ANEJO Nº 6. ESTRUCTURAS

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1. Cuadro resumen

1. CUADRO RESÚMEN.

Estructura	PK	Tipología del la estructura	Tipo de estructura	Dimensiones (m)	Procedimiento constructivo
Viaductos del Papiol	600+155-600+725	Viga postesa aligerada	Viaducto	570 m de longitud	Empujado
Riera del Mig	601+608	Marcos prefabricados	Paso inferior	4.50x3.10	Montaje de prefabricado
Galería de servicio	600+858.47	Marcos prefabricados	Paso inferior		Montaje de prefabricado
Riera de Fonda	601+758	Armado	Paso inferior	10.40x4.50	Cimbrado
Riera de Manyá	602+100	Armado	Paso inferior	7.80x2.80	Cimbrado
Riera de Cervelló	602+700-602+740	Viga postesa aligerada	Puente	40 m longitud	Cimbrado

2. Descripción (Tipología, aparatos de apoyo, juntas, impermeabilización, etc.)

LÍNEA DE ALTA VELOCIDAD MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA. TRAMO

PAPIOL - SANT VICENÇ DELS HORTS

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CANAL DE LA INFANTA

*****

CANAL SOBRE EL TORRENT ARGILÉS

COMPROBACIÓN DEL ESTADO LÍMITE ÚLTIMO

DE FLEXIÓN Y CORTANTE

1. - Esfuerzos máximos.

A - HASTIALES	*Zona inferior*			Combinación
Barra 1 - Nudo 1		M_d = -1,758	N_d = 3,348	1
Barra 7 - Nudo 7		V_d = 0,839	N_d = 3,336	1
	Zona superior			Combinación
Barra 2 - Nudo 3		M_d = -0,820	N_d = 2,183	1
Barra 2 - Nudo 3		V_d = 0,885	N_d = 2,183	1
	Zona central			
		M_d = <0	N_d = -	
		V_d = -	N_d = -	
B - LOSA SUPERIOR	*Cara superior*			Combinación
Barra 3 - Nudo 3		M_d = -0,820	N_d = -0,885	1
Barra 3 - Nudo 3		V_d = 2,183	N_d = -0,885	1
	Cara inferior			Combinación
Barra 4 - Nudo 5		M_d = 1,533	N_d = -0,885	1
		V_d = -	N_d = -	
C - LOSA INFERIOR	*Cara inferior*			Combinación
Barra 12 - Nudo 1		M_d = 1,758	N_d = -0,803	1
Barra 21 - Nudo 7		V_d = 3,911	N_d = -0,803	1
	Cara superior			Combinación
Barra 16 - Nudo 17		M_d = -2,302	N_d = -0,803	1
		V_d = -	N_d = -	

2.- Características de los materiales.

Hormigón HA-25/P/20/IIa

Resistencia característica hormigón (f_{ck})	250 Kp/cm^2
Coeficiente minoración hormigón (γ_c)	1,50
Resistencia cálculo hormigón (f_{cd})	166,67 Kp/cm^2

Acero B-500-S

Resistencia característica acero (f_{yk})	5100 Kp/cm^2
Coeficiente minoración acero (γ_s)	1,15
Resistencia cálculo acero (f_{yd})	4434,78 Kp/cm^2

3. - Cálculo de las armaduras.

A - HASTIALES

- Estado límite de agotamiento frente a solicitaciones normales

Recubrimiento (c)	40 mm
Canto (h)	0,300 m
Canto útil (d)	0,260 m
Coeficiente vertical (v)	0,90

$$U_c = v \cdot f_{cd} \cdot d \cdot 1{,}00 = 390{,}00 \text{ T/ml}$$

Armadura exterior inferior

Momento (M)	1,76 mT/ml

Axil (N) 3,35 T/ml

Excentricidad (e) 0,098 m

Coef. mayoración cargas variables (γ_Q) 1,5

Mom. cálculo (M_d) M + (N·e) = 2,08 mT/ml

Axil cálculo (N_d) N / γ_Q = 2,23 T/ml

μ = 0,021 ν = 0,006 ω = 0,015

U_s = 5,9 T/ml

La armadura mínima a disponer es de 5 Ø 12 por metro lineal.

U_{real} = 25,08 T/ml U_{dif} = 19,1 T/ml

Armadura exterior superior

Momento (M) 0,82 mT/ml

Axil (N) 2,18 T/ml

Excentricidad (e) 0,098 m

Coef. mayoración cargas variables (γ_Q) 1,5

Mom. Cálculo (M_d) M + (N·e) = 1,03 mT/ml

Axil cálculo (N_d) N / γ_Q = 1,46 T/ml

μ = 0,010 ν = 0,004 ω = 0,007

U_s = 2,6 T/ml

La armadura mínima a disponer es de 5 Ø 12 por metro lineal.

U_{real} = 25,08 T/ml U_{dif} = 22,5 T/ml

Armadura Interior

La cuantía geométrica mínima vertical es el 0,09 % de la sección total de hormigón, correspondiente a la cara de tracción, disponiendo en la cara opuesta una armadura mínima opuesta del 30 % de la consignada.

U_s = 11,974 T/ml 5 Ø 12 pml

La cuantía geométrica mínima horizontal es el 0,32 % de la sección total de hormigón, colocada en ambas caras, disponiendo en la cara vista una armadura de 2/3 de la total.

U_s = 42,574 T/m Reparto Ø 12 a 20 mm

- Estado límite de agotamiento frente a cortante

Ángulo de las armaduras (α) 90 º

Ángulo de las bielas de compresión (ϑ) 45 º

Resistencia de cálculo de cercos ($f_{y\alpha,d}$) 4000 Kp/cm2

Agotamiento por compresión oblícua

V_{u1} = 130,00 T/ml > Vd

V_{rd} = 0,89 T/ml

Agotamiento por tracción en el alma

V_{cu} = 9,88 T/ml

$V_s = V_{rd} - V_{cu}$ = -9,00 T/ml No es necesaria armadura de cortante

Si se disponen cercos Ø 10 a 20 cm cada 40 cm

$V_{su} = 0,9 \cdot d \cdot (1/s) \cdot (1/s') \cdot A_{cerco} =$ 9,19 T/ml > Vs

El área mínima de cercos de cortante es 8 cm^2/m

B - LOSA SUPERIOR

- Estado límite de agotamiento frente a solicitaciones normales

Recubrimiento (c) (v)40 mm

Canto (h) 0,300 m

Canto útil (d) 0,260 m

Coeficiente horizontal (v) 1

$U_c = v \cdot f_{cd} \cdot d \cdot 1,00 =$ 433 T/ml

Armadura exterior

Momento (M) 0,82 mT/ml

Axil (N) 0,89 T/ml

Excentricidad (e) 0,098 m

Coef. mayoración cargas variables (γ_Q) 1,5

Mom. cálculo (M_d) M + (N·e) = 0,91 mT/ml

Axil cálculo (N_d) N / γ_Q = 0,59 T/ml

μ = 0,008 ν = 0,001 ω = 0,007

U_s = 2,9 T/ml

La armadura mínima a disponer es de 5 Ø 12 por metro lineal.

U_{real} = 25,08 T/ml U_{dif} = 22,2 T/ml

Armadura Interior

Momento (M) 1,53 mT/ml

Axil (N) 0,89 T/ml

Excentricidad (e) 0,098 m

Coef. mayoración cargas variables (γ_Q) 1,5

Mom. cálculo (M_d) M + (N·e) = 1,62 mT/ml

Axil cálculo (N_d) N / γ_Q = 0,59 T/ml

μ = 0,014 ν = 0,001 ω = 0,013

U_s = 5,7 T/ml

La armadura mínima a disponer es de 5 Ø 12 por metro lineal.

U_{real} = 25,08 T/ml U_{dif} = 19,4 T/ml

- Estado límite de agotamiento frente a cortante

Ángulo de las armaduras (α) 90 º

Ángulo de las bielas de compresión (ϑ) 45 º

Resistencia de cálculo de cercos ($f_{y\alpha,d}$) 4000 Kp/cm^2

Agotamiento por compresión oblícua

V_{u1} = 130,00 T/ml > Vd

V_{rd} = 2,18 T/ml

Agotamiento por tracción en el alma

V_{cu} = 8,58 T/ml

$V_s = V_{rd} - V_{cu}$ = -6,40 T/ml No es necesaria armadura de cortante

Si se disponen cercos Ø 10 a 20 cm cada 40 cm

$V_{su} = 0,9 \cdot d \cdot (1/s) \cdot (1/s') \cdot A_{cerco}$ = 9,19 T/ml > Vs

El área mínima de cercos de cortante es 8 cm^2/m

PASO INFERIOR SOBRE LA RIERA DE CERVELLÓ

PASO INFERIOR SOBRE LA RIERA DE CERVELLÓ

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1 GEOMETRÍA

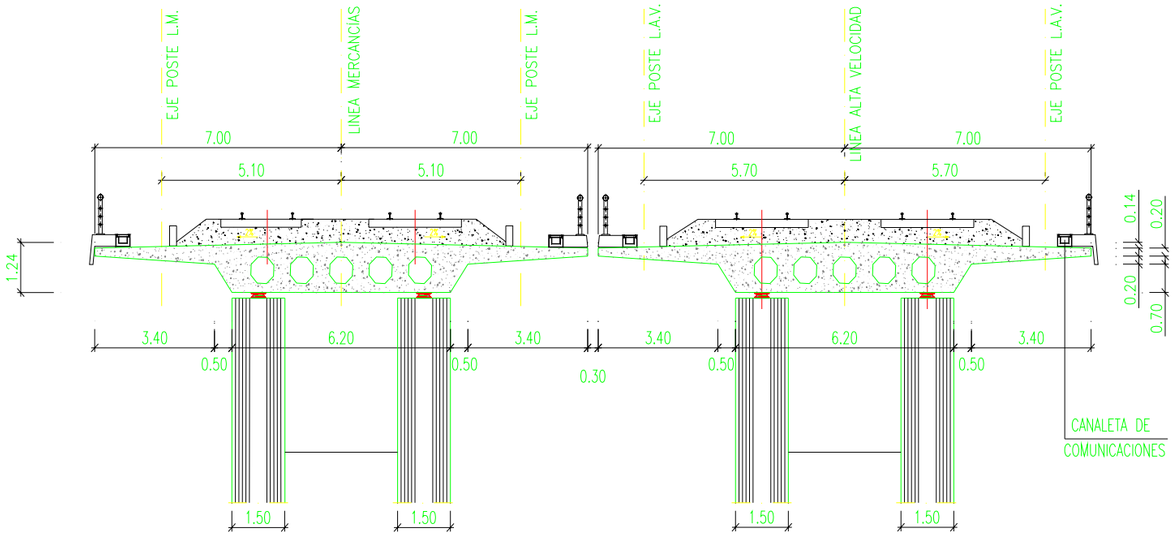
1.1 GEOMETRÍA Y ESQUEMA ESTRUCTURAL

El paso inferior permite el cruce de la línea de alta velocidad y de la línea de mercancías sobre la riera de Cervelló, con una longitud total de 48 m. El puente está constituido por dos tableros paralelos, uno para la línea de alta velocidad y otro para la línea de mercancías, de similares características de hormigón postesado con un esquema longitudinal de tres vanos de 14,5+19+14,5 m de luz. La plataforma tiene 14 m de ancho para ubicar la capa de balasto del ferrocarril, dos canaletas para el paso de cables y las barandillas con sus impostas. El desarrollo en planta de la estructura es prácticamente recto, presentando un ligero esviaje en planta de 8^g.

Al tratarse de un estructura de poca longitud y una altura sobre el cauce del río de unos 4 m, se ha proyectado un tablero de hormigón in situ constituido por una losa aligerada de 1,24 m de canto constante (sobre el eje del tablero). La esbeltez del tablero es L_{max}/15.3. La construcción del tablero podrá realizarse sobre cimbra apoyada en el terreno. La sección del dintel es un losa aligerada de inercia concentrada postesada longitudinalmente mediante 12 unidades de 23 ϕ 0,6".

El tablero se ancla a uno de los estribos (estribo fijo) para transmitir los eventuales empujes de frenado y arranque sobre el mismo. El resto de apoyos no toman fuerzas horizontales, salvo las inducidas por el rozamiento entre el apoyo y el tablero a través de los apoyos de neopreno tipo POT. Las pilas están constituidas por un dos fustes de sección rectangular con tajamares circulares.

Las cargas del tablero se transmiten a los estribos mediante aparatos de apoyo tipo "POT" de neopreno confinado (fijos, unidireccionales o bidireccionales, dependiendo de su posición). Las cimentaciones son profundas mediante pilotes, dimensionadas de acuerdo con las indicaciones del estudio geotécnico.



1.2 SECCIÓN TIPO

La sección transversal del tablero tiene un ancho de plataforma de 14 m y está constituida por una sección losa aligerada de hormigón postesado e inercia concentrada con un canto constante de 1,24 m sobre el eje del tablero y con bombeo del 2 % (canto sobre el borde del tablero igual a 1,10 m).

2 ACCIONES, MATERIALES, COEFICIENTES DE SEGURIDAD Y NORMATIVAS

2.1 ACCIONES

En el cálculo de los elementos estructurales se han considerado las siguientes acciones:

Acciones permanentes (G):

g1, PESO PROPIO.

El peso propio de los distintos elementos se ha calculado a partir de su geometría (secciones transversales) adoptando una densidad de valor γ =2,5 T/m^3 para la losa de hormigón.

El peso del tablero es: Sección aligerada g1= 21,66 T/m

Sección maciza g1= 26,48 T/m

g2, PESO DEL BALASTO Y CARGAS MUERTAS

Las cargas permanentes distintas del propio peso del tablero son las siguientes:

- Balasto
- Vías y traviesas
- Conductos de cableado y paseos
- Soportes de catenarias
- Impostas y barandillas

El peso de balasto sobre el tablero se calcula a partir de la plataforma en la estructura de vía tomando como densidad γ = 1,6 t/m^3.

Para la plataforma sobre el puente se obtiene $g_{2,\ balasto}$ = 9,66 T/m.

De acuerdo a las Bases de Cálculo se adoptarán para esta carga los siguientes valores característicos superior e inferior:

valor inferior (0.70 x peso medio) $g_{2,\ bal\ inf}$ = 6,762 T/m de tablero
valor superior (1.3 x peso medio) $g_{2,\ bal,\ sup}$ = 12,558 T/m de tablero

Se consideran dos hipótesis de desbalastado.

- 50% de una vía en toda su longitud.
- 100% de una vía sobre 15 metros.

El peso de vías y traviesas para la plataforma con doble vía es:

$g_{2,vías+traviesas}$ = 2 x (0,52 + 0,12) = 2 x 0,64 = 1,28 t/ml
(trav) + (carril)

El peso de los conductos para cableados y zona de paseos es:

$g_{2,conductos}$ =0,3 t/ml (peso de hormigón γ = 2,5 t/m^3) (peso de 1 canaleta)

$q_{\ paseos}$ = 0,50 t/m^2 (esta carga en paseos se ha tratado como sobrecarga y no como carga permanente pudiendo actuar en las dos zonas extremas de paseo de 1,45 m de ancho).

$q_{conductos\ +\ paseos}$ = 2 × (0,30 + 0,50 x 1,45) = 2,05 t/m

El peso de la imposta y barandilla es:

Se toma $g_{2,imposta+barandilla}$ = 1,50 T/m, de acuerdo a la sección tipo de plataforma.

La impermeabilización del tablero tiene un espesor de 0,03 m y se aplica en un ancho de 10,10 m (entre muretes guardabalasto), por lo cual su peso resulta ser:

$g_{2impermeabilización}$= 0,03 x 10,10 x 2,30 = 0,70 t/m

El peso de los soportes de catenarias se tienen en cuenta sólo para efectos locales de anclaje de la catenaria y armado local de losa, pero no para el cálculo general del tablero.

	g2, medio (T/m)	**g2, inf (T/m)**	**g2, sup (T/m)**
Balasto	9,66	6,76	12,56
Impermeabilización	0,70	0,70	0,70
Vías y traviesas	1,28	1,28	1,28
Conductos cableado	0,60	0,60	0,60
Imposta y barandillas	1,50	1,08	1,08
TOTAL	**13,74**	**10,84**	**16,64**

Tabla 1. Carga permanente, g2

Acciones permanentes de valor no constante (G*):

PRETENSADO

Las fuerzas del pretensado se calculan para cada fase de construcción de acuerdo con las especificaciones de la normativa vigente para el proyecto con hormigón estructural (EHE).

Para la determinación de las pérdidas de pretensado se han utilizado los siguientes valores de los parámetros de cálculo:

El efecto de la relajación del acero de pretensado a 1000 horas es: $\rho_{1000horas}$= 2 % y la relajación a tiempo infinito ($\rho f=\rho_{1000000horas}$).

Tensión inicial	0.60 fmax	0.70 fmax	0.80 fmax
ρ1000horas (%)	1.0	2.0	5.5
ρf (1000000horas) (%)	2.9	5.8	16

Coeficiente de envejecimiento para el hormigón a tiempo infinito χ = 0.80

Las acciones indirectas derivadas de las deformaciones impuestas se estiman de acuerdo con la rigidez de los elementos de apoyo. En los aparatos de apoyo tipo POT se considera el efecto de rozamiento de acuerdo con los criterios indicados en el apartado 8 de este anejo.

ACCIONES REOLÓGICAS.

Las acciones reolológicas se han determinado de acuerdo con las especificaciones de la normativa vigente para hormigón (EHE) diferenciando la retracción y la fluencia del hormigón.

RETRACCIÓN

$\varepsilon cs(t,ts) = \varepsilon cso\ \beta s\ (t-ts)$

$\varepsilon cso = \beta_{HR}\ (570-5\ fck)\ 10^{-6}$ (fck en MPa)

$\beta_{HR} = -1.55\ (1-(HR/100)^3)$

$$\beta s = \sqrt{\frac{t-ts}{0.035\,e^2+(t-ts)}} \qquad e = \frac{2\,Ac}{u}$$

t = edad del hormigón en el instante de evaluación (en días)
ts = edad del hormigón al comienzo de la retracción (en días)
εcso = coeficiente básico de retracción
HR = humedad relativa
βs = coeficiente que define la evolución de la retracción en el tiempo
e = espesor medio en mm
Ac = área de la sección transversal
u = perímetro en contacto con la atmósfera

Los valores de la sección transversal tipo del tablero son los siguientes:

En la zona de construcción de las estructuras HR= 70 %

Sección transversal tipo : Ac= 8.66 m^2 u=28.73m e=603 mm

Cálculo del valor de la retracción en el tablero:

$\beta_{H\,R}$=-1.018 $\varepsilon cso=3.77\ 10^{-4}$ β_s(10.000 días) = 0.66 $\varepsilon cs(t,ts)= 2.5\ 10^{-4}$

FLUENCIA

$$\varepsilon c(t,to) = \sigma(to)\left[\frac{1}{Eo,to}+\frac{\varphi(t,to)}{Eo,28}\right]$$

$$\varphi(t,to)=\varphi o\,\beta c(t-to)$$
$$\varphi o=\varphi_{HR}\,\beta(fcm)\,\beta(to)$$
$$\varphi_{HR}=1+\frac{100-HR}{9.9e^{1/3}}$$
$$\beta(fcm)=\frac{16.8}{\sqrt{fck+8}}$$
$$\beta to=\frac{1}{0.1+to^{0.2}}$$
$$\beta c(t-to)=\left[\frac{t-to}{\beta_H+(t-to)}\right]^{0.3}$$
$$\beta_H=1.5e\left[1+(0.012HR)^{18}\right]+250>/1500$$

σc = tensión media en el hormigón aplicada en el tiempo to
Eo,to = módulo de deformación en el tiempo to
φ(t,to) = coeficiente de fluencia
φo = coeficiente básico de fluencia

En el caso del tablero, adoptando un valor de aplicación de la fuerza de postesado to= 14 días tenemos

un coeficiente de fluencia a tiempo infinito (10000 días) φf=1.77

φ_{HR}=1.36
β_H = 1194 $\beta_{c(}$(10000-14)=1.217 βto=0.56 β(fcm)=2.425
φo=1.835

ACCIONES DEBIDAS AL TERRENO

Carga sobre zapatas y empuje de las tierras en alzados de estribos y aletas, con una densidad 2,0 T/m^3 y un ángulo de rozamiento interno de 30 º (con presiones horizontales correspondientes a un empuje con coeficiente Ka= 0,33).

ASIENTOS DIFERENCIALES

Al estar cimentada la estructura sobre un terreno granular y mediante cimentación profunda no se prevée la existencia de asientos diferenciales significativos, por lo cual no se han tenido en cuenta en los cálculos.

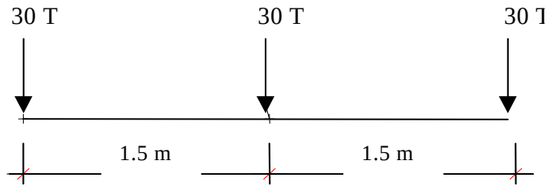
SOBRECARGAS DE USO. COMPONENTES VERTICALES.

En el cálculo de esfuerzos se ha empleado la envolvente de esfuerzos debidos a los trenes de carga de IPF-75 y del Eurocódigo 1 (parte 3, acciones en puentes) EC1-3 tomando como coeficiente de impacto correspondiente en cada caso.

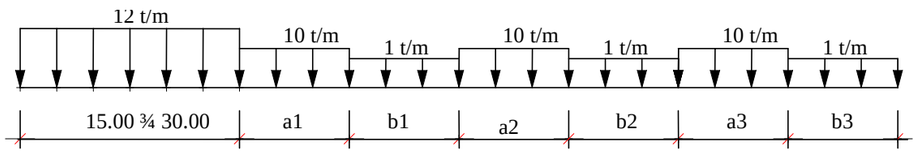
Los coeficientes de impacto no afectan al cálculo de apoyos, pilas y estribos, salvo aquellos casos en que la unión tablero-estructura fuera rígido. Esto conduciría a que el coeficiente de impacto afectaría a la subestructura para las fuerzas de frenado, transmitida al estribo a través del tope rígido longitudinal, y fuerza centrífuga, transmitida a través de apoyos tipo POT guiados. No obstante, la presencia del balasto supone una liberación en la rigidez de la transmisión de las fuerzas horizontales a los apoyos y topes, por lo que no se considera el coeficiente de impacto para estas acciones.

De acuerdo con la normativa IPF-75 Existen dos trenes de carga

Tipo A Por cada vía: Q_A = 3 ejes de 30 T separados 1.50 m



Tipo B Por cada vía: Sobrecarga uniforme de 12 T/m sobre 15 ó 30 metros, más un conjunto de cuchillos de carga de 10 T/m y 1 T/m de longitud arbitraria.

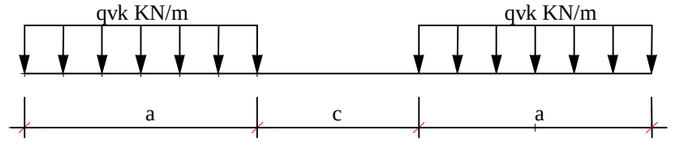


El tren tipo A suele condicionar el trabajo local de reparto de la losa y el tren tipo B condiciona el dimensionamiento general de la mayor parte de los Estados Límites Últimos o de Servicio.

De acuerdo con las especificaciones de la IPF, no se admite reducción de cargas por simultaneidad entre ambas vías. En cualquier caso se debe contemplar la posibilidad de un ripado de la vía respecto al eje teórico de 0.30 m.

El tren de cargas de Eurocódigo 1 (parte 3, acciones en puentes) EC1-3 se define de acuerdo con las configuraciones indicadas en las 2 figuras siguientes. En ambos casos, a efectos de cálculo se contemplará un eventual ripado de la vía de 0.30 m.

Modelo de carga SW



Se considera adicionalmente un tren pesado equivalente al siguiente esquema de cargas (SW/0) ó (SW2) en una de las vías y el tren tipo 71 en la otra vía.

	SW0	SW2
Q_{vk} (kN)	133	150
a (m)	15	25
c (m)	5,3	7

De acuerdo con la IPF-75, para algunas comprobaciones específicas asociadas a combinaciones de carga con viento transversal se considerará un tren sin carga de 12.5 KN/m.

Coeficientes de mayoración por impacto

De acuerdo con la normativa IPF75, se aplica la formulación siguiente:

$$I = 65\frac{\mu}{1 - \mu + \mu^2}$$

El valor del coeficiente μ depende de la velocidad, la luz y el periodo de vibración de la estructura. En este viaducto se ha obtenido un primer periodo de vibración a flexión de valor T= 0,155 s. Para una velocidad máxima de 200 Km/h se obtiene: I = 18 %

De acuerdo con el Eurocódigo EC-1, para vías de mantenimiento cuidadoso.

$$\phi_2 = \frac{1{,}44}{\sqrt{L\phi} - 0{,}20} + 0{,}82 = 1{,}15 \leq 1{,}17$$

$L\phi = K * L_m = 20{,}8$ m

Este valor se debe emplear en el cálculo longitudinal del tablero. Los coeficientes a aplicar en el cálculo local se estudiarán en el apartado correspondiente.

En las zonas del tablero destinadas a mantenimiento (zonas de paseo) se considera una sobrecarga de 0.5 T/m^2, considerándose concomitante con las sobrecargas ferroviario un 50 % de dicha carga.

SOBRECARGAS DE USO. COMPONENTES HORIZONTALES.

EFECTO LAZO

En la estructura se considerará una única fuerza transversal concomitante con la sobrecarga vertical para contemplar el efecto lazo. El valor de dicha carga (que no debe ser mayorada con el coeficiente de impacto) es el siguiente:

Según IPF-75 H_T = 5 T para el conjunto de ambas vías, aplicada a cota superior del carril.

Según EC1 H_T = 10,2 T para el conjunto de ambas vías, aplicada a cota superior del carril.

FUERZA CENTRÍFUGA

En puentes de trazado curvo en planta se debe considerar la fuerza centrífuga, cuyo valor se puede obtener mediante la expresión siguiente:

IPF 75: Fc = Q x $\frac{V^2}{127R}$

El Eurocódigo 1 permite una reducción de la fuerza centrífuga en función de la longitud cargada. Se constata que la IPF-75 da un valor mayor de fuerza centrifuga que el EC1 y por tanto, si el puente es curvo se tomará dicho valor, combinado con el efecto del peralte. Se supondrá la carga actuando 1,80 m por encima del carril.

El puente está ubicado en una alineación recta en planta, con lo cual el valor de la fuerza centrífuga a considerar es nulo.

EFECTOS DE FRENADO Y ARRANQUE

En el presente proyecto se adoptan las acciones más desfavorables de las especificadas en el Eurocódigo EC-1 considerando el carril discontínuo en ambos estribos, las propuestas por la IPF-75 y las calculadas según la ficha 774-3 de la UIC teniendo en cuenta el efecto de la interacción entre vía y estructura, que incluye el efecto del frenado y arranque, la diferencia de temperatura entre el carríl y la estructura y el giro de la estructura en estribos.

En la siguiente tabla se expone el cálculo de las fuerzas horizontales según la IPF-75, que resulta ser 1/8 de la carga vertical en el tablero:

Cálculos intermedios

Carga vertical tren tipo A en primera vía	90 T
Carga vertical tren tipo A en segunda vía	90 T
Carga vertical tren tipo B en primera vía	540 T
Carga vertical tren tipo B en segunda vía	540 T
Valor total de la carga vertical	1080 T

Resultado

Valor de la fuerza de frenado total	**135** T

Según el EC-1, considerando el carril discontinuo en ambos extremos del tablero:

Cálculos intermedios

Longitud cargada LM 71	48 m
Longitud sin carga LMT1	0 m
Longitud cargada SW0	30 m
Longitud sin carga SWO	18 m
Longitud cargada SW2	41 m
Longitud sin carga SW2	7 m
Fuerza horizontal por arranque vía 1	100 T
Fuerza horizontal por frenado vía 1	143,5 T
Fuerza horizontal por arranque vía 2	100 T
Fuerza horizontal por frenado vía 2	96 T

Resultado

Fuerza de frenado sin reducción por continuidad del carril	**243,5 T**

Para el cálculo de los anteriores valores se han aplicado las siguientes fórmulas:

Fuerzas de arranque (por vía) LM71 y SW

$F_a = 33\ (KN/m) \times L(m) \leq 1.000\ KN.$

Fuerzas de frenado (por vía)

$F_f = 20\ (KN/m) \times L(m) = \leq 6.000\ (KN)$ LM71 y SW0
$F_f = 35\ (KN/m) \times L(m) = \leq 6.000\ (KN)$ SW2

El cálculo de las fuerzas en el punto fijo en sentido longitudinal de la estructura según la ficha 774-3 de la UIC se expone en el apartado 12 del presente anejo. A continuación se resumen los valores de esta reacción debido a los efectos de frenado, diferencia de temperatura entre carril y estructura y giro del tablero en los estribos.

Fuerzas en el apoyo fijo.

	F. Temperatura T	F. Frenado/arranque T	F. Giro T
Valores máximos	84,0	58,2	3,2
Valores mínimos	-84,0	-58,2	0

Estos valores se reducirán al 50% si se consideran concomitantes con la fuerza centrífuga.

No se ha previsto la colocación de aparato de dilatación de vía en ninguno de los estribos al estar los incrementos de tensiones en el carril dentro del rango de valores admisibles.

EMPUJE SOBRE BARANDILLAS.

En el elemento superior de la barandilla se considera una fuerza horizontal de valor 1.5 kN/m actuando de modo simultáneo con la sobrecarga uniforme.

DESCARRILAMIENTO

El efecto de descarrilamiento se estudiará como una situación accidental, mayorándose las acciones por un coeficiente de seguridad γf =1,0 y minorándose los parámetros mecánicos de los materiales por los coeficientes indicados en el apartado 2.2.

Para el estudio del Estado Límite Último de estabilidad se empleará, según el Eurocódigo, una carga vertical de 80 KN/m en una longitud total de 20,00 m a una distancia máxima del eje de la vía de 1,5 veces el ancho.

Para el análisis local de elementos estructurales se tomarán 2 cargas verticales a cada lado del eje de vía de 5 T/m en 6.4 m y separadas entre sí 1.4 m

Acciones climáticas

VIENTO

Al estar la estructura ubicada junto a la población de Sant Vicenç dels Horts la velocidad de cálculo se puede determinar a partir de una velocidad de referencia de vref=28 m/s corregida con los siguientes parámetros multiplicadores:

Ct = factor de topografía

Cr = factor de riesgo (se toma un periodo de retorno de 100 años)

Cz = factor de altura (se adopta un entorno Tipo II, zona plana con algunos obstáculos)

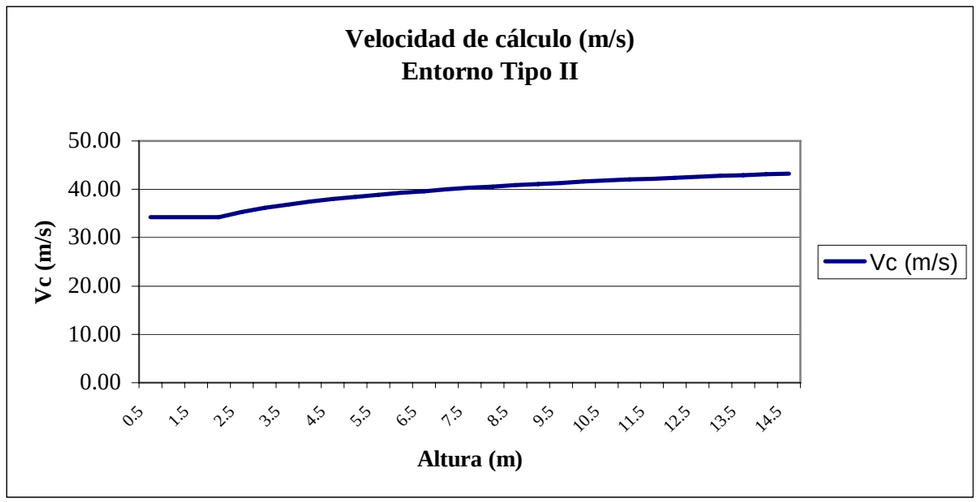
Cg = factor de ráfaga

$$Cz = Kz\ \ln(\frac{z}{zo}) \quad si \quad z \geq z_{min}$$

$$Cz = Kz\ \ln(\frac{z_{min}}{zo}) \quad si \quad z \leq z_{min}$$

$$Cg = \sqrt{\left(1 + \frac{7Kz}{CzCt}\right)}$$

Vref=28 m/s, Ct=1.0 y Cr=1.04



Para un entorno Tipo II

Kz= 0.19 zo = 0.05m zmin = 4 m

Para determinar el empuje de viento sobre el tablero, la velocidad de cálculo es:

Vc = Ct . Cr . Cz . Cg . Vref = 44.66 m/s

Las situaciones consideradas han sido:

Puente sin sobrecarga
Puente con tren en una vía
Puente con trenes en ambas vías

Se tiene en cuenta en el cálculo del empuje total del viento sobre el tablero los coeficientes de ocultamiento entre zonas expuestas, obteniendose los siguientes valores:

Puente sin sobrecarga F = 0.664 T/m

Puente con tren en una vía F = 0.791 T/m

Puente con trenes en ambas vías F = 0.813 T/m

Cuando se combina con la sobrecarga se reduce en un 50% esta acción.

NIEVE

Según al IAP se debe aplicar una carga de nieve sobre la superficie de tablero en la que no se considere sobrecarga de uso. Para el cálculo del tablero se considera la posibilidad de tener sobrecarga en toda su superficie, por lo tanto no es necesario aplicar la sobrecarga de nieve.

Acciones Térmicas

VARIACIÓN UNIFORME DE TEMPERATURA

El puente está emplazado en la región climática III (Figura 7 de la IAP)

Por ser una losa aligerada de hormigón, la variación uniforme de temperatura viene dada por:

$$\Delta T = K \cdot z^a \cdot h^b \cdot s^c = 24{,}91 \cdot 3^{0{,}292} \cdot 1{,}24^{-0{,}172} \cdot 1^0 = 33{,}1^oC$$

GRADIENTE TÉRMICO

$\nabla Tsi,ref = 12\ ºC$

$K_1 = 0{,}78$

$K_3 = 1{,}06$

$K_4 = 0{,}80$

Vertical positivo $\nabla T_{SI} = (K_1\ K_3\ K_4) \cdot \nabla T_{SI,ref} = 7{,}90\ ºC$

Vertical negativo $\nabla T_{SI} = 0ºC$ (tablero de hormigón con pavimento bituminoso)

Transversal $\nabla T_T = 2.5\ ºC$ si la estructura tiene dirección Este-Oeste (+/- 25 g)

ACCIÓN SÍSMICA

La aceleración sísmica básica de la zona, según la normativa vigente, es $a_b = 0{,}04$ g.

La categoría de la estructura puede considerarse de especial importancia, lo que es equivalente a un factor de nivel de daño $\gamma_1 = 1.3$.

La aceleración de cálculo es: $a_c = \gamma_1\ a_b = 0.052$ g

Las acciones sísmicas en puentes sólo se consideran, de acuerdo con la IAP, para aceleraciones de cálculo superiores a 0.06g, por lo tanto no es preciso realizar el análisis sísmico del puente.

2.2 COEFICIENTES DE SEGURIDAD, MATERIALES, NIVELES DE CONTROL Y NORMATIVAS

HORMIGONES

- Hormigón de Limpieza..... HM-15
- Cimentaciones y estribos..... HA-25 / B / 20 / IIa
- Alzados de pilas …….... HA-25 / B / 20 / IIa
- Tablero ..... HP-40 / B / 20 / IIa

Control del hormigón ESTADÍSTICO

γc= 1.50 (Situación persistente o transitoria)
γc= 1.30 (Situación accidental)

El módulo de elasticidad se ha evaluado en todos los casos de acuerdo a la expresión de EHE:

$E_c = 8500 \sqrt[3]{f_{ck} + 8}$ (Nw/mm^2)

Los límites establecidos para la consistencia en la puesta en obra podrán superarse con el empleo de aditivos superfluidificantes, siempre que el valor de la relación agua-cemento cumpla los requisitos prefijados en EHE.

ACEROS

- Acero corrugado para la armadura pasiva B500S, con f_{yk} > 500 MPa (5100 Kp/cm^2)

- Acero de pretensado tipo 170/190 con tendones de 0,6 " (Y 1860 S7 15.2).

Control de los aceros NORMAL

γs= 1.15 (Situación persistente o transitoria)
γs= 1.0 (Situación accidental)

CONTROL DE EJECUCIÓN

El control de ejecución será INTENSO (γ_g= 1.35 y γ_{fq}= 1.5) en tablero y estribos de acuerdo con las especificaciones de la normativa EHE.

NORMAS UTILIZADAS

Para el establecimiento de acciones y las combinaciones necesarias para la obtención de las solicitaciones de cálculo que se emplearán en la comprobación de los diferentes Estados Límite se realizarán los cálculos empleando la normativa IPF-75 y los criterios especificados en los Eurocódigos, adoptándose el más desfavorable de ambos.

Cálculo según IPF-75

Para el cálculo de las acciones se utilizarán las siguientes instrucciones.

- Instrucción relativa a las acciones a considerar en el Proyecto de Puentes de Ferrocarril", correspondiente a la O.M. 25 de Junio de 1.975 (IPF-75).

- Norma de construcción Sismorresistente: Parte general y edificación (NCSE-94)" R.D. 29 de Diciembre de 1.994.

Para el cálculo de las acciones ambientales se utilizará la siguiente instrucción.

- Instrucción relativa a las acciones a considerar en el proyecto de Puentes de Carreteras I.A.P. 12 de Febrero de 1998.

Para establecer las hipótesis y combinaciones de cálculo y sus correspondientes coeficientes de ponderación se utilizarán las siguientes Instrucciones:

- Instrucción de Hormigón Estructural (EHE) R.D. 2661/1998 de 11 de Diciembre.

Cálculo según Eurocódigos y EHE

- Eurocódigo 1*: Bases de proyecto y acciones. Parte 3. Cargas de tráfico en puentes*. UNE-ENV 1991-3. Octubre 1997. (EC1.1.3.)

Para establecer las hipótesis y combinaciones de cálculo y sus correspondientes coeficientes de ponderación se utilizarán las siguientes Instrucciones:

- Eurocódigo 1: *Bases de proyecto y acciones en estructuras. Parte 1; Bases de proyecto*. UNE-ENV 1991-1, Octubre 1997 (EC1.1)

Para dimensionamiento y comprobación de secciones se actuará, en todo momento, de acuerdo con la normativa española;

- Instrucción de Hormigón Estructural EHE. R.D. 2661/1998 de 11 de Diciembre

El estudio de la fatiga de los materiales se hará de acuerdo con la siguiente norma:

- Eurocódigo 2: *Proyecto de estructuras de hormigón. Parte 2: Puentes de hormigón.* ENV 1992.2: Septiembre 1996. (EC2.2).

La comprobación de flechas, deformaciones y vibraciones se hará de acuerdo con la norma:

- Eurocódigo 1: *Bases de proyecto y acciones en estructuras. Parte 3: Cargas de tráfico en puentes* UNE-ENV 1991-3. Octubre 1997. (EC1.1.3).

Para el análisis de la interacción vía-estructura se empleará la siguiente norma:

- Norma U.I.C. Ficha 774.3 R. 1ª edición. Febrero 1999 (U.I.C. 774.3).

Subsidiariamente, y en lo no contemplado en las normas anterioriores se emplearán las siguientes:

- Norma UIC. Ficha 776.1. 3ª edición. 1 de Julio de 1.979. (U.I.C. 776.1)
- Norma UIC. Ficha 774-2. 1ª Edición. 1 de Julio de 1.974. (U.I.C. 774.2)
- Norma UIC. Ficha 702.0. 2ª Edición. 1 de Enero de 1.974. (U.I.C. 702.0)

2.3 AMBIENTES, RECUBRIMIENTOS, FISURACIÓN Y CUANTÍAS MÍNIMAS

De acuerdo con la normativa EHE se consideran los ambientes indicados en la tabla siguiente.

Elemento	Ambiente	Recubrimiento de Armadura pasiva (mm)	Límite de abertura de fisura Wmax (mm)	
			Hormigón armado	Hormigón postesado
Tablero	IIa	30	-	Descompresion bajo comb. cuasipermanente
Alzados de pilas y estribos	IIa	35	0.3	-
Cimentaciones	IIa	35	0.3	-
Pilotes/Pantallas	IIa	35	0.3	-

Para las armaduras postesas el recubrimiento es el máximo de los siguientes valores: 4 cm o el diámetro de la vaina.

Las cuantías mínimas de armadura pasiva B500S serán las expuestas en la siguiente tabla (EHE, art. 4.3.5)

Elemento	Posición	Tipo	Cuantía geométrica o/oo
Zapatas	cara superior o inferior	transversal o longitudinal	0.90
Pilotes	vertical	-	4.0
Pilas	vertical	-	4.0
Alzados de estribos y aletas (1)	horizontal	lado tierras	1.07
		lado visto	2.13
	vertical	lado tierras	0.90
		lado visto	0.30
Tablero	cara superior o inferior	transversal o longitudinal	0.90

(1) las cuantías geométricas horizontales se pueden reducir un 50 % si se colocan juntas de contracción distanciadas menos de 7,5 m.

2.4 HIPÓTESIS DE COMBINACIÓN DE ESFUERZOS

Se han considerado las combinaciones de hipótesis de las acciones recogidas en la Normativas IAP y EHE, basados en la teoría de Estados Límites, para las distintas situaciones de cálculo de la estructura.

2.4.1 ESTADOS LÍMITES ÚLTIMOS

Las hipótesis de cálculo consideradas son:

- Situaciones persistentes o transitorias

$$\underset{j \geq 1}{\Sigma}\ \gamma_{Gj}\ G_{kj}\ +\ \Sigma\ \gamma_{Gj}\ G^{*}_{kj}\ +\ \gamma_{Q1}\ Q_{k1}\ +\ \underset{i > 1}{\Sigma}\ \gamma_{Qi}\ \Psi_{0i}\ Q_{ki}$$

- Situaciones accidentales

$$\underset{j \geq 1}{\Sigma}\ \gamma_{Gaj}\ G_{kj}\ +\ \Sigma\ \gamma_{Gj}\ G^{*}_{kj}\ +\ \gamma_{A}\ A_{k}\ +\ \Psi_{11}\ Q_{k1}\ +\ \underset{i > 1}{\Sigma}\ \gamma_{Qi}\ \Psi_{2i}\ Q_{ki}$$

- Situaciones accidentales de sismo

$$\Sigma\ G_{kj}\ +\ \underset{j \geq 1}{\Sigma}\ \gamma_{Gj}\ G^{*}_{kj}\ +\ \gamma_{i}\ A_{Ed}\ +\ \underset{i > 1}{\Sigma}\ \gamma_{Qi}\ \Psi_{2i}\ Q_{ki}$$

donde:

G = Valor característico de las cargas permanentes.
G* = Valor característico de las cargas permanentes de valor no constante.
Q_{k1} = Valor característico de la carga variable dominante.
A_k = Valor característico de la acción accidental
A_{eq} = Valor característico de la acción sísmica, calculado según la Norma Sismorresistente.

Los coeficientes de seguridad y de combinación de acciones empleados se definen en la EHE para control de ejecución intenso.

2.4.2 ESTADOS LÍMITES DE SERVICIO

Las hipótesis de cálculo consideradas son:

- Combinación característica

$$\underset{j \geq 1}{\Sigma}\ \gamma_{Gj}\ G_{kj}\ +\ \Sigma\ \gamma_{Gj}\ G^{*}_{kj}\ +\ \gamma_{Q1}\ Q_{k1}\ +\ \underset{i > 1}{\Sigma}\ \gamma_{Qi}\ \Psi_{0i}\ Q_{ki}$$

- Combinación frecuente

$$\underset{j \geq 1}{\Sigma}\ \gamma_{Gaj}\ G_{kj}\ +\ \Sigma\ \gamma_{Gj}\ G^{*}_{kj}\ +\ \Psi_{11}\ Q_{k1}\ +\ \underset{i > 1}{\Sigma}\ \gamma_{Qi}\ \Psi_{2i}\ Q_{ki}$$

- Combinación casi permanente

$$\underset{j \geq 1}{\Sigma}\ G_{kj}\ +\ \Sigma\ \gamma_{Gj}\ G^{*}_{kj}\ +\ \underset{i > 1}{\Sigma}\ \gamma_{Qi}\ \Psi_{2i}\ Q_{ki}$$

3 CÁLCULO ESTRUCTURAL DEL TABLERO

3.1 CÁLCULO ESTRUCTURAL CON MODELO DE VIGA CONTINUA

3.1.1 DISCRETIZACIÓN Y CARACTERÍSTICAS MECÁNICAS

Se modela el tablero mediante un emparrillado plano constituido por dos nervios longitudinales, coincidente con los ejes de viga en planta, con 3 grados de libertad por nudo (desplazamiento vertical, giro de flexión longitudinal de la barra y giro a torsión). Los nervios longitudinales se han dividido para cada uno de los vanos del tablero en 20 barras de igual longitud asignando las características mecánicas en cada uno de los extremos de la barra. Las propiedades mecánicas de la barra se obtienen como media de las características de sus secciones extremas. En la zona de estribos se ha simulado la riostra de apoyo mediante 2 barras transversales, una a cada lado del nervio longitudinal, con su extremo final coincidente con la posición real de los apoyos de neopreno. En las barras transversales de las riostras de apoyo se ha despreciado su rigidez a torsión. En los apoyos se han prescrito únicamente los movimientos verticales del nudo.

La numeración de nudos y barras es correlativa, tomando como origen el extremo izquierdo del nervio longitudinal, en último lugar se numeran las barras y nudos que permiten simular las riostras de apoyo en los dos estribos. La discretización adoptada aparece en las hojas y esquemas adjuntos.

3.1.2 CÁLCULO DE ESFUERZOS LONGITUDINALES

El cálculo de esfuerzos longitudinales con el modelo de análisis estructural expuesto se detalla a continuación.

La notación adoptada para cada una de las hipótesis de carga es la siguiente:

- **g_1** Peso propio de la estructura.
- **g_2** Carga permanente.
- **q** Sobrecarga uniforme de ferrocarril.
- **ΔT** Gradiente de temperatura.
- **Pii** Pretensado inicial de descimbrado (pretensado parcial con pérdidas iniciales).
- **Pi** Pretensado inicial (con pérdidas iniciales).
- **P_∞** Pretensado final (con pérdidas iniciales y diferidas).

En los listados aparece la siguiente información:

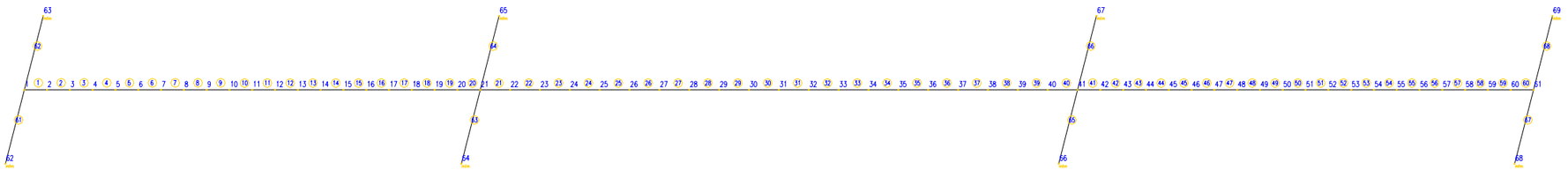
1. Datos generales.
2. Discretización: numeración de barras y nudos, coordenadas de los nudos condiciones de vinculación.
3. Cargas en los nudos para cada hipótesis de carga.
4. Reacciones para cada hipótesis de carga.
5. Esfuerzos en extremo de barra para cada hipótesis de carga.

CÁLCULO ESTRUCTURAL DEL TABLERO CON MODELO DE EMPARRILLADO

MODELO DE CALCULO

(J) Numeracion de barras

J Numeracion de nudos



Referencia del Proyecto:

Paso Inferior Riera de Cervelló

DATOS GENERALES DEL EMPARRILLADO

No. de Barras = 68
No. de Nudos = 69
No. de Nudos con condiciones impuestas = 8
No. de Materiales = 3
No. de Hipotesis de carga = 1

Propiedades de barras =1, de secciones =0

TIPO DE PROPIEDADES = 0

PROPIEDADES DE LOS MATERIALES

MATERIAL/SECCION 1

Inercia a Flexion	(m4)	=	1.1212699
Modulo de Torsion	(m4)	=	2.2570000
Area a Cortante	(m2)	=	0.0000000
Modulo de elasticidad	(T/m2)	=	2850000.00
Coeficiente de Poisson		=	0.16
Canto	(m)	=	1.24000
Vsup	(m)	=	0.51700
Vinf	(m)	=	0.72300

MATERIAL/SECCION 2

Inercia a Flexion	(m4)	=	1.2274500
Modulo de Torsion	(m4)	=	2.2570000
Area a Cortante	(m2)	=	0.0000000
Modulo de elasticidad	(T/m2)	=	2850000.00
Coeficiente de Poisson		=	0.16
Canto	(m)	=	1.24000
Vsup	(m)	=	0.54800
Vinf	(m)	=	0.69200

PROPIEDADES DE LOS MATERIALES

MATERIAL/SECCION 3

Inercia a Flexion	(m4)	=	1.0000000
Modulo de Torsion	(m4)	=	0.0000100
Area a Cortante	(m2)	=	0.0000000
Modulo de elasticidad	(T/m2)	=	2850000.00
Coeficiente de Poisson		=	0.16
Canto	(m)	=	1.10000
Vsup	(m)	=	0.55000
Vinf	(m)	=	0.55000

DISCRETIZACION. DATOS DE LAS BARRAS

Barra	Nudo 1	Nudo 2	No.de Secc Nud.1	No.de Secc Nud.2	No. MAT
1	1	2	2	2	1
2	2	3	2	2	1
3	3	4	1	1	2
4	4	5	1	1	2
5	5	6	1	1	2
6	6	7	1	1	2
7	7	8	1	1	2
8	8	9	1	1	2
9	9	10	1	1	2
10	10	11	1	1	2
11	11	12	1	1	2
12	12	13	1	1	2
13	13	14	1	1	2
14	14	15	1	1	2
15	15	16	1	1	2
16	16	17	1	1	2
17	17	18	1	1	2
18	18	19	1	1	2
19	19	20	2	2	1
20	20	21	2	2	1
21	21	22	2	2	1
22	22	23	2	1	3
23	23	24	1	1	2
24	24	25	1	1	2
25	25	26	1	1	2
26	26	27	1	1	2
27	27	28	1	1	2
28	28	29	1	1	2
29	29	30	1	1	2
30	30	31	1	1	2
31	31	32	1	1	2
32	32	33	1	1	2
33	33	34	1	1	2
34	34	35	1	1	2
35	35	36	1	1	2
36	36	37	1	1	2
37	37	38	1	1	2
38	38	39	1	1	2
39	39	40	1	2	3
40	40	41	2	2	1
41	41	42	2	2	1
42	42	43	2	2	1
43	43	44	1	1	2
44	44	45	1	1	2
45	45	46	1	1	2
46	46	47	1	1	2
47	47	48	1	1	2

DISCRETIZACION. DATOS DE LAS BARRAS

Barra	Nudo 1	Nudo 2	No.de Secc Nud.1	No.de Secc Nud.2	No. MAT
48	48	49	1	1	2
49	49	50	1	1	2
50	50	51	1	1	2
51	51	52	1	1	2
52	52	53	1	1	2
53	53	54	1	1	2
54	54	55	1	1	2
55	55	56	1	1	2
56	56	57	1	1	2
57	57	58	1	1	2
58	58	59	1	1	2
59	59	60	2	2	1
60	60	61	2	2	1
61	1	62	3	3	4
62	1	63	3	3	4
63	21	64	3	3	4
64	21	65	3	3	4
65	41	66	3	3	4
66	41	67	3	3	4
67	61	68	3	3	4
68	61	69	3	3	4

PROPIEDADES DE LAS BARRAS

MATERIAL 1

Inercia a Flexion	(m4)	=	1.2274500
Modulo de Torsion	(m4)	=	2.2570000
Area a Cortante	(m2)	=	0.0000000
Modulo de elasticidad	(T/m2)	=	2850000.00
Modulo de deformacion G	(T/m2)	=	1653000.00
Canto	(m)	=	1.24000
Vsup	(m)	=	0.54800
Vinf	(m)	=	0.69200

MATERIAL 2

Inercia a Flexion	(m4)	=	1.1212699
Modulo de Torsion	(m4)	=	2.2570000
Area a Cortante	(m2)	=	0.0000000
Modulo de elasticidad	(T/m2)	=	2850000.00
Modulo de deformacion G	(T/m2)	=	1653000.00
Canto	(m)	=	1.24000
Vsup	(m)	=	0.51700
Vinf	(m)	=	0.72300

MATERIAL 3

Inercia a Flexion	(m4)	=	1.1743600
Modulo de Torsion	(m4)	=	2.2570000
Area a Cortante	(m2)	=	0.0000000
Modulo de elasticidad	(T/m2)	=	2850000.00
Modulo de deformacion G	(T/m2)	=	1653000.00
Canto	(m)	=	1.24000
Vsup	(m)	=	0.53250
Vinf	(m)	=	0.70750

MATERIAL 4

Inercia a Flexion	(m4)	=	1.0000000
Modulo de Torsion	(m4)	=	0.0000100
Area a Cortante	(m2)	=	0.0000000
Modulo de elasticidad	(T/m2)	=	2850000.00
Modulo de deformacion G	(T/m2)	=	1653000.00
Canto	(m)	=	1.10000
Vsup	(m)	=	0.55000
Vinf	(m)	=	0.55000

COORDENADAS DE LOS NUDOS

Nudo	X	Y
1	0.000	0.000
2	0.725	0.000
3	1.450	0.000
4	2.175	0.000
5	2.900	0.000
6	3.625	0.000
7	4.350	0.000
8	5.075	0.000
9	5.800	0.000
10	6.525	0.000
11	7.250	0.000
12	7.975	0.000
13	8.700	0.000
14	9.425	0.000
15	10.150	0.000
16	10.875	0.000
17	11.600	0.000
18	12.325	0.000
19	13.050	0.000
20	13.775	0.000
21	14.500	0.000
22	15.450	0.000
23	16.400	0.000
24	17.350	0.000
25	18.300	0.000
26	19.250	0.000
27	20.200	0.000
28	21.150	0.000
29	22.100	0.000
30	23.050	0.000
31	24.000	0.000
32	24.950	0.000
33	25.900	0.000
34	26.850	0.000
35	27.800	0.000
36	28.750	0.000
37	29.700	0.000
38	30.650	0.000
39	31.600	0.000
40	32.550	0.000
41	33.500	0.000
42	34.225	0.000
43	34.950	0.000
44	35.675	0.000
45	36.400	0.000
46	37.125	0.000
47	37.850	0.000
48	38.575	0.000

COORDENADAS DE LOS NUDOS

Nudo	X	Y
49	39.300	0.000
50	40.025	0.000
51	40.750	0.000
52	41.475	0.000
53	42.200	0.000
54	42.925	0.000
55	43.650	0.000
56	44.375	0.000
57	45.100	0.000
58	45.825	0.000
59	46.550	0.000
60	47.275	0.000
61	48.000	0.000
62	-0.222	-2.350
63	0.222	2.350
64	14.278	-2.350
65	14.722	2.350
66	33.278	-2.350
67	33.722	2.350
68	47.778	-2.350
69	48.222	2.350

CONDICIONES DE VINCULACION

Nudo	Codigo	RX	RZ	RY
62	0 1 0	0.000	0.000	0.000
63	0 1 0	0.000	0.000	0.000
64	0 1 0	0.000	0.000	0.000
65	0 1 0	0.000	0.000	0.000
66	0 1 0	0.000	0.000	0.000
67	0 1 0	0.000	0.000	0.000
68	0 1 0	0.000	0.000	0.000
69	0 1 0	0.000	0.000	0.000

Ancho de banda = 189

HIPOTESIS 1 PESO PROPIO

REACCIONES

Nudo	Flector	Reac_vert	Torsor
62	0.00000	64.45224	0.00000
63	0.00000	67.53541	0.00000
64	0.00000	212.24019	0.00000
65	0.00000	210.64760	0.00000
66	0.00000	210.60106	0.00000
67	0.00000	212.19008	0.00000
68	0.00000	67.51598	0.00000
69	0.00000	64.43632	0.00000

SUMA DE REACCIONES

Suma Momentos Flectores = 0.000
Suma Reacciones Vertic. = 1109.619
Suma Momentos Torsores = 0.000

HIPOTESIS 1 PESO PROPIO

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-0.69	120.18	7.25	-79.49	-100.99	-7.25
2	79.49	100.99	7.25	-145.75	-81.79	-7.25
3	145.75	81.80	7.25	-199.36	-66.09	-7.25
4	199.36	66.10	7.25	-241.58	-50.39	-7.25
5	241.58	50.39	7.25	-272.42	-34.68	-7.25
6	272.41	34.66	7.25	-291.86	-18.95	-7.25
7	291.85	18.98	7.25	-299.92	-3.28	-7.25
8	299.92	3.27	7.25	-296.60	12.44	-7.25
9	296.59	-12.43	7.25	-281.89	28.14	-7.25
10	281.89	-28.16	7.25	-255.78	43.86	-7.25
11	255.78	-43.84	7.25	-218.30	59.55	-7.25
12	218.30	-59.56	7.25	-169.43	75.27	-7.25
13	169.43	-75.26	7.25	-109.17	90.97	-7.25
14	109.16	-90.98	7.25	-37.51	106.69	-7.25
15	37.51	-106.68	7.25	45.53	122.39	-7.25
16	-45.54	-122.41	7.25	139.97	138.11	-7.25
17	-139.98	-138.11	7.25	245.80	153.82	-7.25
18	-245.80	-153.83	7.25	363.01	169.53	-7.25
19	-363.02	-169.52	7.25	492.88	188.72	-7.25
20	-492.88	-188.72	7.25	636.66	207.92	-7.25
21	-636.30	214.97	3.50	444.03	-189.82	-3.50
22	-444.03	189.82	3.50	275.65	-164.67	-3.50
23	-275.65	164.66	3.50	129.00	-144.08	-3.50
24	-129.00	144.09	3.50	1.90	-123.51	-3.50

HIPOTESIS 1 PESO PROPIO

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
25	-1.89	123.50	3.50	-105.65	-102.92	-3.50
26	105.65	102.92	3.50	-193.65	-82.34	-3.50
27	193.65	82.34	3.50	-262.10	-61.76	-3.50
28	262.09	61.75	3.50	-310.97	-41.17	-3.50
29	310.97	41.17	3.50	-340.31	-20.59	-3.50
30	340.31	20.59	3.50	-350.09	-0.01	-3.50
31	350.08	0.01	3.50	-340.31	20.57	-3.50
32	340.33	-20.59	3.50	-310.98	41.17	-3.50
33	310.97	-41.14	3.50	-262.12	61.72	-3.50
34	262.10	-61.73	3.50	-193.69	82.31	-3.50
35	193.69	-82.33	3.50	-105.70	102.91	-3.50
36	105.71	-102.90	3.50	1.83	123.48	-3.50
37	-1.82	-123.48	3.50	128.91	144.07	-3.50
38	-128.91	-144.05	3.50	275.54	164.64	-3.50
39	-275.54	-164.64	3.50	443.90	189.79	-3.50
40	-443.90	-189.79	3.50	636.15	214.94	-3.50
41	-636.50	207.85	7.24	492.77	-188.66	-7.24
42	-492.77	188.65	7.24	362.95	-169.46	-7.24
43	-362.95	169.46	7.24	245.78	-153.76	-7.24
44	-245.78	153.76	7.24	140.01	-138.05	-7.24
45	-140.01	138.06	7.24	45.61	-122.35	-7.24
46	-45.61	122.35	7.24	-37.40	-106.64	-7.24
47	37.40	106.66	7.24	-109.03	-90.95	-7.24
48	109.04	90.94	7.24	-169.28	-75.23	-7.24
49	169.28	75.27	7.24	-218.15	-59.56	-7.24
50	218.14	59.54	7.24	-255.62	-43.84	-7.24
51	255.62	43.83	7.24	-281.70	-28.13	-7.24
52	281.70	28.15	7.24	-296.42	-12.45	-7.24
53	296.42	12.47	7.24	-299.75	3.24	-7.24
54	299.76	-3.25	7.24	-291.71	18.95	-7.24
55	291.70	-18.91	7.24	-272.29	34.61	-7.24
56	272.28	-34.63	7.24	-241.48	50.34	-7.24
57	241.48	-50.34	7.24	-199.28	66.05	-7.24
58	199.29	-66.05	7.24	-145.70	81.75	-7.24
59	145.71	-81.77	7.24	-79.47	100.96	-7.24
60	79.47	-100.95	7.24	0.68	120.15	-7.24
61	145.17	-58.55	0.00	0.00	64.45	0.00
62	152.45	-61.63	0.00	0.00	67.54	0.00
63	500.99	-212.24	0.00	0.00	212.24	0.00
64	497.23	-210.65	0.00	0.00	210.65	0.00
65	497.12	-210.60	0.00	0.00	210.60	0.00
66	500.87	-212.19	0.00	0.00	212.19	0.00
67	152.40	-61.61	0.00	0.00	67.52	0.00
68	145.13	-58.54	0.00	0.00	64.44	0.00

HIPOTESIS 1 CARGA PERMANENTE

REACCIONES

Nudo	Flector	Reac_vert	Torsor
62	0.00000	38.42548	0.00000
63	0.00000	40.54013	0.00000
64	0.00000	141.55679	0.00000
65	0.00000	140.46448	0.00000
66	0.00000	140.43282	0.00000
67	0.00000	141.52272	0.00000
68	0.00000	40.52695	0.00000
69	0.00000	38.41467	0.00000

SUMA DE REACCIONES

Suma Momentos Flectores = 0.000
Suma Reacciones Vertic. = 721.884
Suma Momentos Torsores = 0.000

HIPOTESIS 1 CARGA PERMANENTE

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-0.47	78.97	4.97	-52.83	-68.06	-4.97
2	52.83	68.06	4.97	-98.22	-57.16	-4.97
3	98.22	57.16	4.97	-135.71	-46.25	-4.97
4	135.71	46.25	4.97	-165.29	-35.35	-4.97
5	165.29	35.35	4.97	-186.97	-24.45	-4.97
6	186.96	24.45	4.97	-200.73	-13.54	-4.97
7	200.73	13.55	4.97	-206.60	-2.65	-4.97
8	206.60	2.65	4.97	-204.57	8.26	-4.97
9	204.57	-8.27	4.97	-194.61	19.17	-4.97
10	194.62	-19.17	4.97	-176.77	30.07	-4.97
11	176.77	-30.06	4.97	-151.02	40.97	-4.97
12	151.02	-40.98	4.97	-117.36	51.89	-4.97
13	117.35	-51.87	4.97	-75.79	62.78	-4.97
14	75.78	-62.77	4.97	-26.32	73.68	-4.97
15	26.31	-73.70	4.97	31.07	84.60	-4.97
16	-31.07	-84.60	4.97	96.36	95.51	-4.97
17	-96.36	-95.51	4.97	169.56	106.41	-4.97
18	-169.56	-106.41	4.97	250.66	117.32	-4.97
19	-250.66	-117.32	4.97	339.67	128.23	-4.97
20	-339.67	-128.22	4.97	436.59	139.13	-4.97
21	-436.35	142.89	2.40	307.38	-128.61	-2.40
22	-307.38	128.60	2.40	192.00	-114.32	-2.40
23	-192.00	114.31	2.40	90.18	-100.02	-2.40
24	-90.18	100.02	2.40	1.95	-85.73	-2.40

HIPOTESIS 1 CARGA PERMANENTE

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
25	-1.94	85.73	2.40	-72.72	-71.44	-2.40
26	72.72	71.45	2.40	-133.81	-57.16	-2.40
27	133.81	57.16	2.40	-181.33	-42.87	-2.40
28	181.32	42.88	2.40	-215.27	-28.59	-2.40
29	215.26	28.58	2.40	-235.63	-14.30	-2.40
30	235.62	14.29	2.40	-242.42	0.00	-2.40
31	242.41	0.00	2.40	-235.63	14.28	-2.40
32	235.62	-14.27	2.40	-215.28	28.56	-2.40
33	215.27	-28.58	2.40	-181.33	42.86	-2.40
34	181.35	-42.88	2.40	-133.82	57.17	-2.40
35	133.84	-57.15	2.40	-72.75	71.44	-2.40
36	72.75	-71.43	2.40	1.89	85.72	-2.40
37	-1.90	-85.72	2.40	90.12	100.01	-2.40
38	-90.12	-100.01	2.40	191.92	114.30	-2.40
39	-191.92	-114.30	2.40	307.29	128.59	-2.40
40	-307.29	-128.59	2.40	436.24	142.88	-2.40
41	-436.48	139.08	4.96	339.60	-128.18	-4.96
42	-339.60	128.18	4.96	250.62	-117.28	-4.96
43	-250.62	117.27	4.96	169.55	-106.37	-4.96
44	-169.55	106.37	4.96	96.38	-95.47	-4.96
45	-96.38	95.47	4.96	31.12	-84.56	-4.96
46	-31.12	84.57	4.96	-26.24	-73.67	-4.96
47	26.24	73.66	4.96	-75.69	-62.75	-4.96
48	75.70	62.77	4.96	-117.25	-51.87	-4.96
49	117.26	51.85	4.96	-150.90	-40.95	-4.96
50	150.91	40.95	4.96	-176.65	-30.05	-4.96
51	176.66	30.05	4.96	-194.49	-19.14	-4.96
52	194.50	19.18	4.96	-204.44	-8.27	-4.96
53	204.44	8.26	4.96	-206.48	2.64	-4.96
54	206.48	-2.61	4.96	-200.63	13.52	-4.96
55	200.63	-13.53	4.96	-186.87	24.43	-4.96
56	186.88	-24.43	4.96	-165.21	35.34	-4.96
57	165.21	-35.31	4.96	-135.66	46.21	-4.96
58	135.66	-46.22	4.96	-98.19	57.12	-4.96
59	98.19	-57.13	4.96	-52.81	68.04	-4.96
60	52.81	-68.04	4.96	0.47	78.94	-4.96
61	90.70	-38.43	0.00	0.00	38.43	0.00
62	95.69	-40.54	0.00	0.00	40.54	0.00
63	334.14	-141.56	0.00	0.00	141.56	0.00
64	331.56	-140.46	0.00	0.00	140.46	0.00
65	331.49	-140.43	0.00	0.00	140.43	0.00
66	334.06	-141.52	0.00	0.00	141.52	0.00
67	95.66	-40.53	0.00	0.00	40.53	0.00
68	90.68	-38.41	0.00	0.00	38.41	0.00

HIPOTESIS 1 GRADIENTE TERMICO, AT= 8 C

REACCIONES

Nudo	Flector	Reac_vert	Torsor
62	0.00000	10.27171	0.00000
63	0.00000	6.58195	0.00000
64	0.00000	-10.95724	0.00000
65	0.00000	-5.91500	0.00000
66	0.00000	-5.88817	0.00000
67	0.00000	-10.92795	0.00000
68	0.00000	6.59449	0.00000
69	0.00000	10.28189	0.00000

SUMA DE REACCIONES

Suma Momentos Flectores = 0.000
Suma Reacciones Vertic. = 0.042
Suma Momentos Torsores = 0.000

HIPOTESIS 1 GRADIENTE TERMICO, AT= 8 C

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	0.82	16.85	-8.67	-13.04	-16.85	8.67
2	13.04	16.85	-8.67	-25.25	-16.85	8.67
3	25.26	16.85	-8.67	-37.47	-16.85	8.67
4	37.48	16.85	-8.67	-49.69	-16.85	8.67
5	49.69	16.85	-8.67	-61.91	-16.85	8.67
6	61.92	16.86	-8.67	-74.13	-16.86	8.67
7	74.14	16.84	-8.67	-86.35	-16.84	8.67
8	86.35	16.85	-8.67	-98.57	-16.85	8.67
9	98.57	16.85	-8.67	-110.79	-16.85	8.67
10	110.78	16.84	-8.67	-123.00	-16.84	8.67
11	123.00	16.85	-8.67	-135.22	-16.85	8.67
12	135.21	16.86	-8.67	-147.44	-16.86	8.67
13	147.44	16.85	-8.67	-159.65	-16.85	8.67
14	159.65	16.87	-8.67	-171.88	-16.87	8.67
15	171.87	16.86	-8.67	-184.10	-16.86	8.67
16	184.10	16.87	-8.67	-196.33	-16.87	8.67
17	196.33	16.86	-8.67	-208.55	-16.86	8.67
18	208.56	16.87	-8.67	-220.79	-16.87	8.67
19	220.79	16.87	-8.67	-233.02	-16.87	8.67
20	233.01	16.87	-8.67	-245.24	-16.87	8.67
21	244.12	0.00	3.18	-244.12	0.00	-3.18
22	244.12	0.00	3.18	-244.12	0.00	-3.18
23	244.12	0.00	3.18	-244.11	0.00	-3.18
24	244.11	0.00	3.18	-244.11	0.00	-3.18

HIPOTESIS 1 GRADIENTE TERMICO, AT= 8 C

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
25	244.11	0.00	3.18	-244.10	0.00	-3.18
26	244.10	0.00	3.18	-244.10	0.00	-3.18
27	244.10	-0.01	3.18	-244.10	0.01	-3.18
28	244.10	-0.01	3.18	-244.09	0.01	-3.18
29	244.09	-0.01	3.18	-244.08	0.01	-3.18
30	244.09	0.00	3.18	-244.08	0.00	-3.18
31	244.08	-0.01	3.18	-244.08	0.01	-3.18
32	244.08	0.00	3.18	-244.07	0.00	-3.18
33	244.07	-0.01	3.18	-244.06	0.01	-3.18
34	244.06	0.00	3.18	-244.06	0.00	-3.18
35	244.06	-0.01	3.18	-244.05	0.01	-3.18
36	244.06	-0.01	3.18	-244.05	0.01	-3.18
37	244.05	-0.01	3.18	-244.04	0.01	-3.18
38	244.04	0.00	3.18	-244.04	0.00	-3.18
39	244.04	-0.01	3.18	-244.04	0.01	-3.18
40	244.03	0.00	3.18	-244.03	0.00	-3.18
41	245.15	-16.82	-8.67	-232.95	16.82	8.67
42	232.95	-16.83	-8.67	-220.75	16.83	8.67
43	220.75	-16.82	-8.67	-208.56	16.82	8.67
44	208.56	-16.83	-8.67	-196.36	16.83	8.67
45	196.36	-16.83	-8.67	-184.16	16.83	8.67
46	184.16	-16.83	-8.67	-171.95	16.83	8.67
47	171.95	-16.83	-8.67	-159.74	16.83	8.67
48	159.74	-16.84	-8.67	-147.54	16.84	8.67
49	147.53	-16.84	-8.67	-135.32	16.84	8.67
50	135.33	-16.85	-8.67	-123.11	16.85	8.67
51	123.11	-16.85	-8.67	-110.90	16.85	8.67
52	110.90	-16.86	-8.67	-98.68	16.86	8.67
53	98.68	-16.87	-8.67	-86.45	16.87	8.67
54	86.45	-16.86	-8.67	-74.23	16.86	8.67
55	74.23	-16.87	-8.67	-62.00	16.87	8.67
56	62.00	-16.88	-8.67	-49.76	16.88	8.67
57	49.76	-16.89	-8.67	-37.52	16.89	8.67
58	37.52	-16.87	-8.67	-25.29	16.87	8.67
59	25.28	-16.87	-8.67	-13.05	16.87	8.67
60	13.06	-16.88	-8.67	-0.82	16.88	8.67
61	24.25	-10.27	0.00	0.00	10.27	0.00
62	15.54	-6.58	0.00	0.00	6.58	0.00
63	-25.86	10.96	0.00	0.00	-10.96	0.00
64	-13.96	5.91	0.00	0.00	-5.91	0.00
65	-13.90	5.89	0.00	0.00	-5.89	0.00
66	-25.80	10.93	0.00	0.00	-10.93	0.00
67	15.57	-6.59	0.00	0.00	6.59	0.00
68	24.27	-10.28	0.00	0.00	10.28	0.00

HIPOTESIS 1 PRETENSADO: PRIMER TESADO

REACCIONES

Nudo	Flector	Reac_vert	Torsor
62	0.00000	37.31795	0.00000
63	0.00000	28.84408	0.00000
64	0.00000	-36.31253	0.00000
65	0.00000	-29.54506	0.00000
66	0.00000	-30.13765	0.00000
67	0.00000	-36.76669	0.00000
68	0.00000	29.18094	0.00000
69	0.00000	37.51659	0.00000

SUMA DE REACCIONES

Suma Momentos Flectores = 0.000
Suma Reacciones Vertic. = 0.098
Suma Momentos Torsores = 0.000

HIPOTESIS 1 PRETENSADO: PRIMER TESADO

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-226.98	66.16	-19.91	317.46	-66.16	19.91
2	-317.46	66.16	-19.91	497.81	-66.16	19.91
3	-497.81	66.16	-19.91	570.85	-66.16	19.91
4	-570.85	66.17	-19.91	622.41	-66.17	19.91
5	-622.42	66.18	-19.91	652.56	-66.18	19.91
6	-652.56	66.19	-19.91	661.32	-66.19	19.91
7	-661.34	66.17	-19.91	648.73	-66.17	19.91
8	-648.75	66.10	-19.91	614.77	-66.10	19.91
9	-614.75	66.15	-19.91	561.44	-66.15	19.91
10	-561.44	66.16	-19.91	492.06	-66.16	19.91
11	-492.06	66.15	-19.91	406.43	-66.15	19.91
12	-406.43	66.14	-19.91	304.32	-66.14	19.91
13	-304.31	66.15	-19.91	185.39	-66.15	19.91
14	-185.40	66.17	-19.91	49.38	-66.17	19.91
15	-49.39	66.18	-19.91	-104.02	-66.18	19.91
16	104.02	66.19	-19.91	-275.10	-66.19	19.91
17	275.10	66.19	-19.91	-462.17	-66.19	19.91
18	462.17	66.19	-19.91	-746.71	-66.19	19.91
19	746.71	66.19	-19.91	-879.56	-66.19	19.91
20	879.56	66.19	-19.91	-955.63	-66.19	19.91
21	954.13	0.33	-4.01	-878.84	-0.33	4.01
22	878.84	0.33	-4.01	-564.14	-0.33	4.01
23	564.14	0.34	-4.01	-273.39	-0.34	4.01
24	273.38	0.34	-4.01	-26.07	-0.34	4.01

HIPOTESIS 1 PRETENSADO: PRIMER TESADO

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
25	26.07	0.34	-4.01	177.50	-0.34	4.01
26	-177.49	0.34	-4.01	338.96	-0.34	4.01
27	-338.96	0.35	-4.01	460.20	-0.35	4.01
28	-460.20	0.35	-4.01	543.14	-0.35	4.01
29	-543.13	0.33	-4.01	589.33	-0.33	4.01
30	-589.32	0.34	-4.01	600.03	-0.34	4.01
31	-600.02	0.34	-4.01	588.63	-0.34	4.01
32	-588.64	0.38	-4.01	541.75	-0.38	4.01
33	-541.76	0.36	-4.01	458.15	-0.36	4.01
34	-458.16	0.36	-4.01	336.23	-0.36	4.01
35	-336.24	0.37	-4.01	174.14	-0.37	4.01
36	-174.14	0.36	-4.01	-30.08	-0.36	4.01
37	30.08	0.35	-4.01	-278.04	-0.35	4.01
38	278.04	0.34	-4.01	-568.88	-0.34	4.01
39	568.88	0.35	-4.01	-884.70	-0.35	4.01
40	884.70	0.35	-4.01	-960.72	-0.35	4.01
41	962.19	-66.55	-19.59	-885.89	66.55	19.59
42	885.89	-66.56	-19.59	-656.82	66.56	19.59
43	656.82	-66.55	-19.59	-468.44	66.55	19.59
44	468.44	-66.55	-19.59	-280.60	66.55	19.59
45	280.60	-66.56	-19.59	-109.26	66.56	19.59
46	109.25	-66.56	-19.59	44.43	66.56	19.59
47	-44.44	-66.56	-19.59	180.73	66.56	19.59
48	-180.74	-66.58	-19.59	299.96	66.58	19.59
49	-299.97	-66.58	-19.59	402.41	66.58	19.59
50	-402.39	-66.63	-19.59	488.36	66.63	19.59
51	-488.38	-66.54	-19.59	558.03	66.54	19.59
52	-558.03	-66.67	-19.59	611.74	66.67	19.59
53	-611.72	-66.63	-19.59	646.08	66.63	19.59
54	-646.09	-66.65	-19.59	659.01	66.65	19.59
55	-659.01	-66.70	-19.59	650.63	66.70	19.59
56	-650.63	-66.69	-19.59	620.86	66.69	19.59
57	-620.87	-66.71	-19.59	570.85	66.71	19.59
58	-570.86	-66.69	-19.59	406.96	66.69	19.59
59	-406.95	-66.73	-19.59	317.53	66.73	19.59
60	-317.53	-66.68	-19.59	227.01	66.68	19.59
61	88.09	-37.32	0.00	0.00	37.32	0.00
62	68.08	-28.84	0.00	0.00	28.84	0.00
63	-85.71	36.31	0.00	0.00	-36.31	0.00
64	-69.74	29.54	0.00	0.00	-29.54	0.00
65	-71.14	30.14	0.00	0.00	-30.14	0.00
66	-86.79	36.77	0.00	0.00	-36.77	0.00
67	68.88	-29.18	0.00	0.00	29.18	0.00
68	88.56	-37.52	0.00	0.00	37.52	0.00

HIPOTESIS 1 PRETENSADO INICIAL

REACCIONES

Nudo	Flector	Reac_vert	Torsor
62	0.00000	62.89857	0.00000
63	0.00000	48.01886	0.00000
64	0.00000	-61.41013	0.00000
65	0.00000	-49.00457	0.00000
66	0.00000	-49.98813	0.00000
67	0.00000	-62.15623	0.00000
68	0.00000	48.58493	0.00000
69	0.00000	63.22762	0.00000

SUMA DE REACCIONES

Suma Momentos Flectores = 0.000
Suma Reacciones Vertic. = 0.171
Suma Momentos Torsores = 0.000

HIPOTESIS 1 PRETENSADO INICIAL

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-386.61	110.92	-34.97	542.04	-110.92	34.97
2	-542.04	110.92	-34.97	850.57	-110.92	34.97
3	-850.56	110.91	-34.97	976.21	-110.91	34.97
4	-976.23	110.94	-34.97	1065.23	-110.94	34.97
5	-1065.22	110.90	-34.97	1117.80	-110.90	34.97
6	-1117.76	110.92	-34.97	1133.90	-110.92	34.97
7	-1133.89	110.94	-34.97	1113.61	-110.94	34.97
8	-1113.66	110.95	-34.97	1056.88	-110.95	34.97
9	-1056.90	110.89	-34.97	967.27	-110.89	34.97
10	-967.25	110.89	-34.97	850.31	-110.89	34.97
11	-850.32	110.93	-34.97	705.67	-110.93	34.97
12	-705.69	110.93	-34.97	532.98	-110.93	34.97
13	-532.98	110.88	-34.97	335.47	-110.88	34.97
14	-335.47	110.93	-34.97	98.60	-110.93	34.97
15	-98.60	110.94	-34.97	-166.14	-110.94	34.97
16	166.15	110.99	-34.97	-458.80	-110.99	34.97
17	458.80	110.96	-34.97	-778.45	-110.96	34.97
18	778.46	110.96	-34.97	-1253.16	-110.96	34.97
19	1253.16	110.97	-34.97	-1475.04	-110.97	34.97
20	1475.04	110.97	-34.97	-1602.30	-110.97	34.97
21	1599.54	0.55	-5.81	-1474.07	-0.55	5.81
22	1474.07	0.56	-5.81	-949.56	-0.56	5.81
23	949.56	0.56	-5.81	-464.97	-0.56	5.81
24	464.96	0.56	-5.81	-52.77	-0.56	5.81

HIPOTESIS 1 PRETENSADO INICIAL

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
25	52.77	0.56	-5.81	286.50	-0.56	5.81
26	-286.49	0.56	-5.81	555.61	-0.56	5.81
27	-555.63	0.60	-5.81	757.67	-0.60	5.81
28	-757.70	0.59	-5.81	895.90	-0.59	5.81
29	-895.93	0.65	-5.81	972.85	-0.65	5.81
30	-972.90	0.59	-5.81	990.73	-0.59	5.81
31	-990.71	0.57	-5.81	971.74	-0.57	5.81
32	-971.74	0.59	-5.81	893.64	-0.59	5.81
33	-893.62	0.58	-5.81	754.29	-0.58	5.81
34	-754.30	0.60	-5.81	551.07	-0.60	5.81
35	-551.09	0.57	-5.81	280.95	-0.57	5.81
36	-280.95	0.59	-5.81	-59.42	-0.59	5.81
37	59.42	0.60	-5.81	-472.70	-0.60	5.81
38	472.70	0.57	-5.81	-957.41	-0.57	5.81
39	957.42	0.58	-5.81	-1483.78	-0.58	5.81
40	1483.78	0.58	-5.81	-1610.49	-0.58	5.81
41	1613.19	-111.56	-34.41	-1485.56	111.56	34.41
42	1485.56	-111.56	-34.41	-1103.31	111.56	34.41
43	1103.31	-111.56	-34.41	-788.88	111.56	34.41
44	788.87	-111.56	-34.41	-467.96	111.56	34.41
45	467.96	-111.60	-34.41	-174.87	111.60	34.41
46	174.88	-111.60	-34.41	90.35	111.60	34.41
47	-90.36	-111.56	-34.41	327.69	111.56	34.41
48	-327.71	-111.61	-34.41	525.73	111.61	34.41
49	-525.77	-111.61	-34.41	698.96	111.61	34.41
50	-698.94	-111.69	-34.41	844.12	111.69	34.41
51	-844.12	-111.64	-34.41	961.62	111.64	34.41
52	-961.59	-111.76	-34.41	1051.85	111.76	34.41
53	-1051.79	-111.83	-34.41	1109.20	111.83	34.41
54	-1109.14	-111.83	-34.41	1130.06	111.83	34.41
55	-1130.00	-111.85	-34.41	1114.56	111.85	34.41
56	-1114.56	-111.81	-34.41	1062.66	111.81	34.41
57	-1062.66	-111.83	-34.41	976.25	111.83	34.41
58	-976.23	-111.90	-34.41	695.86	111.90	34.41
59	-695.84	-111.78	-34.41	542.15	111.78	34.41
60	-542.17	-111.80	-34.41	386.66	111.80	34.41
61	148.47	-62.90	0.00	0.00	62.90	0.00
62	113.35	-48.02	0.00	0.00	48.02	0.00
63	-144.96	61.41	0.00	0.00	-61.41	0.00
64	-115.67	49.00	0.00	0.00	-49.00	0.00
65	-117.99	49.99	0.00	0.00	-49.99	0.00
66	-146.72	62.16	0.00	0.00	-62.16	0.00
67	114.68	-48.58	0.00	0.00	48.58	0.00
68	149.25	-63.23	0.00	0.00	63.23	0.00

HIPOTESIS 1 PRETENSADO FINAL

REACCIONES

Nudo	Flector	Reac_vert	Torsor
62	0.00000	54.52883	0.00000
63	0.00000	41.56409	0.00000
64	0.00000	-53.29366	0.00000
65	0.00000	-42.34684	0.00000
66	0.00000	-43.18977	0.00000
67	0.00000	-53.95152	0.00000
68	0.00000	42.02880	0.00000
69	0.00000	54.80887	0.00000

SUMA DE REACCIONES

Suma Momentos Flectores = 0.000
Suma Reacciones Vertic. = 0.149
Suma Momentos Torsores = 0.000

HIPOTESIS 1 PRETENSADO FINAL

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-340.65	96.09	-30.47	476.46	-96.09	30.47
2	-476.47	96.10	-30.47	737.03	-96.10	30.47
3	-737.02	96.08	-30.47	842.89	-96.08	30.47
4	-842.89	96.11	-30.47	916.94	-96.11	30.47
5	-916.94	96.07	-30.47	960.02	-96.07	30.47
6	-960.00	96.08	-30.47	972.78	-96.08	30.47
7	-972.77	96.09	-30.47	955.60	-96.09	30.47
8	-955.65	96.12	-30.47	908.50	-96.12	30.47
9	-908.48	96.02	-30.47	834.10	-96.02	30.47
10	-834.07	96.07	-30.47	736.57	-96.07	30.47
11	-736.56	96.14	-30.47	615.18	-96.14	30.47
12	-615.21	96.08	-30.47	469.27	-96.08	30.47
13	-469.24	96.02	-30.47	301.20	-96.02	30.47
14	-301.17	96.11	-30.47	97.65	-96.11	30.47
15	-97.66	96.14	-30.47	-131.52	-96.14	30.47
16	131.53	96.13	-30.47	-386.51	-96.13	30.47
17	386.52	96.13	-30.47	-663.43	-96.13	30.47
18	663.43	96.14	-30.47	-1081.47	-96.14	30.47
19	1081.47	96.14	-30.47	-1276.79	-96.14	30.47
20	1276.79	96.14	-30.47	-1387.98	-96.14	30.47
21	1385.55	0.50	-4.74	-1274.86	-0.50	4.74
22	1274.86	0.50	-4.74	-813.33	-0.50	4.74
23	813.33	0.51	-4.74	-387.60	-0.51	4.74
24	387.60	0.49	-4.74	-30.59	-0.49	4.74

HIPOTESIS 1 PRETENSADO FINAL

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
25	30.60	0.50	-4.74	257.12	-0.50	4.74
26	-257.11	0.48	-4.74	480.01	-0.48	4.74
27	-480.01	0.51	-4.74	643.59	-0.51	4.74
28	-643.60	0.51	-4.74	753.35	-0.51	4.74
29	-753.34	0.52	-4.74	813.60	-0.52	4.74
30	-813.61	0.53	-4.74	827.41	-0.53	4.74
31	-827.40	0.53	-4.74	812.70	-0.53	4.74
32	-812.69	0.47	-4.74	751.58	-0.47	4.74
33	-751.54	0.53	-4.74	640.89	-0.53	4.74
34	-640.88	0.53	-4.74	476.33	-0.53	4.74
35	-476.33	0.52	-4.74	252.48	-0.52	4.74
36	-252.48	0.52	-4.74	-36.28	-0.52	4.74
37	36.28	0.53	-4.74	-394.35	-0.53	4.74
38	394.35	0.52	-4.74	-817.10	-0.52	4.74
39	817.10	0.52	-4.74	-1283.01	-0.52	4.74
40	1283.01	0.52	-4.74	-1395.35	-0.52	4.74
41	1397.74	-96.62	-30.03	-1286.49	96.62	30.03
42	1286.49	-96.62	-30.03	-951.63	96.62	30.03
43	951.62	-96.62	-30.03	-675.76	96.62	30.03
44	675.76	-96.63	-30.03	-394.77	96.63	30.03
45	394.77	-96.61	-30.03	-139.40	96.61	30.03
46	139.41	-96.69	-30.03	90.22	96.69	30.03
47	-90.22	-96.64	-30.03	294.17	96.64	30.03
48	-294.17	-96.71	-30.03	462.73	96.71	30.03
49	-462.72	-96.70	-30.03	609.11	96.70	30.03
50	-609.12	-96.63	-30.03	730.84	96.63	30.03
51	-730.88	-96.66	-30.03	828.83	96.66	30.03
52	-828.84	-96.72	-30.03	903.72	96.72	30.03
53	-903.73	-96.76	-30.03	951.30	96.76	30.03
54	-951.29	-96.81	-30.03	968.93	96.81	30.03
55	-968.93	-96.84	-30.03	956.66	96.84	30.03
56	-956.66	-96.87	-30.03	914.10	96.87	30.03
57	-914.10	-96.81	-30.03	849.14	96.81	30.03
58	-849.17	-96.80	-30.03	613.72	96.80	30.03
59	-613.73	-96.83	-30.03	478.55	96.83	30.03
60	-478.55	-96.84	-30.03	340.70	96.84	30.03
61	128.71	-54.53	0.00	0.00	54.53	0.00
62	98.11	-41.56	0.00	0.00	41.56	0.00
63	-125.80	53.29	0.00	0.00	-53.29	0.00
64	-99.96	42.35	0.00	0.00	-42.35	0.00
65	-101.95	43.19	0.00	0.00	-43.19	0.00
66	-127.35	53.95	0.00	0.00	-53.95	0.00
67	99.21	-42.03	0.00	0.00	42.03	0.00
68	129.37	-54.81	0.00	0.00	54.81	0.00

ENVOL. MAX. FLECTORES TREN TREN IPF-75 TIPO A en via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	0.2994	-9.6382	-3.1689	36.2015	72.4173	172.5688
2	36.2015	72.4173	172.5688	78.9162	64.9200	161.0898
3	78.9162	64.9200	161.0898	120.7318	34.9191	92.0898
4	120.7318	34.9191	92.0898	152.8589	57.5695	149.0883
5	152.8589	57.5695	149.0883	175.8444	27.5627	80.0883
6	175.8444	27.5627	80.0883	195.8400	20.3970	67.5938
7	195.8400	20.3970	67.5938	210.6330	20.4044	67.5939
8	210.6330	20.4044	67.5939	216.4427	13.4713	54.6384
9	216.4427	13.4713	54.6384	225.4564	-16.5287	-14.3615
10	225.4564	-16.5287	-14.3615	218.9590	6.8113	41.2536
11	218.9590	6.8113	41.2536	209.6474	-23.1834	-27.7464
12	209.6474	-23.1834	-27.7464	198.9568	-29.5252	-41.5289
13	198.9568	-29.5252	-41.5289	180.2404	-5.5051	13.3228
14	180.2404	-5.5051	13.3228	156.7392	-35.5214	-55.6772
15	156.7392	-35.5214	-55.6772	131.6400	-41.1143	-70.1600
16	131.6400	-41.1143	-70.1600	103.6400	-46.2495	-84.9451
17	103.6400	-46.2495	-84.9451	70.1096	-46.2533	-84.9451
18	70.1096	-46.2533	-84.9451	37.2230	-50.9044	-99.9982
19	37.2230	-50.9044	-99.9982	29.1391	2.1235	1.5106
20	29.1391	2.1235	1.5106	30.7982	-2.6539	0.2487
21	30.7982	-2.6539	0.2487	23.8575	-7.4318	-1.0131
22	23.8575	-7.4318	-1.0131	36.9833	53.2281	114.4771
23	36.9833	53.2281	114.4771	77.5055	49.1686	105.2576
24	77.5055	49.1686	105.2576	115.7881	44.7001	95.8829
25	115.7881	44.7001	95.8829	150.4439	39.8866	86.3512
26	150.4439	39.8866	86.3512	180.2327	34.7848	76.6624
27	180.2327	34.7848	76.6624	204.1664	29.4516	66.8167
28	204.1664	29.4516	66.8167	221.4733	23.9732	56.8135
29	221.4733	23.9732	56.8135	231.6565	18.3942	46.6533
30	231.6565	18.3942	46.6533	234.4333	12.7629	36.3358
31	234.4333	12.7629	36.3358	233.0648	-17.2362	-32.6642
32	233.0648	-17.2362	-32.6642	224.6173	-22.8008	-43.1386
33	224.6173	-22.8008	-43.1386	209.0332	-28.2803	-53.7703
34	209.0332	-28.2803	-53.7703	186.8377	-33.6052	-64.5591
35	186.8377	-33.6052	-64.5591	158.7939	-38.7097	-75.5047
36	158.7939	-38.7097	-75.5047	125.8782	-43.5234	-86.6077
37	125.8782	-43.5234	-86.6077	89.3447	-47.9855	-97.8675
38	89.3447	-47.9855	-97.8675	50.5728	-52.0459	-109.2823
39	50.5728	-52.0459	-109.2823	25.5854	7.9102	-7.1690
40	25.5854	7.9102	-7.1690	32.6962	2.8351	-2.8918
41	32.6962	2.8351	-2.8918	30.6683	-2.2401	1.3854
42	30.6683	-2.2401	1.3854	29.0442	-2.2399	1.3854
43	29.0442	-2.2399	1.3854	56.5065	48.0331	97.1328
44	56.5065	48.0331	97.1328	91.3369	48.0405	97.1327
45	91.3369	48.0405	97.1327	122.2350	37.5706	73.3864
46	122.2350	37.5706	73.3864	149.4729	37.5705	73.3864
47	149.4729	37.5705	73.3864	174.4637	7.5708	4.3862
48	174.4637	7.5708	4.3862	196.0873	31.7222	61.0279
49	196.0873	31.7222	61.0279	209.8551	25.4930	48.3042
50	209.8551	25.4930	48.3042	220.8526	-4.4983	-20.6958
51	220.8526	-4.4983	-20.6958	230.7092	18.9645	35.1832
52	230.7092	18.9645	35.1832	225.2516	12.1820	21.6330
53	225.2516	12.1820	21.6330	221.3318	-17.8150	-47.3671
54	221.3318	-17.8150	-47.3671	210.3738	-24.8403	-61.3775
55	210.3738	-24.8403	-61.3775	192.3617	-24.8452	-61.3775
56	192.3617	-24.8452	-61.3775	171.3560	-54.8451	-130.3775
57	171.3560	-54.8451	-130.3775	143.4471	-32.0691	-75.8804
58	143.4471	-32.0691	-75.8804	103.6949	-62.0709	-144.8804
59	103.6949	-62.0709	-144.8804	65.4593	-69.4537	-159.9059
60	65.4593	-69.4537	-159.9059	16.5767	-46.9334	-106.4711

ENVOL. MIN. FLECTORES TREN TREN IPF-75 TIPO A en via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-17.3358	50.0203	114.5064	-6.9420	-9.9285	-2.7122
2	-6.9420	-9.9285	-2.7122	-14.1409	-9.9287	-2.7122
3	-14.1409	-9.9287	-2.7122	-21.3389	-9.9295	-2.7122
4	-21.3389	-9.9295	-2.7122	-28.5371	-9.9305	-2.7122
5	-28.5371	-9.9305	-2.7122	-35.7351	-9.9295	-2.7122
6	-35.7351	-9.9295	-2.7122	-42.9316	-9.9288	-2.7122
7	-42.9316	-9.9288	-2.7122	-50.1314	-9.9319	-2.7122
8	-50.1314	-9.9319	-2.7122	-57.3336	-9.9306	-2.7122
9	-57.3336	-9.9306	-2.7122	-64.5305	-9.9291	-2.7122
10	-64.5305	-9.9291	-2.7122	-71.7298	-9.9319	-2.7122
11	-71.7298	-9.9319	-2.7122	-78.9298	-9.9300	-2.7122
12	-78.9298	-9.9300	-2.7122	-86.1283	-9.9291	-2.7122
13	-86.1283	-9.9291	-2.7122	-93.3276	-9.9248	-2.7122
14	-93.3276	-9.9248	-2.7122	-100.5230	-9.9186	-2.7122
15	-100.5230	-9.9186	-2.7122	-107.7144	-9.9180	-2.7122
16	-107.7144	-9.9180	-2.7122	-114.9066	-9.9183	-2.7122
17	-114.9066	-9.9183	-2.7122	-122.0972	-9.9174	-2.7122
18	-122.0972	-9.9174	-2.7122	-129.2859	-9.9176	-2.7122
19	-129.2859	-9.9176	-2.7122	-136.4771	-9.9180	-2.7122
20	-136.4771	-9.9180	-2.7122	-150.2104	24.7733	66.5521
21	-150.2104	24.7733	66.5521	-109.6699	7.9071	-7.1690
22	-109.6699	7.9071	-7.1690	-102.1595	7.9078	-7.1690
23	-102.1595	7.9078	-7.1690	-94.6460	7.9073	-7.1690
24	-94.6460	7.9073	-7.1690	-87.1343	7.9046	-7.1690
25	-87.1343	7.9046	-7.1690	-79.6232	7.9058	-7.1690
26	-79.6232	7.9058	-7.1690	-72.1106	7.9092	-7.1690
27	-72.1106	7.9092	-7.1690	-64.5962	7.9100	-7.1690
28	-64.5962	7.9100	-7.1690	-57.0823	7.9111	-7.1690
29	-57.0823	7.9111	-7.1690	-49.5652	7.9107	-7.1690
30	-49.5652	7.9107	-7.1690	-42.0519	7.9105	-7.1690
31	-42.0519	7.9105	-7.1690	-46.8503	-7.4383	-0.6943
32	-46.8503	-7.4383	-0.6943	-53.9158	-7.4350	-0.6943
33	-53.9158	-7.4350	-0.6943	-60.9795	-7.4355	-0.6943
34	-60.9795	-7.4355	-0.6943	-68.0453	-7.4396	-0.6943
35	-68.0453	-7.4396	-0.6943	-75.1136	-7.4388	-0.6943
36	-75.1136	-7.4388	-0.6943	-82.1769	-7.4387	-0.6943
37	-82.1769	-7.4387	-0.6943	-89.2448	-7.4404	-0.6943
38	-89.2448	-7.4404	-0.6943	-96.3111	-7.4380	-0.6943
39	-96.3111	-7.4380	-0.6943	-103.3761	-7.4384	-0.6943
40	-103.3761	-7.4384	-0.6943	-149.2870	-23.7642	-67.3136
41	-149.2870	-23.7642	-67.3136	-146.7307	10.7535	-11.8569
42	-146.7307	10.7535	-11.8569	-138.9344	10.7527	-11.8569
43	-138.9344	10.7527	-11.8569	-131.1390	10.7503	-11.8569
44	-131.1390	10.7503	-11.8569	-123.3449	10.7462	-11.8569
45	-123.3449	10.7462	-11.8569	-115.5524	10.7474	-11.8569
46	-115.5524	10.7474	-11.8569	-107.7617	10.7476	-11.8569
47	-107.7617	10.7476	-11.8569	-99.9749	10.7448	-11.8569
48	-99.9749	10.7448	-11.8569	-92.1883	10.7420	-11.8569
49	-92.1883	10.7420	-11.8569	-84.4037	10.7364	-11.8569
50	-84.4037	10.7364	-11.8569	-76.6171	10.7309	-11.8569
51	-76.6171	10.7309	-11.8569	-68.8387	10.7329	-11.8569
52	-68.8387	10.7329	-11.8569	-61.0534	10.7292	-11.8569
53	-61.0534	10.7292	-11.8569	-53.2818	10.7207	-11.8569
54	-53.2818	10.7207	-11.8569	-45.5049	10.7183	-11.8569
55	-45.5049	10.7183	-11.8569	-37.7336	10.7176	-11.8569
56	-37.7336	10.7176	-11.8569	-29.9622	10.7187	-11.8569
57	-29.9622	10.7187	-11.8569	-22.1925	10.7157	-11.8569
58	-22.1925	10.7157	-11.8569	-14.4228	10.7161	-11.8570
59	-14.4228	10.7161	-11.8570	-6.6514	10.7196	-11.8570
60	-6.6514	10.7196	-11.8570	-0.1308	-2.2326	1.3854

ENVOL. MAX. CORTANTES TREN TREN IPF-75 TIPO A en via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-16.3025	72.4182	172.5688	36.2015	72.4173	172.5688
2	36.2015	72.4173	172.5688	78.9162	64.9200	161.0898
3	78.9162	64.9200	161.0898	111.1236	57.5706	149.0882
4	111.1236	57.5706	149.0882	152.8589	57.5695	149.0883
5	152.8589	57.5695	149.0883	169.8037	50.3945	136.5938
6	169.8037	50.3945	136.5938	177.4059	43.4683	123.6384
7	177.4059	43.4683	123.6384	176.3920	36.8149	110.2534
8	176.3920	36.8149	110.2534	203.0841	36.8168	110.2535
9	203.0841	36.8168	110.2535	189.6846	30.4742	96.4711
10	189.6846	30.4742	96.4711	169.7305	24.4905	82.3226
11	169.7305	24.4905	82.3226	187.4867	24.4979	82.3226
12	187.4867	24.4979	82.3226	158.0429	18.9045	67.8400
13	158.0429	18.9045	67.8400	124.7211	13.7628	53.0548
14	124.7211	13.7628	53.0548	88.8410	9.1014	38.0018
15	88.8410	9.1014	38.0018	95.4382	9.1018	38.0018
16	95.4382	9.1018	38.0018	55.1996	4.9585	24.8853
17	55.1996	4.9585	24.8853	26.0579	2.1238	1.5211
18	26.0579	2.1238	1.5211	27.5974	2.1234	1.5211
19	27.5974	2.1234	1.5211	29.1370	2.1236	1.5211
20	29.1370	2.1236	1.5211	-70.6233	39.4838	93.2286
21	-70.6233	39.4838	93.2286	-32.4149	79.1694	174.2574
22	-32.4149	79.1694	174.2574	12.8541	74.7055	164.8828
23	12.8541	74.7055	164.8828	55.1562	69.8862	155.3513
24	55.1562	69.8862	155.3513	93.1405	64.7842	145.6625
25	93.1405	64.7842	145.6625	125.6900	59.4638	135.8165
26	125.6900	59.4638	135.8165	151.9305	53.9783	125.8134
27	151.9305	53.9783	125.8134	171.2119	48.3912	115.6532
28	171.2119	48.3912	115.6532	183.1516	42.7822	105.3358
29	183.1516	42.7822	105.3358	187.5972	37.2163	94.8613
30	187.5972	37.2163	94.8613	184.6417	31.7173	84.2296
31	184.6417	31.7173	84.2296	214.7770	31.7168	84.2296
32	214.7770	31.7168	84.2296	199.7003	26.3928	73.4409
33	199.7003	26.3928	73.4409	178.3358	21.2915	62.4951
34	178.3358	21.2915	62.4951	151.5732	16.4778	51.3923
35	151.5732	16.4778	51.3923	120.5229	12.0133	40.1325
36	120.5229	12.0133	40.1325	86.4619	7.9532	28.7177
37	86.4619	7.9532	28.7177	10.5556	7.9113	-7.1690
38	10.5556	7.9113	-7.1690	18.0704	7.9105	-7.1690
39	18.0704	7.9105	-7.1690	25.5854	7.9102	-7.1690
40	25.5854	7.9102	-7.1690	-61.5180	39.5141	90.0976
41	-61.5180	39.5141	90.0976	-36.3935	78.0352	166.1328
42	-36.3935	78.0352	166.1328	20.1834	78.0307	166.1328
43	20.1834	78.0307	166.1328	49.6361	73.0189	154.4107
44	49.6361	73.0189	154.4107	77.0018	67.5659	142.3864
45	77.0018	67.5659	142.3864	100.8546	61.7083	130.0281
46	100.8546	61.7083	130.0281	145.5944	61.7214	130.0280
47	145.5944	61.7214	130.0280	160.1329	55.4995	117.3043
48	160.1329	55.4995	117.3043	168.4647	48.9516	104.1833
49	168.4647	48.9516	104.1833	169.5392	42.1544	90.6334
50	169.5392	42.1544	90.6334	200.1097	42.1552	90.6335
51	200.1097	42.1552	90.6335	187.9447	35.1254	76.6228
52	187.9447	35.1254	76.6228	166.7277	27.9090	62.1197
53	166.7277	27.9090	62.1197	186.9637	27.9190	62.1196
54	186.9637	27.9190	62.1196	150.7253	20.5497	47.0942
55	150.7253	20.5497	47.0942	104.2177	13.0634	31.5277
56	104.2177	13.0634	31.5277	-29.9622	10.7187	-11.8569
57	-29.9622	10.7187	-11.8569	-22.1925	10.7157	-11.8569
58	-22.1925	10.7157	-11.8569	-14.4228	10.7161	-11.8570

59	-14.4228	10.7161	-11.8570	-6.6514	10.7196	-11.8570
60	-6.6514	10.7196	-11.8570	1.1209	10.7207	-11.8569

ENVOL. MIN. CORTANTES TREN TREN IPF-75 TIPO A en via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	0.2563	-9.9283	-2.7122	-6.9420	-9.9285	-2.7122
2	-6.9420	-9.9285	-2.7122	-14.1409	-9.9287	-2.7122
3	-14.1409	-9.9287	-2.7122	-21.3389	-9.9295	-2.7122
4	-21.3389	-9.9295	-2.7122	-28.5371	-9.9305	-2.7122
5	-28.5371	-9.9305	-2.7122	81.4857	-9.9818	-23.4935
6	81.4857	-9.9818	-23.4935	132.2146	-17.5875	-34.4311
7	132.2146	-17.5875	-34.4311	172.4933	-25.0820	-45.9100
8	172.4933	-25.0820	-45.9100	154.3159	-25.0818	-45.9099
9	154.3159	-25.0818	-45.9099	179.2824	-32.4366	-57.9115
10	179.2824	-32.4366	-57.9115	195.0190	-39.5880	-70.4060
11	195.0190	-39.5880	-70.4060	166.3050	-39.5922	-70.4060
12	166.3050	-39.5922	-70.4060	168.5102	-46.5322	-83.3615
13	168.5102	-46.5322	-83.3615	163.2754	-53.2003	-96.7463
14	163.2754	-53.2003	-96.7463	151.6350	-59.5376	-110.5289
15	151.6350	-59.5376	-110.5289	108.4641	-59.5473	-110.5289
16	108.4641	-59.5473	-110.5289	87.2130	-65.5277	-124.6773
17	87.2130	-65.5277	-124.6773	62.2776	-71.1194	-139.1600
18	62.2776	-71.1194	-139.1600	35.0763	-76.2507	-153.9451
19	35.0763	-76.2507	-153.9451	-20.2031	-76.2494	-153.9451
20	-20.2031	-76.2494	-153.9451	-59.2464	-38.2081	-87.9317
21	-59.2464	-38.2081	-87.9317	23.8181	-7.4400	-0.6943
22	23.8181	-7.4400	-0.6943	16.7499	-7.4395	-0.6943
23	16.7499	-7.4395	-0.6943	9.6823	-7.4390	-0.6943
24	9.6823	-7.4390	-0.6943	2.6149	-7.4386	-0.6943
25	2.6149	-7.4386	-0.6943	110.9249	-10.8346	-32.7426
26	110.9249	-10.8346	-32.7426	143.7209	-15.2978	-42.1171
27	143.7209	-15.2978	-42.1171	172.2220	-20.1217	-51.6487
28	172.2220	-20.1217	-51.6487	195.3142	-25.2239	-61.3375
29	195.3142	-25.2239	-61.3375	212.1176	-30.5408	-71.1834
30	212.1176	-30.5408	-71.1834	222.0194	-36.0339	-81.1866
31	222.0194	-36.0339	-81.1866	187.7805	-36.0396	-81.1866
32	187.7805	-36.0396	-81.1866	185.0624	-41.6043	-91.3468
33	185.0624	-41.6043	-91.3468	174.8457	-47.2248	-101.6642
34	174.8457	-47.2248	-101.6642	157.2916	-52.7971	-112.1387
35	157.2916	-52.7971	-112.1387	132.7996	-58.2708	-122.7702
36	132.7996	-58.2708	-122.7702	101.9837	-63.6077	-133.5591
37	101.9837	-63.6077	-133.5591	65.7429	-68.7029	-144.5048
38	65.7429	-68.7029	-144.5048	25.1866	-73.5227	-155.6077
39	25.1866	-73.5227	-155.6077	-18.3327	-77.9870	-166.8675
40	-18.3327	-77.9870	-166.8675	-71.2688	-38.2551	-94.0997
41	-71.2688	-38.2551	-94.0997	30.6683	-2.2401	1.3854
42	30.6683	-2.2401	1.3854	29.0442	-2.2399	1.3854
43	29.0442	-2.2399	1.3854	27.4202	-2.2394	1.3854
44	27.4202	-2.2394	1.3854	41.1528	-3.3900	-20.3148
45	41.1528	-3.3900	-20.3148	83.3068	-7.4151	-29.4130
46	83.3068	-7.4151	-29.4130	77.9323	-7.4166	-29.4131
47	77.9323	-7.4166	-29.4131	116.3334	-11.9554	-40.8675
48	116.3334	-11.9554	-40.8675	152.3651	-16.9693	-52.5895
49	152.3651	-16.9693	-52.5895	184.7023	-22.4153	-64.6140
50	184.7023	-22.4153	-64.6140	168.4527	-22.4213	-64.6140
51	168.4527	-22.4213	-64.6140	191.5760	-28.2852	-76.9722
52	191.5760	-28.2852	-76.9722	208.3384	-34.4801	-89.6960
53	208.3384	-34.4801	-89.6960	183.3449	-34.4725	-89.6962
54	183.3449	-34.4725	-89.6962	188.0119	-40.9969	-102.8172
55	188.0119	-40.9969	-102.8172	184.2639	-47.8017	-116.3670
56	184.2639	-47.8017	-116.3670	171.3560	-54.8451	-130.3775
57	171.3560	-54.8451	-130.3775	131.5945	-54.8391	-130.3776
58	131.5945	-54.8391	-130.3776	103.6949	-62.0709	-144.8804
59	103.6949	-62.0709	-144.8804	65.4593	-69.4537	-159.9059
60	65.4593	-69.4537	-159.9059	15.1071	-69.4508	-159.9060

ENVOL. MAX. TORSORES TREN TREN IPF-75 TIPO A en via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-16.3025	72.4182	172.5688	36.2015	72.4173	172.5688
2	36.2015	72.4173	172.5688	78.9162	64.9200	161.0898
3	78.9162	64.9200	161.0898	111.1236	57.5706	149.0882
4	111.1236	57.5706	149.0882	152.8589	57.5695	149.0883
5	152.8589	57.5695	149.0883	169.8037	50.3945	136.5938
6	169.8037	50.3945	136.5938	177.4059	43.4683	123.6384
7	177.4059	43.4683	123.6384	176.3920	36.8149	110.2534
8	176.3920	36.8149	110.2534	203.0841	36.8168	110.2535
9	203.0841	36.8168	110.2535	189.6846	30.4742	96.4711
10	189.6846	30.4742	96.4711	169.7305	24.4905	82.3226
11	169.7305	24.4905	82.3226	187.4867	24.4979	82.3226
12	187.4867	24.4979	82.3226	158.0429	18.9045	67.8400
13	158.0429	18.9045	67.8400	124.7211	13.7628	53.0548
14	124.7211	13.7628	53.0548	88.8410	9.1014	38.0018
15	88.8410	9.1014	38.0018	95.4382	9.1018	38.0018
16	95.4382	9.1018	38.0018	55.1996	4.9585	24.8853
17	55.1996	4.9585	24.8853	15.2979	1.3463	13.8730
18	15.2979	1.3463	13.8730	-23.1837	-1.7231	7.2459
19	-23.1837	-1.7231	7.2459	-24.4331	-1.7229	7.2459
20	-24.4331	-1.7229	7.2459	-70.6233	39.4838	93.2286
21	-70.6233	39.4838	93.2286	-32.4149	79.1694	174.2574
22	-32.4149	79.1694	174.2574	12.8541	74.7055	164.8828
23	12.8541	74.7055	164.8828	55.1562	69.8862	155.3513
24	55.1562	69.8862	155.3513	93.1405	64.7842	145.6625
25	93.1405	64.7842	145.6625	125.6900	59.4638	135.8165
26	125.6900	59.4638	135.8165	151.9305	53.9783	125.8134
27	151.9305	53.9783	125.8134	171.2119	48.3912	115.6532
28	171.2119	48.3912	115.6532	183.1516	42.7822	105.3358
29	183.1516	42.7822	105.3358	187.5972	37.2163	94.8613
30	187.5972	37.2163	94.8613	184.6417	31.7173	84.2296
31	184.6417	31.7173	84.2296	214.7770	31.7168	84.2296
32	214.7770	31.7168	84.2296	199.7003	26.3928	73.4409
33	199.7003	26.3928	73.4409	178.3358	21.2915	62.4951
34	178.3358	21.2915	62.4951	151.5732	16.4778	51.3923
35	151.5732	16.4778	51.3923	120.5229	12.0133	40.1325
36	120.5229	12.0133	40.1325	86.4619	7.9532	28.7177
37	86.4619	7.9532	28.7177	50.6617	4.3433	18.8261
38	50.6617	4.3433	18.8261	14.5660	1.2156	10.5660
39	14.5660	1.2156	10.5660	-20.5644	-1.4176	5.6843
40	-20.5644	-1.4176	5.6843	-61.5180	39.5141	90.0976
41	-61.5180	39.5141	90.0976	-36.3935	78.0352	166.1328
42	-36.3935	78.0352	166.1328	20.1834	78.0307	166.1328
43	20.1834	78.0307	166.1328	49.6361	73.0189	154.4107
44	49.6361	73.0189	154.4107	77.0018	67.5659	142.3864
45	77.0018	67.5659	142.3864	100.8546	61.7083	130.0281
46	100.8546	61.7083	130.0281	145.5944	61.7214	130.0280
47	145.5944	61.7214	130.0280	160.1329	55.4995	117.3043
48	160.1329	55.4995	117.3043	168.4647	48.9516	104.1833
49	168.4647	48.9516	104.1833	169.5392	42.1544	90.6334
50	169.5392	42.1544	90.6334	200.1097	42.1552	90.6335
51	200.1097	42.1552	90.6335	187.9447	35.1254	76.6228
52	187.9447	35.1254	76.6228	166.7277	27.9090	62.1197
53	166.7277	27.9090	62.1197	186.9637	27.9190	62.1196
54	186.9637	27.9190	62.1196	150.7253	20.5497	47.0942
55	150.7253	20.5497	47.0942	104.2177	13.0634	31.5277
56	104.2177	13.0634	31.5277	64.6201	7.4711	18.5425

57	64.6201	7.4711	18.5425	70.0368	7.4704	18.5425
58	70.0368	7.4704	18.5425	3.1067	-2.2330	1.3854
59	3.1067	-2.2330	1.3854	1.4878	-2.2327	1.3854
60	1.4878	-2.2327	1.3854	-0.1308	-2.2326	1.3854

ENVOL. MIN. TORSORES TREN TREN IPF-75 TIPO A en via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	0.2994	-9.6382	-3.1689	-6.6888	-9.6373	-3.1689
2	-6.6888	-9.6373	-3.1689	21.0546	-2.0607	-5.9373
3	21.0546	-2.0607	-5.9373	51.5273	-5.3944	-13.7208
4	51.5273	-5.3944	-13.7208	47.6163	-5.3934	-13.7208
5	47.6163	-5.3934	-13.7208	81.4857	-9.9818	-23.4935
6	81.4857	-9.9818	-23.4935	132.2146	-17.5875	-34.4311
7	132.2146	-17.5875	-34.4311	172.4933	-25.0820	-45.9100
8	172.4933	-25.0820	-45.9100	154.3159	-25.0818	-45.9099
9	154.3159	-25.0818	-45.9099	179.2824	-32.4366	-57.9115
10	179.2824	-32.4366	-57.9115	195.0190	-39.5880	-70.4060
11	195.0190	-39.5880	-70.4060	166.3050	-39.5922	-70.4060
12	166.3050	-39.5922	-70.4060	168.5102	-46.5322	-83.3615
13	168.5102	-46.5322	-83.3615	163.2754	-53.2003	-96.7463
14	163.2754	-53.2003	-96.7463	151.6350	-59.5376	-110.5289
15	151.6350	-59.5376	-110.5289	108.4641	-59.5473	-110.5289
16	108.4641	-59.5473	-110.5289	87.2130	-65.5277	-124.6773
17	87.2130	-65.5277	-124.6773	62.2776	-71.1194	-139.1600
18	62.2776	-71.1194	-139.1600	35.0763	-76.2507	-153.9451
19	35.0763	-76.2507	-153.9451	-20.2031	-76.2494	-153.9451
20	-20.2031	-76.2494	-153.9451	-59.2464	-38.2081	-87.9317
21	-59.2464	-38.2081	-87.9317	-34.5554	2.4598	-7.8525
22	-34.5554	2.4598	-7.8525	0.7774	-0.0945	-10.3486
23	0.7774	-0.0945	-10.3486	37.8981	-3.1832	-16.0943
24	37.8981	-3.1832	-16.0943	75.1129	-6.7734	-23.5229
25	75.1129	-6.7734	-23.5229	110.9249	-10.8346	-32.7426
26	110.9249	-10.8346	-32.7426	143.7209	-15.2978	-42.1171
27	143.7209	-15.2978	-42.1171	172.2220	-20.1217	-51.6487
28	172.2220	-20.1217	-51.6487	195.3142	-25.2239	-61.3375
29	195.3142	-25.2239	-61.3375	212.1176	-30.5408	-71.1834
30	212.1176	-30.5408	-71.1834	222.0194	-36.0339	-81.1866
31	222.0194	-36.0339	-81.1866	187.7805	-36.0396	-81.1866
32	187.7805	-36.0396	-81.1866	185.0624	-41.6043	-91.3468
33	185.0624	-41.6043	-91.3468	174.8457	-47.2248	-101.6642
34	174.8457	-47.2248	-101.6642	157.2916	-52.7971	-112.1387
35	157.2916	-52.7971	-112.1387	132.7996	-58.2708	-122.7702
36	132.7996	-58.2708	-122.7702	101.9837	-63.6077	-133.5591
37	101.9837	-63.6077	-133.5591	65.7429	-68.7029	-144.5048
38	65.7429	-68.7029	-144.5048	25.1866	-73.5227	-155.6077
39	25.1866	-73.5227	-155.6077	-18.3327	-77.9870	-166.8675
40	-18.3327	-77.9870	-166.8675	-71.2688	-38.2551	-94.0997
41	-71.2688	-38.2551	-94.0997	-143.5702	10.5249	-12.0486
42	-143.5702	10.5249	-12.0486	-135.9399	10.5263	-12.0486
43	-135.9399	10.5263	-12.0486	-0.1668	0.1146	-13.4049
44	-0.1668	0.1146	-13.4049	41.1528	-3.3900	-20.3148
45	41.1528	-3.3900	-20.3148	83.3068	-7.4151	-29.4130
46	83.3068	-7.4151	-29.4130	77.9323	-7.4166	-29.4131
47	77.9323	-7.4166	-29.4131	116.3334	-11.9554	-40.8675
48	116.3334	-11.9554	-40.8675	152.3651	-16.9693	-52.5895
49	152.3651	-16.9693	-52.5895	184.7023	-22.4153	-64.6140
50	184.7023	-22.4153	-64.6140	168.4527	-22.4213	-64.6140
51	168.4527	-22.4213	-64.6140	191.5760	-28.2852	-76.9722
52	191.5760	-28.2852	-76.9722	208.3384	-34.4801	-89.6960
53	208.3384	-34.4801	-89.6960	183.3449	-34.4725	-89.6962
54	183.3449	-34.4725	-89.6962	188.0119	-40.9969	-102.8172
55	188.0119	-40.9969	-102.8172	184.2639	-47.8017	-116.3670
56	184.2639	-47.8017	-116.3670	171.3560	-54.8451	-130.3775
57	171.3560	-54.8451	-130.3775	131.5945	-54.8391	-130.3776
58	131.5945	-54.8391	-130.3776	103.6949	-62.0709	-144.8804
59	103.6949	-62.0709	-144.8804	65.4593	-69.4537	-159.9059
60	65.4593	-69.4537	-159.9059	15.1071	-69.4508	-159.9060

ENVOL. MAX. FLECTORES TREN TREN SW/0, EC-1 en via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-0.0896	-12.2056	0.9511	36.4358	80.4756	231.9243
2	36.4358	80.4756	231.9243	88.7967	67.1795	200.0974
3	88.7967	67.1795	200.0974	135.1763	53.8762	168.2704
4	135.1763	53.8762	168.2704	174.2345	53.8660	168.2705
5	174.2345	53.8660	168.2705	205.2585	41.4195	133.7342
6	205.2585	41.4195	133.7342	230.6281	28.1210	101.9073
7	230.6281	28.1210	101.9073	250.0184	14.8176	70.0804
8	250.0184	14.8176	70.0804	260.7574	14.8244	70.0804
9	260.7574	14.8244	70.0804	264.5239	1.5213	38.2537
10	264.5239	1.5213	38.2537	262.2946	-11.7784	6.4268
11	262.2946	-11.7784	6.4268	253.7513	-11.7682	6.4268
12	253.7513	-11.7682	6.4268	235.9034	-25.0760	-25.3999
13	235.9034	-25.0760	-25.3999	212.0569	-38.3897	-57.2268
14	212.0569	-38.3897	-57.2268	182.2326	-51.7034	-89.0538
15	182.2326	-51.7034	-89.0538	144.7435	-51.7190	-89.0538
16	144.7435	-51.7190	-89.0538	99.2712	-65.0228	-120.8806
17	99.2712	-65.0228	-120.8806	47.8139	-78.3204	-152.7075
18	47.8139	-78.3204	-152.7075	0.1734	0.2352	-1.1851
19	0.1734	0.2352	-1.1851	0.3439	0.2352	-1.1851
20	0.3439	0.2352	-1.1851	0.4592	0.1040	-0.6004
21	0.4592	0.1040	-0.6004	0.3781	-0.0272	-0.0158
22	0.3781	-0.0272	-0.0158	0.3523	-0.0272	-0.0158
23	0.3523	-0.0272	-0.0158	51.3095	73.1029	200.8619
24	51.3095	73.1029	200.8619	112.7783	59.8000	169.0350
25	112.7783	59.8000	169.0350	162.2761	46.5019	137.2081
26	162.2761	46.5019	137.2081	199.8067	33.1964	105.3813
27	199.8067	33.1964	105.3813	225.3629	19.8827	73.5545
28	225.3629	19.8827	73.5545	245.5405	26.2280	44.4416
29	245.5405	26.2280	44.4416	269.7985	12.9412	12.6146
30	269.7985	12.9412	12.6146	282.3919	2.3990	-13.5415
31	282.3919	2.3990	-13.5415	284.6687	2.3992	-13.5415
32	284.6687	2.3992	-13.5415	274.9768	-10.9025	-45.3684
33	274.9768	-10.9025	-45.3684	255.7381	-21.6137	-71.9005
34	255.7381	-21.6137	-71.9005	224.5701	-34.9160	-103.7272
35	224.5701	-34.9160	-103.7272	183.4415	-45.7141	-130.6010
36	183.4415	-45.7141	-130.6010	130.7032	-59.0192	-162.4279
37	130.7032	-59.0192	-162.4279	67.9776	-69.8422	-188.8318
38	67.9776	-69.8422	-188.8318	25.8229	11.3616	-11.8061
39	25.8229	11.3616	-11.8061	36.6171	11.3618	-11.8061
40	36.6171	11.3618	-11.8061	46.7626	4.0819	-4.9399
41	46.7626	4.0819	-4.9399	43.7953	-3.1986	1.9262
42	43.7953	-3.1986	1.9262	41.4763	-3.1988	1.9262
43	41.4763	-3.1988	1.9262	39.1572	-3.1981	1.9262
44	39.1572	-3.1981	1.9262	36.8386	-3.1971	1.9262
45	36.8386	-3.1971	1.9262	34.5203	-3.1959	1.9262
46	34.5203	-3.1959	1.9262	65.3902	63.1516	94.8708
47	65.3902	63.1516	94.8708	103.5352	49.8526	63.0438
48	103.5352	49.8526	63.0438	137.8676	39.6488	37.2075
49	137.8676	39.6488	37.2075	166.2794	26.3643	5.3805
50	166.2794	26.3643	5.3805	185.3879	26.3600	5.3805
51	185.3879	26.3600	5.3805	199.6593	15.2780	-23.0545
52	199.6593	15.2780	-23.0545	208.0809	1.9836	-54.8816
53	208.0809	1.9836	-54.8816	209.5186	1.9953	-54.8818
54	209.5186	1.9953	-54.8818	202.3275	-11.2923	-86.7088

55	202.3275	-11.2923	-86.7088	189.1541	-24.5928	-118.5357
56	189.1541	-24.5928	-118.5357	169.9925	-37.8871	-150.3626
57	169.9925	-37.8871	-150.3626	142.5317	-37.8899	-150.3627
58	142.5317	-37.8899	-150.3627	108.7106	-49.8221	-181.4886
59	108.7106	-49.8221	-181.4886	68.9276	-63.1254	-213.3153
60	68.9276	-63.1254	-213.3153	23.2191	-61.7657	-213.9705

ENVOL. MIN. FLECTORES TREN TREN SW/0, EC-1 en via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-24.7489	81.2193	230.1498	-8.9392	-12.2052	0.9511
2	-8.9392	-12.2052	0.9511	-17.7879	-12.2057	0.9511
3	-17.7879	-12.2057	0.9511	-26.6373	-12.2064	0.9511
4	-26.6373	-12.2064	0.9511	-35.4874	-12.2064	0.9511
5	-35.4874	-12.2064	0.9511	-44.3356	-12.2032	0.9511
6	-44.3356	-12.2032	0.9511	-53.1820	-12.2017	0.9511
7	-53.1820	-12.2017	0.9511	-62.0303	-12.2082	0.9511
8	-62.0303	-12.2082	0.9511	-70.8845	-12.2089	0.9511
9	-70.8845	-12.2089	0.9511	-79.7323	-12.2086	0.9511
10	-79.7323	-12.2086	0.9511	-88.5825	-12.2161	0.9511
11	-88.5825	-12.2161	0.9511	-97.4333	-12.2145	0.9511
12	-97.4333	-12.2145	0.9511	-106.2860	-12.2017	0.9511
13	-106.2860	-12.2017	0.9511	-115.1304	-12.1968	0.9512
14	-115.1304	-12.1968	0.9512	-123.9800	-12.1954	0.9512
15	-123.9800	-12.1954	0.9512	-132.8208	-12.1906	0.9512
16	-132.8208	-12.1906	0.9512	-165.6274	-61.1603	-87.8496
17	-165.6274	-61.1603	-87.8496	-209.9689	-61.1596	-87.8495
18	-209.9689	-61.1596	-87.8495	-259.3159	-71.3512	-108.5199
19	-259.3159	-71.3512	-108.5199	-313.4418	-81.7949	-131.0243
20	-313.4418	-81.7949	-131.0243	-390.9950	4.0397	32.0098
21	-390.9950	4.0397	32.0098	-314.8062	89.7659	193.0909
22	-314.8062	89.7659	193.0909	-232.7078	78.9637	168.0183
23	-232.7078	78.9637	168.0183	-160.7832	68.1098	144.2011
24	-160.7832	68.1098	144.2011	-125.2879	11.3601	-11.8061
25	-125.2879	11.3601	-11.8061	-114.4985	11.3594	-11.8061
26	-114.4985	11.3594	-11.8061	-103.7094	11.3635	-11.8061
27	-103.7094	11.3635	-11.8061	-92.9162	11.3665	-11.8061
28	-92.9162	11.3665	-11.8061	-82.1196	11.3618	-11.8061
29	-82.1196	11.3618	-11.8061	-71.3269	11.3586	-11.8061
30	-71.3269	11.3586	-11.8061	-60.5313	11.3600	-11.8061
31	-60.5313	11.3600	-11.8061	-49.7387	11.3614	-11.8061
32	-49.7387	11.3614	-11.8061	-38.9436	11.3631	-11.8061
33	-38.9436	11.3631	-11.8061	-28.1483	11.3651	-11.8061
34	-28.1483	11.3651	-11.8061	-17.3535	11.3654	-11.8061
35	-17.3535	11.3654	-11.8061	-33.5455	-41.9949	-84.0325
36	-33.5455	-41.9949	-84.0325	-83.4344	-52.5555	-105.8380
37	-83.4344	-52.5555	-105.8380	-141.4860	-62.9193	-127.5441
38	-141.4860	-62.9193	-127.5441	-209.1335	-73.2019	-149.2337
39	-209.1335	-73.2019	-149.2337	-278.6771	-73.2028	-149.2338
40	-278.6771	-73.2028	-149.2338	-366.2106	25.5889	41.1866
41	-366.2106	25.5889	41.1866	-297.0150	111.0815	199.7801
42	-297.0150	111.0815	199.7801	-216.4808	111.0811	199.7800
43	-216.4808	111.0811	199.7800	-195.2328	16.0315	-20.3194
44	-195.2328	16.0315	-20.3194	-183.6136	16.0261	-20.3194
45	-183.6136	16.0261	-20.3194	-171.9963	16.0165	-20.3194
46	-171.9963	16.0165	-20.3194	-160.3856	16.0116	-20.3194
47	-160.3856	16.0116	-20.3194	-148.7754	16.0090	-20.3194
48	-148.7754	16.0090	-20.3194	-137.1754	16.0129	-20.3194
49	-137.1754	16.0129	-20.3194	-125.5637	16.0086	-20.3194
50	-125.5637	16.0086	-20.3194	-113.9647	16.0020	-20.3194
51	-113.9647	16.0020	-20.3194	-102.3605	15.9947	-20.3194
52	-102.3605	15.9947	-20.3194	-90.7644	15.9827	-20.3195
53	-90.7644	15.9827	-20.3195	-79.1712	15.9792	-20.3195
54	-79.1712	15.9792	-20.3195	-67.5867	15.9858	-20.3195
55	-67.5867	15.9858	-20.3195	-55.9938	15.9854	-20.3195
56	-55.9938	15.9854	-20.3195	-44.4140	15.9727	-20.3195
57	-44.4140	15.9727	-20.3195	-32.8329	15.9728	-20.3195
58	-32.8329	15.9728	-20.3195	-21.2490	15.9755	-20.3195
59	-21.2490	15.9755	-20.3195	-9.6650	15.9760	-20.3195
60	-9.6650	15.9760	-20.3195	-0.1821	-3.1882	1.9262

ENVOL. MAX. CORTANTES TREN TREN SW/0, EC-1 en via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-24.6598	81.3113	229.2147	34.2939	81.3096	229.2147
2	34.2939	81.3096	229.2147	87.2581	68.0142	197.3878
3	87.2581	68.0142	197.3878	102.7511	54.8742	175.8027
4	102.7511	54.8742	175.8027	142.5348	54.8763	175.8028
5	142.5348	54.8763	175.8028	143.3233	43.4338	150.0038
6	143.3233	43.4338	150.0038	131.6236	32.9893	125.8822
7	131.6236	32.9893	125.8822	112.5661	24.2246	109.5961
8	112.5661	24.2246	109.5961	126.8020	23.5614	103.5536
9	126.8020	23.5614	103.5536	104.0880	17.2500	89.4442
10	104.0880	17.2500	89.4442	73.5038	11.0687	71.1389
11	73.5038	11.0687	71.1389	39.9336	5.6576	54.7598
12	39.9336	5.6576	54.7598	4.8393	0.9948	40.3824
13	4.8393	0.9948	40.3824	5.5605	0.9946	40.3825
14	5.5605	0.9946	40.3825	-0.5086	0.2352	-1.1851
15	-0.5086	0.2352	-1.1851	-0.3381	0.2352	-1.1851
16	-0.3381	0.2352	-1.1851	-0.1676	0.2351	-1.1851
17	-0.1676	0.2351	-1.1851	0.0029	0.2352	-1.1851
18	0.0029	0.2352	-1.1851	0.1734	0.2352	-1.1851
19	0.1734	0.2352	-1.1851	0.3439	0.2352	-1.1851
20	0.3439	0.2352	-1.1851	-190.9717	50.4081	148.6469
21	-190.9717	50.4081	148.6469	-282.8029	122.1111	272.9005
22	-282.8029	122.1111	272.9005	-196.7354	111.3957	246.3684
23	-196.7354	111.3957	246.3684	-122.0114	100.5911	219.4947
24	-122.0114	100.5911	219.4947	-58.9766	89.7593	193.0909
25	-58.9766	89.7593	193.0909	-7.6637	78.9594	168.0184
26	-7.6637	78.9594	168.0184	33.3298	68.1061	144.2011
27	33.3298	68.1061	144.2011	64.9298	57.1353	120.5087
28	64.9298	57.1353	120.5087	87.0227	46.0825	96.9745
29	87.0227	46.0825	96.9745	99.5773	34.9809	73.6236
30	99.5773	34.9809	73.6236	102.6074	23.8498	50.4744
31	102.6074	23.8498	50.4744	125.2589	23.8489	50.4743
32	125.2589	23.8489	50.4743	108.2412	12.7139	27.5382
33	108.2412	12.7139	27.5382	-28.1483	11.3651	-11.8061
34	-28.1483	11.3651	-11.8061	-17.3535	11.3654	-11.8061
35	-17.3535	11.3654	-11.8061	-6.5594	11.3635	-11.8061
36	-6.5594	11.3635	-11.8061	4.2351	11.3619	-11.8061
37	4.2351	11.3619	-11.8061	15.0289	11.3617	-11.8061
38	15.0289	11.3617	-11.8061	25.8229	11.3616	-11.8061
39	25.8229	11.3616	-11.8061	36.6171	11.3618	-11.8061
40	36.6171	11.3618	-11.8061	-366.2106	25.5889	41.1866
41	-366.2106	25.5889	41.1866	-297.0150	111.0815	199.7801
42	-297.0150	111.0815	199.7801	-216.4808	111.0811	199.7800
43	-216.4808	111.0811	199.7800	-144.9239	97.7841	167.9530
44	-144.9239	97.7841	167.9530	-79.3508	84.4871	136.1260
45	-79.3508	84.4871	136.1260	-19.7615	71.1889	104.2990
46	-19.7615	71.1889	104.2990	31.8535	71.1864	104.2990
47	31.8535	71.1864	104.2990	75.8145	57.8955	72.4719
48	75.8145	57.8955	72.4719	113.8085	44.5951	40.6451
49	113.8085	44.5951	40.6451	145.8033	31.2910	8.8181
50	145.8033	31.2910	8.8181	168.4960	31.2999	8.8180
51	168.4960	31.2999	8.8180	184.8766	18.0030	-23.0091
52	184.8766	18.0030	-23.0091	-90.7644	15.9827	-20.3195

53	-90.7644	15.9827	-20.3195	-79.1712	15.9792	-20.3195
54	-79.1712	15.9792	-20.3195	-67.5867	15.9858	-20.3195
55	-67.5867	15.9858	-20.3195	-55.9938	15.9854	-20.3195
56	-55.9938	15.9854	-20.3195	-44.4140	15.9727	-20.3195
57	-44.4140	15.9727	-20.3195	-32.8329	15.9728	-20.3195
58	-32.8329	15.9728	-20.3195	-21.2490	15.9755	-20.3195
59	-21.2490	15.9755	-20.3195	-9.6650	15.9760	-20.3195
60	-9.6650	15.9760	-20.3195	1.9189	15.9764	-20.3195

ENVOL. MIN. CORTANTES TREN TREN SW/0, EC-1 en via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-0.0896	-12.2056	0.9511	-8.9392	-12.2052	0.9511
2	-8.9392	-12.2052	0.9511	-17.7879	-12.2057	0.9511
3	-17.7879	-12.2057	0.9511	-26.6373	-12.2064	0.9511
4	-26.6373	-12.2064	0.9511	-35.4874	-12.2064	0.9511
5	-35.4874	-12.2064	0.9511	-44.3356	-12.2032	0.9511
6	-44.3356	-12.2032	0.9511	47.3002	-12.9434	14.9515
7	47.3002	-12.9434	14.9515	51.8812	-22.3118	-6.2790
8	51.8812	-22.3118	-6.2790	55.4758	-31.7944	-27.1565
9	55.4758	-31.7944	-27.1565	32.4249	-31.7940	-27.1565
10	32.4249	-31.7940	-27.1565	27.6827	-41.4117	-47.6964
11	27.6827	-41.4117	-47.6964	20.9851	-51.1915	-67.9191
12	20.9851	-51.1915	-67.9191	11.7383	-54.5084	-71.9361
13	11.7383	-54.5084	-71.9361	-32.6037	-61.1592	-87.8495
14	-32.6037	-61.1592	-87.8495	-52.3977	-71.3492	-108.5199
15	-52.3977	-71.3492	-108.5199	-76.2384	-81.7929	-131.0242
16	-76.2384	-81.7929	-131.0242	-135.5390	-81.7936	-131.0242
17	-135.5390	-81.7936	-131.0242	-172.0577	-92.5170	-155.4751
18	-172.0577	-92.5170	-155.4751	-214.5227	-103.5385	-181.9525
19	-214.5227	-103.5385	-181.9525	-263.7024	-114.8655	-210.5260
20	-263.7024	-114.8655	-210.5260	-158.7855	-46.7815	-114.0837
21	-158.7855	-46.7815	-114.0837	0.3781	-0.0272	-0.0158
22	0.3781	-0.0272	-0.0158	0.3523	-0.0272	-0.0158
23	0.3523	-0.0272	-0.0158	0.3265	-0.0272	-0.0158
24	0.3265	-0.0272	-0.0158	0.3007	-0.0272	-0.0158
25	0.3007	-0.0272	-0.0158	0.2749	-0.0272	-0.0158
26	0.2749	-0.0272	-0.0158	6.0268	-0.4266	-40.6049
27	6.0268	-0.4266	-40.6049	48.9414	-5.4581	-50.0449
28	48.9414	-5.4581	-50.0449	89.3624	-11.2994	-61.0196
29	89.3624	-11.2994	-61.0196	118.1213	-20.4124	-39.9819
30	118.1213	-20.4124	-39.9819	126.7160	-31.2757	-62.0904
31	126.7160	-31.2757	-62.0904	126.0478	-42.0006	-84.0324
32	126.0478	-42.0006	-84.0324	116.2806	-52.5540	-105.8382
33	116.2806	-52.5540	-105.8382	97.6129	-62.9294	-127.5443
34	97.6129	-62.9294	-127.5443	69.0462	-73.2048	-149.2339
35	69.0462	-73.2048	-149.2339	-0.4994	-73.2079	-149.2338
36	-0.4994	-73.2079	-149.2338	-70.0464	-73.2044	-149.2338
37	-70.0464	-73.2044	-149.2338	28.3135	-80.1635	-210.1735
38	28.3135	-80.1635	-210.1735	-34.5448	-90.6967	-236.3297
39	-34.5448	-90.6967	-236.3297	-110.8387	-101.4095	-262.8618
40	-110.8387	-101.4095	-262.8618	-212.6501	-48.2549	-155.3551
41	-212.6501	-48.2549	-155.3551	43.7953	-3.1986	1.9262
42	43.7953	-3.1986	1.9262	41.4763	-3.1988	1.9262
43	41.4763	-3.1988	1.9262	39.1572	-3.1981	1.9262
44	39.1572	-3.1981	1.9262	36.8386	-3.1971	1.9262
45	36.8386	-3.1971	1.9262	34.5203	-3.1959	1.9262
46	34.5203	-3.1959	1.9262	32.2040	-3.1951	1.9262
47	32.2040	-3.1951	1.9262	29.8881	-3.1976	1.9262
48	29.8881	-3.1976	1.9262	27.5704	-3.1960	1.9262
49	27.5704	-3.1960	1.9262	46.3985	-5.0381	-66.3307
50	46.3985	-5.0381	-66.3307	42.7471	-5.0383	-66.3307
51	42.7471	-5.0383	-66.3307	79.2552	-10.9878	-80.5340
52	79.2552	-10.9878	-80.5340	112.1466	-17.7723	-96.8938
53	112.1466	-17.7723	-96.8938	99.2690	-17.7689	-96.8939
54	99.2690	-17.7689	-96.8939	121.3017	-25.3778	-115.4917
55	121.3017	-25.3778	-115.4917	135.6101	-33.8497	-136.4126
56	135.6101	-33.8497	-136.4126	140.3708	-43.2031	-159.7451
57	140.3708	-43.2031	-159.7451	109.0516	-43.2066	-159.7452
58	109.0516	-43.2066	-159.7452	94.9778	-53.4122	-185.5816
59	94.9778	-53.4122	-185.5816	66.9751	-64.4852	-214.0166
60	66.9751	-64.4852	-214.0166	20.2178	-64.4889	-214.0166

ENVOL. MAX. TORSORES TREN TREN SW/0, EC-1 en via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-22.2050	71.3465	235.0500	36.4358	80.4756	231.9243
2	36.4358	80.4756	231.9243	67.8414	60.2682	206.9673
3	67.8414	60.2682	206.9673	91.7695	50.0234	180.2890
4	91.7695	50.0234	180.2890	142.5348	54.8763	175.8028
5	142.5348	54.8763	175.8028	132.5230	40.6005	155.1066
6	132.5230	40.6005	155.1066	126.7845	32.0039	131.5124
7	126.7845	32.0039	131.5124	112.5661	24.2246	109.5961
8	112.5661	24.2246	109.5961	126.8020	23.5614	103.5536
9	126.8020	23.5614	103.5536	104.0880	17.2500	89.4442
10	104.0880	17.2500	89.4442	73.5038	11.0687	71.1389
11	73.5038	11.0687	71.1389	64.2025	5.4960	58.5110
12	64.2025	5.4960	58.5110	4.8393	0.9948	40.3824
13	4.8393	0.9948	40.3824	5.5605	0.9946	40.3825
14	5.5605	0.9946	40.3825	-32.5627	-2.9450	28.0790
15	-32.5627	-2.9450	28.0790	-69.1340	-6.1962	17.9180
16	-69.1340	-6.1962	17.9180	-73.6250	-6.1946	17.9180
17	-73.6250	-6.1946	17.9180	-109.4809	-8.8003	9.9648
18	-109.4809	-8.8003	9.9648	-141.4084	-10.7962	4.2808
19	-141.4084	-10.7962	4.2808	-168.1796	-12.1927	0.9512
20	-168.1796	-12.1927	0.9512	-190.9717	50.4081	148.6469
21	-190.9717	50.4081	148.6469	-282.8029	122.1111	272.9005
22	-282.8029	122.1111	272.9005	-196.7354	111.3957	246.3684
23	-196.7354	111.3957	246.3684	-122.0114	100.5911	219.4947
24	-122.0114	100.5911	219.4947	-58.9766	89.7593	193.0909
25	-58.9766	89.7593	193.0909	-7.6637	78.9594	168.0184
26	-7.6637	78.9594	168.0184	33.3298	68.1061	144.2011
27	33.3298	68.1061	144.2011	64.9298	57.1353	120.5087
28	64.9298	57.1353	120.5087	87.0227	46.0825	96.9745
29	87.0227	46.0825	96.9745	99.5773	34.9809	73.6236
30	99.5773	34.9809	73.6236	102.6074	23.8498	50.4744
31	102.6074	23.8498	50.4744	125.2589	23.8489	50.4743
32	125.2589	23.8489	50.4743	108.2412	12.7139	27.5382
33	108.2412	12.7139	27.5382	81.8701	1.6028	4.8196
34	81.8701	1.6028	4.8196	0.0427	-0.0272	-0.0158
35	0.0427	-0.0272	-0.0158	0.0169	-0.0272	-0.0158
36	0.0169	-0.0272	-0.0158	-0.0089	-0.0272	-0.0158
37	-0.0089	-0.0272	-0.0158	-0.0348	-0.0272	-0.0158
38	-0.0348	-0.0272	-0.0158	-0.0606	-0.0272	-0.0158
39	-0.0606	-0.0272	-0.0158	-0.0864	-0.0272	-0.0158
40	-0.0864	-0.0272	-0.0158	-366.2106	25.5889	41.1866
41	-366.2106	25.5889	41.1866	-278.2654	109.7164	200.4355
42	-278.2654	109.7164	200.4355	-198.7233	109.7135	200.4355
43	-198.7233	109.7135	200.4355	-128.1574	96.4111	168.6085
44	-128.1574	96.4111	168.6085	-63.5780	83.1116	136.7815
45	-63.5780	83.1116	136.7815	-4.9804	69.8143	104.9545
46	-4.9804	69.8143	104.9545	45.6381	69.8277	104.9544
47	45.6381	69.8277	104.9544	88.6227	56.5307	73.1273
48	88.6227	56.5307	73.1273	125.6104	43.2297	41.3003
49	125.6104	43.2297	41.3003	156.6269	29.9315	9.4734
50	156.6269	29.9315	9.4734	178.3255	29.9314	9.4733
51	178.3255	29.9314	9.4733	20.6255	-3.1920	1.9262

52	20.6255	-3.1920	1.9262	18.3120	-3.1918	1.9262
53	18.3120	-3.1918	1.9262	15.9981	-3.1907	1.9262
54	15.9981	-3.1907	1.9262	13.6856	-3.1874	1.9262
55	13.6856	-3.1874	1.9262	11.3741	-3.1862	1.9262
56	11.3741	-3.1862	1.9262	9.0638	-3.1874	1.9262
57	9.0638	-3.1874	1.9262	6.7520	-3.1881	1.9262
58	6.7520	-3.1881	1.9262	4.4410	-3.1880	1.9262
59	4.4410	-3.1880	1.9262	2.1295	-3.1883	1.9262
60	2.1295	-3.1883	1.9262	-0.1821	-3.1882	1.9262

ENVOL. MIN. TORSORES TREN TREN SW/0, EC-1 en via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-2.8947	0.2352	-1.1851	-2.7242	0.2351	-1.1851
2	-2.7242	0.2351	-1.1851	6.6890	-0.6690	-3.9421
3	6.6890	-0.6690	-3.9421	25.7816	-2.7073	-8.3536
4	25.7816	-2.7073	-8.3536	23.8188	-2.7081	-8.3536
5	23.8188	-2.7081	-8.3536	47.8759	-5.8685	-14.5034
6	47.8759	-5.8685	-14.5034	76.0216	-10.1308	-22.4713
7	76.0216	-10.1308	-22.4713	105.9953	-15.4760	-32.3324
8	105.9953	-15.4760	-32.3324	94.7798	-15.4748	-32.3324
9	94.7798	-15.4748	-32.3324	119.7832	-21.8536	-44.1572
10	119.7832	-21.8536	-44.1572	141.6912	-29.2554	-58.0116
11	141.6912	-29.2554	-58.0116	20.9851	-51.1915	-67.9191
12	20.9851	-51.1915	-67.9191	131.3905	-37.6181	-73.9567
13	131.3905	-37.6181	-73.9567	135.0245	-46.9124	-92.0488
14	135.0245	-46.9124	-92.0488	129.9763	-57.0719	-112.3398
15	129.9763	-57.0719	-112.3398	-76.2384	-81.7929	-131.0242
16	-76.2384	-81.7929	-131.0242	65.7258	-68.0115	-134.8766
17	65.7258	-68.0115	-134.8766	31.5170	-79.6951	-159.7018
18	31.5170	-79.6951	-159.7018	-14.6308	-92.0136	-186.8527
19	-14.6308	-92.0136	-186.8527	-263.7024	-114.8655	-210.5260
20	-263.7024	-114.8655	-210.5260	-158.7855	-46.7815	-114.0837
21	-158.7855	-46.7815	-114.0837	-155.4008	11.1890	-13.3281
22	-155.4008	11.1890	-13.3281	-136.5297	10.5473	-16.2242
23	-136.5297	10.5473	-16.2242	-109.3282	9.1179	-20.3743
24	-109.3282	9.1179	-20.3743	-75.2600	6.8403	-25.8023
25	-75.2600	6.8403	-25.8023	-36.1221	3.6676	-32.5355
26	-36.1221	3.6676	-32.5355	6.0268	-0.4266	-40.6049
27	6.0268	-0.4266	-40.6049	48.9414	-5.4581	-50.0449
28	48.9414	-5.4581	-50.0449	89.3624	-11.2994	-61.0196
29	89.3624	-11.2994	-61.0196	124.6948	-17.8445	-73.6020
30	124.6948	-17.8445	-73.6020	153.2283	-25.0601	-87.8337
31	153.2283	-25.0601	-87.8337	129.4190	-25.0607	-87.8336
32	129.4190	-25.0607	-87.8336	116.2806	-52.5540	-105.8382
33	116.2806	-52.5540	-105.8382	97.6129	-62.9294	-127.5443
34	97.6129	-62.9294	-127.5443	69.0462	-73.2048	-149.2339
35	69.0462	-73.2048	-149.2339	112.8367	-59.9390	-162.0797
36	112.8367	-59.9390	-162.0797	77.4315	-69.8819	-185.1785
37	77.4315	-69.8819	-185.1785	28.3135	-80.1635	-210.1735
38	28.3135	-80.1635	-210.1735	-34.5448	-90.6967	-236.3297
39	-34.5448	-90.6967	-236.3297	-110.8387	-101.4095	-262.8618
40	-110.8387	-101.4095	-262.8618	-212.6501	-48.2549	-155.3551
41	-212.6501	-48.2549	-155.3551	-201.3165	14.7938	-22.2144
42	-201.3165	14.7938	-22.2144	-190.5912	14.7941	-22.2145
43	-190.5912	14.7941	-22.2145	-160.4167	13.2327	-25.0543
44	-160.4167	13.2327	-25.0543	-124.6418	11.0040	-29.5746
45	-124.6418	11.0040	-29.5746	-84.5728	8.1047	-35.8970
46	-84.5728	8.1047	-35.8970	-78.6984	8.1060	-35.8970
47	-78.6984	8.1060	-35.8970	-38.0107	4.4813	-44.0851
48	-38.0107	4.4813	-44.0851	4.1503	0.1117	-54.2060
49	4.1503	0.1117	-54.2060	46.3985	-5.0381	-66.3307
50	46.3985	-5.0381	-66.3307	42.7471	-5.0383	-66.3307
51	42.7471	-5.0383	-66.3307	79.2552	-10.9878	-80.5340
52	79.2552	-10.9878	-80.5340	112.1466	-17.7723	-96.8938
53	112.1466	-17.7723	-96.8938	99.2690	-17.7689	-96.8939
54	99.2690	-17.7689	-96.8939	121.3017	-25.3778	-115.4917
55	121.3017	-25.3778	-115.4917	135.6101	-33.8497	-136.4126
56	135.6101	-33.8497	-136.4126	140.3708	-43.2031	-159.7451
57	140.3708	-43.2031	-159.7451	109.0516	-43.2066	-159.7452
58	109.0516	-43.2066	-159.7452	94.9778	-53.4122	-185.5816
59	94.9778	-53.4122	-185.5816	66.9751	-64.4852	-214.0166
60	66.9751	-64.4852	-214.0166	20.2178	-64.4889	-214.0166

ENVOL. MAX. FLECTORES TREN TREN SW/2, EC-1 en via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-3.1377	0.2542	-1.2852	39.6070	91.5851	249.1322
2	39.6070	91.5851	249.1322	99.2566	76.5867	214.6322
3	99.2566	76.5867	214.6322	152.1602	61.5918	180.1322
4	152.1602	61.5918	180.1322	196.8116	61.5792	180.1324
5	196.8116	61.5792	180.1324	232.0747	46.5839	145.6324
6	232.0747	46.5839	145.6324	260.6024	31.5948	111.1324
7	260.6024	31.5948	111.1324	282.3743	16.5968	76.6326
8	282.3743	16.5968	76.6326	294.4159	16.5849	76.6328
9	294.4159	16.5849	76.6328	298.5649	1.5768	42.1328
10	298.5649	1.5768	42.1328	295.9614	-13.4097	7.6327
11	295.9614	-13.4097	7.6327	286.2455	-13.4010	7.6326
12	286.2455	-13.4010	7.6326	266.0206	-28.4068	-26.8672
13	266.0206	-28.4068	-26.8672	239.0480	-43.4193	-61.3671
14	239.0480	-43.4193	-61.3671	205.3192	-58.4259	-95.8671
15	205.3192	-58.4259	-95.8671	162.9481	-58.4326	-95.8670
16	162.9481	-58.4326	-95.8670	111.5797	-73.4382	-130.3670
17	111.5797	-73.4382	-130.3670	53.4606	-88.4476	-164.8671
18	53.4606	-88.4476	-164.8671	0.1791	0.2542	-1.2852
19	0.1791	0.2542	-1.2852	0.3635	0.2542	-1.2852
20	0.3635	0.2542	-1.2852	0.4879	0.1127	-0.6514
21	0.4879	0.1127	-0.6514	0.4007	-0.0288	-0.0175
22	0.4007	-0.0288	-0.0175	0.3734	-0.0288	-0.0175
23	0.3734	-0.0288	-0.0175	0.3460	-0.0288	-0.0175
24	0.3460	-0.0288	-0.0175	75.6771	86.0378	201.4366
25	75.6771	86.0378	201.4366	153.6688	71.0331	166.9367
26	153.6688	71.0331	166.9367	218.1519	56.0454	132.4367
27	218.1519	56.0454	132.4367	269.4727	42.3447	97.2460
28	269.4727	42.3447	97.2460	308.1923	27.3361	62.7461
29	308.1923	27.3361	62.7461	333.4066	12.3254	28.2460
30	333.4066	12.3254	28.2460	346.2016	-1.2566	-7.2862
31	346.2016	-1.2566	-7.2862	344.9982	-1.2627	-7.2862
32	344.9982	-1.2627	-7.2862	330.8741	-14.8889	-43.1762
33	330.8741	-14.8889	-43.1762	303.9882	-29.8847	-77.6761
34	303.9882	-29.8847	-77.6761	263.6207	-44.8827	-112.1760
35	263.6207	-44.8827	-112.1760	210.1746	-58.6453	-148.4418
36	210.1746	-58.6453	-148.4418	143.9599	-73.6393	-182.9418
37	143.9599	-73.6393	-182.9418	64.2650	-88.6209	-217.4417
38	64.2650	-88.6209	-217.4417	29.0813	12.7991	-13.0449
39	29.0813	12.7991	-13.0449	41.2409	12.7993	-13.0449
40	41.2409	12.7993	-13.0449	52.6821	4.5979	-5.4329
41	52.6821	4.5979	-5.4329	49.3502	-3.6045	2.1791
42	49.3502	-3.6045	2.1791	46.7371	-3.6052	2.1791
43	46.7371	-3.6052	2.1791	44.1239	-3.6050	2.1791
44	44.1239	-3.6050	2.1791	41.5107	-3.6031	2.1791
45	41.5107	-3.6031	2.1791	38.8988	-3.6019	2.1791
46	38.8988	-3.6019	2.1791	85.4268	75.3073	113.5897
47	85.4268	75.3073	113.5897	131.3994	60.3109	79.0896
48	131.3994	60.3109	79.0896	170.6218	45.3133	44.5895
49	170.6218	45.3133	44.5895	203.1015	30.3059	10.0894

50	203.1015	30.3059	10.0894	225.0753	30.3063	10.0893
51	225.0753	30.3063	10.0893	239.9286	15.3142	-24.4111
52	239.9286	15.3142	-24.4111	248.0335	0.3371	-58.9113
53	248.0335	0.3371	-58.9113	248.2946	0.3580	-58.9113
54	248.2946	0.3580	-58.9113	238.7904	-14.6428	-93.4115
55	238.7904	-14.6428	-93.4115	222.5486	-29.6378	-127.9117
56	222.5486	-29.6378	-127.9117	199.5659	-44.6346	-162.4116
57	199.5659	-44.6346	-162.4116	167.2051	-44.6324	-162.4115
58	167.2051	-44.6324	-162.4115	126.5965	-59.6307	-196.9115
59	126.5965	-59.6307	-196.9115	79.2343	-74.6343	-231.4113
60	79.2343	-74.6343	-231.4113	25.2426	-73.3267	-232.7416

ENVOL. MIN. FLECTORES TREN TREN SW/2, EC-1 en via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-26.9798	88.6986	251.0880	-9.4352	0.0544	65.7934
2	-9.4352	0.0544	65.7934	-9.3957	0.0543	65.7934
3	-9.3957	0.0543	65.7934	-9.9901	-6.5135	45.5826
4	-9.9901	-6.5135	45.5826	-14.7117	-6.5124	45.5826
5	-14.7117	-6.5124	45.5826	-19.4329	-6.5101	45.5826
6	-19.4329	-6.5101	45.5826	-24.6938	-13.2089	26.0024
7	-24.6938	-13.2089	26.0024	-34.2713	-13.2125	26.0024
8	-34.2713	-13.2125	26.0024	-43.8507	-13.2132	26.0025
9	-43.8507	-13.2132	26.0025	-54.9202	-20.1116	7.0002
10	-54.9202	-20.1116	7.0002	-69.5035	-20.1139	7.0001
11	-69.5035	-20.1139	7.0001	-84.0816	-20.1174	7.0001
12	-84.0816	-20.1174	7.0001	-102.6346	-27.2931	-11.4771
13	-102.6346	-27.2931	-11.4771	-122.4207	-27.2938	-11.4771
14	-122.4207	-27.2938	-11.4771	-145.1786	-34.8096	-29.4812
15	-145.1786	-34.8096	-29.4812	-170.4151	-34.8037	-29.4812
16	-170.4151	-34.8037	-29.4812	-199.4482	-42.7580	-47.0621
17	-199.4482	-42.7580	-47.0621	-230.9991	-51.1912	-64.2703
18	-230.9991	-51.1912	-64.2703	-268.1131	-51.1921	-64.2703
19	-268.1131	-51.1921	-64.2703	-326.4250	-115.1753	-186.4005
20	-326.4250	-115.1753	-186.4005	-442.5881	10.2070	45.4444
21	-442.5881	10.2070	45.4444	-331.4398	135.5909	277.2894
22	-331.4398	135.5909	277.2894	-228.8981	66.2865	157.0520
23	-228.8981	66.2865	157.0520	-171.9937	55.8947	132.5298
24	-171.9937	55.8947	132.5298	-141.1530	12.7924	-13.0450
25	-141.1530	12.7924	-13.0450	-129.0009	12.7973	-13.0450
26	-129.0009	12.7973	-13.0450	-116.8419	12.8039	-13.0450
27	-116.8419	12.8039	-13.0450	-104.6857	12.8025	-13.0450
28	-104.6857	12.8025	-13.0450	-92.5235	12.8040	-13.0450
29	-92.5235	12.8040	-13.0450	-80.3625	12.8026	-13.0449
30	-80.3625	12.8026	-13.0449	-68.2041	12.8027	-13.0450
31	-68.2041	12.8027	-13.0450	-56.0417	12.8032	-13.0450
32	-56.0417	12.8032	-13.0450	-43.8820	12.8010	-13.0449
33	-43.8820	12.8010	-13.0449	-31.7198	12.8010	-13.0449
34	-31.7198	12.8010	-13.0449	-19.5591	12.8010	-13.0449
35	-19.5591	12.8010	-13.0449	-7.4009	12.8011	-13.0449
36	-7.4009	12.8011	-13.0449	-0.0094	-0.0288	-0.0175
37	-0.0094	-0.0288	-0.0175	-56.8602	-83.7182	-187.9478
38	-56.8602	-83.7182	-187.9478	-147.3488	-102.6100	-230.6115
39	-147.3488	-102.6100	-230.6115	-254.8685	-120.7537	-271.5374
40	-254.8685	-120.7537	-271.5374	-402.1400	-1.4432	-40.8109
41	-402.1400	-1.4432	-40.8109	-336.7638	113.5506	177.4235
42	-336.7638	113.5506	177.4235	-257.4168	100.8789	145.9111
43	-257.4168	100.8789	145.9111	-242.1673	19.8953	-27.2420
44	-242.1673	19.8953	-27.2420	-227.7413	19.8845	-27.2421
45	-227.7413	19.8845	-27.2421	-213.3244	19.8746	-27.2421
46	-213.3244	19.8746	-27.2421	-198.9072	19.8716	-27.2421
47	-198.9072	19.8716	-27.2421	-184.5038	19.8705	-27.2421
48	-184.5038	19.8705	-27.2421	-170.0897	19.8694	-27.2421
49	-170.0897	19.8694	-27.2421	-155.6876	19.8597	-27.2421
50	-155.6876	19.8597	-27.2421	-141.2859	19.8631	-27.2421
51	-141.2859	19.8631	-27.2421	-126.8817	19.8722	-27.2422
52	-126.8817	19.8722	-27.2422	-112.4850	19.8624	-27.2422
53	-112.4850	19.8624	-27.2422	-98.0919	19.8447	-27.2422
54	-98.0919	19.8447	-27.2422	-83.7059	19.8344	-27.2422
55	-83.7059	19.8344	-27.2422	-69.3223	19.8264	-27.2422
56	-69.3223	19.8264	-27.2422	-54.9494	19.8300	-27.2422
57	-54.9494	19.8300	-27.2422	-40.5676	19.8380	-27.2422
58	-40.5676	19.8380	-27.2422	-26.2176	19.7055	-24.9533
59	-26.2176	19.7055	-24.9533	-11.9316	19.7072	-24.9533
60	-11.9316	19.7072	-24.9533	-0.2059	-3.5925	2.1791

ENVOL. MAX. CORTANTES TREN TREN SW/2, EC-1 en via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-26.7958	91.5871	249.1322	39.6070	91.5851	249.1322
2	39.6070	91.5851	249.1322	99.2566	76.5867	214.6322
3	99.2566	76.5867	214.6322	152.1602	61.5918	180.1322
4	152.1602	61.5918	180.1322	196.8116	61.5792	180.1324
5	196.8116	61.5792	180.1324	232.0747	46.5839	145.6324
6	232.0747	46.5839	145.6324	260.6024	31.5948	111.1324
7	260.6024	31.5948	111.1324	282.3743	16.5968	76.6326
8	282.3743	16.5968	76.6326	294.4159	16.5849	76.6328
9	294.4159	16.5849	76.6328	34.6330	6.5624	86.6507
10	34.6330	6.5624	86.6507	-1.2952	0.2541	-1.2852
11	-1.2952	0.2541	-1.2852	-1.1109	0.2541	-1.2852
12	-1.1109	0.2541	-1.2852	-0.9267	0.2542	-1.2852
13	-0.9267	0.2542	-1.2852	-0.7424	0.2542	-1.2852
14	-0.7424	0.2542	-1.2852	-0.5581	0.2542	-1.2852
15	-0.5581	0.2542	-1.2852	-0.3738	0.2542	-1.2852
16	-0.3738	0.2542	-1.2852	-0.1895	0.2542	-1.2852
17	-0.1895	0.2542	-1.2852	-0.0052	0.2542	-1.2852
18	-0.0052	0.2542	-1.2852	0.1791	0.2542	-1.2852
19	0.1791	0.2542	-1.2852	0.3635	0.2542	-1.2852
20	0.3635	0.2542	-1.2852	-361.4182	46.4019	137.6494
21	-361.4182	46.4019	137.6494	-317.5689	137.5677	292.2499
22	-317.5689	137.5677	292.2499	-192.8793	122.5683	257.7501
23	-192.8793	122.5683	257.7501	-81.6899	107.5664	223.2500
24	-81.6899	107.5664	223.2500	15.9958	92.5666	188.7500
25	15.9958	92.5666	188.7500	100.1834	77.5620	154.2501
26	100.1834	77.5620	154.2501	22.9891	66.2868	157.0522
27	22.9891	66.2868	157.0522	40.4070	55.8937	132.5300
28	40.4070	55.8937	132.5300	49.2954	46.1646	109.0582
29	49.2954	46.1646	109.0582	50.9186	36.8669	85.7701
30	50.9186	36.8669	85.7701	85.9433	21.8666	51.2701
31	85.9433	21.8666	51.2701	106.7160	21.8673	51.2701
32	106.7160	21.8673	51.2701	-43.8820	12.8010	-13.0449
33	-43.8820	12.8010	-13.0449	-31.7198	12.8010	-13.0449
34	-31.7198	12.8010	-13.0449	-19.5591	12.8010	-13.0449
35	-19.5591	12.8010	-13.0449	-7.4009	12.8011	-13.0449
36	-7.4009	12.8011	-13.0449	4.7603	12.8026	-13.0449
37	4.7603	12.8026	-13.0449	16.9218	12.8017	-13.0449
38	16.9218	12.8017	-13.0449	29.0813	12.7991	-13.0449
39	29.0813	12.7991	-13.0449	41.2409	12.7993	-13.0449
40	41.2409	12.7993	-13.0449	-337.9474	11.0765	-3.8198
41	-337.9474	11.0765	-3.8198	-302.8845	122.6573	213.1655
42	-302.8845	122.6573	213.1655	-213.9554	122.6551	213.1654
43	-213.9554	122.6551	213.1654	-135.1555	107.6556	178.6653
44	-135.1555	107.6556	178.6653	-63.1012	92.6615	144.1650
45	-63.1012	92.6615	144.1650	2.2046	77.6678	109.6649
46	2.2046	77.6678	109.6649	58.5141	77.6822	109.6649
47	58.5141	77.6822	109.6649	106.2084	62.6857	75.1647

48	106.2084	62.6857	75.1647	147.1486	47.6801	40.6648
49	147.1486	47.6801	40.6648	181.3416	32.6805	6.1646
50	181.3416	32.6805	6.1646	205.0370	32.6760	6.1645
51	205.0370	32.6760	6.1645	-126.8817	19.8722	-27.2422
52	-126.8817	19.8722	-27.2422	-112.4850	19.8624	-27.2422
53	-112.4850	19.8624	-27.2422	-98.0919	19.8447	-27.2422
54	-98.0919	19.8447	-27.2422	-83.7059	19.8344	-27.2422
55	-83.7059	19.8344	-27.2422	-69.3223	19.8264	-27.2422
56	-69.3223	19.8264	-27.2422	-54.9494	19.8300	-27.2422
57	-54.9494	19.8300	-27.2422	-40.5676	19.8380	-27.2422
58	-40.5676	19.8380	-27.2422	-26.1873	19.8363	-27.2422
59	-26.1873	19.8363	-27.2422	-11.8076	19.8359	-27.2422
60	-11.8076	19.8359	-27.2422	2.5739	19.8362	-27.2422

ENVOL. MIN. CORTANTES TREN TREN SW/2, EC-1 en via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-9.4745	0.0544	65.7934	-9.4352	0.0544	65.7934
2	-9.4352	0.0544	65.7934	-5.2678	-6.5132	45.5826
3	-5.2678	-6.5132	45.5826	4.0346	-13.2095	26.0023
4	4.0346	-13.2095	26.0023	-5.5416	-13.2091	26.0024
5	-5.5416	-13.2091	26.0024	3.4011	-20.1090	7.0001
6	3.4011	-20.1090	7.0001	16.0784	-27.2908	-11.4774
7	16.0784	-27.2908	-11.4774	31.5256	-34.8170	-29.4813
8	31.5256	-34.8170	-29.4813	6.2819	-34.8171	-29.4812
9	6.2819	-34.8171	-29.4812	17.5803	-42.7665	-47.0622
10	17.5803	-42.7665	-47.0622	28.8168	-51.1965	-64.2704
11	28.8168	-51.1965	-64.2704	-8.3012	-51.1969	-64.2704
12	-8.3012	-51.1969	-64.2704	-5.0400	-60.1705	-82.2410
13	-5.0400	-60.1705	-82.2410	-5.1750	-69.7340	-102.1734
14	-5.1750	-69.7340	-102.1734	-10.3577	-79.9284	-124.1976
15	-10.3577	-79.9284	-124.1976	-68.3089	-79.9323	-124.1976
16	-68.3089	-79.9323	-124.1976	-88.0280	-90.7803	-148.4339
17	-88.0280	-90.7803	-148.4339	-150.1585	-104.2443	-162.6337
18	-150.1585	-104.2443	-162.6337	-226.4866	-119.2446	-197.1337
19	-226.4866	-119.2446	-197.1337	-312.9387	-119.2442	-197.1337
20	-312.9387	-119.2442	-197.1337	-179.3436	-52.8245	-123.4561
21	-179.3436	-52.8245	-123.4561	0.4007	-0.0288	-0.0175
22	0.4007	-0.0288	-0.0175	0.3734	-0.0288	-0.0175
23	0.3734	-0.0288	-0.0175	0.3460	-0.0288	-0.0175
24	0.3460	-0.0288	-0.0175	0.3187	-0.0288	-0.0175
25	0.3187	-0.0288	-0.0175	0.2914	-0.0288	-0.0175
26	0.2914	-0.0288	-0.0175	0.2640	-0.0288	-0.0175
27	0.2640	-0.0288	-0.0175	28.9622	-2.9446	-56.9181
28	28.9622	-2.9446	-56.9181	69.9648	-8.4755	-69.5927
29	69.9648	-8.4755	-69.5927	108.0934	-14.9347	-83.9475
30	108.0934	-14.9347	-83.9475	141.2380	-22.3342	-100.0090
31	141.2380	-22.3342	-100.0090	120.0166	-22.3375	-100.0090
32	120.0166	-22.3375	-100.0090	138.0883	-30.6802	-117.8028
33	138.0883	-30.6802	-117.8028	145.9296	-39.9349	-137.3382
34	145.9296	-39.9349	-137.3382	208.4937	-51.0249	-108.9310
35	208.4937	-51.0249	-108.9310	148.7858	-66.0216	-143.4308
36	148.7858	-66.0216	-143.4308	75.5550	-81.0189	-177.9308
37	75.5550	-81.0189	-177.9308	-11.1564	-96.0157	-212.4308
38	-11.1564	-96.0157	-212.4308	-111.3770	-111.0172	-246.9308
39	-111.3770	-111.0172	-246.9308	-225.0966	-126.0173	-281.4308
40	-225.0966	-126.0173	-281.4308	-269.8183	-56.9315	-172.9474
41	-269.8183	-56.9315	-172.9474	49.3502	-3.6045	2.1791
42	49.3502	-3.6045	2.1791	46.7371	-3.6052	2.1791
43	46.7371	-3.6052	2.1791	44.1239	-3.6050	2.1791
44	44.1239	-3.6050	2.1791	41.5107	-3.6031	2.1791
45	41.5107	-3.6031	2.1791	38.8988	-3.6019	2.1791
46	38.8988	-3.6019	2.1791	36.2885	-3.6027	2.1791
47	36.2885	-3.6027	2.1791	33.6777	-3.6023	2.1791
48	33.6777	-3.6023	2.1791	31.0685	-3.6008	2.1791
49	31.0685	-3.6008	2.1791	28.4590	-3.5986	2.1791
50	28.4590	-3.5986	2.1791	25.8505	-3.5991	2.1791
51	25.8505	-3.5991	2.1791	35.9287	-4.1239	-95.5896
52	35.9287	-4.1239	-95.5896	80.9348	-12.1145	-113.2735
53	80.9348	-12.1145	-113.2735	72.1534	-12.1118	-113.2735
54	72.1534	-12.1118	-113.2735	105.7619	-21.4272	-133.0779
55	105.7619	-21.4272	-133.0779	130.9879	-32.0947	-155.0858
56	130.9879	-32.0947	-155.0858	199.5659	-44.6346	-162.4116
57	199.5659	-44.6346	-162.4116	167.2051	-44.6324	-162.4115
58	167.2051	-44.6324	-162.4115	126.5965	-59.6307	-196.9115
59	126.5965	-59.6307	-196.9115	79.2343	-74.6343	-231.4113
60	79.2343	-74.6343	-231.4113	25.1194	-74.6367	-231.4110

ENVOL. MAX. TORSORES TREN TREN SW/2, EC-1 en via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-26.9798	88.6986	251.0880	37.3290	88.7004	251.0880
2	37.3290	88.7004	251.0880	67.6283	60.7685	216.8658
3	67.6283	60.7685	216.8658	84.7466	47.0771	186.7591
4	84.7466	47.0771	186.7591	118.8750	47.0761	186.7592
5	118.8750	47.0761	186.7592	111.2878	34.8322	158.5990
6	111.2878	34.8322	158.5990	91.9925	24.0247	132.4757
7	91.9925	24.0247	132.4757	63.9346	14.6176	108.4697
8	63.9346	14.6176	108.4697	74.5331	14.6182	108.4698
9	74.5331	14.6182	108.4698	34.6330	6.5624	86.6507
10	34.6330	6.5624	86.6507	-9.0814	0.0551	65.7936
11	-9.0814	0.0551	65.7936	-9.0412	0.0539	65.7935
12	-9.0412	0.0539	65.7935	-52.4893	-6.5120	45.5829
13	-52.4893	-6.5120	45.5829	-91.7388	-13.2071	26.0026
14	-91.7388	-13.2071	26.0026	-127.8235	-20.1054	7.0002
15	-127.8235	-20.1054	7.0002	-142.3975	-20.1005	7.0002
16	-142.3975	-20.1005	7.0002	-0.1895	0.2542	-1.2852
17	-0.1895	0.2542	-1.2852	-0.0052	0.2542	-1.2852
18	-0.0052	0.2542	-1.2852	0.1791	0.2542	-1.2852
19	0.1791	0.2542	-1.2852	0.3635	0.2542	-1.2852
20	0.3635	0.2542	-1.2852	-361.4182	46.4019	137.6494
21	-361.4182	46.4019	137.6494	-240.4625	129.2549	305.3406
22	-240.4625	129.2549	305.3406	-175.5487	115.2240	272.5101
23	-175.5487	115.2240	272.5101	-102.2580	101.8701	241.1957
24	-102.2580	101.8701	241.1957	-46.1318	89.2528	211.4622
25	-46.1318	89.2528	211.4622	-5.1191	77.3968	183.3884
26	-5.1191	77.3968	183.3884	22.9891	66.2868	157.0522
27	22.9891	66.2868	157.0522	40.4070	55.8937	132.5300
28	40.4070	55.8937	132.5300	49.2954	46.1646	109.0582
29	49.2954	46.1646	109.0582	50.9186	36.8669	85.7701
30	50.9186	36.8669	85.7701	85.9433	21.8666	51.2701
31	85.9433	21.8666	51.2701	106.7160	21.8673	51.2701
32	106.7160	21.8673	51.2701	113.9904	6.8682	16.7701
33	113.9904	6.8682	16.7701	0.0726	-0.0288	-0.0175
34	0.0726	-0.0288	-0.0175	0.0453	-0.0288	-0.0175
35	0.0453	-0.0288	-0.0175	0.0179	-0.0288	-0.0175
36	0.0179	-0.0288	-0.0175	-0.0094	-0.0288	-0.0175
37	-0.0094	-0.0288	-0.0175	-0.0368	-0.0288	-0.0175
38	-0.0368	-0.0288	-0.0175	-0.0641	-0.0288	-0.0175
39	-0.0641	-0.0288	-0.0175	-0.0914	-0.0288	-0.0175
40	-0.0914	-0.0288	-0.0175	-0.1193	-0.0103	-0.0121
41	-0.1193	-0.0103	-0.0121	-267.3694	120.2857	217.0901
42	-267.3694	120.2857	217.0901	-180.1626	120.2841	217.0901
43	-180.1626	120.2841	217.0901	-103.0836	105.2894	182.5901
44	-103.0836	105.2894	182.5901	-32.7412	90.2818	148.0899

45	-32.7412	90.2818	148.0899	30.8316	75.2865	113.5898
46	30.8316	75.2865	113.5898	85.4268	75.3073	113.5897
47	85.4268	75.3073	113.5897	131.3994	60.3109	79.0896
48	131.3994	60.3109	79.0896	170.6218	45.3133	44.5895
49	170.6218	45.3133	44.5895	203.1015	30.3059	10.0894
50	203.1015	30.3059	10.0894	225.0753	30.3063	10.0893
51	225.0753	30.3063	10.0893	23.2399	-3.5976	2.1791
52	23.2399	-3.5976	2.1791	20.6341	-3.5937	2.1791
53	20.6341	-3.5937	2.1791	18.0268	-3.5935	2.1791
54	18.0268	-3.5935	2.1791	15.4212	-3.5917	2.1791
55	15.4212	-3.5917	2.1791	12.8161	-3.5897	2.1791
56	12.8161	-3.5897	2.1791	10.2127	-3.5911	2.1791
57	10.2127	-3.5911	2.1791	7.6077	-3.5923	2.1791
58	7.6077	-3.5923	2.1791	5.0036	-3.5922	2.1791
59	5.0036	-3.5922	2.1791	2.3987	-3.5925	2.1791
60	2.3987	-3.5925	2.1791	-0.2059	-3.5925	2.1791

ENVOL. MIN. TORSORES TREN TREN SW/2, EC-1 en via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-3.1377	0.2542	-1.2852	-2.9535	0.2542	-1.2852
2	-2.9535	0.2542	-1.2852	7.7580	-0.7763	-4.2538
3	7.7580	-0.7763	-4.2538	29.3629	-3.0859	-8.9991
4	29.3629	-3.0859	-8.9991	27.1268	-3.0849	-8.9991
5	27.1268	-3.0849	-8.9991	54.3023	-6.6611	-15.6155
6	54.3023	-6.6611	-15.6155	86.0696	-11.4772	-24.1932
7	86.0696	-11.4772	-24.1932	119.8734	-17.5066	-34.8167
8	119.8734	-17.5066	-34.8167	107.1852	-17.5020	-34.8167
9	107.1852	-17.5020	-34.8167	135.3651	-24.7206	-47.5657
10	135.3651	-24.7206	-47.5657	28.8168	-51.1965	-64.2704
11	28.8168	-51.1965	-64.2704	-8.3012	-51.1969	-64.2704
12	-8.3012	-51.1969	-64.2704	-5.0400	-60.1705	-82.2410
13	-5.0400	-60.1705	-82.2410	-5.1750	-69.7340	-102.1734
14	-5.1750	-69.7340	-102.1734	-10.3577	-79.9284	-124.1976
15	-10.3577	-79.9284	-124.1976	-68.3089	-79.9323	-124.1976
16	-68.3089	-79.9323	-124.1976	-88.0280	-90.7803	-148.4339
17	-88.0280	-90.7803	-148.4339	-116.4104	-102.2895	-174.9913
18	-116.4104	-102.2895	-174.9913	-154.7804	-114.4552	-203.9676
19	-154.7804	-114.4552	-203.9676	-237.7591	-114.4541	-203.9676
20	-237.7591	-114.4541	-203.9676	-179.3436	-52.8245	-123.4561
21	-179.3436	-52.8245	-123.4561	-175.0214	12.5998	-14.6898
22	-175.0214	12.5998	-14.6898	-153.3116	11.8440	-17.8326
23	-153.3116	11.8440	-17.8326	-125.1949	10.4419	-22.4987
24	-125.1949	10.4419	-22.4987	-91.5594	8.3165	-28.7141
25	-91.5594	8.3165	-28.7141	-53.6188	5.4145	-36.5051
26	-53.6188	5.4145	-36.5051	-12.8689	1.6741	-45.8976
27	-12.8689	1.6741	-45.8976	28.9622	-2.9446	-56.9181
28	28.9622	-2.9446	-56.9181	69.9648	-8.4755	-69.5927
29	69.9648	-8.4755	-69.5927	108.0934	-14.9347	-83.9475
30	108.0934	-14.9347	-83.9475	141.2380	-22.3342	-100.0090
31	141.2380	-22.3342	-100.0090	120.0166	-22.3375	-100.0090
32	120.0166	-22.3375	-100.0090	138.0883	-30.6802	-117.8028
33	138.0883	-30.6802	-117.8028	145.9296	-39.9349	-137.3382
34	145.9296	-39.9349	-137.3382	141.9884	-50.3258	-158.4825
35	141.9884	-50.3258	-158.4825	123.6778	-61.8497	-181.2629
36	123.6778	-61.8497	-181.2629	88.5775	-74.4265	-205.7104
37	88.5775	-74.4265	-205.7104	34.5883	-87.9857	-231.8598
38	34.5883	-87.9857	-231.8598	-40.0243	-102.4445	-259.7498
39	-40.0243	-102.4445	-259.7498	-136.5278	-117.6872	-289.4228
40	-136.5278	-117.6872	-289.4228	-269.8183	-56.9315	-172.9474
41	-269.8183	-56.9315	-172.9474	-271.0182	19.8975	-27.2420
42	-271.0182	19.8975	-27.2420	-256.5918	19.8965	-27.2420
43	-256.5918	19.8965	-27.2420	-234.7679	19.3220	-31.3328
44	-234.7679	19.3220	-31.3328	-204.3289	17.9509	-37.2517
45	-204.3289	17.9509	-37.2517	-165.9369	15.6742	-45.0323
46	-165.9369	15.6742	-45.0323	-154.5726	15.6755	-45.0323
47	-154.5726	15.6755	-45.0323	-111.6152	12.4002	-54.7127
48	-111.6152	12.4002	-54.7127	-63.8612	8.0756	-66.3370
49	-63.8612	8.0756	-66.3370	-13.0251	2.5846	-79.9543
50	-13.0251	2.5846	-79.9543	-11.1529	2.5846	-79.9543
51	-11.1529	2.5846	-79.9543	35.9287	-4.1239	-95.5896
52	35.9287	-4.1239	-95.5896	80.9348	-12.1145	-113.2735
53	80.9348	-12.1145	-113.2735	72.1534	-12.1118	-113.2735
54	72.1534	-12.1118	-113.2735	105.7619	-21.4272	-133.0779
55	105.7619	-21.4272	-133.0779	130.9879	-32.0947	-155.0858
56	130.9879	-32.0947	-155.0858	144.9215	-44.1349	-179.3922
57	144.9215	-44.1349	-179.3922	112.9328	-44.1231	-179.3922
58	112.9328	-44.1231	-179.3922	102.8984	-57.5207	-206.1035
59	102.8984	-57.5207	-206.1035	74.6306	-72.2686	-235.3362
60	74.6306	-72.2686	-235.3362	22.2342	-72.2679	-235.3363

ENVOL. MAX. FLECTORES TREN TREN SIN CARGA, EC-1 en via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-0.2721	0.0221	-0.1114	3.2229	7.6422	21.5427
2	3.2229	7.6422	21.5427	8.2014	6.3921	18.5515
3	8.2014	6.3921	18.5515	12.6169	5.1416	15.5602
4	12.6169	5.1416	15.5602	16.3451	5.1418	15.5602
5	16.3451	5.1418	15.5602	19.2915	3.8918	12.5690
6	19.2915	3.8918	12.5690	21.6758	2.6409	9.5778
7	21.6758	2.6409	9.5778	23.4976	1.3911	6.5865
8	23.4976	1.3911	6.5865	24.5075	1.3925	6.5865
9	24.5075	1.3925	6.5865	24.8609	0.1439	3.5953
10	24.8609	0.1439	3.5953	24.6518	-1.1070	0.6040
11	24.6518	-1.1070	0.6040	23.8489	-1.1066	0.6040
12	23.8489	-1.1066	0.6040	22.1716	-2.3555	-2.3872
13	22.1716	-2.3555	-2.3872	19.9309	-3.6077	-5.3785
14	19.9309	-3.6077	-5.3785	17.1269	-4.8595	-8.3697
15	17.1269	-4.8595	-8.3697	13.6038	-4.8601	-8.3697
16	13.6038	-4.8601	-8.3697	9.3298	-6.1099	-11.3610
17	9.3298	-6.1099	-11.3610	4.4938	-7.3598	-14.3522
18	4.4938	-7.3598	-14.3522	0.0163	0.0221	-0.1114
19	0.0163	0.0221	-0.1114	0.0323	0.0221	-0.1114
20	0.0323	0.0221	-0.1114	0.0432	0.0098	-0.0565
21	0.0432	0.0098	-0.0565	0.0355	-0.0026	-0.0015
22	0.0355	-0.0026	-0.0015	0.0331	-0.0026	-0.0015
23	0.0331	-0.0026	-0.0015	0.0307	-0.0026	-0.0015
24	0.0307	-0.0026	-0.0015	0.0283	-0.0026	-0.0015
25	0.0283	-0.0026	-0.0015	5.6020	6.8547	13.6113
26	5.6020	6.8547	13.6113	11.8642	5.6050	10.6201
27	11.8642	5.6050	10.6201	17.0008	4.3549	7.6288
28	17.0008	4.3549	7.6288	21.0130	3.1033	4.6376
29	21.0130	3.1033	4.6376	23.8975	1.8533	1.6463
30	23.8975	1.8533	1.6463	25.6595	0.6049	-1.3449
31	25.6595	0.6049	-1.3449	26.2333	0.6050	-1.3449
32	26.2333	0.6050	-1.3449	25.6820	-0.6453	-4.3362
33	25.6820	-0.6453	-4.3362	24.0051	-1.8967	-7.3274
34	24.0051	-1.8967	-7.3274	21.2038	-3.1472	-10.3187
35	21.2038	-3.1472	-10.3187	17.2780	-4.3969	-13.3099
36	17.2780	-4.3969	-13.3099	12.2263	-5.6465	-16.3012
37	12.2263	-5.6465	-16.3012	6.0505	-6.8960	-19.2924
38	6.0505	-6.8960	-19.2924	2.4270	1.0678	-1.1096
39	2.4270	1.0678	-1.1096	3.4415	1.0679	-1.1096
40	3.4415	1.0679	-1.1096	4.3949	0.3836	-0.4643
41	4.3949	0.3836	-0.4643	4.1161	-0.3006	0.1810
42	4.1161	-0.3006	0.1810	3.8982	-0.3007	0.1810
43	3.8982	-0.3007	0.1810	3.6803	-0.3007	0.1810

44	3.6803	-0.3007	0.1810	3.4623	-0.3007	0.1810
45	3.4623	-0.3007	0.1810	3.2444	-0.3004	0.1810
46	3.2444	-0.3004	0.1810	3.0267	-0.3003	0.1810
47	3.0267	-0.3003	0.1810	5.3740	5.6337	6.2018
48	5.3740	5.6337	6.2018	9.0833	4.3836	3.2105
49	9.0833	4.3836	3.2105	12.2304	3.1329	0.2193
50	12.2304	3.1329	0.2193	14.5019	3.1335	0.2193
51	14.5019	3.1335	0.2193	16.1807	1.8851	-2.7720
52	16.1807	1.8851	-2.7720	17.2971	0.6356	-5.7632
53	17.2971	0.6356	-5.7632	17.7579	0.6364	-5.7632
54	17.7579	0.6364	-5.7632	17.4062	-0.6124	-8.7545
55	17.4062	-0.6124	-8.7545	16.4936	-1.8628	-11.7458
56	16.4936	-1.8628	-11.7458	15.0174	-3.1135	-14.7370
57	15.0174	-3.1135	-14.7370	12.7607	-3.1126	-14.7370
58	12.7607	-3.1126	-14.7370	9.8165	-4.3626	-17.7283
59	9.8165	-4.3626	-17.7283	6.3094	-5.6129	-20.7195
60	6.3094	-5.6129	-20.7195	2.2400	-5.6128	-20.7195

ENVOL. MIN. FLECTORES TREN TREN SIN CARGA, EC-1 en via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-2.3345	7.4031	21.7202	-0.2560	0.0221	-0.1114
2	-0.2560	0.0221	-0.1114	-0.2400	0.0221	-0.1114
3	-0.2400	0.0221	-0.1114	-0.2240	0.0221	-0.1114
4	-0.2240	0.0221	-0.1114	-0.2080	0.0221	-0.1114
5	-0.2080	0.0221	-0.1114	-0.1920	0.0221	-0.1114
6	-0.1920	0.0221	-0.1114	-0.1759	0.0221	-0.1114
7	-0.1759	0.0221	-0.1114	-0.1599	0.0221	-0.1114
8	-0.1599	0.0221	-0.1114	-0.1439	0.0221	-0.1114
9	-0.1439	0.0221	-0.1114	-0.1279	0.0221	-0.1114
10	-0.1279	0.0221	-0.1114	-0.1119	0.0221	-0.1114
11	-0.1119	0.0221	-0.1114	-0.0959	0.0221	-0.1114
12	-0.0959	0.0221	-0.1114	-0.0798	0.0221	-0.1114
13	-0.0798	0.0221	-0.1114	-0.0638	0.0221	-0.1114
14	-0.0638	0.0221	-0.1114	-0.0478	0.0221	-0.1114
15	-0.0478	0.0221	-0.1114	-4.3423	-6.5106	-8.5866
16	-4.3423	-6.5106	-8.5866	-9.8125	-7.7606	-11.5779
17	-9.8125	-7.7606	-11.5779	-15.8452	-9.0107	-14.5691
18	-15.8452	-9.0107	-14.5691	-22.4405	-10.2608	-17.5604
19	-22.4405	-10.2608	-17.5604	-29.8796	-10.2608	-17.5604
20	-29.8796	-10.2608	-17.5604	-40.2637	0.7971	4.0080
21	-40.2637	0.7971	4.0080	-30.6966	11.8549	25.5763
22	-30.6966	11.8549	25.5763	-19.9342	10.6049	22.5851
23	-19.9342	10.6049	22.5851	-12.7894	1.0673	-1.1096
24	-12.7894	1.0673	-1.1096	-11.7753	1.0673	-1.1096
25	-11.7753	1.0673	-1.1096	-10.7613	1.0676	-1.1096
26	-10.7613	1.0676	-1.1096	-9.7469	1.0679	-1.1096
27	-9.7469	1.0679	-1.1096	-8.7327	1.0680	-1.1096
28	-8.7327	1.0680	-1.1096	-7.7181	1.0680	-1.1096
29	-7.7181	1.0680	-1.1096	-6.7035	1.0677	-1.1096
30	-6.7035	1.0677	-1.1096	-5.6892	1.0678	-1.1096
31	-5.6892	1.0678	-1.1096	-4.6747	1.0681	-1.1096
32	-4.6747	1.0681	-1.1096	-3.6601	1.0681	-1.1096
33	-3.6601	1.0681	-1.1096	-2.6454	1.0678	-1.1096
34	-2.6454	1.0678	-1.1096	-1.6310	1.0675	-1.1096
35	-1.6310	1.0675	-1.1096	-0.6166	1.0678	-1.1096
36	-0.6166	1.0678	-1.1096	-0.0008	-0.0026	-0.0015
37	-0.0008	-0.0026	-0.0015	-6.0301	-7.9005	-19.2427
38	-6.0301	-7.9005	-19.2427	-14.2859	-9.1506	-22.2339
39	-14.2859	-9.1506	-22.2339	-23.6667	-10.4007	-25.2252
40	-23.6667	-10.4007	-25.2252	-36.5048	0.1160	-3.5292
41	-36.5048	0.1160	-3.5292	-30.5035	10.6325	18.1669
42	-30.5035	10.6325	18.1669	-22.7950	10.6322	18.1669
43	-22.7950	10.6322	18.1669	-18.4161	1.5125	-2.0323
44	-18.4161	1.5125	-2.0323	-17.3195	1.5120	-2.0323
45	-17.3195	1.5120	-2.0323	-16.2232	1.5120	-2.0323
46	-16.2232	1.5120	-2.0323	-15.1271	1.5115	-2.0323
47	-15.1271	1.5115	-2.0323	-14.0316	1.5111	-2.0323
48	-14.0316	1.5111	-2.0323	-12.9361	1.5113	-2.0323
49	-12.9361	1.5113	-2.0323	-11.8408	1.5116	-2.0323
50	-11.8408	1.5116	-2.0323	-10.7451	1.5106	-2.0323
51	-10.7451	1.5106	-2.0323	-9.6507	1.5092	-2.0323
52	-9.6507	1.5092	-2.0323	-8.5561	1.5092	-2.0323
53	-8.5561	1.5092	-2.0323	-7.4619	1.5088	-2.0323
54	-7.4619	1.5088	-2.0323	-6.3678	1.5084	-2.0323
55	-6.3678	1.5084	-2.0323	-5.2745	1.5077	-2.0323
56	-5.2745	1.5077	-2.0323	-4.1813	1.5075	-2.0323
57	-4.1813	1.5075	-2.0323	-3.0881	1.5079	-2.0323
58	-3.0881	1.5079	-2.0323	-1.9948	1.5082	-2.0323
59	-1.9948	1.5082	-2.0323	-0.9014	1.5082	-2.0323
60	-0.9014	1.5082	-2.0323	-0.0171	-0.2996	0.1810

ENVOL. MAX. CORTANTES TREN TREN SIN CARGA, EC-1 en via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-2.3177	7.6420	21.5427	3.2229	7.6422	21.5427
2	3.2229	7.6422	21.5427	8.2014	6.3921	18.5515
3	8.2014	6.3921	18.5515	12.6169	5.1416	15.5602
4	12.6169	5.1416	15.5602	16.3451	5.1418	15.5602
5	16.3451	5.1418	15.5602	19.2915	3.8918	12.5690
6	19.2915	3.8918	12.5690	21.6758	2.6409	9.5778
7	21.6758	2.6409	9.5778	23.4976	1.3911	6.5865
8	23.4976	1.3911	6.5865	24.5075	1.3925	6.5865
9	24.5075	1.3925	6.5865	24.8609	0.1439	3.5953
10	24.8609	0.1439	3.5953	-0.1119	0.0221	-0.1114
11	-0.1119	0.0221	-0.1114	-0.0959	0.0221	-0.1114
12	-0.0959	0.0221	-0.1114	-0.0798	0.0221	-0.1114
13	-0.0798	0.0221	-0.1114	-0.0638	0.0221	-0.1114
14	-0.0638	0.0221	-0.1114	-0.0478	0.0221	-0.1114
15	-0.0478	0.0221	-0.1114	-0.0318	0.0221	-0.1114
16	-0.0318	0.0221	-0.1114	-0.0158	0.0221	-0.1114
17	-0.0158	0.0221	-0.1114	0.0003	0.0221	-0.1114
18	0.0003	0.0221	-0.1114	0.0163	0.0221	-0.1114
19	0.0163	0.0221	-0.1114	0.0323	0.0221	-0.1114
20	0.0323	0.0221	-0.1114	-40.2637	0.7971	4.0080
21	-40.2637	0.7971	4.0080	-30.6966	11.8549	25.5763
22	-30.6966	11.8549	25.5763	-19.9342	10.6049	22.5851
23	-19.9342	10.6049	22.5851	-10.2969	9.3550	19.5938
24	-10.2969	9.3550	19.5938	-1.7849	8.1048	16.6026
25	-1.7849	8.1048	16.6026	5.6020	6.8547	13.6113
26	5.6020	6.8547	13.6113	11.8642	5.6050	10.6201
27	11.8642	5.6050	10.6201	17.0008	4.3549	7.6288
28	17.0008	4.3549	7.6288	21.0130	3.1033	4.6376
29	21.0130	3.1033	4.6376	23.8975	1.8533	1.6463
30	23.8975	1.8533	1.6463	-5.6892	1.0678	-1.1096
31	-5.6892	1.0678	-1.1096	-4.6747	1.0681	-1.1096
32	-4.6747	1.0681	-1.1096	-3.6601	1.0681	-1.1096
33	-3.6601	1.0681	-1.1096	-2.6454	1.0678	-1.1096
34	-2.6454	1.0678	-1.1096	-1.6310	1.0675	-1.1096
35	-1.6310	1.0675	-1.1096	-0.6166	1.0678	-1.1096
36	-0.6166	1.0678	-1.1096	0.3981	1.0680	-1.1096
37	0.3981	1.0680	-1.1096	1.4125	1.0678	-1.1096
38	1.4125	1.0678	-1.1096	2.4270	1.0678	-1.1096
39	2.4270	1.0678	-1.1096	3.4415	1.0679	-1.1096
40	3.4415	1.0679	-1.1096	4.3949	0.3836	-0.4643
41	4.3949	0.3836	-0.4643	-30.5035	10.6325	18.1669

42	-30.5035	10.6325	18.1669	-22.7950	10.6322	18.1669
43	-22.7950	10.6322	18.1669	-15.9303	9.3822	15.1756
44	-15.9303	9.3822	15.1756	-9.6278	8.1323	12.1843
45	-9.6278	8.1323	12.1843	-3.8882	6.8828	9.1931
46	-3.8882	6.8828	9.1931	1.1021	6.8835	9.1931
47	1.1021	6.8835	9.1931	5.3740	5.6337	6.2018
48	5.3740	5.6337	6.2018	9.0833	4.3836	3.2105
49	9.0833	4.3836	3.2105	12.2304	3.1329	0.2193
50	12.2304	3.1329	0.2193	14.5019	3.1335	0.2193
51	14.5019	3.1335	0.2193	16.1807	1.8851	-2.7720
52	16.1807	1.8851	-2.7720	-8.5561	1.5092	-2.0323
53	-8.5561	1.5092	-2.0323	-7.4619	1.5088	-2.0323
54	-7.4619	1.5088	-2.0323	-6.3678	1.5084	-2.0323
55	-6.3678	1.5084	-2.0323	-5.2745	1.5077	-2.0323
56	-5.2745	1.5077	-2.0323	-4.1813	1.5075	-2.0323
57	-4.1813	1.5075	-2.0323	-3.0881	1.5079	-2.0323
58	-3.0881	1.5079	-2.0323	-1.9948	1.5082	-2.0323
59	-1.9948	1.5082	-2.0323	-0.9014	1.5082	-2.0323
60	-0.9014	1.5082	-2.0323	0.1920	1.5081	-2.0323

ENVOL. MIN. CORTANTES TREN TREN SIN CARGA, EC-1 en via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-0.2721	0.0221	-0.1114	-0.2560	0.0221	-0.1114
2	-0.2560	0.0221	-0.1114	0.6287	-0.0629	-0.3705
3	0.6287	-0.0629	-0.3705	2.4230	-0.2545	-0.7851
4	2.4230	-0.2545	-0.7851	2.2386	-0.2545	-0.7851
5	2.2386	-0.2545	-0.7851	4.4997	-0.5514	-1.3631
6	4.4997	-0.5514	-1.3631	7.1449	-0.9519	-2.1120
7	7.1449	-0.9519	-2.1120	9.9619	-1.4536	-3.0388
8	9.9619	-1.4536	-3.0388	8.9079	-1.4535	-3.0387
9	8.9079	-1.4535	-3.0387	11.2582	-2.0546	-4.1501
10	11.2582	-2.0546	-4.1501	12.6939	-2.7592	0.3871
11	12.6939	-2.7592	0.3871	10.6931	-2.7593	0.3871
12	10.6931	-2.7593	0.3871	7.8175	-4.0097	-2.6041
13	7.8175	-4.0097	-2.6041	4.3789	-5.2600	-5.5953
14	4.3789	-5.2600	-5.5953	0.3780	-6.5104	-8.5866
15	0.3780	-6.5104	-8.5866	-4.3423	-6.5106	-8.5866
16	-4.3423	-6.5106	-8.5866	-9.8125	-7.7606	-11.5779
17	-9.8125	-7.7606	-11.5779	-15.8452	-9.0107	-14.5691
18	-15.8452	-9.0107	-14.5691	-22.4405	-10.2608	-17.5604
19	-22.4405	-10.2608	-17.5604	-29.8796	-10.2608	-17.5604
20	-29.8796	-10.2608	-17.5604	-14.9235	-4.3966	-10.7221
21	-14.9235	-4.3966	-10.7221	0.0355	-0.0026	-0.0015
22	0.0355	-0.0026	-0.0015	0.0331	-0.0026	-0.0015
23	0.0331	-0.0026	-0.0015	0.0307	-0.0026	-0.0015
24	0.0307	-0.0026	-0.0015	0.0283	-0.0026	-0.0015
25	0.0283	-0.0026	-0.0015	0.0258	-0.0026	-0.0015
26	0.0258	-0.0026	-0.0015	0.0234	-0.0026	-0.0015
27	0.0234	-0.0026	-0.0015	2.3906	-0.2418	-4.9292
28	2.3906	-0.2418	-4.9292	5.8098	-0.7023	-6.0320
29	5.8098	-0.7023	-6.0320	8.9905	-1.2404	-7.2805
30	8.9905	-1.2404	-7.2805	11.7566	-1.8567	-8.6771
31	11.7566	-1.8567	-8.6771	9.9923	-1.8574	-8.6771
32	9.9923	-1.8574	-8.6771	11.5029	-2.5519	-10.2239
33	11.5029	-2.5519	-10.2239	12.1687	-3.3245	-11.9230
34	12.1687	-3.3245	-11.9230	11.8183	-4.1728	-13.7766
35	11.8183	-4.1728	-13.7766	7.1067	-5.4008	-13.2602
36	7.1067	-5.4008	-13.2602	1.1008	-6.6504	-16.2514
37	1.1008	-6.6504	-16.2514	-6.0301	-7.9005	-19.2427
38	-6.0301	-7.9005	-19.2427	-14.2859	-9.1506	-22.2339
39	-14.2859	-9.1506	-22.2339	-23.6667	-10.4007	-25.2252
40	-23.6667	-10.4007	-25.2252	-20.4673	-4.5665	-15.1493
41	-20.4673	-4.5665	-15.1493	4.1161	-0.3006	0.1810
42	4.1161	-0.3006	0.1810	3.8982	-0.3007	0.1810
43	3.8982	-0.3007	0.1810	3.6803	-0.3007	0.1810
44	3.6803	-0.3007	0.1810	3.4623	-0.3007	0.1810
45	3.4623	-0.3007	0.1810	3.2444	-0.3004	0.1810
46	3.2444	-0.3004	0.1810	3.0267	-0.3003	0.1810
47	3.0267	-0.3003	0.1810	2.8089	-0.3002	0.1810
48	2.8089	-0.3002	0.1810	2.5914	-0.3004	0.1810
49	2.5914	-0.3004	0.1810	2.3737	-0.3004	0.1810
50	2.3737	-0.3004	0.1810	2.1561	-0.3001	0.1810
51	2.1561	-0.3001	0.1810	3.7862	-0.4617	-8.2090
52	3.7862	-0.4617	-8.2090	7.1559	-1.0749	-9.7930
53	7.1559	-1.0749	-9.7930	6.3766	-1.0748	-9.7930
54	6.3766	-1.0748	-9.7930	8.8523	-1.7838	-11.5755
55	8.8523	-1.7838	-11.5755	10.6794	-2.5928	-13.5630
56	10.6794	-2.5928	-13.5630	11.6497	-3.5035	-15.7626
57	11.6497	-3.5035	-15.7626	9.1099	-3.5036	-15.7626
58	9.1099	-3.5036	-15.7626	8.2695	-4.5187	-18.1819
59	8.2695	-4.5187	-18.1819	6.0554	-5.6377	-20.8287
60	6.0554	-5.6377	-20.8287	1.9676	-5.6381	-20.8287

ENVOL. MAX. TORSORES TREN TREN SIN CARGA, EC-1 en via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-2.3345	7.4031	21.7202	3.0329	7.4032	21.7202
2	3.0329	7.4032	21.7202	7.8377	6.1531	18.7290
3	7.8377	6.1531	18.7290	12.0802	4.9030	15.7377
4	12.0802	4.9030	15.7377	15.6348	4.9033	15.7377
5	15.6348	4.9033	15.7377	18.4081	3.6530	12.7465
6	18.4081	3.6530	12.7465	20.6185	2.4039	9.7552
7	20.6185	2.4039	9.7552	22.2676	1.1549	6.7640
8	22.2676	1.1549	6.7640	23.1048	1.1526	6.7640
9	23.1048	1.1526	6.7640	23.2837	-0.0970	3.7727
10	23.2837	-0.0970	3.7727	22.9015	-1.3451	0.7815
11	22.9015	-1.3451	0.7815	21.9254	-1.3452	0.7815
12	21.9254	-1.3452	0.7815	-0.0798	0.0221	-0.1114
13	-0.0798	0.0221	-0.1114	-0.0638	0.0221	-0.1114
14	-0.0638	0.0221	-0.1114	-0.0478	0.0221	-0.1114
15	-0.0478	0.0221	-0.1114	-0.0318	0.0221	-0.1114
16	-0.0318	0.0221	-0.1114	-0.0158	0.0221	-0.1114
17	-0.0158	0.0221	-0.1114	0.0003	0.0221	-0.1114
18	0.0003	0.0221	-0.1114	0.0163	0.0221	-0.1114
19	0.0163	0.0221	-0.1114	0.0323	0.0221	-0.1114
20	0.0323	0.0221	-0.1114	-36.1214	0.4377	4.1377
21	-36.1214	0.4377	4.1377	-29.7769	11.5572	25.7317
22	-29.7769	11.5572	25.7317	-19.2976	10.3071	22.7405
23	-19.2976	10.3071	22.7405	-9.9433	9.0569	19.7492
24	-9.9433	9.0569	19.7492	-1.7142	7.8066	16.7580
25	-1.7142	7.8066	16.7580	5.3897	6.5565	13.7667
26	5.3897	6.5565	13.7667	11.3690	5.3064	10.7754
27	11.3690	5.3064	10.7754	16.2223	4.0569	7.7842
28	16.2223	4.0569	7.7842	19.9516	2.8063	4.7930
29	19.9516	2.8063	4.7930	22.5539	1.5552	1.8017
30	22.5539	1.5552	1.8017	0.0137	-0.0026	-0.0015
31	0.0137	-0.0026	-0.0015	0.0113	-0.0026	-0.0015
32	0.0113	-0.0026	-0.0015	0.0089	-0.0026	-0.0015
33	0.0089	-0.0026	-0.0015	0.0064	-0.0026	-0.0015
34	0.0064	-0.0026	-0.0015	0.0040	-0.0026	-0.0015
35	0.0040	-0.0026	-0.0015	0.0016	-0.0026	-0.0015
36	0.0016	-0.0026	-0.0015	-0.0008	-0.0026	-0.0015
37	-0.0008	-0.0026	-0.0015	-0.0033	-0.0026	-0.0015
38	-0.0033	-0.0026	-0.0015	-0.0057	-0.0026	-0.0015

39	-0.0057	-0.0026	-0.0015	-0.0081	-0.0026	-0.0015
40	-0.0081	-0.0026	-0.0015	-0.0105	-0.0010	-0.0011
41	-0.0105	-0.0010	-0.0011	-30.5035	10.6325	18.1669
42	-30.5035	10.6325	18.1669	-22.7950	10.6322	18.1669
43	-22.7950	10.6322	18.1669	-15.9303	9.3822	15.1756
44	-15.9303	9.3822	15.1756	-9.6278	8.1323	12.1843
45	-9.6278	8.1323	12.1843	-3.8882	6.8828	9.1931
46	-3.8882	6.8828	9.1931	1.1021	6.8835	9.1931
47	1.1021	6.8835	9.1931	5.3740	5.6337	6.2018
48	5.3740	5.6337	6.2018	9.0833	4.3836	3.2105
49	9.0833	4.3836	3.2105	12.2304	3.1329	0.2193
50	12.2304	3.1329	0.2193	14.5019	3.1335	0.2193
51	14.5019	3.1335	0.2193	1.9385	-0.3000	0.1810
52	1.9385	-0.3000	0.1810	1.7211	-0.2998	0.1810
53	1.7211	-0.2998	0.1810	1.5036	-0.2998	0.1810
54	1.5036	-0.2998	0.1810	1.2862	-0.2998	0.1810
55	1.2862	-0.2998	0.1810	1.0689	-0.2998	0.1810
56	1.0689	-0.2998	0.1810	0.8518	-0.2997	0.1810
57	0.8518	-0.2997	0.1810	0.6346	-0.2997	0.1810
58	0.6346	-0.2997	0.1810	0.4174	-0.2996	0.1810
59	0.4174	-0.2996	0.1810	0.2001	-0.2996	0.1810
60	0.2001	-0.2996	0.1810	-0.0171	-0.2996	0.1810

ENVOL. MIN. TORSORES TREN TREN SIN CARGA, EC-1 en via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-0.2721	0.0221	-0.1114	-0.2560	0.0221	-0.1114
2	-0.2560	0.0221	-0.1114	0.6287	-0.0629	-0.3705
3	0.6287	-0.0629	-0.3705	2.4230	-0.2545	-0.7851
4	2.4230	-0.2545	-0.7851	2.2386	-0.2545	-0.7851
5	2.2386	-0.2545	-0.7851	4.4997	-0.5514	-1.3631
6	4.4997	-0.5514	-1.3631	7.1449	-0.9519	-2.1120
7	7.1449	-0.9519	-2.1120	9.9619	-1.4536	-3.0388
8	9.9619	-1.4536	-3.0388	8.9079	-1.4535	-3.0387
9	8.9079	-1.4535	-3.0387	11.2582	-2.0546	-4.1501
10	11.2582	-2.0546	-4.1501	13.3172	-2.7496	-5.4522
11	13.3172	-2.7496	-5.4522	11.3237	-2.7494	-5.4522
12	11.3237	-2.7494	-5.4522	12.3484	-3.5356	-6.9508
13	12.3484	-3.5356	-6.9508	12.6904	-4.4096	-8.6512
14	12.6904	-4.4096	-8.6512	12.2158	-5.3638	-10.5583
15	12.2158	-5.3638	-10.5583	8.3269	-5.3642	-10.5583
16	8.3269	-5.3642	-10.5583	6.1772	-6.3920	-12.6764
17	6.1772	-6.3920	-12.6764	2.9623	-7.4887	-15.0096
18	2.9623	-7.4887	-15.0096	-1.3755	-8.6483	-17.5613
19	-1.3755	-8.6483	-17.5613	-7.6451	-8.6480	-17.5614
20	-7.6451	-8.6480	-17.5614	-14.9235	-4.3966	-10.7221
21	-14.9235	-4.3966	-10.7221	-14.6054	1.0515	-1.2526
22	-14.6054	1.0515	-1.2526	-12.7986	0.9887	-1.5263
23	-12.7986	0.9887	-1.5263	-10.4573	0.8722	-1.9327
24	-10.4573	0.8722	-1.9327	-7.6551	0.6956	-2.4740
25	-7.6551	0.6956	-2.4740	-4.4935	0.4541	-3.1524
26	-4.4935	0.4541	-3.1524	-1.0969	0.1427	-3.9701
27	-1.0969	0.1427	-3.9701	2.3906	-0.2418	-4.9292
28	2.3906	-0.2418	-4.9292	5.8098	-0.7023	-6.0320
29	5.8098	-0.7023	-6.0320	8.9905	-1.2404	-7.2805
30	8.9905	-1.2404	-7.2805	11.7566	-1.8567	-8.6771
31	11.7566	-1.8567	-8.6771	9.9923	-1.8574	-8.6771
32	9.9923	-1.8574	-8.6771	11.5029	-2.5519	-10.2239
33	11.5029	-2.5519	-10.2239	12.1687	-3.3245	-11.9230
34	12.1687	-3.3245	-11.9230	11.8183	-4.1728	-13.7766
35	11.8183	-4.1728	-13.7766	10.2938	-5.0948	-15.7870
36	10.2938	-5.0948	-15.7870	7.4501	-6.0858	-17.9563
37	7.4501	-6.0858	-17.9563	3.1639	-7.1420	-20.2867
38	3.1639	-7.1420	-20.2867	-2.6669	-8.2588	-22.7804
39	-2.6669	-8.2588	-22.7804	-10.1153	-9.4288	-25.4395
40	-10.1153	-9.4288	-25.4395	-20.4673	-4.5665	-15.1493
41	-20.4673	-4.5665	-15.1493	-20.3750	1.4971	-2.2140
42	-20.3750	1.4971	-2.2140	-19.2897	1.4971	-2.2140
43	-19.2897	1.4971	-2.2140	-17.3328	1.4283	-2.5572
44	-17.3328	1.4283	-2.5572	-14.7677	1.3002	-3.0648
45	-14.7677	1.3002	-3.0648	-11.6474	1.1050	-3.7404
46	-11.6474	1.1050	-3.7404	-10.8464	1.1048	-3.7405
47	-10.8464	1.1048	-3.7405	-7.4440	0.8367	-4.5880
48	-7.4440	0.8367	-4.5880	-3.7261	0.4901	-5.6120
49	-3.7261	0.4901	-5.6120	0.1786	0.0586	-6.8172
50	0.1786	0.0586	-6.8172	0.2210	0.0584	-6.8172
51	0.2210	0.0584	-6.8172	3.7862	-0.4617	-8.2090
52	3.7862	-0.4617	-8.2090	7.1559	-1.0749	-9.7930
53	7.1559	-1.0749	-9.7930	6.3766	-1.0748	-9.7930
54	6.3766	-1.0748	-9.7930	8.8523	-1.7838	-11.5755
55	8.8523	-1.7838	-11.5755	10.6794	-2.5928	-13.5630
56	10.6794	-2.5928	-13.5630	11.6497	-3.5035	-15.7626
57	11.6497	-3.5035	-15.7626	9.1099	-3.5036	-15.7626
58	9.1099	-3.5036	-15.7626	8.2695	-4.5187	-18.1819
59	8.2695	-4.5187	-18.1819	6.0554	-5.6377	-20.8287
60	6.0554	-5.6377	-20.8287	1.9676	-5.6381	-20.8287

ENVOL. MAX. FLECTORES TREN TREN IPF-75 TIPO A en via 2

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	12.1529	47.3489	-77.6458	61.6544	69.8542	-116.5347
2	61.6544	69.8542	-116.5347	100.4917	62.4674	-104.9650
3	100.4917	62.4674	-104.9650	140.5300	32.4656	-53.9651
4	140.5300	32.4656	-53.9651	169.0154	55.2260	-93.9184
5	169.0154	55.2260	-93.9184	190.3003	25.2218	-42.9184
6	190.3003	25.2218	-42.9184	208.5775	25.2257	-42.9184
7	208.5775	25.2257	-42.9184	220.0644	18.1651	-32.3643
8	220.0644	18.1651	-32.3643	224.2385	-11.8371	18.6357
9	224.2385	-11.8371	18.6357	230.1747	-18.6507	28.7285
10	230.1747	-18.6507	28.7285	220.7455	4.7994	-12.6077
11	220.7455	4.7994	-12.6077	209.9725	-25.1963	38.3923
12	209.9725	-25.1963	38.3923	196.5857	-31.4407	47.6582
13	196.5857	-31.4407	47.6582	175.3260	-7.3169	5.5582
14	175.3260	-7.3169	5.5582	150.5196	-37.3275	56.5583
15	150.5196	-37.3275	56.5583	123.4521	-37.3347	56.5583
16	123.4521	-37.3347	56.5583	92.9747	-47.8332	73.3876
17	92.9747	-47.8332	73.3876	58.2958	-47.8310	73.3876
18	58.2958	-47.8310	73.3876	28.8330	2.2176	1.4029
19	28.8330	2.2176	1.4029	30.4405	2.2175	1.4029
20	30.4405	2.2175	1.4029	32.4133	-2.8130	-2.4595
21	32.4133	-2.8130	-2.4595	25.3267	-7.8437	-6.3218
22	25.3267	-7.8437	-6.3218	48.8211	52.2003	-80.0959
23	48.8211	52.2003	-80.0959	87.8318	48.1427	-71.3725
24	87.8318	48.1427	-71.3725	124.6003	43.6748	-62.8041
25	124.6003	43.6748	-62.8041	157.7393	38.8646	-54.3926
26	157.7393	38.8646	-54.3926	186.0208	33.7528	-46.1383
27	186.0208	33.7528	-46.1383	208.4355	28.4235	-38.0412
28	208.4355	28.4235	-38.0412	224.2335	22.9429	-30.1012
29	224.2335	22.9429	-30.1012	232.8970	17.3643	-22.3183
30	232.8970	17.3643	-22.3183	234.3919	-12.6368	28.6817
31	234.3919	-12.6368	28.6817	231.8280	-18.2486	36.3073
32	231.8280	-18.2486	36.3073	221.8614	-23.8375	43.7758
33	221.8614	-23.8375	43.7758	204.7577	-29.3196	51.0872
34	204.7577	-29.3196	51.0872	181.0565	-34.6318	58.2416
35	181.0565	-34.6318	58.2416	151.4968	-39.7374	65.2388
36	151.4968	-39.7374	65.2388	117.0721	-44.5499	72.0789

37	117.0721	-44.5499	72.0789	79.0251	-49.0163	78.7622
38	79.0251	-49.0163	78.7622	38.7392	-53.0727	85.2906
39	38.7392	-53.0727	85.2906	24.0763	7.5064	-1.5415
40	24.0763	7.5064	-1.5415	31.0639	2.6803	-0.0189
41	31.0639	2.6803	-0.0189	29.3644	-2.1462	1.5037
42	29.3644	-2.1462	1.5037	35.1722	51.1007	-72.7953
43	35.1722	51.1007	-72.7953	68.3178	46.4516	-61.2010
44	68.3178	46.4516	-61.2010	102.0005	46.4555	-61.2010
45	102.0005	46.4555	-61.2010	130.2806	41.3382	-49.8745
46	130.2806	41.3382	-49.8745	155.6895	35.7746	-38.8501
47	155.6895	35.7746	-38.8501	179.3756	5.7722	12.1500
48	179.3756	5.7722	12.1500	198.4558	29.8111	-28.1595
49	198.4558	29.8111	-28.1595	209.5381	23.4720	-17.8347
50	209.5381	23.4720	-17.8347	219.0669	-6.5247	33.1653
51	219.0669	-6.5247	33.1653	225.9984	16.8462	-7.9067
52	225.9984	16.8462	-7.9067	217.4422	9.9419	1.5919
53	217.4422	9.9419	1.5919	211.9117	-20.0461	52.5921
54	211.9117	-20.0461	52.5921	197.6239	-27.1945	61.6302
55	197.6239	-27.1945	61.6302	177.9084	-27.1840	61.6302
56	177.9084	-27.1840	61.6302	155.2053	-57.1797	112.6302
57	155.2053	-57.1797	112.6302	123.6517	-34.5302	70.1758
58	123.6517	-34.5302	70.1758	82.1196	-64.5267	121.1758
59	82.1196	-64.5267	121.1758	40.0077	-72.0152	129.1990
60	40.0077	-72.0152	129.1990	0.3934	9.7057	-4.1627

ENVOL. MIN. FLECTORES TREN TREN IPF-75 TIPO A en via 2

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-0.1326	2.2199	1.4029	-6.6986	-10.6279	-10.6681
2	-6.6986	-10.6279	-10.6681	-14.4037	-10.6285	-10.6681
3	-14.4037	-10.6285	-10.6681	-22.1101	-10.6301	-10.6681
4	-22.1101	-10.6301	-10.6681	-29.8169	-10.6288	-10.6681
5	-29.8169	-10.6288	-10.6681	-37.5218	-10.6257	-10.6681
6	-37.5218	-10.6257	-10.6681	-45.2250	-10.6285	-10.6681
7	-45.2250	-10.6285	-10.6681	-52.9328	-10.6291	-10.6681
8	-52.9328	-10.6291	-10.6681	-60.6386	-10.6278	-10.6681
9	-60.6386	-10.6278	-10.6681	-68.3466	-10.6323	-10.6681
10	-68.3466	-10.6323	-10.6681	-76.0537	-10.6318	-10.6681
11	-76.0537	-10.6318	-10.6681	-83.7601	-10.6305	-10.6681
12	-83.7601	-10.6305	-10.6681	-91.4667	-10.6320	-10.6681
13	-91.4667	-10.6320	-10.6681	-99.1743	-10.6274	-10.6681
14	-99.1743	-10.6274	-10.6681	-106.8757	-10.6213	-10.6681
15	-106.8757	-10.6213	-10.6681	-114.5766	-10.6164	-10.6681
16	-114.5766	-10.6164	-10.6681	-122.2729	-10.6157	-10.6681
17	-122.2729	-10.6157	-10.6681	-129.9714	-10.6157	-10.6681
18	-129.9714	-10.6157	-10.6681	-137.6671	-10.6151	-10.6681
19	-137.6671	-10.6151	-10.6681	-145.3652	-10.6171	-10.6681
20	-145.3652	-10.6171	-10.6681	-149.3604	23.9107	-49.8546
21	-149.3604	23.9107	-49.8546	-104.2771	7.5031	-1.5415
22	-104.2771	7.5031	-1.5415	-97.1494	7.5032	-1.5415
23	-97.1494	7.5032	-1.5415	-90.0212	7.5037	-1.5415
24	-90.0212	7.5037	-1.5415	-82.8910	7.5027	-1.5415
25	-82.8910	7.5027	-1.5415	-75.7641	7.5031	-1.5415
26	-75.7641	7.5031	-1.5415	-68.6332	7.5055	-1.5415
27	-68.6332	7.5055	-1.5415	-61.5035	7.5057	-1.5415
28	-61.5035	7.5057	-1.5415	-54.3716	7.5059	-1.5415
29	-54.3716	7.5059	-1.5415	-47.2397	7.5052	-1.5415
30	-47.2397	7.5052	-1.5415	-41.7257	-7.8388	-6.3218
31	-41.7257	-7.8388	-6.3218	-49.1748	-7.8398	-6.3218
32	-49.1748	-7.8398	-6.3218	-56.6234	-7.8421	-6.3218
33	-56.6234	-7.8421	-6.3218	-64.0735	-7.8405	-6.3218
34	-64.0735	-7.8405	-6.3218	-71.5214	-7.8385	-6.3218
35	-71.5214	-7.8385	-6.3218	-78.9724	-7.8386	-6.3218
36	-78.9724	-7.8386	-6.3218	-86.4197	-7.8393	-6.3218
37	-86.4197	-7.8393	-6.3218	-93.8704	-7.8420	-6.3218
38	-93.8704	-7.8420	-6.3218	-101.3198	-7.8428	-6.3218
39	-101.3198	-7.8428	-6.3218	-108.7696	-7.8426	-6.3218
40	-108.7696	-7.8426	-6.3218	-150.1351	-24.6289	49.0929
41	-150.1351	-24.6289	49.0929	-137.8414	10.0522	-3.9013
42	-137.8414	10.0522	-3.9013	-130.5538	10.0534	-3.9013
43	-130.5538	10.0534	-3.9013	-123.2656	10.0510	-3.9013
44	-123.2656	10.0510	-3.9013	-115.9795	10.0454	-3.9013
45	-115.9795	10.0454	-3.9013	-108.6960	10.0442	-3.9013
46	-108.6960	10.0442	-3.9013	-101.4149	10.0483	-3.9013
47	-101.4149	10.0483	-3.9013	-94.1329	10.0471	-3.9013
48	-94.1329	10.0471	-3.9013	-86.8537	10.0400	-3.9013
49	-86.8537	10.0400	-3.9013	-79.5791	10.0399	-3.9013
50	-79.5791	10.0399	-3.9013	-72.3007	10.0368	-3.9013
51	-72.3007	10.0368	-3.9013	-65.0260	10.0296	-3.9013
52	-65.0260	10.0296	-3.9013	-57.7534	10.0264	-3.9013
53	-57.7534	10.0264	-3.9013	-50.4845	10.0266	-3.9013
54	-50.4845	10.0266	-3.9013	-43.2149	10.0244	-3.9013
55	-43.2149	10.0244	-3.9013	-35.9498	10.0166	-3.9013
56	-35.9498	10.0166	-3.9013	-28.6882	10.0149	-3.9013
57	-28.6882	10.0149	-3.9013	-21.4240	10.0167	-3.9013
58	-21.4240	10.0167	-3.9013	-14.1604	10.0184	-3.9013
59	-14.1604	10.0184	-3.9013	-6.8959	10.0203	-3.9013
60	-6.8959	10.0203	-3.9013	-12.9132	-49.6100	85.6801

ENVOL. MAX. CORTANTES TREN TREN IPF-75 TIPO A en via 2

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	11.0090	69.8548	-116.5347	61.6544	69.8542	-116.5347
2	61.6544	69.8542	-116.5347	100.4917	62.4674	-104.9650
3	100.4917	62.4674	-104.9650	128.9785	55.2222	-93.9182
4	128.9785	55.2222	-93.9182	169.0154	55.2260	-93.9184
5	169.0154	55.2260	-93.9184	182.4746	48.1642	-83.3642
6	182.4746	48.1642	-83.3642	186.7530	41.3456	-73.2713
7	186.7530	41.3456	-73.2713	182.5680	34.7950	-63.6077
8	182.5680	34.7950	-63.6077	207.7976	34.7941	-63.6077
9	207.7976	34.7941	-63.6077	191.4684	28.5604	-54.3418
10	191.4684	28.5604	-54.3418	168.7423	22.6906	-45.4417
11	168.7423	22.6906	-45.4417	185.1873	22.6885	-45.4417
12	185.1873	22.6885	-45.4417	153.2061	17.2104	-36.8758
13	153.2061	17.2104	-36.8758	117.5020	12.1817	-28.6125
14	117.5020	12.1817	-28.6125	79.4003	7.6270	-20.6170
15	79.4003	7.6270	-20.6170	84.9272	7.6227	-20.6170
16	84.9272	7.6227	-20.6170	42.9995	3.5870	-14.4177
17	42.9995	3.5870	-14.4177	27.2253	2.2177	1.4029
18	27.2253	2.2177	1.4029	28.8330	2.2176	1.4029
19	28.8330	2.2176	1.4029	30.4405	2.2175	1.4029
20	30.4405	2.2175	1.4029	-71.1644	38.4219	-69.6665
21	-71.1644	38.4219	-69.6665	-20.1408	78.1434	-122.3725
22	-20.1408	78.1434	-122.3725	23.6142	73.6783	-113.8040
23	23.6142	73.6783	-113.8040	64.4031	68.8604	-105.3925
24	64.4031	68.8604	-105.3925	100.8748	63.7650	-97.1382
25	100.8748	63.7650	-97.1382	131.9124	58.4316	-89.0412
26	131.9124	58.4316	-89.0412	156.6348	52.9490	-81.1012
27	156.6348	52.9490	-81.1012	174.4077	47.3734	-73.3184
28	174.4077	47.3734	-73.3184	184.8336	41.7474	-65.6926
29	184.8336	41.7474	-65.6926	187.7682	36.1744	-58.2242
30	187.7682	36.1744	-58.2242	183.2986	30.6833	-50.9128
31	183.2986	30.6833	-50.9128	212.4552	30.6902	-50.9127
32	212.4552	30.6902	-50.9127	195.8636	25.3730	-43.7584
33	195.8636	25.3730	-43.7584	172.9905	20.2648	-36.7611
34	172.9905	20.2648	-36.7611	144.7137	15.4536	-29.9211
35	144.7137	15.4536	-29.9211	112.1528	10.9847	-23.2378

36	112.1528	10.9847	-23.2378	2.6821	7.5065	-1.5415
37	2.6821	7.5065	-1.5415	9.8132	7.5065	-1.5415
38	9.8132	7.5065	-1.5415	16.9450	7.5066	-1.5415
39	16.9450	7.5066	-1.5415	24.0763	7.5064	-1.5415
40	24.0763	7.5064	-1.5415	-59.5028	38.3662	-64.7118
41	-59.5028	38.3662	-64.7118	-22.2839	76.4494	-112.2010
42	-22.2839	76.4494	-112.2010	33.1436	76.4459	-112.2010
43	33.1436	76.4459	-112.2010	60.6093	71.3275	-100.8745
44	60.6093	71.3275	-100.8745	85.8332	65.7516	-89.8502
45	85.8332	65.7516	-89.8502	107.3867	59.7895	-79.1597
46	107.3867	59.7895	-79.1597	150.7367	59.8007	-79.1597
47	150.7367	59.8007	-79.1597	162.7433	53.4766	-68.8348
48	162.7433	53.4766	-68.8348	168.3739	46.8355	-58.9070
49	168.3739	46.8355	-58.9070	166.6030	39.9229	-49.4081
50	166.6030	39.9229	-49.4081	195.5498	39.9242	-49.4081
51	195.5498	39.9242	-49.4081	180.2950	32.7766	-40.3699
52	180.2950	32.7766	-40.3699	155.8352	25.4552	-31.8242
53	155.8352	25.4552	-31.8242	174.2932	25.4653	-31.8242
54	174.2932	25.4653	-31.8242	134.5677	17.9783	-23.8010
55	134.5677	17.9783	-23.8010	84.4175	10.3928	-16.3190
56	84.4175	10.3928	-16.3190	-28.6882	10.0149	-3.9013
57	-28.6882	10.0149	-3.9013	-21.4240	10.0167	-3.9013
58	-21.4240	10.0167	-3.9013	-14.1604	10.0184	-3.9013
59	-14.1604	10.0184	-3.9013	-6.8959	10.0203	-3.9013
60	-6.8959	10.0203	-3.9013	0.3688	10.0206	-3.9013

ENVOL. MIN. CORTANTES TREN TREN IPF-75 TIPO A en via 2

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	1.0080	-10.6287	-10.6681	-6.6986	-10.6279	-10.6681
2	-6.6986	-10.6279	-10.6681	-14.4037	-10.6285	-10.6681
3	-14.4037	-10.6285	-10.6681	-22.1101	-10.6301	-10.6681
4	-22.1101	-10.6301	-10.6681	-29.8169	-10.6288	-10.6681
5	-29.8169	-10.6288	-10.6681	101.2927	-12.6525	24.3542
6	101.2927	-12.6525	24.3542	148.3775	-20.1408	36.4651
7	148.3775	-20.1408	36.4651	185.1772	-27.5317	48.0348
8	185.1772	-27.5317	48.0348	165.2171	-27.5350	48.0347
9	165.2171	-27.5350	48.0347	186.9438	-34.7752	59.0816
10	186.9438	-34.7752	59.0816	199.5807	-41.8365	69.6355
11	199.5807	-41.8365	69.6355	169.2505	-41.8316	69.6356
12	169.2505	-41.8316	69.6356	168.5996	-48.6519	79.7286
13	168.5996	-48.6519	79.7286	160.6729	-55.2118	89.3922
14	160.6729	-55.2118	89.3922	146.4916	-61.4537	98.6582
15	146.4916	-61.4537	98.6582	101.9301	-61.4584	98.6582
16	101.9301	-61.4584	98.6582	78.3846	-67.3396	107.5582
17	78.3846	-67.3396	107.5582	51.3037	-72.8085	116.1241
18	51.3037	-72.8085	116.1241	22.1174	-77.8324	124.3875
19	22.1174	-77.8324	124.3875	-34.3127	-77.8324	124.3876
20	-34.3127	-77.8324	124.3876	-61.2573	-39.3531	66.8772
21	-61.2573	-39.3531	66.8772	25.3267	-7.8437	-6.3218
22	25.3267	-7.8437	-6.3218	17.8750	-7.8435	-6.3218
23	17.8750	-7.8435	-6.3218	10.4241	-7.8430	-6.3218
24	10.4241	-7.8430	-6.3218	2.9731	-7.8429	-6.3218
25	2.9731	-7.8429	-6.3218	119.2983	-11.8554	30.6276
26	119.2983	-11.8554	30.6276	150.5839	-16.3293	39.1959
27	150.5839	-16.3293	39.1959	177.5742	-21.1444	47.6073
28	177.5742	-21.1444	47.6073	199.1469	-26.2518	55.8616
29	199.1469	-26.2518	55.8616	214.4445	-31.5662	63.9588
30	214.4445	-31.5662	63.9588	222.8261	-37.0538	71.8988
31	222.8261	-37.0538	71.8988	187.6189	-37.0616	71.8988
32	187.6189	-37.0616	71.8988	183.3767	-42.6452	79.6817
33	183.3767	-42.6452	79.6817	171.6530	-48.2530	87.3072

34	171.6530	-48.2530	87.3072	152.5845	-53.8236	94.7758
35	152.5845	-53.8236	94.7758	126.5760	-59.3176	102.0872
36	126.5760	-59.3176	102.0872	94.2520	-64.6332	109.2415
37	94.2520	-64.6332	109.2415	56.4991	-69.7346	116.2388
38	56.4991	-69.7346	116.2388	14.4294	-74.5476	123.0790
39	14.4294	-74.5476	123.0790	-30.6033	-79.0141	129.7623
40	-30.6033	-79.0141	129.7623	-70.7232	-39.3186	68.7949
41	-70.7232	-39.3186	68.7949	29.3644	-2.1462	1.5037
42	29.3644	-2.1462	1.5037	27.8086	-2.1468	1.5037
43	27.8086	-2.1468	1.5037	26.2522	-2.1463	1.5037
44	26.2522	-2.1463	1.5037	53.3510	-4.7679	18.9874
45	53.3510	-4.7679	18.9874	93.8143	-8.8955	29.2048
46	93.8143	-8.8955	29.2048	87.3691	-8.8926	29.2048
47	87.3691	-8.8926	29.2048	123.5516	-13.5387	40.7992
48	123.5516	-13.5387	40.7992	157.2014	-18.6553	52.1256
49	157.2014	-18.6553	52.1256	187.0004	-24.2201	63.1500
50	187.0004	-24.2201	63.1500	169.4449	-24.2231	63.1499
51	169.4449	-24.2231	63.1499	189.7965	-30.1912	73.8405
52	189.7965	-30.1912	73.8405	203.6293	-36.4988	84.1656
53	203.6293	-36.4988	84.1656	177.1684	-36.4935	84.1656
54	177.1684	-36.4935	84.1656	178.6729	-43.1295	94.0934
55	178.6729	-43.1295	94.0934	171.5946	-50.0358	103.5921
56	171.5946	-50.0358	103.5921	155.2053	-57.1797	112.6302
57	155.2053	-57.1797	112.6302	113.7425	-57.1826	112.6302
58	113.7425	-57.1826	112.6302	82.1196	-64.5267	121.1758
59	82.1196	-64.5267	121.1758	40.0077	-72.0152	129.1990
60	40.0077	-72.0152	129.1990	-12.2047	-72.0155	129.1990

ENVOL. MAX. TORSORES TREN TREN IPF-75 TIPO A en via 2

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	4.6426	-0.4362	1.8546	4.3263	-0.4363	1.8546
2	4.3263	-0.4363	1.8546	29.9297	-2.9689	6.1706
3	29.9297	-2.9689	6.1706	67.6371	-7.1925	14.3363
4	67.6371	-7.1925	14.3363	62.4216	-7.1930	14.3363
5	62.4216	-7.1930	14.3363	101.2927	-12.6525	24.3542
6	101.2927	-12.6525	24.3542	148.3775	-20.1408	36.4651
7	148.3775	-20.1408	36.4651	185.1772	-27.5317	48.0348
8	185.1772	-27.5317	48.0348	165.2171	-27.5350	48.0347
9	165.2171	-27.5350	48.0347	186.9438	-34.7752	59.0816
10	186.9438	-34.7752	59.0816	199.5807	-41.8365	69.6355
11	199.5807	-41.8365	69.6355	169.2505	-41.8316	69.6356
12	169.2505	-41.8316	69.6356	168.5996	-48.6519	79.7286
13	168.5996	-48.6519	79.7286	160.6729	-55.2118	89.3922
14	160.6729	-55.2118	89.3922	146.4916	-61.4537	98.6582
15	146.4916	-61.4537	98.6582	101.9301	-61.4584	98.6582
16	101.9301	-61.4584	98.6582	78.3846	-67.3396	107.5582
17	78.3846	-67.3396	107.5582	51.3037	-72.8085	116.1241
18	51.3037	-72.8085	116.1241	22.1174	-77.8324	124.3875
19	22.1174	-77.8324	124.3875	-34.3127	-77.8324	124.3876
20	-34.3127	-77.8324	124.3876	-61.2573	-39.3531	66.8772
21	-61.2573	-39.3531	66.8772	-22.4076	1.5547	3.9179
22	-22.4076	1.5547	3.9179	12.7647	-1.0687	7.8377
23	12.7647	-1.0687	7.8377	49.0074	-4.1919	14.2714
24	49.0074	-4.1919	14.2714	85.0014	-7.7980	21.9041
25	85.0014	-7.7980	21.9041	119.2983	-11.8554	30.6276
26	119.2983	-11.8554	30.6276	150.5839	-16.3293	39.1959
27	150.5839	-16.3293	39.1959	177.5742	-21.1444	47.6073
28	177.5742	-21.1444	47.6073	199.1469	-26.2518	55.8616
29	199.1469	-26.2518	55.8616	214.4445	-31.5662	63.9588
30	214.4445	-31.5662	63.9588	222.8261	-37.0538	71.8988
31	222.8261	-37.0538	71.8988	187.6189	-37.0616	71.8988
32	187.6189	-37.0616	71.8988	183.3767	-42.6452	79.6817

33	183.3767	-42.6452	79.6817	171.6530	-48.2530	87.3072
34	171.6530	-48.2530	87.3072	152.5845	-53.8236	94.7758
35	152.5845	-53.8236	94.7758	126.5760	-59.3176	102.0872
36	126.5760	-59.3176	102.0872	94.2520	-64.6332	109.2415
37	94.2520	-64.6332	109.2415	56.4991	-69.7346	116.2388
38	56.4991	-69.7346	116.2388	14.4294	-74.5476	123.0790
39	14.4294	-74.5476	123.0790	-30.6033	-79.0141	129.7623
40	-30.6033	-79.0141	129.7623	-70.7232	-39.3186	68.7949
41	-70.7232	-39.3186	68.7949	-26.6607	1.9040	4.9060
42	-26.6607	1.9040	4.9060	-25.2800	1.9042	4.9060
43	-25.2800	1.9042	4.9060	13.2773	-1.1601	10.3141
44	13.2773	-1.1601	10.3141	53.3510	-4.7679	18.9874
45	53.3510	-4.7679	18.9874	93.8143	-8.8955	29.2048
46	93.8143	-8.8955	29.2048	87.3691	-8.8926	29.2048
47	87.3691	-8.8926	29.2048	123.5516	-13.5387	40.7992
48	123.5516	-13.5387	40.7992	157.2014	-18.6553	52.1256
49	157.2014	-18.6553	52.1256	187.0004	-24.2201	63.1500
50	187.0004	-24.2201	63.1500	169.4449	-24.2231	63.1499
51	169.4449	-24.2231	63.1499	189.7965	-30.1912	73.8405
52	189.7965	-30.1912	73.8405	203.6293	-36.4988	84.1656
53	203.6293	-36.4988	84.1656	177.1684	-36.4935	84.1656
54	177.1684	-36.4935	84.1656	178.6729	-43.1295	94.0934
55	178.6729	-43.1295	94.0934	171.5946	-50.0358	103.5921
56	171.5946	-50.0358	103.5921	155.2053	-57.1797	112.6302
57	155.2053	-57.1797	112.6302	113.7425	-57.1826	112.6302
58	113.7425	-57.1826	112.6302	82.1196	-64.5267	121.1758
59	82.1196	-64.5267	121.1758	40.0077	-72.0152	129.1990
60	40.0077	-72.0152	129.1990	-12.2047	-72.0155	129.1990

ENVOL. MIN. TORSORES TREN TREN IPF-75 TIPO A en via 2

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	11.0090	69.8548	-116.5347	61.6544	69.8542	-116.5347
2	61.6544	69.8542	-116.5347	100.4917	62.4674	-104.9650
3	100.4917	62.4674	-104.9650	128.9785	55.2222	-93.9182
4	128.9785	55.2222	-93.9182	169.0154	55.2260	-93.9184
5	169.0154	55.2260	-93.9184	182.4746	48.1642	-83.3642
6	182.4746	48.1642	-83.3642	186.7530	41.3456	-73.2713
7	186.7530	41.3456	-73.2713	182.5680	34.7950	-63.6077
8	182.5680	34.7950	-63.6077	207.7976	34.7941	-63.6077
9	207.7976	34.7941	-63.6077	191.4684	28.5604	-54.3418
10	191.4684	28.5604	-54.3418	168.7423	22.6906	-45.4417
11	168.7423	22.6906	-45.4417	185.1873	22.6885	-45.4417
12	185.1873	22.6885	-45.4417	153.2061	17.2104	-36.8758
13	153.2061	17.2104	-36.8758	117.5020	12.1817	-28.6125
14	117.5020	12.1817	-28.6125	79.4003	7.6270	-20.6170
15	79.4003	7.6270	-20.6170	84.9272	7.6227	-20.6170
16	84.9272	7.6227	-20.6170	42.9995	3.5870	-14.4177
17	42.9995	3.5870	-14.4177	-127.0056	-10.3784	-10.7619
18	-127.0056	-10.3784	-10.7619	-134.5266	-10.3738	-10.7619
19	-134.5266	-10.3738	-10.7619	-142.0504	-10.3756	-10.7619
20	-142.0504	-10.3756	-10.7619	-71.1644	38.4219	-69.6665
21	-71.1644	38.4219	-69.6665	-20.1408	78.1434	-122.3725
22	-20.1408	78.1434	-122.3725	23.6142	73.6783	-113.8040
23	23.6142	73.6783	-113.8040	64.4031	68.8604	-105.3925
24	64.4031	68.8604	-105.3925	100.8748	63.7650	-97.1382
25	100.8748	63.7650	-97.1382	131.9124	58.4316	-89.0412
26	131.9124	58.4316	-89.0412	156.6348	52.9490	-81.1012
27	156.6348	52.9490	-81.1012	174.4077	47.3734	-73.3184
28	174.4077	47.3734	-73.3184	184.8336	41.7474	-65.6926
29	184.8336	41.7474	-65.6926	187.7682	36.1744	-58.2242
30	187.7682	36.1744	-58.2242	183.2986	30.6833	-50.9128
31	183.2986	30.6833	-50.9128	212.4552	30.6902	-50.9127

32	212.4552	30.6902	-50.9127	195.8636	25.3730	-43.7584
33	195.8636	25.3730	-43.7584	172.9905	20.2648	-36.7611
34	172.9905	20.2648	-36.7611	144.7137	15.4536	-29.9211
35	144.7137	15.4536	-29.9211	112.1528	10.9847	-23.2378
36	112.1528	10.9847	-23.2378	76.5766	6.9254	-16.7094
37	76.5766	6.9254	-16.7094	39.5576	3.3350	-11.5397
38	39.5576	3.3350	-11.5397	2.5837	0.2418	-7.6204
39	2.5837	0.2418	-7.6204	-105.5114	-7.6030	-6.4755
40	-105.5114	-7.6030	-6.4755	-59.5028	38.3662	-64.7118
41	-59.5028	38.3662	-64.7118	-22.2839	76.4494	-112.2010
42	-22.2839	76.4494	-112.2010	33.1436	76.4459	-112.2010
43	33.1436	76.4459	-112.2010	60.6093	71.3275	-100.8745
44	60.6093	71.3275	-100.8745	85.8332	65.7516	-89.8502
45	85.8332	65.7516	-89.8502	107.3867	59.7895	-79.1597
46	107.3867	59.7895	-79.1597	150.7367	59.8007	-79.1597
47	150.7367	59.8007	-79.1597	162.7433	53.4766	-68.8348
48	162.7433	53.4766	-68.8348	168.3739	46.8355	-58.9070
49	168.3739	46.8355	-58.9070	166.6030	39.9229	-49.4081
50	166.6030	39.9229	-49.4081	195.5498	39.9242	-49.4081
51	195.5498	39.9242	-49.4081	180.2950	32.7766	-40.3699
52	180.2950	32.7766	-40.3699	155.8352	25.4552	-31.8242
53	155.8352	25.4552	-31.8242	174.2932	25.4653	-31.8242
54	174.2932	25.4653	-31.8242	134.5677	17.9783	-23.8010
55	134.5677	17.9783	-23.8010	84.4175	10.3928	-16.3190
56	84.4175	10.3928	-16.3190	49.8191	5.6706	-9.5137
57	49.8191	5.6706	-9.5137	53.9309	5.6689	-9.5137
58	53.9309	5.6689	-9.5137	-13.6804	9.7079	-4.1627
59	-13.6804	9.7079	-4.1627	-6.6431	9.7070	-4.1627
60	-6.6431	9.7070	-4.1627	0.3934	9.7057	-4.1627

ENVOL. MAX. FLECTORES TREN TREN SW/0, EC-1 en via 2

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	14.2416	76.4432	-129.3897	69.7812	76.7177	-128.5226
2	69.7812	76.7177	-128.5226	119.4164	63.4221	-107.1494
3	119.4164	63.4221	-107.1494	163.0680	50.1198	-85.7764
4	163.0680	50.1198	-85.7764	199.4031	50.1183	-85.7764
5	199.4031	50.1183	-85.7764	227.4266	36.8090	-64.4035
6	227.4266	36.8090	-64.4035	249.4492	23.5116	-43.0304
7	249.4492	23.5116	-43.0304	265.5098	10.2276	-21.6574
8	265.5098	10.2276	-21.6574	272.9247	10.2342	-21.6574
9	272.9247	10.2342	-21.6574	273.3555	-3.0706	-0.2843
10	273.3555	-3.0706	-0.2843	267.7841	-16.3713	21.0888
11	267.7841	-16.3713	21.0888	255.9264	-16.3738	21.0888
12	255.9264	-16.3738	21.0888	234.7358	-29.6801	42.4618
13	234.7358	-29.6801	42.4618	207.5627	-42.9800	63.8349
14	207.5627	-42.9800	63.8349	174.4040	-56.3083	85.2079
15	174.4040	-56.3083	85.2079	133.5753	-56.3189	85.2079
16	133.5753	-56.3189	85.2079	84.7716	-69.6017	106.5811
17	84.7716	-69.6017	106.5811	29.9900	-82.9057	127.9542
18	29.9900	-82.9057	127.9542	-0.4523	-0.1839	0.7766
19	-0.4523	-0.1839	0.7766	-0.5856	-0.1838	0.7766
20	-0.5856	-0.1838	0.7766	-0.6820	-0.0702	0.3866
21	-0.6820	-0.0702	0.3866	-0.6038	0.0435	-0.0035
22	-0.6038	0.0435	-0.0035	1.9359	80.5757	-142.3101
23	1.9359	80.5757	-142.3101	69.8369	67.2785	-120.9370
24	69.8369	67.2785	-120.9370	128.5886	57.1341	-104.8128
25	128.5886	57.1341	-104.8128	175.5444	43.8304	-83.4397
26	175.5444	43.8304	-83.4397	210.5342	30.5259	-62.0666
27	210.5342	30.5259	-62.0666	233.5500	17.2206	-40.6935
28	233.5500	17.2206	-40.6935	252.6364	20.8550	-10.6393
29	252.6364	20.8550	-10.6393	273.9404	10.5076	6.3644
30	273.9404	10.5076	6.3644	283.9160	-2.7922	27.7376

31	283.9160	-2.7922	27.7376	283.2079	-0.1178	23.5811
32	283.2079	-0.1178	23.5811	271.1256	-13.4215	44.9541
33	271.1256	-13.4215	44.9541	248.4164	-24.2179	61.8911
34	248.4164	-24.2179	61.8911	214.7724	-37.5211	83.2642
35	214.7724	-37.5211	83.2642	169.9132	-48.4229	99.9558
36	169.9132	-48.4229	99.9558	114.5826	-61.7220	121.3289
37	114.5826	-61.7220	121.3289	47.9283	-72.6782	137.3094
38	47.9283	-72.6782	137.3094	24.1927	10.8128	-1.5006
39	24.1927	10.8128	-1.5006	34.4649	10.8123	-1.5006
40	34.4649	10.8123	-1.5006	44.5625	3.8655	0.3409
41	44.5625	3.8655	0.3409	42.1553	-3.0811	2.1824
42	42.1553	-3.0811	2.1824	39.9213	-3.0815	2.1824
43	39.9213	-3.0815	2.1824	37.6875	-3.0808	2.1824
44	37.6875	-3.0808	2.1824	35.4546	-3.0794	2.1824
45	35.4546	-3.0794	2.1824	38.9671	55.4233	-47.6498
46	38.9671	55.4233	-47.6498	80.6123	59.0561	-51.8639
47	80.6123	59.0561	-51.8639	115.7881	45.7633	-30.4907
48	115.7881	45.7633	-30.4907	146.0237	35.1987	-12.4296
49	146.0237	35.1987	-12.4296	171.2195	21.9002	8.9436
50	171.2195	21.9002	8.9436	187.0976	21.9088	8.9436
51	187.0976	21.9088	8.9436	196.6684	8.6171	30.3167
52	196.6684	8.6171	30.3167	201.0177	-2.8122	49.1852
53	201.0177	-2.8122	49.1852	198.9700	-2.8000	49.1852
54	198.9700	-2.8000	49.1852	188.2938	-16.0919	70.5584
55	188.2938	-16.0919	70.5584	171.6248	-29.3868	91.9315
56	171.6248	-29.3868	91.9315	148.9865	-42.6802	113.3047
57	148.9865	-42.6802	113.3047	118.0336	-42.6940	113.3047
58	118.0336	-42.6940	113.3047	79.7586	-56.0003	134.6777
59	79.7586	-56.0003	134.6777	35.5024	-69.2991	156.0508
60	35.5024	-69.2991	156.0508	0.4893	14.2360	-5.1823

ENVOL. MIN. FLECTORES TREN TREN SW/0, EC-1 en via 2

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	1.5275	-13.5859	-16.1697	-8.3228	-13.5858	-16.1697
2	-8.3228	-13.5858	-16.1697	-18.1723	-13.5872	-16.1697
3	-18.1723	-13.5872	-16.1697	-28.0237	-13.5863	-16.1697
4	-28.0237	-13.5863	-16.1697	-37.8717	-13.5826	-16.1697
5	-37.8717	-13.5826	-16.1697	-47.7216	-13.5806	-16.1696
6	-47.7216	-13.5806	-16.1696	-57.5687	-13.5824	-16.1697
7	-57.5687	-13.5824	-16.1697	-67.4194	-13.5893	-16.1697
8	-67.4194	-13.5893	-16.1697	-77.2743	-13.5898	-16.1697
9	-77.2743	-13.5898	-16.1697	-87.1203	-13.5946	-16.1697
10	-87.1203	-13.5946	-16.1697	-96.9748	-13.5957	-16.1697
11	-96.9748	-13.5957	-16.1697	-106.8249	-13.5851	-16.1697
12	-106.8249	-13.5851	-16.1697	-116.6728	-13.5885	-16.1697
13	-116.6728	-13.5885	-16.1697	-126.5271	-13.5875	-16.1697
14	-126.5271	-13.5875	-16.1697	-136.3717	-13.5772	-16.1697
15	-136.3717	-13.5772	-16.1697	-146.2168	-55.6585	41.7521
16	-146.2168	-55.6585	41.7521	-186.8978	-65.7162	56.6129
17	-186.8978	-65.7162	56.6129	-234.5419	-65.7162	56.6129
18	-234.5419	-65.7162	56.6129	-286.5895	-75.9812	72.4852
19	-286.5895	-75.9812	72.4852	-343.6247	-86.4827	89.9295
20	-343.6247	-86.4827	89.9295	-395.0247	0.3140	-13.1575
21	-395.0247	0.3140	-13.1575	-291.7669	86.9314	-119.1678
22	-291.7669	86.9314	-119.1678	-211.8194	76.0129	-104.3149
23	-211.8194	76.0129	-104.3149	-141.3637	64.9864	-90.2343
24	-141.3637	64.9864	-90.2343	-119.6093	10.8074	-1.5006
25	-119.6093	10.8074	-1.5006	-109.3419	10.8072	-1.5006
26	-109.3419	10.8072	-1.5006	-99.0738	10.8146	-1.5006
27	-99.0738	10.8146	-1.5006	-88.7996	10.8137	-1.5006
28	-88.7996	10.8137	-1.5006	-78.5294	10.8077	-1.5006
29	-78.5294	10.8077	-1.5006	-68.2586	10.8103	-1.5006
30	-68.2586	10.8103	-1.5006	-57.9871	10.8127	-1.5006
31	-57.9871	10.8127	-1.5006	-47.7124	10.8123	-1.5006
32	-47.7124	10.8123	-1.5006	-37.4414	10.8123	-1.5006
33	-37.4414	10.8123	-1.5006	-27.1677	10.8139	-1.5006
34	-27.1677	10.8139	-1.5006	-16.8955	10.8144	-1.5006
35	-16.8955	10.8144	-1.5006	-48.1319	-45.1695	60.5102
36	-48.1319	-45.1695	60.5102	-99.9142	-55.5626	76.6023
37	-99.9142	-55.5626	76.6023	-159.3433	-65.7326	92.7939
38	-159.3433	-65.7326	92.7939	-228.8746	-75.8777	108.9182
39	-228.8746	-75.8777	108.9182	-300.9576	-75.8773	108.9182
40	-300.9576	-75.8773	108.9182	-360.9937	21.6669	-18.6152
41	-360.9937	21.6669	-18.6152	-265.5107	105.9152	-124.7754
42	-265.5107	105.9152	-124.7754	-192.0553	14.7789	-4.4090
43	-192.0553	14.7789	-4.4090	-181.3406	14.7733	-4.4090
44	-181.3406	14.7733	-4.4090	-170.6317	14.7712	-4.4090
45	-170.6317	14.7712	-4.4090	-159.9231	14.7781	-4.4090
46	-159.9231	14.7781	-4.4090	-149.2117	14.7652	-4.4090
47	-149.2117	14.7652	-4.4090	-138.5181	14.7570	-4.4090
48	-138.5181	14.7570	-4.4090	-127.8103	14.7545	-4.4090
49	-127.8103	14.7545	-4.4090	-117.1199	14.7499	-4.4090
50	-117.1199	14.7499	-4.4090	-106.4144	14.7503	-4.4090
51	-106.4144	14.7503	-4.4090	-95.7234	14.7465	-4.4090
52	-95.7234	14.7465	-4.4090	-85.0296	14.7423	-4.4090
53	-85.0296	14.7423	-4.4090	-74.3441	14.7356	-4.4090
54	-74.3441	14.7356	-4.4090	-63.6577	14.7344	-4.4090
55	-63.6577	14.7344	-4.4090	-52.9777	14.7326	-4.4090
56	-52.9777	14.7326	-4.4090	-42.2998	14.7320	-4.4090
57	-42.2998	14.7320	-4.4090	-31.6207	14.7268	-4.4090
58	-31.6207	14.7268	-4.4090	-20.9437	14.7251	-4.4090
59	-20.9437	14.7251	-4.4090	-10.2636	14.7287	-4.4090
60	-10.2636	14.7287	-4.4090	-16.5923	-68.3234	154.2604

ENVOL. MAX. CORTANTES TREN TREN SW/0, EC-1 en via 2

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	14.1605	76.7161	-128.5226	69.7812	76.7177	-128.5226
2	69.7812	76.7177	-128.5226	119.4164	63.4221	-107.1494
3	119.4164	63.4221	-107.1494	119.8618	50.8361	-98.2684
4	119.8618	50.8361	-98.2684	156.7154	50.8336	-98.2684
5	156.7154	50.8336	-98.2684	151.6961	39.6508	-84.4642
6	151.6961	39.6508	-84.4642	134.8304	29.4281	-72.2922
7	134.8304	29.4281	-72.2922	113.3000	21.0872	-66.5932
8	113.3000	21.0872	-66.5932	123.0549	20.2043	-61.6367
9	123.0549	20.2043	-61.6367	99.0991	14.3838	-55.4496
10	99.0991	14.3838	-55.4496	65.6350	8.4584	-45.8647
11	65.6350	8.4584	-45.8647	29.7115	3.2795	-37.7597
12	29.7115	3.2795	-37.7597	0.3473	-0.1838	0.7766
13	0.3473	-0.1838	0.7766	0.2141	-0.1838	0.7766
14	0.2141	-0.1838	0.7766	0.0809	-0.1838	0.7766
15	0.0809	-0.1838	0.7766	-0.0524	-0.1838	0.7766
16	-0.0524	-0.1838	0.7766	-0.1857	-0.1838	0.7766
17	-0.1857	-0.1838	0.7766	-0.3190	-0.1839	0.7766
18	-0.3190	-0.1839	0.7766	-0.4523	-0.1839	0.7766
19	-0.4523	-0.1839	0.7766	-0.5856	-0.1838	0.7766
20	-0.5856	-0.1838	0.7766	-187.1857	48.3811	-103.2375
21	-187.1857	48.3811	-103.2375	-260.3572	119.5956	-168.7769
22	-260.3572	119.5956	-168.7769	-176.7857	108.7903	-151.8399
23	-176.7857	108.7903	-151.8399	-104.5513	97.8735	-135.1483
24	-104.5513	97.8735	-135.1483	-44.0187	86.9277	-119.1679
25	-44.0187	86.9277	-119.1679	4.8141	76.0097	-104.3148
26	4.8141	76.0097	-104.3148	43.8451	64.9846	-90.2343
27	43.8451	64.9846	-90.2343	73.0692	53.8687	-76.0289
28	73.0692	53.8687	-76.0289	92.4550	42.7081	-61.6655

29	92.4550	42.7081	-61.6655	102.0557	31.5201	-47.1185
30	102.0557	31.5201	-47.1185	101.9818	20.3389	-32.3698
31	101.9818	20.3389	-32.3698	121.3024	20.3419	-32.3698
32	121.3024	20.3419	-32.3698	-37.4414	10.8123	-1.5006
33	-37.4414	10.8123	-1.5006	-27.1677	10.8139	-1.5006
34	-27.1677	10.8139	-1.5006	-16.8955	10.8144	-1.5006
35	-16.8955	10.8144	-1.5006	-6.6230	10.8139	-1.5006
36	-6.6230	10.8139	-1.5006	3.6491	10.8120	-1.5006
37	3.6491	10.8120	-1.5006	13.9204	10.8120	-1.5006
38	13.9204	10.8120	-1.5006	24.1927	10.8128	-1.5006
39	24.1927	10.8128	-1.5006	34.4649	10.8123	-1.5006
40	34.4649	10.8123	-1.5006	-360.9937	21.6669	-18.6152
41	-360.9937	21.6669	-18.6152	-265.5107	105.9152	-124.7754
42	-265.5107	105.9152	-124.7754	-188.7222	105.9142	-124.7753
43	-188.7222	105.9142	-124.7753	-120.9151	92.6142	-103.4023
44	-120.9151	92.6142	-103.4023	-59.0877	79.3191	-82.0290
45	-59.0877	79.3191	-82.0290	-3.2449	66.0183	-60.6558
46	-3.2449	66.0183	-60.6558	44.6148	66.0296	-60.6559
47	44.6148	66.0296	-60.6559	84.8393	52.7354	-39.2826
48	84.8393	52.7354	-39.2826	119.0773	39.4324	-17.9095
49	119.0773	39.4324	-17.9095	147.3336	26.1328	3.4636
50	147.3336	26.1328	3.4636	166.2791	26.1232	3.4636
51	166.2791	26.1232	3.4636	-95.7234	14.7465	-4.4090
52	-95.7234	14.7465	-4.4090	-85.0296	14.7423	-4.4090
53	-85.0296	14.7423	-4.4090	-74.3441	14.7356	-4.4090
54	-74.3441	14.7356	-4.4090	-63.6577	14.7344	-4.4090
55	-63.6577	14.7344	-4.4090	-52.9777	14.7326	-4.4090
56	-52.9777	14.7326	-4.4090	-42.2998	14.7320	-4.4090
57	-42.2998	14.7320	-4.4090	-31.6207	14.7268	-4.4090
58	-31.6207	14.7268	-4.4090	-20.9437	14.7251	-4.4090
59	-20.9437	14.7251	-4.4090	-10.2636	14.7287	-4.4090
60	-10.2636	14.7287	-4.4090	0.4163	14.7292	-4.4090

ENVOL. MIN. CORTANTES TREN TREN SW/0, EC-1 en via 2

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	1.5275	-13.5859	-16.1697	-8.3228	-13.5858	-16.1697
2	-8.3228	-13.5858	-16.1697	-18.1723	-13.5872	-16.1697
3	-18.1723	-13.5872	-16.1697	-28.0237	-13.5863	-16.1697
4	-28.0237	-13.5863	-16.1697	-37.8717	-13.5826	-16.1697
5	-37.8717	-13.5826	-16.1697	-47.7216	-13.5806	-16.1696
6	-47.7216	-13.5806	-16.1696	52.7114	-16.9390	-13.5791
7	52.7114	-16.9390	-13.5791	55.4826	-26.4428	-0.4036
8	55.4826	-26.4428	-0.4036	57.1300	-36.0506	13.2210
9	57.1300	-36.0506	13.2210	30.9929	-36.0508	13.2209
10	30.9929	-36.0508	13.2209	24.1110	-45.7803	27.2796
11	24.1110	-45.7803	27.2796	15.1959	-55.6607	41.7522
12	15.1959	-55.6607	41.7522	3.6798	-59.0630	45.9264
13	3.6798	-59.0630	45.9264	-43.9648	-65.7153	56.6129
14	-43.9648	-65.7153	56.6129	-66.2437	-75.9805	72.4853
15	-66.2437	-75.9805	72.4853	-92.8242	-86.4850	89.9296
16	-92.8242	-86.4850	89.9296	-155.5251	-86.4835	89.9296
17	-155.5251	-86.4835	89.9296	-195.0330	-97.2484	108.8334
18	-195.0330	-97.2484	108.8334	-240.7610	-108.3053	129.0690
19	-240.7610	-108.3053	129.0690	-293.5626	-119.6666	150.5182
20	-293.5626	-119.6666	150.5182	-168.8138	-49.3519	84.5999
21	-168.8138	-49.3519	84.5999	-0.6038	0.0435	-0.0035
22	-0.6038	0.0435	-0.0035	-0.5625	0.0435	-0.0035
23	-0.5625	0.0435	-0.0035	-0.5211	0.0436	-0.0035
24	-0.5211	0.0436	-0.0035	-0.4797	0.0435	-0.0035
25	-0.4797	0.0435	-0.0035	-0.4383	0.0435	-0.0035
26	-0.4383	0.0435	-0.0035	19.0896	-2.0865	24.8632
27	19.0896	-2.0865	24.8632	61.0686	-7.2639	33.5742

28	61.0686	-7.2639	33.5742	99.6527	-13.1777	43.3853
29	99.6527	-13.1777	43.3853	121.4702	-23.8232	28.7650
30	121.4702	-23.8232	28.7650	127.0107	-34.5767	44.5544
31	127.0107	-34.5767	44.5544	123.5107	-45.1764	60.5102
32	123.5107	-45.1764	60.5102	111.2260	-55.5646	76.6023
33	111.2260	-55.5646	76.6023	90.4409	-65.7408	92.7941
34	90.4409	-65.7408	92.7941	59.4566	-75.8889	108.9182
35	59.4566	-75.8889	108.9182	-12.6203	-75.8842	108.9181
36	-12.6203	-75.8842	108.9181	-84.7126	-75.8782	108.9181
37	-84.7126	-75.8782	108.9181	13.9226	-82.5982	155.9762
38	13.9226	-82.5982	155.9762	-52.7430	-93.2126	173.1926
39	-52.7430	-93.2126	173.1926	-133.0387	-104.0215	190.1296
40	-133.0387	-104.0215	190.1296	-216.4675	-50.3207	101.6586
41	-216.4675	-50.3207	101.6586	42.1553	-3.0811	2.1824
42	42.1553	-3.0811	2.1824	39.9213	-3.0815	2.1824
43	39.9213	-3.0815	2.1824	37.6875	-3.0808	2.1824
44	37.6875	-3.0808	2.1824	35.4546	-3.0794	2.1824
45	35.4546	-3.0794	2.1824	33.2215	-3.0793	2.1824
46	33.2215	-3.0793	2.1824	30.9893	-3.0780	2.1824
47	30.9893	-3.0780	2.1824	28.7579	-3.0752	2.1824
48	28.7579	-3.0752	2.1824	26.5279	-3.0740	2.1824
49	26.5279	-3.0740	2.1824	57.1862	-7.7031	44.1356
50	57.1862	-7.7031	44.1356	51.6044	-7.7016	44.1355
51	51.6044	-7.7016	44.1355	85.2578	-13.8957	56.8005
52	85.2578	-13.8957	56.8005	114.7253	-20.9436	70.7151
53	114.7253	-20.9436	70.7151	99.5421	-20.9380	70.7153
54	99.5421	-20.9380	70.7153	117.3359	-28.8450	85.7975
55	117.3359	-28.8450	85.7975	126.7561	-37.6280	101.9624
56	126.7561	-37.6280	101.9624	125.9019	-47.2917	119.1214
57	125.9019	-47.2917	119.1214	91.6165	-47.2959	119.1214
58	91.6165	-47.2959	119.1214	70.9308	-57.8505	137.1826
59	70.9308	-57.8505	137.1826	35.5024	-69.2991	156.0508
60	35.5024	-69.2991	156.0508	-14.7432	-69.3006	156.0509

ENVOL. MAX. TORSORES TREN TREN SW/0, EC-1 en via 2

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	1.9458	-0.1838	0.7766	1.8125	-0.1837	0.7766
2	1.8125	-0.1837	0.7766	14.8565	-1.4904	3.3874
3	14.8565	-1.4904	3.3874	36.7094	-3.9147	7.7498
4	36.7094	-3.9147	7.7498	33.8703	-3.9155	7.7498
5	33.8703	-3.9155	7.7498	59.5833	-7.4467	13.7799
6	59.5833	-7.4467	13.7799	88.5947	-12.0635	21.3981
7	88.5947	-12.0635	21.3981	118.6800	-17.7433	30.5289
8	118.6800	-17.7433	30.5289	105.8171	-17.7429	30.5289
9	105.8171	-17.7429	30.5289	129.9811	-24.4509	41.1020
10	129.9811	-24.4509	41.1020	150.3796	-32.1591	53.0517
11	150.3796	-32.1591	53.0517	127.0583	-32.1600	53.0517
12	127.0583	-32.1600	53.0517	135.6064	-40.8204	66.3168
13	135.6064	-40.8204	66.3168	136.2852	-50.3673	80.8408
14	136.2852	-50.3673	80.8408	127.7261	-60.7851	96.5721
15	127.7261	-60.7851	96.5721	83.6486	-60.7921	96.5721
16	83.6486	-60.7921	96.5721	56.5684	-71.9821	113.4635
17	56.5684	-71.9821	113.4635	17.6763	-83.8795	131.4729
18	17.6763	-83.8795	131.4729	-33.5949	-96.4215	150.5624
19	-33.5949	-96.4215	150.5624	-103.5004	-96.4236	150.5624
20	-103.5004	-96.4236	150.5624	-168.8138	-49.3519	84.5999
21	-168.8138	-49.3519	84.5999	-0.6038	0.0435	-0.0035
22	-0.6038	0.0435	-0.0035	-125.2337	9.6251	2.1920
23	-125.2337	9.6251	2.1920	-96.6763	7.9880	5.9721
24	-96.6763	7.9880	5.9721	-61.8910	5.5165	11.0296
25	-61.8910	5.5165	11.0296	-22.6306	2.1694	17.3368
26	-22.6306	2.1694	17.3368	19.0896	-2.0865	24.8632

27	19.0896	-2.0865	24.8632	61.0686	-7.2639	33.5742
28	61.0686	-7.2639	33.5742	99.6527	-13.1777	43.3853
29	99.6527	-13.1777	43.3853	132.9297	-19.7864	54.2403
30	132.9297	-19.7864	54.2403	159.2047	-27.0659	66.0981
31	159.2047	-27.0659	66.0981	133.4844	-27.0801	66.0981
32	133.4844	-27.0801	66.0981	143.5960	-35.0276	78.9167
33	143.5960	-35.0276	78.9167	90.4409	-65.7408	92.7941
34	90.4409	-65.7408	92.7941	59.4566	-75.8889	108.9182
35	59.4566	-75.8889	108.9182	105.4413	-62.2504	122.7242
36	105.4413	-62.2504	122.7242	66.6407	-72.2449	138.9725
37	66.6407	-72.2449	138.9725	13.9226	-82.5982	155.9762
38	13.9226	-82.5982	155.9762	-52.7430	-93.2126	173.1926
39	-52.7430	-93.2126	173.1926	-133.0387	-104.0215	190.1296
40	-133.0387	-104.0215	190.1296	-216.4675	-50.3207	101.6586
41	-216.4675	-50.3207	101.6586	42.1553	-3.0811	2.1824
42	42.1553	-3.0811	2.1824	39.9213	-3.0815	2.1824
43	39.9213	-3.0815	2.1824	37.6875	-3.0808	2.1824
44	37.6875	-3.0808	2.1824	-106.3719	9.1258	7.4764
45	-106.3719	9.1258	7.4764	-67.1068	6.0560	14.3990
46	-67.1068	6.0560	14.3990	-62.7190	6.0538	14.3990
47	-62.7190	6.0538	14.3990	-23.3301	2.2492	22.8619
48	-23.3301	2.2492	22.8619	17.1147	-2.3252	32.7977
49	17.1147	-2.3252	32.7977	57.1862	-7.7031	44.1356
50	57.1862	-7.7031	44.1356	51.6044	-7.7016	44.1355
51	51.6044	-7.7016	44.1355	85.2578	-13.8957	56.8005
52	85.2578	-13.8957	56.8005	114.7253	-20.9436	70.7151
53	114.7253	-20.9436	70.7151	99.5421	-20.9380	70.7153
54	99.5421	-20.9380	70.7153	117.3359	-28.8450	85.7975
55	117.3359	-28.8450	85.7975	126.7561	-37.6280	101.9624
56	126.7561	-37.6280	101.9624	125.9019	-47.2917	119.1214
57	125.9019	-47.2917	119.1214	91.6165	-47.2959	119.1214
58	91.6165	-47.2959	119.1214	70.9308	-57.8505	137.1826
59	70.9308	-57.8505	137.1826	35.5024	-69.2991	156.0508
60	35.5024	-69.2991	156.0508	-14.7432	-69.3006	156.0509

ENVOL. MIN. TORSORES TREN TREN SW/0, EC-1 en via 2

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	14.0551	64.6057	-148.7809	67.4669	75.9511	-131.2828
2	67.4669	75.9511	-131.2828	93.1110	55.8457	-128.4628
3	93.1110	55.8457	-128.4628	110.3528	45.9480	-110.2221
4	110.3528	45.9480	-110.2221	156.7154	50.8336	-98.2684
5	156.7154	50.8336	-98.2684	142.4856	36.8626	-93.8916
6	142.4856	36.8626	-93.8916	131.7922	28.5696	-79.3786
7	131.7922	28.5696	-79.3786	113.3000	21.0872	-66.5932
8	113.3000	21.0872	-66.5932	123.0549	20.2043	-61.6367
9	123.0549	20.2043	-61.6367	99.0991	14.3838	-55.4496
10	99.0991	14.3838	-55.4496	65.6350	8.4584	-45.8647
11	65.6350	8.4584	-45.8647	53.9888	1.8047	-38.5424
12	53.9888	1.8047	-38.5424	-7.2499	-1.1711	-31.0587
13	-7.2499	-1.1711	-31.0587	-8.0987	-1.1705	-31.0587
14	-8.0987	-1.1705	-31.0587	-47.5093	-4.9202	-25.6895
15	-47.5093	-4.9202	-25.6895	-84.9837	-7.9970	-21.5836
16	-84.9837	-7.9970	-21.5836	-90.7820	-7.9958	-21.5836
17	-90.7820	-7.9958	-21.5836	-127.0916	-10.4457	-18.6758
18	-127.0916	-10.4457	-18.6758	-159.1951	-12.3080	-16.9044
19	-159.1951	-12.3080	-16.9044	-185.5704	-13.5707	-16.1697
20	-185.5704	-13.5707	-16.1697	-187.1857	48.3811	-103.2375
21	-187.1857	48.3811	-103.2375	-84.1187	97.0347	-168.9322
22	-84.1187	97.0347	-168.9322	-176.7857	108.7903	-151.8399
23	-176.7857	108.7903	-151.8399	-104.5513	97.8735	-135.1483
24	-104.5513	97.8735	-135.1483	-44.0187	86.9277	-119.1679
25	-44.0187	86.9277	-119.1679	4.8141	76.0097	-104.3148

26	4.8141	76.0097	-104.3148	43.8451	64.9846	-90.2343
27	43.8451	64.9846	-90.2343	73.0692	53.8687	-76.0289
28	73.0692	53.8687	-76.0289	92.4550	42.7081	-61.6655
29	92.4550	42.7081	-61.6655	102.0557	31.5201	-47.1185
30	102.0557	31.5201	-47.1185	101.9818	20.3389	-32.3698
31	101.9818	20.3389	-32.3698	121.3024	20.3419	-32.3698
32	121.3024	20.3419	-32.3698	101.0922	9.1833	-17.4081
33	101.0922	9.1833	-17.4081	-23.6726	9.5208	-2.2520
34	-23.6726	9.5208	-2.2520	-14.6281	9.5231	-2.2520
35	-14.6281	9.5231	-2.2520	-5.5800	9.5234	-2.2520
36	-5.5800	9.5234	-2.2520	3.4660	9.5216	-2.2520
37	3.4660	9.5216	-2.2520	12.5117	9.5223	-2.2520
38	12.5117	9.5223	-2.2520	21.5584	9.5227	-2.2520
39	21.5584	9.5227	-2.2520	30.6046	9.5224	-2.2520
40	30.6046	9.5224	-2.2520	-360.9937	21.6669	-18.6152
41	-360.9937	21.6669	-18.6152	-265.5107	105.9152	-124.7754
42	-265.5107	105.9152	-124.7754	-188.7222	105.9142	-124.7753
43	-188.7222	105.9142	-124.7753	-120.9151	92.6142	-103.4023
44	-120.9151	92.6142	-103.4023	-59.0877	79.3191	-82.0290
45	-59.0877	79.3191	-82.0290	-3.2449	66.0183	-60.6558
46	-3.2449	66.0183	-60.6558	44.6148	66.0296	-60.6559
47	44.6148	66.0296	-60.6559	84.8393	52.7354	-39.2826
48	84.8393	52.7354	-39.2826	119.0773	39.4324	-17.9095
49	119.0773	39.4324	-17.9095	-113.1173	14.2677	-5.1823
50	-113.1173	14.2677	-5.1823	-102.7695	14.2633	-5.1823
51	-102.7695	14.2633	-5.1823	-92.4362	14.2546	-5.1823
52	-92.4362	14.2546	-5.1823	-82.1008	14.2584	-5.1823
53	-82.1008	14.2584	-5.1823	-71.7685	14.2496	-5.1823
54	-71.7685	14.2496	-5.1823	-61.4435	14.2352	-5.1823
55	-61.4435	14.2352	-5.1823	-51.1192	14.2335	-5.1823
56	-51.1192	14.2335	-5.1823	-40.7989	14.2385	-5.1823
57	-40.7989	14.2385	-5.1823	-30.4778	14.2425	-5.1823
58	-30.4778	14.2425	-5.1823	-20.1546	14.2416	-5.1823
59	-20.1546	14.2416	-5.1823	-9.8328	14.2378	-5.1823
60	-9.8328	14.2378	-5.1823	0.4893	14.2360	-5.1823

ENVOL. MAX. FLECTORES TREN TREN SW/2, EC-1 en via 2

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	18.6402	70.8307	-171.8280	79.6309	86.4025	-154.3308
2	79.6309	86.4025	-154.3308	135.5252	71.4034	-128.8307
3	135.5252	71.4034	-128.8307	184.6670	56.4040	-103.3307
4	184.6670	56.4040	-103.3307	225.5573	56.4082	-103.3309
5	225.5573	56.4082	-103.3309	257.0742	41.4005	-77.8309
6	257.0742	41.4005	-77.8309	281.8332	26.3932	-52.3309
7	281.8332	26.3932	-52.3309	299.8524	11.3923	-26.8310
8	299.8524	11.3923	-26.8310	308.1265	11.3855	-26.8311
9	308.1265	11.3855	-26.8311	308.5257	-3.6100	-1.3312
10	308.5257	-3.6100	-1.3312	302.1653	-18.6036	24.1688
11	302.1653	-18.6036	24.1688	288.6790	-18.5927	24.1689
12	288.6790	-18.5927	24.1689	264.7101	-33.5810	49.6687
13	264.7101	-33.5810	49.6687	233.9747	-48.5807	75.1686
14	233.9747	-48.5807	75.1686	196.4860	-63.5931	100.6687
15	196.4860	-63.5931	100.6687	150.3664	-63.6171	100.6687
16	150.3664	-63.6171	100.6687	95.2293	-78.6264	126.1687
17	95.2293	-78.6264	126.1687	33.3514	-93.6271	151.6687
18	33.3514	-93.6271	151.6687	-0.5265	-0.2183	0.9273
19	-0.5265	-0.2183	0.9273	-0.6848	-0.2183	0.9273
20	-0.6848	-0.2183	0.9273	-0.7991	-0.0837	0.4618
21	-0.7991	-0.0837	0.4618	-0.7067	0.0510	-0.0036
22	-0.7067	0.0510	-0.0036	-0.6583	0.0510	-0.0036
23	-0.6583	0.0510	-0.0036	9.0296	97.0363	-154.1165
24	9.0296	97.0363	-154.1165	96.7175	82.0386	-128.6163

25	96.7175	82.0386	-128.6163	170.9033	67.0384	-103.1163
26	170.9033	67.0384	-103.1163	231.8865	53.3230	-76.3367
27	231.8865	53.3230	-76.3367	280.2915	38.3122	-50.8366
28	280.2915	38.3122	-50.8366	315.1948	23.3181	-25.3366
29	315.1948	23.3181	-25.3366	337.5662	9.7278	1.2105
30	337.5662	9.7278	1.2105	346.8158	-5.2538	26.7104
31	346.8158	-5.2538	26.7104	342.4188	-3.8612	27.5088
32	342.4188	-3.8612	27.5088	325.2688	-18.8599	53.0089
33	325.2688	-18.8599	53.0089	294.5978	-33.8751	78.5087
34	294.5978	-33.8751	78.5087	251.2708	-47.5862	104.5396
35	251.2708	-47.5862	104.5396	194.8293	-62.5915	130.0395
36	194.8293	-62.5915	130.0395	124.8694	-77.5826	155.5394
37	124.8694	-77.5826	155.5394	41.4292	-92.5693	181.0395
38	41.4292	-92.5693	181.0395	27.2416	12.1806	-1.4222
39	27.2416	12.1806	-1.4222	38.8139	12.1810	-1.4222
40	38.8139	12.1810	-1.4222	50.2010	4.3541	0.5229
41	50.2010	4.3541	0.5229	47.5004	-3.4716	2.4680
42	47.5004	-3.4716	2.4680	44.9837	-3.4720	2.4680
43	44.9837	-3.4720	2.4680	42.4660	-3.4720	2.4681
44	42.4660	-3.4720	2.4681	39.9497	-3.4704	2.4681
45	39.9497	-3.4704	2.4681	55.4072	68.8628	-66.9644
46	55.4072	68.8628	-66.9644	105.3436	68.8651	-66.9645
47	105.3436	68.8651	-66.9645	146.6518	53.8656	-41.4643
48	146.6518	53.8656	-41.4643	181.2173	38.8837	-15.9642
49	181.2173	38.8837	-15.9642	209.0378	23.8982	9.5359
50	209.0378	23.8982	9.5359	226.3623	23.8954	9.5359
51	226.3623	23.8954	9.5359	236.5596	8.8790	35.0359
52	236.5596	8.8790	35.0359	240.0042	-6.1109	60.5360
53	240.0042	-6.1109	60.5360	235.6020	-6.0874	60.5361
54	235.6020	-6.0874	60.5361	221.4386	-21.0695	86.0363
55	221.4386	-21.0695	86.0363	200.5509	-36.0606	111.5363
56	200.5509	-36.0606	111.5363	172.9014	-51.0589	137.0363
57	172.9014	-51.0589	137.0363	135.8871	-51.0534	137.0361
58	135.8871	-51.0534	137.0361	90.6198	-66.0569	162.5362
59	90.6198	-66.0569	162.5362	39.1042	-78.4095	187.8458
60	39.1042	-78.4095	187.8458	0.5030	16.8621	-5.3228

ENVOL. MIN. FLECTORES TREN TREN SW/2, EC-1 en via 2

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	2.3213	-0.2181	0.9273	2.1631	-0.2181	0.9273
2	2.1631	-0.2181	0.9273	2.0049	-0.2181	0.9273
3	2.0049	-0.2181	0.9273	-0.3679	-3.9144	-60.7472
4	-0.3679	-3.9144	-60.7472	-6.3081	-10.5676	-47.8694
5	-6.3081	-10.5676	-47.8694	-13.9687	-10.5678	-47.8695
6	-13.9687	-10.5678	-47.8695	-21.6302	-10.5686	-47.8695
7	-21.6302	-10.5686	-47.8695	-32.6071	-17.3591	-34.3607
8	-32.6071	-17.3591	-34.3607	-45.1922	-17.3565	-34.3607
9	-45.1922	-17.3565	-34.3607	-57.7741	-17.3533	-34.3609
10	-57.7741	-17.3533	-34.3609	-75.0024	-24.3509	-20.2738
11	-75.0024	-24.3509	-20.2738	-92.6595	-24.3564	-20.2738
12	-92.6595	-24.3564	-20.2738	-112.6133	-31.6335	-5.6617
13	-112.6133	-31.6335	-5.6617	-135.5449	-31.6315	-5.6617
14	-135.5449	-31.6315	-5.6617	-159.9655	-39.2601	9.4241
15	-159.9655	-39.2601	9.4241	-188.4247	-39.2585	9.4241
16	-188.4247	-39.2585	9.4241	-219.4020	-47.3144	24.9334
17	-219.4020	-47.3144	24.9334	-253.7025	-47.3101	24.9333
18	-253.7025	-47.3101	24.9333	-293.6067	-55.8573	40.8157
19	-293.6067	-55.8573	40.8157	-370.0987	-120.2279	139.1624
20	-370.0987	-120.2279	139.1624	-446.7348	5.9797	-26.1743
21	-446.7348	5.9797	-26.1743	-296.6616	129.9644	-186.1761
22	-296.6616	129.9644	-186.1761	-207.8033	62.8447	-117.7175
23	-207.8033	62.8447	-117.7175	-153.7654	52.5233	-101.8551
24	-153.7654	52.5233	-101.8551	-134.7483	12.1795	-1.4222
25	-134.7483	12.1795	-1.4222	-123.1801	12.1758	-1.4222
26	-123.1801	12.1758	-1.4222	-111.6143	12.1739	-1.4222
27	-111.6143	12.1739	-1.4222	-100.0453	12.1767	-1.4222
28	-100.0453	12.1767	-1.4222	-88.4752	12.1798	-1.4222
29	-88.4752	12.1798	-1.4222	-76.8994	12.1800	-1.4222
30	-76.8994	12.1800	-1.4222	-65.3307	12.1766	-1.4222
31	-65.3307	12.1766	-1.4222	-53.7608	12.1792	-1.4222
32	-53.7608	12.1792	-1.4222	-42.1844	12.1784	-1.4222
33	-42.1844	12.1784	-1.4222	-30.6160	12.1765	-1.4222
34	-30.6160	12.1765	-1.4222	-19.0430	12.1794	-1.4222
35	-19.0430	12.1794	-1.4222	-7.4724	12.1809	-1.4222
36	-7.4724	12.1809	-1.4222	-13.1915	-56.4231	82.5040
37	-13.1915	-56.4231	82.5040	-84.8240	-87.1572	137.2824
38	-84.8240	-87.1572	137.2824	-179.7322	-106.1242	171.4609
39	-179.7322	-106.1242	171.4609	-291.5402	-124.3382	204.6041
40	-291.5402	-124.3382	204.6041	-399.5160	-8.9525	40.5882
41	-399.5160	-8.9525	40.5882	-294.6628	103.5849	-122.9600
42	-294.6628	103.5849	-122.9600	-238.5307	18.3474	-4.7635
43	-238.5307	18.3474	-4.7635	-225.2300	18.3443	-4.7635
44	-225.2300	18.3443	-4.7635	-211.9295	18.3380	-4.7635
45	-211.9295	18.3380	-4.7635	-198.6358	18.3412	-4.7635
46	-198.6358	18.3412	-4.7635	-185.3372	18.3348	-4.7635
47	-185.3372	18.3348	-4.7635	-172.0550	18.3258	-4.7635
48	-172.0550	18.3258	-4.7635	-158.7674	18.3316	-4.7635
49	-158.7674	18.3316	-4.7635	-145.4799	18.3204	-4.7635
50	-145.4799	18.3204	-4.7635	-132.2041	18.3175	-4.7635
51	-132.2041	18.3175	-4.7635	-118.9160	18.3147	-4.7635
52	-118.9160	18.3147	-4.7635	-105.6479	18.3030	-4.7635
53	-105.6479	18.3030	-4.7635	-92.3735	18.2923	-4.7635
54	-92.3735	18.2923	-4.7635	-79.1096	18.2864	-4.7635
55	-79.1096	18.2864	-4.7635	-65.8441	18.2839	-4.7634
56	-65.8441	18.2839	-4.7634	-52.5907	18.2810	-4.7635
57	-52.5907	18.2810	-4.7635	-39.3299	18.2864	-4.7635
58	-39.3299	18.2864	-4.7635	-26.0715	18.2887	-4.7634
59	-26.0715	18.2887	-4.7634	-12.8843	18.1681	-3.0469
60	-12.8843	18.1681	-3.0469	-20.1728	-81.0641	188.0359

ENVOL. MAX. CORTANTES TREN TREN SW/2, EC-1 en via 2

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	16.9875	86.4029	-154.3308	79.6309	86.4025	-154.3308
2	79.6309	86.4025	-154.3308	135.5252	71.4034	-128.8307
3	135.5252	71.4034	-128.8307	184.6670	56.4040	-103.3307
4	184.6670	56.4040	-103.3307	225.5573	56.4082	-103.3309
5	225.5573	56.4082	-103.3309	257.0742	41.4005	-77.8309
6	257.0742	41.4005	-77.8309	281.8332	26.3932	-52.3309
7	281.8332	26.3932	-52.3309	299.8524	11.3923	-26.8310
8	299.8524	11.3923	-26.8310	308.1265	11.3855	-26.8311
9	308.1265	11.3855	-26.8311	24.3987	2.6831	-72.9247
10	24.3987	2.6831	-72.9247	0.7394	-0.2181	0.9273
11	0.7394	-0.2181	0.9273	0.5812	-0.2181	0.9273
12	0.5812	-0.2181	0.9273	0.4230	-0.2181	0.9273
13	0.4230	-0.2181	0.9273	0.2649	-0.2182	0.9273
14	0.2649	-0.2182	0.9273	0.1067	-0.2183	0.9273
15	0.1067	-0.2183	0.9273	-0.0516	-0.2183	0.9273
16	-0.0516	-0.2183	0.9273	-0.2099	-0.2183	0.9273
17	-0.2099	-0.2183	0.9273	-0.3682	-0.2183	0.9273
18	-0.3682	-0.2183	0.9273	-0.5265	-0.2183	0.9273
19	-0.5265	-0.2183	0.9273	-0.6848	-0.2183	0.9273
20	-0.6848	-0.2183	0.9273	-361.5413	42.1330	-97.4641
21	-361.5413	42.1330	-97.4641	-279.9077	133.8225	-198.6800
22	-279.9077	133.8225	-198.6800	-158.7754	118.8230	-173.1801

23	-158.7754	118.8230	-173.1801	-51.1447	103.8196	-147.6801
24	-51.1447	103.8196	-147.6801	42.9805	88.8176	-122.1799
25	42.9805	88.8176	-122.1799	5.8912	73.8798	-134.5389
26	5.8912	73.8798	-134.5389	31.0034	62.8403	-117.7176
27	31.0034	62.8403	-117.7176	45.8214	52.5205	-101.8551
28	45.8214	52.5205	-101.8551	52.4091	42.8727	-86.2743
29	52.4091	42.8727	-86.2743	51.5351	33.5767	-70.4958
30	51.5351	33.5767	-70.4958	83.4313	18.5766	-44.9958
31	83.4313	18.5766	-44.9958	101.0782	18.5753	-44.9958
32	101.0782	18.5753	-44.9958	-42.1844	12.1784	-1.4222
33	-42.1844	12.1784	-1.4222	-30.6160	12.1765	-1.4222
34	-30.6160	12.1765	-1.4222	-19.0430	12.1794	-1.4222
35	-19.0430	12.1794	-1.4222	-7.4724	12.1809	-1.4222
36	-7.4724	12.1809	-1.4222	4.1002	12.1811	-1.4222
37	4.1002	12.1811	-1.4222	15.6711	12.1795	-1.4222
38	15.6711	12.1795	-1.4222	27.2416	12.1806	-1.4222
39	27.2416	12.1806	-1.4222	38.8139	12.1810	-1.4222
40	38.8139	12.1810	-1.4222	-330.9093	6.2181	7.7698
41	-330.9093	6.2181	7.7698	-272.6317	116.6384	-142.1622
42	-272.6317	116.6384	-142.1622	-188.0677	116.6329	-142.1621
43	-188.0677	116.6329	-142.1621	-113.6337	101.6320	-116.6620
44	-113.6337	101.6320	-116.6620	-45.9439	86.6406	-91.1620
45	-45.9439	86.6406	-91.1620	14.9983	71.6417	-65.6618
46	14.9983	71.6417	-65.6618	66.9406	71.6537	-65.6617
47	66.9406	71.6537	-65.6617	110.2692	56.6611	-40.1617
48	110.2692	56.6611	-40.1617	146.8425	41.6604	-14.6616
49	146.8425	41.6604	-14.6616	176.6758	26.6582	10.8384
50	176.6758	26.6582	10.8384	195.9971	26.6622	10.8384
51	195.9971	26.6622	10.8384	-118.9160	18.3147	-4.7635
52	-118.9160	18.3147	-4.7635	-105.6479	18.3030	-4.7635
53	-105.6479	18.3030	-4.7635	-92.3735	18.2923	-4.7635
54	-92.3735	18.2923	-4.7635	-79.1096	18.2864	-4.7635
55	-79.1096	18.2864	-4.7635	-65.8441	18.2839	-4.7634
56	-65.8441	18.2839	-4.7634	-52.5907	18.2810	-4.7635
57	-52.5907	18.2810	-4.7635	-39.3299	18.2864	-4.7635
58	-39.3299	18.2864	-4.7635	-26.0715	18.2887	-4.7634
59	-26.0715	18.2887	-4.7634	-12.8104	18.2897	-4.7634
60	-12.8104	18.2897	-4.7634	0.4492	18.2885	-4.7634

ENVOL. MIN. CORTANTES TREN TREN SW/2, EC-1 en via 2

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	8.1476	-3.9147	-60.7473	5.3093	-3.9149	-60.7473
2	5.3093	-3.9149	-60.7473	9.0158	-10.5684	-47.8694
3	9.0158	-10.5684	-47.8694	17.7243	-17.3567	-34.3607
4	17.7243	-17.3567	-34.3607	5.1406	-17.3553	-34.3607
5	5.1406	-17.3553	-34.3607	13.2755	-24.3535	-20.2738
6	13.2755	-24.3535	-20.2738	24.9853	-31.6308	-5.6616
7	24.9853	-31.6308	-5.6616	39.2990	-39.2654	9.4243
8	39.2990	-39.2654	9.4243	10.8309	-39.2647	9.4243
9	10.8309	-39.2647	9.4243	20.7393	-47.3211	24.9334
10	20.7393	-47.3211	24.9334	30.3935	-55.8643	40.8157
11	30.3935	-55.8643	40.8157	-10.1086	-55.8646	40.8157
12	-10.1086	-55.8646	40.8157	-8.8708	-64.9530	57.8022
13	-8.8708	-64.9530	57.8022	-11.5483	-74.6357	76.5597
14	-11.5483	-74.6357	76.5597	-19.7892	-84.9451	96.9588
15	-19.7892	-84.9451	96.9588	-81.3734	-84.9453	96.9587
16	-81.3734	-84.9453	96.9587	-104.7521	-95.9124	118.8787
17	-104.7521	-95.9124	118.8787	-173.6595	-110.3697	131.9265
18	-173.6595	-110.3697	131.9265	-254.4257	-125.3664	157.4265
19	-254.4257	-125.3664	157.4265	-345.3141	-125.3661	157.4265
20	-345.3141	-125.3661	157.4265	-190.6540	-55.7266	100.6233
21	-190.6540	-55.7266	100.6233	-0.7067	0.0510	-0.0036

22	-0.7067	0.0510	-0.0036	-0.6583	0.0510	-0.0036
23	-0.6583	0.0510	-0.0036	-0.6099	0.0510	-0.0036
24	-0.6099	0.0510	-0.0036	-0.5615	0.0510	-0.0036
25	-0.5615	0.0510	-0.0036	-0.5131	0.0510	-0.0036
26	-0.5131	0.0510	-0.0036	-0.2406	0.0283	29.0951
27	-0.2406	0.0283	29.0951	40.7840	-4.7628	39.1031
28	40.7840	-4.7628	39.1031	80.5643	-10.4653	50.4475
29	80.5643	-10.4653	50.4475	117.0567	-17.0918	63.1021
30	117.0567	-17.0918	63.1021	148.1515	-24.6651	77.0408
31	148.1515	-24.6651	77.0408	124.7131	-24.6677	77.0408
32	124.7131	-24.6677	77.0408	140.1587	-33.1879	92.2374
33	140.1587	-33.1879	92.2374	145.1512	-42.6716	108.6691
34	145.1512	-42.6716	108.6691	189.0577	-54.8820	95.7561
35	189.0577	-54.8820	95.7561	125.6671	-69.8964	121.2561
36	125.6671	-69.8964	121.2561	48.7639	-84.8997	146.7561
37	48.7639	-84.8997	146.7561	-41.6286	-99.8892	172.2560
38	-41.6286	-99.8892	172.2560	-145.5208	-114.8868	197.7560
39	-145.5208	-114.8868	197.7560	-262.9172	-129.8866	223.2560
40	-262.9172	-129.8866	223.2560	-277.5258	-59.6135	126.3880
41	-277.5258	-59.6135	126.3880	47.5004	-3.4716	2.4680
42	47.5004	-3.4716	2.4680	44.9837	-3.4720	2.4680
43	44.9837	-3.4720	2.4680	42.4660	-3.4720	2.4681
44	42.4660	-3.4720	2.4681	39.9497	-3.4704	2.4681
45	39.9497	-3.4704	2.4681	37.4339	-3.4697	2.4681
46	37.4339	-3.4697	2.4681	34.9186	-3.4683	2.4681
47	34.9186	-3.4683	2.4681	32.4044	-3.4667	2.4681
48	32.4044	-3.4667	2.4681	29.8913	-3.4668	2.4681
49	29.8913	-3.4668	2.4681	27.3778	-3.4678	2.4681
50	27.3778	-3.4678	2.4681	24.8649	-3.4699	2.4681
51	24.8649	-3.4699	2.4681	46.4143	-8.0457	64.1497
52	46.4143	-8.0457	64.1497	87.4503	-16.4094	81.0406
53	87.4503	-16.4094	81.0406	75.5571	-16.4032	81.0407
54	75.5571	-16.4032	81.0407	104.0450	-26.0810	99.5439
55	104.0450	-26.0810	99.5439	123.2654	-37.1180	119.5763
56	123.2654	-37.1180	119.5763	172.9014	-51.0589	137.0363
57	172.9014	-51.0589	137.0363	135.8871	-51.0534	137.0361
58	135.8871	-51.0534	137.0361	90.6198	-66.0569	162.5362
59	90.6198	-66.0569	162.5362	38.5997	-81.0616	188.0361
60	38.5997	-81.0616	188.0361	-20.1728	-81.0641	188.0359

ENVOL. MAX. TORSORES TREN TREN SW/2, EC-1 en via 2

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	2.3213	-0.2181	0.9273	2.1631	-0.2181	0.9273
2	2.1631	-0.2181	0.9273	16.9695	-1.7027	4.0126
3	16.9695	-1.7027	4.0126	41.6884	-4.4468	9.1627
4	41.6884	-4.4468	9.1627	38.4635	-4.4474	9.1626
5	38.4635	-4.4474	9.1626	67.5060	-8.4397	16.2829
6	67.5060	-8.4397	16.2829	100.2494	-13.6550	25.2835
7	100.2494	-13.6550	25.2835	134.1830	-20.0669	36.0795
8	134.1830	-20.0669	36.0795	119.6338	-20.0723	36.0794
9	119.6338	-20.0723	36.0794	146.8625	-27.6468	48.5914
10	146.8625	-27.6468	48.5914	169.8269	-36.3377	62.7450
11	169.8269	-36.3377	62.7450	143.4762	-36.3402	62.7450
12	143.4762	-36.3402	62.7450	153.0518	-46.1193	78.4715
13	153.0518	-46.1193	78.4715	153.7397	-56.9018	95.7072
14	153.7397	-56.9018	95.7072	143.9872	-68.6760	114.3940
15	143.9872	-68.6760	114.3940	94.2075	-68.6651	114.3939
16	94.2075	-68.6651	114.3939	63.5586	-81.2878	134.4783
17	63.5586	-81.2878	134.4783	19.5726	-94.7081	155.9128
18	19.5726	-94.7081	155.9128	-38.3903	-108.8609	178.6549
19	-38.3903	-108.8609	178.6549	-117.3084	-108.8578	178.6549
20	-117.3084	-108.8578	178.6549	-190.6540	-55.7266	100.6233

21	-190.6540	-55.7266	100.6233	-164.5800	11.8096	0.0184
22	-164.5800	11.8096	0.0184	-141.6026	10.8809	2.9514
23	-141.6026	10.8809	2.9514	-112.6343	9.3084	7.3518
24	-112.6343	9.3084	7.3518	-78.5611	7.0155	13.1933
25	-78.5611	7.0155	13.1933	-40.5988	3.9388	20.4499
26	-40.5988	3.9388	20.4499	-0.2406	0.0283	29.0951
27	-0.2406	0.0283	29.0951	40.7840	-4.7628	39.1031
28	40.7840	-4.7628	39.1031	80.5643	-10.4653	50.4475
29	80.5643	-10.4653	50.4475	117.0567	-17.0918	63.1021
30	117.0567	-17.0918	63.1021	148.1515	-24.6651	77.0408
31	148.1515	-24.6651	77.0408	124.7131	-24.6677	77.0408
32	124.7131	-24.6677	77.0408	140.1587	-33.1879	92.2374
33	140.1587	-33.1879	92.2374	145.1512	-42.6716	108.6691
34	145.1512	-42.6716	108.6691	137.7836	-53.3140	126.3736
35	137.7836	-53.3140	126.3736	115.4979	-65.0569	145.3238
36	115.4979	-65.0569	145.3238	75.9285	-77.8252	165.4887
37	75.9285	-77.8252	165.4887	17.0382	-91.5690	186.8337
38	17.0382	-91.5690	186.8337	-62.8653	-106.1908	209.3199
39	-62.8653	-106.1908	209.3199	-165.0074	-121.5822	232.9049
40	-165.0074	-121.5822	232.9049	-277.5258	-59.6135	126.3880
41	-277.5258	-59.6135	126.3880	47.5004	-3.4716	2.4680
42	47.5004	-3.4716	2.4680	44.9837	-3.4720	2.4680
43	44.9837	-3.4720	2.4680	42.4660	-3.4720	2.4681
44	42.4660	-3.4720	2.4681	-182.6599	15.7241	6.4783
45	-182.6599	15.7241	6.4783	-144.0313	13.1332	14.2276
46	-144.0313	13.1332	14.2276	-134.5028	13.1280	14.2276
47	-134.5028	13.1280	14.2276	-92.1705	9.5478	23.9184
48	-92.1705	9.5478	23.9184	-45.7101	4.8752	35.5070
49	-45.7101	4.8752	35.5070	3.1209	-0.9678	48.9436
50	3.1209	-0.9678	48.9436	2.4183	-0.9688	48.9436
51	2.4183	-0.9688	48.9436	46.4143	-8.0457	64.1497
52	46.4143	-8.0457	64.1497	87.4503	-16.4094	81.0406
53	87.4503	-16.4094	81.0406	75.5571	-16.4032	81.0407
54	75.5571	-16.4032	81.0407	104.0450	-26.0810	99.5439
55	104.0450	-26.0810	99.5439	123.2654	-37.1180	119.5763
56	123.2654	-37.1180	119.5763	130.3076	-49.5238	141.0435
57	130.3076	-49.5238	141.0435	94.3985	-49.5265	141.0435
58	94.3985	-49.5265	141.0435	76.3060	-63.2993	163.8389
59	76.3060	-63.2993	163.8389	38.5997	-81.0616	188.0361
60	38.5997	-81.0616	188.0361	-20.1728	-81.0641	188.0359

ENVOL. MIN. TORSORES TREN TREN SW/2, EC-1 en via 2

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	16.4440	69.6477	-174.0730	66.9398	69.6488	-174.0730
2	66.9398	69.6488	-174.0730	94.0535	54.9109	-152.8080
3	94.0535	54.9109	-152.8080	103.1301	41.6191	-133.4294
4	103.1301	41.6191	-133.4294	133.3069	41.6164	-133.4294
5	133.3069	41.6164	-133.4294	118.8962	29.7759	-115.8372
6	118.8962	29.7759	-115.8372	93.6930	19.3673	-99.9408
7	93.6930	19.3673	-99.9408	60.6266	10.3510	-85.6599
8	60.6266	10.3510	-85.6599	68.1320	10.3527	-85.6599
9	68.1320	10.3527	-85.6599	24.3987	2.6831	-72.9247
10	24.3987	2.6831	-72.9247	-20.2356	-3.9152	-60.7475
11	-20.2356	-3.9152	-60.7475	-23.0756	-3.9169	-60.7474
12	-23.0756	-3.9169	-60.7474	-67.6093	-10.5691	-47.8697
13	-67.6093	-10.5691	-47.8697	-108.1073	-17.3541	-34.3609
14	-108.1073	-17.3541	-34.3609	-145.6226	-24.3454	-20.2739
15	-145.6226	-24.3454	-20.2739	-163.2707	-24.3436	-20.2740
16	-163.2707	-24.3436	-20.2740	-204.3248	-31.6233	-5.6617
17	-204.3248	-31.6233	-5.6617	-0.3682	-0.2183	0.9273
18	-0.3682	-0.2183	0.9273	-0.5265	-0.2183	0.9273
19	-0.5265	-0.2183	0.9273	-0.6848	-0.2183	0.9273
20	-0.6848	-0.2183	0.9273	-361.5413	42.1330	-97.4641
21	-361.5413	42.1330	-97.4641	-240.7978	125.4930	-212.9628
22	-240.7978	125.4930	-212.9628	-153.1400	111.4991	-191.5294
23	-153.1400	111.4991	-191.5294	-84.0477	98.2069	-171.3665
24	-84.0477	98.2069	-171.3665	-31.7252	85.6705	-152.3960
25	-31.7252	85.6705	-152.3960	5.8912	73.8798	-134.5389
26	5.8912	73.8798	-134.5389	31.0034	62.8403	-117.7176
27	31.0034	62.8403	-117.7176	45.8214	52.5205	-101.8551
28	45.8214	52.5205	-101.8551	52.4091	42.8727	-86.2743
29	52.4091	42.8727	-86.2743	51.5351	33.5767	-70.4958
30	51.5351	33.5767	-70.4958	83.4313	18.5766	-44.9958
31	83.4313	18.5766	-44.9958	101.0782	18.5753	-44.9958
32	101.0782	18.5753	-44.9958	105.2245	3.5739	-19.4958
33	105.2245	3.5739	-19.4958	-26.6943	10.7334	-2.3691
34	-26.6943	10.7334	-2.3691	-16.4959	10.7328	-2.3691
35	-16.4959	10.7328	-2.3691	-6.2984	10.7351	-2.3691
36	-6.2984	10.7351	-2.3691	3.9015	10.7355	-2.3691
37	3.9015	10.7355	-2.3691	14.0988	10.7355	-2.3691
38	14.0988	10.7355	-2.3691	24.2980	10.7364	-2.3691
39	24.2980	10.7364	-2.3691	34.4965	10.7353	-2.3691
40	34.4965	10.7353	-2.3691	29.9646	2.5727	-0.2279
41	29.9646	2.5727	-0.2279	-241.0368	115.0914	-144.0345
42	-241.0368	115.0914	-144.0345	-157.5964	115.0860	-144.0345
43	-157.5964	115.0860	-144.0345	-84.2828	100.0853	-118.5343
44	-84.2828	100.0853	-118.5343	-17.7160	85.0959	-93.0343
45	-17.7160	85.0959	-93.0343	42.1069	70.1003	-67.5343
46	42.1069	70.1003	-67.5343	92.9274	70.1067	-67.5342
47	92.9274	70.1067	-67.5342	135.1333	55.1275	-42.0340
48	135.1333	55.1275	-42.0340	170.5956	40.1268	-16.5341
49	170.5956	40.1268	-16.5341	-134.0346	16.8811	-5.3228
50	-134.0346	16.8811	-5.3228	-121.7959	16.8832	-5.3228
51	-121.7959	16.8832	-5.3228	-109.5501	16.8956	-5.3228
52	-109.5501	16.8956	-5.3228	-97.3095	16.8881	-5.3228
53	-97.3095	16.8881	-5.3228	-85.0740	16.8739	-5.3228
54	-85.0740	16.8739	-5.3228	-72.8442	16.8666	-5.3228
55	-72.8442	16.8666	-5.3228	-60.6182	16.8611	-5.3228
56	-60.6182	16.8611	-5.3228	-48.3956	16.8556	-5.3228
57	-48.3956	16.8556	-5.3228	-36.1710	16.8540	-5.3228
58	-36.1710	16.8540	-5.3228	-23.9486	16.8573	-5.3228
59	-23.9486	16.8573	-5.3228	-11.7225	16.8619	-5.3228
60	-11.7225	16.8619	-5.3228	0.5030	16.8621	-5.3228

ENVOL. MAX. FLECTORES TREN TREN SIN CARGA, EC-1 en via 2

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	1.5090	5.4260	-13.9653	6.5584	7.2099	-12.0792
2	6.5584	7.2099	-12.0792	11.2232	5.9603	-10.0704
3	11.2232	5.9603	-10.0704	15.3260	4.7102	-8.0617
4	15.3260	4.7102	-8.0617	18.7405	4.7107	-8.0617
5	18.7405	4.7107	-8.0617	21.3747	3.4604	-6.0529
6	21.3747	3.4604	-6.0529	23.4450	2.2095	-4.0442
7	23.4450	2.2095	-4.0442	24.9538	0.9611	-2.0355
8	24.9538	0.9611	-2.0355	25.6519	0.9596	-2.0355
9	25.6519	0.9596	-2.0355	25.6904	-0.2913	-0.0267
10	25.6904	-0.2913	-0.0267	25.1684	-1.5398	1.9820
11	25.1684	-1.5398	1.9820	24.0527	-1.5398	1.9820
12	24.0527	-1.5398	1.9820	22.0615	-2.7892	3.9908
13	22.0615	-2.7892	3.9908	19.5082	-4.0404	5.9995
14	19.5082	-4.0404	5.9995	16.3909	-5.2914	8.0083
15	16.3909	-5.2914	8.0083	12.5547	-5.2919	8.0083
16	12.5547	-5.2919	8.0083	7.9676	-6.5422	10.0170
17	7.9676	-6.5422	10.0170	2.8184	-7.7922	12.0258
18	2.8184	-7.7922	12.0258	-0.0425	-0.0173	0.0730

19	-0.0425	-0.0173	0.0730	-0.0550	-0.0173	0.0730
20	-0.0550	-0.0173	0.0730	-0.0641	-0.0066	0.0364
21	-0.0641	-0.0066	0.0364	-0.0567	0.0041	-0.0003
22	-0.0567	0.0041	-0.0003	-0.0529	0.0041	-0.0003
23	-0.0529	0.0041	-0.0003	-0.0490	0.0041	-0.0003
24	-0.0490	0.0041	-0.0003	0.6783	6.7243	-10.8465
25	0.6783	6.7243	-10.8465	7.3733	6.5325	-7.9201
26	7.3733	6.5325	-7.9201	13.3290	5.2822	-5.9114
27	13.3290	5.2822	-5.9114	18.1595	4.0321	-3.9026
28	18.1595	4.0321	-3.9026	21.8644	2.7819	-1.8939
29	21.8644	2.7819	-1.8939	24.4440	1.5321	0.1149
30	24.4440	1.5321	0.1149	25.8994	0.2815	2.1236
31	25.8994	0.2815	2.1236	26.1667	0.2804	2.1236
32	26.1667	0.2804	2.1236	25.3086	-0.9690	4.1324
33	25.3086	-0.9690	4.1324	23.3261	-2.2187	6.1411
34	23.3261	-2.2187	6.1411	20.2179	-3.4683	8.1499
35	20.2179	-3.4683	8.1499	15.9858	-4.7178	10.1586
36	15.9858	-4.7178	10.1586	10.6285	-5.9683	12.1674
37	10.6285	-5.9683	12.1674	4.1455	-7.2184	14.1761
38	4.1455	-7.2184	14.1761	2.2737	1.0161	-0.1410
39	2.2737	1.0161	-0.1410	3.2392	1.0162	-0.1410
40	3.2392	1.0162	-0.1410	4.1882	0.3633	0.0320
41	4.1882	0.3633	0.0320	3.9619	-0.2896	0.2051
42	3.9619	-0.2896	0.2051	3.7520	-0.2895	0.2051
43	3.7520	-0.2895	0.2051	3.5421	-0.2894	0.2051
44	3.5421	-0.2894	0.2051	3.3321	-0.2894	0.2051
45	3.3321	-0.2894	0.2051	3.1223	-0.2894	0.2051
46	3.1223	-0.2894	0.2051	2.9430	6.3440	-5.4166
47	2.9430	6.3440	-5.4166	6.8243	5.0947	-3.4079
48	6.8243	5.0947	-3.4079	10.1433	3.8445	-1.3991
49	10.1433	3.8445	-1.3991	12.8996	2.5943	0.6096
50	12.8996	2.5943	0.6096	14.7814	2.5949	0.6096
51	14.7814	2.5949	0.6096	16.0690	1.3463	2.6184
52	16.0690	1.3463	2.6184	16.7950	0.0976	4.6272
53	16.7950	0.0976	4.6272	16.8657	0.0979	4.6272
54	16.8657	0.0979	4.6272	16.1231	-1.1510	6.6359
55	16.1231	-1.1510	6.6359	14.8199	-2.4006	8.6447
56	14.8199	-2.4006	8.6447	12.9536	-3.6511	10.6534
57	12.9536	-3.6511	10.6534	10.3066	-3.6510	10.6534
58	10.3066	-3.6510	10.6534	6.9716	-4.9014	12.6622
59	6.9716	-4.9014	12.6622	3.0741	-6.1515	14.6709
60	3.0741	-6.1515	14.6709	0.0394	1.3242	-0.4176

ENVOL. MIN. FLECTORES TREN TREN SIN CARGA, EC-1 en via 2

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	0.1829	-0.0173	0.0730	0.1704	-0.0173	0.0730
2	0.1704	-0.0173	0.0730	0.1578	-0.0173	0.0730
3	0.1578	-0.0173	0.0730	0.1453	-0.0173	0.0730
4	0.1453	-0.0173	0.0730	0.1328	-0.0173	0.0730
5	0.1328	-0.0173	0.0730	0.1203	-0.0173	0.0730
6	0.1203	-0.0173	0.0730	0.1077	-0.0173	0.0730
7	0.1077	-0.0173	0.0730	0.0952	-0.0173	0.0730
8	0.0952	-0.0173	0.0730	0.0827	-0.0173	0.0730
9	0.0827	-0.0173	0.0730	0.0702	-0.0173	0.0730
10	0.0702	-0.0173	0.0730	0.0577	-0.0173	0.0730
11	0.0577	-0.0173	0.0730	0.0452	-0.0173	0.0730
12	0.0452	-0.0173	0.0730	0.0326	-0.0173	0.0730
13	0.0326	-0.0173	0.0730	0.0201	-0.0173	0.0730
14	0.0201	-0.0173	0.0730	-1.5410	-7.0745	6.1222
15	-1.5410	-7.0745	6.1222	-6.6701	-7.0742	6.1222
16	-6.6701	-7.0742	6.1222	-12.5490	-8.3244	8.1310
17	-12.5490	-8.3244	8.1310	-18.9907	-9.5747	10.1397
18	-18.9907	-9.5747	10.1397	-25.9949	-10.8248	12.1484
19	-25.9949	-10.8248	12.1484	-33.8428	-10.8248	12.1484
20	-33.8428	-10.8248	12.1484	-40.7985	0.3540	-1.9033
21	-40.7985	0.3540	-1.9033	-27.7002	11.5327	-15.9551
22	-27.7002	11.5327	-15.9551	-17.2440	10.2824	-13.9464
23	-17.2440	10.2824	-13.9464	-12.2067	1.0160	-0.1410
24	-12.2067	1.0160	-0.1410	-11.2414	1.0160	-0.1410
25	-11.2414	1.0160	-0.1410	-10.2764	1.0159	-0.1410
26	-10.2764	1.0159	-0.1410	-9.3113	1.0161	-0.1410
27	-9.3113	1.0161	-0.1410	-8.3459	1.0161	-0.1410
28	-8.3459	1.0161	-0.1410	-7.3806	1.0159	-0.1410
29	-7.3806	1.0159	-0.1410	-6.4153	1.0159	-0.1410
30	-6.4153	1.0159	-0.1410	-5.4499	1.0160	-0.1410
31	-5.4499	1.0160	-0.1410	-4.4844	1.0164	-0.1410
32	-4.4844	1.0164	-0.1410	-3.5188	1.0164	-0.1410
33	-3.5188	1.0164	-0.1410	-2.5535	1.0165	-0.1410
34	-2.5535	1.0165	-0.1410	-1.5878	1.0164	-0.1410
35	-1.5878	1.0164	-0.1410	-0.6225	1.0161	-0.1410
36	-0.6225	1.0161	-0.1410	-1.0455	-7.0260	11.2498
37	-1.0455	-7.0260	11.2498	-8.5327	-8.2760	13.2585
38	-8.5327	-8.2760	13.2585	-17.1453	-9.5261	15.2673
39	-17.1453	-9.5261	15.2673	-26.8827	-10.7763	17.2761
40	-26.8827	-10.7763	17.2761	-36.1988	-0.3412	2.9165
41	-36.1988	-0.3412	2.9165	-26.7097	10.0939	-11.4429
42	-26.7097	10.0939	-11.4429	-19.3917	10.0936	-11.4429
43	-19.3917	10.0936	-11.4429	-17.0844	1.3910	-0.3391
44	-17.0844	1.3910	-0.3391	-16.0760	1.3904	-0.3391
45	-16.0760	1.3904	-0.3391	-15.0673	1.3905	-0.3391
46	-15.0673	1.3905	-0.3391	-14.0590	1.3896	-0.3391
47	-14.0590	1.3896	-0.3391	-13.0516	1.3891	-0.3391
48	-13.0516	1.3891	-0.3391	-12.0440	1.3893	-0.3391
49	-12.0440	1.3893	-0.3391	-11.0364	1.3896	-0.3391
50	-11.0364	1.3896	-0.3391	-10.0287	1.3895	-0.3391
51	-10.0287	1.3895	-0.3391	-9.0217	1.3892	-0.3391
52	-9.0217	1.3892	-0.3391	-8.0149	1.3890	-0.3391
53	-8.0149	1.3890	-0.3391	-7.0081	1.3880	-0.3391
54	-7.0081	1.3880	-0.3391	-6.0022	1.3873	-0.3391
55	-6.0022	1.3873	-0.3391	-4.9963	1.3872	-0.3391
56	-4.9963	1.3872	-0.3391	-3.9907	1.3872	-0.3391
57	-3.9907	1.3872	-0.3391	-2.9850	1.3872	-0.3391
58	-2.9850	1.3872	-0.3391	-1.9794	1.3872	-0.3391
59	-1.9794	1.3872	-0.3391	-0.9737	1.3872	-0.3391
60	-0.9737	1.3872	-0.3391	-1.5686	-6.1658	14.5958

ENVOL. MAX. CORTANTES TREN TREN SIN CARGA, EC-1 en via 2

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	1.3308	7.2100	-12.0792	6.5584	7.2099	-12.0792
2	6.5584	7.2099	-12.0792	11.2232	5.9603	-10.0704
3	11.2232	5.9603	-10.0704	15.3260	4.7102	-8.0617
4	15.3260	4.7102	-8.0617	18.7405	4.7107	-8.0617
5	18.7405	4.7107	-8.0617	21.3747	3.4604	-6.0529
6	21.3747	3.4604	-6.0529	23.4450	2.2095	-4.0442
7	23.4450	2.2095	-4.0442	24.9538	0.9611	-2.0355
8	24.9538	0.9611	-2.0355	25.6519	0.9596	-2.0355
9	25.6519	0.9596	-2.0355	0.0702	-0.0173	0.0730
10	0.0702	-0.0173	0.0730	0.0577	-0.0173	0.0730
11	0.0577	-0.0173	0.0730	0.0452	-0.0173	0.0730
12	0.0452	-0.0173	0.0730	0.0326	-0.0173	0.0730
13	0.0326	-0.0173	0.0730	0.0201	-0.0173	0.0730
14	0.0201	-0.0173	0.0730	0.0076	-0.0173	0.0730
15	0.0076	-0.0173	0.0730	-0.0049	-0.0173	0.0730
16	-0.0049	-0.0173	0.0730	-0.0175	-0.0173	0.0730

17	-0.0175	-0.0173	0.0730	-0.0300	-0.0173	0.0730
18	-0.0300	-0.0173	0.0730	-0.0425	-0.0173	0.0730
19	-0.0425	-0.0173	0.0730	-0.0550	-0.0173	0.0730
20	-0.0550	-0.0173	0.0730	-40.7985	0.3540	-1.9033
21	-40.7985	0.3540	-1.9033	-27.7002	11.5327	-15.9551
22	-27.7002	11.5327	-15.9551	-17.2440	10.2824	-13.9464
23	-17.2440	10.2824	-13.9464	-7.9132	9.0320	-11.9376
24	-7.9132	9.0320	-11.9376	0.2924	7.7822	-9.9289
25	0.2924	7.7822	-9.9289	7.3733	6.5325	-7.9201
26	7.3733	6.5325	-7.9201	13.3290	5.2822	-5.9114
27	13.3290	5.2822	-5.9114	18.1595	4.0321	-3.9026
28	18.1595	4.0321	-3.9026	21.8644	2.7819	-1.8939
29	21.8644	2.7819	-1.8939	24.4440	1.5321	0.1149
30	24.4440	1.5321	0.1149	-5.4499	1.0160	-0.1410
31	-5.4499	1.0160	-0.1410	-4.4844	1.0164	-0.1410
32	-4.4844	1.0164	-0.1410	-3.5188	1.0164	-0.1410
33	-3.5188	1.0164	-0.1410	-2.5535	1.0165	-0.1410
34	-2.5535	1.0165	-0.1410	-1.5878	1.0164	-0.1410
35	-1.5878	1.0164	-0.1410	-0.6225	1.0161	-0.1410
36	-0.6225	1.0161	-0.1410	0.3429	1.0161	-0.1410
37	0.3429	1.0161	-0.1410	1.3084	1.0162	-0.1410
38	1.3084	1.0162	-0.1410	2.2737	1.0161	-0.1410
39	2.2737	1.0161	-0.1410	3.2392	1.0162	-0.1410
40	3.2392	1.0162	-0.1410	4.1882	0.3633	0.0320
41	4.1882	0.3633	0.0320	-26.7097	10.0939	-11.4429
42	-26.7097	10.0939	-11.4429	-19.3917	10.0936	-11.4429
43	-19.3917	10.0936	-11.4429	-12.9178	8.8438	-9.4342
44	-12.9178	8.8438	-9.4342	-7.0057	7.5941	-7.4254
45	-7.0057	7.5941	-7.4254	-1.6564	6.3436	-5.4166
46	-1.6564	6.3436	-5.4166	2.9430	6.3440	-5.4166
47	2.9430	6.3440	-5.4166	6.8243	5.0947	-3.4079
48	6.8243	5.0947	-3.4079	10.1433	3.8445	-1.3991
49	10.1433	3.8445	-1.3991	12.8996	2.5943	0.6096
50	12.8996	2.5943	0.6096	14.7814	2.5949	0.6096
51	14.7814	2.5949	0.6096	-9.0217	1.3892	-0.3391
52	-9.0217	1.3892	-0.3391	-8.0149	1.3890	-0.3391
53	-8.0149	1.3890	-0.3391	-7.0081	1.3880	-0.3391
54	-7.0081	1.3880	-0.3391	-6.0022	1.3873	-0.3391
55	-6.0022	1.3873	-0.3391	-4.9963	1.3872	-0.3391
56	-4.9963	1.3872	-0.3391	-3.9907	1.3872	-0.3391
57	-3.9907	1.3872	-0.3391	-2.9850	1.3872	-0.3391
58	-2.9850	1.3872	-0.3391	-1.9794	1.3872	-0.3391
59	-1.9794	1.3872	-0.3391	-0.9737	1.3872	-0.3391
60	-0.9737	1.3872	-0.3391	0.0321	1.3873	-0.3391

ENVOL. MIN. CORTANTES TREN TREN SIN CARGA, EC-1 en via 2

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	0.1829	-0.0173	0.0730	0.1704	-0.0173	0.0730
2	0.1704	-0.0173	0.0730	1.3963	-0.1402	0.3184
3	1.3963	-0.1402	0.3184	3.4502	-0.3681	0.7284
4	3.4502	-0.3681	0.7284	3.1832	-0.3681	0.7284
5	3.1832	-0.3681	0.7284	5.5998	-0.6999	1.2951
6	5.5998	-0.6999	1.2951	8.3265	-1.1337	2.0111
7	8.3265	-1.1337	2.0111	11.1539	-1.6676	2.8693
8	11.1539	-1.6676	2.8693	9.9453	-1.6675	2.8693
9	9.9453	-1.6675	2.8693	12.2163	-2.2989	3.8630
10	12.2163	-2.2989	3.8630	12.4109	-3.3238	0.0960
11	12.4109	-3.3238	0.0960	10.0010	-3.3238	0.0960
12	10.0010	-3.3238	0.0960	6.7162	-4.5734	2.1047
13	6.7162	-4.5734	2.1047	2.8691	-5.8241	4.1134
14	2.8691	-5.8241	4.1134	-1.5410	-7.0745	6.1222
15	-1.5410	-7.0745	6.1222	-6.6701	-7.0742	6.1222
16	-6.6701	-7.0742	6.1222	-12.5490	-8.3244	8.1310
17	-12.5490	-8.3244	8.1310	-18.9907	-9.5747	10.1397
18	-18.9907	-9.5747	10.1397	-25.9949	-10.8248	12.1484
19	-25.9949	-10.8248	12.1484	-33.8428	-10.8248	12.1484
20	-33.8428	-10.8248	12.1484	-15.8658	-4.6382	7.9512
21	-15.8658	-4.6382	7.9512	-0.0567	0.0041	-0.0003
22	-0.0567	0.0041	-0.0003	-0.0529	0.0041	-0.0003
23	-0.0529	0.0041	-0.0003	-0.0490	0.0041	-0.0003
24	-0.0490	0.0041	-0.0003	-0.0451	0.0041	-0.0003
25	-0.0451	0.0041	-0.0003	-0.0412	0.0041	-0.0003
26	-0.0412	0.0041	-0.0003	-0.0373	0.0041	-0.0003
27	-0.0373	0.0041	-0.0003	3.3758	-0.3932	3.0726
28	3.3758	-0.3932	3.0726	6.6931	-0.8682	3.9714
29	6.6931	-0.8682	3.9714	9.7376	-1.4204	4.9736
30	9.7376	-1.4204	4.9736	12.3326	-2.0515	6.0771
31	12.3326	-2.0515	6.0771	10.3837	-2.0520	6.0771
32	10.3837	-2.0520	6.0771	11.6756	-2.7605	7.2795
33	11.6756	-2.7605	7.2795	12.0870	-3.5477	8.5788
34	12.0870	-3.5477	8.5788	10.5545	-4.5264	7.2323
35	10.5545	-4.5264	7.2323	5.3171	-5.7762	9.2411
36	5.3171	-5.7762	9.2411	-1.0455	-7.0260	11.2498
37	-1.0455	-7.0260	11.2498	-8.5327	-8.2760	13.2585
38	-8.5327	-8.2760	13.2585	-17.1453	-9.5261	15.2673
39	-17.1453	-9.5261	15.2673	-26.8827	-10.7763	17.2761
40	-26.8827	-10.7763	17.2761	-21.0814	-4.7882	9.9317
41	-21.0814	-4.7882	9.9317	3.9619	-0.2896	0.2051
42	3.9619	-0.2896	0.2051	3.7520	-0.2895	0.2051
43	3.7520	-0.2895	0.2051	3.5421	-0.2894	0.2051
44	3.5421	-0.2894	0.2051	3.3321	-0.2894	0.2051
45	3.3321	-0.2894	0.2051	3.1223	-0.2894	0.2051
46	3.1223	-0.2894	0.2051	2.9125	-0.2894	0.2051
47	2.9125	-0.2894	0.2051	2.7028	-0.2893	0.2051
48	2.7028	-0.2893	0.2051	2.4932	-0.2893	0.2051
49	2.4932	-0.2893	0.2051	2.2836	-0.2892	0.2051
50	2.2836	-0.2892	0.2051	2.0739	-0.2891	0.2051
51	2.0739	-0.2891	0.2051	4.5433	-0.7709	5.1193
52	4.5433	-0.7709	5.1193	7.5912	-1.4141	6.4302
53	7.5912	-1.4141	6.4302	6.5659	-1.4139	6.4302
54	6.5659	-1.4139	6.4302	8.6301	-2.1543	7.8628
55	8.6301	-2.1543	7.8628	9.9754	-2.9969	9.4104
56	9.9754	-2.9969	9.4104	10.3895	-3.9427	11.0661
57	10.3895	-3.9427	11.0661	7.5308	-3.9433	11.0661
58	7.5308	-3.9433	11.0661	6.0303	-4.9941	12.8222
59	6.0303	-4.9941	12.8222	2.9018	-6.1659	14.5958
60	2.9018	-6.1659	14.5958	-1.5686	-6.1658	14.5958

ENVOL. MAX. TORSORES TREN TREN SIN CARGA, EC-1 en via 2

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	0.1829	-0.0173	0.0730	0.1704	-0.0173	0.0730
2	0.1704	-0.0173	0.0730	1.3963	-0.1402	0.3184
3	1.3963	-0.1402	0.3184	3.4502	-0.3681	0.7284
4	3.4502	-0.3681	0.7284	3.1832	-0.3681	0.7284
5	3.1832	-0.3681	0.7284	5.5998	-0.6999	1.2951
6	5.5998	-0.6999	1.2951	8.3265	-1.1337	2.0111
7	8.3265	-1.1337	2.0111	11.1539	-1.6676	2.8693
8	11.1539	-1.6676	2.8693	9.9453	-1.6675	2.8693
9	9.9453	-1.6675	2.8693	12.2163	-2.2989	3.8630
10	12.2163	-2.2989	3.8630	14.1332	-3.0220	4.9861
11	14.1332	-3.0220	4.9861	11.9419	-3.0223	4.9861
12	11.9419	-3.0223	4.9861	12.7448	-3.8366	6.2328
13	12.7448	-3.8366	6.2328	12.8089	-4.7342	7.5978
14	12.8089	-4.7342	7.5978	12.0042	-5.7125	9.0763

15	12.0042	-5.7125	9.0763	7.8618	-5.7132	9.0763
16	7.8618	-5.7132	9.0763	5.3166	-6.7650	10.6639
17	5.3166	-6.7650	10.6639	1.6616	-7.8836	12.3565
18	1.6616	-7.8836	12.3565	-3.1576	-9.0618	14.1506
19	-3.1576	-9.0618	14.1506	-9.7274	-9.0620	14.1506
20	-9.7274	-9.0620	14.1506	-15.8658	-4.6382	7.9512
21	-15.8658	-4.6382	7.9512	-0.0567	0.0041	-0.0003
22	-0.0567	0.0041	-0.0003	-11.8230	0.9087	0.2057
23	-11.8230	0.9087	0.2057	-9.4105	0.7779	0.5548
24	-9.4105	0.7779	0.5548	-6.5719	0.5872	1.0182
25	-6.5719	0.5872	1.0182	-3.4084	0.3311	1.5938
26	-3.4084	0.3311	1.5938	-0.0446	0.0055	2.2793
27	-0.0446	0.0055	2.2793	3.3758	-0.3932	3.0726
28	3.3758	-0.3932	3.0726	6.6931	-0.8682	3.9714
29	6.6931	-0.8682	3.9714	9.7376	-1.4204	4.9736
30	9.7376	-1.4204	4.9736	12.3326	-2.0515	6.0771
31	12.3326	-2.0515	6.0771	10.3837	-2.0520	6.0771
32	10.3837	-2.0520	6.0771	11.6756	-2.7605	7.2795
33	11.6756	-2.7605	7.2795	12.0870	-3.5477	8.5788
34	12.0870	-3.5477	8.5788	11.4492	-4.4099	9.9728
35	11.4492	-4.4099	9.9728	9.6019	-5.3460	11.4592
36	9.6019	-5.3460	11.4592	6.4007	-6.3514	13.0359
37	6.4007	-6.3514	13.0359	1.7229	-7.4222	14.7008
38	1.7229	-7.4222	14.7008	-4.5339	-8.5525	16.4516
39	-4.5339	-8.5525	16.4516	-12.4436	-9.7371	18.2862
40	-12.4436	-9.7371	18.2862	-21.0814	-4.7882	9.9317
41	-21.0814	-4.7882	9.9317	3.9619	-0.2896	0.2051
42	3.9619	-0.2896	0.2051	3.7520	-0.2895	0.2051
43	3.7520	-0.2895	0.2051	3.5421	-0.2894	0.2051
44	3.5421	-0.2894	0.2051	-13.0229	1.1201	0.5906
45	-13.0229	1.1201	0.5906	-9.9079	0.9022	1.2093
46	-9.9079	0.9022	1.2093	-9.2542	0.9022	1.2093
47	-9.2542	0.9022	1.2093	-5.9229	0.6098	1.9761
48	-5.9229	0.6098	1.9761	-2.3282	0.2366	2.8867
49	-2.3282	0.2366	2.8867	1.3975	-0.2218	3.9362
50	1.3975	-0.2218	3.9362	1.2366	-0.2218	3.9362
51	1.2366	-0.2218	3.9362	4.5433	-0.7709	5.1193
52	4.5433	-0.7709	5.1193	7.5912	-1.4141	6.4302
53	7.5912	-1.4141	6.4302	6.5659	-1.4139	6.4302
54	6.5659	-1.4139	6.4302	8.6301	-2.1543	7.8628
55	8.6301	-2.1543	7.8628	9.9754	-2.9969	9.4104
56	9.9754	-2.9969	9.4104	10.3895	-3.9427	11.0661
57	10.3895	-3.9427	11.0661	7.5308	-3.9433	11.0661
58	7.5308	-3.9433	11.0661	6.0303	-4.9941	12.8222
59	6.0303	-4.9941	12.8222	3.0741	-6.1515	14.6709
60	3.0741	-6.1515	14.6709	-1.3859	-6.1515	14.6709

ENVOL. MIN. TORSORES TREN TREN SIN CARGA, EC-1 en via 2

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	1.5090	5.4260	-13.9653	5.4429	5.4262	-13.9653
2	5.4429	5.4262	-13.9653	8.8145	4.1762	-11.9565
3	8.8145	4.1762	-11.9565	11.6232	2.9264	-9.9478
4	11.6232	2.9264	-9.9478	13.7449	2.9265	-9.9478
5	13.7449	2.9265	-9.9478	15.0847	1.6761	-7.9390
6	15.0847	1.6761	-7.9390	15.8622	0.4257	-5.9303
7	15.8622	0.4257	-5.9303	16.0770	-0.8237	-3.9215
8	16.0770	-0.8237	-3.9215	15.4805	-0.8234	-3.9215
9	15.4805	-0.8234	-3.9215	14.2268	-2.0738	-1.9128
10	14.2268	-2.0738	-1.9128	0.0577	-0.0173	0.0730
11	0.0577	-0.0173	0.0730	0.0452	-0.0173	0.0730
12	0.0452	-0.0173	0.0730	0.0326	-0.0173	0.0730
13	0.0326	-0.0173	0.0730	0.0201	-0.0173	0.0730
14	0.0201	-0.0173	0.0730	0.0076	-0.0173	0.0730
15	0.0076	-0.0173	0.0730	-0.0049	-0.0173	0.0730
16	-0.0049	-0.0173	0.0730	-0.0175	-0.0173	0.0730
17	-0.0175	-0.0173	0.0730	-0.0300	-0.0173	0.0730
18	-0.0300	-0.0173	0.0730	-0.0425	-0.0173	0.0730
19	-0.0425	-0.0173	0.0730	-0.0550	-0.0173	0.0730
20	-0.0550	-0.0173	0.0730	-36.4494	-0.0259	-2.2699
21	-36.4494	-0.0259	-2.2699	-24.3029	10.4759	-16.8740
22	-24.3029	10.4759	-16.8740	-14.8507	9.2256	-14.8652
23	-14.8507	9.2256	-14.8652	-6.5240	7.9754	-12.8565
24	-6.5240	7.9754	-12.8565	0.6778	6.7256	-10.8477
25	0.6778	6.7256	-10.8477	6.7549	5.4752	-8.8390
26	6.7549	5.4752	-8.8390	11.7065	4.2246	-6.8302
27	11.7065	4.2246	-6.8302	15.5330	2.9747	-4.8215
28	15.5330	2.9747	-4.8215	18.2342	1.7248	-2.8127
29	18.2342	1.7248	-2.8127	19.8101	0.4751	-0.8040
30	19.8101	0.4751	-0.8040	-4.7759	0.8952	-0.2117
31	-4.7759	0.8952	-0.2117	-3.9254	0.8951	-0.2117
32	-3.9254	0.8951	-0.2117	-3.0754	0.8951	-0.2117
33	-3.0754	0.8951	-0.2117	-2.2249	0.8953	-0.2117
34	-2.2249	0.8953	-0.2117	-1.3746	0.8949	-0.2117
35	-1.3746	0.8949	-0.2117	-0.5246	0.8949	-0.2117
36	-0.5246	0.8949	-0.2117	0.3258	0.8951	-0.2117
37	0.3258	0.8951	-0.2117	1.1759	0.8949	-0.2117
38	1.1759	0.8949	-0.2117	2.0261	0.8949	-0.2117
39	2.0261	0.8949	-0.2117	2.8763	0.8950	-0.2117
40	2.8763	0.8950	-0.2117	2.9373	0.2524	-0.0238
41	2.9373	0.2524	-0.0238	-26.6946	10.0793	-11.5181
42	-26.6946	10.0793	-11.5181	-19.3871	10.0793	-11.5181
43	-19.3871	10.0793	-11.5181	-12.9233	8.8295	-9.5093
44	-12.9233	8.8295	-9.5093	-7.0220	7.5797	-7.5006
45	-7.0220	7.5797	-7.5006	-1.6830	6.3300	-5.4918
46	-1.6830	6.3300	-5.4918	2.9064	6.3301	-5.4918
47	2.9064	6.3301	-5.4918	6.7771	5.0800	-3.4830
48	6.7771	5.0800	-3.4830	10.0856	3.8303	-1.4743
49	10.0856	3.8303	-1.4743	-10.5268	1.3264	-0.4176
50	-10.5268	1.3264	-0.4176	-9.5653	1.3267	-0.4176
51	-9.5653	1.3267	-0.4176	-8.6033	1.3263	-0.4176
52	-8.6033	1.3263	-0.4176	-7.6424	1.3250	-0.4176
53	-7.6424	1.3250	-0.4176	-6.6813	1.3241	-0.4176
54	-6.6813	1.3241	-0.4176	-5.7213	1.3241	-0.4176
55	-5.7213	1.3241	-0.4176	-4.7607	1.3242	-0.4176
56	-4.7607	1.3242	-0.4176	-3.8011	1.3241	-0.4176
57	-3.8011	1.3241	-0.4176	-2.8407	1.3243	-0.4176
58	-2.8407	1.3243	-0.4176	-1.8809	1.3242	-0.4176
59	-1.8809	1.3242	-0.4176	-0.9207	1.3242	-0.4176
60	-0.9207	1.3242	-0.4176	0.0394	1.3242	-0.4176

ENVOLVENTE MAXIMOS FLECTORES TREN IPF-B, l=30 m, via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-0.3425	-10.2866	-3.2723	-0.7111	-7.9794	-46.8112
2	34.7776	73.1472	196.3772	-84.0958	-63.6219	-174.4697
3	84.0950	63.6260	174.4819	-127.3339	-54.1000	-152.5744
4	127.3351	54.0964	152.5745	-164.1899	-47.5720	-137.5670
5	164.1895	47.5739	137.5672	-194.4385	-38.0500	-115.6597
6	194.4386	38.0443	115.6596	-218.6055	-28.5170	-93.7521
7	218.6043	28.5240	93.7522	-236.6950	-18.9988	-71.8447
8	236.6978	19.0065	71.8447	-248.1146	-12.4844	-56.8372
9	248.1142	12.4754	56.8374	-253.2176	-2.9508	-34.9299
10	253.2178	2.9547	34.9298	-252.2443	6.5708	-13.0224
11	252.2425	-6.5735	13.0223	-245.1111	13.0957	1.9852
12	245.1139	-13.0975	-1.9851	-231.1536	22.6228	23.8927
13	231.1529	-22.6215	-23.8925	-211.1107	32.1506	45.7999

14	211.1073	-32.1530	-45.7999	-184.9813	41.6813	67.7074
15	184.9821	-41.6992	-67.7075	-152.3842	48.2256	82.7150
16	152.3825	-48.2229	-82.7149	-113.2568	57.7476	104.6224
17	113.2989	-57.6597	-103.8018	-68.1556	67.1856	125.7092
18	72.8856	-52.1535	-98.0312	-34.8786	40.9384	80.3223
19	43.4680	-19.6880	-41.1041	-26.8292	26.2130	56.1116
20	33.3301	-9.8547	-23.5123	-23.8085	16.4080	38.3931
21	29.9560	-7.1919	-0.2836	-23.0850	7.2202	0.1568
22	26.0565	0.8167	16.8639	-22.7711	7.7333	2.8011
23	31.2790	14.4735	46.0172	-40.9681	-5.9235	-26.3522
24	48.3976	24.1514	67.3964	-82.5458	-31.2329	-87.9660
25	92.7278	51.7712	137.8409	-137.1007	-40.2203	-111.2760
26	147.4231	56.4979	140.7177	-196.4347	-44.9451	-114.1527
27	196.4349	44.9422	114.1528	-234.7473	-33.6102	-87.4927
28	234.7482	33.6030	87.4926	-262.3884	-22.3488	-60.8190
29	262.3860	22.3513	60.8190	-279.8174	-11.9986	-33.8707
30	279.8189	11.9970	33.8707	-288.0632	-1.9945	-6.6414
31	288.0648	1.9870	6.6412	-285.9140	6.3231	13.2401
32	285.9197	-6.3138	-13.2398	-273.1577	17.8626	39.8048
33	273.1511	-17.8648	-39.8049	-249.5687	29.4162	66.3699
34	249.5681	-29.4212	-66.3699	-215.1763	40.8356	93.1834
35	215.1806	-40.8276	-93.1834	-170.0846	52.3781	119.7484
36	170.0863	-52.3835	-119.7484	-114.1585	63.9343	146.3134
37	118.0807	-50.3752	-135.7957	-64.2154	61.9237	162.3607
38	72.2872	-44.5119	-123.8441	-33.4858	33.7582	101.8330
39	44.6805	-10.8847	-53.7610	-30.2792	19.4347	73.4259
40	38.9138	2.4365	-26.9348	-37.0237	7.7538	45.0774
41	41.7516	-1.2456	0.2227	-39.5156	2.8860	-1.7451
42	41.3827	3.3458	14.5748	-41.4431	3.1794	0.4327
43	47.8596	14.3230	36.8907	-55.8782	-7.7981	-21.8832
44	63.0223	27.3147	62.9489	-80.4609	-20.7898	-47.9414
45	89.2225	43.4303	96.9097	-118.3441	-36.9053	-81.9022
46	119.7760	39.0835	87.3956	-145.7468	-32.5587	-72.3882
47	145.7458	32.5702	72.3880	-171.4896	-40.4393	-71.3156
48	171.4880	40.4364	71.3155	-197.5379	-30.9149	-49.4080
49	197.5397	30.9226	49.4079	-217.5165	-21.3990	-27.5003
50	217.5153	21.3956	27.5003	-230.6576	-14.8683	-12.4928
51	230.6599	14.8722	12.4927	-237.6515	-5.3486	9.4148
52	237.6504	5.3608	-9.4147	-238.5724	4.1608	31.3223
53	238.5736	-4.1503	-31.3223	-233.1966	10.6753	46.3297
54	233.1943	-10.6653	-46.3299	-221.1449	20.1902	68.2374
55	221.1408	-20.1814	-68.2375	-203.0188	29.7032	90.1450
56	203.0198	-29.7009	-90.1448	-178.8220	39.2255	112.0523
57	178.8216	-39.2226	-112.0523	-148.0176	45.7483	127.0599
58	148.0165	-45.7500	-127.0599	-110.8325	55.2746	148.9674
59	110.8309	-55.2800	-148.9675	-67.5611	64.8056	170.8750
60	67.5611	-64.8029	-170.8751	-18.2226	71.2179	185.9977

ENVOLVENTE MAXIMOS CORTANTES TREN IPF-B, l=30 m, via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-20.6226	79.6740	211.3970	-34.7775	-73.1488	-196.3895
2	33.8188	73.2402	197.2103	-83.2043	-63.7149	-175.3028
3	78.1176	64.2148	176.6608	-121.7834	-54.6888	-154.7533
4	113.1526	55.5857	156.6705	-151.0872	-49.0613	-141.6630
5	139.4837	50.3633	144.1607	-171.7552	-40.8394	-122.2532
6	157.7449	42.5328	125.3524	-185.1663	-33.0055	-103.4449
7	169.2986	35.0988	107.1661	-192.1565	-25.5736	-85.2586
8	174.9679	28.0537	89.6211	-192.9448	-21.5316	-74.6136
9	174.9433	24.3754	79.6362	-188.6738	-14.8508	-57.7287
10	170.3516	18.0731	63.4285	-120.8855	-11.2808	-39.7375
11	102.7015	14.8557	46.1316	-111.1070	-8.3307	-31.1241
12	93.4942	12.2578	38.2284	-100.0165	-5.7328	-23.2209
13	83.3677	9.9954	31.0506	-88.2493	-3.4704	-16.0431
14	72.9247	8.0521	24.6120	-76.3971	-1.5271	-9.6045
15	62.7174	6.4129	18.9258	-65.0013	0.1121	-3.9183
16	53.2370	5.0730	14.0047	-54.5494	1.4520	1.0028
17	44.9265	4.0053	9.8601	-45.4656	2.5197	5.1473
18	38.1582	3.1950	6.5027	-38.1095	3.3300	8.5048
19	33.2362	2.6228	3.9421	-32.7727	3.9022	11.0654
20	30.3987	2.2669	2.1872	34.5304	-3.8707	-13.4693
21	-370.0362	102.4913	223.9184	292.4324	-114.0325	-236.9832
22	-293.8370	114.1382	237.9002	190.6663	-102.5878	-211.3352
23	-195.9075	102.9940	213.0627	103.1747	-91.4438	-186.4976
24	-112.2192	92.1966	189.0484	29.5944	-80.6469	-162.4835
25	-42.2785	81.7837	165.8712	-30.6052	-70.2341	-139.3061
26	14.5743	71.7879	143.5441	-78.1119	-60.2371	-116.9792
27	59.1452	62.2358	122.0810	-113.7570	-50.6834	-95.5161
28	92.3630	53.1465	101.4951	-138.4894	-41.5973	-74.9301
29	115.2487	44.5538	81.7999	-153.3640	-33.0044	-55.2349
30	128.9178	36.4604	63.0089	-84.1770	-26.2010	-37.1725
31	59.2011	30.1588	45.8641	-83.7920	-21.6090	-26.1991
32	58.9784	26.0920	35.8219	-79.7051	-17.5422	-16.1569
33	55.7384	22.5249	26.7243	-73.0764	-13.9752	-7.0593
34	50.6327	19.4570	18.5848	-65.0555	-10.9069	1.0801
35	44.7609	16.8770	11.4169	-56.7327	-8.3268	8.2481
36	39.1503	14.7662	5.2340	-49.1164	-6.2161	14.4310
37	34.7298	13.1006	0.0496	-43.1142	-4.5506	19.6154
38	32.3064	11.8515	-4.1229	-39.5041	-3.3013	23.7879
39	32.5376	10.9865	-7.2699	-38.9138	-2.4365	26.9348
40	35.9146	10.4664	-9.3781	-41.6529	-0.2761	27.5207
41	-299.0037	88.5151	143.9571	326.4463	-106.8805	-171.5519
42	-327.2237	106.9326	172.3506	252.0620	-100.4072	-157.3430
43	-255.3430	100.6494	158.7220	186.7617	-91.1250	-136.8146
44	-192.5185	91.5810	138.7813	129.6864	-82.0563	-116.8737
45	-137.8445	82.7350	119.4367	80.6032	-73.2098	-97.5292
46	-91.0407	74.1458	100.6986	39.6498	-67.6220	-85.6912
47	-52.1909	68.8293	89.4771	6.3791	-59.3041	-67.5695
48	-20.7955	60.7875	71.9837	-20.0098	-51.2628	-50.0763
49	3.9941	53.0558	55.1312	-40.0195	-43.5315	-33.2235
50	22.7219	45.6319	38.9325	-53.4401	-39.1063	-23.9250
51	35.2199	41.5369	30.3019	-61.5443	-32.0149	-8.3945
52	42.7985	34.7838	15.4545	-5.2614	-27.1094	-2.4170
53	-13.5845	30.2384	10.1760	-5.9715	-23.7128	4.8314
54	-12.5160	27.1980	3.6431	-4.8375	-20.6726	11.3644
55	-12.8064	24.5267	-2.1564	-2.6090	-18.0012	17.1639
56	-13.6836	22.2324	-7.2041	-0.0694	-15.7068	22.2116
57	-14.3405	20.3245	-11.4806	1.9712	-13.7982	26.4882
58	-13.9556	18.8051	-14.9657	2.6862	-12.2811	29.9732
59	-11.6862	17.6893	-17.6382	1.2261	-11.1651	32.6458
60	-6.6763	16.9657	-19.4764	-3.2579	-10.4401	34.4838

ENVOLVENTE MAXIMOS TORSORES TREN IPF-B, l=30 m, via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-20.7716	77.5343	212.9745	-33.0773	-71.0090	-197.9670
2	32.1187	71.1005	198.7878	-79.9528	-61.5755	-176.8803
3	74.8662	62.0751	178.2383	-105.8252	-49.5903	-156.5300
4	97.1944	50.4875	158.4472	-131.4320	-43.9617	-143.4397
5	119.8285	45.2638	145.9374	-144.3980	-36.1922	-124.9080
6	130.3877	37.8858	128.0072	-149.5767	-29.0071	-107.2514
7	133.7092	31.1001	110.9726	-148.1860	-22.4067	-90.5048
8	130.9974	24.8860	94.8673	-146.6747	-18.3606	-79.8598
9	128.6734	21.2048	84.8824	-134.9473	-12.6876	-64.7096
10	116.6251	15.9097	70.4094	-119.7845	-7.5571	-50.5384
11	101.6006	11.1324	56.9325	-107.3065	-4.6072	-41.9250

12	89.6936	8.5342	49.0293	-87.1693	-0.3358	-29.4663
13	70.5206	4.5983	37.2960	-66.2445	3.4575	-18.0470
14	50.9198	1.1252	26.6159	-60.4269	0.0346	-10.7909
15	46.7468	4.8521	20.1122	-47.8991	1.6729	-5.1047
16	36.1349	3.5116	15.1911	-36.3153	3.0134	-0.1836
17	26.6926	2.4444	11.0465	-26.1000	4.0806	3.9609
18	18.7926	1.6345	7.6891	-17.6123	4.8905	7.3184
19	12.7391	1.0621	5.1285	-11.1439	5.4629	9.8790
20	8.7699	0.7060	3.3736	57.2908	-2.3098	-14.6557
21	-249.3132	93.1301	232.7857	151.6148	-100.9099	-248.2090
22	-153.0191	101.0155	249.1260	63.3835	-89.4654	-222.9596
23	-68.6245	89.8704	224.6871	-9.4697	-78.4502	-198.7338
24	0.4254	79.2025	201.2845	-67.5485	-67.9228	-175.5479
25	54.8650	69.0606	178.9356	-111.6565	-57.8977	-153.4094
26	95.6252	59.4506	157.6474	-147.4432	-47.8999	-131.0824
27	128.4777	49.8973	136.1843	-171.3676	-38.3456	-109.6194
28	149.9738	40.8088	115.5983	-184.3810	-29.2585	-89.0333
29	161.1399	32.2143	95.9032	-187.5333	-20.6660	-69.3382
30	163.0875	24.1222	77.1121	-181.9422	-12.5732	-50.5471
31	156.9661	16.5306	59.2387	-168.6066	-7.9799	-39.5737
32	143.7937	12.4635	49.1965	-102.4856	-5.6119	-27.6296
33	78.5181	10.5944	38.1970	-84.5224	-2.0444	-18.5320
34	62.0781	7.5257	30.0575	-65.1669	1.0243	-10.3926
35	44.8726	4.9465	22.8897	-45.5107	3.6035	-3.2247
36	27.9281	2.8352	16.7067	-26.5603	5.7148	2.9583
37	12.1734	1.1706	11.5224	-9.2243	7.3794	8.1426
38	-1.5835	-0.0787	7.3499	5.7191	8.6287	12.3151
39	-12.6857	-0.9435	4.2029	17.6432	9.4935	15.4620
40	-20.6424	-1.4639	2.0947	26.0943	10.0102	17.5692
41	-91.3998	72.4108	161.9950	116.7869	-91.5599	-188.9610
42	-117.5644	91.6117	189.7597	53.5106	-85.0870	-174.7522
43	-56.7901	85.3261	176.1312	-0.6815	-75.8014	-154.2236
44	-5.0721	76.2630	156.1903	-46.6536	-66.7383	-134.2828
45	38.4935	67.4207	136.8458	-84.6332	-57.8958	-114.9383
46	74.1941	58.8397	118.1077	-114.4884	-52.3149	-103.1003
47	101.9470	53.5266	106.8862	-136.6634	-44.0019	-84.9786
48	122.2471	45.4857	89.3929	-151.9578	-35.9642	-67.4854
49	135.9447	37.7590	72.5403	-160.8778	-28.2354	-50.6327
50	143.5800	30.3377	56.3417	-163.2059	-23.8104	-41.3342
51	144.9872	26.2434	47.7111	-127.2568	-11.3228	-32.5686
52	108.5100	14.0998	39.6287	-116.3688	-7.5754	-24.6211
53	97.5237	10.7071	32.3801	-102.9200	-4.1820	-17.3727
54	84.4330	7.6709	25.8472	-87.6290	-1.1460	-10.8397
55	69.9853	5.0060	20.0477	-71.2495	1.5185	-5.0402
56	54.9599	2.7156	15.0000	-54.5638	3.8092	0.0075
57	40.1543	0.8109	10.7235	-38.3768	5.7142	4.2841
58	26.3924	-0.7060	7.2384	-23.5156	7.2310	7.7691
59	14.5146	-1.8268	4.5659	-10.8244	8.3518	10.4417
60	5.3747	-2.5512	2.7277	-1.1599	9.0761	12.2797

ENVOLVENTE MINIMOS FLECTORES TREN IPF-B, l=30 m, via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-20.7716	77.5343	212.9745	-25.0206	-53.3204	-147.4924
2	-9.0462	-11.8480	-2.0735	17.6369	11.8481	2.0735
3	-17.6370	-11.8503	-2.0859	26.2282	11.8503	2.0859
4	-26.2283	-11.8492	-2.0859	34.8189	11.8492	2.0859
5	-34.8187	-11.8488	-2.0859	43.4090	11.8488	2.0859
6	-43.4083	-11.8488	-2.0859	51.9992	11.8488	2.0859
7	-51.9979	-11.8494	-2.0859	60.5888	11.8494	2.0859
8	-60.5899	-11.8555	-2.0859	69.1848	11.8555	2.0859
9	-69.1836	-11.8498	-2.0859	79.5721	15.1683	-0.8053
10	-79.5725	-15.1698	0.8053	90.8204	16.1702	1.4947
11	-90.8204	-16.1691	-1.4947	102.5429	16.1697	1.4947
12	-102.5425	-16.1751	-1.4947	114.9689	17.1753	3.7947
13	-114.9669	-17.1697	-3.7947	127.8392	18.1692	6.0947
14	-127.8388	-18.1642	-6.0947	141.1580	19.1630	8.3947
15	-141.1594	-19.1558	-8.3947	155.0472	19.1552	8.3947
16	-155.0474	-19.1536	-8.3947	169.5341	20.1538	10.6947
17	-169.5782	-20.2467	-11.5154	184.5816	21.2462	13.8154
18	-189.3125	-36.2795	-41.4934	224.0992	51.2360	69.6107
19	-232.6897	-72.4850	-108.8289	285.2409	72.4850	108.8289
20	-291.7420	-88.8442	-141.4282	362.9874	62.7901	93.1241
21	-401.1122	96.1313	207.2620	292.6292	-113.8899	-236.5204
22	-295.6011	105.8536	219.4998	196.2393	-102.8531	-212.5998
23	-204.7475	80.6444	163.7815	136.0195	-58.0644	-110.1281
24	-143.4496	39.8366	69.0837	105.6056	-39.8364	-69.0837
25	-115.7877	19.2986	19.2088	97.4541	-19.2983	-19.2088
26	-107.7781	3.0206	-10.2329	104.9084	-3.0212	10.2329
27	-104.9098	3.0237	-10.2328	102.0368	-3.0240	10.2328
28	-102.0371	3.0258	-10.2329	99.1632	-3.0255	10.2329
29	-99.1625	3.0245	-10.2328	96.2879	-3.0245	10.2328
30	-96.2879	3.0243	-10.2329	93.4157	-3.0245	10.2329
31	-93.4155	3.0277	-10.2329	90.5381	-3.0279	10.2329
32	-90.5408	3.0263	-10.2329	87.6659	-3.0265	10.2329
33	-87.6645	3.0262	-10.2329	84.7885	-3.0265	10.2329
34	-84.7884	3.0267	-10.2329	81.9141	-3.0266	10.2329
35	-81.9150	3.0251	-10.2328	79.0417	-3.0249	10.2328
36	-79.0415	3.0246	-10.2329	77.1217	-0.4587	7.6274
37	-81.0438	-13.0943	-18.1449	109.7630	33.4503	59.5102
38	-117.8348	-50.8650	-98.0270	167.9575	53.8654	104.9270
39	-179.1528	-76.7381	-152.9989	253.7042	79.7384	159.8989
40	-262.3386	-101.6084	-206.3900	365.5859	75.5223	158.0478
41	-402.5807	87.3192	138.2171	326.5293	-106.6287	-170.6911
42	-328.3968	100.3978	157.8613	255.6084	-100.3969	-157.8613
43	-262.0253	82.8940	120.5379	205.5913	-61.0106	-75.0686
44	-212.7370	41.4978	34.0029	182.6506	-41.4968	-34.0029
45	-191.4121	18.8523	-14.9655	177.7457	-18.8512	14.9655
46	-179.1769	16.6774	-20.4588	167.0860	-16.6763	20.4588
47	-167.0854	16.6720	-20.4588	154.9979	-16.6702	20.4588
48	-154.9977	16.6702	-20.4589	142.9115	-16.6698	20.4589
49	-142.9137	16.6688	-20.4589	130.8274	-16.6684	20.4589
50	-130.8270	16.6666	-20.4589	118.7425	-16.6657	20.4589
51	-118.7436	16.6633	-20.4589	106.6623	-16.6628	20.4589
52	-106.6615	16.6562	-20.4590	94.5854	-16.6548	20.4590
53	-94.5865	16.6529	-20.4590	82.5137	-16.6523	20.4590
54	-82.5143	16.6488	-20.4590	70.4435	-16.6484	20.4590
55	-70.4438	16.6434	-20.4590	58.3783	-16.6429	20.4590
56	-58.3812	16.6402	-20.4590	46.3175	-16.6395	20.4590
57	-46.3179	16.6376	-20.4590	34.2564	-16.6363	20.4590
58	-34.2564	16.6346	-20.4590	22.1954	-16.6356	20.4590
59	-22.1946	16.6397	-20.4590	10.1301	-16.6405	20.4590
60	-10.1305	16.6402	-20.4590	-1.4370	-12.2584	15.2088

ENVOLVENTE MINIMOS CORTANTES TREN IPF-B, l=30 m, via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-1.7947	-5.4160	12.1009	8.0874	11.9410	2.9066
2	-5.0064	-5.9131	10.7427	9.5540	12.6442	4.8586
3	-2.6348	-7.0204	8.2318	5.6560	14.0071	7.7247
4	4.5251	-8.7817	4.7852	4.2075	15.3067	10.2223
5	8.6679	-10.4778	1.6861	-4.5886	17.7181	14.6447
6	19.6053	-13.2847	-3.3585	-14.9269	20.7727	20.0815
7	31.5463	-16.7187	-9.4364	-25.4846	24.4495	26.5687
8	43.1873	-20.7799	-16.5836	-25.7561	27.3048	31.5910
9	44.0496	-23.9977	-22.2834	-32.4603	31.9662	39.8407

10	50.8722	-29.0174	-31.2274	-35.9902	37.2124	49.2247
11	54.0836	-34.6131	-41.3215	-26.6231	41.1373	56.3290
12	43.9979	-38.8819	-49.1509	-11.2837	48.3172	57.4275
13	27.5670	-46.3690	-50.9888	9.6893	55.8941	72.8963
14	5.1707	-54.2571	-67.2103	36.9827	63.7834	89.1178
15	-23.8266	-62.4469	-84.1967	71.4656	68.9722	99.2042
16	-60.2525	-67.9022	-95.0595	113.6478	77.4276	116.9670
17	-104.5639	-76.6222	-113.6097	163.4542	86.1472	135.5171
18	-156.6316	-85.5751	-132.9565	221.1890	95.1008	154.8640
19	-216.7085	-94.7438	-153.1091	287.7625	101.2686	168.1166
20	-285.6602	-101.1106	-167.1748	309.7073	93.6745	166.6015
21	-8.5884	-9.3466	-5.7412	-24.4574	7.3370	0.7185
22	26.0246	0.8050	17.2191	-22.7281	7.7450	2.4459
23	28.4262	0.0519	14.6681	-24.4145	8.4981	4.9969
24	34.1165	-1.0841	11.2803	-29.0255	9.6341	8.3847
25	42.4697	-2.6380	7.0423	-35.9028	11.1880	12.6227
26	52.7058	-4.6376	1.9405	-44.2384	13.1876	17.7245
27	63.9175	-7.1057	-4.0384	-58.8506	16.2388	35.0834
28	80.8388	-10.6446	-22.2884	-75.4242	20.3005	44.4884
29	99.0927	-15.2062	-32.5973	-89.8219	25.0482	55.1332
30	114.5059	-20.4637	-44.1599	-100.4700	30.4946	67.0372
31	125.4766	-26.4194	-56.9952	-96.3154	34.9696	76.6602
32	120.9522	-31.3994	-67.5623	-94.9201	41.6185	90.7861
33	118.5064	-38.5553	-82.6467	-98.2635	49.4615	93.1316
34	120.1689	-46.8851	-85.9637	-70.2352	58.4337	112.9272
35	89.8765	-56.3157	-106.7442	-28.9979	67.8667	132.9106
36	45.8647	-66.2076	-127.7263	23.1954	77.7588	154.2913
37	-9.5130	-76.5038	-150.1186	88.2009	88.0528	176.6836
38	-77.9947	-87.1909	-173.5368	166.6861	98.7405	200.1018
39	-160.1205	-98.2195	-197.9935	258.0743	109.7695	224.9570
40	-255.1809	-109.5510	-223.9004	328.0220	102.6434	222.2860
41	-20.2218	-6.7264	-19.3817	-40.2927	2.9372	-0.9463
42	41.3827	3.3458	14.5748	-41.4431	3.1794	0.4327
43	45.1613	2.8920	12.6081	-44.8925	3.6329	2.3994
44	51.1819	2.2091	10.0450	-50.4188	4.3158	4.9625
45	59.1687	1.2759	6.8757	-57.7286	5.2491	8.1318
46	68.7753	0.0766	3.0896	-66.4657	6.4482	11.9178
47	79.5937	-1.4081	-1.3247	-76.2075	7.9326	16.3323
48	91.1527	-3.1941	-6.3799	-86.4721	9.7185	21.3873
49	102.9283	-5.2968	-12.0887	-96.7227	11.8224	27.0963
50	114.3398	-7.7304	-18.4658	-106.3687	14.2558	33.4733
51	124.7624	-10.5024	-25.5259	-114.7841	17.0264	40.5333
52	133.5283	-13.6143	-33.2847	-131.7999	21.5707	71.6023
53	150.4488	-18.5298	-65.0695	-134.6481	25.0542	80.0769
54	152.7193	-22.3759	-74.2775	-141.8302	30.5836	93.3957
55	158.8212	-28.2872	-88.3481	-143.3941	36.7470	107.9305
56	158.7880	-34.8395	-103.6538	-138.0173	43.5592	123.7110
57	151.2679	-42.0412	-120.2259	-118.4219	48.5661	135.2335
58	128.9744	-47.4458	-132.5610	-96.3139	56.4406	153.1044
59	103.6024	-55.7219	-151.2663	-64.1069	65.1310	171.8576
60	67.5611	-64.8029	-170.8751	-18.2121	71.3283	185.8825

ENVOLVENTE MINIMOS TORSORES TREN IPF-B, l=30 m, via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-1.6827	-3.8536	10.9145	6.8425	10.3786	4.0930
2	-3.7616	-4.3508	9.5563	7.1764	11.0819	6.0450
3	-0.2573	-5.4578	7.0454	2.1457	12.4445	8.9111
4	8.0354	-7.2194	3.5988	-0.4355	13.7444	11.4087
5	13.3109	-8.9156	0.4997	-10.3642	16.1559	15.8311
6	25.3809	-11.7227	-4.5449	-21.8351	19.2107	21.2679
7	38.4543	-15.1564	-10.6228	-33.5254	22.8872	27.7551
8	51.2281	-19.2168	-17.7700	-34.9302	25.7417	32.7774
9	53.2235	-22.4350	-23.4698	-42.7670	30.4035	41.0271
10	61.1789	-27.4545	-32.4138	-47.4298	35.6495	50.4111
11	65.5231	-33.0506	-42.5079	-39.1955	39.5748	57.5154
12	56.5704	-37.3193	-50.3373	-34.3916	45.7353	68.7882
13	50.6748	-43.7870	-62.3495	-23.5355	52.4060	81.2669
14	38.3956	-50.7700	-75.5809	-5.7468	59.5878	94.9764
15	18.9033	-58.2522	-90.0553	25.6953	64.7784	105.0628
16	-14.4823	-63.7078	-100.9181	58.8702	72.7030	120.8023
17	-49.7865	-71.8981	-117.4450	100.8799	81.0561	137.8274
18	-94.0573	-80.4844	-135.2668	199.0391	93.3806	156.1816
19	-194.5587	-93.0234	-154.4267	264.3660	99.5487	169.4342
20	-262.2637	-99.3905	-168.4924	286.9469	92.1136	167.7879
21	-129.3114	0.0146	-14.6085	122.4564	-4.5500	12.5203
22	-120.8895	12.6921	5.4173	110.9456	-3.9907	14.8762
23	-105.2477	11.7888	2.2378	94.7366	-2.9581	18.3604
24	-85.0348	10.3726	-2.0831	74.4989	-1.3991	22.9912
25	-61.0553	8.3942	-7.5642	51.1348	0.7374	28.7874
26	-34.3314	5.8139	-14.2242	25.7487	3.4842	35.7678
27	-6.0708	2.5990	-22.0818	-0.3853	6.8746	43.9507
28	22.3733	-1.2805	-31.1556	-25.8545	10.9364	53.3556
29	49.5234	-5.8414	-41.4646	-49.1491	15.6834	64.0005
30	73.8327	-11.0991	-53.0271	-68.6931	21.1300	75.9044
31	93.6999	-17.0544	-65.8624	-73.4354	25.6046	85.5274
32	98.0715	-22.0350	-76.4295	-80.9362	32.2541	99.6533
33	104.5233	-29.1907	-91.5139	-80.1446	39.5961	115.0895
34	102.0506	-37.0192	-107.9216	-69.5585	47.6055	131.8540
35	89.1995	-45.4882	-125.6711	-47.7746	56.2504	149.9659
36	64.6416	-54.5906	-144.7815	-13.5022	65.5213	169.4438
37	27.1849	-64.2672	-165.2712	34.3434	75.3476	190.3039
38	-24.1372	-74.4855	-187.1571	96.7445	85.7454	212.5443
39	-90.1788	-85.2244	-210.4360	174.4568	96.6438	236.1829
40	-171.5634	-96.4250	-235.1263	270.8351	93.2787	231.1533
41	-238.3860	8.4563	-36.3354	226.6831	-16.6347	21.6962
42	-225.5930	22.9180	-8.0677	211.3425	-16.3937	23.0752
43	-207.6258	22.4682	-10.0344	192.0923	-15.8186	25.8545
44	-185.8060	21.6550	-13.4101	169.3178	-14.8649	29.6102
45	-160.5659	20.4529	-17.7720	143.4028	-13.5076	34.3597
46	-132.3545	18.8254	-23.1383	121.0715	-12.3003	38.1457
47	-107.9432	17.3360	-27.5526	91.9710	-10.2170	44.5363
48	-77.0259	14.9551	-34.5840	61.5193	-7.6469	51.9724
49	-45.0657	12.0668	-42.6738	30.5458	-4.5535	60.4777
50	-12.9285	8.6436	-51.8472	9.0265	-2.1195	66.8547
51	9.3657	5.8705	-58.9073	-19.4288	1.8620	77.1370
52	38.1740	1.5420	-69.8885	-45.6099	6.4208	88.5562
53	64.2580	-3.3826	-82.0234	-59.4389	9.9070	97.0308
54	77.5096	-7.2324	-91.2314	-77.5994	15.4401	110.3496
55	94.5902	-13.1496	-105.3020	-90.1381	21.6094	124.8844
56	105.5290	-19.7048	-120.6077	-95.7312	28.4245	140.6649
57	108.9814	-26.9089	-137.1798	-87.1065	33.4338	152.1874
58	97.6590	-32.3148	-149.5149	-75.9692	41.3096	170.0583
59	83.2587	-40.5869	-168.2202	-54.0281	49.8600	189.2670
60	57.4818	-49.5319	-188.2845	-19.2052	56.0565	203.2919

ENVOLVENTE MAXIMOS FLECTORES TREN IPF-B, l=15 m, via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-0.3425	-10.2866	-3.2723	-1.0697	-7.9230	-47.1840
2	35.1362	73.0908	196.7500	-84.4131	-63.5674	-174.8425
3	84.4123	63.5715	174.8547	-127.6114	-54.0476	-152.9472
4	127.6126	54.0440	152.9473	-164.4271	-47.5170	-137.9398
5	164.4267	47.5189	137.9400	-194.6348	-37.9930	-116.0325
6	194.6349	37.9873	116.0324	-218.7593	-28.4640	-94.1249
7	218.7581	28.4710	94.1250	-236.8088	-18.9500	-72.2175

8	236.8116	18.9577	72.2175	-248.1899	-12.4298	-57.2100
9	248.1895	12.4208	57.2102	-253.2497	-2.8925	-35.3028
10	253.2499	2.8964	35.3027	-252.2443	6.5708	-13.0224
11	252.2425	-6.5735	13.0223	-245.1111	13.0957	1.9852
12	245.1139	-13.0975	-1.9851	-231.1536	22.6228	23.8927
13	231.1529	-22.6215	-23.8925	-211.1107	32.1506	45.7999
14	211.1073	-32.1530	-45.7999	-184.9813	41.6813	67.7074
15	184.9821	-41.6992	-67.7075	-152.3842	48.2256	82.7150
16	152.3825	-48.2229	-82.7149	-113.2568	57.7476	104.6224
17	113.2989	-57.6597	-103.8018	-68.1556	67.1856	125.7092
18	72.8856	-52.1535	-98.0312	-34.8786	40.9384	80.3223
19	43.4680	-19.6880	-41.1041	-26.8292	26.2130	56.1116
20	33.3301	-9.8547	-23.5123	-23.8085	16.4080	38.3931
21	29.9560	-7.1919	-0.2836	-23.0850	7.2202	0.1568
22	26.0565	0.8167	16.8639	-22.7711	7.7333	2.8011
23	31.2790	14.4735	46.0172	-40.9681	-5.9235	-26.3522
24	48.3976	24.1514	67.3964	-82.4373	-32.2813	-84.0084
25	92.6193	52.8196	133.8833	-137.9882	-41.2698	-107.3183
26	148.3106	57.5474	136.7600	-198.7818	-46.4861	-111.9443
27	198.7820	46.4832	111.9444	-238.4292	-34.9322	-85.3795
28	238.4301	34.9250	85.3794	-267.5670	-23.7940	-60.3855
29	267.5646	23.7965	60.3855	-285.9609	-12.2474	-33.8205
30	285.9624	12.2458	33.8205	-293.5374	-0.6941	-7.2555
31	293.5390	0.6866	7.2553	-290.4466	7.4831	11.0187
32	290.4523	-7.4738	-11.0184	-276.5903	19.0239	37.5834
33	276.5837	-19.0261	-37.5835	-251.8980	30.5770	64.1486
34	251.8974	-30.5820	-64.1486	-216.5809	41.7716	89.5041
35	216.5852	-41.7636	-89.5041	-170.6025	53.3105	116.0689
36	170.6042	-53.3159	-116.0689	-113.7890	64.8647	142.6340
37	117.7112	-51.3056	-132.1163	-63.1230	62.4894	157.4873
38	71.1948	-45.0776	-118.9707	-33.4858	33.7582	101.8330
39	44.6805	-10.8847	-53.7610	-30.2792	19.4347	73.4259
40	38.9138	2.4365	-26.9348	-37.0237	7.7538	45.0774
41	41.7516	-1.2456	0.2227	-39.5156	2.8860	-1.7451
42	41.3827	3.3458	14.5748	-41.4431	3.1794	0.4327
43	47.8596	14.3230	36.8907	-55.8782	-7.7981	-21.8832
44	63.0223	27.3147	62.9489	-80.4609	-20.7898	-47.9414
45	89.2225	43.4303	96.9097	-127.2702	-51.7006	-105.8991
46	128.7021	53.8788	111.3925	-165.3985	-47.3564	-96.3851
47	165.3975	47.3679	96.3849	-195.6473	-37.8429	-74.4772
48	195.6457	37.8400	74.4771	-219.8131	-28.3144	-52.5697
49	219.8149	28.3221	52.5696	-237.9059	-18.8026	-30.6620
50	237.9047	18.7992	30.6620	-249.1669	-12.2739	-15.6545
51	249.1692	12.2778	15.6544	-254.2769	-2.7511	6.2530
52	254.2758	2.7633	-6.2529	-253.3160	6.7590	28.1605
53	253.3172	-6.7485	-28.1605	-246.0579	13.2716	43.1679
54	246.0556	-13.2616	-43.1681	-232.1249	22.7820	65.0757
55	232.1208	-22.7732	-65.0758	-212.1200	32.2941	86.9833
56	212.1210	-32.2918	-86.9831	-186.0429	41.8180	108.8906
57	186.0425	-41.8151	-108.8906	-153.3589	48.3408	123.8982
58	153.3578	-48.3425	-123.8982	-114.2945	57.8679	145.8057
59	114.2929	-57.8733	-145.8058	-69.1420	67.3993	167.7134
60	69.1420	-67.3966	-167.7135	-17.9134	73.9209	182.7208

ENVOLVENTE MAXIMOS CORTANTES TREN IPF-B, l=15 m, via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-20.6226	79.6740	211.3970	-34.7775	-73.1488	-196.3895
2	33.8188	73.2402	197.2103	-83.2043	-63.7149	-175.3028
3	78.1176	64.2148	176.6608	-117.1183	-54.7734	-156.3378
4	108.4875	55.6703	158.2550	-146.4820	-49.1449	-143.2475
5	134.8785	50.4469	145.7452	-162.3858	-41.1486	-124.7264
6	148.3755	42.8420	127.8256	-169.8767	-33.6663	-107.0269
7	154.0090	35.7596	110.7481	-170.1118	-26.7206	-90.1909
8	152.9232	29.2007	94.5534	-171.7292	-22.6762	-79.5459
9	153.7277	25.5200	84.5685	-160.6566	-16.6222	-64.2726
10	142.3344	19.8445	69.9724	-120.8855	-11.2808	-39.7375
11	102.7015	14.8557	46.1316	-111.1070	-8.3307	-31.1241
12	93.4942	12.2578	38.2284	-100.0165	-5.7328	-23.2209
13	83.3677	9.9954	31.0506	-88.2493	-3.4704	-16.0431
14	72.9247	8.0521	24.6120	-76.3971	-1.5271	-9.6045
15	62.7174	6.4129	18.9258	-65.0013	0.1121	-3.9183
16	53.2370	5.0730	14.0047	-54.5494	1.4520	1.0028
17	44.9265	4.0053	9.8601	-45.4656	2.5197	5.1473
18	38.1582	3.1950	6.5027	-38.1095	3.3300	8.5048
19	33.2362	2.6228	3.9421	-32.7727	3.9022	11.0654
20	30.3987	2.2669	2.1872	38.7982	-4.2416	-11.3130
21	-374.3040	102.8622	221.7621	268.5204	-111.9266	-236.9436
22	-269.9250	112.0323	237.8606	170.8338	-100.9032	-212.8667
23	-176.0750	101.3094	214.5942	87.4997	-90.1361	-189.4202
24	-96.5442	90.8889	191.9710	18.3958	-79.7003	-166.6154
25	-31.0799	80.8371	170.0031	-36.8582	-69.6585	-144.6321
26	20.8273	71.2123	148.8701	-78.8966	-60.0604	-123.6604
27	59.9299	62.0591	128.7622	-108.5950	-50.9651	-103.7265
28	87.2010	53.4282	109.7055	-127.0369	-42.4074	-84.8558
29	103.7962	45.3639	91.7256	-135.4804	-34.4406	-67.0735
30	111.0342	37.8966	74.8475	-135.3094	-27.0798	-50.4036
31	110.3335	31.0376	59.0952	-135.7574	-22.4887	-39.4302
32	110.9438	26.9717	49.0530	-79.7051	-17.5422	-16.1569
33	55.7384	22.5249	26.7243	-73.0764	-13.9752	-7.0593
34	50.6327	19.4570	18.5848	-65.0555	-10.9069	1.0801
35	44.7609	16.8770	11.4169	-56.7327	-8.3268	8.2481
36	39.1503	14.7662	5.2340	-49.1164	-6.2161	14.4310
37	34.7298	13.1006	0.0496	-43.1142	-4.5506	19.6154
38	32.3064	11.8515	-4.1229	-39.5041	-3.3013	23.7879
39	32.5376	10.9865	-7.2699	-38.9138	-2.4365	26.9348
40	35.9146	10.4664	-9.3781	23.7062	-6.9231	11.2408
41	-364.3628	95.1621	160.2370	288.8591	-104.1674	-175.4473
42	-289.6365	104.2195	176.2460	216.4418	-97.6944	-161.2385
43	-219.7228	97.9366	162.6175	153.1084	-88.4129	-140.7100
44	-158.8652	88.8689	142.6767	98.0001	-79.3445	-120.7691
45	-106.1582	80.0232	123.3321	50.8831	-70.4992	-101.4246
46	-61.3206	71.4352	104.5940	11.8954	-64.9144	-89.5866
47	-24.4365	66.1217	93.3725	-19.4110	-56.5977	-71.4649
48	4.9946	58.0811	75.8791	-43.8357	-48.5545	-53.9716
49	27.8200	50.3475	59.0265	-61.8815	-40.8221	-37.1189
50	44.5839	42.9225	42.8279	-73.3364	-36.4011	-27.8204
51	55.1162	38.8317	34.1973	-0.2719	-31.1272	-10.4854
52	-18.4739	33.8961	17.5454	-3.7371	-27.3680	-2.5378
53	-15.1088	30.4970	10.2968	-4.6365	-23.9720	4.7106
54	-13.8510	27.4572	3.7639	-3.6913	-20.9315	11.2436
55	-13.9526	24.7856	-2.0356	-1.6528	-18.2585	17.0431
56	-14.6398	22.4897	-7.0833	0.6989	-15.9643	22.0908
57	-15.1088	20.5820	-11.3598	2.5505	-14.0592	26.3674
58	-14.5349	19.0661	-14.8449	3.0754	-12.5429	29.8524
59	-12.0754	17.9511	-17.5174	1.4265	-11.4256	32.5250
60	-6.8767	17.2262	-19.3556	-3.2463	-10.7001	34.3630

ENVOLVENTE MAXIMOS TORSORES TREN IPF-B, l=15 m, via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-20.3352	78.0551	212.9562	-33.8912	-71.5300	-197.9487
2	32.9326	71.6215	198.7695	-79.5621	-62.1189	-177.3818
3	74.4755	62.6185	178.7398	-113.6080	-53.2108	-157.5242
4	104.9772	54.1080	159.4414	-141.8390	-47.5826	-144.4339
5	130.2355	48.8847	146.9316	-156.6102	-39.5864	-125.9128

6	142.5999	41.2800	129.0120	-162.9685	-32.1043	-108.2133
7	147.1010	34.1973	111.9345	-162.0710	-25.1583	-91.3773
8	144.8824	27.6376	95.7398	-162.5551	-21.1131	-80.7323
9	144.5538	23.9573	85.7549	-150.3499	-15.0595	-65.4590
10	132.0277	18.2816	71.1588	-134.0324	-9.5318	-51.1424
11	115.8485	13.1071	57.5365	-122.9858	-6.5819	-42.5289
12	105.3729	10.5089	49.6332	-100.8046	-1.9076	-29.9125
13	84.1559	6.1701	37.7422	-77.3472	2.2763	-18.3319
14	62.0225	2.3064	26.9008	-60.4269	0.0346	-10.7909
15	46.7468	4.8521	20.1122	-47.8991	1.6729	-5.1047
16	36.1349	3.5116	15.1911	-36.3153	3.0134	-0.1836
17	26.6926	2.4444	11.0465	-26.1000	4.0806	3.9609
18	18.7926	1.6345	7.6891	-17.6123	4.8905	7.3184
19	12.7391	1.0621	5.1285	-11.1439	5.4629	9.8790
20	8.7699	0.7060	3.3736	61.5586	-2.6807	-12.4994
21	-253.5810	93.5010	230.6294	156.6910	-102.5654	-245.8109
22	-158.0953	102.6710	246.7279	67.8970	-91.5419	-221.7340
23	-73.1380	91.9469	223.4615	-6.5433	-80.7736	-198.2875
24	-2.5010	81.5259	200.8382	-66.7529	-70.3373	-175.4826
25	54.0694	71.4751	178.8703	-113.1137	-60.2965	-153.4993
26	97.0824	61.8494	157.7373	-146.2570	-50.6975	-132.5276
27	127.2915	52.6949	137.6295	-167.0603	-41.6009	-112.5938
28	145.6665	44.0641	118.5727	-176.6066	-33.0433	-93.7230
29	153.3655	35.9991	100.5929	-176.1532	-25.0758	-75.9408
30	151.7074	28.5320	83.7147	-167.0863	-17.7152	-59.2708
31	142.1102	21.6726	67.9624	-158.6374	-13.1237	-48.2974
32	133.8245	17.6073	57.9202	-136.6868	-6.9131	-33.6943
33	112.7193	11.8956	44.2617	-110.4138	-1.3305	-20.2631
34	87.9695	6.8118	31.7886	-65.1669	1.0243	-10.3926
35	44.8726	4.9465	22.8897	-45.5107	3.6035	-3.2247
36	27.9281	2.8352	16.7067	-26.5603	5.7148	2.9583
37	12.1734	1.1706	11.5224	-9.2243	7.3794	8.1426
38	-1.5835	-0.0787	7.3499	5.7191	8.6287	12.3151
39	-12.6857	-0.9435	4.2029	17.6432	9.4935	15.4620
40	-20.6424	-1.4639	2.0947	80.8931	2.4416	2.3735
41	-146.1986	79.9794	177.1907	81.7013	-88.9847	-192.4010
42	-82.4788	89.0365	193.1997	20.2921	-82.5114	-178.1922
43	-23.5716	82.7505	179.5712	-32.0327	-73.2268	-157.6637
44	26.2791	73.6884	159.6304	-76.1382	-64.1640	-137.7228
45	67.9781	64.8464	140.2858	-112.2511	-55.3224	-118.3783
46	101.8120	56.2663	121.5477	-140.2405	-49.7455	-106.5403
47	127.6991	50.9572	110.3262	-160.5513	-41.4332	-88.4186
48	146.1350	42.9170	92.8329	-173.9817	-33.3904	-70.9254
49	157.9686	35.1852	75.9803	-181.0366	-25.6598	-54.0727
50	163.7388	27.7621	59.7817	-181.4987	-21.2407	-44.7742
51	163.2800	23.6737	51.1511	-127.2568	-11.3228	-32.5686
52	108.5100	14.0998	39.6287	-116.3688	-7.5754	-24.6211
53	97.5237	10.7071	32.3801	-102.9200	-4.1820	-17.3727
54	84.4330	7.6709	25.8472	-87.6290	-1.1460	-10.8397
55	69.9853	5.0060	20.0477	-71.2495	1.5185	-5.0402
56	54.9599	2.7156	15.0000	-54.5638	3.8092	0.0075
57	40.1543	0.8109	10.7235	-38.3768	5.7142	4.2841
58	26.3924	-0.7060	7.2384	-23.5156	7.2310	7.7691
59	14.5146	-1.8268	4.5659	-10.8244	8.3518	10.4417
60	5.3747	-2.5512	2.7277	-1.1599	9.0761	12.2797

ENVOLVENTE MINIMOS FLECTORES TREN IPF-B, l=15 m, via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-20.7346	78.1116	212.5834	-25.0206	-53.3204	-147.4924
2	-9.0462	-11.8480	-2.0735	17.6369	11.8481	2.0735
3	-17.6370	-11.8503	-2.0859	26.2282	11.8503	2.0859
4	-26.2283	-11.8492	-2.0859	34.8189	11.8492	2.0859
5	-34.8187	-11.8488	-2.0859	43.4090	11.8488	2.0859
6	-43.4083	-11.8488	-2.0859	51.9992	11.8488	2.0859
7	-51.9979	-11.8494	-2.0859	60.6218	14.5987	-2.4670
8	-60.6229	-14.6048	2.4670	71.2112	14.6049	-2.4670
9	-71.2100	-14.5992	2.4670	82.3189	15.5992	-0.1670
10	-82.3193	-15.6007	0.1670	93.8791	16.6007	2.1330
11	-93.8791	-16.5996	-2.1330	105.9132	16.6003	2.1330
12	-105.9128	-16.6057	-2.1330	118.6515	17.6046	4.4330
13	-118.6495	-17.5990	-4.4330	131.8330	18.5981	6.7329
14	-131.8326	-18.5931	-6.7329	145.4643	19.5927	9.0330
15	-145.4657	-19.5855	-9.0330	159.6646	19.5843	9.0330
16	-159.6648	-19.5827	-9.0330	174.4632	20.5829	11.3330
17	-174.5073	-20.6758	-12.1537	189.8220	21.6759	14.4537
18	-194.5529	-36.7092	-42.1317	221.2173	37.7089	44.4317
19	-229.8078	-58.9579	-83.6499	272.5522	58.9579	83.6499
20	-279.0533	-75.3171	-116.2492	337.6728	57.6763	81.3502
21	-375.7976	101.2451	219.0359	270.1073	-108.7140	-231.0609
22	-273.0792	100.6777	214.0403	182.6722	-80.2728	-158.9464
23	-191.1804	58.0641	110.1281	136.0195	-58.0644	-110.1281
24	-143.4496	39.8366	69.0837	105.6056	-39.8364	-69.0837
25	-115.7877	19.2986	19.2088	97.4541	-19.2983	-19.2088
26	-107.7781	3.0206	-10.2329	104.9084	-3.0212	10.2329
27	-104.9098	3.0237	-10.2328	102.0368	-3.0240	10.2328
28	-102.0371	3.0258	-10.2329	99.1632	-3.0255	10.2329
29	-99.1625	3.0245	-10.2328	96.2879	-3.0245	10.2328
30	-96.2879	3.0243	-10.2329	93.4157	-3.0245	10.2329
31	-93.4155	3.0277	-10.2329	90.5381	-3.0279	10.2329
32	-90.5408	3.0263	-10.2329	87.6659	-3.0265	10.2329
33	-87.6645	3.0262	-10.2329	84.7885	-3.0265	10.2329
34	-84.7884	3.0267	-10.2329	83.2011	4.4711	15.4700
35	-83.2020	-4.4726	-15.4699	88.2014	5.4726	17.7699
36	-88.2012	-5.4729	-17.7700	94.1000	6.4729	20.0700
37	-98.0221	-20.0259	-30.5875	117.6967	21.0259	32.8875
38	-125.7685	-38.4406	-71.4043	162.8864	39.4407	73.7043
39	-174.0817	-62.3134	-121.7762	233.8289	63.3134	124.0762
40	-242.4633	-85.1834	-170.5673	329.1759	72.9146	149.4148
41	-366.1707	89.9269	146.8501	302.0728	-85.0067	-125.3426
42	-303.9403	78.7758	112.5128	246.8276	-78.7764	-112.5128
43	-253.2445	61.2735	75.1894	208.8210	-61.2731	-75.1894
44	-215.9667	41.7603	34.1237	185.6908	-41.7589	-34.1237
45	-194.4523	19.1144	-14.8447	180.5957	-19.1130	14.8447
46	-182.0269	16.9392	-20.3380	169.7469	-16.9370	20.3380
47	-169.7463	16.9327	-20.3380	157.4703	-16.9335	20.3380
48	-157.4701	16.9335	-20.3381	145.1925	-16.9335	20.3381
49	-145.1947	16.9325	-20.3381	132.9192	-16.9297	20.3381
50	-132.9188	16.9279	-20.3381	120.6457	-16.9279	20.3381
51	-120.6468	16.9255	-20.3381	108.3753	-16.9231	20.3381
52	-108.3745	16.9165	-20.3382	96.1097	-16.9134	20.3382
53	-96.1108	16.9115	-20.3382	83.8487	-16.9115	20.3382
54	-83.8493	16.9080	-20.3382	71.5897	-16.9073	20.3382
55	-71.5900	16.9023	-20.3382	59.3345	-16.9002	20.3382
56	-59.3374	16.8975	-20.3382	47.0858	-16.8970	20.3382
57	-47.0862	16.8951	-20.3382	34.8357	-16.8973	20.3382
58	-34.8357	16.8956	-20.3382	22.5846	-16.8974	20.3382
59	-22.5838	16.9015	-20.3382	10.3305	-16.9010	20.3382
60	-10.3309	16.9007	-20.3382	-1.4370	-12.2584	15.2088

ENVOLVENTE MINIMOS CORTANTES TREN IPF-B, l=15 m, via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-1.7947	-5.4160	12.1009	8.0874	11.9410	2.9066
2	-5.0064	-5.9131	10.7427	9.5540	12.6442	4.8586
3	-2.6348	-7.0204	8.2318	5.6560	14.0071	7.7247

4	4.5251	-8.7817	4.7852	4.2075	15.3067	10.2223
5	8.6679	-10.4778	1.6861	-4.5886	17.7181	14.6447
6	19.6053	-13.2847	-3.3585	-14.9269	20.7727	20.0815
7	31.5463	-16.7187	-9.4364	-25.4846	24.4495	26.5687
8	43.1873	-20.7799	-16.5836	-25.7561	27.3048	31.5910
9	44.0496	-23.9977	-22.2834	-32.4603	31.9662	39.8407
10	50.8722	-29.0174	-31.2274	-35.9902	37.2124	49.2247
11	54.0836	-34.6131	-41.3215	-26.6231	41.1373	56.3290
12	43.9979	-38.8819	-49.1509	-20.6863	47.2979	67.6018
13	36.9696	-45.3497	-61.1631	-8.6976	53.9687	80.0805
14	23.5576	-52.3317	-74.3945	10.2234	61.1495	93.7900
15	2.9327	-59.8130	-88.8689	42.7975	66.3392	103.8764
16	-31.5844	-65.2692	-99.7317	77.1043	74.2644	119.6159
17	-68.0204	-73.4590	-116.2586	120.2455	82.6170	136.6410
18	-113.4229	-82.0449	-134.0804	172.6596	91.3526	154.9697
19	-168.1791	-90.9956	-153.2148	236.5165	97.5208	168.2223
20	-234.4142	-97.3628	-167.2805	309.7073	93.6745	166.6015
21	-8.5884	-9.3466	-5.7412	-24.4574	7.3370	0.7185
22	26.0246	0.8050	17.2191	-22.7281	7.7450	2.4459
23	28.4262	0.0519	14.6681	-24.4145	8.4981	4.9969
24	34.1165	-1.0841	11.2803	-29.0255	9.6341	8.3847
25	42.4697	-2.6380	7.0423	-35.9028	11.1880	12.6227
26	52.7058	-4.6376	1.9405	-45.5647	13.2813	26.5446
27	65.2438	-7.1994	-12.8585	-63.6972	16.8336	34.5965
28	85.6854	-11.2394	-21.8015	-80.9581	21.0691	43.8554
29	104.6266	-15.9748	-31.9643	-95.7578	25.9975	54.3425
30	120.4418	-21.4130	-43.3692	-106.4647	31.6240	66.0807
31	131.4713	-27.5488	-56.0387	-101.2367	36.0997	75.7036
32	125.8735	-32.5295	-66.6057	-99.3575	42.9203	89.6599
33	122.9438	-39.8571	-81.5205	-88.8161	50.4158	104.9275
34	110.7215	-47.8394	-97.7596	-68.1478	58.5514	121.5298
35	87.7891	-56.4334	-115.3468	-36.0219	67.2834	139.4914
36	52.8887	-65.6243	-134.3071	8.7339	76.5918	158.8373
37	4.9485	-75.3368	-154.6646	67.0551	86.3977	179.4803
38	-56.8489	-85.5358	-176.3335	139.6488	96.6646	201.3274
39	-133.0832	-96.1436	-199.2191	226.9423	107.3163	224.3930
40	-224.0489	-107.0978	-223.3364	331.7627	102.9863	220.4747
41	-23.9625	-7.0693	-17.5704	-40.2927	2.9372	-0.9463
42	41.3827	3.3458	14.5748	-41.4431	3.1794	0.4327
43	45.1613	2.8920	12.6081	-44.8925	3.6329	2.3994
44	51.1819	2.2091	10.0450	-50.4188	4.3158	4.9625
45	59.1687	1.2759	6.8757	-57.7286	5.2491	8.1318
46	68.7753	0.0766	3.0896	-66.4657	6.4482	11.9178
47	79.5937	-1.4081	-1.3247	-76.2075	7.9326	16.3323
48	91.1527	-3.1941	-6.3799	-86.4721	9.7185	21.3873
49	102.9283	-5.2968	-12.0887	-99.1934	11.9544	42.0643
50	116.8105	-7.8624	-33.4338	-108.7440	14.3872	48.4413
51	127.1377	-10.6338	-40.4939	-127.0763	18.6519	58.4347
52	145.8205	-15.2398	-51.1861	-142.6702	23.4782	69.5635
53	161.3191	-20.4373	-63.0307	-144.1358	26.9622	78.0381
54	162.2070	-24.2839	-72.2387	-151.0273	32.7451	91.0724
55	168.0183	-30.4487	-86.0248	-151.8164	39.1347	105.3369
56	167.2103	-37.2272	-101.0602	-145.2076	46.1318	120.8745
57	158.4582	-44.6138	-117.3894	-123.7481	51.1400	132.3970
58	134.3006	-50.0197	-129.7245	-99.9326	59.1365	150.0665
59	107.2211	-58.4178	-148.2284	-65.0855	67.7381	169.1252
60	68.5397	-67.4100	-168.1427	-17.3019	73.9347	183.1501

ENVOLVENTE MINIMOS TORSORES TREN IPF-B, l=15 m, via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-1.6827	-3.8536	10.9145	6.8425	10.3786	4.0930
2	-3.7616	-4.3508	9.5563	7.1764	11.0819	6.0450
3	-0.2573	-5.4578	7.0454	2.1457	12.4445	8.9111
4	8.0354	-7.2194	3.5988	-0.4355	13.7444	11.4087
5	13.3109	-8.9156	0.4997	-10.3642	16.1559	15.8311
6	25.3809	-11.7227	-4.5449	-21.8351	19.2107	21.2679
7	38.4543	-15.1564	-10.6228	-33.5254	22.8872	27.7551
8	51.2281	-19.2168	-17.7700	-34.9302	25.7417	32.7774
9	53.2235	-22.4350	-23.4698	-42.7670	30.4035	41.0271
10	61.1789	-27.4545	-32.4138	-47.4298	35.6495	50.4111
11	65.5231	-33.0506	-42.5079	-39.1955	39.5748	57.5154
12	56.5704	-37.3193	-50.3373	-34.3916	45.7353	68.7882
13	50.6748	-43.7870	-62.3495	-23.5355	52.4060	81.2669
14	38.3956	-50.7700	-75.5809	-5.7468	59.5878	94.9764
15	18.9033	-58.2522	-90.0553	25.6953	64.7784	105.0628
16	-14.4823	-63.7078	-100.9181	58.8702	72.7030	120.8023
17	-49.7865	-71.8981	-117.4450	100.8799	81.0561	137.8274
18	-94.0573	-80.4844	-135.2668	152.1624	89.7921	156.1561
19	-147.6820	-89.4349	-154.4012	214.8877	95.9601	169.4087
20	-212.7854	-95.8019	-168.4669	286.9469	92.1136	167.7879
21	-129.3114	0.0146	-14.6085	122.5098	-4.5538	12.5179
22	-120.9429	12.6959	5.4197	110.6254	-3.9657	14.8481
23	-104.9275	11.7638	2.2659	93.7185	-2.8729	18.2832
24	-84.0167	10.2874	-2.0059	72.5675	-1.2228	22.8421
25	-59.1239	8.2179	-7.4151	48.1885	1.0305	28.5448
26	-31.3851	5.5208	-13.9816	21.7957	3.9184	35.4118
27	-2.1178	2.1648	-21.7258	-5.2319	7.4694	43.4638
28	27.2199	-1.8753	-30.6687	-31.3884	11.7050	52.7226
29	55.0573	-6.6100	-40.8316	-55.0850	16.6327	63.2098
30	79.7686	-12.0484	-52.2364	-74.6878	22.2594	74.9479
31	99.6946	-18.1838	-64.9059	-78.3567	26.7347	84.5708
32	102.9928	-23.1651	-75.4729	-85.3736	33.5559	98.5271
33	108.9607	-30.4925	-90.3877	-83.7286	41.0512	113.7947
34	105.6346	-38.4743	-106.6268	-71.9575	49.1863	130.3970
35	91.5985	-47.0690	-124.2141	-48.7274	57.9190	148.3587
36	65.5944	-56.2592	-143.1743	-12.8682	67.2267	167.7045
37	26.5509	-65.9726	-163.5319	36.5568	77.0335	188.3476
38	-26.3506	-76.1714	-185.2008	100.2545	87.3002	210.1947
39	-93.6888	-86.7792	-208.0864	178.6517	97.9519	233.2603
40	-175.7583	-97.7331	-232.2037	274.5758	93.6216	229.3420
41	-242.1267	8.1134	-34.5241	228.0885	-16.7368	21.6167
42	-226.9984	23.0201	-7.9882	212.6738	-16.4955	22.9957
43	-208.9571	22.5700	-9.9549	191.1671	-15.7408	25.6077
44	-184.8808	21.5772	-13.1633	166.0363	-14.5763	29.1670
45	-157.2844	20.1643	-17.3288	137.7731	-12.9843	33.6932
46	-126.7248	18.3021	-22.4718	115.8213	-11.7772	37.4792
47	-102.6930	16.8129	-26.8861	84.6776	-9.4339	43.6230
48	-69.7325	14.1720	-33.6707	52.4164	-6.5871	50.7931
49	-35.9628	11.0070	-41.4945	19.9617	-3.2079	59.0181
50	-2.3444	7.2980	-50.3876	-0.5817	-0.7732	65.3951
51	18.9739	4.5242	-57.4477	-29.9014	3.4939	75.3885
52	48.6466	-0.0899	-68.1400	-56.4802	8.3283	86.5174
53	75.1283	-5.2901	-79.9846	-68.9266	11.8150	94.9920
54	86.9973	-9.1404	-89.1926	-86.7965	17.6016	108.0263
55	103.7873	-15.3111	-102.9787	-98.5604	23.9971	122.2908
56	113.9513	-22.0925	-118.0141	-102.9215	30.9971	137.8284
57	116.1717	-29.4815	-134.3433	-92.4327	36.0077	149.3509
58	102.9852	-34.8887	-146.6784	-79.5879	44.0055	167.0204
59	86.8774	-43.2828	-165.1823	-55.7151	52.6031	186.0791
60	59.1688	-52.2750	-185.0966	-18.9039	58.7997	200.1040

ENVOLVENTE MAXIMOS FLECTORES TREN IPF-B, l=30 m, via 2

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	14.5991	56.7469	-149.4433	-55.8748	-54.2343	134.0061

2	65.3140	69.2310	-118.8249	-111.7922	-59.7067	102.6323
3	111.7909	59.7097	-102.6322	-152.1917	-50.1848	86.4397
4	152.1918	50.1817	-86.4397	-186.2080	-43.6548	75.3472
5	186.2067	43.6550	-75.3473	-213.6169	-34.1294	59.1549
6	213.6152	34.1273	-59.1549	-234.9415	-24.6047	42.9624
7	234.9390	24.6083	-42.9624	-250.1908	-15.0880	26.7699
8	250.1939	15.0928	-26.7699	-258.7724	-8.5671	15.6774
9	258.7706	8.5654	-15.6774	-261.0354	0.9634	-0.5150
10	261.0335	-0.9630	0.5150	-257.2206	10.4863	-16.7075
11	257.2184	-10.4843	16.7075	-247.2510	17.0093	-27.8000
12	247.2494	-17.0051	27.8000	-230.4552	26.5319	-43.9925
13	230.4518	-26.5395	43.9925	-207.5679	36.0667	-60.1850
14	207.5671	-36.0726	60.1850	-178.5977	45.6018	-76.3775
15	178.5993	-45.6166	76.3775	-143.1621	52.1404	-87.4700
16	143.1596	-52.1400	87.4700	-101.1939	61.6655	-103.6625
17	101.3091	-60.6800	101.4936	-53.9752	70.2087	-117.6861
18	61.8309	-46.6501	77.9705	-32.4470	34.4905	-58.9148
19	38.9604	-15.0392	27.8739	-25.6918	21.5642	-38.9664
20	31.5021	-4.1040	11.0704	-26.1703	10.6020	-22.0698
21	31.5935	-7.6401	-6.6839	-24.3697	7.6132	6.7770
22	29.8830	0.2287	-18.9048	-26.0388	8.3213	4.3698
23	37.7172	13.5943	-38.4290	-50.3179	-22.8007	56.1703
24	60.3962	45.7328	-91.0672	-98.8810	-34.1837	71.4322
25	107.0190	51.6605	-99.0469	-151.2833	-40.1092	79.4119
26	160.1452	53.6886	-85.6901	-206.5943	-42.3291	65.8558
27	206.5958	42.3255	-65.8558	-242.2954	-30.7755	46.2208
28	242.2957	30.7712	-46.2208	-267.3955	-19.8473	26.2027
29	267.3937	19.8462	-26.2027	-282.5818	-9.9921	5.8254
30	282.5825	9.9968	-5.8255	-288.4995	0.8146	-14.1450
31	288.4981	-0.8219	14.1451	-283.8500	9.1052	-28.8236
32	283.8544	-9.1057	28.8236	-268.4445	20.6565	-48.4585
33	268.4404	-20.6511	48.4585	-242.3482	32.0333	-68.2118
34	242.3476	-32.0370	68.2118	-205.4531	43.5887	-87.8468
35	205.4569	-43.5867	87.8468	-157.7416	55.1331	-107.4818
36	157.7427	-55.1356	107.4818	-99.2059	66.6836	-127.1168
37	104.1675	-50.2999	103.8973	-50.3698	61.8503	-123.5323
38	59.1199	-41.5296	85.6063	-28.1522	30.0979	-63.9119
39	37.6416	-11.9150	33.1132	-22.2615	20.4651	-47.6482
40	34.3498	1.7206	11.5157	-31.8862	8.3946	-26.4398
41	39.9835	-1.2078	1.5822	-37.9365	2.7731	-1.9712
42	42.4712	9.2313	-16.1834	-46.7988	-2.7062	5.0908
43	51.7436	19.1077	-28.8083	-63.2314	-12.5828	17.7158
44	69.6083	30.3212	-41.2425	-89.2267	-23.7964	30.1499
45	97.6139	42.6198	-53.9317	-126.1491	-36.0949	42.8392
46	126.1919	36.2251	-43.4248	-150.0889	-29.7004	32.3323
47	150.0910	29.7142	-32.3321	-177.6357	-36.2063	30.8399
48	177.6354	36.2038	-30.8399	-200.6175	-26.6777	14.6474
49	200.6200	26.6880	-14.6474	-217.5288	-17.1634	-1.5451
50	217.5268	17.1554	1.5453	-227.6013	-10.6325	-12.6377
51	227.6036	10.6425	12.6376	-231.5300	-1.1189	-28.8301
52	231.5265	1.1305	28.8303	-229.3822	8.3928	-45.0229
53	229.3820	-8.3849	45.0229	-220.9374	14.9083	-56.1154
54	220.9365	-14.9006	56.1154	-205.8166	24.4251	-72.3079
55	205.8142	-24.4145	72.3079	-184.6235	33.9388	-88.5003
56	184.6248	-33.9349	88.5003	-157.3577	43.4591	-104.6927
57	157.3579	-43.4583	104.6927	-123.4835	49.9840	-115.7852
58	123.4840	-49.9852	115.7852	-83.3702	59.2786	-132.0865
59	83.3693	-59.2840	132.0866	-37.1962	68.8107	-148.2791
60	37.1969	-68.8076	148.2791	11.4807	57.7072	-121.5344

ENVOLVENTE MAXIMOS CORTANTES TREN IPF-B, l=30 m, via 2

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	12.7541	75.7570	-129.9174	-65.3143	-69.2315	118.8249
2	62.1851	69.5257	-119.5724	-108.8770	-60.0014	103.3798
3	101.8722	60.6982	-104.8011	-142.9897	-51.1733	88.6086
4	132.6849	52.2620	-90.6827	-168.2092	-45.7351	79.5902
5	155.1686	47.2212	-82.2954	-185.1642	-37.6956	66.1030
6	169.9444	39.5718	-69.4179	-195.2181	-30.0492	53.2254
7	178.3608	32.3152	-57.1298	-199.1995	-22.7949	40.9373
8	181.2347	25.4400	-45.4119	-197.3146	-18.9143	34.3194
9	178.7376	21.9271	-39.3456	-129.1657	-13.0735	22.7014
10	110.4626	16.4471	-28.2616	-120.0228	-9.9221	17.1691
11	101.6476	13.6511	-23.2465	-109.1783	-7.1261	12.1540
12	91.5522	11.2010	-18.7327	-97.3077	-4.6760	7.6402
13	80.8161	9.0747	-14.7052	-85.0289	-2.5497	3.6127
14	70.0255	7.2642	-11.1499	-72.9262	-0.7391	0.0574
15	59.7199	5.7552	-8.0535	-61.5275	0.7698	-3.0390
16	50.3814	4.5372	-5.4036	-51.3056	1.9878	-5.6889
17	42.4391	3.5872	-3.1887	-42.6746	2.9378	-7.9038
18	36.2517	2.8879	-1.3981	-35.9800	3.6371	-9.6944
19	32.1121	2.4210	-0.0221	-31.5020	4.1040	-11.0704
20	30.2453	2.1650	0.9480	33.5785	-3.1227	7.2901
21	-344.9829	99.4042	-156.2814	263.1003	-110.9215	162.9464
22	-265.7992	111.1244	-163.7456	165.4918	-99.5736	144.1106
23	-171.8863	100.0763	-145.7186	81.9248	-88.5256	126.0836
24	-91.9817	89.3779	-128.4876	12.0351	-77.8278	108.8526
25	-25.5895	79.0618	-112.0389	-44.7072	-67.5119	92.4039
26	27.9472	69.1606	-96.3594	-88.9909	-57.6096	76.7244
27	69.4374	59.7062	-81.4355	-121.6454	-48.1552	61.8005
28	99.8029	50.7191	-67.2537	-143.6274	-39.1676	47.6187
29	120.0796	42.2186	-53.8005	-155.9741	-30.6703	34.1655
30	131.3617	34.2273	-41.0627	-84.2064	-24.6100	27.2670
31	59.2021	28.6702	-34.8655	-82.3778	-20.1206	20.3305
32	57.6785	24.6917	-28.6174	-77.0745	-16.1416	14.0825
33	53.3679	21.2231	-23.0441	-69.4694	-12.6734	8.5091
34	47.4256	18.2528	-18.1320	-60.7053	-9.7025	3.5970
35	40.9499	15.7725	-13.8677	-51.8725	-7.2218	-0.6673
36	34.9699	13.7570	-10.2378	-43.9792	-5.2072	-4.2972
37	30.4147	12.1894	-7.2287	-37.9340	-3.6398	-7.3063
38	28.0898	11.0381	-4.8271	-34.5152	-2.4884	-9.7079
39	28.6534	10.2707	-3.0193	-34.3497	-1.7206	-11.5157
40	32.5967	9.8480	-1.7921	-37.8542	0.2672	-13.1320
41	-268.4302	84.5478	-104.3811	288.9052	-101.7021	122.7912
42	-290.8353	101.8481	-123.5059	219.3611	-95.3228	112.4133
43	-223.6860	95.6643	-113.7592	158.7198	-86.1393	97.5667
44	-165.4028	86.6980	-99.5366	106.1107	-77.1733	83.3440
45	-115.0722	77.9643	-85.9287	61.2872	-68.4400	69.7361
46	-72.3947	69.4983	-72.9264	24.3739	-62.9734	61.8339
47	-37.4454	64.3022	-65.6186	-5.0839	-54.7775	49.4261
48	-9.7124	56.3897	-53.7942	-27.9039	-46.8657	37.6017
49	11.6680	48.7846	-42.5406	-44.5984	-39.2598	26.3481
50	27.2461	41.5045	-31.8444	-54.9727	-34.9788	20.7520
51	36.8714	37.5562	-26.7920	-60.3107	-28.0338	10.5995
52	41.8646	30.9624	-17.1678	-3.5387	-24.2685	13.1375
53	-14.8178	27.5442	-20.2185	-2.7860	-21.0180	9.1260
54	-15.0110	24.6695	-16.7028	-0.5083	-18.1418	5.6103
55	-16.2366	22.1589	-13.6653	2.5368	-15.6327	2.5729
56	-17.7136	20.0434	-11.0875	5.5468	-13.5181	-0.0049
57	-18.6192	18.3154	-8.9500	7.7059	-11.7901	-2.1425
58	-18.1195	16.9837	-7.2325	8.1706	-10.4596	-3.8600
59	-15.3594	16.0574	-5.9139	6.0827	-9.5328	-5.1786
60	-9.4728	15.5301	-4.9725	0.5784	-9.0050	-6.1200

ENVOLVENTE MAXIMOS TORSORES TREN IPF-B, l=30 m, via 2

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2

1	0.3381	2.1027	1.5197	-1.8629	-2.1027	-1.5197
2	4.9918	1.8082	2.2672	-9.2955	-1.5114	-2.8842
3	16.2987	0.8176	4.3056	-22.0821	-0.2683	-5.3356
4	32.3871	-0.8239	7.4097	-31.7898	0.8237	-7.4097
5	44.8290	-2.3094	10.1148	-49.6087	3.1082	-11.5389
6	64.8266	-4.9866	14.8538	-68.9836	6.0296	-16.6539
7	85.8382	-8.2918	20.5583	-88.5940	9.5750	-22.7175
8	106.5626	-12.2149	27.1921	-97.7077	12.2144	-27.1921
9	116.2826	-15.2293	32.2183	-113.5970	16.7432	-34.7207
10	132.2982	-20.1162	40.2809	-126.3141	21.8567	-43.1116
11	144.6868	-25.5835	49.1890	-126.1385	25.5839	-49.1890
12	143.7629	-29.6543	55.7677	-129.4482	31.6105	-58.9130
13	145.9364	-36.0174	65.9780	-126.6488	38.1709	-69.4252
14	141.6512	-42.8923	76.9624	-116.8536	45.2444	-80.6997
15	130.0615	-50.2764	88.6958	-93.6104	50.2771	-88.6958
16	104.7536	-55.5837	97.1384	-68.2806	58.1092	-101.1553
17	77.1467	-63.6882	110.0329	-33.9627	66.3740	-114.3198
18	40.3848	-72.2022	123.6217	9.8205	75.0315	-128.1701
19	-5.9528	-81.0897	137.8866	64.7417	81.0897	-137.8866
20	-63.4841	-87.3573	148.0090	125.7022	76.7310	-132.4026
21	-50.2607	-10.3412	20.6947	44.2814	-3.1664	-0.5738
22	-41.5820	2.9637	1.3730	36.4149	-2.7777	-1.9596
23	-30.0199	2.2725	3.5676	24.1348	-1.9579	-4.4477
24	-14.0782	1.1077	6.8515	7.9797	-0.6491	-8.0198
25	5.5754	-0.5847	11.2063	-11.2799	1.1996	-12.6576
26	28.0397	-2.8511	16.6131	-32.6536	3.6334	-18.3422
27	52.2077	-5.7308	23.0533	-54.9635	6.6889	-25.0548
28	76.8056	-9.2573	30.5080	-76.8724	10.3970	-32.7769
29	100.4189	-13.4492	38.9587	-96.9287	14.7751	-41.4896
30	121.5414	-18.3268	48.3865	-113.5951	19.8427	-51.1743
31	138.5982	-23.9107	58.7731	-115.8841	23.9111	-58.7731
32	140.5873	-28.4832	67.0600	-121.3052	30.1852	-70.0993
33	145.0093	-35.2607	79.0609	-118.7890	37.1500	-82.3465
34	140.8321	-42.7337	91.9694	-106.7879	44.8058	-95.4961
35	126.5465	-50.8738	105.7668	-83.8322	53.1202	-109.5294
36	100.7354	-59.6565	120.4345	-48.5633	62.0704	-124.4277
37	62.1257	-69.0482	135.9536	0.2333	71.6262	-140.1727
38	9.6107	-79.0257	152.3059	63.6501	81.7753	-156.7541
39	-57.7905	-89.5564	169.4815	142.5784	92.4664	-174.1535
40	-140.8257	-100.5946	187.4613	235.1995	88.6758	-166.3488
41	-35.0700	-12.7252	27.3676	-25.0780	1.8427	-2.6188
42	27.0081	-1.9880	3.3335	-25.5672	1.9881	-3.3335
43	29.8920	-2.3301	4.6795	-28.2027	2.3300	-4.6795
44	34.8860	-2.8874	6.6493	8.4043	-0.6633	-7.6536
45	0.5571	-0.1316	10.2385	-5.4756	0.6079	-11.7621
46	16.5851	-1.6596	14.9523	-15.3813	1.6611	-14.9523
47	28.4518	-2.9799	18.7372	-32.2595	3.6322	-20.6332
48	47.0540	-5.2486	25.0013	-50.3979	6.0973	-27.2605
49	66.6346	-8.0140	32.1994	-68.9963	9.0703	-34.8118
50	86.3476	-11.3187	40.3083	-78.1412	11.3184	-40.3083
51	96.2439	-13.8930	46.3482	-94.2358	15.1731	-49.3028
52	112.6797	-18.0914	55.8713	-108.0390	19.6066	-59.1562
53	126.3937	-22.8821	66.2372	-109.8043	22.8817	-66.2372
54	127.5999	-26.5243	73.8140	-115.6938	28.2880	-77.4167
55	132.4360	-32.3050	85.4717	-115.9696	34.3224	-89.3782
56	131.1461	-38.7277	97.8928	-109.3047	41.0142	-102.0858
57	122.3761	-45.8122	111.0407	-89.1608	45.8118	-111.0407
58	99.5750	-51.0084	120.4157	-65.8849	53.5677	-124.8761
59	73.0737	-59.1678	134.6501	-31.7889	62.0073	-139.3611
60	35.1792	-68.0024	149.5122	14.1240	68.0033	-149.5122

ENVOLVENTE MINIMOS FLECTORES TREN IPF-B, l=30 m, via 2

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2

1	0.3381	2.1027	1.5197	-1.8629	-2.1027	-1.5197
2	-7.5768	-12.8946	-13.6616	16.9260	12.8946	13.6616
3	-16.9255	-12.8955	-13.6616	26.2751	12.8955	13.6616
4	-26.2749	-12.8950	-13.6616	35.6236	12.8951	13.6616
5	-35.6243	-12.8925	-13.6616	44.9708	12.8925	13.6616
6	-44.9713	-12.8932	-13.6616	54.3188	12.8932	13.6616
7	-54.3180	-12.8953	-13.6616	63.6673	12.8953	13.6616
8	-63.6689	-12.8987	-13.6616	73.5635	15.7664	20.0907
9	-73.5621	-15.7636	-20.0907	85.5158	16.7635	18.3907
10	-85.5151	-16.7643	-18.3907	97.9201	17.7644	16.6907
11	-97.9181	-17.7665	-16.6907	110.7983	17.7666	16.6907
12	-110.7978	-17.7669	-16.6907	124.3795	18.7664	14.9907
13	-124.3776	-18.7631	-14.9908	138.4050	19.7637	13.2908
14	-138.4043	-19.7590	-13.2907	152.8798	20.7589	11.5907
15	-152.8820	-20.7490	-11.5907	167.9233	20.7474	11.5907
16	-167.9232	-20.7501	-11.5907	183.5667	21.7493	9.8907
17	-183.6825	-22.7367	-7.7218	202.9927	36.2293	-12.8334
18	-210.8490	-59.7869	52.5489	254.3449	62.7870	-57.6490
19	-260.8579	-82.2400	88.6900	320.5938	82.5566	-89.4271
20	-326.4035	-100.0159	117.3230	396.6148	73.4488	-82.1901
21	-378.1502	92.8139	-141.9204	263.4988	-110.8308	162.5183
22	-269.0117	102.9891	-150.3905	172.3716	-99.9889	145.2906
23	-184.0495	78.0712	-111.2314	122.1663	-56.0911	76.6987
24	-132.2449	33.1611	-41.8019	100.7426	-33.1610	41.8019
25	-108.8802	15.6848	-14.1871	93.9800	-15.6850	14.1871
26	-102.8422	2.1020	-7.9089	100.8453	-2.1025	7.9089
27	-100.8462	2.1063	-7.9089	98.8455	-2.1057	7.9089
28	-98.8466	2.1072	-7.9089	96.8449	-2.1077	7.9089
29	-96.8443	2.1069	-7.9089	94.8418	-2.1071	7.9089
30	-94.8420	2.1068	-7.9090	92.8409	-2.1065	7.9090
31	-92.8411	2.1086	-7.9089	90.8368	-2.1090	7.9089
32	-90.8385	2.1067	-7.9089	88.8375	-2.1066	7.9089
33	-88.8346	2.1070	-7.9089	86.8319	-2.1073	7.9089
34	-86.8319	2.1078	-7.9089	84.8289	-2.1075	7.9089
35	-84.8306	2.1061	-7.9089	82.8296	-2.1054	7.9089
36	-82.8302	2.1072	-7.9089	84.5930	18.4550	-19.9293
37	-89.5557	-34.8346	43.1488	124.5976	37.8334	-48.2488
38	-133.3484	-58.1551	86.1747	190.3958	61.1543	-91.2747
39	-199.8868	-79.3367	122.0735	276.9925	82.5025	-127.7952
40	-289.0810	-104.6887	163.9277	386.1306	78.8493	-127.6854
41	-370.6298	82.2256	-97.2525	289.2423	-101.5406	122.4022
42	-293.7769	89.5369	-104.2476	228.8620	-89.5372	104.2476
43	-233.8068	73.1349	-80.5300	188.7239	-52.1375	52.2811
44	-195.1003	34.4007	-28.7545	170.1594	-34.3986	28.7545
45	-178.5468	15.5714	-4.9725	167.2572	-15.5724	4.9725
46	-167.2980	15.4493	-4.3870	156.0973	-15.4501	4.3870
47	-156.1003	15.4463	-4.3870	144.9040	-15.4451	4.3870
48	-144.9054	15.4438	-4.3870	133.7122	-15.4423	4.3870
49	-133.7139	15.4346	-4.3870	122.5242	-15.4345	4.3870
50	-122.5235	15.4389	-4.3870	111.3317	-15.4390	4.3870
51	-111.3327	15.4310	-4.3870	100.1468	-15.4294	4.3870
52	-100.1455	15.4292	-4.3870	88.9613	-15.4277	4.3870
53	-88.9626	15.4197	-4.3870	77.7838	-15.4185	4.3870
54	-77.7841	15.4198	-4.3870	66.6057	-15.4171	4.3870
55	-66.6058	15.4074	-4.3870	55.4352	-15.4062	4.3870
56	-55.4368	15.4079	-4.3870	44.2651	-15.4076	4.3870
57	-44.2664	15.4058	-4.3870	33.0973	-15.4055	4.3870
58	-33.0970	15.4037	-4.3870	21.9281	-15.4046	4.3870
59	-21.9271	15.4078	-4.3870	10.7561	-15.4082	4.3870
60	-10.7566	15.4074	-4.3870	3.6150	2.6417	-33.1665

ENVOLVENTE MINIMOS CORTANTES TREN IPF-B, l=30 m, via 2

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	2.7499	-6.6642	-24.0065	4.4477	13.1892	12.9140
2	0.6933	-7.3583	-22.5852	4.0145	14.1801	10.8757
3	4.7167	-8.7471	-19.8941	-1.2000	15.8214	7.7716
4	12.9522	-10.7829	-16.1590	-2.7696	17.3077	5.0665
5	16.9827	-12.6564	-12.8441	-11.8955	19.9802	0.3275
6	28.0249	-15.7205	-7.5156	-22.0346	23.2885	-5.3770
7	39.5517	-19.4062	-1.2409	-31.8841	27.2144	-12.0108
8	50.2771	-23.7041	5.9445	-30.7268	30.2286	-17.0370
9	49.5123	-27.0790	11.5047	-35.8699	35.1179	-25.0996
10	54.5842	-32.3209	20.0845	-34.1749	41.1447	-21.7036
11	52.3886	-38.6917	17.1898	-21.9711	45.2170	-28.2823
12	39.2859	-43.0905	24.2548	-3.5787	52.6163	-40.4473
13	19.6371	-50.8115	36.8919	20.8431	60.3373	-53.0843
14	-6.3615	-58.8311	49.9880	51.8311	68.3568	-66.1805
15	-39.2047	-67.1388	63.5306	90.2452	73.6641	-74.6231
16	-79.7032	-72.7168	72.4082	136.5886	82.2420	-88.6007
17	-128.3078	-81.5452	86.8101	190.7673	91.0706	-103.0026
18	-184.8730	-90.6017	101.6265	253.0747	100.1269	-117.8190
19	-249.6379	-99.8729	116.8490	324.4109	106.3980	-127.9415
20	-323.4606	-106.3322	127.3697	343.0385	98.1723	-127.7420
21	-7.5470	-10.4217	-0.3875	-27.0691	7.8159	5.9778
22	29.8830	0.2287	-18.9048	-26.0388	8.3213	4.3698
23	32.8424	-0.6212	-16.5009	-28.1907	9.1712	1.9659
24	38.8567	-1.8547	-13.3145	-33.0334	10.4047	-1.2205
25	47.2998	-3.5052	-9.3590	-39.9084	12.0552	-5.1760
26	57.3927	-5.6030	-4.6479	-48.0535	14.1576	-15.7069
27	68.2720	-8.1739	6.6251	-64.6456	17.6820	-23.1616
28	87.0327	-12.1863	14.8084	-80.2553	21.8760	-31.6123
29	104.1827	-16.8785	23.9743	-93.3732	26.7544	-41.0402
30	118.1735	-22.2643	34.1039	-102.4249	32.3302	-51.4267
31	127.4067	-28.3574	45.1786	-96.4074	36.9078	-59.7136
32	120.8800	-33.4381	54.1403	-92.8294	43.6901	-71.7145
33	116.1112	-40.7161	66.8024	-91.8830	51.9497	-76.2232
34	113.3395	-49.4704	71.9589	-59.8796	61.0219	-91.5939
35	78.9312	-59.0090	87.9640	-16.5602	70.5595	-107.5990
36	32.6967	-68.9925	104.5899	39.0076	80.5420	-124.2249
37	-26.1970	-79.3862	121.8232	107.6258	90.9363	-141.4582
38	-98.4325	-90.1698	139.6505	189.9560	101.7206	-159.2855
39	-184.5445	-101.2972	158.0583	286.4882	112.8475	-177.6933
40	-284.8900	-112.7282	177.0338	353.7683	105.5324	-172.8780
41	-21.8666	-7.2759	16.3422	-39.8668	2.9184	-2.6859
42	42.0742	3.2648	-7.0607	-42.0761	3.2603	-4.0319
43	46.7988	2.7054	-5.0908	-46.3949	3.8195	-6.0017
44	53.5687	1.9124	-2.5060	-52.5904	4.6124	-8.5866
45	62.0948	0.8618	0.6843	-60.3548	5.6631	-11.7768
46	72.0201	-0.4631	4.4692	-69.3195	6.9878	-15.5617
47	82.9210	-2.0727	8.8373	-79.0535	8.5976	-19.9298
48	94.3181	-3.9948	13.7762	-89.0562	10.5195	-24.8687
49	105.6690	-6.2310	19.2727	-98.7858	12.7557	-30.3652
50	116.3881	-8.8155	25.3127	-107.6314	15.3405	-36.4051
51	125.8332	-11.7344	31.8810	-118.7991	19.0249	-55.2236
52	137.1644	-15.7760	51.2122	-131.8365	23.8162	-65.5896
53	149.9132	-20.9345	62.0739	-132.3703	27.4591	-73.1664
54	149.6671	-24.9523	70.1289	-136.5353	33.2410	-84.8241
55	152.5403	-31.1162	82.2463	-134.5702	39.6586	-97.2452
56	148.7566	-37.9299	95.1077	-125.1282	46.7414	-110.3931
57	136.9431	-45.4100	108.6756	-101.6542	51.9346	-119.7681
58	110.5355	-51.0065	118.4495	-76.6628	60.1609	-133.5046
59	82.0348	-59.6389	132.5633	-35.6062	69.1632	-148.7558
60	36.8907	-69.0375	148.1703	15.5265	75.5612	-159.2628

ENVOLVENTE MINIMOS TORSORES TREN IPF-B, l=30 m, via 2

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	13.3236	50.4202	-139.3425	-49.8792	-50.4206	139.3425
2	44.7375	44.5888	-129.6715	-73.6024	-41.6999	125.0674
3	64.8712	36.2681	-116.0489	-87.0783	-33.5848	111.6862
4	75.3265	28.5446	-103.2988	-96.0217	-28.5447	103.2988
5	81.8060	23.8986	-95.5213	-92.9010	-21.4150	91.3899
6	76.7691	17.1519	-84.2018	-83.0242	-14.8595	80.2981
7	65.5064	10.9764	-73.6802	-67.5681	-8.8660	70.0008
8	49.1743	5.3533	-63.9345	-53.0569	-5.3530	63.9345
9	34.2727	2.2077	-58.4022	-29.0607	-0.2709	54.9398
10	10.3459	-2.5275	-49.9247	-2.4880	4.3042	46.6727
11	-15.7236	-6.7596	-42.1589	20.6250	6.7597	42.1588
12	-37.9403	-8.8829	-38.1313	50.6491	10.5083	35.0834
13	-66.7071	-12.3135	-31.5282	80.7490	13.7997	28.6784
14	-95.2298	-15.3014	-25.5819	91.0761	9.2330	23.2348
15	-103.7053	-10.4449	-20.5849	111.2768	10.4449	20.5849
16	-121.8207	-11.3972	-18.3700	130.0838	11.3972	18.3700
17	-138.3654	-12.0938	-16.5794	147.1327	12.0938	16.5794
18	-153.0274	-12.5582	-15.2035	162.1325	12.5582	15.2035
19	-165.5683	-12.8155	-14.2333	174.8601	12.8155	14.2333
20	-175.8101	-12.8809	-13.6617	248.1776	5.3982	32.9923
21	-299.9306	82.6291	-149.8920	201.9419	-98.8703	173.5135
22	-204.7555	90.8259	-160.5865	121.0269	-87.8564	155.9443
23	-127.8300	80.1546	-143.8132	55.1560	-77.3199	139.3350
24	-65.8223	70.0055	-127.9864	3.5844	-67.3134	123.6683
25	-17.8507	60.4149	-113.0888	-34.6206	-57.8269	108.9563
26	17.1359	51.3703	-99.1324	-65.3369	-48.3707	94.0324
27	45.1190	42.3882	-84.9506	-84.9379	-39.3850	79.8506
28	62.5496	33.8882	-71.4974	-94.4412	-30.8872	66.3975
29	70.5127	25.8871	-58.7595	-94.9587	-22.8878	53.6595
30	70.1591	18.4012	-46.7233	-24.6370	-19.9557	42.4014
31	-0.3468	15.9803	-36.1532	-14.8339	-15.9804	36.1532
32	-9.6372	12.5061	-30.5799	-2.2441	-12.5059	30.5799
33	-21.0376	9.5375	-25.6678	11.9763	-9.5373	25.6678
34	-33.4333	7.0559	-21.4035	26.7301	-7.0558	21.4035
35	-45.7807	5.0421	-17.7736	40.9900	-5.0421	17.7736
36	-57.1261	3.4748	-14.7645	53.8248	-3.4751	14.7645
37	-66.6355	2.3231	-12.3628	64.4289	-2.3231	12.3628
38	-73.6234	1.5558	-10.5551	72.1454	-1.5556	10.5551
39	-77.5579	1.1320	-9.3279	76.4815	-1.1320	9.3279
40	-78.0798	1.0125	-8.6684	80.0640	0.6200	8.2402
41	-258.6147	76.8813	-94.8011	276.7893	-100.7972	124.3094
42	-278.9965	94.6147	-114.5628	210.4009	-94.6148	114.5628
43	-215.1235	88.6480	-105.4400	152.8799	-85.6477	100.3399
44	-160.0530	79.9177	-91.8323	103.3115	-76.9177	86.7323
45	-112.8162	71.4398	-78.8298	61.3966	-68.4410	73.7298
46	-73.0599	63.2486	-66.4223	27.2057	-63.2493	66.4223
47	-40.8080	58.3442	-59.6977	0.2336	-55.3435	54.5977
48	-15.4998	50.7373	-48.4441	-20.3828	-47.7378	43.3441
49	3.7708	43.4523	-37.7481	18.8353	-37.2144	34.6293
50	-36.4392	33.2707	-29.5766	12.3182	-33.2688	29.5766
51	-30.5188	29.6639	-25.0526	9.0137	-29.6615	25.0526
52	-27.3812	26.4251	-21.0410	8.2226	-26.4242	21.0410
53	-26.3005	23.5421	-17.5253	9.2325	-23.5407	17.5253
54	-26.5303	21.0430	-14.4878	11.2737	-21.0428	14.4878
55	-27.2810	18.9197	-11.9100	13.5640	-18.9171	11.9100
56	-27.7507	17.1942	-9.7725	15.2840	-17.1937	9.7725
57	-27.1001	15.8610	-8.0550	15.5995	-15.8624	8.0550
58	-24.4798	14.9313	-6.7364	13.6541	-14.9315	6.7364
59	-19.0259	14.4074	-5.7950	8.5805	-14.4076	5.7950
60	-9.8648	14.2843	-5.2095	-0.4920	-14.2844	5.2095

ENVOLVENTE MAXIMOS FLECTORES TREN IPF-B, l=15 m, via 2

ESFUERZOS EN EXTREMO DE BARRA

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	14.1886	60.7598	-145.0986	-55.8748	-54.2343	134.0061
2	65.3140	69.2310	-118.8249	-111.7922	-59.7067	102.6323
3	111.7909	59.7097	-102.6322	-152.1917	-50.1848	86.4397
4	152.1918	50.1817	-86.4397	-186.2080	-43.6548	75.3472
5	186.2067	43.6550	-75.3473	-213.6169	-34.1294	59.1549
6	213.6152	34.1273	-59.1549	-234.9415	-24.6047	42.9624
7	234.9390	24.6083	-42.9624	-250.1908	-15.0880	26.7699
8	250.1939	15.0928	-26.7699	-258.7724	-8.5671	15.6774
9	258.7706	8.5654	-15.6774	-261.0354	0.9634	-0.5150
10	261.0335	-0.9630	0.5150	-257.2206	10.4863	-16.7075
11	257.2184	-10.4843	16.7075	-247.2510	17.0093	-27.8000
12	247.2494	-17.0051	27.8000	-230.4552	26.5319	-43.9925
13	230.4518	-26.5395	43.9925	-207.5679	36.0667	-60.1850
14	207.5671	-36.0726	60.1850	-178.5977	45.6018	-76.3775
15	178.5993	-45.6166	76.3775	-143.1621	52.1404	-87.4700
16	143.1596	-52.1400	87.4700	-101.1939	61.6655	-103.6625
17	101.3091	-60.6800	101.4936	-53.9752	70.2087	-117.6861
18	61.8309	-46.6501	77.9705	-32.4470	34.4905	-58.9148
19	38.9604	-15.0392	27.8739	-25.6918	21.5642	-38.9664
20	31.5021	-4.1040	11.0704	-26.1703	10.6020	-22.0698
21	31.5935	-7.6401	-6.6839	-24.3697	7.6132	6.7770
22	29.8830	0.2287	-18.9048	-26.0388	8.3213	4.3698
23	37.7172	13.5943	-38.4290	-48.9733	-23.5826	50.7085
24	59.0516	46.5147	-85.6054	-98.3880	-35.5367	67.1499
25	106.5260	53.0135	-94.7646	-152.0758	-41.4621	75.1296
26	160.9377	55.0415	-81.4078	-208.8573	-43.9697	62.8463
27	208.8588	43.9661	-62.8463	-246.1158	-32.4140	43.2113
28	246.1161	32.4097	-43.2113	-272.6652	-21.2709	24.6287
29	272.6634	21.2698	-24.6287	-288.6567	-9.7189	4.9937
30	288.6574	9.7236	-4.9938	-293.8332	1.8271	-14.6413
31	293.8318	-1.8344	14.6414	-288.1051	10.0197	-28.1434
32	288.1095	-10.0202	28.1434	-271.8329	21.5687	-47.7783
33	271.8288	-21.5633	47.7783	-244.7307	33.1143	-67.4132
34	244.7301	-33.1180	67.4132	-206.8112	44.6691	-87.0482
35	206.8150	-44.6671	87.0482	-158.3245	55.8624	-105.6679
36	158.3256	-55.8649	105.6679	-99.0925	67.4155	-125.3029
37	104.0541	-51.0318	102.0834	-49.5635	62.5825	-121.7184
38	58.3136	-42.2618	83.7924	-28.1522	30.0979	-63.9119
39	37.6416	-11.9150	33.1132	-22.2615	20.4651	-47.6482
40	34.3498	1.7206	11.5157	-31.8862	8.3946	-26.4398
41	39.9835	-1.2078	1.5822	-37.9365	2.7731	-1.9712
42	42.4712	9.2313	-16.1834	-46.7988	-2.7062	5.0908
43	51.7436	19.1077	-28.8083	-63.2314	-12.5828	17.7158
44	69.6083	30.3212	-41.2425	-90.2042	-40.4295	49.2636
45	98.5914	59.2529	-73.0454	-138.8112	-49.7282	56.8529
46	138.8540	49.8584	-57.4385	-172.6347	-43.3348	46.3460
47	172.6368	43.3486	-46.3458	-199.9774	-33.8254	30.1533
48	199.9771	33.8229	-30.1533	-221.2310	-24.2991	13.9608
49	221.2335	24.3094	-13.9608	-236.4299	-14.8393	-2.5161
50	236.4279	14.8313	2.5163	-244.8186	-8.3085	-13.6087
51	244.8209	8.3185	13.6086	-247.0604	1.1999	-29.8011
52	247.0569	-1.1883	29.8013	-243.2309	10.7081	-45.9938
53	243.2307	-10.7002	45.9938	-233.1032	17.2270	-57.0863
54	233.1023	-17.2193	57.0863	-216.2980	26.7430	-73.2788
55	216.2956	-26.7324	73.2788	-193.4235	36.2552	-89.4712
56	193.4248	-36.2513	89.4712	-164.4752	45.7769	-105.6637
57	164.4754	-45.7761	105.6637	-128.9200	52.3013	-116.7562
58	128.9205	-52.3025	116.7562	-86.9849	61.8287	-132.9487
59	86.9840	-61.8341	132.9488	-38.9623	71.3595	-149.1413
60	38.9630	-71.3564	149.1413	11.4505	57.4689	-121.2136

ENVOLVENTE MAXIMOS CORTANTES TREN IPF-B, l=15 m, via 2

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	12.7541	75.7570	-129.9174	-65.3143	-69.2315	118.8249
2	62.1851	69.5257	-119.5724	-106.3452	-60.0122	104.3807
3	99.3404	60.7090	-105.8020	-136.5425	-51.3214	90.6000
4	126.2377	52.4101	-92.6741	-161.8708	-45.8846	81.5817
5	148.8302	47.3707	-84.2869	-173.6445	-38.0973	69.3785
6	158.4247	39.9735	-72.6934	-177.4426	-30.8231	58.0555
7	160.5853	33.0891	-61.9599	-174.4127	-24.0734	47.5708
8	156.4479	26.7185	-52.0454	-173.4561	-20.1948	40.9529
9	154.8791	23.2076	-45.9791	-159.8748	-14.3310	31.8193
10	141.1717	17.7046	-37.3795	-120.0228	-9.9221	17.1691
11	101.6476	13.6511	-23.2465	-109.1783	-7.1261	12.1540
12	91.5522	11.2010	-18.7327	-97.3077	-4.6760	7.6402
13	80.8161	9.0747	-14.7052	-85.0289	-2.5497	3.6127
14	70.0255	7.2642	-11.1499	-72.9262	-0.7391	0.0574
15	59.7199	5.7552	-8.0535	-61.5275	0.7698	-3.0390
16	50.3814	4.5372	-5.4036	-51.3056	1.9878	-5.6889
17	42.4391	3.5872	-3.1887	-42.6746	2.9378	-7.9038
18	36.2517	2.8879	-1.3981	-35.9800	3.6371	-9.6944
19	32.1121	2.4210	-0.0221	-31.5020	4.1040	-11.0704
20	30.2453	2.1650	0.9480	39.0070	-3.6192	5.2091
21	-350.4114	99.9007	-154.2004	241.2448	-109.0144	161.8695
22	-243.9437	109.2173	-162.6687	147.6623	-98.0760	144.0860
23	-154.0568	98.5787	-145.6940	68.2264	-87.3956	127.0920
24	-78.2833	88.2479	-129.4960	2.8136	-77.0470	110.8763
25	-16.3680	78.2810	-114.0626	-48.9649	-67.0885	95.5471
26	32.2049	68.7372	-99.5026	-87.7572	-57.5838	81.2028
27	68.2037	59.6804	-85.9139	-114.4546	-48.5830	67.8172
28	92.6121	51.1469	-73.2704	-130.1474	-40.1265	55.3645
29	106.5996	43.1775	-61.5463	-136.0975	-32.2599	43.8199
30	111.4851	35.8169	-50.7171	-133.7115	-25.0070	33.1594
31	108.7072	29.0672	-40.7579	-132.2591	-20.5171	26.2229
32	107.5598	25.0882	-34.5098	-77.0745	-16.1416	14.0825
33	53.3679	21.2231	-23.0441	-69.4694	-12.6734	8.5091
34	47.4256	18.2528	-18.1320	-60.7053	-9.7025	3.5970
35	40.9499	15.7725	-13.8677	-51.8725	-7.2218	-0.6673
36	34.9699	13.7570	-10.2378	-43.9792	-5.2072	-4.2972
37	30.4147	12.1894	-7.2287	-37.9340	-3.6398	-7.3063
38	28.0898	11.0381	-4.8271	-34.5152	-2.4884	-9.7079
39	28.6534	10.2707	-3.0193	-34.3497	-1.7206	-11.5157
40	32.5967	9.8480	-1.7921	25.2387	-5.6709	-3.4693
41	-331.5231	90.4859	-114.0438	253.8275	-99.1456	121.9291
42	-255.7576	99.2916	-122.6438	186.5616	-92.7653	112.0915
43	-190.8865	93.1068	-113.4374	127.7745	-83.5815	97.2449
44	-134.4575	84.1402	-99.2148	77.0190	-74.6158	83.0221
45	-85.9805	75.4068	-85.6068	34.0491	-65.8825	69.4143
46	-45.1566	66.9408	-72.6046	-1.0103	-60.4187	61.5121
47	-12.0612	61.7475	-65.2968	-29.0434	-52.2253	48.5640
48	14.2471	53.8375	-52.9321	-49.5844	-44.3121	37.2799
49	33.3485	46.2310	-42.2188	-64.4286	-36.7059	26.0263
50	47.0763	38.9506	-31.5226	-72.9501	-32.4282	20.4302
51	54.8488	35.0056	-26.4702	-0.3261	-28.1301	18.0504
52	-18.1200	31.0587	-24.6187	-2.0335	-24.5310	13.5262
53	-16.3230	27.8067	-20.6072	-1.4727	-21.2793	9.5147
54	-16.3243	24.9308	-17.0915	0.6118	-18.4057	5.9990
55	-17.3567	22.4228	-14.0540	3.4648	-15.8979	2.9616
56	-18.6416	20.3086	-11.4762	6.2815	-13.7845	0.3838
57	-19.3539	18.5818	-9.3387	8.2476	-12.0567	-1.7538
58	-18.6612	17.2503	-7.6212	8.5196	-10.7259	-3.4713
59	-15.7084	16.3237	-6.3026	6.2388	-9.7987	-4.7899
60	-9.6289	15.7960	-5.3612	0.5417	-9.2707	-5.7313

ENVOLVENTE MAXIMOS TORSORES TREN IPF-B, l=15 m, via 2

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	0.3381	2.1027	1.5197	-1.8629	-2.1027	-1.5197
2	4.9918	1.8082	2.2672	-9.2955	-1.5114	-2.8842
3	16.2987	0.8176	4.3056	-22.0821	-0.2683	-5.3356
4	32.3871	-0.8239	7.4097	-31.7898	0.8237	-7.4097
5	44.8290	-2.3094	10.1148	-49.6087	3.1082	-11.5389
6	64.8266	-4.9866	14.8538	-68.9836	6.0296	-16.6539
7	85.8382	-8.2918	20.5583	-88.5940	9.5750	-22.7175
8	106.5626	-12.2149	27.1921	-97.7077	12.2144	-27.1921
9	116.2826	-15.2293	32.2183	-113.5970	16.7432	-34.7207
10	132.2982	-20.1162	40.2809	-126.3141	21.8567	-43.1116
11	144.6868	-25.5835	49.1890	-126.1385	25.5839	-49.1890
12	143.7629	-29.6543	55.7677	-129.4482	31.6105	-58.9130
13	145.9364	-36.0174	65.9780	-126.6488	38.1709	-69.4252
14	141.6512	-42.8923	76.9624	-116.8536	45.2444	-80.6997
15	130.0615	-50.2764	88.6958	-93.6104	50.2771	-88.6958
16	104.7536	-55.5837	97.1384	-68.2806	58.1092	-101.1553
17	77.1467	-63.6882	110.0329	-33.9627	66.3740	-114.3198
18	40.3848	-72.2022	123.6217	9.8205	75.0315	-128.1701
19	-5.9528	-81.0897	137.8866	64.7417	81.0897	-137.8866
20	-63.4841	-87.3573	148.0090	125.7022	76.7310	-132.4026
21	-50.2607	-10.3412	20.6947	44.1872	-3.1595	-0.5743
22	-41.4878	2.9568	1.3735	35.8489	-2.7340	-1.9695
23	-29.4539	2.2288	3.5775	22.8152	-1.8475	-4.4759
24	-12.7586	0.9973	6.8797	5.7283	-0.4446	-8.0745
25	7.8268	-0.7892	11.2610	-14.5354	1.5228	-12.7459
26	31.2952	-3.1743	16.7014	-36.8816	4.0968	-18.4695
27	56.4357	-6.1942	23.1806	-60.0344	7.3098	-25.2244
28	81.8765	-9.8782	30.6776	-82.5700	11.1865	-32.9892
29	106.1165	-14.2387	39.1710	-102.9638	15.7384	-41.7419
30	127.5765	-19.2901	48.6388	-119.6280	20.9757	-51.4600
31	144.6311	-25.0437	59.0588	-120.8409	25.0436	-59.0588
32	145.5441	-29.6157	67.3457	-125.7389	31.4771	-70.4079
33	149.4430	-36.5526	79.3695	-122.3467	38.5805	-82.6624
34	144.3898	-44.1642	92.2853	-109.1651	46.3465	-95.7986
35	128.9237	-52.4145	106.0693	-84.7996	54.7277	-109.7917
36	101.7028	-61.2640	120.6968	-48.0154	63.6956	-124.6173
37	61.5778	-70.6734	136.1432	2.2220	73.1937	-140.1697
38	7.6220	-80.5932	152.3029	66.7297	83.1833	-156.3506
39	-60.8701	-90.9644	169.0780	146.0730	93.5974	-173.1450
40	-144.3203	-101.7256	186.4528	238.1665	88.9361	-165.3352
41	-38.0370	-12.9855	26.3540	-25.0780	1.8427	-2.6188
42	27.0081	-1.9880	3.3335	-25.5672	1.9881	-3.3335
43	29.8920	-2.3301	4.6795	-28.2027	2.3300	-4.6795
44	34.8860	-2.8874	6.6493	4.8191	-0.3529	-7.7000
45	4.1423	-0.4420	10.2849	-11.3085	1.1477	-11.9228
46	22.4180	-2.1994	15.1130	-20.8237	2.1996	-15.1130
47	33.8942	-3.5184	18.8979	-39.6423	4.4200	-20.9172
48	54.4368	-6.0364	25.2853	-59.4833	7.1468	-27.6727
49	75.7200	-9.0635	32.6116	-79.4579	10.3901	-35.3518
50	96.8092	-12.6385	40.8483	-87.6459	12.6384	-40.8484
51	105.7486	-15.2130	46.8883	-104.5200	16.7612	-49.9648
52	122.9639	-19.6795	56.5333	-118.6513	21.4494	-59.9273
53	137.0060	-24.7249	67.0083	-119.0805	24.7239	-67.0083
54	136.8761	-28.3665	74.5851	-124.6458	30.3640	-78.2765
55	141.3880	-34.3810	86.3315	-124.1376	36.5976	-90.2983
56	139.3141	-41.0029	98.8129	-116.2672	43.4459	-103.0313
57	129.3386	-48.2439	111.9862	-94.3606	48.2428	-111.9862
58	104.7748	-53.4394	121.3612	-69.4624	56.0947	-125.8057
59	76.6512	-61.6948	135.5797	-33.5550	64.5561	-140.2233
60	36.9453	-70.5512	150.3744	14.2048	70.5502	-150.3744

ENVOLVENTE MINIMOS FLECTORES TREN IPF-B, l=15 m, via 2

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	0.3381	2.1027	1.5197	-1.8629	-2.1027	-1.5197
2	-7.5768	-12.8946	-13.6616	16.9260	12.8946	13.6616
3	-16.9255	-12.8955	-13.6616	26.2751	12.8955	13.6616
4	-26.2749	-12.8950	-13.6616	35.6236	12.8951	13.6616
5	-35.6243	-12.8925	-13.6616	44.9708	12.8925	13.6616
6	-44.9713	-12.8932	-13.6616	54.3188	12.8932	13.6616
7	-54.3180	-12.8953	-13.6616	64.2989	16.1875	19.9644
8	-64.3005	-16.1909	-19.9644	76.0398	16.1915	19.9644
9	-76.0384	-16.1887	-19.9644	88.3005	17.1884	18.2644
10	-88.2998	-17.1892	-18.2644	101.0129	18.1881	16.5644
11	-101.0109	-18.1902	-16.5644	114.1986	18.1908	16.5644
12	-114.1981	-18.1911	-16.5644	128.0882	19.1917	14.8644
13	-128.0863	-19.1884	-14.8645	142.4222	20.1872	13.1645
14	-142.4215	-20.1825	-13.1644	157.2044	21.1821	11.4644
15	-157.2066	-21.1722	-11.4644	172.5556	21.1717	11.4644
16	-172.5555	-21.1744	-11.4644	188.5069	22.1741	9.7644
17	-188.6227	-23.1615	-7.5955	205.7390	24.1618	5.8955
18	-213.5953	-47.7194	33.8200	248.2418	48.7189	-35.5200
19	-254.7548	-68.1719	66.5610	304.1791	68.1718	-66.5610
20	-309.9888	-85.6311	94.4569	370.2031	67.1647	-71.0815
21	-351.7385	99.0980	-153.0290	243.0536	-105.7909	157.1549
22	-248.5665	97.9492	-145.0271	163.7750	-78.0087	110.7579
23	-175.4529	56.0910	-76.6987	122.1663	-56.0911	76.6987
24	-132.2449	33.1611	-41.8019	100.7426	-33.1610	41.8019
25	-108.8802	15.6848	-14.1871	93.9800	-15.6850	14.1871
26	-102.8422	2.1020	-7.9089	100.8453	-2.1025	7.9089
27	-100.8462	2.1063	-7.9089	98.8455	-2.1057	7.9089
28	-98.8466	2.1072	-7.9089	96.8449	-2.1077	7.9089
29	-96.8443	2.1069	-7.9089	94.8418	-2.1071	7.9089
30	-94.8420	2.1068	-7.9090	92.8409	-2.1065	7.9090
31	-92.8411	2.1086	-7.9089	90.8368	-2.1090	7.9089
32	-90.8385	2.1067	-7.9089	88.8375	-2.1066	7.9089
33	-88.8346	2.1070	-7.9089	86.8319	-2.1073	7.9089
34	-86.8319	2.1078	-7.9089	88.0539	5.6479	3.0204
35	-88.0556	-5.6493	-3.0204	94.1721	6.6493	1.3204
36	-94.1727	-6.6475	-1.3204	101.1879	7.6475	-0.3796
37	-106.1506	-24.0271	23.5991	129.6267	25.0272	-25.2991
38	-138.3775	-45.3489	63.2250	182.0592	46.3488	-64.9250
39	-191.5502	-64.5312	95.7238	253.4044	65.5312	-97.4238
40	-265.4929	-87.7174	133.5563	350.1035	76.8888	-122.1886
41	-334.6027	84.1861	-102.7493	270.3677	-80.8108	94.5420
42	-274.9023	68.8071	-76.3874	225.0171	-68.8074	76.3874
43	-229.9619	52.4051	-52.6698	191.9692	-52.4048	52.6698
44	-198.3456	34.6680	-29.1432	173.2108	-34.6663	29.1432
45	-181.5982	15.8391	-5.3612	170.1154	-15.8382	5.3612
46	-170.1562	15.7151	-4.7757	158.7622	-15.7156	4.7757
47	-158.7652	15.7118	-4.7757	147.3763	-15.7117	4.7757
48	-147.3777	15.7104	-4.7757	135.9898	-15.7076	4.7757
49	-135.9915	15.6999	-4.7757	124.6094	-15.6972	4.7757
50	-124.6087	15.7016	-4.7757	113.2236	-15.7011	4.7757
51	-113.2246	15.6931	-4.7757	101.8462	-15.6931	4.7757
52	-101.8449	15.6929	-4.7757	90.4665	-15.6902	4.7757
53	-90.4678	15.6822	-4.7757	79.0971	-15.6798	4.7757
54	-79.0974	15.6811	-4.7757	67.7258	-15.6810	4.7757
55	-67.7259	15.6713	-4.7757	56.3632	-15.6714	4.7757
56	-56.3648	15.6731	-4.7757	44.9998	-15.6740	4.7757
57	-45.0011	15.6722	-4.7757	33.6390	-15.6721	4.7757
58	-33.6387	15.6703	-4.7757	22.2771	-15.6709	4.7757
59	-22.2761	15.6741	-4.7757	10.9122	-15.6741	4.7757
60	-10.9127	15.6733	-4.7757	3.6804	5.0185	-33.8531

ENVOLVENTE MINIMOS CORTANTES TREN IPF-B, l=15 m, via 2

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	2.7499	-6.6642	-24.0065	4.4477	13.1892	12.9140
2	0.6933	-7.3583	-22.5852	4.0145	14.1801	10.8757
3	4.7167	-8.7471	-19.8941	-1.2000	15.8214	7.7716
4	12.9522	-10.7829	-16.1590	-2.7696	17.3077	5.0665
5	16.9827	-12.6564	-12.8441	-11.8955	19.9802	0.3275
6	28.0249	-15.7205	-7.5156	-22.0346	23.2885	-5.3770
7	39.5517	-19.4062	-1.2409	-31.8841	27.2144	-12.0108
8	50.2771	-23.7041	5.9445	-30.7268	30.2286	-17.0370
9	49.5123	-27.0790	11.5047	-35.8699	35.1179	-25.0996
10	54.5842	-32.3209	20.0845	-37.3858	40.5864	-34.0077
11	55.5995	-38.1334	29.4939	-25.5875	44.6588	-40.5864
12	42.9023	-42.5323	36.5589	-16.8850	51.0135	-50.7967
13	32.9434	-49.2087	47.2413	-1.7265	57.8872	-61.7810
14	16.2081	-56.3810	58.6847	20.7351	65.2581	-73.5145
15	-8.1087	-64.0401	70.8646	56.9033	70.5658	-81.9571
16	-46.3613	-69.6185	79.7422	95.3754	78.6690	-94.8516
17	-87.0946	-77.9722	93.0610	142.9992	87.1830	-108.4404
18	-137.1049	-86.7141	107.0643	200.1970	96.0684	-122.7052
19	-196.7602	-95.8144	121.7352	268.5904	102.3394	-132.8277
20	-267.6401	-102.2736	132.2559	343.0385	98.1723	-127.7420
21	-7.5470	-10.4217	-0.3875	-27.0691	7.8159	5.9778
22	29.8830	0.2287	-18.9048	-26.0388	8.3213	4.3698
23	32.8424	-0.6212	-16.5009	-28.1907	9.1712	1.9659
24	38.8567	-1.8547	-13.3145	-33.0334	10.4047	-1.2205
25	47.2998	-3.5052	-9.3590	-39.9084	12.0552	-5.1760
26	57.3927	-5.6030	-4.6479	-52.2815	14.6210	-15.8342
27	72.5000	-8.6373	6.7524	-69.7165	18.3029	-23.3312
28	92.1036	-12.8072	14.9780	-85.9529	22.6655	-31.8246
29	109.8803	-17.6680	24.1866	-99.4083	27.7177	-41.2925
30	124.2086	-23.2276	34.3562	-108.4578	33.4632	-51.7124
31	133.4396	-29.4904	45.4643	-101.3642	38.0403	-59.9993
32	125.8368	-34.5706	54.4260	-97.2631	44.9820	-72.0231
33	120.5449	-42.0080	67.1110	-84.2050	52.5859	-84.9389
34	105.6615	-50.1066	80.6746	-60.7301	60.8389	-98.7229
35	79.7817	-58.8260	95.0930	-25.5056	69.6892	-113.3504
36	41.6421	-68.1222	110.3413	22.6214	79.1038	-128.7968
37	-9.8108	-77.9480	126.3951	84.5831	89.0183	-144.9566
38	-75.3898	-88.2518	143.1489	161.0787	99.3919	-161.7316
39	-155.6672	-98.9685	160.5044	252.5345	110.1515	-179.1064
40	-250.9363	-110.0322	178.4469	356.7353	105.7927	-171.8644
41	-24.8336	-7.5362	15.3286	-39.8668	2.9184	-2.6859
42	42.0742	3.2648	-7.0607	-42.0761	3.2603	-4.0319
43	46.7988	2.7054	-5.0908	-46.3949	3.8195	-6.0017
44	53.5687	1.9124	-2.5060	-52.5904	4.6124	-8.5866
45	62.0948	0.8618	0.6843	-60.3548	5.6631	-11.7768
46	72.0201	-0.4631	4.4692	-69.3195	6.9878	-15.5617
47	82.9210	-2.0727	8.8373	-79.0535	8.5976	-19.9298
48	94.3181	-3.9948	13.7762	-89.0562	10.5195	-24.8687
49	105.6690	-6.2310	19.2727	-104.2755	13.5612	-40.2007
50	121.8778	-9.6210	35.1482	-112.5373	16.1459	-46.2407
51	130.7391	-12.5398	41.7166	-129.0833	20.6130	-55.8856
52	147.4486	-17.3641	51.8742	-142.4488	25.6590	-66.3607
53	160.5255	-22.7773	62.8450	-141.6465	29.3013	-73.9375
54	158.9433	-26.7945	70.9000	-145.4873	35.3170	-85.6839
55	161.4923	-33.1922	83.1061	-142.7382	41.9338	-98.1653
56	156.9246	-40.2051	96.0278	-132.0907	49.1731	-111.3386
57	143.9056	-47.8417	109.6211	-106.8540	54.3656	-120.7136
58	115.7353	-53.4375	119.3950	-78.0588	62.6178	-134.9320
59	83.4308	-62.0958	133.9907	-37.2641	71.5384	-149.4424
60	38.5486	-71.4127	148.8569	15.5919	77.9380	-159.9494

ENVOLVENTE MINIMOS TORSORES TREN IPF-B, l=15 m, via 2

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	12.9211	54.4955	-135.0823	-52.4317	-54.4947	135.0823
2	47.2900	48.6629	-125.4113	-79.0284	-45.7087	120.9834
3	70.2972	40.2769	-111.9649	-95.0510	-37.4143	107.8554
4	83.2992	32.3741	-99.4680	-106.7716	-32.3736	99.4681
5	92.5559	27.7275	-91.6906	-105.4945	-24.9791	87.8747
6	89.3626	20.7160	-80.6866	-96.7844	-18.0906	77.1412
7	79.2666	14.2075	-70.5233	-81.7696	-11.7168	67.2267
8	63.3758	8.2041	-61.1604	-69.3258	-8.2054	61.1604
9	50.5416	5.0601	-55.6281	-44.7451	-2.7085	52.5608
10	26.0303	-0.0899	-47.5457	-16.8921	2.2920	44.6893
11	-1.3195	-4.7474	-40.1755	4.7619	4.7472	40.1755
12	-22.0772	-6.8704	-36.1480	36.9866	8.9202	33.4863
13	-53.0446	-10.7254	-29.9311	69.7790	12.6234	27.4495
14	-84.2598	-14.1251	-24.3530	91.0761	9.2330	23.2348
15	-103.7053	-10.4449	-20.5849	111.2768	10.4449	20.5849
16	-121.8207	-11.3972	-18.3700	130.0838	11.3972	18.3700
17	-138.3654	-12.0938	-16.5794	147.1327	12.0938	16.5794
18	-153.0274	-12.5582	-15.2035	162.1325	12.5582	15.2035
19	-165.5683	-12.8155	-14.2333	174.8601	12.8155	14.2333
20	-175.8101	-12.8809	-13.6617	253.6061	4.9017	30.9113
21	-305.3591	83.1256	-147.8110	208.0678	-100.7893	170.0151
22	-210.8814	92.7449	-157.0881	126.1875	-90.1536	153.0404
23	-132.9906	82.4518	-140.9093	58.4196	-79.8187	136.8423
24	-69.0859	72.5043	-125.4937	4.5116	-69.8534	121.4090
25	-18.7779	62.9549	-110.8295	-36.0567	-60.3124	106.8490
26	18.5720	53.8558	-97.0251	-64.0483	-51.2524	93.2603
27	43.8304	45.2699	-84.1785	-80.4529	-42.7225	80.6168
28	58.0646	37.2257	-72.2636	-86.4357	-34.7553	68.8927
29	62.5072	29.7552	-61.2547	-83.3154	-27.3876	58.0633
30	58.5158	22.9010	-51.1271	-72.5343	-20.6411	48.1044
31	47.5505	16.6657	-41.8562	-63.3822	-16.6656	41.8562
32	38.9111	13.1913	-36.2829	-41.6175	-11.0573	33.4192
33	18.3358	8.0889	-28.5071	-16.5036	-6.0886	25.7932
34	-4.9534	3.6072	-21.5289	26.7301	-7.0558	21.4035
35	-45.7807	5.0421	-17.7736	40.9900	-5.0421	17.7736
36	-57.1261	3.4748	-14.7645	53.8248	-3.4751	14.7645
37	-66.6355	2.3231	-12.3628	64.4289	-2.3231	12.3628
38	-73.6234	1.5558	-10.5551	72.1454	-1.5556	10.5551
39	-77.5579	1.1320	-9.3279	76.4815	-1.1320	9.3279
40	-78.0798	1.0125	-8.6684	139.1096	-5.6745	17.7527
41	-317.6603	83.1758	-104.3136	243.3237	-98.3596	123.8317
42	-245.5309	92.1771	-114.0851	178.7025	-92.1767	114.0851
43	-183.4251	86.2099	-104.9623	122.9481	-83.2096	99.8623
44	-130.1212	77.4796	-91.3547	75.1464	-74.4802	86.2546
45	-84.6511	69.0023	-78.3521	34.9977	-66.0030	73.2521
46	-46.6610	60.8106	-65.9446	2.5736	-60.8135	65.9446
47	-16.1759	55.9084	-59.2200	-22.6351	-52.9107	54.1200
48	7.3689	48.3045	-47.9664	-41.4858	-45.3046	42.8664
49	24.8738	41.0191	-37.2704	20.7079	-37.4480	34.9501
50	-38.3118	33.5043	-29.8974	14.0183	-33.5048	29.8974
51	-32.2189	29.8999	-25.3734	10.5404	-29.8990	25.3734
52	-28.9079	26.6626	-21.3618	9.5763	-26.6625	21.3618
53	-27.6542	23.7804	-17.8461	10.4123	-23.7798	17.8461
54	-27.7101	21.2821	-14.8086	12.2807	-21.2805	14.8086
55	-28.2880	19.1574	-12.2308	14.3988	-19.1568	12.2308
56	-28.5855	17.4339	-10.0933	15.9452	-17.4342	10.0933
57	-27.7613	16.1015	-8.3758	16.0880	-16.1017	8.3758
58	-24.9683	15.1706	-7.0572	13.9697	-15.1705	7.0572
59	-19.3415	14.6464	-6.1158	8.7230	-14.6461	6.1158

60	-10.0073	14.5228	-5.5303	-0.5222	-14.5227	5.5303

ENVOLVENTE MAXIMOS FLECTORES TREN UIC-71, via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	0.3858	-14.2653	-4.0806	-10.4024	-25.7206	-87.2727
2	40.2255	83.6964	224.9072	-95.7544	-65.6955	-181.8332
3	95.7532	65.6977	181.8332	-145.2092	-68.1390	-190.3371
4	145.2090	68.1382	190.3371	-183.9665	-50.1402	-147.2632
5	183.9660	50.1402	147.2744	-218.2107	-44.3377	-133.3950
6	218.2099	44.3339	133.3950	-244.3469	-34.6820	-112.4391
7	244.3458	34.6856	112.4391	-264.0385	-16.6842	-69.3652
8	264.0419	16.6891	69.3653	-277.5123	-13.2655	-62.7584
9	277.5111	13.2648	62.7585	-280.6002	-1.3606	-34.2819
10	280.5985	1.3623	34.2820	-279.4837	4.4393	-20.4026
11	279.4807	-4.4404	20.4025	-270.7504	13.8168	1.0328
12	270.7493	-13.8177	-1.0329	-254.9762	31.8112	44.1069
13	254.9742	-31.8134	-44.1067	-235.0689	41.0230	65.7558
14	235.0671	-41.0267	-65.7558	-204.9865	37.8365	58.4071
15	204.9867	-37.8508	-58.4071	-169.6466	55.8558	101.4810
16	169.6458	-55.8564	-101.4810	-129.7902	64.6409	123.5064
17	129.8280	-64.5634	-122.7445	-83.5583	60.9048	115.7364
18	87.7009	-47.5731	-89.9731	-45.5393	35.3015	73.5081
19	53.0957	-16.4267	-37.1084	-39.0842	22.2265	50.9877
20	44.8003	-7.6930	-20.7866	-37.1782	15.9843	35.2758
21	42.5622	-7.7900	0.1749	-32.8530	10.2813	0.4350
22	35.4417	-3.1331	15.2968	-29.6282	-23.4638	-65.9710
23	37.1252	43.2094	111.0780	-68.3747	-33.1948	-87.5726
24	74.9284	49.4022	125.4682	-112.5377	-39.2038	-101.8784
25	121.5356	57.4701	147.8816	-167.0298	-37.6730	-100.5002
26	176.1856	52.1497	127.5050	-225.9776	-41.7938	-103.8300
27	225.9803	41.7873	103.8300	-265.3856	-31.3152	-80.0699
28	265.3893	31.3120	80.0699	-294.0126	-20.7624	-56.2245
29	294.0143	20.7639	56.2246	-311.5862	-10.1678	-32.2939
30	311.5858	10.1729	32.2938	-317.9855	0.4407	-8.2779
31	317.9826	-0.4488	8.2779	-313.9501	8.0516	9.9089
32	313.9545	-8.0505	-9.9089	-299.0919	18.6422	34.0098
33	299.0901	-18.6436	-34.0098	-273.2119	29.1752	58.1961
34	273.2123	-29.1705	-58.1961	-237.0077	48.9714	105.5774
35	237.0085	-48.9676	-105.5773	-191.1042	59.4195	129.8488
36	191.1032	-59.4233	-129.8489	-135.0097	69.7465	154.2054
37	138.4749	-57.7039	-144.2718	-84.2196	67.8648	168.7135
38	91.3380	-52.3939	-132.9745	-42.8489	62.3693	157.5005
39	52.7266	-42.0463	-112.9547	-33.0796	15.4050	69.3012
40	40.6838	4.0302	-26.2629	-40.6842	6.2171	42.1449
41	44.8173	-0.4466	-0.4279	-42.3566	3.0938	-1.8770
42	43.9695	2.4497	13.7330	-43.6432	3.3503	0.1464
43	49.2865	12.2138	34.3290	-66.3483	-37.2314	-83.3450
44	72.6388	54.5908	121.2293	-105.7382	-46.0675	-100.6723
45	113.4694	66.2191	145.7609	-155.6124	-57.4606	-125.0392
46	156.8903	59.4092	130.0947	-197.2511	-41.4121	-87.0208
47	197.2515	41.4208	87.0204	-228.6236	-44.6473	-95.3104
48	228.6225	44.6490	95.3103	-252.7899	-26.6516	-52.2363
49	252.7932	26.6505	52.2363	-273.1551	-17.4860	-31.1318
50	273.1550	17.4867	31.1318	-285.0628	-20.3493	-39.0050
51	285.0648	20.3537	39.0049	-289.4865	-2.3600	4.0691
52	289.4857	2.3701	-4.0692	-289.0932	3.4306	17.9488
53	289.0944	-3.4216	-17.9488	-279.5381	12.9023	39.5044
54	279.5357	-12.8937	-39.5045	-265.0347	30.8899	82.5785
55	265.0306	-30.8797	-82.5786	-242.5920	28.2871	75.1914
56	242.5925	-28.2849	-75.1915	-211.4456	46.2863	118.2655
57	211.4445	-46.2838	-118.2655	-175.7877	52.0809	132.1450
58	175.7878	-52.0832	-132.1450	-130.1676	61.7894	154.2204
59	130.1665	-61.7938	-154.2204	-79.9048	79.7971	197.2945
60	79.9056	-79.7956	-197.2945	-20.7493	77.3827	190.4546

ENVOLVENTE MAXIMOS CORTANTES TREN UIC-71, via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-23.1766	93.5378	245.3315	-40.2249	-83.6981	-224.9184
2	39.4177	83.7745	225.6803	-92.9552	-74.0142	-204.9896
3	88.4728	74.4539	206.2544	-140.3506	-68.6546	-192.3750
4	132.7121	69.4506	194.1615	-170.4495	-59.7959	-173.2057
5	160.1642	60.9478	175.5333	-189.4286	-51.4189	-154.3291
6	176.9992	52.9204	157.2165	-198.4197	-43.5415	-135.7813
7	184.3350	45.3982	139.2466	-215.1493	-39.6047	-125.3672
8	199.8871	41.8041	129.4277	-209.0952	-32.6029	-107.7786
9	193.1049	35.1311	112.4507	-196.3052	-26.1236	-90.6049
10	180.0241	28.9842	95.9043	-178.0621	-20.1970	-73.8789
11	161.9001	23.3749	79.8203	-176.7443	-17.5734	-65.9409
12	161.0863	21.0590	72.5385	-151.1572	-12.5179	-50.3521
13	136.3543	16.3012	57.6196	-123.3571	-8.0130	-36.2080
14	109.7293	12.0824	44.1576	-116.3859	-6.2795	-30.2782
15	104.2156	10.6209	38.9218	-86.3899	-2.6103	-18.3574
16	75.9200	7.2150	27.7060	-61.3736	0.2210	0.0010
17	52.8050	4.6282	10.0629	-54.0586	1.1715	3.8165
18	47.5453	3.9063	6.9721	-48.2748	1.8936	6.9073
19	43.9226	3.3955	4.6147	-44.2822	2.4043	9.2646
20	42.1492	3.0775	2.9985	25.7771	-15.7976	-37.5708
21	-324.5030	103.5093	232.0650	226.4022	-116.3893	-256.9439
22	-227.6236	116.4798	257.7943	133.5514	-106.2807	-234.2045
23	-138.1855	106.6398	235.8091	53.1891	-96.2899	-212.1341
24	-61.2066	96.9570	214.5041	-14.3827	-86.4892	-190.7438
25	3.1276	87.4973	193.8909	-69.1325	-76.9420	-170.0455
26	54.8991	78.3223	173.9820	-111.3095	-67.7254	-150.0514
27	94.4656	69.4948	154.7891	-156.8712	-61.8920	-136.6023
28	137.8652	64.0853	142.1533	-176.8093	-53.4699	-118.1374
29	156.1585	56.0957	124.5137	-186.3642	-45.5068	-100.4128
30	164.6364	48.5790	107.6261	-186.5939	-38.0387	-83.4398
31	164.3902	41.5561	91.5024	-178.7049	-31.1136	-67.2310
32	156.6447	35.0904	76.1547	-164.0841	-24.7641	-51.7982
33	142.7769	29.1930	61.5950	-144.2145	-19.0288	-37.1532
34	124.2562	23.9013	47.8352	-120.6723	-13.9284	-23.3092
35	102.6202	19.2330	34.8882	-95.0229	-9.4763	-10.9876
36	79.3787	15.1971	23.4757	-44.4945	-7.3955	14.7407
37	31.6896	13.5121	-1.3316	-40.9164	-5.9121	19.5184
38	31.2903	12.4009	-5.1763	-39.4602	-4.8012	23.3631
39	33.2453	11.6298	-8.0761	-40.6836	-4.0298	26.2629
40	37.9921	11.1658	-10.0190	16.3704	-19.0331	-22.5552
41	-319.8867	97.5387	180.9523	250.1252	-111.2695	-206.3342
42	-250.7921	111.3140	207.0754	172.1912	-105.5125	-193.1960
43	-175.0849	105.7228	194.4781	112.2041	-96.9613	-173.7563
44	-117.2993	97.3644	175.5858	60.1064	-88.3858	-154.6813
45	-67.3410	88.9889	157.0658	4.9268	-83.1923	-143.1863
46	-14.1916	84.0260	146.1350	-30.7005	-74.8641	-125.0307
47	19.5640	75.9280	128.5523	-57.7562	-66.5953	-107.2307
48	44.9522	67.9126	111.3360	-76.0642	-58.4249	-89.7802
49	61.8356	60.0124	94.4801	-103.2410	-54.2133	-80.6007
50	87.8693	56.0779	85.9069	-105.9845	-46.4690	-64.0996
51	89.7860	48.6352	70.0246	-100.4265	-38.9344	-47.9493
52	83.7559	41.3904	54.5065	-86.7840	-31.6078	-32.1511
53	70.0226	34.3824	39.3547	-92.8513	-28.5872	-25.4753
54	76.4047	31.6798	33.3399	-72.7863	-22.6274	-12.0004
55	57.0863	26.0501	20.5420	6.0950	-18.4520	17.6342
56	-20.5985	22.2114	-8.3993	6.5990	-16.4105	22.2787
57	-19.4350	20.5124	-12.3332	6.6670	-14.7106	26.2127

58	-17.3518	19.1586	-15.5386	5.5643	-13.3586	29.4180
59	-13.6016	18.1615	-17.9966	2.5371	-12.3622	31.8761
60	-7.4239	17.5133	-19.6880	-3.1712	-11.7134	33.5674

ENVOLVENTE MAXIMOS TORSORES TREN UIC-71, via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-23.2846	92.1577	246.4746	-39.1163	-82.3180	-226.0615
2	38.3092	82.3945	226.8234	-90.8460	-72.6342	-206.1327
3	86.3636	73.0738	207.3975	-137.2409	-67.2745	-193.5181
4	129.6023	68.0707	195.3046	-166.3392	-58.4160	-174.3488
5	156.0538	59.5678	176.6764	-184.3178	-50.0389	-155.4722
6	171.8886	51.5405	158.3596	-192.3086	-42.1616	-136.9244
7	178.2241	44.0179	140.3897	-208.0376	-38.2244	-126.5103
8	192.7752	40.4238	130.5708	-200.9828	-31.2226	-108.9217
9	184.9925	33.7510	113.5938	-187.1921	-24.7435	-91.7480
10	170.9110	27.6041	97.0474	-167.9484	-18.8169	-75.0220
11	151.7864	21.9945	80.9634	-165.6299	-16.1930	-67.0840
12	149.9719	19.6785	73.6816	-139.0420	-11.1374	-51.4952
13	124.2392	14.9209	58.7627	-110.2414	-6.6327	-37.3511
14	96.6134	10.7031	45.3007	-102.2701	-4.9002	-31.4213
15	90.0997	9.2417	40.0649	-71.2738	-1.2311	-19.5005
16	60.8045	5.8359	28.8492	-41.0527	1.8904	-9.9106
17	32.4843	2.9591	19.9744	-12.6991	4.4812	-1.8089
18	6.1859	0.5966	12.5976	-4.5158	5.2035	1.2818
19	0.1637	0.0856	10.2401	20.3244	7.0722	6.5506
20	-22.4574	-1.5903	5.7126	45.8909	-14.4189	-38.7140
21	-217.1099	95.1870	240.1642	126.9154	-108.0670	-265.0431
22	-128.1366	108.1578	265.8935	41.9702	-97.9587	-242.3037
23	-46.6041	98.3168	243.9083	-30.4855	-87.9669	-220.2333
24	22.4681	88.6340	222.6033	-90.1502	-78.1662	-198.8430
25	78.8953	79.1750	201.9901	-136.9936	-68.6197	-178.1447
26	122.7599	69.9983	182.0812	-171.2633	-59.4014	-158.1506
27	154.4203	61.1705	162.8883	-208.9179	-53.5677	-144.7015
28	189.9128	55.7586	150.2525	-220.9466	-45.1432	-126.2366
29	200.2961	47.7705	132.6129	-222.5928	-37.1816	-108.5120
30	200.8649	40.2545	115.7253	-214.9143	-29.7142	-91.5390
31	192.7101	33.2307	99.6016	-199.1154	-22.7882	-75.3302
32	177.0561	26.7652	84.2539	-176.5868	-16.4389	-59.8974
33	155.2787	20.8678	69.6942	-148.8072	-10.7036	-45.2524
34	128.8494	15.5752	55.9344	-117.3558	-5.6023	-31.4084
35	99.3043	10.9078	42.9874	-83.7979	-1.1511	-19.0868
36	68.1544	6.8714	31.5749	-49.7367	2.6474	-8.3434
37	36.9320	3.4698	21.7525	-16.6849	5.7951	0.2177
38	7.0590	0.6933	14.1244	13.8605	8.3051	7.2507
39	-20.0758	-1.4758	8.0363	40.6878	10.2092	12.2842
40	-43.3795	-3.0736	3.9597	67.1388	-10.7079	-30.6544
41	-125.6751	84.0212	196.2674	65.7129	-97.7520	-221.6493
42	-66.3801	97.7965	222.3905	-2.4213	-91.9950	-208.5111
43	-0.4720	92.2030	209.7932	-52.6071	-83.4415	-189.0714
44	47.5136	83.8501	190.9009	-94.9087	-74.8715	-169.9964
45	87.6728	75.4762	172.3810	-140.2909	-69.6796	-158.5015
46	131.0269	70.5179	161.4502	-166.1250	-61.3560	-140.3459
47	154.9893	62.4273	143.8675	-183.3936	-53.0946	-122.5459
48	170.5884	54.4126	126.6512	-191.9133	-44.9249	-105.0954
49	177.6864	46.5123	109.7953	-209.3047	-40.7132	-95.9159
50	193.9318	42.5814	101.2221	-202.2617	-32.9725	-79.4148
51	186.0653	35.1359	85.3398	-186.9196	-25.4351	-63.2645
52	170.2492	27.9011	69.8217	-163.4985	-18.1185	-47.4663
53	146.7375	20.8978	54.6699	-159.7897	-15.1026	-40.7905
54	143.3427	18.1999	48.6551	-129.9512	-9.1475	-27.3156
55	114.2501	12.5744	35.8572	-65.3529	1.8491	-4.8394
56	50.8511	1.9132	14.0743	-50.1367	3.8862	-0.1949
57	37.3003	0.2166	10.1404	-35.3552	5.5834	3.7391
58	24.6701	-1.1351	6.9350	-21.7448	6.9350	6.9444
59	13.7062	-2.1359	4.4770	-10.0554	7.9359	9.4025
60	5.1687	-2.7838	2.7856	-1.0482	8.5836	11.0938

ENVOLVENTE MINIMOS FLECTORES TREN UIC-71, via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-23.2846	92.1577	246.4746	-18.6244	-42.1849	-134.9787
2	-11.1990	-15.7920	-2.6558	22.6493	15.7926	2.6558
3	-22.6490	-15.7934	-2.6558	34.0993	15.7936	2.6558
4	-34.0999	-15.7920	-2.6558	45.5484	15.7924	2.6558
5	-45.5492	-15.7927	-2.6670	56.9981	15.7931	2.6670
6	-56.9978	-15.7933	-2.6670	68.4463	15.7917	2.6670
7	-68.4453	-15.7940	-2.6670	79.8959	15.7943	2.6670
8	-79.8973	-15.7958	-2.6670	91.3510	15.7970	2.6670
9	-91.3495	-15.7984	-2.6670	102.8023	15.7969	2.6670
10	-102.8014	-15.7941	-2.6670	114.2531	15.7921	2.6670
11	-114.2524	-15.7936	-2.6670	125.7031	15.7960	2.6670
12	-125.7029	-15.7972	-2.6670	137.1564	15.7986	2.6670
13	-137.1546	-15.7965	-2.6670	148.6063	15.7947	2.6670
14	-148.6045	-15.7919	-2.6670	160.0532	15.7890	2.6670
15	-160.0534	-15.7804	-2.6670	171.4942	15.7807	2.8556
16	-171.4929	-15.7782	-2.8555	182.9318	15.7782	2.8555
17	-182.9703	-15.8573	-3.6175	194.4665	15.8558	3.6175
18	-198.6088	-29.1889	-29.3807	219.7703	29.1875	29.3807
19	-227.3268	-48.0612	-65.7805	262.1721	48.0618	65.7805
20	-267.8886	-62.5958	-95.9815	316.9088	44.0354	57.2262
21	-351.8722	97.2037	220.4290	253.6278	-80.3977	-161.0719
22	-256.2166	73.2488	145.3400	186.6302	-73.2491	-145.3400
23	-194.1267	53.5021	100.2332	143.2996	-53.5032	-100.2333
24	-149.8529	37.2958	62.3378	114.4221	-37.2952	-62.3378
25	-123.4187	19.0298	16.3345	105.3414	-19.0292	-16.3344
26	-114.4978	4.5522	-10.6704	110.1726	-4.5531	10.6704
27	-110.1743	4.5554	-10.6704	105.8462	-4.5567	10.6704
28	-105.8480	4.5589	-10.6704	101.5164	-4.5590	10.6704
29	-101.5161	4.5578	-10.6704	97.1866	-4.5567	10.6704
30	-97.1874	4.5564	-10.6704	92.8579	-4.5566	10.6704
31	-92.8583	4.5591	-10.6704	94.9232	3.4429	7.0232
32	-94.9258	-3.4446	-7.0232	98.1986	3.4445	7.0232
33	-98.1962	-3.4443	-7.0232	101.4685	3.4434	7.0232
34	-101.4689	-3.4432	-7.0232	104.7409	3.4443	7.0232
35	-104.7418	-3.4470	-7.0232	108.0178	3.4480	7.0232
36	-108.0180	-3.4454	-7.0232	111.2890	3.4454	7.0232
37	-114.7561	-15.4895	-16.9567	129.4712	15.4902	16.9567
38	-136.5888	-30.9597	-52.6958	165.9999	30.9591	52.6958
39	-175.8777	-51.2839	-97.2417	224.5965	51.2833	97.2417
40	-232.2000	-70.7168	-140.2799	320.5210	78.4419	175.1879
41	-354.4908	66.3429	98.9304	298.9255	-77.8278	-113.7661
42	-300.5383	72.2853	101.9100	248.1321	-72.2862	-101.9099
43	-253.7749	56.7186	67.4345	212.6530	-56.7170	-67.4345
44	-218.9423	39.3615	29.5502	190.4066	-39.3585	-29.5502
45	-198.1372	19.2049	-15.5386	184.2123	-19.2039	15.5386
46	-185.4897	17.2624	-20.5939	172.9741	-17.2615	20.5939
47	-172.9749	17.2549	-20.5939	160.4658	-17.2546	20.5939
48	-160.4647	17.2535	-20.5939	147.9555	-17.2493	20.5939
49	-147.9572	17.2502	-20.5939	135.4530	-17.2512	20.5939
50	-135.4520	17.2475	-20.5939	122.9429	-17.2486	20.5939
51	-122.9445	17.2514	-20.5939	110.4410	-17.2477	20.5939
52	-110.4411	17.2387	-20.5939	97.9424	-17.2360	20.5939
53	-97.9431	17.2328	-20.5939	85.4504	-17.2305	20.5939
54	-85.4501	17.2258	-20.5939	72.9596	-17.2265	20.5939
55	-72.9585	17.2228	-20.5939	60.4726	-17.2229	20.5939

56	-60.4739	17.2204	-20.5939	47.9903	-17.2195	20.5939
57	-47.9900	17.2189	-20.5939	35.5075	-17.2171	20.5939
58	-35.5069	17.2168	-20.5939	23.0249	-17.2168	20.5939
59	-23.0238	17.2202	-20.5939	10.5466	-17.2032	20.3827
60	-10.5466	17.2022	-20.3827	-1.2693	-10.3973	13.4355

ENVOLVENTE MINIMOS CORTANTES TREN UIC-71, via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-0.9692	-10.0722	10.2619	10.3745	15.8722	3.6175
2	-7.6786	-10.5098	8.9971	17.4016	16.3106	4.8823
3	-11.2883	-11.3074	7.2106	21.5884	17.1069	6.6688
4	-12.5717	-12.4580	4.8830	23.7185	18.2569	8.8078
5	-12.3018	-13.9616	2.1842	24.5258	19.7620	11.6952
6	-11.2012	-15.8160	-1.2811	-49.1488	23.1933	28.0896
7	63.9035	-19.5913	-18.2706	-69.0021	28.4384	38.3827
8	84.7237	-25.1689	-29.1753	-64.3755	30.9717	43.0547
9	80.6258	-28.0291	-34.4746	-81.2553	37.8670	54.8877
10	97.6159	-35.2420	-46.9497	-90.6993	45.0076	67.6403
11	106.7806	-42.6974	-60.3587	-73.7288	48.4935	74.2380
12	89.1719	-46.4809	-67.6260	-69.3077	56.1264	88.5819
13	83.7855	-54.3962	-82.6520	-56.6054	63.9319	103.8561
14	69.8240	-62.4754	-98.6203	-35.6385	71.8577	120.0556
15	47.3443	-70.6653	-115.5248	5.9926	76.4698	129.4042
16	3.9906	-75.5173	-125.5886	42.7958	84.7173	147.2378
17	-34.7041	-83.9962	-144.1471	87.6593	93.0025	165.9929
18	-81.5749	-92.4927	-163.6354	140.1205	101.2786	185.6608
19	-136.1156	-100.9594	-184.0447	211.4129	106.7596	197.9240
20	-209.5207	-106.6168	-197.0554	283.0991	92.9858	177.2293
21	-16.1484	-18.0987	-28.2704	-34.0105	10.3834	0.7732
22	35.3777	-3.1438	15.8091	-28.7805	10.7436	2.3777
23	33.8225	-3.8108	13.4394	-26.5925	11.4104	4.7475
24	35.1965	-4.8186	10.2921	-27.0086	12.4184	7.8947
25	38.9419	-6.1960	6.3556	-73.5342	14.0024	25.9198
26	88.4555	-8.1792	-12.4707	-98.0566	17.9761	35.4745
27	115.5363	-12.5667	-22.8387	-121.2249	22.5830	46.3439
28	140.7616	-17.6121	-34.5333	-141.4317	27.8108	58.1231
29	162.4677	-23.2803	-47.1497	-157.1605	33.6307	70.8246
30	179.0982	-29.5493	-60.7004	-166.9629	40.0228	84.4607
31	189.1887	-36.3993	-75.1976	-150.9972	43.9998	93.3844
32	172.9000	-40.8288	-84.9945	-146.1798	51.3705	108.8398
33	167.1558	-48.6450	-101.3349	-131.7908	59.2510	125.2657
34	151.2724	-56.9523	-118.6579	-106.8575	67.5615	142.6736
35	124.3269	-65.6807	-136.9748	-70.5898	76.2749	161.0758
36	85.5963	-74.7936	-156.2982	-22.4080	85.3311	180.4844
37	34.5862	-84.2195	-176.6396	38.0087	94.6659	200.9110
38	-28.9153	-93.8946	-198.0113	110.7305	104.2155	222.3679
39	-104.8704	-103.7522	-220.4251	195.5482	113.9171	244.8668
40	-192.9492	-113.7207	-243.8920	296.2132	100.6645	223.8836
41	-23.1115	-15.4535	-36.0952	-43.0235	3.1373	-1.1357
42	43.9695	2.4497	13.7330	-43.6432	3.3503	0.1464
43	46.9272	2.0483	11.9035	-46.3101	3.7516	1.9759
44	51.8826	1.4442	9.5188	-50.8271	4.3555	4.3606
45	58.5892	0.6171	6.5702	-70.2163	6.2826	21.3621
46	80.0235	-1.5470	-11.0045	-76.7982	7.3461	24.8838
47	88.4574	-2.8609	-15.1100	-105.4537	10.8657	33.6353
48	118.7302	-6.6495	-24.4558	-133.8442	14.9209	44.3250
49	148.4674	-10.9888	-35.7518	-160.7420	19.5127	56.3087
50	176.4006	-15.8741	-48.3544	-162.7927	21.6696	62.2337
51	179.1464	-18.3308	-54.9117	-183.7075	27.0960	75.6334
52	200.3780	-24.0626	-68.9576	-199.9139	33.0359	89.8623
53	216.5024	-30.3261	-83.8477	-192.4207	36.1178	97.7270
54	208.4997	-33.7363	-92.3892	-197.2739	42.8953	113.4936
55	212.3968	-40.8466	-108.8493	-194.2099	50.1799	130.1708
56	207.9173	-48.4819	-126.2370	-182.0738	57.9629	147.7928
57	193.8810	-56.6093	-144.5874	-150.7371	62.4091	158.4669
58	160.1526	-61.4107	-156.0089	-119.7924	71.0251	177.8163
59	126.3112	-70.3815	-176.1249	-76.7895	80.0906	198.2004
60	79.9056	-79.7956	-197.2945	-19.9490	85.5966	211.1739

ENVOLVENTE MINIMOS TORSORES TREN UIC-71, via 1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-0.8534	-8.5429	9.0369	9.1500	14.3430	4.8425
2	-6.4542	-8.9807	7.7721	-0.6391	10.5227	7.0762
3	6.7524	-5.5194	5.0167	-12.5677	12.5622	12.0350
4	21.5845	-7.9135	-0.4832	-13.7446	13.7141	14.3626
5	25.1614	-9.4187	-3.3706	-33.4063	17.2920	20.3167
6	46.7307	-13.3461	-9.9026	-55.2599	21.8134	29.2327
7	70.0144	-18.2110	-19.4137	-76.1138	27.0581	39.5258
8	91.8356	-23.7886	-30.3184	-72.4879	29.5914	44.1978
9	88.7382	-26.6490	-35.6177	-90.3684	36.4869	56.0308
10	106.7290	-33.8619	-48.0928	-100.8130	43.6275	68.7834
11	116.8943	-41.3170	-61.5018	-84.8432	47.1131	75.3811
12	100.2863	-45.1004	-68.7691	-81.4229	54.7459	89.7250
13	95.9006	-53.0159	-83.7951	-69.7211	62.5516	104.9992
14	82.9399	-61.0961	-99.7634	-49.7543	70.4784	121.1987
15	61.4602	-69.2861	-116.6679	-9.1235	75.0906	130.5473
16	19.1061	-74.1382	-126.7318	26.6801	83.3382	148.3810
17	-18.5886	-82.6174	-145.2902	70.5441	91.6237	167.1360
18	-64.4598	-91.1139	-164.7786	122.0058	99.8998	186.8040
19	-118.0010	-99.5806	-185.1878	192.2987	105.3808	199.0671
20	-190.4065	-105.2381	-198.1986	262.9853	91.6071	178.3725
21	-123.5415	-9.7764	-36.3696	107.3503	-3.9277	13.0088
22	-105.9833	11.1670	3.5735	84.3087	-2.4301	15.6899
23	-79.2669	9.3639	0.1272	56.9443	-0.3477	20.3338
24	-48.3404	6.9395	-5.2942	26.5088	2.3485	26.2858
25	-14.5757	3.8732	-12.0355	-5.6731	5.6801	34.0190
26	20.5947	0.1448	-20.5699	-38.1028	9.6521	43.5737
27	55.5816	-4.2424	-30.9379	-69.1782	14.2587	54.4431
28	88.7140	-9.2854	-42.6325	-97.2944	19.4841	66.2223
29	118.3301	-14.9551	-55.2489	-120.9319	25.3055	78.9238
30	142.8697	-21.2248	-68.7996	-138.6425	31.6983	92.5599
31	160.8688	-28.0739	-83.2968	-130.5867	35.6744	101.4836
32	152.4886	-32.5036	-93.0937	-133.6771	43.0453	116.9390
33	154.6540	-40.3198	-109.4341	-127.1981	50.9258	133.3649
34	146.6792	-48.6262	-126.7571	-110.1740	59.2354	150.7728
35	127.6428	-57.3555	-145.0740	-81.8148	67.9497	169.1750
36	96.8206	-66.4679	-164.3974	-41.5417	77.0054	188.5836
37	53.7197	-75.8944	-184.7388	10.9664	86.3408	209.0102
38	-1.8732	-85.5691	-206.1105	75.7796	95.8900	230.4671
39	-69.9191	-95.4274	-228.5243	152.6887	105.5923	252.9660
40	-150.0895	-105.3955	-251.9912	245.4448	92.3393	231.9828
41	-217.3231	-1.9360	-51.4103	232.6900	-17.0705	21.4200
42	-231.7437	22.6575	-8.8227	217.4203	-16.8583	22.7021
43	-214.1367	22.2592	-10.6522	148.0673	-12.2328	25.3285
44	-142.4965	17.4231	-13.8338	112.7132	-9.9815	30.3774
45	-104.9498	14.9525	-19.4467	75.0014	-7.2301	36.6773
46	-65.1950	11.9611	-26.3197	58.6263	-6.1620	40.1990
47	-46.9679	10.6398	-30.4252	20.1837	-2.6350	48.9505
48	-6.9060	6.8505	-39.7710	-17.9951	1.4209	59.6402
49	32.6166	2.5113	-51.0670	-54.6783	6.0126	71.6239
50	70.3381	-2.3776	-63.6696	-66.5155	8.1731	77.5489
51	82.8671	-4.8315	-70.2269	-97.2144	13.5967	90.9486
52	113.8847	-10.5733	-84.2728	-123.1994	19.5466	105.1775
53	139.7875	-16.8415	-99.1629	-125.4823	22.6332	113.0422

54	141.5617	-20.2564	-107.7044	-140.1090	29.4154	128.8088
55	155.2330	-27.3709	-124.1645	-146.8164	36.7042	145.4860
56	160.5221	-35.0091	-141.5522	-144.4465	44.4901	163.1080
57	156.2541	-43.1374	-159.9026	-122.8773	48.9372	173.7821
58	132.2931	-47.9391	-171.3241	-101.7000	57.5535	193.1315
59	108.2201	-56.9061	-191.4401	-68.4674	66.6152	213.5156
60	71.5834	-66.3212	-212.6097	-21.3957	72.1222	226.4891

ENVOLVENTE MAXIMOS FLECTORES TREN UIC-71, via 2

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	14.6509	76.2837	-155.0906	-64.4045	-66.5027	139.8061
2	72.8021	79.8130	-126.5565	-125.5158	-61.8126	97.6305
3	125.5147	61.8148	-97.6305	-171.1016	-64.3121	102.2291
4	171.1027	64.3083	-102.2291	-207.0830	-46.3110	73.3031
5	207.0825	46.3114	-73.3031	-238.5571	-40.5115	63.9826
6	238.5555	40.5095	-63.9826	-260.9931	-30.9111	49.2411
7	260.9904	30.9169	-49.2411	-277.9524	-12.9205	20.3151
8	277.9542	12.9268	-20.3151	-287.8581	-9.5607	15.6246
9	287.8551	9.5525	-15.6246	-288.2560	2.3445	-3.4987
10	288.2554	-2.3423	3.4986	-284.4496	8.1435	-12.8192
11	284.4487	-8.1445	12.8192	-272.3219	17.4631	-27.0814
12	272.3207	-17.4533	27.0815	-253.9020	35.4556	-56.0074
13	253.8968	-35.4639	56.0073	-230.7212	44.6126	-70.0556
14	230.7189	-44.6191	70.0556	-197.4521	41.3717	-64.3018
15	197.4524	-41.3827	64.3018	-159.5531	59.3813	-93.2278
16	159.5501	-59.3829	93.2278	-116.6386	68.1082	-106.8999
17	116.7396	-67.2398	105.0619	-68.0733	63.5253	-98.9674
18	74.9739	-42.6159	65.3082	-44.1144	29.4436	-50.3467
19	49.8359	-12.1648	24.1364	-38.9144	17.9646	-33.4570
20	44.0143	-2.4512	9.9595	-40.3235	10.8741	-17.2829
21	45.0808	-8.2355	-7.1441	-34.9546	10.8584	9.1413
22	39.8027	-3.8838	-19.3192	-38.9753	-12.3728	31.0818
23	49.2905	31.8589	-59.6438	-78.7989	-31.8435	58.4163
24	87.6927	52.2350	-87.6206	-127.7005	-42.0341	71.0812
25	134.8866	57.5755	-94.1256	-180.4850	-37.7765	62.3070
26	188.3480	49.8566	-67.3029	-235.6696	-39.5075	50.8488
27	235.6711	39.5036	-50.8489	-272.6129	-29.0315	34.4800
28	272.6158	29.0234	-34.4800	-298.7745	-18.4694	18.1963
29	298.7741	18.4746	-18.1963	-313.8841	-7.8782	1.9979
30	313.8836	7.8788	-1.9978	-317.8136	2.7447	-14.1155
31	317.8126	-2.7504	14.1156	-311.5943	10.3439	-26.3288
32	311.5987	-10.3413	26.3287	-294.2751	20.9332	-42.3568
33	294.2717	-20.9342	42.3569	-265.9307	31.4617	-58.2999
34	265.9311	-31.4595	58.2999	-227.5529	51.2623	-90.1184
35	227.5563	-51.2632	90.1183	-179.1778	61.7149	-105.9761
36	179.1793	-61.7145	105.9760	-120.6181	72.0386	-121.7486
37	125.0011	-57.4847	101.9298	-70.6625	67.6456	-117.6172
38	78.3771	-49.5939	85.5885	-32.2601	59.5672	-101.1916
39	40.6399	-43.4090	75.2266	-25.6517	16.4139	-39.2232
40	36.3307	3.3020	8.8043	-35.7768	6.8222	-21.8778
41	42.9046	-0.4479	1.2322	-40.6686	2.9721	-2.0924
42	44.6302	7.7041	-13.1351	-48.1134	-1.9037	3.8145
43	52.4520	16.4892	-23.6728	-79.5210	-40.6000	52.3918
44	85.1336	56.3788	-72.0230	-119.0307	-47.7977	56.8823
45	126.4360	64.5613	-76.6034	-167.1744	-46.5656	47.6774
46	167.2154	46.6892	-48.1654	-204.6654	-37.8616	33.1897
47	204.6673	37.8715	-33.1897	-232.8488	-41.0426	38.0020
48	232.8491	41.0413	-38.0020	-254.4008	-23.0474	9.0759
49	254.4048	23.0473	-9.0759	-271.4442	-13.8114	-5.5171
50	271.4448	13.8176	5.5171	-279.9543	-16.6262	-0.2877
51	279.9568	16.6294	0.2877	-282.1662	9.9638	-43.7638
52	282.1654	-9.9539	43.7638	-278.5863	7.1492	-38.5344
53	278.5890	-7.1423	38.5344	-265.4513	16.6795	-52.6760
54	265.4518	-16.6734	52.6760	-248.2070	34.6701	-81.6020
55	248.2063	-34.6590	81.6020	-222.0584	32.1261	-75.8868
56	222.0615	-32.1245	75.8868	-188.3235	58.4585	-119.8486
57	188.3237	-58.4564	119.8486	-149.6859	55.9234	-114.1335
58	149.6866	-55.9227	114.1335	-100.3316	73.9214	-143.0595
59	100.3309	-73.9264	143.0595	-47.1004	83.6961	-156.6816
60	47.1012	-83.6944	156.6816	9.5616	48.8893	-101.2104

ENVOLVENTE MAXIMOS CORTANTES TREN UIC-71, via 2

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	13.3991	89.5936	-141.8410	-72.8027	-79.8126	126.5565
2	70.0657	80.0708	-127.1885	-119.8234	-70.3699	112.1817
3	113.6366	70.9848	-113.3877	-162.9976	-65.1826	104.0671
4	153.8734	66.1452	-105.8283	-188.2077	-56.5553	91.0869
5	176.6465	57.8729	-93.3839	-202.7087	-48.4007	78.8906
6	189.2052	50.0638	-81.7046	-207.6306	-40.7445	67.4425
7	192.6668	42.7579	-70.7555	-221.5670	-36.9613	61.4349
8	205.6137	39.3094	-65.2297	-212.1718	-30.1660	51.1815
9	195.6710	32.8359	-55.4416	-196.4166	-23.8921	41.5900
10	179.8015	26.8891	-46.2998	-175.5630	-18.1590	32.6277
11	159.2334	21.4714	-37.7721	-172.6988	-15.6737	28.4515
12	157.0315	19.2941	-34.0164	-145.1488	-10.8042	20.5055
13	130.4857	14.7103	-26.4778	-115.8383	-6.4828	13.7100
14	102.4943	10.6722	-20.0768	-108.1289	-4.8681	10.7562
15	96.3797	9.3241	-17.5059	-77.3184	-1.3696	5.4087
16	67.3976	6.0831	-12.5303	-59.0635	0.5624	-5.4952
17	51.1665	4.3908	-1.9880	-52.2470	1.4095	-7.3326
18	46.5197	3.7663	-0.5028	-47.1474	2.0345	-8.8178
19	43.6886	3.3487	0.6389	-44.0142	2.4511	-9.9595
20	42.8741	3.1191	1.4449	25.8598	-15.2387	23.5040
21	-303.1610	100.8707	-148.5124	200.5810	-113.7468	160.5910
22	-202.9540	113.9249	-161.2659	111.6006	-103.7255	144.7266
23	-117.2611	104.1720	-146.0870	34.8996	-93.8199	129.6328
24	-43.8185	94.5742	-131.6672	-29.2155	-84.1046	115.2983
25	17.1848	85.1972	-117.9948	-80.7185	-74.6493	101.7110
26	65.8354	76.1166	-105.0577	-119.8509	-65.5157	88.8593
27	102.4819	67.3756	-92.8442	-162.8832	-59.7690	80.6310
28	143.4780	62.0426	-85.2420	-180.1888	-51.4341	69.1287
29	159.2640	54.1509	-74.3539	-187.3272	-43.5577	58.3259
30	165.4510	46.7129	-64.1533	-185.3462	-36.1773	48.2104
31	163.1213	39.7845	-54.6280	-175.4629	-29.3368	38.7703
32	153.5065	33.4002	-45.7664	-159.0485	-23.0765	29.9938
33	137.9703	27.5896	-37.5560	-137.5924	-17.4260	21.8685
34	117.9891	22.3869	-29.9852	-112.6727	-12.4146	14.3820
35	95.1011	17.8027	-23.0410	-45.2320	-8.1981	0.2283
36	30.1949	14.0069	-9.4178	-39.8921	-6.4068	-2.7954
37	27.8190	12.6110	-6.9124	-36.1888	-5.0108	-5.3008
38	27.4195	11.5858	-4.9134	-34.8168	-3.9860	-7.2998
39	29.5840	10.9019	-3.4089	-36.3308	-3.3018	-8.8043
40	34.7467	10.5243	-2.3870	17.9412	-17.9699	19.2409
41	-290.9046	93.4319	-117.7245	217.7881	-106.8622	129.4413
42	-219.4805	106.9902	-130.0453	144.0145	-101.1900	120.7247
43	-147.8373	101.4916	-121.8648	88.4809	-92.6680	106.8891
44	-94.4021	93.1622	-108.5587	40.7505	-84.1285	93.7657
45	-48.6994	84.8275	-95.9570	-10.7000	-79.0308	86.6363
46	0.8411	79.9706	-89.3406	-42.2088	-70.7461	74.7475
47	30.6009	71.9239	-77.9554	-65.2671	-62.5306	63.5794
48	52.1231	63.9601	-67.2807	-79.7058	-54.4202	53.1390
49	65.2801	56.1194	-57.3226	-103.8638	-50.3182	48.0020
50	88.4418	52.3191	-52.6562	-103.0775	-42.6493	38.7660
51	86.9830	44.9391	-43.8782	-94.1488	-35.1822	30.2562

52	77.7453	37.7745	-35.8131	-77.3143	-27.9322	22.4708
53	60.9885	30.8476	-28.4583	-81.2487	-25.0471	19.1377
54	65.4152	28.2843	-25.5409	-61.4110	-19.5753	12.5079
55	46.5095	23.1442	-19.3111	10.3362	-16.2440	4.0621
56	-23.8496	20.1594	-11.2489	11.3371	-14.3580	1.9283
57	-22.9838	18.6181	-9.4814	11.5890	-12.8175	0.1607
58	-20.8777	17.4335	-8.0622	10.3411	-11.6346	-1.2584
59	-16.7687	16.6041	-6.9726	6.8330	-10.8043	-2.3480
60	-9.8886	16.1321	-6.1932	0.2954	-10.3315	-3.1274

ENVOLVENTE MAXIMOS TORSORES TREN UIC-71, via 2

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-0.1816	3.0635	1.9218	-2.0393	-3.0634	-1.9218
2	4.7757	2.8055	2.5538	-17.2887	-0.4492	-4.2163
3	23.4744	-0.1633	5.4223	-38.5106	1.7691	-8.4236
4	47.6359	-2.7356	10.1848	-45.6533	2.7358	-10.1848
5	57.2140	-4.0533	12.4818	-70.9679	6.0967	-15.6637
6	84.4697	-7.7616	18.4777	-101.2701	10.7745	-23.5747
7	116.2311	-12.7821	26.8877	-130.1563	16.1609	-32.4524
8	146.1122	-18.5023	36.2472	-132.6961	18.5049	-36.2472
9	149.1940	-21.1839	40.5073	-156.0923	25.1655	-46.4710
10	172.7071	-28.1596	51.1807	-172.2732	32.0616	-56.8669
11	188.6015	-35.3747	62.0113	-162.9540	35.3725	-62.0113
12	178.6199	-38.9829	67.5763	-165.6223	42.7795	-72.9972
13	180.2799	-46.6948	78.9694	-160.1621	50.3673	-84.1421
14	173.5038	-54.5635	90.5089	-146.5769	58.0836	-95.4504
15	158.3266	-62.5515	102.2001	-112.9743	62.5537	-102.2001
16	122.8917	-67.2693	109.3217	-83.6896	70.6172	-114.0494
17	91.5873	-75.5731	121.5326	-46.3903	78.7178	-126.0636
18	52.1177	-83.8966	133.8990	-1.4933	86.8218	-138.2505
19	4.9518	-92.2040	146.4294	61.8951	92.2046	-146.4294
20	-60.7547	-97.7741	154.9440	119.1547	78.0549	-127.1368
21	-52.5008	-19.0945	32.6831	33.7074	-2.3898	-1.7462
22	-31.3347	2.2116	2.4211	14.0944	-1.0326	-4.0420
23	-8.4336	0.5852	5.4024	-9.3671	0.8605	-7.9353
24	18.2858	-1.6146	9.9697	-35.6912	3.3274	-12.9095
25	47.7230	-4.4218	15.6060	-63.6214	6.3866	-19.1945
26	78.5039	-7.8529	22.5412	-91.7921	10.0568	-26.7502
27	109.1624	-11.9190	30.7350	-118.7829	14.3372	-35.1458
28	138.1905	-16.6183	39.7568	-143.1247	19.2167	-44.0828
29	164.0493	-21.9276	49.3080	-163.3483	24.6742	-53.5490
30	185.2230	-27.8304	59.3765	-178.0337	30.7023	-63.5322
31	200.2575	-34.3135	69.9499	-167.6607	34.3132	-69.9499
32	189.6204	-38.3742	76.9459	-168.5453	41.3262	-81.0164
33	189.6211	-45.8410	88.5787	-160.2426	48.8415	-92.5640
34	179.8458	-53.7992	100.6807	-141.7493	56.8113	-104.5808
35	159.3234	-62.2015	113.2397	-112.2111	65.1865	-117.0546
36	127.2497	-70.9948	126.2440	-70.9841	73.9347	-129.9737
37	83.0558	-80.1367	139.6815	-17.6539	82.9878	-143.3260
38	26.4239	-89.5626	153.5402	47.9554	92.2808	-157.0996
39	-42.7243	-99.1953	167.8083	125.7567	101.7617	-171.2825
40	-124.1728	-108.9862	182.4738	212.2493	88.3300	-152.3739
41	-34.7990	-20.8558	35.2113	14.6187	-1.0401	-3.2519
42	-12.9267	0.9124	3.8559	12.2650	-0.9127	-3.8559
43	-8.4421	0.6102	4.9960	-9.1049	0.7983	-7.2651
44	15.0264	-1.2913	8.9347	-33.3549	2.9829	-12.3924
45	41.3043	-3.6876	14.5837	-59.7162	5.6669	-18.5688
46	69.5776	-6.5959	21.2731	-64.7980	6.5939	-21.2731
47	76.4056	-7.7681	24.4810	-91.5746	10.0230	-29.2967
48	104.7189	-11.4564	32.9980	-117.8598	13.9849	-38.5948
49	132.2895	-15.6894	42.7784	-142.5463	18.4769	-48.5984
50	157.9701	-20.4671	53.2526	-143.1347	20.4632	-53.2526
51	159.2288	-22.7493	58.3648	-161.8967	25.7749	-64.0200
52	178.2987	-28.3654	69.5769	-175.9815	31.5837	-75.0493
53	192.3085	-34.4961	81.0368	-167.2983	34.4947	-81.0368
54	183.1325	-37.7298	87.4400	-170.1844	41.1556	-92.7125
55	185.0866	-44.7190	99.5157	-165.2314	48.3060	-104.5711
56	178.7463	-52.2201	111.7579	-151.2893	55.9664	-116.5789
57	162.9360	-60.2270	124.1320	-119.2731	60.2277	-124.1320
58	128.5627	-64.8411	132.0335	-86.7302	68.7061	-136.6031
59	93.1578	-73.6803	144.8341	-42.2081	77.6500	-149.1356
60	45.2644	-82.9761	157.6768	14.8961	82.9782	-157.6768

ENVOLVENTE MINIMOS FLECTORES TREN UIC-71, via 2

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-0.1816	3.0635	1.9218	2.2719	3.7033	4.3787
2	-10.6697	-17.0133	-17.6283	23.0053	17.0135	17.6283
3	-23.0048	-17.0143	-17.6283	35.3406	17.0143	17.6283
4	-35.3407	-17.0136	-17.6283	47.6751	17.0126	17.6283
5	-47.6748	-17.0131	-17.6283	60.0099	17.0131	17.6283
6	-60.0088	-17.0108	-17.6283	72.3419	17.0104	17.6283
7	-72.3411	-17.0130	-17.6283	84.6765	17.0140	17.6283
8	-84.6775	-17.0169	-17.6283	97.0166	17.0191	17.6283
9	-97.0163	-17.0152	-17.6283	109.3520	17.0154	17.6283
10	-109.3516	-17.0182	-17.6283	121.6891	17.0161	17.6283
11	-121.6879	-17.0163	-17.6283	134.0232	17.0179	17.6283
12	-134.0224	-17.0197	-17.6283	146.3644	17.0194	17.6283
13	-146.3624	-17.0136	-17.6283	158.6951	17.0119	17.6283
14	-158.6945	-17.0114	-17.6283	171.0291	17.0089	17.6283
15	-171.0294	-16.9997	-17.6283	183.3523	16.9951	17.6283
16	-183.3517	-16.9953	-17.6283	195.6741	16.9955	17.6283
17	-195.7753	-17.8644	-15.7903	208.7287	17.8654	15.7903
18	-215.6293	-38.7757	17.8689	243.7421	38.7758	-17.8689
19	-249.4632	-56.0550	44.0792	290.1031	56.0551	-44.0792
20	-295.2031	-71.5684	67.5767	345.2237	53.0998	-47.8077
21	-329.9017	94.6604	-140.3124	231.3919	-78.1192	103.7001
22	-236.2404	71.1445	-93.5222	168.6519	-71.1443	93.5222
23	-178.9671	51.6579	-64.9602	129.8923	-51.6582	64.9602
24	-138.7865	31.2671	-35.7559	109.0824	-31.2675	35.7559
25	-116.2680	15.7238	-12.7115	101.3303	-15.7239	12.7115
26	-109.1938	3.6452	-7.7156	105.7314	-3.6455	7.7156
27	-105.7318	3.6481	-7.7156	102.2657	-3.6481	7.7156
28	-102.2669	3.6495	-7.7156	98.7998	-3.6504	7.7156
29	-98.7995	3.6507	-7.7157	95.3303	-3.6517	7.7157
30	-95.3308	3.6489	-7.7157	92.6775	4.3654	10.0397
31	-92.6770	-4.3614	-10.0396	96.8219	4.3611	10.0396
32	-96.8237	-4.3631	-10.0397	100.9694	4.3640	10.0397
33	-100.9671	-4.3643	-10.0397	105.1135	4.3655	10.0397
34	-105.1136	-4.3644	-10.0396	109.2593	4.3648	10.0396
35	-109.2603	-4.3675	-10.0397	113.4083	4.3680	10.0397
36	-113.4086	-4.3652	-10.0397	117.5546	4.3642	10.0397
37	-121.9387	-18.9180	9.7791	139.9098	18.9179	-9.7791
38	-147.6234	-36.9696	41.8078	182.7452	36.9702	-41.8078
39	-191.1261	-53.1262	67.7729	241.5957	53.1256	-67.7729
40	-252.2749	-72.8440	98.1918	340.1627	80.8048	-124.8807
41	-327.4688	62.4107	-64.2925	269.3029	-73.9870	80.6313
42	-273.2650	63.3113	-65.4038	227.3649	-63.3124	65.4038
43	-231.7034	48.7259	-45.5455	196.3781	-48.7249	45.5455
44	-201.9901	32.9472	-25.9143	178.1052	-32.9453	25.9143
45	-185.5100	16.1766	-6.1932	173.7806	-16.1750	6.1932
46	-173.8191	16.0619	-5.7052	162.1769	-16.0580	5.7052
47	-162.1793	16.0528	-5.7052	150.5405	-16.0506	5.7052
48	-150.5409	16.0479	-5.7052	138.9046	-16.0493	5.7052
49	-138.9048	16.0444	-5.7052	127.2724	-16.0449	5.7052

50	-127.2713	16.0482	-5.7052	115.6380	-16.0472	5.7052
51	-115.6406	16.0483	-5.7052	104.0054	-16.0467	5.7052
52	-104.0059	16.0387	-5.7052	92.3791	-16.0337	5.7052
53	-92.3804	16.0309	-5.7052	80.7579	-16.0283	5.7052
54	-80.7579	16.0246	-5.7052	69.1393	-16.0260	5.7052
55	-69.1381	16.0204	-5.7052	57.5241	-16.0203	5.7052
56	-57.5256	16.0199	-5.7052	45.9119	-16.0185	5.7052
57	-45.9121	16.0160	-5.7052	34.3013	-16.0154	5.7052
58	-34.3010	16.0170	-5.7052	22.6888	-16.0181	5.7052
59	-22.6881	16.0186	-5.7052	11.0745	-16.0188	5.7052
60	-11.0746	16.0189	-5.7052	5.9589	16.5624	-43.4699

ENVOLVENTE MINIMOS CORTANTES TREN UIC-71, via 2

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	2.4863	-11.4714	-26.3169	7.9337	17.2709	16.9963
2	-3.4059	-12.0840	-25.1109	14.2702	17.8842	15.7903
3	-6.5465	-13.0510	-23.3497	18.1115	18.8510	14.0291
4	-7.6978	-14.3677	-21.0527	20.2164	20.1667	11.7321
5	-7.6094	-16.0320	-18.2387	21.3353	21.8320	8.9181
6	-7.0199	-18.0376	-14.9257	-59.5875	26.0903	-13.6381
7	75.1392	-22.6378	8.1123	-79.8170	31.8166	-22.9976
8	96.1522	-28.6912	17.9371	-73.2473	34.4938	-27.2577
9	89.9330	-31.6907	22.6468	-87.1112	41.4723	-37.9311
10	103.7390	-38.9856	33.7549	-93.3538	48.6876	-48.7617
11	109.5416	-46.5043	45.0061	-73.7233	52.3021	-54.3267
12	89.1155	-50.4072	50.9783	-65.7319	60.0038	-65.7198
13	80.0092	-58.3939	62.7660	-49.3064	67.8664	-77.2593
14	62.1854	-66.5303	74.6884	-24.4799	75.8504	-88.9505
15	35.7147	-74.7633	86.7515	20.5939	80.5655	-96.0721
16	-11.2094	-79.7204	94.2347	61.5404	88.8683	-108.2830
17	-54.1627	-88.2449	106.7978	110.6496	97.1896	-120.6494
18	-105.3906	-96.7725	119.5077	167.4527	105.4977	-133.1798
19	-164.3762	-105.2689	132.3738	242.7987	111.0695	-141.6944
20	-241.9309	-111.0097	141.2175	312.0295	97.0905	-122.7309
21	-14.5257	-19.1613	14.8102	-37.3273	11.0365	8.4664
22	39.8027	-3.8838	-19.3192	-32.5032	11.4839	7.1060
23	38.5277	-4.6372	-17.2848	-30.5122	12.2371	5.0716
24	39.9738	-5.7326	-14.5883	-30.9182	13.3325	2.3751
25	43.5833	-7.1978	-11.2416	-81.9779	15.3407	-16.2066
26	97.5060	-9.6029	7.9782	-105.5215	19.4068	-24.4004
27	123.4834	-14.0852	16.7982	-127.4362	24.1034	-33.4222
28	147.3288	-19.2178	26.4342	-146.1840	29.4162	-42.9734
29	167.4483	-24.9708	36.5876	-160.2466	35.3174	-53.0417
30	182.2896	-31.3275	47.2463	-168.1676	41.7994	-63.6152
31	190.3748	-38.2614	58.3981	-150.4177	45.8611	-70.6113
32	172.1745	-42.7753	65.9603	-143.3083	53.3273	-82.2440
33	164.0104	-50.6857	78.1474	-126.4196	61.2862	-94.3460
34	145.5034	-59.0776	90.7919	-98.7821	69.6897	-106.9052
35	115.7303	-67.8982	103.8812	-59.5970	78.4832	-119.9093
36	73.9557	-77.0847	117.4039	-8.2947	87.6246	-133.3468
37	19.6992	-86.5994	131.3478	55.4524	97.0505	-147.2055
38	-47.2587	-96.3662	145.7010	131.7114	106.6844	-161.4736
39	-126.8776	-106.3047	160.4518	220.2740	116.4711	-176.1392
40	-218.8265	-116.3652	175.5885	317.5225	103.3090	-157.7018
41	-22.9965	-16.0171	25.9875	-42.3605	3.0994	-2.6964
42	44.2996	2.3985	-5.4841	-43.9363	3.4019	-3.8365
43	48.1136	1.9030	-3.8145	-47.3907	3.8970	-5.5061
44	53.7496	1.1994	-1.6232	-52.5175	4.6005	-7.6974
45	60.9512	0.2683	1.0811	-78.6755	7.4324	-20.7659
46	89.0323	-2.8045	14.6532	-84.8992	8.6025	-23.9738
47	96.9801	-4.2343	18.3544	-112.6084	12.2892	-32.4908
48	126.1716	-8.1950	27.3538	-139.5743	16.5235	-42.2712
49	154.3397	-12.7125	37.6048	-164.6527	21.3000	-52.7454
50	180.3007	-17.7881	48.5370	-165.3055	23.5842	-57.8576
51	181.4896	-20.3779	54.0939	-183.7740	29.2035	-69.0697
52	200.1086	-26.3118	65.7366	-197.1775	35.3301	-80.5296
53	213.2591	-32.7677	77.6122	-187.3993	38.5663	-86.9328
54	202.7915	-36.3346	84.4154	-188.7520	45.5604	-99.0085
55	203.0003	-43.6656	96.8747	-181.8064	53.0526	-111.2507
56	194.4430	-51.5141	109.4832	-165.3954	61.0604	-123.6248
57	175.9273	-59.8727	122.2056	-130.4188	65.6734	-131.5263
58	138.3479	-64.8421	130.4367	-94.4122	74.5071	-144.3269
59	99.2270	-74.0396	143.5475	-45.9144	83.8093	-157.1696
60	47.1012	-83.6944	156.6816	15.6825	89.4965	-166.0022

ENVOLVENTE MINIMOS TORSORES TREN UIC-71, via 2

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	13.8301	70.7414	-146.4020	-61.6681	-66.7604	140.4381
2	57.1405	61.5738	-132.3235	-95.5894	-57.6729	126.6373
3	87.8656	52.8401	-119.0779	-126.1746	-52.8379	119.0779
4	115.7618	48.3523	-112.0543	-139.2990	-44.5624	106.6335
5	126.6921	40.4274	-100.1269	-142.2092	-36.7552	94.9542
6	127.8945	32.9632	-88.9466	-136.0246	-29.4439	84.0051
7	120.4719	25.9920	-78.4793	-139.3193	-25.9954	78.4793
8	122.9831	22.8701	-73.4188	-119.7252	-19.5267	68.6912
9	103.0370	16.7241	-64.0803	-94.2041	-13.5803	59.5493
10	77.5762	11.0895	-55.3732	-63.9852	-8.1594	51.0217
11	47.7993	5.9744	-47.2661	-52.1321	-5.9767	47.2661
12	36.7405	4.0878	-43.9176	-15.9352	-1.3979	39.7273
13	1.6570	-0.2078	-36.7736	21.7038	2.6353	33.3264
14	-34.5839	-3.9766	-30.7555	37.4675	3.9807	30.7555
15	-48.7028	-5.0595	-28.5565	76.0896	7.2140	25.7799
16	-85.4755	-8.0606	-23.9425	113.2376	9.9355	22.2726
17	-120.6164	-10.5572	-20.7874	197.4184	16.1559	20.0948
18	-202.6775	-16.5718	-18.9531	214.6921	16.5721	18.9531
19	-217.7675	-16.8027	-18.1471	229.9509	16.8037	18.1471
20	-230.8192	-16.8640	-17.6702	216.3520	-7.6841	45.5973
21	-263.0499	85.9601	-143.3087	171.0242	-106.4362	167.6005
22	-173.5001	99.2834	-156.7477	92.4460	-96.6840	152.4216
23	-98.4708	89.8376	-142.2428	26.1168	-87.0855	138.0018
24	-35.5790	80.5816	-128.4851	-27.7727	-77.7120	124.3294
25	15.1075	71.5745	-115.4629	-69.3100	-68.6266	111.3923
26	53.7815	62.8906	-103.1639	-98.8419	-59.8897	99.1787
27	80.8809	54.5678	-91.5766	-132.7247	-54.5612	91.5766
28	112.8331	49.6697	-84.5886	-141.3995	-46.6612	80.6885
29	120.1352	42.2209	-74.3029	-140.4747	-39.2277	70.4880
30	118.4312	35.2344	-64.6925	-131.0315	-32.2988	60.9628
31	108.8244	28.7614	-55.7454	-114.3039	-25.9137	52.1009
32	92.5490	22.8267	-47.4502	-91.6561	-20.1030	43.8908
33	70.9542	17.4605	-39.7941	-64.5642	-14.8969	36.3199
34	45.4811	12.6917	-32.7656	-34.5645	-10.3194	29.3756
35	17.6186	8.5228	-26.3519	-3.2716	-6.3725	23.5087
36	-11.0862	4.9799	-21.0034	27.7582	-3.0749	18.6628
37	-39.1635	2.0477	-16.6638	56.9920	-0.4094	15.1714
38	-65.1844	-0.2751	-13.6669	83.1273	1.6414	12.5169
39	-87.9616	-2.0181	-11.4949	128.9221	4.8480	11.1203
40	-130.3698	-4.9569	-10.5696	119.0960	-17.9737	37.2380
41	-278.4655	86.9252	-109.5151	207.9637	-106.1555	130.5525
42	-209.9034	100.6583	-122.3720	136.9256	-100.6582	122.3720
43	-141.1028	95.3522	-114.7210	84.0950	-92.3286	109.0659
44	-90.4530	87.2332	-101.9366	38.9973	-83.9995	96.4642
45	-47.4305	79.1262	-89.8479	-9.9377	-79.1295	89.8478
46	-0.4166	74.5118	-83.7351	-39.0962	-71.0873	78.4626
47	27.0146	66.7249	-72.8432	-60.0145	-63.1316	67.7879

48	46.4508	59.0333	-62.6509	-72.5641	-55.2934	57.8298
49	57.8023	51.4777	-53.1634	-95.1230	-51.4765	53.1634
50	79.4766	47.9729	-48.9550	-93.0637	-44.1031	44.3854
51	76.8798	40.9017	-40.6217	-83.2215	-36.9448	36.3203
52	66.8858	34.0551	-32.9872	-65.8609	-30.0128	28.9655
53	49.7809	27.4556	-26.0481	-69.6845	-27.4551	26.0481
54	54.2926	25.2261	-23.5307	-50.1738	-22.3171	19.8183
55	35.9258	20.4278	-17.6845	20.3156	-19.1966	11.7886
56	-32.9505	17.6592	-10.0211	20.1473	-17.6588	10.0211
57	-30.6792	16.4708	-8.6019	18.7376	-16.4706	8.6019
58	-26.6656	15.6413	-7.5123	15.3257	-15.6419	7.5123
59	-20.1405	15.1701	-6.7329	9.1409	-15.1710	6.7329
60	-10.3270	15.0580	-6.2449	-0.5899	-15.0577	6.2449

ENVOLVENTE DE MAX. FLECTORES CON SOBRECARGA UNIFORME

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	0.0418	-0.9454	-0.4423	0.6439	0.9454	0.4423
2	3.0940	4.3066	2.3156	-6.0262	-3.7809	-2.3156
3	6.0263	3.7812	2.3156	-8.5764	-3.2556	-2.3156
4	8.5764	3.2552	2.3156	-10.7457	-2.7296	-2.3156
5	10.7456	2.7296	2.3156	-12.5338	-2.2039	-2.3156
6	12.5337	2.2037	2.3156	-13.9411	-1.6781	-2.3156
7	13.9411	1.6784	2.3156	-14.9672	-1.1528	-2.3156
8	14.9674	1.1538	2.3156	-15.6136	-0.6282	-2.3156
9	15.6133	0.6277	2.3156	-15.8778	-0.1020	-2.3156
10	15.8774	0.1021	2.3156	-15.7611	0.4235	-2.3156
11	15.7605	-0.4236	2.3156	-15.2630	0.9492	-2.3156
12	15.2629	-0.9486	2.3156	-14.3842	1.4743	-1.6907
13	14.3841	-1.4752	1.6907	-13.1240	2.0009	-1.0657
14	13.1240	-2.0017	1.0657	-11.4820	2.5273	-0.4408
15	11.4825	-2.5279	0.4408	-9.4593	3.0536	0.1841
16	9.4592	-3.0536	-0.1841	-7.0539	3.5792	0.8091
17	7.0596	-3.5137	-0.8349	-4.3221	4.0394	1.4599
18	4.8322	-2.5165	-1.8748	-2.8172	3.0421	2.4998
19	3.3894	-1.6031	-1.5706	-2.0369	2.1287	2.1955
20	2.6283	-0.8029	-0.8945	-1.8559	1.3285	1.5195
21	2.4502	-0.5912	-0.2112	-1.8885	0.5912	0.2112
22	2.1847	0.0519	0.5077	-1.9066	0.6368	0.3112
23	2.6630	1.1454	1.7670	-3.4240	-0.4567	-0.9481
24	4.0789	1.9209	2.7127	-5.5766	-1.2322	-1.8938
25	6.4561	2.8640	4.1107	-8.8500	-2.1753	-3.2918
26	9.7126	3.4905	4.8244	-12.7015	-2.8017	-4.0055
27	12.7017	2.8015	4.0055	-15.0359	-2.1127	-3.1866
28	15.0362	2.1120	3.1866	-16.7155	-1.4232	-2.3677
29	16.7156	1.4237	2.3677	-17.7408	-0.7350	-1.5488
30	17.7410	0.7353	1.5488	-18.1122	-0.0465	-0.7299
31	18.1120	0.0460	0.7298	-17.8281	0.6428	0.0891
32	17.8286	-0.6429	-0.0890	-16.8909	1.3316	0.9079
33	16.8905	-1.3318	-0.9079	-15.2983	2.0205	1.7268
34	15.2981	-2.0200	-1.7268	-13.0522	2.7088	2.5457
35	13.0521	-2.7081	-2.5457	-10.1518	3.3968	3.3646
36	10.1519	-3.3980	-3.3646	-6.5967	4.0867	4.1835
37	6.9323	-2.9874	-3.9177	-3.7672	3.6761	4.7366
38	4.4792	-2.2642	-3.2601	-2.0010	2.9530	4.0790
39	2.9820	-1.1017	-2.1718	-1.6083	1.7904	2.9907
40	2.3810	-0.0219	-1.0999	-2.0330	0.7106	1.9188
41	2.4938	-0.1730	0.1112	-2.3686	0.1730	-0.1112
42	2.5698	0.3247	0.6555	-2.6146	0.2009	-0.0306
43	3.1963	1.2016	1.6308	-3.8767	-0.6760	-1.0059
44	4.5642	2.5525	2.1374	-6.2247	-2.0269	-1.5124
45	6.8163	3.5477	1.9269	-9.1983	-3.0221	-1.3020
46	9.2404	3.0886	1.3278	-11.2890	-2.5629	-0.7028
47	11.2889	2.5638	0.7028	-12.9573	-2.0382	-0.0778
48	12.9572	2.0385	0.0778	-14.2447	-1.5129	-0.0778
49	14.2450	1.5126	0.0778	-15.1510	-0.9870	-0.0778
50	15.1512	0.9876	0.0778	-15.6767	-0.4620	-0.0778
51	15.6773	0.4618	0.0778	-15.8215	0.0638	-0.0778
52	15.8214	-0.0624	0.0778	-15.5861	0.5880	-0.0778
53	15.5857	-0.5871	0.0778	-14.9692	1.1127	-0.0778
54	14.9692	-1.1123	0.0778	-13.9722	1.6379	-0.0778
55	13.9722	-1.6371	0.0778	-12.5946	2.1627	-0.0778
56	12.5951	-2.1626	0.0778	-10.8362	2.6882	-0.0778
57	10.8364	-2.6880	0.0778	-8.6977	3.2136	-0.0778
58	8.6976	-3.2136	0.0778	-6.1775	3.7392	-0.0778
59	6.1773	-3.7394	0.0778	-3.2754	4.2650	-0.0778
60	3.2755	-4.2652	0.0778	0.0077	4.7908	-0.0778
61	4.5689	-1.9359	0.0000	0.0000	1.9359	0.0000
62	6.8682	-2.9096	0.0000	0.0000	2.9096	0.0000
63	10.7704	-4.5631	0.0000	0.0000	4.5631	0.0000
64	23.1635	-9.8131	0.0000	0.0000	9.8131	0.0000
65	11.3999	-4.8298	0.0000	0.0000	4.8298	0.0000
66	22.4699	-9.5197	0.0000	0.0000	9.5197	0.0000
67	5.7012	-2.4155	0.0000	0.0000	2.4155	0.0000
68	5.6175	-2.3798	0.0000	0.0000	2.3798	0.0000

ENVOLVENTE DE MIN. FLECTORES CON SOBRECARGA UNIFORME

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-0.2216	4.7980	2.3417	-3.0667	-4.2724	-2.3417
2	-0.6712	-0.9797	-0.4162	1.3817	0.9797	0.4162
3	-1.3817	-0.9798	-0.4162	2.0921	0.9798	0.4162
4	-2.0921	-0.9799	-0.4162	2.8024	0.9799	0.4162
5	-2.8025	-0.9798	-0.4162	3.5130	0.9798	0.4162
6	-3.5131	-0.9797	-0.4162	4.2231	0.9797	0.4162
7	-4.2231	-0.9801	-0.4162	4.9336	0.9801	0.4162
8	-4.9338	-0.9801	-0.4162	5.6442	0.9801	0.4162
9	-5.6442	-0.9799	-0.4162	6.3547	0.9799	0.4162
10	-6.3547	-0.9801	-0.4162	7.0655	0.9801	0.4162
11	-7.0652	-0.9802	-0.4162	7.7757	0.9802	0.4162
12	-7.7757	-0.9799	-0.4162	8.4866	0.9799	0.4162
13	-8.4866	-0.9802	-0.4162	9.1970	0.9802	0.4162
14	-9.1968	-0.9796	-0.4162	9.9073	0.9796	0.4162
15	-9.9073	-0.9791	-0.4162	10.6171	0.9791	0.4162
16	-10.6171	-0.9789	-0.4162	11.3265	0.9789	0.4162
17	-11.3318	-1.0448	-0.3904	12.0897	1.0448	0.3904
18	-12.6000	-2.5680	0.0245	14.4616	2.5680	-0.0245
19	-15.0336	-4.0070	-0.9047	17.9387	4.0070	0.9047
20	-18.5300	-5.3323	-2.2057	22.3959	5.3323	2.2057
21	-24.1248	7.5460	8.4960	17.2833	-6.8572	-7.6771
22	-17.5796	6.2144	6.9582	11.6758	-6.2144	-6.9582
23	-12.4320	4.4318	4.8800	8.2223	-4.4318	-4.8800
24	-8.8774	2.9674	3.1154	6.0581	-2.9674	-3.1154
25	-6.9373	1.3354	0.8985	5.6686	-1.3354	-0.8985
26	-6.5313	0.0208	-0.6341	6.5117	-0.0208	0.6341
27	-6.5118	0.0207	-0.6341	6.4921	-0.0207	0.6341
28	-6.4920	0.0209	-0.6341	6.4727	-0.0209	0.6341
29	-6.4728	0.0209	-0.6341	6.4532	-0.0209	0.6341
30	-6.4533	0.0208	-0.6341	6.4332	-0.0208	0.6341
31	-6.4334	0.0212	-0.6341	6.4132	-0.0212	0.6341
32	-6.4136	0.0208	-0.6341	6.3936	-0.0208	0.6341
33	-6.3937	0.0211	-0.6341	6.3745	-0.0211	0.6341
34	-6.3742	0.0206	-0.6341	6.3545	-0.0206	0.6341
35	-6.3541	0.0206	-0.6341	6.3347	-0.0206	0.6341
36	-6.3346	0.0211	-0.6341	6.3152	-0.0211	0.6341

37	-6.6506	-1.0783	-0.8999	7.6747	1.0783	0.8999
38	-8.3869	-2.4901	-2.3764	10.7524	2.4901	2.3764
39	-11.7337	-4.3416	-4.2836	15.8582	4.3416	4.2836
40	-16.6309	-6.1101	-6.1744	22.4354	6.1101	6.1744
41	-23.9878	6.9164	3.3498	19.1641	-6.3908	-2.7248
42	-19.3651	5.8928	2.1805	15.0931	-5.8928	-2.1805
43	-15.6748	4.4904	0.5803	12.4190	-4.4904	-0.5803
44	-13.1063	2.6140	-0.5512	11.2115	-2.6140	0.5512
45	-11.8031	1.0928	-0.9657	11.0108	-1.0928	0.9657
46	-11.0531	1.0267	-0.9915	10.3088	-1.0267	0.9915
47	-10.3088	1.0259	-0.9915	9.5651	-1.0259	0.9915
48	-9.5649	1.0259	-0.9915	8.8212	-1.0259	0.9915
49	-8.8210	1.0263	-0.9915	8.0773	-1.0263	0.9915
50	-8.0772	1.0257	-0.9915	7.3335	-1.0257	0.9915
51	-7.3339	1.0258	-0.9915	6.5899	-1.0258	0.9915
52	-6.5898	1.0251	-0.9915	5.8469	-1.0251	0.9915
53	-5.8468	1.0247	-0.9915	5.1038	-1.0247	0.9915
54	-5.1036	1.0245	-0.9915	4.3610	-1.0245	0.9915
55	-4.3610	1.0241	-0.9915	3.6185	-1.0241	0.9915
56	-3.6185	1.0243	-0.9915	2.8758	-1.0243	0.9915
57	-2.8761	1.0243	-0.9915	2.1340	-1.0243	0.9915
58	-2.1339	1.0239	-0.9915	1.3913	-1.0239	0.9915
59	-1.3913	1.0242	-0.9915	0.6486	-1.0242	0.9915
60	-0.6486	1.0243	-0.9915	-0.0939	-1.0243	0.9915
61	-0.9764	0.4139	0.0000	0.0000	-0.4139	0.0000
62	-1.3678	0.5794	0.0000	0.0000	-0.5794	0.0000
63	-0.7324	0.3104	0.0000	0.0000	-0.3104	0.0000
64	-1.0621	0.4501	0.0000	0.0000	-0.4501	0.0000
65	-1.1946	0.5060	0.0000	0.0000	-0.5060	0.0000
66	-0.6588	0.2792	0.0000	0.0000	-0.2792	0.0000
67	-1.7145	0.7266	0.0000	0.0000	-0.7266	0.0000
68	-0.7131	0.3022	0.0000	0.0000	-0.3022	0.0000

ENVOLVENTE DE MAX. CORTANTES CON SOBRECARGA UNIFORME

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-0.2191	4.8323	2.3156	-3.0940	-4.3067	-2.3156
2	2.9163	4.3234	2.3091	-5.8606	-3.7977	-2.3091
3	5.3622	3.8471	2.2898	-7.9601	-3.3215	-2.2898
4	7.1873	3.4025	2.2594	-9.4634	-2.8769	-2.2594
5	8.4622	2.9903	2.2196	-10.4394	-2.4646	-2.2196
6	9.2548	2.6095	2.1722	-10.9563	-2.0839	-2.1722
7	9.6324	2.2605	2.1187	-11.0806	-1.7349	-2.1187
8	9.6601	1.9426	2.0608	-10.8781	-1.4170	-2.0608
9	9.4013	1.6537	1.9999	-10.4097	-1.1280	-1.9999
10	8.9160	1.3949	1.9375	-9.7367	-0.8693	-1.9375
11	8.2626	1.1645	1.8749	-8.9165	-0.6389	-1.8749
12	7.4970	0.9620	1.8134	-8.0035	-0.4363	-1.1885
13	6.6659	0.7827	1.4859	-7.0427	-0.2570	-0.8609
14	5.8154	0.6288	1.1908	-6.0804	-0.1032	-0.5659
15	4.9891	0.4998	0.9293	-5.1610	0.0259	-0.3044
16	4.2272	0.3945	0.7023	-4.3222	0.1311	-0.0773
17	3.5641	0.3111	0.5107	-3.5993	0.2146	0.1143
18	3.0305	0.2483	0.3554	-3.0199	0.2773	0.2696
19	2.6498	0.2044	0.2372	-2.6076	0.3212	0.3877
20	2.4414	0.1782	0.1568	-2.3802	0.3474	0.4682
21	-24.1248	7.5460	8.4960	17.2833	-6.8572	-7.6771
22	-17.4255	6.8681	7.7126	11.2278	-6.1794	-6.8937
23	-11.6756	6.2141	6.9582	6.0999	-5.5254	-6.1393
24	-6.8511	5.5880	6.2339	1.8693	-4.8993	-5.4150
25	-2.9102	4.9928	5.5408	-1.5060	-4.3041	-4.7219
26	0.1983	4.4320	4.8800	-4.0814	-3.7432	-4.0611
27	2.5406	3.9062	4.2525	-5.9241	-3.2174	-3.4336
28	4.1907	3.4180	3.6594	-7.1108	-2.7292	-2.8405
29	5.2318	2.9697	3.1019	-7.7259	-2.2810	-2.2830
30	5.7530	2.5619	2.5810	-7.8595	-1.8731	-1.7621
31	5.8464	2.1945	2.0978	-7.6038	-1.5057	-1.2789
32	5.6074	1.8684	1.6533	-7.0553	-1.1797	-0.8344
33	5.1306	1.5832	1.2487	-6.3070	-0.8945	-0.4298
34	4.5079	1.3384	0.8850	-5.4523	-0.6496	-0.0661
35	3.8294	1.1328	0.5634	-4.5786	-0.4441	0.2555
36	3.1775	0.9647	0.2849	-3.7664	-0.2760	0.5340
37	2.6260	0.8327	0.0506	-3.0899	-0.1440	0.7683
38	2.2409	0.7342	-0.1384	-2.6112	-0.0454	0.9573
39	2.0747	0.6667	-0.2810	-2.3810	0.0220	1.0999
40	2.1673	0.6271	-0.3762	-2.4359	0.0616	1.1951
41	-23.9878	6.9164	3.3498	19.1641	-6.3908	-2.7248
42	-19.2523	6.3967	2.7553	14.8055	-5.8711	-2.1304
43	-15.0931	5.8929	2.1805	11.0111	-5.3673	-1.5556
44	-11.4952	5.4063	1.6259	7.7663	-4.8807	-1.0009
45	-8.4414	4.9378	1.0922	5.0517	-4.4122	-0.4673
46	-5.9077	4.4904	0.5803	2.8427	-3.9647	0.0447
47	-3.8648	4.0640	0.0909	1.1088	-3.5384	0.5341
48	-2.2782	3.6615	-0.3750	-0.1856	-3.1359	0.3750
49	-1.1143	3.2863	-0.4307	-1.0773	-2.7607	0.4307
50	-0.3183	2.9364	-0.4898	-1.6200	-2.4108	0.4898
51	0.1577	2.6134	-0.5512	-1.8621	-2.0878	0.5512
52	0.3660	2.3182	-0.6137	-1.8560	-1.7926	0.6137
53	0.3606	2.0511	-0.6760	-1.6574	-1.5255	0.6760
54	0.2005	1.8139	-0.7368	-1.3248	-1.2883	0.7368
55	-0.0548	1.6067	-0.7947	-0.9195	-1.0811	0.7947
56	-0.3410	1.4305	-0.8481	-0.5057	-0.9049	0.8481
57	-0.5934	1.2853	-0.8955	-0.1474	-0.7597	0.8955
58	-0.7452	1.1714	-0.9353	0.0861	-0.6458	0.9353
59	-0.7274	1.0902	-0.9657	0.1273	-0.5646	0.9657
60	-0.4709	1.0411	-0.9850	-0.0933	-0.5155	0.9850
61	-0.9764	0.4139	0.0000	0.0000	-0.4139	0.0000
62	-1.3678	0.5794	0.0000	0.0000	-0.5794	0.0000
63	-0.7324	0.3104	0.0000	0.0000	-0.3104	0.0000
64	-1.0621	0.4501	0.0000	0.0000	-0.4501	0.0000
65	-1.1946	0.5060	0.0000	0.0000	-0.5060	0.0000
66	-0.6588	0.2792	0.0000	0.0000	-0.2792	0.0000
67	-1.7145	0.7266	0.0000	0.0000	-0.7266	0.0000
68	-0.7131	0.3022	0.0000	0.0000	-0.3022	0.0000

ENVOLVENTE DE MIN. CORTANTES CON SOBRECARGA UNIFORME

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	0.0387	-0.4709	-0.4097	0.4935	0.9965	0.4097
2	-0.1499	-0.5200	-0.3904	0.7176	1.0457	0.3904
3	-0.0763	-0.6015	-0.3600	0.7030	1.1271	0.3600
4	0.1899	-0.7150	-0.3202	0.5189	1.2406	0.3202
5	0.5801	-0.8599	-0.2728	0.2341	1.3856	0.2728
6	1.0270	-1.0362	-0.2193	-0.0856	1.5618	0.2193
7	1.4659	-1.2436	-0.1614	-0.3737	1.7692	0.1614
8	1.8315	-1.4804	-0.1005	-0.5679	2.0060	0.1005
9	2.0641	-1.7469	-0.0381	-0.6069	2.2726	0.0381
10	2.1039	-2.0425	0.0245	-0.4326	2.5681	-0.0245
11	1.8958	-2.3657	0.0860	0.0097	2.8913	-0.0860
12	1.3884	-2.7113	0.4135	0.7683	3.2370	0.2114
13	0.5381	-3.0846	0.0837	1.8885	3.6103	0.5413
14	-0.6995	-3.4814	-0.2798	3.4143	4.0070	0.9047
15	-2.3659	-3.9015	-0.6777	5.3850	4.4272	1.3026

16	-4.4967	-4.3437	-1.1110	7.8366	4.8693	1.7360
17	-7.1224	-4.8068	-1.5807	10.7981	5.3325	2.2057
18	-10.2694	-5.2890	-2.0875	14.2942	5.8146	2.7125
19	-13.9564	-5.7881	-2.6321	18.3432	6.3137	3.2570
20	-18.1995	-6.3027	-3.2150	22.9594	6.8283	3.8400
21	2.2753	0.0869	0.5722	-2.0306	0.6019	0.2467
22	2.1847	0.0519	0.5077	-1.9066	0.6368	0.3112
23	2.3904	-0.0110	0.4131	-2.0528	0.6997	0.4058
24	2.8557	-0.1047	0.2873	-2.4290	0.7934	0.5316
25	3.5304	-0.2320	0.1292	-2.9830	0.9207	0.6897
26	4.3518	-0.3951	-0.0622	-3.6493	1.0839	0.8811
27	5.2466	-0.5963	-0.2880	-4.3531	1.2851	1.1069
28	6.1337	-0.8367	-0.5494	-5.0111	1.5255	1.3683
29	6.9235	-1.1170	-0.8474	-5.5348	1.8057	1.6663
30	7.5258	-1.4386	-1.1831	-5.8323	2.1274	2.0020
31	7.8461	-1.8013	-1.5576	-5.8076	2.4901	2.3765
32	7.7884	-2.2053	-1.9718	-5.3667	2.8940	2.7907
33	7.2597	-2.6490	-2.4270	-4.4158	3.3377	3.2459
34	6.1705	-3.1320	-2.9243	-2.8682	3.8208	3.7432
35	4.4374	-3.6524	-3.4647	-0.6396	4.3411	4.2836
36	1.9821	-4.2097	-4.0493	2.3444	4.8984	4.8682
37	-1.2616	-4.8000	-4.6792	6.1484	5.4887	5.4981
38	-5.3491	-5.4210	-5.3555	10.8261	6.1098	6.1744
39	-10.3233	-6.0703	-6.0792	16.4172	6.7590	6.8981
40	-16.2131	-6.7438	-6.8514	22.9468	7.4325	7.6703
41	2.3962	0.3464	0.7057	-2.4570	0.1792	-0.0807
42	2.5698	0.3247	0.6555	-2.6146	0.2009	-0.0306
43	2.9366	0.2859	0.5852	-2.9531	0.2397	0.0397
44	3.4795	0.2282	0.4940	-3.4547	0.2974	0.1310
45	4.1764	0.1505	0.3809	-4.0951	0.3751	0.2440
46	4.9987	0.0509	0.2454	-4.8449	0.4748	0.3796
47	5.9130	-0.0715	0.0863	-5.6707	0.5971	0.5387
48	6.8892	-0.2217	-0.4830	-6.5383	0.7473	0.4830
49	7.8712	-0.3977	-0.4239	-7.3923	0.9233	0.4239
50	8.8108	-0.6002	-0.3625	-8.1853	1.1258	0.3625
51	9.6584	-0.8307	-0.3000	-8.8657	1.3563	0.3000
52	10.3581	-1.0889	-0.2377	-9.3785	1.6145	0.2377
53	10.8540	-1.3763	-0.1769	-9.6652	1.9019	0.1769
54	11.0850	-1.6946	-0.1190	-9.6659	2.2202	0.1190
55	10.9892	-2.0432	-0.0656	-9.3172	2.5688	0.0656
56	10.5017	-2.4236	-0.0182	-8.5535	2.9492	0.0182
57	9.5546	-2.8355	0.0216	-7.3089	3.3611	-0.0216
58	8.0815	-3.2796	0.0520	-5.5135	3.8052	-0.0520
59	6.0118	-3.7562	0.0713	-3.0977	4.2818	-0.0713
60	3.2755	-4.2652	0.0778	0.0077	4.7908	-0.0778
61	4.5689	-1.9359	0.0000	0.0000	1.9359	0.0000
62	6.8682	-2.9096	0.0000	0.0000	2.9096	0.0000
63	10.7704	-4.5631	0.0000	0.0000	4.5631	0.0000
64	23.1635	-9.8131	0.0000	0.0000	9.8131	0.0000
65	11.3999	-4.8298	0.0000	0.0000	4.8298	0.0000
66	22.4699	-9.5197	0.0000	0.0000	9.5197	0.0000
67	5.7012	-2.4155	0.0000	0.0000	2.4155	0.0000
68	5.6175	-2.3798	0.0000	0.0000	2.3798	0.0000

ENVOLVENTE DE MAX. TORSORES CON SOBRECARGA UNIFORME

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-0.0045	0.0889	0.0468	-0.0601	-0.0889	-0.0468
2	0.2804	0.0682	0.1449	-0.3297	-0.0682	-0.1449
3	0.6953	0.0317	0.3228	-0.7181	-0.0317	-0.3228
4	1.2063	-0.0206	0.5795	-1.1913	0.0206	-0.5795
5	1.7795	-0.0885	0.9142	-1.7154	0.0885	-0.9142
6	2.3817	-0.1721	1.3260	-2.2567	0.1721	-1.3260
7	2.9793	-0.2708	1.8141	-2.7828	0.2708	-1.8141
8	3.5411	-0.3844	2.3777	-3.2624	0.3844	-2.3777
9	4.0364	-0.5136	3.0161	-3.6642	0.5136	-3.0161
10	4.4350	-0.6563	3.7286	-3.9592	0.6563	-3.7286
11	4.7085	-0.8132	4.5145	-4.1186	0.8132	-4.5145
12	4.8299	-0.9836	5.3731	-4.1172	0.9836	-5.3731
13	4.7754	-1.1673	6.3039	-3.9289	1.1673	-6.3039
14	4.5201	-1.3636	7.3062	-3.5315	1.3636	-7.3062
15	4.0438	-1.5722	8.3796	-2.9036	1.5722	-8.3796
16	3.3261	-1.7915	9.5235	-2.0276	1.7915	-9.5235
17	2.3524	-2.0216	10.7375	-0.8868	2.0216	-10.7375
18	1.1072	-2.2617	12.0211	0.5323	2.2617	-12.0211
19	-0.4199	-2.5106	13.3740	2.2403	2.5106	-13.3740
20	-2.2380	-2.7679	14.7958	4.2442	2.7679	-14.7958
21	-4.1273	0.2766	0.2683	3.8639	-0.2766	-0.2683
22	-3.6989	0.2642	0.3749	3.4479	-0.2642	-0.3749
23	-3.1399	0.2396	0.5844	2.9120	-0.2396	-0.5844
24	-2.4624	0.2011	0.8962	2.2715	-0.2011	-0.8962
25	-1.6870	0.1471	1.3098	1.5471	-0.1471	-1.3098
26	-0.8394	0.0764	1.8246	0.7667	-0.0764	-1.8246
27	0.0477	-0.0124	2.4401	-0.0358	0.0124	-2.4401
28	0.9361	-0.1199	3.1557	-0.8224	0.1199	-3.1557
29	1.7854	-0.2475	3.9709	-1.5500	0.2475	-3.9709
30	2.5497	-0.3950	4.8852	-2.1745	0.3950	-4.8852
31	3.1842	-0.5631	5.8980	-2.6492	0.5631	-5.8980
32	3.6406	-0.7515	7.0088	-2.9266	0.7515	-7.0088
33	3.8713	-0.9609	8.2170	-2.9588	0.9609	-8.2170
34	3.8306	-1.1902	9.5221	-2.6997	1.1902	-9.5221
35	3.4730	-1.4393	10.9235	-2.1060	1.4393	-10.9235
36	2.7582	-1.7070	12.4207	-1.1363	1.7070	-12.4207
37	1.6476	-1.9928	14.0132	0.2451	1.9928	-14.0132
38	0.1100	-2.2955	15.7004	2.0709	2.2955	-15.7004
39	-1.8824	-2.6135	17.4818	4.3647	2.6135	-17.4818
40	-4.3480	-2.9456	19.3568	7.1467	2.9456	-19.3568
41	-5.3289	0.3650	0.4417	5.0641	-0.3650	-0.4417
42	-4.9362	0.3551	0.5361	4.6785	-0.3551	-0.5361
43	-4.4588	0.3370	0.7085	4.2144	-0.3370	-0.7085
44	-3.9046	0.3098	0.9586	3.6800	-0.3098	-0.9586
45	-3.2838	0.2728	1.2861	3.0856	-0.2728	-1.2861
46	-2.6084	0.2255	1.6905	2.4444	-0.2255	-1.6905
47	-1.8945	0.1670	2.1714	1.7739	-0.1670	-2.1714
48	-1.1607	0.0957	2.7284	1.0909	-0.0957	-2.7284
49	-0.4263	0.0122	3.3609	0.4174	-0.0122	-3.3609
50	0.2851	-0.0844	4.0684	-0.2240	0.0844	-4.0684
51	0.9491	-0.1943	4.8505	-0.8081	0.1943	-4.8505
52	1.5391	-0.3184	5.7063	-1.3081	0.3184	-5.7063
53	2.0270	-0.4575	6.6354	-1.6955	0.4575	-6.6354
54	2.3835	-0.6118	7.6369	-1.9396	0.6118	-7.6369
55	2.5761	-0.7813	8.7103	-2.0090	0.7813	-8.7103
56	2.5731	-0.9663	9.8547	-1.8725	0.9663	-9.8547
57	2.3418	-1.1678	11.0694	-1.4951	1.1678	-11.0694
58	1.8467	-1.3854	12.3536	-0.8421	1.3854	-12.3536
59	1.0536	-1.6195	13.7065	0.1207	1.6195	-13.7065
60	-0.0733	-1.8700	15.1271	1.4289	1.8700	-15.1271
61	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
62	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
63	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
64	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
66	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
67	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
68	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

ENVOLVENTE DE MIN. TORSORES CON SOBRECARGA UNIFORME

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	1.4119	1.3431	-14.9405	-2.3847	-1.3431	14.9405
2	2.0880	1.1164	-13.5393	-2.8973	-1.1164	13.5393
3	2.4666	0.9055	-12.2170	-3.1230	-0.9055	12.2170
4	2.5809	0.7102	-10.9726	-3.0955	-0.7102	10.9726
5	2.4642	0.5305	-9.8054	-2.8492	-0.5305	9.8054
6	2.1502	0.3661	-8.7145	-2.4152	-0.3661	8.7145
7	1.6696	0.2167	-7.6991	-1.8271	-0.2167	7.6991
8	1.0553	0.0822	-6.7585	-1.1149	-0.0822	6.7585
9	0.3358	-0.0380	-5.8919	-0.3081	0.0380	5.8919
10	-0.4597	-0.1441	-5.0987	0.5640	0.1441	5.0987
11	-1.3039	-0.2368	-4.3783	1.4757	0.2368	4.3783
12	-2.1716	-0.3164	-3.7300	2.4012	0.3164	3.7300
13	-3.0391	-0.3835	-3.1534	3.3174	0.3835	3.1534
14	-3.8849	-0.4387	-2.6476	4.2030	0.4387	2.6476
15	-4.6895	-0.4820	-2.2125	5.0387	0.4820	2.2125
16	-5.4352	-0.5154	-1.8474	5.8088	0.5154	1.8474
17	-6.1080	-0.5386	-1.5520	6.4984	0.5386	1.5520
18	-6.6959	-0.5529	-1.3258	7.0966	0.5529	1.3258
19	-7.1899	-0.5590	-1.1685	7.5955	0.5590	1.1685
20	-7.5838	-0.5574	-1.0798	7.9880	0.5574	1.0798
21	-4.8403	2.6734	-18.9388	2.3006	-2.6734	18.9388
22	-2.4682	2.3530	-17.0792	0.2324	-2.3530	17.0792
23	-0.5545	2.0464	-15.3219	-1.3900	-2.0464	15.3219
24	0.9180	1.7558	-13.6664	-2.5862	-1.7558	13.6664
25	1.9750	1.4818	-12.1121	-3.3834	-1.4818	12.1121
26	2.6485	1.2257	-10.6585	-3.8127	-1.2257	10.6585
27	2.9740	0.9887	-9.3050	-3.9134	-0.9887	9.3050
28	2.9932	0.7710	-8.0511	-3.7258	-0.7710	8.0511
29	2.7494	0.5738	-6.8963	-3.2948	-0.5738	6.8963
30	2.2895	0.3971	-5.8400	-2.6663	-0.3971	5.8400
31	1.6596	0.2407	-4.8817	-1.8890	-0.2407	4.8817
32	0.9091	0.1051	-4.0208	-1.0087	-0.1051	4.0208
33	0.0829	-0.0105	-3.2568	-0.0733	0.0105	3.2568
34	-0.7727	-0.1064	-2.5891	0.8737	0.1064	2.5891
35	-1.6163	-0.1835	-2.0172	1.7905	0.1835	2.0172
36	-2.4097	-0.2424	-1.5406	2.6401	0.2424	1.5406
37	-3.1189	-0.2847	-1.1587	3.3889	0.2847	1.1587
38	-3.7158	-0.3114	-0.8710	4.0115	0.3114	0.8710
39	-4.1799	-0.3242	-0.6769	4.4877	0.3242	0.6769
40	-4.4960	-0.3248	-0.5759	4.8042	0.3248	0.5759
41	-3.4428	2.5068	-13.9235	1.6258	-2.5068	13.9235
42	-1.7633	2.2617	-12.5169	0.1235	-2.2617	12.5169
43	-0.3575	2.0254	-11.1880	-1.1109	-2.0254	11.1880
44	0.7833	1.7993	-9.9364	-2.0876	-1.7993	9.9364
45	1.6714	1.5836	-8.7618	-2.8196	-1.5836	8.7618
46	2.3222	1.3793	-7.6637	-3.3225	-1.3793	7.6637
47	2.7534	1.1873	-6.6416	-3.6140	-1.1873	6.6416
48	2.9844	1.0071	-5.6951	-3.7148	-1.0071	5.6951
49	3.0380	0.8407	-4.8236	-3.6477	-0.8407	4.8236
50	2.9383	0.6879	-4.0265	-3.4369	-0.6879	4.0265
51	2.7111	0.5494	-3.3033	-3.1095	-0.5494	3.3033
52	2.3849	0.4257	-2.6533	-2.6932	-0.4257	2.6533
53	1.9890	0.3168	-2.0757	-2.2186	-0.3168	2.0757
54	1.5546	0.2233	-1.5700	-1.7165	-0.2233	1.5700
55	1.1136	0.1455	-1.1354	-1.2190	-0.1455	1.1354
56	0.6992	0.0837	-0.7711	-0.7599	-0.0837	0.7711
57	0.3456	0.0381	-0.4763	-0.3734	-0.0381	0.4763
58	0.0877	0.0089	-0.2501	-0.0941	-0.0089	0.2501
59	-0.0395	-0.0038	-0.0916	0.0423	0.0038	0.0916
60	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
61	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
62	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
63	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
64	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
66	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
67	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
68	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

ENVOLVENTES DE ESFUERZOS CON IMPACTO

ENVOL. MAX. FLECTORES -IPF

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	16.8228	54.8231	-180.2044	-115.4700	-167.8804	-66.1202
2	118.5312	167.9397	91.9516	-231.5222	-145.4634	-85.2080
3	231.5198	145.4718	85.2225	-330.1676	-122.9942	-78.4789
4	330.1692	122.9863	78.4790	-413.7494	-107.5827	-73.8593
5	413.7474	107.5852	73.8594	-481.7370	-85.1044	-67.1156
6	481.7351	85.0952	67.1154	-535.3669	-62.6211	-60.3717
7	535.3625	62.6336	60.3719	-574.6595	-40.1648	-53.6282
8	574.6664	40.1796	53.6282	-598.2155	-24.7763	-49.0085
9	598.2129	24.7637	49.0087	-606.8564	-2.2763	-42.2650
10	606.8544	2.2814	42.2649	-601.1686	20.1274	-35.0813
11	601.1638	-20.1282	35.0812	-580.9873	35.5239	-30.4615
12	580.9887	-35.5211	30.4616	-544.6984	58.0025	-23.7178
13	544.6935	-58.0100	23.7180	-494.0407	80.4964	-16.9744
14	494.0357	-80.5062	16.9744	-429.0232	102.9940	-10.2307
15	429.0261	-103.0326	10.2306	-348.7446	118.4319	-5.6109
16	348.7397	-118.4282	5.6110	-253.0518	140.9075	1.1327
17	253.2374	-139.6408	-2.7237	-151.5184	111.0195	13.6378
18	158.9655	-116.5882	-23.6716	-79.4442	89.0061	25.2609
19	97.2655	-40.9781	-15.6116	-70.3039	-5.1224	-3.4379
20	76.5020	-16.4713	-14.6814	-74.5896	6.4509	2.6087
21	74.5896	-6.4509	-2.6087	-58.0374	18.0251	8.6552
22	66.0086	1.2336	-2.4083	-101.2492	-124.4055	-40.5698
23	101.2492	124.4055	40.5698	-195.0980	-114.8273	-39.9844
24	195.0980	114.8273	39.9844	-283.6583	-104.2824	-39.0330
25	283.6583	104.2824	39.0330	-363.6562	-92.9264	-37.7111
26	364.9130	132.8549	65.3156	-481.0141	-106.7378	-57.9356
27	481.0161	106.7302	57.9358	-571.7631	-79.4685	-49.7585
28	571.7645	79.4549	49.7584	-637.4739	-53.1766	-42.1930
29	637.4691	53.1782	42.1930	-678.0488	-25.9202	-34.0156
30	678.0513	25.9239	34.0155	-693.0973	1.3369	-25.8382
31	693.0975	-1.3544	25.8381	-682.6910	20.6533	-20.2071
32	682.7029	-20.6429	20.2075	-647.1393	47.8993	-12.0300
33	647.1267	-47.8955	12.0299	-586.0219	75.1557	-3.8522
34	586.0204	-75.1660	3.8522	-499.6026	102.0000	2.8980
35	499.6122	-101.9882	-2.8980	-388.1339	128.8240	12.2732

36	388.1371	-128.8333	-12.2732	-286.6813	103.9265	17.1440
37	286.6813	-103.9265	-17.1440	-198.6764	114.4621	22.5443
38	198.6764	-114.4621	-22.5443	-105.3882	124.0399	28.3102
39	105.3882	-124.0399	-28.3102	-61.9980	47.0818	30.4177
40	86.4510	4.9054	-18.1945	-81.3137	19.0551	21.9924
41	96.4474	-2.8950	2.1298	-91.3935	6.6777	-4.3852
42	98.9476	14.8410	-1.8981	-104.1254	0.5584	6.5177
43	117.5318	39.4482	9.5372	-147.2927	-111.4919	-42.3995
44	156.5041	68.0104	25.6135	-228.1381	-111.5053	-42.3994
45	228.1381	111.5053	42.3994	-313.9761	-119.6860	-57.8745
46	315.7162	122.4099	63.6657	-398.8792	-107.0156	-59.0461
47	398.8805	107.0455	59.0461	-466.8371	-84.5686	-52.3022
48	466.8349	84.5622	52.3021	-520.4320	-62.0839	-45.5585
49	520.4371	62.1052	45.5584	-559.7162	-39.6974	-39.1502
50	559.7124	39.6840	39.1504	-582.9029	-24.2872	-34.5306
51	582.9083	24.3036	34.5303	-591.5779	-1.8304	-27.7868
52	591.5726	1.8585	27.7871	-585.9253	20.6112	-21.0433
53	585.9265	-20.5895	21.0433	-565.4101	35.9883	-16.4237
54	565.4063	-35.9675	16.4235	-529.1390	58.4395	-9.6797
55	529.1313	-58.4166	9.6795	-478.5413	80.8882	-2.9357
56	478.5440	-80.8809	2.9360	-413.6113	103.3620	3.8077
57	413.6111	-103.3576	-3.8077	-333.0891	118.7577	8.4276
58	333.0884	-118.7611	-8.4276	-237.5097	141.2420	15.1713
59	237.5067	-141.2547	-15.1713	-127.5631	163.7354	21.9151
60	127.5639	-163.7285	-21.9152	-20.0247	43.9287	130.5479

ENVOL. MAX CORTANTES -IPF

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-9.2848	183.4086	96.1459	-118.1083	-168.0088	-91.5262
2	113.2846	168.4638	91.6127	-211.7013	-150.3171	-66.2273
3	211.7013	150.3171	66.2273	-283.3205	-133.0955	-65.1006
4	283.3205	133.0955	65.1006	-379.8116	-133.0987	-65.1005
5	379.8116	133.0987	65.1005	-415.6884	-116.2993	-62.8109
6	415.6884	116.2993	62.8109	-429.7075	-100.0804	-59.4332
7	429.7075	100.0804	59.4332	-423.5728	-84.4997	-55.0419
8	423.5728	84.4997	55.0419	-484.8404	-84.5009	-55.0420
9	484.8404	84.5009	55.0420	-449.7605	-69.6608	-49.7126
10	449.7605	69.6608	49.7126	-399.3979	-55.6737	-43.5195
11	399.3979	55.6737	43.5195	-439.7553	-55.6800	-43.5195
12	439.7553	55.6800	43.5195	-367.2738	-42.6156	-36.5378
13	367.2738	42.6156	36.5378	-285.8232	-30.6145	-28.8419
14	285.8232	30.6145	28.8419	-198.5247	-19.7395	-20.5141
15	198.5247	19.7395	20.5141	-212.8312	-19.7349	-20.5141
16	212.8312	19.7349	20.5141	-115.8749	-10.0837	-12.3518
17	115.8749	10.0837	12.3518	-62.8742	-5.1230	-3.4503
18	87.8037	7.1778	6.0234	-66.5879	-5.1224	-3.4503
19	77.1110	5.9517	4.6256	-70.3014	-5.1225	-3.4503
20	71.5599	5.2296	3.6995	167.3095	-91.9287	-27.8033
21	-855.1641	239.2602	79.7228	655.5286	-265.4457	-87.3634
22	-660.3707	265.8099	87.5024	420.2665	-238.5504	-79.3250
23	-433.9967	239.6230	79.4660	218.4174	-212.3639	-71.2885
24	-240.9570	214.2579	71.4617	49.1228	-187.0001	-63.2845
25	-80.0842	189.7977	63.5221	-88.8686	-162.5403	-55.3446
26	50.1754	166.3192	55.6779	-197.1813	-139.0591	-47.5007
27	151.7275	143.8916	47.9617	-263.1985	-117.4668	-42.3730
28	212.1794	123.3986	42.9934	-434.2225	-99.7449	-46.7790
29	248.2670	104.4788	35.6116	-442.9312	-86.6010	-43.2318
30	262.5728	86.9819	28.4739	-434.1696	-73.6327	-39.3138
31	434.1696	73.6327	39.3138	-504.1339	-73.6403	-39.3139
32	504.1339	73.6403	39.3139	-466.7654	-61.0836	-35.0254
33	466.7654	61.0836	35.0254	-414.5650	-49.0364	-30.3661
34	414.5650	49.0364	30.3661	-349.6185	-37.6791	-25.3360
35	101.1387	38.5264	-2.8919	-274.5573	-27.1376	-19.9357
36	87.4618	33.6574	-5.9045	-105.1899	-18.2424	-32.0679
37	76.8705	29.8422	-8.4713	-24.0352	-18.1930	10.2784
38	71.2675	27.0097	-10.5610	-41.3182	-18.1922	10.2784
39	72.2054	25.0835	-12.1413	-58.6008	-18.1916	10.2784
40	80.8433	23.9710	-13.1808	142.8045	-91.8987	-29.9552
41	-821.1453	219.0646	54.5080	726.1147	-246.1275	-57.5376
42	-729.3096	246.3612	57.6367	556.2792	-230.9614	-53.0170
43	-565.2542	231.6501	53.0561	407.6682	-209.1719	-46.3125
44	-422.3471	210.3692	46.3087	278.2406	-187.8909	-39.5650
45	-298.4417	189.6252	39.5394	167.4307	-167.1468	-32.7959
46	-192.8538	169.5000	32.7712	75.5480	-154.1026	-28.1516
47	-105.7708	157.0952	28.1530	1.5283	-134.6163	-21.4092
48	-35.9993	138.2691	21.4636	-56.5382	-115.7916	-14.7200
49	18.4813	120.1717	14.8569	-99.8491	-97.6937	-8.1130
50	58.9622	102.8209	8.3640	-466.8782	-96.8537	-48.6460
51	466.8782	96.8537	48.6460	-434.5228	-80.1244	-42.7784
52	434.5228	80.1244	42.7784	-380.6242	-62.9698	-35.7487
53	-37.0895	68.7984	-12.1663	-426.2831	-62.9935	-35.7486
54	426.2831	62.9935	35.7486	-3.6338	-46.4179	20.3463
55	-36.9450	55.7059	-18.9857	2.1382	-40.3046	23.6055
56	-39.2720	50.5020	-21.9002	8.2369	-35.1036	26.5200
57	-40.6660	46.2133	-24.4242	12.7418	-30.8168	29.0440
58	-39.1714	42.8533	-26.5100	13.6821	-27.4572	31.1297
59	-32.7849	40.4443	-28.1076	9.0451	-25.0447	32.7274
60	-19.4766	38.9662	-29.1658	-1.7578	-24.4747	18.5947

ENVOL. MAX. TORSORES -IPF

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-24.5105	91.4905	251.3099	-39.0312	-83.7906	-233.6010
2	37.9001	83.8986	234.5696	-93.8833	-73.3003	-209.3105
3	87.8811	73.8898	210.9130	-134.0574	-62.7887	-185.8786
4	123.8731	63.8474	188.1409	-180.3735	-67.9320	-175.9242
5	180.3735	67.9320	175.9242	-200.3683	-59.4655	-161.1807
6	200.3683	59.4655	161.1807	-209.3390	-51.2926	-145.8933
7	209.3390	51.2926	145.8933	-208.1425	-43.4416	-130.0990
8	208.1425	43.4416	130.0990	-239.6392	-43.4438	-130.0991
9	239.6392	43.4438	130.0991	-223.8278	-35.9596	-113.8359
10	223.8278	35.9596	113.8359	-200.2820	-28.8988	-97.1407
11	200.2820	28.8988	97.1407	-221.2343	-28.9075	-97.1407
12	221.2343	28.9075	97.1407	-186.4906	-22.3073	-80.0512
13	186.4906	22.3073	80.0512	-147.1709	-16.2401	-62.6047
14	147.1709	16.2401	62.6047	-104.8324	-10.7397	-44.8421
15	104.8324	10.7397	44.8421	-112.6171	-10.7401	-44.8421
16	112.6171	10.7401	44.8421	-65.1355	-5.8510	-29.3647
17	65.1355	5.8510	29.3647	-18.0515	-1.5886	-16.3701
18	18.0515	1.5886	16.3701	27.3568	2.0333	-8.5502
19	-27.3568	-2.0333	8.5502	28.8311	2.0330	-8.5502
20	-28.8311	-2.0330	8.5502	83.3355	-46.5909	-110.0097
21	-294.1896	109.8935	274.6871	178.9055	-119.0737	-292.8866
22	-180.5625	119.1983	293.9687	74.7925	-105.5692	-263.0923
23	-80.9769	106.0471	265.1308	-11.1742	-92.5712	-234.5059
24	0.5020	93.4589	237.5157	-79.7072	-80.1489	-207.1465
25	64.7407	81.4915	211.1440	-133.4742	-71.1499	-181.1292
26	114.5572	72.9823	186.1300	-172.5833	-59.8230	-156.3826
27	150.2040	62.1800	162.4028	-202.0300	-57.1016	-136.4708
28	171.8865	51.9956	139.9158	-216.1189	-50.4830	-124.2962
29	216.1189	50.4830	124.2962	-221.3647	-43.9152	-111.9363
30	221.3647	43.9152	111.9363	-217.8772	-37.4264	-99.3909
31	217.8772	37.4264	99.3909	-253.4368	-37.4258	-99.3909

32	253.4368	37.4258	99.3909	-235.6463	-31.1435	-86.6603
33	235.6463	31.1435	86.6603	-210.4362	-25.1240	-73.7442
34	210.4362	25.1240	73.7442	-178.8564	-19.4438	-60.6429
35	178.8564	19.4438	60.6429	-142.2170	-14.1757	-47.3563
36	142.2170	14.1757	47.3563	-102.0250	-9.3848	-33.8869
37	102.0250	9.3848	33.8869	-59.7808	-5.1251	-22.2148
38	59.7808	5.1251	22.2148	-17.1879	-1.4344	-12.4679
39	17.1879	1.4344	12.4679	24.2660	1.6728	-6.7075
40	-24.2660	-1.6728	6.7075	72.5912	-46.6266	-106.3152
41	-172.5143	94.3757	209.0850	96.4075	-105.0019	-227.0332
42	-97.3250	105.0631	227.9756	23.9447	-97.3634	-210.2668
43	-27.8145	97.6456	211.8940	-37.7986	-86.4076	-186.0432
44	31.0093	86.9523	188.3639	-90.8621	-79.7278	-168.0159
45	90.8621	79.7278	168.0159	-119.0084	-72.8158	-153.4332
46	119.0084	72.8158	153.4332	-171.8014	-72.8313	-153.4330
47	171.8014	72.8313	153.4330	-188.9568	-65.4894	-138.4191
48	188.9568	65.4894	138.4191	-198.7883	-57.7629	-122.9363
49	198.7883	57.7629	122.9363	-200.0562	-49.7422	-106.9474
50	200.0562	49.7422	106.9474	-236.1294	-49.7431	-106.9475
51	236.1294	49.7431	106.9475	-221.7747	-41.4480	-90.4149
52	221.7747	41.4480	90.4149	-196.7387	-32.9326	-73.3012
53	196.7387	32.9326	73.3012	-220.6172	-32.9444	-73.3011
54	220.6172	32.9444	73.3011	-177.8558	-24.2486	-55.5712
55	177.8558	24.2486	55.5712	-122.9769	-15.4148	-37.2027
56	122.9769	15.4148	37.2027	-76.2517	-8.8159	-21.8801
57	76.2517	8.8159	21.8801	-82.6434	-8.8151	-21.8801
58	82.6434	8.8151	21.8801	-3.6659	2.6349	-1.6348
59	17.1272	-2.1556	5.3878	-1.7556	2.6346	-1.6348
60	6.3421	-3.0104	3.2187	0.1543	2.6345	-1.6348

ENVOLVENTES DE ESFUERZOS CON IMPACTO

ENVOL. MIN. FLECTORES -IPF

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-24.1115	93.9717	253.1031	16.0959	24.2566	15.7888
2	-19.6151	-29.1963	-18.5674	40.7842	29.1964	18.5674
3	-40.7837	-29.2000	-18.5821	61.9539	29.2000	18.5821
4	-61.9538	-29.1982	-18.5821	83.1222	29.1983	18.5821
5	-83.1227	-29.1947	-18.5821	104.2882	29.1947	18.5821
6	-104.2879	-29.1956	-18.5821	125.4552	29.1956	18.5821
7	-125.4528	-29.1987	-18.5821	147.4064	36.3277	20.6469
8	-147.4096	-36.3389	-20.6469	173.7562	36.3398	20.6469
9	-173.7531	-36.3297	-20.6469	201.3309	38.6894	21.3549
10	-201.3305	-38.6921	-21.3549	229.9725	41.0508	22.0629
11	-229.9702	-41.0520	-22.0629	259.7319	41.0535	22.0629
12	-259.7309	-41.0602	-22.0629	291.1528	43.4196	22.7709
13	-291.1483	-43.4091	-22.7710	323.6211	45.7667	23.4789
14	-323.6198	-45.7552	-23.4788	357.1490	48.1143	24.1869
15	-357.1533	-48.0941	-24.1869	392.0198	48.0921	24.1869
16	-392.0199	-48.0934	-24.1869	428.3047	50.4533	24.8949
17	-428.4934	-51.7280	-23.3041	466.7620	54.0885	24.0121
18	-481.6148	-99.6257	-9.8078	564.5640	134.5471	14.1148
19	-582.3862	-182.5755	-23.7639	714.8849	182.9491	22.8941
20	-729.4117	-222.8549	-28.4441	896.3305	160.7619	12.9021
21	-919.5297	222.9553	77.1031	656.2311	-265.1704	-87.3225
22	-666.2430	246.4344	81.5490	434.9608	-239.3536	-79.4248
23	-458.7804	187.2844	62.0091	304.6592	-134.7035	-39.4467
24	-325.3195	86.1373	32.1925	243.4909	-86.1369	-32.1925
25	-265.1081	41.2804	5.9256	225.8922	-41.2803	-5.9256
26	-248.5319	6.0447	-21.4073	242.7894	-6.0460	21.4073
27	-242.7921	6.0534	-21.4072	237.0411	-6.0530	21.4072
28	-237.0428	6.0569	-21.4073	231.2896	-6.0572	21.4073
29	-231.2880	6.0551	-21.4072	225.5330	-6.0553	21.4072
30	-225.5333	6.0547	-21.4074	219.7828	-6.0546	21.4074
31	-219.7828	6.0608	-21.4073	214.0224	-6.0615	21.4073
32	-214.0276	6.0569	-21.4073	208.2740	-6.0571	21.4073
33	-208.2689	6.0572	-21.4073	202.5121	-6.0579	21.4073
34	-202.5119	6.0587	-21.4073	202.0809	11.9404	21.8187
35	-202.0840	-11.9438	-21.8186	215.2007	14.3038	22.5266
36	-215.2012	-14.3021	-22.5267	230.4397	16.6621	23.2347
37	-240.9238	-51.9825	-8.2463	291.8416	54.3427	8.9543
38	-311.6923	-98.8716	-9.6516	422.8569	135.7232	16.1097
39	-447.2667	-184.1683	-36.4920	626.2220	191.4443	37.8824
40	-650.6750	-243.4306	-50.1055	887.0255	182.1585	35.8276
41	-912.3883	200.0629	48.3382	726.6105	-245.6398	-56.9809
42	-734.1649	224.1229	63.2642	571.6750	-224.1222	-63.2642
43	-585.0818	184.1141	47.2093	472.9324	-134.1399	-26.5731
44	-488.8885	90.1854	5.8770	423.5039	-90.1817	-5.8770
45	-443.7396	41.2451	-23.8430	413.8391	-41.2424	23.8430
46	-415.5760	38.5321	-29.6342	387.6407	-38.5301	29.6342
47	-387.6436	38.5205	-29.6342	359.7190	-38.5213	29.6342
48	-359.7204	38.5198	-29.6343	331.7951	-38.5165	29.6343
49	-331.7997	38.5062	-29.6343	303.8837	-38.4997	29.6343
50	-303.8824	38.5028	-29.6343	275.9658	-38.5022	29.6343
51	-275.9682	38.4899	-29.6343	248.0614	-38.4871	29.6343
52	-248.0589	38.4791	-29.6344	220.1599	-38.4722	29.6344
53	-220.1627	38.4606	-29.6344	192.2760	-38.4577	29.6344
54	-192.2771	38.4551	-29.6344	164.3923	-38.4542	29.6344
55	-164.3927	38.4368	-29.6344	136.5233	-38.4345	29.6344
56	-136.5286	38.4333	-29.6344	108.6610	-38.4338	29.6344
57	-108.6630	38.4294	-29.6344	80.8001	-38.4319	29.6344
58	-80.7998	38.4278	-29.6344	52.9368	-38.4306	29.6344
59	-52.9347	38.4392	-29.6344	25.0664	-38.4386	29.6344
60	-25.0674	38.4373	-29.6344	15.3919	61.1743	-102.7373

ENVOLVENTES DE ESFUERZOS CON IMPACTO

ENVOL. MIN. CORTANTES -IPF

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	1.4919	-24.2573	-15.7888	14.7914	29.6536	18.6683
2	-16.0959	-24.2566	-15.7888	16.0108	31.6527	18.5665
3	-33.6826	-24.2575	-15.7888	5.2581	35.1976	18.2856
4	-51.2698	-24.2603	-15.7888	1.6967	38.4850	18.0408
5	30.2677	-27.2984	-13.1664	-19.4512	44.4840	17.6672
6	56.2036	-34.2261	-12.8314	-43.6146	51.9922	17.3513
7	331.0987	-44.5194	2.4001	-422.0512	62.0842	-2.5073
8	422.0512	-62.0842	2.5073	-66.6498	67.8894	17.1737
9	377.0490	-62.0878	2.5073	-432.1469	79.3099	-1.3807
10	432.1469	-79.3099	1.3807	-465.6276	96.0809	0.9092
11	465.6276	-96.0809	-0.9092	-57.3412	101.8981	33.0951
12	98.2749	-96.7274	-29.3774	-17.5376	119.1015	20.0366
13	55.7008	-114.6730	-16.6343	36.0282	137.1530	23.3782
14	-1.4051	-133.4441	-20.3223	104.8003	155.9254	27.0660
15	-74.3769	-152.9111	-24.3860	190.8187	168.3108	29.0057
16	-165.1477	-165.9304	-26.7285	295.2789	188.4101	33.4722
17	-274.7886	-186.6375	-31.6235	417.9814	209.1170	38.3671
18	-402.9754	-207.8886	-36.9694	559.6312	230.3687	43.7131
19	-550.2887	-229.6477	-42.7869	722.3646	245.0466	47.4066
20	-718.7625	-244.7825	-46.9700	770.2401	226.3792	45.8542
21	-142.1944	-91.5222	-24.8443	-57.9909	18.0348	8.2790

22	57.9909	-18.0348	-8.2790	-57.5449	18.9582	8.0425
23	40.8574	-18.0339	-8.2790	-62.0741	20.8498	8.2161
24	23.7255	-18.0328	-8.2790	-73.2295	23.6458	8.4538
25	6.5938	-18.0322	-8.2790	-89.4572	27.4270	8.7871
26	271.6634	-26.7742	-2.4957	-347.2797	37.3200	3.4470
27	347.2797	-37.3200	-3.4470	-412.7595	48.6940	4.7689
28	412.7595	-48.6940	-4.7689	-465.4641	60.7413	6.4616
29	465.4641	-60.7413	-6.4616	-503.3433	73.2863	8.5250
30	503.3433	-73.2863	-8.5250	-524.9177	86.2435	10.9596
31	524.9177	-86.2435	-10.9596	-239.0690	87.4852	18.5311
32	442.9713	-86.2594	-10.9596	-232.0123	103.7247	20.8114
33	434.7581	-99.4144	-13.7648	-204.1649	121.5420	23.5865
34	255.3319	-115.5763	-20.1603	-153.5355	140.9576	25.1733
35	199.1931	-136.0831	-22.1606	-53.7586	163.3429	29.8677
36	92.7024	-159.5361	-27.3010	73.3995	186.7949	35.4784
37	-42.1378	-183.9502	-33.3886	231.0755	211.2071	41.5660
38	-208.1841	-209.2856	-39.9858	420.8376	236.5441	48.1632
39	-406.7047	-235.4297	-47.1235	642.5837	262.6880	55.7712
40	-637.2836	-262.2895	-55.3026	812.4276	246.3592	57.3602
41	-167.5506	-91.5370	-29.8597	-94.5882	6.9096	-4.2860
42	70.8386	-5.1758	3.4091	-98.5526	7.5988	-4.2471
43	67.0863	-5.1763	3.4091	-107.7191	8.7938	-4.2507
44	63.3334	-5.1751	3.4091	-121.5508	10.5353	-4.2764
45	111.5145	-9.6263	-1.5663	-209.0029	19.2465	0.2457
46	209.0029	-19.2465	-0.2457	-195.0556	19.2449	0.2458
47	195.0556	-19.2449	-0.2458	-283.0643	30.0830	0.0806
48	283.0643	-30.0830	-0.0806	-365.2885	42.0370	0.5474
49	365.2885	-42.0370	-0.5474	-438.6092	55.0298	1.7275
50	438.6092	-55.0298	-1.7275	-398.7191	55.0404	1.7276
51	398.7191	-55.0404	-1.7276	-450.0195	69.0022	3.6954
52	450.0195	-69.0022	-3.6954	-486.1219	83.7551	6.5259
53	486.1219	-83.7551	-6.5259	-425.4057	83.7399	6.5261
54	425.4057	-83.7399	-6.5261	-432.6880	99.2691	10.2941
55	432.6880	-99.2691	-10.2941	-419.9130	115.4482	15.0744
56	419.9130	-115.4482	-15.0744	-385.3423	132.1893	20.9418
57	385.3423	-132.1893	-20.9418	-289.4977	132.1856	20.9419
58	289.4977	-132.1856	-20.9419	-219.2611	149.3852	27.9714
59	219.2611	-149.3852	-27.9714	-124.4510	166.9333	36.2341
60	124.4510	-166.9333	-36.2341	-2.0178	179.2098	27.3768

ENVOLVENTES DE ESFUERZOS CON IMPACTO

ENVOL. MIN. TORSORES -IPF

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	0.3533	-11.3731	-3.7393	8.0742	12.2467	4.8297
2	-7.8928	-11.3720	-3.7393	8.4682	13.0766	7.1331
3	24.8444	-2.4316	-7.0060	-60.8022	6.3654	16.1905
4	60.8022	-6.3654	-16.1905	-56.1872	6.3642	16.1905
5	56.1872	-6.3642	-16.1905	-96.1531	11.7785	27.7223
6	96.1531	-11.7785	-27.7223	-156.0132	20.7532	40.6287
7	156.0132	-20.7532	-40.6287	-203.5421	29.5968	54.1738
8	203.5421	-29.5968	-54.1738	-182.0928	29.5965	54.1737
9	182.0928	-29.5965	-54.1737	-211.5532	38.2752	68.3356
10	211.5532	-38.2752	-68.3356	-230.1224	46.7138	83.0791
11	230.1224	-46.7138	-83.0791	-196.2399	46.7188	83.0791
12	196.2399	-46.7188	-83.0791	-198.8420	54.9080	98.3666
13	198.8420	-54.9080	-98.3666	-192.6650	62.7763	114.1606
14	192.6650	-62.7763	-114.1606	-178.9293	70.2544	130.4241
15	178.9293	-70.2544	-130.4241	-127.9876	70.2658	130.4241
16	127.9876	-70.2658	-130.4241	-102.9113	77.3227	147.1192
17	102.9113	-77.3227	-147.1192	-73.4876	83.9209	164.2088
18	73.4876	-83.9209	-164.2088	234.8661	110.1891	184.2943
19	-229.5793	-109.7676	-182.2235	311.9519	117.4675	199.9324
20	-309.4712	-117.2808	-198.8210	338.5973	108.6940	197.9897
21	-69.9108	-45.0856	-103.7594	144.4986	-5.3690	14.7740
22	-40.7754	2.9026	-9.2659	130.9158	-4.7090	17.5539
23	0.9173	-0.1115	-12.2113	111.7892	-3.4906	21.6653
24	44.7198	-3.7562	-18.9913	-88.6332	7.9926	27.7570
25	88.6332	-7.9926	-27.7570	-130.8914	12.7848	38.6363
26	130.8914	-12.7848	-38.6363	-169.5907	18.0514	49.6982
27	169.5907	-18.0514	-49.6982	-203.2220	23.7436	60.9455
28	203.2220	-23.7436	-60.9455	-230.4707	29.7642	72.3783
29	230.4707	-29.7642	-72.3783	-250.2988	36.0381	83.9964
30	250.2988	-36.0381	-83.9964	-261.9829	42.5200	95.8002
31	261.9829	-42.5200	-95.8002	-86.6538	30.2134	100.9223
32	221.5810	-42.5267	-95.8002	-95.5047	38.0598	117.5909
33	123.3375	-34.4450	-107.9864	-94.5706	46.7234	135.8056
34	120.4197	-43.6827	-127.3475	-82.0790	56.1745	155.5877
35	105.2554	-53.6761	-148.2919	-56.3740	66.3755	176.9597
36	76.2771	-64.4169	-170.8422	-15.9326	77.3151	199.9437
37	32.0782	-75.8353	-195.0200	40.5252	88.9102	224.5586
38	-28.4819	-87.8929	-220.8454	114.1585	101.1796	250.8023
39	-106.4110	-100.5648	-248.3145	205.8590	114.0397	278.6958
40	-202.4448	-113.7815	-277.4490	319.5854	110.0689	272.7609
41	-84.0972	-45.1410	-111.0376	267.4861	-19.6289	25.6015
42	-169.4128	12.4194	-14.2173	249.3841	-19.3446	27.2287
43	-160.4091	12.4210	-14.2173	226.6689	-18.6659	30.5083
44	-219.2511	25.5529	-15.8239	199.7950	-17.5406	34.9400
45	48.5603	-4.0002	-23.9715	169.2153	-15.9390	40.5444
46	98.3020	-8.7498	-34.7073	142.8644	-14.5144	45.0119
47	91.9601	-8.7516	-34.7075	108.5258	-12.0561	52.5528
48	137.2734	-14.1074	-48.2236	-179.7908	20.0238	62.0556
49	179.7908	-20.0238	-62.0556	-217.9487	26.4501	76.2445
50	217.9487	-26.4501	-76.2445	10.6513	-2.5010	78.8885
51	198.7742	-26.4571	-76.2445	-22.9260	2.1972	91.0217
52	226.0597	-33.3765	-90.8272	-245.8393	40.6865	105.8413
53	245.8393	-40.6865	-105.8413	-70.1379	11.6903	114.4963
54	91.4613	-8.5342	-107.6530	-91.5673	18.2193	130.2125
55	111.6164	-15.5165	-124.2564	-106.3630	25.4991	147.3636
56	124.5242	-23.2517	-142.3171	-112.9628	33.5409	165.9846
57	128.5981	-31.7525	-161.8721	-102.7857	39.4519	179.5811
58	115.2376	-38.1315	-176.4276	-89.6437	48.7453	200.6688
59	98.2453	-47.8925	-198.4998	-63.7532	58.8348	223.3351
60	67.8285	-58.4476	-222.1757	-22.6621	66.1467	239.8844

ENVOL. MAX. FLECTORES -EC1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	17.2922	71.3212	-183.0469	-119.6132	-181.8010	-125.7250
2	129.9817	188.0358	113.1033	-258.4883	-159.1592	-134.5520
3	258.4870	159.1617	134.5520	-371.7510	-144.7895	-89.5886
4	371.7523	144.7851	89.5886	-464.4788	-124.0737	-122.8537
5	464.4782	124.0742	122.8537	-541.2266	-100.1597	-93.8973
6	541.2247	100.1574	93.8973	-599.8348	-71.8818	-71.1750
7	599.8317	71.8885	71.1750	-644.3757	-33.9449	-64.7651
8	644.3777	33.9521	64.7651	-669.6151	-30.0674	-70.1594
9	669.6116	30.0580	70.1594	-674.8441	0.8829	-52.4762
10	674.8433	-0.8803	52.4761	-667.4727	24.7862	-23.5197
11	667.4716	-24.7873	23.5197	-642.3525	35.4937	-39.9211
12	642.3511	-35.4824	39.9212	-597.9110	73.4418	-33.5112
13	597.9050	-73.4513	33.5111	-540.2346	101.2367	-9.9918

14	540.2319	-101.2442	9.9918	-463.1870	114.7672	36.3001
15	463.1873	-114.7799	-36.3001	-378.5797	132.5227	9.4912
16	378.5753	-132.5252	-9.4912	-283.3931	152.6615	19.0975
17	283.5527	-151.5737	-20.3350	-174.3763	143.0946	19.2843
18	187.0760	-103.7173	-28.3646	-103.1018	74.4569	26.6356
19	118.3713	-32.8802	-14.9178	-89.6984	46.2198	20.1603
20	102.1368	-11.6658	-12.4512	-89.1270	30.8872	20.6918
21	100.7894	-18.4293	-8.0146	-77.9787	24.3107	11.0127
22	86.5311	-8.0694	-4.6258	-78.8940	-41.2121	-40.1226
23	99.3780	86.3285	59.1493	-169.2496	-74.7940	-33.5297
24	187.0143	116.8828	43.5247	-276.5506	-117.1092	-112.6469
25	294.8855	132.3024	61.8194	-399.6420	-86.7669	-43.9222
26	419.2136	117.3072	69.2324	-530.8943	-93.4965	-60.9284
27	530.8991	93.4845	60.9283	-623.3984	-82.0826	-72.1809
28	623.4017	82.0733	72.1809	-698.0118	-52.6763	-51.2323
29	698.0114	52.6823	51.2323	-744.3842	-23.2341	-30.1853
30	744.3837	23.2348	30.1854	-763.6174	4.6015	-7.8537
31	763.6163	-4.6080	7.8538	-755.0814	13.3476	-21.8990
32	755.0864	-13.3446	21.8989	-718.9215	41.1954	0.9423
33	718.9177	-41.1966	-0.9422	-655.4067	70.5484	22.2826
34	655.4072	-70.5458	-22.2826	-564.8496	110.5667	25.3662
35	564.8535	-110.5678	-25.3664	-447.7553	138.4142	48.8356
36	447.7570	-138.4138	-48.8357	-304.2647	167.5296	70.3722
37	309.3051	-150.7926	-93.1638	-178.1144	155.8370	58.7607
38	195.1723	-117.2860	-54.4939	-86.3754	140.2270	64.7552
39	107.3715	-98.2736	-43.3873	-76.9265	4.1568	-30.1050
40	89.2073	18.5165	-4.8767	-101.7277	2.5579	-18.9116
41	109.9247	4.7725	-4.8308	-103.5216	7.5631	-4.9122
42	108.0775	4.7145	-12.5994	-109.0781	1.9567	1.8807
43	116.9993	33.0084	12.2546	-167.7497	-89.5061	-35.5962
44	181.4383	127.6150	56.5872	-258.4842	-107.9450	-50.3585
45	275.8912	150.3974	79.5311	-371.2048	-119.6301	-88.9661
46	372.7216	122.0132	94.2187	-462.2040	-91.1647	-61.9058
47	462.2066	91.1861	61.9053	-530.6932	-98.5434	-65.9047
48	530.6923	98.5438	65.9045	-583.2693	-57.1538	-49.6345
49	583.2777	57.1525	49.6345	-626.2892	-35.9920	-42.1462
50	626.2897	35.9999	42.1462	-649.7697	-42.5218	-45.1866
51	649.7748	42.5306	45.1865	-657.4006	8.7444	-45.6489
52	657.3988	-8.7214	45.6488	-652.8314	12.1668	-23.6734
53	652.8358	-12.1485	23.6734	-626.7378	34.0191	-15.1473
54	626.7357	-34.0022	15.1472	-590.2280	75.3940	1.1230
55	590.2225	-75.3695	-1.1231	-534.3480	69.4752	-0.7997
56	534.3521	-69.4708	0.7996	-459.7345	120.4565	-1.8206
57	459.7334	-120.4512	1.8206	-374.2946	124.2049	20.7132
58	374.2955	-124.2068	-20.7132	-265.0741	156.0674	12.8350
59	265.0720	-156.0782	-12.8350	-146.0560	188.0172	46.7048
60	146.0578	-188.0135	-46.7048	-18.0331	140.5484	151.2609

ENVOL. MAX CORTANTES -EC1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-11.2441	210.6011	119.0141	-129.2711	-197.1074	-140.9621
2	126.1236	197.4043	140.2353	-251.9420	-169.0001	-117.8181
3	244.8272	169.7072	116.4312	-348.8504	-153.9128	-101.5541
4	329.5733	155.9352	101.5832	-442.7722	-135.8547	-102.4023
5	429.4768	137.3699	99.7608	-450.9579	-114.7925	-86.7543
6	421.1351	118.4318	86.8387	-466.9578	-96.9289	-78.5896
7	433.5521	101.3795	78.7648	-502.2238	-88.0509	-73.5221
8	466.3259	93.2805	73.8277	-484.4570	-72.1842	-65.0867
9	447.0923	78.1620	65.5605	-451.6301	-57.5181	-56.3671
10	413.7994	64.2543	57.0452	-406.6689	-44.1094	-47.4389
11	369.3035	51.5732	48.3554	-401.8596	-38.2342	-43.1128
12	365.8354	46.4061	44.3004	-340.7519	-26.8204	-34.3236
13	306.8660	35.6632	35.8131	-275.0747	-16.6702	-25.8727
14	244.0571	26.1678	27.6929	-258.1920	-12.8197	-22.4503
15	230.6846	22.9367	24.6283	-188.2645	-4.5769	-14.8910
16	164.8152	15.2928	17.4521	-67.7051	0.3544	-4.8415
17	119.5672	10.3719	9.2861	-60.0781	1.3286	-6.9545
18	108.1748	8.8235	7.4397	-54.4255	2.0473	-8.6625
19	100.7529	7.7558	6.0416	-51.0344	2.5264	-9.9754
20	97.7768	7.1261	5.1099	249.3562	-75.4938	-143.9143
21	-721.8136	235.0370	96.0855	595.8724	-289.0117	-151.4077
22	-598.6013	289.2165	150.6316	350.1519	-260.2379	-129.9770
23	-356.6615	260.7513	128.4126	134.0779	-231.5942	-107.6598
24	-144.3347	232.4617	105.3202	-51.9930	-203.1719	-84.4695
25	38.1577	204.4284	81.3685	-84.0130	-176.6500	-76.2535
26	66.8975	178.3374	72.4048	-176.1578	-153.6651	-63.6431
27	226.4896	157.4009	71.2366	-367.7176	-139.9101	-64.3670
28	323.5447	145.0471	65.4480	-410.5478	-120.6396	-56.3600
29	362.7358	126.7836	57.6838	-429.7451	-102.4242	-48.3999
30	379.6005	109.5857	49.9937	-427.7311	-85.3484	-40.5138
31	376.6382	93.5417	42.4056	-407.2929	-69.5180	-32.7298
32	356.6739	78.7642	34.9465	-371.6025	-55.0167	-25.0751
33	322.8593	65.3000	27.6449	-324.0779	-41.9230	-17.5774
34	278.5821	53.2314	20.5275	-268.3467	-30.2945	-10.2663
35	227.3795	42.5911	13.6243	-43.5058	-24.1491	15.2642
36	126.0096	33.5846	16.1666	-51.3503	-22.0908	11.7869
37	68.4349	30.0416	-9.4806	-61.0772	-20.4844	8.9057
38	50.9925	28.0456	-20.6520	-73.4828	-19.3029	6.6069
39	67.4651	27.2561	-18.9219	-89.2075	-18.5163	4.8767
40	87.3857	26.8221	-17.7467	441.7746	-50.0926	-25.2376
41	-702.4099	219.6162	72.7120	598.7735	-263.9474	-96.2828
42	-600.7197	264.0946	95.5882	411.6654	-257.4218	-106.3068
43	-416.0616	257.7687	104.9957	257.1819	-230.3721	-82.5426
44	-263.9912	230.9405	80.6226	119.4295	-203.3085	-57.9592
45	-128.5707	204.1124	55.4392	-6.6392	-186.5566	-65.0325
46	-15.3531	188.5961	65.3136	-115.8313	-170.6925	-40.1550
47	102.4822	172.0470	36.4659	-141.4768	-148.4948	-50.1990
48	111.6366	151.6536	50.6636	-179.1355	-129.7719	-42.1374
49	146.1830	133.5516	42.7311	-238.1705	-120.2112	-37.4885
50	202.7578	124.6565	38.2383	-240.4213	-102.4860	-29.1336
51	203.2844	107.6104	30.0684	-223.7616	-85.2341	-20.3471
52	185.7264	91.0396	21.4974	-188.7130	-68.4710	-11.1323
53	150.6628	75.0145	12.5309	-200.2150	-61.6794	-7.2882
54	163.0929	68.9587	8.9689	-154.3269	-48.5331	0.5836
55	119.1352	56.5734	1.4155	91.6073	-41.4810	35.9999
56	-51.1153	48.7264	-22.5954	76.2295	-39.3162	33.5461
57	-48.7816	45.0001	-25.0868	59.9801	-37.5538	31.5133
58	-70.6621	42.8622	-40.6001	42.0077	-36.1915	29.8814
59	-49.3994	41.9065	-39.3470	21.4367	-35.2362	28.6283
60	-24.9506	41.3632	-38.4507	-2.6203	-34.6929	27.7320

ENVOL. MAX. TORSORES -EC1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-31.0268	102.0034	288.7512	-42.9283	-102.0055	-288.7512
2	42.9283	102.0055	288.7512	-77.7725	-69.8838	-249.3957
3	77.7725	69.8838	249.3957	-157.8270	-77.3657	-222.5458
4	149.0426	78.2813	224.6003	-136.7063	-54.1375	-214.7731
5	136.7063	54.1375	214.7731	-127.9810	-40.0570	-182.3888
6	127.9810	40.0570	182.3888	-221.1549	-48.4858	-157.4630
7	204.9577	50.6206	161.4482	-239.2432	-43.9581	-145.4868
8	221.6915	46.4874	150.1564	-231.1302	-35.9060	-125.2599
9	212.7414	38.8136	130.6329	-215.2709	-28.4550	-105.5102
10	196.5476	31.7447	111.6045	-193.1407	-21.6394	-86.2753

11	174.5544	25.2937	93.1079	-190.4744	-18.6220	-77.1466
12	172.4677	22.6303	84.7338	-159.8983	-12.8080	-59.2195
13	142.8751	17.1590	67.5771	-6.3946	-1.1438	-46.4399
14	111.1054	12.3086	52.0958	-117.6106	-5.6352	-36.1345
15	103.6147	10.6280	46.0746	-81.9649	-1.4158	-22.4256
16	69.9252	6.7113	33.1766	84.6687	7.1238	-20.6057
17	37.3569	3.4030	22.9706	125.9030	10.1203	-11.4595
18	7.1138	0.6861	14.4872	162.6197	12.4156	-4.9229
19	0.1883	0.0984	11.7761	193.4065	14.0216	-1.0939
20	-25.8260	-1.8288	6.5695	219.6174	-57.9693	-170.9439
21	-249.6764	109.4650	276.1888	276.5319	-148.6431	-351.1417
22	-276.5319	148.6431	351.1417	201.8810	-132.5076	-313.3866
23	-201.8810	132.5076	313.3866	117.5967	-117.1506	-277.3750
24	-117.5967	117.1506	277.3750	53.0516	-102.6407	-243.1815
25	-53.0516	102.6407	243.1815	5.8870	-89.0063	-210.8967
26	-5.8870	89.0063	210.8967	-196.9528	-68.3116	-181.8732
27	177.5833	70.3461	187.3215	-240.2556	-61.6029	-166.4067
28	218.3997	64.1224	172.7904	-254.0886	-51.9147	-145.1721
29	230.3405	54.9361	152.5048	-255.9817	-42.7588	-124.7888
30	230.9946	46.2927	133.0841	-247.1514	-34.1713	-105.2699
31	221.6166	38.2153	114.5418	-228.9827	-26.2064	-86.6297
32	203.6145	30.7800	96.8920	-203.0748	-18.9047	-68.8820
33	178.5705	23.9980	80.1483	-171.1283	-12.3091	-52.0403
34	148.1768	17.9115	64.3246	-134.9592	-6.4426	-36.1197
35	114.1999	12.5440	49.4355	-96.3676	-1.3238	-21.9498
36	78.3776	7.9021	36.3111	-57.1972	3.0445	-9.5949
37	42.4718	3.9903	25.0154	0.0400	0.0313	0.0182
38	8.1179	0.7973	16.2431	0.0697	0.0313	0.0182
39	-23.0872	-1.6972	9.2417	0.0994	0.0313	0.0182
40	-49.8864	-3.5346	4.5537	421.1422	-29.4272	-47.3646
41	-144.5264	96.6244	225.7075	75.5698	-112.4148	-254.8967
42	-76.3371	112.4660	255.7491	207.1870	-138.3267	-249.6536
43	-207.1870	138.3267	249.6536	-60.4982	-95.9577	-217.4321
44	54.6406	96.4276	219.5360	-109.1450	-86.1022	-195.4958
45	100.8237	86.7976	198.2381	-161.3345	-80.1315	-182.2767
46	150.6809	81.0956	185.6677	-191.0437	-70.5594	-161.3978
47	178.2377	71.7914	165.4476	-210.9026	-61.0588	-140.9278
48	196.1767	62.5745	145.6489	-220.7003	-51.6636	-120.8597
49	204.3394	53.4891	126.2646	-240.7004	-46.8202	-110.3033
50	223.0216	48.9686	116.4054	-232.6010	-37.9184	-91.3270
51	213.9751	40.4063	98.1408	-214.9575	-29.2504	-72.7542
52	195.7866	32.0863	80.2950	-188.0233	-20.8363	-54.5862
53	168.7481	24.0325	62.8704	-183.7581	-17.3680	-46.9091
54	164.8441	20.9299	55.9534	-149.4439	-10.5196	-31.4129
55	131.3876	14.4606	41.2358	-75.1558	2.1265	-5.5653
56	58.4788	2.2002	16.1854	-11.7446	4.1298	-2.5060
57	42.8953	0.2491	11.6615	-8.7489	4.1311	-2.5060
58	28.3706	-1.3054	7.9752	-5.7541	4.1310	-2.5060
59	15.7621	-2.4563	5.1486	-2.7585	4.1314	-2.5060
60	5.9440	-3.2014	3.2034	0.2368	4.1314	-2.5060

ENVOL. MIN. FLECTORES -EC1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-31.2356	105.5264	290.9613	13.4632	4.1962	-70.6269
2	-25.1490	-37.7261	-23.3267	52.5028	37.7270	23.3267
3	-52.5019	-37.7289	-23.3267	79.8559	37.7291	23.3267
4	-79.8567	-37.7264	-23.3267	107.2070	37.7257	23.3267
5	-107.2076	-37.7267	-23.3396	134.5592	37.7271	23.3396
6	-134.5576	-37.7247	-23.3396	161.9064	37.7224	23.3396
7	-161.9044	-37.7280	-23.3396	189.2582	37.7295	23.3396
8	-189.2610	-37.7346	-23.3396	216.6227	37.7385	23.3396
9	-216.6207	-37.7356	-23.3396	243.9774	37.7341	23.3396
10	-243.9760	-37.7341	-23.3396	271.3335	37.7294	23.3396
11	-271.3314	-37.7314	-23.3396	298.6852	37.7360	23.3396
12	-298.6841	-37.7394	-23.3396	326.0489	37.7407	23.3396
13	-326.0446	-37.7316	-23.3396	353.3966	37.7276	23.3396
14	-353.3939	-37.7238	-23.3396	380.7446	37.7176	23.3396
15	-380.7452	-37.6971	-23.3396	408.0735	37.6922	23.5565
16	-408.0713	-37.6895	-23.5564	454.3907	68.7165	74.3940
17	-454.5070	-69.7158	-72.2803	505.6870	79.4151	92.0697
18	-513.6227	-103.4619	-53.3616	588.6335	103.4631	53.3616
19	-595.2127	-123.3342	-23.2198	709.0073	196.9150	163.6695
20	-714.8723	-214.7552	-136.6474	905.9835	49.3267	-107.2399
21	-888.3633	120.5975	-109.0982	647.2564	-245.7666	-199.6277
22	-652.8322	237.7457	211.3323	461.5636	-172.6242	-85.6705
23	-473.4261	150.2148	118.5168	347.1689	-123.6858	-77.7050
24	-357.3972	100.2361	111.2900	287.7707	-50.6689	56.1210
25	-296.0341	32.7936	-29.6200	264.8809	-32.7994	29.6200
26	-273.9239	18.9089	-23.8747	255.9593	-18.9168	23.8747
27	-255.9597	18.9198	-23.8747	239.3287	-9.4355	21.1439
28	-239.3321	9.4397	-21.1439	230.3636	-9.4408	21.1439
29	-230.3629	9.4398	-21.1440	221.3944	-9.4397	21.1440
30	-221.3959	9.4361	-21.1440	213.3657	-0.2199	23.8166
31	-213.3656	0.2274	-23.8165	220.5069	8.9746	19.6222
32	-220.5119	-8.9789	-19.6223	229.0432	8.9798	19.6223
33	-229.0378	-8.9799	-19.6223	237.5693	8.9802	19.6223
34	-237.5699	-8.9787	-19.6222	246.1002	8.9805	19.6222
35	-246.1024	-8.9867	-19.6223	254.6400	8.9884	19.6223
36	-254.6406	-8.9822	-19.6223	263.1701	8.9810	19.6223
37	-272.1990	-39.5686	-8.2542	323.6052	94.1128	135.4297
38	-332.4758	-114.8722	-98.5967	450.6605	126.6979	123.5398
39	-460.2985	-145.2773	-93.6799	598.3137	145.2777	93.6800
40	-610.5948	-167.9538	-58.6983	853.6481	94.5852	-96.6803
41	-839.0501	70.1126	-120.8689	696.9766	-215.6682	-111.3110
42	-701.5331	203.3912	128.8226	557.4990	-188.8200	-92.5834
43	-562.4882	172.0455	115.4204	504.3272	-78.9132	83.7056
44	-510.7810	60.7689	-61.1297	466.7234	-60.7543	61.1299
45	-475.2390	41.4703	-38.4506	445.1707	-41.4570	38.4506
46	-445.2150	41.3270	-37.8894	415.2467	-41.3190	37.8894
47	-415.2495	41.3131	-37.8894	385.3010	-41.3093	37.8894
48	-385.3014	41.3062	-37.8894	355.3435	-41.3065	37.8894
49	-355.3437	41.3009	-37.8894	325.4040	-41.2903	37.8894
50	-325.4027	41.2941	-37.8894	295.4625	-41.2968	37.8894
51	-295.4655	41.2981	-37.8894	265.5202	-41.3067	37.8895
52	-265.5208	41.2975	-37.8895	235.5937	-41.2805	37.8895
53	-235.5952	41.2773	-37.8895	205.6773	-41.2540	37.8895
54	-205.6773	41.2497	-37.8895	175.7720	-41.2395	37.8895
55	-175.7706	41.2330	-37.8895	145.8734	-41.2237	37.8895
56	-145.8751	41.2232	-37.8895	115.9905	-41.2258	37.8895
57	-115.9907	41.2229	-37.8895	86.0992	-41.2314	37.8895
58	-86.0989	41.2332	-37.8895	56.2424	-41.0821	35.2573
59	-56.2416	41.0827	-35.2573	26.4570	-41.0849	35.2573
60	-26.4571	41.0850	-35.2573	7.0895	23.1781	-52.4963

ENVOL. MIN. CORTANTES -EC1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	2.7562	-27.2285	-29.1707	21.0544	38.1146	23.7059
2	-14.1969	-27.9326	-27.7838	36.4226	39.3240	23.7735
3	-27.9846	-29.0452	-25.7584	45.6549	41.3516	23.8026
4	-4.2127	-31.7138	5.6920	50.5251	44.1871	23.6209
5	-22.8979	-34.4926	-18.4627	20.6243	48.2322	2.2057
6	-4.1616	-43.8686	-9.1144	-87.0158	61.3883	-2.4848
7	104.9002	-57.4179	-3.8699	-128.0440	76.6286	7.4563
8	146.8295	-73.0344	-13.2758	-91.4586	79.7075	2.5570

9	110.6471	-76.4840	-7.8596	-120.3952	96.8746	10.5008
10	139.5172	-94.0149	-15.3034	-140.4962	114.8667	17.8350
11	159.1122	-112.3559	-22.1539	-75.2354	119.0238	11.4353
12	92.9364	-116.8447	-15.2859	-69.7957	138.2004	18.9994
13	86.2146	-136.3491	-22.3962	-50.7511	158.2405	28.6512
14	65.5620	-156.7039	-31.6077	-16.2405	179.1456	40.5342
15	29.1605	-177.8954	-43.0630	111.3571	186.7122	40.1949
16	-100.5650	-185.7403	-42.3079	172.0037	206.5959	46.1735
17	-163.5193	-205.8790	-47.8815	299.9293	231.6490	48.2819
18	-293.8815	-231.1693	-49.5949	453.0302	258.4536	73.5470
19	-449.4922	-258.1905	-74.4739	639.0980	264.8607	63.7552
20	-638.1000	-264.7920	-64.3036	684.3979	218.5877	62.6731
21	-222.9497	-82.7837	-124.9428	-82.0385	24.6329	10.6255
22	86.4575	-8.0817	-4.0366	-70.4762	25.5616	10.9063
23	83.2027	-9.7152	-4.4222	-65.6704	27.1946	11.2920
24	86.4458	-12.1339	-4.9406	-66.6158	29.6135	11.8103
25	94.9040	-15.4029	-5.6189	-178.8389	33.7446	11.1702
26	213.8557	-20.4494	-5.1664	-234.1148	42.9903	12.7352
27	274.8727	-30.6497	-6.9466	-285.9603	53.6894	14.8600
28	331.3040	-42.3544	-9.3140	-330.7581	65.8111	17.4222
29	379.4034	-55.4888	-12.1464	-365.0182	79.2903	20.4503
30	415.5960	-70.0083	-15.4722	-385.4001	94.0955	23.9723
31	436.4980	-85.8598	-19.3194	-346.6271	103.3400	26.1891
32	342.9556	-97.4923	-20.7829	-298.5272	121.7635	27.1333
33	322.3347	-118.7257	-31.8444	-257.6374	142.8479	38.1780
34	279.5837	-140.3080	-42.2653	-193.0025	164.3287	48.6780
35	212.4930	-162.2684	-52.1556	-149.7148	177.9718	47.3415
36	183.4848	-174.6600	-44.7284	-35.3081	198.8990	54.2082
37	62.4282	-196.4417	-52.0856	76.6001	222.0261	75.0091
38	-67.1774	-221.2392	-76.7393	279.5516	250.3568	98.2758
39	-273.9928	-249.9202	-99.4509	512.1762	278.8617	121.0853
40	-510.5115	-278.7399	-121.7186	705.7961	234.5695	76.1091
41	-336.7370	-83.8909	-169.0039	-105.4673	7.7095	-5.6068
42	107.6973	-1.3869	-3.8007	-104.2744	8.0582	-6.9179
43	109.0783	-1.9575	-1.8807	-107.7559	8.7959	-4.0597
44	112.5545	-2.7664	0.6393	-118.8463	10.2994	-3.8373
45	117.8312	-3.8350	3.7492	-171.2256	15.7723	0.6856
46	147.1208	-7.3674	19.3571	-185.9520	18.3409	1.0465
47	153.2589	-9.0125	23.6135	-250.7714	26.6281	1.3162
48	281.6371	-17.0712	3.3327	-314.4312	36.1611	2.3619
49	348.2282	-27.2565	2.1310	-374.2039	46.9346	4.0978
50	410.2065	-38.7115	0.2100	-377.3129	52.0419	5.0325
51	414.7314	-44.5150	-0.9405	-422.6037	64.7444	7.5483
52	460.5596	-57.9306	-3.7042	-456.6551	78.6209	10.7326
53	494.2257	-72.5579	-7.1708	-436.7930	85.8867	12.4133
54	472.9849	-80.5815	-9.1699	-443.9297	101.7241	16.6579
55	477.7066	-97.1890	-13.7708	-432.4187	118.7174	21.7581
56	462.7143	-114.9954	-19.2669	-399.5896	136.8768	27.7932
57	425.2795	-133.9543	-25.7391	-323.3293	147.2949	30.9817
58	343.2755	-145.1907	-29.4080	-246.3353	167.3620	38.5128
59	259.3689	-166.0843	-37.4640	-141.1095	188.4849	47.1854
60	146.0578	-188.0135	-46.7048	-4.9065	201.3571	51.9475

8	137.8544	-20.1326	-40.0392	-83.3611	34.0301	50.8275
9	102.0489	-30.6463	-40.9604	-103.9237	41.9599	64.4354
10	122.7383	-38.9412	-55.3067	-115.9350	50.1716	79.1009
11	33.1393	-58.8760	-73.9110	-97.5697	54.1801	86.6883
12	115.3292	-51.8655	-79.0845	-93.6363	62.9578	103.1837
13	110.2857	-60.9683	-96.3644	-80.1793	71.9343	120.7491
14	-5.9513	-80.1941	-117.4994	11.9114	91.9177	142.8272
15	-11.9114	-91.9177	-142.8272	87.6742	94.0618	150.6778
16	-87.6742	-94.0618	-150.6778	101.2322	104.3973	170.6990
17	-101.2322	-104.3973	-170.6990	133.8720	117.6329	201.2400
18	-133.8720	-117.6329	-201.2400	177.9975	131.6235	234.5627
19	-177.9975	-131.6235	-234.5627	303.2578	132.0953	242.1049
20	-303.2578	-132.0953	-242.1049	302.4331	105.3482	205.1284
21	-206.2451	-60.7482	-141.9745	201.2746	-14.4898	16.8933
22	-201.2746	14.4898	-16.8933	176.3083	-13.6206	20.5075
23	-176.3083	13.6206	-20.5075	143.9741	-12.0082	25.8735
24	-143.9741	12.0082	-25.8735	105.2933	-9.5640	33.0212
25	-105.2933	9.5640	-33.0212	61.6616	-6.2267	41.9809
26	-61.6616	6.2267	-41.9809	14.7992	-1.9252	52.7822
27	-14.7992	1.9252	-52.7822	-33.3065	3.3863	65.4558
28	33.3065	-3.3863	-65.4558	-80.4595	9.7468	80.0316
29	80.4595	-9.7468	-80.0316	-124.3074	17.1749	96.5396
30	124.3074	-17.1749	-96.5396	-162.4237	25.6843	115.0104
31	162.4237	-25.6843	-115.0104	-150.1747	41.0256	116.7061
32	138.0191	-25.6881	-115.0104	-158.8015	35.2822	135.4732
33	158.8015	-35.2822	-135.4732	-167.8190	45.9251	157.9389
34	167.8190	-45.9251	-157.9389	-163.2867	57.8747	182.2549
35	163.2867	-57.8747	-182.2549	-142.2295	71.1272	208.4523
36	142.2295	-71.1272	-208.4523	-101.8641	85.5905	236.5670
37	101.8641	-85.5905	-236.5670	-39.7765	101.1836	266.6388
38	39.7765	-101.1836	-266.6388	46.0279	117.8112	298.7122
39	-46.0279	-117.8112	-298.7122	157.0070	135.3403	332.8362
40	-157.0070	-135.3403	-332.8362	282.2615	106.1902	266.7802
41	-310.2910	-65.4712	-198.8895	311.6709	-22.8821	31.3283
42	-311.6709	22.8821	-31.3283	295.0806	-22.8810	31.3283
43	-295.0806	22.8810	-31.3283	269.9831	-22.2203	36.0327
44	-269.9831	22.2203	-36.0327	234.9782	-20.6435	42.8395
45	-234.9782	20.6435	-42.8395	190.8274	-18.0253	51.7871
46	-190.8274	18.0253	-51.7871	177.7585	-18.0268	51.7871
47	-177.7585	18.0268	-51.7871	128.3575	-14.2602	62.9196
48	-128.3575	14.2602	-62.9196	73.4404	-9.2869	76.2875
49	-73.4404	9.2869	-76.2875	14.9789	-2.9723	91.9474
50	-14.9789	2.9723	-91.9474	12.8258	-2.9723	91.9474
51	-12.8258	2.9723	-91.9474	-41.3180	4.7425	109.9280
52	41.3180	-4.7425	-109.9280	-93.0750	13.9317	130.2645
53	93.0750	-13.9317	-130.2645	-82.9764	13.9286	130.2645
54	82.9764	-13.9286	-130.2645	-121.6262	24.6413	153.0396
55	121.6262	-24.6413	-153.0396	-150.6361	36.9089	178.3487
56	150.6361	-36.9089	-178.3487	-166.6597	50.7551	206.3010
57	166.6597	-50.7551	-206.3010	-129.8727	50.7416	206.3010
58	129.8727	-50.7416	-206.3010	-118.3332	66.1488	237.0190
59	118.3332	-66.1488	-237.0190	-85.8252	83.1089	270.6366
60	85.8252	-83.1089	-270.6366	-25.5693	83.1081	270.6367

ENVOL. MIN. TORSORES -EC1

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-3.6084	0.2923	-1.4780	10.5225	16.4944	5.5689
2	-3.3965	0.2923	-1.4780	-0.7350	12.1011	8.1376
3	8.9217	-0.8927	-4.8919	-14.4529	14.4465	13.8402
4	33.7673	-3.5488	-10.3490	-15.8063	15.7712	16.5170
5	31.1958	-3.5476	-10.3490	-38.4172	19.8858	23.3642
6	62.4476	-7.6603	-17.9578	-63.5489	25.0854	33.6176
7	98.9800	-13.1988	-27.8222	-87.5309	31.1168	45.4547

4 PRETENSADO

4.1 TRAZADO

El trazado del pretensado en alzado se define en los planos del proyecto mediante una sucesión de tramos formados por recta y parábolas con continuidad en la pendiente. En planta el trazado puede ser recto o curvo, permitiéndose variaciones del radio de curvatura.

Los 2 extremos del trazado son anclajes de tipo activo.

4.2 CÁLCULO DEL PRETENSADO

El cálculo de la fuerza de pretensado se realiza con un programa de cálculo automático que considera las pérdidas de tensión instantáneas y diferidas, de acuerdo con la normativa vigente (EHE). El programa calcula, además, un sistema de fuerzas equivalentes a la introducción del pretensado en la estructura, para su consideración en el modelo de análisis estructural del tablero.

El programa permite la determinación de las pérdidas de la fuerza de pretensado asociadas a los siguientes aspectos:

Pérdidas instantáneas

a.- Pérdidas por rozamiento.
b.- Pérdidas de penetración de cuña en anclajes.
c.- Pérdidas por acortamiento elástico del hormigón.

Pérdidas diferidas

d.- Pérdidas por retracción del hormigón.
e.- Pérdidas por fluencia del hormigón.
f.- Pérdidas por relajación del acero de pretensado.

CÁLCULO ESTRUCTURAL

La acción del pretensado sobre la estructura se realiza considerándolo como un sistema de fuerzas equivalentes, constituido por las fuerzas de anclaje y las de interacción (de desviación o repartidas).

Los resultados del programa de cálculo del pretensado son los siguientes:

a. Definición del trazado del pretensado, mediante su excentricidad y cotas respecto a la fibra superior e inferior del elemento.

b. Listados de tensiones en los cables y de las pérdidas instantáneas y diferidas en cada punto.

c. Longitud afectada por la penetración de las cuñas en anclajes.

d. Alargamiento de los cables al tesar.

e. Fuerzas equivalentes del pretensado en los nudos de los elementos por los que pasan los cables del pretensado.

f. Esfuerzos isostáticos de pretensado en los nudos de los elementos atravesados por el trazado.

Al igual que con cualquier estado de cargas introducido en el programa general de análisis estructural, posteriormente se obtienen las reacciones, desplazamientos, esfuerzos y tensiones en todo punto de la estructura.

Referencia del Proyecto:

PASO INFERIOR RIERA DE CERVELLÓ

PROGRAMA DE CALCULO DE PRETENSADO EN NERVIOS DE UN EMPARRILLADO

DATOS GENERALES DE PRETENSADO

NUMERO DE NERVIOS = 1
NUMERO DE VANOS = 3
NUMERO DE SECCIONES POR VANO = 21
NUMERO DE MATERIALES = 3
LUZ DEL VANO = 1 L (m) = 14.50
LUZ DEL VANO = 2 L (m) = 19.00
LUZ DEL VANO = 3 L (m) = 14.50

COEFICIENTE DE ROZAMIENTO EN CURVA = 0.21
COEFICIENTE DE DESV. PARASITAS = 0.0060
RELAJACION = 0.04
RETRACCION mm/m = 0.250
COEF. FLUENCIA = 1.772

ACERO DE PRETENSADO (Kp/mm2)

LIMITE DE PROPORCIONALIDAD AL 0,2% = 170.00
TENSION DE ROTURA = 190.00
MODULO DE DEFORMACION = 19000.00

HORMIGON

MODULO DE DEFORMACION DURANTE TESADO (Kp/cm2) = 297000.00
MODULO DE DEFORMACION A 28 DIAS (Kp/cm2) = 320000.00

CARACTERISTICAS MECANICAS DE LA SECCION 1

AREA DE LA SECCION (m2) = 8.666
INERCIA DE LA SECCION (m2) = 1.1213
V_SUP. DE LA SECCION (m2) = 0.52
V_INF. DE LA SECCION (m2) = 0.72
CANTO DE LA SECCION (m2) = 1.24

CARACTERISTICAS MECANICAS DE LA SECCION 2

AREA DE LA SECCION (m2) = 10.590
INERCIA DE LA SECCION (m2) = 1.2275
V_SUP. DE LA SECCION (m2) = 0.55
V_INF. DE LA SECCION (m2) = 0.69
CANTO DE LA SECCION (m2) = 1.24

CARACTERISTICAS MECANICAS DE LA SECCION 3

AREA DE LA SECCION (m2) = 1.000
INERCIA DE LA SECCION (m2) = 1.0000
V_SUP. DE LA SECCION (m2) = 0.55
V_INF. DE LA SECCION (m2) = 0.55
CANTO DE LA SECCION (m2) = 1.10

DEFINICION DEL TRAZADO DEL NERVIO = 1 VANO = 1

Parametros de la parabola = 1
A = 0.00000 B = -0.06429 C = -0.62500
Origen = 0.00 Final = 1.20
Parametros de la parabola = 2
A = 0.00699 B = -0.08106 C = -0.61494
Origen = 1.20 Final = 5.80
Parametros de la parabola = 4
A = 0.00515 B = -0.05970 C = -0.67687
Origen = 5.80 Final = 12.50
Parametros de la parabola = 5
A = -0.01724 B = 0.50000 C = -4.17500
Origen = 12.50 Final = 14.50
(origen en inicio vano)

DEFINICION DEL TRAZADO DEL NERVIO = 1 VANO = 2

Parametros de la parabola = 2
A = -0.02763 B = 0.00000 C = -0.55000
Origen = 0.00 Final = 2.00
Parametros de la parabola = 3
A = 0.00737 B = -0.14000 C = -0.41000
Origen = 2.00 Final = 9.50
Parametros de la parabola = 5
A = 0.00737 B = -0.14000 C = -0.41000
Origen = 9.50 Final = 17.00
Parametros de la parabola = 6
A = -0.02763 B = 1.05000 C = -10.52500
Origen = 17.00 Final = 19.00
(origen en inicio vano)

DEFINICION DEL TRAZADO DEL NERVIO = 1 VANO = 3

Parametros de la parabola = 2
A = -0.01724 B = 0.00000 C = -0.55000
Origen = 0.00 Final = 2.00
Parametros de la parabola = 3
A = 0.00515 B = -0.08955 C = -0.46045
Origen = 2.00 Final = 8.70
Parametros de la parabola = 5
A = 0.00699 B = -0.12158 C = -0.32111
Origen = 8.70 Final = 13.30
Parametros de la parabola = 6
A = 0.00000 B = 0.06429 C = -1.55714
Origen = 13.30 Final = 14.50

(origen en inicio vano)

DEFINICION DEL TRAZADO DEL NERVIO= 1

I	S	Ysup	Yinf	EXC	ALPHA_IZ	ALPHA_DE	CURV
1	0.000	-0.625	0.615	-0.077	0.0000	0.8468	0.0000
2	0.725	-0.672	0.568	-0.124	0.0000	0.8468	0.0000
3	1.450	-0.718	0.522	-0.201	0.0035	0.8433	0.0140
4	2.175	-0.758	0.482	-0.241	0.0136	0.8332	0.0140
5	2.900	-0.791	0.449	-0.274	0.0238	0.8230	0.0140
6	3.625	-0.817	0.423	-0.300	0.0339	0.8129	0.0140
7	4.350	-0.835	0.405	-0.318	0.0440	0.8028	0.0140
8	5.075	-0.846	0.394	-0.329	0.0542	0.7926	0.0140
9	5.800	-0.850	0.390	-0.333	0.0643	0.7825	0.0140
10	6.525	-0.847	0.393	-0.330	0.0718	0.7750	0.0103
11	7.250	-0.839	0.401	-0.322	0.0792	0.7676	0.0103
12	7.975	-0.826	0.414	-0.309	0.0867	0.7601	0.0103
13	8.700	-0.807	0.433	-0.290	0.0941	0.7527	0.0103
14	9.425	-0.782	0.458	-0.265	0.1016	0.7452	0.0103
15	10.150	-0.753	0.487	-0.236	0.1091	0.7377	0.0103
16	10.875	-0.717	0.523	-0.200	0.1165	0.7303	0.0103
17	11.600	-0.677	0.563	-0.160	0.1240	0.7228	0.0103
18	12.325	-0.631	0.609	-0.114	0.1315	0.7153	0.0103
19	13.050	-0.586	0.654	-0.038	0.1522	0.6945	-0.0345
20	13.775	-0.559	0.681	-0.011	0.1773	0.6695	-0.0345
21	14.500	-0.550	0.690	-0.002	0.2023	0.6445	-0.0553
22	15.450	-0.575	0.665	-0.027	0.2548	0.5920	-0.0553
23	16.400	-0.650	0.590	-0.133	0.3073	0.5395	-0.0553
24	17.350	-0.749	0.491	-0.232	0.3253	0.5215	0.0147
25	18.300	-0.836	0.404	-0.319	0.3393	0.5075	0.0147
26	19.250	-0.909	0.331	-0.392	0.3533	0.4935	0.0147
27	20.200	-0.969	0.271	-0.452	0.3673	0.4795	0.0147
28	21.150	-1.015	0.225	-0.498	0.3813	0.4654	0.0147
29	22.100	-1.048	0.192	-0.531	0.3953	0.4515	0.0147
30	23.050	-1.068	0.172	-0.551	0.4094	0.4374	0.0147
31	24.000	-1.075	0.165	-0.558	0.4233	0.4234	0.0147
32	24.950	-1.068	0.172	-0.551	0.4373	0.4095	0.0147
33	25.900	-1.048	0.192	-0.531	0.4514	0.3954	0.0147
34	26.850	-1.015	0.225	-0.498	0.4654	0.3814	0.0147
35	27.800	-0.969	0.271	-0.452	0.4793	0.3675	0.0147
36	28.750	-0.909	0.331	-0.392	0.4934	0.3534	0.0147
37	29.700	-0.836	0.404	-0.319	0.5074	0.3394	0.0147
38	30.650	-0.749	0.491	-0.232	0.5214	0.3254	0.0147
39	31.600	-0.650	0.590	-0.133	0.5395	0.3073	-0.0553
40	32.550	-0.575	0.665	-0.027	0.5920	0.2548	-0.0553
41	33.500	-0.550	0.690	-0.002	0.6445	0.2023	-0.0345
42	34.225	-0.559	0.681	-0.011	0.6695	0.1773	-0.0345
43	34.950	-0.586	0.654	-0.069	0.6945	0.1523	-0.0345
44	35.675	-0.631	0.609	-0.114	0.7153	0.1315	0.0103
45	36.400	-0.677	0.563	-0.160	0.7228	0.1240	0.0103
46	37.125	-0.717	0.523	-0.200	0.7302	0.1166	0.0103
47	37.850	-0.753	0.487	-0.236	0.7377	0.1091	0.0103
48	38.575	-0.782	0.458	-0.265	0.7452	0.1016	0.0103
49	39.300	-0.807	0.433	-0.290	0.7526	0.0942	0.0103
50	40.025	-0.826	0.414	-0.309	0.7601	0.0867	0.0103
51	40.750	-0.839	0.401	-0.322	0.7676	0.0792	0.0103
52	41.475	-0.847	0.393	-0.330	0.7750	0.0718	0.0103
53	42.200	-0.850	0.390	-0.333	0.7825	0.0643	0.0140
54	42.925	-0.846	0.394	-0.329	0.7926	0.0542	0.0140
55	43.650	-0.835	0.405	-0.318	0.8028	0.0440	0.0140
56	44.375	-0.817	0.423	-0.300	0.8129	0.0339	0.0140
57	45.100	-0.791	0.449	-0.274	0.8230	0.0238	0.0140
58	45.825	-0.758	0.482	-0.241	0.8331	0.0136	0.0140
59	46.550	-0.718	0.522	-0.170	0.8433	0.0035	0.0140
60	47.275	-0.672	0.568	-0.124	0.8468	0.0000	0.0000
61	48.000	-0.625	0.615	-0.077	0.8468	0.0000	0.0000

SECCIONES INICIAL Y FINAL DEL TRAZADO = 1 61
NUMERO DE VANOS INICIAL Y FINAL DEL TRAZADO = 1 3
PENDIENTE INICIAL DEL TRAZADO = -0.06429
PENDIENTE FINAL DEL TRAZADO = 0.06429

ETAPA DE TESADO INICIAL

PRETENSADO EN EL NERVIO = 1

NUMERO DE CABLES = 12

TENSION EN ANCLAJE IZQUIERDO (Kp/mm2) = 142.50
TESAMOS POR LA IZQUIERDA (SI=1) = 1
TENSION EN ANCLAJE DERECHO (Kp/mm2) = 142.50
TESAMOS POR LA DERECHA (SI=1) = 1

PROPORCION DE TESADO EN LA PRIMERA FASE 0.60
AREA DE PRETENSADO (cm2) = 386.40
PENETRACION DE CUNA EN EXTREMO 1 (mm) = 5.000
PENETRACION DE CUNA EN EXTREMO 2 (mm) = 5.000

LONGITUD AFECT. POR PENETRAC. DE CUNA EXTR-1 (m) = 12.60
LONGITUD AFECT. POR PENETRAC. DE CUNA EXTR-2 (m) = 12.60

TENSION EN LOS CABLES. PERDIDAS INSTANT. (Kp/mm2)

I	X	To	P_ROZ	P_CUNA	P_ELAS	Ti
1	0.00	85.50	0.00	7.54	0.88	77.08
2	0.73	85.50	0.08	7.39	1.03	77.00
3	1.45	85.50	0.22	7.11	1.34	76.84
4	2.18	85.50	0.48	6.59	1.49	76.95
5	2.90	85.50	0.74	6.07	1.63	77.07
6	3.62	85.50	0.99	5.56	1.75	77.20
7	4.35	85.50	1.25	5.04	1.85	77.36
8	5.07	85.50	1.51	4.53	1.91	77.55
9	5.80	85.50	1.76	4.02	1.94	77.78
10	6.52	85.50	1.97	3.61	1.93	78.00
11	7.25	85.50	2.18	3.19	1.89	78.24
12	7.97	85.50	2.38	2.78	1.82	78.51
13	8.70	85.50	2.59	2.37	1.74	78.81
14	9.43	85.50	2.79	1.96	1.63	79.12
15	10.15	85.50	3.00	1.55	1.51	79.44
16	10.88	85.50	3.20	1.14	1.39	79.77
17	11.60	85.50	3.41	0.73	1.27	80.09
18	12.33	85.50	3.61	0.00	1.07	80.82
19	13.05	85.50	4.04	0.00	0.88	80.58
20	13.78	85.50	4.54	0.00	0.87	80.09
21	14.50	85.50	5.04	0.00	0.86	79.60
22	15.45	85.50	6.02	0.00	0.94	78.54
23	16.40	85.50	6.98	0.00	1.17	77.35
24	17.35	85.50	7.37	0.00	1.45	76.68

25	18.30	85.50	7.70	0.00	1.82	75.99
26	19.25	85.50	8.02	0.00	2.21	75.27
27	20.20	85.50	8.34	0.00	2.60	74.56
28	21.15	85.50	8.66	0.00	2.93	73.91
29	22.10	85.50	8.97	0.00	3.18	73.34
30	23.05	85.50	9.29	0.00	3.34	72.87
31	24.00	85.50	9.60	0.00	3.38	72.52
32	24.95	85.50	9.29	0.00	3.34	72.87
33	25.90	85.50	8.97	0.00	3.18	73.34
34	26.85	85.50	8.66	0.00	2.93	73.91
35	27.80	85.50	8.34	0.00	2.60	74.56
36	28.75	85.50	8.02	0.00	2.21	75.27
37	29.70	85.50	7.70	0.00	1.82	75.99
38	30.65	85.50	7.37	0.00	1.45	76.68
39	31.60	85.50	6.98	0.00	1.06	77.46
40	32.55	85.50	6.02	0.00	0.86	78.63
41	33.50	85.50	5.04	0.00	0.86	79.60
42	34.23	85.50	4.54	0.00	0.95	80.00
43	34.95	85.50	4.04	0.00	1.10	80.35
44	35.68	85.50	3.61	0.00	1.18	80.71
45	36.40	85.50	3.41	0.73	1.27	80.09
46	37.13	85.50	3.20	1.14	1.39	79.77
47	37.85	85.50	3.00	1.55	1.51	79.44
48	38.58	85.50	2.79	1.96	1.63	79.12
49	39.30	85.50	2.59	2.37	1.74	78.81
50	40.03	85.50	2.38	2.78	1.82	78.51
51	40.75	85.50	2.18	3.19	1.89	78.24
52	41.47	85.50	1.97	3.61	1.93	78.00
53	42.20	85.50	1.76	4.02	1.94	77.78
54	42.92	85.50	1.51	4.53	1.91	77.55
55	43.65	85.50	1.25	5.04	1.85	77.36
56	44.37	85.50	0.99	5.56	1.75	77.20
57	45.10	85.50	0.74	6.07	1.63	77.07
58	45.82	85.50	0.48	6.59	1.36	77.07
59	46.55	85.50	0.22	7.11	1.04	77.13
60	47.27	85.50	0.08	7.39	0.94	77.09
61	48.00	85.50	0.00	7.54	0.88	77.08

ALARGAMIENTO DE LOS CABLES (sobre embolo)= 204.8 mm

ETAPA DE TESADO INICIAL

PRETENSADO EN EL NERVIO = 1

TENSION EN LOS CABLES. PERDIDAS DIFERIDAS (Kp/mm2)

I	S	Ti	P_RETRA	P_FLUE	P_RELAJ.
1	0.00	77.08	0.00	0.00	0.00
2	0.73	77.00	0.00	0.00	0.00
3	1.45	76.84	0.00	0.00	0.00
4	2.18	76.95	0.00	0.00	0.00
5	2.90	77.07	0.00	0.00	0.00
6	3.62	77.20	0.00	0.00	0.00
7	4.35	77.36	0.00	0.00	0.00
8	5.07	77.55	0.00	0.00	0.00
9	5.80	77.78	0.00	0.00	0.00
10	6.52	78.00	0.00	0.00	0.00
11	7.25	78.24	0.00	0.00	0.00
12	7.97	78.51	0.00	0.00	0.00
13	8.70	78.81	0.00	0.00	0.00
14	9.43	79.12	0.00	0.00	0.00
15	10.15	79.44	0.00	0.00	0.00
16	10.88	79.77	0.00	0.00	0.00
17	11.60	80.09	0.00	0.00	0.00
18	12.33	80.82	0.00	0.00	0.00
19	13.05	80.58	0.00	0.00	0.00
20	13.78	80.09	0.00	0.00	0.00
21	14.50	79.60	0.00	0.00	0.00
22	15.45	78.54	0.00	0.00	0.00
23	16.40	77.35	0.00	0.00	0.00
24	17.35	76.68	0.00	0.00	0.00
25	18.30	75.99	0.00	0.00	0.00
26	19.25	75.27	0.00	0.00	0.00
27	20.20	74.56	0.00	0.00	0.00
28	21.15	73.91	0.00	0.00	0.00
29	22.10	73.34	0.00	0.00	0.00
30	23.05	72.87	0.00	0.00	0.00
31	24.00	72.52	0.00	0.00	0.00
32	24.95	72.87	0.00	0.00	0.00
33	25.90	73.34	0.00	0.00	0.00
34	26.85	73.91	0.00	0.00	0.00
35	27.80	74.56	0.00	0.00	0.00
36	28.75	75.27	0.00	0.00	0.00
37	29.70	75.99	0.00	0.00	0.00
38	30.65	76.68	0.00	0.00	0.00
39	31.60	77.46	0.00	0.00	0.00
40	32.55	78.63	0.00	0.00	0.00
41	33.50	79.60	0.00	0.00	0.00
42	34.23	80.00	0.00	0.00	0.00
43	34.95	80.35	0.00	0.00	0.00
44	35.68	80.71	0.00	0.00	0.00
45	36.40	80.09	0.00	0.00	0.00
46	37.13	79.77	0.00	0.00	0.00
47	37.85	79.44	0.00	0.00	0.00
48	38.58	79.12	0.00	0.00	0.00
49	39.30	78.81	0.00	0.00	0.00
50	40.03	78.51	0.00	0.00	0.00
51	40.75	78.24	0.00	0.00	0.00
52	41.47	78.00	0.00	0.00	0.00
53	42.20	77.78	0.00	0.00	0.00
54	42.92	77.55	0.00	0.00	0.00
55	43.65	77.36	0.00	0.00	0.00
56	44.37	77.20	0.00	0.00	0.00
57	45.10	77.07	0.00	0.00	0.00
58	45.82	77.07	0.00	0.00	0.00
59	46.55	77.13	0.00	0.00	0.00
60	47.27	77.09	0.00	0.00	0.00
61	48.00	77.08	0.00	0.00	0.00

ETAPA DE TESADO INICIAL

PRETENSADO EN EL NERVIO = 1

TENSION EN LOS CABLES (Kp/mm2)

I	S	To	APi	Ti	APf	Tf
1	0.00	85.50	8.42	77.08	0.00	77.08
2	0.73	85.50	8.50	77.00	0.00	77.00
3	1.45	85.50	8.66	76.84	0.00	76.84
4	2.18	85.50	8.55	76.95	0.00	76.95

5	2.90	85.50	8.43	77.07	0.00	77.07
6	3.62	85.50	8.30	77.20	0.00	77.20
7	4.35	85.50	8.14	77.36	0.00	77.36
8	5.07	85.50	7.95	77.55	0.00	77.55
9	5.80	85.50	7.72	77.78	0.00	77.78
10	6.52	85.50	7.50	78.00	0.00	78.00
11	7.25	85.50	7.26	78.24	0.00	78.24
12	7.97	85.50	6.99	78.51	0.00	78.51
13	8.70	85.50	6.69	78.81	0.00	78.81
14	9.43	85.50	6.38	79.12	0.00	79.12
15	10.15	85.50	6.06	79.44	0.00	79.44
16	10.88	85.50	5.73	79.77	0.00	79.77
17	11.60	85.50	5.41	80.09	0.00	80.09
18	12.33	85.50	4.68	80.82	0.00	80.82
19	13.05	85.50	4.92	80.58	0.00	80.58
20	13.78	85.50	5.41	80.09	0.00	80.09
21	14.50	85.50	5.90	79.60	0.00	79.60
22	15.45	85.50	6.96	78.54	0.00	78.54
23	16.40	85.50	8.15	77.35	0.00	77.35
24	17.35	85.50	8.82	76.68	0.00	76.68
25	18.30	85.50	9.51	75.99	0.00	75.99
26	19.25	85.50	10.23	75.27	0.00	75.27
27	20.20	85.50	10.94	74.56	0.00	74.56
28	21.15	85.50	11.59	73.91	0.00	73.91
29	22.10	85.50	12.16	73.34	0.00	73.34
30	23.05	85.50	12.63	72.87	0.00	72.87
31	24.00	85.50	12.98	72.52	0.00	72.52
32	24.95	85.50	12.63	72.87	0.00	72.87
33	25.90	85.50	12.16	73.34	0.00	73.34
34	26.85	85.50	11.59	73.91	0.00	73.91
35	27.80	85.50	10.94	74.56	0.00	74.56
36	28.75	85.50	10.23	75.27	0.00	75.27
37	29.70	85.50	9.51	75.99	0.00	75.99
38	30.65	85.50	8.82	76.68	0.00	76.68
39	31.60	85.50	8.04	77.46	0.00	77.46
40	32.55	85.50	6.87	78.63	0.00	78.63
41	33.50	85.50	5.90	79.60	0.00	79.60
42	34.23	85.50	5.50	80.00	0.00	80.00
43	34.95	85.50	5.15	80.35	0.00	80.35
44	35.68	85.50	4.79	80.71	0.00	80.71
45	36.40	85.50	5.41	80.09	0.00	80.09
46	37.13	85.50	5.73	79.77	0.00	79.77
47	37.85	85.50	6.06	79.44	0.00	79.44
48	38.58	85.50	6.38	79.12	0.00	79.12
49	39.30	85.50	6.69	78.81	0.00	78.81
50	40.03	85.50	6.99	78.51	0.00	78.51
51	40.75	85.50	7.26	78.24	0.00	78.24
52	41.47	85.50	7.50	78.00	0.00	78.00
53	42.20	85.50	7.72	77.78	0.00	77.78
54	42.92	85.50	7.95	77.55	0.00	77.55
55	43.65	85.50	8.14	77.36	0.00	77.36
56	44.37	85.50	8.30	77.20	0.00	77.20
57	45.10	85.50	8.43	77.07	0.00	77.07
58	45.82	85.50	8.43	77.07	0.00	77.07
59	46.55	85.50	8.37	77.13	0.00	77.13
60	47.27	85.50	8.41	77.09	0.00	77.09
61	48.00	85.50	8.42	77.08	0.00	77.08

ETAPA DE TESADO INICIAL

PRETENSADO EN EL NERVIO = 1

FUERZAS EN LOS CABLES (T, m)

I	S(m)	Pi (T)	Mpi (mT)	Upi (T/m)	Pf (T)	Mpf (mT)	Upf (T/m)
1	0.00	2978.4	229.34	0.00	2978.4	229.34	0.00
2	0.73	2975.4	367.78	0.00	2975.4	367.78	0.00
3	1.45	2968.9	596.09	41.49	2968.9	596.09	41.49
4	2.18	2973.3	717.09	41.55	2973.3	717.09	41.55
5	2.90	2977.8	816.63	41.62	2977.8	816.63	41.62
6	3.62	2983.0	894.74	41.69	2983.0	894.74	41.69
7	4.35	2989.2	951.49	41.77	2989.2	951.49	41.77
8	5.07	2996.7	986.88	41.88	2996.7	986.88	41.88
9	5.80	3005.5	1000.84	42.00	3005.5	1000.84	42.00
10	6.52	3013.9	995.48	31.02	3013.9	995.48	31.02
11	7.25	3023.4	974.06	31.12	3023.4	974.06	31.12
12	7.97	3033.8	936.40	31.23	3033.8	936.40	31.23
13	8.70	3045.2	882.23	31.34	3045.2	882.23	31.34
14	9.43	3057.2	811.29	31.47	3057.2	811.29	31.47
15	10.15	3069.7	723.25	31.60	3069.7	723.25	31.60
16	10.88	3082.3	617.82	31.73	3082.3	617.82	31.73
17	11.60	3094.7	494.73	31.85	3094.7	494.73	31.85
18	12.33	3123.1	355.64	32.15	3123.1	355.64	32.15
19	13.05	3113.5	119.09	-107.36	3113.5	119.09	-107.36
20	13.78	3094.7	34.24	-106.71	3094.7	34.24	-106.71
21	14.50	3075.7	6.15	-169.98	3075.7	6.15	-169.98
22	15.45	3034.9	81.75	-167.72	3034.9	81.75	-167.72
23	16.40	2988.9	396.77	-165.17	2988.9	396.77	-165.17
24	17.35	2962.9	687.84	43.66	2962.9	687.84	43.66
25	18.30	2936.2	935.48	43.27	2936.2	935.48	43.27
26	19.25	2908.4	1139.36	42.86	2908.4	1139.36	42.86
27	20.20	2881.2	1301.14	42.46	2881.2	1301.14	42.46
28	21.15	2856.0	1422.72	42.09	2856.0	1422.72	42.09
29	22.10	2834.0	1505.98	41.76	2834.0	1505.98	41.76
30	23.05	2815.8	1552.51	41.50	2815.8	1552.51	41.50
31	24.00	2802.0	1563.54	41.29	2802.0	1563.54	41.29
32	24.95	2815.8	1552.48	41.50	2815.8	1552.48	41.50
33	25.90	2833.9	1505.95	41.76	2833.9	1505.95	41.76
34	26.85	2856.0	1422.69	42.09	2856.0	1422.69	42.09
35	27.80	2881.1	1301.10	42.46	2881.1	1301.10	42.46
36	28.75	2908.3	1139.35	42.86	2908.3	1139.35	42.86
37	29.70	2936.2	935.46	43.27	2936.2	935.46	43.27
38	30.65	2962.9	687.83	43.66	2962.9	687.83	43.66
39	31.60	2993.0	397.33	-165.41	2993.0	397.33	-165.41
40	32.55	3038.2	81.84	-167.90	3038.2	81.84	-167.90
41	33.50	3075.7	6.15	-106.06	3075.7	6.15	-106.06
42	34.23	3091.4	34.20	-106.60	3091.4	34.20	-106.60
43	34.95	3104.9	215.01	-107.07	3104.9	215.01	-107.07
44	35.68	3118.7	355.15	32.10	3118.7	355.15	32.10
45	36.40	3094.6	494.73	31.85	3094.6	494.73	31.85
46	37.13	3082.3	617.82	31.73	3082.3	617.82	31.73
47	37.85	3069.6	723.24	31.60	3069.6	723.24	31.60
48	38.58	3057.2	811.28	31.47	3057.2	811.28	31.47
49	39.30	3045.2	882.23	31.34	3045.2	882.23	31.34
50	40.03	3033.8	936.39	31.23	3033.8	936.39	31.23
51	40.75	3023.3	974.06	31.12	3023.3	974.06	31.12
52	41.47	3013.9	995.47	31.02	3013.9	995.47	31.02
53	42.20	3005.5	1000.83	42.00	3005.5	1000.83	42.00
54	42.92	2996.6	986.87	41.88	2996.6	986.87	41.88
55	43.65	2989.2	951.48	41.77	2989.2	951.48	41.77
56	44.37	2983.0	894.74	41.69	2983.0	894.74	41.69
57	45.10	2977.8	816.62	41.62	2977.8	816.62	41.62
58	45.82	2978.0	718.24	41.62	2978.0	718.24	41.62
59	46.55	2980.3	505.99	41.65	2980.3	505.99	41.65
60	47.27	2978.8	368.20	0.00	2978.8	368.20	0.00
61	48.00	2978.4	229.33	0.00	2978.4	229.33	0.00

ETAPA DE TESADO INICIAL

FUERZAS HORIZONTALES DE DESVIACION

I	S(m)	R(m)	Ti (T)	Uh(T/m)	Tf(T)	Uh(T/m)
1	0.00	0.0	2978.39	0.00	2978.39	0.00
2	0.73	0.0	2975.36	0.00	2975.36	0.00
3	1.45	0.0	2968.92	0.00	2968.92	0.00
4	2.18	0.0	2973.29	0.00	2973.29	0.00
5	2.90	0.0	2977.84	0.00	2977.84	0.00
6	3.62	0.0	2983.03	0.00	2983.03	0.00
7	4.35	0.0	2989.21	0.00	2989.21	0.00
8	5.07	0.0	2996.65	0.00	2996.65	0.00
9	5.80	0.0	3005.52	0.00	3005.52	0.00
10	6.52	0.0	3013.90	0.00	3013.90	0.00
11	7.25	0.0	3023.36	0.00	3023.36	0.00
12	7.97	0.0	3033.82	0.00	3033.82	0.00
13	8.70	0.0	3045.15	0.00	3045.15	0.00
14	9.43	0.0	3057.20	0.00	3057.20	0.00
15	10.15	0.0	3069.66	0.00	3069.66	0.00
16	10.88	0.0	3082.26	0.00	3082.26	0.00
17	11.60	0.0	3094.66	0.00	3094.66	0.00
18	12.33	0.0	3123.05	0.00	3123.05	0.00
19	13.05	0.0	3113.48	0.00	3113.48	0.00
20	13.78	0.0	3094.73	0.00	3094.73	0.00
21	14.50	0.0	3075.75	0.00	3075.75	0.00
22	15.45	0.0	3034.88	0.00	3034.88	0.00
23	16.40	0.0	2988.86	0.00	2988.86	0.00
24	17.35	0.0	2962.93	0.00	2962.93	0.00
25	18.30	0.0	2936.22	0.00	2936.22	0.00
26	19.25	0.0	2908.38	0.00	2908.38	0.00
27	20.20	0.0	2881.18	0.00	2881.18	0.00
28	21.15	0.0	2856.00	0.00	2856.00	0.00
29	22.10	0.0	2833.99	0.00	2833.99	0.00
30	23.05	0.0	2815.83	0.00	2815.83	0.00
31	24.00	0.0	2802.04	0.00	2802.04	0.00
32	24.95	0.0	2815.78	0.00	2815.78	0.00
33	25.90	0.0	2833.93	0.00	2833.93	0.00
34	26.85	0.0	2855.95	0.00	2855.95	0.00
35	27.80	0.0	2881.10	0.00	2881.10	0.00
36	28.75	0.0	2908.35	0.00	2908.35	0.00
37	29.70	0.0	2936.17	0.00	2936.17	0.00
38	30.65	0.0	2962.86	0.00	2962.86	0.00
39	31.60	0.0	2993.05	0.00	2993.05	0.00
40	32.55	0.0	3038.16	0.00	3038.16	0.00
41	33.50	0.0	3075.75	0.00	3075.75	0.00
42	34.23	0.0	3091.39	0.00	3091.39	0.00
43	34.95	0.0	3104.90	0.00	3104.90	0.00
44	35.68	0.0	3118.71	0.00	3118.71	0.00
45	36.40	0.0	3094.65	0.00	3094.65	0.00
46	37.13	0.0	3082.27	0.00	3082.27	0.00
47	37.85	0.0	3069.64	0.00	3069.64	0.00
48	38.58	0.0	3057.18	0.00	3057.18	0.00
49	39.30	0.0	3045.16	0.00	3045.16	0.00
50	40.03	0.0	3033.79	0.00	3033.79	0.00
51	40.75	0.0	3023.34	0.00	3023.34	0.00
52	41.47	0.0	3013.88	0.00	3013.88	0.00
53	42.20	0.0	3005.51	0.00	3005.51	0.00
54	42.92	0.0	2996.63	0.00	2996.63	0.00
55	43.65	0.0	2989.18	0.00	2989.18	0.00
56	44.37	0.0	2983.01	0.00	2983.01	0.00
57	45.10	0.0	2977.81	0.00	2977.81	0.00
58	45.82	0.0	2978.03	0.00	2978.03	0.00
59	46.55	0.0	2980.33	0.00	2980.33	0.00
60	47.27	0.0	2978.76	0.00	2978.76	0.00
61	48.00	0.0	2978.36	0.00	2978.36	0.00

TESADO DEFINITIVO

PRETENSADO EN EL NERVIO = 1

NUMERO DE CABLES = 12

TENSION EN ANCLAJE IZQUIERDO (Kp/mm2) = 142.50
TESAMOS POR LA IZQUIERDA (SI=1) = 1
TENSION EN ANCLAJE DERECHO (Kp/mm2) = 142.50
TESAMOS POR LA DERECHA (SI=1) = 1

PROPORCION DE TESADO EN LA PRIMERA FASE 0.60
AREA DE PRETENSADO (cm2) = 386.40
PENETRACION DE CUNA EN EXTREMO 1 (mm) = 5.000
PENETRACION DE CUNA EN EXTREMO 2 (mm) = 5.000

LONGITUD AFECT. POR PENETRAC. DE CUNA EXTR-1 (m) = 9.82
LONGITUD AFECT. POR PENETRAC. DE CUNA EXTR-2 (m) = 9.82

TENSION EN LOS CABLES. PERDIDAS INSTANT. (Kp/mm2)

I	X	To	P_ROZ	P_CUNA	P_ELAS	Ti
1	0.00	142.50	0.00	9.69	1.49	131.32
2	0.73	142.50	0.13	9.42	1.76	131.18
3	1.45	142.50	0.36	8.96	2.28	130.90
4	2.18	142.50	0.80	8.09	2.53	131.08
5	2.90	142.50	1.23	7.23	2.77	131.27
6	3.62	142.50	1.66	6.37	2.98	131.49
7	4.35	142.50	2.08	5.52	3.14	131.75
8	5.07	142.50	2.51	4.67	3.25	132.07
9	5.80	142.50	2.93	3.82	3.30	132.45
10	6.52	142.50	3.28	3.12	3.28	132.82
11	7.25	142.50	3.63	2.43	3.21	133.23
12	7.97	142.50	3.97	1.75	3.10	133.68
13	8.70	142.50	4.31	1.06	2.96	134.17
14	9.43	142.50	4.66	0.00	2.78	135.06
15	10.15	142.50	5.00	0.00	2.57	134.93
16	10.88	142.50	5.34	0.00	2.35	134.81
17	11.60	142.50	5.68	0.00	2.14	134.68
18	12.33	142.50	6.02	0.00	1.78	134.71
19	13.05	142.50	6.73	0.00	1.47	134.29
20	13.78	142.50	7.57	0.00	1.45	133.49
21	14.50	142.50	8.40	0.00	1.43	132.67
22	15.45	142.50	10.03	0.00	1.57	130.90
23	16.40	142.50	11.64	0.00	1.94	128.92
24	17.35	142.50	12.29	0.00	2.41	127.80
25	18.30	142.50	12.83	0.00	3.03	126.65
26	19.25	142.50	13.36	0.00	3.69	125.45
27	20.20	142.50	13.89	0.00	4.33	124.27
28	21.15	142.50	14.43	0.00	4.89	123.19
29	22.10	142.50	14.95	0.00	5.31	122.24
30	23.05	142.50	15.48	0.00	5.56	121.46
31	24.00	142.50	16.01	0.00	5.63	120.86

32	24.95	142.50	15.48	0.00	5.56	121.45
33	25.90	142.50	14.96	0.00	5.31	122.24
34	26.85	142.50	14.43	0.00	4.89	123.19
35	27.80	142.50	13.90	0.00	4.33	124.27
36	28.75	142.50	13.36	0.00	3.69	125.45
37	29.70	142.50	12.83	0.00	3.03	126.65
38	30.65	142.50	12.29	0.00	2.41	127.80
39	31.60	142.50	11.64	0.00	1.76	129.10
40	32.55	142.50	10.03	0.00	1.43	131.05
41	33.50	142.50	8.40	0.00	1.43	132.67
42	34.23	142.50	7.57	0.00	1.59	133.34
43	34.95	142.50	6.74	0.00	1.84	133.92
44	35.68	142.50	6.02	0.00	1.96	134.52
45	36.40	142.50	5.68	0.00	2.14	134.68
46	37.13	142.50	5.34	0.00	2.35	134.81
47	37.85	142.50	5.00	0.00	2.57	134.93
48	38.58	142.50	4.66	0.00	2.78	135.06
49	39.30	142.50	4.31	1.06	2.96	134.17
50	40.03	142.50	3.97	1.75	3.10	133.68
51	40.75	142.50	3.63	2.43	3.21	133.22
52	41.47	142.50	3.28	3.12	3.28	132.82
53	42.20	142.50	2.94	3.81	3.30	132.45
54	42.92	142.50	2.51	4.67	3.25	132.07
55	43.65	142.50	2.08	5.52	3.14	131.75
56	44.37	142.50	1.66	6.37	2.98	131.49
57	45.10	142.50	1.23	7.23	2.77	131.27
58	45.82	142.50	0.80	8.09	2.32	131.29
59	46.55	142.50	0.36	8.96	1.78	131.40
60	47.27	142.50	0.13	9.42	1.61	131.34
61	48.00	142.50	0.00	9.69	1.49	131.32

ALARGAMIENTO DE LOS CABLES (sobre embolo)= 336.2 mm

TENSION EN LOS CABLES. PERDIDAS INSTANT. (Kp/mm2)

I	X	To	P_ROZ	P_CUNA	P_ELAS	Ti
1	0.00	142.50	0.00	9.69	1.49	131.32
2	0.73	142.50	0.13	9.42	1.76	131.18
3	1.45	142.50	0.36	8.96	2.28	130.90
4	2.18	142.50	0.80	8.09	2.53	131.08
5	2.90	142.50	1.23	7.23	2.77	131.27
6	3.62	142.50	1.66	6.37	2.98	131.49
7	4.35	142.50	2.08	5.52	3.14	131.75
8	5.07	142.50	2.51	4.67	3.25	132.07
9	5.80	142.50	2.93	3.82	3.30	132.45
10	6.52	142.50	3.28	3.12	3.28	132.82
11	7.25	142.50	3.63	2.43	3.21	133.23
12	7.97	142.50	3.97	1.75	3.10	133.68
13	8.70	142.50	4.31	1.06	2.96	134.17
14	9.43	142.50	4.66	0.00	2.78	135.06
15	10.15	142.50	5.00	0.00	2.57	134.93
16	10.88	142.50	5.34	0.00	2.35	134.81
17	11.60	142.50	5.68	0.00	2.14	134.68
18	12.33	142.50	6.02	0.00	1.78	134.71
19	13.05	142.50	6.73	0.00	1.47	134.29
20	13.78	142.50	7.57	0.00	1.45	133.49
21	14.50	142.50	8.40	0.00	1.43	132.67
22	15.45	142.50	10.03	0.00	1.57	130.90
23	16.40	142.50	11.64	0.00	1.94	128.92
24	17.35	142.50	12.29	0.00	2.41	127.80
25	18.30	142.50	12.83	0.00	3.03	126.65
26	19.25	142.50	13.36	0.00	3.69	125.45
27	20.20	142.50	13.89	0.00	4.33	124.27
28	21.15	142.50	14.43	0.00	4.89	123.19
29	22.10	142.50	14.95	0.00	5.31	122.24
30	23.05	142.50	15.48	0.00	5.56	121.46
31	24.00	142.50	16.01	0.00	5.63	120.86
32	24.95	142.50	15.48	0.00	5.56	121.45
33	25.90	142.50	14.96	0.00	5.31	122.24
34	26.85	142.50	14.43	0.00	4.89	123.19
35	27.80	142.50	13.90	0.00	4.33	124.27
36	28.75	142.50	13.36	0.00	3.69	125.45
37	29.70	142.50	12.83	0.00	3.03	126.65
38	30.65	142.50	12.29	0.00	2.41	127.80
39	31.60	142.50	11.64	0.00	1.76	129.10
40	32.55	142.50	10.03	0.00	1.43	131.05
41	33.50	142.50	8.40	0.00	1.43	132.67
42	34.23	142.50	7.57	0.00	1.59	133.34
43	34.95	142.50	6.74	0.00	1.84	133.92
44	35.68	142.50	6.02	0.00	1.96	134.52
45	36.40	142.50	5.68	0.00	2.14	134.68
46	37.13	142.50	5.34	0.00	2.35	134.81
47	37.85	142.50	5.00	0.00	2.57	134.93
48	38.58	142.50	4.66	0.00	2.78	135.06
49	39.30	142.50	4.31	1.06	2.96	134.17
50	40.03	142.50	3.97	1.75	3.10	133.68
51	40.75	142.50	3.63	2.43	3.21	133.22
52	41.47	142.50	3.28	3.12	3.28	132.82
53	42.20	142.50	2.94	3.81	3.30	132.45
54	42.92	142.50	2.51	4.67	3.25	132.07
55	43.65	142.50	2.08	5.52	3.14	131.75
56	44.37	142.50	1.66	6.37	2.98	131.49
57	45.10	142.50	1.23	7.23	2.77	131.27
58	45.82	142.50	0.80	8.09	2.32	131.29
59	46.55	142.50	0.36	8.96	1.78	131.40
60	47.27	142.50	0.13	9.42	1.61	131.34
61	48.00	142.50	0.00	9.69	1.49	131.32

ALARGAMIENTO DE LOS CABLES (sobre embolo)= 336.3 mm

PRETENSADO EN EL NERVIO = 1

TENSION EN LOS CABLES. PERDIDAS DIFERIDAS (Kp/mm2)

I	S	Ti	P_RETRA	P_FLUE	P_RELAJ.
1	0.00	131.32	4.75	5.55	5.32
2	0.73	131.18	4.75	5.99	5.35
3	1.45	130.90	4.75	7.28	5.44
4	2.18	131.08	4.75	7.60	5.47
5	2.90	131.27	4.75	7.85	5.50
6	3.62	131.49	4.75	8.02	5.52
7	4.35	131.75	4.75	8.10	5.54
8	5.07	132.07	4.75	8.07	5.55
9	5.80	132.45	4.75	7.95	5.55
10	6.52	132.82	4.75	7.75	5.55
11	7.25	133.23	4.75	7.51	5.55
12	7.97	133.68	4.75	7.25	5.55
13	8.70	134.17	4.75	6.96	5.54
14	9.43	135.06	4.75	6.71	5.56
15	10.15	134.93	4.75	6.41	5.53
16	10.88	134.81	4.75	6.16	5.51
17	11.60	134.68	4.75	5.98	5.49
18	12.33	134.71	4.75	5.32	5.43
19	13.05	134.29	4.75	4.95	5.39
20	13.78	133.49	4.75	5.06	5.36

21	14.50	132.67	4.75	5.08	5.33
22	15.45	130.90	4.75	5.35	5.28
23	16.40	128.92	4.75	5.45	5.21
24	17.35	127.80	4.75	5.46	5.17
25	18.30	126.65	4.75	5.80	5.15
26	19.25	125.45	4.75	6.28	5.14
27	20.20	124.27	4.75	6.80	5.13
28	21.15	123.19	4.75	7.25	5.13
29	22.10	122.24	4.75	7.58	5.12
30	23.05	121.46	4.75	7.75	5.10
31	24.00	120.86	4.75	7.76	5.07
32	24.95	121.45	4.75	7.75	5.10
33	25.90	122.24	4.75	7.57	5.11
34	26.85	123.19	4.75	7.23	5.13
35	27.80	124.27	4.75	6.78	5.13
36	28.75	125.45	4.75	6.26	5.14
37	29.70	126.65	4.75	5.77	5.15
38	30.65	127.80	4.75	5.44	5.17
39	31.60	129.10	4.75	4.87	5.17
40	32.55	131.05	4.75	4.86	5.25
41	33.50	132.67	4.75	5.08	5.33
42	34.23	133.34	4.75	5.57	5.40
43	34.95	133.92	4.75	5.96	5.45
44	35.68	134.52	4.75	5.91	5.47
45	36.40	134.68	4.75	5.97	5.48
46	37.13	134.81	4.75	6.14	5.50
47	37.85	134.93	4.75	6.39	5.53
48	38.58	135.06	4.75	6.69	5.56
49	39.30	134.17	4.75	6.94	5.54
50	40.03	133.68	4.75	7.23	5.55
51	40.75	133.22	4.75	7.50	5.55
52	41.47	132.82	4.75	7.74	5.55
53	42.20	132.45	4.75	7.94	5.55
54	42.92	132.07	4.75	8.06	5.55
55	43.65	131.75	4.75	8.09	5.54
56	44.37	131.49	4.75	8.01	5.52
57	45.10	131.27	4.75	7.85	5.50
58	45.82	131.29	4.75	6.93	5.43
59	46.55	131.40	4.75	5.70	5.33
60	47.27	131.34	4.75	5.48	5.31
61	48.00	131.32	4.75	5.31	5.30

PRETENSADO EN EL NERVIO = 1

TENSION EN LOS CABLES (Kp/mm2)

I	S	To	APi	Ti	APf	Tf
1	0.00	142.50	11.18	131.32	15.62	115.70
2	0.73	142.50	11.32	131.18	16.09	115.09
3	1.45	142.50	11.60	130.90	17.47	113.42
4	2.18	142.50	11.42	131.08	17.82	113.26
5	2.90	142.50	11.23	131.27	18.10	113.17
6	3.62	142.50	11.01	131.49	18.29	113.20
7	4.35	142.50	10.75	131.75	18.38	113.37
8	5.07	142.50	10.43	132.07	18.37	113.70
9	5.80	142.50	10.05	132.45	18.25	114.20
10	6.52	142.50	9.68	132.82	18.05	114.76
11	7.25	142.50	9.27	133.23	17.81	115.41
12	7.97	142.50	8.82	133.68	17.54	116.14
13	8.70	142.50	8.33	134.17	17.26	116.91
14	9.43	142.50	7.44	135.06	17.02	118.04
15	10.15	142.50	7.57	134.93	16.69	118.25
16	10.88	142.50	7.69	134.81	16.41	118.40
17	11.60	142.50	7.82	134.68	16.22	118.46
18	12.33	142.50	7.79	134.71	15.50	119.21
19	13.05	142.50	8.21	134.29	15.08	119.21
20	13.78	142.50	9.01	133.49	15.18	118.31
21	14.50	142.50	9.83	132.67	15.17	117.50
22	15.45	142.50	11.60	130.90	15.39	115.52
23	16.40	142.50	13.58	128.92	15.41	113.51
24	17.35	142.50	14.70	127.80	15.38	112.42
25	18.30	142.50	15.85	126.65	15.69	110.95
26	19.25	142.50	17.05	125.45	16.17	109.27
27	20.20	142.50	18.23	124.27	16.68	107.59
28	21.15	142.50	19.31	123.19	17.13	106.06
29	22.10	142.50	20.26	122.24	17.44	104.80
30	23.05	142.50	21.04	121.46	17.60	103.86
31	24.00	142.50	21.64	120.86	17.58	103.28
32	24.95	142.50	21.05	121.45	17.59	103.86
33	25.90	142.50	20.26	122.24	17.43	104.81
34	26.85	142.50	19.31	123.19	17.11	106.08
35	27.80	142.50	18.23	124.27	16.66	107.61
36	28.75	142.50	17.05	125.45	16.15	109.30
37	29.70	142.50	15.85	126.65	15.67	110.97
38	30.65	142.50	14.70	127.80	15.36	112.44
39	31.60	142.50	13.40	129.10	14.79	114.31
40	32.55	142.50	11.45	131.05	14.86	116.18
41	33.50	142.50	9.83	132.67	15.17	117.50
42	34.23	142.50	9.16	133.34	15.71	117.63
43	34.95	142.50	8.58	133.92	16.17	117.76
44	35.68	142.50	7.98	134.52	16.14	118.38
45	36.40	142.50	7.82	134.68	16.21	118.47
46	37.13	142.50	7.69	134.81	16.39	118.42
47	37.85	142.50	7.57	134.93	16.67	118.27
48	38.58	142.50	7.44	135.06	17.00	118.06
49	39.30	142.50	8.33	134.17	17.24	116.93
50	40.03	142.50	8.82	133.68	17.52	116.16
51	40.75	142.50	9.28	133.22	17.79	115.43
52	41.47	142.50	9.68	132.82	18.04	114.78
53	42.20	142.50	10.05	132.45	18.24	114.22
54	42.92	142.50	10.43	132.07	18.36	113.71
55	43.65	142.50	10.75	131.75	18.37	113.38
56	44.37	142.50	11.01	131.49	18.28	113.21
57	45.10	142.50	11.23	131.27	18.09	113.17
58	45.82	142.50	11.21	131.29	17.11	114.18
59	46.55	142.50	11.10	131.40	15.78	115.61
60	47.27	142.50	11.16	131.34	15.54	115.80
61	48.00	142.50	11.18	131.32	15.36	115.96

PRETENSADO EN EL NERVIO = 1

FUERZAS EN LOS CABLES (T, m)

I	S(m)	Pi (T)	Mpi (mT)	Upi (T/m)	Pf (T)	Mpf (mT)	Upf (T/m)
1	0.00	5074.3	390.72	0.00	4470.7	344.25	0.00
2	0.73	5069.0	626.56	0.00	4447.3	549.71	0.00
3	1.45	5057.8	1015.49	70.68	4382.7	879.95	61.25
4	2.18	5064.9	1221.54	70.78	4376.3	1055.46	61.16
5	2.90	5072.3	1390.99	70.89	4372.8	1199.18	61.11
6	3.62	5080.8	1523.95	71.00	4373.9	1311.93	61.13
7	4.35	5090.9	1620.49	71.15	4380.6	1394.38	61.22

8	5.07	5103.3	1680.64	71.32	4393.4	1446.87	61.40
9	5.80	5118.0	1704.30	71.53	4412.7	1469.42	61.67
10	6.52	5132.0	1695.07	52.83	4434.4	1464.65	45.64
11	7.25	5147.8	1658.52	52.99	4459.5	1436.77	45.90
12	7.97	5165.4	1594.30	53.17	4487.5	1385.09	46.19
13	8.70	5184.4	1502.00	53.36	4517.5	1308.81	46.50
14	9.43	5218.8	1384.90	53.72	4561.1	1210.38	46.95
15	10.15	5213.9	1228.45	53.67	4569.1	1076.53	47.03
16	10.88	5209.2	1044.15	53.62	4575.1	917.04	47.09
17	11.60	5204.1	831.95	53.57	4577.3	731.75	47.12
18	12.33	5205.1	592.74	53.58	4606.1	524.53	47.41
19	13.05	5189.1	198.49	-178.94	4606.3	176.19	-158.84
20	13.78	5157.9	57.06	-177.86	4571.4	50.57	-157.63
21	14.50	5126.2	10.25	-283.29	4540.2	9.08	-250.90
22	15.45	5058.1	136.25	-279.53	4463.6	120.24	-246.67
23	16.40	4981.4	661.28	-275.29	4386.0	582.24	-242.38
24	17.35	4938.2	1146.41	72.77	4344.0	1008.45	64.02
25	18.30	4893.7	1559.13	72.12	4287.3	1365.92	63.18
26	19.25	4847.3	1898.93	71.43	4222.4	1654.11	62.22
27	20.20	4802.0	2168.57	70.77	4157.4	1877.48	61.27
28	21.15	4760.0	2371.19	70.15	4098.3	2041.55	60.40
29	22.10	4723.3	2509.97	69.61	4049.3	2151.79	59.67
30	23.05	4693.0	2587.51	69.16	4013.0	2212.56	59.14
31	24.00	4670.1	2605.90	68.82	3990.8	2226.86	58.81
32	24.95	4693.0	2587.47	69.16	4013.2	2212.66	59.14
33	25.90	4723.2	2509.92	69.61	4049.7	2152.00	59.68
34	26.85	4759.9	2371.15	70.15	4098.9	2041.85	60.40
35	27.80	4801.8	2168.51	70.76	4158.1	1877.79	61.28
36	28.75	4847.2	1898.91	71.43	4223.2	1654.43	62.24
37	29.70	4893.6	1559.10	72.12	4288.0	1366.16	63.19
38	30.65	4938.1	1146.38	72.77	4344.6	1008.60	64.03
39	31.60	4988.4	662.21	-275.68	4416.9	586.34	-244.09
40	32.55	5063.6	136.40	-279.83	4489.3	120.93	-248.09
41	33.50	5126.2	10.25	-176.77	4540.2	9.08	-156.56
42	34.23	5152.3	57.00	-177.67	4545.1	50.28	-156.73
43	34.95	5174.8	358.36	-178.44	4550.1	315.09	-156.90
44	35.68	5197.8	591.91	53.50	4574.4	520.92	47.09
45	36.40	5204.0	831.95	53.57	4577.8	731.84	47.12
46	37.13	5209.1	1044.14	53.62	4575.7	917.17	47.10
47	37.85	5213.8	1228.44	53.67	4569.8	1076.70	47.04
48	38.58	5218.8	1384.90	53.72	4561.9	1210.58	46.96
49	39.30	5184.4	1502.00	53.36	4518.3	1309.04	46.51
50	40.03	5165.3	1594.29	53.17	4488.3	1385.32	46.20
51	40.75	5147.8	1658.51	52.99	4460.3	1437.00	45.91
52	41.47	5132.0	1695.06	52.83	4435.0	1464.87	45.65
53	42.20	5118.0	1704.30	71.52	4413.3	1469.62	61.68
54	42.92	5103.2	1680.64	71.32	4393.9	1447.04	61.41
55	43.65	5090.9	1620.48	71.15	4381.0	1394.51	61.23
56	44.37	5080.7	1523.94	71.00	4374.2	1312.03	61.13
57	45.10	5072.2	1390.98	70.89	4373.1	1199.24	61.11
58	45.82	5073.0	1223.49	70.90	4412.0	1064.09	61.66
59	46.55	5077.3	862.00	70.96	4467.4	758.46	62.43
60	47.27	5074.8	627.28	0.00	4474.4	553.07	0.00
61	48.00	5074.2	390.71	0.00	4480.7	345.01	0.00

5	2.90	0.0	5072.28	0.00	4372.84	0.00	
6	3.62	0.0	5080.76	0.00	4373.92	0.00	
7	4.35	0.0	5090.95	0.00	4380.58	0.00	
8	5.07	0.0	5103.26	0.00	4393.42	0.00	
9	5.80	0.0	5118.01	0.00	4412.66	0.00	
10	6.52	0.0	5132.00	0.00	4434.37	0.00	
11	7.25	0.0	5147.83	0.00	4459.54	0.00	
12	7.97	0.0	5165.36	0.00	4487.52	0.00	
13	8.70	0.0	5184.38	0.00	4517.54	0.00	
14	9.43	0.0	5218.78	0.00	4561.11	0.00	
15	10.15	0.0	5213.88	0.00	4569.09	0.00	
16	10.88	0.0	5209.18	0.00	4575.05	0.00	
17	11.60	0.0	5204.06	0.00	4577.29	0.00	
18	12.33	0.0	5205.08	0.00	4606.12	0.00	
19	13.05	0.0	5189.14	0.00	4606.32	0.00	
20	13.78	0.0	5157.88	0.00	4571.40	0.00	
21	14.50	0.0	5126.25	0.00	4540.18	0.00	
22	15.45	0.0	5058.14	0.00	4463.57	0.00	
23	16.40	0.0	4981.43	0.00	4385.97	0.00	
24	17.35	0.0	4938.21	0.00	4343.97	0.00	
25	18.30	0.0	4893.71	0.00	4287.26	0.00	
26	19.25	0.0	4847.30	0.00	4222.37	0.00	
27	20.20	0.0	4801.97	0.00	4157.39	0.00	
28	21.15	0.0	4760.00	0.00	4098.27	0.00	
29	22.10	0.0	4723.32	0.00	4049.29	0.00	
30	23.05	0.0	4693.04	0.00	4012.99	0.00	
31	24.00	0.0	4670.07	0.00	3990.79	0.00	
32	24.95	0.0	4692.97	0.00	4013.17	0.00	
33	25.90	0.0	4723.22	0.00	4049.68	0.00	
34	26.85	0.0	4759.92	0.00	4098.86	0.00	
35	27.80	0.0	4801.83	0.00	4158.07	0.00	
36	28.75	0.0	4847.25	0.00	4223.19	0.00	
37	29.70	0.0	4893.61	0.00	4288.02	0.00	
38	30.65	0.0	4938.11	0.00	4344.59	0.00	
39	31.60	0.0	4988.41	0.00	4416.85	0.00	
40	32.55	0.0	5063.59	0.00	4489.31	0.00	
41	33.50	0.0	5126.25	0.00	4540.19	0.00	
42	34.23	0.0	5152.31	0.00	4545.10	0.00	
43	34.95	0.0	5174.83	0.00	4550.07	0.00	
44	35.68	0.0	5197.84	0.00	4574.37	0.00	
45	36.40	0.0	5204.03	0.00	4577.84	0.00	
46	37.13	0.0	5209.11	0.00	4575.67	0.00	
47	37.85	0.0	5213.84	0.00	4569.80	0.00	
48	38.58	0.0	5218.76	0.00	4561.88	0.00	
49	39.30	0.0	5184.39	0.00	4518.34	0.00	
50	40.03	0.0	5165.32	0.00	4488.27	0.00	
51	40.75	0.0	5147.80	0.00	4460.25	0.00	
52	41.47	0.0	5131.97	0.00	4435.04	0.00	
53	42.20	0.0	5118.00	0.00	4413.27	0.00	
54	42.92	0.0	5103.24	0.00	4393.94	0.00	
55	43.65	0.0	5090.91	0.00	4380.99	0.00	
56	44.37	0.0	5080.74	0.00	4374.25	0.00	
57	45.10	0.0	5072.23	0.00	4373.06	0.00	
58	45.82	0.0	5072.97	0.00	4412.02	0.00	
59	46.55	0.0	5077.25	0.00	4467.35	0.00	
60	47.27	0.0	5074.79	0.00	4474.42	0.00	
61	48.00	0.0	5074.20	0.00	4480.71	0.00	

FUERZAS HORIZONTALES DE DESVIACION

I	S(m)	R(m)	Ti (T)	Uh(T/m)	Tf(T)	Uh(T/m)
1	0.00	0.0	5074.25	0.00	4470.72	0.00
2	0.73	0.0	5068.97	0.00	4447.26	0.00
3	1.45	0.0	5057.81	0.00	4382.69	0.00
4	2.18	0.0	5064.89	0.00	4376.26	0.00

5 VERIFICACIÓN DE LOS ESTADOS LÍMITES DE SERVICIO

5.1 TENSIONES NORMALES (ESTADO LÍMITE DE FISURACIÓN)

En el tablero se han comprobado las siguientes condiciones, de acuerdo con la EHE (artículo 49) y el Model Code del CEB de 1990:

a. Hipótesis de carga de construcción:

a.1. Considerando peso propio y el 60 % del pretensado total para el descimbrado del tablero:

$\gamma_{t,\,max} < 0$ Kp/cm^2
$\gamma_{c,max} < 0{,}60\ f_{ck,5} \approx 0{,}30\ fck = 105$ Kp/cm^2

(El hormigón deberá alcanzar una resistencia a compresión antes del 1er tesado superior a 220 Kp/cm^2)

a2. Considerando peso propio y el 100 % del pretensado inicial (con su valor característico superior):

$\sigma_{t,\,max} < f_{ctk} = 23{,}35$ Kp/cm^2
$\sigma_{c,max} < 0{,}60\ f_{ck} = 210$ Kp/cm^2

b. Hipótesis de carga permanente, considerando peso propio, carga permanente y pretensado final (con su valor característico superior e inferior):

$\sigma_{t,\,max} < 0$ Kp/cm^2
$\sigma_{c,max} < 0{,}40\ f_{ck} = 140$ Kp/cm^2

c. Hipótesis de combinación frecuente:

$\sigma_{t,\,max} < f_{ctk} = 22{,}4$ Kp/cm^2

d. Hipótesis de combinación característica:

$\sigma_{c,max} < 0{,}60\ f_{ck} = 210$ Kp/cm^2

Comprobación del ELS de fisuración

$\sigma_{,\,max} < w_k = 0{,}2$ mm

COMBINACION 1 G1 + PRETII

TENSIONES CON AXIL INICIAL

Barra	TS_1	TI_1	TS_2	T1_2
1	-182.794	-405.562	-178.107	-411.480
2	-177.822	-411.193	-126.800	-475.622
3	-183.391	-565.251	-174.337	-577.912
4	-174.842	-578.416	-170.446	-584.564
5	-170.975	-585.083	-171.189	-584.784
6	-171.790	-585.379	-176.619	-578.627
7	-177.324	-579.351	-186.758	-566.158
8	-187.618	-567.015	-201.664	-547.371
9	-202.685	-548.399	-220.409	-523.613
10	-221.375	-524.581	-241.235	-496.808
11	-242.325	-497.902	-264.439	-466.976
12	-265.656	-468.170	-290.112	-433.969
13	-291.421	-435.275	-318.386	-397.565
14	-319.770	-398.964	-349.358	-357.588
15	-350.793	-359.029	-383.151	-313.778
16	-384.606	-315.230	-419.852	-265.940
17	-421.284	-267.370	-458.660	-215.101
18	-461.935	-218.379	-538.998	-110.611
19	-466.939	-75.615	-468.184	-74.043
20	-466.413	-72.273	-436.102	-110.549
21	-430.850	-113.126	-483.084	-47.166
22	-479.225	-43.306	-481.720	-166.307
23	-476.412	-160.994	-409.974	-253.904
24	-406.983	-250.911	-351.563	-328.412
25	-348.477	-325.336	-304.227	-387.217
26	-301.006	-384.016	-267.145	-431.369
27	-263.998	-428.242	-239.667	-462.268
28	-236.754	-459.372	-221.066	-481.312
29	-218.522	-478.777	-210.755	-489.639
30	-208.657	-487.547	-208.234	-488.138
31	-206.653	-486.532	-207.388	-485.504
32	-208.979	-487.083	-217.069	-475.769
33	-219.161	-477.866	-235.168	-455.482
34	-237.715	-458.015	-262.370	-423.536
35	-265.281	-426.426	-299.443	-378.652
36	-302.591	-381.791	-347.171	-319.448
37	-350.382	-322.658	-406.119	-244.712
38	-409.198	-247.793	-475.688	-154.810
39	-479.172	-158.294	-477.999	-35.917
40	-482.259	-40.176	-430.371	-105.698
41	-437.284	-105.001	-467.476	-66.876
42	-468.951	-68.354	-424.728	-124.198
43	-495.462	-166.469	-462.712	-212.269
44	-464.305	-213.864	-426.560	-266.648
45	-423.781	-263.876	-388.393	-313.364
46	-386.961	-311.940	-354.465	-357.384
47	-353.006	-355.928	-323.276	-397.505
48	-321.832	-396.076	-294.731	-433.975
49	-293.341	-432.592	-268.725	-467.017
50	-267.411	-465.708	-245.149	-496.839
51	-243.937	-495.642	-223.920	-523.635
52	-222.824	-522.550	-204.952	-547.542
53	-203.966	-546.605	-189.781	-566.442
54	-188.741	-565.438	-179.142	-578.862

COMBINACION 1 G1 + PRETII

TENSIONES CON AXIL INICIAL

Barra	TS_1	TI_1	TS_2	T1_2
55	-178.286	-577.997	-173.280	-584.999
56	-172.574	-584.277	-172.168	-584.845
57	-171.577	-584.232	-175.269	-579.069
58	-175.300	-579.088	-226.231	-507.863
59	-167.736	-424.991	-178.179	-411.804
60	-178.031	-411.656	-182.734	-405.717

COMBINACION 2 G1 + PRETII + 0.4 TEMP + SCMAX*0.05

TENSIONES CON AXIL INICIAL

Barra	TS_1	TI_1	TS_2	T1_2
1	-183.814	-404.274	-181.280	-407.473
2	-181.056	-407.109	-132.265	-468.721
3	-189.039	-557.353	-182.285	-566.797
4	-182.790	-567.301	-180.684	-570.246
5	-181.214	-570.765	-183.708	-567.276
6	-184.312	-567.869	-191.411	-557.941
7	-192.118	-558.663	-203.817	-542.302
8	-204.676	-543.160	-220.980	-520.360
9	-221.999	-521.390	-241.971	-493.460
10	-242.936	-494.429	-265.036	-463.524
11	-266.124	-464.620	-290.470	-430.574
12	-291.686	-431.768	-318.366	-394.457
13	-319.674	-395.764	-348.853	-354.958
14	-350.237	-356.358	-382.029	-311.899
15	-383.465	-313.339	-418.019	-265.016
16	-419.474	-266.469	-456.908	-214.119
17	-458.341	-215.548	-497.899	-160.228
18	-501.187	-163.487	-580.453	-52.638
19	-507.086	-24.918	-510.473	-20.642
20	-508.714	-18.857	-480.557	-54.412
21	-473.959	-58.689	-526.180	7.254
22	-522.325	11.119	-526.227	-104.067
23	-520.932	-98.735	-454.499	-191.638
24	-451.531	-188.613	-396.146	-266.066
25	-393.075	-262.967	-348.875	-324.779
26	-345.675	-321.549	-311.883	-368.806
27	-308.736	-365.678	-284.459	-399.628
28	-281.546	-396.733	-265.896	-418.618
29	-263.352	-416.084	-255.610	-426.912
30	-253.512	-424.819	-253.098	-425.398
31	-251.517	-423.792	-252.246	-422.772
32	-253.837	-424.351	-261.906	-413.066
33	-263.999	-415.163	-279.969	-392.829
34	-282.516	-395.363	-307.120	-360.955
35	-310.032	-363.844	-344.127	-316.163
36	-347.275	-319.303	-391.775	-257.072
37	-394.995	-260.269	-450.659	-182.424
38	-453.755	-185.483	-520.187	-92.580
39	-523.693	-96.034	-521.075	18.478
40	-525.350	14.238	-473.454	-51.294
41	-481.730	-48.876	-509.754	-13.488
42	-511.232	-14.964	-464.845	-73.539
43	-536.904	-108.515	-501.934	-157.420
44	-503.539	-158.997	-463.591	-214.862
45	-460.827	-212.068	-423.257	-264.608
46	-421.827	-263.182	-387.143	-311.685
47	-385.684	-310.231	-353.756	-354.880
48	-352.310	-353.454	-323.002	-394.440
49	-321.611	-393.058	-294.777	-430.584
50	-293.463	-429.275	-268.974	-463.522
51	-267.761	-462.326	-245.508	-493.445
52	-244.411	-492.361	-224.294	-520.493
53	-223.309	-519.554	-206.865	-542.550
54	-205.826	-541.545	-193.962	-558.137

COMBINACION 2 G1 + PRETII + 0.4 TEMP + SCMAX*0.05

TENSIONES CON AXIL INICIAL

Barra	TS_1	TI_1	TS_2	T1_2
55	-193.107	-557.272	-185.824	-567.456
56	-185.118	-566.735	-182.430	-570.494
57	-181.839	-569.882	-183.238	-567.925
58	-183.267	-567.946	-231.896	-499.940
59	-173.222	-418.063	-181.427	-407.702
60	-181.279	-407.554	-183.736	-404.451

COMBINACION 3 G1 + PRETII + SCMIN*0.05

TENSIONES CON AXIL INICIAL

Barra	TS_1	TI_1	TS_2	T1_2
1	-182.772	-405.589	-178.159	-411.414
2	-177.814	-411.203	-126.781	-475.646
3	-183.368	-565.283	-174.299	-577.965
4	-174.803	-578.470	-170.392	-584.639
5	-170.921	-585.159	-171.118	-584.882
6	-171.720	-585.477	-176.533	-578.746
7	-177.239	-579.470	-186.657	-566.299
8	-187.517	-567.156	-201.548	-547.535
9	-202.568	-548.562	-220.277	-523.798
10	-221.243	-524.766	-241.087	-497.015
11	-242.177	-498.109	-264.276	-467.205
12	-265.492	-468.399	-289.933	-434.219
13	-291.241	-435.526	-318.191	-397.837
14	-319.576	-399.236	-349.147	-357.882
15	-350.583	-359.323	-382.925	-314.094
16	-384.380	-315.546	-419.611	-266.278
17	-421.042	-267.708	-458.400	-215.465
18	-461.661	-218.762	-538.677	-111.060
19	-466.622	-76.016	-467.803	-74.524
20	-466.020	-72.769	-435.624	-111.152
21	-430.291	-113.832	-482.679	-47.677
22	-478.816	-43.823	-481.435	-166.706
23	-476.113	-161.412	-409.786	-254.167
24	-406.771	-251.207	-351.418	-328.616
25	-348.316	-325.561	-304.101	-387.393
26	-300.860	-384.220	-267.001	-431.571
27	-263.853	-428.444	-239.524	-462.468
28	-236.611	-459.573	-220.923	-481.510
29	-218.379	-478.976	-210.614	-489.836
30	-208.516	-487.744	-208.094	-488.333
31	-206.514	-486.727	-207.250	-485.698
32	-208.840	-487.277	-216.931	-475.961
33	-219.024	-478.058	-235.032	-455.673
34	-237.578	-458.206	-262.235	-423.725
35	-265.146	-426.615	-299.309	-378.839
36	-302.457	-381.978	-347.038	-319.634
37	-350.239	-322.857	-405.954	-244.942
38	-409.017	-248.046	-475.454	-155.137
39	-478.917	-158.651	-477.662	-36.343
40	-481.906	-40.622	-429.891	-106.305
41	-436.735	-105.694	-467.036	-67.431
42	-468.508	-68.913	-424.381	-124.636
43	-495.094	-166.984	-462.419	-212.679
44	-464.000	-214.290	-426.305	-267.005
45	-423.510	-264.255	-388.141	-313.716
46	-386.709	-312.293	-354.230	-357.713
47	-352.771	-356.257	-323.059	-397.808
48	-321.614	-396.380	-294.531	-434.254
49	-293.141	-432.871	-268.543	-467.271
50	-267.228	-465.962	-244.985	-497.069
51	-243.773	-495.871	-223.773	-523.840
52	-222.677	-522.755	-204.823	-547.723
53	-203.838	-546.784	-189.670	-566.597
54	-188.630	-565.593	-179.048	-578.993

COMBINACION 3 G1 + PRETII + SCMIN*0.05

TENSIONES CON AXIL INICIAL

Barra	TS_1	TI_1	TS_2	T1_2
55	-178.193	-578.127	-173.204	-585.104
56	-172.499	-584.383	-172.111	-584.926
57	-171.520	-584.313	-175.229	-579.125
58	-175.259	-579.144	-226.208	-507.895
59	-167.714	-425.019	-178.174	-411.810
60	-178.026	-411.662	-182.746	-405.701

COMBINACION 4 G1 + PRETI

TENSIONES CON AXIL INICIAL

Barra	TS_1	TI_1	TS_2	T1_2
1	-313.240	-688.657	-279.430	-731.352
2	-278.931	-730.854	-170.567	-867.693
3	-265.463	-1028.624	-232.036	-1075.369
4	-232.849	-1076.193	-211.046	-1106.683
5	-211.897	-1107.538	-201.673	-1121.836
6	-202.645	-1122.827	-203.956	-1120.992
7	-205.136	-1122.158	-217.970	-1104.210
8	-219.404	-1105.615	-243.810	-1071.484
9	-245.515	-1073.181	-279.836	-1025.186
10	-281.455	-1026.793	-323.132	-968.510
11	-324.951	-970.348	-374.161	-901.530
12	-376.194	-903.538	-433.070	-823.999
13	-435.278	-826.177	-498.353	-737.969
14	-502.319	-741.943	-578.302	-635.686
15	-577.730	-635.129	-661.298	-518.264
16	-660.755	-517.722	-751.938	-390.207
17	-751.345	-389.619	-849.732	-252.030
18	-849.851	-252.146	-1014.470	-21.933
19	-890.690	15.982	-931.564	67.598
20	-928.613	70.551	-921.037	60.983
21	-910.838	54.863	-940.674	92.539
22	-934.243	98.971	-891.091	-153.804
23	-882.238	-144.953	-726.439	-362.831
24	-721.456	-357.838	-590.021	-541.644
25	-584.887	-536.506	-478.065	-685.891
26	-472.708	-680.539	-389.226	-797.284
27	-383.992	-792.057	-322.382	-878.216
28	-317.548	-873.360	-276.366	-930.951
29	-272.135	-926.715	-250.161	-957.445
30	-246.680	-953.933	-242.948	-959.151
31	-240.308	-956.487	-244.557	-950.544
32	-247.193	-953.196	-269.694	-921.730
33	-273.173	-925.237	-314.861	-866.938
34	-319.113	-871.150	-381.224	-784.289
35	-386.072	-789.109	-470.057	-671.660
36	-475.298	-676.903	-582.652	-526.773
37	-588.005	-532.117	-719.948	-347.603
38	-725.090	-352.727	-880.968	-134.739
39	-886.776	-140.540	-932.126	111.197
40	-939.225	104.098	-909.960	67.143
41	-922.922	70.122	-930.321	79.465
42	-932.780	77.002	-820.296	-65.040
43	-941.871	-115.087	-851.127	-241.988
44	-853.781	-244.645	-754.803	-383.061
45	-755.518	-383.775	-664.116	-511.596
46	-664.711	-512.169	-580.912	-629.359
47	-581.468	-629.891	-505.257	-736.469
48	-505.820	-737.043	-442.513	-825.575
49	-438.546	-821.610	-381.394	-901.534
50	-379.197	-899.328	-329.772	-968.446
51	-327.726	-966.458	-285.806	-1025.082
52	-283.976	-1023.260	-249.364	-1071.662
53	-247.743	-1070.063	-223.066	-1104.573
54	-221.360	-1102.874	-208.215	-1121.256

COMBINACION 4 G1 + PRETI

TENSIONES CON AXIL INICIAL

Barra	TS_1	TI_1	TS_2	T1_2
55	-206.800	-1119.823	-205.176	-1122.093
56	-204.003	-1120.919	-213.939	-1107.024
57	-212.961	-1106.039	-233.552	-1077.244
58	-233.631	-1077.335	-338.435	-930.771
59	-240.306	-781.398	-279.522	-731.877
60	-279.292	-731.642	-313.129	-688.914

COMBINACION 5 G1 + PRETI + 0.4 TEMP

TENSIONES CON AXIL INICIAL

Barra	TS_1	TI_1	TS_2	T1_2
1	-314.252	-687.379	-282.610	-727.336
2	-282.112	-726.838	-175.916	-860.938
3	-270.987	-1020.898	-239.802	-1064.510
4	-240.614	-1065.334	-221.051	-1092.692
5	-221.902	-1093.546	-213.918	-1104.711
6	-214.891	-1105.701	-218.440	-1100.738
7	-219.621	-1101.902	-234.696	-1080.820
8	-236.129	-1082.226	-262.776	-1044.961
9	-264.480	-1046.660	-301.042	-995.530
10	-302.660	-997.139	-346.579	-935.720
11	-348.397	-937.559	-399.848	-865.607
12	-401.883	-867.614	-461.001	-784.940
13	-463.209	-787.117	-528.526	-695.773
14	-532.491	-699.749	-610.716	-590.356
15	-610.144	-589.800	-695.955	-469.798
16	-695.412	-469.256	-788.837	-338.605
17	-788.245	-338.016	-888.874	-197.291
18	-888.993	-197.407	-1055.856	35.943
19	-930.762	66.585	-973.809	120.944
20	-970.859	123.897	-965.454	117.072
21	-953.894	109.232	-983.729	146.908
22	-977.298	153.339	-935.556	-91.622
23	-926.703	-82.772	-770.902	-300.651
24	-765.919	-295.659	-634.483	-479.465
25	-629.349	-474.328	-522.525	-623.716
26	-517.168	-618.363	-433.685	-735.110
27	-428.451	-729.883	-366.840	-816.043
28	-362.006	-811.188	-320.822	-868.781
29	-316.592	-864.545	-294.617	-895.276
30	-291.135	-891.764	-287.402	-896.985
31	-284.762	-894.319	-289.010	-888.379
32	-291.646	-891.031	-314.146	-859.565
33	-317.625	-863.073	-359.312	-804.775
34	-363.564	-808.987	-425.675	-722.128
35	-430.522	-726.948	-514.507	-609.500
36	-519.747	-614.743	-627.100	-464.614
37	-632.454	-469.959	-764.395	-285.445
38	-769.537	-290.570	-925.415	-72.583
39	-931.222	-78.383	-975.160	165.539
40	-982.259	158.440	-952.993	121.484
41	-967.316	126.182	-972.550	132.791
42	-975.009	130.328	-860.360	-14.448
43	-983.249	-57.222	-890.269	-187.251
44	-892.923	-189.907	-791.708	-331.452
45	-792.423	-332.165	-698.785	-463.114
46	-699.379	-463.688	-613.344	-584.004
47	-613.899	-584.537	-535.452	-694.242
48	-536.013	-694.819	-470.469	-786.479
49	-466.501	-782.515	-407.110	-865.571
50	-404.913	-863.365	-353.249	-935.615
51	-351.201	-933.630	-307.042	-995.385
52	-305.211	-993.564	-268.360	-1045.099
53	-266.739	-1043.498	-239.817	-1081.147
54	-238.112	-1079.447	-222.725	-1100.964

COMBINACION 5 G1 + PRETI + 0.4 TEMP

TENSIONES CON AXIL INICIAL

Barra	TS_1	TI_1	TS_2	T1_2
55	-221.309	-1099.532	-217.441	-1104.941
56	-216.267	-1103.768	-223.961	-1093.009
57	-222.983	-1092.024	-241.330	-1066.367
58	-241.408	-1066.460	-343.968	-923.034
59	-245.663	-774.633	-282.705	-727.857
60	-282.476	-727.621	-314.139	-687.637

COMBINACION 6 G1 + G2 + PRETI + 0.6 TEMP

TENSIONES CON AXIL INICIAL

Barra	TS_1	TI_1	TS_2	T1_2
1	-313.278	-688.609	-306.577	-697.071
2	-306.079	-696.572	-221.294	-803.636
3	-317.853	-955.359	-305.136	-973.143
4	-305.948	-973.967	-301.210	-980.593
5	-302.061	-981.448	-305.253	-976.985
6	-306.227	-977.972	-317.310	-962.473
7	-318.490	-963.638	-337.455	-937.116
8	-338.884	-938.527	-365.777	-900.918
9	-367.480	-902.619	-400.643	-856.242
10	-402.260	-857.854	-439.129	-806.293
11	-440.950	-808.129	-481.706	-751.134
12	-483.738	-753.144	-528.514	-690.526
13	-530.721	-692.703	-578.054	-626.511
14	-582.020	-630.486	-638.612	-551.344
15	-638.041	-550.787	-698.574	-466.134
16	-698.032	-465.592	-762.535	-375.388
17	-761.942	-374.799	-830.005	-279.617
18	-830.123	-279.734	-960.772	-97.027
19	-838.696	-49.674	-843.151	-44.048
20	-840.199	-41.096	-792.673	-101.111
21	-781.135	-108.922	-868.538	1.447
22	-862.106	7.879	-869.786	-183.599
23	-860.932	-174.749	-752.070	-326.987
24	-747.086	-321.995	-656.326	-448.918
25	-651.193	-443.780	-578.792	-545.029
26	-573.433	-539.680	-518.109	-617.046
27	-512.878	-611.817	-473.170	-667.346
28	-468.330	-662.498	-442.796	-698.207
29	-438.564	-693.972	-425.978	-711.574
30	-422.500	-708.057	-421.894	-708.904
31	-419.256	-706.236	-420.375	-704.671
32	-423.015	-707.318	-436.132	-688.974
33	-439.612	-692.480	-465.665	-656.046
34	-469.917	-660.257	-510.125	-604.027
35	-514.975	-608.846	-570.804	-530.771
36	-576.046	-536.011	-648.979	-434.018
37	-654.334	-439.360	-745.600	-311.729
38	-750.743	-316.853	-859.686	-164.501
39	-865.492	-170.304	-860.015	20.137
40	-867.113	13.036	-780.284	-96.609
41	-794.586	-91.938	-841.926	-32.157
42	-844.384	-34.621	-768.314	-130.681
43	-888.185	-190.164	-831.401	-269.574
44	-834.056	-272.230	-765.394	-368.251
45	-766.108	-368.965	-701.379	-459.486
46	-701.973	-460.061	-641.201	-545.048
47	-641.756	-545.581	-584.927	-625.053
48	-585.490	-625.627	-537.924	-692.147
49	-533.957	-688.181	-488.900	-751.192
50	-486.704	-748.984	-445.727	-806.288
51	-443.679	-804.304	-406.572	-856.196
52	-404.740	-854.377	-371.287	-901.159
53	-369.673	-899.550	-342.509	-937.538
54	-340.803	-935.839	-321.539	-962.778

COMBINACION 6 G1 + G2 + PRETI + 0.6 TEMP

TENSIONES CON AXIL INICIAL

Barra	TS_1	TI_1	TS_2	T1_2
55	-320.123	-961.346	-308.729	-977.280
56	-307.554	-976.109	-304.083	-980.963
57	-303.101	-979.982	-306.634	-975.043
58	-306.712	-975.135	-390.816	-857.519
59	-291.023	-717.354	-306.665	-697.602
60	-306.435	-697.367	-313.167	-688.865

COMBINACION 7 G1 + 1.1 PRETI + 0.4 TEMP

TENSIONES CON AXIL INICIAL

Barra	TS_1	TI_1	TS_2	T1_2
1	-347.674	-753.597	-309.406	-801.919
2	-308.615	-801.678	-188.886	-952.868
3	-293.007	-1130.091	-256.207	-1181.554
4	-256.751	-1182.948	-233.196	-1215.890
5	-233.751	-1217.364	-223.398	-1231.841
6	-224.064	-1233.495	-226.867	-1229.574
7	-227.750	-1231.436	-243.709	-1209.119
8	-244.866	-1211.251	-274.036	-1170.458
9	-275.498	-1172.905	-316.060	-1116.180
10	-317.443	-1118.506	-366.590	-1049.776
11	-368.215	-1052.323	-426.143	-971.313
12	-428.037	-974.002	-494.901	-880.495
13	-497.023	-883.319	-571.210	-779.571
14	-575.309	-784.313	-664.203	-659.998
15	-663.359	-659.687	-761.113	-522.983
16	-760.352	-522.616	-866.999	-373.475
17	-866.238	-372.980	-981.331	-212.029
18	-981.410	-212.228	-1169.883	51.343
19	-1032.018	83.573	-1084.703	150.102
20	-1081.519	153.429	-1081.534	153.447
21	-1070.668	147.160	-1096.122	179.302
22	-1088.906	186.199	-1036.791	-90.045
23	-1026.838	-80.610	-849.662	-328.382
24	-843.896	-323.286	-694.287	-532.508
25	-688.294	-527.341	-566.531	-697.620
26	-560.238	-692.292	-464.932	-825.572
27	-458.729	-820.446	-388.276	-918.972
28	-382.477	-914.303	-335.295	-980.285
29	-330.140	-976.327	-304.897	-1011.628
30	-300.558	-1008.477	-296.204	-1014.567
31	-292.796	-1012.339	-298.051	-1004.990
32	-300.468	-1008.582	-326.640	-971.982
33	-330.018	-976.467	-378.146	-909.162
34	-382.422	-914.355	-453.878	-814.429
35	-458.868	-820.210	-555.253	-685.420
36	-560.744	-691.568	-683.713	-519.602
37	-689.406	-525.755	-840.308	-314.726
38	-845.852	-320.521	-1023.977	-71.422
39	-1030.339	-77.838	-1085.897	198.788
40	-1093.764	191.053	-1070.059	161.119
41	-1085.079	165.358	-1085.536	165.934
42	-1088.119	163.072	-957.242	-2.196
43	-1092.608	-47.514	-985.911	-196.724
44	-988.623	-199.937	-873.314	-361.191
45	-873.855	-362.320	-767.330	-511.289
46	-767.706	-512.311	-669.998	-648.950
47	-670.302	-649.964	-581.402	-774.288
48	-581.690	-775.383	-507.445	-879.211
49	-502.736	-875.331	-435.729	-969.038
50	-432.961	-967.103	-374.927	-1048.261
51	-372.325	-1046.566	-323.026	-1115.508
52	-320.671	-1113.982	-279.898	-1171.001
53	-277.794	-1169.690	-248.434	-1210.749
54	-246.268	-1209.285	-230.094	-1231.904

COMBINACION 7 G1 + 1.1 PRETI + 0.4 TEMP

TENSIONES CON AXIL INICIAL

Barra	TS_1	TI_1	TS_2	T1_2
55	-228.285	-1230.679	-225.285	-1234.874
56	-223.796	-1233.860	-234.023	-1219.559
57	-232.814	-1218.661	-255.274	-1187.252
58	-255.303	-1187.434	-370.919	-1025.751
59	-263.050	-861.162	-307.075	-805.568
60	-306.950	-805.148	-345.688	-756.231

COMBINACION 8 G1 + G2 + 1.1 PRETI + 0.60 TEMP

TENSIONES CON AXIL INICIAL

Barra	TS_1	TI_1	TS_2	T1_2
1	-344.818	-757.202	-331.147	-774.465
2	-330.599	-773.917	-232.011	-898.412
3	-337.852	-1067.378	-319.311	-1093.306
4	-320.204	-1094.213	-311.329	-1106.624
5	-312.266	-1107.563	-313.004	-1106.531
6	-314.076	-1107.617	-324.384	-1093.202
7	-325.681	-1094.484	-345.549	-1066.700
8	-347.122	-1068.251	-376.600	-1027.027
9	-378.474	-1028.898	-415.738	-976.786
10	-417.516	-978.558	-459.748	-919.499
11	-461.750	-921.519	-509.146	-855.237
12	-511.382	-857.447	-564.092	-783.735
13	-566.520	-786.130	-622.929	-707.245
14	-627.292	-711.616	-694.777	-617.241
15	-694.149	-616.628	-766.860	-514.946
16	-766.263	-514.350	-844.229	-405.317
17	-843.577	-404.670	-926.349	-288.918
18	-926.480	-289.046	-1078.987	-75.771
19	-944.000	-27.574	-958.331	-9.477
20	-955.085	-6.230	-913.212	-59.106
21	-900.552	-67.659	-982.354	35.640
22	-975.280	42.714	-971.529	-181.311
23	-961.789	-171.577	-830.586	-355.058
24	-825.104	-349.566	-715.342	-503.063
25	-709.695	-497.412	-621.653	-620.534
26	-615.759	-614.648	-548.030	-709.363
27	-542.276	-703.610	-493.252	-772.168
28	-487.929	-766.834	-456.022	-811.453
29	-451.368	-806.795	-435.231	-829.362
30	-431.405	-825.494	-429.975	-827.494
31	-427.074	-824.558	-429.068	-821.769
32	-431.971	-824.681	-448.689	-801.302
33	-452.517	-805.159	-484.990	-759.746
34	-489.668	-764.378	-539.242	-695.050
35	-544.576	-700.351	-612.859	-604.860
36	-618.625	-610.624	-707.251	-486.686
37	-713.141	-492.562	-823.460	-338.287
38	-829.118	-343.923	-960.409	-160.318
39	-966.796	-166.700	-972.969	56.185
40	-980.777	48.375	-899.603	-54.129
41	-915.304	-49.030	-956.976	3.593
42	-959.680	0.883	-866.575	-116.688
43	-999.135	-178.231	-927.885	-277.871
44	-930.805	-280.793	-847.377	-397.463
45	-848.163	-398.248	-769.951	-507.624
46	-770.604	-508.258	-697.635	-610.302
47	-698.245	-610.888	-630.502	-705.623
48	-631.122	-706.255	-574.455	-785.500
49	-570.093	-781.137	-517.076	-855.279
50	-514.661	-852.849	-467.022	-919.471
51	-464.770	-917.286	-422.276	-976.712
52	-420.261	-974.710	-382.677	-1027.269
53	-380.901	-1025.500	-351.123	-1067.143
54	-349.247	-1065.273	-329.049	-1093.519

COMBINACION 8 G1 + G2 + 1.1 PRETI + 0.60 TEMP

TENSIONES CON AXIL INICIAL

Barra	TS_1	TI_1	TS_2	T1_2
55	-327.491	-1091.944	-316.839	-1106.840
56	-315.547	-1105.552	-314.498	-1107.018
57	-313.420	-1105.938	-320.966	-1095.385
58	-321.051	-1095.488	-418.116	-959.748
59	-308.717	-803.495	-331.246	-775.046
60	-330.993	-774.788	-344.695	-757.484

COMBINACION 9 G1 + G2 + PRETD

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
1	-273.162	-606.942	-272.279	-608.057
2	-269.906	-605.682	-204.071	-688.816
3	-282.086	-812.727	-275.480	-821.965
4	-274.649	-821.135	-273.753	-822.388
5	-273.289	-821.913	-277.673	-815.782
6	-277.753	-815.851	-287.130	-802.736
7	-287.864	-803.501	-302.053	-783.658
8	-303.534	-785.163	-322.504	-758.634
9	-324.750	-760.912	-347.338	-729.324
10	-349.897	-731.905	-374.153	-697.984
11	-377.128	-700.966	-403.424	-664.192
12	-406.746	-667.491	-435.423	-627.387
13	-438.977	-630.927	-468.962	-588.995
14	-474.064	-594.096	-511.441	-541.827
15	-512.453	-542.836	-552.740	-486.497
16	-553.502	-487.249	-596.798	-426.701
17	-597.094	-427.007	-641.499	-364.908
18	-645.035	-368.450	-745.513	-227.936
19	-642.511	-169.716	-631.560	-183.545
20	-628.221	-180.210	-570.086	-253.621
21	-561.602	-257.645	-655.786	-138.712
22	-648.469	-131.392	-668.085	-296.620
23	-659.069	-287.599	-578.135	-400.782
24	-573.260	-395.894	-508.810	-486.025
25	-502.127	-479.335	-454.403	-546.073
26	-446.724	-538.396	-413.608	-584.708
27	-405.915	-577.013	-384.759	-606.599
28	-377.767	-599.605	-365.972	-616.099
29	-360.195	-610.329	-355.701	-616.613
30	-351.435	-612.371	-352.800	-610.462
31	-350.242	-607.888	-349.292	-609.216
32	-351.877	-611.811	-356.807	-604.917
33	-361.080	-609.210	-373.308	-592.110
34	-379.107	-597.911	-400.723	-567.681
35	-407.727	-574.685	-441.306	-527.726
36	-449.017	-535.439	-497.254	-467.982
37	-504.928	-475.650	-569.887	-384.808
38	-576.558	-391.471	-656.036	-280.324
39	-664.604	-288.896	-647.951	-122.324
40	-654.819	-129.194	-561.420	-247.136
41	-571.569	-245.061	-629.651	-171.716
42	-629.979	-172.046	-578.890	-236.560
43	-679.256	-304.505	-644.075	-353.704
44	-646.915	-356.540	-600.511	-421.434
45	-600.910	-421.831	-557.401	-482.676
46	-557.111	-482.385	-516.596	-539.043
47	-515.842	-538.307	-478.258	-590.866
48	-477.249	-589.869	-447.041	-632.113
49	-441.952	-627.005	-413.040	-667.438
50	-409.483	-663.881	-382.993	-700.927
51	-379.656	-697.642	-355.219	-731.815
52	-352.211	-728.865	-329.439	-760.711
53	-326.855	-758.146	-307.684	-784.956
54	-305.409	-782.693	-291.037	-802.791

COMBINACION 9 G1 + G2 + PRETD

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
55	-289.504	-801.327	-279.943	-814.697
56	-279.171	-813.959	-274.556	-820.413
57	-274.469	-820.320	-270.965	-825.221
58	-275.764	-830.013	-341.675	-737.840
59	-260.355	-622.257	-270.782	-609.091
60	-271.485	-609.816	-273.377	-607.427

COMBINACION 10 G1 + G2 + PRETD + TEMP + 0.80 SCMAX-IPF

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
1	-296.071	-578.013	-315.641	-553.301
2	-314.916	-548.845	-289.336	-581.146
3	-373.882	-684.354	-410.564	-633.057
4	-409.732	-632.228	-446.424	-580.916
5	-445.975	-580.419	-482.086	-529.921
6	-482.169	-529.985	-517.835	-480.107
7	-518.572	-480.867	-553.620	-431.854
8	-555.100	-433.360	-588.971	-385.994
9	-591.219	-388.269	-623.076	-343.718
10	-625.634	-346.299	-653.728	-307.011
11	-656.706	-309.990	-681.333	-275.551
12	-684.650	-278.854	-705.567	-249.603
13	-709.121	-253.144	-725.923	-229.647
14	-731.025	-234.748	-749.786	-208.513
15	-750.797	-209.522	-766.701	-187.282
16	-767.465	-188.032	-780.549	-169.734
17	-781.362	-169.317	-796.383	-148.311
18	-801.261	-149.974	-884.549	-33.500
19	-778.666	2.217	-760.656	-20.526
20	-761.063	-12.461	-707.155	-80.535
21	-696.234	-87.636	-786.071	25.808
22	-780.619	35.484	-814.741	-91.530
23	-805.948	-82.196	-759.374	-147.327
24	-754.867	-141.925	-723.443	-185.870
25	-717.004	-178.839	-699.509	-203.305
26	-692.151	-195.178	-701.007	-182.793
27	-693.705	-174.552	-707.192	-155.691
28	-700.197	-148.702	-713.516	-130.076
29	-707.739	-124.305	-718.837	-108.785
30	-714.575	-104.538	-721.994	-94.162
31	-719.433	-91.591	-714.820	-98.042
32	-717.405	-100.638	-709.106	-112.243
33	-713.383	-116.531	-702.858	-131.250
34	-708.655	-137.054	-697.929	-152.053
35	-704.946	-159.037	-696.550	-170.778
36	-704.283	-178.461	-715.483	-162.798
37	-723.311	-170.252	-755.200	-125.656
38	-762.131	-131.956	-806.980	-69.236
39	-815.895	-77.322	-780.031	44.463
40	-795.738	48.755	-696.774	-76.215
41	-715.873	-62.838	-767.267	2.061
42	-769.520	4.162	-713.965	-65.990
43	-824.230	-101.765	-794.340	-143.565
44	-800.036	-142.409	-775.776	-176.334
45	-776.426	-176.380	-754.638	-206.850
46	-756.576	-203.443	-742.196	-223.552
47	-741.439	-222.820	-724.237	-246.876
48	-723.226	-245.882	-707.982	-267.200
49	-702.890	-262.096	-683.508	-289.200
50	-679.948	-285.649	-656.904	-317.876
51	-653.565	-314.593	-627.084	-351.625
52	-624.072	-348.681	-593.820	-390.986
53	-591.242	-388.414	-558.957	-433.563
54	-556.685	-431.296	-523.260	-478.040

COMBINACION 10 G1 + G2 + PRETD + TEMP + 0.80 SCMAX-IPF

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
55	-521.729	-476.571	-487.704	-524.154
56	-486.934	-523.411	-452.438	-571.654
57	-452.346	-571.568	-413.069	-626.495
58	-417.867	-631.288	-442.311	-597.104
59	-357.797	-499.210	-324.078	-541.789
60	-324.784	-542.512	-297.920	-576.435

COMBINACION 11 G1 + G2 + PRETD + TEMP

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
1	-275.691	-603.748	-280.230	-598.017
2	-277.857	-595.641	-217.445	-671.928
3	-295.897	-793.413	-294.894	-794.816
4	-294.062	-793.986	-298.763	-787.412
5	-298.302	-786.933	-308.286	-772.972
6	-308.368	-773.037	-323.339	-752.100
7	-324.076	-752.860	-343.867	-725.184
8	-345.347	-726.690	-369.920	-692.325
9	-372.162	-694.609	-400.355	-655.183
10	-402.911	-657.767	-432.771	-616.009
11	-435.744	-618.994	-467.644	-574.385
12	-470.966	-577.682	-505.250	-529.737
13	-508.804	-533.278	-544.395	-483.506
14	-549.495	-488.610	-592.477	-428.502
15	-593.488	-429.512	-639.382	-365.331
16	-640.144	-366.084	-689.046	-297.697
17	-689.342	-298.002	-739.356	-228.061
18	-742.891	-231.603	-848.978	-83.245
19	-742.693	-43.209	-737.172	-50.181
20	-733.835	-46.844	-681.129	-113.399
21	-669.241	-121.721	-763.423	-2.791
22	-756.105	4.528	-779.247	-141.166
23	-770.230	-132.145	-689.293	-245.332
24	-684.418	-240.445	-619.964	-330.581
25	-613.281	-323.891	-565.555	-390.633
26	-557.875	-382.956	-524.756	-429.273
27	-517.063	-421.578	-495.903	-451.170
28	-488.912	-444.174	-477.113	-460.674
29	-471.336	-454.904	-466.839	-461.192
30	-462.574	-456.949	-463.935	-455.046
31	-461.377	-452.470	-460.424	-453.802
32	-463.010	-456.398	-467.938	-449.506
33	-472.210	-453.800	-484.436	-436.703
34	-490.235	-442.504	-511.849	-412.277
35	-518.852	-419.281	-552.429	-372.325
36	-560.140	-380.039	-608.375	-312.585
37	-616.048	-320.253	-681.005	-229.414
38	-687.675	-236.078	-767.151	-124.935
39	-775.719	-133.506	-755.537	13.533
40	-762.405	6.663	-669.003	-111.283
41	-682.554	-104.913	-735.225	-38.401
42	-735.551	-38.733	-679.050	-110.080
43	-782.699	-159.844	-741.928	-216.861
44	-744.770	-219.695	-692.773	-292.410
45	-693.172	-292.808	-644.072	-361.471
46	-643.780	-361.182	-597.677	-425.655
47	-596.921	-424.921	-553.746	-485.300
48	-552.733	-484.309	-516.931	-534.375
49	-511.841	-529.269	-477.330	-577.531
50	-473.774	-573.974	-441.683	-618.852
51	-438.344	-615.570	-408.310	-657.570
52	-405.299	-654.624	-376.926	-694.301
53	-374.344	-691.735	-349.563	-726.391
54	-347.290	-724.125	-327.312	-752.063

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
55	-325.776	-750.602	-310.605	-771.817
56	-309.831	-771.082	-299.612	-785.373
57	-299.523	-785.285	-290.409	-798.029
58	-295.207	-802.823	-355.506	-718.497
59	-273.749	-605.344	-278.741	-599.040
60	-279.446	-599.764	-275.904	-604.236

COMBINACION 11 G1 + G2 + PRETD + TEMP

COMBINACION 12 G1 + G2 + PRETD + SCMAX-IPF + 0.6 TEMP

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
1	-300.155	-572.856	-321.313	-546.138
2	-321.000	-541.161	-301.960	-565.205
3	-387.854	-664.815	-431.716	-603.477
4	-430.885	-602.647	-473.334	-543.283
5	-472.888	-542.783	-513.291	-486.282
6	-513.372	-486.348	-551.976	-432.363
7	-552.711	-433.125	-589.332	-381.912
8	-590.813	-383.417	-624.767	-335.934
9	-627.018	-338.206	-657.550	-295.507
10	-660.109	-298.087	-685.520	-262.551
11	-688.500	-265.528	-709.067	-236.766
12	-712.383	-240.071	-727.716	-218.630
13	-731.269	-222.171	-741.133	-208.377
14	-746.236	-213.477	-756.699	-198.845
15	-757.711	-199.854	-763.874	-191.235
16	-764.638	-191.986	-766.526	-189.346
17	-767.467	-188.748	-771.497	-183.113
18	-776.712	-184.306	-852.056	-78.940
19	-747.586	-37.030	-724.282	-66.458
20	-725.625	-57.212	-669.244	-128.408
21	-659.926	-133.484	-748.678	-21.410
22	-743.694	-11.145	-779.149	-141.303
23	-770.413	-131.890	-732.432	-185.005
24	-728.017	-179.474	-704.851	-211.871
25	-698.473	-204.754	-688.537	-218.649
26	-681.260	-210.409	-700.611	-183.347
27	-693.407	-174.970	-715.557	-143.994
28	-708.561	-137.005	-728.160	-109.596
29	-722.383	-103.825	-737.381	-82.852
30	-733.120	-78.604	-742.054	-66.109
31	-739.493	-63.539	-733.966	-71.267
32	-736.551	-73.864	-724.947	-90.092
33	-729.223	-94.379	-713.012	-117.050
34	-718.808	-122.854	-699.999	-149.158
35	-707.019	-156.138	-688.131	-182.552
36	-695.869	-190.227	-697.812	-187.511
37	-705.678	-194.910	-729.302	-161.873
38	-736.297	-168.082	-772.491	-117.467
39	-781.493	-125.431	-743.120	-2.147
40	-761.037	4.935	-660.683	-121.789
41	-679.809	-108.379	-733.048	-41.150
42	-735.783	-38.439	-682.630	-105.560
43	-793.236	-145.109	-768.301	-179.979
44	-774.710	-177.825	-759.622	-198.925
45	-760.335	-198.883	-747.610	-216.677
46	-750.107	-212.489	-745.893	-218.382
47	-745.136	-217.649	-736.664	-229.497
48	-735.656	-228.499	-727.789	-239.501
49	-722.697	-234.396	-709.337	-253.080
50	-705.775	-249.531	-687.233	-275.462
51	-683.895	-272.177	-660.542	-304.836
52	-657.530	-301.891	-629.049	-341.720
53	-626.471	-339.148	-594.554	-383.782
54	-592.282	-381.516	-557.737	-429.825

COMBINACION 12 G1 + G2 + PRETD + SCMAX-IPF + 0.6 TEMP

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
55	-556.208	-428.353	-519.713	-479.390
56	-518.946	-478.644	-480.621	-532.240
57	-480.531	-532.153	-435.957	-594.488
58	-440.755	-599.281	-458.480	-574.493
59	-373.452	-479.442	-332.229	-531.496
60	-332.934	-532.219	-302.413	-570.760

COMBINACION 13 G1 + G2 + PRETD + 0.60 SCMAX-IPF + 0.5 TEMP

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
1	-289.712	-586.043	-302.813	-569.500
2	-301.675	-565.564	-264.676	-612.286
3	-347.481	-721.276	-371.940	-687.071
4	-371.108	-686.241	-397.003	-650.029
5	-396.550	-649.538	-423.329	-612.089
6	-423.411	-612.155	-451.107	-573.423
7	-451.842	-574.186	-480.275	-534.424
8	-481.755	-535.929	-510.500	-495.731
9	-512.748	-498.006	-540.888	-458.654
10	-543.446	-461.235	-569.180	-425.248
11	-572.158	-428.227	-595.800	-395.163
12	-599.119	-398.466	-620.574	-368.462
13	-624.128	-372.002	-642.825	-345.856
14	-647.927	-350.957	-669.941	-320.172
15	-670.953	-321.181	-691.550	-292.376
16	-692.313	-293.128	-711.549	-266.227
17	-712.233	-265.991	-733.198	-236.672
18	-737.741	-238.805	-823.924	-118.282
19	-719.582	-72.394	-701.979	-94.622
20	-701.449	-87.740	-645.127	-158.862
21	-635.666	-164.119	-726.590	-49.302
22	-720.673	-40.215	-750.286	-181.666
23	-741.438	-172.410	-686.275	-249.553
24	-681.676	-244.280	-641.996	-299.770
25	-635.496	-292.824	-610.445	-327.857
26	-603.007	-319.842	-601.371	-322.130
27	-593.970	-314.027	-598.798	-307.276
28	-591.804	-300.285	-598.845	-290.438
29	-593.067	-284.668	-600.268	-274.597
30	-596.006	-270.351	-601.911	-262.092
31	-599.351	-259.520	-595.655	-264.689
32	-598.240	-267.285	-593.249	-274.264
33	-597.524	-278.554	-592.688	-285.317
34	-598.486	-291.120	-595.846	-294.811
35	-602.860	-301.800	-604.958	-298.865
36	-612.685	-306.556	-633.146	-277.944
37	-640.935	-285.451	-681.093	-229.292
38	-687.958	-235.683	-741.465	-160.856
39	-750.293	-169.063	-720.115	-31.198
40	-733.612	-29.696	-636.039	-152.909
41	-652.050	-143.431	-706.470	-74.712
42	-708.241	-73.219	-655.157	-140.252
43	-762.126	-188.615	-732.311	-230.310
44	-737.292	-230.153	-708.895	-269.865
45	-709.482	-269.999	-683.661	-306.108
46	-685.042	-303.479	-665.526	-330.772
47	-664.770	-330.038	-643.870	-359.266
48	-642.861	-358.269	-625.275	-382.862
49	-620.183	-377.757	-599.819	-406.236
50	-596.259	-402.684	-573.753	-434.157
51	-570.416	-430.873	-545.846	-465.233
52	-542.834	-462.287	-515.853	-500.019
53	-513.273	-497.449	-485.669	-536.052
54	-483.396	-533.787	-456.135	-571.910

COMBINACION 13 G1 + G2 + PRETD + 0.60 SCMAX-IPF + 0.5 TEMP

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
55	-454.605	-570.441	-428.098	-607.510
56	-427.328	-606.767	-401.703	-642.603
57	-401.614	-642.515	-372.682	-682.974
58	-377.480	-687.767	-413.694	-637.123
59	-330.088	-534.201	-308.764	-561.127
60	-309.469	-561.850	-291.152	-584.980

COMBINACION 14 G1 + G2 + PRETD + SCMIN-IPF

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
1	-236.305	-653.484	-262.785	-620.046
2	-259.200	-619.201	-189.479	-707.243
3	-266.943	-833.905	-250.666	-856.667
4	-249.835	-855.837	-239.089	-870.863
5	-238.609	-870.412	-233.108	-878.105
6	-233.187	-878.173	-232.679	-878.884
7	-233.413	-879.648	-237.717	-873.629
8	-239.198	-875.134	-246.793	-864.513
9	-249.035	-866.797	-258.909	-852.988
10	-261.467	-855.570	-272.479	-840.169
11	-275.453	-843.154	-287.992	-825.619
12	-291.316	-828.914	-305.478	-809.109
13	-309.033	-812.648	-324.002	-791.715
14	-329.102	-796.819	-350.973	-766.234
15	-351.984	-767.244	-376.146	-733.454
16	-376.908	-734.208	-403.426	-697.123
17	-403.078	-698.330	-426.666	-665.343
18	-424.286	-677.157	-485.205	-591.965
19	-382.565	-497.969	-311.284	-587.981
20	-301.707	-592.524	-167.209	-762.364
21	-137.405	-793.309	-348.799	-526.368
22	-339.149	-521.994	-454.273	-595.627
23	-438.595	-595.922	-436.583	-598.736
24	-419.604	-610.774	-397.099	-642.246
25	-379.214	-651.222	-350.936	-690.767
26	-334.412	-695.459	-304.596	-737.155
27	-296.415	-730.144	-277.995	-755.903
28	-271.005	-748.906	-261.947	-761.574
29	-256.168	-755.805	-254.406	-758.269
30	-250.139	-754.029	-254.234	-748.303
31	-251.677	-745.725	-253.452	-743.244
32	-256.037	-745.839	-263.687	-735.141
33	-267.959	-739.435	-282.904	-718.535
34	-288.704	-724.334	-310.443	-693.934
35	-317.430	-700.961	-345.896	-661.152
36	-353.579	-668.904	-394.837	-611.206
37	-395.402	-628.816	-436.186	-571.782
38	-432.991	-592.242	-457.281	-558.274
39	-456.415	-580.037	-364.855	-479.811
40	-360.673	-500.633	-162.506	-750.874
41	-151.121	-775.991	-292.441	-597.536
42	-290.360	-600.908	-315.437	-569.241
43	-400.327	-694.574	-422.592	-663.437
44	-417.000	-678.066	-402.507	-698.333
45	-395.407	-709.218	-368.917	-746.263
46	-365.838	-749.870	-338.677	-787.854
47	-337.925	-787.116	-313.687	-821.011
48	-312.675	-820.019	-295.803	-843.613
49	-290.712	-838.508	-275.132	-860.296
50	-271.577	-856.736	-258.413	-875.146
51	-255.074	-871.863	-243.962	-887.403
52	-240.955	-884.450	-231.505	-897.666
53	-228.919	-895.105	-223.066	-903.290
54	-220.791	-901.027	-219.730	-902.511

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
55	-218.194	-901.051	-221.916	-895.845
56	-221.137	-895.116	-229.790	-883.016
57	-229.704	-882.922	-239.465	-869.273
58	-244.264	-874.064	-323.425	-763.360
59	-242.686	-644.569	-265.529	-615.724
60	-264.854	-618.190	-250.807	-635.927

COMBINACION 14 G1 + G2 + PRETD + SCMIN-IPF

COMBINACION 15 G1 + G2 + PRETD + 0.60 SCMIN-IPF

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
1	-251.048	-634.867	-266.583	-615.250
2	-263.483	-613.793	-195.316	-699.872
3	-273.000	-825.433	-260.592	-842.786
4	-259.760	-841.956	-252.955	-851.473
5	-252.481	-851.013	-250.934	-853.176
6	-251.013	-853.244	-254.460	-848.425
7	-255.194	-849.189	-263.452	-837.640
8	-264.933	-839.146	-277.078	-822.161
9	-279.321	-824.443	-294.281	-803.522
10	-296.839	-806.104	-313.149	-783.295
11	-316.123	-786.279	-334.165	-761.049
12	-337.488	-764.345	-357.456	-736.420
13	-361.011	-739.960	-381.986	-710.627
14	-387.087	-715.730	-415.160	-676.470
15	-416.171	-677.481	-446.784	-634.671
16	-447.545	-635.424	-480.775	-588.954
17	-480.684	-589.801	-512.599	-545.169
18	-512.586	-553.674	-589.328	-446.354
19	-486.543	-366.668	-439.394	-426.207
20	-432.312	-427.599	-328.360	-558.867
21	-307.084	-579.044	-471.594	-371.305
22	-462.877	-365.753	-539.798	-476.024
23	-526.784	-472.593	-493.204	-519.554
24	-481.067	-524.822	-441.784	-579.757
25	-428.379	-582.467	-392.323	-632.890
26	-379.337	-632.634	-348.201	-676.176
27	-340.215	-668.892	-320.701	-696.182
28	-313.710	-689.185	-303.557	-703.384
29	-297.779	-697.614	-294.924	-701.606
30	-290.658	-697.366	-293.660	-693.167
31	-291.103	-690.590	-291.788	-689.632
32	-294.374	-692.227	-300.936	-683.051
33	-305.207	-687.345	-319.065	-667.965
34	-324.865	-673.765	-346.555	-643.433
35	-353.548	-650.450	-384.060	-607.782
36	-391.754	-615.518	-435.804	-553.916
37	-439.212	-567.550	-489.666	-496.992
38	-490.417	-511.934	-536.783	-447.094
39	-539.690	-463.581	-478.093	-336.816
40	-478.332	-352.058	-322.071	-549.379
41	-319.300	-563.619	-427.325	-427.208
42	-426.208	-429.363	-420.819	-436.168
43	-511.898	-538.546	-511.185	-539.544
44	-508.966	-549.456	-481.709	-587.574
45	-477.608	-594.263	-444.310	-640.828
46	-442.348	-642.875	-409.845	-688.330
47	-409.091	-687.592	-379.515	-728.953
48	-378.504	-727.959	-356.298	-759.013
49	-351.208	-753.907	-330.295	-783.153
50	-326.740	-779.594	-308.245	-805.458
51	-304.907	-802.174	-288.465	-825.168
52	-285.458	-822.216	-270.678	-842.884
53	-268.094	-840.321	-256.913	-855.956
54	-254.639	-853.694	-248.253	-862.623

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
55	-246.717	-861.162	-245.127	-863.386
56	-244.351	-862.653	-247.696	-857.975
57	-247.611	-857.881	-252.065	-851.653
58	-256.864	-856.444	-330.725	-753.152
59	-249.754	-635.645	-267.630	-613.070
60	-267.507	-614.840	-259.835	-624.527

COMBINACION 15 G1 + G2 + PRETD + 0.60 SCMIN-IPF

COMBINACION 16 G1 + G2 + PRETD + SCMAX-EC1 + 0.6 TEMP

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
1	-300.611	-572.280	-322.060	-545.195
2	-324.826	-536.330	-312.357	-552.076
3	-396.967	-652.072	-445.699	-583.922
4	-444.867	-583.094	-491.323	-518.126
5	-490.860	-517.650	-536.136	-454.334
6	-536.218	-454.399	-577.426	-396.771
7	-578.162	-397.533	-618.053	-341.747
8	-619.534	-343.252	-654.705	-294.067
9	-656.951	-296.346	-686.794	-254.611
10	-689.351	-257.194	-714.867	-221.510
11	-717.843	-224.493	-736.712	-198.105
12	-740.031	-201.407	-752.523	-183.937
13	-756.077	-187.478	-763.382	-177.263
14	-768.484	-182.364	-774.154	-174.435
15	-775.166	-175.444	-778.355	-170.984
16	-779.118	-171.735	-781.680	-168.153
17	-782.508	-167.714	-782.300	-168.005
18	-790.809	-164.592	-858.936	-69.319
19	-758.981	-22.641	-733.887	-54.329
20	-735.831	-44.323	-674.792	-121.401
21	-671.492	-118.879	-756.369	-11.698
22	-752.729	0.264	-775.836	-145.936
23	-774.250	-126.523	-718.710	-204.194
24	-724.206	-184.803	-699.433	-219.448
25	-702.318	-199.377	-703.633	-197.538
26	-703.615	-179.146	-723.214	-151.739
27	-715.954	-143.438	-737.476	-113.341
28	-730.482	-106.349	-754.397	-72.906
29	-748.620	-67.134	-767.197	-41.155
30	-762.934	-36.910	-774.084	-21.317
31	-771.523	-18.745	-767.505	-24.364
32	-770.090	-26.961	-758.849	-42.680
33	-763.122	-46.973	-746.020	-70.889
34	-751.818	-76.693	-731.944	-104.485
35	-738.964	-111.465	-718.230	-140.460
36	-725.964	-148.141	-707.182	-174.407
37	-718.783	-176.583	-721.189	-173.219
38	-736.245	-168.155	-769.074	-122.245
39	-785.702	-119.546	-749.396	5.777
40	-762.160	6.354	-670.029	-109.988
41	-686.670	-99.715	-737.742	-35.222
42	-740.095	-32.994	-689.014	-97.499
43	-796.407	-140.674	-774.963	-170.664
44	-784.940	-163.519	-770.892	-183.165
45	-777.679	-174.628	-773.070	-181.074
46	-776.169	-176.042	-774.509	-178.364
47	-773.752	-177.632	-765.460	-189.227
48	-764.452	-188.229	-756.207	-199.759
49	-751.115	-194.655	-739.417	-211.014
50	-735.856	-207.465	-717.626	-232.959
51	-714.291	-229.671	-690.816	-262.499
52	-687.804	-259.554	-659.498	-299.139
53	-656.919	-296.568	-622.775	-344.316
54	-620.502	-342.051	-585.832	-390.535

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
55	-584.303	-389.064	-545.813	-442.890
56	-545.055	-442.133	-502.642	-501.445
57	-502.551	-501.360	-455.590	-567.031
58	-460.389	-571.823	-475.683	-550.436
59	-390.110	-458.406	-345.606	-514.605
60	-347.247	-514.146	-303.329	-569.604

COMBINACION 16 G1 + G2 + PRETD + SCMAX-EC1 + 0.6 TEMP

COMBINACION 17 G1 + G2 + PRETD + TEMP + 0.80 SCMAX-EC1

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
1	-296.437	-577.551	-316.239	-552.546
2	-317.977	-544.979	-297.654	-570.643
3	-381.172	-674.160	-421.750	-617.414
4	-420.918	-616.585	-460.815	-560.791
5	-460.353	-560.313	-500.362	-504.363
6	-500.445	-504.426	-538.196	-451.633
7	-538.933	-452.393	-576.596	-399.723
8	-578.077	-401.228	-612.922	-352.499
9	-615.165	-354.781	-646.472	-311.000
10	-649.027	-313.585	-677.206	-274.179
11	-680.180	-277.162	-703.448	-244.623
12	-706.769	-247.923	-725.414	-221.849
13	-728.967	-225.391	-743.723	-204.755
14	-748.824	-209.858	-763.750	-188.985
15	-764.761	-189.994	-778.286	-171.081
16	-779.049	-171.832	-792.673	-152.780
17	-793.395	-152.490	-805.025	-136.225
18	-812.539	-134.203	-890.053	-25.803
19	-787.782	13.728	-768.340	-10.823
20	-769.228	-2.150	-711.594	-74.930
21	-705.487	-75.951	-792.224	33.578
22	-787.848	44.611	-812.090	-95.236
23	-809.018	-77.902	-748.397	-162.678
24	-751.819	-146.188	-719.108	-191.932
25	-720.079	-174.538	-711.586	-186.416
26	-710.036	-170.167	-719.089	-157.506
27	-711.743	-149.327	-724.727	-131.169
28	-717.734	-124.176	-734.505	-100.723
29	-728.729	-94.952	-742.689	-75.428
30	-738.426	-71.183	-747.617	-58.330
31	-745.057	-55.757	-741.652	-60.520
32	-744.236	-63.116	-736.229	-74.314
33	-740.501	-78.607	-729.265	-94.321
34	-735.062	-100.125	-723.485	-116.314
35	-730.502	-123.299	-720.630	-137.104
36	-728.358	-144.793	-722.979	-152.315
37	-733.796	-155.589	-748.710	-134.732
38	-762.089	-132.014	-804.247	-73.058
39	-819.262	-72.613	-785.052	50.802
40	-796.636	49.889	-704.250	-66.774
41	-721.362	-55.907	-771.022	6.803
42	-772.969	8.518	-719.072	-59.542
43	-826.768	-98.217	-799.669	-136.113
44	-808.219	-130.964	-784.792	-163.726
45	-790.302	-156.976	-775.005	-178.367
46	-777.425	-174.286	-765.089	-191.538
47	-764.331	-190.806	-747.274	-214.660
48	-746.263	-213.665	-730.717	-235.406
49	-725.625	-230.303	-707.572	-255.548
50	-704.012	-251.997	-681.218	-283.873
51	-677.881	-280.588	-651.304	-317.755
52	-648.291	-314.811	-618.180	-356.920
53	-615.600	-354.350	-581.534	-401.990
54	-579.261	-399.724	-545.735	-446.608

COMBINACION 17 G1 + G2 + PRETD + TEMP + 0.80 SCMAX-EC1

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
55	-544.205	-445.140	-508.584	-494.954
56	-507.822	-494.202	-470.054	-547.018
57	-469.963	-546.933	-428.776	-604.529
58	-433.575	-609.321	-456.073	-577.858
59	-371.123	-482.382	-334.780	-528.276
60	-336.234	-528.053	-298.653	-575.510

COMBINACION 18 G1 + G2 + PRETD + 0.60 SCMAX-EC1 + 0.5 TEMP

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
1	-289.986	-585.698	-303.261	-568.934
2	-303.971	-562.665	-270.915	-604.408
3	-352.948	-713.630	-380.329	-675.338
4	-379.497	-674.510	-407.796	-634.934
5	-407.333	-634.458	-437.037	-592.920
6	-437.118	-592.986	-466.377	-552.068
7	-467.113	-552.830	-497.507	-510.325
8	-498.988	-511.830	-528.463	-470.610
9	-530.708	-472.890	-558.434	-434.117
10	-560.991	-436.699	-586.788	-400.623
11	-589.763	-403.606	-612.388	-371.967
12	-615.708	-375.267	-635.459	-347.646
13	-639.013	-351.187	-656.174	-327.188
14	-661.276	-332.289	-680.414	-305.526
15	-681.425	-306.536	-700.239	-280.226
16	-701.002	-280.978	-720.642	-253.512
17	-721.258	-253.370	-739.680	-227.608
18	-746.199	-226.976	-828.052	-112.509
19	-726.419	-63.760	-707.742	-87.345
20	-707.573	-80.007	-648.456	-154.658
21	-642.606	-155.356	-731.205	-43.474
22	-726.094	-33.370	-748.298	-184.446
23	-743.740	-169.190	-678.042	-261.066
24	-679.390	-247.477	-638.745	-304.316
25	-637.803	-289.598	-619.502	-315.191
26	-616.420	-301.084	-614.932	-303.165
27	-607.499	-295.107	-611.949	-288.884
28	-604.956	-281.891	-614.587	-268.423
29	-608.810	-262.653	-618.158	-249.579
30	-613.894	-245.335	-621.129	-235.217
31	-618.570	-232.644	-615.778	-236.547
32	-618.363	-239.143	-613.591	-245.817
33	-617.863	-250.111	-612.494	-257.620
34	-618.291	-263.423	-615.013	-268.007
35	-622.026	-274.997	-623.018	-273.610
36	-630.742	-281.304	-638.768	-270.081
37	-648.798	-274.454	-676.225	-236.099
38	-687.927	-235.727	-739.415	-163.722
39	-752.819	-165.531	-723.880	-26.443
40	-734.286	-28.846	-641.647	-145.828
41	-656.167	-138.233	-709.286	-71.155
42	-710.829	-69.951	-658.987	-135.416
43	-764.029	-185.954	-736.307	-224.722
44	-743.430	-221.569	-715.656	-260.409
45	-719.888	-255.446	-698.937	-284.746
46	-700.680	-281.611	-682.695	-306.761
47	-681.939	-306.028	-661.148	-335.104
48	-660.139	-334.106	-642.325	-359.018
49	-637.234	-353.912	-617.867	-380.997
50	-614.308	-377.444	-591.989	-408.655
51	-588.653	-405.369	-564.010	-439.831
52	-560.999	-436.884	-534.122	-474.470
53	-531.542	-471.902	-502.602	-512.372
54	-500.328	-510.108	-472.993	-548.336

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
55	-471.461	-546.868	-443.758	-585.610
56	-442.994	-584.860	-414.915	-624.126
57	-414.826	-624.039	-384.462	-666.501
58	-389.261	-671.292	-424.016	-622.689
59	-340.083	-521.579	-316.790	-550.992
60	-318.057	-551.006	-291.702	-584.286

COMBINACION 18 G1 + G2 + PRETD + 0.60 SCMAX-EC1 + 0.5 TEMP

COMBINACION 19 G1 + G2 + PRETD + SCMIN-EC1

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
1	-226.148	-666.310	-260.312	-623.169
2	-255.377	-624.029	-184.635	-713.360
3	-261.867	-841.003	-244.169	-865.753
4	-243.338	-864.922	-229.781	-883.880
5	-229.297	-883.434	-220.988	-895.053
6	-221.067	-895.123	-217.750	-899.761
7	-218.484	-900.525	-219.981	-898.432
8	-221.462	-899.937	-227.742	-891.155
9	-229.985	-893.437	-239.884	-879.594
10	-242.442	-882.175	-254.008	-866.000
11	-256.981	-868.987	-270.593	-849.951
12	-273.916	-853.247	-289.913	-830.875
13	-293.469	-834.414	-310.769	-810.220
14	-315.870	-815.323	-340.562	-780.792
15	-341.574	-781.802	-369.183	-743.191
16	-369.945	-743.945	-396.098	-707.371
17	-395.871	-708.409	-414.300	-682.636
18	-413.908	-691.670	-478.216	-601.738
19	-380.413	-500.687	-324.223	-571.642
20	-318.551	-571.253	-148.804	-785.605
21	-168.184	-754.443	-348.454	-526.803
22	-337.460	-524.126	-442.809	-611.659
23	-430.615	-607.081	-411.731	-633.489
24	-400.941	-636.874	-378.232	-668.631
25	-367.075	-668.198	-333.132	-715.666
26	-322.287	-712.415	-297.237	-747.447
27	-289.520	-739.786	-276.403	-758.130
28	-269.413	-751.133	-261.944	-761.577
29	-256.167	-755.807	-255.895	-756.187
30	-251.628	-751.947	-255.922	-745.942
31	-253.365	-743.365	-250.637	-747.181
32	-253.221	-749.777	-254.502	-747.985
33	-258.773	-752.281	-267.350	-740.286
34	-273.150	-746.086	-291.118	-720.959
35	-298.105	-727.985	-328.015	-686.157
36	-335.702	-693.905	-380.133	-631.769
37	-381.688	-647.995	-426.906	-584.759
38	-427.025	-600.586	-450.661	-567.531
39	-455.010	-582.003	-377.893	-463.347
40	-380.740	-475.293	-160.203	-753.782
41	-197.449	-717.490	-298.990	-589.266
42	-297.291	-592.156	-314.791	-570.058
43	-403.081	-690.723	-409.598	-681.609
44	-408.439	-690.038	-381.964	-727.062
45	-379.117	-731.998	-350.179	-772.466
46	-349.849	-772.231	-323.856	-808.580
47	-323.103	-807.842	-300.040	-840.096
48	-299.029	-839.101	-283.325	-861.062
49	-278.236	-855.954	-263.826	-876.105
50	-260.272	-872.546	-248.278	-889.320
51	-244.940	-886.036	-234.998	-899.938
52	-231.991	-896.986	-223.711	-908.565
53	-221.127	-906.002	-216.440	-912.557
54	-214.164	-910.295	-214.271	-910.145

COMBINACION 19 G1 + G2 + PRETD + SCMIN-EC1

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
55	-212.734	-908.686	-217.637	-901.830
56	-216.865	-901.091	-226.720	-887.309
57	-226.633	-887.217	-237.591	-871.893
58	-242.391	-876.684	-322.639	-764.460
59	-241.924	-645.531	-266.136	-614.957
60	-265.838	-616.947	-256.806	-628.352

COMBINACION 20 G1 + G2 + PRETD + 0.60 SCMIN-EC1

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
1	-244.954	-642.563	-265.099	-617.124
2	-261.188	-616.690	-192.409	-703.543
3	-269.955	-829.692	-256.693	-848.238
4	-255.862	-847.407	-247.370	-859.284
5	-246.894	-858.826	-243.662	-863.345
6	-243.742	-863.413	-245.502	-860.952
7	-246.236	-861.716	-252.810	-852.523
8	-254.291	-854.027	-265.647	-838.146
9	-267.891	-840.427	-282.866	-819.486
10	-285.424	-822.067	-302.066	-798.794
11	-305.040	-801.778	-323.725	-775.648
12	-327.048	-778.945	-348.117	-749.480
13	-351.672	-753.019	-374.047	-721.730
14	-379.147	-726.833	-408.914	-685.205
15	-409.925	-686.216	-442.606	-640.514
16	-443.368	-641.266	-476.378	-595.103
17	-476.360	-595.847	-505.180	-555.545
18	-506.359	-562.382	-585.135	-452.217
19	-485.252	-368.298	-447.158	-416.404
20	-442.419	-414.836	-317.317	-572.812
21	-325.551	-555.724	-471.387	-371.566
22	-461.864	-367.033	-532.919	-485.644
23	-521.997	-479.288	-478.293	-540.406
24	-469.869	-540.482	-430.464	-595.588
25	-421.095	-592.653	-381.640	-647.829
26	-372.062	-642.808	-343.785	-682.352
27	-336.078	-674.677	-319.745	-697.518
28	-312.754	-690.521	-303.556	-703.386
29	-297.778	-697.616	-295.817	-700.357
30	-291.551	-696.116	-294.673	-691.750
31	-292.116	-689.174	-290.099	-691.995
32	-292.684	-694.591	-295.424	-690.758
33	-299.696	-695.053	-309.733	-681.016
34	-315.533	-686.816	-334.960	-659.648
35	-341.953	-666.666	-373.331	-622.785
36	-381.028	-630.518	-426.981	-566.254
37	-430.984	-579.057	-484.098	-504.779
38	-486.838	-516.940	-532.811	-452.648
39	-538.847	-464.760	-485.916	-326.938
40	-490.372	-336.853	-320.690	-551.124
41	-347.097	-528.519	-431.255	-422.246
42	-430.366	-424.112	-420.431	-436.658
43	-513.551	-536.235	-503.388	-550.447
44	-503.830	-556.639	-469.383	-604.811
45	-467.834	-607.931	-433.068	-656.550
46	-432.754	-656.292	-400.952	-700.765
47	-400.199	-700.028	-371.327	-740.404
48	-370.317	-739.409	-348.812	-769.483
49	-343.722	-764.375	-323.512	-792.638
50	-319.957	-789.080	-302.163	-813.963
51	-298.826	-810.679	-283.087	-832.689
52	-280.079	-829.738	-266.002	-849.424
53	-263.418	-846.860	-252.938	-861.516
54	-250.662	-859.254	-244.978	-867.204

COMBINACION 20 G1 + G2 + PRETD + 0.60 SCMIN-EC1

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
55	-243.442	-865.742	-242.560	-866.976
56	-241.787	-866.238	-245.854	-860.551
57	-245.768	-860.458	-250.940	-853.225
58	-255.740	-858.015	-330.253	-753.812
59	-249.296	-636.222	-267.995	-612.610
60	-268.097	-614.094	-263.434	-619.982

COMBINACION 21 G1 + G2 + 0.9 PRETD

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
1	-245.482	-546.707	-250.661	-540.167
2	-248.525	-538.030	-194.274	-606.536
3	-264.836	-716.129	-263.106	-718.549
4	-262.358	-717.802	-264.878	-714.277
5	-264.461	-713.850	-270.843	-704.925
6	-270.915	-704.986	-280.903	-691.018
7	-281.562	-691.708	-294.990	-672.929
8	-296.323	-674.284	-313.164	-650.733
9	-315.186	-652.782	-334.394	-625.920
10	-336.696	-628.243	-356.515	-600.527
11	-359.193	-603.211	-379.959	-574.172
12	-382.948	-577.141	-404.965	-546.350
13	-408.164	-549.537	-430.470	-518.343
14	-435.061	-522.934	-463.131	-483.681
15	-464.041	-484.589	-493.839	-442.918
16	-494.526	-443.595	-526.142	-399.381
17	-526.409	-399.655	-558.134	-355.289
18	-561.316	-358.476	-642.617	-244.782
19	-550.815	-187.401	-531.201	-212.169
20	-528.196	-209.167	-465.144	-288.788
21	-457.681	-292.191	-556.787	-167.044
22	-550.202	-160.456	-579.843	-296.933
23	-571.728	-288.813	-510.342	-374.659
24	-505.955	-370.260	-457.877	-437.495
25	-451.862	-431.474	-417.312	-479.791
26	-410.400	-472.882	-387.468	-504.950
27	-380.544	-498.026	-366.849	-517.178
28	-360.556	-510.883	-353.759	-520.389
29	-348.559	-515.196	-346.807	-517.647
30	-342.968	-513.829	-344.960	-511.043
31	-342.658	-508.725	-341.040	-510.987
32	-343.367	-513.323	-345.515	-510.319
33	-349.361	-514.182	-356.550	-504.128
34	-361.769	-509.349	-375.879	-489.617
35	-382.183	-495.919	-405.533	-463.265
36	-412.473	-470.207	-447.487	-421.242
37	-454.394	-428.142	-502.930	-360.267
38	-508.934	-366.264	-569.011	-282.249
39	-576.722	-289.963	-549.749	-152.277
40	-555.930	-158.460	-457.532	-282.715
41	-466.493	-281.066	-529.495	-201.509
42	-529.789	-201.807	-493.562	-247.554
43	-582.991	-313.685	-560.453	-345.204
44	-563.009	-347.757	-529.480	-394.645
45	-529.839	-395.003	-498.027	-439.491
46	-497.766	-439.228	-467.758	-481.192
47	-467.079	-480.530	-438.820	-520.049
48	-437.913	-519.151	-415.404	-550.628
49	-410.824	-546.031	-388.593	-577.121
50	-385.391	-573.920	-364.451	-603.205
51	-361.446	-600.250	-341.466	-628.191
52	-338.758	-625.537	-319.384	-652.630
53	-317.059	-650.321	-300.039	-674.123
54	-297.991	-672.087	-284.401	-691.093

COMBINACION 21 G1 + G2 + 0.9 PRETD

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
55	-283.021	-689.774	-272.872	-703.968
56	-272.176	-703.303	-265.590	-712.515
57	-265.511	-712.433	-259.033	-721.492
58	-263.353	-725.803	-318.459	-648.740
59	-244.924	-546.641	-249.312	-541.100
60	-249.944	-541.753	-245.676	-547.143

COMBINACION 22 G1 + G2 + 0.9 PRETD + TEMP

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
1	-248.011	-543.513	-258.612	-530.126
2	-256.477	-527.989	-207.648	-589.649
3	-278.647	-696.815	-282.520	-691.400
4	-281.771	-690.653	-289.889	-679.301
5	-289.474	-678.869	-301.455	-662.115
6	-301.530	-662.172	-317.111	-640.382
7	-317.774	-641.067	-336.804	-614.454
8	-338.136	-615.810	-360.580	-584.423
9	-362.598	-586.479	-387.410	-551.780
10	-389.710	-554.106	-415.133	-518.554
11	-417.809	-521.239	-444.178	-484.364
12	-447.168	-487.332	-474.792	-448.701
13	-477.990	-451.888	-505.902	-412.854
14	-510.492	-417.448	-544.166	-370.356
15	-545.077	-371.265	-580.482	-321.753
16	-581.168	-322.430	-618.390	-270.377
17	-618.657	-270.651	-655.990	-218.442
18	-659.172	-221.629	-746.082	-100.091
19	-650.996	-60.895	-636.814	-78.805
20	-633.810	-75.802	-576.187	-148.566
21	-565.321	-156.267	-664.423	-31.123
22	-657.837	-24.536	-691.004	-141.478
23	-682.890	-133.359	-621.500	-219.210
24	-617.113	-214.811	-569.032	-282.050
25	-563.017	-276.029	-528.463	-324.350
26	-521.551	-317.442	-498.616	-349.516
27	-491.693	-342.591	-477.993	-361.749
28	-471.700	-355.454	-464.900	-364.964
29	-459.700	-359.770	-457.945	-362.225
30	-454.107	-358.406	-456.095	-355.626
31	-453.793	-353.308	-452.173	-355.574
32	-454.500	-357.909	-456.646	-354.908
33	-460.491	-358.772	-467.678	-348.721
34	-472.897	-353.943	-487.005	-334.213
35	-493.309	-340.515	-516.656	-307.865
36	-523.596	-314.807	-558.608	-265.844
37	-565.515	-272.745	-614.049	-204.873
38	-620.052	-210.870	-680.126	-126.859
39	-687.837	-134.574	-657.335	-16.421
40	-663.516	-22.604	-565.115	-146.862
41	-577.478	-140.917	-635.068	-68.194
42	-635.361	-68.493	-593.722	-121.074
43	-686.435	-169.024	-658.306	-208.361
44	-660.863	-210.912	-621.742	-265.621
45	-622.101	-265.979	-584.698	-318.285
46	-584.435	-318.026	-548.839	-367.804
47	-548.159	-367.145	-514.309	-414.482
48	-513.396	-413.591	-485.295	-452.890
49	-480.712	-448.295	-452.882	-487.215
50	-449.682	-484.013	-423.141	-521.129
51	-420.134	-518.177	-394.557	-553.946
52	-391.846	-551.296	-366.872	-586.220
53	-364.548	-583.911	-341.917	-615.559
54	-339.872	-613.520	-320.675	-640.366

COMBINACION 22 G1 + G2 + 0.9 PRETD + TEMP

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
55	-319.294	-639.049	-303.534	-661.088
56	-302.837	-660.426	-290.645	-677.476
57	-290.564	-677.397	-278.478	-694.300
58	-282.796	-698.613	-332.291	-629.397
59	-258.318	-529.727	-257.271	-531.050
60	-257.905	-531.701	-248.203	-543.952

COMBINACION 23 G1 + G2 + 0.9 PRETD + SCMAX-IPF + 0.6 TEMP

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
1	-272.475	-512.621	-299.696	-478.248
2	-299.620	-473.509	-292.163	-482.926
3	-370.604	-568.218	-419.342	-500.061
4	-418.593	-499.313	-464.459	-435.172
5	-464.060	-434.719	-506.460	-375.425
6	-506.534	-375.483	-545.748	-320.645
7	-546.409	-321.332	-582.270	-271.182
8	-583.602	-272.537	-615.426	-228.033
9	-617.453	-230.076	-644.606	-192.104
10	-646.909	-194.425	-667.882	-165.095
11	-670.565	-167.773	-685.601	-146.745
12	-688.586	-149.720	-697.258	-137.593
13	-700.456	-140.780	-702.641	-137.725
14	-707.234	-142.314	-708.389	-140.699
15	-709.299	-141.608	-704.974	-147.656
16	-705.661	-148.332	-695.870	-162.025
17	-696.782	-161.397	-688.132	-173.494
18	-692.993	-174.333	-749.160	-95.785
19	-655.890	-54.715	-623.923	-95.082
20	-625.600	-86.168	-564.302	-163.575
21	-556.005	-168.030	-649.679	-49.742
22	-645.426	-40.209	-690.907	-141.614
23	-683.072	-133.105	-664.639	-158.882
24	-660.712	-153.840	-653.918	-163.341
25	-648.208	-156.893	-651.446	-152.366
26	-644.936	-144.895	-674.471	-103.590
27	-668.036	-95.982	-697.647	-54.573
28	-691.350	-48.285	-715.947	-13.886
29	-710.748	-8.693	-728.487	16.115
30	-724.653	19.940	-734.215	33.311
31	-731.909	35.625	-725.714	26.961
32	-728.041	24.625	-713.655	4.507
33	-717.504	0.648	-696.254	-29.068
34	-701.471	-34.293	-675.156	-71.093
35	-681.475	-77.373	-652.358	-118.092
36	-659.326	-124.995	-648.045	-140.771
37	-655.144	-147.402	-662.345	-137.332
38	-668.674	-142.874	-685.466	-119.391
39	-693.611	-126.499	-644.918	-32.100
40	-662.148	-24.331	-556.795	-157.368
41	-574.734	-144.382	-632.891	-70.943
42	-635.593	-68.200	-597.302	-116.553
43	-696.971	-154.290	-684.679	-171.479
44	-690.804	-169.042	-688.591	-172.136
45	-689.264	-172.055	-688.236	-173.492
46	-690.761	-169.333	-697.055	-160.531
47	-696.374	-159.873	-697.227	-158.680
48	-696.320	-157.781	-696.153	-158.015
49	-691.569	-153.422	-684.890	-162.762
50	-681.683	-159.570	-668.690	-177.740
51	-665.686	-174.785	-646.789	-201.212
52	-644.076	-198.563	-618.995	-233.639
53	-616.675	-231.323	-586.909	-272.949
54	-584.864	-270.910	-551.100	-318.127

COMBINACION 23 G1 + G2 + 0.9 PRETD + SCMAX-IPF + 0.6 TEMP

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
55	-549.726	-316.800	-512.642	-368.661
56	-511.952	-367.989	-471.655	-424.342
57	-471.573	-424.265	-424.025	-490.758
58	-428.344	-495.071	-435.265	-485.392
59	-358.021	-403.825	-310.759	-463.506
60	-311.394	-464.156	-274.713	-510.476

COMBINACION 24 G1 + G2 + 0.9 PRETD + TEMP + 0.80 SCMAX-IPF

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
1	-268.392	-517.778	-294.023	-485.411
2	-293.536	-481.192	-279.539	-498.866
3	-356.632	-587.757	-398.190	-529.641
4	-397.441	-528.894	-437.549	-472.805
5	-437.147	-472.356	-475.255	-419.063
6	-475.330	-419.120	-511.607	-368.389
7	-512.270	-369.074	-546.557	-321.124
8	-547.889	-322.480	-579.630	-278.091
9	-581.654	-280.139	-610.132	-240.314
10	-612.434	-242.637	-636.090	-209.555
11	-638.771	-212.235	-657.866	-185.531
12	-660.852	-188.504	-675.109	-168.566
13	-678.307	-171.754	-687.431	-158.994
14	-692.023	-163.585	-701.475	-150.367
15	-702.386	-151.276	-707.801	-143.703
16	-708.488	-144.378	-709.893	-142.414
17	-710.676	-141.966	-713.018	-138.692
18	-717.543	-140.001	-781.653	-50.345
19	-686.970	-15.469	-660.297	-49.150
20	-661.038	-41.418	-602.212	-115.702
21	-592.313	-122.182	-687.071	-2.524
22	-682.351	6.420	-726.498	-91.842
23	-718.607	-83.410	-691.582	-121.204
24	-687.562	-116.291	-672.510	-137.341
25	-666.739	-130.978	-662.418	-137.022
26	-655.827	-129.664	-674.868	-103.036
27	-668.335	-95.565	-689.283	-66.270
28	-682.986	-59.981	-701.303	-34.366
29	-696.104	-29.172	-709.943	-9.818
30	-706.108	-5.994	-714.154	5.257
31	-711.849	7.572	-706.568	0.186
32	-708.895	-2.150	-697.815	-17.645
33	-701.663	-21.504	-686.100	-43.268
34	-691.317	-48.493	-673.086	-73.988
35	-679.402	-80.272	-660.777	-106.318
36	-667.739	-113.230	-665.716	-116.058
37	-672.777	-122.744	-688.244	-101.114
38	-694.507	-106.748	-719.955	-71.161
39	-728.014	-78.389	-681.829	14.510
40	-696.849	19.488	-592.885	-111.794
41	-610.798	-98.842	-667.110	-27.732
42	-669.330	-25.598	-628.637	-76.984
43	-727.966	-110.945	-710.718	-135.066
44	-716.129	-133.626	-704.745	-149.545
45	-705.355	-149.552	-695.263	-163.665
46	-697.230	-160.287	-693.358	-165.702
47	-692.676	-165.044	-684.799	-176.059
48	-683.890	-175.164	-676.346	-185.714
49	-671.762	-181.122	-659.062	-198.883
50	-655.856	-195.689	-638.362	-220.153
51	-635.356	-217.200	-613.332	-248.000
52	-610.618	-245.353	-583.766	-282.905
53	-581.446	-280.589	-551.312	-322.731
54	-549.267	-320.690	-516.623	-366.342

COMBINACION 24 G1 + G2 + 0.9 PRETD + TEMP + 0.80 SCMAX-IPF

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
55	-515.247	-365.018	-480.632	-413.425
56	-479.940	-412.756	-443.471	-463.757
57	-443.388	-463.681	-401.138	-522.765
58	-405.456	-527.079	-419.097	-508.003
59	-342.366	-423.593	-302.608	-473.798
60	-303.243	-474.449	-270.219	-516.150

COMBINACION 25 G1 + G2 + 0.9 PRETD + 0.60 SCMAX-IPF + 0.5 TEMP

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
1	-262.032	-525.808	-281.195	-501.610
2	-280.295	-497.911	-254.879	-530.006
3	-330.230	-624.679	-359.566	-583.655
4	-358.817	-582.908	-388.129	-541.917
5	-387.722	-541.474	-416.499	-501.232
6	-416.573	-501.290	-444.879	-461.705
7	-445.540	-462.392	-473.212	-423.695
8	-474.544	-425.049	-501.160	-387.829
9	-503.184	-389.876	-527.943	-355.251
10	-530.246	-357.573	-551.542	-327.791
11	-554.223	-330.472	-572.335	-305.143
12	-575.321	-308.116	-590.116	-287.425
13	-593.315	-290.612	-604.333	-275.204
14	-608.925	-279.794	-621.631	-262.026
15	-622.541	-262.935	-632.650	-248.798
16	-633.337	-249.474	-640.893	-238.907
17	-641.547	-238.640	-649.832	-227.053
18	-654.022	-228.831	-721.028	-135.127
19	-627.886	-90.078	-601.620	-123.246
20	-601.424	-116.697	-540.185	-194.029
21	-531.745	-198.665	-627.591	-77.634
22	-622.405	-69.279	-662.044	-181.978
23	-654.097	-173.624	-618.483	-223.430
24	-614.371	-218.645	-591.063	-251.240
25	-585.232	-244.963	-573.353	-261.574
26	-566.682	-254.328	-575.231	-242.374
27	-568.600	-235.039	-580.888	-217.855
28	-574.592	-211.564	-586.631	-194.728
29	-581.432	-189.534	-591.374	-175.631
30	-587.538	-171.808	-594.072	-162.672
31	-591.767	-160.357	-587.403	-166.460
32	-589.730	-168.796	-581.957	-179.666
33	-585.805	-183.526	-575.931	-197.335
34	-581.148	-202.558	-571.003	-216.746
35	-577.316	-223.035	-569.185	-234.405
36	-576.142	-241.324	-583.379	-231.203
37	-590.401	-237.943	-614.136	-204.750
38	-620.334	-210.475	-654.440	-162.780
39	-662.412	-170.130	-621.913	-61.151
40	-634.723	-58.963	-532.151	-188.487
41	-546.975	-179.435	-606.313	-104.505
42	-608.051	-102.979	-569.828	-151.246
43	-665.861	-197.795	-648.688	-221.811
44	-653.386	-221.370	-637.864	-243.076
45	-638.411	-243.171	-624.286	-262.923
46	-625.697	-260.322	-616.688	-272.921
47	-616.007	-272.262	-604.433	-288.448
48	-603.525	-287.551	-593.638	-301.377
49	-589.056	-296.782	-575.372	-315.918
50	-572.167	-312.723	-555.211	-336.436
51	-552.206	-333.481	-532.093	-361.609
52	-529.381	-358.959	-505.799	-391.938
53	-503.477	-389.625	-478.024	-425.219
54	-475.978	-423.181	-449.499	-460.211

COMBINACION 25 G1 + G2 + 0.9 PRETD + 0.60 SCMAX-IPF + 0.5 TEMP

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
55	-448.122	-458.888	-421.026	-496.781
56	-420.334	-496.112	-392.737	-534.706
57	-392.655	-534.628	-360.751	-579.244
58	-365.070	-583.557	-390.479	-548.023
59	-314.657	-458.583	-287.294	-493.136
60	-287.928	-493.788	-263.452	-524.696

COMBINACION 26 G1 + G2 + 0.9 PRETD + SCMIN-IPF

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
1	-208.625	-593.249	-241.168	-552.155
2	-237.820	-551.548	-179.682	-624.963
3	-249.692	-737.307	-238.292	-753.250
4	-237.543	-752.503	-230.215	-762.752
5	-229.781	-762.348	-226.277	-767.247
6	-226.349	-767.309	-226.451	-767.166
7	-227.112	-767.854	-230.655	-762.899
8	-231.987	-764.254	-237.452	-756.611
9	-239.470	-758.667	-245.965	-749.584
10	-248.266	-751.908	-254.841	-742.713
11	-257.518	-745.400	-264.526	-735.599
12	-267.518	-738.564	-275.020	-728.072
13	-278.219	-731.258	-285.509	-721.063
14	-290.100	-725.657	-302.662	-708.088
15	-303.573	-708.997	-317.246	-689.875
16	-317.931	-690.554	-332.770	-669.803
17	-332.392	-670.979	-343.300	-655.724
18	-340.567	-667.184	-382.309	-608.810
19	-290.869	-515.655	-210.926	-616.604
20	-201.682	-621.481	-62.267	-797.531
21	-33.484	-827.856	-249.799	-554.700
22	-240.881	-551.058	-366.030	-595.939
23	-351.254	-597.136	-368.790	-572.613
24	-352.299	-585.140	-346.167	-593.716
25	-328.949	-603.362	-313.845	-624.485
26	-298.088	-629.945	-278.457	-657.398
27	-271.045	-651.156	-260.086	-666.482
28	-253.795	-660.185	-249.733	-665.864
29	-244.533	-660.671	-245.513	-659.302
30	-241.672	-655.487	-246.394	-648.883
31	-244.094	-646.562	-245.200	-645.015
32	-247.528	-647.350	-252.396	-640.542
33	-256.240	-644.408	-266.146	-630.554
34	-271.367	-635.773	-285.599	-615.870
35	-291.886	-622.195	-310.122	-596.692
36	-317.035	-603.672	-345.070	-564.466
37	-344.868	-581.309	-369.229	-547.241
38	-365.367	-567.035	-370.256	-560.198
39	-368.533	-581.105	-266.652	-509.764
40	-261.784	-529.900	-58.618	-786.453
41	-46.046	-811.995	-192.285	-627.329
42	-190.170	-630.668	-230.109	-580.235
43	-304.063	-703.753	-338.970	-654.937
44	-333.093	-669.283	-331.476	-671.545
45	-324.336	-682.390	-309.543	-703.077
46	-306.493	-706.714	-289.839	-730.003
47	-289.162	-729.339	-274.249	-750.194
48	-273.339	-749.300	-264.166	-762.128
49	-259.584	-757.533	-250.685	-769.978
50	-247.485	-766.776	-239.871	-777.424
51	-236.865	-774.471	-230.209	-783.779
52	-227.502	-781.123	-221.451	-789.585
53	-219.124	-787.280	-215.421	-792.458
54	-213.373	-790.422	-213.094	-790.812

COMBINACION 26 G1 + G2 + 0.9 PRETD + SCMIN-IPF

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
55	-211.711	-789.498	-214.844	-785.116
56	-214.143	-784.461	-220.823	-775.119
57	-220.746	-775.035	-227.533	-765.543
58	-231.852	-769.855	-300.211	-674.260
59	-227.255	-568.953	-244.059	-547.733
60	-243.313	-550.126	-223.106	-575.643

COMBINACION 27 G1 + G2 + 0.9 PRETD + 0.60 SCMIN-IPF

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
1	-223.368	-574.632	-244.965	-547.360
2	-242.102	-546.140	-185.519	-617.592
3	-255.750	-728.836	-248.218	-739.370
4	-247.469	-738.622	-244.080	-743.362
5	-243.652	-742.949	-244.103	-742.318
6	-244.175	-742.379	-248.232	-736.707
7	-248.892	-737.395	-256.389	-726.911
8	-257.721	-728.266	-267.737	-714.260
9	-269.756	-716.313	-281.336	-700.119
10	-283.638	-702.442	-295.511	-685.839
11	-298.188	-688.524	-310.699	-671.029
12	-313.690	-673.994	-326.998	-655.383
13	-330.197	-658.569	-343.494	-639.975
14	-348.084	-644.568	-366.850	-618.325
15	-367.760	-619.234	-387.883	-591.093
16	-388.569	-591.771	-410.119	-561.634
17	-409.999	-562.449	-429.234	-535.550
18	-428.866	-543.701	-486.432	-463.199
19	-394.847	-384.353	-339.036	-454.830
20	-332.288	-456.556	-223.417	-594.034
21	-203.163	-613.590	-372.594	-399.637
22	-364.609	-394.817	-451.555	-476.336
23	-439.444	-473.807	-425.411	-493.431
24	-413.762	-499.188	-390.851	-531.228
25	-378.114	-534.607	-355.232	-566.607
26	-343.012	-567.120	-322.061	-596.419
27	-314.845	-589.904	-302.791	-606.761
28	-296.499	-600.464	-291.344	-607.674
29	-286.144	-602.481	-286.030	-602.640
30	-282.190	-598.823	-285.820	-593.747
31	-283.519	-591.427	-283.536	-591.404
32	-285.863	-593.739	-289.643	-588.453
33	-293.488	-592.318	-302.308	-579.984
34	-307.528	-585.203	-321.711	-565.368
35	-328.005	-571.684	-348.287	-543.321
36	-355.210	-550.286	-386.037	-507.176
37	-388.678	-520.042	-422.710	-472.451
38	-422.794	-486.726	-449.758	-449.018
39	-451.809	-464.648	-379.891	-366.770
40	-379.442	-381.324	-218.183	-584.958
41	-214.225	-599.623	-327.168	-457.001
42	-326.018	-459.124	-335.490	-447.162
43	-415.634	-547.726	-427.563	-531.044
44	-425.060	-540.673	-410.678	-560.785
45	-406.537	-567.435	-384.936	-597.643
46	-383.002	-599.720	-361.007	-630.479
47	-360.329	-629.816	-340.078	-658.136
48	-339.168	-657.241	-324.661	-677.528
49	-320.080	-672.933	-305.848	-692.835
50	-302.647	-689.634	-289.703	-707.736
51	-286.697	-704.783	-274.712	-721.543
52	-272.004	-718.889	-260.624	-734.803
53	-258.298	-732.496	-249.268	-745.124
54	-247.221	-743.088	-241.617	-750.925

COMBINACION 27 G1 + G2 + 0.9 PRETD + 0.60 SCMIN-IPF

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
55	-240.235	-749.608	-238.055	-752.657
56	-237.356	-751.998	-238.730	-750.077
57	-238.652	-749.994	-240.133	-747.923
58	-244.453	-752.234	-307.510	-664.051
59	-234.323	-560.028	-246.160	-545.080
60	-245.966	-546.777	-232.134	-564.243

COMBINACION 28 G1 + G2 + 0.9 PRETD + SCMAX-EC1 + 0.6 TEMP

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
1	-272.931	-512.045	-300.443	-477.304
2	-303.446	-468.677	-302.560	-469.796
3	-379.716	-555.475	-433.325	-480.506
4	-432.575	-479.760	-482.449	-410.015
5	-482.032	-409.587	-529.305	-343.477
6	-529.380	-343.535	-571.199	-285.053
7	-571.860	-285.739	-610.991	-231.017
8	-612.323	-232.372	-645.365	-186.165
9	-647.387	-188.215	-673.849	-151.208
10	-676.150	-153.533	-697.229	-124.055
11	-699.908	-126.738	-713.246	-108.085
12	-716.233	-111.057	-722.066	-102.900
13	-725.263	-106.088	-724.889	-106.611
14	-729.482	-111.201	-725.843	-116.289
15	-726.754	-117.198	-719.455	-127.405
16	-720.142	-128.081	-711.024	-140.833
17	-711.823	-140.362	-698.935	-158.386
18	-707.090	-154.618	-756.040	-86.164
19	-667.285	-40.326	-633.529	-82.953
20	-635.806	-73.281	-569.850	-156.568
21	-567.571	-153.425	-657.369	-40.030
22	-654.461	-28.800	-687.593	-146.249
23	-686.910	-127.738	-650.918	-178.071
24	-656.901	-159.169	-648.500	-170.917
25	-652.053	-151.517	-666.541	-131.255
26	-667.291	-113.632	-697.074	-71.982
27	-690.584	-64.451	-719.566	-23.920
28	-713.271	-17.628	-742.184	22.804
29	-736.984	27.998	-758.303	57.811
30	-754.467	61.633	-766.244	78.102
31	-763.940	80.418	-759.254	73.864
32	-761.579	71.527	-747.557	51.918
33	-751.403	48.054	-729.263	17.093
34	-734.479	11.868	-707.100	-26.420
35	-713.420	-32.700	-682.457	-76.000
36	-689.420	-82.910	-657.415	-127.667
37	-668.250	-129.075	-654.232	-148.678
38	-668.622	-142.947	-682.049	-124.170
39	-697.820	-120.613	-651.193	-24.176
40	-663.271	-22.913	-566.140	-145.567
41	-581.595	-135.719	-637.586	-65.015
42	-639.906	-62.754	-603.685	-108.492
43	-700.143	-149.854	-691.340	-162.164
44	-701.034	-154.736	-699.861	-156.376
45	-706.608	-147.800	-713.696	-137.888
46	-716.823	-132.887	-725.671	-120.513
47	-724.989	-119.855	-726.023	-118.410
48	-725.116	-117.511	-724.571	-118.273
49	-719.987	-113.681	-714.970	-120.697
50	-711.763	-117.504	-699.084	-135.236
51	-696.081	-132.279	-677.063	-158.875
52	-674.351	-156.226	-649.443	-191.058
53	-647.123	-188.743	-615.130	-233.483
54	-613.084	-231.445	-579.195	-278.837

COMBINACION 28 G1 + G2 + 0.9 PRETD + SCMAX-EC1 + 0.6 TEMP

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
55	-577.821	-277.511	-538.742	-332.161
56	-538.061	-331.477	-493.675	-393.548
57	-493.592	-393.472	-443.659	-463.301
58	-447.979	-467.613	-452.468	-461.335
59	-374.679	-382.790	-324.136	-446.614
60	-325.707	-446.082	-275.629	-509.319

COMBINACION 29 G1 + G2 + 0.9 PRETD + TEMP + 0.80 SCMAX-EC1

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
1	-268.757	-517.316	-294.621	-484.656
2	-296.597	-477.326	-287.857	-488.363
3	-363.922	-577.563	-409.376	-513.998
4	-408.627	-513.251	-451.940	-452.680
5	-451.524	-452.250	-493.531	-393.505
6	-493.607	-393.562	-531.968	-339.915
7	-532.631	-340.600	-569.534	-288.993
8	-570.866	-290.348	-603.581	-244.598
9	-605.600	-246.651	-633.527	-207.597
10	-635.826	-209.924	-659.568	-176.723
11	-662.245	-179.407	-679.983	-154.602
12	-682.970	-157.573	-694.955	-140.813
13	-698.153	-144.000	-705.230	-134.104
14	-709.822	-138.695	-715.439	-130.839
15	-716.350	-131.747	-719.386	-127.502
16	-720.073	-128.178	-722.017	-125.460
17	-722.709	-125.138	-721.660	-126.606
18	-728.821	-124.230	-787.157	-42.649
19	-696.086	-3.957	-667.982	-39.447
20	-669.203	-31.108	-606.651	-110.097
21	-601.566	-110.498	-693.224	5.246
22	-689.580	15.547	-723.847	-95.549
23	-721.677	-79.117	-680.605	-136.555
24	-684.514	-120.554	-668.176	-143.402
25	-669.815	-126.677	-674.494	-120.133
26	-673.712	-104.653	-692.950	-77.749
27	-686.373	-70.340	-706.818	-41.748
28	-700.523	-35.456	-722.292	-5.013
29	-717.093	0.181	-733.796	23.539
30	-729.959	27.360	-739.777	41.090
31	-737.474	43.407	-733.399	37.709
32	-735.726	35.372	-724.937	20.284
33	-728.782	16.420	-712.507	-6.340
34	-717.724	-11.563	-698.641	-38.250
35	-704.958	-44.533	-684.856	-72.645
36	-691.815	-79.561	-673.213	-105.575
37	-683.261	-108.082	-681.753	-110.191
38	-694.466	-106.806	-717.222	-74.983
39	-731.381	-73.680	-686.849	20.849
40	-697.747	20.623	-600.362	-102.352
41	-616.286	-91.911	-670.865	-22.990
42	-672.780	-21.242	-633.744	-70.535
43	-730.503	-107.397	-716.046	-127.614
44	-724.313	-122.181	-713.761	-136.937
45	-719.230	-130.148	-715.631	-135.182
46	-718.080	-131.130	-716.251	-133.687
47	-715.569	-133.030	-707.836	-143.843
48	-706.927	-142.948	-699.080	-153.921
49	-694.497	-149.328	-683.125	-165.230
50	-679.920	-162.036	-662.676	-186.150
51	-659.672	-183.196	-637.551	-214.131
52	-634.838	-211.483	-608.125	-248.839
53	-605.804	-246.525	-573.888	-291.158
54	-571.843	-289.118	-539.099	-334.910

COMBINACION 29 G1 + G2 + 0.9 PRETD + TEMP + 0.80 SCMAX-EC1

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
55	-537.723	-333.586	-501.512	-384.225
56	-500.827	-383.546	-461.087	-439.121
57	-461.004	-439.046	-416.845	-500.800
58	-421.164	-505.112	-432.858	-488.758
59	-355.693	-406.765	-313.310	-460.285
60	-314.694	-459.989	-270.952	-515.225

COMBINACION 30 G1 + G2 + 0.9 PRETD + 0.60 SCMAX-EC1 + 0.5 TEMP

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
1	-262.306	-525.463	-281.644	-501.043
2	-282.591	-495.012	-261.117	-522.129
3	-335.698	-617.033	-367.955	-571.922
4	-367.206	-571.176	-398.922	-526.823
5	-398.505	-526.395	-430.206	-482.063
6	-430.280	-482.121	-460.149	-440.350
7	-460.811	-441.037	-490.444	-399.596
8	-491.777	-400.950	-519.123	-362.709
9	-521.144	-364.760	-545.490	-330.713
10	-547.790	-333.038	-569.150	-303.168
11	-571.829	-305.851	-588.922	-281.946
12	-591.910	-284.917	-605.001	-266.609
13	-608.199	-269.797	-617.682	-256.535
14	-622.274	-261.127	-632.103	-247.380
15	-633.014	-248.289	-641.339	-236.647
16	-642.025	-237.324	-649.986	-226.192
17	-650.572	-226.019	-656.314	-217.989
18	-662.481	-217.003	-725.156	-129.354
19	-634.723	-81.445	-607.384	-115.968
20	-607.548	-108.964	-543.514	-189.825
21	-538.685	-189.902	-632.206	-71.806
22	-627.826	-62.434	-660.056	-184.758
23	-656.400	-170.404	-610.250	-234.943
24	-612.085	-221.843	-587.813	-255.786
25	-587.538	-241.737	-582.411	-248.908
26	-580.096	-235.571	-588.792	-223.409
27	-582.129	-216.120	-594.040	-199.463
28	-587.745	-193.170	-602.374	-172.713
29	-597.174	-167.520	-609.264	-150.613
30	-605.427	-146.793	-613.289	-135.798
31	-610.986	-133.481	-607.527	-138.318
32	-609.853	-140.655	-602.299	-151.219
33	-606.144	-155.083	-595.736	-169.638
34	-600.953	-174.861	-590.169	-189.942
35	-596.483	-196.231	-587.245	-209.150
36	-594.198	-216.073	-589.001	-223.341
37	-598.264	-226.947	-609.268	-211.558
38	-620.303	-210.518	-652.390	-165.647
39	-664.937	-166.598	-625.678	-56.397
40	-635.396	-58.112	-537.759	-181.406
41	-551.092	-174.237	-609.129	-100.949
42	-610.639	-99.711	-573.658	-146.410
43	-667.765	-195.134	-652.685	-216.222
44	-659.523	-212.786	-644.625	-233.621
45	-648.817	-228.617	-639.562	-241.560
46	-641.334	-238.455	-633.857	-248.911
47	-633.176	-248.251	-621.711	-264.286
48	-620.802	-263.389	-610.689	-277.531
49	-606.106	-272.938	-593.420	-290.680
50	-590.215	-287.484	-573.447	-310.933
51	-570.443	-307.977	-550.257	-336.207
52	-547.546	-333.557	-524.068	-366.389
53	-521.746	-364.077	-494.957	-401.540
54	-492.910	-399.503	-466.356	-436.637

COMBINACION 30 G1 + G2 + 0.9 PRETD + 0.60 SCMAX-EC1 + 0.5 TEMP

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
55	-464.979	-435.315	-436.686	-474.881
56	-436.000	-474.205	-405.949	-516.229
57	-405.867	-516.151	-372.531	-562.771
58	-376.850	-567.082	-400.801	-533.589
59	-324.652	-445.962	-295.320	-483.001
60	-296.516	-482.943	-264.001	-524.002

COMBINACION 31 G1 + G2 + 0.9 PRETD + SCMIN-EC1

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
1	-198.468	-606.075	-238.694	-555.279
2	-233.997	-556.376	-174.837	-631.081
3	-244.617	-744.405	-231.795	-762.336
4	-231.047	-761.588	-220.907	-775.769
5	-220.469	-775.370	-214.157	-784.197
6	-214.229	-784.258	-211.522	-788.043
7	-212.183	-788.731	-212.918	-787.703
8	-214.251	-789.058	-218.402	-783.253
9	-220.420	-785.307	-226.940	-776.190
10	-229.241	-778.514	-236.370	-768.545
11	-239.046	-771.231	-247.126	-759.931
12	-250.118	-762.897	-259.455	-749.839
13	-262.655	-753.024	-272.277	-739.568
14	-276.868	-744.161	-292.252	-722.646
15	-293.163	-723.555	-310.283	-699.613
16	-310.969	-700.291	-325.442	-680.050
17	-325.185	-681.057	-330.934	-673.017
18	-330.189	-681.697	-375.320	-618.583
19	-288.717	-518.372	-223.864	-600.266
20	-218.527	-600.210	-43.862	-820.772
21	-64.263	-788.990	-249.454	-555.135
22	-239.192	-553.190	-354.566	-611.971
23	-343.275	-608.295	-343.939	-607.366
24	-333.636	-611.240	-327.299	-620.101
25	-316.811	-620.337	-296.040	-649.383
26	-285.962	-646.902	-271.097	-667.690
27	-264.150	-660.798	-258.494	-668.708
28	-252.202	-662.412	-249.731	-665.867
29	-244.531	-660.675	-247.001	-657.221
30	-243.161	-653.404	-248.082	-646.522
31	-245.781	-644.202	-242.384	-648.953
32	-244.712	-651.288	-243.210	-653.388
33	-247.054	-657.254	-250.593	-652.305
34	-255.812	-657.525	-266.274	-642.894
35	-272.561	-649.220	-292.241	-621.698
36	-299.158	-628.673	-330.366	-585.029
37	-331.154	-600.487	-359.950	-560.218
38	-359.401	-575.378	-363.636	-569.455
39	-367.127	-583.071	-279.690	-493.301
40	-281.851	-504.560	-56.315	-789.361
41	-92.374	-753.494	-198.833	-619.060
42	-197.101	-621.916	-229.462	-581.051
43	-306.816	-699.903	-325.975	-673.110
44	-324.533	-681.254	-310.933	-700.274
45	-308.046	-705.169	-290.805	-729.281
46	-290.504	-729.074	-275.019	-750.729
47	-274.341	-750.066	-260.602	-769.279
48	-259.693	-768.383	-251.689	-779.576
49	-247.108	-774.980	-239.379	-785.788
50	-236.180	-782.586	-229.735	-791.598
51	-226.730	-788.644	-221.245	-796.314
52	-218.538	-793.659	-213.657	-800.484
53	-211.331	-798.177	-208.794	-801.725
54	-206.746	-799.689	-207.635	-798.447

COMBINACION 31 G1 + G2 + 0.9 PRETD + SCMIN-EC1

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
55	-206.251	-797.133	-210.565	-791.100
56	-209.870	-790.435	-217.753	-779.412
57	-217.675	-779.330	-225.660	-768.163
58	-229.980	-772.474	-299.424	-675.359
59	-226.493	-569.914	-244.666	-546.966
60	-244.297	-548.884	-229.105	-568.068

COMBINACION 32 G1 + G2 + 0.9 PRETD + 0.60 SCMIN-EC1

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
1	-217.274	-582.328	-243.481	-549.234
2	-239.808	-549.037	-182.612	-621.263
3	-252.704	-733.095	-244.319	-744.821
4	-243.571	-744.073	-238.495	-751.172
5	-238.066	-750.762	-236.831	-752.488
6	-236.903	-752.549	-239.274	-749.234
7	-239.935	-749.922	-245.747	-741.793
8	-247.079	-743.148	-256.306	-730.245
9	-258.327	-732.297	-269.921	-716.082
10	-272.223	-718.405	-284.428	-701.338
11	-287.105	-704.023	-300.260	-685.627
12	-303.249	-688.595	-317.659	-668.443
13	-320.859	-671.629	-335.554	-651.078
14	-340.145	-655.670	-360.604	-627.060
15	-361.514	-627.969	-383.706	-596.935
16	-384.392	-597.612	-405.722	-567.783
17	-405.674	-568.497	-421.814	-545.926
18	-422.640	-552.408	-482.239	-469.062
19	-393.556	-385.984	-346.799	-445.027
20	-342.394	-443.794	-212.375	-607.979
21	-221.630	-590.270	-372.388	-399.898
22	-363.596	-396.096	-444.677	-485.955
23	-434.656	-480.503	-410.500	-514.284
24	-402.564	-514.848	-379.531	-547.058
25	-370.831	-544.792	-344.549	-581.547
26	-335.738	-577.294	-317.646	-602.594
27	-310.708	-595.690	-301.836	-608.096
28	-295.544	-601.800	-291.342	-607.676
29	-286.142	-602.483	-286.923	-601.391
30	-283.084	-597.574	-286.833	-592.330
31	-284.532	-590.011	-281.847	-593.766
32	-284.174	-596.102	-284.132	-596.160
33	-287.977	-600.025	-292.976	-593.034
34	-298.195	-598.255	-310.116	-581.584
35	-316.409	-587.900	-337.558	-558.325
36	-344.484	-565.286	-377.215	-519.514
37	-380.450	-531.549	-417.142	-480.238
38	-419.214	-491.732	-445.786	-454.573
39	-450.965	-465.828	-387.714	-356.891
40	-391.483	-366.120	-216.802	-586.703
41	-242.022	-564.523	-331.098	-452.039
42	-330.176	-453.872	-335.102	-447.652
43	-417.286	-545.416	-419.766	-541.947
44	-419.923	-547.856	-398.352	-578.022
45	-396.764	-581.103	-373.694	-613.365
46	-373.409	-613.136	-352.115	-642.915
47	-351.436	-642.252	-331.889	-669.587
48	-330.981	-668.690	-317.175	-687.997
49	-312.594	-683.400	-299.065	-702.321
50	-295.864	-699.119	-283.621	-716.241
51	-280.617	-713.286	-269.334	-729.065
52	-266.626	-726.410	-255.948	-741.343
53	-253.622	-739.035	-245.292	-750.684
54	-243.244	-748.648	-238.341	-755.505

COMBINACION 32 G1 + G2 + 0.9 PRETD + 0.60 SCMIN-EC1

TENSIONES CON AXIL FINAL

Barra	TS_1	TI_1	TS_2	T1_2
55	-236.959	-754.190	-235.488	-756.247
56	-234.793	-755.583	-236.887	-752.654
57	-236.809	-752.571	-239.009	-749.495
58	-243.329	-753.806	-307.039	-664.711
59	-233.866	-560.605	-246.525	-544.620
60	-246.556	-546.031	-235.733	-559.698

5.2. ESTADO LÍMITE DE DEFORMACIONES

En el presente apartado se calcula el valor de la flecha máxima, comprobándose que la relación flecha/luz se encuentra por debajo del valor 1/2000.

5.3. ESTADO LÍMITE DE VIBRACIONES

En este apartado se comprueba que la primera frecuencia de vibración en el modo de flexión se encuentra dentro del rango de valores admitidos por el EC-1.

Se calcula asimismo el valor del coeficiente de impacto según IPF y EC-1.

6 VERIFICACIÓN DEL E.L.U DE ROTURA POR TENSIONES NORMALES

6.1 FLEXIÓN LONGITUDINAL

En este apartado se comprueba el Estado Límite Último de rotura por flexión longitudinal de acuerdo con los criterios de la Normativa española vigente (EHE)

Los cálculos realizados han sido los siguientes:

1. Cálculo de la envolvente de esfuerzos flectores longitudinales para las distintas acciones consideradas en el proyecto del tablero. Los esfuerzos de cálculo se han combinado de acuerdo con los criterios del apartado 2 de este Anejo.

   La envolvente de esfuerzos flectores positivos se muestra en las tablas y gráficos adjuntos con la notación $\mathbf{M}_{\mathbf{d,\ pos}}$. La envolvente de flectores negativos se denota como $\mathbf{M}_{\mathbf{d,neg.}}$

2. Cálculo del momento último respuesta para cada una de las secciones (nudos de las barras) en las que se ha discretizado el tablero. El momento último respuesta se ha calculado considerando las distintas capas de armado y la posible tensión previa de las mismas. El cálculo se realiza con un programa de cálculo automático que permite obtener el momento último respuesta y los diagramas momento curvatura considerando las curvas tensión-deformación no lineales de los materiales (acero y hormigón).

Los momentos últimos de respuesta de cada sección se han calculado para un momento positivo ($\mathbf{M}_{u,pos}$) y para un momento negativo ($\mathbf{M}_{\mathbf{u,neg}}$). De un modo análogo se calculan los momentos de descompresión y de fisuración de la sección (momentos totales sobre la sección).

Las unidades de trabajo para los momentos son (mT).

COMBINACION 33 1.35(G1+G2)+1.5(SCMAX-IPF)+ MHIPER-PRETD

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	27.327	158.950	-284.948	-424.122	-289.407	-84.539
2	434.319	297.385	127.423	-828.604	-241.614	-117.308
3	828.605	241.608	117.330	-1173.036	-215.703	-107.214
4	1173.045	215.728	107.215	-1468.263	-200.251	-100.285
5	1468.252	200.211	100.285	-1713.492	-173.966	-90.169
6	1713.491	173.938	90.169	-1910.549	-147.653	-80.054
7	1910.549	147.729	80.054	-2059.510	-121.551	-69.938
8	2059.482	121.592	69.938	-2158.229	-106.286	-63.009
9	2158.238	106.164	63.009	-2207.929	-68.812	-52.894
10	2207.966	68.846	52.893	-2209.536	-31.982	-42.118
11	2209.543	32.092	42.118	-2162.859	-6.175	-35.188
12	2162.826	6.074	35.189	-2065.327	30.011	-24.135
13	2065.338	-30.052	24.136	-1919.621	65.214	-13.083
14	1919.625	-65.154	13.083	-1725.810	101.289	-2.030
15	1725.794	-101.337	2.030	-1482.459	126.860	5.837
16	1482.446	-126.889	-5.837	-1189.362	163.204	16.890
17	1189.653	-161.211	-19.315	-860.984	119.107	36.624
18	872.921	-125.167	-52.297	-552.586	199.149	55.618
19	580.177	-124.950	-39.751	-311.927	213.000	12.114
20	322.111	-243.402	-37.341	-62.842	384.043	20.170
21	62.107	473.047	-1.001	-470.577	-168.425	10.071
22	482.978	198.279	0.378	-918.980	-104.764	-63.617
23	920.115	107.431	66.734	-1397.936	-79.289	-64.627
24	1398.924	81.478	67.274	-1825.179	-82.368	-64.619
25	1826.510	84.820	67.944	-2196.559	-83.701	-64.733
26	2199.747	145.549	108.439	-2580.108	-120.662	-96.140
27	2580.117	120.690	96.141	-2876.785	-92.166	-82.646
28	2876.769	92.126	82.646	-3090.158	-63.242	-70.070
29	3090.150	63.248	70.070	-3220.149	-31.415	-56.575
30	3220.136	31.424	56.575	-3266.153	1.397	-43.081
31	3266.148	-1.412	43.081	-3228.255	22.288	-33.406
32	3228.304	-22.346	33.406	-3106.921	54.169	-19.912
33	3106.918	-54.079	19.912	-2901.597	84.421	-6.417
34	2901.596	-84.470	6.417	-2612.575	112.340	4.937
35	2612.611	-112.331	-4.937	-2240.289	138.277	20.228
36	2240.311	-138.266	-20.228	-1837.330	84.984	28.763
37	1837.842	-83.342	-28.364	-1410.917	82.440	37.693
38	1411.987	-80.320	-35.478	-933.452	105.303	45.355
39	934.922	-102.534	-42.494	-485.238	267.243	46.884
40	523.078	-186.605	-25.713	-81.731	512.184	32.638
41	106.707	367.138	-10.200	-353.721	-207.236	6.817
42	365.353	240.255	-15.426	-598.508	-62.106	23.292
43	619.485	124.224	3.190	-862.723	-116.256	-51.546
44	877.574	53.841	28.065	-1159.027	-116.096	-52.306
45	1159.914	118.411	52.928	-1437.737	-128.085	-75.203
46	1440.418	132.201	83.929	-1687.646	-106.686	-76.062
47	1687.662	106.787	76.062	-1885.488	-70.671	-65.008
48	1885.502	70.596	65.008	-2035.140	-35.451	-54.893
49	2035.168	35.526	54.893	-2136.734	0.441	-45.280
50	2136.713	-0.412	45.281	-2187.591	26.324	-38.351
51	2187.576	-26.332	38.351	-2190.000	63.287	-28.235
52	2189.984	-63.224	28.236	-2144.330	100.545	-18.120
53	2144.327	-100.537	18.120	-2049.730	115.831	-11.191
54	2049.737	-115.820	11.190	-1904.899	142.000	-1.074

COMBINACION 1 1.35(G1+G2)+1.5(SCMAX-IPF)+ MHIPER-PRETD

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
55	1904.882	-141.951	1.074	-1711.932	168.230	9.042
56	1711.959	-168.274	-9.041	-1470.841	194.521	19.157
57	1470.846	-194.421	-19.156	-1179.805	208.093	26.086
58	1179.769	-208.094	-26.086	-839.523	230.676	36.202
59	839.511	-230.758	-36.202	-449.355	289.930	46.318
60	449.358	-289.926	-46.318	-32.780	151.245	209.267

COMBINACION 34 1.35(G1+G2)+1.5(SCMIN-IPF)+ MHIPER-PRETD

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-34.470	226.288	369.190	-232.339	-9.028	34.148
2	221.452	-6.248	-42.453	-409.033	27.517	42.453
3	409.038	-27.542	-42.475	-568.852	18.942	42.475
4	568.858	-18.901	-42.475	-702.633	10.485	42.475
5	702.625	-10.523	-42.475	-810.384	2.258	42.475
6	810.386	-2.274	-42.475	-892.070	-5.941	42.475
7	892.079	5.993	-42.475	-946.560	-3.613	45.572
8	946.516	3.613	-45.572	-968.385	-12.200	45.572
9	968.403	12.112	-45.572	-962.299	-5.740	46.634
10	962.340	5.763	-46.634	-928.584	0.238	47.696
11	928.604	-0.129	-47.696	-867.222	2.166	47.696
12	867.189	-2.282	-47.696	-777.244	7.395	48.758
13	777.270	-7.408	-48.758	-659.647	11.588	49.820
14	659.660	-11.494	-49.820	-514.468	16.648	50.882
15	514.440	-16.606	-50.882	-341.198	18.239	50.882
16	341.192	-18.275	-50.882	-139.756	23.623	51.944
17	139.470	-25.639	-49.519	91.055	29.219	50.581
18	-114.098	-99.801	-28.652	439.345	266.749	35.113
19	-466.935	-340.951	-50.980	895.820	497.925	49.675
20	-918.497	-559.772	-59.952	1429.916	621.515	36.639
21	-1468.934	829.362	131.627	629.583	-604.391	-145.728
22	-645.046	575.323	135.990	-94.291	-287.463	-132.803
23	57.428	206.679	103.562	-630.831	-115.066	-69.719
24	598.863	40.013	56.191	-1017.003	-57.753	-56.191
25	983.270	-11.976	13.465	-1290.458	-4.972	-13.465
26	1255.214	-49.870	-29.833	-1465.583	34.547	29.833
27	1465.584	-34.496	-29.833	-1631.286	21.095	29.833
28	1631.266	-21.108	-29.833	-1752.231	9.540	29.833
29	1752.232	-9.541	-29.833	-1828.485	-0.546	29.833
30	1828.468	0.548	-29.834	-1860.015	-9.652	29.834
31	1860.009	9.673	-29.833	-1846.823	-18.780	29.833
32	1846.844	18.699	-29.833	-1788.874	-28.794	29.833
33	1788.898	28.880	-29.833	-1686.287	-40.462	29.833
34	1686.289	40.428	-29.833	-1530.940	-26.844	30.450
35	1530.957	26.828	-30.450	-1310.557	-38.629	31.512
36	1310.573	38.660	-31.512	-1042.281	-52.075	32.574
37	1026.060	-2.562	-10.491	-657.977	-11.635	11.553
38	627.135	-57.273	-14.813	-121.954	122.134	24.500
39	83.866	-197.587	-57.935	573.292	487.614	60.020
40	-611.129	-568.241	-81.191	1407.480	764.938	59.774
41	-1446.269	682.209	63.970	905.584	-595.558	-75.997
42	-917.218	562.530	84.605	441.755	-408.268	-84.605
43	-462.742	346.156	58.123	92.058	-155.950	-27.168
44	-117.020	87.196	-5.573	-155.410	-84.991	5.573
45	124.168	9.338	-50.775	-315.701	-7.526	50.775
46	313.040	3.292	-59.500	-475.470	-1.653	59.500
47	475.480	1.693	-59.500	-611.870	-0.082	59.500
48	611.885	0.013	-59.500	-722.201	0.631	59.500
49	722.214	-0.602	-59.500	-806.492	2.179	59.500
50	806.479	-2.126	-59.500	-864.772	4.156	59.500
51	864.744	-4.207	-59.500	-896.924	6.668	59.500
52	896.920	-6.662	-59.500	-903.053	9.500	59.500
53	903.044	-9.544	-59.500	-883.091	0.956	59.500
54	883.103	-0.981	-59.501	-837.102	-7.334	59.501

COMBINACION 2 1.35(G1+G2)+1.5(SCMIN-IPF)+ MHIPER-PRETD

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
55	837.096	7.321	-59.501	-765.015	-15.534	59.501
56	765.030	15.477	-59.501	-666.865	-23.741	59.501
57	666.866	23.828	-59.500	-542.724	-34.048	59.500
58	542.690	34.046	-59.501	-392.501	-45.978	59.501
59	392.496	45.929	-59.501	-214.524	-21.265	59.501
60	214.525	21.257	-59.500	20.192	168.391	-139.057

COMBINACION 35 1.35(G1+G2)+1.5(SCMAX-EC1)+ MHIPER-PRETD

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	28.031	183.697	-289.211	-430.337	-310.288	-173.947
2	451.495	327.530	159.151	-869.053	-262.158	-191.324
3	869.056	262.142	191.324	-1235.412	-248.396	-123.879
4	1235.420	248.426	123.879	-1544.357	-224.987	-173.777
5	1544.348	224.945	173.777	-1802.726	-196.549	-130.342
6	1802.725	196.531	130.342	-2007.251	-161.544	-96.259
7	2007.252	161.612	96.259	-2164.085	-112.222	-86.644
8	2164.049	112.251	86.644	-2265.328	-114.223	-94.735
9	2265.336	114.105	94.735	-2309.911	-64.073	-68.210
10	2309.949	64.104	68.210	-2308.992	-24.994	-24.776
11	2309.005	25.103	24.776	-2254.907	-6.220	-49.378
12	2254.870	6.132	49.378	-2145.146	53.170	-38.826
13	2145.156	-53.214	38.825	-1988.912	96.324	-2.609
14	1988.919	-96.261	2.609	-1777.055	118.949	67.766
15	1777.036	-118.958	-67.766	-1527.212	147.997	28.490
16	1527.199	-148.035	-28.490	-1234.874	180.835	43.837
17	1235.126	-179.111	-45.732	-895.271	167.220	45.094
18	915.087	-105.861	-59.336	-588.072	177.325	57.680
19	611.836	-112.803	-38.710	-341.019	290.014	47.511
20	360.563	-236.194	-33.996	-84.648	420.698	47.294
21	101.407	455.079	-9.110	-500.489	-158.997	13.607
22	513.761	184.324	-2.948	-885.447	20.026	-62.946
23	917.308	50.316	94.603	-1359.164	-19.239	-54.945
24	1386.798	84.561	72.585	-1814.518	-101.608	-175.040
25	1843.350	126.850	102.124	-2250.538	-74.462	-74.050
26	2281.198	122.228	114.314	-2654.929	-100.800	-100.630
27	2654.941	100.822	100.629	-2954.237	-96.087	-116.280
28	2954.225	96.053	116.280	-3180.965	-62.492	-83.629
29	3180.964	62.504	83.629	-3319.652	-27.385	-50.830
30	3319.635	27.390	50.830	-3371.933	6.294	-16.104
31	3371.926	-6.293	16.104	-3336.841	11.329	-35.944
32	3336.879	-11.399	35.944	-3214.594	44.113	-0.453
33	3214.604	-44.030	0.454	-3005.674	77.510	32.785
34	3005.676	-77.540	-32.785	-2710.446	125.190	38.639
35	2710.473	-125.201	-38.639	-2329.721	152.662	75.072
36	2329.740	-152.636	-75.072	-1863.705	180.388	108.605
37	1871.778	-153.641	-142.394	-1380.074	144.503	92.017
38	1406.731	-84.556	-83.402	-904.933	129.584	100.023
39	937.897	-63.885	-65.110	-507.631	202.856	-43.900
40	527.212	-166.188	-5.736	-112.352	487.438	-28.718
41	126.923	378.639	-20.641	-371.913	-205.908	6.027
42	379.048	225.065	-31.478	-605.937	-60.009	16.337
43	618.686	114.564	7.266	-893.409	-83.277	-41.341
44	914.976	143.248	74.525	-1204.546	-110.756	-64.245
45	1231.543	176.749	108.625	-1523.580	-128.001	-121.840
46	1525.926	131.606	129.758	-1782.633	-82.910	-80.351
47	1782.651	82.998	80.350	-1981.272	-91.633	-85.412
48	1981.288	91.568	85.412	-2129.396	-28.056	-61.007
49	2129.429	28.097	61.007	-2236.594	5.999	-49.774
50	2236.579	-5.938	49.774	-2287.891	-1.028	-54.335
51	2287.875	1.008	54.335	-2288.734	79.149	-55.028
52	2288.723	-79.094	55.028	-2244.689	87.878	-22.065
53	2244.691	-87.876	22.065	-2141.721	112.877	-9.276
54	2141.731	-112.872	9.276	-1996.532	167.431	15.130

COMBINACION 3 1.35(G1+G2)+1.5(SCMAX-EC1)+ MHIPER-PRETD

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
55	1996.518	-167.380	-15.130	-1795.642	151.111	12.246
56	1795.671	-151.159	-12.246	-1540.026	220.163	10.714
57	1540.029	-220.062	-10.714	-1241.614	216.264	44.515
58	1241.580	-216.262	-44.515	-880.870	252.914	32.698
59	880.859	-252.993	-32.697	-477.094	326.353	83.502
60	477.098	-326.354	-83.502	-29.793	296.174	240.336

COMBINACION 36 1.35(G1+G2)+1.5(SCMIN-EC1)+ MHIPER-PRETD

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	1.698	85.330	-10.465	-256.483	-45.413	10.465
2	250.875	37.546	-14.602	-470.209	-16.278	14.602
3	470.214	16.258	-14.602	-661.782	-24.858	14.602
4	661.789	24.896	-14.602	-827.317	-33.312	14.602
5	827.309	33.269	-14.602	-966.816	-41.534	14.602
6	966.818	41.520	-14.602	-1080.253	-49.734	14.602
7	1080.259	49.791	-14.602	-1167.670	-58.105	14.602
8	1167.631	58.122	-14.602	-1229.019	-66.709	14.602
9	1229.032	66.607	-14.602	-1264.296	-63.774	14.602
10	1264.336	63.801	-14.602	-1273.543	-61.338	14.602
11	1273.559	61.449	-14.602	-1256.820	-59.414	14.602
12	1256.785	59.308	-14.602	-1213.973	-57.735	14.602
13	1213.992	57.706	-14.602	-1145.079	-57.062	14.602
14	1145.090	57.139	-14.602	-1050.191	-55.524	14.602
15	1050.170	55.535	-14.602	-929.228	-53.899	14.602
16	929.222	53.865	-14.602	-782.213	-52.057	14.602
17	782.210	51.953	-14.563	-609.088	-51.914	14.563
18	608.325	49.638	-13.941	-407.501	64.929	13.941
19	406.644	-67.088	-15.334	-176.508	223.501	15.334
20	175.620	-225.490	-17.286	85.420	380.372	17.286
21	-89.640	494.929	15.973	-354.763	-206.636	-14.744
22	354.318	205.672	13.666	-746.733	71.567	-13.666
23	745.599	-74.247	10.549	-1087.820	86.989	-10.549
24	1086.843	-89.193	7.902	-1382.240	71.453	-7.902
25	1380.932	-73.897	4.576	-1629.297	56.948	-4.576
26	1628.011	-58.938	2.278	-1829.767	43.616	-2.278
27	1829.772	-43.576	2.278	-1986.848	30.175	-2.278
28	1986.830	-30.193	2.278	-2099.165	18.626	-2.278
29	2099.164	-18.624	2.278	-2166.785	8.537	-2.278
30	2166.768	-8.534	2.278	-2189.689	-0.570	-2.278
31	2189.683	0.582	2.278	-2167.857	-9.688	-2.278
32	2167.886	9.613	2.278	-2101.285	-19.708	-2.278
33	2101.301	19.794	2.278	-1990.055	-31.375	-2.278
34	1990.057	31.340	2.278	-1834.061	-44.754	-2.278
35	1834.083	44.744	2.278	-1633.358	-60.085	-2.278
36	1633.375	60.113	2.278	-1387.940	-77.068	-2.278
37	1387.446	75.412	1.879	-1095.740	-93.149	-1.879
38	1094.673	91.035	-0.336	-756.240	-81.451	0.336
39	754.766	78.666	-3.197	-366.042	200.447	3.197
40	364.884	-203.095	-6.033	76.942	491.701	6.033
41	-77.687	382.115	-8.537	-184.332	-227.098	9.475
42	184.030	226.346	-10.291	-415.758	-72.084	10.291
43	414.881	69.985	-12.691	-617.341	45.260	12.691
44	616.312	-48.083	-14.389	-790.665	50.281	14.389
45	789.777	-52.530	-15.010	-936.460	54.338	15.010
46	936.404	-54.507	-15.049	-1056.931	56.142	15.049
47	1056.945	-56.088	-15.049	-1151.449	57.700	15.049
48	1151.466	-57.767	-15.049	-1219.893	58.405	15.049
49	1219.913	-58.361	-15.049	-1262.318	59.928	15.049
50	1262.302	-59.881	-15.049	-1278.721	61.909	15.049
51	1278.696	-61.941	-15.049	-1269.016	64.398	15.049
52	1269.008	-64.381	-15.049	-1233.293	67.209	15.049
53	1233.288	-67.235	-15.049	-1171.505	58.642	15.049
54	1171.519	-58.664	-15.049	-1083.691	50.347	15.049

COMBINACION 4 1.35(G1+G2)+1.5(SCMIN-EC1)+ MHIPER-PRETD

ESFUERZOS EN EXTREMO DE BARRA

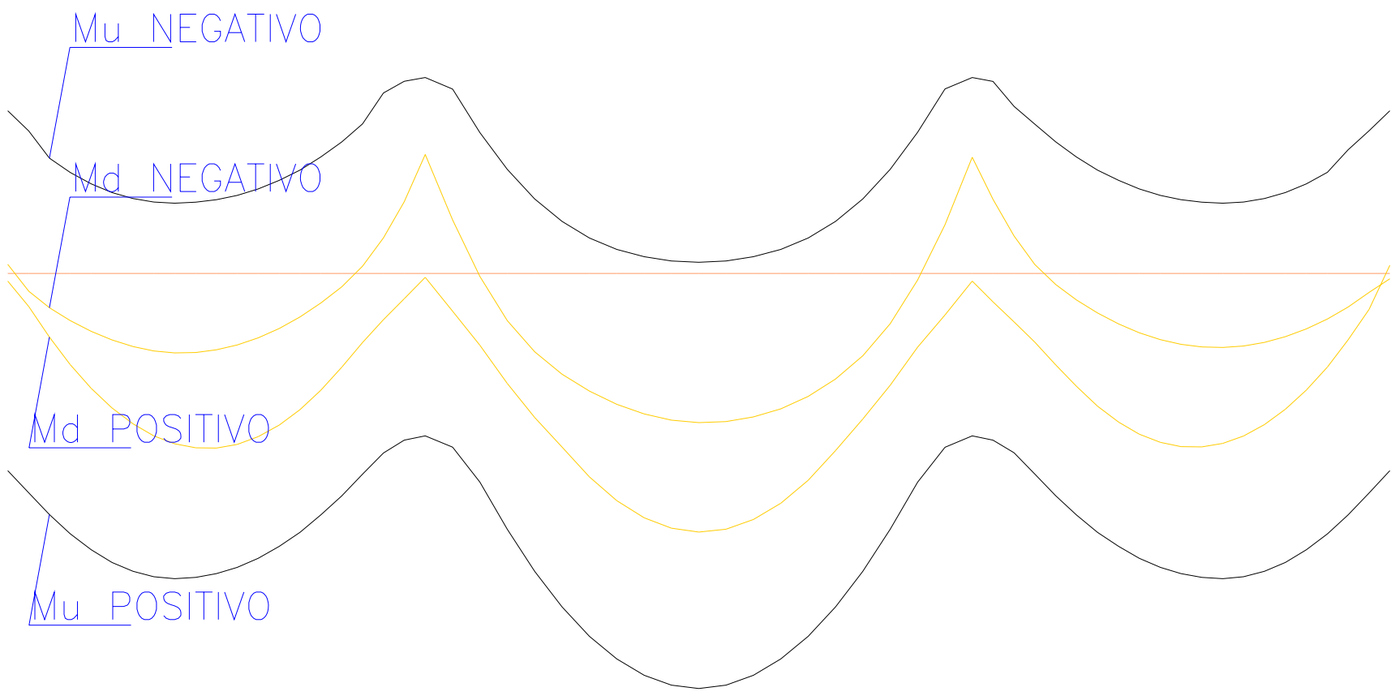
Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
55	1083.685	-50.334	-15.049	-969.800	42.118	15.049
56	969.823	-42.173	-15.049	-829.856	33.909	15.049
57	829.861	-33.816	-15.049	-663.924	23.599	15.049
58	663.889	-23.596	-15.049	-471.906	11.668	15.049
59	471.898	-11.730	-15.049	-252.124	36.393	15.049
60	252.126	-36.399	-15.049	-2.896	76.629	15.049

61 48.00 2545.16 -2073.23 1494.12 -1101.17 1097.32 -602.71

RESPUESTA SECCIONAL A FLEXION (mT)

Isec	Sx(is)	Mu,pos	Mu,neg	Mcr,pos	Mcr,neg	Mdec,pos	Mdec,neg
1	0.00	2544.52	-2072.34	1491.68	-1099.83	1094.88	-601.37
2	0.73	2833.30	-1811.98	1699.72	-887.89	1301.94	-389.47
3	1.45	3115.87	-1455.46	2035.66	-698.34	1685.73	-215.31
4	2.17	3366.83	-1272.94	2218.90	-523.86	1867.61	-40.26
5	2.90	3575.31	-1127.91	2372.47	-380.09	2019.94	104.17
6	3.62	3740.61	-1017.06	2496.49	-266.57	2142.88	218.32
7	4.35	3855.84	-942.22	2586.11	-187.40	2231.72	297.98
8	5.07	3927.00	-897.32	2645.90	-138.13	2291.00	347.58
9	5.80	3953.91	-881.26	2675.44	-118.92	2320.36	366.91
10	6.53	3936.18	-893.71	2672.15	-130.45	2317.21	355.29
11	7.25	3886.69	-926.61	2645.95	-164.17	2291.38	321.33
12	7.97	3805.58	-980.98	2596.29	-220.53	2242.30	264.60
13	8.70	3686.58	-1062.12	2517.65	-304.52	2164.46	180.11
14	9.43	3530.75	-1171.74	2415.16	-416.53	2062.97	67.54
15	10.15	3348.03	-1302.16	2276.83	-548.38	1925.72	-64.86
16	10.87	3122.24	-1468.84	2104.82	-712.34	1754.93	-229.32
17	11.60	2872.85	-1659.97	1913.96	-894.64	1565.24	-411.95
18	12.32	2590.11	-1888.68	1704.57	-1108.45	1356.98	-625.84
19	13.05	2314.67	-2303.72	1342.64	-1298.15	946.46	-799.42
20	13.77	2148.78	-2454.28	1210.89	-1416.30	815.04	-917.26
21	14.50	2092.45	-2503.17	1164.18	-1451.25	768.43	-952.09
22	15.45	2238.71	-2352.99	1263.70	-1322.73	867.66	-823.90
23	16.40	2692.98	-1779.80	1725.67	-995.40	1377.64	-512.80
24	17.35	3307.94	-1312.17	2163.43	-562.47	1812.47	-79.02
25	18.30	3855.85	-936.67	2543.29	-189.46	2188.85	295.96
26	19.25	4319.76	-651.75	2854.56	115.94	2496.56	603.85
27	20.20	4703.53	-441.58	3103.42	360.16	2742.04	850.71
28	21.15	4998.94	-297.71	3287.33	541.83	2923.07	1034.75
29	22.10	5211.31	-205.35	3413.67	668.17	3047.22	1162.98
30	23.05	5339.90	-152.09	3484.64	741.67	3116.79	1237.70
31	24.00	5384.28	-134.49	3501.85	764.14	3133.50	1260.62
32	24.95	5339.92	-152.09	3484.79	741.73	3116.94	1237.76
33	25.90	5211.33	-205.33	3413.96	668.28	3047.51	1163.09
34	26.85	4998.98	-297.69	3287.74	541.98	2923.49	1034.90
35	27.80	4703.58	-441.57	3103.88	360.30	2742.50	850.85
36	28.75	4319.81	-651.75	2855.04	116.05	2497.04	603.97
37	29.70	3855.90	-936.68	2543.68	-189.40	2189.24	296.01
38	30.65	3307.98	-1312.19	2163.69	-562.48	1812.73	-79.03
39	31.60	2695.03	-1781.94	1735.37	-999.01	1387.34	-516.41
40	32.55	2240.32	-2355.40	1268.70	-1327.48	872.66	-828.65
41	33.50	2092.45	-2503.17	1164.18	-1451.25	768.43	-952.09
42	34.22	2147.12	-2451.90	1206.20	-1411.02	810.35	-911.98
43	34.95	2311.10	-2113.57	1478.46	-1305.70	1131.75	-822.87
44	35.67	2588.12	-1886.70	1695.22	-1104.13	1347.63	-621.53
45	36.40	2872.88	-1659.99	1914.15	-894.69	1565.42	-412.00
46	37.12	3122.28	-1468.86	2105.06	-712.37	1755.16	-229.35
47	37.85	3348.08	-1302.17	2277.12	-548.39	1926.01	-64.87
48	38.58	3530.80	-1171.76	2415.51	-416.52	2063.32	67.55
49	39.30	3686.63	-1062.13	2518.02	-304.49	2164.83	180.14
50	40.03	3805.62	-980.98	2596.66	-220.49	2242.66	264.64
51	40.75	3886.74	-926.61	2646.33	-164.12	2291.76	321.38
52	41.47	3936.22	-893.71	2672.50	-130.39	2317.56	355.35
53	42.20	3953.95	-881.26	2675.76	-118.86	2320.68	366.97
54	42.92	3927.03	-897.32	2646.18	-138.09	2291.29	347.62
55	43.65	3855.87	-942.22	2586.33	-187.37	2231.94	298.01
56	44.37	3740.63	-1017.06	2496.64	-266.56	2143.03	218.33
57	45.10	3575.32	-1127.92	2372.56	-380.08	2020.03	104.18
58	45.83	3369.23	-1274.29	2234.17	-524.19	1882.88	-40.58
59	46.55	3121.47	-1568.71	1917.98	-684.84	1518.98	-186.15
60	47.28	2835.09	-1814.27	1707.68	-890.27	1309.89	-391.85

LEYES DE MOMENTOS FLECTORES MAYORADOS



6.2. FLEXIÓN TRANSVERSAL

A continuación se presenta el cálculo de la flexión transversal en el tablero, en el que se determina la armadura necesaria en arranque el voladizo de la losa por este efecto.

La armadura de flexión calculada debe sumarse a la armadura de rasante del voladizo obtenida a partir del cortante total sobre la sección y de la aplicación de la regla de cosido en el plano de unión del voladizo con el núcleo de la sección transversal.

6.3. TRAVIESAS DE APOYO

En este apartado se incluyen los resultados del cálculo de la flexión transversal que se produce en las traviesas de apoyo en estribos.

La determinación de los esfuerzos de flexión y cortante se realizan a partir de las reacciones que se han calculado en el apartado 3 de este anejo.

6.4. INTRODUCCIÓN DEL PRETENSADO

La regularización de las tensiones normales en el tablero inducidas por el pretensado produce tracciones en la zona de anclajes, cuyo efecto se puede estudiar a partir de dos análisis independientes:

- Estudio de la la introducción de una fuerza puntual en el anclaje, que permite el cálculo de los refuerzos de armadura en la zona inmediatamente detrás de la placa de anclaje.

- En las zonas de estribos la fuerza rasante se incrementa por el efecto de introducción de pretensado, cuyo valor total se reparte en planta, a efectos de cálculo, con un ángulo de aproximadamente 35 º. El efecto de esta regularización de tensiones se puede abordar a partir del método de bielas y tirantes, cuyo modelo sería análogo al que se emplea para el cálculo de vigas de gran canto.

En la hoja siguiente se detallan los cálculos de las armaduras a colocar en la zona de introducción de la fuerza de pretensado.

6.5. EVALUACIÓN DEL ELU DE FATIGA

El Estado Límite Último de Fatiga se ha calculado según las indicaciones dadas en el Eurocódigo 2 parte 2 en su artículo 4.3.7.

Se comprueba a fatiga el hormigón a compresión, el acero de armar y de pretensar no hay que comprobarlo a fatiga.

El acero de armar no se comprueba por que no hay soldaduras en los empalmes, y bajo la acción frecuente el $\Delta\sigma s$ no supera los 70 N/mm2.

Los cálculos han sido realizados con una hoja de cálculo desarrollada al efecto por los ingenieros de PEDELTA S.L.

$$\lambda_c = \lambda_{c,0} \times \lambda_{c,1} \times \lambda_{c,2} \times \lambda_{c,3} \times \lambda_{c,4}$$

Se adjuntan a continuación los cálculos realizados.

7. VERIFICACIÓN DEL E.L.U DE ROTURA POR TENSIONES TANGENCIALES

7.1 EVALUACIÓN DEL E.L.U. DE CORTANTE

En este apartado se comprueba el Estado Límite Último de rotura por cortante de acuerdo con los criterios de la Normativa española vigente (EHE, artículo 44)

Los cálculos realizados han sido los siguientes:

- Cálculo de la envolvente de esfuerzos cortantes para las distintas acciones consideradas en el proyecto del tablero. Los esfuerzos de cálculo se han combinado de acuerdo con los criterios del apartado 2 de este Anejo.

  La envolvente de esfuerzos flectores positivos se muestra en los listados adjuntos con la notación $\mathbf{V_{rd}}$, conjuntamente con el esfuerzo flector y torsor concomitantes.

  Donde

  $$\mathbf{V_{rd} = V_d + V_{pd} + V_{cd}}$$

  donde,

  V_{rd} = Valor del esfuerzo cortante efectivo calculado como:
  V_d = Valor de cálculo del esfuerzo cortante producido por las acciones exteriores
  V_{pd} = Valor de cálculo del esfuerzo cortante producido por el pretensado.
  V_{cd} = Valor de cálculo del la componente paralela a la sección de las tensiones normales en piezas de sección variable

- Comprobación del agotamiento por compresión oblicua en el alma.

  $$\mathbf{V_{rd} \leq V_{u1}}$$

  V_{u1} = Esfuerzo cortante de agotamiento por compresión oblicua del alma.

- Comprobación del agotamiento por tracción en el alma.

  $$\mathbf{V_{rd} \leq V_{u2}}$$

  V_{u2} = Esfuerzo cortante de agotamiento por tracción en el alma.

- El cálculo de todos los parámetros resistentes se ha realizado de forma automática. Posteriormente se ha determinado la armadura de cortante necesaria $\mathbf{A_{sc}}$ por criterios resistentes y se comprueba que verifica los criterios de armadura mínima a cortante (el máximo de los dos valores es el que aparece en los listados).

COMBINACION 37 1.35 (G1 + G2) + 1.5 (SCVMAX-IPF) + PRETD

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-356.471	360.495	133.715	116.026	-297.478	-126.785
2	-123.530	298.197	126.905	81.321	-248.920	-88.827
3	-82.064	248.974	88.798	-46.379	-230.953	-87.108
4	45.226	231.113	87.063	-216.249	-238.746	-87.063
5	214.739	238.872	87.003	-299.343	-221.149	-83.568
6	297.569	221.352	83.497	-353.208	-204.450	-78.431
7	351.228	204.773	78.350	-380.179	-188.927	-71.764
8	378.009	189.255	71.677	-511.648	-197.056	-71.677
9	509.446	197.309	71.585	-499.432	-171.427	-63.591
10	497.232	171.855	63.498	-461.074	-147.623	-54.208
11	458.878	148.177	54.114	-556.404	-145.363	-54.114
12	554.240	145.741	54.022	-480.813	-123.782	-42.612
13	478.825	124.273	43.058	-387.793	-104.840	-30.577
14	385.963	105.473	31.072	-295.429	-86.757	-17.643
15	293.771	87.362	18.188	-355.100	-84.931	-17.250
16	353.693	85.528	17.847	-247.747	-68.454	-4.666
17	246.614	69.112	5.316	-202.403	-60.844	8.973
18	238.946	64.629	-4.409	-357.414	53.809	9.206
19	372.644	-51.844	-6.683	-262.207	210.289	9.383
20	263.845	-209.379	-8.193	308.300	235.002	-27.025
21	-1381.466	853.819	135.557	748.767	-604.804	-145.790
22	-756.244	605.367	146.051	465.233	-286.206	-132.557
23	-486.500	287.861	132.865	245.075	-233.197	-119.370
24	-280.005	236.124	119.772	51.081	-211.945	-106.278
25	-99.074	216.286	106.823	-119.248	-191.315	-93.328
26	59.256	197.158	94.066	-263.952	-170.557	-80.571
27	193.465	178.090	81.550	-358.717	-150.820	-71.939
28	279.570	160.000	73.208	-619.079	-135.054	-77.658
29	337.326	142.518	61.299	-639.890	-124.755	-71.501
30	366.377	125.751	49.811	-635.524	-113.797	-64.843
31	632.499	114.291	65.346	-732.421	-122.375	-64.118
32	729.456	122.845	64.680	-669.606	-113.072	-57.018
33	666.735	113.762	57.640	-589.076	-106.240	-49.423
34	586.380	106.871	50.105	-498.414	-102.216	-41.332
35	123.281	104.202	-0.264	-407.130	-101.427	-32.749
36	124.402	112.014	-5.201	-194.685	-104.814	-50.530
37	150.504	123.042	-9.402	-139.342	-122.272	13.341
38	208.919	136.386	-12.820	-251.927	-112.543	13.625
39	297.451	123.803	-15.405	-360.370	166.680	13.839
40	393.415	-157.033	-17.107	262.922	344.780	-46.369
41	-1318.485	710.712	73.225	955.120	-596.290	-76.832
42	-960.046	596.644	77.026	733.321	-418.494	-69.159
43	-747.220	419.564	69.293	512.965	-269.813	-58.240
44	-535.707	271.660	58.340	353.367	-234.955	-47.287
45	-384.682	237.676	47.386	222.913	-201.361	-36.333
46	-262.324	204.939	36.466	121.892	-179.419	-28.599
47	-168.745	184.112	28.804	48.743	-147.993	-17.751
48	-102.187	153.590	18.071	-9.173	-118.447	-7.956
49	-49.843	125.286	8.078	-40.504	-89.214	2.038
50	-22.935	97.217	-1.750	-555.469	-85.449	-58.673
51	553.251	85.720	58.581	-468.609	-57.381	-49.779
52	466.356	57.745	49.685	-346.164	-28.397	-39.141
53	-282.655	37.502	-32.825	-374.029	-36.599	-39.047
54	371.856	37.011	38.956	296.837	-19.676	45.186

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
55	-359.780	34.099	-43.232	338.631	-18.424	50.162
56	-396.200	34.190	-47.684	376.669	-18.567	54.614
57	-426.956	35.895	-51.541	415.853	-22.229	58.471
58	-456.872	40.905	-54.730	305.116	-28.951	61.659
59	-334.740	49.035	-57.172	313.731	-0.484	64.101
60	-329.892	22.075	-58.788	339.482	40.680	42.931

COMBINACION 37 1.35 (G1 + G2) + 1.5 (SCVMAX-IPF) + PRETD

COMBINACION 38 1.35 (G1 + G2) + 1.5 (SCVMIN-IPF) + PRETD

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-386.772	199.331	398.167	340.952	13.265	-63.346
2	-359.924	-54.738	-73.236	511.510	87.890	77.403
3	-537.050	-76.154	-73.191	519.267	84.753	76.936
4	-586.940	-67.687	-73.131	531.798	81.395	76.509
5	-482.211	-64.089	-69.146	512.862	82.391	75.897
6	-455.837	-66.491	-68.563	485.097	85.711	75.343
7	-51.792	-73.975	-45.629	-77.949	92.799	45.468
8	80.092	-92.357	-45.377	456.037	93.271	74.898
9	11.822	-84.279	-45.283	-92.341	113.731	46.973
10	94.629	-113.359	-46.879	-139.462	141.759	50.314
11	141.676	-141.348	-50.221	478.634	152.904	98.500
12	-415.169	-144.989	-92.433	546.022	180.914	79.359
13	-486.793	-174.058	-73.813	638.476	209.204	84.866
14	-584.743	-203.366	-79.890	744.918	239.482	90.943
15	-697.732	-234.761	-86.582	878.304	260.277	94.774
16	-838.468	-256.612	-91.071	1068.808	339.468	178.381
17	-1037.171	-338.220	-172.204	1299.007	387.316	212.941
18	-1287.607	-421.470	-152.605	1490.836	570.546	163.658
19	-1486.184	-599.233	-116.935	2021.729	889.904	335.477
20	-2024.908	-916.252	-294.226	2609.681	796.175	-72.341
21	-1604.956	527.353	-196.827	620.401	-537.045	-289.882
22	-628.534	525.994	308.570	421.160	-148.655	-119.204
23	-463.259	117.360	169.205	332.862	-59.568	-106.853
24	-404.517	29.503	158.176	292.762	36.559	94.431
25	-403.447	-54.106	-53.426	274.975	52.274	55.416
26	-13.168	-71.359	-36.420	-104.512	72.878	39.075
27	106.913	-72.102	-38.186	-221.709	91.021	37.301
28	224.357	-90.361	-36.465	-317.247	97.897	40.232
29	320.115	-97.283	-39.451	-395.130	107.047	43.774
30	398.098	-106.498	-43.049	-448.557	131.688	51.939
31	451.572	-131.176	-51.272	-1.369	138.769	57.566
32	310.216	-136.583	-45.602	28.621	153.721	61.608
33	278.361	-146.803	-50.492	85.714	169.447	66.453
34	-6.331	-160.222	-60.831	168.737	185.915	69.579
35	-97.879	-178.370	-64.643	311.937	204.954	77.432
36	-251.491	-199.011	-73.230	477.120	223.975	86.725
37	-442.138	-265.449	-66.254	742.589	371.446	270.512
38	-720.357	-399.598	-212.678	1137.454	468.841	263.587
39	-1129.959	-494.988	-217.095	1617.074	816.022	231.295
40	-1627.238	-849.411	-178.050	2585.903	1005.101	-50.703
41	-1557.092	340.123	-238.596	737.099	-530.381	-159.955
42	-779.390	515.317	185.769	561.192	-334.776	-131.730
43	-615.397	313.982	165.560	475.428	-52.824	132.804
44	-550.895	31.729	-99.402	436.933	-20.680	99.039
45	-463.679	-6.177	-73.016	312.298	23.224	71.972
46	-311.002	-22.849	-70.396	327.325	25.283	71.334
47	-325.713	-24.632	-70.635	189.637	43.295	71.325
48	-187.792	-42.803	-71.241	51.188	62.161	71.941
49	-49.169	-61.602	-71.853	-70.011	83.462	73.623
50	72.125	-82.923	-73.531	-19.884	85.752	73.531
51	22.065	-85.340	-73.437	-104.079	109.515	76.389
52	106.308	-109.109	-76.296	-162.303	134.880	80.541
53	164.510	-134.553	-80.450	-76.208	126.761	80.450
54	78.351	-126.477	-80.364	-95.598	142.258	86.016

COMBINACION 38 1.35 (G1 + G2) + 1.5 (SCVMIN-IPF) + PRETD

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
55	97.579	-141.989	-85.936	-88.232	158.844	93.106
56	90.029	-158.682	-93.035	-51.786	176.315	101.836
57	53.292	-176.056	-101.776	80.901	166.609	101.776
58	-79.776	-166.480	-101.731	31.665	181.366	108.327
59	-30.925	-181.354	-108.298	148.335	233.125	120.692
60	-148.066	-233.106	-120.682	349.878	388.934	-24.234

COMBINACION 39 1.35 (G1 + G2) + 1.5 (SCVMAX-IPF) + V_Pd

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-12.226	360.495	133.715	-433.687	-297.478	-126.785
2	426.183	298.197	126.905	-798.624	-248.920	-88.827
3	797.881	248.974	88.798	-1101.841	-230.953	-87.108
4	1100.688	231.113	87.063	-1415.433	-238.746	-87.063
5	1413.923	238.872	87.003	-1611.277	-221.149	-83.568
6	1609.502	221.352	83.497	-1747.583	-204.450	-78.431
7	1745.603	204.773	78.350	-1827.051	-188.927	-71.764
8	1824.881	189.255	71.677	-1981.063	-197.056	-71.677
9	1978.861	197.309	71.585	-1964.083	-171.427	-63.591
10	1961.883	171.855	63.498	-1897.843	-147.623	-54.208
11	1895.647	148.177	54.114	-1941.492	-145.363	-54.114
12	1939.328	145.741	54.022	-1789.619	-123.782	-42.612
13	1787.631	124.273	43.058	-1598.173	-104.840	-30.577
14	1596.343	105.473	31.072	-1371.960	-86.757	-17.643
15	1370.302	87.362	18.188	-1272.142	-84.931	-17.250
16	1270.735	85.528	17.847	-979.499	-68.454	-4.666
17	978.366	69.112	5.316	-726.933	-60.844	8.973
18	763.476	64.629	-4.409	-533.606	53.809	9.206
19	548.836	-51.844	-6.683	-312.779	210.289	9.383
20	314.417	-209.379	-8.193	299.220	235.002	-27.025
21	-1372.386	853.819	135.557	628.530	-604.804	-145.790
22	-636.007	605.367	146.051	-117.005	-286.206	-132.557
23	95.738	287.861	132.865	-763.377	-233.197	-119.370
24	728.447	236.124	119.772	-1314.839	-211.945	-106.278
25	1266.846	216.286	106.823	-1773.361	-191.315	-93.328
26	1713.369	197.158	94.066	-2141.429	-170.557	-80.571
27	2070.942	178.090	81.550	-2400.270	-150.820	-71.939
28	2321.123	160.000	73.208	-2770.874	-135.054	-77.658
29	2489.121	142.518	61.299	-2852.450	-124.755	-71.501
30	2578.937	125.751	49.811	-2862.383	-113.797	-64.843
31	2859.357	114.291	65.346	-2945.083	-122.375	-64.118
32	2942.118	122.845	64.680	-2821.607	-113.072	-57.018
33	2818.736	113.762	57.640	-2630.925	-106.240	-49.423
34	2628.228	106.871	50.105	-2376.199	-102.216	-41.332
35	2001.066	104.202	-0.264	-2061.564	-101.427	-32.749
36	1778.836	112.014	-5.201	-1560.847	-104.814	-50.530
37	1516.666	123.042	-9.402	-1147.939	-122.272	13.341
38	1217.516	136.386	-12.820	-838.263	-112.543	13.625
39	883.787	123.803	-15.405	-481.301	166.680	13.839
40	514.346	-157.033	-17.107	253.842	344.780	-46.369
41	-1309.405	710.712	73.225	904.840	-596.290	-76.832
42	-909.766	596.643	77.026	418.229	-418.494	-69.159
43	-432.128	419.564	69.293	-7.950	-269.813	-58.240
44	-14.792	271.660	58.340	-378.472	-234.955	-47.287
45	347.157	237.676	47.386	-694.252	-201.361	-36.333
46	654.841	204.939	36.466	-954.808	-179.419	-28.599
47	907.955	184.112	28.804	-1161.841	-147.993	-17.751
48	1108.397	153.590	18.071	-1318.211	-118.447	-7.956
49	1259.195	125.286	8.078	-1425.823	-89.214	2.038
50	1362.384	97.217	-1.750	-1992.469	-85.449	-58.673
51	1990.251	85.720	58.581	-1933.479	-57.381	-49.779
52	1931.226	57.745	49.685	-1815.784	-28.397	-39.141
53	1186.965	37.502	-32.825	-1821.072	-36.599	-39.047
54	1818.899	37.011	38.956	-1097.670	-19.676	45.186

COMBINACION 39 1.35 (G1 + G2) + 1.5 (SCVMAX-IPF) + V_Pd

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
55	1034.727	34.099	-43.232	-973.400	-18.424	50.162
56	915.831	34.190	-47.684	-822.573	-18.567	54.614
57	772.286	35.895	-51.541	-648.234	-22.229	58.471
58	607.215	40.905	-54.730	-453.340	-28.951	61.659
59	423.716	49.035	-57.172	-239.338	-0.484	64.101
60	223.177	22.075	-58.788	-5.532	40.680	42.931

COMBINACION 40 1.35 (G1 + G2) + 1.5 (SCVMIN-IPF) + V_Pd

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	4.326	41.041	-38.275	-228.956	6.971	42.594
2	227.513	1.851	-38.246	-447.189	31.300	42.413
3	421.648	-19.560	-38.201	-655.979	28.159	41.946
4	588.307	-11.097	-38.141	-828.197	24.806	41.519
5	877.784	-7.499	-34.136	-1000.911	25.801	40.887
6	1057.934	-9.904	-33.553	-1152.138	29.127	40.333
7	1585.440	-17.383	-10.619	-1808.708	36.205	10.459
8	1810.855	-35.755	-10.367	-1338.312	36.664	39.889
9	1806.168	-27.675	-10.274	-1922.958	57.130	11.963
10	1925.244	-56.757	-11.869	-1983.231	85.165	15.304
11	1985.442	-84.751	-15.212	-1354.481	96.300	63.491
12	1417.944	-88.380	-57.423	-1251.857	124.303	44.349
13	1311.080	-117.461	-38.803	-1101.999	152.613	49.857
14	1155.728	-146.780	-44.880	-902.730	182.906	55.933
15	949.917	-178.215	-51.573	-650.848	203.739	59.440
16	690.681	-200.077	-55.737	-344.530	236.394	66.790
17	376.341	-233.646	-63.784	15.946	268.193	74.836
18	7.357	-266.277	-72.563	431.694	415.352	83.616
19	-417.173	-414.232	-82.106	907.646	594.531	89.973
20	-902.028	-594.119	-89.255	1241.625	722.185	88.519
21	-263.331	346.457	-33.179	-470.721	-168.395	9.560
22	470.951	169.376	-8.428	-853.423	110.281	9.302
23	829.119	-107.962	-8.570	-1196.344	125.961	9.704
24	1140.031	-120.851	-8.759	-1504.814	112.563	10.249
25	1406.524	-103.296	-8.996	-1776.460	101.473	10.986
26	2051.831	-99.723	-0.608	-2365.928	101.253	3.263
27	2368.329	-100.482	-2.374	-2622.255	105.175	5.585
28	2624.908	-104.521	-4.749	-2814.587	112.058	8.516
29	2817.455	-111.442	-7.735	-2939.782	121.206	12.058
30	2942.752	-120.652	-11.333	-2995.464	132.018	16.214
31	2998.479	-131.517	-15.547	-2544.792	125.307	28.133
32	2853.646	-123.115	-16.168	-2466.944	140.251	32.174
33	2773.918	-133.333	-21.059	-2312.488	155.976	37.020
34	2391.872	-146.754	-31.398	-2078.199	172.444	40.146
35	2149.060	-164.890	-35.209	-1724.457	191.472	47.998
36	1784.904	-185.537	-43.797	-1283.797	210.504	57.291
37	1332.322	-206.096	-53.873	-751.416	230.277	67.367
38	786.954	-227.290	-64.783	-124.873	278.795	78.278
39	146.824	-277.072	-76.575	598.672	598.105	90.775
40	-590.415	-597.480	-90.002	1296.351	863.223	94.317
41	-289.437	234.954	-57.293	-358.646	-206.879	7.012
42	323.190	210.230	-7.465	-590.148	-51.546	7.145
43	543.427	55.914	-7.570	-801.977	65.546	7.245
44	736.191	-59.424	-7.707	-994.991	70.451	7.344
45	981.018	-68.383	-15.340	-1272.623	85.410	14.296
46	1273.986	-84.840	-13.562	-1372.245	87.261	14.500
47	1373.861	-86.602	-13.801	-1598.899	105.259	14.491
48	1600.744	-104.762	-14.407	-1790.865	124.121	15.107
49	1792.884	-123.553	-15.019	-1943.436	145.397	16.789
50	1945.548	-144.864	-16.697	-1900.078	147.697	16.697
51	1902.264	-147.287	-16.603	-1967.229	171.475	19.555
52	1969.460	-171.055	-19.461	-1985.314	196.801	23.707
53	1987.522	-196.469	-23.616	-1831.767	188.642	23.616
54	1833.910	-188.352	-23.529	-1753.763	204.118	29.181

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
55	1755.742	-203.839	-29.101	-1619.073	220.680	36.272
56	1620.872	-220.517	-36.201	-1425.014	238.153	45.002
57	1426.520	-237.890	-44.942	-1112.335	228.456	44.942
58	1113.459	-228.330	-44.897	-811.155	242.989	55.441
59	811.894	-242.978	-55.412	-444.420	294.752	67.806
60	444.688	-294.733	-67.796	-5.770	354.166	54.510

COMBINACION 40 1.35 (G1 + G2) + 1.5 (SCVMIN-IPF) + V_Pd

COMBINACION 41 1.35 (G1 + G2) + 1.5 (SCVMAX-EC1) + PRETD

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-359.410	401.283	168.017	99.282	-341.126	-200.939
2	-104.272	341.608	199.839	20.960	-276.944	-166.213
3	-32.375	278.060	164.104	-144.674	-262.179	-141.788
4	114.606	265.372	141.787	-310.690	-242.880	-143.015
5	289.237	245.279	138.993	-352.247	-218.889	-119.483
6	305.739	224.551	119.539	-409.083	-199.723	-107.165
7	356.995	206.721	107.348	-498.155	-194.254	-99.484
8	442.138	202.426	99.855	-511.073	-178.581	-86.744
9	452.824	187.800	87.363	-502.236	-153.213	-73.573
10	443.290	163.745	74.497	-471.980	-130.277	-60.087
11	413.737	142.026	61.368	-499.561	-119.194	-53.504
12	443.361	131.830	55.193	-441.030	-100.090	-39.291
13	388.214	113.845	41.971	-371.670	-83.923	-26.123
14	323.314	98.803	29.348	-384.930	-76.377	-20.547
15	342.011	92.158	24.359	-318.250	-62.194	-8.816
16	281.669	78.865	13.254	-175.492	-52.797	6.599
17	252.153	69.545	0.718	-198.209	-51.166	3.717
18	269.502	67.097	-2.285	-339.170	64.564	1.388
19	408.107	-49.137	-4.559	-233.307	221.762	-0.404
20	303.171	-206.535	-6.077	431.370	259.654	-201.192
21	-1181.440	847.484	160.101	659.282	-640.153	-241.856
22	-663.590	640.477	240.745	360.061	-318.737	-208.535
23	-370.497	319.553	206.285	118.565	-262.043	-173.927
24	-135.072	263.430	170.560	-100.592	-236.203	-138.055
25	78.289	238.232	133.593	-111.965	-212.480	-124.692
26	84.339	215.185	119.156	-232.417	-192.466	-104.785
27	305.608	198.354	116.462	-515.495	-184.485	-104.930
28	446.618	192.473	106.890	-583.567	-166.396	-92.029
29	509.030	175.975	94.407	-620.111	-148.490	-79.253
30	541.918	159.657	82.091	-625.866	-131.371	-66.643
31	546.202	144.155	69.984	-587.160	-116.192	-54.242
32	508.266	130.531	58.128	-526.862	-103.972	-42.093
33	450.876	120.087	46.569	-453.346	-95.570	-30.240
34	382.405	113.164	35.347	-376.507	-91.140	-18.727
35	312.643	110.299	24.510	-60.553	-96.944	20.051
36	182.224	111.905	27.906	-113.926	-110.586	15.253
37	137.851	123.341	-10.916	-194.905	-125.710	11.282
38	178.507	137.939	-27.957	-300.173	-114.209	8.118
39	290.340	127.062	-25.576	-406.281	166.193	5.736
40	403.228	-152.756	-23.956	711.377	407.489	-39.292
41	-1140.381	711.539	100.531	764.108	-623.020	-134.950
42	-767.161	623.244	133.953	516.401	-458.185	-149.094
43	-523.431	458.742	147.202	287.235	-301.613	-112.585
44	-298.173	302.517	109.811	115.150	-258.082	-74.878
45	-129.875	259.406	71.235	-38.192	-230.476	-84.688
46	3.927	233.583	85.279	-165.177	-204.304	-46.604
47	143.634	206.540	41.273	-165.764	-168.811	-60.936
48	119.267	173.667	61.871	-193.069	-139.418	-49.082
49	141.710	145.356	49.889	-247.986	-122.990	-42.025
50	192.758	129.970	43.061	-215.783	-93.897	-29.404
51	157.860	101.856	30.714	-152.467	-65.046	-16.132
52	93.162	74.118	17.764	-58.297	-36.649	-2.216
53	-1.026	46.826	4.221	-34.927	-34.628	3.643
54	-22.929	45.959	-1.214	70.797	-22.849	15.542

COMBINACION 41 1.35 (G1 + G2) + 1.5 (SCVMAX-EC1) + PRETD

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
55	-125.660	35.400	-12.631	472.835	-20.189	68.754
56	-413.965	31.526	-48.727	478.658	-24.886	65.153
57	-439.130	34.075	-52.535	486.711	-32.334	62.175
58	-504.108	40.919	-75.865	347.604	-42.052	59.787
59	-359.662	51.229	-74.031	332.318	-15.772	57.953
60	-338.103	25.671	-72.715	338.189	25.353	56.637

COMBINACION 42 1.35 (G1 + G2) + 1.5 (SCVMIN-EC1) + PRETD

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-384.876	194.874	378.094	350.346	25.957	-55.789
2	-357.075	-60.252	-91.229	542.128	99.397	85.213
3	-528.503	-83.335	-88.145	579.862	93.984	85.211
4	-516.355	-78.867	-40.910	605.040	89.948	84.879
5	-561.959	-74.880	-77.090	572.975	88.014	52.705
6	-546.384	-80.955	-62.987	419.995	99.805	45.589
7	-391.089	-93.323	-55.034	363.062	114.616	60.413
8	-332.741	-108.782	-69.051	418.824	110.999	52.973
9	-387.781	-105.873	-60.833	375.286	140.078	64.795
10	-344.316	-135.416	-71.905	348.235	169.938	75.702
11	-318.097	-165.760	-82.089	451.793	178.592	66.011
12	-423.177	-175.165	-71.295	467.635	209.563	77.803
13	-441.022	-206.572	-82.455	508.307	240.835	92.775
14	-484.292	-238.256	-96.818	563.357	274.312	111.145
15	-542.426	-272.238	-114.598	759.112	287.880	111.558
16	-741.594	-286.327	-114.440	883.895	366.747	197.433
17	-870.267	-367.082	-196.591	1121.929	421.114	227.813
18	-1123.966	-456.391	-171.543	1330.935	612.674	208.409
19	-1334.989	-642.047	-164.466	1896.829	919.625	360.000
20	-1903.914	-946.266	-320.226	2480.917	784.488	-47.113
21	-1726.089	540.461	-346.974	584.330	-527.148	-286.362
22	-585.834	540.924	314.934	401.763	-138.750	-114.908
23	-399.741	129.838	174.990	327.467	-50.050	-102.240
24	-310.437	38.352	163.184	302.682	45.511	99.466
25	-270.982	-50.162	-49.436	140.902	61.750	58.991
26	-99.879	-61.872	-40.426	65.235	81.383	53.008
27	-1.698	-62.096	-43.435	-31.510	98.514	52.437
28	102.173	-80.852	-43.282	-115.187	105.501	56.673
29	191.024	-89.404	-47.978	-187.643	116.053	61.662
30	266.477	-101.581	-53.470	-239.280	143.466	71.458
31	318.942	-130.600	-63.812	-162.706	162.551	69.053
32	160.192	-153.432	-60.337	-71.151	180.779	71.091
33	109.726	-175.770	-77.612	5.506	201.405	88.341
34	30.047	-197.319	-93.989	109.536	220.972	104.836
35	-77.929	-217.648	-109.635	168.002	226.898	103.642
36	-115.317	-221.697	-99.371	314.059	242.132	114.819
37	-285.289	-284.186	-94.300	510.876	387.674	320.677
38	-508.847	-417.529	-267.809	925.525	489.561	338.756
39	-930.891	-516.724	-295.586	1421.463	840.282	329.266
40	-1437.080	-874.086	-277.674	2425.955	987.416	-22.580
41	-1810.871	351.592	-447.312	720.780	-529.181	-161.936
42	-724.102	521.000	174.954	552.609	-334.087	-135.736
43	-552.409	318.810	157.626	475.373	-52.821	133.090
44	-477.064	35.342	-103.556	440.990	-21.034	99.697
45	-454.204	2.510	-65.042	368.964	18.013	72.632
46	-403.825	-5.031	-40.992	340.981	23.927	72.535
47	-388.408	-9.283	-34.846	238.076	38.113	73.178
48	-189.933	-23.285	-66.121	127.474	53.347	74.663
49	-74.760	-39.431	-67.835	26.597	71.319	77.178
50	29.521	-58.445	-70.624	12.225	81.254	78.488
51	46.084	-69.552	-72.256	-62.955	103.128	82.168
52	122.119	-92.501	-76.309	-118.103	127.179	86.851
53	176.665	-117.758	-81.417	-93.289	129.981	89.281
54	149.720	-121.740	-84.329	-112.460	145.941	95.561

COMBINACION 42 1.35 (G1 + G2) + 1.5 (SCVMIN-EC1) + PRETD

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
55	165.107	-138.869	-91.151	-106.990	163.748	103.132
56	154.231	-158.003	-99.324	-73.157	183.346	112.113
57	113.198	-178.703	-108.972	30.153	189.273	116.836
58	0.890	-185.988	-114.430	-8.946	208.331	124.139
59	29.237	-206.403	-122.537	123.347	265.452	137.119
60	-115.656	-264.726	-136.388	345.545	422.154	12.622

COMBINACION 43 1.35 (G1 + G2) + 1.5 (SCVMAX-EC1) + V_Pd

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-15.165	401.283	168.017	-450.431	-341.126	-200.939
2	445.441	341.608	199.839	-858.985	-276.944	-166.213
3	847.570	278.060	164.104	-1200.136	-262.179	-141.788
4	1170.068	265.372	141.787	-1509.874	-242.880	-143.015
5	1488.421	245.279	138.993	-1664.181	-218.889	-119.483
6	1617.673	224.551	119.539	-1803.458	-199.723	-107.165
7	1751.370	206.721	107.348	-1945.027	-194.254	-99.484
8	1889.010	202.426	99.855	-1980.488	-178.581	-86.744
9	1922.239	187.800	87.363	-1966.887	-153.213	-73.573
10	1907.941	163.745	74.497	-1908.749	-130.277	-60.087
11	1850.506	142.026	61.368	-1884.648	-119.194	-53.504
12	1828.448	131.830	55.193	-1749.836	-100.090	-39.291
13	1697.020	113.845	41.971	-1582.050	-83.923	-26.123
14	1533.694	98.803	29.348	-1461.461	-76.377	-20.547
15	1418.542	92.158	24.359	-1235.292	-62.194	-8.816
16	1198.711	78.865	13.254	-907.244	-52.797	6.599
17	983.905	69.545	0.718	-722.739	-51.166	3.717
18	794.033	67.097	-2.285	-515.362	64.564	1.388
19	584.299	-49.137	-4.559	-283.879	221.762	-0.404
20	353.743	-206.535	-6.077	422.290	259.654	-201.192
21	-1172.360	847.484	160.101	539.045	-640.153	-241.856
22	-543.353	640.477	240.745	-222.177	-318.737	-208.535
23	211.741	319.553	206.285	-889.887	-262.043	-173.927
24	873.380	263.430	170.560	-1466.512	-236.203	-138.055
25	1444.209	238.232	133.593	-1766.078	-212.480	-124.692
26	1738.452	215.185	119.156	-2109.894	-192.466	-104.785
27	2183.085	198.354	116.462	-2557.049	-184.485	-104.930
28	2488.171	192.473	106.890	-2735.362	-166.396	-92.029
29	2660.825	175.975	94.407	-2832.671	-148.490	-79.253
30	2754.479	159.657	82.091	-2852.725	-131.371	-66.643
31	2773.060	144.155	69.984	-2799.822	-116.192	-54.242
32	2720.928	130.531	58.128	-2678.863	-103.972	-42.093
33	2602.877	120.087	46.569	-2495.194	-95.570	-30.240
34	2424.253	113.164	35.347	-2254.292	-91.140	-18.727
35	2190.428	110.299	24.510	-1714.987	-96.944	20.051
36	1836.658	111.905	27.906	-1480.088	-110.586	15.253
37	1504.013	123.341	-10.916	-1203.502	-125.710	11.282
38	1187.104	137.939	-27.957	-886.509	-114.209	8.118
39	876.676	127.062	-25.576	-527.211	166.193	5.736
40	524.159	-152.756	-23.956	702.297	407.489	-39.292
41	-1131.302	711.539	100.531	713.828	-623.019	-134.950
42	-716.881	623.244	133.953	201.309	-458.185	-149.094
43	-208.339	458.742	147.202	-233.680	-301.613	-112.585
44	222.742	302.517	109.811	-616.689	-258.082	-74.878
45	601.964	259.406	71.235	-955.357	-230.476	-84.688
46	921.092	233.583	85.279	-1241.877	-204.304	-46.604
47	1220.334	206.540	41.273	-1376.348	-168.811	-60.936
48	1329.851	173.667	61.871	-1502.107	-139.418	-49.082
49	1450.748	145.356	49.889	-1633.305	-122.990	-42.025
50	1578.077	129.970	43.061	-1652.783	-93.897	-29.404
51	1594.860	101.856	30.714	-1617.337	-65.046	-16.132
52	1558.032	74.118	17.764	-1527.917	-36.649	-2.216
53	1468.594	46.826	4.221	-1481.970	-34.628	3.643
54	1424.114	45.959	-1.214	-1323.710	-22.849	15.542

COMBINACION 43 1.35 (G1 + G2) + 1.5 (SCVMAX-EC1) + V_Pd

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
55	1268.847	35.400	-12.631	-839.196	-20.189	68.754
56	898.066	31.526	-48.727	-720.584	-24.886	65.153
57	760.112	34.075	-52.535	-577.376	-32.334	62.175
58	559.979	40.919	-75.865	-410.852	-42.052	59.787
59	398.794	51.229	-74.031	-220.751	-15.772	57.953
60	214.966	25.671	-72.715	-6.825	25.353	56.637

COMBINACION 44 1.35 (G1 + G2) + 1.5 (SCVMIN-EC1) + V_Pd

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	6.222	36.584	-58.348	-219.561	19.662	50.151
2	230.361	-3.663	-56.239	-416.571	42.807	50.223
3	430.195	-26.742	-53.155	-595.384	37.390	50.221
4	658.893	-22.277	-5.920	-754.954	33.359	49.889
5	798.036	-18.290	-42.081	-940.798	31.423	17.695
6	967.386	-24.368	-27.978	-1217.239	43.221	10.579
7	1246.142	-36.731	-20.024	-1367.697	58.022	25.404
8	1398.023	-52.181	-34.042	-1375.525	54.391	17.964
9	1406.566	-49.270	-25.824	-1455.331	83.477	29.786
10	1486.299	-78.815	-36.896	-1495.534	113.344	40.693
11	1525.669	-109.163	-47.079	-1381.322	121.988	31.001
12	1409.936	-118.556	-36.286	-1330.244	152.952	42.793
13	1356.851	-149.975	-47.446	-1232.168	184.244	57.766
14	1256.179	-181.670	-61.809	-1084.291	217.736	76.136
15	1105.223	-215.692	-79.588	-770.040	231.341	76.224
16	787.555	-229.792	-79.106	-529.443	263.672	85.842
17	543.245	-262.508	-88.171	-161.132	301.991	89.709
18	170.998	-301.198	-91.501	271.793	457.479	128.367
19	-265.978	-457.046	-129.636	782.746	624.253	114.496
20	-781.034	-624.133	-115.255	1112.862	710.498	113.747
21	-384.464	359.565	-183.327	-506.792	-158.498	13.080
22	513.651	184.306	-2.065	-872.820	120.186	13.598
23	892.636	-95.484	-2.785	-1201.738	135.478	14.318
24	1234.111	-112.002	-3.751	-1494.894	121.514	15.284
25	1538.990	-99.352	-5.006	-1910.532	110.949	14.561
26	1965.120	-90.235	-4.614	-2196.181	109.758	17.196
27	2259.719	-90.476	-7.623	-2432.056	112.668	20.722
28	2502.725	-95.011	-11.566	-2612.528	119.662	24.957
29	2688.364	-103.564	-16.262	-2732.294	130.212	29.946
30	2811.131	-115.735	-21.754	-2786.188	143.796	35.733
31	2865.850	-130.941	-28.087	-2706.129	149.089	39.620
32	2703.622	-139.964	-30.903	-2566.717	167.309	41.657
33	2605.283	-162.300	-48.178	-2392.696	187.935	58.907
34	2428.250	-183.851	-64.556	-2137.399	207.501	75.403
35	2169.010	-204.168	-80.202	-1868.391	213.415	74.209
36	1921.078	-208.223	-69.938	-1446.859	228.660	85.386
37	1489.171	-224.833	-81.918	-983.129	246.505	117.532
38	998.464	-245.220	-119.913	-336.802	299.514	153.447
39	345.892	-298.808	-155.066	403.061	622.366	188.746
40	-400.257	-622.156	-189.626	1136.403	845.539	122.440
41	-543.216	246.423	-266.009	-374.965	-205.679	5.031
42	378.478	215.913	-18.280	-598.731	-50.857	3.139
43	606.415	60.742	-15.505	-802.033	65.549	7.532
44	810.023	-55.811	-11.862	-990.934	70.097	8.002
45	990.493	-59.696	-7.367	-1215.957	80.198	14.956
46	1181.162	-67.021	15.842	-1358.589	85.905	15.701
47	1311.166	-71.253	21.988	-1550.459	100.077	16.344
48	1598.603	-85.245	-9.287	-1714.580	115.307	17.829
49	1767.294	-101.382	-11.001	-1846.828	133.255	20.344
50	1902.944	-120.387	-13.790	-1867.969	143.200	21.654
51	1926.282	-131.499	-15.422	-1926.105	165.088	25.334
52	1985.270	-154.448	-19.474	-1941.114	189.099	30.017
53	1999.678	-179.674	-24.583	-1848.848	191.862	32.447
54	1905.279	-183.614	-27.495	-1770.625	207.800	38.727

COMBINACION 44 1.35 (G1 + G2) + 1.5 (SCVMIN-EC1) + V_Pd

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
55	1823.270	-200.718	-34.316	-1637.832	225.583	46.297
56	1685.074	-219.838	-42.489	-1446.385	245.185	55.279
57	1486.426	-240.537	-52.138	-1163.083	251.120	60.002
58	1194.126	-247.837	-57.596	-851.766	269.955	71.253
59	872.056	-268.027	-69.651	-469.408	327.080	84.233
60	477.098	-326.354	-83.502	-10.103	387.387	91.366

DIMENSIONAMIENTO A CORTANTE SEGUN NORMATIVA EHE

Angulo de la biela comprimida(sex.) = 26.50

SEC	Vd (T)	Nd (T)	Vu1 (T)	Vcu (T)	Vsu (T)	Asc (cm2/m)	Dec (m)	th	the	rho	psi	d (m)
1	360.	4471.	3723.	446.	558.	73.9	0.2	26.6	26.6	0.02	1.44	1.05
2	298.	4447.	3723.	444.	558.	73.9	0.1	26.6	26.6	0.02	1.44	1.05
3	249.	4383.	1371.	191.	206.	27.2	0.6	26.6	26.6	0.02	1.44	1.05
4	231.	4376.	1371.	191.	206.	27.2	0.8	26.6	26.6	0.02	1.44	1.05
5	239.	4373.	1371.	191.	206.	27.2	0.8	26.6	26.6	0.02	1.44	1.05
6	221.	4374.	1371.	191.	206.	27.2	0.8	26.6	26.6	0.02	1.44	1.05
7	205.	4381.	1371.	191.	206.	27.2	0.7	26.6	26.6	0.02	1.44	1.05
8	189.	4393.	1371.	191.	206.	27.2	0.7	26.6	26.6	0.02	1.44	1.05
9	197.	4413.	1371.	192.	206.	27.2	0.7	26.6	26.6	0.02	1.44	1.05
10	172.	4434.	1371.	193.	206.	27.2	0.6	26.6	26.6	0.02	1.44	1.05
11	148.	4460.	1371.	194.	206.	27.2	0.5	26.6	26.6	0.02	1.44	1.05
12	146.	4488.	1371.	195.	206.	27.2	0.4	26.6	26.6	0.02	1.44	1.05
13	174.	4518.	1371.	196.	206.	27.2	0.3	26.6	26.6	0.02	1.44	1.05
14	203.	4561.	1371.	198.	206.	27.2	0.4	26.6	26.6	0.02	1.44	1.05
15	235.	4569.	1371.	198.	206.	27.2	0.5	26.6	26.6	0.02	1.44	1.05
16	257.	4575.	1371.	198.	206.	27.2	0.6	26.6	26.6	0.02	1.44	1.05
17	338.	4577.	1371.	198.	206.	27.2	0.7	26.6	26.6	0.02	1.44	1.05
18	421.	4606.	1371.	199.	222.	29.4	0.8	26.6	26.6	0.02	1.44	1.05
19	599.	4606.	3723.	457.	558.	73.9	0.6	26.6	26.6	0.02	1.44	1.05
20	916.	4571.	3723.	454.	558.	73.9	0.9	26.6	26.6	0.02	1.44	1.05
21	854.	4540.	3723.	452.	558.	73.9	0.8	26.6	26.6	0.02	1.44	1.05
22	605.	4464.	3723.	445.	558.	73.9	0.6	26.6	26.6	0.02	1.44	1.05
23	288.	4386.	1371.	191.	206.	27.2	0.7	26.6	26.6	0.02	1.44	1.05
24	236.	4344.	1371.	190.	206.	27.2	0.5	26.6	26.6	0.02	1.44	1.05
25	216.	4287.	1371.	188.	206.	27.2	0.4	26.6	26.6	0.02	1.44	1.05
26	197.	4222.	1371.	185.	206.	27.2	0.8	26.6	26.6	0.02	1.44	1.05
27	178.	4157.	1371.	183.	206.	27.2	0.7	26.6	26.6	0.02	1.44	1.05
28	160.	4098.	1371.	181.	206.	27.2	0.7	26.6	26.6	0.02	1.44	1.05
29	143.	4049.	1371.	179.	206.	27.2	0.5	26.6	26.6	0.02	1.44	1.05
30	126.	4013.	1371.	177.	206.	27.2	0.4	26.6	26.6	0.02	1.44	1.05
31	131.	3991.	1371.	177.	206.	27.2	0.4	26.6	26.6	0.02	1.44	1.05
32	137.	4013.	1371.	177.	206.	27.2	0.5	26.6	26.6	0.02	1.44	1.05
33	147.	4050.	1371.	179.	206.	27.2	0.6	26.6	26.6	0.02	1.44	1.05
34	160.	4099.	1371.	181.	206.	27.2	0.1	26.6	26.6	0.02	1.44	1.05
35	178.	4158.	1371.	183.	206.	27.2	0.2	26.6	26.6	0.02	1.44	1.05
36	199.	4223.	1371.	185.	206.	27.2	0.3	26.6	26.6	0.02	1.44	1.05
37	265.	4288.	1371.	188.	206.	27.2	0.4	26.6	26.6	0.02	1.44	1.05
38	400.	4345.	1371.	190.	210.	27.8	0.7	26.6	26.6	0.02	1.44	1.05
39	495.	4417.	1371.	192.	303.	40.0	0.7	26.6	26.6	0.02	1.44	1.05
40	849.	4489.	3723.	447.	558.	73.9	0.8	26.6	26.6	0.02	1.44	1.05
41	711.	4540.	3723.	452.	558.	73.9	0.8	26.6	26.6	0.02	1.44	1.05
42	597.	4545.	3723.	452.	558.	73.9	0.7	26.6	26.6	0.02	1.44	1.05
43	420.	4550.	1371.	197.	222.	29.4	0.9	26.6	26.6	0.02	1.44	1.05
44	272.	4574.	1371.	198.	206.	27.2	0.7	26.6	26.6	0.02	1.44	1.05
45	238.	4578.	1371.	198.	206.	27.2	0.6	26.6	26.6	0.02	1.44	1.05
46	205.	4576.	1371.	198.	206.	27.2	0.5	26.6	26.6	0.02	1.44	1.05
47	184.	4570.	1371.	198.	206.	27.2	0.4	26.6	26.6	0.02	1.44	1.05
48	154.	4562.	1371.	198.	206.	27.2	0.3	26.6	26.6	0.02	1.44	1.05
49	125.	4518.	1371.	196.	206.	27.2	0.1	26.6	26.6	0.02	1.44	1.05
50	97.	4488.	1371.	195.	206.	27.2	0.0	26.6	26.6	0.02	1.44	1.05
51	86.	4460.	1371.	194.	206.	27.2	0.3	26.6	26.6	0.02	1.44	1.05
52	109.	4435.	1371.	193.	206.	27.2	0.1	26.6	26.6	0.02	1.44	1.05
53	135.	4413.	1371.	192.	206.	27.2	0.4	26.6	26.6	0.02	1.44	1.05
54	126.	4394.	1371.	191.	206.	27.2	0.3	26.6	26.6	0.02	1.44	1.05
55	142.	4381.	1371.	191.	206.	27.2	0.4	26.6	26.6	0.02	1.44	1.05
56	159.	4374.	1371.	191.	206.	27.2	0.5	26.6	26.6	0.02	1.44	1.05
57	176.	4373.	1371.	191.	206.	27.2	0.6	26.6	26.6	0.02	1.44	1.05
58	166.	4412.	1371.	192.	206.	27.2	0.3	26.6	26.6	0.02	1.44	1.05
59	181.	4467.	3723.	446.	558.	73.9	0.5	26.6	26.6	0.02	1.44	1.05
60	233.	4474.	3723.	446.	558.	73.9	0.2	26.6	26.6	0.02	1.44	1.05
61	389.	4474.	3723.	446.	558.	73.9	0.3	26.6	26.6	0.02	1.44	1.05

DIMENSIONAMIENTO A CORTANTE SEGUN NORMATIVA EHE

Angulo de la biela comprimida(sex.) = 45.00

SEC	Vd (T)	Nd (T)	Vu1 (T)	Vcu (T)	Vsu (T)	Asc (cm2/m)	Dec (m)	th	the	rho	psi	d (m)
1	360.	4471.	4654.	149.	279.	73.9	0.3	45.0	26.6	0.02	1.44	1.05
2	298.	4447.	4654.	148.	279.	73.9	0.3	45.0	26.6	0.02	1.44	1.05
3	249.	4383.	1714.	64.	185.	49.0	0.3	45.0	26.6	0.02	1.44	1.05
4	231.	4376.	1714.	64.	168.	44.3	0.4	45.0	26.6	0.02	1.44	1.05
5	239.	4373.	1714.	64.	175.	46.4	0.5	45.0	26.6	0.02	1.44	1.05
6	221.	4374.	1714.	64.	158.	41.7	0.5	45.0	26.6	0.02	1.44	1.05
7	205.	4381.	1714.	64.	141.	37.3	0.5	45.0	26.6	0.02	1.44	1.05
8	189.	4393.	1714.	64.	125.	33.2	0.5	45.0	26.6	0.02	1.44	1.05
9	197.	4413.	1714.	64.	133.	35.3	0.5	45.0	26.6	0.02	1.44	1.05
10	172.	4434.	1714.	64.	108.	28.4	0.5	45.0	26.6	0.02	1.44	1.05
11	148.	4460.	1714.	65.	103.	27.2	0.5	45.0	26.6	0.02	1.44	1.05
12	146.	4488.	1714.	65.	103.	27.2	0.5	45.0	26.6	0.02	1.44	1.05
13	174.	4518.	1714.	65.	109.	28.8	0.3	45.0	26.6	0.02	1.44	1.05
14	203.	4561.	1714.	66.	137.	36.4	0.3	45.0	26.6	0.02	1.44	1.05
15	235.	4569.	1714.	66.	169.	44.6	0.3	45.0	26.6	0.02	1.44	1.05
16	257.	4575.	1714.	66.	191.	50.4	0.3	45.0	26.6	0.02	1.44	1.05
17	338.	4577.	1714.	66.	272.	72.0	0.3	45.0	26.6	0.02	1.44	1.05
18	421.	4606.	1714.	66.	355.	93.9	0.3	45.0	26.6	0.02	1.44	1.05
19	599.	4606.	4654.	152.	447.	118.2	0.4	45.0	26.6	0.02	1.44	1.05
20	916.	4571.	4654.	151.	765.	202.3	0.4	45.0	26.6	0.02	1.44	1.05
21	854.	4540.	4654.	151.	703.	186.1	0.4	45.0	26.6	0.02	1.44	1.05
22	605.	4464.	4654.	148.	457.	120.9	0.4	45.0	26.6	0.02	1.44	1.05
23	288.	4386.	1714.	64.	224.	59.3	0.3	45.0	26.6	0.02	1.44	1.05
24	236.	4344.	1714.	63.	173.	45.7	0.3	45.0	26.6	0.02	1.44	1.05
25	216.	4287.	1714.	63.	154.	40.7	0.2	45.0	26.6	0.02	1.44	1.05
26	197.	4222.	1714.	62.	135.	35.8	0.5	45.0	26.6	0.02	1.44	1.05
27	178.	4157.	1714.	61.	117.	31.0	0.6	45.0	26.6	0.02	1.44	1.05
28	160.	4098.	1714.	60.	103.	27.2	0.6	45.0	26.6	0.02	1.44	1.05
29	143.	4049.	1714.	60.	103.	27.2	0.6	45.0	26.6	0.02	1.44	1.05
30	126.	4013.	1714.	59.	103.	27.2	0.6	45.0	26.6	0.02	1.44	1.05
31	131.	3991.	1714.	59.	103.	27.2	0.6	45.0	26.6	0.02	1.44	1.05
32	137.	4013.	1714.	59.	103.	27.2	0.6	45.0	26.6	0.02	1.44	1.05
33	147.	4050.	1714.	60.	103.	27.2	0.6	45.0	26.6	0.02	1.44	1.05
34	160.	4099.	1714.	60.	103.	27.2	0.1	45.0	26.6	0.02	1.44	1.05
35	178.	4158.	1714.	61.	117.	31.1	0.2	45.0	26.6	0.02	1.44	1.05
36	199.	4223.	1714.	62.	137.	36.3	0.2	45.0	26.6	0.02	1.44	1.05
37	265.	4288.	1714.	63.	203.	53.7	0.2	45.0	26.6	0.02	1.44	1.05
38	400.	4345.	1714.	63.	336.	89.0	0.3	45.0	26.6	0.02	1.44	1.05
39	495.	4417.	1714.	64.	431.	114.0	0.3	45.0	26.6	0.02	1.44	1.05
40	849.	4489.	4654.	149.	700.	185.3	0.4	45.0	26.6	0.02	1.44	1.05
41	711.	4540.	4654.	151.	560.	148.2	0.4	45.0	26.6	0.02	1.44	1.05
42	597.	4545.	4654.	151.	446.	118.0	0.4	45.0	26.6	0.02	1.44	1.05
43	420.	4550.	1714.	66.	354.	93.6	0.3	45.0	26.6	0.02	1.44	1.05
44	272.	4574.	1714.	66.	206.	54.4	0.3	45.0	26.6	0.02	1.44	1.05
45	238.	4578.	1714.	66.	172.	45.4	0.3	45.0	26.6	0.02	1.44	1.05
46	205.	4576.	1714.	66.	139.	36.7	0.3	45.0	26.6	0.02	1.44	1.05
47	184.	4570.	1714.	66.	118.	31.2	0.3	45.0	26.6	0.02	1.44	1.05
48	154.	4562.	1714.	66.	103.	27.2	0.3	45.0	26.6	0.02	1.44	1.05
49	125.	4518.	1714.	65.	103.	27.2	0.2	45.0	26.6	0.02	1.44	1.05
50	97.	4488.	1714.	65.	103.	27.2	0.2	45.0	26.6	0.02	1.44	1.05
51	86.	4460.	1714.	65.	103.	27.2	0.3	45.0	26.6	0.02	1.44	1.05
52	109.	4435.	1714.	64.	103.	27.2	0.4	45.0	26.6	0.02	1.44	1.05
53	135.	4413.	1714.	64.	103.	27.2	0.5	45.0	26.6	0.02	1.44	1.05
54	126.	4394.	1714.	64.	103.	27.2	0.5	45.0	26.6	0.02	1.44	1.05
55	142.	4381.	1714.	64.	103.	27.2	0.5	45.0	26.6	0.02	1.44	1.05
56	159.	4374.	1714.	64.	103.	27.2	0.5	45.0	26.6	0.02	1.44	1.05
57	176.	4373.	1714.	64.	112.	29.8	0.5	45.0	26.6	0.02	1.44	1.05
58	166.	4412.	1714.	64.	103.	27.2	0.3	45.0	26.6	0.02	1.44	1.05
59	181.	4467.	4654.	149.	279.	73.9	0.1	45.0	26.6	0.02	1.44	1.05
60	233.	4474.	4654.	149.	279.	73.9	0.2	45.0	26.6	0.02	1.44	1.05
61	389.	4474.	4654.	149.	279.	73.9	0.4	45.0	26.6	0.02	1.44	1.05

7.2 EVALUACIÓN DEL E.L.U. DE TORSIÓN

En este apartado se comprueba el Estado Límite Último de rotura por esfuerzo torsor de acuerdo con los criterios de la Normativa española vigente (EHE artículo 45)

Los cálculos realizados han sido los siguientes:

- Cálculo de la envolvente de esfuerzos cortantes para las distintas acciones consideradas en el proyecto del tablero. Los esfuerzos de cálculo se han combinado de acuerdo con los criterios del apartado 2 de este Anejo.

- La envolvente de esfuerzos flectores positivos se muestra en los listados adjuntos con la notación $\mathbf{T_d}$, conjuntamente con el esfuerzo flector y cortante concomitantes.

- Cálculo de $\mathbf{T_{u1}}$ (esfuerzo torsor de agotamiento que pueden resistir las bielas comprimidas).

- Dimensionamiento de las armaduras transversal $\mathbf{A_{st}}$ y longitudinal $\mathbf{A_{sl}}$ requeridas para resistir el esfuerzo torsor $\mathbf{T_d}$, a partir del cálculo de $\mathbf{T_{u2}}$ (esfuerzo torsor que pueden resistir las armaduras transversales) y $\mathbf{T_{u3}}$ (esfuerzo torsor que pueden resistir las armaduras longitudinales).

- Comprobación de la interacción torsor-cortante (artículo 45.3.2.2) en cada una de las secciones en que se ha discretizado el tablero para el máximo esfuerzo cortante y el torsor concomitante y viceversa.

COMBINACION 45 1.35 (G1 + G2) + 1.5 (SCTMAX-IPF) + PRETD

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-378.987	215.502	363.058	239.193	-164.824	-336.494
2	-240.561	164.966	338.094	266.344	-127.800	-300.206
3	-274.794	128.610	302.876	188.378	-120.558	-265.325
4	-202.916	122.106	269.103	95.317	-136.649	-250.778
5	-94.442	136.504	251.280	36.723	-132.069	-229.165
6	-35.721	131.929	229.783	-9.606	-127.884	-206.852
7	10.696	127.794	207.584	-44.586	-124.331	-183.892
8	45.685	124.177	184.738	-132.422	-132.769	-184.738
9	133.597	132.472	185.695	-150.415	-118.413	-161.301
10	151.611	118.226	162.369	-153.734	-105.172	-137.327
11	154.873	105.048	138.506	-221.426	-103.026	-138.506
12	222.458	102.664	139.793	-203.809	-91.190	-114.159
13	204.815	90.886	115.555	-175.144	-81.142	-89.386
14	176.042	80.923	90.889	-151.067	-71.057	-64.245
15	151.814	70.755	65.855	-201.392	-69.120	-65.855
16	202.021	68.757	67.571	-168.196	-59.615	-44.355
17	168.688	59.264	46.176	-131.100	-52.832	-26.684
18	131.433	52.480	28.610	-211.168	67.519	-16.880
19	211.338	-67.894	18.909	-106.237	224.306	-18.909
20	106.240	-224.693	21.042	192.276	306.639	-173.231
21	-510.008	648.865	415.662	13.703	-375.375	-442.961
22	-15.941	375.544	444.744	-64.648	-77.862	-398.430
23	55.834	78.535	401.802	-104.095	-45.579	-355.864
24	88.766	46.845	360.847	-141.560	-44.621	-315.293
25	119.999	46.558	321.909	-181.577	-47.994	-276.887
26	154.272	50.619	285.161	-219.783	-46.202	-240.540
27	187.440	49.644	250.493	-258.132	-55.428	-211.595
28	214.249	47.589	217.836	-282.491	-56.887	-194.407
29	283.935	56.698	195.629	-298.277	-56.933	-177.090
30	299.760	56.715	178.461	-302.558	-56.086	-159.643
31	304.067	55.845	161.162	-348.943	-64.950	-161.162
32	350.460	64.594	162.828	-316.734	-65.265	-143.732
33	318.167	65.036	145.545	-277.861	-67.588	-126.171
34	279.171	67.210	128.128	-238.142	-72.104	-108.476
35	239.323	71.720	110.578	-204.910	-79.159	-90.648
36	205.906	78.784	92.894	-185.993	-88.553	-72.690
37	186.768	88.117	75.079	-187.958	-99.465	-57.571
38	188.493	99.014	60.102	-208.708	-83.895	-45.481
39	208.989	83.409	48.153	-225.952	200.364	-39.513
40	225.978	-200.858	42.325	171.976	417.014	-191.737
41	-317.550	513.851	300.728	-10.591	-375.563	-327.651
42	9.405	375.634	329.206	-80.371	-209.823	-302.643
43	74.891	210.223	305.342	-165.430	-78.121	-266.566
44	155.714	78.890	270.422	-206.417	-65.854	-239.900
45	207.010	65.832	240.391	-209.695	-53.656	-218.517
46	210.418	53.515	219.124	-249.729	-51.903	-219.124
47	250.569	51.871	219.845	-235.987	-39.246	-197.324
48	236.924	39.072	198.160	-220.633	-26.844	-174.935
49	221.650	26.762	175.884	-188.573	-13.164	-151.901
50	189.611	13.068	152.962	-207.251	-11.040	-152.962
51	208.315	10.843	154.135	-147.905	4.056	-129.336
52	148.994	-4.224	130.620	-69.513	19.825	-104.950
53	70.587	-20.060	106.343	-65.587	11.449	-106.343
54	66.632	-11.701	107.845	34.582	16.428	-81.250

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
55	-33.633	-16.669	82.860	149.324	21.704	-55.308
56	-148.456	-22.036	57.024	247.886	23.671	-34.041
57	-247.177	-23.881	35.863	270.754	13.665	-35.863
58	-270.262	-13.987	37.789	277.701	19.234	-7.421
59	-257.200	-18.929	15.080	297.520	44.311	-9.450
60	-290.567	-45.256	13.957	344.634	84.922	-11.581

COMBINACION 45 1.35 (G1 + G2) + 1.5 (SCTMAX-IPF) + PRETD

COMBINACION 46 1.35 (G1 + G2) + 1.5 (SCTMIN-IPF) + PRETD

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-345.189	168.389	17.510	241.728	-121.203	-26.848
2	-243.477	122.335	30.222	290.049	-84.307	-13.923
3	-244.279	100.293	15.404	120.229	-95.094	5.812
4	-130.674	95.851	-3.930	57.354	-94.229	3.521
5	-64.956	94.673	-3.091	-34.134	-83.528	26.892
6	18.176	85.087	-25.213	-163.334	-69.088	48.697
7	145.518	71.146	-47.087	-287.364	-59.530	70.026
8	268.218	61.960	-68.462	-285.110	-60.000	72.832
9	265.273	62.706	-71.296	-352.784	-36.533	97.135
10	332.757	39.769	-95.606	-395.044	-14.576	122.525
11	375.267	18.280	-120.986	-376.473	-9.568	123.607
12	357.382	13.429	-122.041	-382.934	10.222	149.960
13	365.053	-5.930	-148.351	-370.053	27.872	177.012
14	353.704	-23.131	-175.343	-379.706	42.637	202.360
15	365.202	-37.633	-200.618	-306.667	48.465	205.487
16	294.342	-43.192	-203.658	-246.957	63.409	235.006
17	272.444	-58.086	-232.341	-233.216	73.872	259.141
18	256.969	-68.809	-258.559	82.729	228.213	288.076
19	-51.775	-222.690	-286.044	300.960	395.794	310.641
20	-273.851	-390.685	-311.274	705.462	498.504	240.624
21	-535.566	537.510	-132.776	257.684	-352.919	-28.363
22	-103.715	348.842	39.027	189.790	-59.823	-16.268
23	4.222	52.383	26.135	140.936	-30.466	-1.578
24	87.996	19.586	6.902	-188.232	-16.327	16.672
25	180.409	16.548	-15.891	-227.105	-12.419	34.767
26	217.454	12.861	-34.511	-310.242	-7.947	55.485
27	334.155	9.499	-49.658	-449.595	-5.617	69.964
28	426.110	7.840	-67.542	-513.648	1.828	89.235
29	488.276	0.951	-86.841	-559.168	10.553	108.910
30	532.571	-7.234	-106.529	-583.320	19.972	128.975
31	556.257	-16.098	-126.591	-301.275	0.544	139.112
32	476.916	-14.668	-129.030	-289.446	9.747	166.651
33	305.451	0.729	-149.814	-261.773	17.796	196.576
34	276.532	-7.759	-181.412	-221.789	24.551	228.903
35	234.978	-14.781	-215.423	-92.054	27.710	272.869
36	162.249	-20.115	-247.262	-76.865	28.255	304.891
37	108.916	-22.130	-295.780	-63.322	28.783	339.800
38	75.856	-23.514	-339.672	-45.519	57.399	377.585
39	53.877	-52.527	-379.719	2.019	356.223	418.269
40	2.181	-351.678	-422.682	759.841	623.080	394.158
41	-533.300	417.597	-164.647	540.257	-382.689	24.708
42	-394.327	371.576	-5.869	456.788	-224.366	20.027
43	-325.880	213.803	0.828	351.874	-94.227	34.835
44	-344.641	104.495	-11.891	280.632	-76.462	51.897
45	86.705	44.262	-34.942	210.463	-63.585	55.005
46	179.078	27.196	-44.461	155.703	-51.505	72.498
47	189.020	17.050	-57.352	131.417	-34.873	77.254
48	221.434	-3.129	-69.108	-288.913	23.583	94.119
49	271.441	-21.900	-92.515	-340.595	39.776	116.420
50	321.808	-37.734	-114.849	37.890	7.422	123.367
51	256.567	-48.537	-117.849	35.035	25.792	144.876
52	249.553	-69.825	-143.034	-239.598	94.902	170.737
53	219.512	-91.820	-169.172	59.240	46.400	184.775
54	-46.799	-38.187	-172.912	87.186	54.611	211.527

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
55	-75.618	-46.640	-200.942	221.234	60.944	254.310
56	-174.503	-54.098	-239.492	232.603	65.973	280.468
57	-196.043	-60.424	-269.628	272.213	65.480	299.404
58	-259.340	-60.885	-298.878	170.860	68.213	329.881
59	-161.862	-64.158	-331.122	215.124	108.569	363.016
60	-210.703	-104.926	-366.050	306.956	160.039	387.254

COMBINACION 46 1.35 (G1 + G2) + 1.5 (SCTMIN-IPF) + PRETD

COMBINACION 47 1.35 (G1 + G2) + 1.5 (SCTMAX-EC1) + PRETD

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-402.689	506.385	563.438	56.185	-444.159	-556.509
2	-63.092	444.822	556.786	-27.042	-348.151	-459.674
3	27.595	348.077	459.941	-272.257	-342.067	-417.976
4	259.819	343.400	421.443	-408.900	-315.606	-406.702
5	409.775	315.460	407.204	-478.229	-277.405	-355.193
6	479.230	277.266	355.811	-671.891	-273.795	-313.356
7	648.685	276.907	320.066	-726.597	-251.856	-289.537
8	701.367	255.496	297.387	-846.920	-248.213	-260.042
9	820.511	252.278	269.059	-812.220	-211.647	-223.381
10	785.331	216.395	233.591	-742.119	-177.794	-186.308
11	715.379	183.151	197.736	-834.919	-171.117	-173.794
12	808.941	176.768	186.462	-714.831	-140.864	-137.718
13	690.302	147.087	151.651	-392.714	-104.419	-108.401
14	550.678	120.947	118.389	-468.021	-93.010	-81.955
15	447.775	100.196	98.475	-474.661	-84.736	-63.002
16	457.229	92.316	80.844	-117.302	-55.278	-49.744
17	300.832	70.718	55.113	-9.480	-42.953	-24.494
18	246.732	61.893	34.820	-108.156	75.409	-16.614
19	368.322	-55.769	30.686	35.174	234.606	-12.900
20	218.087	-216.542	23.620	647.663	151.679	-306.337
21	-1725.984	1007.113	537.499	1143.435	-817.898	-661.389
22	-1150.452	818.426	661.757	756.385	-476.095	-592.858
23	-776.518	477.660	593.384	416.688	-400.994	-527.101
24	-449.817	403.770	527.828	131.262	-358.859	-464.272
25	-176.816	362.978	465.249	-105.838	-318.589	-404.555
26	48.869	324.134	405.828	-552.109	-267.524	-350.026
27	456.101	277.731	359.814	-710.268	-238.380	-320.058
28	602.288	250.877	331.638	-990.779	-208.652	-295.889
29	677.668	220.096	291.360	-1014.599	-185.100	-261.216
30	708.064	190.755	252.894	-997.723	-161.652	-227.432
31	960.930	167.478	242.859	-1068.463	-158.582	-200.991
32	1031.928	165.085	218.051	-968.025	-138.532	-169.603
33	932.702	145.943	188.315	-840.747	-121.920	-139.164
34	807.629	129.945	159.548	-696.724	-109.121	-109.695
35	294.047	119.160	89.429	-547.972	-100.587	-82.442
36	241.340	119.860	67.470	-276.536	-97.272	-84.354
37	212.744	124.789	49.065	-134.280	-119.020	-8.804
38	217.900	133.037	35.302	-244.799	-108.984	-11.334
39	256.884	116.337	25.102	-350.103	170.615	-14.007
40	308.812	-167.694	19.323	909.009	304.965	-148.244
41	-1507.286	845.821	407.424	1047.325	-755.873	-455.752
42	-1053.077	756.280	457.321	1028.911	-617.710	-441.248
43	-1042.049	618.720	441.565	412.022	-406.204	-383.118
44	-442.360	408.656	386.643	183.520	-357.252	-340.467
45	-225.710	360.874	345.034	-22.038	-315.350	-310.976
46	-31.354	320.185	316.632	-165.271	-279.650	-273.298
47	101.567	285.953	280.096	-266.613	-234.524	-233.201
48	193.754	242.104	241.200	-338.309	-191.382	-193.901
49	257.698	200.609	203.162	-399.313	-155.321	-169.104
50	312.502	166.139	179.695	-902.276	-138.584	-202.500
51	875.401	142.118	213.894	-789.464	-97.834	-167.013
52	761.796	101.920	179.608	-627.377	-56.485	-130.500
53	-27.033	69.788	72.448	-649.723	-59.677	-120.378
54	622.397	64.767	135.447	71.749	-32.605	-14.493

COMBINACION 47 1.35 (G1 + G2) + 1.5 (SCTMAX-EC1) + PRETD

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
55	-158.753	52.208	32.879	224.263	-12.441	27.557
56	-304.111	33.895	-7.352	357.002	-9.566	34.801
57	-358.211	32.589	-16.101	400.708	-13.141	36.764
58	-410.428	35.112	-22.834	295.092	-19.707	37.967
59	-308.425	41.286	-27.440	309.583	8.989	38.334
60	-320.379	12.906	-29.815	342.121	50.456	15.004

COMBINACION 48 1.35 (G1 + G2) + 1.5 (SCTMIN-EC1) + PRETD

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
1	-351.132	185.887	20.902	245.401	-114.831	-25.739
2	-236.733	139.831	33.614	276.244	-85.771	-12.416
3	-268.163	102.601	18.575	189.752	-82.973	2.286
4	-171.226	100.076	4.832	117.925	-80.118	4.011
5	-102.443	98.898	5.671	52.470	-71.367	20.355
6	-32.382	91.264	-10.566	-24.637	-62.589	38.181
7	59.969	82.478	-27.877	-113.347	-57.250	56.947
8	169.687	76.156	-47.260	-137.013	-53.350	67.813
9	145.207	61.131	-51.476	-191.340	-31.006	91.285
10	199.534	38.770	-76.063	-223.763	-9.390	116.557
11	79.792	0.037	-107.234	-228.468	1.624	129.021
12	236.016	5.709	-116.049	-225.126	22.297	157.186
13	232.219	-15.020	-145.347	-201.324	41.609	186.895
14	55.779	-49.257	-180.351	-93.445	75.132	220.964
15	78.941	-70.128	-219.223	16.826	84.159	235.867
16	-29.151	-78.886	-234.039	59.258	104.021	270.376
17	-33.771	-98.698	-267.711	77.824	124.440	314.688
18	-54.070	-119.377	-314.106	-2.573	260.365	363.479
19	25.598	-255.474	-364.553	287.919	417.736	373.900
20	-264.531	-412.907	-376.199	651.216	493.485	251.332
21	-740.067	514.016	-190.098	342.848	-366.601	-25.184
22	-344.464	366.223	27.586	257.879	-73.191	-11.837
23	-261.616	72.981	13.691	189.214	-43.242	4.734
24	-195.045	43.232	-3.421	102.657	-42.662	24.568
25	-110.481	42.883	-23.787	61.724	-40.936	39.784
26	-71.376	41.379	-39.528	-33.657	-37.912	60.111
27	57.570	39.464	-54.284	-194.722	-36.153	76.729
28	171.237	38.376	-74.308	-288.631	-28.199	100.715
29	263.260	30.977	-98.321	-370.181	-17.742	127.725
30	343.584	21.061	-125.344	-433.981	-5.282	157.790
31	406.919	9.156	-155.407	-396.556	16.762	162.788
32	351.574	10.590	-157.845	-384.391	5.580	193.475
33	358.647	-0.527	-191.044	-371.646	16.599	229.776
34	347.631	-11.123	-227.300	-343.601	27.101	268.904
35	322.025	-21.079	-266.367	-220.837	34.837	320.108
36	261.178	-30.181	-303.677	-205.762	40.668	359.826
37	213.595	-36.763	-358.100	-183.775	47.193	402.920
38	178.244	-43.450	-408.362	-147.715	82.346	449.449
39	144.451	-78.397	-455.316	-71.259	388.173	499.479
40	70.337	-384.017	-505.763	703.855	617.262	385.187
41	-872.591	387.102	-296.425	606.534	-387.569	33.298
42	-607.714	387.270	-31.536	525.333	-229.670	26.176
43	-527.887	229.493	-24.838	416.845	-99.559	43.122
44	-420.739	99.496	-42.204	333.407	-81.116	63.746
45	-338.603	81.228	-63.244	242.881	-66.715	71.869
46	-254.616	67.358	-70.081	208.045	-56.774	82.660
47	-215.558	57.218	-82.972	161.164	-38.180	92.804
48	-177.012	39.422	-91.152	90.933	-20.383	115.467
49	-108.405	22.066	-113.863	8.797	-4.357	139.974
50	-27.583	6.399	-138.403	41.151	6.715	142.956
51	-60.833	-4.392	-141.403	7.447	29.610	173.235
52	-27.559	-26.874	-171.685	-10.452	54.770	207.372
53	-9.634	-51.687	-205.806	39.982	49.757	208.428
54	-59.526	-46.279	-206.829	42.097	64.244	245.768

COMBINACION 48 1.35 (G1 + G2) + 1.5 (SCTMIN-EC1) + PRETD

ESFUERZOS EN EXTREMO DE BARRA

Barra	Momento1	Cortante1	Torsor1	Momento2	Cortante2	Torsor2
55	-60.603	-60.327	-244.117	154.824	78.059	300.788
56	-135.335	-74.584	-293.539	152.057	91.795	340.943
57	-138.950	-88.928	-336.271	231.583	82.414	339.484
58	-237.387	-79.800	-343.688	127.826	94.318	384.406
59	-131.731	-91.542	-388.901	182.016	144.981	433.968
60	-183.708	-141.917	-438.742	302.595	185.481	433.383

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DIMENSIONAMIENTO A TORSION SEGUN NORMATIVA EHE

Angulo de la biela comprimida(sex.) = 26.50

SECC	Td (mT)	Tu1 (mT)	T-V	Asl (cm2/m)	Ast (cm2/m)	theta	thetae
1	563.44	1675.26	0.14	21.52	5.38	26.57	26.57
2	556.79	1675.26	0.14	21.27	5.32	26.57	26.57
3	459.94	1675.26	0.18	17.57	4.39	26.57	26.57
4	421.44	1675.26	0.17	16.10	4.03	26.57	26.57
5	407.20	1675.26	0.15	15.56	3.89	26.57	26.57
6	355.81	1675.26	0.12	13.59	3.40	26.57	26.57
7	320.07	1675.26	0.11	12.23	3.06	26.57	26.57
8	297.39	1675.26	0.09	11.36	2.84	26.57	26.57
9	269.06	1675.26	0.08	10.28	2.57	26.57	26.57
10	233.59	1675.26	0.06	8.92	2.23	26.57	26.57
11	197.74	1675.26	0.05	7.55	1.89	26.57	26.57
12	186.46	1675.26	0.04	7.12	1.78	26.57	26.57
13	151.65	1675.26	0.03	5.79	1.45	26.57	26.57
14	180.35	1675.26	0.04	6.89	1.72	26.57	26.57
15	219.22	1675.26	0.05	8.37	2.09	26.57	26.57
16	234.04	1675.26	0.05	8.94	2.24	26.57	26.57
17	267.71	1675.26	0.10	10.23	2.56	26.57	26.57
18	314.11	1675.26	0.13	12.00	3.00	26.57	26.57
19	364.55	1675.26	0.06	13.93	3.48	26.57	26.57
20	376.20	1675.26	0.10	14.37	3.59	26.57	26.57
21	537.50	1675.26	0.19	20.53	5.13	26.57	26.57
22	661.76	1675.26	0.22	25.28	6.32	26.57	26.57
23	593.38	1675.26	0.30	22.67	5.67	26.57	26.57
24	527.83	1675.26	0.23	20.16	5.04	26.57	26.57
25	465.25	1675.26	0.19	17.77	4.44	26.57	26.57
26	405.83	1675.26	0.15	15.50	3.88	26.57	26.57
27	359.81	1675.26	0.12	13.75	3.44	26.57	26.57
28	331.64	1675.26	0.10	12.67	3.17	26.57	26.57
29	291.36	1675.26	0.08	11.13	2.78	26.57	26.57
30	252.89	1675.26	0.06	9.66	2.42	26.57	26.57
31	242.86	1675.26	0.05	9.28	2.32	26.57	26.57
32	218.05	1675.26	0.05	8.33	2.08	26.57	26.57
33	191.04	1675.26	0.02	7.30	1.82	26.57	26.57
34	227.30	1675.26	0.03	8.68	2.17	26.57	26.57
35	266.37	1675.26	0.04	10.18	2.54	26.57	26.57
36	303.68	1675.26	0.05	11.60	2.90	26.57	26.57
37	358.10	1675.26	0.06	13.68	3.42	26.57	26.57
38	408.36	1675.26	0.13	15.60	3.90	26.57	26.57
39	455.32	1675.26	0.18	17.39	4.35	26.57	26.57
40	505.76	1675.26	0.11	19.32	4.83	26.57	26.57
41	407.42	1675.26	0.12	15.56	3.89	26.57	26.57
42	457.32	1675.26	0.13	17.47	4.37	26.57	26.57
43	441.57	1675.26	0.33	16.87	4.22	26.57	26.57
44	386.64	1675.26	0.18	14.77	3.69	26.57	26.57
45	345.03	1675.26	0.15	13.18	3.30	26.57	26.57
46	316.63	1675.26	0.12	12.10	3.02	26.57	26.57
47	280.10	1675.26	0.10	10.70	2.68	26.57	26.57
48	241.20	1675.26	0.07	9.21	2.30	26.57	26.57
49	203.16	1675.26	0.05	7.76	1.94	26.57	26.57
50	179.70	1675.26	0.04	6.86	1.72	26.57	26.57
51	213.89	1675.26	0.04	8.17	2.04	26.57	26.57
52	179.61	1675.26	0.03	6.86	1.72	26.57	26.57
53	205.81	1675.26	0.03	7.86	1.97	26.57	26.57
54	206.83	1675.26	0.03	7.90	1.98	26.57	26.57
55	244.12	1675.26	0.03	9.33	2.33	26.57	26.57
56	293.54	1675.26	0.05	11.21	2.80	26.57	26.57
57	336.27	1675.26	0.06	12.85	3.21	26.57	26.57
58	343.69	1675.26	0.06	13.13	3.28	26.57	26.57
59	388.90	1675.26	0.06	14.86	3.71	26.57	26.57
60	438.74	1675.26	0.08	16.76	4.19	26.57	26.57
61	433.38	1675.26	0.08	16.56	4.14	26.57	26.57

DIMENSIONAMIENTO A TORSION SEGUN NORMATIVA EHE

Angulo de la biela comprimida(sex.) = 45.00

SECC	Td (mT)	Tu1 (mT)	T-V	Asl (cm2/m)	Ast (cm2/m)	theta	thetae
1	563.44	1256.45	0.23	10.76	10.76	45.00	26.57
2	556.79	1256.45	0.22	10.64	10.64	45.00	26.57
3	459.94	1256.45	0.22	8.79	8.79	45.00	26.57
4	421.44	1256.45	0.19	8.05	8.05	45.00	26.57
5	407.20	1256.45	0.18	7.78	7.78	45.00	26.57
6	355.81	1256.45	0.14	6.80	6.80	45.00	26.57
7	320.07	1256.45	0.12	6.11	6.11	45.00	26.57
8	297.39	1256.45	0.11	5.68	5.68	45.00	26.57
9	269.06	1256.45	0.09	5.14	5.14	45.00	26.57
10	233.59	1256.45	0.07	4.46	4.46	45.00	26.57
11	197.74	1256.45	0.05	3.78	3.78	45.00	26.57
12	186.46	1256.45	0.05	3.56	3.56	45.00	26.57
13	151.65	1256.45	0.03	2.90	2.90	45.00	26.57
14	180.35	1256.45	0.03	3.44	3.44	45.00	26.57
15	219.22	1256.45	0.05	4.19	4.19	45.00	26.57
16	234.04	1256.45	0.05	4.47	4.47	45.00	26.57
17	267.71	1256.45	0.08	5.11	5.11	45.00	26.57
18	314.11	1256.45	0.10	6.00	6.00	45.00	26.57
19	364.55	1256.45	0.10	6.96	6.96	45.00	26.57
20	376.20	1256.45	0.11	7.19	7.19	45.00	26.57
21	537.50	1256.45	0.25	10.27	10.27	45.00	26.57
22	661.76	1256.45	0.33	12.64	12.64	45.00	26.57
23	593.38	1256.45	0.36	11.33	11.33	45.00	26.57
24	527.83	1256.45	0.28	10.08	10.08	45.00	26.57
25	465.25	1256.45	0.23	8.89	8.89	45.00	26.57
26	405.83	1256.45	0.18	7.75	7.75	45.00	26.57
27	359.81	1256.45	0.14	6.87	6.87	45.00	26.57
28	331.64	1256.45	0.12	6.33	6.33	45.00	26.57
29	291.36	1256.45	0.10	5.57	5.57	45.00	26.57
30	252.89	1256.45	0.07	4.83	4.83	45.00	26.57
31	242.86	1256.45	0.07	4.64	4.64	45.00	26.57
32	218.05	1256.45	0.06	4.17	4.17	45.00	26.57
33	191.04	1256.45	0.03	3.65	3.65	45.00	26.57
34	227.30	1256.45	0.05	4.34	4.34	45.00	26.57
35	266.37	1256.45	0.06	5.09	5.09	45.00	26.57
36	303.68	1256.45	0.08	5.80	5.80	45.00	26.57
37	358.10	1256.45	0.10	6.84	6.84	45.00	26.57
38	408.36	1256.45	0.13	7.80	7.80	45.00	26.57
39	455.32	1256.45	0.16	8.70	8.70	45.00	26.57
40	505.76	1256.45	0.18	9.66	9.66	45.00	26.57
41	407.42	1256.45	0.15	7.78	7.78	45.00	26.57
42	457.32	1256.45	0.17	8.74	8.74	45.00	26.57
43	441.57	1256.45	0.31	8.43	8.43	45.00	26.57
44	386.64	1256.45	0.19	7.39	7.39	45.00	26.57
45	345.03	1256.45	0.16	6.59	6.59	45.00	26.57
46	316.63	1256.45	0.13	6.05	6.05	45.00	26.57
47	280.10	1256.45	0.11	5.35	5.35	45.00	26.57
48	241.20	1256.45	0.08	4.61	4.61	45.00	26.57
49	203.16	1256.45	0.06	3.88	3.88	45.00	26.57
50	179.70	1256.45	0.04	3.43	3.43	45.00	26.57
51	213.89	1256.45	0.05	4.09	4.09	45.00	26.57
52	179.61	1256.45	0.04	3.43	3.43	45.00	26.57
53	205.81	1256.45	0.04	3.93	3.93	45.00	26.57
54	206.83	1256.45	0.04	3.95	3.95	45.00	26.57
55	244.12	1256.45	0.05	4.66	4.66	45.00	26.57
56	293.54	1256.45	0.08	5.61	5.61	45.00	26.57
57	336.27	1256.45	0.10	6.42	6.42	45.00	26.57
58	343.69	1256.45	0.10	6.56	6.56	45.00	26.57
59	388.90	1256.45	0.10	7.43	7.43	45.00	26.57
60	438.74	1256.45	0.13	8.38	8.38	45.00	26.57
61	433.38	1256.45	0.13	8.28	8.28	45.00	26.57

7.3. EVALUACIÓN DEL E.L.U. DE RASANTE

Se comprueban las secciones de arranque de voladizo a rasante según el artículo 47º de la EHE.

DIMENSIONAMIENTO A RASANTE (Vd)
Y VERIFICACION DE AGOTAMIENTO DEL HORMIGON POR
TENSIONES TANGENCIALES SEGUN NORMATIVA EHE

Seccion = 1

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 360.495 Td (mT) = 563.438

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	303.83	0.00	0.24	10.81

Seccion = 2

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 298.197 Td (mT) = 556.786

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	266.89	0.00	0.19	8.95

Seccion = 3

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 248.974 Td (mT) = 459.941

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	208.85	0.00	0.12	7.47

Seccion = 4

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 231.113 Td (mT) = 421.443

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	206.04	0.00	0.12	6.93

Seccion = 5

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 238.872 Td (mT) = 407.204

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	189.28	0.00	0.10	7.17

Seccion = 6

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 221.352 Td (mT) = 355.811

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	166.36	0.00	0.08	6.64

Seccion = 7

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 204.773 Td (mT) = 320.066

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	166.14	0.00	0.08	6.14

Seccion = 8

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 189.255 Td (mT) = 297.387

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	153.30	0.00	0.07	5.68

Seccion = 9

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 197.309 Td (mT) = 269.059

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	151.37	0.00	0.06	5.92

Seccion = 10

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 171.855 Td (mT) = 233.591

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	129.84	0.00	0.05	5.16

Seccion = 11

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 148.177 Td (mT) = 197.736

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	109.89	0.00	0.04	4.45

Seccion = 12

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 145.741 Td (mT) = 186.462

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	106.06	0.00	0.03	4.37

Seccion = 13

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 174.058 Td (mT) = 151.651

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	88.25	0.00	0.03	5.22

Seccion = 14

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 203.366 Td (mT) = 180.351

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	29.55	0.00	0.04	6.10

Seccion = 15

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 234.761 Td (mT) = 219.223

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	42.08	0.00	0.06	7.04

Seccion = 16

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 256.612 Td (mT) = 234.039

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	47.33	0.00	0.07	7.70

Seccion = 17

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 338.220 Td (mT) = 267.711

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	59.22	0.00	0.11	10.15

Seccion = 18

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 421.470 Td (mT) = 314.106

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	71.63	0.00	0.17	12.64

Seccion = 19

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 599.233 Td (mT) = 364.553

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	153.28	0.00	0.33	17.98

Seccion = 20

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 916.252 Td (mT) = 376.199

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	247.74	0.00	0.75	27.49

Seccion = 21

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 853.819 Td (mT) = 537.499

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	604.27	0.00	0.90	25.61

Seccion = 22

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 605.367 Td (mT) = 661.757

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	491.06	0.00	0.60	18.16

Seccion = 23

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 287.861 Td (mT) = 593.384

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	286.60	0.00	0.22	8.64

Seccion = 24

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 236.124 Td (mT) = 527.828

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	242.26	0.00	0.16	7.08

Seccion = 25

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 216.286 Td (mT) = 465.249

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	217.79	0.00	0.13	6.49

Seccion = 26

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 197.158 Td (mT) = 405.828

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	194.48	0.00	0.10	5.91

Seccion = 27

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 178.090 Td (mT) = 359.814

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	166.64	0.00	0.08	5.34

Seccion = 28

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 160.000 Td (mT) = 331.638

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	150.53	0.00	0.06	4.80

Seccion = 29

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 142.518 Td (mT) = 291.360

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	132.06	0.00	0.05	4.28

Seccion = 30

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 125.751 Td (mT) = 252.894

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	114.45	0.00	0.04	3.77

Seccion = 31

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 131.176 Td (mT) = 242.859

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	100.49	0.00	0.03	3.94

Seccion = 32

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 136.583 Td (mT) = 218.051

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	99.05	0.00	0.03	4.10

Seccion = 33

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 146.803 Td (mT) = 191.044

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	0.32	0.00	0.02	4.40

Seccion = 34

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 160.222 Td (mT) = 227.300

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	6.67	0.00	0.03	4.81

Seccion = 35

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 178.370 Td (mT) = 266.367

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	12.65	0.00	0.03	5.35

Seccion = 36

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 199.011 Td (mT) = 303.677

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	18.11	0.00	0.04	5.97

Seccion = 37

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 265.449 Td (mT) = 358.100

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	22.06	0.00	0.07	7.96

Seccion = 38

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 399.598 Td (mT) = 408.362

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	26.07	0.00	0.15	11.99

Seccion = 39

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 494.988 Td (mT) = 455.316

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	47.04	0.00	0.23	14.85

Seccion = 40

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 849.411 Td (mT) = 505.763

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	230.41	0.00	0.65	25.48

Seccion = 41

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 710.712 Td (mT) = 407.424

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	507.49	0.00	0.64	21.32

Seccion = 42

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 596.644 Td (mT) = 457.321

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	453.77	0.00	0.52	17.90

Seccion = 43

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 419.564 Td (mT) = 441.565

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	371.23	0.00	0.36	12.59

Seccion = 44

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 271.660 Td (mT) = 386.643

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	245.19	0.00	0.16	8.15

Seccion = 45

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 237.676 Td (mT) = 345.034

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	216.52	0.00	0.13	7.13

Seccion = 46

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 204.939 Td (mT) = 316.632

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	192.11	0.00	0.10	6.15

Seccion = 47

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 184.112 Td (mT) = 280.096

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	171.57	0.00	0.08	5.52

Seccion = 48

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 153.590 Td (mT) = 241.200

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	145.26	0.00	0.06	4.61

Seccion = 49

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 125.286 Td (mT) = 203.162

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	120.37	0.00	0.04	3.76

Seccion = 50

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 97.217 Td (mT) = 179.695

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	99.68	0.00	0.03	2.92

Seccion = 51

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 85.720 Td (mT) = 213.894

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	85.27	0.00	0.02	2.57

Seccion = 52

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 109.109 Td (mT) = 179.608

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	61.15	0.00	0.01	3.27

Seccion = 53

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 134.553 Td (mT) = 205.806

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	31.01	0.00	0.02	4.04

Seccion = 54

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 126.477 Td (mT) = 206.829

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	27.77	0.00	0.02	3.79

Seccion = 55

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 141.989 Td (mT) = 244.117

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	36.20	0.00	0.02	4.26

Seccion = 56

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 158.682 Td (mT) = 293.539

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	44.75	0.00	0.03	4.76

Seccion = 57

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 176.056 Td (mT) = 336.271

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	53.36	0.00	0.03	5.28

Seccion = 58

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 166.480 Td (mT) = 343.688

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	47.88	0.00	0.03	4.99

Seccion = 59

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 181.354 Td (mT) = 388.901

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	54.93	0.00	0.03	5.44

Seccion = 60

Angulo de la biela comprimida (sex) = 26.57

Valores maximos de los esfuerzos
Vd (T) = 233.106 Td (mT) = 438.742

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	85.15	0.00	0.06	6.99

Seccion = 61

Angulo de la biela comprimida (sex) =   26.57

Valores maximos de los esfuerzos
Vd (T) =   388.934   Td (mT) =   433.383

Corte	tau_Vu (T/m2)	tau_Tu (T/m2)	tau_Vd (T/m2)	tau_Td (T/m2)	T-V	As,ras (cm2/m)
1	640.00	768.00	111.29	0.00	0.15	11.67

8 APARATOS DE APOYO Y JUNTAS

8.1. REACCIONES VERTICALES

Las reacciones verticales en los distintos apoyos se han calculado a partir de los resultados del apartado 3. Los resultados se resumen en este apartado siguiendo los criterios de numeración de nudos y designación de cargas adoptados en el mencionado apartado 3.

- **g_1** Peso propio de la estructura.
- **g_2** Carga permanente.
- **q** Sobrecarga uniforme (se ha obtenido la envolvente para distintos tipos de tren establecidos en la IPF y en el EC-1)
- **∇T (TEM)** Gradiente de temperatura.
- **Pii** Pretensado inicial de descimbrado (pretensado parcial con pérdidas iniciales).
- **Pi** Pretensado inicial (con pérdidas iniciales).
- **P_∞** Pretensado final (con pérdidas iniciales y diferidas).

Referencia del Proyecto: Paso Inferior Riera de Cervelló

APOYO N = 62

REACCIONES	Flector	Reac_vert	Torsor
G1	0.00000	64.45224	0.00000
G2	0.00000	38.42548	0.00000
Pii	0.00000	37.31795	0.00000
Pi	0.00000	62.89857	0.00000
Pd	0.00000	54.52883	0.00000
TEMP	0.00000	10.27171	0.00000
SC peatonal(100%) Max	0.00000	1.93602	0.00000
SC peatonal(100%) Min	0.00000	-0.41371	0.00000
SC peatonal(50%) Max	0.00000	4.38973	0.00000
SC peatonal(50%) Min	0.00000	-0.06812	0.00000
IPF-75 TREN A via 1 (Max)	0.00000	1.12019	0.00000
IPF-75 TREN A via 1 (Min)	0.00000	-5.29234	0.00000
IPF-75 TREN B1 via 1 (Max)	0.00000	1.21762	0.00000
IPF-75 TREN B1 via 1 (Min)	0.00000	-13.67612	0.00000
IPF-75 TREN B2 via 1 (Max)	0.00000	1.21762	0.00000
IPF-75 TREN B2 via 1 (Min)	0.00000	-12.52344	0.00000
EC-1 TREN LM71 via 1 (Max)	0.00000	1.08806	0.00000
EC-1 TREN LM71 via 1 (Min)	0.00000	-13.23386	0.00000
EC-1 TREN SW/0 via 1 (Max)	0.00000	0.26082	0.00000
EC-1 TREN SW/0 via 1 (Min)	0.00000	-14.63496	0.00000
EC-1 TREN SW/2 via 1 (Max)	0.00000	0.85096	0.00000
EC-1 TREN SW/2 via 1 (Min)	0.00000	-16.32785	0.00000
EC-1 TREN 12.5 via 1 (Max)	0.00000	0.02451	0.00000
EC-1 TREN 12.5 via 1 (Min)	0.00000	-1.55381	0.00000
IPF-75 TREN A via 2 (Max)	0.00000	66.04578	0.00000
IPF-75 TREN A via 2 (Min)	0.00000	-3.07142	0.00000
IPF-75 TREN B1 via 2 (Max)	0.00000	68.15553	0.00000
IPF-75 TREN B1 via 2 (Min)	0.00000	-0.99355	0.00000
IPF-75 TREN B2 via 2 (Max)	0.00000	68.14335	0.00000
IPF-75 TREN B2 via 2 (Min)	0.00000	-0.99355	0.00000
EC-1 TREN LM71 via 2 (Max)	0.00000	75.00552	0.00000
EC-1 TREN LM71 via 2 (Min)	0.00000	-4.80021	0.00000
EC-1 TREN SW/0 via 2 (Max)	0.00000	76.94823	0.00000
EC-1 TREN SW/0 via 2 (Min)	0.00000	-3.35248	0.00000
EC-1 TREN SW/2 via 2 (Max)	0.00000	89.02381	0.00000
EC-1 TREN SW/2 via 2 (Min)	0.00000	12.61912	0.00000
EC-1 TREN 12.5 via 2 (Max)	0.00000	7.23198	0.00000
EC-1 TREN 12.5 via 2 (Min)	0.00000	1.02823	0.00000

COMBINACION DE REACCIONES VERTICALES

Reaccion permanente (ELS) = 157.407
Reaccion maxima (ELS) = 244.208
Reaccion minima (ELS) = 140.628
Reaccion minima (ELU) = 126.289

DESPLAZAMIENTOS	GX	FZ	GY
G1	-0.00002	0.00000	0.00041
G2	-0.00001	0.00000	0.00028
Pii	-0.00012	0.00000	-0.00096
Pi	-0.00021	0.00000	-0.00165
Pd	-0.00018	0.00000	-0.00142
TEMP	0.00014	0.00000	-0.00030
SC peatonal(100%) Max	0.00000	0.00000	0.00002
SC peatonal(100%) Min	0.00000	0.00000	-0.00001
SC peatonal(50%) Max	0.00000	0.00000	0.00001
SC peatonal(50%) Min	0.00000	0.00000	-0.00001
IPF-75 TREN A via 1 (Max)	0.00001	0.00000	0.00027
IPF-75 TREN A via 1 (Min)	-0.00002	0.00000	-0.00010
IPF-75 TREN B1 via 1 (Max)	0.00000	0.00000	0.00009
IPF-75 TREN B1 via 1 (Min)	0.00000	0.00000	-0.00001
IPF-75 TREN B2 via 1 (Max)	0.00000	0.00000	0.00009
IPF-75 TREN B2 via 1 (Min)	0.00000	0.00000	-0.00001
EC-1 TREN LM71 via 1 (Max)	0.00001	0.00000	0.00014
EC-1 TREN LM71 via 1 (Min)	-0.00001	0.00000	-0.00005
EC-1 TREN SW/0 via 1 (Max)	0.00002	0.00000	0.00038
EC-1 TREN SW/0 via 1 (Min)	-0.00001	0.00000	-0.00013
EC-1 TREN SW/2 via 1 (Max)	0.00001	0.00000	0.00043
EC-1 TREN SW/2 via 1 (Min)	-0.00002	0.00000	-0.00008
EC-1 TREN 12.5 via 1 (Max)	0.00000	0.00000	0.00004
EC-1 TREN 12.5 via 1 (Min)	0.00000	0.00000	0.00000
IPF-75 TREN A via 2 (Max)	0.00001	0.00000	0.00030
IPF-75 TREN A via 2 (Min)	-0.00003	0.00000	-0.00011
IPF-75 TREN B1 via 2 (Max)	0.00000	0.00000	0.00010
IPF-75 TREN B1 via 2 (Min)	-0.00001	0.00000	-0.00001
IPF-75 TREN B2 via 2 (Max)	0.00000	0.00000	0.00010
IPF-75 TREN B2 via 2 (Min)	0.00000	0.00000	-0.00001
EC-1 TREN LM71 via 2 (Max)	0.00000	0.00000	0.00015
EC-1 TREN LM71 via 2 (Min)	-0.00001	0.00000	-0.00006
EC-1 TREN SW/0 via 2 (Max)	0.00000	0.00000	0.00042
EC-1 TREN SW/0 via 2 (Min)	-0.00002	0.00000	-0.00014
EC-1 TREN SW/2 via 2 (Max)	-0.00001	0.00000	0.00048
EC-1 TREN SW/2 via 2 (Min)	-0.00003	0.00000	-0.00007
EC-1 TREN 12.5 via 2 (Max)	0.00000	0.00000	0.00004
EC-1 TREN 12.5 via 2 (Min)	0.00000	0.00000	0.00000

COMBINACION DE GIROS DE FLEXION

Acciones permanentes (ELS) = -0.000737
Giro maximo (ELS) = 0.000116
Giro minimo (ELS) = -0.001289

APOYO N = 63

REACCIONES	Flector	Reac_vert	Torsor
G1	0.00000	67.53541	0.00000
G2	0.00000	40.54013	0.00000
Pii	0.00000	28.84408	0.00000
Pi	0.00000	48.01886	0.00000
Pd	0.00000	41.56409	0.00000
TEMP	0.00000	6.58195	0.00000
SC peatonal(100%) Max	0.00000	2.90925	0.00000
SC peatonal(100%) Min	0.00000	-0.58369	0.00000
SC peatonal(50%) Max	0.00000	0.05511	0.00000
SC peatonal(50%) Min	0.00000	-2.70235	0.00000
IPF-75 TREN A via 1 (Max)	0.00000	79.05386	0.00000
IPF-75 TREN A via 1 (Min)	0.00000	-5.60908	0.00000
IPF-75 TREN B1 via 1 (Max)	0.00000	87.91135	0.00000
IPF-75 TREN B1 via 1 (Min)	0.00000	-3.49701	0.00000
IPF-75 TREN B2 via 1 (Max)	0.00000	87.87962	0.00000
IPF-75 TREN B2 via 1 (Min)	0.00000	-3.49701	0.00000
EC-1 TREN LM71 via 1 (Max)	0.00000	99.05902	0.00000
EC-1 TREN LM71 via 1 (Min)	0.00000	-8.59702	0.00000
EC-1 TREN SW/0 via 1 (Max)	0.00000	102.99879	0.00000
EC-1 TREN SW/0 via 1 (Min)	0.00000	-5.90029	0.00000
EC-1 TREN SW/2 via 1 (Max)	0.00000	113.79877	0.00000
EC-1 TREN SW/2 via 1 (Min)	0.00000	14.69407	0.00000
EC-1 TREN 12.5 via 1 (Max)	0.00000	9.68034	0.00000
EC-1 TREN 12.5 via 1 (Min)	0.00000	1.24879	0.00000
IPF-75 TREN A via 2 (Max)	0.00000	11.30288	0.00000
IPF-75 TREN A via 2 (Min)	0.00000	-7.58405	0.00000
IPF-75 TREN B1 via 2 (Max)	0.00000	10.99590	0.00000
IPF-75 TREN B1 via 2 (Min)	0.00000	-11.76371	0.00000
IPF-75 TREN B2 via 2 (Max)	0.00000	10.99590	0.00000
IPF-75 TREN B2 via 2 (Min)	0.00000	-11.76892	0.00000
EC-1 TREN LM71 via 2 (Max)	0.00000	14.78377	0.00000
EC-1 TREN LM71 via 2 (Min)	0.00000	-12.42338	0.00000
EC-1 TREN SW/0 via 2 (Max)	0.00000	13.39196	0.00000
EC-1 TREN SW/0 via 2 (Min)	0.00000	-10.23316	0.00000
EC-1 TREN SW/2 via 2 (Max)	0.00000	12.87551	0.00000
EC-1 TREN SW/2 via 2 (Min)	0.00000	-14.17410	0.00000
EC-1 TREN 12.5 via 2 (Max)	0.00000	19.13494	0.00000
EC-1 TREN 12.5 via 2 (Min)	0.00000	-0.06071	0.00000

COMBINACION DE REACCIONES VERTICALES

Reaccion permanente (ELS) = 149.640
Reaccion maxima (ELS) = 285.060
Reaccion minima (ELS) = 132.073
Reaccion minima (ELU) = 117.835

DESPLAZAMIENTOS	GX	FZ	GY
G1	0.00010	0.00000	0.00040
G2	0.00007	0.00000	0.00027
Pii	-0.00006	0.00000	-0.00097
Pi	-0.00011	0.00000	-0.00166
Pd	-0.00009	0.00000	-0.00144
TEMP	-0.00019	0.00000	-0.00027
SC peatonal(100%) Max	0.00000	0.00000	0.00002
SC peatonal(100%) Min	0.00000	0.00000	-0.00001
SC peatonal(50%) Max	0.00000	0.00000	0.00001
SC peatonal(50%) Min	0.00000	0.00000	-0.00001
IPF-75 TREN A via 1 (Max)	0.00006	0.00000	0.00027
IPF-75 TREN A via 1 (Min)	-0.00001	0.00000	-0.00010
IPF-75 TREN B1 via 1 (Max)	0.00002	0.00000	0.00008
IPF-75 TREN B1 via 1 (Min)	0.00000	0.00000	-0.00001
IPF-75 TREN B2 via 1 (Max)	0.00002	0.00000	0.00008
IPF-75 TREN B2 via 1 (Min)	0.00000	0.00000	-0.00001
EC-1 TREN LM71 via 1 (Max)	0.00003	0.00000	0.00014
EC-1 TREN LM71 via 1 (Min)	-0.00001	0.00000	-0.00005
EC-1 TREN SW/0 via 1 (Max)	0.00010	0.00000	0.00037
EC-1 TREN SW/0 via 1 (Min)	-0.00002	0.00000	-0.00013
EC-1 TREN SW/2 via 1 (Max)	0.00011	0.00000	0.00042
EC-1 TREN SW/2 via 1 (Min)	0.00001	0.00000	-0.00008
EC-1 TREN 12.5 via 1 (Max)	0.00001	0.00000	0.00003
EC-1 TREN 12.5 via 1 (Min)	0.00000	0.00000	0.00000
IPF-75 TREN A via 2 (Max)	0.00005	0.00000	0.00030
IPF-75 TREN A via 2 (Min)	-0.00002	0.00000	-0.00011
IPF-75 TREN B1 via 2 (Max)	0.00002	0.00000	0.00009
IPF-75 TREN B1 via 2 (Min)	0.00000	0.00000	-0.00001
IPF-75 TREN B2 via 2 (Max)	0.00002	0.00000	0.00009
IPF-75 TREN B2 via 2 (Min)	0.00000	0.00000	-0.00001
EC-1 TREN LM71 via 2 (Max)	0.00003	0.00000	0.00015
EC-1 TREN LM71 via 2 (Min)	-0.00001	0.00000	-0.00006
EC-1 TREN SW/0 via 2 (Max)	0.00007	0.00000	0.00042
EC-1 TREN SW/0 via 2 (Min)	-0.00002	0.00000	-0.00014
EC-1 TREN SW/2 via 2 (Max)	0.00008	0.00000	0.00047
EC-1 TREN SW/2 via 2 (Min)	0.00000	0.00000	-0.00007
EC-1 TREN 12.5 via 2 (Max)	0.00001	0.00000	0.00004
EC-1 TREN 12.5 via 2 (Min)	-0.00001	0.00000	0.00000

COMBINACION DE GIROS DE FLEXION

Acciones permanentes (ELS) = -0.000765
Giro maximo (ELS) = 0.000074
Giro minimo (ELS) = -0.001289

APOYO N = 64

REACCIONES	Flector	Reac_vert	Torsor
G1	0.00000	212.24019	0.00000
G2	0.00000	141.55679	0.00000
Pii	0.00000	-36.31253	0.00000
Pi	0.00000	-61.41013	0.00000
Pd	0.00000	-53.29366	0.00000
TEMP	0.00000	-10.95724	0.00000
SC peatonal(100%) Max	0.00000	4.56408	0.00000
SC peatonal(100%) Min	0.00000	-0.30612	0.00000
SC peatonal(50%) Max	0.00000	11.16069	0.00000
SC peatonal(50%) Min	0.00000	-0.08259	0.00000
IPF-75 TREN A via 1 (Max)	0.00000	11.73850	0.00000
IPF-75 TREN A via 1 (Min)	0.00000	-4.31051	0.00000
IPF-75 TREN B1 via 1 (Max)	0.00000	22.71061	0.00000
IPF-75 TREN B1 via 1 (Min)	0.00000	-5.12536	0.00000
IPF-75 TREN B2 via 1 (Max)	0.00000	21.47911	0.00000
IPF-75 TREN B2 via 1 (Min)	0.00000	-5.12536	0.00000
EC-1 TREN LM71 via 1 (Max)	0.00000	18.36295	0.00000
EC-1 TREN LM71 via 1 (Min)	0.00000	-6.94287	0.00000
EC-1 TREN SW/0 via 1 (Max)	0.00000	17.01283	0.00000
EC-1 TREN SW/0 via 1 (Min)	0.00000	-0.38240	0.00000
EC-1 TREN SW/2 via 1 (Max)	0.00000	28.47348	0.00000
EC-1 TREN SW/2 via 1 (Min)	0.00000	-0.41121	0.00000
EC-1 TREN 12.5 via 1 (Max)	0.00000	1.96079	0.00000
EC-1 TREN 12.5 via 1 (Min)	0.00000	-0.03594	0.00000
IPF-75 TREN A via 2 (Max)	0.00000	73.21947	0.00000
IPF-75 TREN A via 2 (Min)	0.00000	-3.39019	0.00000
IPF-75 TREN B1 via 2 (Max)	0.00000	188.27650	0.00000
IPF-75 TREN B1 via 2 (Min)	0.00000	-3.10907	0.00000
IPF-75 TREN B2 via 2 (Max)	0.00000	176.26393	0.00000
IPF-75 TREN B2 via 2 (Min)	0.00000	-3.10907	0.00000
EC-1 TREN LM71 via 2 (Max)	0.00000	161.31306	0.00000
EC-1 TREN LM71 via 2 (Min)	0.00000	-4.62019	0.00000
EC-1 TREN SW/0 via 2 (Max)	0.00000	153.46097	0.00000
EC-1 TREN SW/0 via 2 (Min)	0.00000	0.27968	0.00000
EC-1 TREN SW/2 via 2 (Max)	0.00000	223.43094	0.00000
EC-1 TREN SW/2 via 2 (Min)	0.00000	0.33273	0.00000
EC-1 TREN 12.5 via 2 (Max)	0.00000	19.26329	0.00000
EC-1 TREN 12.5 via 2 (Min)	0.00000	0.02629	0.00000

COMBINACION DE REACCIONES VERTICALES

Reaccion permanente (ELS) = 300.503
Reaccion maxima (ELS) = 512.064
Reaccion minima (ELS) = 281.007
Reaccion minima (ELU) = 264.557

DESPLAZAMIENTOS	GX	FZ	GY
G1	-0.00020	0.00000	0.00011
G2	-0.00013	0.00000	0.00007
Pii	0.00002	0.00000	-0.00009
Pi	0.00004	0.00000	-0.00012
Pd	0.00004	0.00000	-0.00010
TEMP	0.00019	0.00000	0.00009
SC peatonal(100%) Max	0.00000	0.00000	0.00002
SC peatonal(100%) Min	-0.00001	0.00000	-0.00002
SC peatonal(50%) Max	0.00000	0.00000	0.00001
SC peatonal(50%) Min	-0.00001	0.00000	-0.00001
IPF-75 TREN A via 1 (Max)	0.00000	0.00000	0.00022
IPF-75 TREN A via 1 (Min)	-0.00005	0.00000	-0.00020
IPF-75 TREN B1 via 1 (Max)	0.00000	0.00000	0.00005
IPF-75 TREN B1 via 1 (Min)	-0.00002	0.00000	-0.00006
IPF-75 TREN B2 via 1 (Max)	0.00000	0.00000	0.00006
IPF-75 TREN B2 via 1 (Min)	-0.00002	0.00000	-0.00006
EC-1 TREN LM71 via 1 (Max)	0.00000	0.00000	0.00011
EC-1 TREN LM71 via 1 (Min)	-0.00002	0.00000	-0.00010
EC-1 TREN SW/0 via 1 (Max)	0.00000	0.00000	0.00027
EC-1 TREN SW/0 via 1 (Min)	-0.00008	0.00000	-0.00029
EC-1 TREN SW/2 via 1 (Max)	0.00000	0.00000	0.00032
EC-1 TREN SW/2 via 1 (Min)	-0.00010	0.00000	-0.00032
EC-1 TREN 12.5 via 1 (Max)	0.00000	0.00000	0.00001
EC-1 TREN 12.5 via 1 (Min)	-0.00001	0.00000	-0.00003
IPF-75 TREN A via 2 (Max)	0.00000	0.00000	0.00023
IPF-75 TREN A via 2 (Min)	-0.00006	0.00000	-0.00018
IPF-75 TREN B1 via 2 (Max)	0.00000	0.00000	0.00006
IPF-75 TREN B1 via 2 (Min)	-0.00003	0.00000	-0.00006
IPF-75 TREN B2 via 2 (Max)	0.00000	0.00000	0.00007
IPF-75 TREN B2 via 2 (Min)	-0.00003	0.00000	-0.00006
EC-1 TREN LM71 via 2 (Max)	0.00000	0.00000	0.00012
EC-1 TREN LM71 via 2 (Min)	-0.00003	0.00000	-0.00010
EC-1 TREN SW/0 via 2 (Max)	0.00000	0.00000	0.00030
EC-1 TREN SW/0 via 2 (Min)	-0.00011	0.00000	-0.00026
EC-1 TREN SW/2 via 2 (Max)	0.00000	0.00000	0.00037
EC-1 TREN SW/2 via 2 (Min)	-0.00016	0.00000	-0.00030
EC-1 TREN 12.5 via 2 (Max)	0.00001	0.00000	0.00001
EC-1 TREN 12.5 via 2 (Min)	-0.00001	0.00000	-0.00002

COMBINACION DE GIROS DE FLEXION

Acciones permanentes (ELS) = 0.000084
Giro maximo (ELS) = 0.000806
Giro minimo (ELS) = -0.000560

APOYO N = 65

REACCIONES	Flector	Reac_vert	Torsor
G1	0.00000	210.64760	0.00000
G2	0.00000	140.46448	0.00000
Pii	0.00000	-29.54506	0.00000
Pi	0.00000	-49.00457	0.00000
Pd	0.00000	-42.34684	0.00000
TEMP	0.00000	-5.91500	0.00000
SC peatonal(100%) Max	0.00000	9.94927	0.00000
SC peatonal(100%) Min	0.00000	-0.44989	0.00000
SC peatonal(50%) Max	0.00000	0.00000	0.00000
SC peatonal(50%) Min	0.00000	-4.20970	0.00000
IPF-75 TREN A via 1 (Max)	0.00000	83.34724	0.00000
IPF-75 TREN A via 1 (Min)	0.00000	-5.31471	0.00000
IPF-75 TREN B1 via 1 (Max)	0.00000	214.13777	0.00000
IPF-75 TREN B1 via 1 (Min)	0.00000	-4.95964	0.00000
IPF-75 TREN B2 via 1 (Max)	0.00000	200.74489	0.00000
IPF-75 TREN B2 via 1 (Min)	0.00000	-4.95964	0.00000
EC-1 TREN LM71 via 1 (Max)	0.00000	190.96510	0.00000
EC-1 TREN LM71 via 1 (Min)	0.00000	-7.15104	0.00000
EC-1 TREN SW/0 via 1 (Max)	0.00000	181.24855	0.00000
EC-1 TREN SW/0 via 1 (Min)	0.00000	0.11763	0.00000
EC-1 TREN SW/2 via 1 (Max)	0.00000	253.72090	0.00000
EC-1 TREN SW/2 via 1 (Min)	0.00000	0.12821	0.00000
EC-1 TREN 12.5 via 1 (Max)	0.00000	22.76810	0.00000
EC-1 TREN 12.5 via 1 (Min)	0.00000	0.01106	0.00000
IPF-75 TREN A via 2 (Max)	0.00000	19.16266	0.00000
IPF-75 TREN A via 2 (Min)	0.00000	-6.67415	0.00000
IPF-75 TREN B1 via 2 (Max)	0.00000	49.91520	0.00000
IPF-75 TREN B1 via 2 (Min)	0.00000	-6.66950	0.00000
IPF-75 TREN B2 via 2 (Max)	0.00000	46.79150	0.00000
IPF-75 TREN B2 via 2 (Min)	0.00000	-6.66950	0.00000
EC-1 TREN LM71 via 2 (Max)	0.00000	46.74075	0.00000
EC-1 TREN LM71 via 2 (Min)	0.00000	-9.34658	0.00000
EC-1 TREN SW/0 via 2 (Max)	0.00000	46.45599	0.00000
EC-1 TREN SW/0 via 2 (Min)	0.00000	-0.05228	0.00000
EC-1 TREN SW/2 via 2 (Max)	0.00000	60.00103	0.00000
EC-1 TREN SW/2 via 2 (Min)	0.00000	-0.06341	0.00000
EC-1 TREN 12.5 via 2 (Max)	0.00000	15.02077	0.00000
EC-1 TREN 12.5 via 2 (Min)	0.00000	-0.00491	0.00000

COMBINACION DE REACCIONES VERTICALES

Reaccion permanente (ELS) = 308.765
Reaccion maxima (ELS) = 609.732
Reaccion minima (ELS) = 290.632
Reaccion minima (ELU) = 272.464

DESPLAZAMIENTOS	GX	FZ	GY
G1	0.00021	0.00000	0.00006
G2	0.00014	0.00000	0.00004
Pii	-0.00004	0.00000	-0.00009
Pi	-0.00006	0.00000	-0.00011
Pd	-0.00005	0.00000	-0.00009
TEMP	-0.00017	0.00000	0.00012
SC peatonal(100%) Max	0.00001	0.00000	0.00002
SC peatonal(100%) Min	0.00000	0.00000	-0.00002
SC peatonal(50%) Max	0.00000	0.00000	0.00001
SC peatonal(50%) Min	0.00000	0.00000	-0.00001
IPF-75 TREN A via 1 (Max)	0.00007	0.00000	0.00021
IPF-75 TREN A via 1 (Min)	-0.00001	0.00000	-0.00020
IPF-75 TREN B1 via 1 (Max)	0.00004	0.00000	0.00005
IPF-75 TREN B1 via 1 (Min)	0.00000	0.00000	-0.00007
IPF-75 TREN B2 via 1 (Max)	0.00003	0.00000	0.00006
IPF-75 TREN B2 via 1 (Min)	0.00000	0.00000	-0.00007
EC-1 TREN LM71 via 1 (Max)	0.00004	0.00000	0.00011
EC-1 TREN LM71 via 1 (Min)	0.00000	0.00000	-0.00011
EC-1 TREN SW/0 via 1 (Max)	0.00014	0.00000	0.00026
EC-1 TREN SW/0 via 1 (Min)	0.00000	0.00000	-0.00030
EC-1 TREN SW/2 via 1 (Max)	0.00019	0.00000	0.00029
EC-1 TREN SW/2 via 1 (Min)	0.00000	0.00000	-0.00033
EC-1 TREN 12.5 via 1 (Max)	0.00002	0.00000	0.00001
EC-1 TREN 12.5 via 1 (Min)	0.00000	0.00000	-0.00003
IPF-75 TREN A via 2 (Max)	0.00005	0.00000	0.00023
IPF-75 TREN A via 2 (Min)	-0.00001	0.00000	-0.00019
IPF-75 TREN B1 via 2 (Max)	0.00003	0.00000	0.00006
IPF-75 TREN B1 via 2 (Min)	0.00000	0.00000	-0.00006
IPF-75 TREN B2 via 2 (Max)	0.00002	0.00000	0.00007
IPF-75 TREN B2 via 2 (Min)	0.00000	0.00000	-0.00006
EC-1 TREN LM71 via 2 (Max)	0.00003	0.00000	0.00012
EC-1 TREN LM71 via 2 (Min)	-0.00001	0.00000	-0.00010
EC-1 TREN SW/0 via 2 (Max)	0.00010	0.00000	0.00029
EC-1 TREN SW/0 via 2 (Min)	0.00000	0.00000	-0.00028
EC-1 TREN SW/2 via 2 (Max)	0.00013	0.00000	0.00034
EC-1 TREN SW/2 via 2 (Min)	0.00000	0.00000	-0.00031
EC-1 TREN 12.5 via 2 (Max)	0.00001	0.00000	0.00001
EC-1 TREN 12.5 via 2 (Min)	-0.00001	0.00000	-0.00003

COMBINACION DE GIROS DE FLEXION

Acciones permanentes (ELS) = 0.000020
Giro maximo (ELS) = 0.000731
Giro minimo (ELS) = -0.000650

APOYO N = 66

REACCIONES	Flector	Reac_vert	Torsor
G1	0.00000	210.60106	0.00000
G2	0.00000	140.43282	0.00000
Pii	0.00000	-30.13765	0.00000
Pi	0.00000	-49.98813	0.00000
Pd	0.00000	-43.18977	0.00000
TEMP	0.00000	-5.88817	0.00000
SC peatonal(100%) Max	0.00000	5.07673	0.00000
SC peatonal(100%) Min	0.00000	-0.50609	0.00000
SC peatonal(50%) Max	0.00000	11.55245	0.00000
SC peatonal(50%) Min	0.00000	-0.15072	0.00000
IPF-75 TREN A via 1 (Max)	0.00000	11.21162	0.00000
IPF-75 TREN A via 1 (Min)	0.00000	-6.89525	0.00000
IPF-75 TREN B1 via 1 (Max)	0.00000	24.64274	0.00000
IPF-75 TREN B1 via 1 (Min)	0.00000	-9.41150	0.00000
IPF-75 TREN B2 via 1 (Max)	0.00000	22.85063	0.00000
IPF-75 TREN B2 via 1 (Min)	0.00000	-9.39200	0.00000
EC-1 TREN LM71 via 1 (Max)	0.00000	19.70925	0.00000
EC-1 TREN LM71 via 1 (Min)	0.00000	-9.98830	0.00000
EC-1 TREN SW/0 via 1 (Max)	0.00000	17.76221	0.00000
EC-1 TREN SW/0 via 1 (Min)	0.00000	-10.52783	0.00000
EC-1 TREN SW/2 via 1 (Max)	0.00000	22.74949	0.00000
EC-1 TREN SW/2 via 1 (Min)	0.00000	-11.74254	0.00000
EC-1 TREN 12.5 via 1 (Max)	0.00000	1.26935	0.00000
EC-1 TREN 12.5 via 1 (Min)	0.00000	-0.98981	0.00000
IPF-75 TREN A via 2 (Max)	0.00000	73.33850	0.00000
IPF-75 TREN A via 2 (Min)	0.00000	-5.50532	0.00000
IPF-75 TREN B1 via 2 (Max)	0.00000	188.92934	0.00000
IPF-75 TREN B1 via 2 (Min)	0.00000	-6.95688	0.00000
IPF-75 TREN B2 via 2 (Max)	0.00000	177.41940	0.00000
IPF-75 TREN B2 via 2 (Min)	0.00000	-6.95688	0.00000
EC-1 TREN LM71 via 2 (Max)	0.00000	162.43762	0.00000
EC-1 TREN LM71 via 2 (Min)	0.00000	-7.56038	0.00000
EC-1 TREN SW/0 via 2 (Max)	0.00000	156.90536	0.00000
EC-1 TREN SW/0 via 2 (Min)	0.00000	-7.75474	0.00000
EC-1 TREN SW/2 via 2 (Max)	0.00000	216.78242	0.00000
EC-1 TREN SW/2 via 2 (Min)	0.00000	-8.69099	0.00000
EC-1 TREN 12.5 via 2 (Max)	0.00000	18.65794	0.00000
EC-1 TREN 12.5 via 2 (Min)	0.00000	-0.72883	0.00000

COMBINACION DE REACCIONES VERTICALES

Reaccion permanente (ELS) = 307.844
Reaccion maxima (ELS) = 521.992
Reaccion minima (ELS) = 285.548
Reaccion minima (ELU) = 265.244

DESPLAZAMIENTOS	GX	FZ	GY
G1	-0.00021	0.00000	-0.00006
G2	-0.00014	0.00000	-0.00005
Pii	0.00004	0.00000	0.00008
Pi	0.00006	0.00000	0.00010
Pd	0.00005	0.00000	0.00008
TEMP	0.00017	0.00000	-0.00012
SC peatonal(100%) Max	0.00000	0.00000	0.00002
SC peatonal(100%) Min	-0.00001	0.00000	-0.00002
SC peatonal(50%) Max	0.00000	0.00000	0.00001
SC peatonal(50%) Min	-0.00001	0.00000	-0.00001
IPF-75 TREN A via 1 (Max)	0.00001	0.00000	0.00019
IPF-75 TREN A via 1 (Min)	-0.00005	0.00000	-0.00023
IPF-75 TREN B1 via 1 (Max)	0.00000	0.00000	0.00002
IPF-75 TREN B1 via 1 (Min)	-0.00002	0.00000	-0.00008
IPF-75 TREN B2 via 1 (Max)	0.00000	0.00000	0.00004
IPF-75 TREN B2 via 1 (Min)	-0.00002	0.00000	-0.00008
EC-1 TREN LM71 via 1 (Max)	0.00001	0.00000	0.00010
EC-1 TREN LM71 via 1 (Min)	-0.00003	0.00000	-0.00012
EC-1 TREN SW/0 via 1 (Max)	0.00001	0.00000	0.00007
EC-1 TREN SW/0 via 1 (Min)	-0.00008	0.00000	-0.00034
EC-1 TREN SW/2 via 1 (Max)	0.00002	0.00000	0.00008
EC-1 TREN SW/2 via 1 (Min)	-0.00011	0.00000	-0.00043
EC-1 TREN 12.5 via 1 (Max)	0.00000	0.00000	0.00001
EC-1 TREN 12.5 via 1 (Min)	-0.00001	0.00000	-0.00003
IPF-75 TREN A via 2 (Max)	0.00001	0.00000	0.00020
IPF-75 TREN A via 2 (Min)	-0.00006	0.00000	-0.00021
IPF-75 TREN B1 via 2 (Max)	0.00000	0.00000	0.00001
IPF-75 TREN B1 via 2 (Min)	-0.00004	0.00000	-0.00007
IPF-75 TREN B2 via 2 (Max)	0.00000	0.00000	0.00004
IPF-75 TREN B2 via 2 (Min)	-0.00003	0.00000	-0.00008
EC-1 TREN LM71 via 2 (Max)	0.00000	0.00000	0.00010
EC-1 TREN LM71 via 2 (Min)	-0.00003	0.00000	-0.00011
EC-1 TREN SW/0 via 2 (Max)	0.00001	0.00000	0.00008
EC-1 TREN SW/0 via 2 (Min)	-0.00011	0.00000	-0.00031
EC-1 TREN SW/2 via 2 (Max)	0.00001	0.00000	0.00013
EC-1 TREN SW/2 via 2 (Min)	-0.00017	0.00000	-0.00038
EC-1 TREN 12.5 via 2 (Max)	0.00000	0.00000	0.00001
EC-1 TREN 12.5 via 2 (Min)	-0.00001	0.00000	-0.00003

COMBINACION DE GIROS DE FLEXION

Acciones permanentes (ELS) = -0.000027
Giro maximo (ELS) = 0.000349
Giro minimo (ELS) = -0.001004

APOYO N = 67

REACCIONES	Flector	Reac_vert	Torsor
G1	0.00000	212.19008	0.00000
G2	0.00000	141.52272	0.00000
Pii	0.00000	-36.76669	0.00000
Pi	0.00000	-62.15623	0.00000
Pd	0.00000	-53.95152	0.00000
TEMP	0.00000	-10.92795	0.00000
SC peatonal(100%) Max	0.00000	9.13480	0.00000
SC peatonal(100%) Min	0.00000	-0.28249	0.00000
SC peatonal(50%) Max	0.00000	0.00000	0.00000
SC peatonal(50%) Min	0.00000	-4.39130	0.00000
IPF-75 TREN A via 1 (Max)	0.00000	83.39126	0.00000
IPF-75 TREN A via 1 (Min)	0.00000	-3.26925	0.00000
IPF-75 TREN B1 via 1 (Max)	0.00000	212.95682	0.00000
IPF-75 TREN B1 via 1 (Min)	0.00000	-4.01641	0.00000
IPF-75 TREN B2 via 1 (Max)	0.00000	200.22101	0.00000
IPF-75 TREN B2 via 1 (Min)	0.00000	-4.01641	0.00000
EC-1 TREN LM71 via 1 (Max)	0.00000	190.15588	0.00000
EC-1 TREN LM71 via 1 (Min)	0.00000	-4.35066	0.00000
EC-1 TREN SW/0 via 1 (Max)	0.00000	187.97678	0.00000
EC-1 TREN SW/0 via 1 (Min)	0.00000	-4.40015	0.00000
EC-1 TREN SW/2 via 1 (Max)	0.00000	247.87584	0.00000
EC-1 TREN SW/2 via 1 (Min)	0.00000	-5.00475	0.00000
EC-1 TREN 12.5 via 1 (Max)	0.00000	22.27172	0.00000
EC-1 TREN 12.5 via 1 (Min)	0.00000	-0.41355	0.00000
IPF-75 TREN A via 2 (Max)	0.00000	19.05132	0.00000
IPF-75 TREN A via 2 (Min)	0.00000	-4.17841	0.00000
IPF-75 TREN B1 via 2 (Max)	0.00000	46.57809	0.00000
IPF-75 TREN B1 via 2 (Min)	0.00000	-5.72526	0.00000
IPF-75 TREN B2 via 2 (Max)	0.00000	43.97667	0.00000
IPF-75 TREN B2 via 2 (Min)	0.00000	-5.71196	0.00000
EC-1 TREN LM71 via 2 (Max)	0.00000	44.67318	0.00000
EC-1 TREN LM71 via 2 (Min)	0.00000	-5.94084	0.00000
EC-1 TREN SW/0 via 2 (Max)	0.00000	43.64370	0.00000
EC-1 TREN SW/0 via 2 (Min)	0.00000	-6.21905	0.00000
EC-1 TREN SW/2 via 2 (Max)	0.00000	50.83865	0.00000
EC-1 TREN SW/2 via 2 (Min)	0.00000	-7.12038	0.00000
EC-1 TREN 12.5 via 2 (Max)	0.00000	4.71960	0.00000
EC-1 TREN 12.5 via 2 (Min)	0.00000	-0.58614	0.00000
TEMP	-0.00019	0.00000	-0.00008
SC peatonal(100%) Max	0.00001	0.00000	0.00002
SC peatonal(100%) Min	0.00000	0.00000	-0.00002
SC peatonal(50%) Max	0.00000	0.00000	0.00001
SC peatonal(50%) Min	0.00000	0.00000	-0.00001
IPF-75 TREN A via 1 (Max)	0.00006	0.00000	0.00018
IPF-75 TREN A via 1 (Min)	0.00000	0.00000	-0.00024
IPF-75 TREN B1 via 1 (Max)	0.00003	0.00000	0.00002
IPF-75 TREN B1 via 1 (Min)	0.00000	0.00000	-0.00008
IPF-75 TREN B2 via 1 (Max)	0.00003	0.00000	0.00003
IPF-75 TREN B2 via 1 (Min)	0.00000	0.00000	-0.00009
EC-1 TREN LM71 via 1 (Max)	0.00003	0.00000	0.00009
EC-1 TREN LM71 via 1 (Min)	0.00000	0.00000	-0.00012
EC-1 TREN SW/0 via 1 (Max)	0.00013	0.00000	0.00007
EC-1 TREN SW/0 via 1 (Min)	0.00000	0.00000	-0.00035
EC-1 TREN SW/2 via 1 (Max)	0.00016	0.00000	0.00008
EC-1 TREN SW/2 via 1 (Min)	0.00000	0.00000	-0.00044
EC-1 TREN 12.5 via 1 (Max)	0.00001	0.00000	0.00001
EC-1 TREN 12.5 via 1 (Min)	0.00000	0.00000	-0.00003
IPF-75 TREN A via 2 (Max)	0.00005	0.00000	0.00019
IPF-75 TREN A via 2 (Min)	0.00000	0.00000	-0.00022
IPF-75 TREN B1 via 2 (Max)	0.00002	0.00000	0.00002
IPF-75 TREN B1 via 2 (Min)	0.00000	0.00000	-0.00007
IPF-75 TREN B2 via 2 (Max)	0.00002	0.00000	0.00004
IPF-75 TREN B2 via 2 (Min)	0.00000	0.00000	-0.00008
EC-1 TREN LM71 via 2 (Max)	0.00003	0.00000	0.00010
EC-1 TREN LM71 via 2 (Min)	0.00000	0.00000	-0.00012
EC-1 TREN SW/0 via 2 (Max)	0.00008	0.00000	0.00007
EC-1 TREN SW/0 via 2 (Min)	0.00000	0.00000	-0.00032
EC-1 TREN SW/2 via 2 (Max)	0.00011	0.00000	0.00010
EC-1 TREN SW/2 via 2 (Min)	0.00000	0.00000	-0.00040
EC-1 TREN 12.5 via 2 (Max)	0.00001	0.00000	0.00001
EC-1 TREN 12.5 via 2 (Min)	0.00000	0.00000	-0.00003

COMBINACION DE REACCIONES VERTICALES

Reaccion permanente (ELS) = 299.761
Reaccion maxima (ELS) = 592.810
Reaccion minima (ELS) = 278.858
Reaccion minima (ELU) = 261.656

COMBINACION DE GIROS DE FLEXION

Acciones permanentes (ELS) = -0.000093
Giro maximo (ELS) = 0.000269
Giro minimo (ELS) = -0.001066

DESPLAZAMIENTOS	GX	FZ	GY
G1	0.00020	0.00000	-0.00011
G2	0.00013	0.00000	-0.00007
Pii	-0.00003	0.00000	0.00008
Pi	-0.00005	0.00000	0.00012
Pd	-0.00004	0.00000	0.00009

APOYO N = 68

REACCIONES	Flector	Reac_vert	Torsor
G1	0.00000	67.51598	0.00000
G2	0.00000	40.52695	0.00000
Pii	0.00000	29.18094	0.00000
Pi	0.00000	48.58493	0.00000
Pd	0.00000	42.02880	0.00000
TEMP	0.00000	6.59449	0.00000
SC peatonal(100%) Max	0.00000	2.42490	0.00000
SC peatonal(100%) Min	0.00000	-0.72295	0.00000
SC peatonal(50%) Max	0.00000	4.32031	0.00000
SC peatonal(50%) Min	0.00000	-0.16673	0.00000
IPF-75 TREN A via 1 (Max)	0.00000	1.41113	0.00000
IPF-75 TREN A via 1 (Min)	0.00000	-7.88199	0.00000
IPF-75 TREN B1 via 1 (Max)	0.00000	2.18083	0.00000
IPF-75 TREN B1 via 1 (Min)	0.00000	-15.76556	0.00000
IPF-75 TREN B2 via 1 (Max)	0.00000	2.18083	0.00000
IPF-75 TREN B2 via 1 (Min)	0.00000	-14.92431	0.00000
EC-1 TREN LM71 via 1 (Max)	0.00000	1.94109	0.00000
EC-1 TREN LM71 via 1 (Min)	0.00000	-15.71920	0.00000
EC-1 TREN SW/0 via 1 (Max)	0.00000	2.00385	0.00000
EC-1 TREN SW/0 via 1 (Min)	0.00000	-14.76536	0.00000
EC-1 TREN SW/2 via 1 (Max)	0.00000	2.25987	0.00000
EC-1 TREN SW/2 via 1 (Min)	0.00000	-18.30092	0.00000
EC-1 TREN 12.5 via 1 (Max)	0.00000	0.18833	0.00000
EC-1 TREN 12.5 via 1 (Min)	0.00000	-1.61333	0.00000
IPF-75 TREN A via 2 (Max)	0.00000	68.88551	0.00000
IPF-75 TREN A via 2 (Min)	0.00000	-5.88081	0.00000
IPF-75 TREN B1 via 2 (Max)	0.00000	74.30291	0.00000
IPF-75 TREN B1 via 2 (Min)	0.00000	-8.68806	0.00000
IPF-75 TREN B2 via 2 (Max)	0.00000	75.63676	0.00000
IPF-75 TREN B2 via 2 (Min)	0.00000	-8.90373	0.00000
EC-1 TREN LM71 via 2 (Max)	0.00000	82.98433	0.00000
EC-1 TREN LM71 via 2 (Min)	0.00000	-9.26180	0.00000
EC-1 TREN SW/0 via 2 (Max)	0.00000	78.18151	0.00000
EC-1 TREN SW/0 via 2 (Min)	0.00000	-8.40419	0.00000
EC-1 TREN SW/2 via 2 (Max)	0.00000	93.46404	0.00000
EC-1 TREN SW/2 via 2 (Min)	0.00000	-10.15822	0.00000
EC-1 TREN 12.5 via 2 (Max)	0.00000	7.24088	0.00000
EC-1 TREN 12.5 via 2 (Min)	0.00000	-0.77125	0.00000

COMBINACION DE REACCIONES VERTICALES

Reaccion permanente (ELS) = 150.072
Reaccion maxima (ELS) = 242.338
Reaccion minima (ELS) = 125.561
Reaccion minima (ELU) = 107.828

DESPLAZAMIENTOS	GX	FZ	GY
G1	-0.00010	0.00000	-0.00040
G2	-0.00006	0.00000	-0.00027
Pii	0.00006	0.00000	0.00094
Pi	0.00010	0.00000	0.00162
Pd	0.00009	0.00000	0.00141
TEMP	0.00019	0.00000	0.00027
SC peatonal(100%) Max	0.00000	0.00000	0.00001
SC peatonal(100%) Min	0.00000	0.00000	-0.00002
SC peatonal(50%) Max	0.00000	0.00000	0.00000
SC peatonal(50%) Min	0.00000	0.00000	-0.00001
IPF-75 TREN A via 1 (Max)	0.00002	0.00000	0.00011
IPF-75 TREN A via 1 (Min)	-0.00005	0.00000	-0.00030
IPF-75 TREN B1 via 1 (Max)	0.00001	0.00000	0.00004
IPF-75 TREN B1 via 1 (Min)	-0.00001	0.00000	-0.00006
IPF-75 TREN B2 via 1 (Max)	0.00001	0.00000	0.00004
IPF-75 TREN B2 via 1 (Min)	-0.00001	0.00000	-0.00008
EC-1 TREN LM71 via 1 (Max)	0.00001	0.00000	0.00006
EC-1 TREN LM71 via 1 (Min)	-0.00002	0.00000	-0.00016
EC-1 TREN SW/0 via 1 (Max)	0.00002	0.00000	0.00016
EC-1 TREN SW/0 via 1 (Min)	-0.00005	0.00000	-0.00030
EC-1 TREN SW/2 via 1 (Max)	0.00003	0.00000	0.00020
EC-1 TREN SW/2 via 1 (Min)	-0.00006	0.00000	-0.00037
EC-1 TREN 12.5 via 1 (Max)	0.00000	0.00000	0.00002
EC-1 TREN 12.5 via 1 (Min)	0.00000	0.00000	-0.00002
IPF-75 TREN A via 2 (Max)	0.00002	0.00000	0.00010
IPF-75 TREN A via 2 (Min)	-0.00006	0.00000	-0.00027
IPF-75 TREN B1 via 2 (Max)	0.00000	0.00000	0.00003
IPF-75 TREN B1 via 2 (Min)	-0.00002	0.00000	-0.00005
IPF-75 TREN B2 via 2 (Max)	0.00001	0.00000	0.00004
IPF-75 TREN B2 via 2 (Min)	-0.00002	0.00000	-0.00007
EC-1 TREN LM71 via 2 (Max)	0.00001	0.00000	0.00006
EC-1 TREN LM71 via 2 (Min)	-0.00003	0.00000	-0.00014
EC-1 TREN SW/0 via 2 (Max)	0.00002	0.00000	0.00015
EC-1 TREN SW/0 via 2 (Min)	-0.00008	0.00000	-0.00027
EC-1 TREN SW/2 via 2 (Max)	0.00003	0.00000	0.00019
EC-1 TREN SW/2 via 2 (Min)	-0.00009	0.00000	-0.00032
EC-1 TREN 12.5 via 2 (Max)	0.00000	0.00000	0.00001
EC-1 TREN 12.5 via 2 (Min)	-0.00001	0.00000	-0.00002

COMBINACION DE GIROS DE FLEXION

Acciones permanentes (ELS) = 0.000737
Giro maximo (ELS) = 0.001403
Giro minimo (ELS) = 0.000004

APOYO N = 69

REACCIONES	Flector	Reac_vert	Torsor
G1	0.00000	64.43632	0.00000
G2	0.00000	38.41467	0.00000
Pii	0.00000	37.51659	0.00000
Pi	0.00000	63.22762	0.00000
Pd	0.00000	54.80887	0.00000
TEMP	0.00000	10.28189	0.00000
SC peatonal(100%) Max	0.00000	2.37023	0.00000
SC peatonal(100%) Min	0.00000	-0.30222	0.00000
SC peatonal(50%) Max	0.00000	0.02608	0.00000
SC peatonal(50%) Min	0.00000	-2.30965	0.00000
IPF-75 TREN A via 1 (Max)	0.00000	75.80235	0.00000
IPF-75 TREN A via 1 (Min)	0.00000	-2.87832	0.00000
IPF-75 TREN B1 via 1 (Max)	0.00000	78.24879	0.00000
IPF-75 TREN B1 via 1 (Min)	0.00000	-4.04545	0.00000
IPF-75 TREN B2 via 1 (Max)	0.00000	78.87259	0.00000
IPF-75 TREN B2 via 1 (Min)	0.00000	-4.19256	0.00000
EC-1 TREN LM71 via 1 (Max)	0.00000	91.58820	0.00000
EC-1 TREN LM71 via 1 (Min)	0.00000	-4.32735	0.00000
EC-1 TREN SW/0 via 1 (Max)	0.00000	90.37183	0.00000
EC-1 TREN SW/0 via 1 (Min)	0.00000	-3.78562	0.00000
EC-1 TREN SW/2 via 1 (Max)	0.00000	101.39546	0.00000
EC-1 TREN SW/2 via 1 (Min)	0.00000	-4.54394	0.00000
EC-1 TREN 12.5 via 1 (Max)	0.00000	8.47636	0.00000
EC-1 TREN 12.5 via 1 (Min)	0.00000	-0.33148	0.00000
IPF-75 TREN A via 2 (Max)	0.00000	10.72334	0.00000
IPF-75 TREN A via 2 (Min)	0.00000	-4.17965	0.00000
IPF-75 TREN B1 via 2 (Max)	0.00000	5.68390	0.00000
IPF-75 TREN B1 via 2 (Min)	0.00000	-8.28817	0.00000
IPF-75 TREN B2 via 2 (Max)	0.00000	6.43236	0.00000
IPF-75 TREN B2 via 2 (Min)	0.00000	-7.89282	0.00000
EC-1 TREN LM71 via 2 (Max)	0.00000	11.29399	0.00000
EC-1 TREN LM71 via 2 (Min)	0.00000	-7.51184	0.00000
EC-1 TREN SW/0 via 2 (Max)	0.00000	3.44363	0.00000
EC-1 TREN SW/0 via 2 (Min)	0.00000	-6.42690	0.00000
EC-1 TREN SW/2 via 2 (Max)	0.00000	2.59746	0.00000
EC-1 TREN SW/2 via 2 (Min)	0.00000	-9.98694	0.00000
EC-1 TREN 12.5 via 2 (Max)	0.00000	0.17511	0.00000
EC-1 TREN 12.5 via 2 (Min)	0.00000	-0.73223	0.00000

COMBINACION DE REACCIONES VERTICALES

Reaccion permanente (ELS) = 157.660
Reaccion maxima (ELS) = 280.884
Reaccion minima (ELS) = 145.149
Reaccion minima (ELU) = 132.932

DESPLAZAMIENTOS	GX	FZ	GY
G1	0.00002	0.00000	-0.00041
G2	0.00001	0.00000	-0.00028
Pii	0.00012	0.00000	0.00094
Pi	0.00021	0.00000	0.00161
Pd	0.00018	0.00000	0.00140
TEMP	-0.00014	0.00000	0.00030
SC peatonal(100%) Max	0.00000	0.00000	0.00001
SC peatonal(100%) Min	0.00000	0.00000	-0.00002
SC peatonal(50%) Max	0.00000	0.00000	0.00000
SC peatonal(50%) Min	0.00000	0.00000	-0.00001
IPF-75 TREN A via 1 (Max)	0.00004	0.00000	0.00011
IPF-75 TREN A via 1 (Min)	0.00000	0.00000	-0.00030
IPF-75 TREN B1 via 1 (Max)	0.00001	0.00000	0.00004
IPF-75 TREN B1 via 1 (Min)	0.00000	0.00000	-0.00006
IPF-75 TREN B2 via 1 (Max)	0.00000	0.00000	0.00004
IPF-75 TREN B2 via 1 (Min)	0.00000	0.00000	-0.00008
EC-1 TREN LM71 via 1 (Max)	0.00001	0.00000	0.00006
EC-1 TREN LM71 via 1 (Min)	0.00000	0.00000	-0.00016
EC-1 TREN SW/0 via 1 (Max)	0.00003	0.00000	0.00016
EC-1 TREN SW/0 via 1 (Min)	0.00000	0.00000	-0.00031
EC-1 TREN SW/2 via 1 (Max)	0.00003	0.00000	0.00020
EC-1 TREN SW/2 via 1 (Min)	0.00000	0.00000	-0.00037
EC-1 TREN 12.5 via 1 (Max)	0.00000	0.00000	0.00002
EC-1 TREN 12.5 via 1 (Min)	0.00000	0.00000	-0.00003
IPF-75 TREN A via 2 (Max)	0.00002	0.00000	0.00010
IPF-75 TREN A via 2 (Min)	-0.00001	0.00000	-0.00028
IPF-75 TREN B1 via 2 (Max)	0.00000	0.00000	0.00004
IPF-75 TREN B1 via 2 (Min)	0.00000	0.00000	-0.00005
IPF-75 TREN B2 via 2 (Max)	0.00000	0.00000	0.00004
IPF-75 TREN B2 via 2 (Min)	0.00000	0.00000	-0.00008
EC-1 TREN LM71 via 2 (Max)	0.00001	0.00000	0.00006
EC-1 TREN LM71 via 2 (Min)	-0.00001	0.00000	-0.00014
EC-1 TREN SW/0 via 2 (Max)	0.00001	0.00000	0.00015
EC-1 TREN SW/0 via 2 (Min)	-0.00001	0.00000	-0.00027
EC-1 TREN SW/2 via 2 (Max)	0.00001	0.00000	0.00019
EC-1 TREN SW/2 via 2 (Min)	-0.00001	0.00000	-0.00033
EC-1 TREN 12.5 via 2 (Max)	0.00000	0.00000	0.00001
EC-1 TREN 12.5 via 2 (Min)	0.00000	0.00000	-0.00002

COMBINACION DE GIROS DE FLEXION

Acciones permanentes (ELS) = 0.000709
Giro maximo (ELS) = 0.001412
Giro minimo (ELS) = -0.000041

8.2. REACCIONES HORIZONTALES

En este apartado se resumen las reacciones horizontales que actuan en cada apoyo. El cálculo del reparto de las mismas se ha efectuado de forma proporcional al area tributaria de cada elemento, pila o estribo.

En la tabla que sigue se exponen los valores característicos de las mismas.

Fuerzas horizontales en POTs

Apoyo	Reacción horizontal longitudinal Tm	Reacción horizontal transversal Tm
Estribo 1 derecho	12,2	33,0
Estribo 1 izquierdo	14,3	0
Pila 1 derecho	31,1	23,1
Pila 1 izquierdo	30,5	0
Pila 2 derecho	26,1	22,9
Pila 2 izquierdo	31,1	0
Estribo 2 derecho	12,2	32,9
Estribo 2 izquierdo	14,3	0

Acciones horizontales consideradas

- Frenado + Arranque F_x= 243,5 T
- Viento transversal F_{yw}= 36,39 T/m
- Efecto lazo 10,2 T

8.3. VERIFICACIÓN DE APARATOS DE APOYO Y MOVIMIENTOS EN JUNTAS

Aparatos de apoyo tipo POT

En la tabla siguiente se comprueban las condiciones de trabajo de los aparatos de apoyo tipo POT. Se ha verificado la carga admisible en cada uno de ellos. Asimismo se especifica en la hoja que sigue el rango de movimientos horizontales máximos previstos.

Fuerzas verticales en POTs

Apoyo	Reacción vertical c. permanentes Tm	Reacción vertical máxima Tm
Estribo 1 derecho	157,4	244,2
Estribo 1 izquierdo	149,6	285,1
Pila 1 derecho	300,5	622,0
Pila 1 izquierdo	308,7	609,7
Pila 2 derecho	308,7	522,0
Pila 2 izquierdo	300,5	622,0
Estribo 2 derecho	157,4	244,2
Estribo 2 izquierdo	149,6	285,1

Aparatos de vía y movimientos en los POTs

Según el análisis de las tensiones inducidas en el carril por efecto de la interacción entre vía y estructura no es necesario disponer aparato de dilatación de vía en ninguno de los estribos de la estructura.

Por lo que respecta al cálculo de los movimientos previstos de los POTs, el cálculo detallado de los mismos se expone en la hoja siguiente.

Fecha: mayo-02

Proyecto: AVE El Papiol - Sant Vicenç

Estructura: P.I. Riera Cervelló

Movimientos longitudinales en POTs. Valores en mm.

Datos	
Area de la sección transversal, m2	8,66
Módulo de deformación del hormigón, T/m2	3,09E+06
Variación anual de la temperatura, ºC	33,1
Fuerza total de postesado, T	4250,4
Valor del coeficiente de fluencia	1,77
Deformación por retracción, mm/m	0,25
Axil medio de frenado, T	121,75

Supuesto de finalización de la obra en Enero

		Acortamiento elástico		Fluencia		Retracción		Frenado		Temperatura		**Totales**	
Apoyo	Distancia a punto fijo, m	Máximo	Mínimo	Máximo	Mínimo	Máximo	Mínimo	Máximo	Mínimo	Máximo	Mínimo	**Alargamiento**	**Acortamiento**
Estribo 1 derecho	0,8	0,0	-0,1	0,0	-0,2	0,0	-0,2	0,004	-0,004	0,3	0,0	**0,3**	**-0,5**
Estribo 1 izquierdo	0,8	0,0	-0,1	0,0	-0,2	0,0	-0,2	0,004	-0,004	0,3	0,0	**0,3**	**-0,5**
Pila 1 derecho	15,3	0,0	-2,4	0,0	-3,4	0,0	-3,8	0,070	-0,070	5,1	0,0	**5,1**	**-9,8**
Pila 1 izquierdo	15,3	0,0	-2,4	0,0	-3,4	0,0	-3,8	0,070	-0,070	5,1	0,0	**5,1**	**-9,8**
Pila 2 derecho	34,3	0,0	-5,4	0,0	-7,7	0,0	-8,6	0,156	-0,156	11,4	0,0	**11,5**	**-21,9**
Pila 2 izquierdo	34,3	0,0	-5,4	0,0	-7,7	0,0	-8,6	0,156	-0,156	11,4	0,0	**11,5**	**-21,9**
Estribo 2 derecho	48,8	0,0	-7,8	0,0	-11,0	0,0	-12,2	0,222	-0,222	16,2	0,0	**16,4**	**-31,2**
Estribo 2 izquierdo	48,8	0,0	-7,8	0,0	-11,0	0,0	-12,2	0,222	-0,222	16,2	0,0	**16,4**	**-31,2**

Supuesto de finalización de la obra en Marzo

		Acortamiento elástico		Fluencia		Retracción		Frenado		Temperatura		**Totales**	
Apoyo	Distancia a punto fijo, m	Máximo	Mínimo	Máximo	Mínimo	Máximo	Mínimo	Máximo	Mínimo	Máximo	Mínimo	**Alargamiento**	**Acortamiento**
Estribo 1 derecho	0,8	0,0	-0,1	0,0	-0,2	0,0	-0,2	0,004	-0,004	0,1	-0,1	**0,1**	**-0,6**
Estribo 1 izquierdo	0,8	0,0	-0,1	0,0	-0,2	0,0	-0,2	0,004	-0,004	0,1	-0,1	**0,1**	**-0,6**
Pila 1 derecho	15,3	0,0	-2,4	0,0	-3,4	0,0	-3,8	0,070	-0,070	2,5	-2,5	**2,6**	**-12,3**
Pila 1 izquierdo	15,3	0,0	-2,4	0,0	-3,4	0,0	-3,8	0,070	-0,070	2,5	-2,5	**2,6**	**-12,3**
Pila 2 derecho	34,3	0,0	-5,4	0,0	-7,7	0,0	-8,6	0,156	-0,156	5,7	-5,7	**5,8**	**-27,6**
Pila 2 izquierdo	34,3	0,0	-5,4	0,0	-7,7	0,0	-8,6	0,156	-0,156	5,7	-5,7	**5,8**	**-27,6**
Estribo 2 derecho	48,8	0,0	-7,8	0,0	-11,0	0,0	-12,2	0,222	-0,222	8,1	-8,1	**8,3**	**-39,2**
Estribo 2 izquierdo	48,8	0,0	-7,8	0,0	-11,0	0,0	-12,2	0,222	-0,222	8,1	-8,1	**8,3**	**-39,2**

Valor positivo --> alargamiento
Valor negativo --> acortamiento

Fecha: mayo-02

Proyecto: AVE El Papiol - Sant Vicenç

Estructura: P.I. Riera Cervelló

Movimientos longitudinales en POTs. Valores en mm.

Supuesto de finalización de la obra en Junio

		Acortamiento elástico		Fluencia		Retracción		Frenado		Temperatura		**Totales**	
Apoyo	Distancia a punto fijo, m	Máximo	Mínimo	Máximo	Mínimo	Máximo	Mínimo	Máximo	Mínimo	Máximo	Mínimo	**Alargamiento**	**Acortamiento**
Estribo 1 derecho	0,8	0,0	-0,1	0,0	-0,2	0,0	-0,2	0,004	-0,004	0,0	-0,3	**0,0**	**-0,8**
Estribo 1 izquierdo	0,8	0,0	-0,1	0,0	-0,2	0,0	-0,2	0,004	-0,004	0,0	-0,3	**0,0**	**-0,8**
Pila 1 derecho	15,3	0,0	-2,4	0,0	-3,4	0,0	-3,8	0,070	-0,070	0,0	-5,1	**0,1**	**-14,8**
Pila 1 izquierdo	15,3	0,0	-2,4	0,0	-3,4	0,0	-3,8	0,070	-0,070	0,0	-5,1	**0,1**	**-14,8**
Pila 2 derecho	34,3	0,0	-5,4	0,0	-7,7	0,0	-8,6	0,156	-0,156	0,0	-11,4	**0,2**	**-33,3**
Pila 2 izquierdo	34,3	0,0	-5,4	0,0	-7,7	0,0	-8,6	0,156	-0,156	0,0	-11,4	**0,2**	**-33,3**
Estribo 2 derecho	48,8	0,0	-7,8	0,0	-11,0	0,0	-12,2	0,222	-0,222	0,0	-16,2	**0,2**	**-47,3**
Estribo 2 izquierdo	48,8	0,0	-7,8	0,0	-11,0	0,0	-12,2	0,222	-0,222	0,0	-16,2	**0,2**	**-47,3**

Supuesto de finalización de la obra en Octubre

		Acortamiento elástico		Fluencia		Retracción		Frenado		Temperatura		**Totales**	
Apoyo	Distancia a punto fijo, m	Máximo	Mínimo	Máximo	Mínimo	Máximo	Mínimo	Máximo	Mínimo	Máximo	Mínimo	**Alargamiento**	**Acortamiento**
Estribo 1 derecho	0,8	0,0	-0,1	0,0	-0,2	0,0	-0,2	0,004	-0,004	0,1	-0,1	**0,1**	**-0,6**
Estribo 1 izquierdo	0,8	0,0	-0,1	0,0	-0,2	0,0	-0,2	0,004	-0,004	0,1	-0,1	**0,1**	**-0,6**
Pila 1 derecho	15,3	0,0	-2,4	0,0	-3,4	0,0	-3,8	0,070	-0,070	2,5	-2,5	**2,6**	**-12,3**
Pila 1 izquierdo	15,3	0,0	-2,4	0,0	-3,4	0,0	-3,8	0,070	-0,070	2,5	-2,5	**2,6**	**-12,3**
Pila 2 derecho	34,3	0,0	-5,4	0,0	-7,7	0,0	-8,6	0,156	-0,156	5,7	-5,7	**5,8**	**-27,6**
Pila 2 izquierdo	34,3	0,0	-5,4	0,0	-7,7	0,0	-8,6	0,156	-0,156	5,7	-5,7	**5,8**	**-27,6**
Estribo 2 derecho	48,8	0,0	-7,8	0,0	-11,0	0,0	-12,2	0,222	-0,222	8,1	-8,1	**8,3**	**-39,2**
Estribo 2 izquierdo	48,8	0,0	-7,8	0,0	-11,0	0,0	-12,2	0,222	-0,222	8,1	-8,1	**8,3**	**-39,2**

Valor positivo --> alargamiento

Valor negativo --> acortamiento

9 CÁLCULO DEL ESTRIBO 1

9.1 CÁLCULO DE ESFUERZOS Y DIMENSIONAMIENTO

9.1 CÁLCULO DE ESFUERZOS Y DIMENSIONAMIENTO

El cálculo y dimensionamiento de los estribos se detalla en las páginas siguientes. Las hipótesis de cálculo se exponen a continuación:

1. El cálculo se realiza en la hipótesis clásica como muro con acciones en coronación debidas a las reacciones horizontales y verticales transmitidas por el tablero. Los empujes del terreno se han calculado para un coeficiente de empuje K= 0,33 y una densidad del terreno de 2,0 T/m^3. No se han considerado eventuales empujes hidrostáticos al colocar un adecuado drenaje en el trasdós del estribo.

2. Se ha comprobado que no se supera la carga admisible por pilote, el cálculo de la cual se detalla en el apartado 12.

3. El dimensionamiento de las armaduras de flexión y cortante del muro y zapata se realiza con los criterios de la Normativa vigente para estructuras de hormigón (EHE). Los coeficientes de seguridad de las acciones corresponden con un **nivel de control intenso γ_{fg} =1,35 y γ_{fq} =1,50.**

4. Las armaduras horizontales de flexión transversal se colocan de acuerdo con los valores mínimos exigidos por la Normativa EHE.

9.2 CÁLCULO DE ESFUERZOS Y DIMENSIONAMIENTO DE LAS ALETAS

9.2. CÁLCULO Y DIMENSIONAMIENTO DE LAS ALETAS.

El cálculo del tramo empotrado se ha realizado mediante el método de los elementos finitos, utilizando el programa ROBOT MILLENIUM para obtener los esfuerzos en servicio y de diseño necesarios para el dimensionamiento del mismo.

El dimensionamiento de las aletas tipo muro y la comprobación de la estabilidad al vuelco y el deslizamiento de las mismas se realiza mediante el programa ALE. El mismo programa proporciona los esfuerzos y la armadura necesaria en las secciones de interés de acuerdo con los criterios de la Normativa vigente para estructuras de hormigón armado (EHE). Los coeficientes de seguridad de las acciones corresponden con un nivel de control intenso.

El programa ALE utiliza el programa de cálculo de armaduras ARMA. El programa ARMA permite el cálculo automático de secciones rectangulares sometidas a flexocompresión y/o cortante para el conjunto de elementos (barras del modelo de pórtico plano) que constituyen la estructura y para todas aquellas hipótesis o combinaciones de cálculo que se hayan contemplado en el análisis estructural.

Las armaduras horizontales de flexión transversal se colocan de acuerdo con los valores mínimos exigidos por la Normativa EHE.

El cálculo de empujes se realiza con la teoría de Coulomb, asumiendo un ángulo de rozamiento tierras-muro de $\delta=21{,}3º$ en el trasdós y de $\delta=0°$ en la base del muro. El drenaje se considera eficaz y, en consecuencia, no se consideran eventuales empujes hidrostáticos en el trasdós del muro.

10 CÁLCULO DEL ESTRIBO 2

10.1 CÁLCULO DE ESFUERZOS Y DIMENSIONAMIENTO

10.1 CÁLCULO DE ESFUERZOS Y DIMENSIONAMIENTO

El cálculo y dimensionamiento de los estribos se detalla en las páginas siguientes. Las hipótesis de cálculo se exponen a continuación:

1. El cálculo se realiza en la hipótesis clásica como muro con acciones en coronación debidas a las reacciones horizontales y verticales transmitidas por el tablero. Los empujes del terreno se han calculado para un coeficiente de empuje K= 0,33 y una densidad del terreno de 2,0 T/m^3. No se han considerado eventuales empujes hidrostáticos al colocar un adecuado drenaje en el trasdós del estribo.

2. Se ha comprobado que no se supera la carga admisible por pilote, el cálculo de la cual se detalla en el apartado 12.

3. El dimensionamiento de las armaduras de flexión y cortante del muro y encepado se realiza con los criterios de la Normativa vigente para estructuras de hormigón (EHE). Los coeficientes de seguridad de las acciones corresponden con un **nivel de control intenso γ_{fg} =1,35 y γ_{fq} =1,50.**

4. Las armaduras horizontales de flexión transversal se colocan de acuerdo con los valores mínimos exigidos por la Normativa EHE.

10.2 CÁLCULO DE ESFUERZOS Y DIMENSIONAMIENTO DE LAS ALETAS

10.2. CÁLCULO Y DIMENSIONAMIENTO DE LAS ALETAS.

El cálculo del tramo empotrado se ha realizado mediante el método de los elementos finitos, utilizando el programa ROBOT MILLENIUM para obtener los esfuerzos en servicio y de diseño necesarios para el dimensionamiento del mismo.

El dimensionamiento de las aletas tipo muro y la comprobación de la estabilidad al vuelco y el deslizamiento de las mismas se realiza mediante el programa ALE. El mismo programa proporciona los esfuerzos y la armadura necesaria en las secciones de interés de acuerdo con los criterios de la Normativa vigente para estructuras de hormigón armado (EHE). Los coeficientes de seguridad de las acciones corresponden con un nivel de control intenso.

El programa ALE utiliza el programa de cálculo de armaduras ARMA. El programa ARMA permite el cálculo automático de secciones rectangulares sometidas a flexocompresión y/o cortante para el conjunto de elementos (barras del modelo de pórtico plano) que constituyen la estructura y para todas aquellas hipótesis o combinaciones de cálculo que se hayan contemplado en el análisis estructural.

Las armaduras horizontales de flexión transversal se colocan de acuerdo con los valores mínimos exigidos por la Normativa EHE.

El cálculo de empujes se realiza con la teoría de Coulomb, asumiendo un ángulo de rozamiento tierras-muro de $\delta=21,3º$ en el trasdós y de $\delta=0°$ en la base del muro. El drenaje se considera eficaz y, en consecuencia, no se consideran eventuales empujes hidrostáticos en el trasdós del muro.

11 CÁLCULO DE LA PILA

11.1 CÁLCULO DE ESFUERZOS Y DIMENSIONAMIENTO

11.1 CÁLCULO DE ESFUERZOS Y DIMENSIONAMIENTO

El cálculo y dimensionamiento de las pilas se detalla en las páginas siguientes. Las hipótesis de cálculo se exponen a continuación:

1. El cálculo se ha realizado según especificaciones de la EHE a partir de las reacciones en coronación que se detallan.

2. Se ha comprobado que no se supera la carga admisible por pilote, el cálculo de la cual se detalla en el apartado 12 del presente anejo.

3. El dimensionamiento de las armaduras de flexión y cortante del muro y encepado se realiza con los criterios de la Normativa vigente para estructuras de hormigón (EHE). Los coeficientes de seguridad de las acciones corresponden con un **nivel de control intenso γ_{fg} =1,35 y γ_{fq} =1,50.**

12 CÁLCULO DE LOS PARÁMETROS GEOTÉCNICOS DE LOS PILOTES

A continuación se detalla el cálculo de los parámetros geotécnicos de los pilotes. En concreto se calcula la carga admisible y el coeficiente de variación del módulo de balasto horizontal con la profundidad.

13 ANÁLISIS DE LA INTERACCIÓN VÍA-ESTRUCTURA

En el presente apartado se realiza la comprobación de las tensiones en el carril por la interacción vía-estructura y el cálculo de las fuerzas horizontales en el punto fijo del tablero, ambos según la ficha 774-3 de la UIC.

Para la realización de estos cálculos se aplica el método simplificado recogido en el citado documento. Los requisitos a cumplir para que sea válida la aplicación de este método son:

- Carril UIC con una tensión última de rotura a tracción no menor de 900 N/mm^2.
- Traviesas de hormigón con un espaciamiento máximo de 0.65 m.
- Existencia de un espesor de balasto consolidado de al menos 0.30 m bajo las traviesas.
- Radio en planta del trazado de la vía mayor o igual que 1 500 m.
- Longitud de expansión no supera los 110 m en el caso de carril continuo soldado.

Todos ellos se cumplen en el presente viaducto.

En las hojas que siguen se expone el cálculo del incremento de tensiones en los carriles debido a la interacción entre vías y estructura, comprobándose que estos no superan los 72 N/mm^2 de compresión y los 92 N/mm^2 de tracción. Asimismo se calculan las fuerzas horizontales en el aparato de apoyo fijo del tablero en sentido longitudinal.

En los cálculos se ha supuesto que el carril es continuo en ambos estribos, es decir, que no se coloca ningún aparato de dilatación de vía en la estructura, y que existe un único apoyo fijo del tablero en sentido longitudinal, situado en el estribo 1 y materializado mediante unos cables de pretensado que cosen el tablero al estribo. El resto de apoyos son deslizantes en sentido longitudinal, con un coeficiente de rozamiento no superior a 0.05.

A continuación se resumen los valores obtenidos. Los coeficientes de combinación y ponderación utilizados para el cálculo de las tensiones en el carril son los que se exponen en el apartado 2 del presente anejo para un Estado Límite de Servicio y combinaciones poco probables.

ESTRIBO FIJO. INCREMENTOS DE TENSIÓN EN EL CARRIL.

	T. Temperatura N/mm2	T. Frenado/arranque N/mm2	T. Giro N/mm2	**Caso 1 N/mm2**	**Caso 2 N/mm2**
4,5	42,8	3,2	**41,3**	**48,7**	4,5
-4,5	-42,8	0,0	**-38,8**	**-45,5**	-4,5

ESTRIBO MÓVIL. INCREMENTOS DE TENSIÓN EN EL CARRIL.

	T. Temperatura N/mm2	T. Frenado/arranque N/mm2	T. Giro N/mm2	**Caso 1 N/mm2**	**Caso 2 N/mm2**
Valores máximos	15,6	37,8	1,1	**46,8**	**48,3**
Valores mínimos	-15,6	-37,8	0,0	**-45,9**	**-47,2**

Tensiones positivas de tracción.

FUERZAS EN EL APOYO FIJO.

	F. Temperatura kN	F. Frenado/arranque kN	F. Giro kN
Valores máximos	840,0	582,2	32,3
Valores mínimos	-840,0	-582,2	0

Fuerzas positivas hacia el trasdós.

ANEJO DE CÁLCULO DEL PASO INFERIOR DE LA RIERA DE MANYÀ

ÍNDICE DEL ANEJO DE CÁLCULO DEL P. I. DE LA RIERA DE MANYÀ

1 GEOMETRÍA

1.1. Geometría y esquema estructural
1.2. Sección tipo

2 ACCIONES, MATERIALES, COEFICIENTES DE SEGURIDAD Y NORMATIVAS

2.1. Acciones
2.2. Coeficientes de seguridad, materiales, niveles de control y Normativas
2.3. Ambientes, recubrimientos, fisuración y cuantías mínimas
2.4. Hipótesis de combinación de esfuerzos
2.4.1. Estados Límite Últimos
2.4.2. Estados Límite de Servicio

3 CÁLCULO DE ESFUERZOS

4 VERIFICACIÓN DEL E.L.U DE ROTURA POR TENSIONES NORMALES

4.1. Flexión longitudinal
4.2. Flexión transversal

5 VERIFICACIÓN DEL E.L.U DE ROTURA POR TENSIONES TANGENCIALES

5.1. Evaluación del E.L.U. de agotamiento por cortante

6 VERIFICACIÓN DEL E.L.S DE FISURACIÓN

7 CÁLCULO DE ALETAS

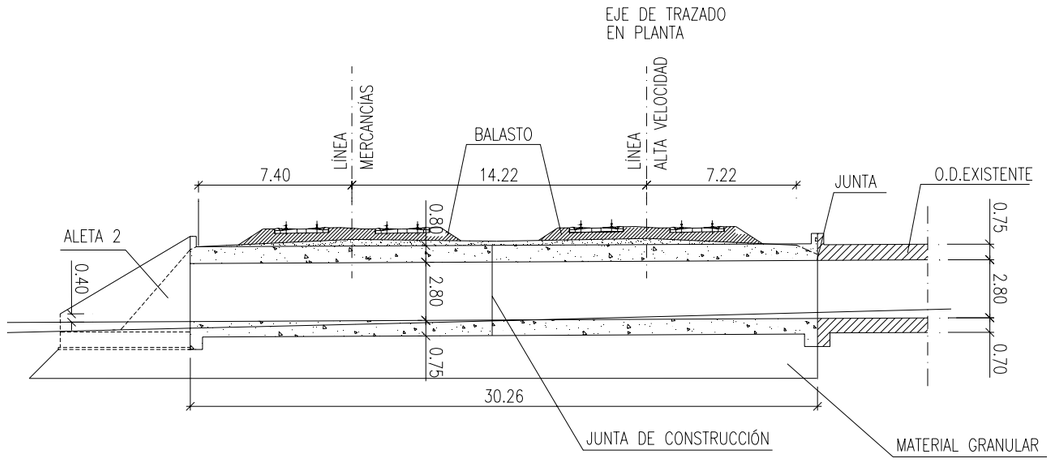
7.1. Geometría
7.2. Cálculo de esfuerzos y dimensionamiento

1 GEOMETRÍA

1.1 GEOMETRÍA Y ESQUEMA ESTRUCTURAL

Se trata de un marco cerrado para dejar paso a través de la plataforma de ferrocarril a la riera de Manyà. El cajón tiene un gálibo horizontal de 7,80 m. y uno vertical de 2,80 m. El dintel tiene un espesor de 0,80 m, el espesor de los hastiales es de 0,70 m y el espesor de la losa inferior (de ahora en adelante solera) es de 0,75 m. El dintel está unido a los hastiales mediante cartelas. La orientación del cajón en planta no es perpendicular a la plataforma de ferrocarril teniendo un esviaje de 116,36g. La entrada del cajón estará formada por aletas tipo muro que sostienen las tierras del terraplén y encauzan la riera en la dirección deseada. Estas aletas forman un ángulo de 30º respecto al eje del paso inferior. La salida del cajón empalma con una O.D. ya existente.

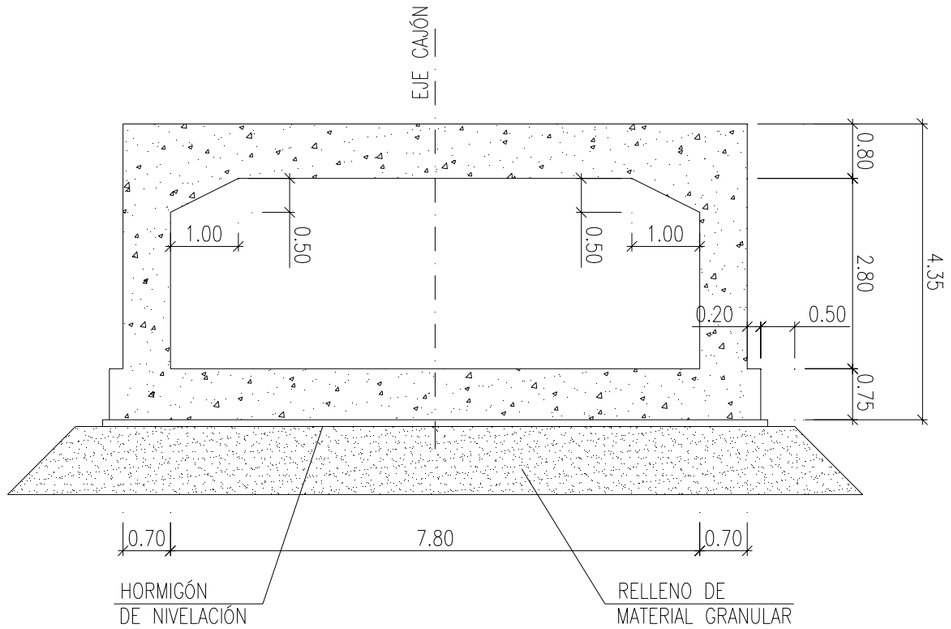
El cajón queda levemente enterrado respecto a la superestructura de la vía, de tal forma que solamente se dispondrá la capa de balasto y subbalasto por encima del dintel (la distancia media entre la cota de carril y la cara superior de la estructura es de 1,02 m).



1.2 SECCIÓN TIPO

La sección transversal de la estructura es un marco rectangular cerrado construido con hormigón armado HA-25.

Las dimensiones de la sección transversal se detallan en la figura adjunta.



En la figura se puede apreciar que la estructura va apoyada sobre una capa de material granular hasta alcanzar el estrato de cimentación competente.

2 ACCIONES, MATERIALES, COEFICIENTES DE SEGURIDAD Y NORMATIVAS

2.1 ACCIONES

De acuerdo con las “Instrucciones y recomendaciones para la redacción de proyectos de plataforma” del GIF se han considerado las siguientes acciones:

Acciones permanentes (g):

g1, PESO PROPIO

El peso propio de los distintos elementos se ha calculado a partir de su geometría (secciones transversales) adoptando una densidad de valor $\gamma c = 2{,}5\ T/m^3$ para los elementos de hormigón armado (solera, dintel y hastiales).

g2, PESO DEL BALASTO Y CARGAS MUERTAS

Las cargas permanentes distintas del peso propio del tablero son las siguientes:

- Balasto
- Vías y traviesas
- Conductos de cableado y paseos
- Soportes de catenarias
- Impostas y barandillas

El peso de balasto sobre el tablero se calcula a partir de la plataforma en la estructura de vía tomando como densidad $\gamma = 1{,}6\ t/m^3$.

De acuerdo con las “Instrucciones y recomendaciones para la redacción de proyectos de plataforma” del GIF se adoptarán para esta carga los siguientes valores característicos superior e inferior:

- valor inferior: (0,70 x peso medio) $g_{2,\ bal\ inf}$
- valor superior: (1,30 x peso medio) $g_{2,\ bal,\ sup}$

El caso de desbalastado se considera incluido en el intervalo indicado de variación del peso del balasto.

El peso de vías y traviesas para la plataforma es:

$g_{2,vías+traviesas} = 0{,}52 + 0{,}12 = 0{,}64$ t/m y vía.
(trav)+(carril)

El peso de los conductos para cableados y zona de paseos es:

$g_{2,conductos} = 0{,}30$ t/m

El peso de los soportes de catenarias se tienen en cuenta sólo para efectos locales de anclaje de la catenaria y armado local de losa, pero no para el cálculo general del tablero.

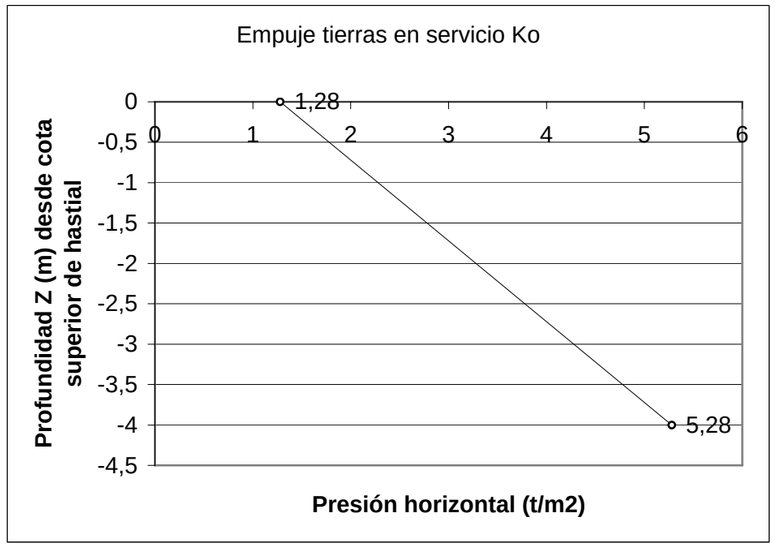
Acciones permanentes de valor no constante (G*):

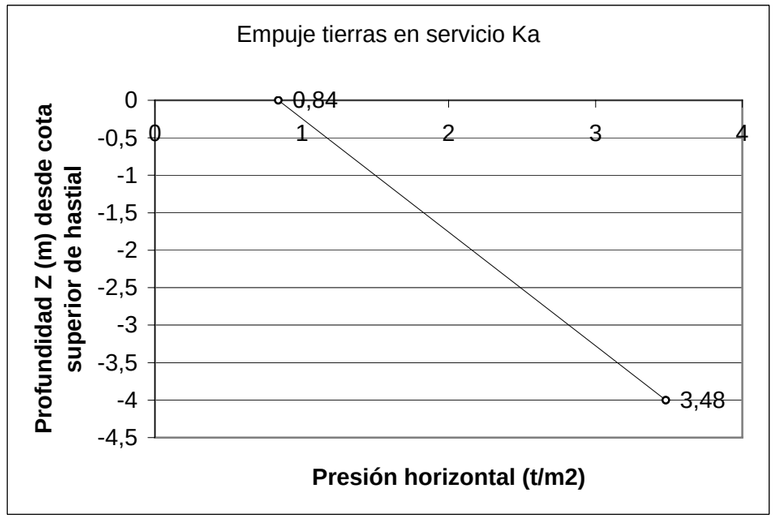
EMPUJE DE TIERRAS

El empuje de tierras se calcula para la fase de servicio, al preverse que el relleno de tierras se efectuará simétricamente a ambos lados de la estructura.

En la fase de servicio se considera el efecto del empuje de tierras ya con toda la altura que tendrá una vez terminada la estructura. En esta fase y debido a que la estructura no presenta un comportamiento completamente flexible o completamente rígido se consideran los empujes activo K_a = 0,33 y empuje al reposo K_o = 0,50.

De esta manera las leyes de presión del terreno quedan de la siguiente manera:





SOBRECARGAS DE USO. COMPONENTES VERTICALES.

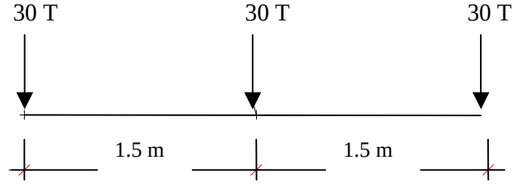
A. Sobrecarga de tráfico de tren

Se utilizará la envolvente de esfuerzos debidos a los trenes de carga de IPF-75 y de EC1-3.

Como coeficiente de impacto se adoptará en cada caso el que corresponda.

De acuerdo con la normativa IPF-75 Existen dos trenes de carga

Tipo A.- Por cada vía: P_{vp} = 3 ejes de 30 T separados 1,50 m

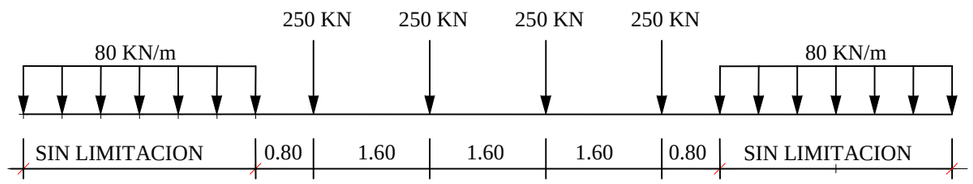


Tipo B.- Por cada vía: Sobrecarga uniforme de 12 t/m. sobre 15,0 ó 30,0 metros, más un conjunto de cuchillos de carga de 10 t/m y 1 t/m. de longitud arbitraria.

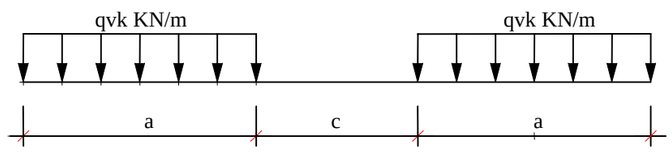
El tren tipo A puede condicionar el trabajo local de reparto de la losa y el tren tipo B condiciona el trabajo global. No se admite reducción de cargas por simultaneidad entre ambas vías. No se considera el efecto del ripado de la vía de 0,30 m porque el estudio del cajón se realiza por metro de ancho.

El tren de cargas de EC1 tiene la siguiente configuración

Tren tipo 71:



Modelo de carga SW:



Se tendrán en cuenta tres tipos de trenes según el EC-1: Tren tipo 71, SW/0, y el SW/2.

	SW0	SW2
Q_{vk}	133	150
a	15	25
c	5,3	7

Tabla 2. Tren de cargas.

Los valores de los trenes tipo 71 y SW/0 se multiplicarán por un coeficiente de clasificación α cuyo valor se toma igual a 1,00 tanto para las vías de ancho RENFE como para las de ancho Internacional.

B. Sobrecarga tráfico losa inferior

Para el paso inferior en estudio no es necesario considerar ninguna sobrecarga sobre la solera, puesto que la obra sirve como canalización de una riera y no se prevé más que la circulación esporádica de algún vehículo automóvil.

C. Sobrecargas en paseos

Según las “Instrucciones y recomendaciones para la redacción de proyectos de plataforma” del GIF se dispondrá una sobrecarga en los paseos laterales de valor:

$$Q_{SV} = 0{,}5 \text{ t/m}^2$$

Sólo un 50 % de dicha carga es compatible con el tráfico ferroviario.

En nuestro caso y debido a que el estudio se realiza por metro de ancho no se considera por ser más desfavorable para el dimensionamiento de los distintos elementos del marco considerar las cargas verticales del tráfico ferroviario.

D. Sobrecarga de tráfico en trasdós hastiales

Se considera la sobrecarga de tráfico en trasdós de hastiales recomendada en la normativa IFF-75 de valor igual 3 t/m^2.

Esta sobrecarga actúa en los hastiales mediante el coeficiente de empuje al reposo K_o = 0,50.

SOBRECARGAS DE USO. COMPONENTES HORIZONTALES.

A. Efectos de frenado y arranque

Se adopta la Norma EC1 ya que las acciones definidas en la IPF75 son mucho más favorables. (1/8 de la carga frente a 1/4)

Son fuerzas que actúan sobre cota superior de carril. No deben mayorarse dinámicamente.

Fuerzas de arranque (por vía)

$F_a = 33\ (KN/m) \times L(m) \leq 1.000\ KN$ LM71 y SW

Fuerzas de frenado (por vía)

$F_f = 20\ (KN/m) \times L(m) \leq 6.000\ (KN)$ LM71 y SW0

$Ff = 35\ (KN/m) \times L(m)$ SW2

VARIACIÓN UNIFORME DE TEMPERATURA

No se considera este efecto al estar la estructura enterrada prácticamente en su totalidad.

GRADIENTE TÉRMICO

No se considera este efecto al estar la estructura enterrada prácticamente en su totalidad.

ACCIONES ACCIDENTALES

ACCIÓN SÍSMICA

La aceleración sísmica básica de la zona, según la normativa vigente, es a_b= 0,04 g.

La categoría de la estructura puede considerarse de especial importancia, lo que es equivalente a un coeficiente de riesgo ρ =1,3.

La aceleración de cálculo es:

$a_c = \rho \cdot a_b$
$a_b = 0{,}052$ g

Las acciones sísmicas en puentes sólo se consideran, de acuerdo con la IAP, para aceleraciones de cálculo superiores a 0,06g, por lo tanto no es preciso realizar el análisis sísmico del cajón.

A continuación se detalla el valor de cálculo de las cargas verticales y los coeficientes de impacto considerados.

2.2 COEFICIENTES DE SEGURIDAD, MATERIALES, NIVELES DE CONTROL Y NORMATIVAS

HORMIGONES

- Hormigón de Limpieza..... HM-15
- Losas..... HA-25 / B / 20 / IIa
- Hastiales..... HA-25 / B / 20 / IIa
- Dintel..... HA-25 / B / 20 / IIa

Control del hormigón NORMAL

γc= 1,50 (Situación persistente o transitoria)
γc= 1,30 (Situación accidental)

El módulo de elasticidad se ha evaluado en todos los casos de acuerdo a la expresión de EHE:

$$E_c = 8500 \sqrt[3]{f_{ck} + 8} \ (N/mm^2)$$

Los límites establecidos para la consistencia en la puesta en obra podrán superarse con el empleo de aditivos superfluidificantes, siempre que el valor de la relación agua-cemento cumpla los requisitos prefijados en la EHE.

ACEROS

- Acero corrugado para la armadura pasiva B500S, con f_{yk} > 500 MPa (5100 Kp/cm^2)

Control de los aceros NORMAL.

γ_s = 1,15 (Situación persistente o transitoria)
γ_s = 1,0 (Situación accidental)

CONTROL DE EJECUCIÓN

El control de ejecución será INTENSO (γ_g= 1,35 y γ_{fq}= 1,50) en hastiales, solera y dintel, de acuerdo con las especificaciones de la normativa EHE.

NORMAS UTILIZADAS

- Instrucción relativa a las acciones a considerar en el proyecto de puentes de carretera IAP, aprobada Orden de12 de febrero de 1998.
- Instrucción para el proyecto de estructuras de hormigón estructural EHE, aprobada por el Real Decreto 2661/1998 de 11 de diciembre.
- Normativa Sismoresistente NCSE-94.
- Instrucción relativa a las acciones a considerar en el proyecto de puentes de ferrocarril, aprobada por Orden Ministerial de 25 de junio de 1975.
- Eurocódigo 1. EC-1.

2.3 AMBIENTES, RECUBRIMIENTOS, FISURACIÓN Y CUANTÍAS MÍNIMAS

De acuerdo con la normativa EHE se consideran los ambientes indicados en la tabla siguiente:

Elemento	Ambiente	Recubrimiento de Armadura pasiva	Abertura máxima de fisura en mm.
Solera	IIa	30	0,3
Hastiales	IIa	30	0,3
Dintel	IIa	30	0,3

Las cuantías mínimas de armadura pasiva B500S serán las expuestas en la tabla indicada a continuación (EHE, art. 44.3.5):

Elemento	Posición	Tipo	Cuantía geométrica (‰)
Solera	Cara superior e Inferior	Transversal y Longitudinal	0,90
Hastiales	Cara interior y exterior	Horizontal	1,6
Hastiales	Cara interior y exterior	Vertical	0,90
Dintel	Cara superior e Inferior	Transversal y Longitudinal	0,90

2.4 HIPÓTESIS DE COMBINACIÓN DE ESFUERZOS

Se han considerado las combinaciones de hipótesis de las acciones recogidas en el Eurocódigo 1 y EHE, basados en la teoría de Estados Límites, para las distintas situaciones de cálculo de la estructura.

A continuación se describe la formulación de dichas combinaciones y seguidamente se detallan los valores de los coeficientes adoptados para los casos de carga considerados en los cálculos.

2.4.1 ESTADOS LÍMITE ÚLTIMOS

Las hipótesis de cálculo consideradas son:

- Situaciones persistentes o transitorias

$$\Sigma_{j \geq 1} \gamma_{Gj} G_{kj} + \Sigma_{j \geq 1} \gamma_{Gj} G^*_{kj} + \gamma_{Q1} Q_{k1} + \Sigma_{i > 1} \gamma_{Qi} \Psi_{0i} Q_{ki}$$

- Situaciones accidentales

$$\Sigma_{j \geq 1} \gamma_{Gaj} G_{kj} + \Sigma_{j \geq 1} \gamma_{Gj} G^*_{kj} + \gamma_A A_k + \Psi_{11} Q_{k1} + \Sigma_{i > 1} \gamma_{Qi} \Psi_{2i} Q_{ki}$$

- Situaciones accidentales de sismo

$$\Sigma_{j \geq 1} G_{kj} + \Sigma_{j \geq 1} \gamma_{Gj} G^*_{kj} + \gamma_i A_{Ed} + \Sigma_{i > 1} \gamma_{Qi} \Psi_{2i} Q_{ki}$$

donde:

G = Valor característico de las cargas permanentes.
G* = Valor característico de las cargas permanentes de valor no constante.
Q_{k1} = Valor característico de la carga variable dominante.
A_k = Valor característico de la acción accidental.
A_{eq} = Valor característico de la acción sísmica, calculado según la Norma Sismorresistente.

Los coeficientes de seguridad y de combinación de acciones empleados se definen en la IAP.

2.4.2 ESTADOS LÍMITE DE SERVICIO

Las hipótesis de cálculo consideradas son:

- Combinación característica:

$$\Sigma_{j \geq 1} \gamma_{Gj} G_{kj} + \Sigma_{j \geq 1} \gamma_{Gj} G^*_{kj} + \gamma_{Q1} Q_{k1} + \Sigma_{i > 1} \gamma_{Qi} \Psi_{0i} Q_{ki}$$

- Combinación frecuente:

$$\Sigma_{j \geq 1} \gamma_{Gaj} G_{kj} + \Sigma_{j \geq 1} \gamma_{Gj} G^*_{kj} + \Psi_{11} Q_{k1} + \Sigma_{i > 1} \gamma_{Qi} \Psi_{2i} Q_{ki}$$

- Combinación casi permanente:

$$\Sigma_{j \geq 1} G_{kj} + \Sigma_{j \geq 1} \gamma_{Gj} G^*_{kj} + \Sigma_{i > 1} \gamma_{Qi} \Psi_{2i} Q_{ki}$$

3 CÁLCULO DE ESFUERZOS

En el siguiente apartado se ha calculado el paso inferior sometido a las cargas de uso. Para ello se modeló el cajón como una estructura reticulada plana compuesta por cuatro barras paralelas dos a dos que conforman el marco cerrado de la estructura.

Las acciones a las que está sometida la estructura han sido descritas en el apartado 2 del presente documento. Las dimensiones del marco son las correspondientes a un plano de corte esviado en el sentido de las vías de ferrocarril. En la dirección perpendicular al plano de cálculo se considera que el marco tiene 1 metro de profundidad.

El cálculo de esfuerzos se ha realizado bajo la hipótesis de linealidad material y geométrica, mediante el programa de cálculo de estructuras ROBOT MILLENIUM v. 14.5. Las comprobaciones y dimensionamiento de la estructura se ha efectuado de acuerdo con la instrucción EHE, y sus resultados se detallan en los apartados 4, 5 y 6 del presente anejo.

El cálculo se ha realizado considerando las acciones y combinaciones que definen las normativas IPF-75 (Proyecto de Puentes de Ferrocarril) y el Eurocódigo 1: Bases de proyecto y acciones en estructuras. Parte 3: Cargas de tráfico en puentes.

Cabe destacar que la barra inferior que representa la solera del marco está apoyada sobre suelo elástico cuyo coeficiente de balasto se ha obtenido a partir del estudio geotécnico. El valor de este coeficiente de balasto representa las características elásticas de las gravas dispuestas bajo la losa inferior del cajón.

4 VERIFICACIÓN DEL E.L.U DE ROTURA POR TENSIONES NORMALES

4.1 FLEXIÓN TRANSVERSAL AL EJE DEL CAJON

En este apartado se comprueba el Estado Límite Último de rotura por flexión transversal de acuerdo con los criterios de la Normativa española vigente (EHE)

El cálculo de la armadura necesaria se ha realizado mediante un programa de armado automático desarrollado al efecto por los ingenieros de PEDELTA S.L.

4.2. FLEXIÓN LONGITUDINAL

La flexión longitudinal no se ha considerado puesto que el cálculo se realiza por metro de ancho. La armadura correspondiente a la flexión longitudinal se dispone por cuantías mínimas indicadas en la normativa EHE.

Programa de calculo automatico de armado desarrollado por:

PEDELTA, S.L.

ESFUERZOS DE CALCULO PARA LAS DISTINTAS HIPOTESIS DE CARGA

REFERENCIA DEL PROYECTO P.I. RIERA DE MANYA

DATOS GENERALES :

N§ de barras = 6
N§ de secciones por barra = 9
N§ de combinaciones en ELU = 22

N§ de combinaciones en ELS = 18
N§ de combinaciones en ELS (frecuente) = 18
N§ de combinaciones en ELS (poco frecuente) = 0
N§ de combinaciones en ELS (caracteristica) = 0

Resistencia a compresion del hormigon (T/m2) = 2500
Resistencia media a traccion del hormigon (T/m2) = 256.4964
Modulo de deformacion del hormigon (T/m2) = 248541.5
Resistencia a traccion del acero (T/m2) = 51000
Modulo de deformacion del acero (T/m2) = 2.1E+07

Elemento = 2 - Dintel

Sec	Hip	Nd	Vd	Md	Asf1	Asf2	ASt	8	10	12	16	20	25	32
9	1	10.6	46.7	-13.4	12.0	0.1	0.0	24	15	11	6	4	2	1
9	13	6.2	36.5	2.1	0.1	12.0	0.0	24	15	11	6	4	2	1
2	7	15.3	33.1	-1.2	12.0	0.2	0.0	24	15	11	6	4	2	1
2	1	10.6	40.7	19.0	0.1	12.0	0.0	24	15	11	6	4	2	1
3	9	19.7	36.1	53.8	0.2	14.4	0.0	0	0	0	0	0	0	0
3	14	15.0	30.1	62.4	0.2	17.6	0.0	35	22	16	9	6	4	2
4	9	18.6	19.5	73.9	0.2	21.0	0.0	0	0	0	0	0	0	0
4	4	13.3	16.5	77.7	0.1	22.9	0.0	46	29	20	11	7	5	3
5	9	17.4	3.0	82.1	0.2	23.9	0.0	0	0	0	0	0	0	0
5	4	13.3	0.0	83.7	0.1	24.9	0.0	50	32	22	12	8	5	3
6	14	18.6	-19.5	73.9	0.2	21.0	0.0	0	0	0	0	0	0	0
6	4	13.3	-16.5	77.7	0.1	22.9	0.0	46	29	20	11	7	5	3
7	14	19.7	-36.1	53.8	0.2	14.4	0.0	0	0	0	0	0	0	0
7	9	15.0	-30.1	62.4	0.2	17.6	0.0	35	22	16	9	6	4	2
8	14	20.9	-52.6	21.6	0.2	12.0	0.0	0	0	0	0	0	0	0
8	1	10.6	-40.7	19.0	0.1	12.0	0.0	24	15	11	6	4	2	1
10	1	10.6	-46.7	-13.4	12.0	0.1	0.0	24	15	11	6	4	2	1
10	2	7.6	-45.9	1.7	0.1	12.0	0.0	24	15	11	6	4	2	1

Elemento = 3 - Solera

Sec	Hip	Nd	Vd	Md	Asf1	Asf2	ASt	8	10	12	16	20	25	32
2	16	6.7	-15.9	11.2	0.1	11.3	0.0	0	0	0	0	0	0	0
2	9	-5.1	-64.4	52.0	0.0	17.7	0.0	35	23	16	9	6	4	2
2	1	-12.1	-29.0	-7.6	11.3	0.0	0.0	23	14	10	6	4	2	1
2	6	-2.5	-31.7	1.0	0.0	11.3	0.0	23	14	10	6	4	2	1
3	14	-5.1	-25.9	-48.3	16.5	0.0	0.0	33	21	15	8	5	3	2
3	16	6.7	-6.3	-10.0	11.3	0.1	0.0	0	0	0	0	0	0	0
4	14	-5.1	-10.6	-65.9	22.5	0.0	0.0	45	29	20	11	7	5	3
4	16	6.7	-2.5	-14.2	11.3	0.1	0.0	0	0	0	0	0	0	0
5	21	-10.0	0.0	-70.4	24.7	0.0	0.0	49	31	22	12	8	5	3
5	16	6.7	0.8	-15.1	11.3	0.1	0.0	0	0	0	0	0	0	0
6	9	-5.1	10.6	-65.9	22.5	0.0	0.0	45	29	20	11	7	5	3
6	16	6.7	4.1	-12.7	11.3	0.1	0.0	0	0	0	0	0	0	0
7	9	-5.1	25.9	-48.3	16.5	0.0	0.0	33	21	15	8	5	3	2
7	16	6.7	7.6	-7.0	11.3	0.1	0.0	0	0	0	0	0	0	0
8	1	-12.1	29.0	-7.6	11.3	0.0	0.0	23	14	10	6	4	2	1
8	11	-2.5	31.7	1.0	0.0	11.3	0.0	23	14	10	6	4	2	1
3	16	6.7	15.9	15.6	0.1	11.3	0.0	0	0	0	0	0	0	0
3	14	-5.1	64.4	52.0	0.0	17.7	0.0	35	23	16	9	6	4	2

REFERENCIA DEL PROYECTO P.I. RIERA DE MANYA

Elemento = 4 - Hastial

Sec	Hip	Nd	Vd	Md	Asf1	Asf2	ASt	8	10	12	16	20	25	32
5	9	86.8	8.9	66.1	1.0	15.0	0.0	2	1	1	0	0	0	0
5	14	80.9	1.4	75.1	0.9	19.3	0.0	39	25	17	10	6	4	2
2	9	86.1	11.2	69.0	1.0	16.3	0.0	2	1	1	0	0	0	0
2	14	80.2	3.1	75.7	0.9	19.6	0.0	39	25	17	10	6	4	2
3	9	85.4	13.5	72.6	1.0	17.9	0.0	2	1	1	0	0	0	0
3	14	79.5	4.7	76.9	0.9	20.2	0.0	40	26	18	10	6	4	3
4	9	84.7	15.6	76.7	1.0	19.6	0.0	2	1	1	0	0	0	0
4	4	81.8	13.7	81.2	0.9	21.8	0.0	44	28	19	11	7	4	3
5	9	84.0	17.5	81.5	0.9	21.7	0.0	2	1	1	0	0	0	0
5	4	81.1	13.5	85.1	0.9	23.5	0.0	47	30	21	12	7	5	3
6	9	83.4	19.3	86.8	0.9	24.0	0.0	2	1	1	0	0	0	0
6	4	80.4	13.4	89.0	0.9	25.3	0.0	51	32	22	13	8	5	3
7	9	82.7	20.9	92.5	0.9	26.6	0.0	2	1	1	0	0	0	0
7	4	79.7	13.3	92.8	0.9	27.0	0.0	54	34	24	13	9	5	3
8	9	82.0	22.4	98.8	0.9	29.4	0.0	2	1	1	0	0	0	0
8	9	82.0	22.4	98.8	0.9	29.4	0.0	59	37	26	15	9	6	4
6	9	81.3	23.7	105.4	0.9	32.4	0.0	2	1	1	0	0	0	0
6	9	81.3	23.7	105.4	0.9	32.4	0.0	65	41	29	16	10	7	4

Elemento = 5 - Hastial

Sec	Hip	Nd	Vd	Md	Asf1	Asf2	ASt	8	10	12	16	20	25	32
13	14	81.3	-23.7	105.4	0.9	32.4	0.0	2	1	1	0	0	0	0
13	14	81.3	-23.7	105.4	0.9	32.4	0.0	65	41	29	16	10	7	4
2	14	82.0	-22.4	98.8	0.9	29.4	0.0	2	1	1	0	0	0	0
2	14	82.0	-22.4	98.8	0.9	29.4	0.0	59	37	26	15	9	6	4
3	14	82.7	-20.9	92.5	0.9	26.6	0.0	2	1	1	0	0	0	0
3	4	79.7	-13.3	92.8	0.9	27.0	0.0	54	34	24	13	9	5	3
4	14	83.4	-19.3	86.8	0.9	24.0	0.0	2	1	1	0	0	0	0
4	4	80.4	-13.4	89.0	0.9	25.3	0.0	51	32	22	13	8	5	3
5	14	84.0	-17.5	81.5	0.9	21.7	0.0	2	1	1	0	0	0	0
5	4	81.1	-13.5	85.1	0.9	23.5	0.0	47	30	21	12	7	5	3
6	14	84.7	-15.6	76.7	1.0	19.6	0.0	2	1	1	0	0	0	0
6	4	81.8	-13.7	81.2	0.9	21.8	0.0	44	28	19	11	7	4	3
7	14	85.4	-13.5	72.6	1.0	17.9	0.0	2	1	1	0	0	0	0
7	9	79.5	-4.7	76.9	0.9	20.2	0.0	40	26	18	10	6	4	3
8	14	86.1	-11.2	69.0	1.0	16.3	0.0	2	1	1	0	0	0	0
8	9	80.2	-3.1	75.7	0.9	19.6	0.0	39	25	17	10	6	4	2
14	14	86.8	-8.9	66.1	1.0	15.0	0.0	2	1	1	0	0	0	0
14	9	80.9	-1.4	75.1	0.9	19.3	0.0	39	25	17	10	6	4	2

REFERENCIA DEL PROYECTO P.I. RIERA DE MANYA

Elemento = 6 - Cartela

Sec	Hip	Nd	Vd	Md	Asf1	Asf2	ASt	8	10	12	16	20	25	32
8	9	42.7	73.1	-90.1	24.0	0.5	0.0	48	31	21	12	8	5	3
8	9	42.7	73.1	-90.1	24.0	0.5	0.0	1	1	0	0	0	0	0
2	9	42.1	71.7	-81.0	20.9	0.5	0.0	42	27	19	10	7	4	3
2	9	42.1	71.7	-81.0	20.9	0.5	0.0	1	1	0	0	0	0	0
3	9	41.6	70.3	-72.1	18.0	0.5	0.0	36	23	16	9	6	4	2
3	9	41.6	70.3	-72.1	18.0	0.5	0.0	1	1	0	0	0	0	0
4	9	41.0	68.9	-63.4	15.2	0.5	0.0	30	19	13	8	5	3	2
4	9	41.0	68.9	-63.4	15.2	0.5	0.0	1	1	0	0	0	0	0
5	9	40.5	67.5	-54.9	12.4	0.5	0.0	25	16	11	6	4	3	2
5	9	40.5	67.5	-54.9	12.4	0.5	0.0	1	1	0	0	0	0	0
6	1	22.1	44.7	-29.8	12.0	0.2	0.0	24	15	11	6	4	2	1
6	9	39.9	66.2	-46.6	12.0	0.4	0.0	1	1	0	0	0	0	0
7	1	22.0	44.0	-24.2	12.0	0.2	0.0	24	15	11	6	4	2	1
7	9	39.4	64.9	-38.4	12.0	0.4	0.0	1	1	0	0	0	0	0
8	1	21.8	43.4	-18.8	12.0	0.2	0.0	24	15	11	6	4	2	1
8	9	38.9	63.6	-30.3	12.0	0.4	0.0	1	1	0	0	0	0	0
9	1	21.6	42.7	-13.4	12.0	0.2	0.0	24	15	11	6	4	2	1
9	13	14.9	33.9	2.1	0.2	12.0	0.0	24	15	11	6	4	2	1

Elemento = 7 - Cartela

Sec	Hip	Nd	Vd	Md	Asf1	Asf2	ASt	8	10	12	16	20	25	32
10	1	21.6	-42.7	-13.4	12.0	0.2	0.0	24	15	11	6	4	2	1
10	2	18.5	-42.7	1.7	0.2	12.0	0.0	24	15	11	6	4	2	1
2	1	21.8	-43.4	-18.8	12.0	0.2	0.0	24	15	11	6	4	2	1
2	7	17.6	-42.3	3.6	0.2	12.0	0.0	24	15	11	6	4	2	1
3	1	22.0	-44.0	-24.2	12.0	0.2	0.0	24	15	11	6	4	2	1
3	14	39.4	-64.9	-38.4	12.0	0.4	0.0	1	1	0	0	0	0	0
4	1	22.1	-44.7	-29.8	12.0	0.2	0.0	24	15	11	6	4	2	1
4	14	39.9	-66.2	-46.6	12.0	0.4	0.0	1	1	0	0	0	0	0
5	14	40.5	-67.5	-54.9	12.4	0.5	0.0	25	16	11	6	4	3	2
5	14	40.5	-67.5	-54.9	12.4	0.5	0.0	1	1	0	0	0	0	0
6	14	41.0	-68.9	-63.4	15.2	0.5	0.0	30	19	13	8	5	3	2
6	14	41.0	-68.9	-63.4	15.2	0.5	0.0	1	1	0	0	0	0	0
7	14	41.6	-70.3	-72.1	18.0	0.5	0.0	36	23	16	9	6	4	2
7	14	41.6	-70.3	-72.1	18.0	0.5	0.0	1	1	0	0	0	0	0
8	14	42.1	-71.7	-81.0	20.9	0.5	0.0	42	27	19	10	7	4	3
8	14	42.1	-71.7	-81.0	20.9	0.5	0.0	1	1	0	0	0	0	0
11	14	42.7	-73.1	-90.1	24.0	0.5	0.0	48	31	21	12	8	5	3
11	14	42.7	-73.1	-90.1	24.0	0.5	0.0	1	1	0	0	0	0	0

5 VERIFICACIÓN DEL E.L.U DE ROTURA POR TENSIONES TANGENCIALES

5.1 EVALUACIÓN DEL E.L.U. DE AGOTAMIENTO POR CORTANTE

En este apartado se comprueba el Estado Límite Último de rotura por cortante de acuerdo con los criterios de la Normativa española vigente (EHE, artículo 44)

Según dicha norma:

$$V_{rd} = V_d + V_{pd} + V_{cd}$$

donde,

V_{rd} = Valor del esfuerzo cortante efectivo.
V_d = Valor de cálculo del esfuerzo cortante producido por las acciones exteriores.
V_{pd} = Valor de cálculo del esfuerzo cortante producido por el pretensado (= 0).
V_{cd} = Valor de cálculo de la componente paralela a la sección de las tensiones normales en piezas de sección variable (= 0).

- Comprobación del agotamiento por compresión oblicua en el alma.

$$V_{rd} \leq V_{u1}$$

V_{u1} = Esfuerzo cortante de agotamiento por compresión oblicua del alma.

- Comprobación del agotamiento por tracción en el alma.

$$V_{rd} \leq V_{u2}$$

V_{u2} = Esfuerzo cortante de agotamiento por tracción en el alma.

El cálculo de todos los parámetros resistentes se ha realizado de forma automática. Posteriormente se ha determinado la armadura de cortante necesaria A_{sc} por criterios resistentes y se comprueba que verifica los criterios de armadura mínima a cortante.

6 VERIFICACIÓN DEL E.L.S DE FISURACIÓN.

En este apartado se comprueba el Estado Límite de Servicio de fisuración.

El cálculo de la abertura de fisura se hace mediante la formulación empleada en la EHE (art. 49). La comprobación de la abertura de fisura se hace para las combinaciones de carga frecuentes. Se toma como abertura de fisura máxima admisible w_k = 0,3 mm, ya que el ambiente considerado para todos los elementos de la estructura es IIa.

REFERENCIA DEL PROYECTO P.I. RIERA DE MANYA

VERIFICACION DEL E.L.S. DE FISURACION

Elemento = 2 - Dintel

N§ de seccion = 1
Canto = 0.80

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-1.2	3.8	-14.5	9.5
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep
	24 1	0.04	15 1	0.06	11 1	0.08	6 1	0.15	4 1	0.22	2 1	0.45	1 1	0.89
	24 1	0.04	15 1	0.06	11 1	0.08	6 1	0.15	4 1	0.22	2 1	0.45	1 1	0.89

N§ de seccion = 2
Canto = 0.80

	Mmax	Nk	Mmin	Nk
Comb. frecuente	16.8	8.5	0.6	8.8
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep
	24 1	0.04	15 1	0.06	11 1	0.08	6 1	0.15	4 1	0.22	2 1	0.45	1 1	0.89
	24 1	0.04	15 1	0.06	11 1	0.08	6 1	0.15	4 1	0.22	2 1	0.45	1 1	0.89

N§ de seccion = 3
Canto = 0.80

	Mmax	Nk	Mmin	Nk
Comb. frecuente	33.9	8.5	7.9	3.8
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep
	35 1	0.03	22 1	0.04	16 1	0.06	9 1	0.10	6 1	0.15	4 1	0.22	2 1	0.44
	35 1	0.03	22 1	0.04	16 1	0.06	9 1	0.10	6 1	0.15	4 1	0.22	2 1	0.44

N§ de seccion = 4
Canto = 0.80

	Mmax	Nk	Mmin	Nk
Comb. frecuente	44.2	8.5	10.6	3.8
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep
	46 2	0.03	29 1	0.03	20 1	0.05	11 1	0.08	7 1	0.13	5 1	0.18	3 1	0.30
	46 2	0.03	29 1	0.03	20 1	0.05	11 1	0.08	7 1	0.13	5 1	0.18	3 1	0.30

N§ de seccion = 5
Canto = 0.80

	Mmax	Nk	Mmin	Nk
Comb. frecuente	47.6	8.5	11.6	3.8
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep
	50 2	0.03	32 1	0.03	22 1	0.04	12 1	0.08	8 1	0.11	5 1	0.18	3 1	0.30
	50 2	0.03	32 1	0.03	22 1	0.04	12 1	0.08	8 1	0.11	5 1	0.18	3 1	0.30

N§ de seccion = 6
Canto = 0.80

	Mmax	Nk	Mmin	Nk
Comb. frecuente	44.8	9.3	10.6	3.8
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep
	46 2	0.03	29 1	0.03	20 1	0.05	11 1	0.08	7 1	0.13	5 1	0.18	3 1	0.30
	46 2	0.03	29 1	0.03	20 1	0.05	11 1	0.08	7 1	0.13	5 1	0.18	3 1	0.30

N§ de seccion = 7
Canto = 0.80

	Mmax	Nk	Mmin	Nk
Comb. frecuente	35.6	8.7	7.9	3.8
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep
	35 1	0.03	22 1	0.04	16 1	0.06	9 1	0.10	6 1	0.15	4 1	0.22	2 1	0.44
	35 1	0.03	22 1	0.04	16 1	0.06	9 1	0.10	6 1	0.15	4 1	0.22	2 1	0.44

N§ de seccion = 8
Canto = 0.80

	Mmax	Nk	Mmin	Nk
Comb. frecuente	19.9	5.1	3.6	3.8
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep
	24 1	0.04	15 1	0.06	11 1	0.08	6 1	0.15	4 1	0.22	2 1	0.45	1 1	0.89
	24 1	0.04	15 1	0.06	11 1	0.08	6 1	0.15	4 1	0.22	2 1	0.45	1 1	0.89

N§ de seccion = 9
Canto = 0.80

	Mmax	Nk	Mmin	Nk
Comb. frecuente	4.3	4.4	-8.1	8.0
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep	Nb/ncap	sep
	24 1	0.04	15 1	0.06	11 1	0.08	6 1	0.15	4 1	0.22	2 1	0.45	1 1	0.89
	24 1	0.04	15 1	0.06	11 1	0.08	6 1	0.15	4 1	0.22	2 1	0.45	1 1	0.89

REFERENCIA DEL PROYECTO P.I. RIERA DE MANYA

VERIFICACION DEL E.L.S. DE FISURACION

Elemento = 3 - Solera

N§ de seccion = 1
Canto = 0.75

	Mmax	Nk	Mmin	Nk
Comb. frecuente	30.4	-2.1	9.2	0.6
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	35 1 0.03	23 1 0.04	16 1 0.06	9 1 0.10	6 1 0.15	4 1 0.22	2 1 0.44
	35 1 0.03	23 1 0.04	16 1 0.06	9 1 0.10	6 1 0.15	4 1 0.22	2 1 0.44

N§ de seccion = 2
Canto = 0.75

	Mmax	Nk	Mmin	Nk
Comb. frecuente	1.1	1.3	-4.9	-4.3
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	23 1 0.04	14 1 0.06	10 1 0.09	6 1 0.15	4 1 0.22	2 1 0.45	1 1 0.89
	23 1 0.04	14 1 0.06	10 1 0.09	6 1 0.15	4 1 0.22	2 1 0.45	1 1 0.89

N§ de seccion = 3
Canto = 0.75

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-6.3	4.1	-25.6	-4.3
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	33 1 0.03	21 1 0.04	15 1 0.06	8 1 0.11	5 1 0.18	3 1 0.30	2 1 0.44
	33 1 0.03	21 1 0.04	15 1 0.06	8 1 0.11	5 1 0.18	3 1 0.30	2 1 0.44

N§ de seccion = 4
Canto = 0.75

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-10.6	4.1	-37.2	-4.3
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	45 2 0.03	29 1 0.03	20 1 0.05	11 1 0.08	7 1 0.13	5 1 0.18	3 1 0.30
	45 2 0.03	29 1 0.03	20 1 0.05	11 1 0.08	7 1 0.13	5 1 0.18	3 1 0.30

N§ de seccion = 5
Canto = 0.75

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-12.3	4.1	-40.9	-4.3
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	49 2 0.03	31 1 0.03	22 1 0.04	12 1 0.08	8 1 0.11	5 1 0.18	3 1 0.30
	49 2 0.03	31 1 0.03	22 1 0.04	12 1 0.08	8 1 0.11	5 1 0.18	3 1 0.30

N§ de seccion = 6
Canto = 0.75

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-10.6	4.1	-38.2	-2.1
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	45 2 0.03	29 1 0.03	20 1 0.05	11 1 0.08	7 1 0.13	5 1 0.18	3 1 0.30
	45 2 0.03	29 1 0.03	20 1 0.05	11 1 0.08	7 1 0.13	5 1 0.18	3 1 0.30

N§ de seccion = 7
Canto = 0.75

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-6.3	4.1	-27.8	-2.1
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	33 1 0.03	21 1 0.04	15 1 0.06	8 1 0.11	5 1 0.18	3 1 0.30	2 1 0.44
	33 1 0.03	21 1 0.04	15 1 0.06	8 1 0.11	5 1 0.18	3 1 0.30	2 1 0.44

N§ de seccion = 8
Canto = 0.75

	Mmax	Nk	Mmin	Nk
Comb. frecuente	0.9	4.1	-7.8	-2.1
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	23 1 0.04	14 1 0.06	10 1 0.09	6 1 0.15	4 1 0.22	2 1 0.45	1 1 0.89
	23 1 0.04	14 1 0.06	10 1 0.09	6 1 0.15	4 1 0.22	2 1 0.45	1 1 0.89

N§ de seccion = 9
Canto = 0.75

	Mmax	Nk	Mmin	Nk
Comb. frecuente	26.9	-2.9	9.2	0.6
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	35 1 0.03	23 1 0.04	16 1 0.06	9 1 0.10	6 1 0.15	4 1 0.22	2 1 0.44
	35 1 0.03	23 1 0.04	16 1 0.06	9 1 0.10	6 1 0.15	4 1 0.22	2 1 0.44

REFERENCIA DEL PROYECTO P.I. RIERA DE MANYA

Elemento = 4 - Hastial

N§ de seccion = 1
Canto = 0.70

	Mmax	Nk	Mmin	Nk
Comb. frecuente	41.6	49.4	12.6	17.4
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep	
	39	1 0.03	25	1 0.04	17	1 0.05	10	1 0.09	6	1 0.15	4	1 0.22	2	1 0.44
	39	1 0.03	25	1 0.04	17	1 0.05	10	1 0.09	6	1 0.15	4	1 0.22	2	1 0.44

N§ de seccion = 2
Canto = 0.70

	Mmax	Nk	Mmin	Nk
Comb. frecuente	42.9	48.9	12.0	16.8
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep	
	39	1 0.03	25	1 0.04	17	1 0.05	10	1 0.09	6	1 0.15	4	1 0.22	2	1 0.44
	39	1 0.03	25	1 0.04	17	1 0.05	10	1 0.09	6	1 0.15	4	1 0.22	2	1 0.44

N§ de seccion = 3
Canto = 0.70

	Mmax	Nk	Mmin	Nk
Comb. frecuente	44.5	48.4	11.7	15.9
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep	
	40	1 0.03	26	1 0.04	18	1 0.05	10	1 0.09	6	1 0.15	4	1 0.22	3	1 0.30
	40	1 0.03	26	1 0.04	18	1 0.05	10	1 0.09	6	1 0.15	4	1 0.22	3	1 0.30

N§ de seccion = 4
Canto = 0.70

	Mmax	Nk	Mmin	Nk
Comb. frecuente	46.2	47.9	11.2	15.4
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep	
	44	1 0.03	28	1 0.03	19	1 0.05	11	1 0.08	7	1 0.13	4	1 0.22	3	1 0.30
	44	1 0.03	28	1 0.03	19	1 0.05	11	1 0.08	7	1 0.13	4	1 0.22	3	1 0.30

N§ de seccion = 5
Canto = 0.70

	Mmax	Nk	Mmin	Nk
Comb. frecuente	48.2	47.4	11.0	14.9
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep	
	47	2 0.03	30	1 0.03	21	1 0.04	12	1 0.08	7	1 0.13	5	1 0.18	3	1 0.30
	47	2 0.03	30	1 0.03	21	1 0.04	12	1 0.08	7	1 0.13	5	1 0.18	3	1 0.30

N§ de seccion = 6
Canto = 0.70

	Mmax	Nk	Mmin	Nk
Comb. frecuente	50.2	46.9	11.1	14.4
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep	
	51	2 0.03	32	1 0.03	22	1 0.04	13	1 0.07	8	1 0.11	5	1 0.18	3	1 0.30
	51	2 0.03	32	1 0.03	22	1 0.04	13	1 0.07	8	1 0.11	5	1 0.18	3	1 0.30

N§ de seccion = 7
Canto = 0.70

	Mmax	Nk	Mmin	Nk
Comb. frecuente	53.0	47.9	11.6	13.9
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep	
	54	2 0.03	34	1 0.03	24	1 0.04	13	1 0.07	9	1 0.10	5	1 0.18	3	1 0.30
	54	2 0.03	34	1 0.03	24	1 0.04	13	1 0.07	9	1 0.10	5	1 0.18	3	1 0.30

N§ de seccion = 8
Canto = 0.70

	Mmax	Nk	Mmin	Nk
Comb. frecuente	56.5	47.4	12.3	13.4
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep	
	59	2 0.03	37	1 0.03	26	1 0.03	15	1 0.06	9	1 0.10	6	1 0.15	4	1 0.22
	59	2 0.03	37	1 0.03	26	1 0.03	15	1 0.06	9	1 0.10	6	1 0.15	4	1 0.22

N§ de seccion = 9
Canto = 0.70

	Mmax	Nk	Mmin	Nk
Comb. frecuente	60.2	46.9	13.3	12.9
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep	
	65	2 0.03	41	1 0.03	29	1 0.04	16	1 0.06	10	1 0.09	7	1 0.13	4	1 0.22
	65	2 0.03	41	1 0.03	29	1 0.04	16	1 0.06	10	1 0.09	7	1 0.13	4	1 0.22

REFERENCIA DEL PROYECTO P.I. RIERA DE MANYA

VERIFICACION DEL E.L.S. DE FISURACION

Elemento = 5 - Hastial

N§ de seccion = 1
Canto = 0.70

	Mmax	Nk	Mmin	Nk
Comb. frecuente	57.2	45.4	13.3	12.9
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura 8	10	12	16	20	25	32
Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
65 2 0.03	41 1 0.03	29 1 0.04	16 1 0.06	10 1 0.09	7 1 0.13	4 1 0.22
65 2 0.03	41 1 0.03	29 1 0.04	16 1 0.06	10 1 0.09	7 1 0.13	4 1 0.22

N§ de seccion = 2
Canto = 0.70

	Mmax	Nk	Mmin	Nk
Comb. frecuente	54.8	45.9	12.3	13.4
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura 8	10	12	16	20	25	32
Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
59 2 0.03	37 1 0.03	26 1 0.03	15 1 0.06	9 1 0.10	6 1 0.15	4 1 0.22
59 2 0.03	37 1 0.03	26 1 0.03	15 1 0.06	9 1 0.10	6 1 0.15	4 1 0.22

N§ de seccion = 3
Canto = 0.70

	Mmax	Nk	Mmin	Nk
Comb. frecuente	52.4	46.4	11.6	13.9
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura 8	10	12	16	20	25	32
Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
54 2 0.03	34 1 0.03	24 1 0.04	13 1 0.07	9 1 0.10	5 1 0.18	3 1 0.30
54 2 0.03	34 1 0.03	24 1 0.04	13 1 0.07	9 1 0.10	5 1 0.18	3 1 0.30

N§ de seccion = 4
Canto = 0.70

	Mmax	Nk	Mmin	Nk
Comb. frecuente	50.2	46.9	11.1	14.4
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura 8	10	12	16	20	25	32
Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
51 2 0.03	32 1 0.03	22 1 0.04	13 1 0.07	8 1 0.11	5 1 0.18	3 1 0.30
51 2 0.03	32 1 0.03	22 1 0.04	13 1 0.07	8 1 0.11	5 1 0.18	3 1 0.30

N§ de seccion = 5
Canto = 0.70

	Mmax	Nk	Mmin	Nk
Comb. frecuente	48.2	47.4	11.0	14.9
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura 8	10	12	16	20	25	32
Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
47 2 0.03	30 1 0.03	21 1 0.04	12 1 0.08	7 1 0.13	5 1 0.18	3 1 0.30
47 2 0.03	30 1 0.03	21 1 0.04	12 1 0.08	7 1 0.13	5 1 0.18	3 1 0.30

N§ de seccion = 6
Canto = 0.70

	Mmax	Nk	Mmin	Nk
Comb. frecuente	46.2	47.9	11.2	15.4
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura 8	10	12	16	20	25	32
Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
44 1 0.03	28 1 0.03	19 1 0.05	11 1 0.08	7 1 0.13	4 1 0.22	3 1 0.30
44 1 0.03	28 1 0.03	19 1 0.05	11 1 0.08	7 1 0.13	4 1 0.22	3 1 0.30

N§ de seccion = 7
Canto = 0.70

	Mmax	Nk	Mmin	Nk
Comb. frecuente	44.5	48.4	11.7	15.9
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura 8	10	12	16	20	25	32
Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
40 1 0.03	26 1 0.04	18 1 0.05	10 1 0.09	6 1 0.15	4 1 0.22	3 1 0.30
40 1 0.03	26 1 0.04	18 1 0.05	10 1 0.09	6 1 0.15	4 1 0.22	3 1 0.30

N§ de seccion = 8
Canto = 0.70

	Mmax	Nk	Mmin	Nk
Comb. frecuente	43.9	47.3	12.0	16.8
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura 8	10	12	16	20	25	32
Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
39 1 0.03	25 1 0.04	17 1 0.05	10 1 0.09	6 1 0.15	4 1 0.22	2 1 0.44
39 1 0.03	25 1 0.04	17 1 0.05	10 1 0.09	6 1 0.15	4 1 0.22	2 1 0.44

N§ de seccion = 9
Canto = 0.70

	Mmax	Nk	Mmin	Nk
Comb. frecuente	43.7	47.8	12.6	17.4
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura 8	10	12	16	20	25	32
Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
39 1 0.03	25 1 0.04	17 1 0.05	10 1 0.09	6 1 0.15	4 1 0.22	2 1 0.44
39 1 0.03	25 1 0.04	17 1 0.05	10 1 0.09	6 1 0.15	4 1 0.22	2 1 0.44

REFERENCIA DEL PROYECTO P.I. RIERA DE MANYA

Elemento = 6 - Cartela

N§ de seccion = 1
Canto = 0.80

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-10.9	6.8	-51.2	24.3
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	48 2 0.03	31 1 0.03	21 1 0.04	12 1 0.08	8 1 0.11	5 1 0.18	3 1 0.30
	48 2 0.03	31 1 0.03	21 1 0.04	12 1 0.08	8 1 0.11	5 1 0.18	3 1 0.30

N§ de seccion = 2
Canto = 0.80

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-9.4	6.6	-45.9	24.0
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	42 1 0.03	27 1 0.03	19 1 0.05	10 1 0.09	7 1 0.13	4 1 0.22	3 1 0.30
	42 1 0.03	27 1 0.03	19 1 0.05	10 1 0.09	7 1 0.13	4 1 0.22	3 1 0.30

N§ de seccion = 3
Canto = 0.80

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-8.1	6.5	-40.8	23.6
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	36 1 0.03	23 1 0.04	16 1 0.06	9 1 0.10	6 1 0.15	4 1 0.22	2 1 0.44
	36 1 0.03	23 1 0.04	16 1 0.06	9 1 0.10	6 1 0.15	4 1 0.22	2 1 0.44

N§ de seccion = 4
Canto = 0.80

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-6.8	6.4	-35.8	23.3
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	30 1 0.03	19 1 0.05	13 1 0.07	8 1 0.11	5 1 0.18	3 1 0.30	2 1 0.44
	30 1 0.03	19 1 0.05	13 1 0.07	8 1 0.11	5 1 0.18	3 1 0.30	2 1 0.44

N§ de seccion = 5
Canto = 0.80

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-5.6	6.3	-30.9	23.0
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	25 1 0.04	16 1 0.06	11 1 0.08	6 1 0.15	4 1 0.22	3 1 0.30	2 1 0.44
	25 1 0.04	16 1 0.06	11 1 0.08	6 1 0.15	4 1 0.22	3 1 0.30	2 1 0.44

N§ de seccion = 6
Canto = 0.80

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-4.4	6.2	-26.1	22.7
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	24 1 0.04	15 1 0.06	11 1 0.08	6 1 0.15	4 1 0.22	2 1 0.45	1 1 0.89
	24 1 0.04	15 1 0.06	11 1 0.08	6 1 0.15	4 1 0.22	2 1 0.45	1 1 0.89

N§ de seccion = 7
Canto = 0.80

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-3.3	6.1	-21.4	22.3
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	24 1 0.04	15 1 0.06	11 1 0.08	6 1 0.15	4 1 0.22	2 1 0.45	1 1 0.89
	24 1 0.04	15 1 0.06	11 1 0.08	6 1 0.15	4 1 0.22	2 1 0.45	1 1 0.89

N§ de seccion = 8
Canto = 0.80

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-2.2	5.9	-16.9	14.8
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	24 1 0.04	15 1 0.06	11 1 0.08	6 1 0.15	4 1 0.22	2 1 0.45	1 1 0.89
	24 1 0.04	15 1 0.06	11 1 0.08	6 1 0.15	4 1 0.22	2 1 0.45	1 1 0.89

N§ de seccion = 9
Canto = 0.80

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-1.2	5.8	-14.5	14.5
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	24 1 0.04	15 1 0.06	11 1 0.08	6 1 0.15	4 1 0.22	2 1 0.45	1 1 0.89
	24 1 0.04	15 1 0.06	11 1 0.08	6 1 0.15	4 1 0.22	2 1 0.45	1 1 0.89

REFERENCIA DEL PROYECTO P.I. RIERA DE MANYA

VERIFICACION DEL E.L.S. DE FISURACION

Elemento = 7 - Cartela

N§ de seccion = 1
Canto = 0.80

	Mmax	Nk	Mmin	Nk
Comb. frecuente	4.3	10.5	-8.1	14.4
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	24 1 0.04	15 1 0.06	11 1 0.08	6 1 0.15	4 1 0.22	2 1 0.45	1 1 0.89
	24 1 0.04	15 1 0.06	11 1 0.08	6 1 0.15	4 1 0.22	2 1 0.45	1 1 0.89

N§ de seccion = 2
Canto = 0.80

	Mmax	Nk	Mmin	Nk
Comb. frecuente	1.2	10.7	-12.0	18.5
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	24 1 0.04	15 1 0.06	11 1 0.08	6 1 0.15	4 1 0.22	2 1 0.45	1 1 0.89
	24 1 0.04	15 1 0.06	11 1 0.08	6 1 0.15	4 1 0.22	2 1 0.45	1 1 0.89

N§ de seccion = 3
Canto = 0.80

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-2.0	10.9	-16.4	18.7
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	24 1 0.04	15 1 0.06	11 1 0.08	6 1 0.15	4 1 0.22	2 1 0.45	1 1 0.89
	24 1 0.04	15 1 0.06	11 1 0.08	6 1 0.15	4 1 0.22	2 1 0.45	1 1 0.89

N§ de seccion = 4
Canto = 0.80

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-4.4	6.2	-21.0	19.0
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	24 1 0.04	15 1 0.06	11 1 0.08	6 1 0.15	4 1 0.22	2 1 0.45	1 1 0.89
	24 1 0.04	15 1 0.06	11 1 0.08	6 1 0.15	4 1 0.22	2 1 0.45	1 1 0.89

N§ de seccion = 5
Canto = 0.80

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-5.6	6.3	-25.7	19.2
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	25 1 0.04	16 1 0.06	11 1 0.08	6 1 0.15	4 1 0.22	3 1 0.30	2 1 0.44
	25 1 0.04	16 1 0.06	11 1 0.08	6 1 0.15	4 1 0.22	3 1 0.30	2 1 0.44

N§ de seccion = 6
Canto = 0.80

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-6.8	6.4	-30.6	19.4
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	30 1 0.03	19 1 0.05	13 1 0.07	8 1 0.11	5 1 0.18	3 1 0.30	2 1 0.44
	30 1 0.03	19 1 0.05	13 1 0.07	8 1 0.11	5 1 0.18	3 1 0.30	2 1 0.44

N§ de seccion = 7
Canto = 0.80

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-8.1	6.5	-35.5	19.6
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	36 1 0.03	23 1 0.04	16 1 0.06	9 1 0.10	6 1 0.15	4 1 0.22	2 1 0.44
	36 1 0.03	23 1 0.04	16 1 0.06	9 1 0.10	6 1 0.15	4 1 0.22	2 1 0.44

N§ de seccion = 8
Canto = 0.80

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-9.4	6.6	-40.5	19.8
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	42 1 0.03	27 1 0.03	19 1 0.05	10 1 0.09	7 1 0.13	4 1 0.22	3 1 0.30
	42 1 0.03	27 1 0.03	19 1 0.05	10 1 0.09	7 1 0.13	4 1 0.22	3 1 0.30

N§ de seccion = 9
Canto = 0.80

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-10.9	6.8	-45.7	20.1
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	48 2 0.03	31 1 0.03	21 1 0.04	12 1 0.08	8 1 0.11	5 1 0.18	3 1 0.30
	48 2 0.03	31 1 0.03	21 1 0.04	12 1 0.08	8 1 0.11	5 1 0.18	3 1 0.30

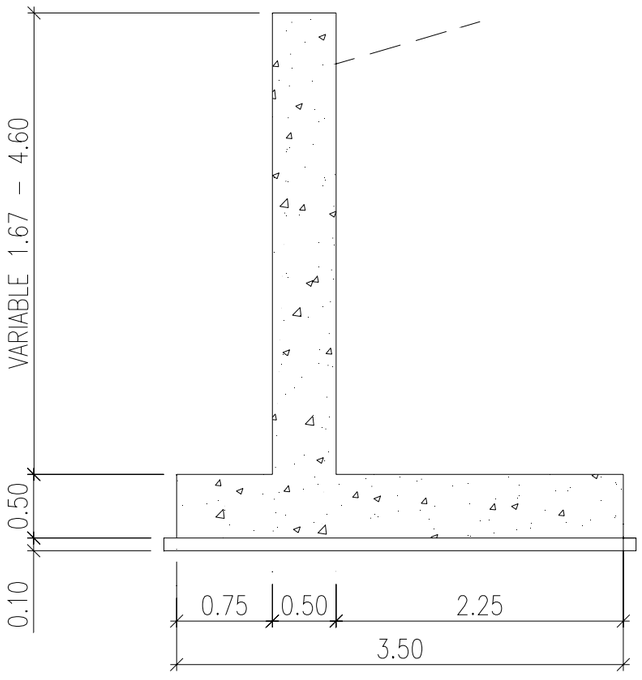
7. CÁLCULO DE ALETAS

7.1. GEOMETRÍA

El diseño de las aletas es el mismo en las dos dispuestas en la entrada del cajón, situadas con un ángulo de 30º respecto al eje longitudinal del cajón. No se dispondran aletas en la salida del cajón al coincidir esta con una O.D. existente. Las 2 aletas son tipo muro y están compuestas de un módulo único. A continuación se detalla la geometría de cada una de ellas.

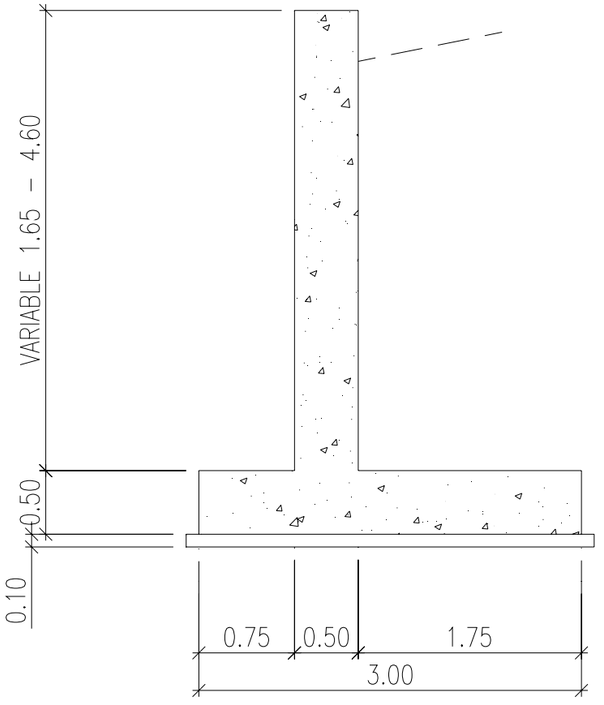
SECCION ALETA 1

ESCALA:1/100



SECCIÓN ALETA 2

ESCALA:1/100



7.2 CÁLCULO DE ESFUERZOS Y DIMENSIONAMIENTO

El cálculo y dimensionamiento de las aletas se detalla en las páginas siguientes. Las hipótesis de cálculo se exponen a continuación:

1. El cálculo se realiza en la hipótesis clásica como muro con acciones en coronación debidas al sobre-empuje de 3,0 T/m^2 de tráfico ferroviario así como la consideración de una altura de tierras hasta la cota superior de vía. Los empujes del terreno se han calculado para un coeficiente de empuje K = 0,31 y una densidad del terreno de 2,1 T/m^3. No se han considerado eventuales empujes hidrostáticos al colocar un adecuado drenaje en el trasdós de las aletas.

2. En el cálculo de la seguridad de la aleta frente al vuelco, deslizamiento y tensiones máximas se han verificado las siguientes condiciones (ver resultados en listados de cálculo).

   Coeficiente de Seguridad al vuelco, $CS,v > 1,80$

   Coeficiente de Seguridad al deslizamiento $CS,d > 1,50$

   Tensión máxima del terreno en puntera $\sigma_{max} > 1,25 \cdot \sigma_{admisible}$

   Con $\sigma_{admisible} = 3,00$ Kp/cm^2 y coeficiente de rozamiento terreno-zapata $\mu = 0,60$.

3. El dimensionamiento de las armaduras de flexión y cortante del muro y zapata se realiza con los criterios de la Normativa vigente para estructuras de hormigón (EHE). Los coeficientes de seguridad de las acciones corresponden con un NIVEL DE CONTROL INTENSO $\gamma_{fg} = 1,35$ y $\gamma_{fq} = 1,50$.

3. Las armaduras horizontales de flexión transversal se colocan de acuerdo con los valores mínimos exigidos por la Normativa EHE

4. Las armaduras horizontales de flexión transversal se colocan de acuerdo con los valores mínimos exigidos por la normativa EHE.

Proyecto: L.A.V. Madrid-Zaragoza-Barcelona-Frontera Francesa.
Tramo: Papiol - St. Vicenç dels Horts.

Referencia: Módulo de aleta tipo 5_2. - ALETA 1

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**************************************************
**                                              **
**                PROGRAMA  MUR                 **
**   CALCULO DE MUROS DE CONTENCION Y CIMENTACION **
**                                              **
**                                              **
**                  PEDELTA SL                  **
**                                              **
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CARACTERISTICAS GEOMETRICAS DE LA ESTRUCTURA

ALTURA TOTAL	5.00
ALTURA DE EMPUJE PASIVO	0.00
DIMENSION DE LA BASE	3.50
CANTO DE LA ZAPATA	0.50
CANTO DEL FUSTE	0.50
ANCHO EN CORONACION	0.50
LONGITUD DE LA PUNTERA	0.75
LONGITUD DEL TALON	2.25
ALTURA DEL TACON	0.00
ANCHO DEL TACON	0.00
INCLINACION DEL TRASDOS	90.00
ANGULO DEL TALUD (OMEGA)	22.00

PROPIEDADES MECANICAS DE MATERIALES Y TIERRAS

PROPIEDADES DEL HORMIGON Y DEL ACERO

resistencia caracteristica del hormigon	250.00
coeficiente de minoracion para el hormigon	1.50
limite elastico caracteristico del acero	5100.00
coeficiente de minoracion para el acero	1.15

PROPIEDADES DEl TERRENO DE RELLENO

angulo de friccion interna	35.000
densidad	2.100
cohesion	0.000
angulo friccion terreno - fuste	10.000

PROPIEDADES DEL TERRENO DE CIMENTACION

coef. de rozamiento cimiento-suelo (mu)	0.600
tension admisible:	3.000
tension ultima:	3.750

CARGAS Y COEFICIENTES DE SEGURIDAD

Carga repartida (T/m*m)	3.00
Coef. de seg. al deslizamiento (servicio)	1.50
Coef. de seg. al deslizamiento (ultimo)	1.50
Coef. de seg. al vuelco	1.80
Coef. de seg. al deslizamiento o vuelco en hipotesis de accion sismica	1.20
Coef. sismico	0.00

Empuje Activo y Magnitudes Relacionadas

angulo del paramento (rad)	1.57
angulo de actuacion del sismo (rad)	0.00
angulo de rozamiento interno (rad)	0.61
Ka (coef. empuje sin sismo)	0.34
Kae (coef. empuje con sismo)	0.34
empuje activo sin sismo	13.99
empuje activo con sismo	13.99
brazo del empuje activo	1.97

Empuje Pasivo y Magnitudes Relacionadas

altura de empuje pasivo	0.00
altura de suelo sobre la puntera	0.00
brazo de empupe pasivo en zapata y fuste	0.00
brazo de empuje pasivo sobre tacon	0.00
empuje pasivo en zapata y fuste	0.00
empuje pasivo sobre tacon	0.00

Volumenes

distancia d:	0.00
volumen 1 (volumen del cimiento)	1.75
volumen 2 (volumen del alzado)	2.25
volumen 3 (suelo sobre la puntera)	0.00
volumen 4 (suelo sobre el talon)	10.13

Pesos

peso 1 (peso del cimiento)	4.38
peso 2 (peso del alzado)	5.62
peso 3 (peso del suelo sobre puntera)	0.00
peso 4 (peso del suelo sobre talon) (incluyendo sobrecarga repartida)	28.01
peso total	38.01

Brazos de Palanca

Brazo de palanca 1 (del cimiento)	1.75
Brazo de palanca 2 (del alzado)	1.00
Brazo de palanca 3 (del suelo / puntera)	0.38
Brazo de palanca 4 (del suelo / talon)	2.37

Momentos

Mto estab. 1 (de zapata)	7.66
Mto estab. 2 (del fuste)	5.62
Mto estab. 3 (del tierras sobre puntera)	0.00
Mto estab. 4 (del tierras sobre talon)	66.53
Mto estab. total	79.81

RESULTADOS DE LAS VERIFICACIONES DE ESTABILIDAD
==========

Coef. de Seg. al deslizamiento servicio: 1.63

VERIFICADA LA SEGURIDAD AL DESLIZAMIENTO EN SERVICIO

Coef. de Seg. al deslizamiento ultimo: 1.63
VERIFICADA LA SEGURIDAD AL DESLIZ. EN ESTADO ULTIMO

Coef de Seg. al vuelco: 2.90

VERIFICADA LA SEGURIDAD AL VUELCO

Tensiones Maxima, Media y Minima en Servicio:
17.85 10.86 3.87 ...T/m*m

VERIFICADA LA TENSION MAXIMA SOBRE EL TERRENO EN SERVICIO
(la tension admisible en punta es 1,25* 30.00 T/m*m)

VERIFICADA LA TENSION MEDIA SOBRE EL TERRENO EN SERVICIO

Tensiones Maxima y Minima bajo empuje mayorado:
25.04 0.00...T/m*m

VERIFICADA LA CONDICION SOBRE LA TENSION MAXIMA CON EMPUJE MAYORADO

LEY DE MOMENTOS Y ARMADURA EN FUSTE

31.68	16.86
24.35	12.77
18.20	9.43
13.14	7.09
9.07	5.51
5.89	4.50
3.51	4.50
1.83	4.50
0.75	4.50
0.17	4.50
0.00	4.50

RESULTADOS DE LOS CALCULOS RESISTENTES
==========

elemento	Md	As nec.	As min.	Vd	Vu (res.)
fuste	31.68	16.86	4.50	17.69	31.53
talon	28.13	14.86	5.00	17.30	64.55
puntera	7.91	5.00	5.00	13.07	32.27
tacon	0.00	0.00	0.00	0.00	0.00

Armaduras transversales minimas

Fuste trasdos = 5.000
Fuste intrados = 5.000
Zapata superior = 5.000
Zapata inferior = 5.000

DIMENSIONAMENT

RESUMEN DE RESULTADOS
numero de mallas: 16

no.	id.	altura	dimens	As nec	malla	l. anc ferrall	l. anc.
1	1	4.50	4.50	12.65	CT-13	42.00	8a30	21.00
2	2	4.50	4.50	4.22	CI-1	15.00		
3	5	0.00	2.21	0.00	CC-3	15.00		
4	6	0.00	2.21	0.00	CC-3	15.00		
5	7	0.00	0.86	0.00	CC-3	22.00		
6	8	0.00	1.18	12.65	CT-13	42.00	8a30	21.00
7	9	0.00	0.91	4.22	CI-1	15.00		
8	10	0.00	0.91	0.00	CC-3	15.00		
9	11	0.00	3.89	5.00	CI-1	24.00		
10	13	0.00	4.06	3.55	CE-1	32.00		
11	14	0.00	3.85	11.31	CT-13	24.00		

Valoracion aproximada: 229.7475 Kp/m

Proyecto: L.A.V. Madrid-Zaragoza-Barcelona-Frontera Francesa.
Tramo: Papiol - St. Vicenç dels Horts.

Referencia: Módulo de aleta tipo 5_1. - ALETA 2

```
**************************************************
**                                              **
**                PROGRAMA  MUR                 **
**   CALCULO DE MUROS DE CONTENCION Y CIMENTACION **
**                                              **
**                                              **
**                  PEDELTA SL                  **
**                                              **
**************************************************
```

CARACTERISTICAS GEOMETRICAS DE LA ESTRUCTURA

ALTURA TOTAL	5.00
ALTURA DE EMPUJE PASIVO	0.00
DIMENSION DE LA BASE	3.00
CANTO DE LA ZAPATA	0.50
CANTO DEL FUSTE	0.50
ANCHO EN CORONACION	0.50
LONGITUD DE LA PUNTERA	0.75
LONGITUD DEL TALON	1.75
ALTURA DEL TACON	0.00
ANCHO DEL TACON	0.00
INCLINACION DEL TRASDOS	90.00
ANGULO DEL TALUD (OMEGA)	11.00

PROPIEDADES MECANICAS DE MATERIALES Y TIERRAS

PROPIEDADES DEL HORMIGON Y DEL ACERO

resistencia caracteristica del hormigon	250.00
coeficiente de minoracion para el hormigon	1.50
limite elastico caracteristico del acero	5100.00
coeficiente de minoracion para el acero	1.15

PROPIEDADES DEl TERRENO DE RELLENO

angulo de friccion interna	35.000
densidad	2.100
cohesion	0.000
angulo friccion terreno - fuste	10.000

PROPIEDADES DEL TERRENO DE CIMENTACION

coef. de rozamiento cimiento-suelo (mu)	0.600
tension admisible:	3.000
tension ultima:	3.750

CARGAS Y COEFICIENTES DE SEGURIDAD

Carga repartida (T/m*m)	3.00
Coef. de seg. al deslizamiento (servicio)	1.50
Coef. de seg. al deslizamiento (ultimo)	1.50
Coef. de seg. al vuelco	1.80
Coef. de seg. al deslizamiento o vuelco en hipotesis de accion sismica	1.20
Coef. sismico	0.00

Empuje Activo y Magnitudes Relacionadas

angulo del paramento (rad)	1.57
angulo de actuacion del sismo (rad)	0.00
angulo de rozamiento interno (rad)	0.61
Ka (coef. empuje sin sismo)	0.29
Kae (coef. empuje con sismo)	0.29
empuje activo sin sismo	11.77
empuje activo con sismo	11.77
brazo del empuje activo	1.97

Empuje Pasivo y Magnitudes Relacionadas

altura de empuje pasivo	0.00
altura de suelo sobre la puntera	0.00
brazo de empupe pasivo en zapata y fuste	0.00
brazo de empuje pasivo sobre tacon	0.00
empuje pasivo en zapata y fuste	0.00
empuje pasivo sobre tacon	0.00

Volumenes

distancia d:	0.00
volumen 1 (volumen del cimiento)	1.50
volumen 2 (volumen del alzado)	2.25
volumen 3 (suelo sobre la puntera)	0.00
volumen 4 (suelo sobre el talon)	7.88

Pesos

peso 1 (peso del cimiento)	3.75
peso 2 (peso del alzado)	5.62
peso 3 (peso del suelo sobre puntera)	0.00
peso 4 (peso del suelo sobre talon) (incluyendo sobrecarga repartida)	21.79
peso total	31.16

Brazos de Palanca

Brazo de palanca 1 (del cimiento)	1.50
Brazo de palanca 2 (del alzado)	1.00
Brazo de palanca 3 (del suelo / puntera)	0.38
Brazo de palanca 4 (del suelo / talon)	2.12

Momentos

Mto estab. 1 (de zapata)	5.62
Mto estab. 2 (del fuste)	5.62
Mto estab. 3 (del tierras sobre puntera)	0.00
Mto estab. 4 (del tierras sobre talon)	46.30
Mto estab. total	57.55

RESULTADOS DE LAS VERIFICACIONES DE ESTABILIDAD
==========

Coef. de Seg. al deslizamiento servicio: 1.59

VERIFICADA LA SEGURIDAD AL DESLIZAMIENTO EN SERVICIO

Coef. de Seg. al deslizamiento ultimo: 1.59
VERIFICADA LA SEGURIDAD AL DESLIZ. EN ESTADO ULTIMO

Coef de Seg. al vuelco: 2.48

VERIFICADA LA SEGURIDAD AL VUELCO

Tensiones Maxima, Media y Minima en Servicio:
18.64 10.39 2.14 ...T/m*m

VERIFICADA LA TENSION MAXIMA SOBRE EL TERRENO EN SERVICIO
(la tension admisible en punta es 1,25* 30.00 T/m*m)

VERIFICADA LA TENSION MEDIA SOBRE EL TERRENO EN SERVICIO

Tensiones Maxima y Minima bajo empuje mayorado:
28.42 0.00...T/m*m

VERIFICADA LA CONDICION SOBRE LA TENSION MAXIMA CON EMPUJE MAYORADO

LEY DE MOMENTOS Y ARMADURA EN FUSTE

26.65	14.04
20.48	10.66
15.31	7.89
11.05	6.35
7.63	4.81
4.96	4.50
2.95	4.50
1.54	4.50
0.63	4.50
0.14	4.50
0.00	4.50

RESULTADOS DE LOS CALCULOS RESISTENTES
==========

elemento	Md	As nec.	As min.	Vd	Vu (res.)
fuste	26.65	14.04	4.50	14.88	31.42
talon	20.50	10.67	5.00	16.24	64.55
puntera	8.36	5.18	5.00	13.51	32.27
tacon	0.00	0.00	0.00	0.00	0.00

Armaduras transversales minimas

Fuste trasdos = 5.000
Fuste intrados = 5.000
Zapata superior = 5.000
Zapata inferior = 5.000

DIMENSIONAMENT

RESUMEN DE RESULTADOS
numero de mallas: 16

no.	id.	altura	dimens	As nec	malla	l. anc ferrall l. anc.
1	1	4.50	4.50	10.53	CT-3	41.00
2	2	4.50	4.50	3.51	CE-1	29.00
3	5	0.00	2.21	0.00	CC-3	15.00
4	6	0.00	2.21	0.00	CC-3	15.00
5	7	0.00	0.86	0.00	CC-3	22.00
6	8	0.00	1.16	10.53	CT-3	41.00
7	9	0.00	1.04	3.51	CE-1	29.00
8	10	0.00	0.91	0.00	CC-3	15.00
9	11	0.00	3.39	5.18	CJ-1	24.00
10	13	0.00	3.39	10.67	CT-3	24.00

Valoracion aproximada: 167.4075 Kp/m

ANEJO DE CÁLCULO DEL PASO INFERIOR DE LA RIERA FONDA

ÍNDICE DEL ANEJO DE CÁLCULO DEL P. I. DE LA RIERA FONDA

1 GEOMETRÍA

1.1. Geometría y esquema estructural
1.2. Sección tipo

2 ACCIONES, MATERIALES, COEFICIENTES DE SEGURIDAD Y NORMATIVAS

2.1. Acciones
2.2. Coeficientes de seguridad, materiales, niveles de control y Normativas
2.3. Ambientes, recubrimientos, fisuración y cuantías mínimas
2.4. Hipótesis de combinación de esfuerzos
2.4.1. Estados Límite Últimos
2.4.2. Estados Límite de Servicio

3 CÁLCULO DE ESFUERZOS

4 VERIFICACIÓN DEL E.L.U DE ROTURA POR TENSIONES NORMALES

4.1. Flexión longitudinal
4.2. Flexión transversal

5 VERIFICACIÓN DEL E.L.U DE ROTURA POR TENSIONES TANGENCIALES

5.1. Evaluación del E.L.U. de agotamiento por cortante

6 VERIFICACIÓN DEL E.L.S DE FISURACIÓN

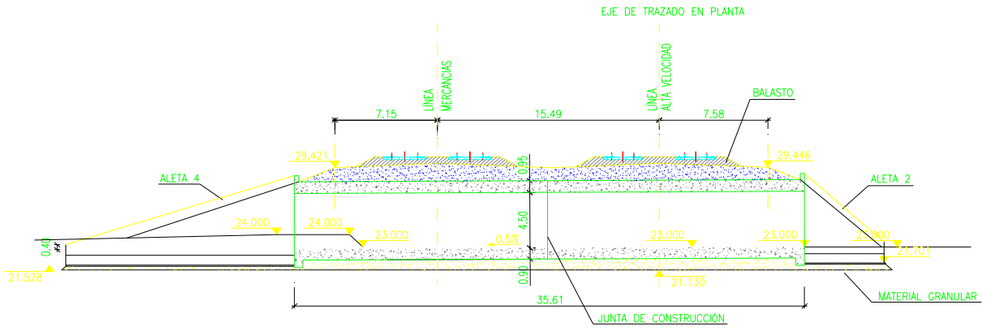
7 CÁLCULO DE ALETAS

7.1. Geometría
7.2. Cálculo de esfuerzos y dimensionamiento

1 GEOMETRÍA

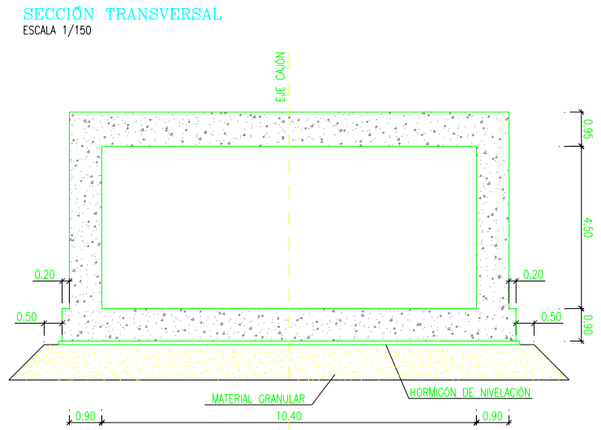
1.1 GEOMETRÍA Y ESQUEMA ESTRUCTURAL

Se trata de un marco cerrado para dejar paso a través de la plataforma de ferrocarril a la riera Fonda. El cajón está constituido por dos hastiales y una losa inferior (de ahora en adelante solera) con un espesor de 0,90 m., y cerrado en su parte superior por un dintel de 0,95 m. de canto. Se consideró, para efectos de cálculo que el esviaje del cajón en relación a la plataforma de ferrocarril es nulo. Tanto la entrada como la salida del cajón estará formada por aletas tipo muro que sostienen las tierras del terraplén y encauzan la riera en la dirección deseada. Estas aletas forman un ángulo de 30º respecto al eje del paso inferior.



1.2 SECCIÓN TIPO

La sección transversal de la estructura es un marco rectangular cerrado construido con hormigón armado HA-25. Como ya se ha dicho anteriormente se consideró el cajón como recto. En consecuencia la sección de cálculo de la estructura coincidirá con la sección transversal del marco. Sus dimensiones se detallan en la figura adjunta.



En la figura se puede apreciar que la estructura va apoyada sobre una capa de material granular hasta alcanzar el estrato de cimentación competente.

2 ACCIONES, MATERIALES, COEFICIENTES DE SEGURIDAD Y NORMATIVAS

2.1 ACCIONES

De acuerdo con las “Instrucciones y recomendaciones para la redacción de proyectos de plataforma” del GIF se han considerado las siguientes acciones:

Acciones permanentes (g):

g1, PESO PROPIO

El peso propio de los distintos elementos se ha calculado a partir de su geometría (secciones transversales) adoptando una densidad de valor $\gamma c = 2{,}5\ T/m^3$ para los elementos de hormigón armado (solera, dintel y hastiales).

g2, PESO DEL BALASTO Y CARGAS MUERTAS

Las cargas permanentes distintas del peso propio del tablero son las siguientes:

- Balasto
- Vías y traviesas
- Conductos de cableado y paseos
- Soportes de catenarias
- Impostas y barandillas

El peso de balasto sobre el tablero se calcula a partir de la plataforma en la estructura de vía tomando como densidad $\gamma = 1{,}6\ t/m^3$.

De acuerdo con las “Instrucciones y recomendaciones para la redacción de proyectos de plataforma” del GIF se adoptarán para esta carga los siguientes valores característicos superior e inferior:

- valor inferior: (0,70 x peso medio) $g_{2,\ bal\ inf}$
- valor superior: (1,30 x peso medio) $g_{2,\ bal,\ sup}$

El caso de desbalastado se considera incluido en el intervalo indicado de variación del peso del balasto.

El peso de vías y traviesas para la plataforma es:

$g_{2,vías+traviesas} = 0{,}52 + 0{,}12 = 0{,}64$ t/m y vía.
(trav)+(carril)

El peso de los conductos para cableados y zona de paseos es:

$g_{2,conductos} = 0{,}30$ t/m

El peso de los soportes de catenarias se tienen en cuenta sólo para efectos locales de anclaje de la catenaria y armado local de losa, pero no para el cálculo general del tablero.

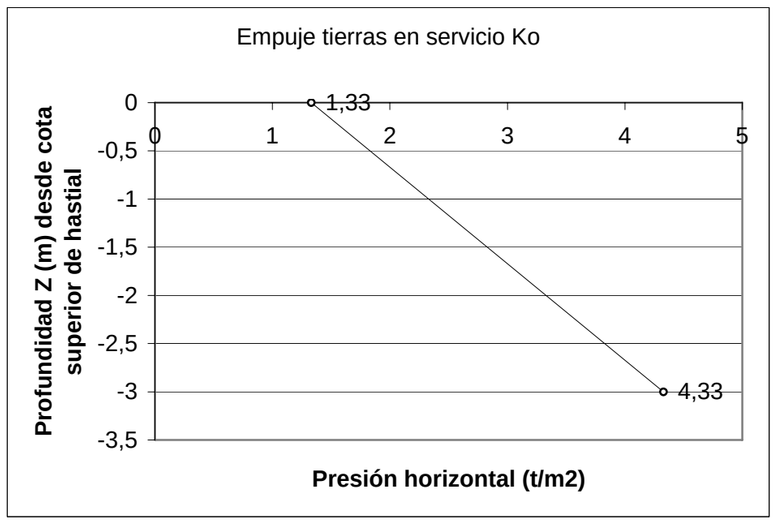
Acciones permanentes de valor no constante (G*):

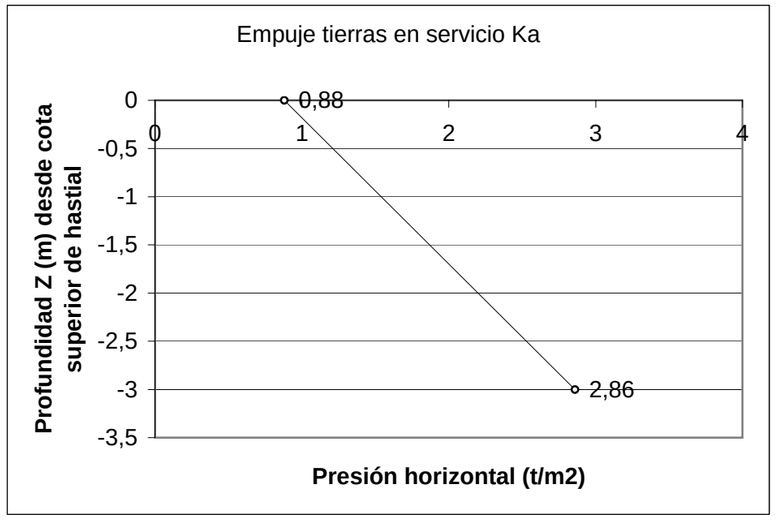
EMPUJE DE TIERRAS

El empuje de tierras se calcula para la fase de servicio, al preverse que el relleno de tierras se efectuará simétricamente a ambos lados de la estructura.

En la fase de servicio se considera el efecto del empuje de tierras ya con toda la altura que tendrá una vez terminada la estructura. En esta fase y debido a que la estructura no presenta un comportamiento completamente flexible o completamente rígido se consideran los empujes activo K_a = 0,33 y empuje al reposo K_o = 0,50.

De esta manera las leyes de presión del terreno quedan de la siguiente manera:





SOBRECARGAS DE USO. COMPONENTES VERTICALES.

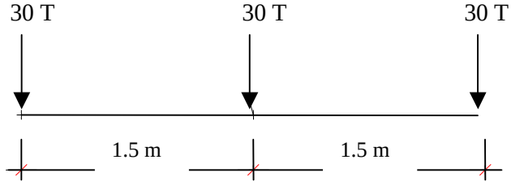
A. Sobrecarga de tráfico de tren

Se utilizará la envolvente de esfuerzos debidos a los trenes de carga de IPF-75 y de EC1-3.

Como coeficiente de impacto se adoptará en cada caso el que corresponda.

De acuerdo con la normativa IPF-75 Existen dos trenes de carga

Tipo A.- Por cada vía: P_{vp} = 3 ejes de 30 T separados 1,50 m

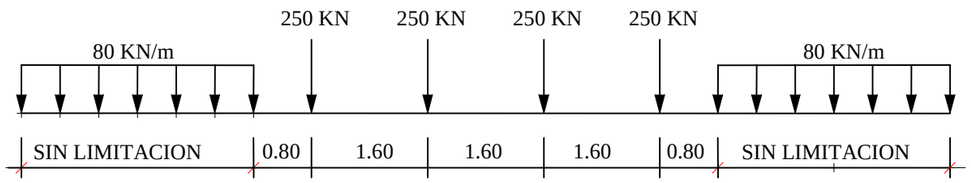


Tipo B.- Por cada vía: Sobrecarga uniforme de 12 t/m. sobre 15,0 ó 30,0 metros, más un conjunto de cuchillos de carga de 10 t/m y 1 t/m. de longitud arbitraria.

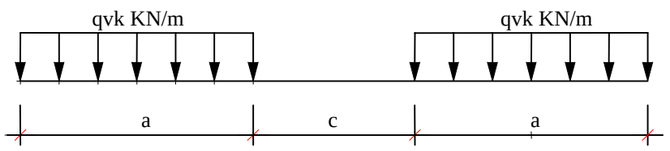
El tren tipo A puede condicionar el trabajo local de reparto de la losa y el tren tipo B condiciona el trabajo global. No se admite reducción de cargas por simultaneidad entre ambas vías. No se considera el efecto del ripado de la vía de 0,30 m porque el estudio del cajón se realiza por metro de ancho.

El tren de cargas de EC1 tiene la siguiente configuración

Tren tipo 71:



Modelo de carga SW:



Se tendrán en cuenta tres tipos de trenes según el EC-1: Tren tipo 71, SW/0, y el SW/2.

	SW0	SW2
Q_{vk}	133	150
a	15	25
c	5,3	7

Tabla 2. Tren de cargas.

Los valores de los trenes tipo 71 y SW/0 se multiplicarán por un coeficiente de clasificación α cuyo valor se toma igual a 1,00 tanto para las vías de ancho RENFE como para las de ancho Internacional.

B. Sobrecarga tráfico losa inferior

Para el paso inferior en estudio no es necesario considerar ninguna sobrecarga sobre la solera, puesto que la obra sirve como canalización de una riera y no se prevé más que la circulación esporádica de algún vehículo automóvil.

C. Sobrecargas en paseos

Según las “Instrucciones y recomendaciones para la redacción de proyectos de plataforma” del GIF se dispondrá una sobrecarga en los paseos laterales de valor:

$$Q_{SV} = 0{,}5 \text{ t/m}^2$$

Sólo un 50 % de dicha carga es compatible con el tráfico ferroviario.

En nuestro caso y debido a que el estudio se realiza por metro de ancho no se considera por ser más desfavorable para el dimensionamiento de los distintos elementos del marco considerar las cargas verticales del tráfico ferroviario.

D. Sobrecarga de tráfico en trasdós hastiales

Se considera la sobrecarga de tráfico en trasdós de hastiales recomendada en la normativa IFF-75 de valor igual 3 t/m^2.

Esta sobrecarga actúa en los hastiales mediante el coeficiente de empuje al reposo K_o = 0,50.

SOBRECARGAS DE USO. COMPONENTES HORIZONTALES.

A. Efectos de frenado y arranque

Se adopta la Norma EC1 ya que las acciones definidas en la IPF75 son mucho más favorables. (1/8 de la carga frente a 1/4)

Son fuerzas que actúan sobre cota superior de carril. No deben mayorarse dinámicamente.

Fuerzas de arranque (por vía)

$F_a = 33\ (KN/m) \times L(m) \leq 1.000\ KN$ LM71 y SW

Fuerzas de frenado (por vía)

$F_f = 20\ (KN/m) \times L(m) \leq 6.000\ (KN)$ LM71 y SW0

$Ff = 35\ (KN/m) \times L(m)$ SW2

VARIACIÓN UNIFORME DE TEMPERATURA

No se considera este efecto al estar la estructura enterrada prácticamente en su totalidad.

GRADIENTE TÉRMICO

No se considera este efecto al estar la estructura enterrada prácticamente en su totalidad.

ACCIONES ACCIDENTALES

ACCIÓN SÍSMICA

La aceleración sísmica básica de la zona, según la normativa vigente, es a_b= 0,04 g.

La categoría de la estructura puede considerarse de especial importancia, lo que es equivalente a un coeficiente de riesgo ρ =1,3.

La aceleración de cálculo es:

$a_c = \rho \cdot a_b$
$a_b = 0{,}052$ g

Las acciones sísmicas en puentes sólo se consideran, de acuerdo con la IAP, para aceleraciones de cálculo superiores a 0,06g, por lo tanto no es preciso realizar el análisis sísmico del cajón.

A continuación se detalla el valor de cálculo de las cargas verticales y los coeficientes de impacto considerados.

2.2 COEFICIENTES DE SEGURIDAD, MATERIALES, NIVELES DE CONTROL Y NORMATIVAS

HORMIGONES

- Hormigón de Limpieza..... HM-15
- Losas..... HA-25 / B / 20 / IIa
- Hastiales..... HA-25 / B / 20 / IIa
- Dintel..... HA-25 / B / 20 / IIa

Control del hormigón NORMAL

γc= 1,50 (Situación persistente o transitoria)
γc= 1,30 (Situación accidental)

El módulo de elasticidad se ha evaluado en todos los casos de acuerdo a la expresión de EHE:

$$E_c = 8500 \sqrt[3]{f_{ck} + 8} \ (N/mm^2)$$

Los límites establecidos para la consistencia en la puesta en obra podrán superarse con el empleo de aditivos superfluidificantes, siempre que el valor de la relación agua-cemento cumpla los requisitos prefijados en la EHE.

ACEROS

- Acero corrugado para la armadura pasiva B500S, con f_{yk} > 500 MPa (5100 Kp/cm^2)

Control de los aceros NORMAL.

γ_s = 1,15 (Situación persistente o transitoria)
γ_s = 1,0 (Situación accidental)

CONTROL DE EJECUCIÓN

El control de ejecución será INTENSO (γ_g= 1,35 y γ_{fq}= 1,50) en hastiales, solera y dintel, de acuerdo con las especificaciones de la normativa EHE.

NORMAS UTILIZADAS

- Instrucción relativa a las acciones a considerar en el proyecto de puentes de carretera IAP, aprobada Orden de12 de febrero de 1998.
- Instrucción para el proyecto de estructuras de hormigón estructural EHE, aprobada por el Real Decreto 2661/1998 de 11 de diciembre.
- Normativa Sismoresistente NCSE-94.
- Instrucción relativa a las acciones a considerar en el proyecto de puentes de ferrocarril, aprobada por Orden Ministerial de 25 de junio de 1975.
- Eurocódigo 1. EC-1.

2.3 AMBIENTES, RECUBRIMIENTOS, FISURACIÓN Y CUANTÍAS MÍNIMAS

De acuerdo con la normativa EHE se consideran los ambientes indicados en la tabla siguiente:

Elemento	Ambiente	Recubrimiento de Armadura pasiva	Abertura máxima de fisura en mm.
Solera	IIa	30	0,3
Hastiales	IIa	30	0,3
Dintel	IIa	30	0,3

Las cuantías mínimas de armadura pasiva B500S serán las expuestas en la tabla indicada a continuación (EHE, art. 44.3.5):

Elemento	Posición	Tipo	Cuantía geométrica (‰)
Solera	Cara superior e Inferior	Transversal y Longitudinal	0,90
Hastiales	Cara interior y exterior	Horizontal	1,6
Hastiales	Cara interior y exterior	Vertical	0,90
Dintel	Cara superior e Inferior	Transversal y Longitudinal	0,90

2.4 HIPÓTESIS DE COMBINACIÓN DE ESFUERZOS

Se han considerado las combinaciones de hipótesis de las acciones recogidas en el Eurocódigo 1 y EHE, basados en la teoría de Estados Límites, para las distintas situaciones de cálculo de la estructura.

A continuación se describe la formulación de dichas combinaciones y seguidamente se detallan los valores de los coeficientes adoptados para los casos de carga considerados en los cálculos.

2.4.1 ESTADOS LÍMITE ÚLTIMOS

Las hipótesis de cálculo consideradas son:

- Situaciones persistentes o transitorias

$$\sum_{j \geq 1} \gamma_{Gj}\, G_{kj} + \sum \gamma_{Gj}\, G^*_{kj} + \gamma_{Q1}\, Q_{k1} + \sum_{i > 1} \gamma_{Qi}\, \Psi_{0i}\, Q_{ki}$$

- Situaciones accidentales

$$\sum_{j \geq 1} \gamma_{Gaj}\, G_{kj} + \sum \gamma_{Gj}\, G^*_{kj} + \gamma_A\, A_k + \Psi_{11}\, Q_{k1} + \sum_{i > 1} \gamma_{Qi}\, \Psi_{2i}\, Q_{ki}$$

- Situaciones accidentales de sismo

$$\sum_{j \geq 1} G_{kj} + \sum \gamma_{Gj}\, G^*_{kj} + \gamma_i\, A_{Ed} + \sum_{i > 1} \gamma_{Qi}\, \Psi_{2i}\, Q_{ki}$$

donde:

G = Valor característico de las cargas permanentes.
G* = Valor característico de las cargas permanentes de valor no constante.
Q_{k1} = Valor característico de la carga variable dominante.
A_k = Valor característico de la acción accidental.
A_{eq} = Valor característico de la acción sísmica, calculado según la Norma Sismorresistente.

Los coeficientes de seguridad y de combinación de acciones empleados se definen en la IAP.

2.4.2 ESTADOS LÍMITE DE SERVICIO

Las hipótesis de cálculo consideradas son:

- Combinación característica:

$$\sum_{j \geq 1} \gamma_{Gj}\, G_{kj} + \sum \gamma_{Gj}\, G^*_{kj} + \gamma_{Q1}\, Q_{k1} + \sum_{i > 1} \gamma_{Qi}\, \Psi_{0i}\, Q_{ki}$$

- Combinación frecuente:

$$\sum_{j \geq 1} \gamma_{Gaj}\, G_{kj} + \sum \gamma_{Gj}\, G^*_{kj} + \Psi_{11}\, Q_{k1} + \sum_{i > 1} \gamma_{Qi}\, \Psi_{2i}\, Q_{ki}$$

- Combinación casi permanente:

$$\sum_{j \geq 1} G_{kj} + \sum \gamma_{Gj}\, G^*_{kj} + \sum_{i > 1} \gamma_{Qi}\, \Psi_{2i}\, Q_{ki}$$

3 CÁLCULO DE ESFUERZOS

En el siguiente apartado se ha calculado el paso inferior sometido a las cargas de uso. Para ello se modeló el cajón como una estructura reticulada plana compuesta por cuatro barras paralelas dos a dos que conforman el marco cerrado de la estructura.

Las acciones a las que está sometida la estructura han sido descritas en el apartado 2 del presente documento. Las dimensiones del marco son las correspondientes a un plano de corte esviado en el sentido de las vías de ferrocarril. En la dirección perpendicular al plano de cálculo se considera que el marco tiene 1 metro de profundidad.

El cálculo de esfuerzos se ha realizado bajo la hipótesis de linealidad material y geométrica, mediante el programa de cálculo de estructuras ROBOT MILLENIUM v. 14.5. Las comprobaciones y dimensionamiento de la estructura se ha efectuado de acuerdo con la instrucción EHE, y sus resultados se detallan en los apartados 4, 5 y 6 del presente anejo.

Cabe destacar que la barra inferior que representa la solera del marco está apoyada sobre suelo elástico cuyo coeficiente de balasto se ha obtenido a partir del estudio geotécnico. El valor de este coeficiente de balasto representa las características elásticas de las gravas dispuestas bajo la losa inferior del cajón.

4 VERIFICACIÓN DEL E.L.U DE ROTURA POR TENSIONES NORMALES

4.1 FLEXIÓN TRANSVERSAL AL EJE DEL CAJON

En este apartado se comprueba el Estado Límite Último de rotura por flexión transversal de acuerdo con los criterios de la Normativa española vigente (EHE)

El cálculo de la armadura necesaria se ha realizado mediante un programa de armado automático desarrollado al efecto por los ingenieros de PEDELTA S.L.

4.2. FLEXIÓN LONGITUDINAL

La flexión longitudinal no se ha considerado puesto que el cálculo se realiza por metro de ancho. La armadura correspondiente a la flexión longitudinal se dispone por cuantías mínimas indicadas en la normativa EHE.

Programa de calculo automatico de armado desarrollado por:

PEDELTA, S.L.

ESFUERZOS DE CALCULO PARA LAS DISTINTAS HIPOTESIS DE CARGA

REFERENCIA DEL PROYECTO P.I. CAN MALLOL (IPF-75).

DATOS GENERALES :

Nº de barras = 4
Nº de secciones por barra = 9
Nº de combinaciones en ELU = 7

Nº de combinaciones en ELS = 7
Nº de combinaciones en ELS (frecuente) = 7
Nº de combinaciones en ELS (poco frecuente) = 0
Nº de combinaciones en ELS (caracteristica) = 0

Resistencia a compresion del hormigon (T/m2) = 2500
Resistencia media a traccion del hormigon (T/m2) = 256.4964
Modulo de deformacion del hormigon (T/m2) = 248541.5
Resistencia a traccion del acero (T/m2) = 51000
Modulo de deformacion del acero (T/m2) = 2.1E+07

REFERENCIA DEL PROYECTO P.I. CAN MALLOL (IPF-75).

Elemento = 2

Sec	Hip	Nd	Vd	Md	Asf1	Asf2	ASt	8	10	12	16	20	25	32
10	1	1.1	32.3	-15.4	10.5	0.0	0.0	21	13	9	5	3	2	1
10	4	9.0	32.3	-18.6	10.5	0.1	0.0	0	0	0	0	0	0	0
2	4	9.0	25.9	3.7	0.1	10.5	0.0	0	0	0	0	0	0	0
2	1	1.1	25.9	6.9	0.0	10.5	0.0	21	13	9	5	3	2	1
3	4	9.0	17.3	19.9	0.1	10.5	0.0	0	0	0	0	0	0	0
3	1	1.1	17.3	23.1	0.0	10.5	0.0	21	13	9	5	3	2	1
4	4	9.0	8.6	29.6	0.1	10.5	0.0	0	0	0	0	0	0	0
4	2	1.1	8.3	32.9	0.0	11.4	0.0	23	15	10	6	4	2	1
5	4	9.0	0.0	32.9	0.1	10.5	0.0	0	0	0	0	0	0	0
5	1	1.1	0.0	36.0	0.0	12.6	0.0	25	16	11	6	4	3	2
6	4	9.0	-8.6	29.6	0.1	10.5	0.0	0	0	0	0	0	0	0
6	1	1.1	-8.6	32.8	0.0	11.4	0.0	23	15	10	6	4	2	1
7	4	9.0	-17.3	19.9	0.1	10.5	0.0	0	0	0	0	0	0	0
7	1	1.1	-17.3	23.1	0.0	10.5	0.0	21	13	9	5	3	2	1
8	7	6.5	-7.5	-2.2	10.5	0.1	0.0	21	13	9	5	3	2	1
8	1	1.1	-25.9	6.9	0.0	10.5	0.0	21	13	9	5	3	2	1
11	1	1.1	-32.3	-15.4	10.5	0.0	0.0	21	13	9	5	3	2	1
11	4	9.0	-32.3	-18.6	10.5	0.1	0.0	0	0	0	0	0	0	0

Elemento = 3

Sec	Hip	Nd	Vd	Md	Asf1	Asf2	ASt	8	10	12	16	20	25	32
5	6	11.0	-26.9	17.1	0.1	9.0	0.0	0	0	0	0	0	0	0
5	1	-0.9	-27.8	14.3	0.0	9.0	0.0	18	11	8	4	3	2	1
2	1	-0.9	-19.5	-3.4	9.0	0.0	0.0	18	11	8	4	3	2	1
2	5	8.9	-22.3	1.5	0.1	9.0	0.0	18	11	8	4	3	2	1
3	1	-0.9	-12.3	-15.3	9.0	0.0	0.0	18	11	8	4	3	2	1
3	6	11.0	-12.2	-11.8	9.0	0.1	0.0	0	0	0	0	0	0	0
4	2	-0.8	-5.5	-22.5	9.4	0.0	0.0	19	12	8	5	3	2	1
4	6	11.0	-5.9	-18.5	9.0	0.1	0.0	0	0	0	0	0	0	0
5	1	-0.9	0.0	-24.3	10.2	0.0	0.0	20	13	9	5	3	2	1
5	6	11.0	0.0	-20.7	9.0	0.1	0.0	0	0	0	0	0	0	0
6	1	-0.9	5.9	-22.1	9.2	0.0	0.0	18	12	8	5	3	2	1
6	6	11.0	5.9	-18.5	9.0	0.1	0.0	0	0	0	0	0	0	0
7	1	-0.9	12.3	-15.3	9.0	0.0	0.0	18	11	8	4	3	2	1
7	6	11.0	12.2	-11.8	9.0	0.1	0.0	0	0	0	0	0	0	0
8	1	-0.9	19.5	-3.4	9.0	0.0	0.0	18	11	8	4	3	2	1
8	6	11.0	19.1	-0.1	9.0	0.1	0.0	0	0	0	0	0	0	0
6	6	11.0	26.9	17.1	0.1	9.0	0.0	0	0	0	0	0	0	0
6	1	-0.9	27.8	14.3	0.0	9.0	0.0	18	11	8	4	3	2	1

REFERENCIA DEL PROYECTO P.I. CAN MALLOL (IPF-75).

Elemento = 4

Sec	Hip	Nd	Vd	Md	Asf1	Asf2	ASt	8	10	12	16	20	25	32
7	1	38.4	-0.9	-22.9	9.0	0.4	0.0	18	11	8	4	3	2	1
7	2	40.3	-0.9	-23.2	9.0	0.5	0.0	1	1	0	0	0	0	0
2	1	37.7	-0.7	-23.2	9.0	0.4	0.0	18	11	8	4	3	2	1
2	2	39.5	-0.6	-23.5	9.0	0.4	0.0	1	1	0	0	0	0	0
3	1	36.9	-0.5	-23.4	9.0	0.4	0.0	18	11	8	4	3	2	1
3	2	38.8	-0.5	-23.7	9.0	0.4	0.0	1	1	0	0	0	0	0
4	1	36.1	-0.4	-23.6	9.0	0.4	0.0	18	11	8	4	3	2	1
4	2	38.0	-0.4	-23.8	9.0	0.4	0.0	1	1	0	0	0	0	0
5	1	35.4	-0.4	-23.7	9.0	0.4	0.0	18	11	8	4	3	2	1
5	2	37.3	-0.4	-24.0	9.0	0.4	0.0	1	1	0	0	0	0	0
6	1	34.6	-0.5	-23.9	9.0	0.4	0.0	18	11	8	4	3	2	1
6	2	36.5	-0.4	-24.1	9.0	0.4	0.0	1	1	0	0	0	0	0
7	1	33.9	-0.6	-24.1	9.0	0.4	0.0	18	11	8	4	3	2	1
7	2	35.7	-0.6	-24.3	9.0	0.4	0.0	1	1	0	0	0	0	0
8	1	33.1	-0.8	-24.4	9.0	0.4	0.0	18	11	8	4	3	2	1
8	2	35.0	-0.8	-24.5	9.0	0.4	0.0	1	1	0	0	0	0	0
8	1	32.3	-1.1	-24.7	9.0	0.4	0.0	18	11	8	4	3	2	1
8	2	34.2	-1.1	-24.9	9.0	0.4	0.0	1	0	0	0	0	0	0

Elemento = 5

Sec	Hip	Nd	Vd	Md	Asf1	Asf2	ASt	8	10	12	16	20	25	32
14	1	38.4	0.9	22.9	0.4	9.0	0.0	1	1	0	0	0	0	0
14	1	38.4	0.9	22.9	0.4	9.0	0.0	18	11	8	4	3	2	1
2	1	37.7	0.7	23.2	0.4	9.0	0.0	1	1	0	0	0	0	0
2	1	37.7	0.7	23.2	0.4	9.0	0.0	18	11	8	4	3	2	1
3	1	36.9	0.5	23.4	0.4	9.0	0.0	1	1	0	0	0	0	0
3	1	36.9	0.5	23.4	0.4	9.0	0.0	18	11	8	4	3	2	1
4	1	36.1	0.4	23.6	0.4	9.0	0.0	1	1	0	0	0	0	0
4	1	36.1	0.4	23.6	0.4	9.0	0.0	18	11	8	4	3	2	1
5	1	35.4	0.4	23.7	0.4	9.0	0.0	1	1	0	0	0	0	0
5	1	35.4	0.4	23.7	0.4	9.0	0.0	18	11	8	4	3	2	1
6	1	34.6	0.5	23.9	0.4	9.0	0.0	1	0	0	0	0	0	0
6	1	34.6	0.5	23.9	0.4	9.0	0.0	18	11	8	4	3	2	1
7	1	33.9	0.6	24.1	0.4	9.0	0.0	1	0	0	0	0	0	0
7	1	33.9	0.6	24.1	0.4	9.0	0.0	18	11	8	4	3	2	1
8	1	33.1	0.8	24.4	0.4	9.0	0.0	1	0	0	0	0	0	0
8	1	33.1	0.8	24.4	0.4	9.0	0.0	18	11	8	4	3	2	1
13	1	32.3	1.1	24.7	0.4	9.0	0.0	1	0	0	0	0	0	0
13	1	32.3	1.1	24.7	0.4	9.0	0.0	18	11	8	4	3	2	1

Programa de calculo automatico de armado desarrollado por:

PEDELTA, S.L.

ESFUERZOS DE CALCULO PARA LAS DISTINTAS HIPOTESIS DE CARGA

REFERENCIA DEL PROYECTO P.I. CAN MALLOL (IPF-75).

DATOS GENERALES :

Nº de barras = 4
Nº de secciones por barra = 9
Nº de combinaciones en ELU = 10

Nº de combinaciones en ELS = 10
Nº de combinaciones en ELS (frecuente) = 10
Nº de combinaciones en ELS (poco frecuente) = 0
Nº de combinaciones en ELS (caracteristica) = 0

Resistencia a compresion del hormigon (T/m2) = 2500
Resistencia media a traccion del hormigon (T/m2) = 256.4964
Modulo de deformacion del hormigon (T/m2) = 248541.5
Resistencia a traccion del acero (T/m2) = 51000
Modulo de deformacion del acero (T/m2) = 2.1E+07

Elemento = 2

Sec	Hip	Nd	Vd	Md	Asf1	Asf2	ASt	8	10	12	16	20	25	32
10	1	1.0	41.2	-18.1	10.5	0.0	0.0	21	13	9	5	3	2	1
10	7	6.5	8.3	-4.1	10.5	0.1	0.0	0	0	0	0	0	0	0
2	7	6.5	6.0	1.2	0.1	10.5	0.0	0	0	0	0	0	0	0
2	1	1.0	30.9	8.9	0.0	10.5	0.0	21	13	9	5	3	2	1
3	7	6.5	3.8	4.9	0.1	10.5	0.0	0	0	0	0	0	0	0
3	1	1.0	20.6	28.2	0.0	10.5	0.0	21	13	9	5	3	2	1
4	7	6.5	1.5	6.9	0.1	10.5	0.0	0	0	0	0	0	0	0
4	1	1.0	10.3	39.8	0.0	14.0	0.0	28	18	12	7	4	3	2
5	4	7.1	-2.6	40.4	0.1	13.5	0.0	0	0	0	0	0	0	0
5	1	1.0	0.0	43.7	0.0	15.4	0.0	31	20	14	8	5	3	2
6	4	7.8	-12.7	34.7	0.1	11.3	0.0	0	0	0	0	0	0	0
6	1	1.0	-10.3	39.8	0.0	14.0	0.0	28	18	12	7	4	3	2
7	4	8.5	-22.8	21.3	0.1	10.5	0.0	0	0	0	0	0	0	0
7	1	1.0	-20.6	28.2	0.0	10.5	0.0	21	13	9	5	3	2	1
8	5	9.1	-29.9	-0.4	10.5	0.1	0.0	21	13	9	5	3	2	1
8	1	1.0	-30.9	8.9	0.0	10.5	0.0	21	13	9	5	3	2	1
11	1	1.0	-41.2	-18.1	10.5	0.0	0.0	21	13	9	5	3	2	1
11	4	10.0	-43.0	-28.0	10.5	0.1	0.0	0	0	0	0	0	0	0

Elemento = 3

Sec	Hip	Nd	Vd	Md	Asf1	Asf2	ASt	8	10	12	16	20	25	32
5	7	9.6	-10.3	11.5	0.1	9.0	0.0	0	0	0	0	0	0	0
5	4	9.0	-35.8	29.5	0.1	11.3	0.0	23	14	10	6	4	2	1
2	1	-0.8	-24.5	-4.1	9.0	0.0	0.0	18	11	8	4	3	2	1
2	4	9.0	-27.3	5.8	0.1	9.0	0.0	18	11	8	4	3	2	1
3	1	-0.8	-15.4	-19.0	9.0	0.0	0.0	18	11	8	4	3	2	1
3	7	9.6	-6.1	-0.8	9.0	0.1	0.0	0	0	0	0	0	0	0
4	1	-0.8	-7.4	-27.5	11.5	0.0	0.0	23	15	10	6	4	2	1
4	7	9.6	-3.9	-4.5	9.0	0.1	0.0	0	0	0	0	0	0	0
5	1	-0.8	0.0	-30.3	12.7	0.0	0.0	25	16	11	6	4	3	2
5	7	9.6	-1.7	-6.6	9.0	0.1	0.0	0	0	0	0	0	0	0
6	1	-0.8	7.4	-27.5	11.5	0.0	0.0	23	15	10	6	4	2	1
6	7	9.6	0.7	-7.0	9.0	0.1	0.0	0	0	0	0	0	0	0
7	1	-0.8	15.4	-19.0	9.0	0.0	0.0	18	11	8	4	3	2	1
7	7	9.6	3.4	-5.5	9.0	0.1	0.0	0	0	0	0	0	0	0
8	1	-0.8	24.5	-4.1	9.0	0.0	0.0	18	11	8	4	3	2	1
8	7	9.6	6.5	-1.8	9.0	0.1	0.0	0	0	0	0	0	0	0
6	7	9.6	10.1	4.5	0.1	9.0	0.0	0	0	0	0	0	0	0
6	1	-0.8	34.8	18.0	0.0	9.0	0.0	18	11	8	4	3	2	1

REFERENCIA DEL PROYECTO P.I. CAN MALLOL (EC-1).

Elemento = 4

Sec	Hip	Nd	Vd	Md	Asf1	Asf2	ASt	8	10	12	16	20	25	32
7	4	43.9	15.3	-35.6	10.2	0.5	0.0	20	13	9	5	3	2	1
7	1	47.2	-0.8	-28.7	9.0	0.5	0.0	1	1	0	0	0	0	0
2	1	46.5	-0.5	-28.9	9.0	0.5	0.0	18	11	8	4	3	2	1
2	1	46.5	-0.5	-28.9	9.0	0.5	0.0	1	1	0	0	0	0	0
3	1	45.7	-0.4	-29.1	9.0	0.5	0.0	18	11	8	4	3	2	1
3	1	45.7	-0.4	-29.1	9.0	0.5	0.0	1	1	0	0	0	0	0
4	1	45.0	-0.3	-29.2	9.0	0.5	0.0	18	11	8	4	3	2	1
4	1	45.0	-0.3	-29.2	9.0	0.5	0.0	1	1	0	0	0	0	0
5	1	44.2	-0.3	-29.3	9.0	0.5	0.0	18	11	8	4	3	2	1
5	1	44.2	-0.3	-29.3	9.0	0.5	0.0	1	1	0	0	0	0	0
6	1	43.4	-0.3	-29.4	9.0	0.5	0.0	18	11	8	4	3	2	1
6	1	43.4	-0.3	-29.4	9.0	0.5	0.0	1	1	0	0	0	0	0
7	1	42.7	-0.5	-29.5	9.0	0.5	0.0	18	11	8	4	3	2	1
7	1	42.7	-0.5	-29.5	9.0	0.5	0.0	1	1	0	0	0	0	0
8	1	41.9	-0.7	-29.8	9.0	0.5	0.0	18	11	8	4	3	2	1
8	1	41.9	-0.7	-29.8	9.0	0.5	0.0	1	1	0	0	0	0	0
8	1	41.2	-1.0	-30.1	9.0	0.5	0.0	18	11	8	4	3	2	1
8	1	41.2	-1.0	-30.1	9.0	0.5	0.0	1	1	0	0	0	0	0

Elemento = 5

Sec	Hip	Nd	Vd	Md	Asf1	Asf2	ASt	8	10	12	16	20	25	32
14	4	49.1	-2.8	23.2	0.6	9.0	0.0	1	1	0	0	0	0	0
14	1	47.2	0.8	28.7	0.5	9.0	0.0	18	11	8	4	3	2	1
2	4	48.3	-0.4	22.6	0.5	9.0	0.0	1	1	0	0	0	0	0
2	1	46.5	0.5	28.9	0.5	9.0	0.0	18	11	8	4	3	2	1
3	4	47.6	1.7	22.9	0.5	9.0	0.0	1	1	0	0	0	0	0
3	1	45.7	0.4	29.1	0.5	9.0	0.0	18	11	8	4	3	2	1
4	4	46.8	3.6	23.9	0.5	9.0	0.0	1	1	0	0	0	0	0
4	1	45.0	0.3	29.2	0.5	9.0	0.0	18	11	8	4	3	2	1
5	4	46.1	5.3	25.5	0.5	9.0	0.0	1	1	0	0	0	0	0
5	1	44.2	0.3	29.3	0.5	9.0	0.0	18	11	8	4	3	2	1
6	4	45.3	6.8	27.8	0.5	9.0	0.0	1	1	0	0	0	0	0
6	1	43.4	0.3	29.4	0.5	9.0	0.0	18	11	8	4	3	2	1
7	4	44.5	8.1	30.6	0.5	9.0	0.0	1	1	0	0	0	0	0
7	1	42.7	0.5	29.5	0.5	9.0	0.0	18	11	8	4	3	2	1
8	4	43.8	9.1	33.8	0.5	9.4	0.0	1	1	0	0	0	0	0
8	4	43.8	9.1	33.8	0.5	9.4	0.0	19	12	8	5	3	2	1
13	4	43.0	10.0	37.4	0.5	11.1	0.0	1	1	0	0	0	0	0
13	4	43.0	10.0	37.4	0.5	11.1	0.0	22	14	10	6	4	2	1

5 VERIFICACIÓN DEL E.L.U DE ROTURA POR TENSIONES TANGENCIALES

5.1 EVALUACIÓN DEL E.L.U. DE AGOTAMIENTO POR CORTANTE

En este apartado se comprueba el Estado Límite Último de rotura por cortante de acuerdo con los criterios de la Normativa española vigente (EHE, artículo 44)

Según dicha norma:

$$V_{rd} = V_d + V_{pd} + V_{cd}$$

donde,

V_{rd} = Valor del esfuerzo cortante efectivo.
V_d = Valor de cálculo del esfuerzo cortante producido por las acciones exteriores.
V_{pd} = Valor de cálculo del esfuerzo cortante producido por el pretensado (= 0).
V_{cd} = Valor de cálculo de la componente paralela a la sección de las tensiones normales en piezas de sección variable (= 0).

- Comprobación del agotamiento por compresión oblicua en el alma.

$$V_{rd} \leq V_{u1}$$

V_{u1} = Esfuerzo cortante de agotamiento por compresión oblicua del alma.

- Comprobación del agotamiento por tracción en el alma.

$$V_{rd} \leq V_{u2}$$

V_{u2} = Esfuerzo cortante de agotamiento por tracción en el alma.

El cálculo de todos los parámetros resistentes se ha realizado de forma automática. Posteriormente se ha determinado la armadura de cortante necesaria A_{sc} por criterios resistentes y se comprueba que verifica los criterios de armadura mínima a cortante.

6 VERIFICACIÓN DEL E.L.S DE FISURACIÓN.

En este apartado se comprueba el Estado Límite de Servicio de fisuración.

El cálculo de la abertura de fisura se hace mediante la formulación empleada en la EHE (art. 49). La comprobación de la abertura de fisura se hace para las combinaciones de carga frecuentes. Se toma como abertura de fisura máxima admisible w_k = 0,3 mm, ya que el ambiente considerado para todos los elementos de la estructura es IIa.

REFERENCIA DEL PROYECTO P.I. CAN MALLOL (IPF-75).

VERIFICACION DEL E.L.S. DE FISURACION

Elemento = 2

Nº de seccion = 1
Canto = 0.70

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-4.1	3.9	-11.1	5.3
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	21 1 0.04	13 1 0.07	9 1 0.10	5 1 0.18	3 1 0.30	2 1 0.45	1 1 0.89
	21 1 0.04	13 1 0.07	9 1 0.10	5 1 0.18	3 1 0.30	2 1 0.45	1 1 0.89

Nº de seccion = 2
Canto = 0.70

	Mmax	Nk	Mmin	Nk
Comb. frecuente	3.9	2.2	1.5	3.9
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	21 1 0.04	13 1 0.07	9 1 0.10	5 1 0.18	3 1 0.30	2 1 0.45	1 1 0.89
	21 1 0.04	13 1 0.07	9 1 0.10	5 1 0.18	3 1 0.30	2 1 0.45	1 1 0.89

Nº de seccion = 3
Canto = 0.70

	Mmax	Nk	Mmin	Nk
Comb. frecuente	13.5	2.2	5.4	3.9
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	21 1 0.04	13 1 0.07	9 1 0.10	5 1 0.18	3 1 0.30	2 1 0.45	1 1 0.89
	21 1 0.04	13 1 0.07	9 1 0.10	5 1 0.18	3 1 0.30	2 1 0.45	1 1 0.89

Nº de seccion = 4
Canto = 0.70

	Mmax	Nk	Mmin	Nk
Comb. frecuente	19.2	2.3	7.7	3.9
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	23 1 0.04	15 1 0.06	10 1 0.09	6 1 0.15	4 1 0.22	2 1 0.45	1 1 0.89
	23 1 0.04	15 1 0.06	10 1 0.09	6 1 0.15	4 1 0.22	2 1 0.45	1 1 0.89

Nº de seccion = 5
Canto = 0.70

	Mmax	Nk	Mmin	Nk
Comb. frecuente	21.2	2.3	8.2	3.9
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	25 1 0.04	16 1 0.06	11 1 0.08	6 1 0.15	4 1 0.22	3 1 0.30	2 1 0.44
	25 1 0.04	16 1 0.06	11 1 0.08	6 1 0.15	4 1 0.22	3 1 0.30	2 1 0.44

Nº de seccion = 6
Canto = 0.70

	Mmax	Nk	Mmin	Nk
Comb. frecuente	19.2	2.3	7.0	3.9
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	23 1 0.04	15 1 0.06	10 1 0.09	6 1 0.15	4 1 0.22	2 1 0.45	1 1 0.89
	23 1 0.04	15 1 0.06	10 1 0.09	6 1 0.15	4 1 0.22	2 1 0.45	1 1 0.89

Nº de seccion = 7
Canto = 0.70

	Mmax	Nk	Mmin	Nk
Comb. frecuente	13.3	2.3	4.2	3.9
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	21 1 0.04	13 1 0.07	9 1 0.10	5 1 0.18	3 1 0.30	2 1 0.45	1 1 0.89
	21 1 0.04	13 1 0.07	9 1 0.10	5 1 0.18	3 1 0.30	2 1 0.45	1 1 0.89

Nº de seccion = 8
Canto = 0.70

	Mmax	Nk	Mmin	Nk
Comb. frecuente	3.6	2.3	-0.3	3.9
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	21 1 0.04	13 1 0.07	9 1 0.10	5 1 0.18	3 1 0.30	2 1 0.45	1 1 0.89
	21 1 0.04	13 1 0.07	9 1 0.10	5 1 0.18	3 1 0.30	2 1 0.45	1 1 0.89

Nº de seccion = 9
Canto = 0.70

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-6.6	3.9	-12.0	4.4
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	21 1 0.04	13 1 0.07	9 1 0.10	5 1 0.18	3 1 0.30	2 1 0.45	1 1 0.89
	21 1 0.04	13 1 0.07	9 1 0.10	5 1 0.18	3 1 0.30	2 1 0.45	1 1 0.89

Elemento = 3

Nº de seccion = 1
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	13.2	5.9	9.0	6.4
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep	
	18	1 0.05	11	1 0.08	8	1 0.11	4	1 0.23	3	1 0.30	2	1 0.45	1	1 0.89
	18	1 0.05	11	1 0.08	8	1 0.11	4	1 0.23	3	1 0.30	2	1 0.45	1	1 0.89

Nº de seccion = 2
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	2.3	6.4	-1.5	3.4
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep	
	18	1 0.05	11	1 0.08	8	1 0.11	4	1 0.23	3	1 0.30	2	1 0.45	1	1 0.89
	18	1 0.05	11	1 0.08	8	1 0.11	4	1 0.23	3	1 0.30	2	1 0.45	1	1 0.89

Nº de seccion = 3
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-2.6	6.4	-9.5	3.4
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep	
	18	1 0.05	11	1 0.08	8	1 0.11	4	1 0.23	3	1 0.30	2	1 0.45	1	1 0.89
	18	1 0.05	11	1 0.08	8	1 0.11	4	1 0.23	3	1 0.30	2	1 0.45	1	1 0.89

Nº de seccion = 4
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-5.8	6.4	-14.0	3.4
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep	
	19	1 0.05	12	1 0.08	8	1 0.11	5	1 0.18	3	1 0.30	2	1 0.45	1	1 0.89
	19	1 0.05	12	1 0.08	8	1 0.11	5	1 0.18	3	1 0.30	2	1 0.45	1	1 0.89

Nº de seccion = 5
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-7.3	6.4	-15.3	3.3
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep	
	20	1 0.05	13	1 0.07	9	1 0.10	5	1 0.18	3	1 0.30	2	1 0.45	1	1 0.89
	20	1 0.05	13	1 0.07	9	1 0.10	5	1 0.18	3	1 0.30	2	1 0.45	1	1 0.89

Nº de seccion = 6
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-7.1	6.4	-13.8	3.3
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep	
	18	1 0.05	12	1 0.08	8	1 0.11	5	1 0.18	3	1 0.30	2	1 0.45	1	1 0.89
	18	1 0.05	12	1 0.08	8	1 0.11	5	1 0.18	3	1 0.30	2	1 0.45	1	1 0.89

Nº de seccion = 7
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-5.1	6.4	-9.5	5.9
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep	
	18	1 0.05	11	1 0.08	8	1 0.11	4	1 0.23	3	1 0.30	2	1 0.45	1	1 0.89
	18	1 0.05	11	1 0.08	8	1 0.11	4	1 0.23	3	1 0.30	2	1 0.45	1	1 0.89

Nº de seccion = 8
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	0.0	7.0	-2.0	5.9
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep	
	18	1 0.05	11	1 0.08	8	1 0.11	4	1 0.23	3	1 0.30	2	1 0.45	1	1 0.89
	18	1 0.05	11	1 0.08	8	1 0.11	4	1 0.23	3	1 0.30	2	1 0.45	1	1 0.89

Nº de seccion = 9
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	11.6	6.8	5.2	6.4
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep	
	18	1 0.05	11	1 0.08	8	1 0.11	4	1 0.23	3	1 0.30	2	1 0.45	1	1 0.89
	18	1 0.05	11	1 0.08	8	1 0.11	4	1 0.23	3	1 0.30	2	1 0.45	1	1 0.89

REFERENCIA DEL PROYECTO P.I. CAN MALLOL (IPF-75).

Elemento = 4

Nº de seccion = 1
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-9.6	13.1	-16.7	24.8
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89

Nº de seccion = 2
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-6.9	12.6	-14.3	24.6
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89

Nº de seccion = 3
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-4.9	12.0	-13.6	24.1
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89

Nº de seccion = 4
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-3.6	11.4	-13.2	23.5
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89

Nº de seccion = 5
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-3.0	10.9	-13.1	22.9
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89

Nº de seccion = 6
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-2.8	10.3	-13.3	22.4
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89

Nº de seccion = 7
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-3.2	9.8	-13.7	21.8
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89

Nº de seccion = 8
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-4.1	9.2	-14.4	21.2
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89

Nº de seccion = 9
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-5.4	8.6	-15.2	19.7
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89

Elemento = 5

Nº de seccion = 1
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	15.2	24.2	6.9	13.9
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep	
	18	1 0.05	11	1 0.08	8	1 0.11	4	1 0.23	3	1 0.30	2	1 0.45	1	1 0.89
	18	1 0.05	11	1 0.08	8	1 0.11	4	1 0.23	3	1 0.30	2	1 0.45	1	1 0.89

Nº de seccion = 2
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	14.1	23.6	5.5	13.4
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep	
	18	1 0.05	11	1 0.08	8	1 0.11	4	1 0.23	3	1 0.30	2	1 0.45	1	1 0.89
	18	1 0.05	11	1 0.08	8	1 0.11	4	1 0.23	3	1 0.30	2	1 0.45	1	1 0.89

Nº de seccion = 3
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	13.4	23.1	4.6	12.8
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep	
	18	1 0.05	11	1 0.08	8	1 0.11	4	1 0.23	3	1 0.30	2	1 0.45	1	1 0.89
	18	1 0.05	11	1 0.08	8	1 0.11	4	1 0.23	3	1 0.30	2	1 0.45	1	1 0.89

Nº de seccion = 4
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	13.1	22.5	4.2	12.3
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep	
	18	1 0.05	11	1 0.08	8	1 0.11	4	1 0.23	3	1 0.30	2	1 0.45	1	1 0.89
	18	1 0.05	11	1 0.08	8	1 0.11	4	1 0.23	3	1 0.30	2	1 0.45	1	1 0.89

Nº de seccion = 5
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	13.0	21.9	4.3	11.7
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep	
	18	1 0.05	11	1 0.08	8	1 0.11	4	1 0.23	3	1 0.30	2	1 0.45	1	1 0.89
	18	1 0.05	11	1 0.08	8	1 0.11	4	1 0.23	3	1 0.30	2	1 0.45	1	1 0.89

Nº de seccion = 6
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	13.2	21.4	4.8	11.1
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep	
	18	1 0.05	11	1 0.08	8	1 0.11	4	1 0.23	3	1 0.30	2	1 0.45	1	1 0.89
	18	1 0.05	11	1 0.08	8	1 0.11	4	1 0.23	3	1 0.30	2	1 0.45	1	1 0.89

Nº de seccion = 7
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	13.6	20.8	5.6	10.6
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep	
	18	1 0.05	11	1 0.08	8	1 0.11	4	1 0.23	3	1 0.30	2	1 0.45	1	1 0.89
	18	1 0.05	11	1 0.08	8	1 0.11	4	1 0.23	3	1 0.30	2	1 0.45	1	1 0.89

Nº de seccion = 8
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	14.7	19.6	6.7	10.0
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep	
	18	1 0.05	11	1 0.08	8	1 0.11	4	1 0.23	3	1 0.30	2	1 0.45	1	1 0.89
	18	1 0.05	11	1 0.08	8	1 0.11	4	1 0.23	3	1 0.30	2	1 0.45	1	1 0.89

Nº de seccion = 9
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	16.2	19.1	8.0	9.4
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep	
	18	1 0.05	11	1 0.08	8	1 0.11	4	1 0.23	3	1 0.30	2	1 0.45	1	1 0.89
	18	1 0.05	11	1 0.08	8	1 0.11	4	1 0.23	3	1 0.30	2	1 0.45	1	1 0.89

REFERENCIA DEL PROYECTO P.I. CAN MALLOL (EC-1).

VERIFICACION DEL E.L.S. DE FISURACION

Elemento = 2

Nº de seccion = 1
Canto = 0.70

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-4.1	3.9	-11.4	2.2
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura 8	10	12	16	20	25	32
Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
21 1 0.04	13 1 0.07	9 1 0.10	5 1 0.18	3 1 0.30	2 1 0.45	1 1 0.89
21 1 0.04	13 1 0.07	9 1 0.10	5 1 0.18	3 1 0.30	2 1 0.45	1 1 0.89

Nº de seccion = 2
Canto = 0.70

	Mmax	Nk	Mmin	Nk
Comb. frecuente	6.9	3.2	1.5	3.9
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura 8	10	12	16	20	25	32
Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
21 1 0.04	13 1 0.07	9 1 0.10	5 1 0.18	3 1 0.30	2 1 0.45	1 1 0.89
21 1 0.04	13 1 0.07	9 1 0.10	5 1 0.18	3 1 0.30	2 1 0.45	1 1 0.89

Nº de seccion = 3
Canto = 0.70

	Mmax	Nk	Mmin	Nk
Comb. frecuente	17.3	3.6	5.4	3.9
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura 8	10	12	16	20	25	32
Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
21 1 0.04	13 1 0.07	9 1 0.10	5 1 0.18	3 1 0.30	2 1 0.45	1 1 0.89
21 1 0.04	13 1 0.07	9 1 0.10	5 1 0.18	3 1 0.30	2 1 0.45	1 1 0.89

Nº de seccion = 4
Canto = 0.70

	Mmax	Nk	Mmin	Nk
Comb. frecuente	23.1	4.0	7.7	3.9
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura 8	10	12	16	20	25	32
Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
28 1 0.03	18 1 0.05	12 1 0.08	7 1 0.13	4 1 0.22	3 1 0.30	2 1 0.44
28 1 0.03	18 1 0.05	12 1 0.08	7 1 0.13	4 1 0.22	3 1 0.30	2 1 0.44

Nº de seccion = 5
Canto = 0.70

	Mmax	Nk	Mmin	Nk
Comb. frecuente	25.2	2.2	8.2	3.9
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura 8	10	12	16	20	25	32
Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
31 1 0.03	20 1 0.05	14 1 0.06	8 1 0.11	5 1 0.18	3 1 0.30	2 1 0.44
31 1 0.03	20 1 0.05	14 1 0.06	8 1 0.11	5 1 0.18	3 1 0.30	2 1 0.44

Nº de seccion = 6
Canto = 0.70

	Mmax	Nk	Mmin	Nk
Comb. frecuente	22.9	2.2	7.0	3.9
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura 8	10	12	16	20	25	32
Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
28 1 0.03	18 1 0.05	12 1 0.08	7 1 0.13	4 1 0.22	3 1 0.30	2 1 0.44
28 1 0.03	18 1 0.05	12 1 0.08	7 1 0.13	4 1 0.22	3 1 0.30	2 1 0.44

Nº de seccion = 7
Canto = 0.70

	Mmax	Nk	Mmin	Nk
Comb. frecuente	16.1	2.2	4.2	3.9
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura 8	10	12	16	20	25	32
Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
21 1 0.04	13 1 0.07	9 1 0.10	5 1 0.18	3 1 0.30	2 1 0.45	1 1 0.89
21 1 0.04	13 1 0.07	9 1 0.10	5 1 0.18	3 1 0.30	2 1 0.45	1 1 0.89

Nº de seccion = 8
Canto = 0.70

	Mmax	Nk	Mmin	Nk
Comb. frecuente	4.6	2.2	-0.3	3.9
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura 8	10	12	16	20	25	32
Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
21 1 0.04	13 1 0.07	9 1 0.10	5 1 0.18	3 1 0.30	2 1 0.45	1 1 0.89
21 1 0.04	13 1 0.07	9 1 0.10	5 1 0.18	3 1 0.30	2 1 0.45	1 1 0.89

Nº de seccion = 9
Canto = 0.70

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-6.6	3.9	-16.4	5.9
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura 8	10	12	16	20	25	32
Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
21 1 0.04	13 1 0.07	9 1 0.10	5 1 0.18	3 1 0.30	2 1 0.45	1 1 0.89
21 1 0.04	13 1 0.07	9 1 0.10	5 1 0.18	3 1 0.30	2 1 0.45	1 1 0.89

Elemento = 3

Nº de seccion = 1
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	17.6	6.0	9.0	6.4
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	23 1 0.04	14 1 0.06	10 1 0.09	6 1 0.15	4 1 0.22	2 1 0.45	1 1 0.89
	23 1 0.04	14 1 0.06	10 1 0.09	6 1 0.15	4 1 0.22	2 1 0.45	1 1 0.89

Nº de seccion = 2
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	3.4	6.0	-1.6	3.4
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89

Nº de seccion = 3
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-2.6	6.4	-11.2	3.4
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89

Nº de seccion = 4
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-5.8	6.4	-16.7	3.4
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	23 1 0.04	15 1 0.06	10 1 0.09	6 1 0.15	4 1 0.22	2 1 0.45	1 1 0.89
	23 1 0.04	15 1 0.06	10 1 0.09	6 1 0.15	4 1 0.22	2 1 0.45	1 1 0.89

Nº de seccion = 5
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-7.3	6.4	-18.5	3.4
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	25 1 0.04	16 1 0.06	11 1 0.08	6 1 0.15	4 1 0.22	3 1 0.30	2 1 0.44
	25 1 0.04	16 1 0.06	11 1 0.08	6 1 0.15	4 1 0.22	3 1 0.30	2 1 0.44

Nº de seccion = 6
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-7.1	6.4	-17.8	6.0
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	23 1 0.04	15 1 0.06	10 1 0.09	6 1 0.15	4 1 0.22	2 1 0.45	1 1 0.89
	23 1 0.04	15 1 0.06	10 1 0.09	6 1 0.15	4 1 0.22	2 1 0.45	1 1 0.89

Nº de seccion = 7
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-5.1	6.4	-13.7	6.0
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89

Nº de seccion = 8
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-1.1	6.4	-5.0	6.0
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89

Nº de seccion = 9
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	12.6	3.4	5.2	6.4
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89

REFERENCIA DEL PROYECTO P.I. CAN MALLOL (EC-1).

Elemento = 4

Nº de seccion = 1
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-9.6	13.1	-21.5	27.5
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	20 1 0.05	13 1 0.07	9 1 0.10	5 1 0.18	3 1 0.30	2 1 0.45	1 1 0.89
	20 1 0.05	13 1 0.07	9 1 0.10	5 1 0.18	3 1 0.30	2 1 0.45	1 1 0.89

Nº de seccion = 2
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-6.9	12.6	-18.4	26.9
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89

Nº de seccion = 3
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-4.9	12.0	-16.4	27.8
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89

Nº de seccion = 4
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-3.6	11.4	-16.1	27.2
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89

Nº de seccion = 5
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-3.0	10.9	-16.0	26.6
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89

Nº de seccion = 6
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-2.8	10.3	-16.1	26.1
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89

Nº de seccion = 7
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-3.2	9.8	-16.5	25.5
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89

Nº de seccion = 8
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-4.1	9.2	-17.1	24.9
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89

Nº de seccion = 9
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	-5.4	8.6	-17.9	24.4
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8	10	12	16	20	25	32
	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep	Nb/ncap/sep
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89
	18 1 0.05	11 1 0.08	8 1 0.11	4 1 0.23	3 1 0.30	2 1 0.45	1 1 0.89

Elemento = 5

Nº de seccion = 1
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	18.2	28.9	6.9	13.9
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep	
	18 1	0.05	11 1	0.08	8 1	0.11	4 1	0.23	3 1	0.30	2 1	0.45	1 1	0.89
	18 1	0.05	11 1	0.08	8 1	0.11	4 1	0.23	3 1	0.30	2 1	0.45	1 1	0.89

Nº de seccion = 2
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	17.2	28.3	5.5	13.4
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep	
	18 1	0.05	11 1	0.08	8 1	0.11	4 1	0.23	3 1	0.30	2 1	0.45	1 1	0.89
	18 1	0.05	11 1	0.08	8 1	0.11	4 1	0.23	3 1	0.30	2 1	0.45	1 1	0.89

Nº de seccion = 3
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	16.4	27.8	4.6	12.8
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep	
	18 1	0.05	11 1	0.08	8 1	0.11	4 1	0.23	3 1	0.30	2 1	0.45	1 1	0.89
	18 1	0.05	11 1	0.08	8 1	0.11	4 1	0.23	3 1	0.30	2 1	0.45	1 1	0.89

Nº de seccion = 4
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	16.1	27.2	4.2	12.3
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep	
	18 1	0.05	11 1	0.08	8 1	0.11	4 1	0.23	3 1	0.30	2 1	0.45	1 1	0.89
	18 1	0.05	11 1	0.08	8 1	0.11	4 1	0.23	3 1	0.30	2 1	0.45	1 1	0.89

Nº de seccion = 5
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	16.0	26.6	4.3	11.7
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep	
	18 1	0.05	11 1	0.08	8 1	0.11	4 1	0.23	3 1	0.30	2 1	0.45	1 1	0.89
	18 1	0.05	11 1	0.08	8 1	0.11	4 1	0.23	3 1	0.30	2 1	0.45	1 1	0.89

Nº de seccion = 6
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	16.5	27.4	4.8	11.1
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep	
	18 1	0.05	11 1	0.08	8 1	0.11	4 1	0.23	3 1	0.30	2 1	0.45	1 1	0.89
	18 1	0.05	11 1	0.08	8 1	0.11	4 1	0.23	3 1	0.30	2 1	0.45	1 1	0.89

Nº de seccion = 7
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	18.1	26.9	5.6	10.6
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep	
	18 1	0.05	11 1	0.08	8 1	0.11	4 1	0.23	3 1	0.30	2 1	0.45	1 1	0.89
	18 1	0.05	11 1	0.08	8 1	0.11	4 1	0.23	3 1	0.30	2 1	0.45	1 1	0.89

Nº de seccion = 8
Canto = 0.60

	Mmax	Nk	Mmin	Nk
Comb. frecuente	19.9	26.3	6.7	10.0
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep	
	19 1	0.05	12 1	0.08	8 1	0.11	5 1	0.18	3 1	0.30	2 1	0.45	1 1	0.89
	19 1	0.05	12 1	0.08	8 1	0.11	5 1	0.18	3 1	0.30	2 1	0.45	1 1	0.89

Nº de seccion = 9
Canto = 0.60

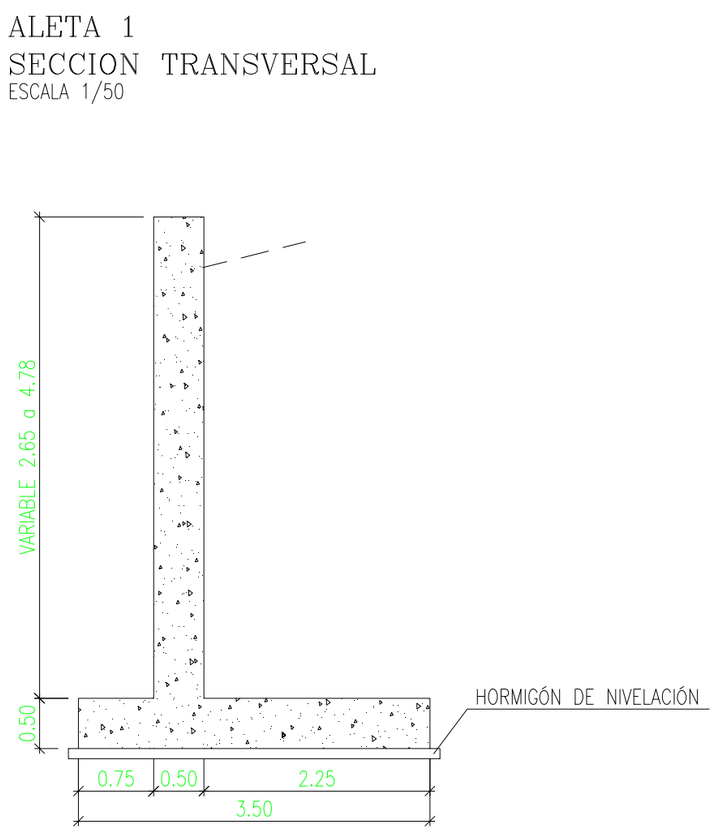
	Mmax	Nk	Mmin	Nk
Comb. frecuente	22.0	25.8	8.0	9.4
Comb. poco frecuente	0.0	0.0	0.0	0.0
Comb. caracteristica	0.0	0.0	0.0	0.0

Armadura	8		10		12		16		20		25		32	
	Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep		Nb/ncap/sep	
	22 1	0.04	14 1	0.06	10 1	0.09	6 1	0.15	4 1	0.22	2 1	0.45	1 1	0.89

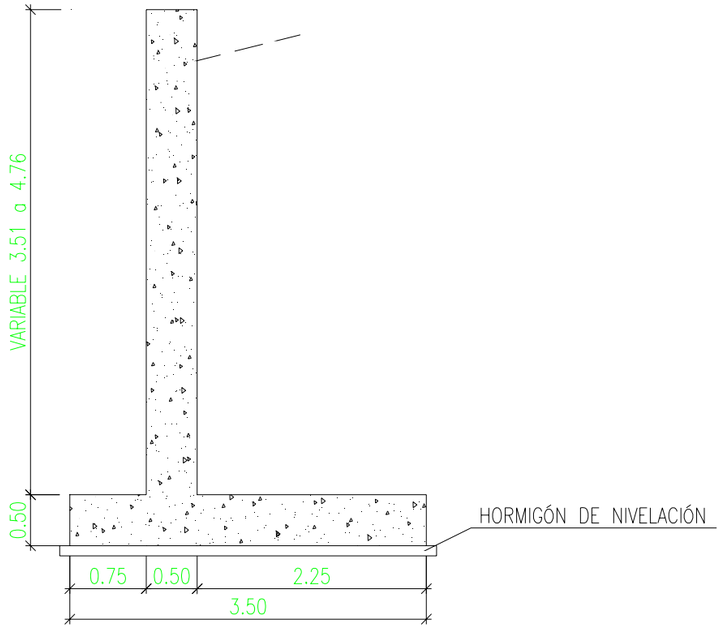
7. CÁLCULO DE ALETAS

7.1. GEOMETRÍA

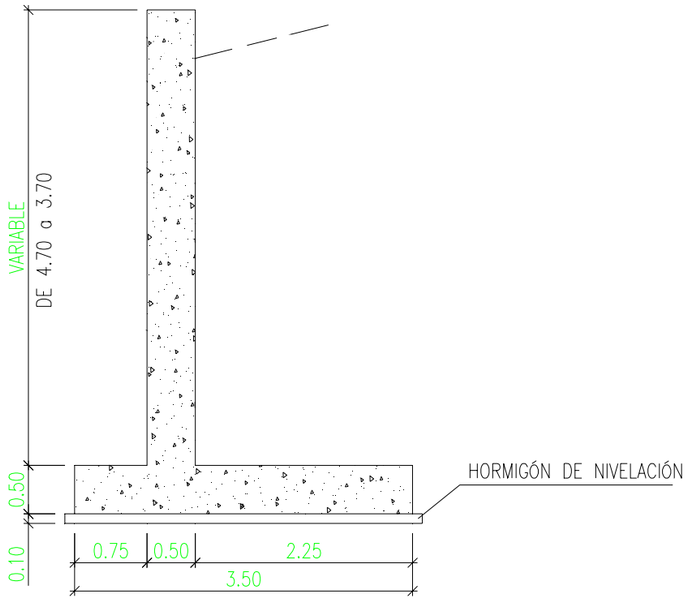
El diseño de las aletas es el mismo en las cuatro dispuestas en las salidas del cajón, situadas con un ángulo de 30º respecto al eje longitudinal del cajón. Las 4 aletas son tipo muro y están compuestas de un módulo único. A continuación se detalla la geometría de cada una de ellas.



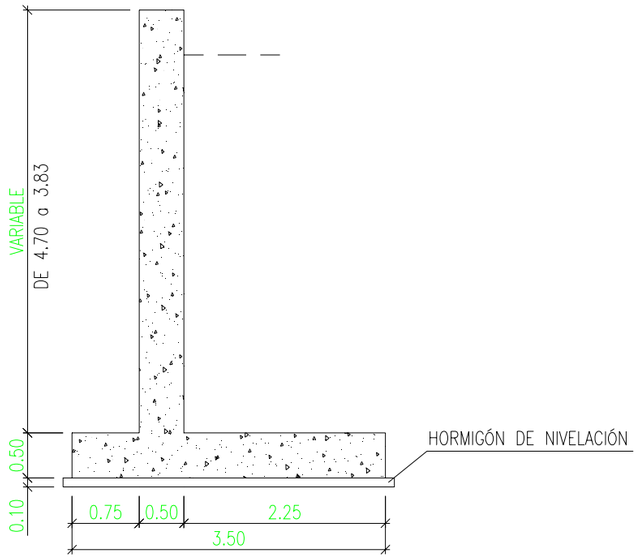
ALETA 2
SECCION TRANSVERSAL
ESCALA 1/50



ALETA 3.
SECCIÓN TRANSVERSAL
ESCALA 1/50



ALETA 4.
SECCIÓN TRANSVERSAL
ESCALA 1/50



7.2 CÁLCULO DE ESFUERZOS Y DIMENSIONAMIENTO

El cálculo y dimensionamiento de las aletas se detalla en las páginas siguientes. Las hipótesis de cálculo se exponen a continuación:

1. El cálculo se realiza en la hipótesis clásica como muro con acciones en coronación debidas al sobre-empuje de 3,0 T/m^2 de tráfico ferroviario así como la consideración de una altura de tierras hasta la cota superior de vía. Los empujes del terreno se han calculado para un coeficiente de empuje K = 0,31 y una densidad del terreno de 2,1 T/m^3. No se han considerado eventuales empujes hidrostáticos al colocar un adecuado drenaje en el trasdós de las aletas.

2. En el cálculo de la seguridad de la aleta frente al vuelco, deslizamiento y tensiones máximas se han verificado las siguientes condiciones (ver resultados en listados de cálculo).

   Coeficiente de Seguridad al vuelco, $CS,v > 1,80$

   Coeficiente de Seguridad al deslizamiento $CS,d > 1,50$

   Tensión máxima del terreno en puntera $\sigma_{max} > 1,25 \cdot \sigma_{admisible}$

   Con $\sigma_{admisible}$ = 3,00 Kp/cm^2 y coeficiente de rozamiento terreno-zapata μ = 0,60 .

3. El dimensionamiento de las armaduras de flexión y cortante del muro y zapata se realiza con los criterios de la Normativa vigente para estructuras de hormigón (EHE). Los coeficientes de seguridad de las acciones corresponden con un NIVEL DE CONTROL INTENSO γ_{fg} =1,35 y γ_{fq} =1,50.

4. Las armaduras horizontales de flexión transversal se colocan de acuerdo con los valores mínimos exigidos por la Normativa EHE.

Proyecto: L.A.V. Madrid-Zaragoza-Barcelona-Frontera Francesa. Tramo: St. Vicenç dels Horts-Sta. Coloma de Cervelló.

Obra: P.I. Riera Fonda.

Referencia: Aletas 1, 2, 3 y 4. Aleta tipo 5_2.

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**************************************************
**                                              **
**                PROGRAMA  MUR                 **
**   CALCULO DE MUROS DE CONTENCION Y CIMENTACION   **
**                                              **
**                                              **
**                  PEDELTA SL                  **
**                                              **
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CARACTERISTICAS GEOMETRICAS DE LA ESTRUCTURA
==========

ALTURA TOTAL	5.00
ALTURA DE EMPUJE PASIVO	0.00
DIMENSION DE LA BASE	3.50
CANTO DE LA ZAPATA	0.50
CANTO DEL FUSTE	0.50
ANCHO EN CORONACION	0.50
LONGITUD DE LA PUNTERA	0.75
LONGITUD DEL TALON	2.25
ALTURA DEL TACON	0.00
ANCHO DEL TACON	0.00
INCLINACION DEL TRASDOS	90.00
ANGULO DEL TALUD (OMEGA)	22.00

PROPIEDADES MECANICAS DE MATERIALES Y TIERRAS
==========

PROPIEDADES DEL HORMIGON Y DEL ACERO

resistencia caracteristica del hormigon	250.00
coeficiente de minoracion para el hormigon	1.50
limite elastico caracteristico del acero	5100.00
coeficiente de minoracion para el acero	1.15

PROPIEDADES DEl TERRENO DE RELLENO

angulo de friccion interna	35.000
densidad	2.100
cohesion	0.000
angulo friccion terreno - fuste	10.000

PROPIEDADES DEL TERRENO DE CIMENTACION

coef. de rozamiento cimiento-suelo (mu)	0.600
tension admisible:	3.000
tension ultima:	3.750

CARGAS Y COEFICIENTES DE SEGURIDAD
==========

Carga repartida (T/m*m)	3.00
Coef. de seg. al deslizamiento (servicio)	1.50
Coef. de seg. al deslizamiento (ultimo)	1.50
Coef. de seg. al vuelco	1.80
Coef. de seg. al deslizamiento o vuelco en hipotesis de accion sismica	1.20
Coef. sismico	0.00

Empuje Activo y Magnitudes Relacionadas

angulo del paramento (rad)	1.57
angulo de actuacion del sismo (rad)	0.00
angulo de rozamiento interno (rad)	0.61
Ka (coef. empuje sin sismo)	0.34
Kae (coef. empuje con sismo)	0.34
empuje activo sin sismo	13.99
empuje activo con sismo	13.99
brazo del empuje activo	1.97

Empuje Pasivo y Magnitudes Relacionadas

altura de empuje pasivo	0.00
altura de suelo sobre la puntera	0.00
brazo de empupe pasivo en zapata y fuste	0.00
brazo de empuje pasivo sobre tacon	0.00
empuje pasivo en zapata y fuste	0.00
empuje pasivo sobre tacon	0.00

Volumenes

distancia d:	0.00
volumen 1 (volumen del cimiento)	1.75
volumen 2 (volumen del alzado)	2.25
volumen 3 (suelo sobre la puntera)	0.00
volumen 4 (suelo sobre el talon)	10.13

Pesos

peso 1 (peso del cimiento)	4.38
peso 2 (peso del alzado)	5.62
peso 3 (peso del suelo sobre puntera)	0.00
peso 4 (peso del suelo sobre talon) (incluyendo sobrecarga repartida)	28.01
peso total	38.01

Brazos de Palanca

Brazo de palanca 1 (del cimiento)	1.75
Brazo de palanca 2 (del alzado)	1.00
Brazo de palanca 3 (del suelo / puntera)	0.38
Brazo de palanca 4 (del suelo / talon)	2.37

Momentos

Mto estab. 1 (de zapata)	7.66
Mto estab. 2 (del fuste)	5.62
Mto estab. 3 (del tierras sobre puntera)	0.00
Mto estab. 4 (del tierras sobre talon)	66.53
Mto estab. total	79.81

RESULTADOS DE LAS VERIFICACIONES DE ESTABILIDAD
==========

Coef. de Seg. al deslizamiento servicio: 1.63

VERIFICADA LA SEGURIDAD AL DESLIZAMIENTO EN SERVICIO

Coef. de Seg. al deslizamiento ultimo: 1.63
VERIFICADA LA SEGURIDAD AL DESLIZ. EN ESTADO ULTIMO

Coef de Seg. al vuelco: 2.90

VERIFICADA LA SEGURIDAD AL VUELCO

Tensiones Maxima, Media y Minima en Servicio:
  17.85   10.86   3.87 ...T/m*m

VERIFICADA LA TENSION MAXIMA SOBRE EL TERRENO EN SERVICIO
(la tension admisible en punta es 1,25* 30.00 T/m*m)

VERIFICADA LA TENSION MEDIA SOBRE EL TERRENO EN SERVICIO

Tensiones Maxima y Minima bajo empuje mayorado:
  25.04   0.00...T/m*m

VERIFICADA LA CONDICION SOBRE LA TENSION MAXIMA CON EMPUJE MAYORADO

LEY DE MOMENTOS Y ARMADURA EN FUSTE

31.68	16.86
24.35	12.77
18.20	9.43
13.14	7.09
9.07	5.51
5.89	4.50
3.51	4.50
1.83	4.50
0.75	4.50
0.17	4.50
0.00	4.50

TITULO DEL PROYECTO

Proyecto: Riera Fonda

Autor: PEDELTA

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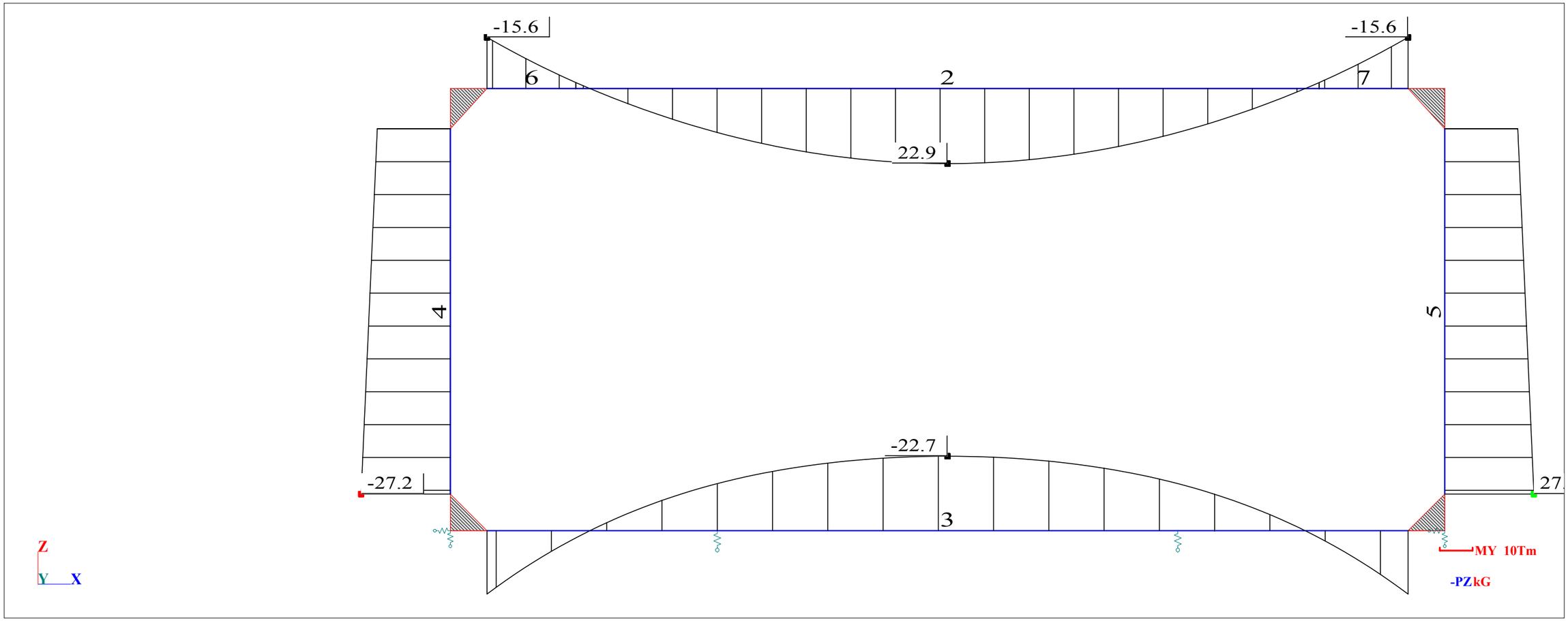
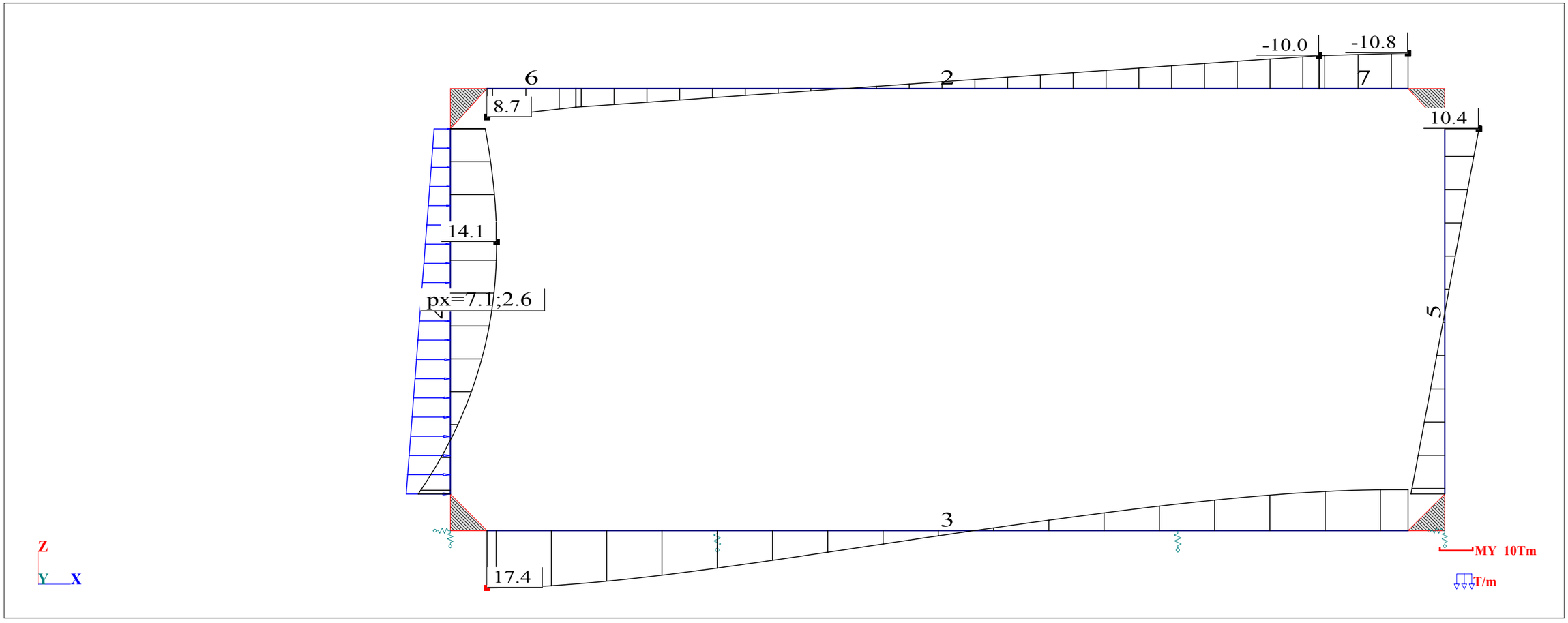
Diagramas - MY; casos: 1 (PESO PROPIO)



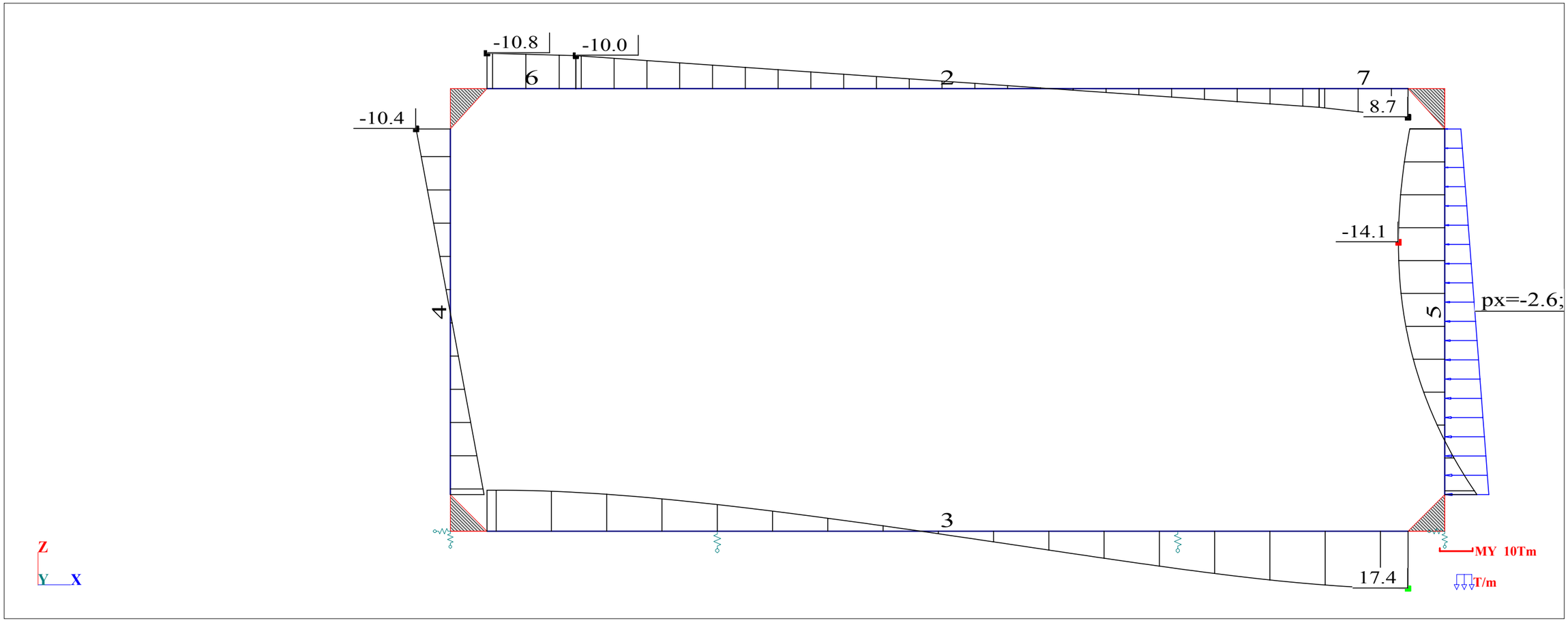
	MY (Tm)
Tipo (color) de línea	
Escala : (cm) =	10.197
MAX	27.2
Barra	5
Punto	x = 0.0000
Caso	1
MIN	-27.2
Barra	4
Punto	x = 0.0000
Caso	1

Diagramas - MY; casos: 2 (EMPUJE AL REPOSO DERECHA)



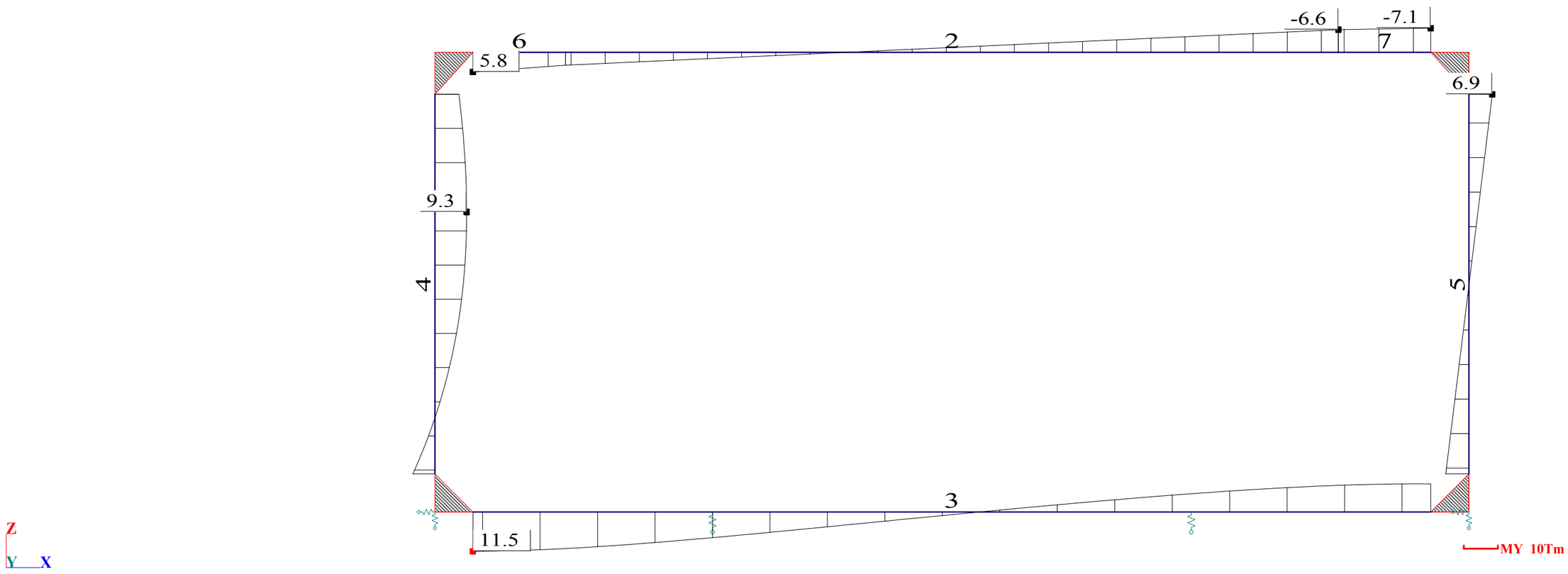
	MY (Tm)
Típo (color) de línea	
Escala : (cm) =	10.197
MAX	17.4
Barra	3
Punto	x = 0.0000
Caso	2
MIN	-12.5
Barra	3
Punto	x = 0.9900
Caso	2

Diagramas - MY; casos: 3 (EMPUJE AL REPOSO IZQUIERDA)



	MY (Tm)
Típo (color) de línea	
Escala : (cm) =	10.197
MAX	17.4
Barra	3
Punto	x = 1.0000
Caso	3
MIN	-14.1
Barra	5
Punto	x = 0.6900
Caso	3

Diagramas - MY; casos: 4 (EMPUJE ACTIVO DERECHA)



	MY (Tm)
Tipo (color) de línea	
Escala : (cm) =	10.197
MAX	11.5
Barra	3
Punto	x = 0.0000
Caso	4
MIN	-8.3
Barra	3
Punto	x = 0.9900
Caso	4

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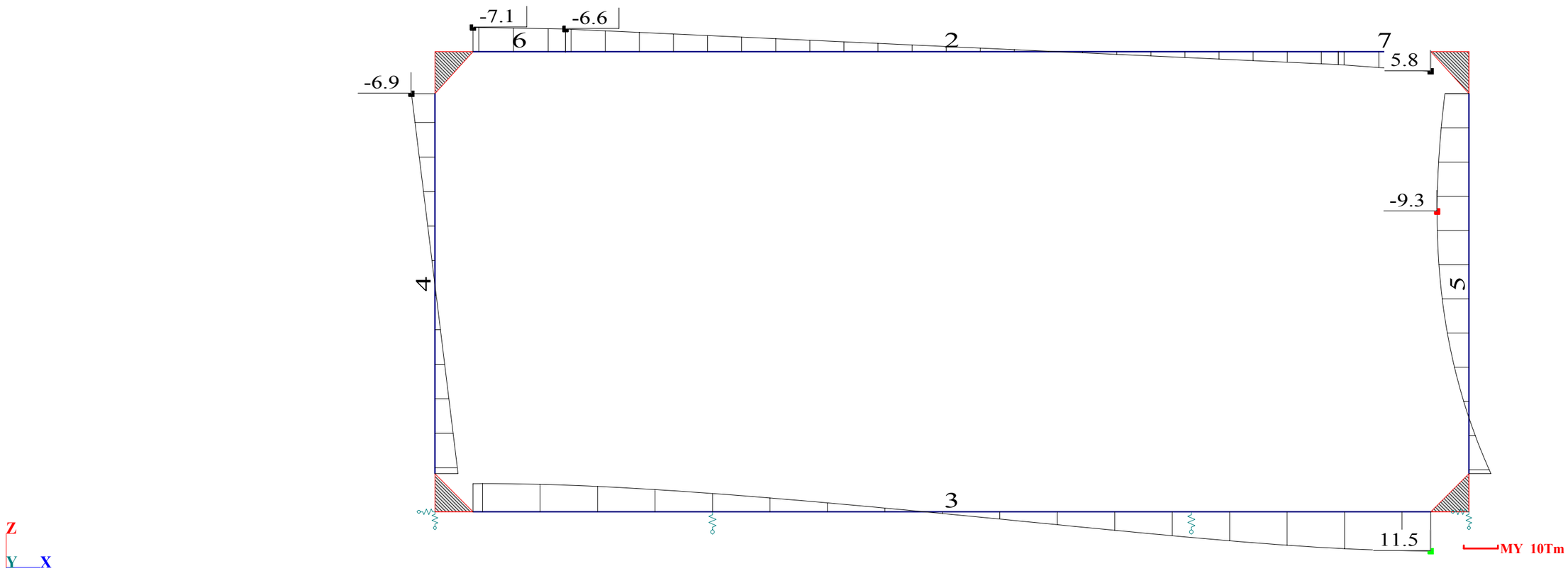
Diagramas - MY; casos: 5 (EMPUJE ACTIVO IZQUIERDA)



	MY (Tm)
Tipo (color) de línea	
Escala : (cm) =	10.197
MAX	11.5
Barra	3
Punto	x = 1.0000
Caso	5
MIN	-9.3
Barra	5
Punto	x = 0.6900
Caso	5

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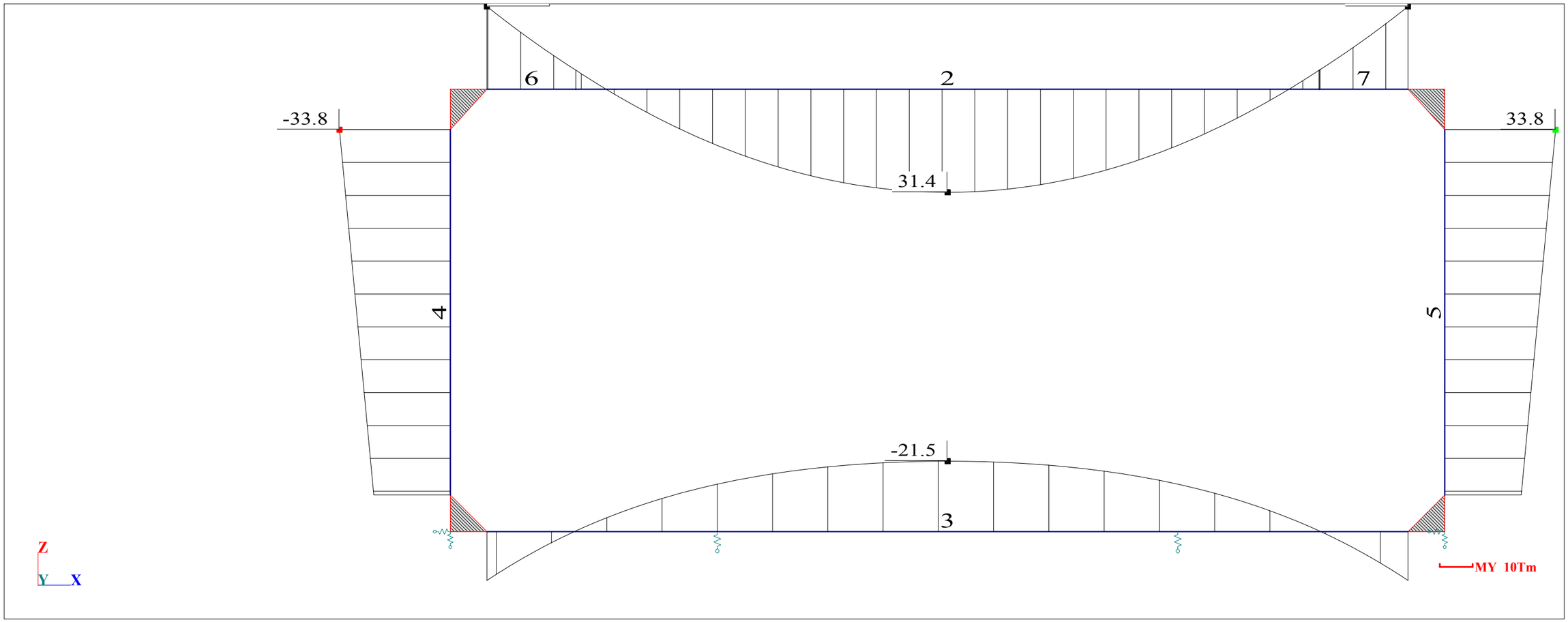
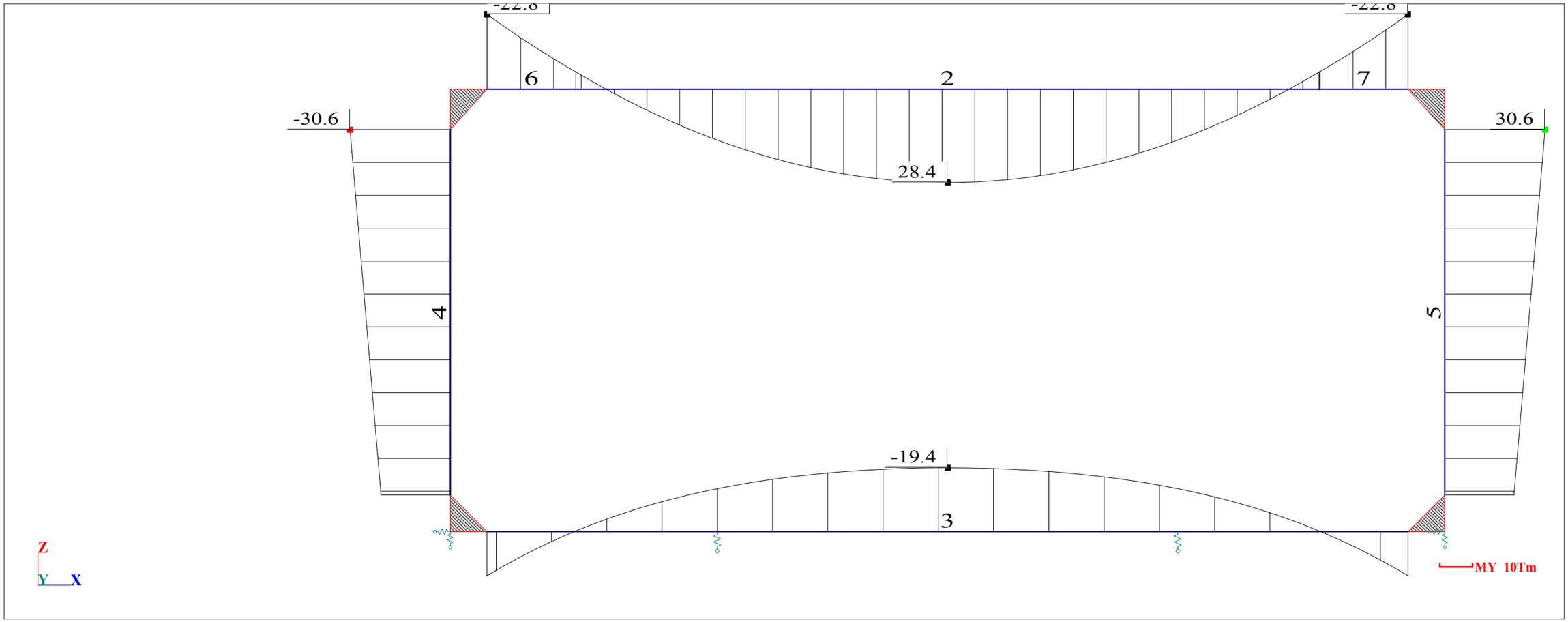
Diagramas - MY; casos: 6 (RELLENO SOBRE DINTEL MAX)



	MY (Tm)
Típo (color) de línea	
Escala : (cm) =	10.197
MAX	33.8
Barra	5
Punto	x = 1.0000
Caso	6
MIN	-33.8
Barra	4
Punto	x = 1.0000
Caso	6

Diagramas - MY; casos: 7 (RELLENO SOBRE DINTEL MIN)



	MY (Tm)
Típo (color) de línea	
Escala : (cm) =	10.197
MAX	30.6
Barra	5
Punto	x = 1.0000
Caso	7
MIN	-30.6
Barra	4
Punto	x = 1.0000
Caso	7

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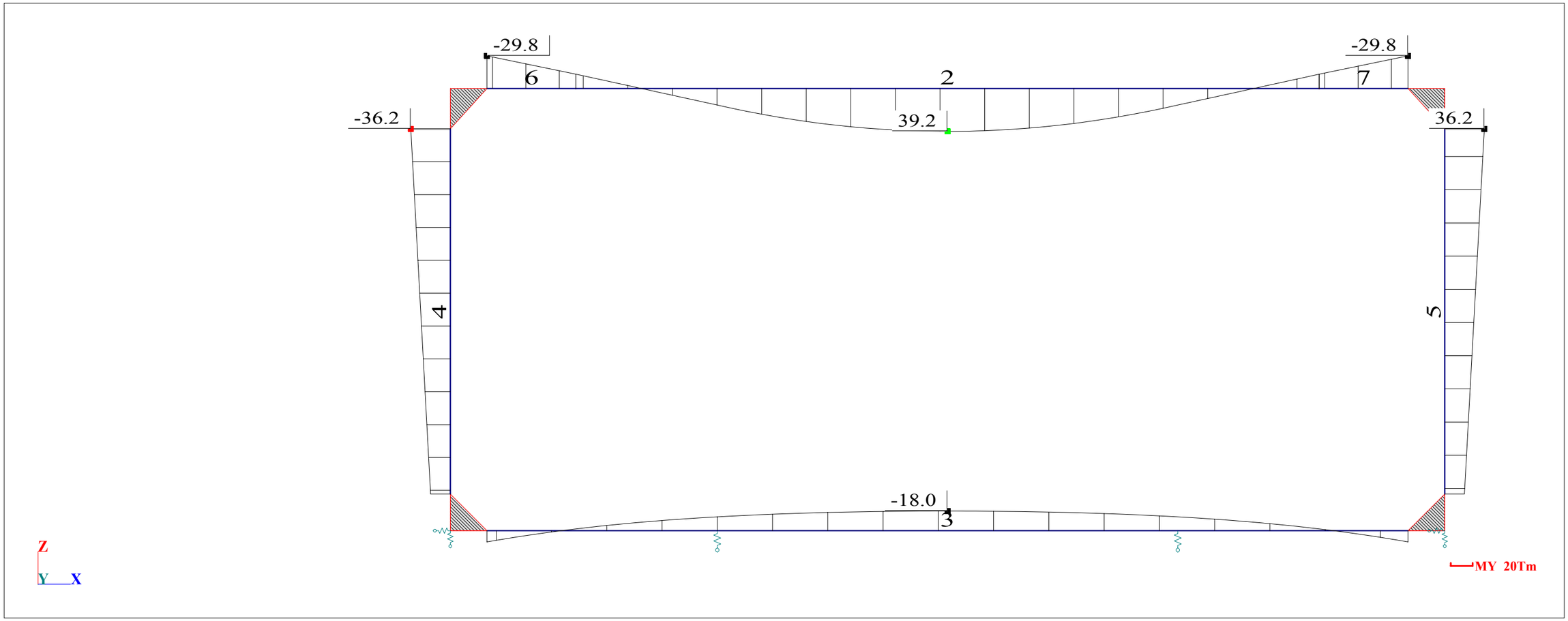
Diagramas - MY; casos: 8 (TREN TIPO A CENTRADO)



	MY (Tm)
Típo (color) de línea	
Escala : (cm) =	30.591
MAX	39.2
Barra	2
Punto	x = 0.5000
Caso	8
MIN	-36.2
Barra	4
Punto	x = 1.0000
Caso	8

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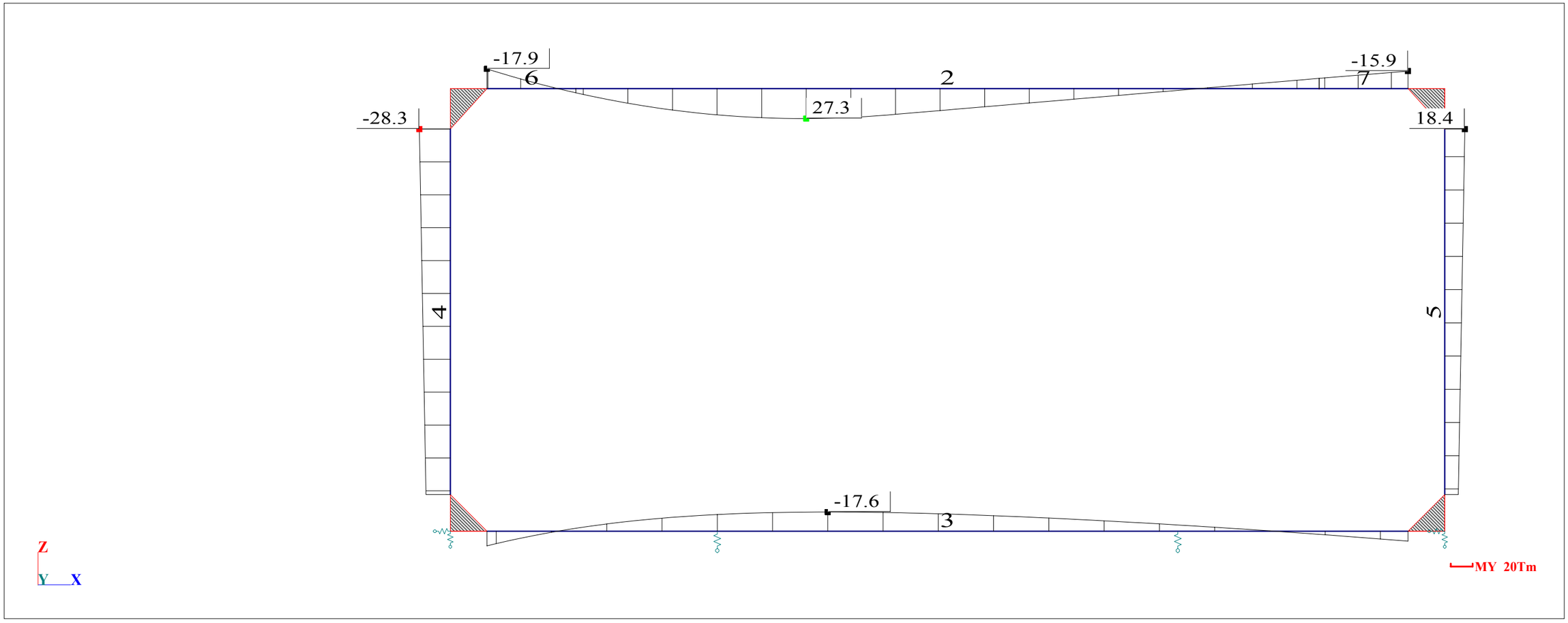
Diagramas - MY; casos: 9 (TREN TIPO A EXCENTRICO)



	MY (Tm)
Tipo (color) de línea	
Escala : (cm) =	30.591
MAX	27.3
Barra	2
Punto	x = 0.3100
Caso	9
MIN	-28.3
Barra	4
Punto	x = 1.0000
Caso	9

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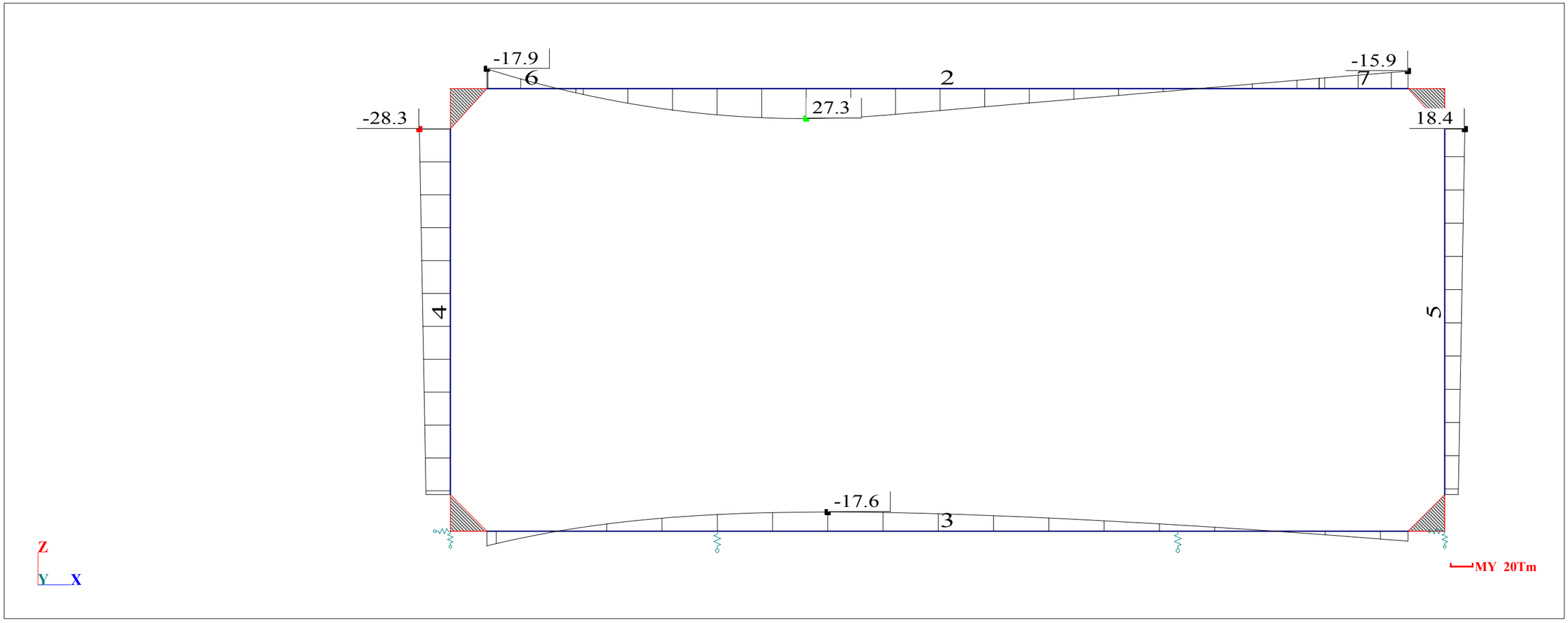
Diagramas - MY; casos: 9 (TREN TIPO A EXCENTRICO) 1



	MY (Tm)
Tipo (color) de línea	
Escala : (cm) =	30.591
MAX	27.3
Barra	2
Punto	x = 0.3100
Caso	9
MIN	-28.3
Barra	4
Punto	x = 1.0000
Caso	9

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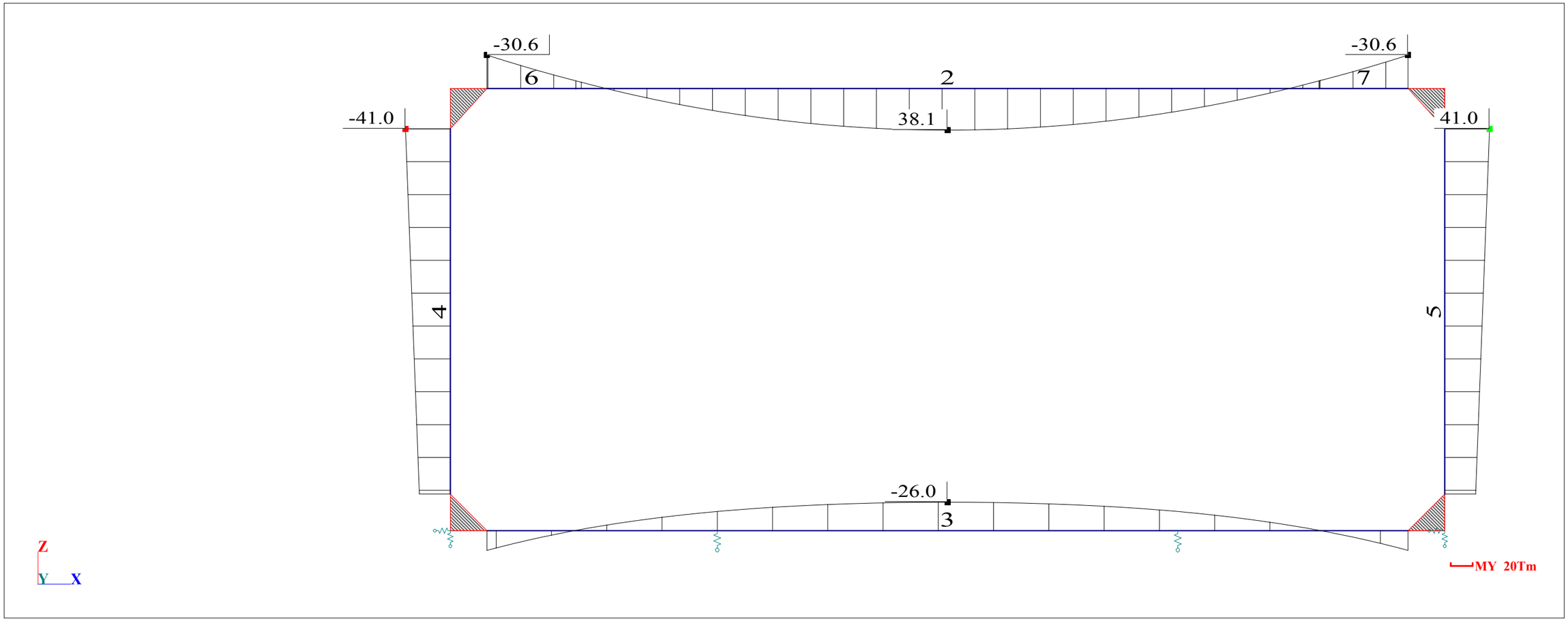
Diagramas - MY; casos: 10 (TREN TIPO B)



	MY (Tm)
Típo (color) de línea	
Escala : (cm) =	30.591
MAX	41.0
Barra	5
Punto	x = 1.0000
Caso	10
MIN	-41.0
Barra	4
Punto	x = 1.0000
Caso	10

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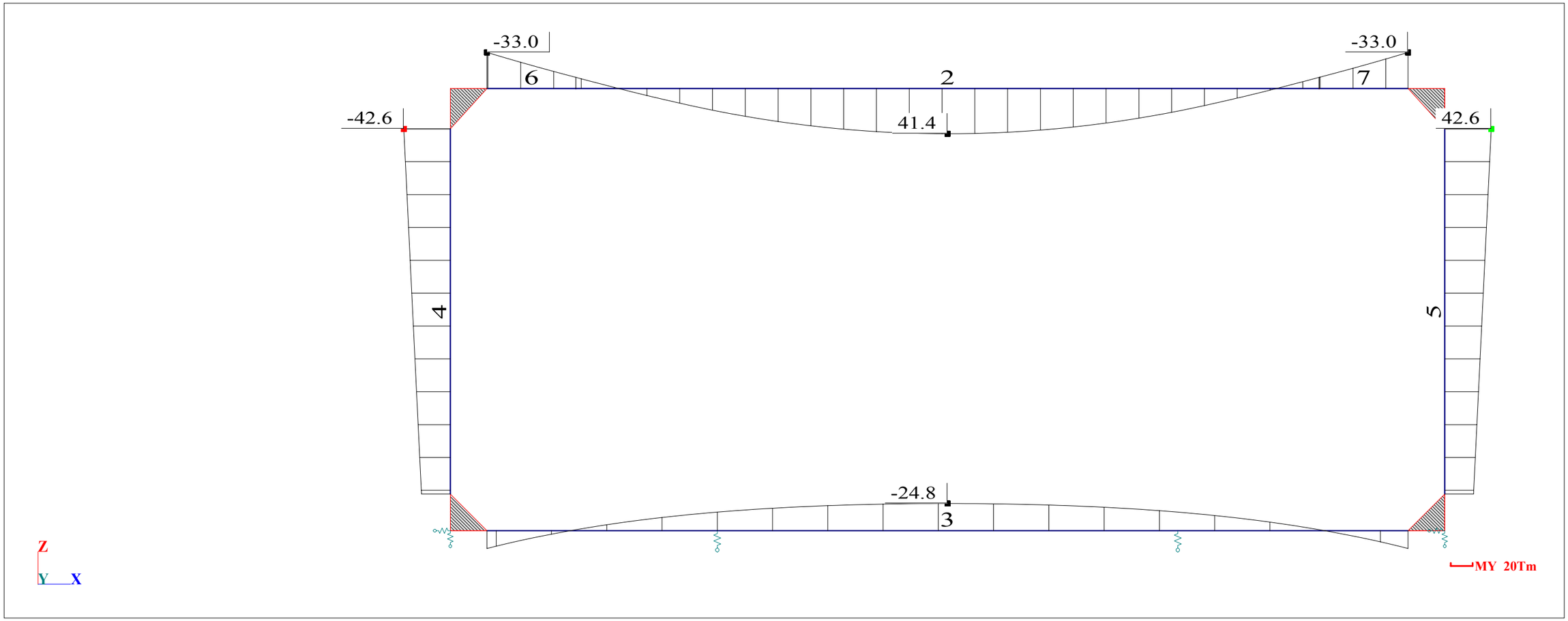
Diagramas - MY; casos: 11 (LM71)



	MY (Tm)
Típo (color) de línea	
Escala : (cm) =	30.591
MAX	42.6
Barra	5
Punto	x = 1.0000
Caso	11
MIN	-42.6
Barra	4
Punto	x = 1.0000
Caso	11

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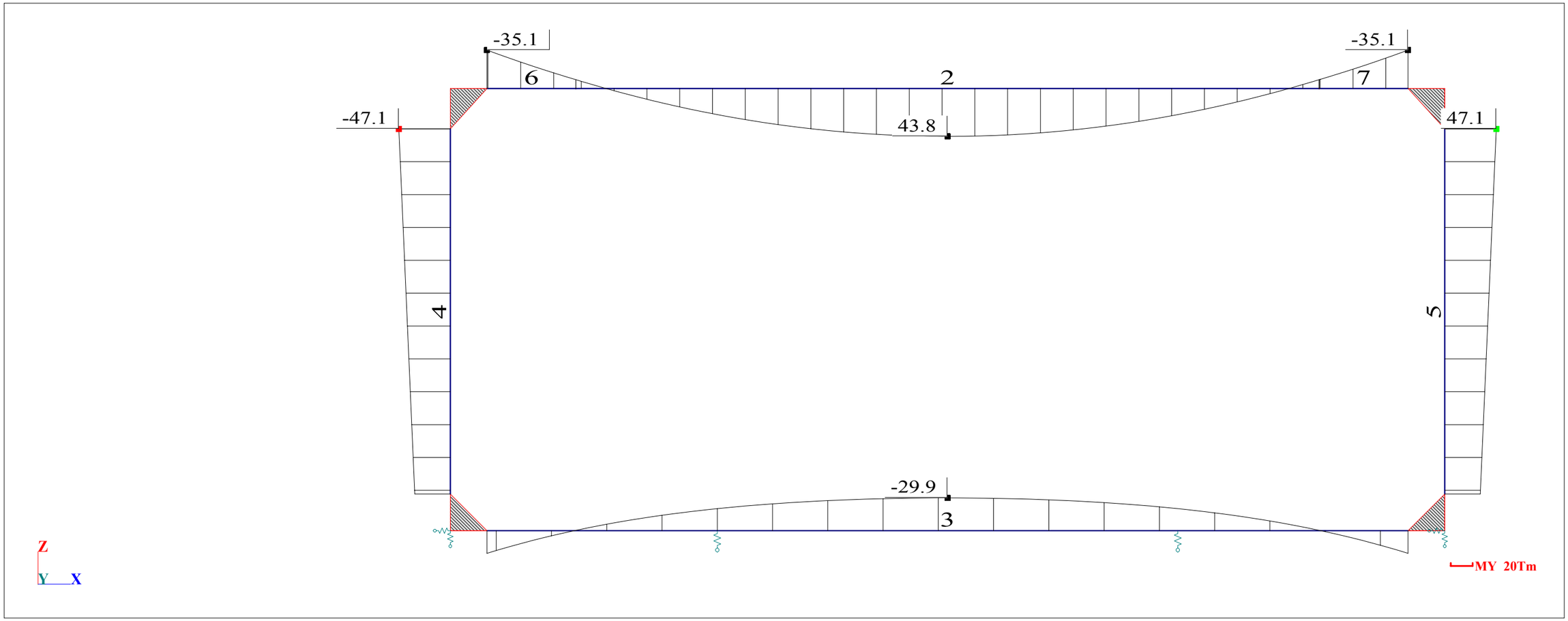
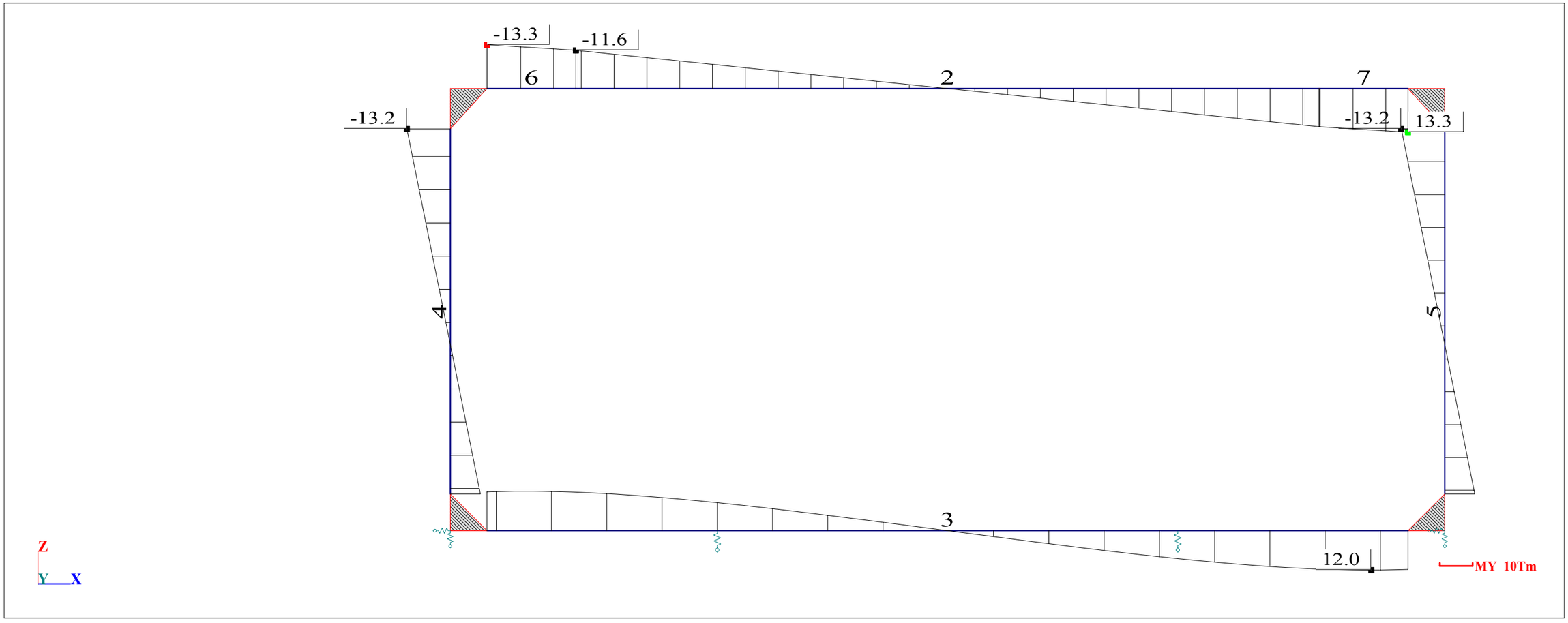
Diagramas - MY; casos: 12 (SW2)



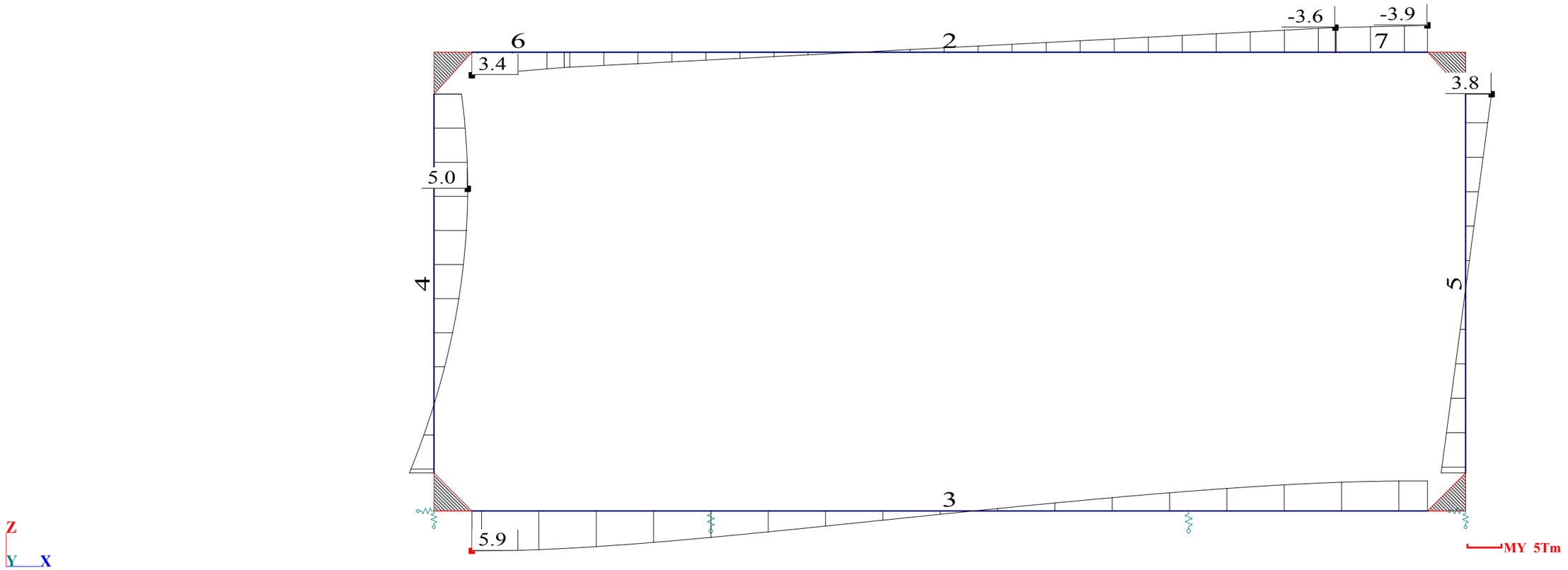
	MY (Tm)
Típo (color) de línea	
Escala : (cm) =	30.591
MAX	47.1
Barra	5
Punto	x = 1.0000
Caso	12
MIN	-47.1
Barra	4
Punto	x = 1.0000
Caso	12

Diagramas - MY; casos: 13 (ARRANQUE EC1)



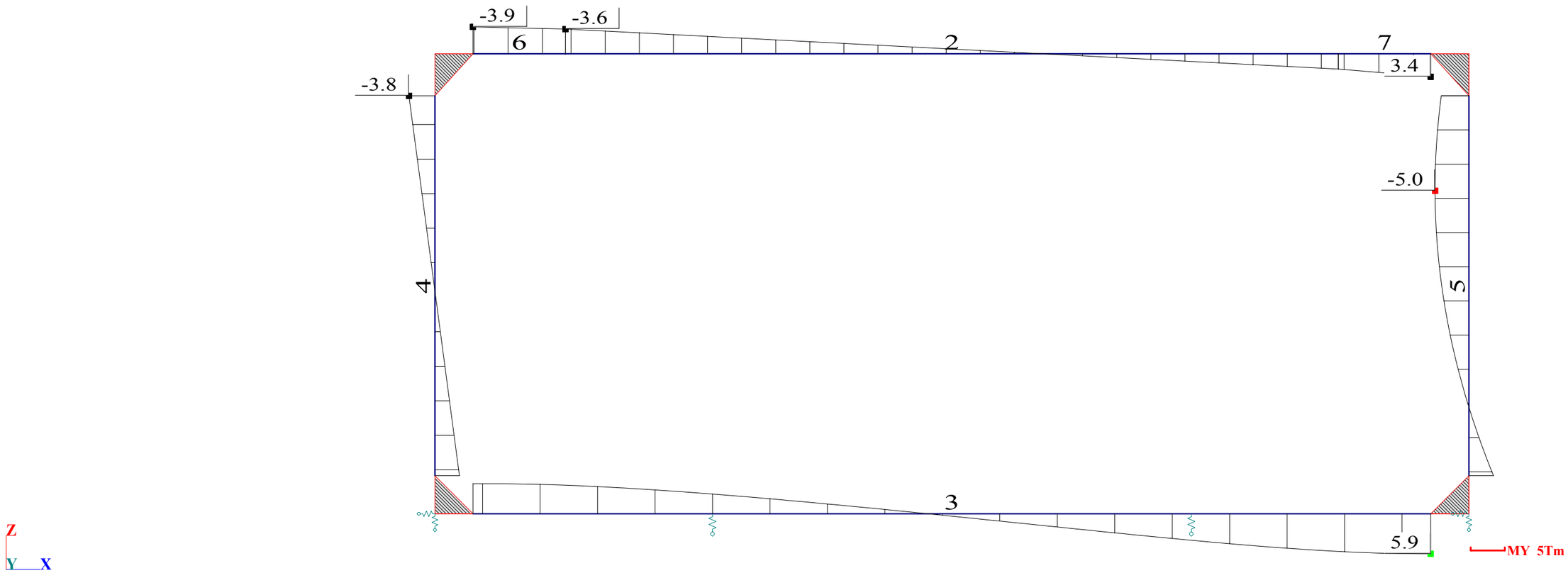
	MY (Tm)
Típo (color) de línea	
Escala : (cm) =	10.197
MAX	13.3
Barra	7
Punto	x = 1.0000
Caso	13
MIN	-13.3
Barra	6
Punto	x = 0.0000
Caso	13

Diagramas - MY; casos: 14 (SOBRECARGA TERRAPLÉN DERECHA)



	MY (Tm)
Tipo (color) de línea	
Escala : (cm) =	5.099
MAX	5.9
Barra	3
Punto	x = 0.0000
Caso	15
MIN	-4.4
Barra	3
Punto	x = 0.9800
Caso	15

Diagramas - MY; casos: 15 (SOBRECARGA TERRAPLÉN IZQUIERDA)



	MY (Tm)
Típo (color) de línea	
Escala : (cm) =	5.099
MAX	5.9
Barra	3
Punto	x = 1.0000
Caso	16
MIN	-5.0
Barra	5
Punto	x = 0.7500
Caso	16

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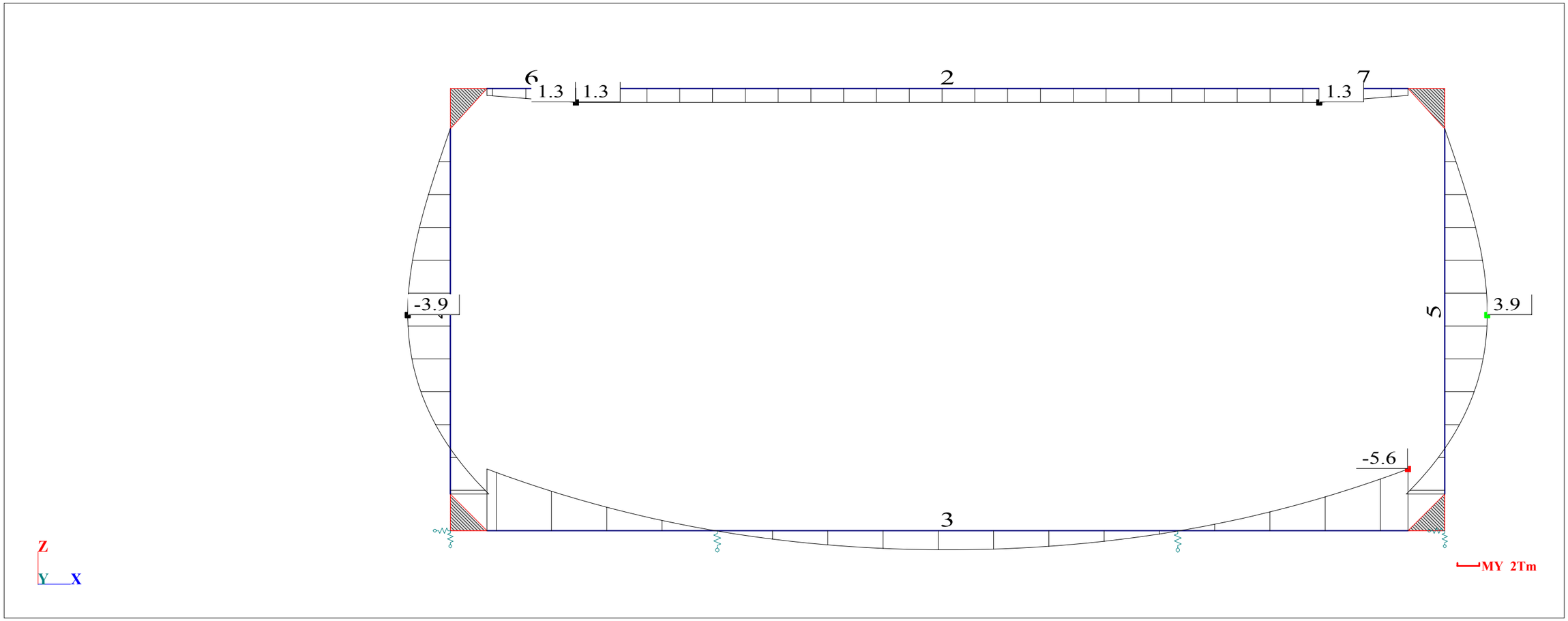
Diagramas - MY; casos: 16 (AGUA)



	MY (Tm)
Típo (color) de línea	
Escala : (cm) =	3.059
MAX	3.9
Barra	5
Punto	x = 0.4900
Caso	17
MIN	-5.6
Barra	3
Punto	x = 1.0000
Caso	17

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Esfuerzos - Casos: 1A17 21A60 : Valores: 1

- Casos: 1A17 21A60

Filtrar	Barra	Caso
Lista completa	2A7	1A17 21A60
Selección	2A7	1A17 21A60
Número total	6	57
Número seleccionado	6	57

- Casos: 1A17 21A60

Barra/Nudo/Caso	FX (T)	FZ (T)	MY (Tm)
2/ 13/ 1	-1.1	10.8	-1.8
2/ 13/ 2	4.6	-1.7	5.7
2/ 13/ 3	4.6	1.7	-10.0
2/ 13/ 4	3.0	-1.1	3.8
2/ 13/ 5	3.0	1.1	-6.6
2/ 13/ 6	2.3	16.3	-5.8
2/ 13/ 7	2.1	14.8	-5.3
2/ 13/ 8	4.1	16.3	-13.1
2/ 13/ 9	1.3	16.9	3.8
2/ 13/ 10	2.8	19.8	-7.1
2/ 13/ 11	3.6	20.2	-10.2
2/ 13/ 12	3.3	22.8	-8.1
2/ 13/ 13	4.0	2.6	-11.6
2/ 13/ 14	-4.0	-2.6	11.6
2/ 13/ 15	1.7	-0.6	2.2
2/ 13/ 16	1.7	0.6	-3.6
2/ 13/ 17	-2.6	-0.0	1.3
2/ 13/ 21 (C)	10.3	63.5	-31.8
2/ 13/ 22 (C)	6.3	64.4	-6.4
2/ 13/ 23 (C)	8.5	68.8	-22.7
2/ 13/ 24 (C)	9.7	69.5	-27.5
2/ 13/ 25 (C)	9.1	73.2	-24.3
2/ 13/ 26 (C)	30.5	66.4	-51.5
2/ 13/ 27 (C)	26.4	67.3	-26.1
2/ 13/ 28 (C)	28.6	71.7	-42.4
2/ 13/ 29 (C)	29.8	72.3	-47.2
2/ 13/ 30 (C)	29.3	76.1	-44.0
2/ 13/ 31 (C)	18.4	60.7	-25.4
2/ 13/ 32 (C)	14.4	61.6	0.0
2/ 13/ 33 (C)	16.6	65.9	-16.3
2/ 13/ 34 (C)	17.8	66.6	-21.0
2/ 13/ 35 (C)	17.2	70.4	-17.9
2/ 13/ 36 (C)	17.0	28.4	-10.9
2/ 13/ 37 (C)	17.0	30.4	-19.7
2/ 13/ 38 (C)	14.2	63.5	-33.7
2/ 13/ 39 (C)	10.1	64.4	-8.4
2/ 13/ 40 (C)	12.4	68.8	-24.6
2/ 13/ 41 (C)	13.6	69.5	-29.4
2/ 13/ 42 (C)	13.0	73.2	-26.2
2/ 13/ 43 (C)	10.6	40.2	-21.0
2/ 13/ 44 (C)	8.4	40.7	-7.5

Barra/Nudo/Caso	FX (T)	FZ (T)	MY (Tm)
2/ 13/ 45 (C)	9.6	43.0	-16.2
2/ 13/ 46 (C)	10.2	43.3	-18.7
2/ 13/ 47 (C)	9.9	45.4	-17.0
2/ 13/ 48 (C)	8.4	27.2	-11.0
2/ 13/ 49 (C)	13.7	40.2	-22.5
2/ 13/ 50 (C)	11.6	40.7	-8.9
2/ 13/ 51 (C)	12.7	43.0	-17.6
2/ 13/ 52 (C)	13.4	43.3	-20.2
2/ 13/ 53 (C)	13.1	45.4	-18.5
2/ 13/ 54 (C)	18.3	41.7	-30.0
2/ 13/ 55 (C)	16.1	42.2	-16.5
2/ 13/ 56 (C)	17.3	44.5	-25.2
2/ 13/ 57 (C)	17.9	44.9	-27.7
2/ 13/ 58 (C)	17.6	46.9	-26.0
2/ 13/ 59 (C)	11.6	25.1	-9.6
2/ 13/ 60 (C)	11.6	26.1	-14.3
2/ 14/ 1	-1.1	-10.8	-1.8
2/ 14/ 2	4.6	-1.7	-10.0
2/ 14/ 3	4.6	1.7	5.7
2/ 14/ 4	3.0	-1.1	-6.6
2/ 14/ 5	3.0	1.1	3.8
2/ 14/ 6	2.3	-16.3	-5.8
2/ 14/ 7	2.1	-14.8	-5.3
2/ 14/ 8	4.1	-16.3	-13.1
2/ 14/ 9	1.3	-6.3	-9.4
2/ 14/ 10	2.8	-19.8	-7.1
2/ 14/ 11	3.6	-20.2	-10.2
2/ 14/ 12	3.3	-22.8	-8.1
2/ 14/ 13	-4.0	2.6	11.6
2/ 14/ 14	4.0	-2.6	-11.6
2/ 14/ 15	1.7	-0.6	-3.6
2/ 14/ 16	1.7	0.6	2.2
2/ 14/ 17	-2.6	-0.0	1.3
2/ 14/ 21 (C)	10.3	-63.5	-31.8
2/ 14/ 22 (C)	6.3	-48.6	-26.2
2/ 14/ 23 (C)	8.5	-68.8	-22.7
2/ 14/ 24 (C)	9.7	-69.5	-27.5
2/ 14/ 25 (C)	9.1	-73.2	-24.3
2/ 14/ 26 (C)	18.4	-60.7	-25.4
2/ 14/ 27 (C)	14.4	-45.7	-19.7
2/ 14/ 28 (C)	16.6	-65.9	-16.3
2/ 14/ 29 (C)	17.8	-66.6	-21.0
2/ 14/ 30 (C)	17.2	-70.4	-17.9
2/ 14/ 31 (C)	30.5	-66.4	-51.5
2/ 14/ 32 (C)	26.4	-51.5	-45.9
2/ 14/ 33 (C)	28.6	-71.7	-42.4
2/ 14/ 34 (C)	29.8	-72.3	-47.2
2/ 14/ 35 (C)	29.3	-76.1	-44.0
2/ 14/ 36 (C)	17.0	-30.4	-19.7
2/ 14/ 37 (C)	17.0	-28.4	-10.9
2/ 14/ 38 (C)	14.2	-63.5	-33.7
2/ 14/ 39 (C)	10.1	-48.6	-28.1

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Barra/Nudo/Caso	FX (T)	FZ (T)	MY (Tm)
2/ 14/ 40 (C)	12.4	-68.8	-24.6
2/ 14/ 41 (C)	13.6	-69.5	-29.4
2/ 14/ 42 (C)	13.0	-73.2	-26.2
2/ 14/ 43 (C)	10.6	-40.2	-21.0
2/ 14/ 44 (C)	8.4	-32.2	-18.0
2/ 14/ 45 (C)	9.6	-43.0	-16.2
2/ 14/ 46 (C)	10.2	-43.3	-18.7
2/ 14/ 47 (C)	9.9	-45.4	-17.0
2/ 14/ 48 (C)	8.4	-27.2	-11.0
2/ 14/ 49 (C)	13.7	-40.2	-22.5
2/ 14/ 50 (C)	11.6	-32.2	-19.5
2/ 14/ 51 (C)	12.7	-43.0	-17.6
2/ 14/ 52 (C)	13.4	-43.3	-20.2
2/ 14/ 53 (C)	13.1	-45.4	-18.5
2/ 14/ 54 (C)	11.8	-38.7	-16.1
2/ 14/ 55 (C)	9.7	-30.7	-13.1
2/ 14/ 56 (C)	10.9	-41.5	-11.2
2/ 14/ 57 (C)	11.5	-41.8	-13.8
2/ 14/ 58 (C)	11.2	-43.8	-12.1
2/ 14/ 59 (C)	11.6	-26.1	-14.3
2/ 14/ 60 (C)	11.6	-25.1	-9.6
3/ 2/ 1	1.1	-18.6	19.3
3/ 2/ 2	6.2	-0.1	17.4
3/ 2/ 3	6.2	-0.3	-12.5
3/ 2/ 4	4.1	-0.1	11.5
3/ 2/ 5	4.1	-0.2	-8.2
3/ 2/ 6	-2.3	-16.5	14.9
3/ 2/ 7	-2.1	-14.9	13.4
3/ 2/ 8	-4.1	-13.1	10.3
3/ 2/ 9	-1.3	-18.3	13.4
3/ 2/ 10	-2.8	-20.0	18.0
3/ 2/ 11	-3.6	-18.7	16.3
3/ 2/ 12	-3.3	-22.9	20.7
3/ 2/ 13	0.0	-0.9	-11.8
3/ 2/ 14	-0.0	0.9	11.8
3/ 2/ 15	1.7	0.0	5.9
3/ 2/ 16	1.7	-0.1	-4.4
3/ 2/ 17	-7.5	2.8	-5.6
3/ 2/ 21 (C)	-11.1	-65.4	58.6
3/ 2/ 22 (C)	-7.1	-73.3	63.2
3/ 2/ 23 (C)	-9.3	-75.8	70.2
3/ 2/ 24 (C)	-10.5	-73.9	67.6
3/ 2/ 25 (C)	-9.9	-80.2	74.3
3/ 2/ 26 (C)	13.2	-71.2	62.4
3/ 2/ 27 (C)	17.2	-79.1	67.0
3/ 2/ 28 (C)	15.0	-81.5	74.0
3/ 2/ 29 (C)	13.8	-79.7	71.3
3/ 2/ 30 (C)	14.4	-86.0	78.0
3/ 2/ 31 (C)	13.2	-68.7	82.4
3/ 2/ 32 (C)	17.2	-76.6	87.0
3/ 2/ 33 (C)	15.0	-79.1	94.0
3/ 2/ 34 (C)	13.8	-77.2	91.3

Barra/Nudo/Caso	FX (T)	FZ (T)	MY (Tm)
3/ 2/ 35 (C)	14.4	-83.5	98.0
3/ 2/ 36 (C)	20.6	-40.5	55.8
3/ 2/ 37 (C)	20.6	-40.7	40.4
3/ 2/ 38 (C)	0.1	-69.6	67.1
3/ 2/ 39 (C)	4.2	-77.5	71.7
3/ 2/ 40 (C)	2.0	-79.9	78.7
3/ 2/ 41 (C)	0.8	-78.1	76.0
3/ 2/ 42 (C)	1.3	-84.4	82.7
3/ 2/ 43 (C)	3.8	-45.7	45.7
3/ 2/ 44 (C)	5.9	-49.9	48.2
3/ 2/ 45 (C)	4.7	-51.2	51.9
3/ 2/ 46 (C)	4.1	-50.3	50.5
3/ 2/ 47 (C)	4.4	-53.6	54.0
3/ 2/ 48 (C)	5.2	-33.2	34.6
3/ 2/ 49 (C)	8.0	-45.8	47.4
3/ 2/ 50 (C)	10.2	-50.0	49.8
3/ 2/ 51 (C)	9.0	-51.4	53.6
3/ 2/ 52 (C)	8.3	-50.4	52.1
3/ 2/ 53 (C)	8.6	-53.7	55.7
3/ 2/ 54 (C)	9.4	-46.5	42.6
3/ 2/ 55 (C)	11.5	-50.7	45.1
3/ 2/ 56 (C)	10.3	-52.1	48.8
3/ 2/ 57 (C)	9.7	-51.1	47.4
3/ 2/ 58 (C)	10.0	-54.4	51.0
3/ 2/ 59 (C)	12.8	-33.8	42.4
3/ 2/ 60 (C)	12.8	-33.9	34.2
3/ 3/ 1	1.1	18.6	19.3
3/ 3/ 2	6.2	0.3	-12.5
3/ 3/ 3	6.2	0.1	17.4
3/ 3/ 4	4.1	0.2	-8.2
3/ 3/ 5	4.1	0.1	11.5
3/ 3/ 6	-2.3	16.5	14.9
3/ 3/ 7	-2.1	14.9	13.4
3/ 3/ 8	-4.1	13.1	10.3
3/ 3/ 9	-1.3	6.0	9.1
3/ 3/ 10	-2.8	20.0	18.0
3/ 3/ 11	-3.6	18.7	16.3
3/ 3/ 12	-3.3	22.9	20.7
3/ 3/ 13	0.0	-0.9	11.8
3/ 3/ 14	-0.0	0.9	-11.8
3/ 3/ 15	1.7	0.1	-4.4
3/ 3/ 16	1.7	-0.0	5.9
3/ 3/ 17	-7.5	-2.8	-5.6
3/ 3/ 21 (C)	-11.1	65.4	58.6
3/ 3/ 22 (C)	-7.1	54.8	56.8
3/ 3/ 23 (C)	-9.3	75.8	70.2
3/ 3/ 24 (C)	-10.5	73.9	67.6
3/ 3/ 25 (C)	-9.9	80.2	74.3
3/ 3/ 26 (C)	13.2	68.7	82.4
3/ 3/ 27 (C)	17.2	58.1	80.6
3/ 3/ 28 (C)	15.0	79.1	94.0
3/ 3/ 29 (C)	13.8	77.2	91.3

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Barra/Nudo/Caso	FX (T)	FZ (T)	MY (Tm)
3/ 3/ 30 (C)	14.4	83.5	98.0
3/ 3/ 31 (C)	13.2	71.2	62.4
3/ 3/ 32 (C)	17.2	60.6	60.6
3/ 3/ 33 (C)	15.0	81.5	74.0
3/ 3/ 34 (C)	13.8	79.7	71.3
3/ 3/ 35 (C)	14.4	86.0	78.0
3/ 3/ 36 (C)	20.6	40.7	40.4
3/ 3/ 37 (C)	20.6	40.5	55.8
3/ 3/ 38 (C)	0.1	69.6	67.1
3/ 3/ 39 (C)	4.2	59.0	65.3
3/ 3/ 40 (C)	2.0	79.9	78.7
3/ 3/ 41 (C)	0.8	78.1	76.0
3/ 3/ 42 (C)	1.3	84.4	82.7
3/ 3/ 43 (C)	3.8	45.7	45.7
3/ 3/ 44 (C)	5.9	40.1	44.7
3/ 3/ 45 (C)	4.7	51.2	51.9
3/ 3/ 46 (C)	4.1	50.3	50.5
3/ 3/ 47 (C)	4.4	53.6	54.0
3/ 3/ 48 (C)	5.2	33.2	34.6
3/ 3/ 49 (C)	8.0	45.8	47.4
3/ 3/ 50 (C)	10.2	40.2	46.4
3/ 3/ 51 (C)	9.0	51.4	53.6
3/ 3/ 52 (C)	8.3	50.4	52.1
3/ 3/ 53 (C)	8.6	53.7	55.7
3/ 3/ 54 (C)	9.4	45.2	53.3
3/ 3/ 55 (C)	11.5	39.6	52.4
3/ 3/ 56 (C)	10.3	50.7	59.5
3/ 3/ 57 (C)	9.7	49.8	58.1
3/ 3/ 58 (C)	10.0	53.1	61.6
3/ 3/ 59 (C)	12.8	33.9	34.2
3/ 3/ 60 (C)	12.8	33.8	42.4
4/ 12/ 1	24.3	1.1	-27.2
4/ 12/ 2	-1.7	17.1	-9.8
4/ 12/ 3	1.7	-4.6	10.3
4/ 12/ 4	-1.1	11.3	-6.5
4/ 12/ 5	1.1	-3.0	6.8
4/ 12/ 6	20.3	-2.3	-23.3
4/ 12/ 7	18.4	-2.1	-21.1
4/ 12/ 8	16.3	-4.1	-18.0
4/ 12/ 9	23.6	-1.3	-22.2
4/ 12/ 10	24.6	-2.8	-28.3
4/ 12/ 11	23.2	-3.6	-26.3
4/ 12/ 12	28.3	-3.3	-32.5
4/ 12/ 13	2.6	-5.0	9.2
4/ 12/ 14	-2.6	5.0	-9.2
4/ 12/ 15	-0.6	5.1	-3.6
4/ 12/ 16	0.6	-1.7	3.6
4/ 12/ 17	-0.0	-7.5	3.5
4/ 12/ 21 (C)	87.7	-11.1	-93.1
4/ 12/ 22 (C)	98.7	-7.1	-99.4
4/ 12/ 23 (C)	100.2	-9.3	-108.5
4/ 12/ 24 (C)	98.1	-10.5	-105.6

Barra/Nudo/Caso	FX (T)	FZ (T)	MY (Tm)
4/ 12/ 25 (C)	105.8	-9.9	-114.8
4/ 12/ 26 (C)	90.5	10.7	-89.6
4/ 12/ 27 (C)	101.6	14.8	-95.9
4/ 12/ 28 (C)	103.1	12.6	-105.0
4/ 12/ 29 (C)	100.9	11.4	-102.1
4/ 12/ 30 (C)	108.6	11.9	-111.4
4/ 12/ 31 (C)	84.8	15.6	-106.3
4/ 12/ 32 (C)	95.9	19.7	-112.6
4/ 12/ 33 (C)	97.4	17.5	-121.7
4/ 12/ 34 (C)	95.2	16.3	-118.8
4/ 12/ 35 (C)	102.9	16.8	-128.0
4/ 12/ 36 (C)	50.2	25.7	-62.5
4/ 12/ 37 (C)	52.1	15.6	-51.7
4/ 12/ 38 (C)	87.7	0.1	-98.3
4/ 12/ 39 (C)	98.7	4.2	-104.7
4/ 12/ 40 (C)	100.2	2.0	-113.8
4/ 12/ 41 (C)	98.1	0.8	-110.8
4/ 12/ 42 (C)	105.8	1.3	-120.1
4/ 12/ 43 (C)	57.6	3.8	-64.6
4/ 12/ 44 (C)	63.5	5.9	-68.0
4/ 12/ 45 (C)	64.3	4.7	-72.8
4/ 12/ 46 (C)	63.2	4.1	-71.2
4/ 12/ 47 (C)	67.3	4.4	-76.2
4/ 12/ 48 (C)	44.6	5.2	-47.2
4/ 12/ 49 (C)	57.6	8.0	-64.4
4/ 12/ 50 (C)	63.5	10.2	-67.8
4/ 12/ 51 (C)	64.3	9.0	-72.6
4/ 12/ 52 (C)	63.2	8.3	-71.1
4/ 12/ 53 (C)	67.3	8.6	-76.0
4/ 12/ 54 (C)	59.2	8.1	-60.0
4/ 12/ 55 (C)	65.1	10.2	-63.3
4/ 12/ 56 (C)	65.8	9.0	-68.2
4/ 12/ 57 (C)	64.7	8.4	-66.6
4/ 12/ 58 (C)	68.8	8.7	-71.6
4/ 12/ 59 (C)	42.2	15.5	-50.7
4/ 12/ 60 (C)	43.2	10.1	-44.9
4/ 11/ 1	14.2	1.1	-22.3
4/ 11/ 2	-1.7	-4.6	10.6
4/ 11/ 3	1.7	-4.6	-10.4
4/ 11/ 4	-1.1	-3.0	7.0
4/ 11/ 5	1.1	-3.0	-6.9
4/ 11/ 6	20.3	-2.3	-33.8
4/ 11/ 7	18.4	-2.1	-30.6
4/ 11/ 8	16.3	-4.1	-36.2
4/ 11/ 9	23.6	-1.3	-28.3
4/ 11/ 10	24.6	-2.8	-41.0
4/ 11/ 11	23.2	-3.6	-42.6
4/ 11/ 12	28.3	-3.3	-47.1
4/ 11/ 13	2.6	-5.0	-13.2
4/ 11/ 14	-2.6	5.0	13.2
4/ 11/ 15	-0.6	-1.7	4.0
4/ 11/ 16	0.6	-1.7	-3.8

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Barra/Nudo/Caso	FX (T)	FZ (T)	MY (Tm)
4/ 11/ 17	-0.0	2.6	-0.0
4/ 11/ 21 (C)	74.1	-10.3	-134.9
4/ 11/ 22 (C)	85.1	-6.3	-123.0
4/ 11/ 23 (C)	86.6	-8.5	-142.0
4/ 11/ 24 (C)	84.5	-9.7	-144.4
4/ 11/ 25 (C)	92.2	-9.1	-151.2
4/ 11/ 26 (C)	76.9	-31.9	-148.4
4/ 11/ 27 (C)	88.0	-27.9	-136.5
4/ 11/ 28 (C)	89.5	-30.1	-155.6
4/ 11/ 29 (C)	87.3	-31.3	-158.0
4/ 11/ 30 (C)	95.0	-30.7	-164.8
4/ 11/ 31 (C)	71.2	-17.0	-120.5
4/ 11/ 32 (C)	82.3	-12.9	-108.6
4/ 11/ 33 (C)	83.8	-15.1	-127.7
4/ 11/ 34 (C)	81.6	-16.3	-130.1
4/ 11/ 35 (C)	89.3	-15.8	-136.9
4/ 11/ 36 (C)	36.6	-17.0	-54.2
4/ 11/ 37 (C)	38.5	-17.0	-66.0
4/ 11/ 38 (C)	74.1	-14.2	-134.8
4/ 11/ 39 (C)	85.1	-10.1	-123.0
4/ 11/ 40 (C)	86.6	-12.4	-142.0
4/ 11/ 41 (C)	84.5	-13.6	-144.4
4/ 11/ 42 (C)	92.2	-13.0	-151.2
4/ 11/ 43 (C)	47.5	-10.6	-84.8
4/ 11/ 44 (C)	53.4	-8.4	-78.5
4/ 11/ 45 (C)	54.2	-9.6	-88.7
4/ 11/ 46 (C)	53.1	-10.2	-89.9
4/ 11/ 47 (C)	57.2	-9.9	-93.6
4/ 11/ 48 (C)	34.5	-8.4	-55.8
4/ 11/ 49 (C)	47.5	-13.7	-84.8
4/ 11/ 50 (C)	53.4	-11.6	-78.4
4/ 11/ 51 (C)	54.2	-12.7	-88.6
4/ 11/ 52 (C)	53.1	-13.4	-89.9
4/ 11/ 53 (C)	57.2	-13.1	-93.5
4/ 11/ 54 (C)	49.1	-19.0	-92.1
4/ 11/ 55 (C)	55.0	-16.9	-85.8
4/ 11/ 56 (C)	55.8	-18.1	-95.9
4/ 11/ 57 (C)	54.6	-18.7	-97.2
4/ 11/ 58 (C)	58.7	-18.4	-100.8
4/ 11/ 59 (C)	32.1	-11.6	-49.4
4/ 11/ 60 (C)	33.1	-11.6	-55.7
5/ 5/ 1	24.3	-1.1	27.2
5/ 5/ 2	1.7	4.6	-10.3
5/ 5/ 3	-1.7	-17.1	9.8
5/ 5/ 4	1.1	3.0	-6.8
5/ 5/ 5	-1.1	-11.3	6.5
5/ 5/ 6	20.3	2.3	23.3
5/ 5/ 7	18.4	2.1	21.1
5/ 5/ 8	16.3	4.1	18.0
5/ 5/ 9	6.3	1.3	12.4
5/ 5/ 10	24.6	2.8	28.3
5/ 5/ 11	23.2	3.6	26.3

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Barra/Nudo/Caso	FX (T)	FZ (T)	MY (Tm)
5/ 5/ 12	28.3	3.3	32.5
5/ 5/ 13	-2.6	-5.0	9.2
5/ 5/ 14	2.6	5.0	-9.2
5/ 5/ 15	0.6	1.7	-3.6
5/ 5/ 16	-0.6	-5.1	3.6
5/ 5/ 17	-0.0	7.5	-3.5
5/ 5/ 21 (C)	87.7	11.1	93.1
5/ 5/ 22 (C)	72.8	7.1	84.7
5/ 5/ 23 (C)	100.2	9.3	108.5
5/ 5/ 24 (C)	98.1	10.5	105.6
5/ 5/ 25 (C)	105.8	9.9	114.8
5/ 5/ 26 (C)	84.8	-15.6	106.3
5/ 5/ 27 (C)	69.9	-19.7	97.9
5/ 5/ 28 (C)	97.4	-17.5	121.7
5/ 5/ 29 (C)	95.2	-16.3	118.8
5/ 5/ 30 (C)	102.9	-16.8	128.0
5/ 5/ 31 (C)	90.5	-10.7	89.6
5/ 5/ 32 (C)	75.6	-14.8	81.2
5/ 5/ 33 (C)	103.1	-12.6	105.0
5/ 5/ 34 (C)	100.9	-11.4	102.1
5/ 5/ 35 (C)	108.6	-11.9	111.4
5/ 5/ 36 (C)	52.1	-15.6	51.7
5/ 5/ 37 (C)	50.2	-25.7	62.5
5/ 5/ 38 (C)	87.7	-0.1	98.3
5/ 5/ 39 (C)	72.8	-4.2	89.9
5/ 5/ 40 (C)	100.2	-2.0	113.8
5/ 5/ 41 (C)	98.1	-0.8	110.8
5/ 5/ 42 (C)	105.8	-1.3	120.1
5/ 5/ 43 (C)	57.6	-3.8	64.6
5/ 5/ 44 (C)	49.7	-5.9	60.1
5/ 5/ 45 (C)	64.3	-4.7	72.8
5/ 5/ 46 (C)	63.2	-4.1	71.2
5/ 5/ 47 (C)	67.3	-4.4	76.2
5/ 5/ 48 (C)	44.6	-5.2	47.2
5/ 5/ 49 (C)	57.6	-8.0	64.4
5/ 5/ 50 (C)	49.7	-10.2	59.9
5/ 5/ 51 (C)	64.3	-9.0	72.6
5/ 5/ 52 (C)	63.2	-8.3	71.1
5/ 5/ 53 (C)	67.3	-8.6	76.0
5/ 5/ 54 (C)	56.1	-10.7	68.8
5/ 5/ 55 (C)	48.1	-12.8	64.4
5/ 5/ 56 (C)	62.8	-11.7	77.1
5/ 5/ 57 (C)	61.6	-11.0	75.5
5/ 5/ 58 (C)	65.7	-11.3	80.5
5/ 5/ 59 (C)	43.2	-10.1	44.9
5/ 5/ 60 (C)	42.2	-15.5	50.7
5/ 6/ 1	14.2	-1.1	22.3
5/ 6/ 2	1.7	4.6	10.4
5/ 6/ 3	-1.7	4.6	-10.6
5/ 6/ 4	1.1	3.0	6.9
5/ 6/ 5	-1.1	3.0	-7.0
5/ 6/ 6	20.3	2.3	33.8

Barra/Nudo/Caso	FX (T)	FZ (T)	MY (Tm)
5/ 6/ 7	18.4	2.1	30.6
5/ 6/ 8	16.3	4.1	36.2
5/ 6/ 9	6.3	1.3	18.4
5/ 6/ 10	24.6	2.8	41.0
5/ 6/ 11	23.2	3.6	42.6
5/ 6/ 12	28.3	3.3	47.1
5/ 6/ 13	-2.6	-5.0	-13.2
5/ 6/ 14	2.6	5.0	13.2
5/ 6/ 15	0.6	1.7	3.8
5/ 6/ 16	-0.6	1.7	-4.0
5/ 6/ 17	-0.0	-2.6	0.0
5/ 6/ 21 (C)	74.1	10.3	134.9
5/ 6/ 22 (C)	59.1	6.3	108.2
5/ 6/ 23 (C)	86.6	8.5	142.0
5/ 6/ 24 (C)	84.5	9.7	144.4
5/ 6/ 25 (C)	92.2	9.1	151.2
5/ 6/ 26 (C)	71.2	17.0	120.5
5/ 6/ 27 (C)	56.3	12.9	93.9
5/ 6/ 28 (C)	83.8	15.1	127.7
5/ 6/ 29 (C)	81.6	16.3	130.1
5/ 6/ 30 (C)	89.3	15.8	136.9
5/ 6/ 31 (C)	76.9	31.9	148.4
5/ 6/ 32 (C)	62.0	27.9	121.8
5/ 6/ 33 (C)	89.5	30.1	155.6
5/ 6/ 34 (C)	87.3	31.3	158.0
5/ 6/ 35 (C)	95.0	30.7	164.8
5/ 6/ 36 (C)	38.5	17.0	66.0
5/ 6/ 37 (C)	36.6	17.0	54.2
5/ 6/ 38 (C)	74.1	14.2	134.8
5/ 6/ 39 (C)	59.1	10.1	108.2
5/ 6/ 40 (C)	86.6	12.4	142.0
5/ 6/ 41 (C)	84.5	13.6	144.4
5/ 6/ 42 (C)	92.2	13.0	151.2
5/ 6/ 43 (C)	47.5	10.6	84.8
5/ 6/ 44 (C)	39.6	8.4	70.6
5/ 6/ 45 (C)	54.2	9.6	88.7
5/ 6/ 46 (C)	53.1	10.2	89.9
5/ 6/ 47 (C)	57.2	9.9	93.6
5/ 6/ 48 (C)	34.5	8.4	55.8
5/ 6/ 49 (C)	47.5	13.7	84.8
5/ 6/ 50 (C)	39.6	11.6	70.6
5/ 6/ 51 (C)	54.2	12.7	88.6
5/ 6/ 52 (C)	53.1	13.4	89.9
5/ 6/ 53 (C)	57.2	13.1	93.5
5/ 6/ 54 (C)	46.0	11.1	77.2
5/ 6/ 55 (C)	38.1	8.9	63.0
5/ 6/ 56 (C)	52.7	10.1	81.1
5/ 6/ 57 (C)	51.6	10.7	82.3
5/ 6/ 58 (C)	55.7	10.4	86.0
5/ 6/ 59 (C)	33.1	11.6	55.7
5/ 6/ 60 (C)	32.1	11.6	49.4
6/ 9/ 1	2.1	14.1	-15.6

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Barra/Nudo/Caso	FX (T)	FZ (T)	MY (Tm)
6/ 9/ 2	4.1	-2.7	8.7
6/ 9/ 3	4.9	0.6	-10.8
6/ 9/ 4	2.7	-1.8	5.8
6/ 9/ 5	3.2	0.4	-7.1
6/ 9/ 6	6.8	19.3	-25.2
6/ 9/ 7	6.2	17.5	-22.8
6/ 9/ 8	7.6	15.0	-29.8
6/ 9/ 9	6.6	22.7	-17.9
6/ 9/ 10	8.3	23.4	-30.6
6/ 9/ 11	8.7	21.8	-33.0
6/ 9/ 12	9.5	26.9	-35.1
6/ 9/ 13	5.4	1.4	-13.3
6/ 9/ 14	-5.4	-1.4	13.3
6/ 9/ 15	1.5	-1.0	3.4
6/ 9/ 16	1.8	0.3	-3.9
6/ 9/ 17	-2.5	0.6	0.6
6/ 9/ 21 (C)	26.6	69.9	-104.1
6/ 9/ 22 (C)	25.2	81.6	-86.2
6/ 9/ 23 (C)	27.7	82.5	-105.1
6/ 9/ 24 (C)	28.3	80.1	-108.8
6/ 9/ 25 (C)	29.5	87.8	-112.0
6/ 9/ 26 (C)	48.3	67.8	-121.6
6/ 9/ 27 (C)	46.8	79.5	-103.8
6/ 9/ 28 (C)	49.4	80.5	-122.7
6/ 9/ 29 (C)	50.0	78.1	-126.4
6/ 9/ 30 (C)	51.2	85.7	-129.6
6/ 9/ 31 (C)	32.4	65.6	-92.6
6/ 9/ 32 (C)	31.0	77.3	-74.8
6/ 9/ 33 (C)	33.5	78.3	-93.7
6/ 9/ 34 (C)	34.1	75.9	-97.4
6/ 9/ 35 (C)	35.3	83.5	-100.6
6/ 9/ 36 (C)	24.7	31.9	-41.9
6/ 9/ 37 (C)	25.2	33.8	-52.8
6/ 9/ 38 (C)	30.4	69.0	-105.0
6/ 9/ 39 (C)	28.9	80.7	-87.2
6/ 9/ 40 (C)	31.4	81.7	-106.1
6/ 9/ 41 (C)	32.1	79.3	-109.7
6/ 9/ 42 (C)	33.3	86.9	-113.0
6/ 9/ 43 (C)	20.9	44.0	-66.0
6/ 9/ 44 (C)	20.2	50.2	-56.5
6/ 9/ 45 (C)	21.5	50.7	-66.6
6/ 9/ 46 (C)	21.8	49.4	-68.6
6/ 9/ 47 (C)	22.5	53.5	-70.3
6/ 9/ 48 (C)	15.9	31.8	-42.4
6/ 9/ 49 (C)	24.0	43.3	-66.7
6/ 9/ 50 (C)	23.2	49.5	-57.2
6/ 9/ 51 (C)	24.5	50.0	-67.3
6/ 9/ 52 (C)	24.9	48.7	-69.3
6/ 9/ 53 (C)	25.5	52.8	-71.0
6/ 9/ 54 (C)	29.5	43.6	-74.7
6/ 9/ 55 (C)	28.7	49.8	-65.2
6/ 9/ 56 (C)	30.1	50.3	-75.3

Barra/Nudo/Caso	FX (T)	FZ (T)	MY (Tm)
6/ 9/ 57 (C)	30.4	49.0	-77.2
6/ 9/ 58 (C)	31.1	53.1	-78.9
6/ 9/ 59 (C)	18.5	28.7	-37.8
6/ 9/ 60 (C)	18.7	29.7	-43.6
6/ 13/ 1	1.4	10.8	-1.8
6/ 13/ 2	4.1	-2.7	5.7
6/ 13/ 3	4.9	0.6	-10.0
6/ 13/ 4	2.7	-1.8	3.8
6/ 13/ 5	3.2	0.4	-6.6
6/ 13/ 6	5.9	15.4	-5.8
6/ 13/ 7	5.4	13.9	-5.3
6/ 13/ 8	7.6	15.0	-13.1
6/ 13/ 9	5.1	16.2	3.8
6/ 13/ 10	7.2	18.7	-7.1
6/ 13/ 11	8.1	18.9	-10.2
6/ 13/ 12	8.3	21.5	-8.1
6/ 13/ 13	4.5	1.6	-11.6
6/ 13/ 14	-4.5	-1.6	11.6
6/ 13/ 15	1.5	-1.0	2.2
6/ 13/ 16	1.8	0.3	-3.6
6/ 13/ 17	-2.5	0.6	1.3
6/ 13/ 21 (C)	24.3	59.6	-31.8
6/ 13/ 22 (C)	20.5	61.4	-6.4
6/ 13/ 23 (C)	23.7	65.2	-22.7
6/ 13/ 24 (C)	25.0	65.5	-27.5
6/ 13/ 25 (C)	25.3	69.3	-24.3
6/ 13/ 26 (C)	44.5	57.9	-51.5
6/ 13/ 27 (C)	40.8	59.7	-26.1
6/ 13/ 28 (C)	43.9	63.5	-42.4
6/ 13/ 29 (C)	45.2	63.8	-47.2
6/ 13/ 30 (C)	45.5	67.6	-44.0
6/ 13/ 31 (C)	31.5	55.0	-25.4
6/ 13/ 32 (C)	27.8	56.8	0.0
6/ 13/ 33 (C)	30.9	60.6	-16.3
6/ 13/ 34 (C)	32.2	60.9	-21.0
6/ 13/ 35 (C)	32.5	64.7	-17.9
6/ 13/ 36 (C)	22.9	23.9	-10.9
6/ 13/ 37 (C)	23.3	25.8	-19.7
6/ 13/ 38 (C)	28.1	58.7	-33.7
6/ 13/ 39 (C)	24.3	60.5	-8.4
6/ 13/ 40 (C)	27.4	64.3	-24.6
6/ 13/ 41 (C)	28.7	64.7	-29.4
6/ 13/ 42 (C)	29.1	68.5	-26.2
6/ 13/ 43 (C)	19.3	36.8	-21.0
6/ 13/ 44 (C)	17.3	37.8	-7.5
6/ 13/ 45 (C)	19.0	39.8	-16.2
6/ 13/ 46 (C)	19.7	40.0	-18.7
6/ 13/ 47 (C)	19.8	42.0	-17.0
6/ 13/ 48 (C)	14.3	24.6	-11.0
6/ 13/ 49 (C)	22.4	36.1	-22.5
6/ 13/ 50 (C)	20.4	37.1	-8.9
6/ 13/ 51 (C)	22.0	39.1	-17.6

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Barra/Nudo/Caso	FX (T)	FZ (T)	MY (Tm)
6/ 13/ 52 (C)	22.7	39.3	-20.2
6/ 13/ 53 (C)	22.9	41.3	-18.5
6/ 13/ 54 (C)	27.1	36.6	-30.0
6/ 13/ 55 (C)	25.1	37.5	-16.5
6/ 13/ 56 (C)	26.8	39.5	-25.2
6/ 13/ 57 (C)	27.5	39.7	-27.7
6/ 13/ 58 (C)	27.7	41.8	-26.0
6/ 13/ 59 (C)	16.9	21.9	-9.6
6/ 13/ 60 (C)	17.1	22.9	-14.3
7/ 14/ 1	1.4	-10.8	-1.8
7/ 14/ 2	4.9	-0.6	-10.0
7/ 14/ 3	4.1	2.7	5.7
7/ 14/ 4	3.2	-0.4	-6.6
7/ 14/ 5	2.7	1.8	3.8
7/ 14/ 6	5.9	-15.4	-5.8
7/ 14/ 7	5.4	-13.9	-5.3
7/ 14/ 8	7.6	-15.0	-13.1
7/ 14/ 9	2.7	-5.9	-9.4
7/ 14/ 10	7.2	-18.7	-7.1
7/ 14/ 11	8.1	-18.9	-10.2
7/ 14/ 12	8.3	-21.5	-8.1
7/ 14/ 13	-4.5	1.6	11.6
7/ 14/ 14	4.5	-1.6	-11.6
7/ 14/ 15	1.8	-0.3	-3.6
7/ 14/ 16	1.5	1.0	2.2
7/ 14/ 17	-2.5	-0.6	1.3
7/ 14/ 21 (C)	24.3	-59.6	-31.8
7/ 14/ 22 (C)	17.0	-46.0	-26.2
7/ 14/ 23 (C)	23.7	-65.2	-22.7
7/ 14/ 24 (C)	25.0	-65.5	-27.5
7/ 14/ 25 (C)	25.3	-69.3	-24.3
7/ 14/ 26 (C)	31.5	-55.0	-25.4
7/ 14/ 27 (C)	24.2	-41.4	-19.7
7/ 14/ 28 (C)	30.9	-60.6	-16.3
7/ 14/ 29 (C)	32.2	-60.9	-21.0
7/ 14/ 30 (C)	32.5	-64.7	-17.9
7/ 14/ 31 (C)	44.5	-57.9	-51.5
7/ 14/ 32 (C)	37.2	-44.3	-45.9
7/ 14/ 33 (C)	43.9	-63.5	-42.4
7/ 14/ 34 (C)	45.2	-63.8	-47.2
7/ 14/ 35 (C)	45.5	-67.6	-44.0
7/ 14/ 36 (C)	23.3	-25.8	-19.7
7/ 14/ 37 (C)	22.9	-23.9	-10.9
7/ 14/ 38 (C)	28.1	-58.7	-33.7
7/ 14/ 39 (C)	20.8	-45.1	-28.1
7/ 14/ 40 (C)	27.4	-64.3	-24.6
7/ 14/ 41 (C)	28.7	-64.7	-29.4
7/ 14/ 42 (C)	29.1	-68.5	-26.2
7/ 14/ 43 (C)	19.3	-36.8	-21.0
7/ 14/ 44 (C)	15.4	-29.5	-18.0
7/ 14/ 45 (C)	19.0	-39.8	-16.2
7/ 14/ 46 (C)	19.7	-40.0	-18.7

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Barra/Nudo/Caso	FX (T)	FZ (T)	MY (Tm)
7/ 14/ 47 (C)	19.8	-42.0	-17.0
7/ 14/ 48 (C)	14.3	-24.6	-11.0
7/ 14/ 49 (C)	22.4	-36.1	-22.5
7/ 14/ 50 (C)	18.5	-28.8	-19.5
7/ 14/ 51 (C)	22.0	-39.1	-17.6
7/ 14/ 52 (C)	22.7	-39.3	-20.2
7/ 14/ 53 (C)	22.9	-41.3	-18.5
7/ 14/ 54 (C)	20.2	-35.0	-16.1
7/ 14/ 55 (C)	16.3	-27.8	-13.1
7/ 14/ 56 (C)	19.9	-38.0	-11.2
7/ 14/ 57 (C)	20.5	-38.2	-13.8
7/ 14/ 58 (C)	20.7	-40.2	-12.1
7/ 14/ 59 (C)	17.1	-22.9	-14.3
7/ 14/ 60 (C)	16.9	-21.9	-9.6
7/ 8/ 1	2.1	-14.1	-15.6
7/ 8/ 2	4.9	-0.6	-10.8
7/ 8/ 3	4.1	2.7	8.7
7/ 8/ 4	3.2	-0.4	-7.1
7/ 8/ 5	2.7	1.8	5.8
7/ 8/ 6	6.8	-19.3	-25.2
7/ 8/ 7	6.2	-17.5	-22.8
7/ 8/ 8	7.6	-15.0	-29.8
7/ 8/ 9	2.7	-5.9	-15.9
7/ 8/ 10	8.3	-23.4	-30.6
7/ 8/ 11	8.7	-21.8	-33.0
7/ 8/ 12	9.5	-26.9	-35.1
7/ 8/ 13	-5.4	1.4	13.3
7/ 8/ 14	5.4	-1.4	-13.3
7/ 8/ 15	1.8	-0.3	-3.9
7/ 8/ 16	1.5	1.0	3.4
7/ 8/ 17	-2.5	-0.6	0.6
7/ 8/ 21 (C)	26.6	-69.9	-104.1
7/ 8/ 22 (C)	19.3	-56.2	-83.2
7/ 8/ 23 (C)	27.7	-82.5	-105.1
7/ 8/ 24 (C)	28.3	-80.1	-108.8
7/ 8/ 25 (C)	29.5	-87.8	-112.0
7/ 8/ 26 (C)	32.4	-65.6	-92.6
7/ 8/ 27 (C)	25.1	-52.0	-71.7
7/ 8/ 28 (C)	33.5	-78.3	-93.7
7/ 8/ 29 (C)	34.1	-75.9	-97.4
7/ 8/ 30 (C)	35.3	-83.5	-100.6
7/ 8/ 31 (C)	48.3	-67.8	-121.6
7/ 8/ 32 (C)	41.0	-54.2	-100.7
7/ 8/ 33 (C)	49.4	-80.5	-122.7
7/ 8/ 34 (C)	50.0	-78.1	-126.4
7/ 8/ 35 (C)	51.2	-85.7	-129.6
7/ 8/ 36 (C)	25.2	-33.8	-52.8
7/ 8/ 37 (C)	24.7	-31.9	-41.9
7/ 8/ 38 (C)	30.4	-69.0	-105.0
7/ 8/ 39 (C)	23.1	-55.4	-84.1
7/ 8/ 40 (C)	31.4	-81.7	-106.1
7/ 8/ 41 (C)	32.1	-79.3	-109.7

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Barra/Nudo/Caso	FX (T)	FZ (T)	MY (Tm)
7/ 8/ 42 (C)	33.3	-86.9	-113.0
7/ 8/ 43 (C)	20.9	-44.0	-66.0
7/ 8/ 44 (C)	17.1	-36.7	-54.9
7/ 8/ 45 (C)	21.5	-50.7	-66.6
7/ 8/ 46 (C)	21.8	-49.4	-68.6
7/ 8/ 47 (C)	22.5	-53.5	-70.3
7/ 8/ 48 (C)	15.9	-31.8	-42.4
7/ 8/ 49 (C)	24.0	-43.3	-66.7
7/ 8/ 50 (C)	20.1	-36.0	-55.6
7/ 8/ 51 (C)	24.5	-50.0	-67.3
7/ 8/ 52 (C)	24.9	-48.7	-69.3
7/ 8/ 53 (C)	25.5	-52.8	-71.0
7/ 8/ 54 (C)	21.1	-42.4	-59.2
7/ 8/ 55 (C)	17.2	-35.1	-48.1
7/ 8/ 56 (C)	21.6	-49.1	-59.8
7/ 8/ 57 (C)	22.0	-47.9	-61.7
7/ 8/ 58 (C)	22.6	-51.9	-63.5
7/ 8/ 59 (C)	18.7	-29.7	-43.6
7/ 8/ 60 (C)	18.5	-28.7	-37.8

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MEMORIA DE CÁLCULO

Para la realización de los cálculos de comprobación de los Viaductos de El Papiol se han considerado los criterios establecidos por el GIF en lo relativo a las Bases de Cálculo de las estructuras. Las fases de comprobación de los diferentes elementos que componen los Viaductos que se desarrollan en el presente anejo se han realizado conforme a las siguientes etapas:

1. Modelo estructural

Se ha realizado un modelo de barras tridimensional que incluye todos los elementos estructurales principales del viaducto: tablero, aparatos de apoyo, pilas y estribos con las vinculaciones adecuadas.

En este modelo se han incluido las características geométricas fundamentales del trazado que tienen repercusión estructural: radio de curvatura en planta, separación y orientación de los apoyos y pilas.

Las características mecánicas del tablero, juntas y aparatos de apoyo corresponde a las de un comportamiento elástico lineal de los materiales.

En el modelo se ha realizado el estudio de las acciones de forma conjunta para todos los elementos mencionados:

- *Acciones permanentes*: incluyendo las excentricidades de cargas que pueden existir.
- *Acciones reológicas*: de fluencia y retracción.
- *Acciones derivadas de las fuerzas de rozamiento* en los aparatos de neopreno y teflón.
- *Acciones térmicas*: temperatura uniforme y gradiente de temperatura.
- *Acciones de viento*: introduciendo un modelo del terreno se han incluido las fuerzas actuantes en las diferentes direcciones y elementos en función de su coeficiente de forma aerodinámica y distancia respecto al terreno natural.
- *Acciones de sobrecarga de uso*: se han considerado las hipótesis simples que producen los efectos más desfavorables en el tablero y pilas conforme a los modelos de carga de la instrucción IPF-75 y el Eurocódigo EC-1 (Parte 3) tanto en la vía como en los paseos.

Para la determinación correcta del coeficiente de impacto se ha realizado un análisis modal de la estructura calculando el periodo del primer modo de vibración vertical de la misma.

En las diferentes hipótesis simples se han considerado las acciones verticales como las horizontales debidas a la fuerza centrífuga que actúan de forma simultánea.

Como el eje del tablero no coincide con el eje de las vías se ha tenido en cuenta la variación de excentricidades a lo largo de todo el tablero.

Con el fin de contemplar efectos que, sin ser más desfavorables para el tablero pueden serlo para las pilas, apoyos y cimientos, se han contemplado las hipótesis de carga máxima y mínima vertical así como las acciones horizontales debidas al frenado y arranque.

Según la normativa utilizada se calculan las envolventes de esfuerzos máximos y mínimos correspondientes a los grupos de máximas acciones verticales, horizontales y transversales.

De las envolventes de cada una de las normas se calculan la envolvente total de sobrecargas.

A partir de las distintas acciones se obtienen las hipótesis más desfavorables tanto en Estado Límite en Servicio (ELS) como en Estado Límite Último (ELU) conforme a la nueva instrucción EHE.

Una vez obtenidos los esfuerzos más desfavorables en todos los elementos estructurales se realiza la comprobación de los mismos: tablero, aparatos de apoyo, pilas, estribos y parque de fabricación.

2.- Cálculo del tablero

El cálculo del tablero se realiza en 2 fases. En una primera fase se realiza la comprobación general del mismo, denominada cálculo longitudinal. En esta fase se realiza la verificación del estado de tensiones normales provocado por los esfuerzos axiles y momentos flectores y el estado de tensiones tangenciales producidos por los esfuerzos cortantes y de torsión.

En esta situación se ha realizado un modelo de cálculo durante la construcción que contempla todas las fases de empuje para la obtención de la correspondiente envolvente de esfuerzos.

Con las envolventes de esfuerzos en situación de servicio y construcción se realiza el dimensionamiento y comprobación de la armadura activa y pasiva longitudinal y transversal.

En la segunda fase de comprobación del tablero, denominado cálculo transversal, se determinan las armadura pasivas complementarias a disponer para resistir las flexiones locales de las losas del tablero.

En esta fase se contemplan nuevas hipótesis de cargas que tienen en cuenta los efectos locales y las acciones accidentales de descarrilamiento.

Para el dimensionamiento de las riostras de pilas y estribos se realiza un modelo de elementos finitos bidimensional que permite obtener tanto la cuantía como la distribución de la armadura en dichos diafragmas.

Se han realizado las comprobaciones frente al ELU de fatiga tanto en el comportamiento longitudinal, como estructura de hormigón pretensado, como en su comportamiento transversal, como estructura de hormigón armado según las especificaciones del Eurocódigo 2. Parte 2.

3.- Cálculo de aparatos de apoyo y juntas

La verificación de los aparatos de apoyo se realiza con las hipótesis de máxima carga vertical, horizontal y estableciendo los movimientos máximos en cada dirección debidos a las deformaciones impuestas de temperatura, fluencia y retracción.

Se han calculado los movimientos de la junta en el estribo móvil, considerando distintas hipótesis de construcción del tablero analizado y el comportamiento reológico durante la vida útil de la estructura.

4.- Cálculo de las pilas

Para el cálculo de las pilas se han realizado las comprobaciones en ELU tanto de los fustes como de las cabezas.

Las cimentaciones se han verificado y dimensionado conforme a las recomendaciones del Informe Geotécnico.

5.- Cálculo de los estribos y parque de fabricación

El dimensionamiento de los estribos se ha realizado contemplando las acciones horizontales provenientes del tablero y del empuje de tierras así como las verticales del propio tablero.

Las cimentaciones se han dimensionado conforme a las recomendaciones del Informe Geotécnico.

6.- Cálculo de los elementos auxiliares de empuje

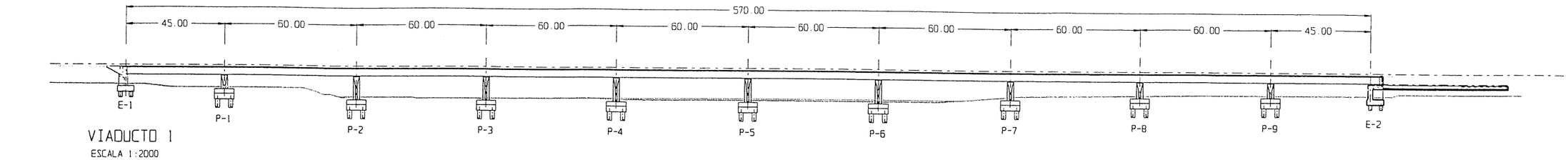
Para el estado del proceso de construcción del tablero se ha realizado un predimensionamiento de los requisitos mínimos de rigidez de la nariz de lanzamiento. Por otro lado se han estudiado los aparatos de apoyo provisionales durante el empuje así como los gatos necesarios.

7.- Prueba de carga

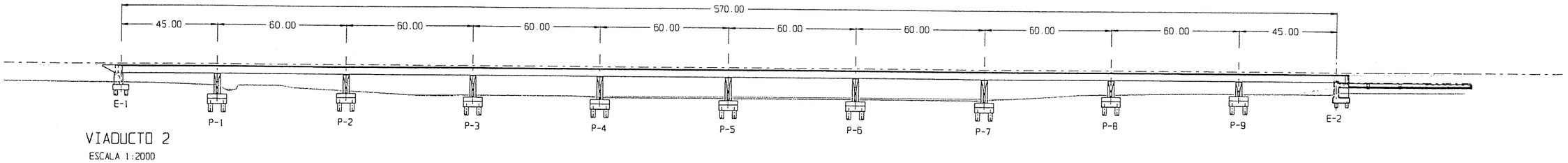
Se ha añadido la prueba de carga contemplando tanto hipótesis estáticas como dinámicas realizadas con camiones de 40 T.

1. MODELO ESTRUCTURAL

CARACTERÍSTICAS GEOMÉTRICAS



VIADUCTO 1
ESCALA 1:2000



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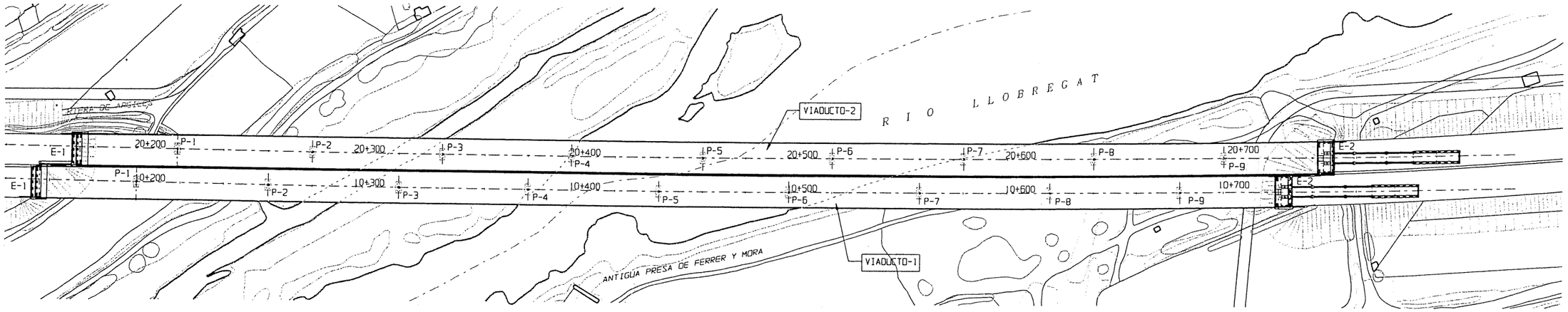
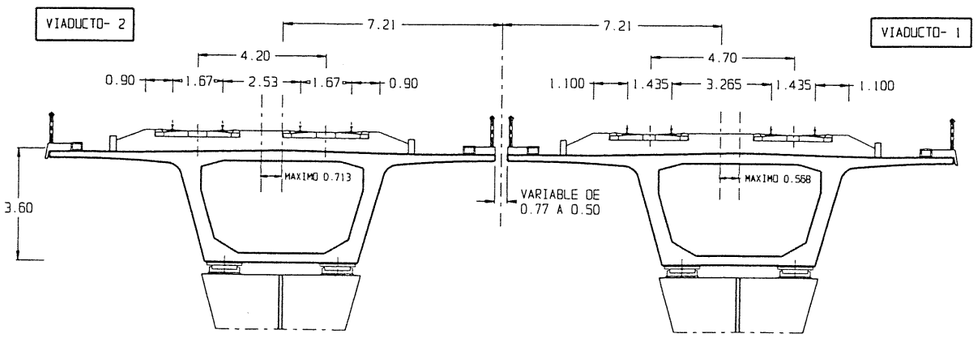
ESCALA 1:2000



PLANTA
ESCALA 1:2000



SECCION TIPO
ESCALA 1:200

VIADUCTOS DE EL PAPIOL

DIBUJADO	REVISADO	FECHA	Nº REVIS.
M. SOLEDAD	A.M.C.	13-03-2002	1
ROBERTO C.	-	27-03-2002	2
-	-	-	-
-	-	-	-

GIF Gestor de Infraestructuras Ferroviarias

TITULO
PROYECTO DE CONSTRUCCION DE PLATAFORMA
L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA
TRAMO: PAPIOL - SANT VICENT DELS HORTS

UTE PAPIOL
SGS TECNOS
INFRAES
CFC

AUTORES
J. MANTEROLA I.C.C.P.
L. ALBERTO DOU I.C.C.P.
A. MARTINEZ CUTILLAS
S. FUENTE GARCIA

ESCALA NORMAL
1:2000
0 20 40m.
Numérica | Gráfica

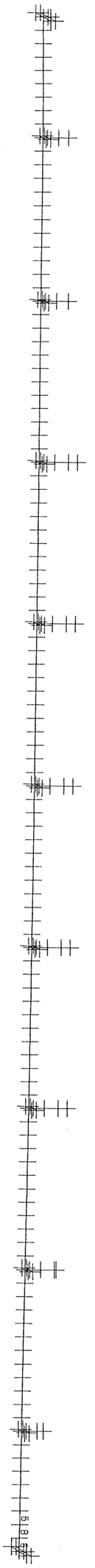
FECHA
MAYO 2002

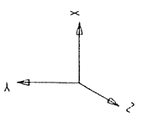
TITULO DEL PLANO
GENERALES
PLANO GENERAL

Nº DE PLANO
2.10.1.1
Hoja ... de ...

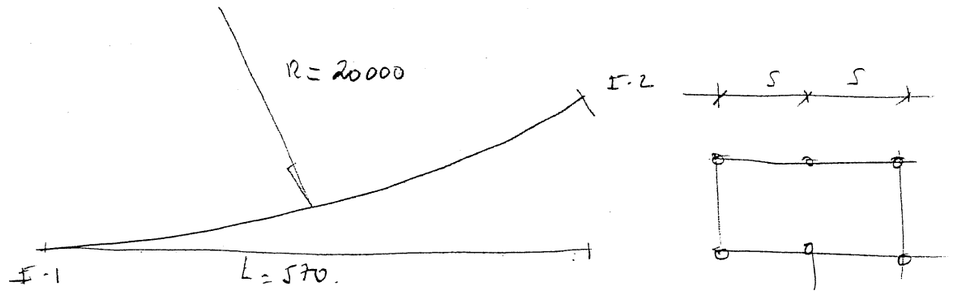
general

estr Viaducto Papiol





CARACTERISTICAS GEOMETRICAS DEL TABLERO



S = 1.75 (Pilas).

S = 4.5 (En bordes)

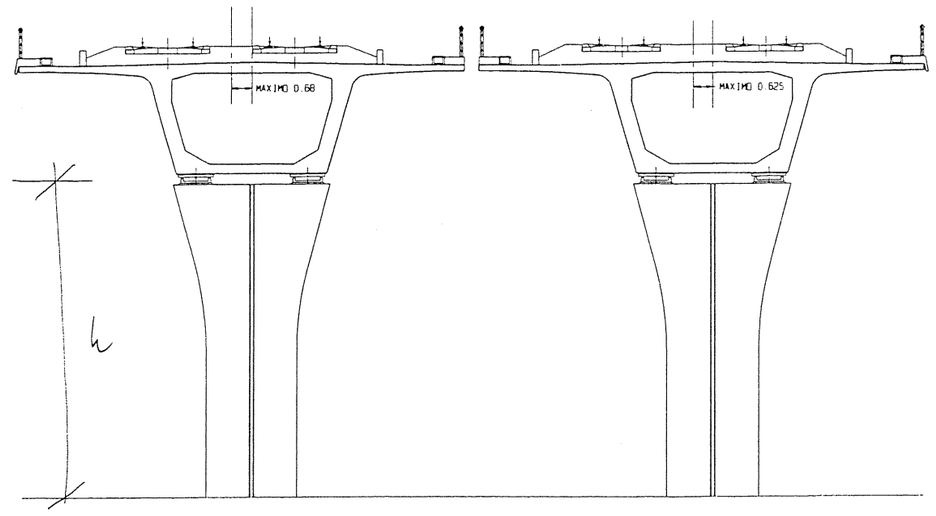
Nº DE VANOS = 10. Nº PILAS = 9 + E1 + E2

DISTRIBUCION DE BARRAS

- TABLERO: 1 a 184
- VIGAS TOTALES 127 a 133.
- TRANSVERSALES SUP: 134 a 155
- TRANSVERSALES INF. 156 a 177
- APOYOS. 182 a 203
- PILAS. 206 a 229
- ESTRIBOS. 230 a 231

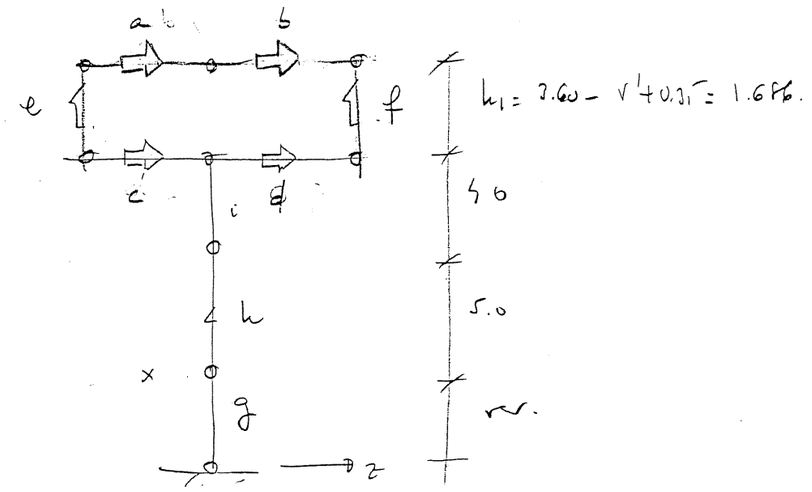
CARACTERISTICAS GEOMETRICAS DE LAS PILAS

h = Zc − 0.788 − 3.60 − 0.35 = Zc − 4.738



PILA/ESTRIBO	P.K	Zcim	Zinc	h
E.1	600+155	36,915	27.50	4.70.
P1	200	36.870	26.00	6.20
P2	260.	36.810.	22.50	9.60
P3	320	36.750	19.75	12.30
P4	380.	36.690	19.75	"
P5	440	36.630	19.75	"
P6	500	36.570	19.75	"
P.7	560	36.510	19.75	12.30
P8	620	36.450	23.50	8.30
P.9	680	36.390	24.00	7.70.
E.2	725	36.045	24.00	7.60

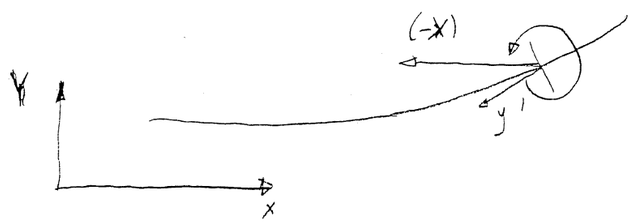
BARRAS DE PILAS/ESTRIBOS Y APOYOS



PILA/ESTRIBO	a	b	c	d	e	f	g	h	i
E.1	134	135	156	157	182	183	231	—	—
P.1	136	137	158	159	184	185	206	—	207
P.2	138	139	160	161	186	187	208	209	210
P.3	140	141	162	163	188	189	211	212	213
P.4	142	143	164	165	190	191	214	215	216
P.5	144	145	166	167	192	193	217	218	219
P.6	146	147	168	169	194	195	220	221	222
P.7	148	149	170	171	196	197	223	224	225
P.8	150	151	172	173	198	199	226	—	227
P.9	152	153	174	175	200	201	228	—	229
E.2	154	155	176	177	202	203	230	—	—

ÁNGULO β. EN APOYOS.

ESTRIBO - 1	358'2668
PILA - 1	358'3957
PILA - 2	358'5676
PILA - 3	358'7395
PILA - 4	358'9114
PILA - 5	359'0833
PILA - 6	359'2552
PILA - 7	359'4271
PILA - 8	359'5990
PILA - 9	359'7708
ESTRIBO - 2	359'8998



MODOS DE VIBRACIÓN

CÁLCULO DE LOS MEDIOS DE INERCIÓN

Asignación de masas al modelo.

Peso propio.

Tablero y pila: Gravedad
Rigidez pila 39'87 T
Rigidez estribos 109'59 T

Carga muerta

Masa e inercia calculada

Valor medio carga muerta = 12'96 T/m.

Inercia: valor medio = 191'03 mT/m.

Nudos del tablero.

3 8 a 15 18 24 a 34 37 44 a 54 57 64 a 74 77 84 a 94 97 104 a 114 117 124 a 134 137 144 a 154 157 163 a 173 176 182 a 189 192

CÁLCULO DE MODOS DE VIBRACIÓN (RAPIDO)

Adjunción de masas al modelo.

Tablero y pilas: gravedad

Diafragma de pila: 39'81 T

Diafragma de E-1 = 107'597

Carga muerta:

masa e inercia calculada

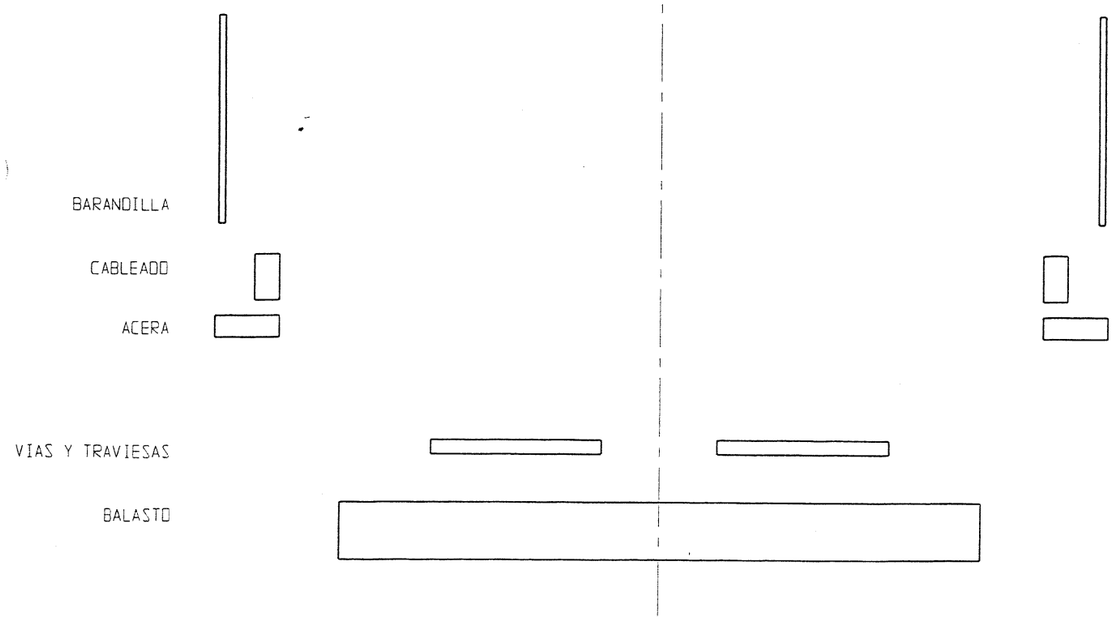
Valor medio de carga muerta $q = 12'961$ T/m

Valor medio del momento de inercia $m = 191'075 m^4$

Esquema de carga muerta:

Área = $12'961 m^2$

$I_y = 191'075 m^4$



CARLOS FERNANDEZ CASADO, S.L.
OFICINA DE PROYECTOS

PROYECTO _____

HOJA ____ DE ____

FECHA _____

CÁLCULO DEL PERÍODO DE VIBRACIÓN.

L(m) = 60m.

Nº de modo	T(s)	f(Hz)	% masa vertical
25	3'5772	0'27955	14'3
26	3'9991	0'25006	20'6
27	4'0433	0'24728	29'6
32	4'1830	0'23906	30'2

Cálculo según ec. 1.3 L = 60m

Límite superior = $94'76 \cdot L^{-0'48} = 4'43$.

Límite inferior = $23'58\ L^{-0'587} = 2'09$

Se considera el modo nº 27

$T = 3'5772$ s $\in [2'09, 4'43]$

$f = 0'2796$ Hz

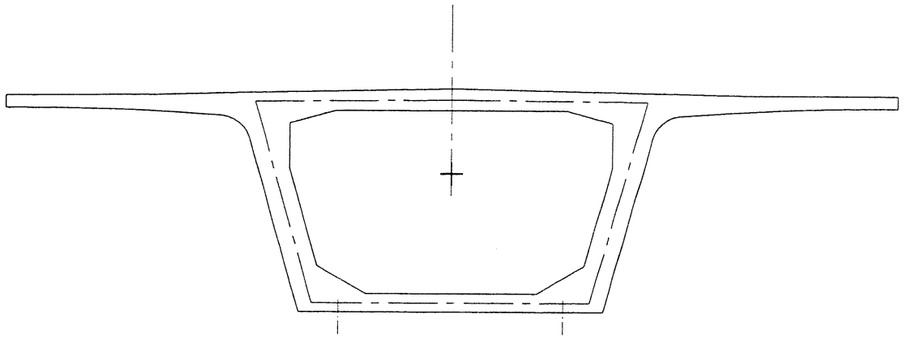
estr Viaducto Papiol - modos de vibracion
nume de nudo 196
nume de barr 206
nume de apoy   11
nume de modo 50
list nada
tipo port espa
coor de nudo

1	-605.0366	0.0000	-4.9023	
2	-605.0366	-1.6860	-4.9023	
3	-604.9081	0.0000	-9.1504	
4	-604.9081	-1.6860	-9.1504	
5	-604.9081	-2.6860	-9.1504	s
6	-604.7796	0.0000	-13.3985	
7	-604.7796	-1.6860	-13.3985	
8	-599.9103	0.0000	-9.0000	
9	-594.9125	0.0000	-8.8496	
10	-589.9147	0.0000	-8.7031	
11	-584.9169	0.0000	-8.5547	
12	-579.9190	0.0000	-8.4082	
13	-574.9211	0.0000	-8.2656	
14	-569.9231	0.0000	-8.1211	
15	-564.9251	0.0000	-7.9805	
16	-559.9761	0.0000	-6.0907	
17	-559.9761	-1.6860	-6.0907	
18	-559.9271	0.0000	-7.8398	
19	-559.9271	-1.6860	-7.8398	
20	-559.9271	-5.6860	-7.8398	
21	-559.9271	-7.8860	-7.8398	s
22	-559.8781	0.0000	-9.5893	
23	-559.8781	-1.6860	-9.5893	
24	-554.9290	0.0000	-7.6992	
25	-549.9309	0.0000	-7.5605	
26	-544.9327	0.0000	-7.4258	
27	-539.9346	0.0000	-7.2891	
28	-534.9364	0.0000	-7.1543	
29	-529.9382	0.0000	-7.0234	
30	-524.9399	0.0000	-6.8906	
31	-519.9416	0.0000	-6.7598	
32	-514.9432	0.0000	-6.6309	
33	-509.9449	0.0000	-6.5020	
34	-504.9465	0.0000	-6.3750	
35	-499.9917	0.0000	-4.5007	
36	-499.9917	-1.6860	-4.5007	
37	-499.9480	0.0000	-6.2500	
38	-499.9480	-1.6860	-6.2500	
39	-499.9480	-10.6860	-6.2500	
40	-499.9480	-11.2860	-6.2500	s
41	-499.9480	-5.6860	-6.2500	
42	-499.9043	-1.6860	-8.0000	
43	-499.9043	0.0000	-8.0000	
44	-494.9496	0.0000	-6.1250	
45	-489.9511	0.0000	-6.0020	
46	-484.9525	0.0000	-5.8809	
47	-479.9540	0.0000	-5.7598	
48	-474.9554	0.0000	-5.6406	
49	-469.9568	0.0000	-5.5215	
50	-464.9581	0.0000	-5.4043	
51	-459.9595	0.0000	-5.2891	
52	-454.9608	0.0000	-5.1758	
53	-449.9621	0.0000	-5.0625	
54	-444.9633	0.0000	-4.9512	
55	-440.0030	0.0000	-3.0908	
56	-440.0030	-1.6860	-3.0908	
57	-439.9645	0.0000	-4.8398	
58	-439.9645	-1.6860	-4.8398	
59	-439.9645	-10.6860	-4.8398	
60	-439.9645	-13.9860	-4.8398	s
61	-439.9645	-5.6860	-4.8398	
62	-439.9260	-1.6860	-6.5899	
63	-439.9260	0.0000	-6.5899	
64	-434.9657	0.0000	-4.7305	
65	-429.9669	0.0000	-4.6211	
66	-424.9680	0.0000	-4.5156	
67	-419.9691	0.0000	-4.4102	
68	-414.9702	0.0000	-4.3066	
69	-409.9712	0.0000	-4.2012	
70	-404.9723	0.0000	-4.1016	
71	-399.9732	0.0000	-4.0000	
72	-394.9742	0.0000	-3.9004	
73	-389.9752	0.0000	-3.8027	
74	-384.9761	0.0000	-3.7051	
75	-380.0102	0.0000	-1.8608	
76	-380.0102	-1.6860	-1.8608	
77	-379.9770	0.0000	-3.6094	
78	-379.9770	-1.6860	-3.6094	
79	-379.9770	-10.6860	-3.6094	
80	-379.9770	-13.9860	-3.6094	s
81	-379.9770	-5.6860	-3.6094	
82	-379.9437	-1.6860	-5.3601	
83	-379.9437	0.0000	-5.3601	
84	-374.9779	0.0000	-3.5156	
85	-369.9787	0.0000	-3.4219	
86	-364.9796	0.0000	-3.3301	
87	-359.9804	0.0000	-3.2402	
88	-354.9812	0.0000	-3.1504	
89	-349.9819	0.0000	-3.0625	
90	-344.9827	0.0000	-2.9746	
91	-339.9834	0.0000	-2.8887	
92	-334.9841	0.0000	-2.8047	
93	-329.9848	0.0000	-2.7227	
94	-324.9855	0.0000	-2.6406	
95	-320.0141	0.0000	-0.8107	
96	-320.0141	-1.6860	-0.8107	
97	-319.9861	0.0000	-2.5586	
98	-319.9861	-1.6860	-2.5586	
99	-319.9861	-10.6860	-2.5586	
100	-319.9861	-13.9860	-2.5586	s
101	-319.9861	-5.6860	-2.5586	
102	-319.9581	-1.6860	-4.3103	
103	-319.9581	0.0000	-4.3103	
104	-314.9867	0.0000	-2.4805	
105	-309.9873	0.0000	-2.4023	
106	-304.9879	0.0000	-2.3262	
107	-299.9885	0.0000	-2.2500	
108	-294.9891	0.0000	-2.1758	
109	-289.9896	0.0000	-2.1035	
110	-284.9901	0.0000	-2.0293	
111	-279.9907	0.0000	-1.9590	
112	-274.9911	0.0000	-1.8906	
113	-269.9916	0.0000	-1.8223	
114	-264.9921	0.0000	-1.7559	
115	-260.0153	0.0000	0.0593	
116	-260.0153	-1.6860	0.0593	
117	-259.9925	0.0000	-1.6895	
118	-259.9925	-1.6860	-1.6895	
119	-259.9925	-10.6860	-1.6895	
120	-259.9925	-13.9860	-1.6895	s

CARACTERÍSTICAS MECÁNICAS

PAPIOL.

CARACTERÍSTICAS MECÁNICAS DEL TABLERO



$A_x = 9'47 m^2$ $\quad I_x = 25'67 m^4$

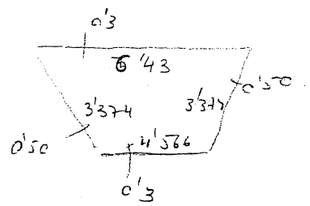
$A_y = 3'60 m^2$ $\quad I_y = 93'87 m^4$

$A_z = 14'20 \times 0'30 = 4'26 m^2$ $\quad I_z = 16'35 m^4$

$v = 1'363 m$ $\quad v' = 2'236 m$

$A_c = 17'944 m^2$ $\quad u_c = 17'749 m$

$$I_x = \frac{4 \times 17'94^2}{\frac{6'43}{0'30} + \frac{2 \times 3'374}{0'5} + \frac{4'506}{0'3}} = 25'67 m^2$$



CARLOS FERNANDEZ CASADO, S.L.
OFICINA DE PROYECTOS

HOJA ____ DE ____

PROYECTO ____ FECHA ____

PROPIEDADES DE BARRAS.

PILAS

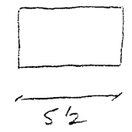
Fuste Sección circular, diámetro 3 m

$A_x = 7'0686 m^2$ $\quad I_x = 7'94$

$A_y = 5'30$ $\quad I_y = 3'9761$

$A_z = 5'30$ $\quad I_z = 3'9761$

Cabeza de pila media entre $\phi 3$ m y rectangular $3 \times 5'2$



(sección empieza de cabeza)

Cabeza Transición $\phi 3$ m – $3 \times 5'2 m^2$

Rectangular: $A_x = 15'6 m^2$ $\quad I_x = 29'48 m^4$

$A_y = 13'22 m^2$ $\quad I_y = 35'15 m^4$

$A_z = 13'22 m^2$ $\quad I_z = 11'70 m^4$

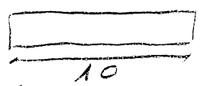
Barra cabeza: media entre ambas.

$A_x = 11'30 m^2$ $\quad I_x = 18'71 m^4$

$A_y = 9'26 m^2$ $\quad I_y = 19'58 m^4$

$A_z = 9'26 m^2$ $\quad I_z = 7'84 m^4$

ESTRIBOS

Rectangular  I_1

$A_x = 10 m^2$ $\quad I_x = 8'13 m^4$

$A_y = 8'47 m^2$ $\quad I_y$ 83 m^4

$A_z = 8'47 m^2$ $\quad I_z$ 0'83 m^4

121	-259.9925	-5.6860	-1.6895	
122	-259.9697	-1.6860	-3.4404	
123	-259.9697	0.0000	-3.4404	
124	-254.9929	0.0000	-1.6270	
125	-249.9933	0.0000	-1.5625	
126	-244.9937	0.0000	-1.5000	
127	-239.9941	0.0000	-1.4395	
128	-234.9945	0.0000	-1.3809	
129	-229.9948	0.0000	-1.3223	
130	-224.9951	0.0000	-1.2656	
131	-219.9955	0.0000	-1.2109	
132	-214.9958	0.0000	-1.1543	
133	-209.9961	0.0000	-1.1035	
134	-204.9963	0.0000	-1.0508	
135	-200.0141	0.0000	0.7493	
136	-200.0141	-1.6860	0.7493	
137	-199.9966	0.0000	-1.0000	
138	-199.9966	-1.6860	-1.0000	
139	-199.9966	-10.6860	-1.0000	
140	-199.9966	-13.9860	-1.0000	s
141	-199.9966	-5.6860	-1.0000	
142	-199.9791	-1.6860	-2.7505	
143	-199.9791	0.0000	-2.7505	
144	-194.9969	0.0000	-0.9492	
145	-189.9971	0.0000	-0.9023	
146	-184.9973	0.0000	-0.8555	
147	-179.9976	0.0000	-0.8086	
148	-174.9977	0.0000	-0.7656	
149	-169.9979	0.0000	-0.7227	
150	-164.9981	0.0000	-0.6816	
151	-159.9983	0.0000	-0.6406	
152	-154.9985	0.0000	-0.6016	
153	-149.9986	0.0000	-0.5625	
154	-144.9987	0.0000	-0.5254	
155	-140.0111	-1.6860	1.2593	
156	-140.0111	0.0000	1.2593	
157	-139.9989	0.0000	-0.4902	
158	-139.9989	-1.6860	-0.4902	
159	-139.9989	-5.6860	-0.4902	
160	-139.9989	-9.9860	-0.4902	s
161	-139.9866	-1.6860	-2.2406	
162	-139.9866	0.0000	-2.2406	
163	-134.9990	0.0000	-0.4551	
164	-129.9991	0.0000	-0.4219	
165	-124.9992	0.0000	-0.3906	
166	-119.9993	0.0000	-0.3594	
167	-114.9994	0.0000	-0.3301	
168	-109.9995	0.0000	-0.3027	
169	-104.9995	0.0000	-0.2754	
170	-99.9996	0.0000	-0.2500	
171	-94.9996	0.0000	-0.2246	
172	-89.9997	0.0000	-0.2031	
173	-84.9998	0.0000	-0.1816	
174	-80.0068	0.0000	1.5893	
175	-80.0068	-1.6860	1.5893	
176	-79.9998	0.0000	-0.1602	
177	-79.9998	-1.6860	-0.1602	
178	-79.9998	-5.6860	-0.1602	
179	-79.9998	-9.3860	-0.1602	s
180	-79.9928	-1.6860	-1.9106	
181	-79.9928	0.0000	-1.9106	
182	-74.9998	0.0000	-0.1406	
183	-69.9999	0.0000	-0.1230	
184	-64.9999	0.0000	-0.1055	
185	-59.9999	0.0000	-0.0898	
186	-54.9999	0.0000	-0.0742	
187	-50.0000	0.0000	-0.0625	
188	-45.0000	0.0000	-0.0508	
189	-40.0000	0.0000	-0.0410	
190	-35.0074	0.0000	4.2187	
191	-35.0074	-1.6860	4.2187	
192	-35.0000	0.0000	-0.0313	
193	-35.0000	-1.6860	-0.0313	
194	-35.0000	-2.6860	-0.0313	s
195	-34.9926	0.0000	-4.2813	
196	-34.9926	-1.6860	-4.2813	
* 197	-30.0000	0.0000	-0.0234	
* 198	-25.0000	0.0000	-0.0156	
* 199	-20.0000	0.0000	-0.0098	
* 200	-15.0000	0.0000	-0.0059	
* 201	-10.0000	0.0000	-0.0020	
* 202	-5.0000	0.0000	-0.0020	
* 203	0.0000	0.0000	0.0000	

inci de barr

1	3	8
2	8	9
3	9	10
4	10	11
5	11	12
6	12	13
7	13	14
8	14	15
9	15	18
10	18	24
11	24	25
12	25	26
13	26	27
14	27	28
15	28	29
16	29	30
17	30	31
18	31	32
19	32	33
20	33	34
21	34	37
22	37	44
23	44	45
24	45	46
25	46	47
26	47	48
27	48	49
28	49	50
29	50	51
30	51	52
31	52	53
32	53	54
33	54	57
34	57	64
35	64	65
36	65	66
37	66	67
38	67	68
39	68	69
40	69	70
41	70	71
42	71	72
43	72	73
44	73	74

	45	74	77
	46	77	84
	47	84	85
	48	85	86
	49	86	87
	50	87	88
	51	88	89
	52	89	90
	53	90	91
	54	91	92
	55	92	93
	56	93	94
	57	94	97
	58	97	104
	59	104	105
	60	105	106
	61	106	107
	62	107	108
	63	108	109
	64	109	110
	65	110	111
	66	111	112
	67	112	113
	68	113	114
	69	114	117
	70	117	124
	71	124	125
	72	125	126
	73	126	127
	74	127	128
	75	128	129
	76	129	130
	77	130	131
	78	131	132
	79	132	133
	80	133	134
	81	134	137
	82	137	144
	83	144	145
	84	145	146
	85	146	147
	86	147	148
	87	148	149
	88	149	150
	89	150	151
	90	151	152
	91	152	153
	92	153	154
	93	154	157
	94	157	163
	95	163	164
	96	164	165
	97	165	166
	98	166	167
	99	167	168
	100	168	169
	101	169	170
	102	170	171
	103	171	172
	104	172	173
	105	173	176
	106	176	182
	107	182	183
	108	183	184
	109	184	185
	110	185	186
	111	186	187
	112	187	188
	113	188	189
	114	189	192
*	127	192	197
*	128	197	198
*	129	198	199
*	130	199	200
*	131	200	201
*	132	201	202
*	133	202	203
	134	6	3
	135	3	1
	136	22	18
	137	18	16
	138	43	37
	139	37	35
	140	63	57
	141	57	55
	142	83	77
	143	77	75
	144	103	97
	145	97	95
	146	123	117
	147	117	115
	148	143	137
	149	137	135
	150	162	157
	151	157	156
	152	181	176
	153	176	174
	154	195	192
	155	192	190
	156	7	4
	157	4	2
	158	23	19
	159	19	17
	160	42	38
	161	38	36
	162	62	58
	163	58	56
	164	82	78
	165	78	76
	166	102	98
	167	98	96
	168	122	118
	169	118	116
	170	142	138
	171	138	136
	172	161	158
	173	158	155
	174	180	177
	175	177	175
	176	196	193
	177	193	191
	182	7	6
	183	2	1
	184	23	22
	185	17	16
	186	42	43
	187	36	35
	188	62	63

```
189   56   55
190   82   83
191   76   75
192  102  103
193   96   95
194  122  123
195  116  115
196  142  143
197  136  135
198  161  162
199  155  156
200  180  181
201  175  174
202  196  195
203  191  190
206   21   20
207   20   19
208   40   39
209   39   41
210   41   38
211   60   59
212   59   61
213   61   58
214   80   79
215   79   81
216   81   78
217  100   99
218   99  101
219  101   98
220  120  119
221  119  121
222  121  118
223  140  139
224  139  141
225  141  138
226  160  159
227  159  158
228  179  178
229  178  177
230    5    4
231  194  193
mate de barr
* 127 a  133   1
    1 a  126   2
  134 a  155   2
  156 a 177    3
  182 a 203    3
  206 a 231    3
libe de barr
182 inic fuer y   mome x y z
183 inic fuer y z mome x y z
184 inic fuer y   mome x y z
185 inic fuer y z mome x y z
186 inic fuer y   mome x y z
187 inic fuer y z mome x y z
188 inic fuer y   mome x y z
189 inic fuer y z mome x y z
190 inic fuer y   mome x y z
191 inic fuer y z mome x y z
192 inic fuer y   mome x y z
193 inic fuer y z mome x y z
194 inic fuer y   mome x y z
195 inic fuer y z mome x y z
196 inic fuer y   mome x y z
197 inic fuer y z mome x y z
198 inic fuer y   mome x y z
199 inic fuer y z mome x y z
200 inic fuer y   mome x y z
201 inic fuer y z mome x y z
202 inic          mome x y z
203 inic fuer   z mome x y z
231 fina          mome x
prop de barr pris
* tablero
    1 a 126   10.0060    3.6000    4.2600   27.6920  108.2010   16.8560
* pilas
* pila 1
  206          7.07  5.30  5.30  7.94  3.98  3.98 beta 358.40
  207         11.30  9.26  9.26 18.71 19.56  7.84 beta 358.40
* pila 2
  208 a 209    7.07  5.30  5.30  7.94  3.98  3.98 beta 358.58
  210         11.30  9.26  9.26 18.71 19.56  7.84 beta 358.58
* pila 3
  211 a 212    7.07  5.30  5.30  7.94  3.98  3.98 beta 358.74
  213         11.30  9.26  9.26 18.71 19.56  7.84 beta 358.74
* pila 4
  214 a 215    7.07  5.30  5.30  7.94  3.98  3.98 beta 358.91
  216         11.30  9.26  9.26 18.71 19.56  7.84 beta 358.91
* pila 5
  217 a 218    7.07  5.30  5.30  7.94  3.98  3.98 beta 359.08
  219         11.30  9.26  9.26 18.71 19.56  7.84 beta 359.08
* pila 6
  220 a 221    7.07  5.30  5.30  7.94  3.98  3.98 beta 359.26
  222         11.30  9.26  9.26 18.71 19.56  7.84 beta 359.26
* pila 7
  223 a 224    7.07  5.30  5.30  7.94  3.98  3.98 beta 359.43
  225         11.30  9.26  9.26 18.71 19.56  7.84 beta 359.43
* pila 8
  226          7.07  5.30  5.30  7.94  3.98  3.98 beta 359.60
  227         11.30  9.26  9.26 18.71 19.56  7.84 beta 359.60
* pila 9
  228          7.07  5.30  5.30  7.94  3.98  3.98 beta 359.77
  229         11.30  9.26  9.26 18.71 19.56  7.84 beta 359.77
* estribo 1
  230        100.00 100.00 100.00 100.00 100.00 100.00 beta 358.27
* estribo 2
  231        100.00 100.00 100.00 100.00 100.00 100.00 beta 359.90
* apoyos
 182 100. 100. 100. 100. 100. 100. beta 358.27
 183 100. 100. 100. 100. 100. 100. beta 358.27
 184 100. 100. 100. 100. 100. 100. beta 358.40
 185 100. 100. 100. 100. 100. 100. beta 358.40
 186 100. 100. 100. 100. 100. 100. beta 358.58
 187 100. 100. 100. 100. 100. 100. beta 358.58
 188 100. 100. 100. 100. 100. 100. beta 358.74
 189 100. 100. 100. 100. 100. 100. beta 358.74
 190 100. 100. 100. 100. 100. 100. beta 358.91
 191 100. 100. 100. 100. 100. 100. beta 358.91
 192 100. 100. 100. 100. 100. 100. beta 359.08
 193 100. 100. 100. 100. 100. 100. beta 359.08
 194 100. 100. 100. 100. 100. 100. beta 359.26
 195 100. 100. 100. 100. 100. 100. beta 359.26
 196 100. 100. 100. 100. 100. 100. beta 359.43
 197 100. 100. 100. 100. 100. 100. beta 359.43
 198 100. 100. 100. 100. 100. 100. beta 359.60
 199 100. 100. 100. 100. 100. 100. beta 359.60
 200 100. 100. 100. 100. 100. 100. beta 359.77
 201 100. 100. 100. 100. 100. 100. beta 359.77
```

```
 202 100. 100. 100. 100. 100. 100. beta 359.90
 203 100. 100. 100. 100. 100. 100. beta 359.90
* aux tablero
  134 a 155    100.00    100.00    100.00    100.00    100.00    100.00
* aux pilas y estribos
  156 a 177    100.00    100.00    100.00    100.00    100.00    100.00
* nariz
* 127    0.2391    0.1731    0.0660    0.0453    1.2826    0.5836
* 128    0.2222    0.1562    0.0660    0.0379    1.0436    0.4536
* 129    0.1946    0.1396    0.0550    0.0311    0.7569    0.3116
* 130    0.1776    0.1226    0.0550    0.0251    0.6992    0.2274
* 131    0.1343    0.0793    0.0550    0.0198    0.5412    0.1470
* 132    0.1108    0.0668    0.0440    0.0149    0.4337    0.0850
* 133    0.0981    0.0541    0.0440    0.0109    0.3902    0.0512
cons de mate
    1    21000000.00      800000.00          7.85
    2     3870000.00     1610000.00          2.50
    3     3360000.00     1400000.00          2.50
dato de masa
masa en nudo
* pp entrega
3 fuer x y z  107.56 107.56 107.56
* riostras
3 fuer x y z   95.36 95.36 95.36
18 fuer x y z   116.62 116.62 116.62
37 fuer x y z   116.62 116.62 116.62
57 fuer x y z   116.62 116.62 116.62
77 fuer x y z   116.62 116.62 116.62
97 fuer x y z   116.62 116.62 116.62
117 fuer x y z   116.62 116.62 116.62
137 fuer x y z   116.62 116.62 116.62
157 fuer x y z   116.62 116.62 116.62
176 fuer x y z   116.62 116.62 116.62
192 fuer x y z   95.36 95.36 95.36
* vaciado  pila
 18 fuer y  6.16
 37 fuer y  6.16
 57 fuer y  6.16
 77 fuer y  6.16
 97 fuer y  6.16
117 fuer y  6.16
137 fuer y  6.16
157 fuer y  6.16
176 fuer y  6.16
* cm
 3 fuer x y z mome x 32.4 32.4 32.4 477.7
 8 fuer x y z mome x 64.8 64.8 64.8 955.4
 9 fuer x y z mome x 64.8 64.8 64.8 955.4
10 fuer x y z mome x 64.8 64.8 64.8 955.4
11 fuer x y z mome x 64.8 64.8 64.8 955.4
12 fuer x y z mome x 64.8 64.8 64.8 955.4
13 fuer x y z mome x 64.8 64.8 64.8 955.4
14 fuer x y z mome x 64.8 64.8 64.8 955.4
15 fuer x y z mome x 64.8 64.8 64.8 955.4
18 fuer x y z mome x 64.8 64.8 64.8 955.4
24 fuer x y z mome x 64.8 64.8 64.8 955.4
25 fuer x y z mome x 64.8 64.8 64.8 955.4
26 fuer x y z mome x 64.8 64.8 64.8 955.4
27 fuer x y z mome x 64.8 64.8 64.8 955.4
28 fuer x y z mome x 64.8 64.8 64.8 955.4
29 fuer x y z mome x 64.8 64.8 64.8 955.4
30 fuer x y z mome x 64.8 64.8 64.8 955.4
31 fuer x y z mome x 64.8 64.8 64.8 955.4
32 fuer x y z mome x 64.8 64.8 64.8 955.4
33 fuer x y z mome x 64.8 64.8 64.8 955.4
34 fuer x y z mome x 64.8 64.8 64.8 955.4
37 fuer x y z mome x 64.8 64.8 64.8 955.4
44 fuer x y z mome x 64.8 64.8 64.8 955.4
45 fuer x y z mome x 64.8 64.8 64.8 955.4
46 fuer x y z mome x 64.8 64.8 64.8 955.4
47 fuer x y z mome x 64.8 64.8 64.8 955.4
48 fuer x y z mome x 64.8 64.8 64.8 955.4
49 fuer x y z mome x 64.8 64.8 64.8 955.4
50 fuer x y z mome x 64.8 64.8 64.8 955.4
51 fuer x y z mome x 64.8 64.8 64.8 955.4
52 fuer x y z mome x 64.8 64.8 64.8 955.4
53 fuer x y z mome x 64.8 64.8 64.8 955.4
54 fuer x y z mome x 64.8 64.8 64.8 955.4
57 fuer x y z mome x 64.8 64.8 64.8 955.4
64 fuer x y z mome x 64.8 64.8 64.8 955.4
65 fuer x y z mome x 64.8 64.8 64.8 955.4
66 fuer x y z mome x 64.8 64.8 64.8 955.4
67 fuer x y z mome x 64.8 64.8 64.8 955.4
68 fuer x y z mome x 64.8 64.8 64.8 955.4
69 fuer x y z mome x 64.8 64.8 64.8 955.4
70 fuer x y z mome x 64.8 64.8 64.8 955.4
71 fuer x y z mome x 64.8 64.8 64.8 955.4
72 fuer x y z mome x 64.8 64.8 64.8 955.4
73 fuer x y z mome x 64.8 64.8 64.8 955.4
74 fuer x y z mome x 64.8 64.8 64.8 955.4
77 fuer x y z mome x 64.8 64.8 64.8 955.4
84 fuer x y z mome x 64.8 64.8 64.8 955.4
85 fuer x y z mome x 64.8 64.8 64.8 955.4
86 fuer x y z mome x 64.8 64.8 64.8 955.4
87 fuer x y z mome x 64.8 64.8 64.8 955.4
88 fuer x y z mome x 64.8 64.8 64.8 955.4
89 fuer x y z mome x 64.8 64.8 64.8 955.4
90 fuer x y z mome x 64.8 64.8 64.8 955.4
91 fuer x y z mome x 64.8 64.8 64.8 955.4
92 fuer x y z mome x 64.8 64.8 64.8 955.4
93 fuer x y z mome x 64.8 64.8 64.8 955.4
94 fuer x y z mome x 64.8 64.8 64.8 955.4
97 fuer x y z mome x 64.8 64.8 64.8 955.4
104 fuer x y z mome x 64.8 64.8 64.8 955.4
105 fuer x y z mome x 64.8 64.8 64.8 955.4
106 fuer x y z mome x 64.8 64.8 64.8 955.4
107 fuer x y z mome x 64.8 64.8 64.8 955.4
108 fuer x y z mome x 64.8 64.8 64.8 955.4
109 fuer x y z mome x 64.8 64.8 64.8 955.4
110 fuer x y z mome x 64.8 64.8 64.8 955.4
111 fuer x y z mome x 64.8 64.8 64.8 955.4
112 fuer x y z mome x 64.8 64.8 64.8 955.4
113 fuer x y z mome x 64.8 64.8 64.8 955.4
114 fuer x y z mome x 64.8 64.8 64.8 955.4
117 fuer x y z mome x 64.8 64.8 64.8 955.4
124 fuer x y z mome x 64.8 64.8 64.8 955.4
125 fuer x y z mome x 64.8 64.8 64.8 955.4
126 fuer x y z mome x 64.8 64.8 64.8 955.4
127 fuer x y z mome x 64.8 64.8 64.8 955.4
128 fuer x y z mome x 64.8 64.8 64.8 955.4
129 fuer x y z mome x 64.8 64.8 64.8 955.4
130 fuer x y z mome x 64.8 64.8 64.8 955.4
131 fuer x y z mome x 64.8 64.8 64.8 955.4
132 fuer x y z mome x 64.8 64.8 64.8 955.4
133 fuer x y z mome x 64.8 64.8 64.8 955.4
134 fuer x y z mome x 64.8 64.8 64.8 955.4
137 fuer x y z mome x 64.8 64.8 64.8 955.4
144 fuer x y z mome x 64.8 64.8 64.8 955.4
```

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145 fuer x y z mome x 64.8 64.8 64.8 955.4
146 fuer x y z mome x 64.8 64.8 64.8 955.4
147 fuer x y z mome x 64.8 64.8 64.8 955.4
148 fuer x y z mome x 64.8 64.8 64.8 955.4
149 fuer x y z mome x 64.8 64.8 64.8 955.4
150 fuer x y z mome x 64.8 64.8 64.8 955.4
151 fuer x y z mome x 64.8 64.8 64.8 955.4
152 fuer x y z mome x 64.8 64.8 64.8 955.4
153 fuer x y z mome x 64.8 64.8 64.8 955.4
154 fuer x y z mome x 64.8 64.8 64.8 955.4
157 fuer x y z mome x 64.8 64.8 64.8 955.4
163 fuer x y z mome x 64.8 64.8 64.8 955.4
164 fuer x y z mome x 64.8 64.8 64.8 955.4
165 fuer x y z mome x 64.8 64.8 64.8 955.4
166 fuer x y z mome x 64.8 64.8 64.8 955.4
167 fuer x y z mome x 64.8 64.8 64.8 955.4
168 fuer x y z mome x 64.8 64.8 64.8 955.4
169 fuer x y z mome x 64.8 64.8 64.8 955.4
170 fuer x y z mome x 64.8 64.8 64.8 955.4
171 fuer x y z mome x 64.8 64.8 64.8 955.4
172 fuer x y z mome x 64.8 64.8 64.8 955.4
173 fuer x y z mome x 64.8 64.8 64.8 955.4
176 fuer x y z mome x 64.8 64.8 64.8 955.4
182 fuer x y z mome x 64.8 64.8 64.8 955.4
183 fuer x y z mome x 64.8 64.8 64.8 955.4
184 fuer x y z mome x 64.8 64.8 64.8 955.4
185 fuer x y z mome x 64.8 64.8 64.8 955.4
186 fuer x y z mome x 64.8 64.8 64.8 955.4
187 fuer x y z mome x 64.8 64.8 64.8 955.4
188 fuer x y z mome x 64.8 64.8 64.8 955.4
189 fuer x y z mome x 64.8 64.8 64.8 955.4
192 fuer x y z mome x 32.4 32.4 32.4 477.7
calc
2 2 2
```

MASA TOTAL REAL DE LA ESTRUCTURA 59046.53

CONVERGENCIA ALCANZADA PARA UNA TOLERANCIA RELATIVA DE 0.50E-02

AUTOVALORES

N	AUTOVALOR	FRECUENCIA(HZ)	PERIODO(SEG.)
1	0.34014E+02	0.9282	1.07734
2	0.37324E+02	0.9723	1.02846
3	0.45923E+02	1.0785	0.92718
4	0.69070E+02	1.3227	0.75602
5	0.10439E+03	1.6261	0.61495
6	0.12916E+03	1.8088	0.55286
7	0.14123E+03	1.8914	0.52872
8	0.14947E+03	1.9458	0.51392
9	0.17918E+03	2.1304	0.46939
10	0.18310E+03	2.1536	0.46434
11	0.21171E+03	2.3157	0.43183
12	0.21172E+03	2.3158	0.43182
13	0.21172E+03	2.3158	0.43182
14	0.21173E+03	2.3159	0.43181
15	0.21174E+03	2.3159	0.43180
16	0.22950E+03	2.4111	0.41475
17	0.24565E+03	2.4945	0.40089
18	0.28543E+03	2.6889	0.37190
19	0.32756E+03	2.8805	0.34716
20	0.34747E+03	2.9667	0.33707
21	0.36988E+03	3.0609	0.32670
22	0.41518E+03	3.2429	0.30836
23	0.43938E+03	3.3361	0.29975
24	0.44534E+03	3.3587	0.29774
25	0.50518E+03	3.5772	0.27955
26	0.63136E+03	3.9991	0.25006
27	0.64560E+03	4.0439	0.24728
28	0.69078E+03	4.1830	0.23906
29	0.76614E+03	4.4053	0.22700
30	0.86736E+03	4.6873	0.21334

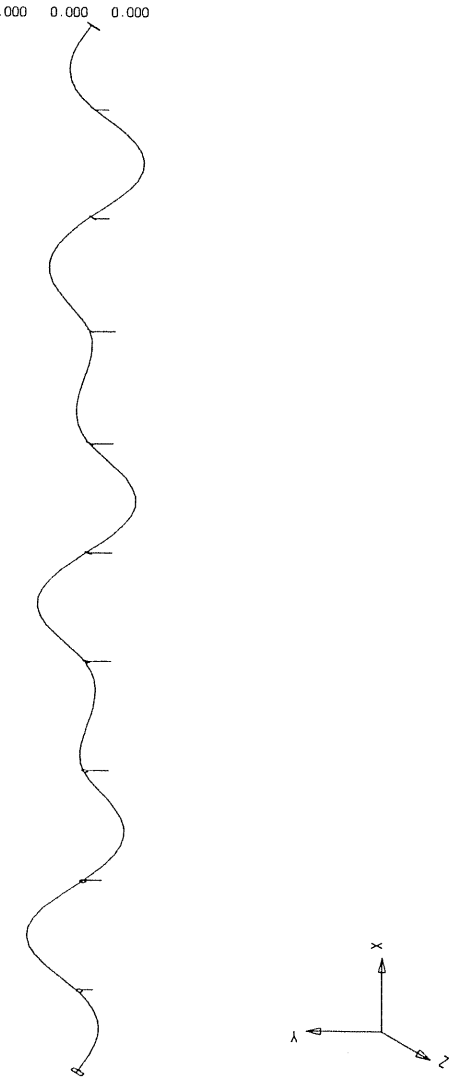
31	0.93287E+03	4.8611	0.20572
32	0.10218E+04	5.0875	0.19656
33	0.11700E+04	5.4440	0.18369
34	0.14666E+04	6.0951	0.16407
35	0.15666E+04	6.2993	0.15875
36	0.16549E+04	6.4745	0.15445
37	0.17540E+04	6.6656	0.15002
38	0.17709E+04	6.6976	0.14931
39	0.18195E+04	6.7888	0.14730
40	0.18928E+04	6.9242	0.14442
41	0.19625E+04	7.0506	0.14183
42	0.20758E+04	7.2512	0.13791
43	0.20971E+04	7.2883	0.13721
44	0.21330E+04	7.3504	0.13605
45	0.21674E+04	7.4095	0.13496
46	0.22490E+04	7.5478	0.13249
47	0.23441E+04	7.7056	0.12978
48	0.23493E+04	7.7142	0.12963
49	0.23558E+04	7.7249	0.12945
50	0.25823E+04	8.0877	0.12364

MASA TOTAL DE CALCULO DE LA ESTRUCTURA: 54341.1

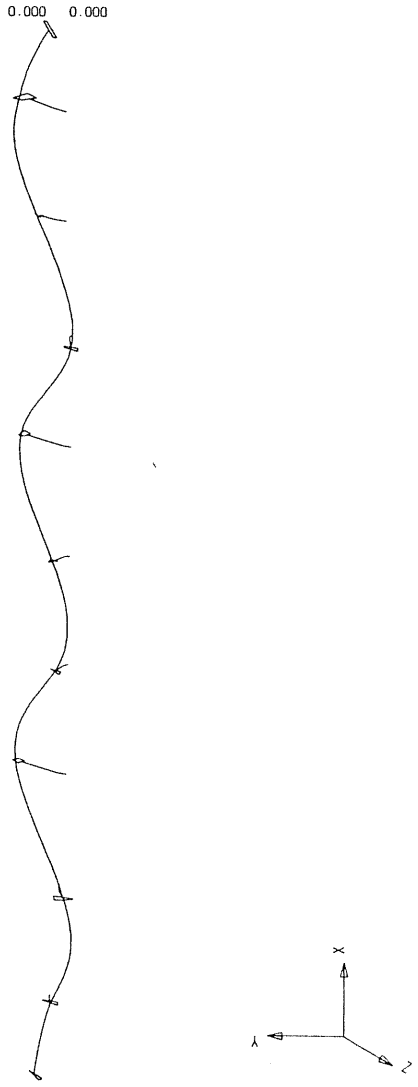
PROPORCION DE MASA MOVILIZADA ACUMULADA
PARA CADA MODO Y DIRECCION EN ACCIONES SISMICAS

MODO	TANTO POR CIENTO PARA CADA DIRECCION		
1	0.9	0.0	44.2
2	58.9	0.0	44.8
3	58.9	0.0	44.8
4	58.9	0.0	54.1
5	58.9	0.0	54.1
6	58.9	0.0	54.1
7	58.9	0.0	65.6
8	58.9	0.0	65.6
9	58.9	0.0	65.6
10	58.9	0.0	65.6
11	60.7	0.0	65.6
12	61.8	0.0	65.6
13	64.4	0.0	65.6
14	66.3	0.0	65.6
15	68.1	0.0	65.6
16	68.2	0.1	65.6
17	68.2	0.1	68.0
18	69.0	0.1	68.0
19	73.3	0.1	68.0
20	73.3	0.1	68.1
21	74.4	0.7	68.1
22	74.4	0.7	71.1
23	74.5	0.7	71.1
24	76.3	0.7	71.1
25	76.3	14.3	71.1
26	76.3	20.6	71.1
27	76.3	29.6	71.1
28	78.0	29.6	71.1
29	78.0	29.6	71.1
30	79.8	29.6	71.1
31	79.8	29.6	71.5
32	81.8	30.2	71.5
33	81.8	30.2	71.5
34	81.8	30.2	71.5
35	81.8	30.2	74.9
36	81.8	30.2	74.9
37	81.8	30.2	74.9
38	81.8	30.2	75.6
39	81.9	30.2	75.6
40	83.0	30.3	75.6
41	83.2	30.3	75.6
42	83.2	30.3	75.6
43	83.2	30.3	77.0
44	83.3	30.3	77.0
45	83.3	30.3	77.0
46	83.3	30.3	77.5
47	83.3	30.3	77.5
48	83.3	30.3	77.5
49	83.3	30.3	77.6
50	83.3	30.3	77.6

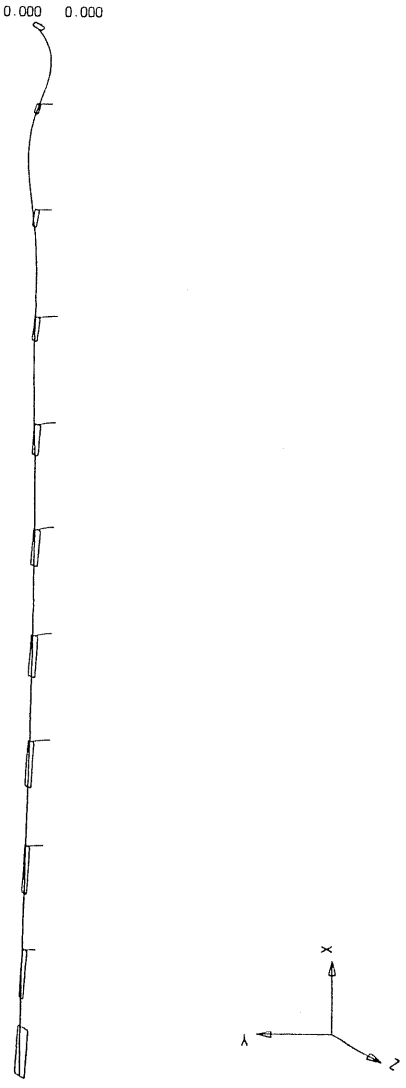
estr Viaducto Papiol - nodos de vibracion
MODO 10 PERIODO 0.464 SEG.
FACTORES DE DISTRIBUCION 0.798 0.014 -0.019
FACTORES DE DISTRIBUCION 0.000 0.000 0.000



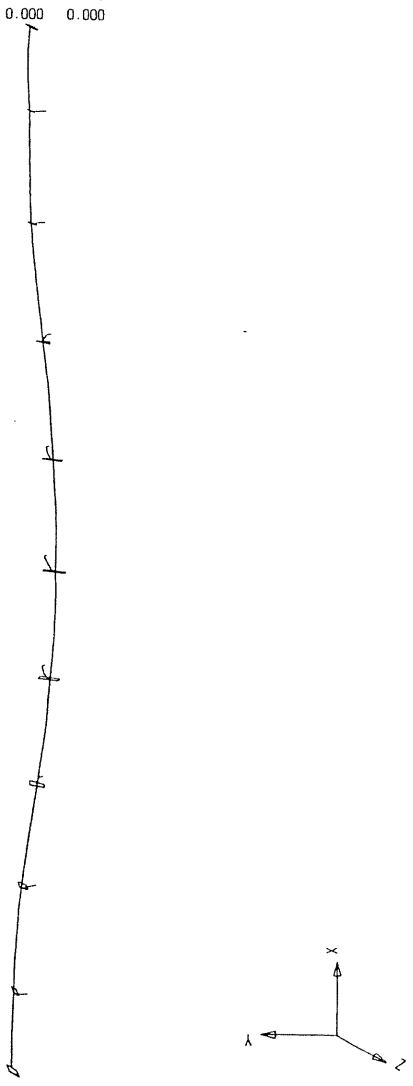
estr Viaducto Papiol - nodos de vibracion
MODO 9 PERIODO 0.469 SEG.
FACTORES DE DISTRIBUCION -0.245 -0.003 -1.410
FACTORES DE DISTRIBUCION 0.000 0.000 0.000



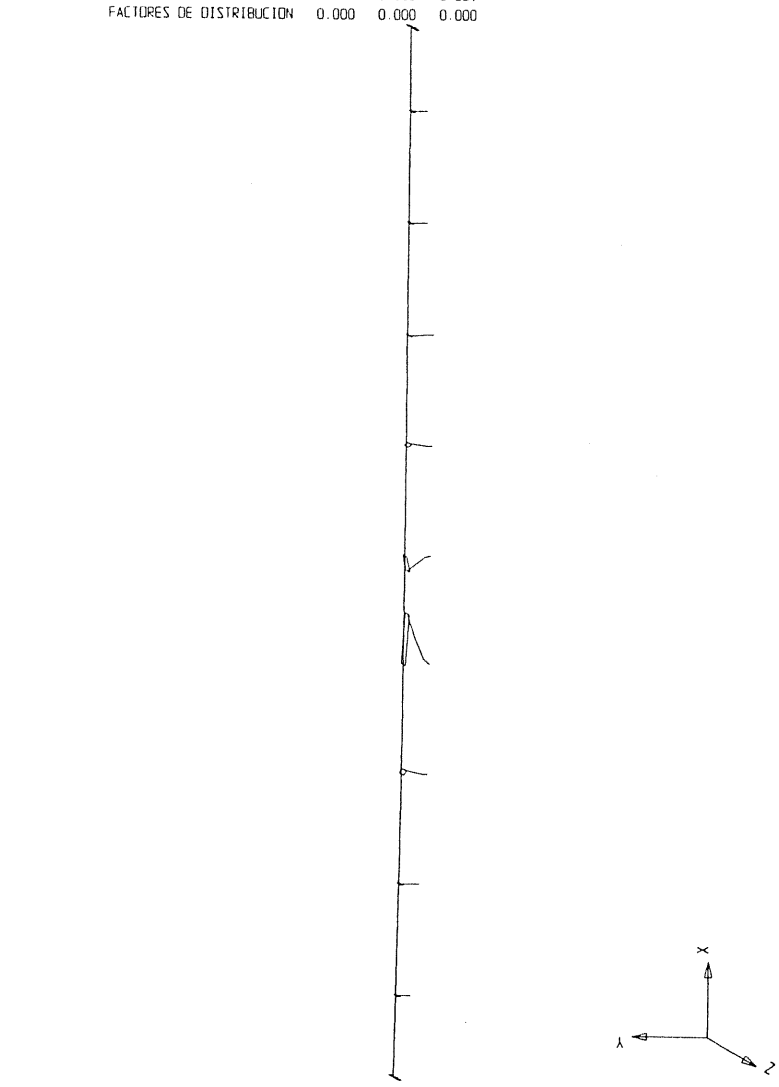
estr Viaducto Papiol - nodos de vibracion
MODO 2 PERIODO 1.028 SEG.
FACTORES DE DISTRIBUCION -56.640 -0.388 5.826
FACTORES DE DISTRIBUCION 0.000 0.000 0.000



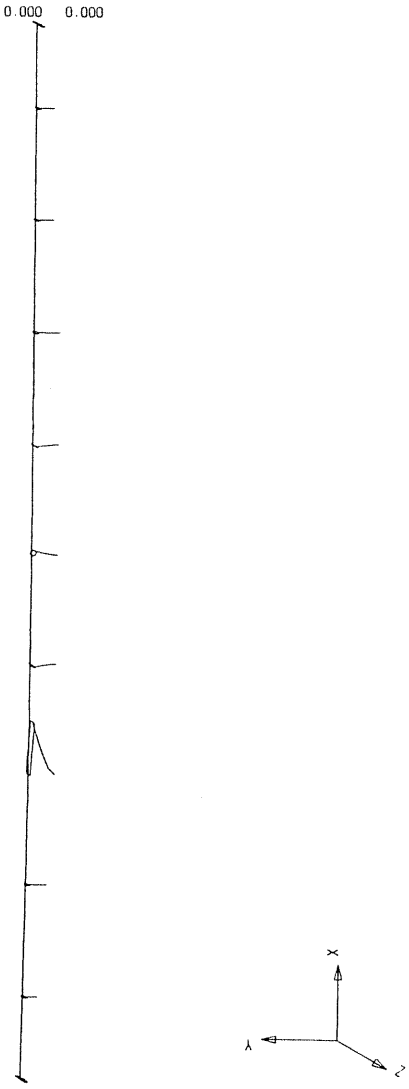
estr Viaducto Papiol - nodos de vibracion
MODO 1 PERIODO 1.077 SEG.
FACTORES DE DISTRIBUCION 7.238 0.052 50.345
FACTORES DE DISTRIBUCION 0.000 0.000 0.000



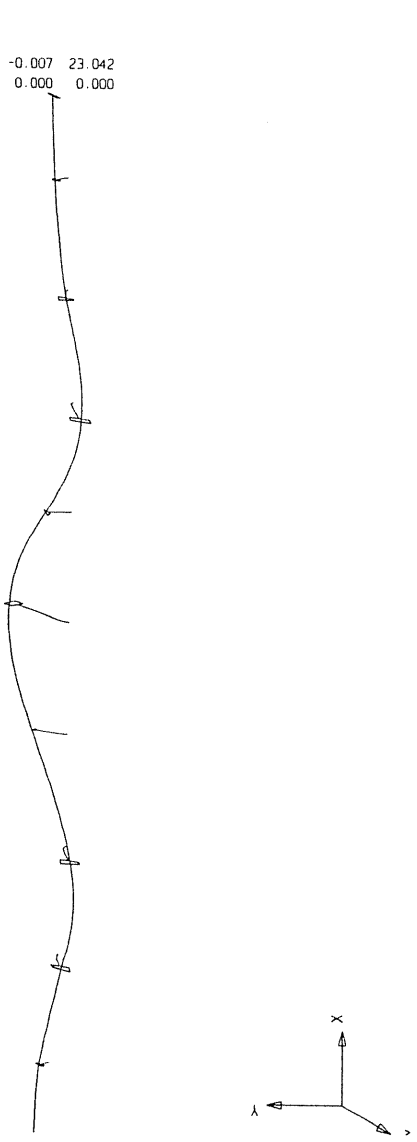
estr Viaducto Papiol - nodos de vibracion
MODO 12 PERIODO 0.432 SEG.
FACTORES DE DISTRIBUCION 8.063 0.000 0.251
FACTORES DE DISTRIBUCION 0.000 0.000 0.000



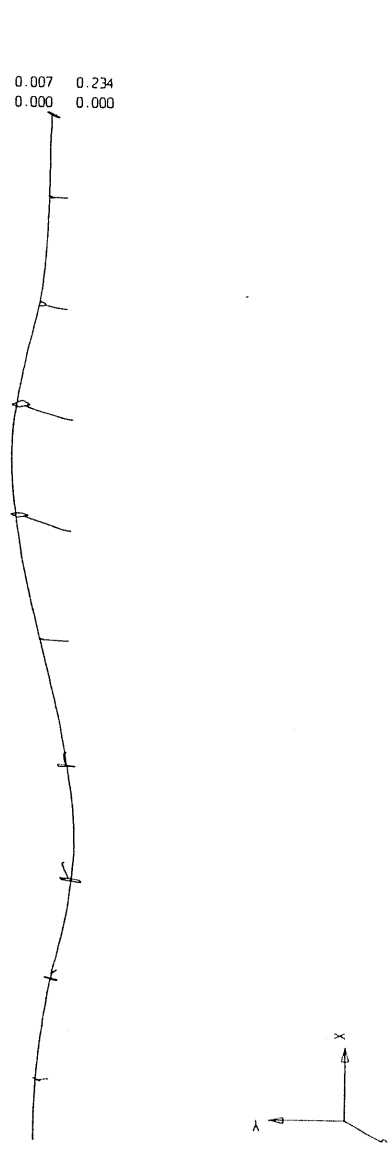
estr Viaducto Papiol - nodos de vibracion
MODO 11 PERIODO 0.432 SEG.
FACTORES DE DISTRIBUCION 9.941 0.000 0.175
FACTORES DE DISTRIBUCION 0.000 0.000 0.000



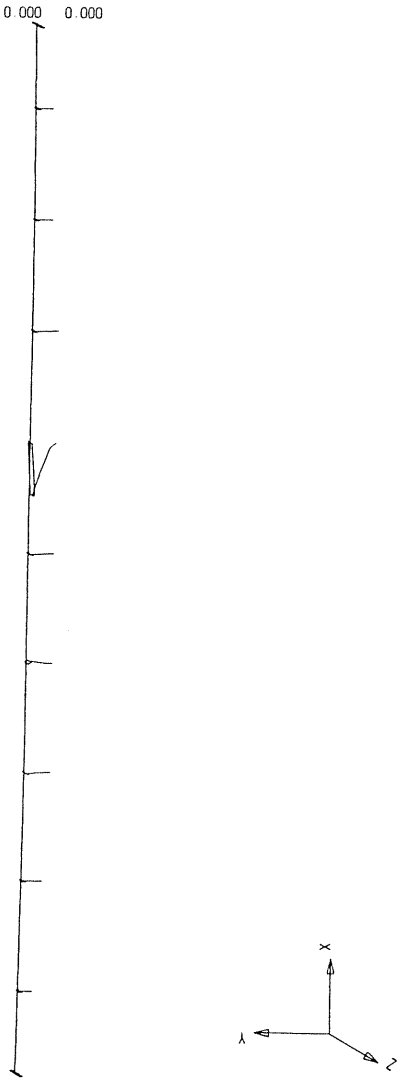
estr Viaducto Papiol - nodos de vibracion
MODO 4 PERIODO 0.756 SEG.
FACTORES DE DISTRIBUCION -0.708 -0.007 23.042
FACTORES DE DISTRIBUCION 0.000 0.000 0.000



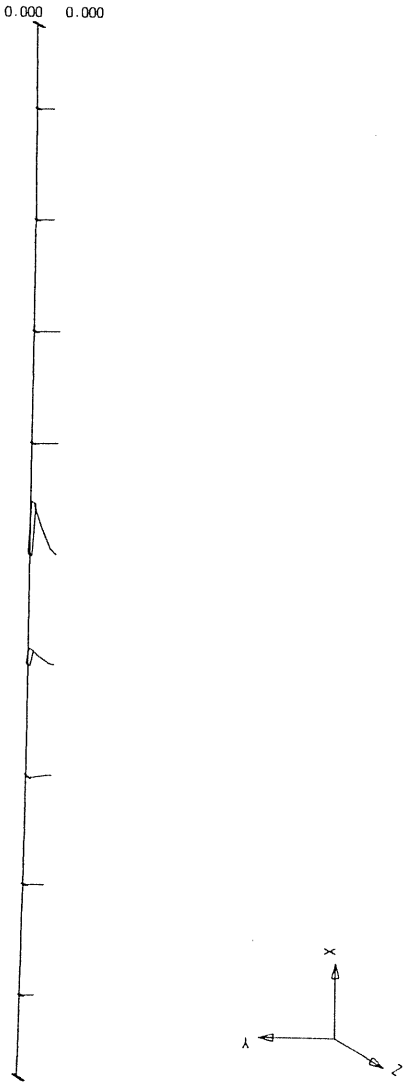
estr Viaducto Papiol - nodos de vibracion
MODO 3 PERIODO 0.927 SEG.
FACTORES DE DISTRIBUCION 0.526 0.007 0.234
FACTORES DE DISTRIBUCION 0.000 0.000 0.000



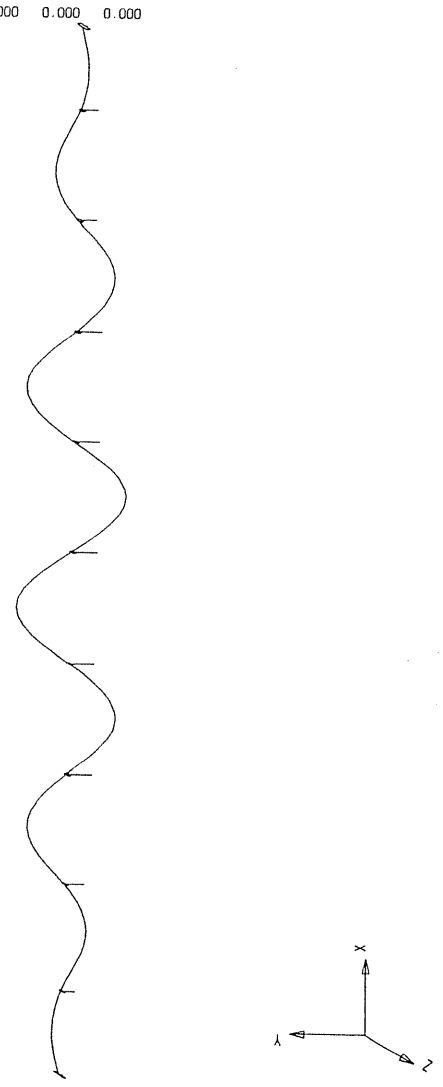
estr Viaducto Papiol - nodos de vibracion
MODO 14 PERIODO 0.432 SEG.
FACTORES DE DISTRIBUCION -10.246 0.000 -0.168
FACTORES DE DISTRIBUCION 0.000 0.000 0.000



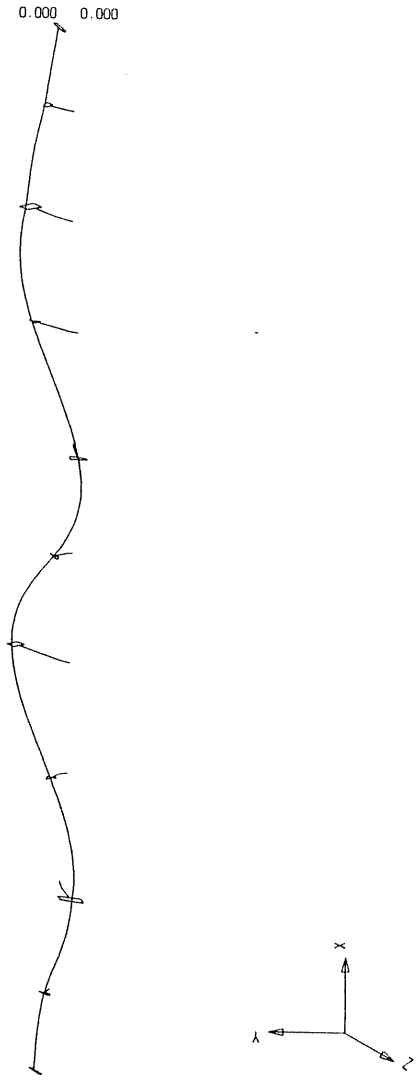
estr Viaducto Papiol - nodos de vibracion
MODO 13 PERIODO 0.432 SEG.
FACTORES DE DISTRIBUCION 11.950 0.000 0.167
FACTORES DE DISTRIBUCION 0.000 0.000 0.000



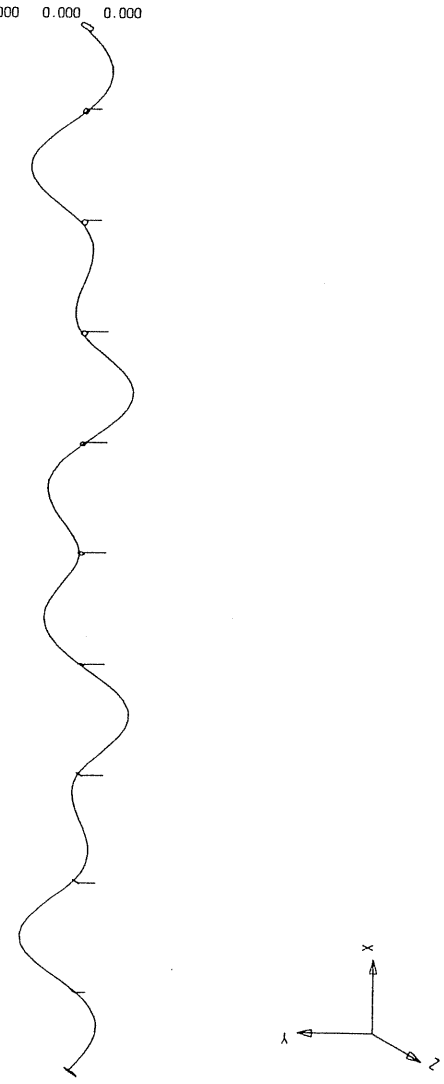
estr Viaducto Papiol - nodos de vibracion
MODO 6 PERIODO 0.553 SEG.
FACTORES DE DISTRIBUCION 0.162 0.018 0.012
FACTORES DE DISTRIBUCION 0.000 0.000 0.000



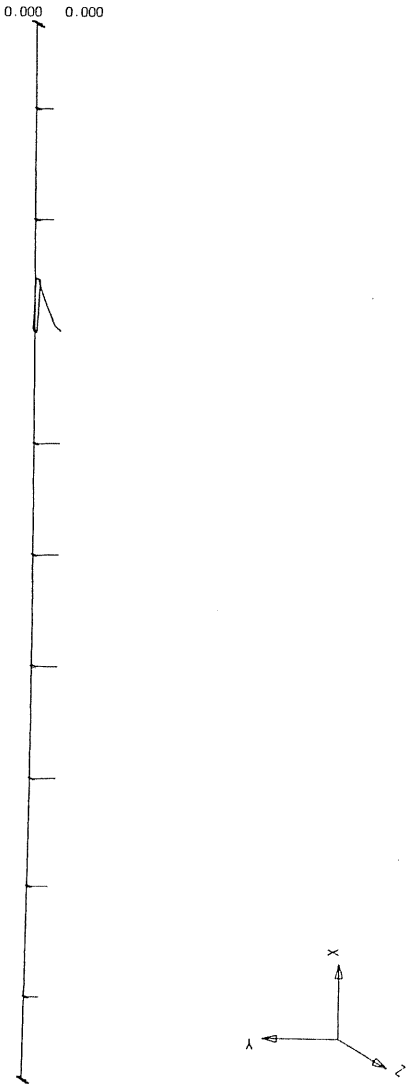
estr Viaducto Papiol - nodos de vibracion
MODO 5 PERIODO 0.615 SEG.
FACTORES DE DISTRIBUCION -0.139 0.002 -2.101
FACTORES DE DISTRIBUCION 0.000 0.000 0.000



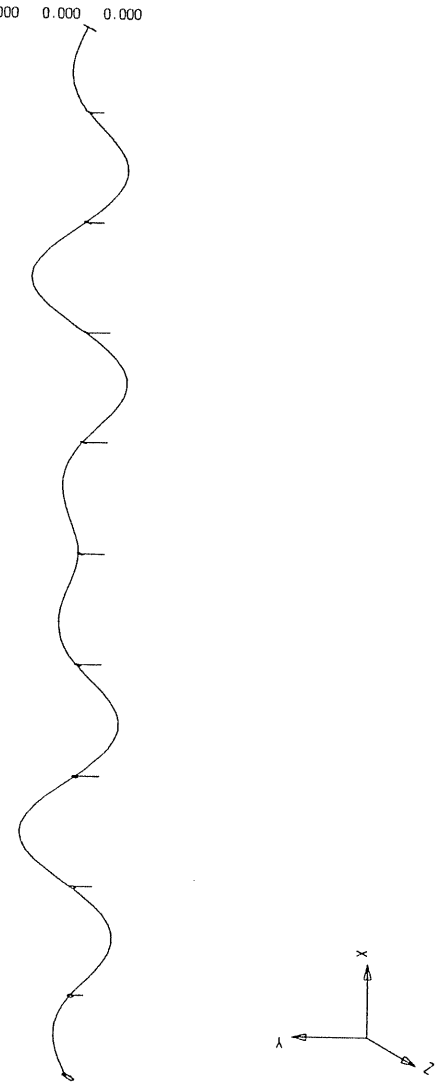
estr Viaducto Papiol - nodos de vibracion
MODO 16 PERIODO 0.415 SEG.
FACTORES DE DISTRIBUCION -2.346 1.975 -0.022
FACTORES DE DISTRIBUCION 0.000 0.000 0.000



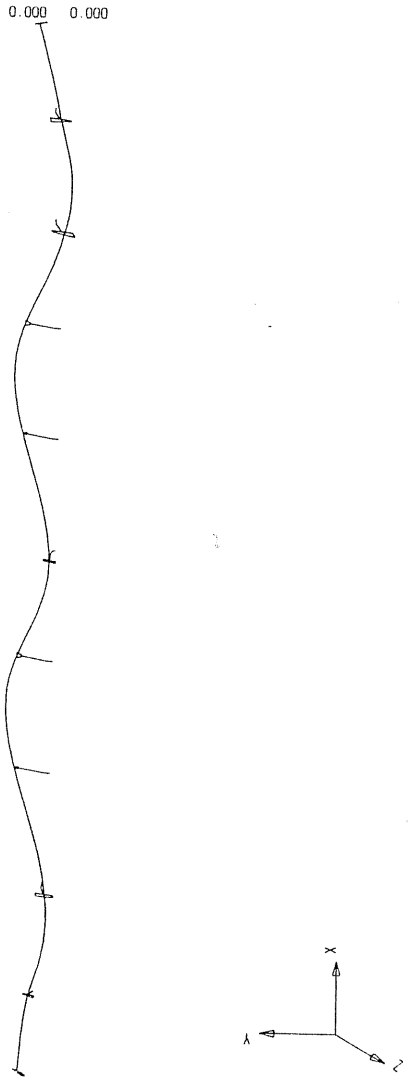
estr Viaducto Papiol - nodos de vibracion
MODO 15 PERIODO 0.432 SEG.
FACTORES DE DISTRIBUCION 9.989 0.000 0.104
FACTORES DE DISTRIBUCION 0.000 0.000 0.000



estr Viaducto Papiol - nodos de vibracion
MODO 8 PERIODO 0.514 SEG.
FACTORES DE DISTRIBUCION 0.052 -0.916 0.076
FACTORES DE DISTRIBUCION 0.000 0.000 0.000

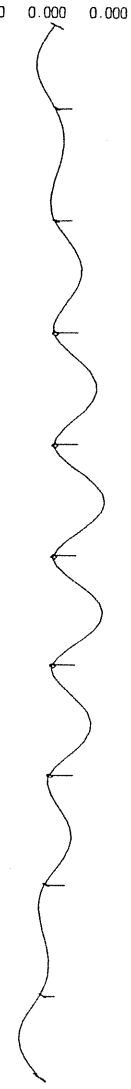


estr Viaducto Papiol - nodos de vibracion
MODO 7 PERIODO 0.529 SEG.
FACTORES DE DISTRIBUCION -0.422 -0.004 25.573
FACTORES DE DISTRIBUCION 0.000 0.000 0.000

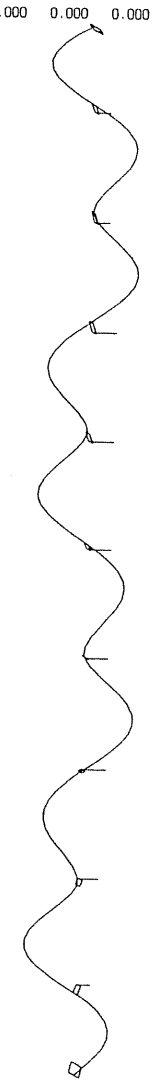


estr Viaducto Papiol - nodos de vibracion
MODO 26 PERIODO 0.250 SEG.
FACTORES DE DISTRIBUCION 1.541 19.339 -0.007
FACTORES DE DISTRIBUCION 0.000 0.000 0.000

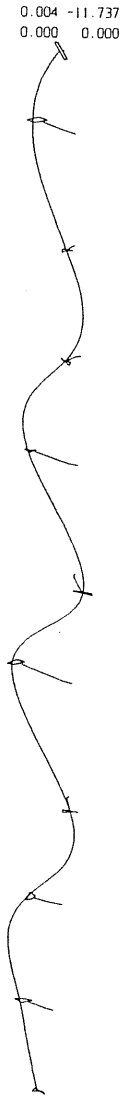
estr Viaducto Papiol - nodos de vibracion
MODO 25 PERIODO 0.280 SEG.
FACTORES DE DISTRIBUCION -0.853 -28.501 -0.019
FACTORES DE DISTRIBUCION 0.000 0.000 0.000



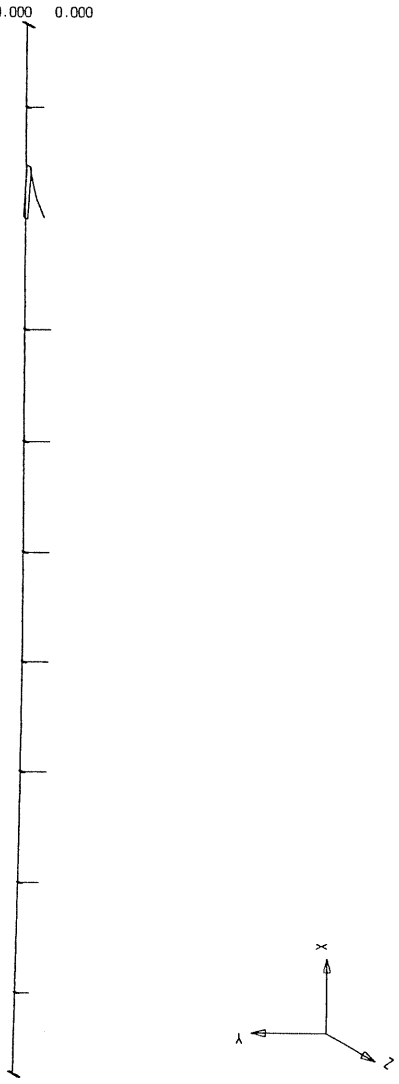
estr Viaducto Papiol - nodos de vibracion
MODO 18 PERIODO 0.372 SEG.
FACTORES DE DISTRIBUCION 6.697 0.584 0.017
FACTORES DE DISTRIBUCION 0.000 0.000 0.000



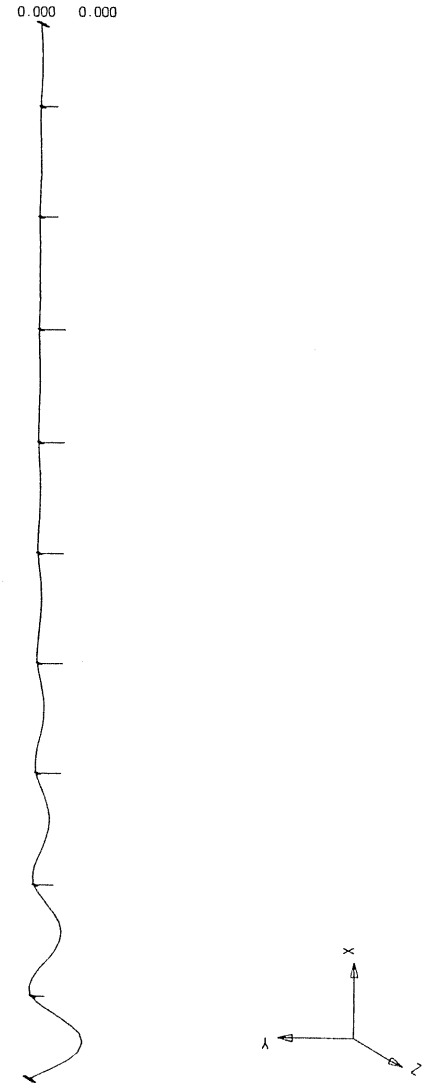
estr Viaducto Papiol - nodos de vibracion
MODO 17 PERIODO 0.401 SEG.
FACTORES DE DISTRIBUCION 0.191 0.004 -11.737
FACTORES DE DISTRIBUCION 0.000 0.000 0.000



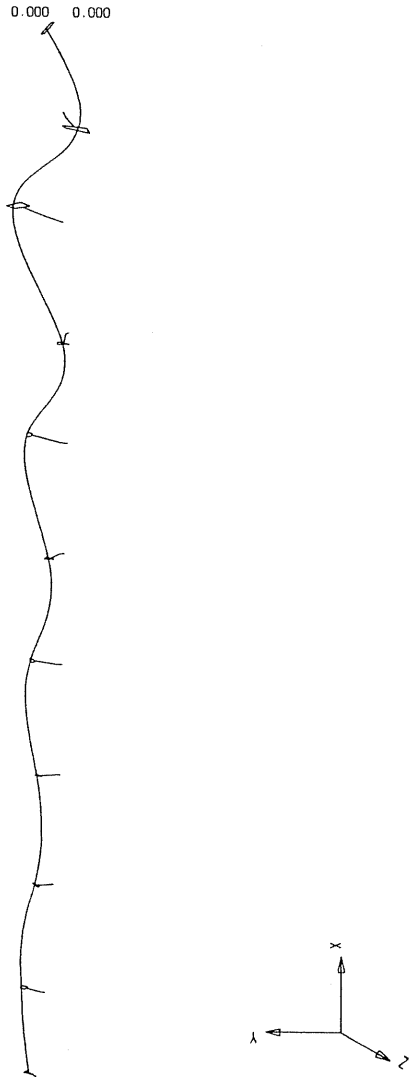
estr Viaducto Papiol - nodos de vibracion
MODO 28 PERIODO 0.239 SEG.
FACTORES DE DISTRIBUCION 9.808 0.001 0.077
FACTORES DE DISTRIBUCION 0.000 0.000 0.000



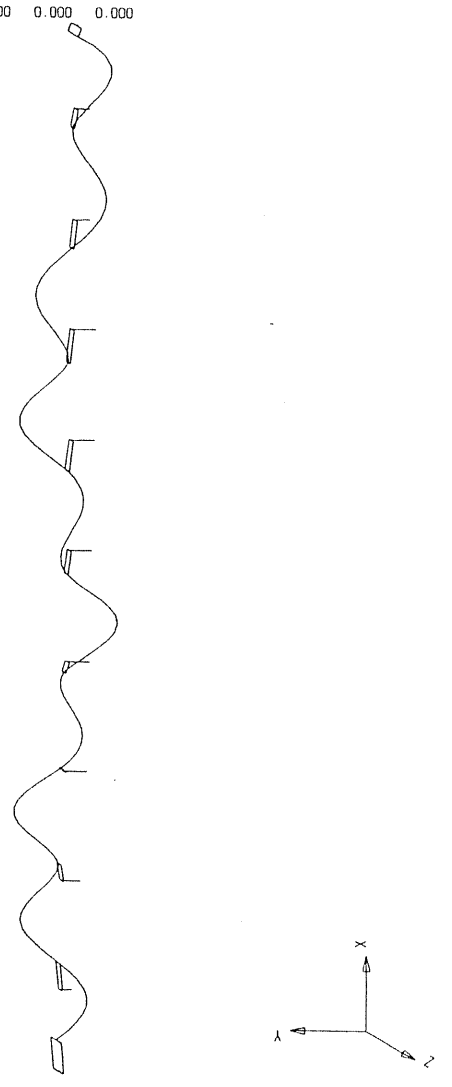
estr Viaducto Papiol - nodos de vibracion
MODO 27 PERIODO 0.247 SEG.
FACTORES DE DISTRIBUCION -0.081 -23.268 0.014
FACTORES DE DISTRIBUCION 0.000 0.000 0.000



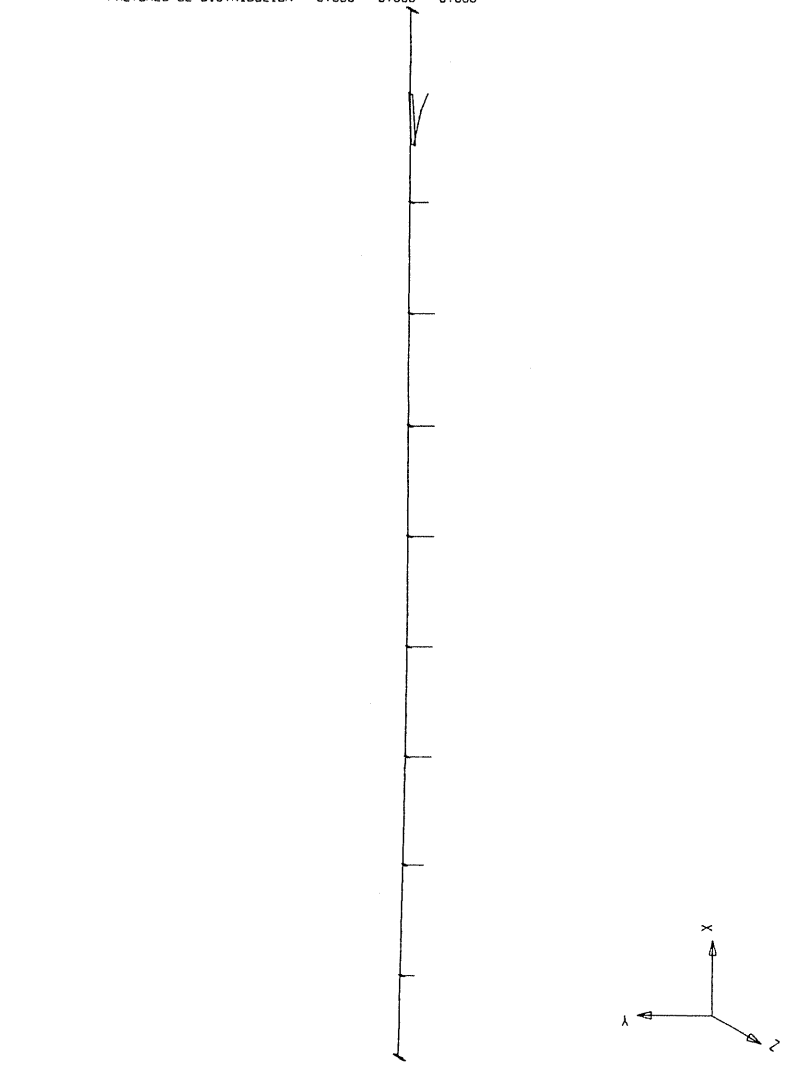
estr Viaducto Papiol - nodos de vibracion
MODO 20 PERIODO 0.337 SEG.
FACTORES DE DISTRIBUCION -0.042 0.040 2.151
FACTORES DE DISTRIBUCION 0.000 0.000 0.000



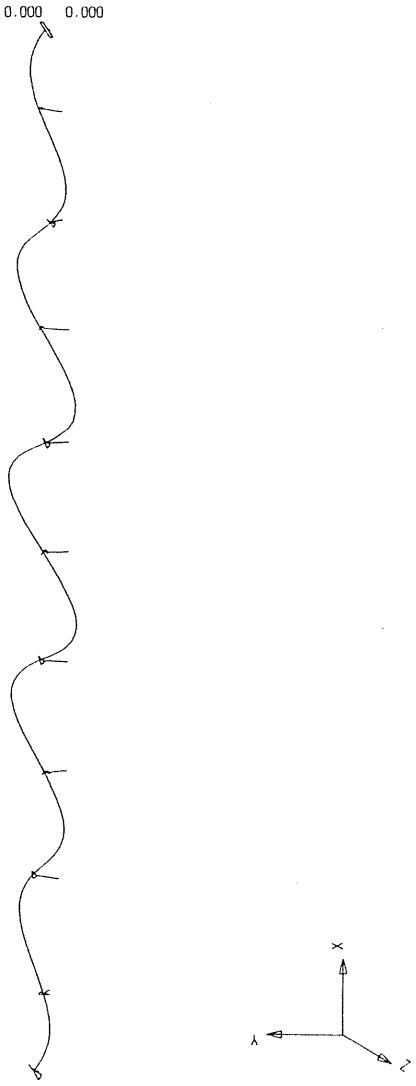
estr Viaducto Papiol - nodos de vibracion
MODO 19 PERIODO 0.347 SEG.
FACTORES DE DISTRIBUCION -15.462 0.015 -0.025
FACTORES DE DISTRIBUCION 0.000 0.000 0.000



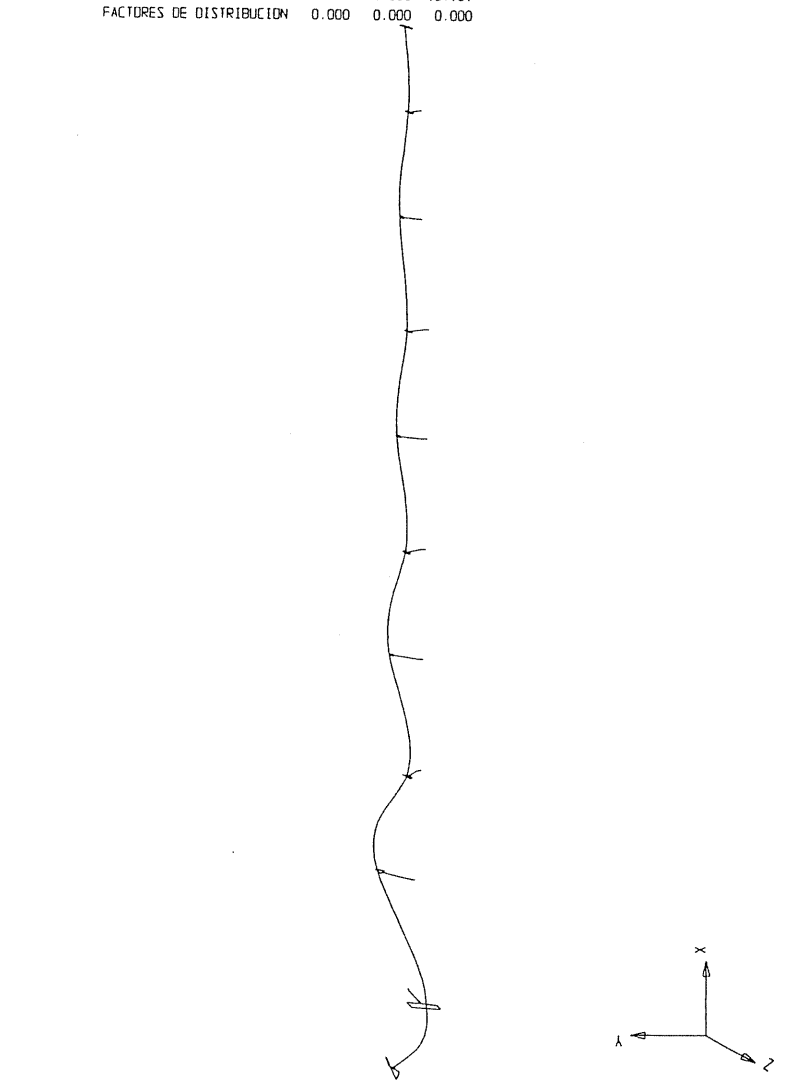
estr Vioducto Popiol - nodos de vibracion
MODO 30 PERIODO 0.213 SEG.
FACTORES DE DISTRIBUCION -9.740 0.000 -0.044
FACTORES DE DISTRIBUCION 0.000 0.000 0.000



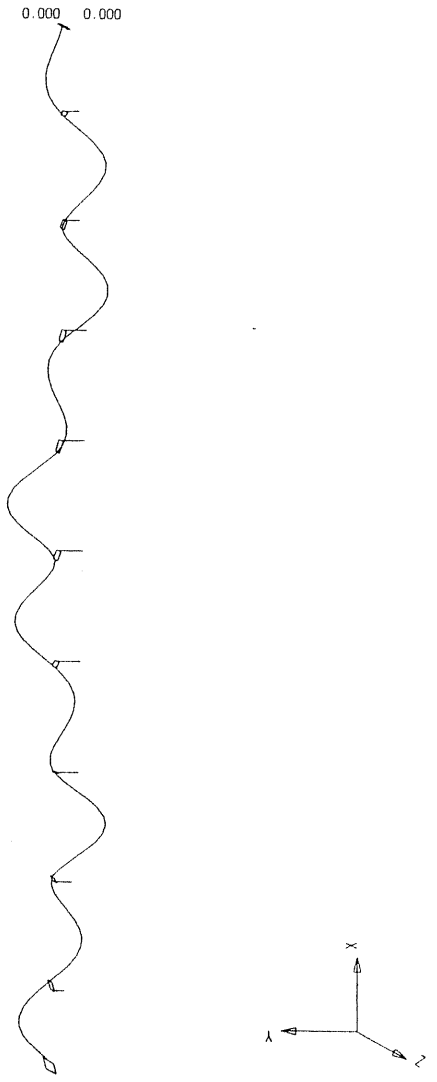
estr Vioducto Popiol - nodos de vibracion
MODO 29 PERIODO 0.227 SEG.
FACTORES DE DISTRIBUCION -0.069 0.005 0.769
FACTORES DE DISTRIBUCION 0.000 0.000 0.000



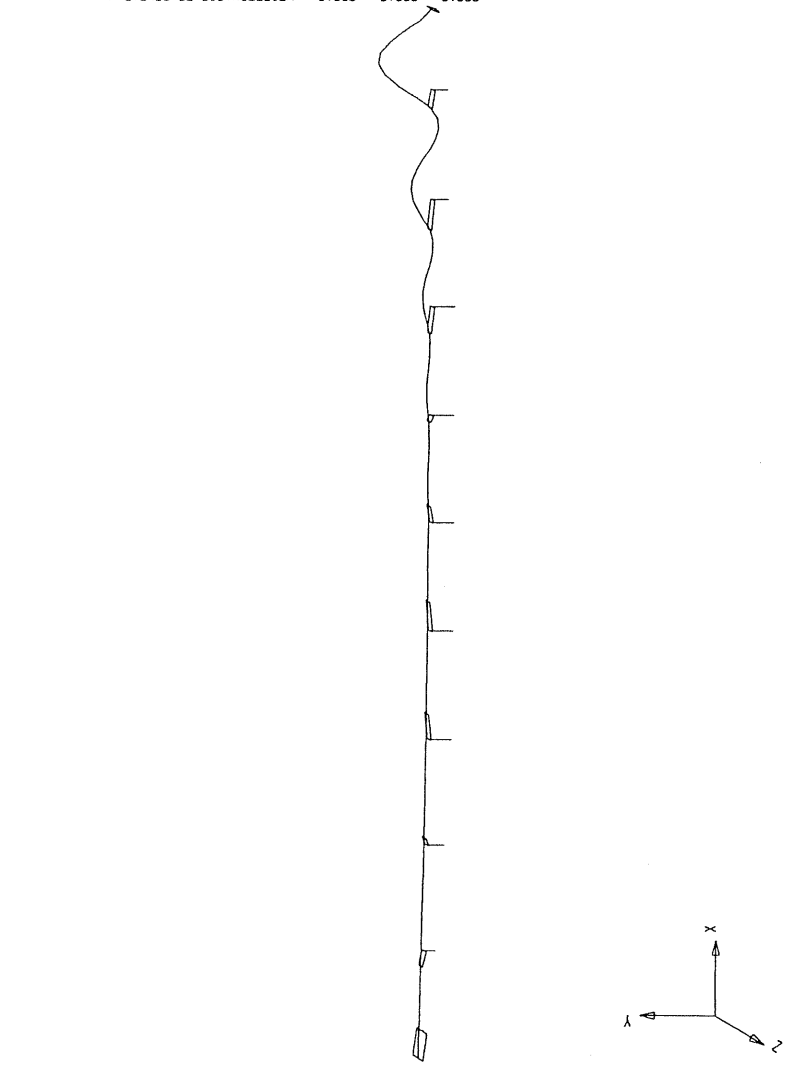
estr Vioducto Popiol - nodos de vibracion
MODO 22 PERIODO 0.308 SEG.
FACTORES DE DISTRIBUCION -0.415 0.006 13.191
FACTORES DE DISTRIBUCION 0.000 0.000 0.000



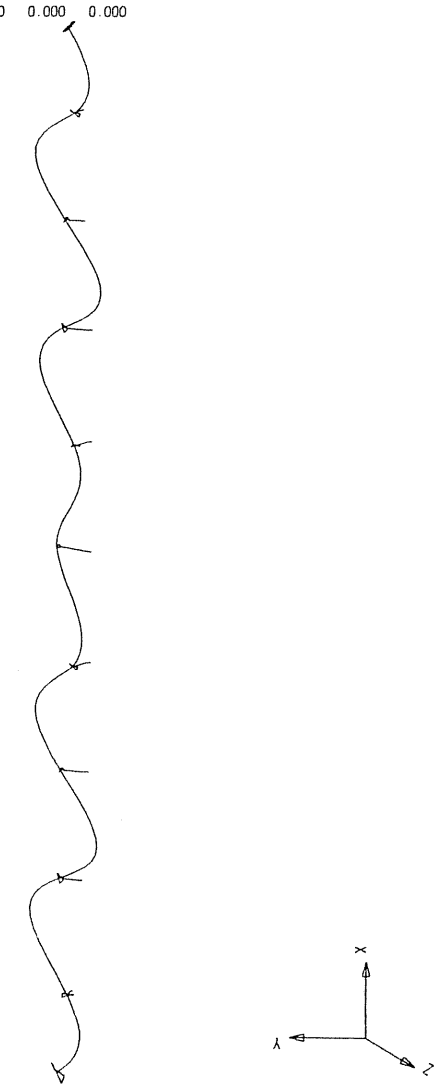
estr Vioducto Popiol - nodos de vibracion
MODO 21 PERIODO 0.327 SEG.
FACTORES DE DISTRIBUCION -7.472 -6.171 0.028
FACTORES DE DISTRIBUCION 0.000 0.000 0.000



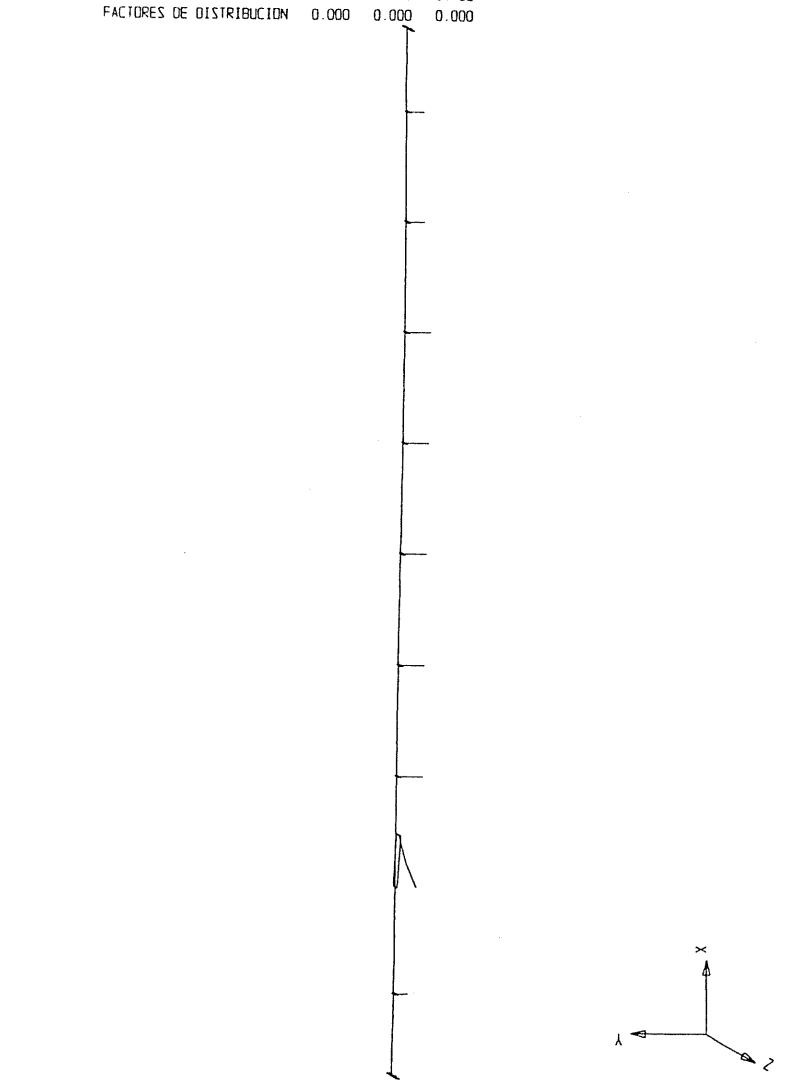
estr Viaducto Papiol - nodos de vibracion
MODO 32 PERIODO 0.197 SEG.
FACTORES DE DISTRIBUCION -10.652 5.761 -0.021
FACTORES DE DISTRIBUCION 0.000 0.000 0.000



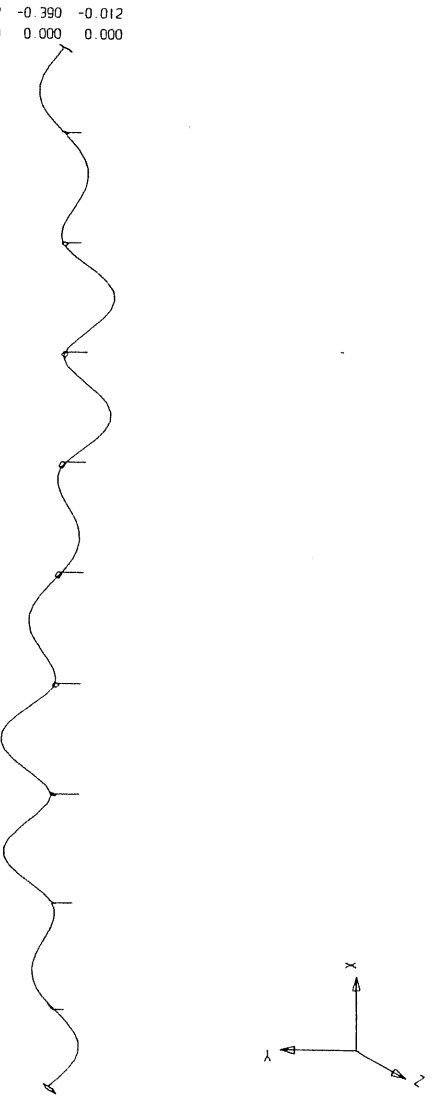
estr Viaducto Papiol - nodos de vibracion
MODO 31 PERIODO 0.206 SEG.
FACTORES DE DISTRIBUCION -0.042 -0.018 4.353
FACTORES DE DISTRIBUCION 0.000 0.000 0.000



estr Viaducto Papiol - nodos de vibracion
MODO 24 PERIODO 0.298 SEG.
FACTORES DE DISTRIBUCION 9.919 0.000 0.402
FACTORES DE DISTRIBUCION 0.000 0.000 0.000



estr Viaducto Papiol - nodos de vibracion
MODO 23 PERIODO 0.300 SEG.
FACTORES DE DISTRIBUCION -2.582 -0.390 -0.012
FACTORES DE DISTRIBUCION 0.000 0.000 0.000



ACCIONES EN BARRAS

CARLOS FERNANDEZ CASADO, S.L.
OFICINA DE PROYECTOS

PROYECTO Viaducto - 1

HOJA _____ DE _____
FECHA _____

DOVELA	INI		MEDIO		FINAL	
	IZDA.	DCHA.	IZDA.	DCHA.	IZDA.	DCHA.
1	2,050	2,455	2,120	2,403	2,175	2,364
2	2,175	2,364	2,244	2,316	2,308	2,274
3	2,308	2,274	2,367	2,238	2,421	2,208
4	2,421	2,208	2,471	2,184	2,515	2,164
5	2,515	2,164	2,554	2,147	2,588	2,132
6	2,588	2,132	2,615	2,118	2,637	2,105
7	2,637	2,105	2,653	2,091	2,665	2,079
8	2,665	2,079	2,673	2,067	2,679	2,058
9	2,679	2,058	2,683	2,050	2,686	2,050
10	2,686	2,050	2,687	2,050	2,685	2,050
11	2,685	2,050	2,679	2,050	2,668	2,050
12	2,668	2,050	2,652	2,050	2,629	2,057
13	2,629	2,057	2,600	2,066	2,566	2,077
14	2,566	2,077	2,528	2,089	2,486	2,103
15	2,486	2,103	2,441	2,117	2,394	2,133
16	2,394	2,133	2,347	2,151	2,300	2,171
17	2,300	2,171	2,254	2,193	2,212	2,219
18	2,212	2,219	2,173	2,250	2,139	2,284
19	2,139	2,284	2,111	2,321	2,088	2,360
20	2,088	2,360	2,070	2,398	2,057	2,434
21	2,057	2,434	2,050	2,468	2,050	2,497
22	2,050	2,497	2,051	2,522	2,058	2,543
23	2,058	2,543	2,067	2,561	2,078	2,573
24	2,078	2,573	2,089	2,581	2,100	2,580
25	2,100	2,580	2,112	2,567	2,128	2,539
26	2,128	2,539	2,150	2,497	2,181	2,443
27	2,181	2,443	2,223	2,380	2,279	2,313
28	2,279	2,313	2,345	2,244	2,419	2,177
29	2,419	2,177	2,476	2,127	2,566	2,050
~~30~~						
~~31~~						
~~32~~						

CARLOS FERNANDEZ CASADO, S.L.
OFICINA DE PROYECTOS

PROYECTO Viaducto - 2

HOJA ____ DE ____
FECHA ____

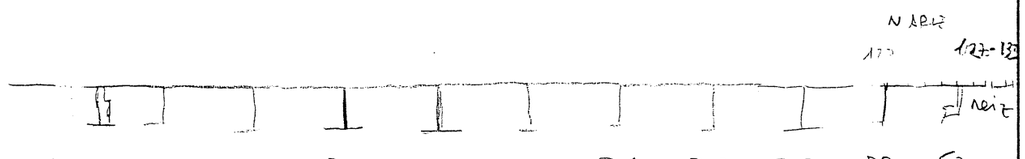
DOVELA	INI		MEDIO		FINAL	
	IZDA.	DCHA.	IZDA.	DCHA.	IZDA.	DCHA.
1	2,050	2,458	2,111	2,404	2,159	2,362
2	2,159	2,362	2,218	2,311	2,272	2,266
3	2,272	2,266	2,321	2,225	2,365	2,190
4	2,365	2,190	2,404	2,160	2,439	2,136
5	2,439	2,136	2,468	2,115	2,492	2,099
6	2,492	2,099	2,511	2,085	2,525	2,073
7	2,525	2,073	2,534	2,064	2,538	2,057
8	2,538	2,057	2,537	2,053	2,531	2,050
9	2,531	2,050	2,520	2,050	2,504	2,051
10	2,504	2,051	2,484	2,054	2,461	2,060
11	2,461	2,060	2,435	2,069	2,408	2,083
12	2,408	2,083	2,381	2,102	2,354	2,126
13	2,354	2,126	2,328	2,154	2,302	2,186
14	2,302	2,186	2,277	2,221	2,253	2,257
15	2,253	2,257	2,229	2,294	2,207	2,329
16	2,207	2,329	2,185	2,364	2,164	2,399
17	2,164	2,399	2,145	2,433	2,127	2,466
18	2,127	2,466	2,110	2,500	2,096	2,534
19	2,096	2,534	2,083	2,567	2,072	2,600
20	2,072	2,600	2,063	2,633	2,056	2,664
21	2,056	2,664	2,050	2,695	2,050	2,724
22	2,050	2,724	2,050	2,748	2,050	2,766
23	2,050	2,766	2,050	2,775	2,050	2,771
24	2,050	2,771	2,050	2,752	2,057	2,717
25	2,057	2,717	2,068	2,667	2,087	2,605
26	2,087	2,605	2,116	2,535	2,159	2,460
27	2,159	2,460	2,221	2,385	2,304	2,310
28	2,304	2,310	2,409	2,239	2,537	2,170
29	2,537	2,170	2,646	2,122	2,541	2,050
30						
31						
32						

CARLOS FERNANDEZ CASADO, S.L.
OFICINA DE PROYECTOS

PROYECTO ____

HOJA ____ DE ____
FECHA ____

ESQUEMA DEL MODELO:



BARRAS (Vanos)	1	-	9	10	-	21	22	33	34	45	46	57	58	69	70	81	82	93	94	105	114
TRANSV. Dcha	134		136	137			140		142		144		146		148		150		152	154	
Izqda	135		138	139			141		143		145		147		149		151		153	155	
NUDOS sobre pila	3		18	37			57		77		97		117		137		157		176	192	

PESO PROPIO

Fuerza vertical

1 a 102 fuer y muj $-23'675$ T/u

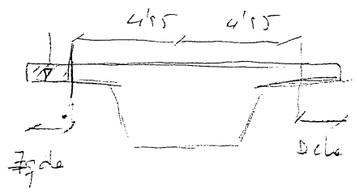
Cárga cte del tablero.

Momento torsor debido a la excentricidad de la losa

Mt si valoriza dcha - izqda

lado 8m (por Lon.)

$$m = (D_{dcha} - D_{zq}) \times 0'20 \times 2'5 \left[4'95 - \frac{|D-D_{zq}|}{2} + \max(D_{zq}, D_{dcha}) \right]$$



ENTREGA:

Carga en Losa.

1	fuer y conc	—	0'01
1	momt z conc	+	0'01
102	fuer y conc	—	-0'01
102	momt z conc	—	-0'01

RIOSTRAS Carga en nudo: —

E-1 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | E-2

PILAS

CARGA MUERTA.

1) Luyo. Momento torsor depende de la diferencia de mch.

PASEOS (depende de la dif. de mch.)

Fuerza vertical 1 a 102 fuer y muj =

Momento torsor carga x diferencia de brazo

Paseo

Δ carc = 0'35 T/m2 x 1'10 = 0'385 T/m @ 0'5 m

Lastrado = 0'75 T/m³ x 0'40 = 0'30 T/m @ 0'90 m

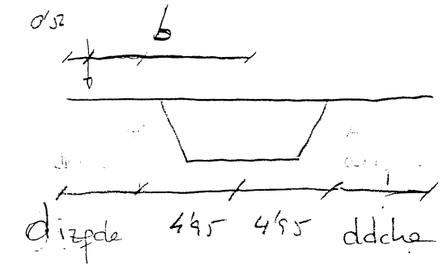
Barandilla 0'4 T/m @ 0'15 m.

Total = 1'025 T/m por cada paseo.

Fza vertical = 2'05 T/m

Momento torsor = 1'025 @ 0'52 m (del borde)

$$m = 1'025 \times (d_{dcha} - d_{izqda})$$



$b = 4'95 + d - 0'52$

2 Losa maciza cuyo momento depende de la excentricidad v/c - tablero.

BALASTO: Área = 5'25 m² ρ = 1'60 T/m³ ⇒ 8'40 T/m

5'25 × 1'60 = 8'40 T/m

Δ30% = 10'92 T/m.

- Δ30% = 5'88 T/m

VÍAS) TRAVIESAS

·Traviesa: 0'52 T/m por vía

Carril: 0'012 T/m por vía

0'64 T/m × 2 vías = 1'28 T/m

Losa maciza cuyo Mtorsor depende de excentricidad

Límite superior 12'2 T/m

Límite inferior = 7'16 T/m

media = 10'94 T/m

CARLOS FERNANDEZ CASADO, S.L.
OFICINA DE PROYECTOS

PROYECTO_____ HOJA____ DE____
FECHA_____

ACCIONES REOLÓGICAS: Fluencia + Retracción (ETHE)

1) Deformación por retracción:

$\varepsilon_{cs} = \varepsilon_{cs0}\ \beta_s(t-t_0)$

$\varepsilon_{cs0} = \varepsilon_s \beta_{HR}$ $\quad \varepsilon_s = (510 - 5f_{ck}) \cdot 10^{-6}$

$\beta_s(t-t_s) = \sqrt{\frac{t-t_s}{0'03\ e^2 + (t-t_s)}}$ $\quad e = \frac{2A_c}{u}$

$\beta_{HR} = 1'55\left[1 - 0'7^3\right] = 1'02$ $\quad HR = 70\%$

$\varepsilon_s = (510 - 5\cdot 50) \cdot 10^{-6} = 320\ 10^{-6}$ $\quad f_{ck} = 50\ N/mm^2$

$\varepsilon_{s0} = 1'02 \times 320 \cdot 10^{-6} = 32'64 \cdot 10^{-5}$

$e = 60\ m$, $\quad A_c = 9'47$ $\quad u = 342'59$ $\quad e = 0'55\ m$

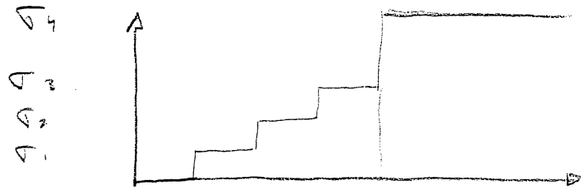
$t - t_s = 10.000\ días \to \infty$ $\quad \beta_s = 0'6969$

$\varepsilon_{cs} = 22'7 \times 10^{-5}$

21 Deformación por fluencia

$$\varepsilon_{cs}(t,t_0) = \sigma(t)\left(\frac{1}{E_{\sigma t}} + \frac{\varphi(t,t_0)}{E_{0,28}}\right)$$

Puente empujado. Se considera una ley de puesta en carga correspondiente a las fases de pretensado de proyecto y servicio



nº dovelas: 29

t_{tot} = 7 dís/dovela = 203 dís.

j med = 102 dís.

$$\varepsilon_\infty = \varphi_\infty(j_1)\frac{\sigma_1}{E_{128}} + \sum_{i=2}^{n}\frac{\Delta\sigma_i}{E_{128}}\varphi_\infty(j)$$

σ_1 = 243 T/m² σ_3 = 730 T/m² N_{prec} = 7300 T

σ_2 = 486 T/m² σ_4 = 1300 T/m² N_{tot} = 13000 T

$\varphi(t,t_0) = \varphi_0\,\beta_c(t-t_0)$ $\quad \varphi_0 = \varphi_{HR}\,\beta(f_{cm})\,\beta(t_0)$

$\varphi_{HR} = 1 + \frac{100 - HR}{9'9 \times e^{1/2}}$ $\quad \beta f_{cm} = \frac{1'68}{\sqrt{f_{cm}+8}}$ $\quad \beta(t_0) = \frac{1}{0'1 + t_0^{0'2}}$

$\beta_c(t-t_0) = \left(\frac{(t-t_0)}{\beta_H + (t-t_0)}\right)^{0'3}$

$\beta_H = 1'5\,e\left[1 + (0'012\,HR)^{18}\right] + 250 \geq 1500$

nº dovelas 29

t_{tot} = 7 dís/dovela × 22 = 203

j med = 102

Coeficientes de fluencia

$\varphi_\infty(3) = 2'227$

$\varphi_\infty(10) = 1'778$

$\varphi_\infty(17) = 1'609$

$\varphi_\infty(91) = 1'143$

Deformaciones de fluencia

$$\varepsilon_{28} = 10\,(50+8)^{1/3} = 38'7\,e\,g\,P-$$

$$\varepsilon_\infty = \frac{1}{\epsilon}\left[2'227 \times 243 + 1'778 \times 243 + 1'609 \times 243 + 1'143 \times 570\right]-$$

$\varepsilon_\infty = 52'09 \times 10^{-5}$

$$\varphi_{\infty\,ef} = \frac{\varepsilon_\infty}{\sigma_n}\,e = \frac{52'45\ 10^{-5}}{1300} \times 3'87\,10^6 = 1'551$$

$$\boxed{\varphi_{\infty\,f} = 1'551}$$

Deformaciones totales

$\varepsilon_\infty + \varepsilon_{cs} = 52'09 + 22'7 \cdot 74'79\ 10^{-5} \cdot \frac{\varepsilon_{\infty t}}{1'562} = 40'2\,°C$

Temperatura

Incrto de temperatura , α = 0'00001

1a 114 ± 16'80 °C

gradiente

Coef de temperatura 0'00001

1a 1.14 plano x y arpe inf cent 3'08 -3'08 3'30

Fluencia y retracción

Coef. de temp 0'00001

1 a 114 - 48'2

Asientos $\frac{0'01}{1'55} = 0'65$ $\varphi_\infty = 1'58$

desp de nudo = desp y - 0'0065

Nudos: extremo inferior de pila y estribo

*

REACCIONES HORIZONTALES POR TEFLÓN.

De cálculo previos se obtienen las reacciones de carga permanente

Las reacciones horizontales en cabeza de pilas se obtienen como 005 x Reacción vertical para cada carga permanente

Se construirán con el resto de las acciones

HIPOTESIS 71

carga permanente (t=0)(sup)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
182	7	340.17	0.00	-3.47	0.00	0.00	0.00
182	6	-340.17	0.00	3.47	0.00	5.85	-0.01
183	2	354.81	0.00	0.00	0.00	0.00	0.00
183	1	-354.81	0.00	0.00	0.00	0.00	-0.01
184	23	1157.32	0.00	5.79	0.00	0.00	0.00
184	22	-1157.32	0.00	-5.79	0.00	-9.77	0.00
185	17	1083.60	0.00	0.00	0.00	0.00	0.00
185	16	-1083.60	0.00	0.00	0.00	0.00	0.00
186	42	1268.33	0.00	0.48	0.00	0.00	0.00
186	43	-1268.33	0.00	-0.48	0.00	-0.81	0.00
187	36	1064.02	0.00	0.00	0.00	0.00	0.00
187	35	-1064.02	0.00	0.00	0.00	0.00	0.00
188	62	1276.80	0.00	-2.82	0.00	0.00	0.00
188	63	-1276.80	0.00	2.82	0.00	4.75	0.00
189	56	1026.06	0.00	0.00	0.00	0.00	0.00
189	55	-1026.06	0.00	0.00	0.00	0.00	0.00
190	82	1284.20	0.00	-0.97	0.00	0.00	0.00
190	83	-1284.20	0.00	0.97	0.00	1.64	0.00
191	76	1026.83	0.00	0.00	0.00	0.00	0.00
191	75	-1026.83	0.00	0.00	0.00	0.00	0.00
192	102	1236.09	0.00	-1.13	0.00	0.00	0.00
192	103	-1236.09	0.00	1.13	0.00	1.90	0.00
193	96	1072.08	0.00	0.00	0.00	0.00	0.00
193	95	-1072.08	0.00	0.00	0.00	0.00	0.00
194	122	1160.23	0.00	-1.01	0.00	0.00	0.00
194	123	-1160.23	0.00	1.01	0.00	1.70	0.00
195	116	1151.12	0.00	0.00	0.00	0.00	0.00
195	115	-1151.12	0.00	0.00	0.00	0.00	0.00
196	142	1078.05	0.00	6.01	0.00	0.00	0.00
196	143	-1078.05	0.00	-6.01	0.00	-10.14	0.00
197	136	1223.86	0.00	0.00	0.00	0.00	0.00
197	135	-1223.86	0.00	0.00	0.00	0.00	0.00
198	161	1049.93	0.00	-1.74	0.00	0.00	0.00
198	162	-1049.93	0.00	1.74	0.00	2.94	0.00
199	155	1284.84	0.00	0.00	0.00	0.00	0.00
199	156	-1284.84	0.00	0.00	0.00	0.00	0.00
200	180	1059.11	0.00	-1.59	0.00	0.00	0.00
200	181	-1059.11	0.00	1.59	0.00	2.69	0.00
201	175	1173.42	0.00	0.00	0.00	0.00	0.00
201	174	-1173.42	0.00	0.00	0.00	0.00	0.00
202	196	404.33	0.00	0.44	0.00	0.00	0.00
202	195	-404.33	0.00	-0.44	0.00	-0.74	0.01
203	191	404.87	0.00	0.00	0.00	0.00	0.00
203	190	-404.87	0.00	0.00	0.00	0.00	0.01

HIPOTESIS 29

hipo 29 F.Teflon +

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
1	3	-34.75	-3.34	0.00	0.32	-3.11	-58.24
1	8	34.75	3.34	0.00	-0.32	3.12	41.56
2	8	-34.75	-3.34	0.00	0.32	-3.12	-41.56
2	9	34.75	3.34	0.00	-0.32	3.14	24.88
3	9	-34.75	-3.34	-0.03	0.34	-3.14	-24.88
3	10	34.75	3.34	0.03	-0.34	3.29	8.20
4	10	-34.75	-3.34	-0.02	0.33	-3.29	-8.20
4	11	34.75	3.34	0.02	-0.33	3.37	-8.48
5	11	-34.75	-3.34	-0.03	0.33	-3.37	8.48
5	12	34.75	3.34	0.03	-0.33	3.52	-25.16
6	12	-34.75	-3.34	-0.06	0.31	-3.52	25.16
6	13	34.75	3.34	0.06	-0.31	3.80	-41.84
7	13	-34.75	-3.34	-0.04	0.33	-3.80	41.84
7	14	34.75	3.34	0.04	-0.33	4.02	-58.52
8	14	-34.75	-3.34	-0.07	0.28	-4.02	58.52
8	15	34.75	3.34	0.07	-0.28	4.37	-75.20
9	15	-34.75	-3.34	-0.07	0.28	-4.37	75.20
9	18	34.75	3.34	0.07	-0.28	4.72	-91.88
10	18	-146.79	-3.22	-0.03	1.51	1.88	-95.91
10	24	146.79	3.22	0.03	-1.51	-1.73	79.79
11	24	-146.80	-3.22	-0.09	1.54	1.73	-79.79
11	25	146.80	3.22	0.09	-1.54	-1.30	63.68
12	25	-146.80	-3.22	-0.20	1.59	1.30	-63.68
12	26	146.80	3.22	0.20	-1.59	-0.29	47.56
13	26	-146.80	-3.22	-0.14	1.57	0.29	-47.56
13	27	146.80	3.22	0.14	-1.57	0.43	31.45
14	27	-146.80	-3.22	-0.20	1.59	-0.43	-31.45
14	28	146.80	3.22	0.20	-1.59	1.43	15.33
15	28	-146.79	-3.22	-0.31	1.60	-1.43	-15.33
15	29	146.79	3.22	0.31	-1.60	3.00	-0.78
16	29	-146.80	-3.22	-0.26	1.60	-3.00	0.78
16	30	146.80	3.22	0.26	-1.60	4.30	-16.90
17	30	-146.79	-3.22	-0.32	1.59	-4.30	16.90
17	31	146.79	3.22	0.32	-1.59	5.88	-33.01
18	31	-146.80	-3.22	-0.37	1.58	-5.88	33.02
18	32	146.80	3.22	0.37	-1.58	7.75	-49.13
19	32	-146.79	-3.22	-0.37	1.58	-7.75	49.13
19	33	146.79	3.22	0.37	-1.58	9.62	-65.25
20	33	-146.79	-3.22	-0.43	1.55	-9.62	65.25
20	34	146.79	3.22	0.43	-1.55	11.76	-81.36
21	34	-146.80	-3.22	-0.49	1.52	-11.76	81.36
21	37	146.80	3.22	0.49	-1.52	14.20	-97.48
22	37	-263.41	-3.25	0.09	2.16	3.75	-97.97
22	44	263.41	3.25	-0.09	-2.16	-4.20	81.74
23	44	-263.42	-3.25	-0.01	2.20	4.20	-81.74
23	45	263.42	3.25	0.01	-2.20	-4.13	65.50
24	45	-263.42	-3.25	-0.12	2.22	4.13	-65.50
24	46	263.42	3.25	0.12	-2.22	-3.56	49.26
25	46	-263.41	-3.25	-0.11	2.22	3.56	-49.26
25	47	263.41	3.25	0.11	-2.22	-2.98	33.02

26	47	-263.41	-3.25	-0.22	2.23	2.98	-33.02
26	48	263.41	3.25	0.22	-2.23	-1.91	16.78
27	48	-263.41	-3.25	-0.22	2.24	1.91	-16.78
27	49	263.41	3.25	0.22	-2.24	-0.80	0.54
28	49	-263.41	-3.25	-0.32	2.24	0.80	-0.54
28	50	263.41	3.25	0.32	-2.24	0.80	-15.70
29	50	-263.41	-3.25	-0.43	2.23	-0.80	15.70
29	51	263.41	3.25	0.43	-2.23	2.93	-31.93
30	51	-263.41	-3.25	-0.53	2.22	-2.93	31.94
30	52	263.41	3.25	0.53	-2.22	5.56	-48.17
31	52	-263.41	-3.25	-0.53	2.22	-5.56	48.17
31	53	263.41	3.25	0.53	-2.22	8.19	-64.41
32	53	-263.41	-3.25	-0.63	2.19	-8.19	64.41
32	54	263.41	3.25	0.63	-2.19	11.34	-80.65
33	54	-263.41	-3.25	-0.63	2.19	-11.34	80.65
33	57	263.41	3.25	0.63	-2.19	14.48	-96.89
34	57	-378.56	-3.21	0.08	2.35	7.60	-96.09
34	64	378.56	3.21	-0.08	-2.35	-8.01	80.07
35	64	-378.56	-3.21	0.09	2.35	8.01	-80.07
35	65	378.56	3.21	-0.09	-2.35	-8.46	64.04
36	65	-378.56	-3.21	-0.20	2.40	8.46	-64.04
36	66	378.56	3.21	0.20	-2.40	-7.44	48.01
37	66	-378.56	-3.21	-0.21	2.40	7.44	-48.01
37	67	378.56	3.21	0.21	-2.40	-6.38	31.99
38	67	-378.56	-3.21	-0.35	2.41	6.38	-31.99
38	68	378.56	3.21	0.35	-2.41	-4.64	15.96
39	68	-378.56	-3.21	-0.21	2.40	4.64	-15.96
39	69	378.56	3.21	0.21	-2.40	-3.57	-0.06
40	69	-378.55	-3.21	-0.65	2.40	3.57	0.07
40	70	378.55	3.21	0.65	-2.40	-0.32	-16.09
41	70	-378.56	-3.21	-0.50	2.41	0.32	16.09
41	71	378.56	3.21	0.50	-2.41	2.19	-32.12
42	71	-378.56	-3.21	-0.65	2.40	-2.19	32.12
42	72	378.56	3.21	0.65	-2.40	5.44	-48.14
43	72	-378.56	-3.21	-0.80	2.38	-5.44	48.14
43	73	378.56	3.21	0.80	-2.38	9.42	-64.17
44	73	-378.56	-3.21	-0.80	2.38	-9.42	64.17
44	74	378.56	3.21	0.80	-2.38	13.44	-80.19
45	74	-378.56	-3.21	-0.95	2.35	-13.44	80.19
45	77	378.56	3.21	0.95	-2.35	18.17	-96.22
46	77	-494.11	-3.26	0.27	2.03	4.60	-97.44
46	84	494.11	3.26	-0.27	-2.03	-5.96	81.12
47	84	-494.11	-3.26	0.26	2.04	5.96	-81.12
47	85	494.11	3.26	-0.26	-2.04	-7.28	64.80
48	85	-494.11	-3.26	0.08	2.06	7.28	-64.79
48	86	494.11	3.26	-0.08	-2.06	-7.66	48.47
49	86	-494.11	-3.26	-0.11	2.08	7.66	-48.47
49	87	494.11	3.26	0.11	-2.08	-7.11	32.14
50	87	-494.11	-3.26	-0.12	2.08	7.11	-32.14
50	88	494.11	3.26	0.12	-2.08	-6.50	15.82
51	88	-494.11	-3.26	-0.31	2.09	6.50	-15.82
51	89	494.11	3.26	0.31	-2.09	-4.95	-0.51
52	89	-494.11	-3.26	-0.31	2.09	4.95	0.51
52	90	494.11	3.26	0.31	-2.09	-3.40	-16.83
53	90	-494.11	-3.26	-0.51	2.08	3.40	16.83
53	91	494.11	3.26	0.51	-2.08	-0.87	-33.15
54	91	-494.11	-3.26	-0.69	2.07	0.87	33.16
54	92	494.11	3.26	0.69	-2.07	2.60	-49.48
55	92	-494.11	-3.26	-0.89	2.05	-2.60	49.48
55	93	494.11	3.26	0.89	-2.05	7.07	-65.81
56	93	-494.11	-3.26	-0.88	2.05	-7.07	65.81
56	94	494.11	3.26	0.88	-2.05	11.48	-82.13
57	94	-494.11	-3.26	-0.89	2.05	-11.48	82.13
57	97	494.11	3.26	0.89	-2.05	15.94	-98.45
58	97	-609.52	-3.08	0.54	1.37	-1.15	-94.97
58	104	609.52	3.08	-0.54	-1.37	-1.56	79.56
59	104	-609.52	-3.08	0.55	1.37	1.56	-79.56
59	105	609.52	3.08	-0.55	-1.37	-4.33	64.14
60	105	-609.52	-3.08	0.30	1.40	4.33	-64.14
60	106	609.52	3.08	-0.30	-1.40	-5.82	48.73
61	106	-609.52	-3.08	0.31	1.40	5.82	-48.73
61	107	609.52	3.08	-0.31	-1.40	-7.37	33.32
62	107	-609.51	-3.08	0.07	1.41	7.37	-33.32
62	108	609.51	3.08	-0.07	-1.41	-7.71	17.90
63	108	-609.52	-3.08	-0.17	1.42	7.71	-17.90
63	109	609.52	3.08	0.17	-1.42	-6.88	2.49
64	109	-609.52	-3.08	0.07	1.42	6.88	-2.49
64	110	609.52	3.08	-0.07	-1.42	-7.22	-12.92
65	110	-609.52	-3.08	-0.41	1.41	7.22	12.93
65	111	609.52	3.08	0.41	-1.41	-5.17	-28.34
66	111	-609.52	-3.08	-0.64	1.40	5.17	28.34
66	112	609.52	3.08	0.64	-1.40	-1.97	-43.75
67	112	-609.51	-3.08	-0.65	1.40	1.97	43.75
67	113	609.51	3.08	0.65	-1.40	1.29	-59.17
68	113	-609.51	-3.08	-0.88	1.37	-1.29	59.17
68	114	609.51	3.08	0.88	-1.37	5.72	-74.58
69	114	-609.51	-3.08	-0.88	1.37	-5.72	74.58
69	117	609.51	3.08	0.88	-1.37	10.14	-89.99
70	117	-725.08	-3.78	0.91	-0.70	-9.10	-103.70
70	124	725.08	3.78	-0.91	0.70	4.55	84.79
71	124	-725.08	-3.78	1.20	-0.74	-4.55	-84.79
71	125	725.08	3.78	-1.20	0.74	-1.45	65.89
72	125	-725.08	-3.78	0.91	-0.71	1.45	-65.89
72	126	725.08	3.78	-0.91	0.71	-6.00	46.99
73	126	-725.08	-3.78	0.62	-0.69	6.00	-46.99
73	127	725.08	3.78	-0.62	0.69	-9.10	28.09
74	127	-725.08	-3.78	0.34	-0.68	9.10	-28.09
74	128	725.08	3.78	-0.34	0.68	-10.82	9.18
75	128	-725.08	-3.78	0.34	-0.68	10.82	-9.18
75	129	725.08	3.78	-0.34	0.68	-12.55	-9.72
76	129	-725.08	-3.78	0.07	-0.68	12.55	9.72
76	130	725.08	3.78	-0.07	0.68	-12.89	-28.62
77	130	-725.08	-3.78	-0.22	-0.70	12.89	28.62
77	131	725.08	3.78	0.22	0.70	-11.78	-47.53
78	131	-725.08	-3.78	0.05	-0.68	11.78	47.53
78	132	725.08	3.78	-0.05	0.68	-12.06	-66.43
79	132	-725.08	-3.78	-0.79	-0.76	12.06	66.43
79	133	725.08	3.78	0.79	0.76	-8.12	-85.33
80	133	-725.08	-3.78	-0.51	-0.72	8.12	85.33
80	134	725.08	3.78	0.51	0.72	-5.56	-104.24
81	134	-725.08	-3.78	-0.79	-0.76	5.56	104.24
81	137	725.08	3.78	0.79	0.76	-1.63	-123.14
82	137	-840.18	-1.05	1.39	-2.74	-10.99	-69.76
82	144	840.18	1.05	-1.39	2.74	4.05	64.53
83	144	-840.18	-1.05	0.73	-2.69	-4.05	-64.54
83	145	840.18	1.05	-0.73	2.69	0.38	59.31
84	145	-840.18	-1.05	0.72	-2.69	-0.38	-59.31
84	146	840.18	1.05	-0.72	2.69	-3.20	54.08
85	146	-840.18	-1.05	0.73	-2.69	3.20	-54.08
85	147	840.18	1.05	-0.73	2.69	-6.86	48.85
86	147	-840.18	-1.05	0.08	-2.65	6.86	-48.86
86	148	840.18	1.05	-0.08	2.65	-7.25	43.63
87	148	-840.18	-1.05	0.06	-2.65	7.25	-43.63
87	149	840.18	1.05	-0.06	2.65	-7.56	38.40
88	149	-840.18	-1.05	-0.24	-2.64	7.56	-38.40
88	150	840.18	1.05	0.24	2.64	-6.35	33.17
89	150	-840.18	-1.05	-0.26	-2.64	6.35	-33.17
89	151	840.18	1.05	0.26	2.64	-5.05	27.95

90	151	-840.18	-1.05	-0.59	-2.63	5.05	-27.95
90	152	840.18	1.05	0.59	2.63	-2.08	22.72
91	152	-840.18	-1.05	-0.58	-2.63	2.08	-22.72
91	153	840.18	1.05	0.58	2.63	0.81	17.49
92	153	-840.18	-1.05	-0.91	-2.62	-0.81	-17.49
92	154	840.18	1.05	0.91	2.62	5.38	12.27
93	154	-840.18	-1.05	-1.23	-2.61	-5.38	-12.27
93	157	840.18	1.05	1.23	2.61	11.54	7.04
94	157	-956.92	-11.77	1.95	-2.77	-32.00	-202.69
94	163	956.92	11.77	-1.95	2.77	22.27	143.82
95	163	-956.92	-11.77	1.58	-2.71	-22.27	-143.82
95	164	956.92	11.77	-1.58	2.71	14.36	84.95
96	164	-956.92	-11.77	1.22	-2.68	-14.36	-84.95
96	165	956.92	11.77	-1.22	2.68	8.27	26.08
97	165	-956.92	-11.77	1.20	-2.68	-8.27	-26.08
97	166	956.92	11.77	-1.20	2.68	2.28	-32.80
98	166	-956.92	-11.77	0.84	-2.69	-2.28	32.80
98	167	956.92	11.77	-0.84	2.69	-1.90	-91.67
99	167	-956.92	-11.77	0.47	-2.73	1.90	91.67
99	168	956.92	11.77	-0.47	2.73	-4.25	-150.54
100	168	-956.92	-11.77	0.45	-2.73	4.25	150.54
100	169	956.92	11.77	-0.45	2.73	-6.52	-209.42
101	169	-956.92	-11.77	0.09	-2.81	6.52	209.41
101	170	956.92	11.77	-0.09	2.81	-6.96	-268.29
102	170	-956.92	-11.77	0.09	-2.81	6.96	268.29
102	171	956.92	11.77	-0.09	2.81	-7.40	-327.16
103	171	-956.92	-11.77	-0.66	-3.07	7.40	327.16
103	172	956.92	11.77	0.66	3.07	-4.11	-386.03
104	172	-956.92	-11.77	-0.66	-3.07	4.11	386.03
104	173	956.92	11.77	0.66	3.07	-0.83	-444.90
105	173	-956.92	-11.77	-0.68	-3.08	0.83	444.90
105	176	956.92	11.77	0.68	3.08	2.56	-503.78
106	176	-1068.55	47.08	1.40	-5.34	-12.46	316.69
106	182	1068.55	-47.08	-1.40	5.34	5.44	-81.28
107	182	-1068.55	47.08	0.98	-5.37	-5.44	81.28
107	183	1068.55	-47.08	-0.98	5.37	0.55	154.12
108	183	-1068.55	47.08	0.96	-5.37	-0.55	-154.12
108	184	1068.55	-47.08	-0.96	5.37	-4.23	389.53
109	184	-1068.55	47.08	0.57	-5.23	4.23	-389.53
109	185	1068.55	-47.08	-0.57	5.23	-7.09	624.94
110	185	-1068.55	47.08	0.55	-5.21	7.09	-624.94
110	186	1068.55	-47.08	-0.55	5.21	-9.84	860.34
111	186	-1068.55	47.08	-0.28	-4.54	9.84	-860.35
111	187	1068.55	-47.08	0.28	4.54	-8.42	1095.75
112	187	-1068.55	47.08	-0.28	-4.54	8.42	-1095.75
112	188	1068.55	-47.08	0.28	4.54	-7.00	1331.15
113	188	-1068.55	47.08	-0.69	-4.04	7.00	-1331.16
113	189	1068.55	-47.08	0.69	4.04	-3.55	1566.56
114	189	-1068.55	47.08	-0.71	-4.00	3.55	-1566.56
114	192	1068.55	-47.08	0.71	4.00	0.00	1801.97
134	6	0.00	-1.63	17.01	-28.51	0.00	0.00
134	3	0.00	1.63	-17.01	28.51	-72.29	-6.94
135	3	0.00	1.70	-17.74	29.73	75.40	7.24
135	1	0.00	-1.70	17.74	-29.73	0.00	0.00
136	22	0.02	0.43	57.93	-97.05	-0.01	0.04
136	18	-0.02	-0.43	-57.93	97.05	-101.35	0.71
137	18	0.00	0.31	-54.13	90.74	94.73	0.55
137	16	0.00	-0.31	54.13	-90.74	0.01	0.00
138	43	0.56	0.45	63.43	-106.30	-0.02	0.95
138	37	-0.56	-0.45	-63.43	106.30	-111.05	-0.16
139	37	-0.01	0.47	-53.18	89.15	93.05	0.81
139	35	0.01	-0.47	53.18	-89.15	-0.05	0.02
140	63	0.84	0.47	63.89	-107.03	0.03	1.41
140	57	-0.84	-0.47	-63.89	107.03	-111.80	-0.58
141	57	0.00	0.43	-51.33	85.95	89.73	0.75
141	55	0.00	-0.43	51.33	-85.95	-0.04	0.00
142	83	1.39	0.55	64.24	-107.68	-0.02	2.35
142	77	-1.39	-0.55	-64.24	107.68	-112.48	-1.39
143	77	0.00	0.61	-51.29	85.99	89.73	1.07
143	75	0.00	-0.61	51.29	-85.99	0.00	0.00
144	103	1.87	0.80	61.82	-103.69	0.02	3.15
144	97	-1.87	-0.80	-61.82	103.69	-108.37	-1.75
145	97	0.00	0.62	-53.52	89.73	93.60	1.08
145	95	0.00	-0.62	53.52	-89.73	-0.01	0.00
146	123	2.32	0.17	58.05	-97.28	-0.02	3.92
146	117	-2.32	-0.17	-58.05	97.28	-101.66	-3.62
147	117	-0.01	0.87	-57.53	96.41	100.63	1.51
147	115	0.01	-0.87	57.53	-96.41	0.02	0.01
148	143	2.15	1.85	53.93	-90.37	0.00	3.63
148	137	-2.15	-1.85	-53.93	90.37	-94.41	-0.39
149	137	0.00	-0.89	-61.20	102.53	106.99	-1.55
149	135	0.00	0.89	61.20	-102.53	0.00	0.01
150	162	3.19	-3.87	52.51	-88.01	0.00	5.38
150	157	-3.19	3.87	-52.51	88.01	-91.92	-12.15
151	157	0.00	6.86	-64.22	107.65	112.38	12.00
151	156	0.00	-6.86	64.22	-107.65	0.00	0.00
152	181	2.44	30.00	52.97	-88.78	0.00	4.11
152	176	-2.44	-30.00	-52.97	88.78	-92.71	48.40
153	176	0.00	-28.86	-58.65	98.31	102.62	-50.49
153	174	0.00	28.86	58.65	-98.31	-0.01	0.00
154	195	0.92	-22.93	-534.27	900.98	0.00	1.55
154	192	-0.92	22.93	534.27	-900.98	2270.67	-99.00
155	192	0.00	24.15	534.27	-900.98	-2270.66	102.65
155	190	0.00	-24.15	-534.27	900.98	0.00	0.00
156	7	0.00	1.63	0.00	0.00	0.00	0.00
156	4	0.00	-1.63	17.01	0.00	72.12	6.93
157	4	0.00	-1.70	17.74	0.00	-75.22	-7.25
157	2	0.00	1.70	0.00	0.00	0.00	0.00
158	23	-0.02	-0.43	0.00	0.00	0.00	0.00
158	19	0.02	0.43	57.90	0.00	100.76	-0.75
159	19	0.00	-0.31	54.14	0.00	-94.20	-0.55
159	17	0.00	0.31	0.00	0.00	0.00	0.00
160	42	-0.55	-0.45	-0.01	0.00	0.01	0.00
160	38	0.55	0.45	63.43	0.00	110.40	-0.79
161	38	0.00	-0.47	53.20	0.00	-92.55	-0.83
161	36	0.00	0.47	0.00	0.00	0.00	0.00
162	62	-0.83	-0.47	0.01	0.00	0.00	0.00
162	58	0.83	0.47	63.85	0.00	111.15	-0.83
163	58	0.00	-0.43	51.30	0.00	-89.21	-0.75
163	56	0.00	0.43	-0.02	0.00	0.00	0.00
164	82	-1.39	-0.55	-0.01	0.00	0.00	0.00
164	78	1.39	0.55	64.25	0.00	111.85	-0.96
165	78	0.00	-0.61	51.31	0.00	-89.19	-1.06
165	76	0.00	0.61	0.00	0.00	0.00	0.00
166	102	-1.87	-0.80	0.00	0.00	-0.02	0.00
166	98	1.87	0.80	61.87	0.00	107.76	-1.40
167	98	0.00	-0.62	53.53	0.00	-93.04	-1.08
167	96	0.00	0.62	0.01	0.00	0.02	0.00
168	122	-2.32	-0.17	-0.03	0.00	0.01	0.00
168	118	2.32	0.17	58.08	0.00	101.06	-0.30
169	118	0.00	-0.87	57.51	0.00	-100.03	-1.52
169	116	0.00	0.87	0.01	0.00	0.00	0.00
170	142	-2.15	-1.85	0.00	0.00	-0.01	0.00
170	138	2.15	1.85	53.92	0.00	93.86	-3.24
171	138	0.00	0.89	61.17	0.00	-106.40	1.55
171	136	0.00	-0.89	0.00	0.00	-0.01	0.00
172	161	-3.19	3.87	0.00	0.00	0.00	0.00
172	158	3.19	-3.87	52.51	0.00	91.39	6.77

173	158	0.00	-6.86	64.23	0.00	-111.72	-12.00
173	155	0.00	6.86	0.00	0.00	0.00	0.00
174	180	-2.44	-30.00	0.00	0.00	0.00	0.00
174	177	2.44	30.00	52.97	0.00	92.19	-52.50
175	177	0.00	28.86	58.66	0.00	-102.04	50.49
175	175	0.00	-28.86	0.00	0.00	0.00	0.00
176	196	-0.92	22.93	554.49	0.00	0.00	0.00
176	193	0.92	-22.93	-534.27	0.00	-2270.87	97.45
177	193	0.00	-24.15	-534.27	0.00	2270.87	-102.65
177	191	0.00	24.15	554.52	0.00	0.00	0.00
182	7	-1.63	0.00	0.00	0.00	0.00	0.00
182	6	1.63	-17.01	0.00	0.00	0.00	28.51
183	2	-1.70	0.00	0.00	0.00	0.00	0.00
183	1	1.70	-17.74	0.00	0.00	0.00	29.73
184	23	0.43	0.00	0.02	0.00	0.00	0.00
184	22	-0.43	-57.90	-0.02	0.00	-0.03	97.05
185	17	-0.31	0.00	0.00	0.00	0.00	0.00
185	16	0.31	-54.14	0.00	0.00	0.00	90.74
186	42	0.45	0.00	0.55	0.00	0.00	0.00
186	43	-0.45	-63.43	-0.55	0.00	-0.93	106.30
187	36	-0.47	0.00	0.00	0.00	0.00	0.00
187	35	0.47	-53.19	0.00	0.00	0.00	89.15
188	62	0.47	0.00	0.83	0.00	0.00	0.00
188	63	-0.47	-63.86	-0.83	0.00	-1.41	107.03
189	56	-0.43	0.00	0.00	0.00	0.00	0.00
189	55	0.43	-51.28	0.00	0.00	0.00	85.95
190	82	0.55	0.00	1.40	0.00	0.00	0.00
190	83	-0.55	-64.25	-1.40	0.00	-2.35	107.68
191	76	-0.61	0.00	0.00	0.00	0.00	0.00
191	75	0.61	-51.31	0.00	0.00	0.00	85.99
192	102	0.80	0.00	1.87	0.00	0.00	0.00
192	103	-0.80	-61.87	-1.87	0.00	-3.15	103.69
193	96	-0.62	0.00	0.00	0.00	0.00	0.00
193	95	0.62	-53.54	0.00	0.00	0.00	89.73
194	122	0.17	0.00	2.32	0.00	0.00	0.00
194	123	-0.17	-58.05	-2.32	0.00	-3.91	97.28
195	116	-0.87	0.00	0.00	0.00	0.00	0.00
195	115	0.87	-57.52	0.00	0.00	0.00	96.41
196	142	1.85	0.00	2.15	0.00	0.00	0.00
196	143	-1.85	-53.92	-2.15	0.00	-3.63	90.37
197	136	0.89	0.00	0.00	0.00	0.00	0.00
197	135	-0.89	-61.17	0.00	0.00	0.00	102.53
198	161	-3.87	0.00	3.19	0.00	0.00	0.00
198	162	3.87	-52.51	-3.19	0.00	-5.38	88.01
199	155	-6.86	0.00	0.00	0.00	0.00	0.00
199	156	6.86	-64.23	0.00	0.00	0.00	107.65
200	180	29.99	0.00	2.44	0.00	0.00	0.00
200	181	-29.99	-52.97	-2.44	0.00	-4.11	88.78
201	175	28.86	0.00	0.00	0.00	0.00	0.00
201	174	-28.86	-58.66	0.00	0.00	0.00	98.31
202	196	-22.93	-554.49	0.92	0.00	0.00	0.00
202	195	22.93	534.27	-0.92	0.00	-1.55	-900.98
203	191	-24.15	-554.52	0.00	0.00	0.00	0.00
203	190	24.15	534.27	0.00	0.00	0.00	-900.98
206	21	0.11	112.05	0.01	6.57	-1.37	694.69
206	20	-0.11	-112.05	-0.01	-6.57	1.34	-448.19
207	20	0.11	112.05	0.01	6.57	-1.34	448.19
207	19	-0.11	-112.05	-0.01	-6.57	1.30	0.00
208	40	-0.02	116.62	0.53	17.85	-6.71	1119.53
208	39	0.02	-116.62	-0.53	-17.85	6.40	-1049.56
209	39	-0.02	116.62	0.53	17.85	-6.40	1049.56
209	41	0.02	-116.62	-0.53	-17.85	3.74	-466.47
210	41	-0.02	116.62	0.53	17.85	-3.74	466.47
210	38	0.02	-116.62	-0.53	-17.85	1.62	0.00
211	60	0.04	115.14	0.83	21.95	-11.83	1416.27
211	59	-0.04	-115.14	-0.83	-21.95	9.08	-1036.30
212	59	0.04	115.14	0.83	21.95	-9.08	1036.30
212	61	-0.04	-115.14	-0.83	-21.95	4.91	-460.58
213	61	0.04	115.14	0.83	21.95	-4.91	460.58
213	58	-0.04	-115.14	-0.83	-21.95	1.58	0.00
214	80	-0.06	115.55	1.40	22.64	-19.21	1421.29
214	79	0.06	-115.55	-1.40	-22.64	14.60	-1039.97
215	79	-0.06	115.55	1.40	22.64	-14.60	1039.97
215	81	0.06	-115.55	-1.40	-22.64	7.61	-462.21
216	81	-0.06	115.55	1.40	22.64	-7.61	462.21
216	78	0.06	-115.55	-1.40	-22.64	2.02	0.00
217	100	0.18	115.41	1.88	14.71	-25.56	1419.53
217	99	-0.18	-115.41	-1.88	-14.71	19.37	-1038.68
218	99	0.18	115.41	1.88	14.71	-19.37	1038.68
218	101	-0.18	-115.41	-1.88	-14.71	9.98	-461.64
219	101	0.18	115.41	1.88	14.71	-9.98	461.64
219	98	-0.18	-115.41	-1.88	-14.71	2.47	0.00
220	120	-0.70	115.57	2.30	1.03	-30.17	1421.47
220	119	0.70	-115.57	-2.30	-1.03	22.57	-1040.10
221	119	-0.70	115.57	2.30	1.03	-22.57	1040.10
221	121	0.70	-115.57	-2.30	-1.03	11.04	-462.27
222	121	-0.70	115.57	2.30	1.03	-11.04	462.27
222	118	0.70	-115.57	-2.30	-1.03	1.82	0.00
223	140	2.74	115.10	2.14	-12.55	-28.07	1415.68
223	139	-2.74	-115.10	-2.14	12.55	20.99	-1035.86
224	139	2.74	115.10	2.14	-12.55	-20.99	1035.86
224	141	-2.74	-115.10	-2.14	12.55	10.27	-460.38
225	141	2.74	115.10	2.14	-12.55	-10.27	460.39
225	138	-2.74	-115.10	-2.14	12.55	1.69	0.00
226	160	-10.73	116.74	3.19	-20.34	-31.70	968.93
226	159	10.73	-116.74	-3.19	20.34	17.99	-466.96
227	159	-10.73	116.74	3.19	-20.34	-17.99	466.96
227	158	10.73	-116.74	-3.19	20.34	5.23	0.00
228	179	58.86	111.63	2.44	-9.84	-20.79	859.53
228	178	-58.86	-111.63	-2.44	9.84	11.76	-446.51
229	178	58.86	111.63	2.44	-9.84	-11.76	446.51
229	177	-58.86	-111.63	-2.44	9.84	2.01	0.00
230	5	-3.34	34.75	0.00	-3.10	-0.31	34.75
230	4	3.34	-34.75	0.00	3.10	0.31	0.00
231	194	-47.08	-1068.55	0.92	0.00	-6.12	-1068.55
231	193	47.08	1068.55	-0.92	0.00	5.20	0.00

HIPOTESIS 30

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E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
1	3	34.75	3.34	0.00	-0.32	3.11	58.24
1	8	-34.75	-3.34	0.00	0.32	-3.12	-41.56
2	8	34.75	3.34	0.00	-0.32	3.12	41.56
2	9	-34.75	-3.34	0.00	0.32	-3.14	-24.88
3	9	34.75	3.34	0.03	-0.34	3.14	24.88
3	10	-34.75	-3.34	-0.03	0.34	-3.29	-8.20
4	10	34.75	3.34	0.02	-0.33	3.29	8.20
4	11	-34.75	-3.34	-0.02	0.33	-3.37	8.48
5	11	34.75	3.34	0.03	-0.33	3.37	-8.48
5	12	-34.75	-3.34	-0.03	0.33	-3.52	25.16
6	12	34.75	3.34	0.06	-0.31	3.52	-25.16
6	13	-34.75	-3.34	-0.06	0.31	-3.80	41.84
7	13	34.75	3.34	0.04	-0.33	3.80	-41.84
7	14	-34.75	-3.34	-0.04	0.33	-4.02	58.52
8	14	34.75	3.34	0.07	-0.28	4.02	-58.52
8	15	-34.75	-3.34	-0.07	0.28	-4.37	75.20
9	15	34.75	3.34	0.07	-0.28	4.37	-75.20
9	18	-34.75	-3.34	-0.07	0.28	-4.72	91.88
10	18	146.79	3.22	0.03	-1.51	-1.88	95.91
10	24	-146.79	-3.22	-0.03	1.51	1.73	-79.79
11	24	146.80	3.22	0.09	-1.54	-1.73	79.79
11	25	-146.80	-3.22	-0.09	1.54	1.30	-63.68
12	25	146.80	3.22	0.20	-1.59	-1.30	63.68
12	26	-146.80	-3.22	-0.20	1.59	0.29	-47.56
13	26	146.80	3.22	0.14	-1.57	-0.29	47.56
13	27	-146.80	-3.22	-0.14	1.57	-0.43	-31.45
14	27	146.80	3.22	0.20	-1.59	0.43	31.45
14	28	-146.80	-3.22	-0.20	1.59	-1.43	-15.33
15	28	146.79	3.22	0.31	-1.60	1.43	15.33
15	29	-146.79	-3.22	-0.31	1.60	-3.00	0.78
16	29	146.80	3.22	0.26	-1.60	3.00	-0.78
16	30	-146.80	-3.22	-0.26	1.60	-4.30	16.90
17	30	146.79	3.22	0.32	-1.59	4.30	-16.90
17	31	-146.79	-3.22	-0.32	1.59	-5.88	33.01
18	31	146.80	3.22	0.37	-1.58	5.88	-33.02
18	32	-146.80	-3.22	-0.37	1.58	-7.75	49.13
19	32	146.79	3.22	0.37	-1.58	7.75	-49.13
19	33	-146.79	-3.22	-0.37	1.58	-9.62	65.25
20	33	146.79	3.22	0.43	-1.55	9.62	-65.25
20	34	-146.79	-3.22	-0.43	1.55	-11.76	81.36
21	34	146.80	3.22	0.49	-1.52	11.76	-81.36
21	37	-146.80	-3.22	-0.49	1.52	-14.20	97.48
22	37	263.41	3.25	-0.09	-2.16	-3.75	97.97
22	44	-263.41	-3.25	0.09	2.16	4.20	-81.74
23	44	263.42	3.25	0.01	-2.20	-4.20	81.74
23	45	-263.42	-3.25	-0.01	2.20	4.13	-65.50
24	45	263.42	3.25	0.12	-2.22	-4.13	65.50
24	46	-263.42	-3.25	-0.12	2.22	3.56	-49.26
25	46	263.41	3.25	0.11	-2.22	-3.56	49.26
25	47	-263.41	-3.25	-0.11	2.22	2.98	-33.02

26	47	263.41	3.25	0.22	-2.23	-2.98	33.02	58	97	609.52	3.08	-0.54	-1.37	1.15	94.97
26	48	-263.41	-3.25	-0.22	2.23	1.91	-16.78	58	104	-609.52	-3.08	0.54	1.37	1.56	-79.56
27	48	263.41	3.25	0.22	-2.24	-1.91	16.78	59	104	609.52	3.08	-0.55	-1.37	-1.56	79.56
27	49	-263.41	-3.25	-0.22	2.24	0.80	-0.54	59	105	-609.52	-3.08	0.55	1.37	4.33	-64.14
28	49	263.41	3.25	0.32	-2.24	-0.80	0.54	60	105	609.52	3.08	-0.30	-1.40	-4.33	64.14
28	50	-263.41	-3.25	-0.32	2.24	-0.80	15.70	60	106	-609.52	-3.08	0.30	1.40	5.82	-48.73
29	50	263.41	3.25	0.43	-2.23	0.80	-15.70	61	106	609.52	3.08	-0.31	-1.40	-5.82	48.73
29	51	-263.41	-3.25	-0.43	2.23	-2.93	31.93	61	107	-609.52	-3.08	0.31	1.40	7.37	-33.32
30	51	263.41	3.25	0.53	-2.22	2.93	-31.94	62	107	609.51	3.08	-0.07	-1.41	-7.37	33.32
30	52	-263.41	-3.25	-0.53	2.22	-5.56	48.17	62	108	-609.51	-3.08	0.07	1.41	7.71	-17.90
31	52	263.41	3.25	0.53	-2.22	5.56	-48.17	63	108	609.52	3.08	0.17	-1.42	-7.71	17.90
31	53	-263.41	-3.25	-0.53	2.22	-8.19	64.41	63	109	-609.52	-3.08	-0.17	1.42	6.88	-2.49
32	53	263.41	3.25	0.63	-2.19	8.19	-64.41	64	109	609.52	3.08	-0.07	-1.42	-6.88	2.49
32	54	-263.41	-3.25	-0.63	2.19	-11.34	80.65	64	110	-609.52	-3.08	0.07	1.42	7.22	12.92
33	54	263.41	3.25	0.63	-2.19	11.34	-80.65	65	110	609.52	3.08	0.41	-1.41	-7.22	-12.93
33	57	-263.41	-3.25	-0.63	2.19	-14.48	96.89	65	111	-609.52	-3.08	-0.41	1.41	5.17	28.34
34	57	378.56	3.21	-0.08	-2.35	-7.60	96.09	66	111	609.52	3.08	0.64	-1.40	-5.17	-28.34
34	64	-378.56	-3.21	0.08	2.35	8.01	-80.07	66	112	-609.52	-3.08	-0.64	1.40	1.97	43.75
35	64	378.56	3.21	-0.09	-2.35	-8.01	80.07	67	112	609.51	3.08	0.65	-1.40	-1.97	-43.75
35	65	-378.56	-3.21	0.09	2.35	8.46	-64.04	67	113	-609.51	-3.08	-0.65	1.40	-1.29	59.17
36	65	378.56	3.21	0.20	-2.40	-8.46	64.04	68	113	609.51	3.08	0.88	-1.37	1.29	-59.17
36	66	-378.56	-3.21	-0.20	2.40	7.44	-48.01	68	114	-609.51	-3.08	-0.88	1.37	-5.72	74.58
37	66	378.56	3.21	0.21	-2.40	-7.44	48.01	69	114	609.51	3.08	0.88	-1.37	5.72	-74.58
37	67	-378.56	-3.21	-0.21	2.40	6.38	-31.99	69	117	-609.51	-3.08	-0.88	1.37	-10.14	89.99
38	67	378.56	3.21	0.35	-2.41	-6.38	31.99	70	117	725.08	3.78	-0.91	0.70	9.10	103.70
38	68	-378.56	-3.21	-0.35	2.41	4.64	-15.96	70	124	-725.08	-3.78	0.91	-0.70	-4.55	-84.79
39	68	378.56	3.21	0.21	-2.40	-4.64	15.96	71	124	725.08	3.78	-1.20	0.74	4.55	84.79
39	69	-378.56	-3.21	-0.21	2.40	3.57	0.06	71	125	-725.08	-3.78	1.20	-0.74	1.45	-65.89
40	69	378.55	3.21	0.65	-2.40	-3.57	-0.07	72	125	725.08	3.78	-0.91	0.71	-1.45	65.89
40	70	-378.55	-3.21	-0.65	2.40	0.32	16.09	72	126	-725.08	-3.78	0.91	-0.71	6.00	-46.99
41	70	378.56	3.21	0.50	-2.41	-0.32	-16.09	73	126	725.08	3.78	-0.62	0.69	-6.00	46.99
41	71	-378.56	-3.21	-0.50	2.41	-2.19	32.12	73	127	-725.08	-3.78	0.62	-0.69	9.10	-28.09
42	71	378.56	3.21	0.65	-2.40	2.19	-32.12	74	127	725.08	3.78	-0.34	0.68	-9.10	28.09
42	72	-378.56	-3.21	-0.65	2.40	-5.44	48.14	74	128	-725.08	-3.78	0.34	-0.68	10.82	-9.18
43	72	378.56	3.21	0.80	-2.38	5.44	-48.14	75	128	725.08	3.78	-0.34	0.68	-10.82	9.18
43	73	-378.56	-3.21	-0.80	2.38	-9.42	64.17	75	129	-725.08	-3.78	0.34	-0.68	12.55	9.72
44	73	378.56	3.21	0.80	-2.38	9.42	-64.17	76	129	725.08	3.78	-0.07	0.68	-12.55	-9.72
44	74	-378.56	-3.21	-0.80	2.38	-13.44	80.19	76	130	-725.08	-3.78	0.07	-0.68	12.89	28.62
45	74	378.56	3.21	0.95	-2.35	13.44	-80.19	77	130	725.08	3.78	0.22	0.70	-12.89	-28.62
45	77	-378.56	-3.21	-0.95	2.35	-18.17	96.22	77	131	-725.08	-3.78	-0.22	-0.70	11.78	47.53
46	77	494.11	3.26	-0.27	-2.03	-4.60	97.44	78	131	725.08	3.78	-0.05	0.68	-11.78	-47.53
46	84	-494.11	-3.26	0.27	2.03	5.96	-81.12	78	132	-725.08	-3.78	0.05	-0.68	12.06	66.43
47	84	494.11	3.26	-0.26	-2.04	-5.96	81.12	79	132	725.08	3.78	0.79	0.76	-12.06	-66.43
47	85	-494.11	-3.26	0.26	2.04	7.28	-64.80	79	133	-725.08	-3.78	-0.79	-0.76	8.12	85.33
48	85	494.11	3.26	-0.08	-2.06	-7.28	64.79	80	133	725.08	3.78	0.51	0.72	-8.12	-85.33
48	86	-494.11	-3.26	0.08	2.06	7.66	-48.47	80	134	-725.08	-3.78	-0.51	-0.72	5.56	104.24
49	86	494.11	3.26	0.11	-2.08	-7.66	48.47	81	134	725.08	3.78	0.79	0.76	-5.56	-104.24
49	87	-494.11	-3.26	-0.11	2.08	7.11	-32.14	81	137	-725.08	-3.78	-0.79	-0.76	1.63	123.14
50	87	494.11	3.26	0.12	-2.08	-7.11	32.14	82	137	840.18	1.05	-1.39	2.74	10.99	69.76
50	88	-494.11	-3.26	-0.12	2.08	6.50	-15.82	82	144	-840.18	-1.05	1.39	-2.74	-4.05	-64.53
51	88	494.11	3.26	0.31	-2.09	-6.50	15.82	83	144	840.18	1.05	-0.73	2.69	4.05	64.54
51	89	-494.11	-3.26	-0.31	2.09	4.95	0.51	83	145	-840.18	-1.05	0.73	-2.69	-0.38	-59.31
52	89	494.11	3.26	0.31	-2.09	-4.95	-0.51	84	145	840.18	1.05	-0.72	2.69	0.38	59.31
52	90	-494.11	-3.26	-0.31	2.09	3.40	16.83	84	146	-840.18	-1.05	0.72	-2.69	3.20	-54.08
53	90	494.11	3.26	0.51	-2.08	-3.40	-16.83	85	146	840.18	1.05	-0.73	2.69	-3.20	54.08
53	91	-494.11	-3.26	-0.51	2.08	0.87	33.15	85	147	-840.18	-1.05	0.73	-2.69	6.86	-48.85
54	91	494.11	3.26	0.69	-2.07	-0.87	-33.16	86	147	840.18	1.05	-0.08	2.65	-6.86	48.86
54	92	-494.11	-3.26	-0.69	2.07	-2.60	49.48	86	148	-840.18	-1.05	0.08	-2.65	7.25	-43.63
55	92	494.11	3.26	0.89	-2.05	2.60	-49.48	87	148	840.18	1.05	-0.06	2.65	-7.25	43.63
55	93	-494.11	-3.26	-0.89	2.05	-7.07	65.81	87	149	-840.18	-1.05	0.06	-2.65	7.56	-38.40
56	93	494.11	3.26	0.88	-2.05	7.07	-65.81	88	149	840.18	1.05	0.24	2.64	-7.56	38.40
56	94	-494.11	-3.26	-0.88	2.05	-11.48	82.13	88	150	-840.18	-1.05	-0.24	-2.64	6.35	-33.17
57	94	494.11	3.26	0.89	-2.05	11.48	-82.13	89	150	840.18	1.05	0.26	2.64	-6.35	33.17
57	97	-494.11	-3.26	-0.89	2.05	-15.94	98.45	89	151	-840.18	-1.05	-0.26	-2.64	5.05	-27.95

90	151	840.18	1.05	0.59	2.63	-5.05	27.95
90	152	-840.18	-1.05	-0.59	-2.63	2.08	-22.72
91	152	840.18	1.05	0.58	2.63	-2.08	22.72
91	153	-840.18	-1.05	-0.58	-2.63	-0.81	-17.49
92	153	840.18	1.05	0.91	2.62	0.81	17.49
92	154	-840.18	-1.05	-0.91	-2.62	-5.38	-12.27
93	154	840.18	1.05	1.23	2.61	5.38	12.27
93	157	-840.18	-1.05	-1.23	-2.61	-11.54	-7.04
94	157	956.92	11.77	-1.95	2.77	32.00	202.69
94	163	-956.92	-11.77	1.95	-2.77	-22.27	-143.82
95	163	956.92	11.77	-1.58	2.71	22.27	143.82
95	164	-956.92	-11.77	1.58	-2.71	-14.36	-84.95
96	164	956.92	11.77	-1.22	2.68	14.36	84.95
96	165	-956.92	-11.77	1.22	-2.68	-8.27	-26.08
97	165	956.92	11.77	-1.20	2.68	8.27	26.08
97	166	-956.92	-11.77	1.20	-2.68	-2.28	32.80
98	166	956.92	11.77	-0.84	2.69	2.28	-32.80
98	167	-956.92	-11.77	0.84	-2.69	1.90	91.67
99	167	956.92	11.77	-0.47	2.73	-1.90	-91.67
99	168	-956.92	-11.77	0.47	-2.73	4.25	150.54
100	168	956.92	11.77	-0.45	2.73	-4.25	-150.54
100	169	-956.92	-11.77	0.45	-2.73	6.52	209.42
101	169	956.92	11.77	-0.09	2.81	-6.52	-209.41
101	170	-956.92	-11.77	0.09	-2.81	6.96	268.29
102	170	956.92	11.77	-0.09	2.81	-6.96	-268.29
102	171	-956.92	-11.77	0.09	-2.81	7.40	327.16
103	171	956.92	11.77	0.66	3.07	-7.40	-327.16
103	172	-956.92	-11.77	-0.66	-3.07	4.11	386.03
104	172	956.92	11.77	0.66	3.07	-4.11	-386.03
104	173	-956.92	-11.77	-0.66	-3.07	0.83	444.90
105	173	956.92	11.77	0.68	3.08	-0.83	-444.90
105	176	-956.92	-11.77	-0.68	-3.08	-2.56	503.78
106	176	1068.55	-47.08	-1.40	5.34	12.46	-316.69
106	182	-1068.55	47.08	1.40	-5.34	-5.44	81.28
107	182	1068.55	-47.08	-0.98	5.37	5.44	-81.28
107	183	-1068.55	47.08	0.98	-5.37	-0.55	-154.12
108	183	1068.55	-47.08	-0.96	5.37	0.55	154.12
108	184	-1068.55	47.08	0.96	-5.37	4.23	-389.53
109	184	1068.55	-47.08	-0.57	5.23	-4.23	389.53
109	185	-1068.55	47.08	0.57	-5.23	7.09	-624.94
110	185	1068.55	-47.08	-0.55	5.21	-7.09	624.94
110	186	-1068.55	47.08	0.55	-5.21	9.84	-860.34
111	186	1068.55	-47.08	0.28	4.54	-9.84	860.35
111	187	-1068.55	47.08	-0.28	-4.54	8.42	-1095.75
112	187	1068.55	-47.08	0.28	4.54	-8.42	1095.75
112	188	-1068.55	47.08	-0.28	-4.54	7.00	-1331.15
113	188	1068.55	-47.08	0.69	4.04	-7.00	1331.16
113	189	-1068.55	47.08	-0.69	-4.04	3.55	-1566.56
114	189	1068.55	-47.08	0.71	4.00	-3.55	1566.56
114	192	-1068.55	47.08	-0.71	-4.00	0.00	-1801.97
134	6	0.00	1.63	-17.01	28.51	0.00	0.00
134	3	0.00	-1.63	17.01	-28.51	72.29	6.94
135	3	0.00	-1.70	17.74	-29.73	-75.40	-7.24
135	1	0.00	1.70	-17.74	29.73	0.00	0.00
136	22	-0.02	-0.43	-57.93	97.05	0.01	-0.04
136	18	0.02	0.43	57.93	-97.05	101.35	-0.71
137	18	0.00	-0.31	54.13	-90.74	-94.73	-0.55
137	16	0.00	0.31	-54.13	90.74	-0.01	0.00
138	43	-0.56	-0.45	-63.43	106.30	0.02	-0.95
138	37	0.56	0.45	63.43	-106.30	111.05	0.16
139	37	0.01	-0.47	53.18	-89.15	-93.05	-0.81
139	35	-0.01	0.47	-53.18	89.15	0.05	-0.02
140	63	-0.84	-0.47	-63.89	107.03	-0.03	-1.41
140	57	0.84	0.47	63.89	-107.03	111.80	0.58
141	57	0.00	-0.43	51.33	-85.95	-89.73	-0.75
141	55	0.00	0.43	-51.33	85.95	0.04	0.00
142	83	-1.39	-0.55	-64.24	107.68	0.02	-2.35
142	77	1.39	0.55	64.24	-107.68	112.48	1.39
143	77	0.00	-0.61	51.29	-85.99	-89.73	-1.07
143	75	0.00	0.61	-51.29	85.99	0.00	0.00
144	103	-1.87	-0.80	-61.82	103.69	-0.02	-3.15
144	97	1.87	0.80	61.82	-103.69	108.37	1.75
145	97	0.00	-0.62	53.52	-89.73	-93.60	-1.08
145	95	0.00	0.62	-53.52	89.73	0.01	0.00
146	123	-2.32	-0.17	-58.05	97.28	0.02	-3.92
146	117	2.32	0.17	58.05	-97.28	101.66	3.62
147	117	0.01	-0.87	57.53	-96.41	-100.63	-1.51
147	115	-0.01	0.87	-57.53	96.41	-0.02	-0.01
148	143	-2.15	-1.85	-53.93	90.37	0.00	-3.63
148	137	2.15	1.85	53.93	-90.37	94.41	0.39
149	137	0.00	0.89	61.20	-102.53	-106.99	1.55
149	135	0.00	-0.89	-61.20	102.53	0.00	-0.01
150	162	-3.19	3.87	-52.51	88.01	0.00	-5.38
150	157	3.19	-3.87	52.51	-88.01	91.92	12.15
151	157	0.00	-6.86	64.22	-107.65	-112.38	-12.00
151	156	0.00	6.86	-64.22	107.65	0.00	0.00
152	181	-2.44	-30.00	-52.97	88.78	0.00	-4.11
152	176	2.44	30.00	52.97	-88.78	92.71	-48.40
153	176	0.00	28.86	58.65	-98.31	-102.62	50.49
153	174	0.00	-28.86	-58.65	98.31	0.01	0.00
154	195	-0.92	22.93	534.27	-900.98	0.00	-1.55
154	192	0.92	-22.93	-534.27	900.98	-2270.67	99.00
155	192	0.00	-24.15	-534.27	900.98	2270.66	-102.65
155	190	0.00	24.15	534.27	-900.98	0.00	0.00
156	7	0.00	-1.63	0.00	0.00	0.00	0.00
156	4	0.00	1.63	-17.01	0.00	-72.12	-6.93
157	4	0.00	1.70	-17.74	0.00	75.22	7.25
157	2	0.00	-1.70	0.00	0.00	0.00	0.00
158	23	0.02	0.43	0.00	0.00	0.00	0.00
158	19	-0.02	-0.43	-57.90	0.00	-100.76	0.75
159	19	0.00	0.31	-54.14	0.00	94.20	0.55
159	17	0.00	-0.31	0.00	0.00	0.00	0.00
160	42	0.55	0.45	0.01	0.00	-0.01	0.00
160	38	-0.55	-0.45	-63.43	0.00	-110.40	0.79
161	38	0.00	0.47	-53.20	0.00	92.55	0.83
161	36	0.00	-0.47	0.00	0.00	0.00	0.00
162	62	0.83	0.47	-0.01	0.00	0.00	0.00
162	58	-0.83	-0.47	-63.85	0.00	-111.15	0.83
163	58	0.00	0.43	-51.30	0.00	89.21	0.75
163	56	0.00	-0.43	0.02	0.00	0.00	0.00
164	82	1.39	0.55	0.01	0.00	0.00	0.00
164	78	-1.39	-0.55	-64.25	0.00	-111.85	0.96
165	78	0.00	0.61	-51.31	0.00	89.19	1.06
165	76	0.00	-0.61	0.00	0.00	0.00	0.00
166	102	1.87	0.80	0.00	0.00	0.02	0.00
166	98	-1.87	-0.80	-61.87	0.00	-107.76	1.40
167	98	0.00	0.62	-53.53	0.00	93.04	1.08
167	96	0.00	-0.62	-0.01	0.00	-0.02	0.00
168	122	2.32	0.17	0.03	0.00	-0.01	0.00
168	118	-2.32	-0.17	-58.08	0.00	-101.06	0.30
169	118	0.00	0.87	-57.51	0.00	100.03	1.52
169	116	0.00	-0.87	-0.01	0.00	0.00	0.00
170	142	2.15	1.85	0.00	0.00	0.01	0.00
170	138	-2.15	-1.85	-53.92	0.00	-93.86	3.24
171	138	0.00	-0.89	-61.17	0.00	106.40	-1.55
171	136	0.00	0.89	0.00	0.00	0.01	0.00
172	161	3.19	-3.87	0.00	0.00	0.00	0.00
172	158	-3.19	3.87	-52.51	0.00	-91.39	-6.77

173	158	0.00	6.86	-64.23	0.00	111.72	12.00	211	60	-0.04	-115.14	-0.83	-21.95	11.83	-1416.27
173	155	0.00	-6.86	0.00	0.00	0.00	0.00	211	59	0.04	115.14	0.83	21.95	-9.08	1036.30
174	180	2.44	30.00	0.00	0.00	0.00	0.00	212	59	-0.04	-115.14	-0.83	-21.95	9.08	-1036.30
174	177	-2.44	-30.00	-52.97	0.00	-92.19	52.50	212	61	0.04	115.14	0.83	21.95	-4.91	460.58
175	177	0.00	-28.86	-58.66	0.00	102.04	-50.49	213	61	-0.04	-115.14	-0.83	-21.95	4.91	-460.58
175	175	0.00	28.86	0.00	0.00	0.00	0.00	213	58	0.04	115.14	0.83	21.95	-1.58	0.00
176	196	0.92	-22.93	-554.49	0.00	0.00	0.00	214	80	0.06	-115.55	-1.40	-22.64	19.21	-1421.29
176	193	-0.92	22.93	534.27	0.00	2270.87	-97.45	214	79	-0.06	115.55	1.40	22.64	-14.60	1039.97
177	193	0.00	24.15	534.27	0.00	-2270.87	102.65	215	79	0.06	-115.55	-1.40	-22.64	14.60	-1039.97
177	191	0.00	-24.15	-554.52	0.00	0.00	0.00	215	81	-0.06	115.55	1.40	22.64	-7.61	462.21
182	7	1.63	0.00	0.00	0.00	0.00	0.00	216	81	0.06	-115.55	-1.40	-22.64	7.61	-462.21
182	6	-1.63	17.01	0.00	0.00	0.00	-28.51	216	78	-0.06	115.55	1.40	22.64	-2.02	0.00
183	2	1.70	0.00	0.00	0.00	0.00	0.00	217	100	-0.18	-115.41	-1.88	-14.71	25.56	-1419.53
183	1	-1.70	17.74	0.00	0.00	0.00	-29.73	217	99	0.18	115.41	1.88	14.71	-19.37	1038.68
184	23	-0.43	0.00	-0.02	0.00	0.00	0.00	218	99	-0.18	-115.41	-1.88	-14.71	19.37	-1038.68
184	22	0.43	57.90	0.02	0.00	0.03	-97.05	218	101	0.18	115.41	1.88	14.71	-9.98	461.64
185	17	0.31	0.00	0.00	0.00	0.00	0.00	219	101	-0.18	-115.41	-1.88	-14.71	9.98	-461.64
185	16	-0.31	54.14	0.00	0.00	0.00	-90.74	219	98	0.18	115.41	1.88	14.71	-2.47	0.00
186	42	-0.45	0.00	-0.55	0.00	0.00	0.00	220	120	0.70	-115.57	-2.30	-1.03	30.17	-1421.47
186	43	0.45	63.43	0.55	0.00	0.93	-106.30	220	119	-0.70	115.57	2.30	1.03	-22.57	1040.10
187	36	0.47	0.00	0.00	0.00	0.00	0.00	221	119	0.70	-115.57	-2.30	-1.03	22.57	-1040.10
187	35	-0.47	53.19	0.00	0.00	0.00	-89.15	221	121	-0.70	115.57	2.30	1.03	-11.04	462.27
188	62	-0.47	0.00	-0.83	0.00	0.00	0.00	222	121	0.70	-115.57	-2.30	-1.03	11.04	-462.27
188	63	0.47	63.86	0.83	0.00	1.41	-107.03	222	118	-0.70	115.57	2.30	1.03	-1.82	0.00
189	56	0.43	0.00	0.00	0.00	0.00	0.00	223	140	-2.74	-115.10	-2.14	12.55	28.07	-1415.68
189	55	-0.43	51.28	0.00	0.00	0.00	-85.95	223	139	2.74	115.10	2.14	-12.55	-20.99	1035.86
190	82	-0.55	0.00	-1.40	0.00	0.00	0.00	224	139	-2.74	-115.10	-2.14	12.55	20.99	-1035.86
190	83	0.55	64.25	1.40	0.00	2.35	-107.68	224	141	2.74	115.10	2.14	-12.55	-10.27	460.38
191	76	0.61	0.00	0.00	0.00	0.00	0.00	225	141	-2.74	-115.10	-2.14	12.55	10.27	-460.39
191	75	-0.61	51.31	0.00	0.00	0.00	-85.99	225	138	2.74	115.10	2.14	-12.55	-1.69	0.00
192	102	-0.80	0.00	-1.87	0.00	0.00	0.00	226	160	10.73	-116.74	-3.19	20.34	31.70	-968.93
192	103	0.80	61.87	1.87	0.00	3.15	-103.69	226	159	-10.73	116.74	3.19	-20.34	-17.99	466.96
193	96	0.62	0.00	0.00	0.00	0.00	0.00	227	159	10.73	-116.74	-3.19	20.34	17.99	-466.96
193	95	-0.62	53.54	0.00	0.00	0.00	-89.73	227	158	-10.73	116.74	3.19	-20.34	-5.23	0.00
194	122	-0.17	0.00	-2.32	0.00	0.00	0.00	228	179	-58.86	-111.63	-2.44	9.84	20.79	-859.53
194	123	0.17	58.05	2.32	0.00	3.91	-97.28	228	178	58.86	111.63	2.44	-9.84	-11.76	446.51
195	116	0.87	0.00	0.00	0.00	0.00	0.00	229	178	-58.86	-111.63	-2.44	9.84	11.76	-446.51
195	115	-0.87	57.52	0.00	0.00	0.00	-96.41	229	177	58.86	111.63	2.44	-9.84	-2.01	0.00
196	142	-1.85	0.00	-2.15	0.00	0.00	0.00	230	5	3.34	-34.75	0.00	3.10	0.31	-34.75
196	143	1.85	53.92	2.15	0.00	3.63	-90.37	230	4	-3.34	34.75	0.00	-3.10	-0.31	0.00
197	136	-0.89	0.00	0.00	0.00	0.00	0.00	231	194	47.08	1068.55	-0.92	0.00	6.12	1068.55
197	135	0.89	61.17	0.00	0.00	0.00	-102.53	231	193	-47.08	-1068.55	0.92	0.00	-5.20	0.00
198	161	3.87	0.00	-3.19	0.00	0.00	0.00								
198	162	-3.87	52.51	3.19	0.00	5.38	-88.01								
199	155	6.86	0.00	0.00	0.00	0.00	0.00								
199	156	-6.86	64.23	0.00	0.00	0.00	-107.65								
200	180	-29.99	0.00	-2.44	0.00	0.00	0.00								
200	181	29.99	52.97	2.44	0.00	4.11	-88.78								
201	175	-28.86	0.00	0.00	0.00	0.00	0.00								
201	174	28.86	58.66	0.00	0.00	0.00	-98.31								
202	196	22.93	554.49	-0.92	0.00	0.00	0.00								
202	195	-22.93	-534.27	0.92	0.00	1.55	900.98								
203	191	24.15	554.52	0.00	0.00	0.00	0.00								
203	190	-24.15	-534.27	0.00	0.00	0.00	900.98								
206	21	-0.11	-112.05	-0.01	-6.57	1.37	-694.69								
206	20	0.11	112.05	0.01	6.57	-1.34	448.19								
207	20	-0.11	-112.05	-0.01	-6.57	1.34	-448.19								
207	19	0.11	112.05	0.01	6.57	-1.30	0.00								
208	40	0.02	-116.62	-0.53	-17.85	6.71	-1119.53								
208	39	-0.02	116.62	0.53	17.85	-6.40	1049.56								
209	39	0.02	-116.62	-0.53	-17.85	6.40	-1049.56								
209	41	-0.02	116.62	0.53	17.85	-3.74	466.47								
210	41	0.02	-116.62	-0.53	-17.85	3.74	-466.47								
210	38	-0.02	116.62	0.53	17.85	-1.62	0.00								

VIENTO

Velocidad de referencia $V_b = 24$ m/s

Factor topográfico = $C_t = 1'0$

Factor de riesgo: $C = 1'04$

Factor de altura.

Entorno tipo III $z =$

$k_r = 0'22$ $z_0 = 0'30$ m $z_{min} = 8$

Coef
Incid
tes/ nº ejes d_{xy} (Cruce cimentación y d_{xy} fuera en studio)

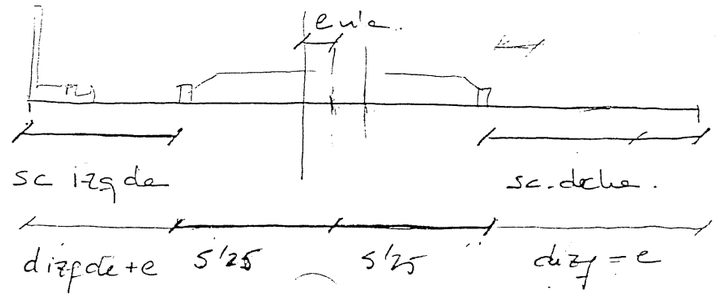
E-1	5	-5'32	P-5	100	
P-1	21		P-6	120	
P-2	40		P-7	140	
P-3	60		P-8	160	
P-4	80		P-9	179	
			E-2	194	-7'66

viento 21 (hipótesis y factores de combinación)

SOBRECARGA DE PASEOS

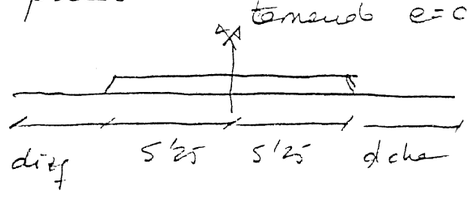
Se considera una sobrecarga desde el bordillo exterior de la vía al final del voladizo.

Al ser variable la vía, se considera



e: excentricidad vía - tablero ⇒ pantalla hacia dcha (cuando de momento pantalla)

La sob. de dizq y dcha se toman suponiendo la vía centrada en el tablero en cada punto



De manera que 1a'5a + dizq + dcha = anch. tablero (variable en cada punto).

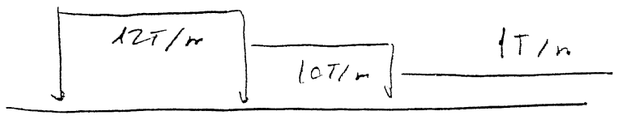
sc-paseo	0.5 T/m2			nudos				barras (semisuma)				
fin de barra	d-izqda	d-dcha	excent-via	Q-izqda	Q-dcha T/m	M-izqda T/m	M-dcha mT	Barra mT	Q-izqda T/m	Q-dcha T/m	M-izqda mT	M-dcha mT
0	2.9270	1.6060	-1.149	-0.8890	-1.3775	-6.4790	7.547	1				
1	2.8130	1.6070	-1.062	-0.8755	-1.3345	-6.2927	7.370	2	-0.882	-1.356	-6.386	7.458
2	2.7275	1.6080	-0.977	-0.8753	-1.2925	-6.2162	7.193	3	-0.875	-1.314	-6.254	7.282
3	2.6450	1.6080	-0.893	-0.8760	-1.2505	-6.1486	7.012	4	-0.876	-1.272	-6.182	7.103
4	2.5630	1.6060	-0.811	-0.8760	-1.2085	-6.0768	6.825	5	-0.876	-1.230	-6.113	6.919
5	2.4810	1.6040	-0.732	-0.8745	-1.1680	-5.9960	6.641	6	-0.875	-1.188	-6.036	6.733
6	2.4030	1.6020	-0.654	-0.8745	-1.1280	-5.9278	6.457	7	-0.875	-1.148	-5.962	6.549
7	2.3250	1.6000	-0.578	-0.8735	-1.0890	-5.8538	6.274	8	-0.874	-1.109	-5.891	6.365
8	2.2540	1.6045	-0.505	-0.8745	-1.0548	-5.7975	6.117	9	-0.874	-1.072	-5.826	6.196
9	2.1830	1.6090	-0.433	-0.8750	-1.0210	-5.7383	5.961	10	-0.875	-1.038	-5.768	6.039
10	2.1230	1.6245	-0.363	-0.8800	-0.9938	-5.7138	5.844	11	-0.878	-1.007	-5.726	5.902
11	2.0630	1.6400	-0.295	-0.8840	-0.9675	-5.6832	5.730	12	-0.882	-0.981	-5.699	5.787
12	2.0160	1.6670	-0.229	-0.8935	-0.9480	-5.6938	5.659	13	-0.889	-0.958	-5.689	5.694
13	1.9690	1.6940	-0.165	-0.9020	-0.9295	-5.6979	5.590	14	-0.898	-0.939	-5.696	5.625
14	1.9370	1.7290	-0.104	-0.9165	-0.9165	-5.7469	5.556	15	-0.909	-0.923	-5.722	5.573
15	1.9050	1.7640	-0.043	-0.9310	-0.9035	-5.7945	5.521	16	-0.924	-0.910	-5.771	5.539
16	1.8910	1.8050	0.014	-0.9525	-0.8955	-5.8945	5.516	17	-0.942	-0.900	-5.845	5.518
17	1.8770	1.8460	0.069	-0.9730	-0.8885	-5.9878	5.515	18	-0.963	-0.892	-5.941	5.516
18	1.8770	1.8900	0.124	-1.0005	-0.8830	-6.1296	5.525	19	-0.987	-0.886	-6.059	5.520
19	1.8770	1.9340	0.175	-1.0260	-0.8795	-6.2596	5.545	20	-1.013	-0.881	-6.195	5.535
20	1.8815	1.9790	0.226	-1.0538	-0.8765	-6.4044	5.568	21	-1.040	-0.878	-6.332	5.556
21	1.8860	2.0240	0.274	-1.0800	-0.8750	-6.5405	5.599	22	-1.067	-0.876	-6.472	5.584
22	1.8885	2.0680	0.320	-1.1043	-0.8740	-6.6633	5.632	23	-1.092	-0.875	-6.602	5.616
23	1.8910	2.1120	0.363	-1.1270	-0.8745	-6.7778	5.673	24	-1.116	-0.874	-6.721	5.653
24	1.8900	2.1530	0.406	-1.1480	-0.8735	-6.8788	5.704	25	-1.138	-0.874	-6.828	5.688
25	1.8890	2.1940	0.446	-1.1675	-0.8740	-6.9717	5.742	26	-1.158	-0.874	-6.925	5.723
26	1.8875	2.2315	0.484	-1.1858	-0.8738	-7.0573	5.774	27	-1.177	-0.874	-7.015	5.758
27	1.8860	2.2690	0.519	-1.2025	-0.8750	-7.1350	5.814	28	-1.194	-0.874	-7.096	5.794
28	1.8845	2.3025	0.554	-1.2193	-0.8743	-7.2122	5.838	29	-1.211	-0.875	-7.174	5.826
29	1.8830	2.3360	0.586	-1.2345	-0.8750	-7.2817	5.872	30	-1.227	-0.875	-7.247	5.855
30	1.8825	2.3655	0.616	-1.2493	-0.8748	-7.3497	5.896	31	-1.242	-0.875	-7.316	5.884
31	1.8820	2.3950	0.644	-1.2630	-0.8755	-7.4125	5.927	32	-1.256	-0.875	-7.381	5.912
32	1.8825	2.4195	0.670	-1.2763	-0.8748	-7.4740	5.944	33	-1.270	-0.875	-7.443	5.935
33	1.8830	2.4440	0.695	-1.2890	-0.8745	-7.5329	5.964	34	-1.283	-0.875	-7.503	5.954
34	1.8825	2.4650	0.716	-1.2993	-0.8745	-7.5789	5.982	35	-1.294	-0.875	-7.556	5.973
35	1.8820	2.4860	0.737	-1.3095	-0.8745	-7.6246	6.000	36	-1.304	-0.875	-7.602	5.991
36	1.8815	2.5035	0.755	-1.3183	-0.8743	-7.6633	6.014	37	-1.314	-0.874	-7.644	6.007
37	1.8810	2.5210	0.771	-1.3260	-0.8750	-7.6974	6.034	38	-1.322	-0.875	-7.680	6.024
38	1.8805	2.5340	0.785	-1.3328	-0.8745	-7.7270	6.042	39	-1.329	-0.875	-7.712	6.038
39	1.8800	2.5470	0.797	-1.3385	-0.8750	-7.7519	6.057	40	-1.336	-0.875	-7.739	6.050
40	1.8800	2.5368	0.807	-1.3435	-0.8649	-7.7742	5.987	41	-1.341	-0.870	-7.763	6.022
41	1.8800	2.5266	0.815	-1.3475	-0.8558	-7.7919	5.923	42	-1.346	-0.860	-7.783	5.955
42	1.8795	2.5513	0.821	-1.3503	-0.8652	-7.8034	6.001	43	-1.349	-0.860	-7.798	5.962
43	1.8790	2.5760	0.827	-1.3530	-0.8745	-7.8149	6.079	44	-1.352	-0.870	-7.809	6.040
44	1.8785	2.5770	0.828	-1.3533	-0.8745	-7.8154	6.080	45	-1.353	-0.875	-7.815	6.080
45	1.8780	2.5780	0.828	-1.3530	-0.8750	-7.8136	6.084	46	-1.353	-0.875	-7.814	6.082
46	1.8780	2.5755	0.826	-1.3520	-0.8748	-7.8092	6.080	47	-1.353	-0.875	-7.811	6.082
47	1.8780	2.5730	0.823	-1.3505	-0.8750	-7.8025	6.080	48	-1.351	-0.875	-7.806	6.080
48	1.8775	2.5665	0.817	-1.3473	-0.8748	-7.7874	6.072	49	-1.349	-0.875	-7.795	6.076
49	1.8770	2.5600	0.809	-1.3430	-0.8755	-7.7679	6.071	50	-1.345	-0.875	-7.778	6.072
50	1.8765	2.5490	0.800	-1.3383	-0.8745	-7.7461	6.055	51	-1.341	-0.875	-7.757	6.063
51	1.8760	2.5380	0.788	-1.3320	-0.8750	-7.7176	6.049	52	-1.335	-0.875	-7.732	6.052
52	1.8755	2.5235	0.774	-1.3248	-0.8748	-7.6845	6.035	53	-1.328	-0.875	-7.701	6.042
53	1.8750	2.5090	0.758	-1.3165	-0.8755	-7.6469	6.027	54	-1.321	-0.875	-7.666	6.031
54	1.8745	2.4900	0.741	-1.3078	-0.8745	-7.6069	6.004	55	-1.312	-0.875	-7.627	6.015
55	1.8740	2.4710	0.722	-1.2980	-0.8745	-7.5621	5.987	56	-1.303	-0.875	-7.585	5.996
56	1.8740	2.4485	0.700	-1.2870	-0.8743	-7.5122	5.966	57	-1.293	-0.874	-7.537	5.977
57	1.8740	2.4260	0.677	-1.2755	-0.8745	-7.4598	5.948	58	-1.281	-0.874	-7.486	5.957
58	1.8740	2.4000	0.651	-1.2625	-0.8745	-7.4001	5.925	59	-1.269	-0.875	-7.430	5.937
59	1.8740	2.3740	0.623	-1.2485	-0.8755	-7.3356	5.908	60	-1.256	-0.875	-7.368	5.917
60	1.8740	2.3435	0.593	-1.2335	-0.8753	-7.2659	5.880	61	-1.241	-0.875	-7.301	5.894
61	1.8740	2.3130	0.562	-1.2180	-0.8755	-7.1935	5.855	62	-1.226	-0.875	-7.230	5.868
62	1.8735	2.2785	0.528	-1.2008	-0.8753	-7.1117	5.823	63	-1.209	-0.875	-7.153	5.839
63	1.8730	2.2440	0.492	-1.1825	-0.8760	-7.0246	5.797	64	-1.192	-0.876	-7.068	5.810
64	1.8710	2.2035	0.455	-1.1630	-0.8743	-6.9292	5.752	65	-1.173	-0.875	-6.977	5.775
65	1.8690	2.1630	0.416	-1.1425	-0.8735	-6.8282	5.712	66	-1.153	-0.874	-6.879	5.732
66	1.8670	2.1195	0.374	-1.1205	-0.8728	-6.7191	5.670	67	-1.132	-0.873	-6.774	5.691
67	1.8650	2.0760	0.330	-1.0975	-0.8730	-6.6042	5.633	68	-1.109	-0.873	-6.662	5.652
68	1.8670	2.0315	0.285	-1.0760	-0.8733	-6.5001	5.596	69	-1.087	-0.873	-6.552	5.615
69	1.8690	1.9870	0.237	-1.0530	-0.8750	-6.3875	5.567	70	-1.065	-0.874	-6.444	5.581
70	1.8775	1.9450	0.188	-1.0328	-0.8785	-6.2944	5.549	71	-1.043	-0.877	-6.341	5.558
71	1.8860	1.9030	0.136	-1.0110	-0.8835	-6.1924	5.539	72	-1.022	-0.881	-6.243	5.544
72	1.9015	1.8645	0.083	-0.9923	-0.8908	-6.1115	5.544	73	-1.002	-0.887	-6.152	5.541
73	1.9170	1.8260	0.028	-0.9725	-0.8990	-6.0242	5.553	74	-0.982	-0.895	-6.068	5.548
74	1.9400	1.7925	-0.029	-0.9555	-0.9108	-5.9571	5.584	75	-0.964	-0.905	-5.991	5.569
75	1.9630	1.7590	-0.086	-0.9385	-0.9225	-5.8886	5.615	76	-0.947	-0.917	-5.923	5.600
76	1.9935	1.7315	-0.144	-0.9248	-0.9378	-5.8433	5.668	77	-0.932	-0.930	-5.866	5.641

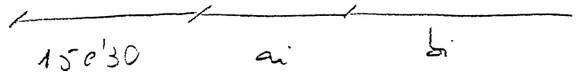
sc-paseo	0.5 T/m2			nudos				barras (semisuma)				
fin de barra	d-izqda	d-dcha	excent-via	Q-izqda	Q-dcha T/m	M-izqda T/m	M-dcha mT	Barra mT	Q-izqda T/m	Q-dcha T/m	M-izqda mT	M-dcha mT
77	2.0240	1.7040	-0.203	-0.9105	-0.9535	-5.7940	5.721	78	-0.918	-0.946	-5.819	5.695
78	2.0620	1.6830	-0.263	-0.8995	-0.9730	-5.7680	5.799	79	-0.905	-0.963	-5.781	5.760
79	2.1000	1.6620	-0.322	-0.8890	-0.9920	-5.7438	5.873	80	-0.894	-0.983	-5.756	5.836
80	2.1465	1.6490	-0.382	-0.8823	-1.0155	-5.7472	5.975	81	-0.886	-1.004	-5.746	5.924
81	2.1930	1.6360	-0.441	-0.8760	-1.0385	-5.7527	6.073	82	-0.879	-1.027	-5.750	6.024
82	2.2465	1.6315	-0.500	-0.8733	-1.0658	-5.7838	6.198	83	-0.875	-1.052	-5.768	6.135
83	2.3000	1.6270	-0.559	-0.8705	-1.0930	-5.8145	6.322	84	-0.872	-1.079	-5.799	6.260
84	2.3570	1.6280	-0.616	-0.8705	-1.1220	-5.8641	6.458	85	-0.871	-1.108	-5.839	6.390
85	2.4140	1.6290	-0.672	-0.8710	-1.1505	-5.9167	6.591	86	-0.871	-1.136	-5.890	6.524
86	2.4710	1.6325	-0.726	-0.8725	-1.1793	-5.9753	6.726	87	-0.872	-1.165	-5.946	6.658
87	2.5280	1.6360	-0.780	-0.8740	-1.2080	-6.0341	6.859	88	-0.873	-1.194	-6.005	6.792
88	2.5800	1.6380	-0.832	-0.8740	-1.2350	-6.0795	6.981	89	-0.874	-1.222	-6.057	6.920
89	2.6320	1.6400	-0.880	-0.8760	-1.2600	-6.1373	7.094	90	-0.875	-1.248	-6.108	7.038
90	2.6775	1.6405	-0.927	-0.8753	-1.2838	-6.1725	7.198	91	-0.876	-1.272	-6.155	7.146
91	2.7230	1.6410	-0.971	-0.8760	-1.3060	-6.2170	7.294	92	-0.876	-1.295	-6.195	7.246
92	2.7625	1.6405	-1.013	-0.8748	-1.3268	-6.2437	7.382	93	-0.875	-1.316	-6.230	7.338
93	2.8020	1.6400	-1.052	-0.8750	-1.3460	-6.2799	7.462	94	-0.875	-1.336	-6.262	7.422
94	2.8350	1.6405	-1.087	-0.8740	-1.3638	-6.3024	7.537	95	-0.875	-1.355	-6.291	7.500
95	2.8680	1.6410	-1.118	-0.8750	-1.3795	-6.3376	7.603	96	-0.875	-1.372	-6.320	7.570
96	2.8940	1.6415	-1.146	-0.8740	-1.3938	-6.3540	7.662	97	-0.875	-1.387	-6.346	7.633
97	2.9200	1.6420	-1.170	-0.8750	-1.4060	-6.3831	7.713	98	-0.875	-1.400	-6.369	7.688
98	2.9380	1.6425	-1.190	-0.8740	-1.4163	-6.3924	7.756	99	-0.875	-1.411	-6.388	7.735
99	2.9560	1.6430	-1.205	-0.8755	-1.4240	-6.4179	7.788	100	-0.875	-1.420	-6.405	7.772
100	2.9635	1.6430	-1.217	-0.8733	-1.4300	-6.4099	7.812	101	-0.874	-1.427	-6.414	7.800
101	2.9710	1.6430	-1.223	-0.8740	-1.4330	-6.4213	7.824	102	-0.874	-1.432	-6.416	7.818
102	2.9690	1.6430	-1.223	-0.8730	-1.4330	-6.4131	7.824	103	-0.874	-1.433	-6.417	7.824
103	2.9670	1.6430	-1.219	-0.8740	-1.4310	-6.4178	7.816	104	-0.874	-1.432	-6.415	7.820
104	2.9545	1.6440	-1.208	-0.8733	-1.4260	-6.4020	7.797	105	-0.874	-1.429	-6.410	7.807
105	2.9420	1.6450	-1.193	-0.8745	-1.4190	-6.3992	7.770	106	-0.874	-1.423	-6.401	7.784
106	2.9195	1.6480	-1.171	-0.8743	-1.4095	-6.3779	7.736	107	-0.874	-1.414	-6.389	7.753
107	2.8970	1.6510	-1.143	-0.8770	-1.3970	-6.3758	7.689	108	-0.876	-1.403	-6.377	7.713
108	2.8615	1.6535	-1.108	-0.8768	-1.3808	-6.3431	7.626	109	-0.877	-1.389	-6.359	7.657
109	2.8260	1.6560	-1.066	-0.8800	-1.3610	-6.3325	7.547	110	-0.878	-1.371	-6.338	7.586
110	2.7725	1.6545	-1.019	-0.8768	-1.3368	-6.2650	7.443	111	-0.878	-1.349	-6.299	7.495
111	2.7190	1.6530	-0.962	-0.8785	-1.3075	-6.2290	7.316	112	-0.878	-1.322	-6.247	7.379
112	2.6440	1.6450	-0.900	-0.8720	-1.2725	-6.1232	7.155	113	-0.875	-1.290	-6.176	7.235
113	2.5690	1.6370	-0.829	-0.8700	-1.2330	-6.0456	6.971	114	-0.871	-1.253	-6.084	7.063
114	2.4795	1.6305	-0.751	-0.8643	-1.1908	-5.9333	6.775	115	-0.867	-1.212	-5.989	6.873
115	2.3900	1.6240	-0.664	-0.8630	-1.1440	-5.8486	6.555	116	-0.864	-1.167	-5.891	6.665
116	2.3025	1.6365	-0.569	-0.8668	-1.1028	-5.7949	6.378	117	-0.865	-1.123	-5.822	6.467
117	2.2150	1.6490	-0.465	-0.8750	-1.0570	-5.7663	6.175	118	-0.871	-1.080	-5.781	6.277
118	2.1430	1.6950	-0.353	-0.8950	-1.0240	-5.8157	6.063	119	-0.885	-1.041	-5.791	6.119
119	2.0710	1.7410	-0.232	-0.9195	-0.9865	-5.8862	5.923	120	-0.907	-1.005	-5.851	5.993
120	2.0170	1.8240	-0.101	-0.9580	-0.9625	-6.0440	5.882	121	-0.939	-0.975	-5.965	5.903
121	1.9630	1.9070	0.039	-1.0010	-0.9340	-6.2182	5.812	122	-0.980	-0.948	-6.131	5.847
122	1.9270	2.0265	0.188	-1.0575	-0.9193	-6.4714	5.844	123	-1.029	-0.927	-6.345	5.828
123	1.8910	2.1460	0.349	-1.1200	-0.8985	-6.7435	5.838	124	-1.089	-0.909	-6.607	5.841
124	1.8681	2.2972	0.518	-1.1931	-0.8896	-7.0689	5.923	125	-1.157	-0.894	-6.906	5.880
125	1.8532	2.4664	0.698	-1.2756	-0.8842	-7.4337	6.041	126	-1.234	-0.887	-7.251	5.982
126	1.8465	2.6457	0.889	-1.3678	-0.8784	-7.8355	6.164		-1.322	-0.881	-7.635	6.102

ACCIONES IPF-75

CARGA VERTICAL 1 P F

Tren de cargas vía Renfe.





Excentricidad de cargas

$d = 2'35 + 0'30 + 0'08$ + ex vía-talud $- 2'75 + e_{V-t}$

apoyo + Redondeo + ex vía - Talud

$q = 12\ T/m \qquad M_t = 12 \times$

$q = 10\ T/m \qquad M_t = 10 \times$

$q = 1\ T/m \qquad M_t = 1 \times$

Coeficiente de impacto: IPF-75.

$V = 200 km/h = 55'56 m/s$ $L = 60 m$

$I = \frac{65\,\mu}{1-\mu+\mu^2}$ $\mu = \frac{VT}{2L} =$

$\mu = \frac{55'56 \times 0'2796}{2 \times 60.} = 0'1295$

$I = 9'48$ $\boxed{i = 1'095}$

Fuerza centrífuga IPF:

$F_c = Q \frac{V^2}{127 r}$

$V = 200 km/h.$

$F_c = 0'015\, Q$

$f = 065.Q = 0'17$

$\eta = f(1.80 + 0.75f + 1.226) = 3.92 f = 0'0.588\, Q = 065$

Frenado y arranque

Frenado $f_f = \frac{1}{8} Q = 0'125\ Q = 13$ t eje

$f_f = 0'9 \frac{1}{8} Q = 0'113\ Q = 12$ t eje.

Hipótesis de frenado

Frenado 1º eje → F_1

Frenado 2º eje → F_1

Frenado 2 ejes → $0'9 F_1$, F_1

$L < 300 m$. (Base de cálculo).

$F_{max} = [30\,12 + (300-30)\,10]\,\frac{1}{8} = 382'5\,T$

(para 1 eje)

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OFICINA DE PROYECTOS

PROYECTO_____ HOJA____ DE____

FECHA _____

APLICACIÓN DE LA HIPÓTESIS DE RÉGIMEN Y ARRANQUE (JPFK)

$f_f = \frac{1}{8} Q = 0'125\,Q.$

$M_{yt} = M_y \cdot f_f$

$L = 60\,m \qquad M_y = 1'358 + 0'788 = 2'146 \qquad M_y = 0'268\,Q.$

$M_{yt} = (2'35) \cdot \Phi_1 = 0'254\,Q.$

Q	1ª hip	2ª hip (80%)
10 T/m	$f = 1'25$	
	$M_e = 2'22$	
	M_e	

Data de excentricidad para cálculo de sobrecarga.

```
sp[1]=0
dp[1]=0.390
sp[2]=5
dp[2]=0.341
sp[3]=10
dp[3]=0.294
sp[4]=15
dp[4]=0.248
sp[5]=20
dp[5]=0.204
sp[6]=25
dp[6]=0.160
sp[7]=30
dp[7]=0.118
sp[8]=35
dp[8]=0.078
sp[9]=40
dp[9]=0.039
sp[10]=45
dp[10]=0.000
sp[11]=50
dp[11]=-0.037
sp[12]=55
dp[12]=-0.073
sp[13]=60
dp[13]=-0.108
sp[14]=65
dp[14]=-0.141
sp[15]=70
dp[15]=-0.173
sp[16]=75
dp[16]=-0.204
sp[17]=80
dp[17]=-0.233
sp[18]=85
dp[18]=-0.261
sp[19]=90
dp[19]=-0.288
sp[20]=95
dp[20]=-0.314
sp[21]=100
dp[21]=-0.339
sp[22]=105
dp[22]=-0.363
sp[23]=110
dp[23]=-0.385
sp[24]=115
dp[24]=-0.405
sp[25]=120
dp[25]=-0.424
sp[26]=125
dp[26]=-0.443
sp[27]=130
dp[27]=-0.460
sp[28]=135
dp[28]=-0.476
sp[29]=140
dp[29]=-0.491
sp[30]=145
dp[30]=-0.503
sp[31]=150
dp[31]=-0.516
```

```
sp[32]=155
dp[32]=-0.527
sp[33]=160
dp[33]=-0.536
sp[34]=165
dp[34]=-0.544
sp[35]=170
dp[35]=-0.551
sp[36]=175
dp[36]=-0.557
sp[37]=180
dp[37]=-0.562
sp[38]=185
dp[38]=-0.565
sp[39]=190
dp[39]=-0.567
sp[40]=195
dp[40]=-0.568
sp[41]=200
dp[41]=-0.568
sp[42]=205
dp[42]=-0.565
sp[43]=210
dp[43]=-0.563
sp[44]=215
dp[44]=-0.559
sp[45]=220
dp[45]=-0.554
sp[46]=225
dp[46]=-0.546
sp[47]=230
dp[47]=-0.539
sp[48]=235
dp[48]=-0.530
sp[49]=240
dp[49]=-0.519
sp[50]=245
dp[50]=-0.507
sp[51]=250
dp[51]=-0.495
sp[52]=255
dp[52]=-0.480
sp[53]=260
dp[53]=-0.465
sp[54]=265
dp[54]=-0.448
sp[55]=270
dp[55]=-0.430
sp[56]=275
dp[56]=-0.411
sp[57]=280
dp[57]=-0.391
sp[58]=285
dp[58]=-0.369
sp[59]=290
dp[59]=-0.346
sp[60]=295
dp[60]=-0.321
sp[61]=300
dp[61]=-0.296
dp[62]=-0.270
sp[63]=310
dp[63]=-0.241
sp[64]=315
dp[64]=-0.213
sp[65]=320
dp[65]=-0.183
sp[66]=325
dp[66]=-0.151
sp[67]=330
dp[67]=-0.119
sp[68]=335
dp[68]=-0.086
sp[69]=340
dp[69]=-0.053
sp[70]=345
dp[70]=-0.020
sp[71]=350
dp[71]=0.015
sp[72]=355
dp[72]=0.048
sp[73]=360
dp[73]=0.082
sp[74]=365
dp[74]=0.116
sp[75]=370
dp[75]=0.149
sp[76]=375
dp[76]=0.183
sp[77]=380
dp[77]=0.215
sp[78]=385
dp[78]=0.246
sp[79]=390
dp[79]=0.277
sp[80]=395
dp[80]=0.307
sp[81]=400
dp[81]=0.335
sp[82]=405
dp[82]=0.362
sp[83]=410
dp[83]=0.387
sp[84]=415
dp[84]=0.412
sp[85]=420
dp[85]=0.434
sp[86]=425
dp[86]=0.454
sp[87]=430
dp[87]=0.472
sp[88]=435
dp[88]=0.488
sp[89]=440
dp[89]=0.502
sp[90]=445
dp[90]=0.514
sp[91]=450
dp[91]=0.522
sp[92]=455
```

```
sp[93]=460
dp[93]=0.531
sp[94]=465
dp[94]=0.531
sp[95]=470
dp[95]=0.528
sp[96]=475
dp[96]=0.521
sp[97]=480
dp[97]=0.511
sp[98]=485
dp[98]=0.497
sp[99]=490
dp[99]=0.480
sp[100]=495
dp[100]=0.459
sp[101]=500
dp[101]=0.434
sp[102]=505
dp[102]=0.404
sp[103]=510
dp[103]=0.370
sp[104]=515
dp[104]=0.331
sp[105]=520
dp[105]=0.289
sp[106]=525
dp[106]=0.241
sp[107]=530
dp[107]=0.188
sp[108]=535
dp[108]=0.131
sp[109]=540
dp[109]=0.067
sp[110]=545
dp[110]=-0.001
sp[111]=550
dp[111]=-0.075
sp[112]=555
dp[112]=-0.153
sp[113]=560
dp[113]=-0.238
sp[114]=565
dp[114]=-0.330
sp[115]=570
dp[115]=-0.426
```

VIADUCTOS DE EL PAPIOL

HIPOTESIS DE SOBRECARGA

Viaductos de El Papiol
n de vanos 10

Hipótesis	**IPF-75**		**numero de la hipótesis**		
sobrecargas	via izda (LM-71)		101	a	157
	via dcha (LM-71)		158	a	214
paseos	izda		215	a	224
	dcha		225	a	234
Frenado	+ dcha		291		
	+ izda		292		
	- dcha		293		
	- izda		294		
Frenado	+ dcha	+ max sobrecarga	295		
	+ izda	+ max sobrecarga	296		
	- dcha	+ max sobrecarga	297		
	- izda	+ max sobrecarga	298		
Frenado	+ 2 vias	+ max sobrecarga	299		
	- 2 vias	+ max sobrecarga	300		
sobrecarga	minima	dcha	301		
	minima	izda	302		
	maxima	dcha	303		
	maxima	izda	304		
	maxima	ambas	305		
Fc 1 via (sin sobrecarga)			306		
Fc 1 via (sin sobrecarga)			307		

```
#
#  programa que genera las hipotesis de sobrecarga de ffcc
#  de acuerdo a la IPF-75 y EC-1
#
#           ipas=1   Hipotesis IPF-75
#           ipas=2   Hipotesis EC-1
#
#           ifc =1   fuerza centrifuga
#
#           itip=1   Norma IPF-75
#           itip=2   Norma EC-1 (LM-71)
#           itip=3   sob. paseos ipf
#           itip=4   Norma EC-1 (SW-2)
#           itip=5   sob. paseos ec-1
#
#           icomb=1  Combinacion de momentos en centro de vano
#           icomb=2  Combinacion de momentos en apoyos
#
BEGIN{
#
# Datos
#
ipuen=1
ipas=2
ifc=1
nhip=101
cipf=1.100
ciec=1.000
if(ifc==1)
  {
  cfi=-0.0150
   cmi=-0.0588
   cfe1=-0.0170
   cme1=-0.0706
   cfe2=-0.00250
   cme2=-0.00981
   }
#
# itip=1
# icomb=1
# evia="izda"
#
if(ipas==1)
    {
    ni1=1
    ni2=4
    }
if(ipas==2)
    {
    ni1=2
    ni2=6
    }
for(itip=ni1;itip<ni2;itip++)
{
if(ipas==1)
{
if(itip==2)
   itip++
}
if(ipas==2)
{
if(itip==3)
   itip++
}
for(ivia=1;ivia<3;ivia++)
{
if(ivia==1)
   evia="izda"
if(ivia==2)
   evia="dcha"
for(icomb=1;icomb<3;icomb++)
{
if(itip==3 || itip==5)
   icomb=3
#
if(ipuen==1)
   nv=10
if(ipuen==2)
   nv=8
if(ipuen==3)
   nv=6
#
# sobrecarga IPF
#
if(itip==1)
   {
   q1=-12.*cipf
   q2=-10.*cipf
   q3=-1.*cipf
   lt=30.
#  ex=-2.65
#  if(evia!="dcha")
#     ex=-ex
   if(icomb==1)
   {
ic=1
for(i=1;i<nv+1;i++)
{
for(kvtip=1;kvtip<4;kvtip++)
   {
   a=ev(i)
   printf"hipo %3d sob. v-%2d %s ipf-75\n",nhip,ic,evia
   printf"carg en barr\n"
   if(kvtip==1)
      {
      d1=0.
      dc=lt
      b=pos(d1)
      if(dc<lv)
      {
      printf"%3d a %3d fuer y unif %8.2f\n",a,i2-1,q1
      printf"%3d       fuer y unif %8.2f %8.2f %8.2f\n",i2,q1,0.,l2
      printf"%3d       fuer y unif %8.2f %8.2f %8.2f\n",i2,q2,l2,-0.01
      printf"%3d a %3d fuer y unif %8.2f\n",i2+1,a+n1,q2
      ex=esob(a,i2-1)
      printf"%3d a %3d mome x unif %8.2f\n",a,i2-1,q1*ex
      ex=esob(i2,i2)
      printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i2,q1*ex,0.,l2
      printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i2,q2*ex,l2,-0.01
      ex=esob(i2+1,a+n1)
      printf"%3d a %3d mome x unif %8.2f\n",i2+1,a+n1,q2*ex
      if(ifc==1)
         {
      printf"%3d a %3d fuer z unif %8.2f\n",a,i2-1,q1*cfi
      printf"%3d       fuer z unif %8.2f %8.2f %8.2f\n",i2,q1*cfi,0.,l2
      printf"%3d       fuer z unif %8.2f %8.2f %8.2f\n",i2,q2*cfi,l2,-0.01
      printf"%3d a %3d fuer z unif %8.2f\n",i2+1,a+n1,q2*cfi
      printf"%3d a %3d mome x unif %8.2f\n",a,i2-1,q1*cmi
```

```
    printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i2,q1*cmi,0.,l2
    printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i2,q2*cmi,l2,-0.01
    printf"%3d a %3d mome x unif %8.2f\n",i2+1,a+n1,q2*cmi
       }
    }
    if(dc>=lv)
    {
    printf"%3d a %3d fuer y unif %8.2f\n",a,a+n1,q1
    ex=esob(a,a+n1)
    printf"%3d a %3d mome x unif %8.2f\n",a,a+n1,q1*ex
    if(ifc==1)
       {
    printf"%3d a %3d fuer z unif %8.2f\n",a,a+n1,q1*cfi
    ex=esob(a,a+n1)
    printf"%3d a %3d mome x unif %8.2f\n",a,a+n1,q1*cmi
       }
    kvtip=4
    }
    }
if(kvtip==2)
    {
    d1=0.5*(lv-dc)
    dc=lt
    b=pos(d1)
    if(dc<lv)
    i3=i1-1
    i4=i2+1
    if(i3>=a)
       {
       printf"%3d a %3d fuer y unif %8.2f\n",a,i3,q2
       ex=esob(a,i3)
       printf"%3d a %3d mome x unif %8.2f\n",a,i3,q2*ex
  if(ifc==1)
       {
       printf"%3d a %3d fuer z unif %8.2f\n",a,i3,q2*cfi
       printf"%3d a %3d mome x unif %8.2f\n",a,i3,q2*cmi
       }
       }
  printf"%3d       fuer y unif %8.2f %8.2f %8.2f\n",i1,q2,0.,l1
  printf"%3d       fuer y unif %8.2f %8.2f %8.2f\n",i1,q1,l1,-0.01
  printf"%3d a %3d fuer y unif %8.2f\n",i1+1,i2-1,q1
  printf"%3d       fuer y unif %8.2f %8.2f %8.2f\n",i2,q1,0.,l2
  printf"%3d       fuer y unif %8.2f %8.2f %8.2f\n",i2,q2,l2,-0.01
 ex=esob(i1,i1)
 printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i1,q2*ex,0.,l1
 printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i1,q1*ex,l1,-0.01
 ex=esob(i1+1,i2-1)
 printf"%3d a %3d mome x unif %8.2f\n",i1+1,i2-1,q1*ex
 ex=esob(i2,i2)
 printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i2,q1*ex,0.,l2
 printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i2,q2*ex,l2,-0.01
  if(ifc==1)
     {
  printf"%3d       fuer z unif %8.2f %8.2f %8.2f\n",i1,q2*cfi,0.,l1
  printf"%3d       fuer z unif %8.2f %8.2f %8.2f\n",i1,q1*cfi,l1,-0.01
  printf"%3d a %3d fuer z unif %8.2f\n",i1+1,i2-1,q1*cfi
  printf"%3d       fuer z unif %8.2f %8.2f %8.2f\n",i2,q1*cfi,0.,l2
  printf"%3d       fuer z unif %8.2f %8.2f %8.2f\n",i2,q2*cfi,l2,-0.01
 printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i1,q2*cmi,0.,l1
 printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i1,q1*cmi,l1,-0.01
 printf"%3d a %3d mome x unif %8.2f\n",i1+1,i2-1,q1*ex
 printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i2,q1*cmi,0.,l2
 printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i2,q2*cmi,l2,-0.01
     }
```

```
    if(i4<=a+n1)
       {
       printf"%3d a %3d fuer y unif %8.2f\n",i4,a+n1,q2
       ex=esob(i4,a+n1)
       printf"%3d a %3d mome x unif %8.2f\n",i4,a+n1,q2*ex
    if(ifc==1)
       {
       printf"%3d a %3d fuer z unif %8.2f\n",i4,a+n1,q2*cfi
       printf"%3d a %3d mome x unif %8.2f\n",i4,a+n1,q2*cmi
       }
       }
    }
 if(kvtip==3)
    {
    d1=lv-dc
    dc=lt
    b=pos(d1)
    i3=i1-1
    if(i3<a)
       i3=a
    if(dc<lv)
    {
    printf"%3d a %3d fuer y unif %8.2f\n",a,i1-1,q2
    printf"%3d       fuer y unif %8.2f %8.2f %8.2f\n",i1,q2,0.,l1
    printf"%3d       fuer y unif %8.2f %8.2f %8.2f\n",i1,q1,l1,-0.01
    printf"%3d a %3d fuer y unif %8.2f\n",i1+1,a+n1,q1
   ex=esob(a,i1-1)
   printf"%3d a %3d mome x unif %8.2f\n",a,i1-1,q2*ex
   ex=esob(i1,i1)
    printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i1,q2*ex,0.,l1
    printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i1,q1*ex,l1,-0.01
    ex=esob(i1+1,a+n1)
     printf"%3d a %3d mome x unif %8.2f\n",i1+1,a+n1,q1*ex
     if(ifc==1)
        {
     printf"%3d a %3d fuer z unif %8.2f\n",a,i1-1,q2*cfi
     printf"%3d       fuer z unif %8.2f %8.2f %8.2f\n",i1,q2*cfi,0.,l1
     printf"%3d       fuer z unif %8.2f %8.2f %8.2f\n",i1,q1*cfi,l1,-0.01
     printf"%3d a %3d fuer z unif %8.2f\n",i1+1,a+n1,q1*cfi
    printf"%3d a %3d mome x unif %8.2f\n",a,i1-1,q2*cmi
    printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i1,q2*cmi,0.,l1
    printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i1,q1*cmi,l1,-0.01
     printf"%3d a %3d mome x unif %8.2f\n",i1+1,a+n1,q1*cmi
        }
    }
    }
 if(i-2>0)
    {
    for(j=i-2;j>0;j=j-2)
       h=alter(j,q2)
    }
 if(i+2<=nv)
    {
    for(j=i+2;j<nv+1;j=j+2)
       h=alter(j,q2)
    }
 if(i-1>0)
    {
    for(j=i-1;j>0;j=j-2)
       h=alter(j,q3)
    }
 if(i+1<=nv)
    {
    for(j=i+1;j<nv+1;j=j+2)
```

```
          h=alter(j,q3)
        }
    ic++
    nhip++
    }
    }
    }
if(icomb==2)
{
ic=1
for(i=2;i<nv+1;i++)
{
for(katip=1;katip<4;katip++)
   {
   printf"hipo %3d sob. a-%2d %s ipf-75\n",nhip,ic,evia
   printf"carg en barr\n"
   if(katip==1)
      {
      a=ev(i-1)
      d1=lv-dc
      dc=lt
      b=pos(d1)
      i3=i1-1
      if(i3<a)
         i3=a
      if(dc<lv)
      {
      printf"%3d a %3d fuer y unif %8.2f\n",a,i3,q2
      printf"%3d       fuer y unif %8.2f %8.2f %8.2f\n",i1,q2,0.,l1
      printf"%3d       fuer y unif %8.2f %8.2f %8.2f\n",i1,q1,l1,-0.01
      printf"%3d a %3d fuer y unif %8.2f\n",i1+1,a+n1,q1
     ex=esob(a,i3)
     printf"%3d a %3d mome x unif %8.2f\n",a,i3,q2*ex
     ex=esob(i1,i1)
     printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i1,q2*ex,0.,l1
     printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i1,q1*ex,l1,-0.01
     ex=esob(i1+1,a+n1)
      printf"%3d a %3d mome x unif %8.2f\n",i1+1,a+n1,q1*ex
      if(ifc==1)
         {
      printf"%3d a %3d fuer z unif %8.2f\n",a,i3,q2*cfi
      printf"%3d       fuer z unif %8.2f %8.2f %8.2f\n",i1,q2*cfi,0.,l1
      printf"%3d       fuer z unif %8.2f %8.2f %8.2f\n",i1,q1*cfi,l1,-0.01
      printf"%3d a %3d fuer z unif %8.2f\n",i1+1,a+n1,q1*cfi
     printf"%3d a %3d mome x unif %8.2f\n",a,i3,q2*cmi
     printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i1,q2*cmi,0.,l1
     printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i1,q1*cmi,l1,-0.01
      printf"%3d a %3d mome x unif %8.2f\n",i1+1,a+n1,q1*cmi
         }
      }
      if(dc>=lv)
      {
      printf"%3d a %3d fuer y unif %8.2f\n",a,a+n1,q1
      ex=esob(a,a+n1)
      printf"%3d a %3d mome x unif %8.2f\n",a,a+n1,q1*ex
      if(ifc==1)
         {
      printf"%3d a %3d fuer z unif %8.2f\n",a,a+n1,q1*cfi
      printf"%3d a %3d mome x unif %8.2f\n",a,a+n1,q1*cmi
         }
      }
      a=ev(i)
      printf"%3d a %3d fuer y unif %8.2f\n",a,a+n1,q2
      ex=esob(a,a+n1)
      printf"%3d a %3d mome x unif %8.2f\n",a,a+n1,q2*ex
      if(ifc==1)
         {
      printf"%3d a %3d fuer z unif %8.2f\n",a,a+n1,q2*cfi
      printf"%3d a %3d mome x unif %8.2f\n",a,a+n1,q2*cmi
         }
      }
   if(katip==2)
      {
      a=ev(i-1)
      dc=lt/2
      d1=lv-dc
      b=pos(d1)
      i3=i1-1
      if(i3<a)
         i3=a
      if(dc<lv)
      {
      printf"%3d a %3d fuer y unif %8.2f\n",a,i3,q2
      printf"%3d       fuer y unif %8.2f %8.2f %8.2f\n",i1,q2,0.,l1
      printf"%3d       fuer y unif %8.2f %8.2f %8.2f\n",i1,q1,l1,-0.01
      printf"%3d a %3d fuer y unif %8.2f\n",i1+1,a+n1,q1
     ex=esob(a,i3)
     printf"%3d a %3d mome x unif %8.2f\n",a,i3,q2*ex
     ex=esob(i1,i1)
     printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i1,q2*ex,0.,l1
     printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i1,q1*ex,l1,-0.01
     ex=esob(i1+1,a+n1)
      printf"%3d a %3d mome x unif %8.2f\n",i1+1,a+n1,q1*ex
       if(ifc==1)
         {
      printf"%3d a %3d fuer z unif %8.2f\n",a,i3,q2*cfi
      printf"%3d       fuer z unif %8.2f %8.2f %8.2f\n",i1,q2*cfi,0.,l1
      printf"%3d       fuer z unif %8.2f %8.2f %8.2f\n",i1,q1*cfi,l1,-0.01
      printf"%3d a %3d fuer z unif %8.2f\n",i1+1,a+n1,q1*cfi
     printf"%3d a %3d mome x unif %8.2f\n",a,i3,q2*cmi
     printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i1,q2*cmi,0.,l1
     printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i1,q1*cmi,l1,-0.01
     printf"%3d a %3d mome x unif %8.2f\n",i1+1,a+n1,q1*cmi
         }
      }
      a=ev(i)
      d1=0.
      dc=lt/2.
      b=pos(d1)
      if(dc<lv)
      {
      printf"%3d a %3d fuer y unif %8.2f\n",a,i2-1,q1
      printf"%3d       fuer y unif %8.2f %8.2f %8.2f\n",i2,q1,0.,l2
      printf"%3d       fuer y unif %8.2f %8.2f %8.2f\n",i2,q2,l2,-0.01
      printf"%3d a %3d fuer y unif %8.2f\n",i2+1,a+n1,q2
      ex=esob(a,i2-1)
      printf"%3d a %3d mome x unif %8.2f\n",a,i2-1,q1*ex
      ex=esob(i2,i2)
      printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i2,q1*ex,0.,l2
      printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i2,q2*ex,l2,-0.01
      ex=esob(i2+1,a+n1)
      printf"%3d a %3d mome x unif %8.2f\n",i2+1,a+n1,q2*ex
      if(ifc==1)
         {
      printf"%3d a %3d fuer z unif %8.2f\n",a,i2-1,q1*cfi
      printf"%3d       fuer z unif %8.2f %8.2f %8.2f\n",i2,q1*cfi,0.,l2
      printf"%3d       fuer z unif %8.2f %8.2f %8.2f\n",i2,q2*cfi,l2,-0.01
      printf"%3d a %3d fuer z unif %8.2f\n",i2+1,a+n1,q2*cfi
```

```
      printf"%3d a %3d mome x unif %8.2f\n",a,i2-1,q1*cmi
      printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i2,q1*cmi,0.,l2
      printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i2,q2*cmi,l2,-0.01
      printf"%3d a %3d mome x unif %8.2f\n",i2+1,a+n1,q2*cmi
         }
      }
      }
   if(katip==3)
      {
      a=ev(i-1)
      printf"%3d a %3d fuer y unif %8.2f\n",a,a+n1,q2
      ex=esob(a,a+n1)
      printf"%3d a %3d mome x unif %8.2f\n",a,a+n1,q2*ex
      if(ifc==1)
         {
      printf"%3d a %3d fuer z unif %8.2f\n",a,a+n1,q2*cfi
      printf"%3d a %3d mome x unif %8.2f\n",a,a+n1,q2*cmi
         }
      a=ev(i)
      d1=0.
      dc=lt
      b=pos(d1)
      if(dc<lv)
      {
      printf"%3d a %3d fuer y unif %8.2f\n",a,i2-1,q1
      printf"%3d       fuer y unif %8.2f %8.2f %8.2f\n",i2,q1,0.,l2
      printf"%3d       fuer y unif %8.2f %8.2f %8.2f\n",i2,q2,l2,-0.01
      printf"%3d a %3d fuer y unif %8.2f\n",i2+1,a+n1,q2
      ex=esob(a,i2-1)
      printf"%3d a %3d mome x unif %8.2f\n",a,i2-1,q1*ex
      ex=esob(i2,i2)
      printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i2,q1*ex,0.,l2
      printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i2,q2*ex,l2,-0.01
      ex=esob(i2+1,a+n1)
      printf"%3d a %3d mome x unif %8.2f\n",i2+1,a+n1,q2*ex
      if(ifc==1)
         {
      printf"%3d a %3d fuer z unif %8.2f\n",a,i2-1,q1*cfi
      printf"%3d       fuer z unif %8.2f %8.2f %8.2f\n",i2,q1*cfi,0.,l2
      printf"%3d       fuer z unif %8.2f %8.2f %8.2f\n",i2,q2*cfi,l2,-0.01
      printf"%3d a %3d fuer z unif %8.2f\n",i2+1,a+n1,q2*cfi
      printf"%3d a %3d mome x unif %8.2f\n",a,i2-1,q1*cmi
      printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i2,q1*cmi,0.,l2
      printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i2,q2*cmi,l2,-0.01
      printf"%3d a %3d mome x unif %8.2f\n",i2+1,a+n1,q2*cmi
         }
      }
      if(dc>=lv)
      {
      printf"%3d a %3d fuer y unif %8.2f\n",a,a+n1,q1
      ex=esob(a,a+n1)
      printf"%3d a %3d mome x unif %8.2f\n",a,a+n1,q1*ex
      if(ifc==1)
         {
      printf"%3d a %3d fuer z unif %8.2f\n",a,a+n1,q1*cfi
      printf"%3d a %3d mome x unif %8.2f\n",a,a+n1,q1*cmi
         }
      }
      }
   if(i-3>0)
      {
      for(j=i-3;j>0;j=j-2)
         h=alter(j,q2)
      }
      if(i+2<=nv)
         {
         for(j=i+2;j<nv+1;j=j+2)
            h=alter(j,q2)
         }
      if(i-2>0)
         {
         for(j=i-2;j>0;j=j-2)
            h=alter(j,q3)
         }
      if(i+1<=nv)
         {
         for(j=i+1;j<nv+1;j=j+2)
            h=alter(j,q3)
         }
      ic++
      nhip++
      }
      }
      }
   }
#
# sobrecarga EC-1 LM-71
#
if(itip==2)
   {
   q1=-25.*ciec
   q2=-8.*ciec
   q3=-1.25*ciec
   b=1.60
   dc=3.2
#  ex=-2.65
#  if(evia!="dcha")
#     ex=-ex
   if(icomb==1)
   {
   ic=1
   for(i=1;i<nv+1;i++)
   {
   for(kvtip=1;kvtip<4;kvtip++)
      {
      a=ev(i)
      d1=kvtip*lv/4.
      bb=posec(d1)
      printf"hipo %3d sob. v-%2d %s ec-1 (LM-71)\n",nhip,ic,evia
      printf"carg en barr\n"
      i3=i1-1
      if(i3>=a)
         {
         printf"%3d a %3d fuer y unif %8.2f\n",a,i3,q2
         ex=esob(a,i3)
         printf"%3d a %3d mome x unif %8.2f\n",a,i3,q2*ex
         if(ifc==1)
            {
         printf"%3d a %3d fuer z unif %8.2f\n",a,i3,q2*cfe1
         printf"%3d a %3d mome x unif %8.2f\n",a,i3,q2*cme1
            }
         }
      printf"%3d       fuer y unif %8.2f %8.2f %8.2f\n",i1,q2,0.,l1
      printf"%3d       fuer y unif %8.2f %8.2f %8.2f\n",i2-1,q2,-l2,-.01
      ex=esob(i1,i1)
      printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i1,q2*ex,0.,l1
      ex=esob(i2-1,i2-1)
      printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i2-1,q2*ex,-l2,-.01
```

```
   if(ifc==1)
      {
printf"%3d       fuer z unif %8.2f %8.2f %8.2f\n",i1,q2*cfe1,0.,l1
printf"%3d       fuer z unif %8.2f %8.2f %8.2f\n",i2-1,q2*cfe1,-l2,-.01
printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i1,q2*cme1,0.,l1
printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i2-1,q2*cme1,-l2,-.01
      }
if(i2<=a+n1)
   {
   printf"%3d a %3d fuer y unif %8.2f\n",i2,a+n1,q2
   ex=esob(i2,a+n1)
   printf"%3d a %3d mome x unif %8.2f\n",i2,a+n1,q2*ex
   if(ifc==1)
      {
   printf"%3d a %3d fuer z unif %8.2f\n",i2,a+n1,q2*cfe1
   printf"%3d a %3d mome x unif %8.2f\n",i2,a+n1,q2*cme1
      }
   }
d0=d1-1.5*b
dk=d0
for(j=1;j<5;j++)
   {
   ik=int(dk/lb)+a
   lk=dk-(ik-a)*lb
   printf"%3d       fuer y conc %8.2f %8.2f\n",ik,q1,lk
   ex=esob(ik,ik)
   printf"%3d       mome x conc %8.2f %8.2f\n",ik,q1*ex,lk
   if(ifc==1)
      {
   printf"%3d       fuer z conc %8.2f %8.2f\n",ik,q1*cfe1,lk
   printf"%3d       mome x conc %8.2f %8.2f\n",ik,q1*cme1,lk
      }
   dk=dk+b
   }
 if(i-2>0)
    {
    for(j=i-2;j>0;j=j-2)
       h=alter(j,q2)
    }
 if(i+2<=nv)
    {
    for(j=i+2;j<nv+1;j=j+2)
       h=alter(j,q2)
    }
 if(i-1>0)
    {
    for(j=i-1;j>0;j=j-2)
       h=alter(j,q3)
    }
 if(i+1<=nv)
    {
    for(j=i+1;j<nv+1;j=j+2)
       h=alter(j,q3)
    }
 ic++
 nhip++
 }
 }
 }
if(icomb==2)
{
ic=1
for(i=2;i<nv+1;i++)
{
```

```
for(katip=1;katip<4;katip++)
   {
   printf"hipo %3d sob. a-%2d %s ec-1 (LM-71)\n",nhip,ic,evia
   printf"carg en barr\n"
   if(katip==1)
   {
   a=ev(i-1)
   d1=3.*lv/4.
   bb=posec(d1)
   i3=il-1
   if(i3>=a)
      {
      printf"%3d a %3d fuer y unif %8.2f\n",a,i3,q2
      ex=esob(a,i3)
      printf"%3d a %3d mome x unif %8.2f\n",a,i3,q2*ex
      if(ifc==1)
         {
      printf"%3d a %3d fuer z unif %8.2f\n",a,i3,q2*cfe1
      printf"%3d a %3d mome x unif %8.2f\n",a,i3,q2*cme1
         }
      }
   printf"%3d       fuer y unif %8.2f %8.2f %8.2f\n",i1,q2,0.,l1
   printf"%3d       fuer y unif %8.2f %8.2f %8.2f\n",i2-1,q2,-l2,-.01
   ex=esob(i1,i1)
   printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i1,q2*ex,0.,l1
   ex=esob(i2-1,i2-1)
   printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i2-1,q2*ex,-l2,-.01
      if(ifc==1)
         {
   printf"%3d       fuer z unif %8.2f %8.2f %8.2f\n",i1,q2*cfe1,0.,l1
   printf"%3d       fuer z unif %8.2f %8.2f %8.2f\n",i2-1,q2*cfe1,-l2,-.01
   printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i1,q2*cme1,0.,l1
   printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i2-1,q2*cme1,-l2,-.01
         }
   if(i2<=a+n1)
      {
      printf"%3d a %3d fuer y unif %8.2f\n",i2,a+n1,q2
      ex=esob(i2,a+n1)
      printf"%3d a %3d mome x unif %8.2f\n",i2,a+n1,q2*ex
      if(ifc==1)
         {
      printf"%3d a %3d fuer z unif %8.2f\n",i2,a+n1,q2*cfe1
      printf"%3d a %3d mome x unif %8.2f\n",i2,a+n1,q2*cme1
         }
      }
   d0=d1-1.5*b
   dk=d0
   for(j=1;j<5;j++)
      {
      ik=int(dk/lb)+a
      lk=dk-(ik-a)*lb
      printf"%3d       fuer y conc %8.2f %8.2f\n",ik,q1,lk
      ex=esob(ik,ik)
      printf"%3d       mome x conc %8.2f %8.2f\n",ik,q1*ex,lk
      if(ifc==1)
         {
      printf"%3d       fuer z conc %8.2f %8.2f\n",ik,q1*cfe1,lk
      printf"%3d       mome x conc %8.2f %8.2f\n",ik,q1*cme1,lk
         }
      dk=dk+b
      }
   a=ev(i)
   printf"%3d a %3d fuer y unif %8.2f\n",a,a+n1,q2
   ex=esob(a,a+n1)
```

```
printf"%3d a %3d mome x unif %8.2f\n",a,a+n1,q2*ex
   if(ifc==1)
      {
printf"%3d a %3d fuer z unif %8.2f\n",a,a+n1,q2*cfe1
printf"%3d a %3d mome x unif %8.2f\n",a,a+n1,q2*cme1
      }
}
if(katip==2)
{
a=ev(i-1)
d1=lv
bb=posec(d1)
printf"%3d a %3d fuer y unif %8.2f\n",a,i1-1,q2
printf"%3d       fuer y unif %8.2f %8.2f %8.2f\n",i1,q2,0.,l1
ex=esob(a,i1-1)
printf"%3d a %3d mome x unif %8.2f\n",a,i1-1,q2*ex
ex=esob(i1,i1)
printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i1,q2*ex,0.,l1
   if(ifc==1)
      {
printf"%3d a %3d fuer z unif %8.2f\n",a,i1-1,q2*cfe1
printf"%3d       fuer z unif %8.2f %8.2f %8.2f\n",i1,q2*cfe1,0.,l1
printf"%3d a %3d mome x unif %8.2f\n",a,i1-1,q2*cme1
printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i1,q2*cme1,0.,l1
      }
d0=d1-1.5*b
dk=d0
for(j=1;j<3;j++)
   {
   ik=int(dk/lb)+a
   lk=dk-(ik-a)*lb
   printf"%3d       fuer y conc %8.2f %8.2f\n",ik,q1,lk
   ex=esob(ik,ik)
   printf"%3d       mome x conc %8.2f %8.2f\n",ik,q1*ex,lk
   if(ifc==1)
      {
   printf"%3d       fuer z conc %8.2f %8.2f\n",ik,q1*cfe1,lk
   printf"%3d       mome x conc %8.2f %8.2f\n",ik,q1*cme1,lk
      }
   dk=dk+b
   }
a=ev(i)
d1=0.
bb=posec(d1)
printf"%3d       fuer y unif %8.2f %8.2f %8.2f\n",i2-1,q2,-l2,-.01
printf"%3d a %3d fuer y unif %8.2f\n",i2,a+n1,q2
ex=esob(i2-1,i2-1)
printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i2-1,q2*ex,-l2,-.01
ex=esob(i2,a+n1)
printf"%3d a %3d mome x unif %8.2f\n",i2,a+n1,q2*ex
   if(ifc==1)
      {
printf"%3d       fuer z unif %8.2f %8.2f %8.2f\n",i2-1,q2*cfe1,-l2,-.01
printf"%3d a %3d fuer z unif %8.2f\n",i2,a+n1,q2*cfe1
printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i2-1,q2*cme1,-l2,-.01
printf"%3d a %3d mome x unif %8.2f\n",i2,a+n1,q2*cme1
      }
d0=d1+0.5*b
dk=d0
for(j=1;j<3;j++)
   {
   ik=int(dk/lb)+a
   lk=dk-(ik-a)*lb
   printf"%3d       fuer y conc %8.2f %8.2f\n",ik,q1,lk
```

```
   ex=esob(ik,ik)
   printf"%3d       mome x conc %8.2f %8.2f\n",ik,q1*ex,lk
   if(ifc==1)
      {
   printf"%3d       fuer z conc %8.2f %8.2f\n",ik,q1*cfe1,lk
   printf"%3d       mome x conc %8.2f %8.2f\n",ik,q1*cme1,lk
      }
   dk=dk+b
   }
}
if(katip==3)
{
a=ev(i-1)
printf"%3d a %3d fuer y unif %8.2f\n",a,a+n1,q2
ex=esob(a,a+n1)
printf"%3d a %3d mome x unif %8.2f\n",a,a+n1,q2*ex
   if(ifc==1)
      {
printf"%3d a %3d fuer z unif %8.2f\n",a,a+n1,q2*cfe1
printf"%3d a %3d mome x unif %8.2f\n",a,a+n1,q2*cme1
      }
a=ev(i)
d1=lv/4.
bb=posec(d1)
i3=i1-1
if(i3>=a)
   {
   printf"%3d a %3d fuer y unif %8.2f\n",a,i3,q2
   ex=esob(a,i3)
   printf"%3d a %3d mome x unif %8.2f\n",a,i3,q2*ex
   if(ifc==1)
      {
   printf"%3d a %3d fuer z unif %8.2f\n",a,i3,q2*cfe1
   printf"%3d a %3d mome x unif %8.2f\n",a,i3,q2*cme1
      }
   }
printf"%3d       fuer y unif %8.2f %8.2f %8.2f\n",i1,q2,0.,l1
printf"%3d       fuer y unif %8.2f %8.2f %8.2f\n",i2-1,q2,-l2,-.01
ex=esob(i1,i1)
printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i1,q2*ex,0.,l1
ex=esob(i2-1,i2-1)
printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i2-1,q2*ex,-l2,-.01
   if(ifc==1)
      {
printf"%3d       fuer z unif %8.2f %8.2f %8.2f\n",i1,q2*cfe1,0.,l1
printf"%3d       fuer z unif %8.2f %8.2f %8.2f\n",i2-1,q2*cfe1,-l2,-.01
printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i1,q2*cme1,0.,l1
printf"%3d       mome x unif %8.2f %8.2f %8.2f\n",i2-1,q2*cme1,-l2,-.01
      }
if(i2<=a+n1)
   {
   printf"%3d a %3d fuer y unif %8.2f\n",i2,a+n1,q2
   ex=esob(i2,a+n1)
   printf"%3d a %3d mome x unif %8.2f\n",i2,a+n1,q2*ex
   if(ifc==1)
      {
   printf"%3d a %3d fuer z unif %8.2f\n",i2,a+n1,q2*cfe1
   printf"%3d a %3d mome x unif %8.2f\n",i2,a+n1,q2*cme1
      }
   }
d0=d1-1.5*b
dk=d0
for(j=1;j<5;j++)
   {
```

```
      ik=int(dk/lb)+a
      lk=dk-(ik-a)*lb
      printf"%3d        fuer y conc %8.2f %8.2f\n",ik,q1,lk
      ex=esob(ik,ik)
      printf"%3d        mome x conc %8.2f %8.2f\n",ik,q1*ex,lk
      if(ifc==1)
         {
      printf"%3d        fuer z conc %8.2f %8.2f\n",ik,q1*cfe1,lk
      printf"%3d        mome x conc %8.2f %8.2f\n",ik,q1*cme1,lk
         }
      dk=dk+b
      }
   }
   if(i-3>0)
      {
      for(j=i-3;j>0;j=j-2)
         h=alter(j,q2)
      }
   if(i+2<=nv)
      {
      for(j=i+2;j<nv+1;j=j+2)
         h=alter(j,q2)
      }
   if(i-2>0)
      {
      for(j=i-2;j>0;j=j-2)
         h=alter(j,q3)
      }
   if(i+1<=nv)
      {
      for(j=i+1;j<nv+1;j=j+2)
         h=alter(j,q3)
      }
   ic++
   nhip++
   }
   }
   }
   }
   if(itip==3 || itip==5)
      {
#     q1=-0.900
#     ex=-5.95
#     if(itip==5)
#        q1=-0.350
#     if(evia!="dcha")
#        ex=-ex
      ic=1
      for(i=1;i<nv+1;i++)
         {
         a=ev(i)
         if(itip==3)
            printf"hipo %3d sob. paseo-%2d %s ipf-75\n",nhip,ic,evia
         if(itip==5)
            printf"hipo %3d sob. paseo-%2d %s ec-1\n",nhip,ic,evia
         printf"carg en barr\n"
         h=alter2(i)
         nhip++
         ic++
         }
      }
   if(itip==4)
      {
      cw=7.0
      aw=25.0
      ci=1.0
      q1=-15.*ci
#     ex=-2.65
#     if(evia!="dcha")
#        ex=-ex
      if(icomb==1)
      {
      ic=1
      for(i=1;i<nv+1;i++)
         {
         a=ev(i)
         if(lv>35.)
            d1=lv/2.
         if(lv<=35.)
            d1=(lv+aw+cw)*0.5
         bb=posecw(d1)
         printf"hipo %3d sob. v-%2d %s ec-1 (sw-2)\n",nhip,ic,evia
         printf"carg en barr\n"
         if(i3>=a)
            {
          if(l3<0)
             l3=0.
          printf"%3d        fuer y unif %8.2f %6.2f %6.2f\n",i3,q1,l3,-0.01
          ex=esob(i3,i3)
          printf"%3d        mome x unif %8.2f %6.2f %6.2f\n",i3,q1*ex,l3,-0.01
           if(ifc==1)
              {
          printf"%3d        fuer z unif %8.2f %6.2f %6.2f\n",i3,q1*cfe2,l3,-0.01
          printf"%3d        mome x unif %8.2f %6.2f %6.2f\n",i3,q1*cme2,l3,-0.01
              }
          i3=i3+1
           }
        i3=i3+1
         }
      if(i3<a)
        i3=a
      i5=i1-1
      if(i5>a+n1)
         i5=a+n1-1
      printf"%3d a %3d fuer y unif %8.2f\n",i3,i5,q1
      ex=esob(i3,i5)
      printf"%3d a %3d mome x unif %8.2f\n",i3,i5,q1*ex
         if(ifc==1)
            {
      printf"%3d a %3d fuer z unif %8.2f\n",i3,i5,q1*cfe2
      printf"%3d a %3d mome x unif %8.2f\n",i3,i5,q1*cme2
            }
      if(i1<=a+n1)
         {
         printf"%3d        fuer y unif %8.2f %6.2f %6.2f\n",i1,q1,0.,l1
         ex=esob(i1,i1)
         printf"%3d        mome x unif %8.2f %6.2f %6.2f\n",i1,q1*ex,0.,l1
         if(ifc==1)
            {
         printf"%3d        fuer z unif %8.2f %6.2f %6.2f\n",i1,q1*cfe2,0.,l1
         printf"%3d        mome x unif %8.2f %6.2f %6.2f\n",i1,q1*cme2,0.,l1
            }
         }
      if(lv>35.)
         {
         printf"%3d        fuer y unif %8.2f %6.2f %6.2f\n",i2-1,q1,-l2,-.01
         ex=esob(i2-1,i2-1)
         printf"%3d        mome x unif %8.2f %6.2f %6.2f\n",i2-1,q1*ex,-l2,-.01
         if(ifc==1)
            {
```

```
      printf"%3d       fuer z unif %8.2f %6.2f %6.2f\n",i2-1,q1*cfe2,-l2,-.01
      printf"%3d       mome x unif %8.2f %6.2f %6.2f\n",i2-1,q1*cme2,-l2,-.01
         }
      i5=i4-1
      if(i5>a+n1)
         i5=a+n1
      printf"%3d a %3d fuer y unif %8.2f\n",i2,i5,q1
      ex=esob(i2,i5)
      printf"%3d a %3d mome x unif %8.2f\n",i2,i5,q1*ex
      if(ifc==1)
         {
      printf"%3d a %3d fuer z unif %8.2f\n",i2,i5,q1*cfe2
      printf"%3d a %3d mome x unif %8.2f\n",i2,i5,q1*cme2
         }
      if(i4<=a+n1)
         {
        printf"%3d       fuer y unif %8.2f %6.2f %6.2f\n",i4,q1,0.,l4
        ex=esob(i4,i4)
        printf"%3d       mome x unif %8.2f %6.2f %6.2f\n",i4,q1*ex,0.,l4
      if(ifc==1)
         {
        printf"%3d       fuer z unif %8.2f %6.2f %6.2f\n",i4,q1*cfe2,0.,l4
        printf"%3d       mome x unif %8.2f %6.2f %6.2f\n",i4,q1*cme2,0.,l4
         }
         }
      }
   ic++
   nhip++
   }
}
if(icomb==2)
{
ic=1
for(i=2;i<nv+1;i++)
   {
   printf"hipo %3d sob. a-%2d %s ec-1 (sw-2)\n",nhip,ic,evia
   printf"carg en barr\n"
   a=ev(i-1)
   d1=lv
   bb=posecw(d1)
   if(i3>=a)
      {
     printf"%3d       fuer y unif %8.2f %6.2f %6.2f\n",i3,q1,l3,-0.01
     ex=esob(i3,i3)
     printf"%3d       mome x unif %8.2f %6.2f %6.2f\n",i3,q1*ex,l3,-0.01
      if(ifc==1)
         {
     printf"%3d       fuer z unif %8.2f %6.2f %6.2f\n",i3,q1*cfe2,l3,-0.01
     printf"%3d       mome x unif %8.2f %6.2f %6.2f\n",i3,q1*cme2,l3,-0.01
         }
     i3=i3+1
      }
   if(i3<a)
     i3=a
   printf"%3d a %3d fuer y unif %8.2f\n",i3,i1-1,q1
   printf"%3d       fuer y unif %8.2f %6.2f %6.2f\n",i1,q1,0.,l1
   ex=esob(i3,i1-1)
   printf"%3d a %3d mome x unif %8.2f\n",i3,i1-1,q1*ex
   ex=esob(i1,i1)
   printf"%3d       mome x unif %8.2f %6.2f %6.2f\n",i1,q1*ex,0.,l1
      if(ifc==1)
         {
   printf"%3d a %3d fuer z unif %8.2f\n",i3,i1-1,q1*cfe2
   printf"%3d       fuer z unif %8.2f %6.2f %6.2f\n",i1,q1*cfe2,0.,l1
   printf"%3d a %3d mome x unif %8.2f\n",i3,i1-1,q1*cme2
   printf"%3d       mome x unif %8.2f %6.2f %6.2f\n",i1,q1*cme2,0.,l1
         }
   a=ev(i)
   d1=0.
   bb=posecw(d1)
   i6=i2-1
   if(i6>=a)
      {
      printf"%3d       fuer y unif %8.2f %6.2f %6.2f\n",i2-1,q1,-l2,-.01
      ex=esob(i2-1,i2-1)
      printf"%3d       mome x unif %8.2f %6.2f %6.2f\n",i2-1,q1*ex,-l2,-.01
      if(ifc==1)
         {
      printf"%3d       fuer z unif %8.2f %6.2f %6.2f\n",i2-1,q1*cfe2,-l2,-.01
      printf"%3d       mome x unif %8.2f %6.2f %6.2f\n",i2-1,q1*cme2,-l2,-.01
         }
      }
   i5=i4-1
   if(i5>a+n1)
      i5=a+n1
   printf"%3d a %3d fuer y unif %8.2f\n",i2,i5,q1
   ex=esob(i2,i5)
   printf"%3d a %3d mome x unif %8.2f\n",i2,i5,q1*ex
      if(ifc==1)
         {
   printf"%3d a %3d fuer z unif %8.2f\n",i2,i5,q1*cfe2
   printf"%3d a %3d mome x unif %8.2f\n",i2,i5,q1*cme2
         }
   if(i4<=a+n1)
      {
      if(i4<=a+n1)
         {
        printf"%3d       fuer y unif %8.2f %6.2f %6.2f\n",i4,q1,0.,l4
        ex=esob(i4,i4)
        printf"%3d       mome x unif %8.2f %6.2f %6.2f\n",i4,q1*ex,0.,l4
         if(ifc==1)
            {
        printf"%3d       fuer z unif %8.2f %6.2f %6.2f\n",i4,q1*cfe2,0.,l4
        printf"%3d       mome x unif %8.2f %6.2f %6.2f\n",i4,q1*cme2,0.,l4
            }
         }
      ic++
      nhip++
      }
   }
   }
}
}
}
function alter(i,q)
   {
   a=ev(i)
   ex=esob(a,a+n1)
   printf"%3d a %3d fuer y unif %8.2f\n",a,a+n1,q
   printf"%3d a %3d mome x unif %8.2f\n",a,a+n1,q*ex
   if(ifc==1)
     {
     if(itip==1)
        {
        c1=cfi
        c2=cmi
        }
     if(itip==2)
        {
```

```
      c1=cfe1
      c2=cme1
      }
    if(itip==4)
      {
      c1=cfe2
      c2=cme2
      }
  printf"%3d a %3d fuer z unif %8.2f\n",a,a+n1,q*c1
  printf"%3d a %3d mome x unif %8.2f\n",a,a+n1,q*c2
    }
  }
function alter2(i)
  {
  a=ev(i)
  ex=esob2(a,a+n1)
  q=-0.50*am
  printf"%3d a %3d fuer y unif %8.2f\n",a,a+n1,q
  printf"%3d a %3d mome x unif %8.2f\n",a,a+n1,q*ex
  }
function pos(d1)
  {
     i1=int(d1/lb)+a
     i2=int((d1+dc)/lb)+a
     l1=d1-(i1-a)*lb
     l2=d1+dc-(i2-a)*lb
     if(l1==0.)
        l1=0.01
     if(l2==0.)
        l2=0.01
     return i1
  }
function posec(d1)
  {
     i1=int((d1-dc)/lb)+a
     i2=int((d1+dc)/lb)+a+1
     l1=d1-dc-(i1-a)*lb
     l2=(i2-a)*lb-d1-dc
     return i1
  }
function posecw(d1)
  {
     i1=int((d1-cw*0.5)/lb)+a
     i2=int((d1+cw*0.5)/lb)+a+1
     l1=d1-cw*0.5-(i1-a)*lb
     l2=(i2-a)*lb-d1-cw*0.5
     i3=int((d1-cw*0.5-aw)/lb)+a
     i4=int((d1+cw*0.5+aw)/lb)+a
     l3=d1-cw*0.5-aw-(i3-a)*lb
     l4=-(i4-a)*lb+d1+cw*0.5+aw
     return i1
  }
function ev(j)
  {
  if(ipuen==1)
#
#  Viaductos de El Papiol
#
  {
  if(j<2)
    {
    e=1
    nb=9
    n1=nb-1
    lv=45.00
    }
  if(j>1 && j<=9)
    {
    e=(j-2)*12+10
    nb=12
    n1=nb-1
    lv=60.0
    }
  if(j>9 && j<=10)
    {
    e=106
    nb=9
    n1=nb-1
    lv=45.00
    }
  }
  lb=lv/nb
  return e
 }
function esob(i1,i2)
  {
  dd1=exce(i1)
  dd2=exce(i2)
  if(ivia==1)
    {
  ex1=(2.73+dd1)
  ex2=(2.73+dd2)
  ex=0.5*(ex1+ex2)
    }
  if(ivia==2)
    {
    ex1=-(2.73-dd1)
    ex2=-(2.73-dd2)
    ex=0.5*(ex1+ex2)
    }
  return ex
  }
function esob2(i1,i2)
  {
  dd1=exce(i1)
  dd2=exce(i2)
  if(ivia==1)
    {
  a1=2.73-dd1
  a2=2.73-dd2
  am=0.5*(a1+a2)
  ex1=(7.80-0.5*a1)
  ex2=(7.80-0.5*a2)
  ex=0.5*(ex1+ex2)
    }
  if(ivia==2)
    {
  a1=2.73+dd1
  a2=2.73+dd2
  am=0.5*(a1+a2)
  ex1=-(7.80-0.5*a1)
  ex2=-(7.80-0.5*a2)
  ex=0.5*(ex1+ex2)
    }
  return ex
  }
function exce(i)
  {
```

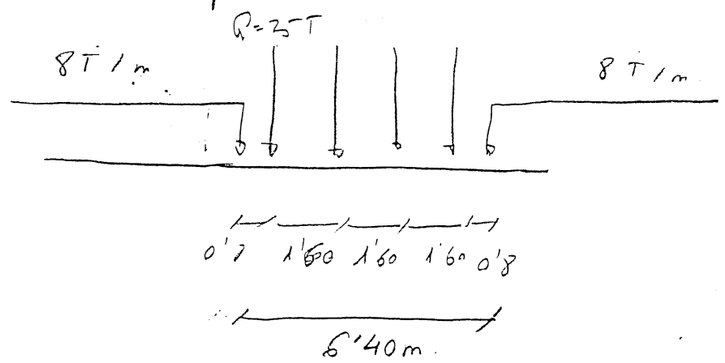
```
   l=5.
   s=(i-1)*l+0.5*l
sp[1]=0
dp[1]=0.390
sp[2]=5
dp[2]=0.341
sp[3]=10
dp[3]=0.294
sp[4]=15
dp[4]=0.248
sp[5]=20
dp[5]=0.204
sp[6]=25
dp[6]=0.160
sp[7]=30
dp[7]=0.118
sp[8]=35
dp[8]=0.078
sp[9]=40
dp[9]=0.039
sp[10]=45
dp[10]=0.000
sp[11]=50
dp[11]=-0.037
sp[12]=55
dp[12]=-0.073
sp[13]=60
dp[13]=-0.108
sp[14]=65
dp[14]=-0.141
sp[15]=70
dp[15]=-0.173
sp[16]=75
dp[16]=-0.204
sp[17]=80
dp[17]=-0.233
sp[18]=85
dp[18]=-0.261
sp[19]=90
dp[19]=-0.288
sp[20]=95
dp[20]=-0.314
sp[21]=100
dp[21]=-0.339
sp[22]=105
dp[22]=-0.363
sp[23]=110
dp[23]=-0.385
sp[24]=115
dp[24]=-0.405
sp[25]=120
dp[25]=-0.424
sp[26]=125
dp[26]=-0.443
sp[27]=130
dp[27]=-0.460
sp[28]=135
dp[28]=-0.476
sp[29]=140
dp[29]=-0.491
sp[30]=145
dp[30]=-0.503
sp[31]=150
dp[31]=-0.516
sp[32]=155
dp[32]=-0.527
sp[33]=160
dp[33]=-0.536
sp[34]=165
dp[34]=-0.544
sp[35]=170
dp[35]=-0.551
sp[36]=175
dp[36]=-0.557
sp[37]=180
dp[37]=-0.562
sp[38]=185
dp[38]=-0.565
sp[39]=190
dp[39]=-0.567
sp[40]=195
dp[40]=-0.568
sp[41]=200
dp[41]=-0.568
sp[42]=205
dp[42]=-0.565
sp[43]=210
dp[43]=-0.563
sp[44]=215
dp[44]=-0.559
sp[45]=220
dp[45]=-0.554
sp[46]=225
dp[46]=-0.546
sp[47]=230
dp[47]=-0.539
sp[48]=235
dp[48]=-0.530
sp[49]=240
dp[49]=-0.519
sp[50]=245
dp[50]=-0.507
sp[51]=250
dp[51]=-0.495
sp[52]=255
dp[52]=-0.480
sp[53]=260
dp[53]=-0.465
sp[54]=265
dp[54]=-0.448
sp[55]=270
dp[55]=-0.430
sp[56]=275
dp[56]=-0.411
sp[57]=280
dp[57]=-0.391
sp[58]=285
dp[58]=-0.369
sp[59]=290
dp[59]=-0.346
sp[60]=295
dp[60]=-0.321
sp[61]=300
dp[61]=-0.296
sp[62]=305
dp[62]=-0.270
sp[63]=310
dp[63]=-0.241
```

```
sp[64]=315
dp[64]=-0.213
sp[65]=320
dp[65]=-0.183
sp[66]=325
dp[66]=-0.151
sp[67]=330
dp[67]=-0.119
sp[68]=335
dp[68]=-0.086
sp[69]=340
dp[69]=-0.053
sp[70]=345
dp[70]=-0.020
sp[71]=350
dp[71]=0.015
sp[72]=355
dp[72]=0.048
sp[73]=360
dp[73]=0.082
sp[74]=365
dp[74]=0.116
sp[75]=370
dp[75]=0.149
sp[76]=375
dp[76]=0.183
sp[77]=380
dp[77]=0.215
sp[78]=385
dp[78]=0.246
sp[79]=390
dp[79]=0.277
sp[80]=395
dp[80]=0.307
sp[81]=400
dp[81]=0.335
sp[82]=405
dp[82]=0.362
sp[83]=410
dp[83]=0.387
sp[84]=415
dp[84]=0.412
sp[85]=420
dp[85]=0.434
sp[86]=425
dp[86]=0.454
sp[87]=430
dp[87]=0.472
sp[88]=435
dp[88]=0.488
sp[89]=440
dp[89]=0.502
sp[90]=445
dp[90]=0.514
sp[91]=450
dp[91]=0.522
sp[92]=455
dp[92]=0.528
sp[93]=460
dp[93]=0.531
sp[94]=465
dp[94]=0.531
sp[95]=470
dp[95]=0.528
sp[96]=475
dp[96]=0.521
sp[97]=480
dp[97]=0.511
sp[98]=485
dp[98]=0.497
sp[99]=490
dp[99]=0.480
sp[100]=495
dp[100]=0.459
sp[101]=500
dp[101]=0.434
sp[102]=505
dp[102]=0.404
sp[103]=510
dp[103]=0.370
sp[104]=515
dp[104]=0.331
sp[105]=520
dp[105]=0.289
sp[106]=525
dp[106]=0.241
sp[107]=530
dp[107]=0.188
sp[108]=535
dp[108]=0.131
sp[109]=540
dp[109]=0.067
sp[110]=545
dp[110]=-0.001
sp[111]=550
dp[111]=-0.075
sp[112]=555
dp[112]=-0.153
sp[113]=560
dp[113]=-0.238
sp[114]=565
dp[114]=-0.330
sp[115]=570
dp[115]=-0.426
  for(i=1;i<115;i++)
    {
    if(s>=sp[i] && s<sp[i+1])
       d=dp[i]+(dp[i+1]-dp[i])*(s-sp[i])/(sp[i+1]-sp[i])
    }
    return d
  }
```

ACCIONES EC-1

SOBRECARGAS (EC-1)

a) Tren de cargas Modelo 71



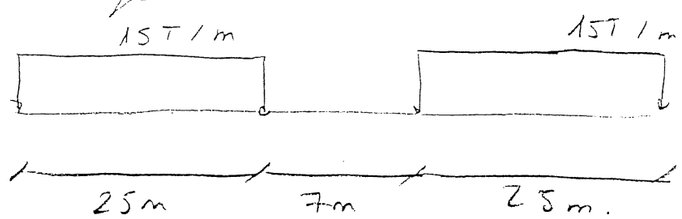
Excentricidad de cargas:

Valor de ripado Transversal = 0'30m.

Debido desequilibrio cargas en ≠ ruedas $e = \frac{\Gamma}{18} = 0'08m$.

d = 2'35 + 0'38 + excentricidad de la u/c en cada punto por ≠ge ula / tablero

b) Tren de cargas modelo SW2



q = 15T/m

At =

SOBRECARGA según EC-1

Coeficiente de dinámico φ: $L = 60\,m$

$v = 350\ km/h$. (Base de cálculo)

$n_0\,(Hz) = 3'5772\ Hz$

$n_{ixy} = 23'58 \cdot 60^{-0'592} = 2'05$

$n_{mp} = 94'76 \cdot 60^{-0'748} = 4'43$

$$\varphi_2 = \frac{1'44}{\sqrt{L_\varphi} - 0'2} + 0'82 \qquad \varphi_2 \in [1'0, 1'67]$$

$$L_\varphi = 1'5 \times \frac{8 \times 60 + 2 \times 45}{11} = 85'5\,m$$

$\varphi_2 = 0'979 \Rightarrow \boxed{\varphi = 1}$

COEFICIENTES DINÁMICOS PARA LOS TRENES REALES

Según EC-1. $1 + \varphi = 1 + \varphi' + \varphi''$

$1 + \varphi = 1 + \varphi' + 0'5\,\varphi''$

$v = 350\ km/h = 97\ m/s$

Santa Coloma $L = 60\,m$, $L_\varphi = 85'5\,m$ $n_1 = 3'5772\,Hz$

$$\varphi' = \frac{k}{1 + k + k^4} \qquad k = \frac{v}{2 L_\varphi n_0}$$

$$\varphi'' = \frac{\alpha}{100}\left[56 \cdot e^{-\left(\frac{L_\varphi}{70}\right)^2} + 50\left(\frac{L_\varphi n_0}{80} - 1\right) e^{-\left(\frac{L_\varphi}{20}\right)^2}\right]$$

$v > 22\ m/s \qquad \alpha \simeq 1$

$v = 350\ km/h = 97'2\ m/s$.

$$k = \frac{97'2}{2 \times 85'5 \times 3'5772} = 0'1589$$

$\varphi' = 0'185965$

$\varphi'' \simeq 0$

$\Big] \quad 1 + \varphi = 1'186$

Tren real de alta velocidad $q = 24'4\ kN/t = 2'49\ T/t$

$(1+\varphi)\,q = 1'18 \times 2'44 = 2'88\ T/t \ll 8'67\ T/t$

Por tanto los efectos dinámicos de amplificación no son significativos.

Combinación de Modelo 71 y SW

Separo la luz de cálculo. Recorriendo el tren pesado por una vía y el otro por la otra

$L = 60m$ Carga máxima EC-1

$Q = 25 \cdot 4 + 8(60 - 6'40) = 527'8\ T$

$Q_2 = 15\ 50 = 750\ T$

Carga máxima JPF-75

$Q_1 = Q_2 = (12 \cdot 30 + 10 \cdot 30) \cdot 1'1 = 726\ T$

M. tasa máx EC-1 - SW

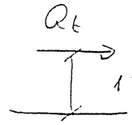
$M_T = d\ 750. =$

M. tasa máxima JPF 75

$M_T = d\ 726$

Fuerza centrífuga

$Q_t = \frac{V^2}{127 R} (f Q_{VL})$



Modelo 71:

Si $V \geq 120 km/h$, $L = 60m$

$V = 120 km/h$ $f = 1$ $Q_t = \frac{120^2}{127 \times 20000} Q_{VL} = 0'0057\ Q_{VL}$

$= 0'0456$

$V = 350 km/h$

$L = 60$ $f = 0'37$ $Q_t = \frac{350^2}{127\ 20000} \cdot 0'37\ Q_{VL} = 0'018\ Q_{VL}$

$= 0'144$

Para el modelo 71: $V = 120 km/h \Rightarrow Q_t = 0'0057\ Q_{VL}$

$V = 350 km/h \Rightarrow Q_t = 0'018\ Q_{VL}$

Para el modelo SW $V = 80 km/h$

$V = 80 km/h$ $f = 1$ $Q_t = \frac{80^2}{127 \cdot 20000} Q_{VL} = 0'0025\ Q_{VL}$.

Fuerza de tara $F_t = 10\ T$

Aplicación de la f. centrífuga

- Modulo 71: $f = 0'018\ Q = 0'144$

  $n = f \cdot (1'50 + 0'788 + 1'306) = 3'92\ f = 0'3060 = 0'565$

- Modulo SW $f = 0'025\ Q = 0'2$

  $n = 3'92\ f = 0'0981\ Q = 0'78$

CARLOS FERNANDEZ CASADO, S.L.
OFICINA DE PROYECTOS

HOJA____ DE ____

PROYECTO_____ FECHA _____

FUERZA DE FRENADO Y ARRANQUE. EC-1

ARRANQUE

$Q_L = 3'3$ t/m $\leq$ 100 T Mod 71 y SW.

FRENADO:

$Q_L = 2.L(m)$ $\leq$ 600 T Mod 71 y SW2

$Q_L = 3'5\ L(m)$ Mod SW2

Para el caso de carril continuo se admite reducción por Transmisión al terreno.

Hipótesis	EC-1				numero de la hipótesis		
sobrecargas	via izda (LM-71)				101	a	157
	via dcha (LM-71)				158	a	214
	via izda (SW.2)				215	a	233
	via dcha (SW.2)				234	a	252
paseos	izda				253	a	262
	dcha				263	a	272
Frenado	+ dcha				351		
	+ izda				352		
	- dcha				353		
	- izda				354		
Arranque	+ dcha				355		
	+ izda				356		
	- dcha				357		
	- izda				358		
Frenado	+ dcha	+ max sobrecarga			359		
	+ izda	+ max sobrecarga			360		
	- dcha	+ max sobrecarga			361		
	- izda	+ max sobrecarga			362		
Frenado	dcha	arranque	izda (+)	+ max sobrecarga	363		
	izda		dcha (+)	+ max sobrecarga	364		
	dcha		izda (-)	+ max sobrecarga	365		
	izda		dcha (-)	+ max sobrecarga	366		
sobrecarga	minima	dcha			367		
	minima	izda			368		
	maxima	dcha			369		
	maxima	izda			370		
	maxima	ambas			371		
Fc 1 via (sin sobrecarga)					372		
Fc 1 via (sin sobrecarga)					373		

COMBINACIÓN DE HIPÓTESIS

ejecuta

```
  sicaln sic-serv      > /dev/null
  sicaln sic-vien      > /dev/null
  sicaln sic-tef       > /dev/null
#
# envolventes de sobrecargas ipf
#
  sicaln sic-sob-ipf.1 > /dev/null
  sicaln sic-sob-ipf.2 > /dev/null
  maminn m.sob-ipf > /dev/null
# listamamin | lpcolor
#
# envolventes de sobrecargas ec-1
#
  sicaln sic-sob-ec.1 > /dev/null
  sicaln sic-sob-ec.2 > /dev/null
  maminn m.sob-ec  > /dev/null
# listamamin | lpcolor
#
# envolventes ELS y ELU sin pretensado
#
  maminn m.env.sp     > /dev/null
#
# hipotesis con pretensado
#
  ejesglec sic-serv > /dev/null
  pretensa pret-proc > /dev/null
  pretensa pret-ser  > /dev/null
  maminn m.pret      > /dev/null
  armaten armaten-ten > t
#
# envolventes ELS y ELU con pretensado
#
  maminn m.env       > /dev/null
  armatenehe armaten-arm  > a
# listamamin | lpcolor
```

m sob - ipf

```
*
* Envolvente de sobrecarga IPF-75
*
impr
hipo 331 a 342 max c.vertical grupo 11-12 (ipf-75)
comp 215 a 234 0.50 291 a 294 0.50
inco serie 1 101 a 157 302 304
inco serie 2 158 a 214 301 303
maxi tota
hipo 351 a 362 max c.longitud grupo 13 (ipf-75)
comp 215 a 234 0.50 306 0.50 307 0.50
inco 295 a 300
maxi tota
hipo 371 a 382 max c.lateral  grupo 14-a (ipf-75)
comp serie 1 304 306 292 0.50 294 0.50 215 a 224 0.50
comp serie 2 303 307 291 0.50 293 0.50 225 a 234 0.50
maxi tota
hipo 31 a 42 sobrecarga + fr. + fc (ipf-75)
eleg 331 hast 342 351 hast 362 371 hast 382 305
maxi tota
*
* Envolvente de sobrecarga EC-1
*
impr
hipo 401 a 412 max frenado y arranque (sin sob) (ec-1)
comp serie 1 351 353 356 358
comp serie 2 352 354 355 357
maxi tota
hipo 431 a 442 max c.vertical grupo 11-12 (ec-1)
comp 253 a 272 0.50 401 hast 412 0.50
inco serie 1 101 a 157 215 a 233 368 370
inco serie 2 158 a 214 234 a 252 367 369
maxi tota
hipo 451 a 462 max c.longitud grupo 13 (ec-1)
comp 253 a 272 0.50 372 0.50 373 0.50
inco 359 a 366
maxi tota
hipo 471 a 482 max c.lateral  grupo 14-a (ec-1)
comp serie 1 370 372 352 0.50 354 0.50 355 0.5 357 0.5
comp serie 2 369 373 351 0.50 353 0.50 356 0.5 358 0.5
maxi tota
hipo 51 a 62 sobrecarga + fr. + fc (ec-1)
eleg 431 hast 442 451 hast 462 471 hast 482 371
maxi tota
```

m.sob-ec

menu.sp (1)

```
impr

hipo 71 carga permanente (t=0)(sup)
fija 1 3
suma
hipo 72 carga permanente (t=inf.) (sup)
fija 1 3 10
suma
hipo 73 carga permanente (t=0)(inf)
fija 1 2
suma
hipo 74 carga permanente (t=inf.) (inf)
fija 1 2 10
suma

* fin

hipo 101 a 112 cp (els)
eleg 71 a 74
maxi tota
hipo 121 a 132 envolvente sobrecarga
eleg 31 hast 42 51 hast 62
maxi tota

hipo 141 a 152 grupo I (ELS)
fija 101 hast 112
comp 7 a 9 0.6 11 a 20 0.6 43 0.6 29 a 30 121 hast 132
maxi tota
hipo 161 a 172 grupo II (ELS)
fija 101 hast 112
comp 7 a 9 0.6 11 a 20 0.6 43  0.6 29 a 30
inco 21 a 22 25 a 26
maxi tota
hipo 181 a 192 grupo III (ELS)
fija 101 hast 112
comp 7 a 9 0.6 11 a 20 0.6 43  0.6 29 a 30 121 hast 132 0.8
inco 23 a 24 27 a 28
maxi tota
hipo 201 a 212 envolvente (ELS)
eleg 141 hast 152 161 hast 172 181 hast 192
maxi tota

hipo 221 cp (t=0)(sup)*1.35
fija 1 1.35 3 1.35
suma
hipo 222 cp (t=inf.)(sup)*1.35
fija 1 1.35 3 1.35 10 1.35
suma
hipo 223 cp (t=0)(inf)*1.35
fija 1 1.35 2 1.35
suma
hipo 224 cp (t=inf.)(inf)*1.35
fija 1 1.35 2 1.35 10 1.35
suma

hipo 231 a 242 cp may
eleg 71 a 74 221 a 224
maxi tota

hipo 251 a 262 grupo I (ELU)
fija 231 hast 242
```

menu.sp (2)

```
comp 7 a 9 0.9 11 a 20 0.9 43 0.9 29 a 30 1.35 121 hast 132 1.50
maxi tota
hipo 271 a 282 grupo II (ELU)
fija 231 hast 242
comp 7 a 9 0.9 11 a 20 0.9 43 0.9 29 a 30 1.35
inco 21 a 22 1.50 25 a 26 1.50
maxi tota
hipo 291 a 302 grupo III (ELU)
fija 231 hast 242
comp 7 a 9 0.9 11 a 20 0.9 43  0.9 29 a 30 1.35  121 hast 132 1.20
inco 23 a 24 1.50 27 a 28 1.50
maxi tota
hipo 311 a 322 envolvente (ELU)
eleg 251 hast 262 271 hast 282 291 hast 302
maxi tota

fin
```

m.pret (1)

```
impr
hipo 83 pret total (t=0)
fija 81 82
suma
hipo 84 pret total (t=inf)
fija 81 0.77 82 0.77
suma
hipo 85 pret total (t=0) (max)
fija 83 1.1
suma
hipo 86 pret total (t=0) (min)
fija 83 0.9
suma
hipo 87 pret total (t=inf) (max)
fija 84 1.1
suma
hipo 88 pret total (t=inf) (min)
fija 84 0.9
suma
hipo 89 pret max-min (t=0)
fija 85 1. 86 -1.
suma
hipo 90 pret max-min (t=inf)
fija 87 1. 88 -1.
suma

hipo 91 pp + pret proc
fija 1 82
suma
hipo 92 pp + pret total(t=0)
fija 1 83
suma
hipo 93 cp + pret total (t=0)
fija 71 83
suma
hipo 94 cp + pret total (t=inf)
fija 71 84
suma

hipo 95 max mz + pret (t=0) (min)
fija 211 86
maxi mome z
hipo 96 min mz + pret (t=0) (min)
fija 212 86
maxi mome z
hipo 97 max mz + pret (t=inf) (min)
fija 211 88
maxi mome z
hipo 98 min mz + pret (t=inf) (min)
fija 212 88
maxi mome z

hipo 113 max mz + pret (t=0) (max)
fija 211 85
maxi mome z
hipo 114 min mz + pret (t=0) (max)
fija 212 85
maxi mome z
hipo 115 max mz + pret (t=inf) (max)
fija 211 87
maxi mome z
```

m pret (2)

```
hipo 116 min mz + pret (t=inf) (max)
fija 212 87
maxi mome z

hipo 117 max mz + pret(t=0) (frecuente)
fija 71 86
comp 10 7 a 9 0.60 11 a 20 0.60 43 0.60 29 a 30 131 0.60 89 1.
maxi mome z
hipo 118 min mz + pret(t=0) (frecuente)
fija 71 86
comp 10 7 a 9 0.60 11 a 20 0.60 43 0.60 29 a 30 132 0.60 89 1.
mini mome z
hipo 119 max mz + pret(t=inf) (frecuente)
fija 71 88
comp 10 7 a 9 0.60 11 a 20 0.60 43 0.60 29 a 30 131 0.60 90 1.
maxi mome z
hipo 120 min mz + pret(t=inf) (frecuente)
fija 71 88
comp 10 7 a 9 0.60 11 a 20 0.60 43 0.60 29 a 30 132 0.60 90 1.
mini mome z

fin
```

menu (1)

```
impr

hipo 71 carga permanente (t=0)(sup)
fija 1 3  83
suma
hipo 72 carga permanente (t=inf.) (sup)
fija 1 3 10 84
suma
hipo 73 carga permanente (t=0)(inf)
fija 1 2  83
suma
hipo 74 carga permanente (t=inf.) (inf)
fija 1 2 10 84
suma

* fin

hipo 101 a 112 cp (els)
eleg 71 a 74
maxi tota
hipo 121 a 132 envolvente sobrecarga
eleg 31 hast 42 51 hast 62
maxi tota

hipo 141 a 152 grupo I (ELS)
fija 101 hast 112
comp 7 a 9 0.6 11 a 20 0.6 43 0.6 29 a 30 121 hast 132
maxi tota
hipo 161 a 172 grupo II (ELS)
fija 101 hast 112
comp 7 a 9 0.6 11 a 20 0.6 43 0.6 29 a 30
inco 21 a 22 25 a 26
maxi tota
hipo 181 a 192 grupo III (ELS)
fija 101 hast 112
comp 7 a 9 0.6 11 a 20 0.6 43 0.6 29 a 30 121 hast 132 0.8
inco 23 a 24 27 a 28
maxi tota
hipo 201 a 212 envolvente (ELS)
eleg 141 hast 152 161 hast 172 181 hast 192
maxi tota

hipo 221 cp (t=0)(sup)*1.35
fija 1 1.35 3 1.35 83
suma
hipo 222 cp (t=inf.)(sup)*1.35
fija 1 1.35 3 1.35 10 1.35 84
suma
hipo 223 cp (t=0)(inf)*1.35
fija 1 1.35 2 1.35 83
suma
hipo 224 cp (t=inf.)(inf)*1.35
fija 1 1.35 2 1.35 10 1.35 84
suma

hipo 231 a 242 cp may
eleg 71 a 74 221 a 224
maxi tota

hipo 251 a 262 grupo I (ELU)
fija 231 hast 242
```

menu (2)

```
comp 7 a 9 0.9 11 a 20 0.9 43 0.9 29 a 30 1.35 121 hast 132 1.50
maxi tota
hipo 271 a 282 grupo II (ELU)
fija 231 hast 242
comp 7 a 9 0.9 11 a 20 0.9 43 0.9 29 a 30 1.35
inco 21 a 22 1.50 25 a 26 1.50
maxi tota
hipo 291 a 302 grupo III (ELU)
fija 231 hast 242
comp 7 a 9 0.9 11 a 20 0.9 43 0.9 29 a 30 1.35  121 hast 132 1.20
inco 23 a 24 1.50 27 a 28 1.50
maxi tota
hipo 311 a 322 envolvente (ELU)
eleg 251 hast 262 271 hast 282 291 hast 302
maxi tota
```

)A10O160Fa8L16E16D8Us0p10h0s0b4099T
proc Viaducto Papiol

numero total de hipotesis previstas: 500

==========

1	hipo 1 peso propio
2	hipo 2 carga muerta (limite inferior)
3	hipo 3 carga muerta (limite superior)
4	hipo 4 desbalastado-1 (dcha)
5	hipo 5 desbalastado-2 (izqda)
6	hipo 6 desbalastado-3 (15m centro vano central)
7	hipo 7 temperatura +
8	hipo 8 temperatura -
9	hipo 9 gradiente de temperatura
10	hipo 10 fluencia y retraccion
11	hipo 11 asiento-1
12	hipo 12 asiento-2
13	hipo 13 asiento-3
14	hipo 14 asiento-4
15	hipo 15 asiento-5
16	hipo 16 asiento-6
17	hipo 17 asiento-7
18	hipo 18 asiento-8
19	hipo 19 asiento-9
20	hipo 20 asiento-10
21	hipo 21 viento + trans estructura
22	hipo 22 viento - trans estructura
23	hipo 23 viento + trans est.+ sobrecarga
24	hipo 24 viento - trans est.+ sobrecarga
25	hipo 25 viento + long. estructura
26	hipo 26 viento - long. estructura
27	hipo 27 viento + long. est.+ sobrecarga
28	hipo 28 viento - long. est.+ sobrecarga
29	hipo 29 F.Teflon +
30	hipo 30 F.Teflon -
31	FUER X MAX sobrecarga + fr. + fc (ipf-75)
32	FUER X MIN sobrecarga + fr. + fc (ipf-75)
33	FUER Y MAX sobrecarga + fr. + fc (ipf-75)
34	FUER Y MIN sobrecarga + fr. + fc (ipf-75)
35	FUER Z MAX sobrecarga + fr. + fc (ipf-75)
36	FUER Z MIN sobrecarga + fr. + fc (ipf-75)
37	MOME X MAX sobrecarga + fr. + fc (ipf-75)
38	MOME X MIN sobrecarga + fr. + fc (ipf-75)
39	MOME Y MAX sobrecarga + fr. + fc (ipf-75)
40	MOME Y MIN sobrecarga + fr. + fc (ipf-75)
41	MOME Z MAX sobrecarga + fr. + fc (ipf-75)
42	MOME Z MIN sobrecarga + fr. + fc (ipf-75)
43	hipo 43 asiento-11
71	carga permanente (t=0)(sup)
72	carga permanente (t=inf.) (sup)
73	carga permanente (t=0)(inf)
74	carga permanente (t=inf.) (inf)
101	hipo 101 sob. v- 1 izda ipf-75
102	hipo 102 sob. v- 2 izda ipf-75
103	hipo 103 sob. v- 3 izda ipf-75
104	hipo 104 sob. v- 4 izda ipf-75
105	hipo 105 sob. v- 5 izda ipf-75
106	hipo 106 sob. v- 6 izda ipf-75
107	hipo 107 sob. v- 7 izda ipf-75
108	hipo 108 sob. v- 8 izda ipf-75
109	hipo 109 sob. v- 9 izda ipf-75
110	hipo 110 sob. v-10 izda ipf-75
111	hipo 111 sob. v-11 izda ipf-75
112	hipo 112 sob. v-12 izda ipf-75
113	hipo 113 sob. v-13 izda ipf-75
114	hipo 114 sob. v-14 izda ipf-75
115	hipo 115 sob. v-15 izda ipf-75
116	hipo 116 sob. v-16 izda ipf-75
117	hipo 117 sob. v-17 izda ipf-75
118	hipo 118 sob. v-18 izda ipf-75
119	hipo 119 sob. v-19 izda ipf-75
120	hipo 120 sob. v-20 izda ipf-75
121	hipo 121 sob. v-21 izda ipf-75
122	hipo 122 sob. v-22 izda ipf-75
123	hipo 123 sob. v-23 izda ipf-75
124	hipo 124 sob. v-24 izda ipf-75
125	hipo 125 sob. v-25 izda ipf-75
126	hipo 126 sob. v-26 izda ipf-75
127	hipo 127 sob. v-27 izda ipf-75
128	hipo 128 sob. v-28 izda ipf-75
129	hipo 129 sob. v-29 izda ipf-75
130	hipo 130 sob. v-30 izda ipf-75
131	hipo 131 sob. a- 1 izda ipf-75
132	hipo 132 sob. a- 2 izda ipf-75
133	hipo 133 sob. a- 3 izda ipf-75
134	hipo 134 sob. a- 4 izda ipf-75
135	hipo 135 sob. a- 5 izda ipf-75
136	hipo 136 sob. a- 6 izda ipf-75
137	hipo 137 sob. a- 7 izda ipf-75
138	hipo 138 sob. a- 8 izda ipf-75
139	hipo 139 sob. a- 9 izda ipf-75
140	hipo 140 sob. a-10 izda ipf-75
141	hipo 141 sob. a-11 izda ipf-75
142	hipo 142 sob. a-12 izda ipf-75
143	hipo 143 sob. a-13 izda ipf-75
144	hipo 144 sob. a-14 izda ipf-75
145	hipo 145 sob. a-15 izda ipf-75
146	hipo 146 sob. a-16 izda ipf-75
147	hipo 147 sob. a-17 izda ipf-75
148	hipo 148 sob. a-18 izda ipf-75
149	hipo 149 sob. a-19 izda ipf-75
150	hipo 150 sob. a-20 izda ipf-75
151	hipo 151 sob. a-21 izda ipf-75
152	hipo 152 sob. a-22 izda ipf-75
153	hipo 153 sob. a-23 izda ipf-75
154	hipo 154 sob. a-24 izda ipf-75
155	hipo 155 sob. a-25 izda ipf-75
156	hipo 156 sob. a-26 izda ipf-75
157	hipo 157 sob. a-27 izda ipf-75
158	hipo 158 sob. v- 1 dcha ipf-75
159	hipo 159 sob. v- 2 dcha ipf-75
160	hipo 160 sob. v- 3 dcha ipf-75
161	hipo 161 sob. v- 4 dcha ipf-75
162	hipo 162 sob. v- 5 dcha ipf-75
163	hipo 163 sob. v- 6 dcha ipf-75
164	hipo 164 sob. v- 7 dcha ipf-75
165	hipo 165 sob. v- 8 dcha ipf-75
166	hipo 166 sob. v- 9 dcha ipf-75
167	hipo 167 sob. v-10 dcha ipf-75
168	hipo 168 sob. v-11 dcha ipf-75
169	hipo 169 sob. v-12 dcha ipf-75
170	hipo 170 sob. v-13 dcha ipf-75
171	hipo 171 sob. v-14 dcha ipf-75
172	hipo 172 sob. v-15 dcha ipf-75
173	hipo 173 sob. v-16 dcha ipf-75

174 hipo 174 sob. v-17 dcha ipf-75
175 hipo 175 sob. v-18 dcha ipf-75
176 hipo 176 sob. v-19 dcha ipf-75
177 hipo 177 sob. v-20 dcha ipf-75
178 hipo 178 sob. v-21 dcha ipf-75
179 hipo 179 sob. v-22 dcha ipf-75
180 hipo 180 sob. v-23 dcha ipf-75
181 hipo 181 sob. v-24 dcha ipf-75
182 hipo 182 sob. v-25 dcha ipf-75
183 hipo 183 sob. v-26 dcha ipf-75
184 hipo 184 sob. v-27 dcha ipf-75
185 hipo 185 sob. v-28 dcha ipf-75
186 hipo 186 sob. v-29 dcha ipf-75
187 hipo 187 sob. v-30 dcha ipf-75
188 hipo 188 sob. a- 1 dcha ipf-75
189 hipo 189 sob. a- 2 dcha ipf-75
190 hipo 190 sob. a- 3 dcha ipf-75
191 hipo 191 sob. a- 4 dcha ipf-75
192 hipo 192 sob. a- 5 dcha ipf-75
193 hipo 193 sob. a- 6 dcha ipf-75
194 hipo 194 sob. a- 7 dcha ipf-75
195 hipo 195 sob. a- 8 dcha ipf-75
196 hipo 196 sob. a- 9 dcha ipf-75
197 hipo 197 sob. a-10 dcha ipf-75
198 hipo 198 sob. a-11 dcha ipf-75
199 hipo 199 sob. a-12 dcha ipf-75
200 hipo 200 sob. a-13 dcha ipf-75
201 hipo 201 sob. a-14 dcha ipf-75
202 hipo 202 sob. a-15 dcha ipf-75
203 hipo 203 sob. a-16 dcha ipf-75
204 hipo 204 sob. a-17 dcha ipf-75
205 hipo 205 sob. a-18 dcha ipf-75
206 hipo 206 sob. a-19 dcha ipf-75
207 hipo 207 sob. a-20 dcha ipf-75
208 hipo 208 sob. a-21 dcha ipf-75
209 hipo 209 sob. a-22 dcha ipf-75
210 hipo 210 sob. a-23 dcha ipf-75
211 hipo 211 sob. a-24 dcha ipf-75
212 hipo 212 sob. a-25 dcha ipf-75
213 hipo 213 sob. a-26 dcha ipf-75
214 hipo 214 sob. a-27 dcha ipf-75
215 hipo 215 sobrecarga paseo izda (ipf-75)
216 hipo 216 sobrecarga paseo izda (ipf-75)
217 hipo 217 sobrecarga paseo izda (ipf-75)
218 hipo 218 sobrecarga paseo izda (ipf-75)
219 hipo 219 sobrecarga paseo izda (ipf-75)
220 hipo 220 sobrecarga paseo izda (ipf-75)
221 hipo 221 sobrecarga paseo izda (ipf-75)
222 hipo 222 sobrecarga paseo izda (ipf-75)
223 hipo 223 sobrecarga paseo izda (ipf-75)
224 hipo 224 sobrecarga paseo izda (ipf-75)
225 hipo 225 sobrecarga paseo dcha (ipf-75)
226 hipo 226 sobrecarga paseo dcha (ipf-75)
227 hipo 227 sobrecarga paseo dcha (ipf-75)
228 hipo 228 sobrecarga paseo dcha (ipf-75)
229 hipo 229 sobrecarga paseo dcha (ipf-75)
230 hipo 230 sobrecarga paseo dcha (ipf-75)
231 hipo 231 sobrecarga paseo dcha (ipf-75)
232 hipo 232 sobrecarga paseo dcha (ipf-75)
233 hipo 233 sobrecarga paseo dcha (ipf-75)
234 hipo 234 sobrecarga paseo dcha (ipf-75)
291 hipo 291 frenado + (dcha) (sin sob) ipf-75
292 hipo 292 frenado + (izda) (sin sob) ipf-75
293 hipo 293 frenado - (dcha) (sin sob) ipf-75
294 hipo 294 frenado - (izda) (sin sob) ipf-75
295 hipo 295 frenado + (dcha) (max sob) ipf-75
296 hipo 296 frenado + (izda) (max sob) ipf-75
297 hipo 297 frenado - (dcha) (max sob) ipf-75
298 hipo 298 frenado - (izda) (max sob) ipf-75
299 hipo 299 frenado + (2 vias) (max sob) ipf-75
300 hipo 300 frenado - (2 vias) (max sob) ipf-75
301 hipo 301 sob. minima (dcha) ipf-75
302 hipo 302 sob. minima (izda) ipf-75
303 hipo 303 sob. maxima (dcha) ipf-75
304 hipo 304 sob. maxima (izda) ipf-75
305 hipo 305 sob. maxima (2 vias) ipf-75
306 hipo 306 fc sin sobrecarga ipf-75
307 hipo 307 fc sin sobrecarga ipf-75
331 FUER X MAX max c.vertical grupo 11-12 (ipf-75)
332 FUER X MIN max c.vertical grupo 11-12 (ipf-75)
333 FUER Y MAX max c.vertical grupo 11-12 (ipf-75)
334 FUER Y MIN max c.vertical grupo 11-12 (ipf-75)
335 FUER Z MAX max c.vertical grupo 11-12 (ipf-75)
336 FUER Z MIN max c.vertical grupo 11-12 (ipf-75)
337 MOME X MAX max c.vertical grupo 11-12 (ipf-75)
338 MOME X MIN max c.vertical grupo 11-12 (ipf-75)
339 MOME Y MAX max c.vertical grupo 11-12 (ipf-75)
340 MOME Y MIN max c.vertical grupo 11-12 (ipf-75)
341 MOME Z MAX max c.vertical grupo 11-12 (ipf-75)
342 MOME Z MIN max c.vertical grupo 11-12 (ipf-75)
351 FUER X MAX max c.longitud grupo 13 (ipf-75)
352 FUER X MIN max c.longitud grupo 13 (ipf-75)
353 FUER Y MAX max c.longitud grupo 13 (ipf-75)
354 FUER Y MIN max c.longitud grupo 13 (ipf-75)
355 FUER Z MAX max c.longitud grupo 13 (ipf-75)
356 FUER Z MIN max c.longitud grupo 13 (ipf-75)
357 MOME X MAX max c.longitud grupo 13 (ipf-75)
358 MOME X MIN max c.longitud grupo 13 (ipf-75)
359 MOME Y MAX max c.longitud grupo 13 (ipf-75)
360 MOME Y MIN max c.longitud grupo 13 (ipf-75)
361 MOME Z MAX max c.longitud grupo 13 (ipf-75)
362 MOME Z MIN max c.longitud grupo 13 (ipf-75)
363 hipo 363 frenado (dcha) arranque (izda) + (max sob) ec-1
364 hipo 364 frenado (izda) arranque + (dcha) (max sob) ec-1
365 hipo 365 frenado (dcha) arranque - (izda) (max sob) ec-1
366 hipo 366 frenado (izda) arranque - (dcha) (max sob) ec-1
367 hipo 367 sob. min (dcha) ec-1
368 hipo 368 sob. min (izda) ec-1
369 hipo 369 sob. max (dcha) ec-1
370 hipo 370 sob. max (izda) ec-1
371 FUER X MAX max c.lateral grupo 14-a (ipf-75)
372 FUER X MIN max c.lateral grupo 14-a (ipf-75)
373 FUER Y MAX max c.lateral grupo 14-a (ipf-75)
374 FUER Y MIN max c.lateral grupo 14-a (ipf-75)
375 FUER Z MAX max c.lateral grupo 14-a (ipf-75)
376 FUER Z MIN max c.lateral grupo 14-a (ipf-75)
377 MOME X MAX max c.lateral grupo 14-a (ipf-75)
378 MOME X MIN max c.lateral grupo 14-a (ipf-75)
379 MOME Y MAX max c.lateral grupo 14-a (ipf-75)
380 MOME Y MIN max c.lateral grupo 14-a (ipf-75)
381 MOME Z MAX max c.lateral grupo 14-a (ipf-75)
382 MOME Z MIN max c.lateral grupo 14-a (ipf-75)
401 FUER X MAX max frenado y arranque (sin sob) (ec-1)
402 FUER X MIN max frenado y arranque (sin sob) (ec-1)
403 FUER Y MAX max frenado y arranque (sin sob) (ec-1)
404 FUER Y MIN max frenado y arranque (sin sob) (ec-1)
405 FUER Z MAX max frenado y arranque (sin sob) (ec-1)
406 FUER Z MIN max frenado y arranque (sin sob) (ec-1)

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  407      MOME X MAX max frenado y arranque (sin sob) (ec-1)
  408      MOME X MIN max frenado y arranque (sin sob) (ec-1)
  409      MOME Y MAX max frenado y arranque (sin sob) (ec-1)
  410      MOME Y MIN max frenado y arranque (sin sob) (ec-1)
  411      MOME Z MAX max frenado y arranque (sin sob) (ec-1)
  412      MOME Z MIN max frenado y arranque (sin sob) (ec-1)
)Al7E0Al0Ol60Fa8Ll6El6D8Us0p10h0s0b4099T
l0H
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0Al0Ol60Fa8Ll6El6D8Us0p10h0s0b4099T
proc Viaducto Papiol

numero total de hipotesis previstas:  500

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    1     hipo 1 peso propio
    2     hipo 2 carga muerta (limite inferior)
    3     hipo 3 carga muerta (limite superior)
    4     hipo 4 desbalastado-1 (dcha)
    5     hipo 5 desbalastado-2 (izqda)
    6     hipo 6 desbalastado-3 (15m centro vano central)
    7     hipo 7 temperatura +
    8     hipo 8 temperatura -
    9     hipo 9 gradiente de temperatura
   10     hipo 10 fluencia y retraccion
   11     hipo 11 asiento-1
   12     hipo 12 asiento-2
   13     hipo 13 asiento-3
   14     hipo 14 asiento-4
   15     hipo 15 asiento-5
   16     hipo 16 asiento-6
   17     hipo 17 asiento-7
   18     hipo 18 asiento-8
   19     hipo 19 asiento-9
   20     hipo 20 asiento-10
   21     hipo 21 viento + trans estructura
   22     hipo 22 viento - trans estructura
   23     hipo 23 viento + trans est.+ sobrecarga
   24     hipo 24 viento - trans est.+ sobrecarga
   25     hipo 25 viento + long. estructura
   26     hipo 26 viento - long. estructura
   27     hipo 27 viento + long. est.+ sobrecarga
   28     hipo 28 viento - long. est.+ sobrecarga
   29     hipo 29  F.Teflon +
   30     hipo 30  F.Teflon -
   31     FUER X MAX sobrecarga + fr. + fc (ipf-75)
   32     FUER X MIN sobrecarga + fr. + fc (ipf-75)
   33     FUER Y MAX sobrecarga + fr. + fc (ipf-75)
   34     FUER Y MIN sobrecarga + fr. + fc (ipf-75)
   35     FUER Z MAX sobrecarga + fr. + fc (ipf-75)
   36     FUER Z MIN sobrecarga + fr. + fc (ipf-75)
   37     MOME X MAX sobrecarga + fr. + fc (ipf-75)
   38     MOME X MIN sobrecarga + fr. + fc (ipf-75)
   39     MOME Y MAX sobrecarga + fr. + fc (ipf-75)
   40     MOME Y MIN sobrecarga + fr. + fc (ipf-75)
   41     MOME Z MAX sobrecarga + fr. + fc (ipf-75)
   42     MOME Z MIN sobrecarga + fr. + fc (ipf-75)
   43     hipo 43 asiento-11
   51     FUER X MAX sobrecarga + fr. + fc (ec-1)
   52     FUER X MIN sobrecarga + fr. + fc (ec-1)
   53     FUER Y MAX sobrecarga + fr. + fc (ec-1)
   54     FUER Y MIN sobrecarga + fr. + fc (ec-1)
   55     FUER Z MAX sobrecarga + fr. + fc (ec-1)
   56     FUER Z MIN sobrecarga + fr. + fc (ec-1)
   57     MOME X MAX sobrecarga + fr. + fc (ec-1)
   58     MOME X MIN sobrecarga + fr. + fc (ec-1)
   59     MOME Y MAX sobrecarga + fr. + fc (ec-1)
   60     MOME Y MIN sobrecarga + fr. + fc (ec-1)
   61     MOME Z MAX sobrecarga + fr. + fc (ec-1)
   62     MOME Z MIN sobrecarga + fr. + fc (ec-1)
   71     carga permanente (t=0)(sup)
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 72    carga permanente (t=inf.) (sup)
 73    carga permanente (t=0)(inf)
 74    carga permanente (t=inf.) (inf)
101    FUER X MAX cp (els)
102    FUER X MIN cp (els)
103    FUER Y MAX cp (els)
104    FUER Y MIN cp (els)
105    FUER Z MAX cp (els)
106    FUER Z MIN cp (els)
107    MOME X MAX cp (els)
108    MOME X MIN cp (els)
109    MOME Y MAX cp (els)
110    MOME Y MIN cp (els)
111    MOME Z MAX cp (els)
112    MOME Z MIN cp (els)
113    hipo 113 sob. v-13 izda ec-1 (LM-71)
114    hipo 114 sob. v-14 izda ec-1 (LM-71)
115    hipo 115 sob. v-15 izda ec-1 (LM-71)
116    hipo 116 sob. v-16 izda ec-1 (LM-71)
117    hipo 117 sob. v-17 izda ec-1 (LM-71)
118    hipo 118 sob. v-18 izda ec-1 (LM-71)
119    hipo 119 sob. v-19 izda ec-1 (LM-71)
120    hipo 120 sob. v-20 izda ec-1 (LM-71)
121    FUER X MAX envolvente sobrecarga
122    FUER X MIN envolvente sobrecarga
123    FUER Y MAX envolvente sobrecarga
124    FUER Y MIN envolvente sobrecarga
125    FUER Z MAX envolvente sobrecarga
126    FUER Z MIN envolvente sobrecarga
127    MOME X MAX envolvente sobrecarga
128    MOME X MIN envolvente sobrecarga
129    MOME Y MAX envolvente sobrecarga
130    MOME Y MIN envolvente sobrecarga
131    MOME Z MAX envolvente sobrecarga
132    MOME Z MIN envolvente sobrecarga
133    hipo 133 sob. a- 3 izda ec-1 (LM-71)
134    hipo 134 sob. a- 4 izda ec-1 (LM-71)
135    hipo 135 sob. a- 5 izda ec-1 (LM-71)
136    hipo 136 sob. a- 6 izda ec-1 (LM-71)
137    hipo 137 sob. a- 7 izda ec-1 (LM-71)
138    hipo 138 sob. a- 8 izda ec-1 (LM-71)
139    hipo 139 sob. a- 9 izda ec-1 (LM-71)
140    hipo 140 sob. a-10 izda ec-1 (LM-71)
141    FUER X MAX grupo I (ELS)
142    FUER X MIN grupo I (ELS)
143    FUER Y MAX grupo I (ELS)
144    FUER Y MIN grupo I (ELS)
145    FUER Z MAX grupo I (ELS)
146    FUER Z MIN grupo I (ELS)
147    MOME X MAX grupo I (ELS)
148    MOME X MIN grupo I (ELS)
149    MOME Y MAX grupo I (ELS)
150    MOME Y MIN grupo I (ELS)
151    MOME Z MAX grupo I (ELS)
152    MOME Z MIN grupo I (ELS)
153    hipo 153 sob. a-23 izda ec-1 (LM-71)
154    hipo 154 sob. a-24 izda ec-1 (LM-71)
155    hipo 155 sob. a-25 izda ec-1 (LM-71)
156    hipo 156 sob. a-26 izda ec-1 (LM-71)
157    hipo 157 sob. a-27 izda ec-1 (LM-71)
158    hipo 158 sob. v- 1 dcha ec-1 (LM-71)
159    hipo 159 sob. v- 2 dcha ec-1 (LM-71)
160    hipo 160 sob. v- 3 dcha ec-1 (LM-71)
161    FUER X MAX grupo II (ELS)
162    FUER X MIN grupo II (ELS)
163    FUER Y MAX grupo II (ELS)
164    FUER Y MIN grupo II (ELS)
165    FUER Z MAX grupo II (ELS)
166    FUER Z MIN grupo II (ELS)
167    MOME X MAX grupo II (ELS)
168    MOME X MIN grupo II (ELS)
169    MOME Y MAX grupo II (ELS)
170    MOME Y MIN grupo II (ELS)
171    MOME Z MAX grupo II (ELS)
172    MOME Z MIN grupo II (ELS)
173    hipo 173 sob. v-16 dcha ec-1 (LM-71)
174    hipo 174 sob. v-17 dcha ec-1 (LM-71)
175    hipo 175 sob. v-18 dcha ec-1 (LM-71)
176    hipo 176 sob. v-19 dcha ec-1 (LM-71)
177    hipo 177 sob. v-20 dcha ec-1 (LM-71)
178    hipo 178 sob. v-21 dcha ec-1 (LM-71)
179    hipo 179 sob. v-22 dcha ec-1 (LM-71)
180    hipo 180 sob. v-23 dcha ec-1 (LM-71)
181    FUER X MAX grupo III (ELS)
182    FUER X MIN grupo III (ELS)
183    FUER Y MAX grupo III (ELS)
184    FUER Y MIN grupo III (ELS)
185    FUER Z MAX grupo III (ELS)
186    FUER Z MIN grupo III (ELS)
187    MOME X MAX grupo III (ELS)
188    MOME X MIN grupo III (ELS)
189    MOME Y MAX grupo III (ELS)
190    MOME Y MIN grupo III (ELS)
191    MOME Z MAX grupo III (ELS)
192    MOME Z MIN grupo III (ELS)
193    hipo 193 sob. a- 6 dcha ec-1 (LM-71)
194    hipo 194 sob. a- 7 dcha ec-1 (LM-71)
195    hipo 195 sob. a- 8 dcha ec-1 (LM-71)
196    hipo 196 sob. a- 9 dcha ec-1 (LM-71)
197    hipo 197 sob. a-10 dcha ec-1 (LM-71)
198    hipo 198 sob. a-11 dcha ec-1 (LM-71)
199    hipo 199 sob. a-12 dcha ec-1 (LM-71)
200    hipo 200 sob. a-13 dcha ec-1 (LM-71)
201    FUER X MAX envolvente (ELS)
202    FUER X MIN envolvente (ELS)
203    FUER Y MAX envolvente (ELS)
204    FUER Y MIN envolvente (ELS)
205    FUER Z MAX envolvente (ELS)
206    FUER Z MIN envolvente (ELS)
207    MOME X MAX envolvente (ELS)
208    MOME X MIN envolvente (ELS)
209    MOME Y MAX envolvente (ELS)
210    MOME Y MIN envolvente (ELS)
211    MOME Z MAX envolvente (ELS)
212    MOME Z MIN envolvente (ELS)
213    hipo 213 sob. a-26 dcha ec-1 (LM-71)
214    hipo 214 sob. a-27 dcha ec-1 (LM-71)
215    hipo 215 sob. v- 1 izda ec-1 (sw-2)
216    hipo 216 sob. v- 2 izda ec-1 (sw-2)
217    hipo 217 sob. v- 3 izda ec-1 (sw-2)
218    hipo 218 sob. v- 4 izda ec-1 (sw-2)
219    hipo 219 sob. v- 5 izda ec-1 (sw-2)
220    hipo 220 sob. v- 6 izda ec-1 (sw-2)
221    cp (t=0)(sup)*1.35
222    cp (t=inf.)(sup)*1.35
223    cp (t=0)(inf)*1.35
224    cp (t=inf.)(inf)*1.35
225    hipo 225 sob. a- 1 izda ec-1 (sw-2)
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226 hipo 226 sob. a- 2 izda ec-1 (sw-2)
227 hipo 227 sob. a- 3 izda ec-1 (sw-2)
228 hipo 228 sob. a- 4 izda ec-1 (sw-2)
229 hipo 229 sob. a- 5 izda ec-1 (sw-2)
230 hipo 230 sob. a- 6 izda ec-1 (sw-2)
231 FUER X MAX cp may
232 FUER X MIN cp may
233 FUER Y MAX cp may
234 FUER Y MIN cp may
235 FUER Z MAX cp may
236 FUER Z MIN cp may
237 MOME X MAX cp may
238 MOME X MIN cp may
239 MOME Y MAX cp may
240 MOME Y MIN cp may
241 MOME Z MAX cp may
242 MOME Z MIN cp may
243 hipo 243 sob. v-10 dcha ec-1 (sw-2)
244 hipo 244 sob. a- 1 dcha ec-1 (sw-2)
245 hipo 245 sob. a- 2 dcha ec-1 (sw-2)
246 hipo 246 sob. a- 3 dcha ec-1 (sw-2)
247 hipo 247 sob. a- 4 dcha ec-1 (sw-2)
248 hipo 248 sob. a- 5 dcha ec-1 (sw-2)
249 hipo 249 sob. a- 6 dcha ec-1 (sw-2)
250 hipo 250 sob. a- 7 dcha ec-1 (sw-2)
251 FUER X MAX grupo I (ELU)
252 FUER X MIN grupo I (ELU)
253 FUER Y MAX grupo I (ELU)
254 FUER Y MIN grupo I (ELU)
255 FUER Z MAX grupo I (ELU)
256 FUER Z MIN grupo I (ELU)
257 MOME X MAX grupo I (ELU)
258 MOME X MIN grupo I (ELU)
259 MOME Y MAX grupo I (ELU)
260 MOME Y MIN grupo I (ELU)
261 MOME Z MAX grupo I (ELU)
262 MOME Z MIN grupo I (ELU)
263 hipo 263 sobrecarga paseo dcha (ec-1)
264 hipo 264 sobrecarga paseo dcha (ec-1)
265 hipo 265 sobrecarga paseo dcha (ec-1)
266 hipo 266 sobrecarga paseo dcha (ec-1)
267 hipo 267 sobrecarga paseo dcha (ec-1)
268 hipo 268 sobrecarga paseo dcha (ec-1)
269 hipo 269 sobrecarga paseo dcha (ec-1)
270 hipo 270 sobrecarga paseo dcha (ec-1)
271 FUER X MAX grupo II (ELU)
272 FUER X MIN grupo II (ELU)
273 FUER Y MAX grupo II (ELU)
274 FUER Y MIN grupo II (ELU)
275 FUER Z MAX grupo II (ELU)
276 FUER Z MIN grupo II (ELU)
277 MOME X MAX grupo II (ELU)
278 MOME X MIN grupo II (ELU)
279 MOME Y MAX grupo II (ELU)
280 MOME Y MIN grupo II (ELU)
281 MOME Z MAX grupo II (ELU)
282 MOME Z MIN grupo II (ELU)
291 FUER X MAX grupo III (ELU)
292 FUER X MIN grupo III (ELU)
293 FUER Y MAX grupo III (ELU)
294 FUER Y MIN grupo III (ELU)
295 FUER Z MAX grupo III (ELU)
296 FUER Z MIN grupo III (ELU)
297 MOME X MAX grupo III (ELU)
298 MOME X MIN grupo III (ELU)
299 MOME Y MAX grupo III (ELU)
300 MOME Y MIN grupo III (ELU)
301 MOME Z MAX grupo III (ELU)
302 MOME Z MIN grupo III (ELU)
303 hipo 303 sob. maxima (dcha) ipf-75
304 hipo 304 sob. maxima (izda) ipf-75
305 hipo 305 sob. maxima (2 vias) ipf-75
306 hipo 306 fc sin sobrecarga ipf-75
307 hipo 307 fc sin sobrecarga ipf-75
311 FUER X MAX envolvente (ELU)
312 FUER X MIN envolvente (ELU)
313 FUER Y MAX envolvente (ELU)
314 FUER Y MIN envolvente (ELU)
315 FUER Z MAX envolvente (ELU)
316 FUER Z MIN envolvente (ELU)
317 MOME X MAX envolvente (ELU)
318 MOME X MIN envolvente (ELU)
319 MOME Y MAX envolvente (ELU)
320 MOME Y MIN envolvente (ELU)
321 MOME Z MAX envolvente (ELU)
322 MOME Z MIN envolvente (ELU)
331 FUER X MAX max c.vertical grupo 11-12 (ipf-75)
332 FUER X MIN max c.vertical grupo 11-12 (ipf-75)
333 FUER Y MAX max c.vertical grupo 11-12 (ipf-75)
334 FUER Y MIN max c.vertical grupo 11-12 (ipf-75)
335 FUER Z MAX max c.vertical grupo 11-12 (ipf-75)
336 FUER Z MIN max c.vertical grupo 11-12 (ipf-75)
337 MOME X MAX max c.vertical grupo 11-12 (ipf-75)
338 MOME X MIN max c.vertical grupo 11-12 (ipf-75)
339 MOME Y MAX max c.vertical grupo 11-12 (ipf-75)
340 MOME Y MIN max c.vertical grupo 11-12 (ipf-75)
341 MOME Z MAX max c.vertical grupo 11-12 (ipf-75)
342 MOME Z MIN max c.vertical grupo 11-12 (ipf-75)
351 hipo 351 frenado + (dcha) (sin sob) ec-1
352 hipo 352 frenado + (izda) (sin sob) ec-1
353 hipo 353 frenado - (dcha) (sin sob) ec-1
354 hipo 354 frenado - (izda) (sin sob) ec-1
355 hipo 355 arranque + (dcha) (sin sob) ec-1
356 hipo 356 arranque + (izda) (sin sob) ec-1
357 hipo 357 arranque - (dcha) (sin sob) ec-1
358 hipo 358 arranque - (izda) (sin sob) ec-1
359 hipo 359 frenado + (dcha) (max sob) ec-1
360 hipo 360 frenado + (izda) (max sob) ec-1
361 hipo 361 frenado - (dcha) (max sob) ec-1
362 hipo 362 frenado - (izda) (max sob) ec-1
363 hipo 363 frenado (dcha) arranque (izda) + (max sob) ec-1
364 hipo 364 frenado (izda) arranque + (dcha) (max sob) ec-1
365 hipo 365 frenado (dcha) arranque - (izda) (max sob) ec-1
366 hipo 366 frenado (izda) arranque - (dcha) (max sob) ec-1
367 hipo 367 sob. min (dcha) ec-1
368 hipo 368 sob. min (izda) ec-1
369 hipo 369 sob. max (dcha) ec-1
370 hipo 370 sob. max (izda) ec-1
371 hipo 371 sob. max (2 vias) ec-1
372 hipo 372 fc sin sob. 1 via ec-1
373 hipo 373 fc sin sob. 1 via ec-1
374 FUER Y MIN max c.lateral grupo 14-a (ipf-75)
375 FUER Z MAX max c.lateral grupo 14-a (ipf-75)
376 FUER Z MIN max c.lateral grupo 14-a (ipf-75)
377 MOME X MAX max c.lateral grupo 14-a (ipf-75)
378 MOME X MIN max c.lateral grupo 14-a (ipf-75)
379 MOME Y MAX max c.lateral grupo 14-a (ipf-75)
380 MOME Y MIN max c.lateral grupo 14-a (ipf-75)

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381     MOME Z MAX max c.lateral grupo 14-a (ipf-75)
382     MOME Z MIN max c.lateral grupo 14-a (ipf-75)
401     FUER X MAX max frenado y arranque (sin sob) (ec-1)
402     FUER X MIN max frenado y arranque (sin sob) (ec-1)
403     FUER Y MAX max frenado y arranque (sin sob) (ec-1)
404     FUER Y MIN max frenado y arranque (sin sob) (ec-1)
405     FUER Z MAX max frenado y arranque (sin sob) (ec-1)
406     FUER Z MIN max frenado y arranque (sin sob) (ec-1)
407     MOME X MAX max frenado y arranque (sin sob) (ec-1)
408     MOME X MIN max frenado y arranque (sin sob) (ec-1)
409     MOME Y MAX max frenado y arranque (sin sob) (ec-1)
410     MOME Y MIN max frenado y arranque (sin sob) (ec-1)
411     MOME Z MAX max frenado y arranque (sin sob) (ec-1)
412     MOME Z MIN max frenado y arranque (sin sob) (ec-1)
431     FUER X MAX max c.vertical grupo 11-12 (ec-1)
432     FUER X MIN max c.vertical grupo 11-12 (ec-1)
433     FUER Y MAX max c.vertical grupo 11-12 (ec-1)
434     FUER Y MIN max c.vertical grupo 11-12 (ec-1)
435     FUER Z MAX max c.vertical grupo 11-12 (ec-1)
436     FUER Z MIN max c.vertical grupo 11-12 (ec-1)
437     MOME X MAX max c.vertical grupo 11-12 (ec-1)
438     MOME X MIN max c.vertical grupo 11-12 (ec-1)
439     MOME Y MAX max c.vertical grupo 11-12 (ec-1)
440     MOME Y MIN max c.vertical grupo 11-12 (ec-1)
441     MOME Z MAX max c.vertical grupo 11-12 (ec-1)
442     MOME Z MIN max c.vertical grupo 11-12 (ec-1)
451     FUER X MAX max c.longitud grupo 13 (ec-1)
452     FUER X MIN max c.longitud grupo 13 (ec-1)
453     FUER Y MAX max c.longitud grupo 13 (ec-1)
454     FUER Y MIN max c.longitud grupo 13 (ec-1)
455     FUER Z MAX max c.longitud grupo 13 (ec-1)
456     FUER Z MIN max c.longitud grupo 13 (ec-1)
457     MOME X MAX max c.longitud grupo 13 (ec-1)
458     MOME X MIN max c.longitud grupo 13 (ec-1)
459     MOME Y MAX max c.longitud grupo 13 (ec-1)
460     MOME Y MIN max c.longitud grupo 13 (ec-1)
461     MOME Z MAX max c.longitud grupo 13 (ec-1)
462     MOME Z MIN max c.longitud grupo 13 (ec-1)
471     FUER X MAX max c.lateral grupo 14-a (ec-1)
472     FUER X MIN max c.lateral grupo 14-a (ec-1)
473     FUER Y MAX max c.lateral grupo 14-a (ec-1)
474     FUER Y MIN max c.lateral grupo 14-a (ec-1)
475     FUER Z MAX max c.lateral grupo 14-a (ec-1)
476     FUER Z MIN max c.lateral grupo 14-a (ec-1)
477     MOME X MAX max c.lateral grupo 14-a (ec-1)
478     MOME X MIN max c.lateral grupo 14-a (ec-1)
479     MOME Y MAX max c.lateral grupo 14-a (ec-1)
480     MOME Y MIN max c.lateral grupo 14-a (ec-1)
481     MOME Z MAX max c.lateral grupo 14-a (ec-1)
482     MOME Z MIN max c.lateral grupo 14-a (ec-1)
)Al7E0Al0Ol60Fa8Ll6El6D8Us0p10h0s0b4099T
l0H
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0Al0Ol60Fa8Ll6El6D8Us0p10h0s0b4099T
proc Viaducto Papiol

numero total de hipotesis previstas:  500

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    1     hipo 1 peso propio
    2     hipo 2 carga muerta (limite inferior)
    3     hipo 3 carga muerta (limite superior)
    4     hipo 4 desbalastado-1 (dcha)
    5     hipo 5 desbalastado-2 (izqda)
    6     hipo 6 desbalastado-3 (15m centro vano central)
    7     hipo 7 temperatura +
    8     hipo 8 temperatura -
    9     hipo 9 gradiente de temperatura
   10     hipo 10 fluencia y retraccion
   11     hipo 11 asiento-1
   12     hipo 12 asiento-2
   13     hipo 13 asiento-3
   14     hipo 14 asiento-4
   15     hipo 15 asiento-5
   16     hipo 16 asiento-6
   17     hipo 17 asiento-7
   18     hipo 18 asiento-8
   19     hipo 19 asiento-9
   20     hipo 20 asiento-10
   21     hipo 21 viento + trans estructura
   22     hipo 22 viento - trans estructura
   23     hipo 23 viento + trans est.+ sobrecarga
   24     hipo 24 viento - trans est.+ sobrecarga
   25     hipo 25 viento + long. estructura
   26     hipo 26 viento - long. estructura
   27     hipo 27 viento + long. est.+ sobrecarga
   28     hipo 28 viento - long. est.+ sobrecarga
   29     hipo 29  F.Teflon +
   30     hipo 30  F.Teflon -
   31     FUER X MAX sobrecarga + fr. + fc (ipf-75)
   32     FUER X MIN sobrecarga + fr. + fc (ipf-75)
   33     FUER Y MAX sobrecarga + fr. + fc (ipf-75)
   34     FUER Y MIN sobrecarga + fr. + fc (ipf-75)
   35     FUER Z MAX sobrecarga + fr. + fc (ipf-75)
   36     FUER Z MIN sobrecarga + fr. + fc (ipf-75)
   37     MOME X MAX sobrecarga + fr. + fc (ipf-75)
   38     MOME X MIN sobrecarga + fr. + fc (ipf-75)
   39     MOME Y MAX sobrecarga + fr. + fc (ipf-75)
   40     MOME Y MIN sobrecarga + fr. + fc (ipf-75)
   41     MOME Z MAX sobrecarga + fr. + fc (ipf-75)
   42     MOME Z MIN sobrecarga + fr. + fc (ipf-75)
   43     hipo 43 asiento-11
   51     FUER X MAX sobrecarga + fr. + fc (ec-1)
   52     FUER X MIN sobrecarga + fr. + fc (ec-1)
   53     FUER Y MAX sobrecarga + fr. + fc (ec-1)
   54     FUER Y MIN sobrecarga + fr. + fc (ec-1)
   55     FUER Z MAX sobrecarga + fr. + fc (ec-1)
   56     FUER Z MIN sobrecarga + fr. + fc (ec-1)
   57     MOME X MAX sobrecarga + fr. + fc (ec-1)
   58     MOME X MIN sobrecarga + fr. + fc (ec-1)
   59     MOME Y MAX sobrecarga + fr. + fc (ec-1)
   60     MOME Y MIN sobrecarga + fr. + fc (ec-1)
   61     MOME Z MAX sobrecarga + fr. + fc (ec-1)
   62     MOME Z MIN sobrecarga + fr. + fc (ec-1)
   71     carga permanente (t=0)(sup)
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 72    carga permanente (t=inf.) (sup)
 73    carga permanente (t=0)(inf)
 74    carga permanente (t=inf.) (inf)
 81    hipo   81 Pretensado de servicio (t=0)
 82    hipo   82 Pretensado de proceso
 83    pret total (t=0)
 84    pret total (t=inf)
 85    pret total (t=0)(max)
 86    pret total (t=0)(min)
 87    pret total (t=inf)(max)
 88    pret total (t=inf)(min)
 89    pret max-min (t=0)
 90    pret max-min (t=inf)
 91    pp + pret proc
 92    pp + pret total(t=0)
 93    cp + pret total (t=0)
 94    cp + pret total (t=inf)
 95    max mz + pret (t=0)(min)
 96    min mz + pret (t=0)(min)
 97    max mz + pret (t=inf)(min)
 98    min mz + pret (t=inf)(min)
101    FUER X MAX cp (els)
102    FUER X MIN cp (els)
103    FUER Y MAX cp (els)
104    FUER Y MIN cp (els)
105    FUER Z MAX cp (els)
106    FUER Z MIN cp (els)
107    MOME X MAX cp (els)
108    MOME X MIN cp (els)
109    MOME Y MAX cp (els)
110    MOME Y MIN cp (els)
111    MOME Z MAX cp (els)
112    MOME Z MIN cp (els)
113    max mz + pret (t=0)(max)
114    min mz + pret (t=0)(max)
115    max mz + pret (t=inf)(max)
116    min mz + pret (t=inf)(max)
117    max mz + pret(t=0)(frecuente)
118    min mz + pret(t=0)(frecuente)
119    max mz + pret(t=inf)(frecuente)
120    min mz + pret(t=inf) (frecuente)
121    FUER X MAX envolvente sobrecarga
122    FUER X MIN envolvente sobrecarga
123    FUER Y MAX envolvente sobrecarga
124    FUER Y MIN envolvente sobrecarga
125    FUER Z MAX envolvente sobrecarga
126    FUER Z MIN envolvente sobrecarga
127    MOME X MAX envolvente sobrecarga
128    MOME X MIN envolvente sobrecarga
129    MOME Y MAX envolvente sobrecarga
130    MOME Y MIN envolvente sobrecarga
131    MOME Z MAX envolvente sobrecarga
132    MOME Z MIN envolvente sobrecarga
133    hipo 133 sob. a- 3 izda ec-1 (LM-71)
134    hipo 134 sob. a- 4 izda ec-1 (LM-71)
135    hipo 135 sob. a- 5 izda ec-1 (LM-71)
136    hipo 136 sob. a- 6 izda ec-1 (LM-71)
137    hipo 137 sob. a- 7 izda ec-1 (LM-71)
138    hipo 138 sob. a- 8 izda ec-1 (LM-71)
139    hipo 139 sob. a- 9 izda ec-1 (LM-71)
140    hipo 140 sob. a-10 izda ec-1 (LM-71)
141    FUER X MAX grupo I (ELS)
142    FUER X MIN grupo I (ELS)
143    FUER Y MAX grupo I (ELS)
144    FUER Y MIN grupo I (ELS)
145    FUER Z MAX grupo I (ELS)
146    FUER Z MIN grupo I (ELS)
147    MOME X MAX grupo I (ELS)
148    MOME X MIN grupo I (ELS)
149    MOME Y MAX grupo I (ELS)
150    MOME Y MIN grupo I (ELS)
151    MOME Z MAX grupo I (ELS)
152    MOME Z MIN grupo I (ELS)
153    hipo 153 sob. a-23 izda ec-1 (LM-71)
154    hipo 154 sob. a-24 izda ec-1 (LM-71)
155    hipo 155 sob. a-25 izda ec-1 (LM-71)
156    hipo 156 sob. a-26 izda ec-1 (LM-71)
157    hipo 157 sob. a-27 izda ec-1 (LM-71)
158    hipo 158 sob. v- 1 dcha ec-1 (LM-71)
159    hipo 159 sob. v- 2 dcha ec-1 (LM-71)
160    hipo 160 sob. v- 3 dcha ec-1 (LM-71)
161    FUER X MAX grupo II (ELS)
162    FUER X MIN grupo II (ELS)
163    FUER Y MAX grupo II (ELS)
164    FUER Y MIN grupo II (ELS)
165    FUER Z MAX grupo II (ELS)
166    FUER Z MIN grupo II (ELS)
167    MOME X MAX grupo II (ELS)
168    MOME X MIN grupo II (ELS)
169    MOME Y MAX grupo II (ELS)
170    MOME Y MIN grupo II (ELS)
171    MOME Z MAX grupo II (ELS)
172    MOME Z MIN grupo II (ELS)
173    hipo 173 sob. v-16 dcha ec-1 (LM-71)
174    hipo 174 sob. v-17 dcha ec-1 (LM-71)
175    hipo 175 sob. v-18 dcha ec-1 (LM-71)
176    hipo 176 sob. v-19 dcha ec-1 (LM-71)
177    hipo 177 sob. v-20 dcha ec-1 (LM-71)
178    hipo 178 sob. v-21 dcha ec-1 (LM-71)
179    hipo 179 sob. v-22 dcha ec-1 (LM-71)
180    hipo 180 sob. v-23 dcha ec-1 (LM-71)
181    FUER X MAX grupo III (ELS)
182    FUER X MIN grupo III (ELS)
183    FUER Y MAX grupo III (ELS)
184    FUER Y MIN grupo III (ELS)
185    FUER Z MAX grupo III (ELS)
186    FUER Z MIN grupo III (ELS)
187    MOME X MAX grupo III (ELS)
188    MOME X MIN grupo III (ELS)
189    MOME Y MAX grupo III (ELS)
190    MOME Y MIN grupo III (ELS)
191    MOME Z MAX grupo III (ELS)
192    MOME Z MIN grupo III (ELS)
193    hipo 193 sob. a- 6 dcha ec-1 (LM-71)
194    hipo 194 sob. a- 7 dcha ec-1 (LM-71)
195    hipo 195 sob. a- 8 dcha ec-1 (LM-71)
196    hipo 196 sob. a- 9 dcha ec-1 (LM-71)
197    hipo 197 sob. a-10 dcha ec-1 (LM-71)
198    hipo 198 sob. a-11 dcha ec-1 (LM-71)
199    hipo 199 sob. a-12 dcha ec-1 (LM-71)
200    hipo 200 sob. a-13 dcha ec-1 (LM-71)
201    FUER X MAX envolvente (ELS)
202    FUER X MIN envolvente (ELS)
203    FUER Y MAX envolvente (ELS)
204    FUER Y MIN envolvente (ELS)
205    FUER Z MAX envolvente (ELS)
206    FUER Z MIN envolvente (ELS)
207    MOME X MAX envolvente (ELS)
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208     MOME X MIN envolvente (ELS)
209     MOME Y MAX envolvente (ELS)
210     MOME Y MIN envolvente (ELS)
211     MOME Z MAX envolvente (ELS)
212     MOME Z MIN envolvente (ELS)
213     hipo 213 sob. a-26 dcha ec-1 (LM-71)
214     hipo 214 sob. a-27 dcha ec-1 (LM-71)
215     hipo 215 sob. v- 1 izda ec-1 (sw-2)
216     hipo 216 sob. v- 2 izda ec-1 (sw-2)
217     hipo 217 sob. v- 3 izda ec-1 (sw-2)
218     hipo 218 sob. v- 4 izda ec-1 (sw-2)
219     hipo 219 sob. v- 5 izda ec-1 (sw-2)
220     hipo 220 sob. v- 6 izda ec-1 (sw-2)
221     cp (t=0)(sup)*1.35
222     cp (t=inf.)(sup)*1.35
223     cp (t=0)(inf)*1.35
224     cp (t=inf.)(inf)*1.35
225     hipo 225 sob. a- 1 izda ec-1 (sw-2)
226     hipo 226 sob. a- 2 izda ec-1 (sw-2)
227     hipo 227 sob. a- 3 izda ec-1 (sw-2)
228     hipo 228 sob. a- 4 izda ec-1 (sw-2)
229     hipo 229 sob. a- 5 izda ec-1 (sw-2)
230     hipo 230 sob. a- 6 izda ec-1 (sw-2)
231     FUER X MAX cp may
232     FUER X MIN cp may
233     FUER Y MAX cp may
234     FUER Y MIN cp may
235     FUER Z MAX cp may
236     FUER Z MIN cp may
237     MOME X MAX cp may
238     MOME X MIN cp may
239     MOME Y MAX cp may
240     MOME Y MIN cp may
241     MOME Z MAX cp may
242     MOME Z MIN cp may
243     hipo 243 sob. v-10 dcha ec-1 (sw-2)
244     hipo 244 sob. a- 1 dcha ec-1 (sw-2)
245     hipo 245 sob. a- 2 dcha ec-1 (sw-2)
246     hipo 246 sob. a- 3 dcha ec-1 (sw-2)
247     hipo 247 sob. a- 4 dcha ec-1 (sw-2)
248     hipo 248 sob. a- 5 dcha ec-1 (sw-2)
249     hipo 249 sob. a- 6 dcha ec-1 (sw-2)
250     hipo 250 sob. a- 7 dcha ec-1 (sw-2)
251     FUER X MAX grupo I (ELU)
252     FUER X MIN grupo I (ELU)
253     FUER Y MAX grupo I (ELU)
254     FUER Y MIN grupo I (ELU)
255     FUER Z MAX grupo I (ELU)
256     FUER Z MIN grupo I (ELU)
257     MOME X MAX grupo I (ELU)
258     MOME X MIN grupo I (ELU)
259     MOME Y MAX grupo I (ELU)
260     MOME Y MIN grupo I (ELU)
261     MOME Z MAX grupo I (ELU)
262     MOME Z MIN grupo I (ELU)
263     hipo 263 sobrecarga paseo dcha (ec-1)
264     hipo 264 sobrecarga paseo dcha (ec-1)
265     hipo 265 sobrecarga paseo dcha (ec-1)
266     hipo 266 sobrecarga paseo dcha (ec-1)
267     hipo 267 sobrecarga paseo dcha (ec-1)
268     hipo 268 sobrecarga paseo dcha (ec-1)
269     hipo 269 sobrecarga paseo dcha (ec-1)
270     hipo 270 sobrecarga paseo dcha (ec-1)
271     FUER X MAX grupo II (ELU)
272     FUER X MIN grupo II (ELU)
273     FUER Y MAX grupo II (ELU)
274     FUER Y MIN grupo II (ELU)
275     FUER Z MAX grupo II (ELU)
276     FUER Z MIN grupo II (ELU)
277     MOME X MAX grupo II (ELU)
278     MOME X MIN grupo II (ELU)
279     MOME Y MAX grupo II (ELU)
280     MOME Y MIN grupo II (ELU)
281     MOME Z MAX grupo II (ELU)
282     MOME Z MIN grupo II (ELU)
291     FUER X MAX grupo III (ELU)
292     FUER X MIN grupo III (ELU)
293     FUER Y MAX grupo III (ELU)
294     FUER Y MIN grupo III (ELU)
295     FUER Z MAX grupo III (ELU)
296     FUER Z MIN grupo III (ELU)
297     MOME X MAX grupo III (ELU)
298     MOME X MIN grupo III (ELU)
299     MOME Y MAX grupo III (ELU)
300     MOME Y MIN grupo III (ELU)
301     MOME Z MAX grupo III (ELU)
302     MOME Z MIN grupo III (ELU)
303     hipo 303 sob. maxima (dcha) ipf-75
304     hipo 304 sob. maxima (izda) ipf-75
305     hipo 305 sob. maxima (2 vias) ipf-75
306     hipo 306 fc sin sobrecarga ipf-75
307     hipo 307 fc sin sobrecarga ipf-75
311     FUER X MAX envolvente (ELU)
312     FUER X MIN envolvente (ELU)
313     FUER Y MAX envolvente (ELU)
314     FUER Y MIN envolvente (ELU)
315     FUER Z MAX envolvente (ELU)
316     FUER Z MIN envolvente (ELU)
317     MOME X MAX envolvente (ELU)
318     MOME X MIN envolvente (ELU)
319     MOME Y MAX envolvente (ELU)
320     MOME Y MIN envolvente (ELU)
321     MOME Z MAX envolvente (ELU)
322     MOME Z MIN envolvente (ELU)
331     FUER X MAX max c.vertical grupo 11-12 (ipf-75)
332     FUER X MIN max c.vertical grupo 11-12 (ipf-75)
333     FUER Y MAX max c.vertical grupo 11-12 (ipf-75)
334     FUER Y MIN max c.vertical grupo 11-12 (ipf-75)
335     FUER Z MAX max c.vertical grupo 11-12 (ipf-75)
336     FUER Z MIN max c.vertical grupo 11-12 (ipf-75)
337     MOME X MAX max c.vertical grupo 11-12 (ipf-75)
338     MOME X MIN max c.vertical grupo 11-12 (ipf-75)
339     MOME Y MAX max c.vertical grupo 11-12 (ipf-75)
340     MOME Y MIN max c.vertical grupo 11-12 (ipf-75)
341     MOME Z MAX max c.vertical grupo 11-12 (ipf-75)
342     MOME Z MIN max c.vertical grupo 11-12 (ipf-75)
351     hipo 351 frenado + (dcha) (sin sob) ec-1
352     hipo 352 frenado + (izda) (sin sob) ec-1
353     hipo 353 frenado - (dcha) (sin sob) ec-1
354     hipo 354 frenado - (izda) (sin sob) ec-1
355     hipo 355 arranque + (dcha) (sin sob) ec-1
356     hipo 356 arranque + (izda) (sin sob) ec-1
357     hipo 357 arranque - (dcha) (sin sob) ec-1
358     hipo 358 arranque - (izda) (sin sob) ec-1
359     hipo 359 frenado + (dcha) (max sob) ec-1
360     hipo 360 frenado + (izda) (max sob) ec-1
361     hipo 361 frenado - (dcha) (max sob) ec-1
362     hipo 362 frenado - (izda) (max sob) ec-1
```

363 hipo 363 frenado (dcha) arranque (izda) + (max sob) ec-1
364 hipo 364 frenado (izda) arranque + (dcha) (max sob) ec-1
365 hipo 365 frenado (dcha) arranque - (izda) (max sob) ec-1
366 hipo 366 frenado (izda) arranque - (dcha) (max sob) ec-1
367 hipo 367 sob. min (dcha) ec-1
368 hipo 368 sob. min (izda) ec-1
369 hipo 369 sob. max (dcha) ec-1
370 hipo 370 sob. max (izda) ec-1
371 hipo 371 sob. max (2 vias) ec-1
372 hipo 372 fc sin sob. 1 via ec-1
373 hipo 373 fc sin sob. 1 via ec-1
374 FUER Y MIN max c.lateral grupo 14-a (ipf-75)
375 FUER Z MAX max c.lateral grupo 14-a (ipf-75)
376 FUER Z MIN max c.lateral grupo 14-a (ipf-75)
377 MOME X MAX max c.lateral grupo 14-a (ipf-75)
378 MOME X MIN max c.lateral grupo 14-a (ipf-75)
379 MOME Y MAX max c.lateral grupo 14-a (ipf-75)
380 MOME Y MIN max c.lateral grupo 14-a (ipf-75)
381 MOME Z MAX max c.lateral grupo 14-a (ipf-75)
382 MOME Z MIN max c.lateral grupo 14-a (ipf-75)
401 FUER X MAX max frenado y arranque (sin sob) (ec-1)
402 FUER X MIN max frenado y arranque (sin sob) (ec-1)
403 FUER Y MAX max frenado y arranque (sin sob) (ec-1)
404 FUER Y MIN max frenado y arranque (sin sob) (ec-1)
405 FUER Z MAX max frenado y arranque (sin sob) (ec-1)
406 FUER Z MIN max frenado y arranque (sin sob) (ec-1)
407 MOME X MAX max frenado y arranque (sin sob) (ec-1)
408 MOME X MIN max frenado y arranque (sin sob) (ec-1)
409 MOME Y MAX max frenado y arranque (sin sob) (ec-1)
410 MOME Y MIN max frenado y arranque (sin sob) (ec-1)
411 MOME Z MAX max frenado y arranque (sin sob) (ec-1)
412 MOME Z MIN max frenado y arranque (sin sob) (ec-1)
431 FUER X MAX max c.vertical grupo 11-12 (ec-1)
432 FUER X MIN max c.vertical grupo 11-12 (ec-1)
433 FUER Y MAX max c.vertical grupo 11-12 (ec-1)
434 FUER Y MIN max c.vertical grupo 11-12 (ec-1)
435 FUER Z MAX max c.vertical grupo 11-12 (ec-1)
436 FUER Z MIN max c.vertical grupo 11-12 (ec-1)
437 MOME X MAX max c.vertical grupo 11-12 (ec-1)
438 MOME X MIN max c.vertical grupo 11-12 (ec-1)
439 MOME Y MAX max c.vertical grupo 11-12 (ec-1)
440 MOME Y MIN max c.vertical grupo 11-12 (ec-1)
441 MOME Z MAX max c.vertical grupo 11-12 (ec-1)
442 MOME Z MIN max c.vertical grupo 11-12 (ec-1)
451 FUER X MAX max c.longitud grupo 13 (ec-1)
452 FUER X MIN max c.longitud grupo 13 (ec-1)
453 FUER Y MAX max c.longitud grupo 13 (ec-1)
454 FUER Y MIN max c.longitud grupo 13 (ec-1)
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456 FUER Z MIN max c.longitud grupo 13 (ec-1)
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459 MOME Y MAX max c.longitud grupo 13 (ec-1)
460 MOME Y MIN max c.longitud grupo 13 (ec-1)
461 MOME Z MAX max c.longitud grupo 13 (ec-1)
462 MOME Z MIN max c.longitud grupo 13 (ec-1)
471 FUER X MAX max c.lateral grupo 14-a (ec-1)
472 FUER X MIN max c.lateral grupo 14-a (ec-1)
473 FUER Y MAX max c.lateral grupo 14-a (ec-1)
474 FUER Y MIN max c.lateral grupo 14-a (ec-1)
475 FUER Z MAX max c.lateral grupo 14-a (ec-1)
476 FUER Z MIN max c.lateral grupo 14-a (ec-1)
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481 MOME Z MAX max c.lateral grupo 14-a (ec-1)
482 MOME Z MIN max c.lateral grupo 14-a (ec-1)
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10H

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nume de barr  206
nume de hipo 21
nume de apoy   11
tipo port espa
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  182 a 203     3
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187 inic fuer y z mome x y z
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  134 a 155    100.00    100.00    100.00    100.00    100.00    100.00
* aux pilas y estribos
  156 a 177    100.00    100.00    100.00    100.00    100.00    100.00
* nariz
* 127    0.2391    0.1731    0.0660    0.0453    1.2826    0.5836
* 128    0.2222    0.1562    0.0660    0.0379    1.0436    0.4536
* 129    0.1946    0.1396    0.0550    0.0311    0.7569    0.3116
* 130    0.1776    0.1226    0.0550    0.0251    0.6992    0.2274
* 131    0.1343    0.0793    0.0550    0.0198    0.5412    0.1470
* 132    0.1108    0.0668    0.0440    0.0149    0.4337    0.0850
* 133    0.0981    0.0541    0.0440    0.0109    0.3902    0.0512
cons de mate
    1    21000000.00      800000.00          7.85
    2     3870000.00     1610000.00          2.50
    3     3360000.00     1400000.00          2.50
hipo 1 peso propio
gravedad
* pilas
206 a 229 0. -1. 0.
 carg en barras
* carga vertical tablero
    1 a 114 fuer y unif -23.675
* torsion pp tablero por excentricidad losa
1 mome x line 1.39 1.15
2 mome x line 1.15 0.84
3 mome x line 0.84 0.68
4 mome x line 0.68 0.47
5 mome x line 0.47 0.26
6 mome x line 0.26 0.07
7 mome x line 0.07 -0.12
8 mome x line -0.12 -0.30
9 mome x line -0.30 -0.47
10 mome x line -0.47 -0.62
11 mome x line -0.62 -0.77
12 mome x line -0.77 -0.91
13 mome x line -0.91 -1.04
14 mome x line -1.04 -1.16
15 mome x line -1.16 -1.28
16 mome x line -1.28 -1.38
17 mome x line -1.38 -1.49
18 mome x line -1.49 -1.58
19 mome x line -1.58 -1.67
20 mome x line -1.67 -1.74
21 mome x line -1.74 -1.82
22 mome x line -1.82 -1.88
23 mome x line -1.88 -1.95
24 mome x line -1.95 -2.00
25 mome x line -2.00 -2.06
26 mome x line -2.06 -2.10
27 mome x line -2.10 -2.15
28 mome x line -2.15 -1.07
29 mome x line -1.07 -0.04
30 mome x line -0.04 -1.13
31 mome x line -1.13 -2.27
32 mome x line -2.27 -1.13
33 mome x line -1.13 -0.03
34 mome x line -0.03 -1.15
35 mome x line -1.15 -2.33
36 mome x line -2.33 -2.33
37 mome x line -2.33 -2.33
38 mome x line -2.33 -2.33
39 mome x line -2.33 -2.32
40 mome x line -2.32 -2.31
41 mome x line -2.31 -2.30
42 mome x line -2.30 -2.28
43 mome x line -2.28 -2.26
44 mome x line -2.26 -2.23
45 mome x line -2.23 -2.20
46 mome x line -2.20 -2.14
47 mome x line -2.14 -2.09
48 mome x line -2.09 -2.02
49 mome x line -2.02 -1.94
50 mome x line -1.94 -1.86
51 mome x line -1.86 -1.78
52 mome x line -1.78 -1.69
53 mome x line -1.69 -1.59
54 mome x line -1.59 -1.49
55 mome x line -1.49 -1.39
56 mome x line -1.39 -1.28
57 mome x line -1.28 -1.17
58 mome x line -1.17 -1.06
59 mome x line -1.06 -0.94
60 mome x line -0.94 -0.82
61 mome x line -0.82 -0.71
62 mome x line -0.71 -0.58
63 mome x line -0.58 -0.46
64 mome x line -0.46 -0.34
65 mome x line -0.34 -0.22
66 mome x line -0.22 -0.10
67 mome x line -0.10 0.03
68 mome x line 0.03 0.15
69 mome x line 0.15 0.28
70 mome x line 0.28 0.40
71 mome x line 0.40 0.52
72 mome x line 0.52 0.64
73 mome x line 0.64 0.75
74 mome x line 0.75 0.86
75 mome x line 0.86 0.98
76 mome x line 0.98 1.08
77 mome x line 1.08 1.18
78 mome x line 1.18 1.27
79 mome x line 1.27 1.36
80 mome x line 1.36 1.43
81 mome x line 1.43 1.51
82 mome x line 1.51 1.56
83 mome x line 1.56 1.61
84 mome x line 1.61 1.66
85 mome x line 1.66 1.70
86 mome x line 1.70 1.73
87 mome x line 1.73 1.76
88 mome x line 1.76 1.78
89 mome x line 1.78 1.79
90 mome x line 1.79 1.80
91 mome x line 1.80 1.80
92 mome x line 1.80 1.80
93 mome x line 1.80 1.79
94 mome x line 1.79 1.77
95 mome x line 1.77 1.75
96 mome x line 1.75 1.70
97 mome x line 1.70 1.66
98 mome x line 1.66 1.58
99 mome x line 1.58 1.50
100 mome x line 1.50 1.38
```

```
101 mome x line 1.38 1.26
102 mome x line 1.26 1.11
103 mome x line 1.11 0.95
104 mome x line 0.95 0.76
105 mome x line 0.76 0.57
106 mome x line 0.57 0.35
107 mome x line 0.35 0.12
108 mome x line 0.12 -0.12
109 mome x line -0.12 -0.37
110 mome x line -0.37 -0.62
111 mome x line -0.62 -0.88
112 mome x line -0.88 -1.06
113 mome x line -1.06 -1.39
114 mome x line -1.39 -1.52
* pp entrega
114 fuer y conc -107.56 -0.01
114 mome z conc -231.26 -0.01
* pp estribos
230 a 231 global fuer y unif -25.00
carg en nudo
* riostras
3 fuer y -95.36
18 fuer y -116.62
37 fuer y -116.62
57 fuer y -116.62
77 fuer y -116.62
97 fuer y -116.62
117 fuer y -116.62
137 fuer y -116.62
157 fuer y -116.62
176 fuer y -116.62
192 fuer y -95.36
* vaciado  pila
 18 fuer y  6.16
 37 fuer y  6.16
 57 fuer y  6.16
 77 fuer y  6.16
 97 fuer y  6.16
117 fuer y  6.16
137 fuer y  6.16
157 fuer y  6.16
176 fuer y  6.16
hipo 2 carga muerta (limite inferior)
carg en barra
* cm paseo
1 a 114 fuer y unif -2.05
1 mome x line 0.39 0.33
2 mome x line 0.33 0.24
3 mome x line 0.24 0.19
4 mome x line 0.19 0.13
5 mome x line 0.13 0.07
6 mome x line 0.07 0.02
7 mome x line 0.02 -0.03
8 mome x line -0.03 -0.08
9 mome x line -0.08 -0.13
10 mome x line -0.13 -0.18
11 mome x line -0.18 -0.22
12 mome x line -0.22 -0.26
13 mome x line -0.26 -0.29
14 mome x line -0.29 -0.33
15 mome x line -0.33 -0.36
16 mome x line -0.36 -0.39
17 mome x line -0.39 -0.42
18 mome x line -0.42 -0.44
19 mome x line -0.44 -0.47
20 mome x line -0.47 -0.49
21 mome x line -0.49 -0.51
22 mome x line -0.51 -0.53
23 mome x line -0.53 -0.55
24 mome x line -0.55 -0.56
25 mome x line -0.56 -0.58
26 mome x line -0.58 -0.59
27 mome x line -0.59 -0.60
28 mome x line -0.60 -0.31
29 mome x line -0.31 -0.01
30 mome x line -0.01 -0.32
31 mome x line -0.32 -0.64
32 mome x line -0.64 -0.32
33 mome x line -0.32 -0.01
34 mome x line -0.01 -0.33
35 mome x line -0.33 -0.65
36 mome x line -0.65 -0.65
37 mome x line -0.65 -0.65
38 mome x line -0.65 -0.65
39 mome x line -0.65 -0.65
40 mome x line -0.65 -0.65
41 mome x line -0.65 -0.64
42 mome x line -0.64 -0.64
43 mome x line -0.64 -0.63
44 mome x line -0.63 -0.63
45 mome x line -0.63 -0.62
46 mome x line -0.62 -0.60
47 mome x line -0.60 -0.59
48 mome x line -0.59 -0.57
49 mome x line -0.57 -0.55
50 mome x line -0.55 -0.52
51 mome x line -0.52 -0.50
52 mome x line -0.50 -0.48
53 mome x line -0.48 -0.45
54 mome x line -0.45 -0.42
55 mome x line -0.42 -0.39
56 mome x line -0.39 -0.36
57 mome x line -0.36 -0.33
58 mome x line -0.33 -0.30
59 mome x line -0.30 -0.27
60 mome x line -0.27 -0.23
61 mome x line -0.23 -0.20
62 mome x line -0.20 -0.17
63 mome x line -0.17 -0.13
64 mome x line -0.13 -0.10
65 mome x line -0.10 -0.06
66 mome x line -0.06 -0.03
67 mome x line -0.03 0.01
68 mome x line 0.01 0.04
69 mome x line 0.04 0.08
70 mome x line 0.08 0.11
71 mome x line 0.11 0.15
72 mome x line 0.15 0.18
73 mome x line 0.18 0.22
74 mome x line 0.22 0.25
75 mome x line 0.25 0.28
76 mome x line 0.28 0.31
77 mome x line 0.31 0.34
78 mome x line 0.34 0.36
79 mome x line 0.36 0.39
80 mome x line 0.39 0.41
81 mome x line 0.41 0.43
82 mome x line 0.43 0.44
```

```
 83 mome x line 0.44 0.46
 84 mome x line 0.46 0.47
 85 mome x line 0.47 0.48
 86 mome x line 0.48 0.49
 87 mome x line 0.49 0.50
 88 mome x line 0.50 0.50
 89 mome x line 0.50 0.51
 90 mome x line 0.51 0.51
 91 mome x line 0.51 0.51
 92 mome x line 0.51 0.51
 93 mome x line 0.51 0.50
 94 mome x line 0.50 0.50
 95 mome x line 0.50 0.49
 96 mome x line 0.49 0.48
 97 mome x line 0.48 0.47
 98 mome x line 0.47 0.44
 99 mome x line 0.44 0.42
100 mome x line 0.42 0.39
101 mome x line 0.39 0.36
102 mome x line 0.36 0.31
103 mome x line 0.31 0.27
104 mome x line 0.27 0.21
105 mome x line 0.21 0.16
106 mome x line 0.16 0.10
107 mome x line 0.10 0.03
108 mome x line 0.03 -0.03
109 mome x line -0.03 -0.10
110 mome x line -0.10 -0.18
111 mome x line -0.18 -0.25
112 mome x line -0.25 -0.30
113 mome x line -0.30 -0.39
114 mome x line -0.39 -0.43
* balasto x 0.70 y vias
   1 a 114  fuer y unif -5.88
 1 mome x line 2.79 2.44
 2 mome x line 2.44 2.11
 3 mome x line 2.11 1.78
 4 mome x line 1.78 1.46
 5 mome x line 1.46 1.15
 6 mome x line 1.15 0.84
 7 mome x line 0.84 0.56
 8 mome x line 0.56 0.28
 9 mome x line 0.28 0.00
10 mome x line 0.00 -0.26
11 mome x line -0.26 -0.52
12 mome x line -0.52 -0.77
13 mome x line -0.77 -1.01
14 mome x line -1.01 -1.24
15 mome x line -1.24 -1.46
16 mome x line -1.46 -1.67
17 mome x line -1.67 -1.87
18 mome x line -1.87 -2.06
19 mome x line -2.06 -2.25
20 mome x line -2.25 -2.43
21 mome x line -2.43 -2.60
22 mome x line -2.60 -2.76
23 mome x line -2.76 -2.90
24 mome x line -2.90 -3.04
25 mome x line -3.04 -3.17
26 mome x line -3.17 -3.29
27 mome x line -3.29 -3.41
28 mome x line -3.41 -3.52
29 mome x line -3.52 -3.60
30 mome x line -3.60 -3.69
31 mome x line -3.69 -3.77
32 mome x line -3.77 -3.84
33 mome x line -3.84 -3.90
34 mome x line -3.90 -3.95
35 mome x line -3.95 -3.99
36 mome x line -3.99 -4.02
37 mome x line -4.02 -4.05
38 mome x line -4.05 -4.06
39 mome x line -4.06 -4.07
40 mome x line -4.07 -4.07
41 mome x line -4.07 -4.05
42 mome x line -4.05 -4.03
43 mome x line -4.03 -4.00
44 mome x line -4.00 -3.97
45 mome x line -3.97 -3.91
46 mome x line -3.91 -3.86
47 mome x line -3.86 -3.79
48 mome x line -3.79 -3.72
49 mome x line -3.72 -3.63
50 mome x line -3.63 -3.54
51 mome x line -3.54 -3.44
52 mome x line -3.44 -3.33
53 mome x line -3.33 -3.21
54 mome x line -3.21 -3.08
55 mome x line -3.08 -2.94
56 mome x line -2.94 -2.80
57 mome x line -2.80 -2.64
58 mome x line -2.64 -2.48
59 mome x line -2.48 -2.30
60 mome x line -2.30 -2.12
61 mome x line -2.12 -1.93
62 mome x line -1.93 -1.73
63 mome x line -1.73 -1.53
64 mome x line -1.53 -1.31
65 mome x line -1.31 -1.08
66 mome x line -1.08 -0.85
67 mome x line -0.85 -0.62
68 mome x line -0.62 -0.38
69 mome x line -0.38 -0.14
70 mome x line -0.14 0.11
71 mome x line 0.11 0.34
72 mome x line 0.34 0.59
73 mome x line 0.59 0.83
74 mome x line 0.83 1.07
75 mome x line 1.07 1.31
76 mome x line 1.31 1.54
77 mome x line 1.54 1.76
78 mome x line 1.76 1.98
79 mome x line 1.98 2.20
80 mome x line 2.20 2.40
81 mome x line 2.40 2.59
82 mome x line 2.59 2.77
83 mome x line 2.77 2.95
84 mome x line 2.95 3.11
85 mome x line 3.11 3.25
86 mome x line 3.25 3.38
87 mome x line 3.38 3.49
88 mome x line 3.49 3.59
89 mome x line 3.59 3.68
90 mome x line 3.68 3.74
91 mome x line 3.74 3.78
92 mome x line 3.78 3.80
93 mome x line 3.80 3.80
94 mome x line 3.80 3.78
```

```
 95 mome x line 3.78 3.73
 96 mome x line 3.73 3.66
 97 mome x line 3.66 3.56
 98 mome x line 3.56 3.44
 99 mome x line 3.44 3.29
100 mome x line 3.29 3.11
101 mome x line 3.11 2.89
102 mome x line 2.89 2.65
103 mome x line 2.65 2.37
104 mome x line 2.37 2.07
105 mome x line 2.07 1.73
106 mome x line 1.73 1.35
107 mome x line 1.35 0.94
108 mome x line 0.94 0.48
109 mome x line 0.48 -0.01
110 mome x line -0.01 -0.54
111 mome x line -0.54 -1.10
112 mome x line -1.10 -1.70
113 mome x line -1.70 -2.36
114 mome x line -2.36 -3.05
hipo 3 carga muerta (limite superior)
carg en barra
* cm paseo
1 a 114 fuer y unif -2.05
1 mome x line 0.39 0.33
2 mome x line 0.33 0.24
3 mome x line 0.24 0.19
4 mome x line 0.19 0.13
5 mome x line 0.13 0.07
6 mome x line 0.07 0.02
7 mome x line 0.02 -0.03
8 mome x line -0.03 -0.08
9 mome x line -0.08 -0.13
10 mome x line -0.13 -0.18
11 mome x line -0.18 -0.22
12 mome x line -0.22 -0.26
13 mome x line -0.26 -0.29
14 mome x line -0.29 -0.33
15 mome x line -0.33 -0.36
16 mome x line -0.36 -0.39
17 mome x line -0.39 -0.42
18 mome x line -0.42 -0.44
19 mome x line -0.44 -0.47
20 mome x line -0.47 -0.49
21 mome x line -0.49 -0.51
22 mome x line -0.51 -0.53
23 mome x line -0.53 -0.55
24 mome x line -0.55 -0.56
25 mome x line -0.56 -0.58
26 mome x line -0.58 -0.59
27 mome x line -0.59 -0.60
28 mome x line -0.60 -0.31
29 mome x line -0.31 -0.01
30 mome x line -0.01 -0.32
31 mome x line -0.32 -0.64
32 mome x line -0.64 -0.32
33 mome x line -0.32 -0.01
34 mome x line -0.01 -0.33
35 mome x line -0.33 -0.65
36 mome x line -0.65 -0.65
37 mome x line -0.65 -0.65
38 mome x line -0.65 -0.65
39 mome x line -0.65 -0.65
40 mome x line -0.65 -0.65
41 mome x line -0.65 -0.64
42 mome x line -0.64 -0.64
43 mome x line -0.64 -0.63
44 mome x line -0.63 -0.63
45 mome x line -0.63 -0.62
46 mome x line -0.62 -0.60
47 mome x line -0.60 -0.59
48 mome x line -0.59 -0.57
49 mome x line -0.57 -0.55
50 mome x line -0.55 -0.52
51 mome x line -0.52 -0.50
52 mome x line -0.50 -0.48
53 mome x line -0.48 -0.45
54 mome x line -0.45 -0.42
55 mome x line -0.42 -0.39
56 mome x line -0.39 -0.36
57 mome x line -0.36 -0.33
58 mome x line -0.33 -0.30
59 mome x line -0.30 -0.27
60 mome x line -0.27 -0.23
61 mome x line -0.23 -0.20
62 mome x line -0.20 -0.17
63 mome x line -0.17 -0.13
64 mome x line -0.13 -0.10
65 mome x line -0.10 -0.06
66 mome x line -0.06 -0.03
67 mome x line -0.03 0.01
68 mome x line 0.01 0.04
69 mome x line 0.04 0.08
70 mome x line 0.08 0.11
71 mome x line 0.11 0.15
72 mome x line 0.15 0.18
73 mome x line 0.18 0.22
74 mome x line 0.22 0.25
75 mome x line 0.25 0.28
76 mome x line 0.28 0.31
77 mome x line 0.31 0.34
78 mome x line 0.34 0.36
79 mome x line 0.36 0.39
80 mome x line 0.39 0.41
81 mome x line 0.41 0.43
82 mome x line 0.43 0.44
83 mome x line 0.44 0.46
84 mome x line 0.46 0.47
85 mome x line 0.47 0.48
86 mome x line 0.48 0.49
87 mome x line 0.49 0.50
88 mome x line 0.50 0.50
89 mome x line 0.50 0.51
90 mome x line 0.51 0.51
91 mome x line 0.51 0.51
92 mome x line 0.51 0.51
93 mome x line 0.51 0.50
94 mome x line 0.50 0.50
95 mome x line 0.50 0.49
96 mome x line 0.49 0.48
97 mome x line 0.48 0.47
98 mome x line 0.47 0.44
99 mome x line 0.44 0.42
100 mome x line 0.42 0.39
101 mome x line 0.39 0.36
102 mome x line 0.36 0.31
103 mome x line 0.31 0.27
104 mome x line 0.27 0.21
```

```
105 mome x line 0.21 0.16
106 mome x line 0.16 0.10
107 mome x line 0.10 0.03
108 mome x line 0.03 -0.03
109 mome x line -0.03 -0.10
110 mome x line -0.10 -0.18
111 mome x line -0.18 -0.25
112 mome x line -0.25 -0.30
113 mome x line -0.30 -0.39
114 mome x line -0.39 -0.43
* balasto x 1.3 y vias
   1 a 114 fuer y unif  -10.92
1 mome x line 4.76 4.16
2 mome x line 4.16 3.59
3 mome x line 3.59 3.03
4 mome x line 3.03 2.49
5 mome x line 2.49 1.95
6 mome x line 1.95 1.44
7 mome x line 1.44 0.95
8 mome x line 0.95 0.48
9 mome x line 0.48 0.00
10 mome x line 0.00 -0.45
11 mome x line -0.45 -0.89
12 mome x line -0.89 -1.32
13 mome x line -1.32 -1.72
14 mome x line -1.72 -2.11
15 mome x line -2.11 -2.49
16 mome x line -2.49 -2.84
17 mome x line -2.84 -3.19
18 mome x line -3.19 -3.52
19 mome x line -3.52 -3.83
20 mome x line -3.83 -4.14
21 mome x line -4.14 -4.43
22 mome x line -4.43 -4.70
23 mome x line -4.70 -4.95
24 mome x line -4.95 -5.18
25 mome x line -5.18 -5.41
26 mome x line -5.41 -5.62
27 mome x line -5.62 -5.81
28 mome x line -5.81 -6.00
29 mome x line -6.00 -6.14
30 mome x line -6.14 -6.30
31 mome x line -6.30 -6.43
32 mome x line -6.43 -6.54
33 mome x line -6.54 -6.64
34 mome x line -6.64 -6.73
35 mome x line -6.73 -6.80
36 mome x line -6.80 -6.86
37 mome x line -6.86 -6.90
38 mome x line -6.90 -6.92
39 mome x line -6.92 -6.94
40 mome x line -6.94 -6.94
41 mome x line -6.94 -6.90
42 mome x line -6.90 -6.87
43 mome x line -6.87 -6.83
44 mome x line -6.83 -6.76
45 mome x line -6.76 -6.67
46 mome x line -6.67 -6.58
47 mome x line -6.58 -6.47
48 mome x line -6.47 -6.34
49 mome x line -6.34 -6.19
50 mome x line -6.19 -6.04
51 mome x line -6.04 -5.86
52 mome x line -5.86 -5.68
53 mome x line -5.68 -5.47
54 mome x line -5.47 -5.25
55 mome x line -5.25 -5.02
56 mome x line -5.02 -4.77
57 mome x line -4.77 -4.51
58 mome x line -4.51 -4.22
59 mome x line -4.22 -3.92
60 mome x line -3.92 -3.61
61 mome x line -3.61 -3.30
62 mome x line -3.30 -2.94
63 mome x line -2.94 -2.60
64 mome x line -2.60 -2.23
65 mome x line -2.23 -1.84
66 mome x line -1.84 -1.45
67 mome x line -1.45 -1.05
68 mome x line -1.05 -0.65
69 mome x line -0.65 -0.24
70 mome x line -0.24 0.18
71 mome x line 0.18 0.59
72 mome x line 0.59 1.00
73 mome x line 1.00 1.42
74 mome x line 1.42 1.82
75 mome x line 1.82 2.23
76 mome x line 2.23 2.63
77 mome x line 2.63 3.00
78 mome x line 3.00 3.38
79 mome x line 3.38 3.75
80 mome x line 3.75 4.09
81 mome x line 4.09 4.42
82 mome x line 4.42 4.73
83 mome x line 4.73 5.03
84 mome x line 5.03 5.30
85 mome x line 5.30 5.54
86 mome x line 5.54 5.76
87 mome x line 5.76 5.96
88 mome x line 5.96 6.13
89 mome x line 6.13 6.28
90 mome x line 6.28 6.37
91 mome x line 6.37 6.45
92 mome x line 6.45 6.48
93 mome x line 6.48 6.48
94 mome x line 6.48 6.45
95 mome x line 6.45 6.36
96 mome x line 6.36 6.24
97 mome x line 6.24 6.07
98 mome x line 6.07 5.86
99 mome x line 5.86 5.60
100 mome x line 5.60 5.30
101 mome x line 5.30 4.93
102 mome x line 4.93 4.52
103 mome x line 4.52 4.04
104 mome x line 4.04 3.53
105 mome x line 3.53 2.94
106 mome x line 2.94 2.30
107 mome x line 2.30 1.60
108 mome x line 1.60 0.82
109 mome x line 0.82 -0.01
110 mome x line -0.01 -0.92
111 mome x line -0.92 -1.87
112 mome x line -1.87 -2.91
113 mome x line -2.91 -4.03
114 mome x line -4.03 -5.20
hipo 4 desbalastado-1 (dcha)
carg en barra
```

```
   1 a 114 fuer y unif    4.200
 1 mome x line -11.508 -11.3022
 2 mome x line -11.3022 -11.1048
 3 mome x line -11.1048 -10.9116
 4 mome x line -10.9116 -10.7268
 5 mome x line -10.7268 -10.542
 6 mome x line -10.542 -10.3656
 7 mome x line -10.3656 -10.1976
 8 mome x line -10.1976 -10.0338
 9 mome x line -10.0338 -9.87
 10 mome x line -9.87 -9.7146
 11 mome x line -9.7146 -9.5634
 12 mome x line -9.5634 -9.4164
 13 mome x line -9.4164 -9.2778
 14 mome x line -9.2778 -9.1434
 15 mome x line -9.1434 -9.0132
 16 mome x line -9.0132 -8.8914
 17 mome x line -8.8914 -8.7738
 18 mome x line -8.7738 -8.6604
 19 mome x line -8.6604 -8.5512
 20 mome x line -8.5512 -8.4462
 21 mome x line -8.4462 -8.3454
 22 mome x line -8.3454 -8.253
 23 mome x line -8.253 -8.169
 24 mome x line -8.169 -8.0892
 25 mome x line -8.0892 -8.0094
 26 mome x line -8.0094 -7.938
 27 mome x line -7.938 -7.8708
 28 mome x line -7.8708 -7.8078
 29 mome x line -7.8078 -7.7574
 30 mome x line -7.7574 -7.7028
 31 mome x line -7.7028 -7.6566
 32 mome x line -7.6566 -7.6188
 33 mome x line -7.6188 -7.5852
 34 mome x line -7.5852 -7.5558
 35 mome x line -7.5558 -7.5306
 36 mome x line -7.5306 -7.5096
 37 mome x line -7.5096 -7.497
 38 mome x line -7.497 -7.4886
 39 mome x line -7.4886 -7.4844
 40 mome x line -7.4844 -7.4844
 41 mome x line -7.4844 -7.497
 42 mome x line -7.497 -7.5054
 43 mome x line -7.5054 -7.5222
 44 mome x line -7.5222 -7.5432
 45 mome x line -7.5432 -7.5768
 46 mome x line -7.5768 -7.6062
 47 mome x line -7.6062 -7.644
 48 mome x line -7.644 -7.6902
 49 mome x line -7.6902 -7.7406
 50 mome x line -7.7406 -7.791
 51 mome x line -7.791 -7.854
 52 mome x line -7.854 -7.917
 53 mome x line -7.917 -7.9884
 54 mome x line -7.9884 -8.064
 55 mome x line -8.064 -8.1438
 56 mome x line -8.1438 -8.2278
 57 mome x line -8.2278 -8.3202
 58 mome x line -8.3202 -8.4168
 59 mome x line -8.4168 -8.5218
 60 mome x line -8.5218 -8.6268
 61 mome x line -8.6268 -8.736
 62 mome x line -8.736 -8.8578
 63 mome x line -8.8578 -8.9754
 64 mome x line -8.9754 -9.1014
 65 mome x line -9.1014 -9.2358
 66 mome x line -9.2358 -9.3702
 67 mome x line -9.3702 -9.5088
 68 mome x line -9.5088 -9.6474
 69 mome x line -9.6474 -9.786
 70 mome x line -9.786 -9.933
 71 mome x line -9.933 -10.0716
 72 mome x line -10.0716 -10.2144
 73 mome x line -10.2144 -10.3572
 74 mome x line -10.3572 -10.4958
 75 mome x line -10.4958 -10.6386
 76 mome x line -10.6386 -10.773
 77 mome x line -10.773 -10.9032
 78 mome x line -10.9032 -11.0334
 79 mome x line -11.0334 -11.1594
 80 mome x line -11.1594 -11.277
 81 mome x line -11.277 -11.3904
 82 mome x line -11.3904 -11.4954
 83 mome x line -11.4954 -11.6004
 84 mome x line -11.6004 -11.6928
 85 mome x line -11.6928 -11.7768
 86 mome x line -11.7768 -11.8524
 87 mome x line -11.8524 -11.9196
 88 mome x line -11.9196 -11.9784
 89 mome x line -11.9784 -12.0288
 90 mome x line -12.0288 -12.0624
 91 mome x line -12.0624 -12.0876
 92 mome x line -12.0876 -12.1002
 93 mome x line -12.1002 -12.1002
 94 mome x line -12.1002 -12.0876
 95 mome x line -12.0876 -12.0582
 96 mome x line -12.0582 -12.0162
 97 mome x line -12.0162 -11.9574
 98 mome x line -11.9574 -11.886
 99 mome x line -11.886 -11.7978
 100 mome x line -11.7978 -11.6928
 101 mome x line -11.6928 -11.5668
 102 mome x line -11.5668 -11.424
 103 mome x line -11.424 -11.2602
 104 mome x line -11.2602 -11.0838
 105 mome x line -11.0838 -10.8822
 106 mome x line -10.8822 -10.6596
 107 mome x line -10.6596 -10.4202
 108 mome x line -10.4202 -10.1514
 109 mome x line -10.1514 -9.8658
 110 mome x line -9.8658 -9.555
 111 mome x line -9.555 -9.2274
 112 mome x line -9.2274 -8.8704
 113 mome x line -8.8704 -8.484
 114 mome x line -8.484 -8.0808
hipo 5 desbalastado-2 (izqda)
carg en barra
   1 a 114 fuer y unif    4.200
 1 mome x line 8.232 8.4378
 2 mome x line 8.4378 8.6352
 3 mome x line 8.6352 8.8284
 4 mome x line 8.8284 9.0132
 5 mome x line 9.0132 9.198
 6 mome x line 9.198 9.3744
 7 mome x line 9.3744 9.5424
 8 mome x line 9.5424 9.7062
 9 mome x line 9.7062 9.87
 10 mome x line 9.87 10.0254
```

```
 11 mome x line 10.0254 10.1766
 12 mome x line 10.1766 10.3236
 13 mome x line 10.3236 10.4622
 14 mome x line 10.4622 10.5966
 15 mome x line 10.5966 10.7268
 16 mome x line 10.7268 10.8486
 17 mome x line 10.8486 10.9662
 18 mome x line 10.9662 11.0796
 19 mome x line 11.0796 11.1888
 20 mome x line 11.1888 11.2938
 21 mome x line 11.2938 11.3946
 22 mome x line 11.3946 11.487
 23 mome x line 11.487 11.571
 24 mome x line 11.571 11.6508
 25 mome x line 11.6508 11.7306
 26 mome x line 11.7306 11.802
 27 mome x line 11.802 11.8692
 28 mome x line 11.8692 11.9322
 29 mome x line 11.9322 11.9826
 30 mome x line 11.9826 12.0372
 31 mome x line 12.0372 12.0834
 32 mome x line 12.0834 12.1212
 33 mome x line 12.1212 12.1548
 34 mome x line 12.1548 12.1842
 35 mome x line 12.1842 12.2094
 36 mome x line 12.2094 12.2304
 37 mome x line 12.2304 12.243
 38 mome x line 12.243 12.2514
 39 mome x line 12.2514 12.2556
 40 mome x line 12.2556 12.2556
 41 mome x line 12.2556 12.243
 42 mome x line 12.243 12.2346
 43 mome x line 12.2346 12.2178
 44 mome x line 12.2178 12.1968
 45 mome x line 12.1968 12.1632
 46 mome x line 12.1632 12.1338
 47 mome x line 12.1338 12.096
 48 mome x line 12.096 12.0498
 49 mome x line 12.0498 11.9994
 50 mome x line 11.9994 11.949
 51 mome x line 11.949 11.886
 52 mome x line 11.886 11.823
 53 mome x line 11.823 11.7516
 54 mome x line 11.7516 11.676
 55 mome x line 11.676 11.5962
 56 mome x line 11.5962 11.5122
 57 mome x line 11.5122 11.4198
 58 mome x line 11.4198 11.3232
 59 mome x line 11.3232 11.2182
 60 mome x line 11.2182 11.1132
 61 mome x line 11.1132 11.004
 62 mome x line 11.004 10.8822
 63 mome x line 10.8822 10.7646
 64 mome x line 10.7646 10.6386
 65 mome x line 10.6386 10.5042
 66 mome x line 10.5042 10.3698
 67 mome x line 10.3698 10.2312
 68 mome x line 10.2312 10.0926
 69 mome x line 10.0926 9.954
 70 mome x line 9.954 9.807
 71 mome x line 9.807 9.6684
 72 mome x line 9.6684 9.5256
 73 mome x line 9.5256 9.3828
 74 mome x line 9.3828 9.2442
 75 mome x line 9.2442 9.1014
 76 mome x line 9.1014 8.967
 77 mome x line 8.967 8.8368
 78 mome x line 8.8368 8.7066
 79 mome x line 8.7066 8.5806
 80 mome x line 8.5806 8.463
 81 mome x line 8.463 8.3496
 82 mome x line 8.3496 8.2446
 83 mome x line 8.2446 8.1396
 84 mome x line 8.1396 8.0472
 85 mome x line 8.0472 7.9632
 86 mome x line 7.9632 7.8876
 87 mome x line 7.8876 7.8204
 88 mome x line 7.8204 7.7616
 89 mome x line 7.7616 7.7112
 90 mome x line 7.7112 7.6776
 91 mome x line 7.6776 7.6524
 92 mome x line 7.6524 7.6398
 93 mome x line 7.6398 7.6398
 94 mome x line 7.6398 7.6524
 95 mome x line 7.6524 7.6818
 96 mome x line 7.6818 7.7238
 97 mome x line 7.7238 7.7826
 98 mome x line 7.7826 7.854
 99 mome x line 7.854 7.9422
100 mome x line 7.9422 8.0472
101 mome x line 8.0472 8.1732
102 mome x line 8.1732 8.316
103 mome x line 8.316 8.4798
104 mome x line 8.4798 8.6562
105 mome x line 8.6562 8.8578
106 mome x line 8.8578 9.0804
107 mome x line 9.0804 9.3198
108 mome x line 9.3198 9.5886
109 mome x line 9.5886 9.8742
110 mome x line 9.8742 10.185
111 mome x line 10.185 10.5126
112 mome x line 10.5126 10.8696
113 mome x line 10.8696 11.256
114 mome x line 11.256 11.6592
hipo 6 desbalastado-3 (15m centro vano central)
carg en barra
 62  fuer y unif   8.40
 62  mome x line    4.72  4.44
 63  fuer y unif   8.40
 63  mome x line    4.44  4.13
 64  fuer y unif   8.40
 64  mome x line    4.13  3.82
hipo 7 temperatura +
camb de temp 0.00001
1  a 114   16.80
hipo 8 temperatura -
camb de temp 0.00001
1  a 114  -16.80
hipo 9 gradiente de temperatura
camb de temp 0.00001
1  a 114  plano x y supe infe cant 3.08 -3.08 3.50
hipo 10 fluencia y retraccion
camb de temp 0.00001
1  a 114  -48.
hipo 11 asiento-1
desp de nudo
  5 desp y -0.0065
hipo 12 asiento-2
```

```
desp de nudo
 21 desp y -0.0065
hipo 13 asiento-3
desp de nudo
 40 desp y -0.0065
hipo 14 asiento-4
desp de nudo
 60 desp y -0.0065
hipo 15 asiento-5
desp de nudo
 80 desp y -0.0065
hipo 16 asiento-6
desp de nudo
100 desp y -0.0065
hipo 17 asiento-7
desp de nudo
120 desp y -0.0065
hipo 18 asiento-8
desp de nudo
140 desp y -0.0065
hipo 19 asiento-9
desp de nudo
160 desp y -0.0065
hipo 20 asiento-10
desp de nudo
179 desp y -0.0065
hipo 43 asiento-11
desp de nudo
194 desp y -0.0065
calc y alma
2 2 2
```

```
estr Viaducto Papiol  - teflon
nume de nudo  196
nume de barr  206
nume de hipo 2
nume de apoy   11
tipo port espa
list todo

---------------------

hipo 29  F.Teflon +
carga en barra
156 fuer z conc -17.009 0.01
157 fuer z conc -17.741 -0.01
158 fuer z conc -57.904 0.01
159 fuer z conc -54.143 -0.01
160 fuer z conc -63.426 0.01
161 fuer z conc -53.192 -0.01
162 fuer z conc -63.860 0.01
163 fuer z conc -51.284 -0.01
164 fuer z conc -64.246 0.01
165 fuer z conc -51.306 -0.01
166 fuer z conc -61.868 0.01
167 fuer z conc -53.541 -0.01
168 fuer z conc -58.046 0.01
169 fuer z conc -57.521 -0.01
170 fuer z conc -53.923 0.01
171 fuer z conc -61.173 -0.01
172 fuer z conc -52.511 0.01
173 fuer z conc -64.228 -0.01
174 fuer z conc -52.970 0.01
175 fuer z conc -58.657 -0.01
176 fuer z conc -20.217 0.01
177 fuer z conc -20.244 -0.01
182 fuer y conc 17.009 0.01
183 fuer y conc 17.741 0.01
184 fuer y conc 57.904 0.01
185 fuer y conc 54.143 0.01
186 fuer y conc 63.426 0.01
187 fuer y conc 53.192 0.01
188 fuer y conc 63.860 0.01
189 fuer y conc 51.284 0.01
190 fuer y conc 64.246 0.01
191 fuer y conc 51.306 0.01
192 fuer y conc 61.868 0.01
193 fuer y conc 53.541 0.01
194 fuer y conc 58.046 0.01
195 fuer y conc 57.521 0.01
196 fuer y conc 53.923 0.01
197 fuer y conc 61.173 0.01
198 fuer y conc 52.511 0.01
199 fuer y conc 64.228 0.01
200 fuer y conc 52.970 0.01
201 fuer y conc 58.657 0.01
202 fuer y conc 20.217 0.01
203 fuer y conc 20.244 0.01
hipo 30  F.Teflon -
carga en barra
156 fuer z conc 17.009 0.01
157 fuer z conc 17.741 -0.01
158 fuer z conc 57.904 0.01
159 fuer z conc 54.143 -0.01
160 fuer z conc 63.426 0.01
161 fuer z conc 53.192 -0.01
162 fuer z conc 63.860 0.01
163 fuer z conc 51.284 -0.01
164 fuer z conc 64.246 0.01
165 fuer z conc 51.306 -0.01
166 fuer z conc 61.868 0.01
167 fuer z conc 53.541 -0.01
168 fuer z conc 58.046 0.01
169 fuer z conc 57.521 -0.01
170 fuer z conc 53.923 0.01
171 fuer z conc 61.173 -0.01
172 fuer z conc 52.511 0.01
173 fuer z conc 64.228 -0.01
174 fuer z conc 52.970 0.01
175 fuer z conc 58.657 -0.01
176 fuer z conc 20.217 0.01
177 fuer z conc 20.244 -0.01
182 fuer y conc -17.009 0.01
183 fuer y conc -17.741 0.01
184 fuer y conc -57.904 0.01
185 fuer y conc -54.143 0.01
186 fuer y conc -63.426 0.01
187 fuer y conc -53.192 0.01
188 fuer y conc -63.860 0.01
189 fuer y conc -51.284 0.01
190 fuer y conc -64.246 0.01
191 fuer y conc -51.306 0.01
192 fuer y conc -61.868 0.01
193 fuer y conc -53.541 0.01
194 fuer y conc -58.046 0.01
195 fuer y conc -57.521 0.01
196 fuer y conc -53.923 0.01
197 fuer y conc -61.173 0.01
198 fuer y conc -52.511 0.01
199 fuer y conc -64.228 0.01
200 fuer y conc -52.970 0.01
201 fuer y conc -58.657 0.01
202 fuer y conc -20.217 0.01
203 fuer y conc -20.244 0.01
calc y alma
2 2 2
```

```
estr Viaducto Papiol - viento
nume de nudo  196
nume de barr  206
nume de hipo  8
nume de apoy   11
tipo port espa
list todo

-----------------------------------


hipo 21 viento + trans estructura
carga en barra
   1 fuer z line   0.4252   0.4238
   1 mome x line   0.1233   0.1229
   2 fuer z line   0.4238   0.4225
   2 mome x line   0.1229   0.1225
   3 fuer z line   0.4225   0.4211
   3 mome x line   0.1225   0.1221
   4 fuer z line   0.4211   0.4197
   4 mome x line   0.1221   0.1217
   5 fuer z line   0.4197   0.4183
   5 mome x line   0.1217   0.1213
   6 fuer z line   0.4183   0.4169
   6 mome x line   0.1213   0.1209
   7 fuer z line   0.4169   0.4154
   7 mome x line   0.1209   0.1205
   8 fuer z line   0.4154   0.4149
   8 mome x line   0.1205   0.1203
   9 fuer z unif   0.4149
   9 mome x unif   0.1203
  10 fuer z line   0.4149   0.4184
  10 mome x line   0.1203   0.1213
  11 fuer z line   0.4184   0.4241
  11 mome x line   0.1213   0.1230
  12 fuer z line   0.4241   0.4297
  12 mome x line   0.1230   0.1246
  13 fuer z line   0.4297   0.4351
  13 mome x line   0.1246   0.1262
  14 fuer z line   0.4351   0.4404
  14 mome x line   0.1262   0.1277
  15 fuer z line   0.4404   0.4455
  15 mome x line   0.1277   0.1292
  16 fuer z line   0.4455   0.4505
  16 mome x line   0.1292   0.1306
  17 fuer z line   0.4505   0.4554
  17 mome x line   0.1306   0.1321
  18 fuer z line   0.4554   0.4601
  18 mome x line   0.1321   0.1334
  19 fuer z line   0.4601   0.4648
  19 mome x line   0.1334   0.1348
  20 fuer z line   0.4648   0.4693
  20 mome x line   0.1348   0.1361
  21 fuer z line   0.4693   0.4738
  21 mome x line   0.1361   0.1374
  22 fuer z line   0.4738   0.4772
  22 mome x line   0.1374   0.1384
  23 fuer z line   0.4772   0.4806
  23 mome x line   0.1384   0.1394
  24 fuer z line   0.4806   0.4840
  24 mome x line   0.1394   0.1404
  25 fuer z line   0.4840   0.4873
  25 mome x line   0.1404   0.1413
  26 fuer z line   0.4873   0.4905
  26 mome x line   0.1413   0.1423
  27 fuer z line   0.4905   0.4937
  27 mome x line   0.1423   0.1432
  28 fuer z line   0.4937   0.4969
  28 mome x line   0.1432   0.1441
  29 fuer z line   0.4969   0.5000
  29 mome x line   0.1441   0.1450
  30 fuer z line   0.5000   0.5030
  30 mome x line   0.1450   0.1459
  31 fuer z line   0.5030   0.5060
  31 mome x line   0.1459   0.1467
  32 fuer z line   0.5060   0.5090
  32 mome x line   0.1467   0.1476
  33 fuer z line   0.5090   0.5119
  33 mome x line   0.1476   0.1485
  34 fuer z unif   0.5119
  34 mome x unif   0.1485
  35 fuer z unif   0.5119
  35 mome x unif   0.1485
  36 fuer z unif   0.5119
  36 mome x unif   0.1485
  37 fuer z unif   0.5119
  37 mome x unif   0.1485
  38 fuer z unif   0.5119
  38 mome x unif   0.1485
  39 fuer z unif   0.5119
  39 mome x unif   0.1485
  40 fuer z unif   0.5119
  40 mome x unif   0.1485
  41 fuer z unif   0.5119
  41 mome x unif   0.1485
  42 fuer z unif   0.5119
  42 mome x unif   0.1485
  43 fuer z unif   0.5119
  43 mome x unif   0.1485
  44 fuer z unif   0.5119
  44 mome x unif   0.1485
  45 fuer z unif   0.5119
  45 mome x unif   0.1485
  46 fuer z unif   0.5119
  46 mome x unif   0.1485
  47 fuer z unif   0.5119
  47 mome x unif   0.1485
  48 fuer z unif   0.5119
  48 mome x unif   0.1485
  49 fuer z unif   0.5119
  49 mome x unif   0.1485
  50 fuer z unif   0.5119
  50 mome x unif   0.1485
  51 fuer z unif   0.5119
  51 mome x unif   0.1485
  52 fuer z unif   0.5119
  52 mome x unif   0.1485
  53 fuer z unif   0.5119
  53 mome x unif   0.1485
  54 fuer z unif   0.5119
  54 mome x unif   0.1485
  55 fuer z unif   0.5119
  55 mome x unif   0.1485
  56 fuer z unif   0.5119
  56 mome x unif   0.1485
  57 fuer z unif   0.5119
  57 mome x unif   0.1485
  58 fuer z unif   0.5119
```

58	mome	x	unif	0.1485
59	fuer	z	unif	0.5119
59	mome	x	unif	0.1485
60	fuer	z	unif	0.5119
60	mome	x	unif	0.1485
61	fuer	z	unif	0.5119
61	mome	x	unif	0.1485
62	fuer	z	unif	0.5119
62	mome	x	unif	0.1485
63	fuer	z	unif	0.5119
63	mome	x	unif	0.1485
64	fuer	z	unif	0.5119
64	mome	x	unif	0.1485
65	fuer	z	unif	0.5119
65	mome	x	unif	0.1485
66	fuer	z	unif	0.5119
66	mome	x	unif	0.1485
67	fuer	z	unif	0.5119
67	mome	x	unif	0.1485
68	fuer	z	unif	0.5119
68	mome	x	unif	0.1485
69	fuer	z	unif	0.5119
69	mome	x	unif	0.1485
70	fuer	z	unif	0.5119
70	mome	x	unif	0.1485
71	fuer	z	unif	0.5119
71	mome	x	unif	0.1485
72	fuer	z	unif	0.5119
72	mome	x	unif	0.1485
73	fuer	z	unif	0.5119
73	mome	x	unif	0.1485
74	fuer	z	unif	0.5119
74	mome	x	unif	0.1485
75	fuer	z	unif	0.5119
75	mome	x	unif	0.1485
76	fuer	z	unif	0.5119
76	mome	x	unif	0.1485
77	fuer	z	unif	0.5119
77	mome	x	unif	0.1485
78	fuer	z	unif	0.5119
78	mome	x	unif	0.1485
79	fuer	z	unif	0.5119
79	mome	x	unif	0.1485
80	fuer	z	unif	0.5119
80	mome	x	unif	0.1485
81	fuer	z	unif	0.5119
81	mome	x	unif	0.1485
82	fuer	z	line	0.5119 0.5076
82	mome	x	line	0.1485 0.1472
83	fuer	z	line	0.5076 0.5031
83	mome	x	line	0.1472 0.1459
84	fuer	z	line	0.5031 0.4986
84	mome	x	line	0.1459 0.1446
85	fuer	z	line	0.4986 0.4939
85	mome	x	line	0.1446 0.1432
86	fuer	z	line	0.4939 0.4892
86	mome	x	line	0.1432 0.1419
87	fuer	z	line	0.4892 0.4843
87	mome	x	line	0.1419 0.1405
88	fuer	z	line	0.4843 0.4794
88	mome	x	line	0.1405 0.1390
89	fuer	z	line	0.4794 0.4743
89	mome	x	line	0.1390 0.1375
90	fuer	z	line	0.4743 0.4691
90	mome	x	line	0.1375 0.1360
91	fuer	z	line	0.4691 0.4637
91	mome	x	line	0.1360 0.1345
92	fuer	z	line	0.4637 0.4582
92	mome	x	line	0.1345 0.1329
93	fuer	z	line	0.4582 0.4525
93	mome	x	line	0.1329 0.1312
94	fuer	z	line	0.4525 0.4516
94	mome	x	line	0.1312 0.1310
95	fuer	z	line	0.4516 0.4508
95	mome	x	line	0.1310 0.1307
96	fuer	z	line	0.4508 0.4499
96	mome	x	line	0.1307 0.1305
97	fuer	z	line	0.4499 0.4490
97	mome	x	line	0.1305 0.1302
98	fuer	z	line	0.4490 0.4481
98	mome	x	line	0.1302 0.1300
99	fuer	z	line	0.4481 0.4473
99	mome	x	line	0.1300 0.1297
100	fuer	z	line	0.4473 0.4464
100	mome	x	line	0.1297 0.1295
101	fuer	z	line	0.4464 0.4455
101	mome	x	line	0.1295 0.1292
102	fuer	z	line	0.4455 0.4446
102	mome	x	line	0.1292 0.1289
103	fuer	z	line	0.4446 0.4437
103	mome	x	line	0.1289 0.1287
104	fuer	z	line	0.4437 0.4428
104	mome	x	line	0.1287 0.1284
105	fuer	z	line	0.4428 0.4419
105	mome	x	line	0.1284 0.1281
106	fuer	z	line	0.4419 0.4438
106	mome	x	line	0.1281 0.1287
107	fuer	z	line	0.4438 0.4457
107	mome	x	line	0.1287 0.1293
108	fuer	z	line	0.4457 0.4476
108	mome	x	line	0.1293 0.1298
109	fuer	z	line	0.4476 0.4495
109	mome	x	line	0.1298 0.1304
110	fuer	z	line	0.4495 0.4514
110	mome	x	line	0.1304 0.1309
111	fuer	z	line	0.4514 0.4532
111	mome	x	line	0.1309 0.1314
112	fuer	z	line	0.4532 0.4550
112	mome	x	line	0.1314 0.1320
113	fuer	z	line	0.4550 0.4568
113	mome	x	line	0.1320 0.1325
114	fuer	z	line	0.4568 0.4586
114	mome	x	line	0.1325 0.1330
206	fuer	z	unif	0.3436
207	fuer	z	unif	0.3436
208	fuer	z	unif	0.3436
209	fuer	z	unif	0.3436
210	fuer	z	line	0.3436 0.3691
211	fuer	z	unif	0.3436
212	fuer	z	line	0.3436 0.3487
213	fuer	z	line	0.3487 0.4049
214	fuer	z	unif	0.3436
215	fuer	z	line	0.3436 0.3487
216	fuer	z	line	0.3487 0.4049
217	fuer	z	unif	0.3436
218	fuer	z	line	0.3436 0.3487
219	fuer	z	line	0.3487 0.4049
220	fuer	z	unif	0.3436

221	fuer z	line	0.3436	0.3487
222	fuer z	line	0.3487	0.4049
223	fuer z	unif	0.3436	
224	fuer z	line	0.3436	0.3487
225	fuer z	line	0.3487	0.4049
226	fuer z	unif	0.3436	
227	fuer z	line	0.3436	0.3487
228	fuer z	unif	0.3436	
229	fuer z	unif	0.3436	

hipo 22 viento - trans estructura

carga en barra

1	fuer z	line	-0.4252	-0.4238
1	mome x	line	-0.1233	-0.1229
2	fuer z	line	-0.4238	-0.4225
2	mome x	line	-0.1229	-0.1225
3	fuer z	line	-0.4225	-0.4211
3	mome x	line	-0.1225	-0.1221
4	fuer z	line	-0.4211	-0.4197
4	mome x	line	-0.1221	-0.1217
5	fuer z	line	-0.4197	-0.4183
5	mome x	line	-0.1217	-0.1213
6	fuer z	line	-0.4183	-0.4169
6	mome x	line	-0.1213	-0.1209
7	fuer z	line	-0.4169	-0.4154
7	mome x	line	-0.1209	-0.1205
8	fuer z	line	-0.4154	-0.4149
8	mome x	line	-0.1205	-0.1203
9	fuer z	unif	-0.4149	
9	mome x	unif	-0.1203	
10	fuer z	line	-0.4149	-0.4184
10	mome x	line	-0.1203	-0.1213
11	fuer z	line	-0.4184	-0.4241
11	mome x	line	-0.1213	-0.1230
12	fuer z	line	-0.4241	-0.4297
12	mome x	line	-0.1230	-0.1246
13	fuer z	line	-0.4297	-0.4351
13	mome x	line	-0.1246	-0.1262
14	fuer z	line	-0.4351	-0.4404
14	mome x	line	-0.1262	-0.1277
15	fuer z	line	-0.4404	-0.4455
15	mome x	line	-0.1277	-0.1292
16	fuer z	line	-0.4455	-0.4505
16	mome x	line	-0.1292	-0.1306
17	fuer z	line	-0.4505	-0.4554
17	mome x	line	-0.1306	-0.1321
18	fuer z	line	-0.4554	-0.4601
18	mome x	line	-0.1321	-0.1334
19	fuer z	line	-0.4601	-0.4648
19	mome x	line	-0.1334	-0.1348
20	fuer z	line	-0.4648	-0.4693
20	mome x	line	-0.1348	-0.1361
21	fuer z	line	-0.4693	-0.4738
21	mome x	line	-0.1361	-0.1374
22	fuer z	line	-0.4738	-0.4772
22	mome x	line	-0.1374	-0.1384
23	fuer z	line	-0.4772	-0.4806
23	mome x	line	-0.1384	-0.1394
24	fuer z	line	-0.4806	-0.4840
24	mome x	line	-0.1394	-0.1404
25	fuer z	line	-0.4840	-0.4873
25	mome x	line	-0.1404	-0.1413
26	fuer z	line	-0.4873	-0.4905
26	mome x	line	-0.1413	-0.1423
27	fuer z	line	-0.4905	-0.4937
27	mome x	line	-0.1423	-0.1432
28	fuer z	line	-0.4937	-0.4969
28	mome x	line	-0.1432	-0.1441
29	fuer z	line	-0.4969	-0.5000
29	mome x	line	-0.1441	-0.1450
30	fuer z	line	-0.5000	-0.5030
30	mome x	line	-0.1450	-0.1459
31	fuer z	line	-0.5030	-0.5060
31	mome x	line	-0.1459	-0.1467
32	fuer z	line	-0.5060	-0.5090
32	mome x	line	-0.1467	-0.1476
33	fuer z	line	-0.5090	-0.5119
33	mome x	line	-0.1476	-0.1485
34	fuer z	unif	-0.5119	
34	mome x	unif	-0.1485	
35	fuer z	unif	-0.5119	
35	mome x	unif	-0.1485	
36	fuer z	unif	-0.5119	
36	mome x	unif	-0.1485	
37	fuer z	unif	-0.5119	
37	mome x	unif	-0.1485	
38	fuer z	unif	-0.5119	
38	mome x	unif	-0.1485	
39	fuer z	unif	-0.5119	
39	mome x	unif	-0.1485	
40	fuer z	unif	-0.5119	
40	mome x	unif	-0.1485	
41	fuer z	unif	-0.5119	
41	mome x	unif	-0.1485	
42	fuer z	unif	-0.5119	
42	mome x	unif	-0.1485	
43	fuer z	unif	-0.5119	
43	mome x	unif	-0.1485	
44	fuer z	unif	-0.5119	
44	mome x	unif	-0.1485	
45	fuer z	unif	-0.5119	
45	mome x	unif	-0.1485	
46	fuer z	unif	-0.5119	
46	mome x	unif	-0.1485	
47	fuer z	unif	-0.5119	
47	mome x	unif	-0.1485	
48	fuer z	unif	-0.5119	
48	mome x	unif	-0.1485	
49	fuer z	unif	-0.5119	
49	mome x	unif	-0.1485	
50	fuer z	unif	-0.5119	
50	mome x	unif	-0.1485	
51	fuer z	unif	-0.5119	
51	mome x	unif	-0.1485	
52	fuer z	unif	-0.5119	
52	mome x	unif	-0.1485	
53	fuer z	unif	-0.5119	
53	mome x	unif	-0.1485	
54	fuer z	unif	-0.5119	
54	mome x	unif	-0.1485	
55	fuer z	unif	-0.5119	
55	mome x	unif	-0.1485	
56	fuer z	unif	-0.5119	
56	mome x	unif	-0.1485	
57	fuer z	unif	-0.5119	
57	mome x	unif	-0.1485	
58	fuer z	unif	-0.5119	
58	mome x	unif	-0.1485	
59	fuer z	unif	-0.5119	

59	mome	x	unif	-0.1485
60	fuer	z	unif	-0.5119
60	mome	x	unif	-0.1485
61	fuer	z	unif	-0.5119
61	mome	x	unif	-0.1485
62	fuer	z	unif	-0.5119
62	mome	x	unif	-0.1485
63	fuer	z	unif	-0.5119
63	mome	x	unif	-0.1485
64	fuer	z	unif	-0.5119
64	mome	x	unif	-0.1485
65	fuer	z	unif	-0.5119
65	mome	x	unif	-0.1485
66	fuer	z	unif	-0.5119
66	mome	x	unif	-0.1485
67	fuer	z	unif	-0.5119
67	mome	x	unif	-0.1485
68	fuer	z	unif	-0.5119
68	mome	x	unif	-0.1485
69	fuer	z	unif	-0.5119
69	mome	x	unif	-0.1485
70	fuer	z	unif	-0.5119
70	mome	x	unif	-0.1485
71	fuer	z	unif	-0.5119
71	mome	x	unif	-0.1485
72	fuer	z	unif	-0.5119
72	mome	x	unif	-0.1485
73	fuer	z	unif	-0.5119
73	mome	x	unif	-0.1485
74	fuer	z	unif	-0.5119
74	mome	x	unif	-0.1485
75	fuer	z	unif	-0.5119
75	mome	x	unif	-0.1485
76	fuer	z	unif	-0.5119
76	mome	x	unif	-0.1485
77	fuer	z	unif	-0.5119
77	mome	x	unif	-0.1485
78	fuer	z	unif	-0.5119
78	mome	x	unif	-0.1485
79	fuer	z	unif	-0.5119
79	mome	x	unif	-0.1485
80	fuer	z	unif	-0.5119
80	mome	x	unif	-0.1485
81	fuer	z	unif	-0.5119
81	mome	x	unif	-0.1485
82	fuer	z	line	-0.5119 -0.5076
82	mome	x	line	-0.1485 -0.1472
83	fuer	z	line	-0.5076 -0.5031
83	mome	x	line	-0.1472 -0.1459
84	fuer	z	line	-0.5031 -0.4986
84	mome	x	line	-0.1459 -0.1446
85	fuer	z	line	-0.4986 -0.4939
85	mome	x	line	-0.1446 -0.1432
86	fuer	z	line	-0.4939 -0.4892
86	mome	x	line	-0.1432 -0.1419
87	fuer	z	line	-0.4892 -0.4843
87	mome	x	line	-0.1419 -0.1405
88	fuer	z	line	-0.4843 -0.4794
88	mome	x	line	-0.1405 -0.1390
89	fuer	z	line	-0.4794 -0.4743
89	mome	x	line	-0.1390 -0.1375
90	fuer	z	line	-0.4743 -0.4691
90	mome	x	line	-0.1375 -0.1360
91	fuer	z	line	-0.4691 -0.4637
91	mome	x	line	-0.1360 -0.1345
92	fuer	z	line	-0.4637 -0.4582
92	mome	x	line	-0.1345 -0.1329
93	fuer	z	line	-0.4582 -0.4525
93	mome	x	line	-0.1329 -0.1312
94	fuer	z	line	-0.4525 -0.4516
94	mome	x	line	-0.1312 -0.1310
95	fuer	z	line	-0.4516 -0.4508
95	mome	x	line	-0.1310 -0.1307
96	fuer	z	line	-0.4508 -0.4499
96	mome	x	line	-0.1307 -0.1305
97	fuer	z	line	-0.4499 -0.4490
97	mome	x	line	-0.1305 -0.1302
98	fuer	z	line	-0.4490 -0.4481
98	mome	x	line	-0.1302 -0.1300
99	fuer	z	line	-0.4481 -0.4473
99	mome	x	line	-0.1300 -0.1297
100	fuer	z	line	-0.4473 -0.4464
100	mome	x	line	-0.1297 -0.1295
101	fuer	z	line	-0.4464 -0.4455
101	mome	x	line	-0.1295 -0.1292
102	fuer	z	line	-0.4455 -0.4446
102	mome	x	line	-0.1292 -0.1289
103	fuer	z	line	-0.4446 -0.4437
103	mome	x	line	-0.1289 -0.1287
104	fuer	z	line	-0.4437 -0.4428
104	mome	x	line	-0.1287 -0.1284
105	fuer	z	line	-0.4428 -0.4419
105	mome	x	line	-0.1284 -0.1281
106	fuer	z	line	-0.4419 -0.4438
106	mome	x	line	-0.1281 -0.1287
107	fuer	z	line	-0.4438 -0.4457
107	mome	x	line	-0.1287 -0.1293
108	fuer	z	line	-0.4457 -0.4476
108	mome	x	line	-0.1293 -0.1298
109	fuer	z	line	-0.4476 -0.4495
109	mome	x	line	-0.1298 -0.1304
110	fuer	z	line	-0.4495 -0.4514
110	mome	x	line	-0.1304 -0.1309
111	fuer	z	line	-0.4514 -0.4532
111	mome	x	line	-0.1309 -0.1314
112	fuer	z	line	-0.4532 -0.4550
112	mome	x	line	-0.1314 -0.1320
113	fuer	z	line	-0.4550 -0.4568
113	mome	x	line	-0.1320 -0.1325
114	fuer	z	line	-0.4568 -0.4586
114	mome	x	line	-0.1325 -0.1330
206	fuer	z	unif	-0.3436
207	fuer	z	unif	-0.3436
208	fuer	z	unif	-0.3436
209	fuer	z	unif	-0.3436
210	fuer	z	line	-0.3436 -0.3691
211	fuer	z	unif	-0.3436
212	fuer	z	line	-0.3436 -0.3487
213	fuer	z	line	-0.3487 -0.4049
214	fuer	z	unif	-0.3436
215	fuer	z	line	-0.3436 -0.3487
216	fuer	z	line	-0.3487 -0.4049
217	fuer	z	unif	-0.3436
218	fuer	z	line	-0.3436 -0.3487
219	fuer	z	line	-0.3487 -0.4049
220	fuer	z	unif	-0.3436
221	fuer	z	line	-0.3436 -0.3487
222	fuer	z	line	-0.3487 -0.4049

223	fuer z unif	-0.3436	
224	fuer z line	-0.3436	-0.3487
225	fuer z line	-0.3487	-0.4049
226	fuer z unif	-0.3436	
227	fuer z line	-0.3436	-0.3487
228	fuer z unif	-0.3436	
229	fuer z unif	-0.3436	

hipo 23 viento + trans est.+ sobrecarga carga en barra

1	fuer z line	0.5379	0.5361
1	mome x line	1.4485	1.4438
2	fuer z line	0.5361	0.5344
2	mome x line	1.4438	1.4391
3	fuer z line	0.5344	0.5326
3	mome x line	1.4391	1.4344
4	fuer z line	0.5326	0.5309
4	mome x line	1.4344	1.4296
5	fuer z line	0.5309	0.5291
5	mome x line	1.4296	1.4249
6	fuer z line	0.5291	0.5273
6	mome x line	1.4249	1.4200
7	fuer z line	0.5273	0.5255
7	mome x line	1.4200	1.4152
8	fuer z line	0.5255	0.5249
8	mome x line	1.4152	1.4135
9	fuer z unif	0.5249	
9	mome x unif	1.4135	
10	fuer z line	0.5249	0.5293
10	mome x line	1.4135	1.4254
11	fuer z line	0.5293	0.5365
11	mome x line	1.4254	1.4449
12	fuer z line	0.5365	0.5436
12	mome x line	1.4449	1.4638
13	fuer z line	0.5436	0.5504
13	mome x line	1.4638	1.4822
14	fuer z line	0.5504	0.5570
14	mome x line	1.4822	1.5001
15	fuer z line	0.5570	0.5635
15	mome x line	1.5001	1.5176
16	fuer z line	0.5635	0.5698
16	mome x line	1.5176	1.5346
17	fuer z line	0.5698	0.5760
17	mome x line	1.5346	1.5512
18	fuer z line	0.5760	0.5820
18	mome x line	1.5512	1.5674
19	fuer z line	0.5820	0.5879
19	mome x line	1.5674	1.5833
20	fuer z line	0.5879	0.5937
20	mome x line	1.5833	1.5987
21	fuer z line	0.5937	0.5993
21	mome x line	1.5987	1.6139
22	fuer z line	0.5993	0.6037
22	mome x line	1.6139	1.6257
23	fuer z line	0.6037	0.6080
23	mome x line	1.6257	1.6373
24	fuer z line	0.6080	0.6122
24	mome x line	1.6373	1.6487
25	fuer z line	0.6122	0.6164
25	mome x line	1.6487	1.6599
26	fuer z line	0.6164	0.6205
26	mome x line	1.6599	1.6710
27	fuer z line	0.6205	0.6245
27	mome x line	1.6710	1.6818
28	fuer z line	0.6245	0.6285
28	mome x line	1.6818	1.6926
29	fuer z line	0.6285	0.6324
29	mome x line	1.6926	1.7031
30	fuer z line	0.6324	0.6363
30	mome x line	1.7031	1.7135
31	fuer z line	0.6363	0.6401
31	mome x line	1.7135	1.7238
32	fuer z line	0.6401	0.6438
32	mome x line	1.7238	1.7339
33	fuer z line	0.6438	0.6475
33	mome x line	1.7339	1.7438
34	fuer z unif	0.6475	
34	mome x unif	1.7438	
35	fuer z unif	0.6475	
35	mome x unif	1.7438	
36	fuer z unif	0.6475	
36	mome x unif	1.7438	
37	fuer z unif	0.6475	
37	mome x unif	1.7438	
38	fuer z unif	0.6475	
38	mome x unif	1.7438	
39	fuer z unif	0.6475	
39	mome x unif	1.7438	
40	fuer z unif	0.6475	
40	mome x unif	1.7438	
41	fuer z unif	0.6475	
41	mome x unif	1.7438	
42	fuer z unif	0.6475	
42	mome x unif	1.7438	
43	fuer z unif	0.6475	
43	mome x unif	1.7438	
44	fuer z unif	0.6475	
44	mome x unif	1.7438	
45	fuer z unif	0.6475	
45	mome x unif	1.7438	
46	fuer z unif	0.6475	
46	mome x unif	1.7438	
47	fuer z unif	0.6475	
47	mome x unif	1.7438	
48	fuer z unif	0.6475	
48	mome x unif	1.7438	
49	fuer z unif	0.6475	
49	mome x unif	1.7438	
50	fuer z unif	0.6475	
50	mome x unif	1.7438	
51	fuer z unif	0.6475	
51	mome x unif	1.7438	
52	fuer z unif	0.6475	
52	mome x unif	1.7438	
53	fuer z unif	0.6475	
53	mome x unif	1.7438	
54	fuer z unif	0.6475	
54	mome x unif	1.7438	
55	fuer z unif	0.6475	
55	mome x unif	1.7438	
56	fuer z unif	0.6475	
56	mome x unif	1.7438	
57	fuer z unif	0.6475	
57	mome x unif	1.7438	
58	fuer z unif	0.6475	
58	mome x unif	1.7438	
59	fuer z unif	0.6475	
59	mome x unif	1.7438	
60	fuer z unif	0.6475	

60	mome	x	unif	1.7438
61	fuer	z	unif	0.6475
61	mome	x	unif	1.7438
62	fuer	z	unif	0.6475
62	mome	x	unif	1.7438
63	fuer	z	unif	0.6475
63	mome	x	unif	1.7438
64	fuer	z	unif	0.6475
64	mome	x	unif	1.7438
65	fuer	z	unif	0.6475
65	mome	x	unif	1.7438
66	fuer	z	unif	0.6475
66	mome	x	unif	1.7438
67	fuer	z	unif	0.6475
67	mome	x	unif	1.7438
68	fuer	z	unif	0.6475
68	mome	x	unif	1.7438
69	fuer	z	unif	0.6475
69	mome	x	unif	1.7438
70	fuer	z	unif	0.6475
70	mome	x	unif	1.7438
71	fuer	z	unif	0.6475
71	mome	x	unif	1.7438
72	fuer	z	unif	0.6475
72	mome	x	unif	1.7438
73	fuer	z	unif	0.6475
73	mome	x	unif	1.7438
74	fuer	z	unif	0.6475
74	mome	x	unif	1.7438
75	fuer	z	unif	0.6475
75	mome	x	unif	1.7438
76	fuer	z	unif	0.6475
76	mome	x	unif	1.7438
77	fuer	z	unif	0.6475
77	mome	x	unif	1.7438
78	fuer	z	unif	0.6475
78	mome	x	unif	1.7438
79	fuer	z	unif	0.6475
79	mome	x	unif	1.7438
80	fuer	z	unif	0.6475
80	mome	x	unif	1.7438
81	fuer	z	unif	0.6475
81	mome	x	unif	1.7438
82	fuer	z	line	0.6475 0.6420
82	mome	x	line	1.7438 1.7290
83	fuer	z	line	0.6420 0.6364
83	mome	x	line	1.7290 1.7139
84	fuer	z	line	0.6364 0.6307
84	mome	x	line	1.7139 1.6984
85	fuer	z	line	0.6307 0.6248
85	mome	x	line	1.6984 1.6826
86	fuer	z	line	0.6248 0.6188
86	mome	x	line	1.6826 1.6665
87	fuer	z	line	0.6188 0.6127
87	mome	x	line	1.6665 1.6499
88	fuer	z	line	0.6127 0.6064
88	mome	x	line	1.6499 1.6330
89	fuer	z	line	0.6064 0.5999
89	mome	x	line	1.6330 1.6156
90	fuer	z	line	0.5999 0.5933
90	mome	x	line	1.6156 1.5978
91	fuer	z	line	0.5933 0.5865
91	mome	x	line	1.5978 1.5796
92	fuer	z	line	0.5865 0.5796
92	mome	x	line	1.5796 1.5608
93	fuer	z	line	0.5796 0.5724
93	mome	x	line	1.5608 1.5415
94	fuer	z	line	0.5724 0.5713
94	mome	x	line	1.5415 1.5385
95	fuer	z	line	0.5713 0.5702
95	mome	x	line	1.5385 1.5356
96	fuer	z	line	0.5702 0.5691
96	mome	x	line	1.5356 1.5326
97	fuer	z	line	0.5691 0.5680
97	mome	x	line	1.5326 1.5296
98	fuer	z	line	0.5680 0.5669
98	mome	x	line	1.5296 1.5266
99	fuer	z	line	0.5669 0.5658
99	mome	x	line	1.5266 1.5236
100	fuer	z	line	0.5658 0.5647
100	mome	x	line	1.5236 1.5206
101	fuer	z	line	0.5647 0.5635
101	mome	x	line	1.5206 1.5176
102	fuer	z	line	0.5635 0.5624
102	mome	x	line	1.5176 1.5145
103	fuer	z	line	0.5624 0.5613
103	mome	x	line	1.5145 1.5115
104	fuer	z	line	0.5613 0.5601
104	mome	x	line	1.5115 1.5084
105	fuer	z	line	0.5601 0.5590
105	mome	x	line	1.5084 1.5053
106	fuer	z	line	0.5590 0.5614
106	mome	x	line	1.5053 1.5119
107	fuer	z	line	0.5614 0.5638
107	mome	x	line	1.5119 1.5184
108	fuer	z	line	0.5638 0.5662
108	mome	x	line	1.5184 1.5248
109	fuer	z	line	0.5662 0.5686
109	mome	x	line	1.5248 1.5312
110	fuer	z	line	0.5686 0.5709
110	mome	x	line	1.5312 1.5376
111	fuer	z	line	0.5709 0.5733
111	mome	x	line	1.5376 1.5438
112	fuer	z	line	0.5733 0.5756
112	mome	x	line	1.5438 1.5500
113	fuer	z	line	0.5756 0.5779
113	mome	x	line	1.5500 1.5562
114	fuer	z	line	0.5779 0.5801
114	mome	x	line	1.5562 1.5623
206	fuer	z	unif	0.1718
207	fuer	z	unif	0.1718
208	fuer	z	unif	0.1718
209	fuer	z	unif	0.1718
210	fuer	z	line	0.1718 0.1846
211	fuer	z	unif	0.1718
212	fuer	z	line	0.1718 0.1744
213	fuer	z	line	0.1744 0.2024
214	fuer	z	unif	0.1718
215	fuer	z	line	0.1718 0.1744
216	fuer	z	line	0.1744 0.2024
217	fuer	z	unif	0.1718
218	fuer	z	line	0.1718 0.1744
219	fuer	z	line	0.1744 0.2024
220	fuer	z	unif	0.1718
221	fuer	z	line	0.1718 0.1744
222	fuer	z	line	0.1744 0.2024
223	fuer	z	unif	0.1718
224	fuer	z	line	0.1718 0.1744

```
 225 fuer z line    0.1744    0.2024
 226 fuer z unif    0.1718
 227 fuer z line    0.1718    0.1744
 228 fuer z unif    0.1718
 229 fuer z unif    0.1718
hipo 24 viento - trans est.+ sobrecarga
carga en barra
   1 fuer z line   -0.5379   -0.5361
   1 mome x line   -1.4485   -1.4438
   2 fuer z line   -0.5361   -0.5344
   2 mome x line   -1.4438   -1.4391
   3 fuer z line   -0.5344   -0.5326
   3 mome x line   -1.4391   -1.4344
   4 fuer z line   -0.5326   -0.5309
   4 mome x line   -1.4344   -1.4296
   5 fuer z line   -0.5309   -0.5291
   5 mome x line   -1.4296   -1.4249
   6 fuer z line   -0.5291   -0.5273
   6 mome x line   -1.4249   -1.4200
   7 fuer z line   -0.5273   -0.5255
   7 mome x line   -1.4200   -1.4152
   8 fuer z line   -0.5255   -0.5249
   8 mome x line   -1.4152   -1.4135
   9 fuer z unif   -0.5249
   9 mome x unif   -1.4135
  10 fuer z line   -0.5249   -0.5293
  10 mome x line   -1.4135   -1.4254
  11 fuer z line   -0.5293   -0.5365
  11 mome x line   -1.4254   -1.4449
  12 fuer z line   -0.5365   -0.5436
  12 mome x line   -1.4449   -1.4638
  13 fuer z line   -0.5436   -0.5504
  13 mome x line   -1.4638   -1.4822
  14 fuer z line   -0.5504   -0.5570
  14 mome x line   -1.4822   -1.5001
  15 fuer z line   -0.5570   -0.5635
  15 mome x line   -1.5001   -1.5176
  16 fuer z line   -0.5635   -0.5698
  16 mome x line   -1.5176   -1.5346
  17 fuer z line   -0.5698   -0.5760
  17 mome x line   -1.5346   -1.5512
  18 fuer z line   -0.5760   -0.5820
  18 mome x line   -1.5512   -1.5674
  19 fuer z line   -0.5820   -0.5879
  19 mome x line   -1.5674   -1.5833
  20 fuer z line   -0.5879   -0.5937
  20 mome x line   -1.5833   -1.5987
  21 fuer z line   -0.5937   -0.5993
  21 mome x line   -1.5987   -1.6139
  22 fuer z line   -0.5993   -0.6037
  22 mome x line   -1.6139   -1.6257
  23 fuer z line   -0.6037   -0.6080
  23 mome x line   -1.6257   -1.6373
  24 fuer z line   -0.6080   -0.6122
  24 mome x line   -1.6373   -1.6487
  25 fuer z line   -0.6122   -0.6164
  25 mome x line   -1.6487   -1.6599
  26 fuer z line   -0.6164   -0.6205
  26 mome x line   -1.6599   -1.6710
  27 fuer z line   -0.6205   -0.6245
  27 mome x line   -1.6710   -1.6818
  28 fuer z line   -0.6245   -0.6285
  28 mome x line   -1.6818   -1.6926
  29 fuer z line   -0.6285   -0.6324
  29 mome x line   -1.6926   -1.7031
  30 fuer z line   -0.6324   -0.6363
  30 mome x line   -1.7031   -1.7135
  31 fuer z line   -0.6363   -0.6401
  31 mome x line   -1.7135   -1.7238
  32 fuer z line   -0.6401   -0.6438
  32 mome x line   -1.7238   -1.7339
  33 fuer z line   -0.6438   -0.6475
  33 mome x line   -1.7339   -1.7438
  34 fuer z unif   -0.6475
  34 mome x unif   -1.7438
  35 fuer z unif   -0.6475
  35 mome x unif   -1.7438
  36 fuer z unif   -0.6475
  36 mome x unif   -1.7438
  37 fuer z unif   -0.6475
  37 mome x unif   -1.7438
  38 fuer z unif   -0.6475
  38 mome x unif   -1.7438
  39 fuer z unif   -0.6475
  39 mome x unif   -1.7438
  40 fuer z unif   -0.6475
  40 mome x unif   -1.7438
  41 fuer z unif   -0.6475
  41 mome x unif   -1.7438
  42 fuer z unif   -0.6475
  42 mome x unif   -1.7438
  43 fuer z unif   -0.6475
  43 mome x unif   -1.7438
  44 fuer z unif   -0.6475
  44 mome x unif   -1.7438
  45 fuer z unif   -0.6475
  45 mome x unif   -1.7438
  46 fuer z unif   -0.6475
  46 mome x unif   -1.7438
  47 fuer z unif   -0.6475
  47 mome x unif   -1.7438
  48 fuer z unif   -0.6475
  48 mome x unif   -1.7438
  49 fuer z unif   -0.6475
  49 mome x unif   -1.7438
  50 fuer z unif   -0.6475
  50 mome x unif   -1.7438
  51 fuer z unif   -0.6475
  51 mome x unif   -1.7438
  52 fuer z unif   -0.6475
  52 mome x unif   -1.7438
  53 fuer z unif   -0.6475
  53 mome x unif   -1.7438
  54 fuer z unif   -0.6475
  54 mome x unif   -1.7438
  55 fuer z unif   -0.6475
  55 mome x unif   -1.7438
  56 fuer z unif   -0.6475
  56 mome x unif   -1.7438
  57 fuer z unif   -0.6475
  57 mome x unif   -1.7438
  58 fuer z unif   -0.6475
  58 mome x unif   -1.7438
  59 fuer z unif   -0.6475
  59 mome x unif   -1.7438
  60 fuer z unif   -0.6475
  60 mome x unif   -1.7438
  61 fuer z unif   -0.6475
```

61	mome	x	unif	-1.7438
62	fuer	z	unif	-0.6475
62	mome	x	unif	-1.7438
63	fuer	z	unif	-0.6475
63	mome	x	unif	-1.7438
64	fuer	z	unif	-0.6475
64	mome	x	unif	-1.7438
65	fuer	z	unif	-0.6475
65	mome	x	unif	-1.7438
66	fuer	z	unif	-0.6475
66	mome	x	unif	-1.7438
67	fuer	z	unif	-0.6475
67	mome	x	unif	-1.7438
68	fuer	z	unif	-0.6475
68	mome	x	unif	-1.7438
69	fuer	z	unif	-0.6475
69	mome	x	unif	-1.7438
70	fuer	z	unif	-0.6475
70	mome	x	unif	-1.7438
71	fuer	z	unif	-0.6475
71	mome	x	unif	-1.7438
72	fuer	z	unif	-0.6475
72	mome	x	unif	-1.7438
73	fuer	z	unif	-0.6475
73	mome	x	unif	-1.7438
74	fuer	z	unif	-0.6475
74	mome	x	unif	-1.7438
75	fuer	z	unif	-0.6475
75	mome	x	unif	-1.7438
76	fuer	z	unif	-0.6475
76	mome	x	unif	-1.7438
77	fuer	z	unif	-0.6475
77	mome	x	unif	-1.7438
78	fuer	z	unif	-0.6475
78	mome	x	unif	-1.7438
79	fuer	z	unif	-0.6475
79	mome	x	unif	-1.7438
80	fuer	z	unif	-0.6475
80	mome	x	unif	-1.7438
81	fuer	z	unif	-0.6475
81	mome	x	unif	-1.7438
82	fuer	z	line	-0.6475 -0.6420
82	mome	x	line	-1.7438 -1.7290
83	fuer	z	line	-0.6420 -0.6364
83	mome	x	line	-1.7290 -1.7139
84	fuer	z	line	-0.6364 -0.6307
84	mome	x	line	-1.7139 -1.6984
85	fuer	z	line	-0.6307 -0.6248
85	mome	x	line	-1.6984 -1.6826
86	fuer	z	line	-0.6248 -0.6188
86	mome	x	line	-1.6826 -1.6665
87	fuer	z	line	-0.6188 -0.6127
87	mome	x	line	-1.6665 -1.6499
88	fuer	z	line	-0.6127 -0.6064
88	mome	x	line	-1.6499 -1.6330
89	fuer	z	line	-0.6064 -0.5999
89	mome	x	line	-1.6330 -1.6156
90	fuer	z	line	-0.5999 -0.5933
90	mome	x	line	-1.6156 -1.5978
91	fuer	z	line	-0.5933 -0.5865
91	mome	x	line	-1.5978 -1.5796
92	fuer	z	line	-0.5865 -0.5796
92	mome	x	line	-1.5796 -1.5608
93	fuer	z	line	-0.5796 -0.5724
93	mome	x	line	-1.5608 -1.5415
94	fuer	z	line	-0.5724 -0.5713
94	mome	x	line	-1.5415 -1.5385
95	fuer	z	line	-0.5713 -0.5702
95	mome	x	line	-1.5385 -1.5356
96	fuer	z	line	-0.5702 -0.5691
96	mome	x	line	-1.5356 -1.5326
97	fuer	z	line	-0.5691 -0.5680
97	mome	x	line	-1.5326 -1.5296
98	fuer	z	line	-0.5680 -0.5669
98	mome	x	line	-1.5296 -1.5266
99	fuer	z	line	-0.5669 -0.5658
99	mome	x	line	-1.5266 -1.5236
100	fuer	z	line	-0.5658 -0.5647
100	mome	x	line	-1.5236 -1.5206
101	fuer	z	line	-0.5647 -0.5635
101	mome	x	line	-1.5206 -1.5176
102	fuer	z	line	-0.5635 -0.5624
102	mome	x	line	-1.5176 -1.5145
103	fuer	z	line	-0.5624 -0.5613
103	mome	x	line	-1.5145 -1.5115
104	fuer	z	line	-0.5613 -0.5601
104	mome	x	line	-1.5115 -1.5084
105	fuer	z	line	-0.5601 -0.5590
105	mome	x	line	-1.5084 -1.5053
106	fuer	z	line	-0.5590 -0.5614
106	mome	x	line	-1.5053 -1.5119
107	fuer	z	line	-0.5614 -0.5638
107	mome	x	line	-1.5119 -1.5184
108	fuer	z	line	-0.5638 -0.5662
108	mome	x	line	-1.5184 -1.5248
109	fuer	z	line	-0.5662 -0.5686
109	mome	x	line	-1.5248 -1.5312
110	fuer	z	line	-0.5686 -0.5709
110	mome	x	line	-1.5312 -1.5376
111	fuer	z	line	-0.5709 -0.5733
111	mome	x	line	-1.5376 -1.5438
112	fuer	z	line	-0.5733 -0.5756
112	mome	x	line	-1.5438 -1.5500
113	fuer	z	line	-0.5756 -0.5779
113	mome	x	line	-1.5500 -1.5562
114	fuer	z	line	-0.5779 -0.5801
114	mome	x	line	-1.5562 -1.5623
206	fuer	z	unif	-0.1718
207	fuer	z	unif	-0.1718
208	fuer	z	unif	-0.1718
209	fuer	z	unif	-0.1718
210	fuer	z	line	-0.1718 -0.1846
211	fuer	z	unif	-0.1718
212	fuer	z	line	-0.1718 -0.1744
213	fuer	z	line	-0.1744 -0.2024
214	fuer	z	unif	-0.1718
215	fuer	z	line	-0.1718 -0.1744
216	fuer	z	line	-0.1744 -0.2024
217	fuer	z	unif	-0.1718
218	fuer	z	line	-0.1718 -0.1744
219	fuer	z	line	-0.1744 -0.2024
220	fuer	z	unif	-0.1718
221	fuer	z	line	-0.1718 -0.1744
222	fuer	z	line	-0.1744 -0.2024
223	fuer	z	unif	-0.1718
224	fuer	z	line	-0.1718 -0.1744
225	fuer	z	line	-0.1744 -0.2024
226	fuer	z	unif	-0.1718

227	fuer z line	-0.1718	-0.1744
228	fuer z unif	-0.1718	
229	fuer z unif	-0.1718	

hipo 25 viento + long. estructura
carga en barra

1	fuer x line	0.1063	0.1060
1	mome z line	-0.0308	-0.0307
2	fuer x line	0.1060	0.1056
2	mome z line	-0.0307	-0.0306
3	fuer x line	0.1056	0.1053
3	mome z line	-0.0306	-0.0305
4	fuer x line	0.1053	0.1049
4	mome z line	-0.0305	-0.0304
5	fuer x line	0.1049	0.1046
5	mome z line	-0.0304	-0.0303
6	fuer x line	0.1046	0.1042
6	mome z line	-0.0303	-0.0302
7	fuer x line	0.1042	0.1039
7	mome z line	-0.0302	-0.0301
8	fuer x line	0.1039	0.1037
8	mome z line	-0.0301	-0.0301
9	fuer x unif	0.1037	
9	mome z unif	-0.0301	
10	fuer x line	0.1037	0.1046
10	mome z line	-0.0301	-0.0303
11	fuer x line	0.1046	0.1060
11	mome z line	-0.0303	-0.0308
12	fuer x line	0.1060	0.1074
12	mome z line	-0.0308	-0.0312
13	fuer x line	0.1074	0.1088
13	mome z line	-0.0312	-0.0315
14	fuer x line	0.1088	0.1101
14	mome z line	-0.0315	-0.0319
15	fuer x line	0.1101	0.1114
15	mome z line	-0.0319	-0.0323
16	fuer x line	0.1114	0.1126
16	mome z line	-0.0323	-0.0327
17	fuer x line	0.1126	0.1138
17	mome z line	-0.0327	-0.0330
18	fuer x line	0.1138	0.1150
18	mome z line	-0.0330	-0.0334
19	fuer x line	0.1150	0.1162
19	mome z line	-0.0334	-0.0337
20	fuer x line	0.1162	0.1173
20	mome z line	-0.0337	-0.0340
21	fuer x line	0.1173	0.1184
21	mome z line	-0.0340	-0.0343
22	fuer x line	0.1184	0.1193
22	mome z line	-0.0343	-0.0346
23	fuer x line	0.1193	0.1202
23	mome z line	-0.0346	-0.0348
24	fuer x line	0.1202	0.1210
24	mome z line	-0.0348	-0.0351
25	fuer x line	0.1210	0.1218
25	mome z line	-0.0351	-0.0353
26	fuer x line	0.1218	0.1226
26	mome z line	-0.0353	-0.0356
27	fuer x line	0.1226	0.1234
27	mome z line	-0.0356	-0.0358
28	fuer x line	0.1234	0.1242
28	mome z line	-0.0358	-0.0360
29	fuer x line	0.1242	0.1250
29	mome z line	-0.0360	-0.0362
30	fuer x line	0.1250	0.1258
30	mome z line	-0.0362	-0.0365
31	fuer x line	0.1258	0.1265
31	mome z line	-0.0365	-0.0367
32	fuer x line	0.1265	0.1272
32	mome z line	-0.0367	-0.0369
33	fuer x line	0.1272	0.1280
33	mome z line	-0.0369	-0.0371
34	fuer x unif	0.1280	
34	mome z unif	-0.0371	
35	fuer x unif	0.1280	
35	mome z unif	-0.0371	
36	fuer x unif	0.1280	
36	mome z unif	-0.0371	
37	fuer x unif	0.1280	
37	mome z unif	-0.0371	
38	fuer x unif	0.1280	
38	mome z unif	-0.0371	
39	fuer x unif	0.1280	
39	mome z unif	-0.0371	
40	fuer x unif	0.1280	
40	mome z unif	-0.0371	
41	fuer x unif	0.1280	
41	mome z unif	-0.0371	
42	fuer x unif	0.1280	
42	mome z unif	-0.0371	
43	fuer x unif	0.1280	
43	mome z unif	-0.0371	
44	fuer x unif	0.1280	
44	mome z unif	-0.0371	
45	fuer x unif	0.1280	
45	mome z unif	-0.0371	
46	fuer x unif	0.1280	
46	mome z unif	-0.0371	
47	fuer x unif	0.1280	
47	mome z unif	-0.0371	
48	fuer x unif	0.1280	
48	mome z unif	-0.0371	
49	fuer x unif	0.1280	
49	mome z unif	-0.0371	
50	fuer x unif	0.1280	
50	mome z unif	-0.0371	
51	fuer x unif	0.1280	
51	mome z unif	-0.0371	
52	fuer x unif	0.1280	
52	mome z unif	-0.0371	
53	fuer x unif	0.1280	
53	mome z unif	-0.0371	
54	fuer x unif	0.1280	
54	mome z unif	-0.0371	
55	fuer x unif	0.1280	
55	mome z unif	-0.0371	
56	fuer x unif	0.1280	
56	mome z unif	-0.0371	
57	fuer x unif	0.1280	
57	mome z unif	-0.0371	
58	fuer x unif	0.1280	
58	mome z unif	-0.0371	
59	fuer x unif	0.1280	
59	mome z unif	-0.0371	
60	fuer x unif	0.1280	
60	mome z unif	-0.0371	
61	fuer x unif	0.1280	
61	mome z unif	-0.0371	
62	fuer x unif	0.1280	

62	mome	z	unif	-0.0371
63	fuer	x	unif	0.1280
63	mome	z	unif	-0.0371
64	fuer	x	unif	0.1280
64	mome	z	unif	-0.0371
65	fuer	x	unif	0.1280
65	mome	z	unif	-0.0371
66	fuer	x	unif	0.1280
66	mome	z	unif	-0.0371
67	fuer	x	unif	0.1280
67	mome	z	unif	-0.0371
68	fuer	x	unif	0.1280
68	mome	z	unif	-0.0371
69	fuer	x	unif	0.1280
69	mome	z	unif	-0.0371
70	fuer	x	unif	0.1280
70	mome	z	unif	-0.0371
71	fuer	x	unif	0.1280
71	mome	z	unif	-0.0371
72	fuer	x	unif	0.1280
72	mome	z	unif	-0.0371
73	fuer	x	unif	0.1280
73	mome	z	unif	-0.0371
74	fuer	x	unif	0.1280
74	mome	z	unif	-0.0371
75	fuer	x	unif	0.1280
75	mome	z	unif	-0.0371
76	fuer	x	unif	0.1280
76	mome	z	unif	-0.0371
77	fuer	x	unif	0.1280
77	mome	z	unif	-0.0371
78	fuer	x	unif	0.1280
78	mome	z	unif	-0.0371
79	fuer	x	unif	0.1280
79	mome	z	unif	-0.0371
80	fuer	x	unif	0.1280
80	mome	z	unif	-0.0371
81	fuer	x	unif	0.1280
81	mome	z	unif	-0.0371
82	fuer	x	line	0.1280 0.1269
82	mome	z	line	-0.0371 -0.0368
83	fuer	x	line	0.1269 0.1258
83	mome	z	line	-0.0368 -0.0365
84	fuer	x	line	0.1258 0.1246
84	mome	z	line	-0.0365 -0.0361
85	fuer	x	line	0.1246 0.1235
85	mome	z	line	-0.0361 -0.0358
86	fuer	x	line	0.1235 0.1223
86	mome	z	line	-0.0358 -0.0355
87	fuer	x	line	0.1223 0.1211
87	mome	z	line	-0.0355 -0.0351
88	fuer	x	line	0.1211 0.1198
88	mome	z	line	-0.0351 -0.0348
89	fuer	x	line	0.1198 0.1186
89	mome	z	line	-0.0348 -0.0344
90	fuer	x	line	0.1186 0.1173
90	mome	z	line	-0.0344 -0.0340
91	fuer	x	line	0.1173 0.1159
91	mome	z	line	-0.0340 -0.0336
92	fuer	x	line	0.1159 0.1145
92	mome	z	line	-0.0336 -0.0332
93	fuer	x	line	0.1145 0.1131
93	mome	z	line	-0.0332 -0.0328
94	fuer	x	line	0.1131 0.1129
94	mome	z	line	-0.0328 -0.0327
95	fuer	x	line	0.1129 0.1127
95	mome	z	line	-0.0327 -0.0327
96	fuer	x	line	0.1127 0.1125
96	mome	z	line	-0.0327 -0.0326
97	fuer	x	line	0.1125 0.1123
97	mome	z	line	-0.0326 -0.0326
98	fuer	x	line	0.1123 0.1120
98	mome	z	line	-0.0326 -0.0325
99	fuer	x	line	0.1120 0.1118
99	mome	z	line	-0.0325 -0.0324
100	fuer	x	line	0.1118 0.1116
100	mome	z	line	-0.0324 -0.0324
101	fuer	x	line	0.1116 0.1114
101	mome	z	line	-0.0324 -0.0323
102	fuer	x	line	0.1114 0.1111
102	mome	z	line	-0.0323 -0.0322
103	fuer	x	line	0.1111 0.1109
103	mome	z	line	-0.0322 -0.0322
104	fuer	x	line	0.1109 0.1107
104	mome	z	line	-0.0322 -0.0321
105	fuer	x	line	0.1107 0.1105
105	mome	z	line	-0.0321 -0.0320
106	fuer	x	line	0.1105 0.1110
106	mome	z	line	-0.0320 -0.0322
107	fuer	x	line	0.1110 0.1114
107	mome	z	line	-0.0322 -0.0323
108	fuer	x	line	0.1114 0.1119
108	mome	z	line	-0.0323 -0.0325
109	fuer	x	line	0.1119 0.1124
109	mome	z	line	-0.0325 -0.0326
110	fuer	x	line	0.1124 0.1128
110	mome	z	line	-0.0326 -0.0327
111	fuer	x	line	0.1128 0.1133
111	mome	z	line	-0.0327 -0.0329
112	fuer	x	line	0.1133 0.1138
112	mome	z	line	-0.0329 -0.0330
113	fuer	x	line	0.1138 0.1142
113	mome	z	line	-0.0330 -0.0331
114	fuer	x	line	0.1142 0.1147
114	mome	z	line	-0.0331 -0.0332
206	fuer	y	unif	-0.4200
207	fuer	y	line	-0.4200 -0.7280
208	fuer	y	unif	-0.4200
209	fuer	y	unif	-0.4200
210	fuer	y	line	-0.4200 -0.7820
211	fuer	y	unif	-0.4200
212	fuer	y	line	-0.4200 -0.4262
213	fuer	y	line	-0.4262 -0.8578
214	fuer	y	unif	-0.4200
215	fuer	y	line	-0.4200 -0.4262
216	fuer	y	line	-0.4262 -0.8578
217	fuer	y	unif	-0.4200
218	fuer	y	line	-0.4200 -0.4262
219	fuer	y	line	-0.4262 -0.8578
220	fuer	y	unif	-0.4200
221	fuer	y	line	-0.4200 -0.4262
222	fuer	y	line	-0.4262 -0.8578
223	fuer	y	unif	-0.4200
224	fuer	y	line	-0.4200 -0.4262
225	fuer	y	line	-0.4262 -0.8578
226	fuer	y	unif	-0.4200
227	fuer	y	line	-0.4200 -0.7388
228	fuer	y	unif	-0.4200

```
 229 fuer y line  -0.4200  -0.7280
hipo 26 viento - long. estructura
carga en barra
   1 fuer x line  -0.1063  -0.1060
   1 mome z line   0.0308   0.0307
   2 fuer x line  -0.1060  -0.1056
   2 mome z line   0.0307   0.0306
   3 fuer x line  -0.1056  -0.1053
   3 mome z line   0.0306   0.0305
   4 fuer x line  -0.1053  -0.1049
   4 mome z line   0.0305   0.0304
   5 fuer x line  -0.1049  -0.1046
   5 mome z line   0.0304   0.0303
   6 fuer x line  -0.1046  -0.1042
   6 mome z line   0.0303   0.0302
   7 fuer x line  -0.1042  -0.1039
   7 mome z line   0.0302   0.0301
   8 fuer x line  -0.1039  -0.1037
   8 mome z line   0.0301   0.0301
   9 fuer x unif  -0.1037
   9 mome z unif   0.0301
  10 fuer x line  -0.1037  -0.1046
  10 mome z line   0.0301   0.0303
  11 fuer x line  -0.1046  -0.1060
  11 mome z line   0.0303   0.0308
  12 fuer x line  -0.1060  -0.1074
  12 mome z line   0.0308   0.0312
  13 fuer x line  -0.1074  -0.1088
  13 mome z line   0.0312   0.0315
  14 fuer x line  -0.1088  -0.1101
  14 mome z line   0.0315   0.0319
  15 fuer x line  -0.1101  -0.1114
  15 mome z line   0.0319   0.0323
  16 fuer x line  -0.1114  -0.1126
  16 mome z line   0.0323   0.0327
  17 fuer x line  -0.1126  -0.1138
  17 mome z line   0.0327   0.0330
  18 fuer x line  -0.1138  -0.1150
  18 mome z line   0.0330   0.0334
  19 fuer x line  -0.1150  -0.1162
  19 mome z line   0.0334   0.0337
  20 fuer x line  -0.1162  -0.1173
  20 mome z line   0.0337   0.0340
  21 fuer x line  -0.1173  -0.1184
  21 mome z line   0.0340   0.0343
  22 fuer x line  -0.1184  -0.1193
  22 mome z line   0.0343   0.0346
  23 fuer x line  -0.1193  -0.1202
  23 mome z line   0.0346   0.0348
  24 fuer x line  -0.1202  -0.1210
  24 mome z line   0.0348   0.0351
  25 fuer x line  -0.1210  -0.1218
  25 mome z line   0.0351   0.0353
  26 fuer x line  -0.1218  -0.1226
  26 mome z line   0.0353   0.0356
  27 fuer x line  -0.1226  -0.1234
  27 mome z line   0.0356   0.0358
  28 fuer x line  -0.1234  -0.1242
  28 mome z line   0.0358   0.0360
  29 fuer x line  -0.1242  -0.1250
  29 mome z line   0.0360   0.0362
  30 fuer x line  -0.1250  -0.1258
  30 mome z line   0.0362   0.0365
  31 fuer x line  -0.1258  -0.1265
  31 mome z line   0.0365   0.0367
  32 fuer x line  -0.1265  -0.1272
  32 mome z line   0.0367   0.0369
  33 fuer x line  -0.1272  -0.1280
  33 mome z line   0.0369   0.0371
  34 fuer x unif  -0.1280
  34 mome z unif   0.0371
  35 fuer x unif  -0.1280
  35 mome z unif   0.0371
  36 fuer x unif  -0.1280
  36 mome z unif   0.0371
  37 fuer x unif  -0.1280
  37 mome z unif   0.0371
  38 fuer x unif  -0.1280
  38 mome z unif   0.0371
  39 fuer x unif  -0.1280
  39 mome z unif   0.0371
  40 fuer x unif  -0.1280
  40 mome z unif   0.0371
  41 fuer x unif  -0.1280
  41 mome z unif   0.0371
  42 fuer x unif  -0.1280
  42 mome z unif   0.0371
  43 fuer x unif  -0.1280
  43 mome z unif   0.0371
  44 fuer x unif  -0.1280
  44 mome z unif   0.0371
  45 fuer x unif  -0.1280
  45 mome z unif   0.0371
  46 fuer x unif  -0.1280
  46 mome z unif   0.0371
  47 fuer x unif  -0.1280
  47 mome z unif   0.0371
  48 fuer x unif  -0.1280
  48 mome z unif   0.0371
  49 fuer x unif  -0.1280
  49 mome z unif   0.0371
  50 fuer x unif  -0.1280
  50 mome z unif   0.0371
  51 fuer x unif  -0.1280
  51 mome z unif   0.0371
  52 fuer x unif  -0.1280
  52 mome z unif   0.0371
  53 fuer x unif  -0.1280
  53 mome z unif   0.0371
  54 fuer x unif  -0.1280
  54 mome z unif   0.0371
  55 fuer x unif  -0.1280
  55 mome z unif   0.0371
  56 fuer x unif  -0.1280
  56 mome z unif   0.0371
  57 fuer x unif  -0.1280
  57 mome z unif   0.0371
  58 fuer x unif  -0.1280
  58 mome z unif   0.0371
  59 fuer x unif  -0.1280
  59 mome z unif   0.0371
  60 fuer x unif  -0.1280
  60 mome z unif   0.0371
  61 fuer x unif  -0.1280
  61 mome z unif   0.0371
  62 fuer x unif  -0.1280
  62 mome z unif   0.0371
  63 fuer x unif  -0.1280
```

63	mome	z	unif	0.0371
64	fuer	x	unif	-0.1280
64	mome	z	unif	0.0371
65	fuer	x	unif	-0.1280
65	mome	z	unif	0.0371
66	fuer	x	unif	-0.1280
66	mome	z	unif	0.0371
67	fuer	x	unif	-0.1280
67	mome	z	unif	0.0371
68	fuer	x	unif	-0.1280
68	mome	z	unif	0.0371
69	fuer	x	unif	-0.1280
69	mome	z	unif	0.0371
70	fuer	x	unif	-0.1280
70	mome	z	unif	0.0371
71	fuer	x	unif	-0.1280
71	mome	z	unif	0.0371
72	fuer	x	unif	-0.1280
72	mome	z	unif	0.0371
73	fuer	x	unif	-0.1280
73	mome	z	unif	0.0371
74	fuer	x	unif	-0.1280
74	mome	z	unif	0.0371
75	fuer	x	unif	-0.1280
75	mome	z	unif	0.0371
76	fuer	x	unif	-0.1280
76	mome	z	unif	0.0371
77	fuer	x	unif	-0.1280
77	mome	z	unif	0.0371
78	fuer	x	unif	-0.1280
78	mome	z	unif	0.0371
79	fuer	x	unif	-0.1280
79	mome	z	unif	0.0371
80	fuer	x	unif	-0.1280
80	mome	z	unif	0.0371
81	fuer	x	unif	-0.1280
81	mome	z	unif	0.0371
82	fuer	x	line	-0.1280 -0.1269
82	mome	z	line	0.0371 0.0368
83	fuer	x	line	-0.1269 -0.1258
83	mome	z	line	0.0368 0.0365
84	fuer	x	line	-0.1258 -0.1246
84	mome	z	line	0.0365 0.0361
85	fuer	x	line	-0.1246 -0.1235
85	mome	z	line	0.0361 0.0358
86	fuer	x	line	-0.1235 -0.1223
86	mome	z	line	0.0358 0.0355
87	fuer	x	line	-0.1223 -0.1211
87	mome	z	line	0.0355 0.0351
88	fuer	x	line	-0.1211 -0.1198
88	mome	z	line	0.0351 0.0348
89	fuer	x	line	-0.1198 -0.1186
89	mome	z	line	0.0348 0.0344
90	fuer	x	line	-0.1186 -0.1173
90	mome	z	line	0.0344 0.0340
91	fuer	x	line	-0.1173 -0.1159
91	mome	z	line	0.0340 0.0336
92	fuer	x	line	-0.1159 -0.1145
92	mome	z	line	0.0336 0.0332
93	fuer	x	line	-0.1145 -0.1131
93	mome	z	line	0.0332 0.0328
94	fuer	x	line	-0.1131 -0.1129
94	mome	z	line	0.0328 0.0327
95	fuer	x	line	-0.1129 -0.1127
95	mome	z	line	0.0327 0.0327
96	fuer	x	line	-0.1127 -0.1125
96	mome	z	line	0.0327 0.0326
97	fuer	x	line	-0.1125 -0.1123
97	mome	z	line	0.0326 0.0326
98	fuer	x	line	-0.1123 -0.1120
98	mome	z	line	0.0326 0.0325
99	fuer	x	line	-0.1120 -0.1118
99	mome	z	line	0.0325 0.0324
100	fuer	x	line	-0.1118 -0.1116
100	mome	z	line	0.0324 0.0324
101	fuer	x	line	-0.1116 -0.1114
101	mome	z	line	0.0324 0.0323
102	fuer	x	line	-0.1114 -0.1111
102	mome	z	line	0.0323 0.0322
103	fuer	x	line	-0.1111 -0.1109
103	mome	z	line	0.0322 0.0322
104	fuer	x	line	-0.1109 -0.1107
104	mome	z	line	0.0322 0.0321
105	fuer	x	line	-0.1107 -0.1105
105	mome	z	line	0.0321 0.0320
106	fuer	x	line	-0.1105 -0.1110
106	mome	z	line	0.0320 0.0322
107	fuer	x	line	-0.1110 -0.1114
107	mome	z	line	0.0322 0.0323
108	fuer	x	line	-0.1114 -0.1119
108	mome	z	line	0.0323 0.0325
109	fuer	x	line	-0.1119 -0.1124
109	mome	z	line	0.0325 0.0326
110	fuer	x	line	-0.1124 -0.1128
110	mome	z	line	0.0326 0.0327
111	fuer	x	line	-0.1128 -0.1133
111	mome	z	line	0.0327 0.0329
112	fuer	x	line	-0.1133 -0.1138
112	mome	z	line	0.0329 0.0330
113	fuer	x	line	-0.1138 -0.1142
113	mome	z	line	0.0330 0.0331
114	fuer	x	line	-0.1142 -0.1147
114	mome	z	line	0.0331 0.0332
206	fuer	y	unif	0.4200
207	fuer	y	line	0.4200 0.7280
208	fuer	y	unif	0.4200
209	fuer	y	unif	0.4200
210	fuer	y	line	0.4200 0.7820
211	fuer	y	unif	0.4200
212	fuer	y	line	0.4200 0.4262
213	fuer	y	line	0.4262 0.8578
214	fuer	y	unif	0.4200
215	fuer	y	line	0.4200 0.4262
216	fuer	y	line	0.4262 0.8578
217	fuer	y	unif	0.4200
218	fuer	y	line	0.4200 0.4262
219	fuer	y	line	0.4262 0.8578
220	fuer	y	unif	0.4200
221	fuer	y	line	0.4200 0.4262
222	fuer	y	line	0.4262 0.8578
223	fuer	y	unif	0.4200
224	fuer	y	line	0.4200 0.4262
225	fuer	y	line	0.4262 0.8578
226	fuer	y	unif	0.4200
227	fuer	y	line	0.4200 0.7388
228	fuer	y	unif	0.4200
229	fuer	y	line	0.4200 0.7280

hipo 27 viento + long. est.+ sobrecarga

carga en barra

1	fuer	x	line	0.1345
1	mome	z	line	-0.3621
2	fuer	x	line	0.1340
2	mome	z	line	-0.3610
3	fuer	x	line	0.1336
3	mome	z	line	-0.3598
4	fuer	x	line	0.1332
4	mome	z	line	-0.3586
5	fuer	x	line	0.1327
5	mome	z	line	-0.3574
6	fuer	x	line	0.1323
6	mome	z	line	-0.3562
7	fuer	x	line	0.1318
7	mome	z	line	-0.3550
8	fuer	x	line	0.1314
8	mome	z	line	-0.3538
9	fuer	x	unif	0.1312
9	mome	z	unif	-0.3534
10	fuer	x	line	0.1312
10	mome	z	line	-0.3534
11	fuer	x	line	0.1323
11	mome	z	line	-0.3563
12	fuer	x	line	0.1341
12	mome	z	line	-0.3612
13	fuer	x	line	0.1359
13	mome	z	line	-0.3659
14	fuer	x	line	0.1376
14	mome	z	line	-0.3705
15	fuer	x	line	0.1393
15	mome	z	line	-0.3750
16	fuer	x	line	0.1409
16	mome	z	line	-0.3794
17	fuer	x	line	0.1425
17	mome	z	line	-0.3836
18	fuer	x	line	0.1440
18	mome	z	line	-0.3878
19	fuer	x	line	0.1455
19	mome	z	line	-0.3919
20	fuer	x	line	0.1470
20	mome	z	line	-0.3958
21	fuer	x	line	0.1484
21	mome	z	line	-0.3997
22	fuer	x	line	0.1498
22	mome	z	line	-0.4035
23	fuer	x	line	0.1509
23	mome	z	line	-0.4064
24	fuer	x	line	0.1520
24	mome	z	line	-0.4093
25	fuer	x	line	0.1531
25	mome	z	line	-0.4122
26	fuer	x	line	0.1541
26	mome	z	line	-0.4150
27	fuer	x	line	0.1551
27	mome	z	line	-0.4177
28	fuer	x	line	0.1561
28	mome	z	line	-0.4205
29	fuer	x	line	0.1571
29	mome	z	line	-0.4231
30	fuer	x	line	0.1581
30	mome	z	line	-0.4258
31	fuer	x	line	0.1591
31	mome	z	line	-0.4284
32	fuer	x	line	0.1600
32	mome	z	line	-0.4309
33	fuer	x	line	0.1610
33	mome	z	line	-0.4335
34	fuer	x	unif	0.1619
34	mome	z	unif	-0.4360
35	fuer	x	unif	0.1619
35	mome	z	unif	-0.4360
36	fuer	x	unif	0.1619
36	mome	z	unif	-0.4360
37	fuer	x	unif	0.1619
37	mome	z	unif	-0.4360
38	fuer	x	unif	0.1619
38	mome	z	unif	-0.4360
39	fuer	x	unif	0.1619
39	mome	z	unif	-0.4360
40	fuer	x	unif	0.1619
40	mome	z	unif	-0.4360
41	fuer	x	unif	0.1619
41	mome	z	unif	-0.4360
42	fuer	x	unif	0.1619
42	mome	z	unif	-0.4360
43	fuer	x	unif	0.1619
43	mome	z	unif	-0.4360
44	fuer	x	unif	0.1619
44	mome	z	unif	-0.4360
45	fuer	x	unif	0.1619
45	mome	z	unif	-0.4360
46	fuer	x	unif	0.1619
46	mome	z	unif	-0.4360
47	fuer	x	unif	0.1619
47	mome	z	unif	-0.4360
48	fuer	x	unif	0.1619
48	mome	z	unif	-0.4360
49	fuer	x	unif	0.1619
49	mome	z	unif	-0.4360
50	fuer	x	unif	0.1619
50	mome	z	unif	-0.4360
51	fuer	x	unif	0.1619
51	mome	z	unif	-0.4360
52	fuer	x	unif	0.1619
52	mome	z	unif	-0.4360
53	fuer	x	unif	0.1619
53	mome	z	unif	-0.4360
54	fuer	x	unif	0.1619
54	mome	z	unif	-0.4360
55	fuer	x	unif	0.1619
55	mome	z	unif	-0.4360
56	fuer	x	unif	0.1619
56	mome	z	unif	-0.4360
57	fuer	x	unif	0.1619
57	mome	z	unif	-0.4360
58	fuer	x	unif	0.1619
58	mome	z	unif	-0.4360
59	fuer	x	unif	0.1619
59	mome	z	unif	-0.4360
60	fuer	x	unif	0.1619
60	mome	z	unif	-0.4360
61	fuer	x	unif	0.1619
61	mome	z	unif	-0.4360
62	fuer	x	unif	0.1619
62	mome	z	unif	-0.4360
63	fuer	x	unif	0.1619
63	mome	z	unif	-0.4360
64	fuer	x	unif	0.1619

```
 64 mome z unif  -0.4360
 65 fuer x unif   0.1619
 65 mome z unif  -0.4360
 66 fuer x unif   0.1619
 66 mome z unif  -0.4360
 67 fuer x unif   0.1619
 67 mome z unif  -0.4360
 68 fuer x unif   0.1619
 68 mome z unif  -0.4360
 69 fuer x unif   0.1619
 69 mome z unif  -0.4360
 70 fuer x unif   0.1619
 70 mome z unif  -0.4360
 71 fuer x unif   0.1619
 71 mome z unif  -0.4360
 72 fuer x unif   0.1619
 72 mome z unif  -0.4360
 73 fuer x unif   0.1619
 73 mome z unif  -0.4360
 74 fuer x unif   0.1619
 74 mome z unif  -0.4360
 75 fuer x unif   0.1619
 75 mome z unif  -0.4360
 76 fuer x unif   0.1619
 76 mome z unif  -0.4360
 77 fuer x unif   0.1619
 77 mome z unif  -0.4360
 78 fuer x unif   0.1619
 78 mome z unif  -0.4360
 79 fuer x unif   0.1619
 79 mome z unif  -0.4360
 80 fuer x unif   0.1619
 80 mome z unif  -0.4360
 81 fuer x unif   0.1619
 81 mome z unif  -0.4360
 82 fuer x line   0.1619   0.1605
 82 mome z line  -0.4360  -0.4323
 83 fuer x line   0.1605   0.1591
 83 mome z line  -0.4323  -0.4285
 84 fuer x line   0.1591   0.1577
 84 mome z line  -0.4285  -0.4246
 85 fuer x line   0.1577   0.1562
 85 mome z line  -0.4246  -0.4207
 86 fuer x line   0.1562   0.1547
 86 mome z line  -0.4207  -0.4166
 87 fuer x line   0.1547   0.1532
 87 mome z line  -0.4166  -0.4125
 88 fuer x line   0.1532   0.1516
 88 mome z line  -0.4125  -0.4083
 89 fuer x line   0.1516   0.1500
 89 mome z line  -0.4083  -0.4039
 90 fuer x line   0.1500   0.1483
 90 mome z line  -0.4039  -0.3995
 91 fuer x line   0.1483   0.1466
 91 mome z line  -0.3995  -0.3949
 92 fuer x line   0.1466   0.1449
 92 mome z line  -0.3949  -0.3902
 93 fuer x line   0.1449   0.1431
 93 mome z line  -0.3902  -0.3854
 94 fuer x line   0.1431   0.1428
 94 mome z line  -0.3854  -0.3846
 95 fuer x line   0.1428   0.1426
 95 mome z line  -0.3846  -0.3839
 96 fuer x line   0.1426   0.1423
 96 mome z line  -0.3839  -0.3832
 97 fuer x line   0.1423   0.1420
 97 mome z line  -0.3832  -0.3824
 98 fuer x line   0.1420   0.1417
 98 mome z line  -0.3824  -0.3817
 99 fuer x line   0.1417   0.1414
 99 mome z line  -0.3817  -0.3809
100 fuer x line   0.1414   0.1412
100 mome z line  -0.3809  -0.3802
101 fuer x line   0.1412   0.1409
101 mome z line  -0.3802  -0.3794
102 fuer x line   0.1409   0.1406
102 mome z line  -0.3794  -0.3786
103 fuer x line   0.1406   0.1403
103 mome z line  -0.3786  -0.3779
104 fuer x line   0.1403   0.1400
104 mome z line  -0.3779  -0.3771
105 fuer x line   0.1400   0.1397
105 mome z line  -0.3771  -0.3763
106 fuer x line   0.1397   0.1404
106 mome z line  -0.3763  -0.3780
107 fuer x line   0.1404   0.1410
107 mome z line  -0.3780  -0.3796
108 fuer x line   0.1410   0.1416
108 mome z line  -0.3796  -0.3812
109 fuer x line   0.1416   0.1421
109 mome z line  -0.3812  -0.3828
110 fuer x line   0.1421   0.1427
110 mome z line  -0.3828  -0.3844
111 fuer x line   0.1427   0.1433
111 mome z line  -0.3844  -0.3860
112 fuer x line   0.1433   0.1439
112 mome z line  -0.3860  -0.3875
113 fuer x line   0.1439   0.1445
113 mome z line  -0.3875  -0.3891
114 fuer x line   0.1445   0.1450
114 mome z line  -0.3891  -0.3906
206 fuer y unif  -0.2100
207 fuer y line  -0.2100  -0.3640
208 fuer y unif  -0.2100
209 fuer y unif  -0.2100
210 fuer y line  -0.2100  -0.3910
211 fuer y unif  -0.2100
212 fuer y line  -0.2100  -0.2131
213 fuer y line  -0.2131  -0.4289
214 fuer y unif  -0.2100
215 fuer y line  -0.2100  -0.2131
216 fuer y line  -0.2131  -0.4289
217 fuer y unif  -0.2100
218 fuer y line  -0.2100  -0.2131
219 fuer y line  -0.2131  -0.4289
220 fuer y unif  -0.2100
221 fuer y line  -0.2100  -0.2131
222 fuer y line  -0.2131  -0.4289
223 fuer y unif  -0.2100
224 fuer y line  -0.2100  -0.2131
225 fuer y line  -0.2131  -0.4289
226 fuer y unif  -0.2100
227 fuer y line  -0.2100  -0.3694
228 fuer y unif  -0.2100
229 fuer y line  -0.2100  -0.3640
hipo 28 viento - long. est.+ sobrecarga
carga en barra
  1 fuer x line  -0.1345  -0.1340
```

1	mome	z	line	0.3621	0.3610
2	fuer	x	line	-0.1340	-0.1336
2	mome	z	line	0.3610	0.3598
3	fuer	x	line	-0.1336	-0.1332
3	mome	z	line	0.3598	0.3586
4	fuer	x	line	-0.1332	-0.1327
4	mome	z	line	0.3586	0.3574
5	fuer	x	line	-0.1327	-0.1323
5	mome	z	line	0.3574	0.3562
6	fuer	x	line	-0.1323	-0.1318
6	mome	z	line	0.3562	0.3550
7	fuer	x	line	-0.1318	-0.1314
7	mome	z	line	0.3550	0.3538
8	fuer	x	line	-0.1314	-0.1312
8	mome	z	line	0.3538	0.3534
9	fuer	x	unif	-0.1312	
9	mome	z	unif	0.3534	
10	fuer	x	line	-0.1312	-0.1323
10	mome	z	line	0.3534	0.3563
11	fuer	x	line	-0.1323	-0.1341
11	mome	z	line	0.3563	0.3612
12	fuer	x	line	-0.1341	-0.1359
12	mome	z	line	0.3612	0.3659
13	fuer	x	line	-0.1359	-0.1376
13	mome	z	line	0.3659	0.3705
14	fuer	x	line	-0.1376	-0.1393
14	mome	z	line	0.3705	0.3750
15	fuer	x	line	-0.1393	-0.1409
15	mome	z	line	0.3750	0.3794
16	fuer	x	line	-0.1409	-0.1425
16	mome	z	line	0.3794	0.3836
17	fuer	x	line	-0.1425	-0.1440
17	mome	z	line	0.3836	0.3878
18	fuer	x	line	-0.1440	-0.1455
18	mome	z	line	0.3878	0.3919
19	fuer	x	line	-0.1455	-0.1470
19	mome	z	line	0.3919	0.3958
20	fuer	x	line	-0.1470	-0.1484
20	mome	z	line	0.3958	0.3997
21	fuer	x	line	-0.1484	-0.1498
21	mome	z	line	0.3997	0.4035
22	fuer	x	line	-0.1498	-0.1509
22	mome	z	line	0.4035	0.4064
23	fuer	x	line	-0.1509	-0.1520
23	mome	z	line	0.4064	0.4093
24	fuer	x	line	-0.1520	-0.1531
24	mome	z	line	0.4093	0.4122
25	fuer	x	line	-0.1531	-0.1541
25	mome	z	line	0.4122	0.4150
26	fuer	x	line	-0.1541	-0.1551
26	mome	z	line	0.4150	0.4177
27	fuer	x	line	-0.1551	-0.1561
27	mome	z	line	0.4177	0.4205
28	fuer	x	line	-0.1561	-0.1571
28	mome	z	line	0.4205	0.4231
29	fuer	x	line	-0.1571	-0.1581
29	mome	z	line	0.4231	0.4258
30	fuer	x	line	-0.1581	-0.1591
30	mome	z	line	0.4258	0.4284
31	fuer	x	line	-0.1591	-0.1600
31	mome	z	line	0.4284	0.4309
32	fuer	x	line	-0.1600	-0.1610
32	mome	z	line	0.4309	0.4335
33	fuer	x	line	-0.1610	-0.1619
33	mome	z	line	0.4335	0.4360
34	fuer	x	unif	-0.1619	
34	mome	z	unif	0.4360	
35	fuer	x	unif	-0.1619	
35	mome	z	unif	0.4360	
36	fuer	x	unif	-0.1619	
36	mome	z	unif	0.4360	
37	fuer	x	unif	-0.1619	
37	mome	z	unif	0.4360	
38	fuer	x	unif	-0.1619	
38	mome	z	unif	0.4360	
39	fuer	x	unif	-0.1619	
39	mome	z	unif	0.4360	
40	fuer	x	unif	-0.1619	
40	mome	z	unif	0.4360	
41	fuer	x	unif	-0.1619	
41	mome	z	unif	0.4360	
42	fuer	x	unif	-0.1619	
42	mome	z	unif	0.4360	
43	fuer	x	unif	-0.1619	
43	mome	z	unif	0.4360	
44	fuer	x	unif	-0.1619	
44	mome	z	unif	0.4360	
45	fuer	x	unif	-0.1619	
45	mome	z	unif	0.4360	
46	fuer	x	unif	-0.1619	
46	mome	z	unif	0.4360	
47	fuer	x	unif	-0.1619	
47	mome	z	unif	0.4360	
48	fuer	x	unif	-0.1619	
48	mome	z	unif	0.4360	
49	fuer	x	unif	-0.1619	
49	mome	z	unif	0.4360	
50	fuer	x	unif	-0.1619	
50	mome	z	unif	0.4360	
51	fuer	x	unif	-0.1619	
51	mome	z	unif	0.4360	
52	fuer	x	unif	-0.1619	
52	mome	z	unif	0.4360	
53	fuer	x	unif	-0.1619	
53	mome	z	unif	0.4360	
54	fuer	x	unif	-0.1619	
54	mome	z	unif	0.4360	
55	fuer	x	unif	-0.1619	
55	mome	z	unif	0.4360	
56	fuer	x	unif	-0.1619	
56	mome	z	unif	0.4360	
57	fuer	x	unif	-0.1619	
57	mome	z	unif	0.4360	
58	fuer	x	unif	-0.1619	
58	mome	z	unif	0.4360	
59	fuer	x	unif	-0.1619	
59	mome	z	unif	0.4360	
60	fuer	x	unif	-0.1619	
60	mome	z	unif	0.4360	
61	fuer	x	unif	-0.1619	
61	mome	z	unif	0.4360	
62	fuer	x	unif	-0.1619	
62	mome	z	unif	0.4360	
63	fuer	x	unif	-0.1619	
63	mome	z	unif	0.4360	
64	fuer	x	unif	-0.1619	
64	mome	z	unif	0.4360	
65	fuer	x	unif	-0.1619	

```
 65 mome z unif   0.4360
 66 fuer x unif  -0.1619
 66 mome z unif   0.4360
 67 fuer x unif  -0.1619
 67 mome z unif   0.4360
 68 fuer x unif  -0.1619
 68 mome z unif   0.4360
 69 fuer x unif  -0.1619
 69 mome z unif   0.4360
 70 fuer x unif  -0.1619
 70 mome z unif   0.4360
 71 fuer x unif  -0.1619
 71 mome z unif   0.4360
 72 fuer x unif  -0.1619
 72 mome z unif   0.4360
 73 fuer x unif  -0.1619
 73 mome z unif   0.4360
 74 fuer x unif  -0.1619
 74 mome z unif   0.4360
 75 fuer x unif  -0.1619
 75 mome z unif   0.4360
 76 fuer x unif  -0.1619
 76 mome z unif   0.4360
 77 fuer x unif  -0.1619
 77 mome z unif   0.4360
 78 fuer x unif  -0.1619
 78 mome z unif   0.4360
 79 fuer x unif  -0.1619
 79 mome z unif   0.4360
 80 fuer x unif  -0.1619
 80 mome z unif   0.4360
 81 fuer x unif  -0.1619
 81 mome z unif   0.4360
 82 fuer x line  -0.1619  -0.1605
 82 mome z line   0.4360   0.4323
 83 fuer x line  -0.1605  -0.1591
 83 mome z line   0.4323   0.4285
 84 fuer x line  -0.1591  -0.1577
 84 mome z line   0.4285   0.4246
 85 fuer x line  -0.1577  -0.1562
 85 mome z line   0.4246   0.4207
 86 fuer x line  -0.1562  -0.1547
 86 mome z line   0.4207   0.4166
 87 fuer x line  -0.1547  -0.1532
 87 mome z line   0.4166   0.4125
 88 fuer x line  -0.1532  -0.1516
 88 mome z line   0.4125   0.4083
 89 fuer x line  -0.1516  -0.1500
 89 mome z line   0.4083   0.4039
 90 fuer x line  -0.1500  -0.1483
 90 mome z line   0.4039   0.3995
 91 fuer x line  -0.1483  -0.1466
 91 mome z line   0.3995   0.3949
 92 fuer x line  -0.1466  -0.1449
 92 mome z line   0.3949   0.3902
 93 fuer x line  -0.1449  -0.1431
 93 mome z line   0.3902   0.3854
 94 fuer x line  -0.1431  -0.1428
 94 mome z line   0.3854   0.3846
 95 fuer x line  -0.1428  -0.1426
 95 mome z line   0.3846   0.3839
 96 fuer x line  -0.1426  -0.1423
 96 mome z line   0.3839   0.3832
 97 fuer x line  -0.1423  -0.1420
 97 mome z line   0.3832   0.3824
 98 fuer x line  -0.1420  -0.1417
 98 mome z line   0.3824   0.3817
 99 fuer x line  -0.1417  -0.1414
 99 mome z line   0.3817   0.3809
100 fuer x line  -0.1414  -0.1412
100 mome z line   0.3809   0.3802
101 fuer x line  -0.1412  -0.1409
101 mome z line   0.3802   0.3794
102 fuer x line  -0.1409  -0.1406
102 mome z line   0.3794   0.3786
103 fuer x line  -0.1406  -0.1403
103 mome z line   0.3786   0.3779
104 fuer x line  -0.1403  -0.1400
104 mome z line   0.3779   0.3771
105 fuer x line  -0.1400  -0.1397
105 mome z line   0.3771   0.3763
106 fuer x line  -0.1397  -0.1404
106 mome z line   0.3763   0.3780
107 fuer x line  -0.1404  -0.1410
107 mome z line   0.3780   0.3796
108 fuer x line  -0.1410  -0.1416
108 mome z line   0.3796   0.3812
109 fuer x line  -0.1416  -0.1421
109 mome z line   0.3812   0.3828
110 fuer x line  -0.1421  -0.1427
110 mome z line   0.3828   0.3844
111 fuer x line  -0.1427  -0.1433
111 mome z line   0.3844   0.3860
112 fuer x line  -0.1433  -0.1439
112 mome z line   0.3860   0.3875
113 fuer x line  -0.1439  -0.1445
113 mome z line   0.3875   0.3891
114 fuer x line  -0.1445  -0.1450
114 mome z line   0.3891   0.3906
206 fuer y unif   0.2100
207 fuer y line   0.2100   0.3640
208 fuer y unif   0.2100
209 fuer y unif   0.2100
210 fuer y line   0.2100   0.3910
211 fuer y unif   0.2100
212 fuer y line   0.2100   0.2131
213 fuer y line   0.2131   0.4289
214 fuer y unif   0.2100
215 fuer y line   0.2100   0.2131
216 fuer y line   0.2131   0.4289
217 fuer y unif   0.2100
218 fuer y line   0.2100   0.2131
219 fuer y line   0.2131   0.4289
220 fuer y unif   0.2100
221 fuer y line   0.2100   0.2131
222 fuer y line   0.2131   0.4289
223 fuer y unif   0.2100
224 fuer y line   0.2100   0.2131
225 fuer y line   0.2131   0.4289
226 fuer y unif   0.2100
227 fuer y line   0.2100   0.3694
228 fuer y unif   0.2100
229 fuer y line   0.2100   0.3640
calc y alma
2 2 2
```

```
estr Viaducto Papiol   (sobrecarga ec.1)
nume de nudo  196
nume de barr  206
nume de hipo 172
nume de apoy   11
tipo port espa
list todo


-------------------------------------------------

hipo 101 sob. v- 1 izda ec-1 (LM-71)
carg en barr
  1 a   1 fuer y unif    -8.00
  1 a   1 mome x unif   -24.76
  1 a   1 fuer z unif     0.14
  1 a   1 mome x unif     0.56
  2       fuer y unif    -8.00      0.00      3.05
  3       fuer y unif    -8.00     -0.55     -0.01
  2       mome x unif   -24.38      0.00      3.05
  3       mome x unif   -24.01     -0.55     -0.01
  2       fuer z unif     0.14      0.00      3.05
  3       fuer z unif     0.14     -0.55     -0.01
  2       mome x unif     0.56      0.00      3.05
  3       mome x unif     0.56     -0.55     -0.01
  4 a   9 fuer y unif    -8.00
  4 a   9 mome x unif   -22.82
  4 a   9 fuer z unif     0.14
  4 a   9 mome x unif     0.56
  2       fuer y conc   -25.00      3.85
  2       mome x conc   -76.19      3.85
  2       fuer z conc     0.43      3.85
  2       mome x conc     1.76      3.85
  3       fuer y conc   -25.00      0.45
  3       mome x conc   -75.02      0.45
  3       fuer z conc     0.43      0.45
  3       mome x conc     1.76      0.45
  3       fuer y conc   -25.00      2.05
  3       mome x conc   -75.02      2.05
  3       fuer z conc     0.43      2.05
  3       mome x conc     1.76      2.05
  3       fuer y conc   -25.00      3.65
  3       mome x conc   -75.02      3.65
  3       fuer z conc     0.43      3.65
  3       mome x conc     1.76      3.65
 22 a  33 fuer y unif    -8.00
 22 a  33 mome x unif   -18.18
 22 a  33 fuer z unif     0.14
 22 a  33 mome x unif     0.56
 46 a  57 fuer y unif    -8.00
 46 a  57 mome x unif   -18.15
 46 a  57 fuer z unif     0.14
 46 a  57 mome x unif     0.56
 70 a  81 fuer y unif    -8.00
 70 a  81 mome x unif   -23.22
 70 a  81 fuer z unif     0.14
 70 a  81 mome x unif     0.56
 94 a 105 fuer y unif    -8.00
 94 a 105 mome x unif   -25.02
 94 a 105 fuer z unif     0.14
 94 a 105 mome x unif     0.56
 10 a  21 fuer y unif    -1.25
 10 a  21 mome x unif    -3.18
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.09
 34 a  45 fuer y unif    -1.25
 34 a  45 mome x unif    -2.73
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.09
 58 a  69 fuer y unif    -1.25
 58 a  69 mome x unif    -3.17
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.09
 82 a  93 fuer y unif    -1.25
 82 a  93 mome x unif    -3.98
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.09
106 a 114 fuer y unif    -1.25
106 a 114 mome x unif    -3.31
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.09
hipo 102 sob. v- 2 izda ec-1 (LM-71)
carg en barr
  1 a   3 fuer y unif    -8.00
  1 a   3 mome x unif   -24.39
  1 a   3 fuer z unif     0.14
  1 a   3 mome x unif     0.56
  4       fuer y unif    -8.00      0.00      4.30
  6       fuer y unif    -8.00     -4.30     -0.01
  4       mome x unif   -23.65      0.00      4.30
  6       mome x unif   -22.95     -4.30     -0.01
  4       fuer z unif     0.14      0.00      4.30
  6       fuer z unif     0.14     -4.30     -0.01
  4       mome x unif     0.56      0.00      4.30
  6       mome x unif     0.56     -4.30     -0.01
  7 a   9 fuer y unif    -8.00
  7 a   9 mome x unif   -22.31
  7 a   9 fuer z unif     0.14
  7 a   9 mome x unif     0.56
  5       fuer y conc   -25.00      0.10
  5       mome x conc   -72.80      0.10
  5       fuer z conc     0.43      0.10
  5       mome x conc     1.76      0.10
  5       fuer y conc   -25.00      1.70
  5       mome x conc   -72.80      1.70
  5       fuer z conc     0.43      1.70
  5       mome x conc     1.76      1.70
  5       fuer y conc   -25.00      3.30
  5       mome x conc   -72.80      3.30
  5       fuer z conc     0.43      3.30
  5       mome x conc     1.76      3.30
  5       fuer y conc   -25.00      4.90
  5       mome x conc   -72.80      4.90
  5       fuer z conc     0.43      4.90
  5       mome x conc     1.76      4.90
 22 a  33 fuer y unif    -8.00
 22 a  33 mome x unif   -18.18
 22 a  33 fuer z unif     0.14
 22 a  33 mome x unif     0.56
 46 a  57 fuer y unif    -8.00
 46 a  57 mome x unif   -18.15
 46 a  57 fuer z unif     0.14
 46 a  57 mome x unif     0.56
 70 a  81 fuer y unif    -8.00
 70 a  81 mome x unif   -23.22
 70 a  81 fuer z unif     0.14
 70 a  81 mome x unif     0.56
 94 a 105 fuer y unif    -8.00
```

```
 94 a 105 mome x unif   -25.02
 94 a 105 fuer z unif     0.14
 94 a 105 mome x unif     0.56
 10 a  21 fuer y unif    -1.25
 10 a  21 mome x unif    -3.18
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.09
 34 a  45 fuer y unif    -1.25
 34 a  45 mome x unif    -2.73
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.09
 58 a  69 fuer y unif    -1.25
 58 a  69 mome x unif    -3.17
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.09
 82 a  93 fuer y unif    -1.25
 82 a  93 mome x unif    -3.98
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.09
106 a 114 fuer y unif    -1.25
106 a 114 mome x unif    -3.31
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.09
hipo 103 sob. v- 3 izda ec-1 (LM-71)
carg en barr
  1 a   6 fuer y unif    -8.00
  1 a   6 mome x unif   -23.86
  1 a   6 fuer z unif     0.14
  1 a   6 mome x unif     0.56
  7       fuer y unif    -8.00     0.00     0.55
  8       fuer y unif    -8.00    -3.05    -0.01
  7       mome x unif   -22.62     0.00     0.55
  8       mome x unif   -22.31    -3.05    -0.01
  7       fuer z unif     0.14     0.00     0.55
  8       fuer z unif     0.14    -3.05    -0.01
  7       mome x unif     0.56     0.00     0.55
  8       mome x unif     0.56    -3.05    -0.01
  9 a   9 fuer y unif    -8.00
  9 a   9 mome x unif   -22.00
  9 a   9 fuer z unif     0.14
  9 a   9 mome x unif     0.56
  7       fuer y conc   -25.00     1.35
  7       mome x conc   -70.70     1.35
  7       fuer z conc     0.43     1.35
  7       mome x conc     1.76     1.35
  7       fuer y conc   -25.00     2.95
  7       mome x conc   -70.70     2.95
  7       fuer z conc     0.43     2.95
  7       mome x conc     1.76     2.95
  7       fuer y conc   -25.00     4.55
  7       mome x conc   -70.70     4.55
  7       fuer z conc     0.43     4.55
  7       mome x conc     1.76     4.55
  8       fuer y conc   -25.00     1.15
  8       mome x conc   -69.71     1.15
  8       fuer z conc     0.43     1.15
  8       mome x conc     1.76     1.15
22 a  33 fuer y unif    -8.00
22 a  33 mome x unif   -18.18
22 a  33 fuer z unif     0.14
22 a  33 mome x unif     0.56
46 a  57 fuer y unif    -8.00
46 a  57 mome x unif   -18.15
46 a  57 fuer z unif     0.14
```

```
 46 a  57 mome x unif     0.56
 70 a  81 fuer y unif    -8.00
 70 a  81 mome x unif   -23.22
 70 a  81 fuer z unif     0.14
 70 a  81 mome x unif     0.56
 94 a 105 fuer y unif    -8.00
 94 a 105 mome x unif   -25.02
 94 a 105 fuer z unif     0.14
 94 a 105 mome x unif     0.56
 10 a  21 fuer y unif    -1.25
 10 a  21 mome x unif    -3.18
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.09
 34 a  45 fuer y unif    -1.25
 34 a  45 mome x unif    -2.73
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.09
 58 a  69 fuer y unif    -1.25
 58 a  69 mome x unif    -3.17
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.09
 82 a  93 fuer y unif    -1.25
 82 a  93 mome x unif    -3.98
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.09
106 a 114 fuer y unif    -1.25
106 a 114 mome x unif    -3.31
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.09
hipo 104 sob. v- 4 izda ec-1 (LM-71)
carg en barr
 10 a  11 fuer y unif    -8.00
 10 a  11 mome x unif   -21.55
 10 a  11 fuer z unif     0.14
 10 a  11 mome x unif     0.56
 12       fuer y unif    -8.00     0.00     1.80
 13       fuer y unif    -8.00    -1.80    -0.01
 12       mome x unif   -21.12     0.00     1.80
 13       mome x unif   -20.84    -1.80    -0.01
 12       fuer z unif     0.14     0.00     1.80
 13       fuer z unif     0.14    -1.80    -0.01
 12       mome x unif     0.56     0.00     1.80
 13       mome x unif     0.56    -1.80    -0.01
 14 a  21 fuer y unif    -8.00
 14 a  21 mome x unif   -19.81
 14 a  21 fuer z unif     0.14
 14 a  21 mome x unif     0.56
 12       fuer y conc   -25.00     2.60
 12       mome x conc   -65.99     2.60
 12       fuer z conc     0.43     2.60
 12       mome x conc     1.76     2.60
 12       fuer y conc   -25.00     4.20
 12       mome x conc   -65.99     4.20
 12       fuer z conc     0.43     4.20
 12       mome x conc     1.76     4.20
 13       fuer y conc   -25.00     0.80
 13       mome x conc   -65.14     0.80
 13       fuer z conc     0.43     0.80
 13       mome x conc     1.76     0.80
 13       fuer y conc   -25.00     2.40
 13       mome x conc   -65.14     2.40
 13       fuer z conc     0.43     2.40
 13       mome x conc     1.76     2.40
34 a  45 fuer y unif    -8.00
```

```
 34 a  45 mome x unif   -17.45
 34 a  45 fuer z unif     0.14
 34 a  45 mome x unif     0.56
 58 a  69 fuer y unif    -8.00
 58 a  69 mome x unif   -20.26
 58 a  69 fuer z unif     0.14
 58 a  69 mome x unif     0.56
 82 a  93 fuer y unif    -8.00
 82 a  93 mome x unif   -25.46
 82 a  93 fuer z unif     0.14
 82 a  93 mome x unif     0.56
106 a 114 fuer y unif    -8.00
106 a 114 mome x unif   -21.19
106 a 114 fuer z unif     0.14
106 a 114 mome x unif     0.56
  1 a   9 fuer y unif    -1.25
  1 a   9 mome x unif    -3.65
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.09
 22 a  33 fuer y unif    -1.25
 22 a  33 mome x unif    -2.84
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.09
 46 a  57 fuer y unif    -1.25
 46 a  57 mome x unif    -2.84
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.09
 70 a  81 fuer y unif    -1.25
 70 a  81 mome x unif    -3.63
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.09
 94 a 105 fuer y unif    -1.25
 94 a 105 mome x unif    -3.91
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.09
hipo 105 sob. v- 5 izda ec-1 (LM-71)
carg en barr
 10 a  14 fuer y unif    -8.00
 10 a  14 mome x unif   -21.14
 10 a  14 fuer z unif     0.14
 10 a  14 mome x unif     0.56
 15       fuer y unif    -8.00     0.00     1.80
 16       fuer y unif    -8.00    -1.80    -0.01
 15       mome x unif   -20.33     0.00     1.80
 16       mome x unif   -20.09    -1.80    -0.01
 15       fuer z unif     0.14     0.00     1.80
 16       fuer z unif     0.14    -1.80    -0.01
 15       mome x unif     0.56     0.00     1.80
 16       mome x unif     0.56    -1.80    -0.01
 17 a  21 fuer y unif    -8.00
 17 a  21 mome x unif   -19.45
 17 a  21 fuer z unif     0.14
 17 a  21 mome x unif     0.56
 15       fuer y conc   -25.00     2.60
 15       mome x conc   -63.54     2.60
 15       fuer z conc     0.43     2.60
 15       mome x conc     1.76     2.60
 15       fuer y conc   -25.00     4.20
 15       mome x conc   -63.54     4.20
 15       fuer z conc     0.43     4.20
 15       mome x conc     1.76     4.20
 16       fuer y conc   -25.00     0.80
 16       mome x conc   -62.79     0.80
 16       fuer z conc     0.43     0.80
 16       mome x conc     1.76     0.80
 16       fuer y conc   -25.00     2.40
 16       mome x conc   -62.79     2.40
 16       fuer z conc     0.43     2.40
 16       mome x conc     1.76     2.40
 34 a  45 fuer y unif    -8.00
 34 a  45 mome x unif   -17.45
 34 a  45 fuer z unif     0.14
 34 a  45 mome x unif     0.56
 58 a  69 fuer y unif    -8.00
 58 a  69 mome x unif   -20.26
 58 a  69 fuer z unif     0.14
 58 a  69 mome x unif     0.56
 82 a  93 fuer y unif    -8.00
 82 a  93 mome x unif   -25.46
 82 a  93 fuer z unif     0.14
 82 a  93 mome x unif     0.56
106 a 114 fuer y unif    -8.00
106 a 114 mome x unif   -21.19
106 a 114 fuer z unif     0.14
106 a 114 mome x unif     0.56
  1 a   9 fuer y unif    -1.25
  1 a   9 mome x unif    -3.65
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.09
 22 a  33 fuer y unif    -1.25
 22 a  33 mome x unif    -2.84
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.09
 46 a  57 fuer y unif    -1.25
 46 a  57 mome x unif    -2.84
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.09
 70 a  81 fuer y unif    -1.25
 70 a  81 mome x unif    -3.63
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.09
 94 a 105 fuer y unif    -1.25
 94 a 105 mome x unif    -3.91
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.09
hipo 106 sob. v- 6 izda ec-1 (LM-71)
carg en barr
 10 a  17 fuer y unif    -8.00
 10 a  17 mome x unif   -20.78
 10 a  17 fuer z unif     0.14
 10 a  17 mome x unif     0.56
 18       fuer y unif    -8.00     0.00     1.80
 19       fuer y unif    -8.00    -1.80    -0.01
 18       mome x unif   -19.64     0.00     1.80
 19       mome x unif   -19.43    -1.80    -0.01
 18       fuer z unif     0.14     0.00     1.80
 19       fuer z unif     0.14    -1.80    -0.01
 18       mome x unif     0.56     0.00     1.80
 19       mome x unif     0.56    -1.80    -0.01
 20 a  21 fuer y unif    -8.00
 20 a  21 mome x unif   -19.13
 20 a  21 fuer z unif     0.14
 20 a  21 mome x unif     0.56
 18       fuer y conc   -25.00     2.60
 18       mome x conc   -61.39     2.60
 18       fuer z conc     0.43     2.60
 18       mome x conc     1.76     2.60
 18       fuer y conc   -25.00     4.20
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 18        mome x conc    -61.39      4.20
 18        fuer z conc      0.43      4.20
 18        mome x conc      1.76      4.20
 19        fuer y conc    -25.00      0.80
 19        mome x conc    -60.72      0.80
 19        fuer z conc      0.43      0.80
 19        mome x conc      1.76      0.80
 19        fuer y conc    -25.00      2.40
 19        mome x conc    -60.72      2.40
 19        fuer z conc      0.43      2.40
 19        mome x conc      1.76      2.40
 34 a  45 fuer y unif     -8.00
 34 a  45 mome x unif    -17.45
 34 a  45 fuer z unif      0.14
 34 a  45 mome x unif      0.56
 58 a  69 fuer y unif     -8.00
 58 a  69 mome x unif    -20.26
 58 a  69 fuer z unif      0.14
 58 a  69 mome x unif      0.56
 82 a  93 fuer y unif     -8.00
 82 a  93 mome x unif    -25.46
 82 a  93 fuer z unif      0.14
 82 a  93 mome x unif      0.56
106 a 114 fuer y unif     -8.00
106 a 114 mome x unif    -21.19
106 a 114 fuer z unif      0.14
106 a 114 mome x unif      0.56
  1 a   9 fuer y unif     -1.25
  1 a   9 mome x unif     -3.65
  1 a   9 fuer z unif      0.02
  1 a   9 mome x unif      0.09
 22 a  33 fuer y unif     -1.25
 22 a  33 mome x unif     -2.84
 22 a  33 fuer z unif      0.02
 22 a  33 mome x unif      0.09
 46 a  57 fuer y unif     -1.25
 46 a  57 mome x unif     -2.84
 46 a  57 fuer z unif      0.02
 46 a  57 mome x unif      0.09
 70 a  81 fuer y unif     -1.25
 70 a  81 mome x unif     -3.63
 70 a  81 fuer z unif      0.02
 70 a  81 mome x unif      0.09
 94 a 105 fuer y unif     -1.25
 94 a 105 mome x unif     -3.91
 94 a 105 fuer z unif      0.02
 94 a 105 mome x unif      0.09
hipo 107 sob. v- 7 izda ec-1 (LM-71)
carg en barr
 22 a  23 fuer y unif     -8.00
 22 a  23 mome x unif    -18.76
 22 a  23 fuer z unif      0.14
 22 a  23 mome x unif      0.56
 24        fuer y unif     -8.00      0.00      1.80
 25        fuer y unif     -8.00     -1.80     -0.01
 24        mome x unif    -18.52      0.00      1.80
 25        mome x unif    -18.37     -1.80     -0.01
 24        fuer z unif      0.14      0.00      1.80
 25        fuer z unif      0.14     -1.80     -0.01
 24        mome x unif      0.56      0.00      1.80
 25        mome x unif      0.56     -1.80     -0.01
 26 a  33 fuer y unif     -8.00
 26 a  33 mome x unif    -17.87
 26 a  33 fuer z unif      0.14
```

```
 26 a  33 mome x unif      0.56
 24        fuer y conc    -25.00      2.60
 24        mome x conc    -57.89      2.60
 24        fuer z conc      0.43      2.60
 24        mome x conc      1.76      2.60
 24        fuer y conc    -25.00      4.20
 24        mome x conc    -57.89      4.20
 24        fuer z conc      0.43      4.20
 24        mome x conc      1.76      4.20
 25        fuer y conc    -25.00      0.80
 25        mome x conc    -57.41      0.80
 25        fuer z conc      0.43      0.80
 25        mome x conc      1.76      0.80
 25        fuer y conc    -25.00      2.40
 25        mome x conc    -57.41      2.40
 25        fuer z conc      0.43      2.40
 25        mome x conc      1.76      2.40
  1 a   9 fuer y unif     -8.00
  1 a   9 mome x unif    -23.38
  1 a   9 fuer z unif      0.14
  1 a   9 mome x unif      0.56
 46 a  57 fuer y unif     -8.00
 46 a  57 mome x unif    -18.15
 46 a  57 fuer z unif      0.14
 46 a  57 mome x unif      0.56
 70 a  81 fuer y unif     -8.00
 70 a  81 mome x unif    -23.22
 70 a  81 fuer z unif      0.14
 70 a  81 mome x unif      0.56
 94 a 105 fuer y unif     -8.00
 94 a 105 mome x unif    -25.02
 94 a 105 fuer z unif      0.14
 94 a 105 mome x unif      0.56
 10 a  21 fuer y unif     -1.25
 10 a  21 mome x unif     -3.18
 10 a  21 fuer z unif      0.02
 10 a  21 mome x unif      0.09
 34 a  45 fuer y unif     -1.25
 34 a  45 mome x unif     -2.73
 34 a  45 fuer z unif      0.02
 34 a  45 mome x unif      0.09
 58 a  69 fuer y unif     -1.25
 58 a  69 mome x unif     -3.17
 58 a  69 fuer z unif      0.02
 58 a  69 mome x unif      0.09
 82 a  93 fuer y unif     -1.25
 82 a  93 mome x unif     -3.98
 82 a  93 fuer z unif      0.02
 82 a  93 mome x unif      0.09
106 a 114 fuer y unif     -1.25
106 a 114 mome x unif     -3.31
106 a 114 fuer z unif      0.02
106 a 114 mome x unif      0.09
hipo 108 sob. v- 8 izda ec-1 (LM-71)
carg en barr
 22 a  26 fuer y unif     -8.00
 22 a  26 mome x unif    -18.54
 22 a  26 fuer z unif      0.14
 22 a  26 mome x unif      0.56
 27        fuer y unif     -8.00      0.00      1.80
 28        fuer y unif     -8.00     -1.80     -0.01
 27        mome x unif    -18.10      0.00      1.80
 28        mome x unif    -17.97     -1.80     -0.01
 27        fuer z unif      0.14      0.00      1.80
```

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 28        fuer z unif      0.14     -1.80     -0.01
 27        mome x unif      0.56      0.00      1.80
 28        mome x unif      0.56     -1.80     -0.01
 29 a  33 fuer y unif     -8.00
 29 a  33 mome x unif    -17.69
 29 a  33 fuer z unif      0.14
 29 a  33 mome x unif      0.56
 27        fuer y conc    -25.00      2.60
 27        mome x conc    -56.55      2.60
 27        fuer z conc      0.43      2.60
 27        mome x conc      1.76      2.60
 27        fuer y conc    -25.00      4.20
 27        mome x conc    -56.55      4.20
 27        fuer z conc      0.43      4.20
 27        mome x conc      1.76      4.20
 28        fuer y conc    -25.00      0.80
 28        mome x conc    -56.16      0.80
 28        fuer z conc      0.43      0.80
 28        mome x conc      1.76      0.80
 28        fuer y conc    -25.00      2.40
 28        mome x conc    -56.16      2.40
 28        fuer z conc      0.43      2.40
 28        mome x conc      1.76      2.40
  1 a   9 fuer y unif     -8.00
  1 a   9 mome x unif    -23.38
  1 a   9 fuer z unif      0.14
  1 a   9 mome x unif      0.56
 46 a  57 fuer y unif     -8.00
 46 a  57 mome x unif    -18.15
 46 a  57 fuer z unif      0.14
 46 a  57 mome x unif      0.56
 70 a  81 fuer y unif     -8.00
 70 a  81 mome x unif    -23.22
 70 a  81 fuer z unif      0.14
 70 a  81 mome x unif      0.56
 94 a 105 fuer y unif     -8.00
 94 a 105 mome x unif    -25.02
 94 a 105 fuer z unif      0.14
 94 a 105 mome x unif      0.56
 10 a  21 fuer y unif     -1.25
 10 a  21 mome x unif     -3.18
 10 a  21 fuer z unif      0.02
 10 a  21 mome x unif      0.09
 34 a  45 fuer y unif     -1.25
 34 a  45 mome x unif     -2.73
 34 a  45 fuer z unif      0.02
 34 a  45 mome x unif      0.09
 58 a  69 fuer y unif     -1.25
 58 a  69 mome x unif     -3.17
 58 a  69 fuer z unif      0.02
 58 a  69 mome x unif      0.09
 82 a  93 fuer y unif     -1.25
 82 a  93 mome x unif     -3.98
 82 a  93 fuer z unif      0.02
 82 a  93 mome x unif      0.09
106 a 114 fuer y unif     -1.25
106 a 114 mome x unif     -3.31
106 a 114 fuer z unif      0.02
106 a 114 mome x unif      0.09
hipo 109 sob. v- 9 izda ec-1 (LM-71)
carg en barr
 22 a  29 fuer y unif     -8.00
 22 a  29 mome x unif    -18.36
 22 a  29 fuer z unif      0.14
 22 a  29 mome x unif      0.56
 30        fuer y unif     -8.00      0.00      1.80
 31        fuer y unif     -8.00     -1.80     -0.01
 30        mome x unif    -17.76      0.00      1.80
 31        mome x unif    -17.67     -1.80     -0.01
 30        fuer z unif      0.14      0.00      1.80
 31        fuer z unif      0.14     -1.80     -0.01
 30        mome x unif      0.56      0.00      1.80
 31        mome x unif      0.56     -1.80     -0.01
 32 a  33 fuer y unif     -8.00
 32 a  33 mome x unif    -17.55
 32 a  33 fuer z unif      0.14
 32 a  33 mome x unif      0.56
 30        fuer y conc    -25.00      2.60
 30        mome x conc    -55.51      2.60
 30        fuer z conc      0.43      2.60
 30        mome x conc      1.76      2.60
 30        fuer y conc    -25.00      4.20
 30        mome x conc    -55.51      4.20
 30        fuer z conc      0.43      4.20
 30        mome x conc      1.76      4.20
 31        fuer y conc    -25.00      0.80
 31        mome x conc    -55.21      0.80
 31        fuer z conc      0.43      0.80
 31        mome x conc      1.76      0.80
 31        fuer y conc    -25.00      2.40
 31        mome x conc    -55.21      2.40
 31        fuer z conc      0.43      2.40
 31        mome x conc      1.76      2.40
  1 a   9 fuer y unif     -8.00
  1 a   9 mome x unif    -23.38
  1 a   9 fuer z unif      0.14
  1 a   9 mome x unif      0.56
 46 a  57 fuer y unif     -8.00
 46 a  57 mome x unif    -18.15
 46 a  57 fuer z unif      0.14
 46 a  57 mome x unif      0.56
 70 a  81 fuer y unif     -8.00
 70 a  81 mome x unif    -23.22
 70 a  81 fuer z unif      0.14
 70 a  81 mome x unif      0.56
 94 a 105 fuer y unif     -8.00
 94 a 105 mome x unif    -25.02
 94 a 105 fuer z unif      0.14
 94 a 105 mome x unif      0.56
 10 a  21 fuer y unif     -1.25
 10 a  21 mome x unif     -3.18
 10 a  21 fuer z unif      0.02
 10 a  21 mome x unif      0.09
 34 a  45 fuer y unif     -1.25
 34 a  45 mome x unif     -2.73
 34 a  45 fuer z unif      0.02
 34 a  45 mome x unif      0.09
 58 a  69 fuer y unif     -1.25
 58 a  69 mome x unif     -3.17
 58 a  69 fuer z unif      0.02
 58 a  69 mome x unif      0.09
 82 a  93 fuer y unif     -1.25
 82 a  93 mome x unif     -3.98
 82 a  93 fuer z unif      0.02
 82 a  93 mome x unif      0.09
106 a 114 fuer y unif     -1.25
106 a 114 mome x unif     -3.31
106 a 114 fuer z unif      0.02
```

```
106 a 114 mome x unif      0.09
hipo 110 sob. v-10 izda ec-1 (LM-71)
carg en barr
 34 a  35 fuer y unif     -8.00
 34 a  35 mome x unif    -17.43
 34 a  35 fuer z unif      0.14
 34 a  35 mome x unif      0.56
 36       fuer y unif     -8.00      0.00      1.80
 37       fuer y unif     -8.00     -1.80     -0.01
 36       mome x unif    -17.36      0.00      1.80
 37       mome x unif    -17.33     -1.80     -0.01
 36       fuer z unif      0.14      0.00      1.80
 37       fuer z unif      0.14     -1.80     -0.01
 36       mome x unif      0.56      0.00      1.80
 37       mome x unif      0.56     -1.80     -0.01
 38 a  45 fuer y unif     -8.00
 38 a  45 mome x unif    -17.38
 38 a  45 fuer z unif      0.14
 38 a  45 mome x unif      0.56
 36       fuer y conc    -25.00      2.60
 36       mome x conc    -54.26      2.60
 36       fuer z conc      0.43      2.60
 36       mome x conc      1.76      2.60
 36       fuer y conc    -25.00      4.20
 36       mome x conc    -54.26      4.20
 36       fuer z conc      0.43      4.20
 36       mome x conc      1.76      4.20
 37       fuer y conc    -25.00      0.80
 37       mome x conc    -54.16      0.80
 37       fuer z conc      0.43      0.80
 37       mome x conc      1.76      0.80
 37       fuer y conc    -25.00      2.40
 37       mome x conc    -54.16      2.40
 37       fuer z conc      0.43      2.40
 37       mome x conc      1.76      2.40
 10 a  21 fuer y unif     -8.00
 10 a  21 mome x unif    -20.36
 10 a  21 fuer z unif      0.14
 10 a  21 mome x unif      0.56
 58 a  69 fuer y unif     -8.00
 58 a  69 mome x unif    -20.26
 58 a  69 fuer z unif      0.14
 58 a  69 mome x unif      0.56
 82 a  93 fuer y unif     -8.00
 82 a  93 mome x unif    -25.46
 82 a  93 fuer z unif      0.14
 82 a  93 mome x unif      0.56
106 a 114 fuer y unif     -8.00
106 a 114 mome x unif    -21.19
106 a 114 fuer z unif      0.14
106 a 114 mome x unif      0.56
 22 a  33 fuer y unif     -1.25
 22 a  33 mome x unif     -2.84
 22 a  33 fuer z unif      0.02
 22 a  33 mome x unif      0.09
  1 a   9 fuer y unif     -1.25
  1 a   9 mome x unif     -3.65
  1 a   9 fuer z unif      0.02
  1 a   9 mome x unif      0.09
 46 a  57 fuer y unif     -1.25
 46 a  57 mome x unif     -2.84
 46 a  57 fuer z unif      0.02
 46 a  57 mome x unif      0.09
 70 a  81 fuer y unif     -1.25
 70 a  81 mome x unif     -3.63
 70 a  81 fuer z unif      0.02
 70 a  81 mome x unif      0.09
 94 a 105 fuer y unif     -1.25
 94 a 105 mome x unif     -3.91
 94 a 105 fuer z unif      0.02
 94 a 105 mome x unif      0.09
hipo 111 sob. v-11 izda ec-1 (LM-71)
carg en barr
 34 a  38 fuer y unif     -8.00
 34 a  38 mome x unif    -17.39
 34 a  38 fuer z unif      0.14
 34 a  38 mome x unif      0.56
 39       fuer y unif     -8.00      0.00      1.80
 40       fuer y unif     -8.00     -1.80     -0.01
 39       mome x unif    -17.30      0.00      1.80
 40       mome x unif    -17.30     -1.80     -0.01
 39       fuer z unif      0.14      0.00      1.80
 40       fuer z unif      0.14     -1.80     -0.01
 39       mome x unif      0.56      0.00      1.80
 40       mome x unif      0.56     -1.80     -0.01
 41 a  45 fuer y unif     -8.00
 41 a  45 mome x unif    -17.37
 41 a  45 fuer z unif      0.14
 41 a  45 mome x unif      0.56
 39       fuer y conc    -25.00      2.60
 39       mome x conc    -54.06      2.60
 39       fuer z conc      0.43      2.60
 39       mome x conc      1.76      2.60
 39       fuer y conc    -25.00      4.20
 39       mome x conc    -54.06      4.20
 39       fuer z conc      0.43      4.20
 39       mome x conc      1.76      4.20
 40       fuer y conc    -25.00      0.80
 40       mome x conc    -54.05      0.80
 40       fuer z conc      0.43      0.80
 40       mome x conc      1.76      0.80
 40       fuer y conc    -25.00      2.40
 40       mome x conc    -54.05      2.40
 40       fuer z conc      0.43      2.40
 40       mome x conc      1.76      2.40
 10 a  21 fuer y unif     -8.00
 10 a  21 mome x unif    -20.36
 10 a  21 fuer z unif      0.14
 10 a  21 mome x unif      0.56
 58 a  69 fuer y unif     -8.00
 58 a  69 mome x unif    -20.26
 58 a  69 fuer z unif      0.14
 58 a  69 mome x unif      0.56
 82 a  93 fuer y unif     -8.00
 82 a  93 mome x unif    -25.46
 82 a  93 fuer z unif      0.14
 82 a  93 mome x unif      0.56
106 a 114 fuer y unif     -8.00
106 a 114 mome x unif    -21.19
106 a 114 fuer z unif      0.14
106 a 114 mome x unif      0.56
 22 a  33 fuer y unif     -1.25
 22 a  33 mome x unif     -2.84
 22 a  33 fuer z unif      0.02
 22 a  33 mome x unif      0.09
  1 a   9 fuer y unif     -1.25
  1 a   9 mome x unif     -3.65
  1 a   9 fuer z unif      0.02
```

```
  1 a   9 mome x unif     0.09
 46 a  57 fuer y unif    -1.25
 46 a  57 mome x unif    -2.84
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.09
 70 a  81 fuer y unif    -1.25
 70 a  81 mome x unif    -3.63
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.09
 94 a 105 fuer y unif    -1.25
 94 a 105 mome x unif    -3.91
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.09
hipo 112 sob. v-12 izda ec-1 (LM-71)
carg en barr
 34 a  41 fuer y unif    -8.00
 34 a  41 mome x unif   -17.38
 34 a  41 fuer z unif     0.14
 34 a  41 mome x unif     0.56
 42       fuer y unif    -8.00     0.00     1.80
 43       fuer y unif    -8.00    -1.80    -0.01
 42       mome x unif   -17.33     0.00     1.80
 43       mome x unif   -17.35    -1.80    -0.01
 42       fuer z unif     0.14     0.00     1.80
 43       fuer z unif     0.14    -1.80    -0.01
 42       mome x unif     0.56     0.00     1.80
 43       mome x unif     0.56    -1.80    -0.01
 44 a  45 fuer y unif    -8.00
 44 a  45 mome x unif   -17.41
 44 a  45 fuer z unif     0.14
 44 a  45 mome x unif     0.56
 42       fuer y conc   -25.00     2.60
 42       mome x conc   -54.15     2.60
 42       fuer z conc     0.43     2.60
 42       mome x conc     1.76     2.60
 42       fuer y conc   -25.00     4.20
 42       mome x conc   -54.15     4.20
 42       fuer z conc     0.43     4.20
 42       mome x conc     1.76     4.20
 43       fuer y conc   -25.00     0.80
 43       mome x conc   -54.23     0.80
 43       fuer z conc     0.43     0.80
 43       mome x conc     1.76     0.80
 43       fuer y conc   -25.00     2.40
 43       mome x conc   -54.23     2.40
 43       fuer z conc     0.43     2.40
 43       mome x conc     1.76     2.40
 10 a  21 fuer y unif    -8.00
 10 a  21 mome x unif   -20.36
 10 a  21 fuer z unif     0.14
 10 a  21 mome x unif     0.56
 58 a  69 fuer y unif    -8.00
 58 a  69 mome x unif   -20.26
 58 a  69 fuer z unif     0.14
 58 a  69 mome x unif     0.56
 82 a  93 fuer y unif    -8.00
 82 a  93 mome x unif   -25.46
 82 a  93 fuer z unif     0.14
 82 a  93 mome x unif     0.56
106 a 114 fuer y unif    -8.00
106 a 114 mome x unif   -21.19
106 a 114 fuer z unif     0.14
106 a 114 mome x unif     0.56
 22 a  33 fuer y unif    -1.25
 22 a  33 mome x unif    -2.84
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.09
  1 a   9 fuer y unif    -1.25
  1 a   9 mome x unif    -3.65
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.09
 46 a  57 fuer y unif    -1.25
 46 a  57 mome x unif    -2.84
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.09
 70 a  81 fuer y unif    -1.25
 70 a  81 mome x unif    -3.63
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.09
 94 a 105 fuer y unif    -1.25
 94 a 105 mome x unif    -3.91
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.09
hipo 113 sob. v-13 izda ec-1 (LM-71)
carg en barr
 46 a  47 fuer y unif    -8.00
 46 a  47 mome x unif   -17.53
 46 a  47 fuer z unif     0.14
 46 a  47 mome x unif     0.56
 48       fuer y unif    -8.00     0.00     1.80
 49       fuer y unif    -8.00    -1.80    -0.01
 48       mome x unif   -17.64     0.00     1.80
 49       mome x unif   -17.74    -1.80    -0.01
 48       fuer z unif     0.14     0.00     1.80
 49       fuer z unif     0.14    -1.80    -0.01
 48       mome x unif     0.56     0.00     1.80
 49       mome x unif     0.56    -1.80    -0.01
 50 a  57 fuer y unif    -8.00
 50 a  57 mome x unif   -18.32
 50 a  57 fuer z unif     0.14
 50 a  57 mome x unif     0.56
 48       fuer y conc   -25.00     2.60
 48       mome x conc   -55.14     2.60
 48       fuer z conc     0.43     2.60
 48       mome x conc     1.76     2.60
 48       fuer y conc   -25.00     4.20
 48       mome x conc   -55.14     4.20
 48       fuer z conc     0.43     4.20
 48       mome x conc     1.76     4.20
 49       fuer y conc   -25.00     0.80
 49       mome x conc   -55.43     0.80
 49       fuer z conc     0.43     0.80
 49       mome x conc     1.76     0.80
 49       fuer y conc   -25.00     2.40
 49       mome x conc   -55.43     2.40
 49       fuer z conc     0.43     2.40
 49       mome x conc     1.76     2.40
 22 a  33 fuer y unif    -8.00
 22 a  33 mome x unif   -18.18
 22 a  33 fuer z unif     0.14
 22 a  33 mome x unif     0.56
  1 a   9 fuer y unif    -8.00
  1 a   9 mome x unif   -23.38
  1 a   9 fuer z unif     0.14
  1 a   9 mome x unif     0.56
 70 a  81 fuer y unif    -8.00
 70 a  81 mome x unif   -23.22
 70 a  81 fuer z unif     0.14
```

```
 70 a  81 mome x unif     0.56
 94 a 105 fuer y unif    -8.00
 94 a 105 mome x unif   -25.02
 94 a 105 fuer z unif     0.14
 94 a 105 mome x unif     0.56
 34 a  45 fuer y unif    -1.25
 34 a  45 mome x unif    -2.73
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.09
 10 a  21 fuer y unif    -1.25
 10 a  21 mome x unif    -3.18
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.09
 58 a  69 fuer y unif    -1.25
 58 a  69 mome x unif    -3.17
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.09
 82 a  93 fuer y unif    -1.25
 82 a  93 mome x unif    -3.98
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.09
106 a 114 fuer y unif    -1.25
106 a 114 mome x unif    -3.31
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.09
hipo 114 sob. v-14 izda ec-1 (LM-71)
carg en barr
 46 a  50 fuer y unif    -8.00
 46 a  50 mome x unif   -17.67
 46 a  50 fuer z unif     0.14
 46 a  50 mome x unif     0.56
 51       fuer y unif    -8.00     0.00     1.80
 52       fuer y unif    -8.00    -1.80    -0.01
 51       mome x unif   -17.94     0.00     1.80
 52       mome x unif   -18.06    -1.80    -0.01
 51       fuer z unif     0.14     0.00     1.80
 52       fuer z unif     0.14    -1.80    -0.01
 51       mome x unif     0.56     0.00     1.80
 52       mome x unif     0.56    -1.80    -0.01
 53 a  57 fuer y unif    -8.00
 53 a  57 mome x unif   -18.49
 53 a  57 fuer z unif     0.14
 53 a  57 mome x unif     0.56
 51       fuer y conc   -25.00     2.60
 51       mome x conc   -56.06     2.60
 51       fuer z conc     0.43     2.60
 51       mome x conc     1.76     2.60
 51       fuer y conc   -25.00     4.20
 51       mome x conc   -56.06     4.20
 51       fuer z conc     0.43     4.20
 51       mome x conc     1.76     4.20
 52       fuer y conc   -25.00     0.80
 52       mome x conc   -56.44     0.80
 52       fuer z conc     0.43     0.80
 52       mome x conc     1.76     0.80
 52       fuer y conc   -25.00     2.40
 52       mome x conc   -56.44     2.40
 52       fuer z conc     0.43     2.40
 52       mome x conc     1.76     2.40
22 a  33 fuer y unif    -8.00
22 a  33 mome x unif   -18.18
22 a  33 fuer z unif     0.14
22 a  33 mome x unif     0.56
 1 a   9 fuer y unif    -8.00
 1 a   9 mome x unif   -23.38
 1 a   9 fuer z unif     0.14
 1 a   9 mome x unif     0.56
70 a  81 fuer y unif    -8.00
70 a  81 mome x unif   -23.22
70 a  81 fuer z unif     0.14
70 a  81 mome x unif     0.56
94 a 105 fuer y unif    -8.00
94 a 105 mome x unif   -25.02
94 a 105 fuer z unif     0.14
94 a 105 mome x unif     0.56
34 a  45 fuer y unif    -1.25
34 a  45 mome x unif    -2.73
34 a  45 fuer z unif     0.02
34 a  45 mome x unif     0.09
10 a  21 fuer y unif    -1.25
10 a  21 mome x unif    -3.18
10 a  21 fuer z unif     0.02
10 a  21 mome x unif     0.09
58 a  69 fuer y unif    -1.25
58 a  69 mome x unif    -3.17
58 a  69 fuer z unif     0.02
58 a  69 mome x unif     0.09
82 a  93 fuer y unif    -1.25
82 a  93 mome x unif    -3.98
82 a  93 fuer z unif     0.02
82 a  93 mome x unif     0.09
106 a 114 fuer y unif    -1.25
106 a 114 mome x unif    -3.31
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.09
hipo 115 sob. v-15 izda ec-1 (LM-71)
carg en barr
 46 a  53 fuer y unif    -8.00
 46 a  53 mome x unif   -17.84
 46 a  53 fuer z unif     0.14
 46 a  53 mome x unif     0.56
 54       fuer y unif    -8.00     0.00     1.80
 55       fuer y unif    -8.00    -1.80    -0.01
 54       mome x unif   -18.33     0.00     1.80
 55       mome x unif   -18.48    -1.80    -0.01
 54       fuer z unif     0.14     0.00     1.80
 55       fuer z unif     0.14    -1.80    -0.01
 54       mome x unif     0.56     0.00     1.80
 55       mome x unif     0.56    -1.80    -0.01
 56 a  57 fuer y unif    -8.00
 56 a  57 mome x unif   -18.72
 56 a  57 fuer z unif     0.14
 56 a  57 mome x unif     0.56
 54       fuer y conc   -25.00     2.60
 54       mome x conc   -57.27     2.60
 54       fuer z conc     0.43     2.60
 54       mome x conc     1.76     2.60
 54       fuer y conc   -25.00     4.20
 54       mome x conc   -57.27     4.20
 54       fuer z conc     0.43     4.20
 54       mome x conc     1.76     4.20
 55       fuer y conc   -25.00     0.80
 55       mome x conc   -57.74     0.80
 55       fuer z conc     0.43     0.80
 55       mome x conc     1.76     0.80
 55       fuer y conc   -25.00     2.40
 55       mome x conc   -57.74     2.40
 55       fuer z conc     0.43     2.40
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 55          mome x conc     1.76      2.40
 22 a  33 fuer y unif    -8.00
 22 a  33 mome x unif   -18.18
 22 a  33 fuer z unif     0.14
 22 a  33 mome x unif     0.56
  1 a   9 fuer y unif    -8.00
  1 a   9 mome x unif   -23.38
  1 a   9 fuer z unif     0.14
  1 a   9 mome x unif     0.56
 70 a  81 fuer y unif    -8.00
 70 a  81 mome x unif   -23.22
 70 a  81 fuer z unif     0.14
 70 a  81 mome x unif     0.56
 94 a 105 fuer y unif    -8.00
 94 a 105 mome x unif   -25.02
 94 a 105 fuer z unif     0.14
 94 a 105 mome x unif     0.56
 34 a  45 fuer y unif    -1.25
 34 a  45 mome x unif    -2.73
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.09
 10 a  21 fuer y unif    -1.25
 10 a  21 mome x unif    -3.18
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.09
 58 a  69 fuer y unif    -1.25
 58 a  69 mome x unif    -3.17
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.09
 82 a  93 fuer y unif    -1.25
 82 a  93 mome x unif    -3.98
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.09
106 a 114 fuer y unif    -1.25
106 a 114 mome x unif    -3.31
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.09
hipo 116 sob. v-16 izda ec-1 (LM-71)
carg en barr
 58 a  59 fuer y unif    -8.00
 58 a  59 mome x unif   -19.08
 58 a  59 fuer z unif     0.14
 58 a  59 mome x unif     0.56
 60       fuer y unif    -8.00      0.00      1.80
 61       fuer y unif    -8.00     -1.80     -0.01
 60       mome x unif   -19.37      0.00      1.80
 61       mome x unif   -19.58     -1.80     -0.01
 60       fuer z unif     0.14      0.00      1.80
 61       fuer z unif     0.14     -1.80     -0.01
 60       mome x unif     0.56      0.00      1.80
 61       mome x unif     0.56     -1.80     -0.01
 62 a  69 fuer y unif    -8.00
 62 a  69 mome x unif   -20.67
 62 a  69 fuer z unif     0.14
 62 a  69 mome x unif     0.56
 60       fuer y conc   -25.00      2.60
 60       mome x conc   -60.54      2.60
 60       fuer z conc     0.43      2.60
 60       mome x conc     1.76      2.60
 60       fuer y conc   -25.00      4.20
 60       mome x conc   -60.54      4.20
 60       fuer z conc     0.43      4.20
 60       mome x conc     1.76      4.20
 61       fuer y conc   -25.00      0.80
 61          mome x conc   -61.18      0.80
 61          fuer z conc     0.43      0.80
 61          mome x conc     1.76      0.80
 61          fuer y conc   -25.00      2.40
 61          mome x conc   -61.18      2.40
 61          fuer z conc     0.43      2.40
 61          mome x conc     1.76      2.40
 34 a  45 fuer y unif    -8.00
 34 a  45 mome x unif   -17.45
 34 a  45 fuer z unif     0.14
 34 a  45 mome x unif     0.56
 10 a  21 fuer y unif    -8.00
 10 a  21 mome x unif   -20.36
 10 a  21 fuer z unif     0.14
 10 a  21 mome x unif     0.56
 82 a  93 fuer y unif    -8.00
 82 a  93 mome x unif   -25.46
 82 a  93 fuer z unif     0.14
 82 a  93 mome x unif     0.56
106 a 114 fuer y unif    -8.00
106 a 114 mome x unif   -21.19
106 a 114 fuer z unif     0.14
106 a 114 mome x unif     0.56
 46 a  57 fuer y unif    -1.25
 46 a  57 mome x unif    -2.84
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.09
 22 a  33 fuer y unif    -1.25
 22 a  33 mome x unif    -2.84
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.09
  1 a   9 fuer y unif    -1.25
  1 a   9 mome x unif    -3.65
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.09
 70 a  81 fuer y unif    -1.25
 70 a  81 mome x unif    -3.63
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.09
 94 a 105 fuer y unif    -1.25
 94 a 105 mome x unif    -3.91
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.09
hipo 117 sob. v-17 izda ec-1 (LM-71)
carg en barr
 58 a  62 fuer y unif    -8.00
 58 a  62 mome x unif   -19.39
 58 a  62 fuer z unif     0.14
 58 a  62 mome x unif     0.56
 63       fuer y unif    -8.00      0.00      1.80
 64       fuer y unif    -8.00     -1.80     -0.01
 63       mome x unif   -20.02      0.00      1.80
 64       mome x unif   -20.26     -1.80     -0.01
 63       fuer z unif     0.14      0.00      1.80
 64       fuer z unif     0.14     -1.80     -0.01
 63       mome x unif     0.56      0.00      1.80
 64       mome x unif     0.56     -1.80     -0.01
 65 a  69 fuer y unif    -8.00
 65 a  69 mome x unif   -21.03
 65 a  69 fuer z unif     0.14
 65 a  69 mome x unif     0.56
 63       fuer y conc   -25.00      2.60
 63       mome x conc   -62.58      2.60
 63       fuer z conc     0.43      2.60
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 63        mome x conc     1.76     2.60
 63        fuer y conc   -25.00     4.20
 63        mome x conc   -62.58     4.20
 63        fuer z conc     0.43     4.20
 63        mome x conc     1.76     4.20
 64        fuer y conc   -25.00     0.80
 64        mome x conc   -63.30     0.80
 64        fuer z conc     0.43     0.80
 64        mome x conc     1.76     0.80
 64        fuer y conc   -25.00     2.40
 64        mome x conc   -63.30     2.40
 64        fuer z conc     0.43     2.40
 64        mome x conc     1.76     2.40
 34 a  45 fuer y unif    -8.00
 34 a  45 mome x unif   -17.45
 34 a  45 fuer z unif     0.14
 34 a  45 mome x unif     0.56
 10 a  21 fuer y unif    -8.00
 10 a  21 mome x unif   -20.36
 10 a  21 fuer z unif     0.14
 10 a  21 mome x unif     0.56
 82 a  93 fuer y unif    -8.00
 82 a  93 mome x unif   -25.46
 82 a  93 fuer z unif     0.14
 82 a  93 mome x unif     0.56
106 a 114 fuer y unif    -8.00
106 a 114 mome x unif   -21.19
106 a 114 fuer z unif     0.14
106 a 114 mome x unif     0.56
 46 a  57 fuer y unif    -1.25
 46 a  57 mome x unif    -2.84
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.09
 22 a  33 fuer y unif    -1.25
 22 a  33 mome x unif    -2.84
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.09
  1 a   9 fuer y unif    -1.25
  1 a   9 mome x unif    -3.65
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.09
 70 a  81 fuer y unif    -1.25
 70 a  81 mome x unif    -3.63
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.09
 94 a 105 fuer y unif    -1.25
 94 a 105 mome x unif    -3.91
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.09
hipo 118 sob. v-18 izda ec-1 (LM-71)
carg en barr
 58 a  65 fuer y unif    -8.00
 58 a  65 mome x unif   -19.74
 58 a  65 fuer z unif     0.14
 58 a  65 mome x unif     0.56
 66        fuer y unif    -8.00     0.00     1.80
 67        fuer y unif    -8.00    -1.80    -0.01
 66        mome x unif   -20.76     0.00     1.80
 67        mome x unif   -21.02    -1.80    -0.01
 66        fuer z unif     0.14     0.00     1.80
 67        fuer z unif     0.14    -1.80    -0.01
 66        mome x unif     0.56     0.00     1.80
 67        mome x unif     0.56    -1.80    -0.01
 68 a  69 fuer y unif    -8.00
 68 a  69 mome x unif   -21.42
 68 a  69 fuer z unif     0.14
 68 a  69 mome x unif     0.56
 66        fuer y conc   -25.00     2.60
 66        mome x conc   -64.88     2.60
 66        fuer z conc     0.43     2.60
 66        mome x conc     1.76     2.60
 66        fuer y conc   -25.00     4.20
 66        mome x conc   -64.88     4.20
 66        fuer z conc     0.43     4.20
 66        mome x conc     1.76     4.20
 67        fuer y conc   -25.00     0.80
 67        mome x conc   -65.69     0.80
 67        fuer z conc     0.43     0.80
 67        mome x conc     1.76     0.80
 67        fuer y conc   -25.00     2.40
 67        mome x conc   -65.69     2.40
 67        fuer z conc     0.43     2.40
 67        mome x conc     1.76     2.40
 34 a  45 fuer y unif    -8.00
 34 a  45 mome x unif   -17.45
 34 a  45 fuer z unif     0.14
 34 a  45 mome x unif     0.56
 10 a  21 fuer y unif    -8.00
 10 a  21 mome x unif   -20.36
 10 a  21 fuer z unif     0.14
 10 a  21 mome x unif     0.56
 82 a  93 fuer y unif    -8.00
 82 a  93 mome x unif   -25.46
 82 a  93 fuer z unif     0.14
 82 a  93 mome x unif     0.56
106 a 114 fuer y unif    -8.00
106 a 114 mome x unif   -21.19
106 a 114 fuer z unif     0.14
106 a 114 mome x unif     0.56
 46 a  57 fuer y unif    -1.25
 46 a  57 mome x unif    -2.84
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.09
 22 a  33 fuer y unif    -1.25
 22 a  33 mome x unif    -2.84
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.09
  1 a   9 fuer y unif    -1.25
  1 a   9 mome x unif    -3.65
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.09
 70 a  81 fuer y unif    -1.25
 70 a  81 mome x unif    -3.63
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.09
 94 a 105 fuer y unif    -1.25
 94 a 105 mome x unif    -3.91
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.09
hipo 119 sob. v-19 izda ec-1 (LM-71)
carg en barr
 70 a  71 fuer y unif    -8.00
 70 a  71 mome x unif   -21.96
 70 a  71 fuer z unif     0.14
 70 a  71 mome x unif     0.56
 72        fuer y unif    -8.00     0.00     1.80
 73        fuer y unif    -8.00    -1.80    -0.01
 72        mome x unif   -22.36     0.00     1.80
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 73        mome x unif   -22.63    -1.80    -0.01
 72        fuer z unif     0.14     0.00     1.80
 73        fuer z unif     0.14    -1.80    -0.01
 72        mome x unif     0.56     0.00     1.80
 73        mome x unif     0.56    -1.80    -0.01
 74 a  81  fuer y unif    -8.00
 74 a  81  mome x unif   -23.76
 74 a  81  fuer z unif     0.14
 74 a  81  mome x unif     0.56
 72        fuer y conc   -25.00     2.60
 72        mome x conc   -69.88     2.60
 72        fuer z conc     0.43     2.60
 72        mome x conc     1.76     2.60
 72        fuer y conc   -25.00     4.20
 72        mome x conc   -69.88     4.20
 72        fuer z conc     0.43     4.20
 72        mome x conc     1.76     4.20
 73        fuer y conc   -25.00     0.80
 73        mome x conc   -70.73     0.80
 73        fuer z conc     0.43     0.80
 73        mome x conc     1.76     0.80
 73        fuer y conc   -25.00     2.40
 73        mome x conc   -70.73     2.40
 73        fuer z conc     0.43     2.40
 73        mome x conc     1.76     2.40
 46 a  57  fuer y unif    -8.00
 46 a  57  mome x unif   -18.15
 46 a  57  fuer z unif     0.14
 46 a  57  mome x unif     0.56
 22 a  33  fuer y unif    -8.00
 22 a  33  mome x unif   -18.18
 22 a  33  fuer z unif     0.14
 22 a  33  mome x unif     0.56
  1 a   9  fuer y unif    -8.00
  1 a   9  mome x unif   -23.38
  1 a   9  fuer z unif     0.14
  1 a   9  mome x unif     0.56
 94 a 105  fuer y unif    -8.00
 94 a 105  mome x unif   -25.02
 94 a 105  fuer z unif     0.14
 94 a 105  mome x unif     0.56
 58 a  69  fuer y unif    -1.25
 58 a  69  mome x unif    -3.17
 58 a  69  fuer z unif     0.02
 58 a  69  mome x unif     0.09
 34 a  45  fuer y unif    -1.25
 34 a  45  mome x unif    -2.73
 34 a  45  fuer z unif     0.02
 34 a  45  mome x unif     0.09
 10 a  21  fuer y unif    -1.25
 10 a  21  mome x unif    -3.18
 10 a  21  fuer z unif     0.02
 10 a  21  mome x unif     0.09
 82 a  93  fuer y unif    -1.25
 82 a  93  mome x unif    -3.98
 82 a  93  fuer z unif     0.02
 82 a  93  mome x unif     0.09
106 a 114  fuer y unif    -1.25
106 a 114  mome x unif    -3.31
106 a 114  fuer z unif     0.02
106 a 114  mome x unif     0.09
hipo 120 sob. v-20 izda ec-1 (LM-71)
carg en barr
 70 a  74  fuer y unif    -8.00
 70 a  74  mome x unif   -22.36
 70 a  74  fuer z unif     0.14
 70 a  74  mome x unif     0.56
 75        fuer y unif    -8.00     0.00     1.80
 76        fuer y unif    -8.00    -1.80    -0.01
 75        mome x unif   -23.17     0.00     1.80
 76        mome x unif   -23.43    -1.80    -0.01
 75        fuer z unif     0.14     0.00     1.80
 76        fuer z unif     0.14    -1.80    -0.01
 75        mome x unif     0.56     0.00     1.80
 76        mome x unif     0.56    -1.80    -0.01
 77 a  81  fuer y unif    -8.00
 77 a  81  mome x unif   -24.16
 77 a  81  fuer z unif     0.14
 77 a  81  mome x unif     0.56
 75        fuer y conc   -25.00     2.60
 75        mome x conc   -72.40     2.60
 75        fuer z conc     0.43     2.60
 75        mome x conc     1.76     2.60
 75        fuer y conc   -25.00     4.20
 75        mome x conc   -72.40     4.20
 75        fuer z conc     0.43     4.20
 75        mome x conc     1.76     4.20
 76        fuer y conc   -25.00     0.80
 76        mome x conc   -73.22     0.80
 76        fuer z conc     0.43     0.80
 76        mome x conc     1.76     0.80
 76        fuer y conc   -25.00     2.40
 76        mome x conc   -73.22     2.40
 76        fuer z conc     0.43     2.40
 76        mome x conc     1.76     2.40
 46 a  57  fuer y unif    -8.00
 46 a  57  mome x unif   -18.15
 46 a  57  fuer z unif     0.14
 46 a  57  mome x unif     0.56
 22 a  33  fuer y unif    -8.00
 22 a  33  mome x unif   -18.18
 22 a  33  fuer z unif     0.14
 22 a  33  mome x unif     0.56
  1 a   9  fuer y unif    -8.00
  1 a   9  mome x unif   -23.38
  1 a   9  fuer z unif     0.14
  1 a   9  mome x unif     0.56
 94 a 105  fuer y unif    -8.00
 94 a 105  mome x unif   -25.02
 94 a 105  fuer z unif     0.14
 94 a 105  mome x unif     0.56
 58 a  69  fuer y unif    -1.25
 58 a  69  mome x unif    -3.17
 58 a  69  fuer z unif     0.02
 58 a  69  mome x unif     0.09
 34 a  45  fuer y unif    -1.25
 34 a  45  mome x unif    -2.73
 34 a  45  fuer z unif     0.02
 34 a  45  mome x unif     0.09
 10 a  21  fuer y unif    -1.25
 10 a  21  mome x unif    -3.18
 10 a  21  fuer z unif     0.02
 10 a  21  mome x unif     0.09
 82 a  93  fuer y unif    -1.25
 82 a  93  mome x unif    -3.98
 82 a  93  fuer z unif     0.02
 82 a  93  mome x unif     0.09
106 a 114  fuer y unif    -1.25
```

106 a 114 mome x unif -3.31
106 a 114 fuer z unif 0.02
106 a 114 mome x unif 0.09
hipo 121 sob. v-21 izda ec-1 (LM-71)
carg en barr
70 a 77 fuer y unif -8.00
70 a 77 mome x unif -22.75
70 a 77 fuer z unif 0.14
70 a 77 mome x unif 0.56
78 fuer y unif -8.00 0.00 1.80
79 fuer y unif -8.00 -1.80 -0.01
78 mome x unif -23.93 0.00 1.80
79 mome x unif -24.18 -1.80 -0.01
78 fuer z unif 0.14 0.00 1.80
79 fuer z unif 0.14 -1.80 -0.01
78 mome x unif 0.56 0.00 1.80
79 mome x unif 0.56 -1.80 -0.01
80 a 81 fuer y unif -8.00
80 a 81 mome x unif -24.52
80 a 81 fuer z unif 0.14
80 a 81 mome x unif 0.56
78 fuer y conc -25.00 2.60
78 mome x conc -74.79 2.60
78 fuer z conc 0.43 2.60
78 mome x conc 1.76 2.60
78 fuer y conc -25.00 4.20
78 mome x conc -74.79 4.20
78 fuer z conc 0.43 4.20
78 mome x conc 1.76 4.20
79 fuer y conc -25.00 0.80
79 mome x conc -75.55 0.80
79 fuer z conc 0.43 0.80
79 mome x conc 1.76 0.80
79 fuer y conc -25.00 2.40
79 mome x conc -75.55 2.40
79 fuer z conc 0.43 2.40
79 mome x conc 1.76 2.40
46 a 57 fuer y unif -8.00
46 a 57 mome x unif -18.15
46 a 57 fuer z unif 0.14
46 a 57 mome x unif 0.56
22 a 33 fuer y unif -8.00
22 a 33 mome x unif -18.18
22 a 33 fuer z unif 0.14
22 a 33 mome x unif 0.56
1 a 9 fuer y unif -8.00
1 a 9 mome x unif -23.38
1 a 9 fuer z unif 0.14
1 a 9 mome x unif 0.56
94 a 105 fuer y unif -8.00
94 a 105 mome x unif -25.02
94 a 105 fuer z unif 0.14
94 a 105 mome x unif 0.56
58 a 69 fuer y unif -1.25
58 a 69 mome x unif -3.17
58 a 69 fuer z unif 0.02
58 a 69 mome x unif 0.09
34 a 45 fuer y unif -1.25
34 a 45 mome x unif -2.73
34 a 45 fuer z unif 0.02
34 a 45 mome x unif 0.09
10 a 21 fuer y unif -1.25
10 a 21 mome x unif -3.18
10 a 21 fuer z unif 0.02
10 a 21 mome x unif 0.09
82 a 93 fuer y unif -1.25
82 a 93 mome x unif -3.98
82 a 93 fuer z unif 0.02
82 a 93 mome x unif 0.09
106 a 114 fuer y unif -1.25
106 a 114 mome x unif -3.31
106 a 114 fuer z unif 0.02
106 a 114 mome x unif 0.09
hipo 122 sob. v-22 izda ec-1 (LM-71)
carg en barr
82 a 83 fuer y unif -8.00
82 a 83 mome x unif -24.94
82 a 83 fuer z unif 0.14
82 a 83 mome x unif 0.56
84 fuer y unif -8.00 0.00 1.80
85 fuer y unif -8.00 -1.80 -0.01
84 mome x unif -25.22 0.00 1.80
85 mome x unif -25.39 -1.80 -0.01
84 fuer z unif 0.14 0.00 1.80
85 fuer z unif 0.14 -1.80 -0.01
84 mome x unif 0.56 0.00 1.80
85 mome x unif 0.56 -1.80 -0.01
86 a 93 fuer y unif -8.00
86 a 93 mome x unif -25.82
86 a 93 fuer z unif 0.14
86 a 93 mome x unif 0.56
84 fuer y conc -25.00 2.60
84 mome x conc -78.83 2.60
84 fuer z conc 0.43 2.60
84 mome x conc 1.76 2.60
84 fuer y conc -25.00 4.20
84 mome x conc -78.83 4.20
84 fuer z conc 0.43 4.20
84 mome x conc 1.76 4.20
85 fuer y conc -25.00 0.80
85 mome x conc -79.35 0.80
85 fuer z conc 0.43 0.80
85 mome x conc 1.76 0.80
85 fuer y conc -25.00 2.40
85 mome x conc -79.35 2.40
85 fuer z conc 0.43 2.40
85 mome x conc 1.76 2.40
58 a 69 fuer y unif -8.00
58 a 69 mome x unif -20.26
58 a 69 fuer z unif 0.14
58 a 69 mome x unif 0.56
34 a 45 fuer y unif -8.00
34 a 45 mome x unif -17.45
34 a 45 fuer z unif 0.14
34 a 45 mome x unif 0.56
10 a 21 fuer y unif -8.00
10 a 21 mome x unif -20.36
10 a 21 fuer z unif 0.14
10 a 21 mome x unif 0.56
106 a 114 fuer y unif -8.00
106 a 114 mome x unif -21.19
106 a 114 fuer z unif 0.14
106 a 114 mome x unif 0.56
70 a 81 fuer y unif -1.25
70 a 81 mome x unif -3.63
70 a 81 fuer z unif 0.02
70 a 81 mome x unif 0.09
46 a 57 fuer y unif -1.25

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 46 a  57 mome x unif    -2.84
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.09
 22 a  33 fuer y unif    -1.25
 22 a  33 mome x unif    -2.84
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.09
  1 a   9 fuer y unif    -1.25
  1 a   9 mome x unif    -3.65
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.09
 94 a 105 fuer y unif    -1.25
 94 a 105 mome x unif    -3.91
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.09
hipo 123 sob. v-23 izda ec-1 (LM-71)
carg en barr
 82 a  86 fuer y unif    -8.00
 82 a  86 mome x unif   -25.19
 82 a  86 fuer z unif     0.14
 82 a  86 mome x unif     0.56
 87       fuer y unif    -8.00     0.00     1.80
 88       fuer y unif    -8.00    -1.80    -0.01
 87       mome x unif   -25.68     0.00     1.80
 88       mome x unif   -25.80    -1.80    -0.01
 87       fuer z unif     0.14     0.00     1.80
 88       fuer z unif     0.14    -1.80    -0.01
 87       mome x unif     0.56     0.00     1.80
 88       mome x unif     0.56    -1.80    -0.01
 89 a  93 fuer y unif    -8.00
 89 a  93 mome x unif   -26.00
 89 a  93 fuer z unif     0.14
 89 a  93 mome x unif     0.56
 87       fuer y conc   -25.00     2.60
 87       mome x conc   -80.25     2.60
 87       fuer z conc     0.43     2.60
 87       mome x conc     1.76     2.60
 87       fuer y conc   -25.00     4.20
 87       mome x conc   -80.25     4.20
 87       fuer z conc     0.43     4.20
 87       mome x conc     1.76     4.20
 88       fuer y conc   -25.00     0.80
 88       mome x conc   -80.62     0.80
 88       fuer z conc     0.43     0.80
 88       mome x conc     1.76     0.80
 88       fuer y conc   -25.00     2.40
 88       mome x conc   -80.62     2.40
 88       fuer z conc     0.43     2.40
 88       mome x conc     1.76     2.40
 58 a  69 fuer y unif    -8.00
 58 a  69 mome x unif   -20.26
 58 a  69 fuer z unif     0.14
 58 a  69 mome x unif     0.56
 34 a  45 fuer y unif    -8.00
 34 a  45 mome x unif   -17.45
 34 a  45 fuer z unif     0.14
 34 a  45 mome x unif     0.56
 10 a  21 fuer y unif    -8.00
 10 a  21 mome x unif   -20.36
 10 a  21 fuer z unif     0.14
 10 a  21 mome x unif     0.56
106 a 114 fuer y unif    -8.00
106 a 114 mome x unif   -21.19
106 a 114 fuer z unif     0.14
106 a 114 mome x unif     0.56
 70 a  81 fuer y unif    -1.25
 70 a  81 mome x unif    -3.63
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.09
 46 a  57 fuer y unif    -1.25
 46 a  57 mome x unif    -2.84
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.09
 22 a  33 fuer y unif    -1.25
 22 a  33 mome x unif    -2.84
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.09
  1 a   9 fuer y unif    -1.25
  1 a   9 mome x unif    -3.65
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.09
 94 a 105 fuer y unif    -1.25
 94 a 105 mome x unif    -3.91
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.09
hipo 124 sob. v-24 izda ec-1 (LM-71)
carg en barr
 82 a  89 fuer y unif    -8.00
 82 a  89 mome x unif   -25.37
 82 a  89 fuer z unif     0.14
 82 a  89 mome x unif     0.56
 90       fuer y unif    -8.00     0.00     1.80
 91       fuer y unif    -8.00    -1.80    -0.01
 90       mome x unif   -25.98     0.00     1.80
 91       mome x unif   -26.04    -1.80    -0.01
 90       fuer z unif     0.14     0.00     1.80
 91       fuer z unif     0.14    -1.80    -0.01
 90       mome x unif     0.56     0.00     1.80
 91       mome x unif     0.56    -1.80    -0.01
 92 a  93 fuer y unif    -8.00
 92 a  93 mome x unif   -26.08
 92 a  93 fuer z unif     0.14
 92 a  93 mome x unif     0.56
 90       fuer y conc   -25.00     2.60
 90       mome x conc   -81.20     2.60
 90       fuer z conc     0.43     2.60
 90       mome x conc     1.76     2.60
 90       fuer y conc   -25.00     4.20
 90       mome x conc   -81.20     4.20
 90       fuer z conc     0.43     4.20
 90       mome x conc     1.76     4.20
 91       fuer y conc   -25.00     0.80
 91       mome x conc   -81.38     0.80
 91       fuer z conc     0.43     0.80
 91       mome x conc     1.76     0.80
 91       fuer y conc   -25.00     2.40
 91       mome x conc   -81.38     2.40
 91       fuer z conc     0.43     2.40
 91       mome x conc     1.76     2.40
 58 a  69 fuer y unif    -8.00
 58 a  69 mome x unif   -20.26
 58 a  69 fuer z unif     0.14
 58 a  69 mome x unif     0.56
 34 a  45 fuer y unif    -8.00
 34 a  45 mome x unif   -17.45
 34 a  45 fuer z unif     0.14
 34 a  45 mome x unif     0.56
 10 a  21 fuer y unif    -8.00
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 10 a  21 mome x unif   -20.36
 10 a  21 fuer z unif     0.14
 10 a  21 mome x unif     0.56
106 a 114 fuer y unif    -8.00
106 a 114 mome x unif   -21.19
106 a 114 fuer z unif     0.14
106 a 114 mome x unif     0.56
 70 a  81 fuer y unif    -1.25
 70 a  81 mome x unif    -3.63
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.09
 46 a  57 fuer y unif    -1.25
 46 a  57 mome x unif    -2.84
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.09
 22 a  33 fuer y unif    -1.25
 22 a  33 mome x unif    -2.84
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.09
  1 a   9 fuer y unif    -1.25
  1 a   9 mome x unif    -3.65
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.09
 94 a 105 fuer y unif    -1.25
 94 a 105 mome x unif    -3.91
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.09
hipo 125 sob. v-25 izda ec-1 (LM-71)
carg en barr
 94 a  95 fuer y unif    -8.00
 94 a  95 mome x unif   -26.06
 94 a  95 fuer z unif     0.14
 94 a  95 mome x unif     0.56
 96       fuer y unif    -8.00     0.00     1.80
 97       fuer y unif    -8.00    -1.80    -0.01
 96       mome x unif   -25.97     0.00     1.80
 97       mome x unif   -25.87    -1.80    -0.01
 96       fuer z unif     0.14     0.00     1.80
 97       fuer z unif     0.14    -1.80    -0.01
 96       mome x unif     0.56     0.00     1.80
 97       mome x unif     0.56    -1.80    -0.01
 98 a 105 fuer y unif    -8.00
 98 a 105 mome x unif   -24.85
 98 a 105 fuer z unif     0.14
 98 a 105 mome x unif     0.56
 96       fuer y conc   -25.00     2.60
 96       mome x conc   -81.15     2.60
 96       fuer z conc     0.43     2.60
 96       mome x conc     1.76     2.60
 96       fuer y conc   -25.00     4.20
 96       mome x conc   -81.15     4.20
 96       fuer z conc     0.43     4.20
 96       mome x conc     1.76     4.20
 97       fuer y conc   -25.00     0.80
 97       mome x conc   -80.85     0.80
 97       fuer z conc     0.43     0.80
 97       mome x conc     1.76     0.80
 97       fuer y conc   -25.00     2.40
 97       mome x conc   -80.85     2.40
 97       fuer z conc     0.43     2.40
 97       mome x conc     1.76     2.40
 70 a  81 fuer y unif    -8.00
 70 a  81 mome x unif   -23.22
 70 a  81 fuer z unif     0.14
 70 a  81 mome x unif     0.56
 46 a  57 fuer y unif    -8.00
 46 a  57 mome x unif   -18.15
 46 a  57 fuer z unif     0.14
 46 a  57 mome x unif     0.56
 22 a  33 fuer y unif    -8.00
 22 a  33 mome x unif   -18.18
 22 a  33 fuer z unif     0.14
 22 a  33 mome x unif     0.56
  1 a   9 fuer y unif    -8.00
  1 a   9 mome x unif   -23.38
  1 a   9 fuer z unif     0.14
  1 a   9 mome x unif     0.56
 82 a  93 fuer y unif    -1.25
 82 a  93 mome x unif    -3.98
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.09
 58 a  69 fuer y unif    -1.25
 58 a  69 mome x unif    -3.17
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.09
 34 a  45 fuer y unif    -1.25
 34 a  45 mome x unif    -2.73
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.09
 10 a  21 fuer y unif    -1.25
 10 a  21 mome x unif    -3.18
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.09
106 a 114 fuer y unif    -1.25
106 a 114 mome x unif    -3.31
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.09
hipo 126 sob. v-26 izda ec-1 (LM-71)
carg en barr
 94 a  98 fuer y unif    -8.00
 94 a  98 mome x unif   -25.91
 94 a  98 fuer z unif     0.14
 94 a  98 mome x unif     0.56
 99       fuer y unif    -8.00     0.00     1.80
100       fuer y unif    -8.00    -1.80    -0.01
 99       mome x unif   -25.60     0.00     1.80
100       mome x unif   -25.41    -1.80    -0.01
 99       fuer z unif     0.14     0.00     1.80
100       fuer z unif     0.14    -1.80    -0.01
 99       mome x unif     0.56     0.00     1.80
100       mome x unif     0.56    -1.80    -0.01
101 a 105 fuer y unif    -8.00
101 a 105 mome x unif   -24.58
101 a 105 fuer z unif     0.14
101 a 105 mome x unif     0.56
 99       fuer y conc   -25.00     2.60
 99       mome x conc   -79.99     2.60
 99       fuer z conc     0.43     2.60
 99       mome x conc     1.76     2.60
 99       fuer y conc   -25.00     4.20
 99       mome x conc   -79.99     4.20
 99       fuer z conc     0.43     4.20
 99       mome x conc     1.76     4.20
100       fuer y conc   -25.00     0.80
100       mome x conc   -79.41     0.80
100       fuer z conc     0.43     0.80
100       mome x conc     1.76     0.80
100       fuer y conc   -25.00     2.40
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100          mome x conc   -79.41     2.40
100          fuer z conc     0.43     2.40
100          mome x conc     1.76     2.40
 70 a  81 fuer y unif     -8.00
 70 a  81 mome x unif    -23.22
 70 a  81 fuer z unif      0.14
 70 a  81 mome x unif      0.56
 46 a  57 fuer y unif     -8.00
 46 a  57 mome x unif    -18.15
 46 a  57 fuer z unif      0.14
 46 a  57 mome x unif      0.56
 22 a  33 fuer y unif     -8.00
 22 a  33 mome x unif    -18.18
 22 a  33 fuer z unif      0.14
 22 a  33 mome x unif      0.56
  1 a   9 fuer y unif     -8.00
  1 a   9 mome x unif    -23.38
  1 a   9 fuer z unif      0.14
  1 a   9 mome x unif      0.56
 82 a  93 fuer y unif     -1.25
 82 a  93 mome x unif     -3.98
 82 a  93 fuer z unif      0.02
 82 a  93 mome x unif      0.09
 58 a  69 fuer y unif     -1.25
 58 a  69 mome x unif     -3.17
 58 a  69 fuer z unif      0.02
 58 a  69 mome x unif      0.09
 34 a  45 fuer y unif     -1.25
 34 a  45 mome x unif     -2.73
 34 a  45 fuer z unif      0.02
 34 a  45 mome x unif      0.09
 10 a  21 fuer y unif     -1.25
 10 a  21 mome x unif     -3.18
 10 a  21 fuer z unif      0.02
 10 a  21 mome x unif      0.09
106 a 114 fuer y unif     -1.25
106 a 114 mome x unif     -3.31
106 a 114 fuer z unif      0.02
106 a 114 mome x unif      0.09
hipo 127 sob. v-27 izda ec-1 (LM-71)
carg en barr
 94 a 101 fuer y unif     -8.00
 94 a 101 mome x unif    -25.63
 94 a 101 fuer z unif      0.14
 94 a 101 mome x unif      0.56
102          fuer y unif     -8.00     0.00     1.80
103          fuer y unif     -8.00    -1.80    -0.01
102          mome x unif    -24.94     0.00     1.80
103          mome x unif    -24.64    -1.80    -0.01
102          fuer z unif      0.14     0.00     1.80
103          fuer z unif      0.14    -1.80    -0.01
102          mome x unif      0.56     0.00     1.80
103          mome x unif      0.56    -1.80    -0.01
104 a 105 fuer y unif     -8.00
104 a 105 mome x unif    -24.14
104 a 105 fuer z unif      0.14
104 a 105 mome x unif      0.56
102          fuer y conc   -25.00     2.60
102          mome x conc   -77.92     2.60
102          fuer z conc     0.43     2.60
102          mome x conc     1.76     2.60
102          fuer y conc   -25.00     4.20
102          mome x conc   -77.92     4.20
102          fuer z conc     0.43     4.20
102          mome x conc     1.76     4.20
103          fuer y conc   -25.00     0.80
103          mome x conc   -77.01     0.80
103          fuer z conc     0.43     0.80
103          mome x conc     1.76     0.80
103          fuer y conc   -25.00     2.40
103          mome x conc   -77.01     2.40
103          fuer z conc     0.43     2.40
103          mome x conc     1.76     2.40
 70 a  81 fuer y unif     -8.00
 70 a  81 mome x unif    -23.22
 70 a  81 fuer z unif      0.14
 70 a  81 mome x unif      0.56
 46 a  57 fuer y unif     -8.00
 46 a  57 mome x unif    -18.15
 46 a  57 fuer z unif      0.14
 46 a  57 mome x unif      0.56
 22 a  33 fuer y unif     -8.00
 22 a  33 mome x unif    -18.18
 22 a  33 fuer z unif      0.14
 22 a  33 mome x unif      0.56
  1 a   9 fuer y unif     -8.00
  1 a   9 mome x unif    -23.38
  1 a   9 fuer z unif      0.14
  1 a   9 mome x unif      0.56
 82 a  93 fuer y unif     -1.25
 82 a  93 mome x unif     -3.98
 82 a  93 fuer z unif      0.02
 82 a  93 mome x unif      0.09
 58 a  69 fuer y unif     -1.25
 58 a  69 mome x unif     -3.17
 58 a  69 fuer z unif      0.02
 58 a  69 mome x unif      0.09
 34 a  45 fuer y unif     -1.25
 34 a  45 mome x unif     -2.73
 34 a  45 fuer z unif      0.02
 34 a  45 mome x unif      0.09
 10 a  21 fuer y unif     -1.25
 10 a  21 mome x unif     -3.18
 10 a  21 fuer z unif      0.02
 10 a  21 mome x unif      0.09
106 a 114 fuer y unif     -1.25
106 a 114 mome x unif     -3.31
106 a 114 fuer z unif      0.02
106 a 114 mome x unif      0.09
hipo 128 sob. v-28 izda ec-1 (LM-71)
carg en barr
106 a 106 fuer y unif     -8.00
106 a 106 mome x unif    -23.56
106 a 106 fuer z unif      0.14
106 a 106 mome x unif      0.56
107          fuer y unif     -8.00     0.00     3.05
108          fuer y unif     -8.00    -0.55    -0.01
107          mome x unif    -23.12     0.00     3.05
108          mome x unif    -22.63    -0.55    -0.01
107          fuer z unif      0.14     0.00     3.05
108          fuer z unif      0.14    -0.55    -0.01
107          mome x unif      0.56     0.00     3.05
108          mome x unif      0.56    -0.55    -0.01
109 a 114 fuer y unif     -8.00
109 a 114 mome x unif    -20.46
109 a 114 fuer z unif      0.14
109 a 114 mome x unif      0.56
107          fuer y conc   -25.00     3.85
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107          mome x conc    -72.24      3.85
107          fuer z conc      0.43      3.85
107          mome x conc      1.76      3.85
108          fuer y conc    -25.00      0.45
108          mome x conc    -70.73      0.45
108          fuer z conc      0.43      0.45
108          mome x conc      1.76      0.45
108          fuer y conc    -25.00      2.05
108          mome x conc    -70.73      2.05
108          fuer z conc      0.43      2.05
108          mome x conc      1.76      2.05
108          fuer y conc    -25.00      3.65
108          mome x conc    -70.73      3.65
108          fuer z conc      0.43      3.65
108          mome x conc      1.76      3.65
 82 a  93 fuer y unif       -8.00
 82 a  93 mome x unif      -25.46
 82 a  93 fuer z unif       0.14
 82 a  93 mome x unif       0.56
 58 a  69 fuer y unif       -8.00
 58 a  69 mome x unif      -20.26
 58 a  69 fuer z unif       0.14
 58 a  69 mome x unif       0.56
 34 a  45 fuer y unif       -8.00
 34 a  45 mome x unif      -17.45
 34 a  45 fuer z unif       0.14
 34 a  45 mome x unif       0.56
 10 a  21 fuer y unif       -8.00
 10 a  21 mome x unif      -20.36
 10 a  21 fuer z unif       0.14
 10 a  21 mome x unif       0.56
 94 a 105 fuer y unif       -1.25
 94 a 105 mome x unif       -3.91
 94 a 105 fuer z unif        0.02
 94 a 105 mome x unif        0.09
 70 a  81 fuer y unif       -1.25
 70 a  81 mome x unif       -3.63
 70 a  81 fuer z unif        0.02
 70 a  81 mome x unif        0.09
 46 a  57 fuer y unif       -1.25
 46 a  57 mome x unif       -2.84
 46 a  57 fuer z unif        0.02
 46 a  57 mome x unif        0.09
 22 a  33 fuer y unif       -1.25
 22 a  33 mome x unif       -2.84
 22 a  33 fuer z unif        0.02
 22 a  33 mome x unif        0.09
  1 a   9 fuer y unif       -1.25
  1 a   9 mome x unif       -3.65
  1 a   9 fuer z unif        0.02
  1 a   9 mome x unif        0.09
hipo 129 sob. v-29 izda ec-1 (LM-71)
carg en barr
106 a 108 fuer y unif       -8.00
106 a 108 mome x unif      -23.09
106 a 108 fuer z unif        0.14
106 a 108 mome x unif        0.56
109          fuer y unif    -8.00      0.00      4.30
111          fuer y unif    -8.00     -4.30     -0.01
109          mome x unif   -22.10      0.00      4.30
111          mome x unif   -20.93     -4.30     -0.01
109          fuer z unif      0.14      0.00      4.30
111          fuer z unif      0.14     -4.30     -0.01
109          mome x unif      0.56      0.00      4.30
```

```
111          mome x unif      0.56     -4.30     -0.01
112 a 114 fuer y unif       -8.00
112 a 114 mome x unif      -19.55
112 a 114 fuer z unif        0.14
112 a 114 mome x unif        0.56
110          fuer y conc    -25.00      0.10
110          mome x conc    -67.30      0.10
110          fuer z conc      0.43      0.10
110          mome x conc      1.76      0.10
110          fuer y conc    -25.00      1.70
110          mome x conc    -67.30      1.70
110          fuer z conc      0.43      1.70
110          mome x conc      1.76      1.70
110          fuer y conc    -25.00      3.30
110          mome x conc    -67.30      3.30
110          fuer z conc      0.43      3.30
110          mome x conc      1.76      3.30
110          fuer y conc    -25.00      4.90
110          mome x conc    -67.30      4.90
110          fuer z conc      0.43      4.90
110          mome x conc      1.76      4.90
 82 a  93 fuer y unif       -8.00
 82 a  93 mome x unif      -25.46
 82 a  93 fuer z unif       0.14
 82 a  93 mome x unif       0.56
 58 a  69 fuer y unif       -8.00
 58 a  69 mome x unif      -20.26
 58 a  69 fuer z unif       0.14
 58 a  69 mome x unif       0.56
 34 a  45 fuer y unif       -8.00
 34 a  45 mome x unif      -17.45
 34 a  45 fuer z unif       0.14
 34 a  45 mome x unif       0.56
 10 a  21 fuer y unif       -8.00
 10 a  21 mome x unif      -20.36
 10 a  21 fuer z unif       0.14
 10 a  21 mome x unif       0.56
 94 a 105 fuer y unif       -1.25
 94 a 105 mome x unif       -3.91
 94 a 105 fuer z unif        0.02
 94 a 105 mome x unif        0.09
 70 a  81 fuer y unif       -1.25
 70 a  81 mome x unif       -3.63
 70 a  81 fuer z unif        0.02
 70 a  81 mome x unif        0.09
 46 a  57 fuer y unif       -1.25
 46 a  57 mome x unif       -2.84
 46 a  57 fuer z unif        0.02
 46 a  57 mome x unif        0.09
 22 a  33 fuer y unif       -1.25
 22 a  33 mome x unif       -2.84
 22 a  33 fuer z unif        0.02
 22 a  33 mome x unif        0.09
  1 a   9 fuer y unif       -1.25
  1 a   9 mome x unif       -3.65
  1 a   9 fuer z unif        0.02
  1 a   9 mome x unif        0.09
hipo 130 sob. v-30 izda ec-1 (LM-71)
carg en barr
106 a 111 fuer y unif       -8.00
106 a 111 mome x unif      -22.24
106 a 111 fuer z unif        0.14
106 a 111 mome x unif        0.56
112          fuer y unif    -8.00      0.00      0.55
```

```
 113          fuer y unif    -8.00    -3.05    -0.01
 112          mome x unif   -20.28     0.00     0.55
 113          mome x unif   -19.57    -3.05    -0.01
 112          fuer z unif     0.14     0.00     0.55
 113          fuer z unif     0.14    -3.05    -0.01
 112          mome x unif     0.56     0.00     0.55
 113          mome x unif     0.56    -3.05    -0.01
 114 a 114    fuer y unif    -8.00
 114 a 114    mome x unif   -18.82
 114 a 114    fuer z unif     0.14
 114 a 114    mome x unif     0.56
 112          fuer y conc   -25.00     1.35
 112          mome x conc   -63.36     1.35
 112          fuer z conc     0.43     1.35
 112          mome x conc     1.76     1.35
 112          fuer y conc   -25.00     2.95
 112          mome x conc   -63.36     2.95
 112          fuer z conc     0.43     2.95
 112          mome x conc     1.76     2.95
 112          fuer y conc   -25.00     4.55
 112          mome x conc   -63.36     4.55
 112          fuer z conc     0.43     4.55
 112          mome x conc     1.76     4.55
 113          fuer y conc   -25.00     1.15
 113          mome x conc   -61.15     1.15
 113          fuer z conc     0.43     1.15
 113          mome x conc     1.76     1.15
  82 a  93    fuer y unif    -8.00
  82 a  93    mome x unif   -25.46
  82 a  93    fuer z unif     0.14
  82 a  93    mome x unif     0.56
  58 a  69    fuer y unif    -8.00
  58 a  69    mome x unif   -20.26
  58 a  69    fuer z unif     0.14
  58 a  69    mome x unif     0.56
  34 a  45    fuer y unif    -8.00
  34 a  45    mome x unif   -17.45
  34 a  45    fuer z unif     0.14
  34 a  45    mome x unif     0.56
  10 a  21    fuer y unif    -8.00
  10 a  21    mome x unif   -20.36
  10 a  21    fuer z unif     0.14
  10 a  21    mome x unif     0.56
  94 a 105    fuer y unif    -1.25
  94 a 105    mome x unif    -3.91
  94 a 105    fuer z unif     0.02
  94 a 105    mome x unif     0.09
  70 a  81    fuer y unif    -1.25
  70 a  81    mome x unif    -3.63
  70 a  81    fuer z unif     0.02
  70 a  81    mome x unif     0.09
  46 a  57    fuer y unif    -1.25
  46 a  57    mome x unif    -2.84
  46 a  57    fuer z unif     0.02
  46 a  57    mome x unif     0.09
  22 a  33    fuer y unif    -1.25
  22 a  33    mome x unif    -2.84
  22 a  33    fuer z unif     0.02
  22 a  33    mome x unif     0.09
   1 a   9    fuer y unif    -1.25
   1 a   9    mome x unif    -3.65
   1 a   9    fuer z unif     0.02
   1 a   9    mome x unif     0.09
hipo 131 sob. a- 1 izda ec-1 (LM-71)
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```
carg en barr
   1 a   6 fuer y unif    -8.00
   1 a   6 mome x unif   -23.86
   1 a   6 fuer z unif     0.14
   1 a   6 mome x unif     0.56
   7         fuer y unif    -8.00     0.00     0.55
   8         fuer y unif    -8.00    -3.05    -0.01
   7         mome x unif   -22.62     0.00     0.55
   8         mome x unif   -22.31    -3.05    -0.01
   7         fuer z unif     0.14     0.00     0.55
   8         fuer z unif     0.14    -3.05    -0.01
   7         mome x unif     0.56     0.00     0.55
   8         mome x unif     0.56    -3.05    -0.01
   9 a   9 fuer y unif    -8.00
   9 a   9 mome x unif   -22.00
   9 a   9 fuer z unif     0.14
   9 a   9 mome x unif     0.56
   7         fuer y conc   -25.00     1.35
   7         mome x conc   -70.70     1.35
   7         fuer z conc     0.43     1.35
   7         mome x conc     1.76     1.35
   7         fuer y conc   -25.00     2.95
   7         mome x conc   -70.70     2.95
   7         fuer z conc     0.43     2.95
   7         mome x conc     1.76     2.95
   7         fuer y conc   -25.00     4.55
   7         mome x conc   -70.70     4.55
   7         fuer z conc     0.43     4.55
   7         mome x conc     1.76     4.55
   8         fuer y conc   -25.00     1.15
   8         mome x conc   -69.71     1.15
   8         fuer z conc     0.43     1.15
   8         mome x conc     1.76     1.15
  10 a  21 fuer y unif    -8.00
  10 a  21 mome x unif   -20.36
  10 a  21 fuer z unif     0.14
  10 a  21 mome x unif     0.56
  34 a  45 fuer y unif    -8.00
  34 a  45 mome x unif   -17.45
  34 a  45 fuer z unif     0.14
  34 a  45 mome x unif     0.56
  58 a  69 fuer y unif    -8.00
  58 a  69 mome x unif   -20.26
  58 a  69 fuer z unif     0.14
  58 a  69 mome x unif     0.56
  82 a  93 fuer y unif    -8.00
  82 a  93 mome x unif   -25.46
  82 a  93 fuer z unif     0.14
  82 a  93 mome x unif     0.56
 106 a 114 fuer y unif    -8.00
 106 a 114 mome x unif   -21.19
 106 a 114 fuer z unif     0.14
 106 a 114 mome x unif     0.56
  22 a  33 fuer y unif    -1.25
  22 a  33 mome x unif    -2.84
  22 a  33 fuer z unif     0.02
  22 a  33 mome x unif     0.09
  46 a  57 fuer y unif    -1.25
  46 a  57 mome x unif    -2.84
  46 a  57 fuer z unif     0.02
  46 a  57 mome x unif     0.09
  70 a  81 fuer y unif    -1.25
  70 a  81 mome x unif    -3.63
  70 a  81 fuer z unif     0.02
```

70	a	81	mome x unif	0.09		
94	a	105	fuer y unif	-1.25		
94	a	105	mome x unif	-3.91		
94	a	105	fuer z unif	0.02		
94	a	105	mome x unif	0.09		

hipo 132 sob. a- 2 izda ec-1 (LM-71)
carg en barr

1	a	8	fuer y unif	-8.00		
9			fuer y unif	-8.00	0.00	1.80
1	a	8	mome x unif	-23.54		
9			mome x unif	-22.00	0.00	1.80
1	a	8	fuer z unif	0.14		
9			fuer z unif	0.14	0.00	1.80
1	a	8	mome x unif	0.56		
9			mome x unif	0.56	0.00	1.80
9			fuer y conc	-25.00	2.60	
9			mome x conc	-68.74	2.60	
9			fuer z conc	0.43	2.60	
9			mome x conc	1.76	2.60	
9			fuer y conc	-25.00	4.20	
9			mome x conc	-68.74	4.20	
9			fuer z conc	0.43	4.20	
9			mome x conc	1.76	4.20	
10			fuer y unif	-8.00	-1.80	-0.01
11	a	21	fuer y unif	-8.00		
10			mome x unif	-21.69	-1.80	-0.01
11	a	21	mome x unif	-20.22		
10			fuer z unif	0.14	-1.80	-0.01
11	a	21	fuer z unif	0.14		
10			mome x unif	0.56	-1.80	-0.01
11	a	21	mome x unif	0.56		
10			fuer y conc	-25.00	0.80	
10			mome x conc	-67.79	0.80	
10			fuer z conc	0.43	0.80	
10			mome x conc	1.76	0.80	
10			fuer y conc	-25.00	2.40	
10			mome x conc	-67.79	2.40	
10			fuer z conc	0.43	2.40	
10			mome x conc	1.76	2.40	
34	a	45	fuer y unif	-8.00		
34	a	45	mome x unif	-17.45		
34	a	45	fuer z unif	0.14		
34	a	45	mome x unif	0.56		
58	a	69	fuer y unif	-8.00		
58	a	69	mome x unif	-20.26		
58	a	69	fuer z unif	0.14		
58	a	69	mome x unif	0.56		
82	a	93	fuer y unif	-8.00		
82	a	93	mome x unif	-25.46		
82	a	93	fuer z unif	0.14		
82	a	93	mome x unif	0.56		
106	a	114	fuer y unif	-8.00		
106	a	114	mome x unif	-21.19		
106	a	114	fuer z unif	0.14		
106	a	114	mome x unif	0.56		
22	a	33	fuer y unif	-1.25		
22	a	33	mome x unif	-2.84		
22	a	33	fuer z unif	0.02		
22	a	33	mome x unif	0.09		
46	a	57	fuer y unif	-1.25		
46	a	57	mome x unif	-2.84		
46	a	57	fuer z unif	0.02		
46	a	57	mome x unif	0.09		
70	a	81	fuer y unif	-1.25		
70	a	81	mome x unif	-3.63		
70	a	81	fuer z unif	0.02		
70	a	81	mome x unif	0.09		
94	a	105	fuer y unif	-1.25		
94	a	105	mome x unif	-3.91		
94	a	105	fuer z unif	0.02		
94	a	105	mome x unif	0.09		

hipo 133 sob. a- 3 izda ec-1 (LM-71)
carg en barr

1	a	9	fuer y unif	-8.00		
1	a	9	mome x unif	-23.38		
1	a	9	fuer z unif	0.14		
1	a	9	mome x unif	0.56		
10	a	11	fuer y unif	-8.00		
10	a	11	mome x unif	-21.55		
10	a	11	fuer z unif	0.14		
10	a	11	mome x unif	0.56		
12			fuer y unif	-8.00	0.00	1.80
13			fuer y unif	-8.00	-1.80	-0.01
12			mome x unif	-21.12	0.00	1.80
13			mome x unif	-20.84	-1.80	-0.01
12			fuer z unif	0.14	0.00	1.80
13			fuer z unif	0.14	-1.80	-0.01
12			mome x unif	0.56	0.00	1.80
13			mome x unif	0.56	-1.80	-0.01
14	a	21	fuer y unif	-8.00		
14	a	21	mome x unif	-19.81		
14	a	21	fuer z unif	0.14		
14	a	21	mome x unif	0.56		
12			fuer y conc	-25.00	2.60	
12			mome x conc	-65.99	2.60	
12			fuer z conc	0.43	2.60	
12			mome x conc	1.76	2.60	
12			fuer y conc	-25.00	4.20	
12			mome x conc	-65.99	4.20	
12			fuer z conc	0.43	4.20	
12			mome x conc	1.76	4.20	
13			fuer y conc	-25.00	0.80	
13			mome x conc	-65.14	0.80	
13			fuer z conc	0.43	0.80	
13			mome x conc	1.76	0.80	
13			fuer y conc	-25.00	2.40	
13			mome x conc	-65.14	2.40	
13			fuer z conc	0.43	2.40	
13			mome x conc	1.76	2.40	
34	a	45	fuer y unif	-8.00		
34	a	45	mome x unif	-17.45		
34	a	45	fuer z unif	0.14		
34	a	45	mome x unif	0.56		
58	a	69	fuer y unif	-8.00		
58	a	69	mome x unif	-20.26		
58	a	69	fuer z unif	0.14		
58	a	69	mome x unif	0.56		
82	a	93	fuer y unif	-8.00		
82	a	93	mome x unif	-25.46		
82	a	93	fuer z unif	0.14		
82	a	93	mome x unif	0.56		
106	a	114	fuer y unif	-8.00		
106	a	114	mome x unif	-21.19		
106	a	114	fuer z unif	0.14		
106	a	114	mome x unif	0.56		
22	a	33	fuer y unif	-1.25		
22	a	33	mome x unif	-2.84		
22	a	33	fuer z unif	0.02		

22	a	33	mome x unif	0.09		
46	a	57	fuer y unif	-1.25		
46	a	57	mome x unif	-2.84		
46	a	57	fuer z unif	0.02		
46	a	57	mome x unif	0.09		
70	a	81	fuer y unif	-1.25		
70	a	81	mome x unif	-3.63		
70	a	81	fuer z unif	0.02		
70	a	81	mome x unif	0.09		
94	a	105	fuer y unif	-1.25		
94	a	105	mome x unif	-3.91		
94	a	105	fuer z unif	0.02		
94	a	105	mome x unif	0.09		

hipo 134 sob. a- 4 izda ec-1 (LM-71)
carg en barr

10	a	17	fuer y unif	-8.00		
10	a	17	mome x unif	-20.78		
10	a	17	fuer z unif	0.14		
10	a	17	mome x unif	0.56		
18			fuer y unif	-8.00	0.00	1.80
19			fuer y unif	-8.00	-1.80	-0.01
18			mome x unif	-19.64	0.00	1.80
19			mome x unif	-19.43	-1.80	-0.01
18			fuer z unif	0.14	0.00	1.80
19			fuer z unif	0.14	-1.80	-0.01
18			mome x unif	0.56	0.00	1.80
19			mome x unif	0.56	-1.80	-0.01
20	a	21	fuer y unif	-8.00		
20	a	21	mome x unif	-19.13		
20	a	21	fuer z unif	0.14		
20	a	21	mome x unif	0.56		
18			fuer y conc	-25.00	2.60	
18			mome x conc	-61.39	2.60	
18			fuer z conc	0.43	2.60	
18			mome x conc	1.76	2.60	
18			fuer y conc	-25.00	4.20	
18			mome x conc	-61.39	4.20	
18			fuer z conc	0.43	4.20	
18			mome x conc	1.76	4.20	
19			fuer y conc	-25.00	0.80	
19			mome x conc	-60.72	0.80	
19			fuer z conc	0.43	0.80	
19			mome x conc	1.76	0.80	
19			fuer y conc	-25.00	2.40	
19			mome x conc	-60.72	2.40	
19			fuer z conc	0.43	2.40	
19			mome x conc	1.76	2.40	
22	a	33	fuer y unif	-8.00		
22	a	33	mome x unif	-18.18		
22	a	33	fuer z unif	0.14		
22	a	33	mome x unif	0.56		
46	a	57	fuer y unif	-8.00		
46	a	57	mome x unif	-18.15		
46	a	57	fuer z unif	0.14		
46	a	57	mome x unif	0.56		
70	a	81	fuer y unif	-8.00		
70	a	81	mome x unif	-23.22		
70	a	81	fuer z unif	0.14		
70	a	81	mome x unif	0.56		
94	a	105	fuer y unif	-8.00		
94	a	105	mome x unif	-25.02		
94	a	105	fuer z unif	0.14		
94	a	105	mome x unif	0.56		
1	a	9	fuer y unif	-1.25		
1	a	9	mome x unif	-3.65		
1	a	9	fuer z unif	0.02		
1	a	9	mome x unif	0.09		
34	a	45	fuer y unif	-1.25		
34	a	45	mome x unif	-2.73		
34	a	45	fuer z unif	0.02		
34	a	45	mome x unif	0.09		
58	a	69	fuer y unif	-1.25		
58	a	69	mome x unif	-3.17		
58	a	69	fuer z unif	0.02		
58	a	69	mome x unif	0.09		
82	a	93	fuer y unif	-1.25		
82	a	93	mome x unif	-3.98		
82	a	93	fuer z unif	0.02		
82	a	93	mome x unif	0.09		
106	a	114	fuer y unif	-1.25		
106	a	114	mome x unif	-3.31		
106	a	114	fuer z unif	0.02		
106	a	114	mome x unif	0.09		

hipo 135 sob. a- 5 izda ec-1 (LM-71)
carg en barr

10	a	20	fuer y unif	-8.00		
21			fuer y unif	-8.00	0.00	1.80
10	a	20	mome x unif	-20.46		
21			mome x unif	-19.03	0.00	1.80
10	a	20	fuer z unif	0.14		
21			fuer z unif	0.14	0.00	1.80
10	a	20	mome x unif	0.56		
21			mome x unif	0.56	0.00	1.80
21			fuer y conc	-25.00	2.60	
21			mome x conc	-59.48	2.60	
21			fuer z conc	0.43	2.60	
21			mome x conc	1.76	2.60	
21			fuer y conc	-25.00	4.20	
21			mome x conc	-59.48	4.20	
21			fuer z conc	0.43	4.20	
21			mome x conc	1.76	4.20	
22			fuer y unif	-8.00	-1.80	-0.01
23	a	33	fuer y unif	-8.00		
22			mome x unif	-18.85	-1.80	-0.01
23	a	33	mome x unif	-18.10		
22			fuer z unif	0.14	-1.80	-0.01
23	a	33	fuer z unif	0.14		
22			mome x unif	0.56	-1.80	-0.01
23	a	33	mome x unif	0.56		
22			fuer y conc	-25.00	0.80	
22			mome x conc	-58.90	0.80	
22			fuer z conc	0.43	0.80	
22			mome x conc	1.76	0.80	
22			fuer y conc	-25.00	2.40	
22			mome x conc	-58.90	2.40	
22			fuer z conc	0.43	2.40	
22			mome x conc	1.76	2.40	
46	a	57	fuer y unif	-8.00		
46	a	57	mome x unif	-18.15		
46	a	57	fuer z unif	0.14		
46	a	57	mome x unif	0.56		
70	a	81	fuer y unif	-8.00		
70	a	81	mome x unif	-23.22		
70	a	81	fuer z unif	0.14		
70	a	81	mome x unif	0.56		
94	a	105	fuer y unif	-8.00		
94	a	105	mome x unif	-25.02		
94	a	105	fuer z unif	0.14		

```
 94 a 105 mome x unif     0.56
  1 a   9 fuer y unif    -1.25
  1 a   9 mome x unif    -3.65
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.09
 34 a  45 fuer y unif    -1.25
 34 a  45 mome x unif    -2.73
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.09
 58 a  69 fuer y unif    -1.25
 58 a  69 mome x unif    -3.17
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.09
 82 a  93 fuer y unif    -1.25
 82 a  93 mome x unif    -3.98
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.09
106 a 114 fuer y unif    -1.25
106 a 114 mome x unif    -3.31
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.09
hipo 136 sob. a- 6 izda ec-1 (LM-71)
carg en barr
 10 a  21 fuer y unif    -8.00
 10 a  21 mome x unif   -20.36
 10 a  21 fuer z unif     0.14
 10 a  21 mome x unif     0.56
 22 a  23 fuer y unif    -8.00
 22 a  23 mome x unif   -18.76
 22 a  23 fuer z unif     0.14
 22 a  23 mome x unif     0.56
 24       fuer y unif    -8.00     0.00     1.80
 25       fuer y unif    -8.00    -1.80    -0.01
 24       mome x unif   -18.52     0.00     1.80
 25       mome x unif   -18.37    -1.80    -0.01
 24       fuer z unif     0.14     0.00     1.80
 25       fuer z unif     0.14    -1.80    -0.01
 24       mome x unif     0.56     0.00     1.80
 25       mome x unif     0.56    -1.80    -0.01
 26 a  33 fuer y unif    -8.00
 26 a  33 mome x unif   -17.87
 26 a  33 fuer z unif     0.14
 26 a  33 mome x unif     0.56
 24       fuer y conc   -25.00     2.60
 24       mome x conc   -57.89     2.60
 24       fuer z conc     0.43     2.60
 24       mome x conc     1.76     2.60
 24       fuer y conc   -25.00     4.20
 24       mome x conc   -57.89     4.20
 24       fuer z conc     0.43     4.20
 24       mome x conc     1.76     4.20
 25       fuer y conc   -25.00     0.80
 25       mome x conc   -57.41     0.80
 25       fuer z conc     0.43     0.80
 25       mome x conc     1.76     0.80
 25       fuer y conc   -25.00     2.40
 25       mome x conc   -57.41     2.40
 25       fuer z conc     0.43     2.40
 25       mome x conc     1.76     2.40
 46 a  57 fuer y unif    -8.00
 46 a  57 mome x unif   -18.15
 46 a  57 fuer z unif     0.14
 46 a  57 mome x unif     0.56
 70 a  81 fuer y unif    -8.00
 70 a  81 mome x unif   -23.22
 70 a  81 fuer z unif     0.14
 70 a  81 mome x unif     0.56
 94 a 105 fuer y unif    -8.00
 94 a 105 mome x unif   -25.02
 94 a 105 fuer z unif     0.14
 94 a 105 mome x unif     0.56
  1 a   9 fuer y unif    -1.25
  1 a   9 mome x unif    -3.65
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.09
 34 a  45 fuer y unif    -1.25
 34 a  45 mome x unif    -2.73
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.09
 58 a  69 fuer y unif    -1.25
 58 a  69 mome x unif    -3.17
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.09
 82 a  93 fuer y unif    -1.25
 82 a  93 mome x unif    -3.98
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.09
106 a 114 fuer y unif    -1.25
106 a 114 mome x unif    -3.31
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.09
hipo 137 sob. a- 7 izda ec-1 (LM-71)
carg en barr
 22 a  29 fuer y unif    -8.00
 22 a  29 mome x unif   -18.36
 22 a  29 fuer z unif     0.14
 22 a  29 mome x unif     0.56
 30       fuer y unif    -8.00     0.00     1.80
 31       fuer y unif    -8.00    -1.80    -0.01
 30       mome x unif   -17.76     0.00     1.80
 31       mome x unif   -17.67    -1.80    -0.01
 30       fuer z unif     0.14     0.00     1.80
 31       fuer z unif     0.14    -1.80    -0.01
 30       mome x unif     0.56     0.00     1.80
 31       mome x unif     0.56    -1.80    -0.01
 32 a  33 fuer y unif    -8.00
 32 a  33 mome x unif   -17.55
 32 a  33 fuer z unif     0.14
 32 a  33 mome x unif     0.56
 30       fuer y conc   -25.00     2.60
 30       mome x conc   -55.51     2.60
 30       fuer z conc     0.43     2.60
 30       mome x conc     1.76     2.60
 30       fuer y conc   -25.00     4.20
 30       mome x conc   -55.51     4.20
 30       fuer z conc     0.43     4.20
 30       mome x conc     1.76     4.20
 31       fuer y conc   -25.00     0.80
 31       mome x conc   -55.21     0.80
 31       fuer z conc     0.43     0.80
 31       mome x conc     1.76     0.80
 31       fuer y conc   -25.00     2.40
 31       mome x conc   -55.21     2.40
 31       fuer z conc     0.43     2.40
 31       mome x conc     1.76     2.40
 34 a  45 fuer y unif    -8.00
 34 a  45 mome x unif   -17.45
 34 a  45 fuer z unif     0.14
```

34	a	45	mome x unif	0.56		
1	a	9	fuer y unif	-8.00		
1	a	9	mome x unif	-23.38		
1	a	9	fuer z unif	0.14		
1	a	9	mome x unif	0.56		
58	a	69	fuer y unif	-8.00		
58	a	69	mome x unif	-20.26		
58	a	69	fuer z unif	0.14		
58	a	69	mome x unif	0.56		
82	a	93	fuer y unif	-8.00		
82	a	93	mome x unif	-25.46		
82	a	93	fuer z unif	0.14		
82	a	93	mome x unif	0.56		
106	a	114	fuer y unif	-8.00		
106	a	114	mome x unif	-21.19		
106	a	114	fuer z unif	0.14		
106	a	114	mome x unif	0.56		
10	a	21	fuer y unif	-1.25		
10	a	21	mome x unif	-3.18		
10	a	21	fuer z unif	0.02		
10	a	21	mome x unif	0.09		
46	a	57	fuer y unif	-1.25		
46	a	57	mome x unif	-2.84		
46	a	57	fuer z unif	0.02		
46	a	57	mome x unif	0.09		
70	a	81	fuer y unif	-1.25		
70	a	81	mome x unif	-3.63		
70	a	81	fuer z unif	0.02		
70	a	81	mome x unif	0.09		
94	a	105	fuer y unif	-1.25		
94	a	105	mome x unif	-3.91		
94	a	105	fuer z unif	0.02		
94	a	105	mome x unif	0.09		

hipo 138 sob. a- 8 izda ec-1 (LM-71)
carg en barr

22	a	32	fuer y unif	-8.00		
33			fuer y unif	-8.00	0.00	1.80
22	a	32	mome x unif	-18.22		
33			mome x unif	-17.52	0.00	1.80
22	a	32	fuer z unif	0.14		
33			fuer z unif	0.14	0.00	1.80
22	a	32	mome x unif	0.56		
33			mome x unif	0.56	0.00	1.80
33			fuer y conc	-25.00	2.60	
33			mome x conc	-54.75	2.60	
33			fuer z conc	0.43	2.60	
33			mome x conc	1.76	2.60	
33			fuer y conc	-25.00	4.20	
33			mome x conc	-54.75	4.20	
33			fuer z conc	0.43	4.20	
33			mome x conc	1.76	4.20	
34			fuer y unif	-8.00	-1.80	-0.01
35	a	45	fuer y unif	-8.00		
34			mome x unif	-17.46	-1.80	-0.01
35	a	45	mome x unif	-17.42		
34			fuer z unif	0.14	-1.80	-0.01
35	a	45	fuer z unif	0.14		
34			mome x unif	0.56	-1.80	-0.01
35	a	45	mome x unif	0.56		
34			fuer y conc	-25.00	0.80	
34			mome x conc	-54.56	0.80	
34			fuer z conc	0.43	0.80	
34			mome x conc	1.76	0.80	
34			fuer y conc	-25.00	2.40	
34			mome x conc	-54.56	2.40	
34			fuer z conc	0.43	2.40	
34			mome x conc	1.76	2.40	
1	a	9	fuer y unif	-8.00		
1	a	9	mome x unif	-23.38		
1	a	9	fuer z unif	0.14		
1	a	9	mome x unif	0.56		
58	a	69	fuer y unif	-8.00		
58	a	69	mome x unif	-20.26		
58	a	69	fuer z unif	0.14		
58	a	69	mome x unif	0.56		
82	a	93	fuer y unif	-8.00		
82	a	93	mome x unif	-25.46		
82	a	93	fuer z unif	0.14		
82	a	93	mome x unif	0.56		
106	a	114	fuer y unif	-8.00		
106	a	114	mome x unif	-21.19		
106	a	114	fuer z unif	0.14		
106	a	114	mome x unif	0.56		
10	a	21	fuer y unif	-1.25		
10	a	21	mome x unif	-3.18		
10	a	21	fuer z unif	0.02		
10	a	21	mome x unif	0.09		
46	a	57	fuer y unif	-1.25		
46	a	57	mome x unif	-2.84		
46	a	57	fuer z unif	0.02		
46	a	57	mome x unif	0.09		
70	a	81	fuer y unif	-1.25		
70	a	81	mome x unif	-3.63		
70	a	81	fuer z unif	0.02		
70	a	81	mome x unif	0.09		
94	a	105	fuer y unif	-1.25		
94	a	105	mome x unif	-3.91		
94	a	105	fuer z unif	0.02		
94	a	105	mome x unif	0.09		

hipo 139 sob. a- 9 izda ec-1 (LM-71)
carg en barr

22	a	33	fuer y unif	-8.00		
22	a	33	mome x unif	-18.18		
22	a	33	fuer z unif	0.14		
22	a	33	mome x unif	0.56		
34	a	35	fuer y unif	-8.00		
34	a	35	mome x unif	-17.43		
34	a	35	fuer z unif	0.14		
34	a	35	mome x unif	0.56		
36			fuer y unif	-8.00	0.00	1.80
37			fuer y unif	-8.00	-1.80	-0.01
36			mome x unif	-17.36	0.00	1.80
37			mome x unif	-17.33	-1.80	-0.01
36			fuer z unif	0.14	0.00	1.80
37			fuer z unif	0.14	-1.80	-0.01
36			mome x unif	0.56	0.00	1.80
37			mome x unif	0.56	-1.80	-0.01
38	a	45	fuer y unif	-8.00		
38	a	45	mome x unif	-17.38		
38	a	45	fuer z unif	0.14		
38	a	45	mome x unif	0.56		
36			fuer y conc	-25.00	2.60	
36			mome x conc	-54.26	2.60	
36			fuer z conc	0.43	2.60	
36			mome x conc	1.76	2.60	
36			fuer y conc	-25.00	4.20	
36			mome x conc	-54.26	4.20	
36			fuer z conc	0.43	4.20	

36		mome x conc	1.76	4.20	
37		fuer y conc	-25.00	0.80	
37		mome x conc	-54.16	0.80	
37		fuer z conc	0.43	0.80	
37		mome x conc	1.76	0.80	
37		fuer y conc	-25.00	2.40	
37		mome x conc	-54.16	2.40	
37		fuer z conc	0.43	2.40	
37		mome x conc	1.76	2.40	
1	a 9	fuer y unif	-8.00		
1	a 9	mome x unif	-23.38		
1	a 9	fuer z unif	0.14		
1	a 9	mome x unif	0.56		
58	a 69	fuer y unif	-8.00		
58	a 69	mome x unif	-20.26		
58	a 69	fuer z unif	0.14		
58	a 69	mome x unif	0.56		
82	a 93	fuer y unif	-8.00		
82	a 93	mome x unif	-25.46		
82	a 93	fuer z unif	0.14		
82	a 93	mome x unif	0.56		
106	a 114	fuer y unif	-8.00		
106	a 114	mome x unif	-21.19		
106	a 114	fuer z unif	0.14		
106	a 114	mome x unif	0.56		
10	a 21	fuer y unif	-1.25		
10	a 21	mome x unif	-3.18		
10	a 21	fuer z unif	0.02		
10	a 21	mome x unif	0.09		
46	a 57	fuer y unif	-1.25		
46	a 57	mome x unif	-2.84		
46	a 57	fuer z unif	0.02		
46	a 57	mome x unif	0.09		
70	a 81	fuer y unif	-1.25		
70	a 81	mome x unif	-3.63		
70	a 81	fuer z unif	0.02		
70	a 81	mome x unif	0.09		
94	a 105	fuer y unif	-1.25		
94	a 105	mome x unif	-3.91		
94	a 105	fuer z unif	0.02		
94	a 105	mome x unif	0.09		

hipo 140 sob. a-10 izda ec-1 (LM-71)
carg en barr

34	a 41	fuer y unif	-8.00		
34	a 41	mome x unif	-17.38		
34	a 41	fuer z unif	0.14		
34	a 41	mome x unif	0.56		
42		fuer y unif	-8.00	0.00	1.80
43		fuer y unif	-8.00	-1.80	-0.01
42		mome x unif	-17.33	0.00	1.80
43		mome x unif	-17.35	-1.80	-0.01
42		fuer z unif	0.14	0.00	1.80
43		fuer z unif	0.14	-1.80	-0.01
42		mome x unif	0.56	0.00	1.80
43		mome x unif	0.56	-1.80	-0.01
44	a 45	fuer y unif	-8.00		
44	a 45	mome x unif	-17.41		
44	a 45	fuer z unif	0.14		
44	a 45	mome x unif	0.56		
42		fuer y conc	-25.00	2.60	
42		mome x conc	-54.15	2.60	
42		fuer z conc	0.43	2.60	
42		mome x conc	1.76	2.60	
42		fuer y conc	-25.00	4.20	
42		mome x conc	-54.15	4.20	
42		fuer z conc	0.43	4.20	
42		mome x conc	1.76	4.20	
43		fuer y conc	-25.00	0.80	
43		mome x conc	-54.23	0.80	
43		fuer z conc	0.43	0.80	
43		mome x conc	1.76	0.80	
43		fuer y conc	-25.00	2.40	
43		mome x conc	-54.23	2.40	
43		fuer z conc	0.43	2.40	
43		mome x conc	1.76	2.40	
46	a 57	fuer y unif	-8.00		
46	a 57	mome x unif	-18.15		
46	a 57	fuer z unif	0.14		
46	a 57	mome x unif	0.56		
10	a 21	fuer y unif	-8.00		
10	a 21	mome x unif	-20.36		
10	a 21	fuer z unif	0.14		
10	a 21	mome x unif	0.56		
70	a 81	fuer y unif	-8.00		
70	a 81	mome x unif	-23.22		
70	a 81	fuer z unif	0.14		
70	a 81	mome x unif	0.56		
94	a 105	fuer y unif	-8.00		
94	a 105	mome x unif	-25.02		
94	a 105	fuer z unif	0.14		
94	a 105	mome x unif	0.56		
22	a 33	fuer y unif	-1.25		
22	a 33	mome x unif	-2.84		
22	a 33	fuer z unif	0.02		
22	a 33	mome x unif	0.09		
1	a 9	fuer y unif	-1.25		
1	a 9	mome x unif	-3.65		
1	a 9	fuer z unif	0.02		
1	a 9	mome x unif	0.09		
58	a 69	fuer y unif	-1.25		
58	a 69	mome x unif	-3.17		
58	a 69	fuer z unif	0.02		
58	a 69	mome x unif	0.09		
82	a 93	fuer y unif	-1.25		
82	a 93	mome x unif	-3.98		
82	a 93	fuer z unif	0.02		
82	a 93	mome x unif	0.09		
106	a 114	fuer y unif	-1.25		
106	a 114	mome x unif	-3.31		
106	a 114	fuer z unif	0.02		
106	a 114	mome x unif	0.09		

hipo 141 sob. a-11 izda ec-1 (LM-71)
carg en barr

34	a 44	fuer y unif	-8.00		
45		fuer y unif	-8.00	0.00	1.80
34	a 44	mome x unif	-17.42		
45		mome x unif	-17.44	0.00	1.80
34	a 44	fuer z unif	0.14		
45		fuer z unif	0.14	0.00	1.80
34	a 44	mome x unif	0.56		
45		mome x unif	0.56	0.00	1.80
45		fuer y conc	-25.00	2.60	
45		mome x conc	-54.50	2.60	
45		fuer z conc	0.43	2.60	
45		mome x conc	1.76	2.60	
45		fuer y conc	-25.00	4.20	
45		mome x conc	-54.50	4.20	
45		fuer z conc	0.43	4.20	

```
45          mome x conc     1.76     4.20
46          fuer y unif    -8.00    -1.80    -0.01
47 a  57    fuer y unif    -8.00
46          mome x unif   -17.50    -1.80    -0.01
47 a  57    mome x unif   -18.18
46          fuer z unif     0.14    -1.80    -0.01
47 a  57    fuer z unif     0.14
46          mome x unif     0.56    -1.80    -0.01
47 a  57    mome x unif     0.56
46          fuer y conc   -25.00     0.80
46          mome x conc   -54.69     0.80
46          fuer z conc     0.43     0.80
46          mome x conc     1.76     0.80
46          fuer y conc   -25.00     2.40
46          mome x conc   -54.69     2.40
46          fuer z conc     0.43     2.40
46          mome x conc     1.76     2.40
10 a  21    fuer y unif    -8.00
10 a  21    mome x unif   -20.36
10 a  21    fuer z unif     0.14
10 a  21    mome x unif     0.56
70 a  81    fuer y unif    -8.00
70 a  81    mome x unif   -23.22
70 a  81    fuer z unif     0.14
70 a  81    mome x unif     0.56
94 a 105    fuer y unif    -8.00
94 a 105    mome x unif   -25.02
94 a 105    fuer z unif     0.14
94 a 105    mome x unif     0.56
22 a  33    fuer y unif    -1.25
22 a  33    mome x unif    -2.84
22 a  33    fuer z unif     0.02
22 a  33    mome x unif     0.09
 1 a   9    fuer y unif    -1.25
 1 a   9    mome x unif    -3.65
 1 a   9    fuer z unif     0.02
 1 a   9    mome x unif     0.09
58 a  69    fuer y unif    -1.25
58 a  69    mome x unif    -3.17
58 a  69    fuer z unif     0.02
58 a  69    mome x unif     0.09
82 a  93    fuer y unif    -1.25
82 a  93    mome x unif    -3.98
82 a  93    fuer z unif     0.02
82 a  93    mome x unif     0.09
106 a 114   fuer y unif    -1.25
106 a 114   mome x unif    -3.31
106 a 114   fuer z unif     0.02
106 a 114   mome x unif     0.09
hipo 142 sob. a-12 izda ec-1 (LM-71)
carg en barr
 34 a  45   fuer y unif    -8.00
 34 a  45   mome x unif   -17.45
 34 a  45   fuer z unif     0.14
 34 a  45   mome x unif     0.56
 46 a  47   fuer y unif    -8.00
 46 a  47   mome x unif   -17.53
 46 a  47   fuer z unif     0.14
 46 a  47   mome x unif     0.56
 48         fuer y unif    -8.00     0.00     1.80
 49         fuer y unif    -8.00    -1.80    -0.01
 48         mome x unif   -17.64     0.00     1.80
 49         mome x unif   -17.74    -1.80    -0.01
 48         fuer z unif     0.14     0.00     1.80
```

```
49          fuer z unif     0.14    -1.80    -0.01
48          mome x unif     0.56     0.00     1.80
49          mome x unif     0.56    -1.80    -0.01
50 a  57    fuer y unif    -8.00
50 a  57    mome x unif   -18.32
50 a  57    fuer z unif     0.14
50 a  57    mome x unif     0.56
48          fuer y conc   -25.00     2.60
48          mome x conc   -55.14     2.60
48          fuer z conc     0.43     2.60
48          mome x conc     1.76     2.60
48          fuer y conc   -25.00     4.20
48          mome x conc   -55.14     4.20
48          fuer z conc     0.43     4.20
48          mome x conc     1.76     4.20
49          fuer y conc   -25.00     0.80
49          mome x conc   -55.43     0.80
49          fuer z conc     0.43     0.80
49          mome x conc     1.76     0.80
49          fuer y conc   -25.00     2.40
49          mome x conc   -55.43     2.40
49          fuer z conc     0.43     2.40
49          mome x conc     1.76     2.40
10 a  21    fuer y unif    -8.00
10 a  21    mome x unif   -20.36
10 a  21    fuer z unif     0.14
10 a  21    mome x unif     0.56
70 a  81    fuer y unif    -8.00
70 a  81    mome x unif   -23.22
70 a  81    fuer z unif     0.14
70 a  81    mome x unif     0.56
94 a 105    fuer y unif    -8.00
94 a 105    mome x unif   -25.02
94 a 105    fuer z unif     0.14
94 a 105    mome x unif     0.56
22 a  33    fuer y unif    -1.25
22 a  33    mome x unif    -2.84
22 a  33    fuer z unif     0.02
22 a  33    mome x unif     0.09
 1 a   9    fuer y unif    -1.25
 1 a   9    mome x unif    -3.65
 1 a   9    fuer z unif     0.02
 1 a   9    mome x unif     0.09
58 a  69    fuer y unif    -1.25
58 a  69    mome x unif    -3.17
58 a  69    fuer z unif     0.02
58 a  69    mome x unif     0.09
82 a  93    fuer y unif    -1.25
82 a  93    mome x unif    -3.98
82 a  93    fuer z unif     0.02
82 a  93    mome x unif     0.09
106 a 114   fuer y unif    -1.25
106 a 114   mome x unif    -3.31
106 a 114   fuer z unif     0.02
106 a 114   mome x unif     0.09
hipo 143 sob. a-13 izda ec-1 (LM-71)
carg en barr
 46 a  53   fuer y unif    -8.00
 46 a  53   mome x unif   -17.84
 46 a  53   fuer z unif     0.14
 46 a  53   mome x unif     0.56
 54         fuer y unif    -8.00     0.00     1.80
 55         fuer y unif    -8.00    -1.80    -0.01
 54         mome x unif   -18.33     0.00     1.80
```

```
 55          mome x unif   -18.48    -1.80    -0.01
 54          fuer z unif     0.14     0.00     1.80
 55          fuer z unif     0.14    -1.80    -0.01
 54          mome x unif     0.56     0.00     1.80
 55          mome x unif     0.56    -1.80    -0.01
 56 a  57 fuer y unif    -8.00
 56 a  57 mome x unif   -18.72
 56 a  57 fuer z unif     0.14
 56 a  57 mome x unif     0.56
 54          fuer y conc -25.00     2.60
 54          mome x conc -57.27     2.60
 54          fuer z conc   0.43     2.60
 54          mome x conc   1.76     2.60
 54          fuer y conc -25.00     4.20
 54          mome x conc -57.27     4.20
 54          fuer z conc   0.43     4.20
 54          mome x conc   1.76     4.20
 55          fuer y conc -25.00     0.80
 55          mome x conc -57.74     0.80
 55          fuer z conc   0.43     0.80
 55          mome x conc   1.76     0.80
 55          fuer y conc -25.00     2.40
 55          mome x conc -57.74     2.40
 55          fuer z conc   0.43     2.40
 55          mome x conc   1.76     2.40
 58 a  69 fuer y unif    -8.00
 58 a  69 mome x unif   -20.26
 58 a  69 fuer z unif     0.14
 58 a  69 mome x unif     0.56
 22 a  33 fuer y unif    -8.00
 22 a  33 mome x unif   -18.18
 22 a  33 fuer z unif     0.14
 22 a  33 mome x unif     0.56
  1 a   9 fuer y unif    -8.00
  1 a   9 mome x unif   -23.38
  1 a   9 fuer z unif     0.14
  1 a   9 mome x unif     0.56
 82 a  93 fuer y unif    -8.00
 82 a  93 mome x unif   -25.46
 82 a  93 fuer z unif     0.14
 82 a  93 mome x unif     0.56
106 a 114 fuer y unif    -8.00
106 a 114 mome x unif   -21.19
106 a 114 fuer z unif     0.14
106 a 114 mome x unif     0.56
 34 a  45 fuer y unif    -1.25
 34 a  45 mome x unif    -2.73
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.09
 10 a  21 fuer y unif    -1.25
 10 a  21 mome x unif    -3.18
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.09
 70 a  81 fuer y unif    -1.25
 70 a  81 mome x unif    -3.63
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.09
 94 a 105 fuer y unif    -1.25
 94 a 105 mome x unif    -3.91
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.09
hipo 144 sob. a-14 izda ec-1 (LM-71)
carg en barr
 46 a  56 fuer y unif    -8.00
```

```
 57          fuer y unif    -8.00     0.00     1.80
 46 a  56 mome x unif   -18.07
 57          mome x unif   -18.80     0.00     1.80
 46 a  56 fuer z unif     0.14
 57          fuer z unif     0.14     0.00     1.80
 46 a  56 mome x unif     0.56
 57          mome x unif     0.56     0.00     1.80
 57          fuer y conc -25.00     2.60
 57          mome x conc -58.75     2.60
 57          fuer z conc   0.43     2.60
 57          mome x conc   1.76     2.60
 57          fuer y conc -25.00     4.20
 57          mome x conc -58.75     4.20
 57          fuer z conc   0.43     4.20
 57          mome x conc   1.76     4.20
 58          fuer y unif    -8.00    -1.80    -0.01
 59 a  69 fuer y unif    -8.00
 58          mome x unif   -18.98    -1.80    -0.01
 59 a  69 mome x unif   -20.36
 58          fuer z unif     0.14    -1.80    -0.01
 59 a  69 fuer z unif     0.14
 58          mome x unif     0.56    -1.80    -0.01
 59 a  69 mome x unif     0.56
 58          fuer y conc -25.00     0.80
 58          mome x conc -59.31     0.80
 58          fuer z conc   0.43     0.80
 58          mome x conc   1.76     0.80
 58          fuer y conc -25.00     2.40
 58          mome x conc -59.31     2.40
 58          fuer z conc   0.43     2.40
 58          mome x conc   1.76     2.40
 22 a  33 fuer y unif    -8.00
 22 a  33 mome x unif   -18.18
 22 a  33 fuer z unif     0.14
 22 a  33 mome x unif     0.56
  1 a   9 fuer y unif    -8.00
  1 a   9 mome x unif   -23.38
  1 a   9 fuer z unif     0.14
  1 a   9 mome x unif     0.56
 82 a  93 fuer y unif    -8.00
 82 a  93 mome x unif   -25.46
 82 a  93 fuer z unif     0.14
 82 a  93 mome x unif     0.56
106 a 114 fuer y unif    -8.00
106 a 114 mome x unif   -21.19
106 a 114 fuer z unif     0.14
106 a 114 mome x unif     0.56
 34 a  45 fuer y unif    -1.25
 34 a  45 mome x unif    -2.73
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.09
 10 a  21 fuer y unif    -1.25
 10 a  21 mome x unif    -3.18
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.09
 70 a  81 fuer y unif    -1.25
 70 a  81 mome x unif    -3.63
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.09
 94 a 105 fuer y unif    -1.25
 94 a 105 mome x unif    -3.91
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.09
hipo 145 sob. a-15 izda ec-1 (LM-71)
```

carg en barr

46	a	57	fuer y unif	-8.00		
46	a	57	mome x unif	-18.15		
46	a	57	fuer z unif	0.14		
46	a	57	mome x unif	0.56		
58	a	59	fuer y unif	-8.00		
58	a	59	mome x unif	-19.08		
58	a	59	fuer z unif	0.14		
58	a	59	mome x unif	0.56		
60			fuer y unif	-8.00	0.00	1.80
61			fuer y unif	-8.00	-1.80	-0.01
60			mome x unif	-19.37	0.00	1.80
61			mome x unif	-19.58	-1.80	-0.01
60			fuer z unif	0.14	0.00	1.80
61			fuer z unif	0.14	-1.80	-0.01
60			mome x unif	0.56	0.00	1.80
61			mome x unif	0.56	-1.80	-0.01
62	a	69	fuer y unif	-8.00		
62	a	69	mome x unif	-20.67		
62	a	69	fuer z unif	0.14		
62	a	69	mome x unif	0.56		
60			fuer y conc	-25.00	2.60	
60			mome x conc	-60.54	2.60	
60			fuer z conc	0.43	2.60	
60			mome x conc	1.76	2.60	
60			fuer y conc	-25.00	4.20	
60			mome x conc	-60.54	4.20	
60			fuer z conc	0.43	4.20	
60			mome x conc	1.76	4.20	
61			fuer y conc	-25.00	0.80	
61			mome x conc	-61.18	0.80	
61			fuer z conc	0.43	0.80	
61			mome x conc	1.76	0.80	
61			fuer y conc	-25.00	2.40	
61			mome x conc	-61.18	2.40	
61			fuer z conc	0.43	2.40	
61			mome x conc	1.76	2.40	
22	a	33	fuer y unif	-8.00		
22	a	33	mome x unif	-18.18		
22	a	33	fuer z unif	0.14		
22	a	33	mome x unif	0.56		
1	a	9	fuer y unif	-8.00		
1	a	9	mome x unif	-23.38		
1	a	9	fuer z unif	0.14		
1	a	9	mome x unif	0.56		
82	a	93	fuer y unif	-8.00		
82	a	93	mome x unif	-25.46		
82	a	93	fuer z unif	0.14		
82	a	93	mome x unif	0.56		
106	a	114	fuer y unif	-8.00		
106	a	114	mome x unif	-21.19		
106	a	114	fuer z unif	0.14		
106	a	114	mome x unif	0.56		
34	a	45	fuer y unif	-1.25		
34	a	45	mome x unif	-2.73		
34	a	45	fuer z unif	0.02		
34	a	45	mome x unif	0.09		
10	a	21	fuer y unif	-1.25		
10	a	21	mome x unif	-3.18		
10	a	21	fuer z unif	0.02		
10	a	21	mome x unif	0.09		
70	a	81	fuer y unif	-1.25		
70	a	81	mome x unif	-3.63		
70	a	81	fuer z unif	0.02		
70	a	81	mome x unif	0.09		
94	a	105	fuer y unif	-1.25		
94	a	105	mome x unif	-3.91		
94	a	105	fuer z unif	0.02		
94	a	105	mome x unif	0.09		

hipo 146 sob. a-16 izda ec-1 (LM-71)

carg en barr

58	a	65	fuer y unif	-8.00		
58	a	65	mome x unif	-19.74		
58	a	65	fuer z unif	0.14		
58	a	65	mome x unif	0.56		
66			fuer y unif	-8.00	0.00	1.80
67			fuer y unif	-8.00	-1.80	-0.01
66			mome x unif	-20.76	0.00	1.80
67			mome x unif	-21.02	-1.80	-0.01
66			fuer z unif	0.14	0.00	1.80
67			fuer z unif	0.14	-1.80	-0.01
66			mome x unif	0.56	0.00	1.80
67			mome x unif	0.56	-1.80	-0.01
68	a	69	fuer y unif	-8.00		
68	a	69	mome x unif	-21.42		
68	a	69	fuer z unif	0.14		
68	a	69	mome x unif	0.56		
66			fuer y conc	-25.00	2.60	
66			mome x conc	-64.88	2.60	
66			fuer z conc	0.43	2.60	
66			mome x conc	1.76	2.60	
66			fuer y conc	-25.00	4.20	
66			mome x conc	-64.88	4.20	
66			fuer z conc	0.43	4.20	
66			mome x conc	1.76	4.20	
67			fuer y conc	-25.00	0.80	
67			mome x conc	-65.69	0.80	
67			fuer z conc	0.43	0.80	
67			mome x conc	1.76	0.80	
67			fuer y conc	-25.00	2.40	
67			mome x conc	-65.69	2.40	
67			fuer z conc	0.43	2.40	
67			mome x conc	1.76	2.40	
70	a	81	fuer y unif	-8.00		
70	a	81	mome x unif	-23.22		
70	a	81	fuer z unif	0.14		
70	a	81	mome x unif	0.56		
34	a	45	fuer y unif	-8.00		
34	a	45	mome x unif	-17.45		
34	a	45	fuer z unif	0.14		
34	a	45	mome x unif	0.56		
10	a	21	fuer y unif	-8.00		
10	a	21	mome x unif	-20.36		
10	a	21	fuer z unif	0.14		
10	a	21	mome x unif	0.56		
94	a	105	fuer y unif	-8.00		
94	a	105	mome x unif	-25.02		
94	a	105	fuer z unif	0.14		
94	a	105	mome x unif	0.56		
46	a	57	fuer y unif	-1.25		
46	a	57	mome x unif	-2.84		
46	a	57	fuer z unif	0.02		
46	a	57	mome x unif	0.09		
22	a	33	fuer y unif	-1.25		
22	a	33	mome x unif	-2.84		
22	a	33	fuer z unif	0.02		
22	a	33	mome x unif	0.09		
1	a	9	fuer y unif	-1.25		

```
  1 a   9 mome x unif    -3.65
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.09
 82 a  93 fuer y unif    -1.25
 82 a  93 mome x unif    -3.98
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.09
106 a 114 fuer y unif    -1.25
106 a 114 mome x unif    -3.31
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.09
hipo 147 sob. a-17 izda ec-1 (LM-71)
carg en barr
 58 a  68 fuer y unif    -8.00
 69       fuer y unif    -8.00     0.00     1.80
 58 a  68 mome x unif   -20.13
 69       mome x unif   -21.55     0.00     1.80
 58 a  68 fuer z unif     0.14
 69       fuer z unif     0.14     0.00     1.80
 58 a  68 mome x unif     0.56
 69       mome x unif     0.56     0.00     1.80
 69       fuer y conc   -25.00     2.60
 69       mome x conc   -67.34     2.60
 69       fuer z conc     0.43     2.60
 69       mome x conc     1.76     2.60
 69       fuer y conc   -25.00     4.20
 69       mome x conc   -67.34     4.20
 69       fuer z conc     0.43     4.20
 69       mome x conc     1.76     4.20
 70       fuer y unif    -8.00    -1.80    -0.01
 71 a  81 fuer y unif    -8.00
 70       mome x unif   -21.82    -1.80    -0.01
 71 a  81 mome x unif   -23.36
 70       fuer z unif     0.14    -1.80    -0.01
 71 a  81 fuer z unif     0.14
 70       mome x unif     0.56    -1.80    -0.01
 71 a  81 mome x unif     0.56
 70       fuer y conc   -25.00     0.80
 70       mome x conc   -68.19     0.80
 70       fuer z conc     0.43     0.80
 70       mome x conc     1.76     0.80
 70       fuer y conc   -25.00     2.40
 70       mome x conc   -68.19     2.40
 70       fuer z conc     0.43     2.40
 70       mome x conc     1.76     2.40
 34 a  45 fuer y unif    -8.00
 34 a  45 mome x unif   -17.45
 34 a  45 fuer z unif     0.14
 34 a  45 mome x unif     0.56
 10 a  21 fuer y unif    -8.00
 10 a  21 mome x unif   -20.36
 10 a  21 fuer z unif     0.14
 10 a  21 mome x unif     0.56
 94 a 105 fuer y unif    -8.00
 94 a 105 mome x unif   -25.02
 94 a 105 fuer z unif     0.14
 94 a 105 mome x unif     0.56
 46 a  57 fuer y unif    -1.25
 46 a  57 mome x unif    -2.84
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.09
 22 a  33 fuer y unif    -1.25
 22 a  33 mome x unif    -2.84
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.09
  1 a   9 fuer y unif    -1.25
  1 a   9 mome x unif    -3.65
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.09
 82 a  93 fuer y unif    -1.25
 82 a  93 mome x unif    -3.98
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.09
106 a 114 fuer y unif    -1.25
106 a 114 mome x unif    -3.31
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.09
hipo 148 sob. a-18 izda ec-1 (LM-71)
carg en barr
 58 a  69 fuer y unif    -8.00
 58 a  69 mome x unif   -20.26
 58 a  69 fuer z unif     0.14
 58 a  69 mome x unif     0.56
 70 a  71 fuer y unif    -8.00
 70 a  71 mome x unif   -21.96
 70 a  71 fuer z unif     0.14
 70 a  71 mome x unif     0.56
 72       fuer y unif    -8.00     0.00     1.80
 73       fuer y unif    -8.00    -1.80    -0.01
 72       mome x unif   -22.36     0.00     1.80
 73       mome x unif   -22.63    -1.80    -0.01
 72       fuer z unif     0.14     0.00     1.80
 73       fuer z unif     0.14    -1.80    -0.01
 72       mome x unif     0.56     0.00     1.80
 73       mome x unif     0.56    -1.80    -0.01
 74 a  81 fuer y unif    -8.00
 74 a  81 mome x unif   -23.76
 74 a  81 fuer z unif     0.14
 74 a  81 mome x unif     0.56
 72       fuer y conc   -25.00     2.60
 72       mome x conc   -69.88     2.60
 72       fuer z conc     0.43     2.60
 72       mome x conc     1.76     2.60
 72       fuer y conc   -25.00     4.20
 72       mome x conc   -69.88     4.20
 72       fuer z conc     0.43     4.20
 72       mome x conc     1.76     4.20
 73       fuer y conc   -25.00     0.80
 73       mome x conc   -70.73     0.80
 73       fuer z conc     0.43     0.80
 73       mome x conc     1.76     0.80
 73       fuer y conc   -25.00     2.40
 73       mome x conc   -70.73     2.40
 73       fuer z conc     0.43     2.40
 73       mome x conc     1.76     2.40
 34 a  45 fuer y unif    -8.00
 34 a  45 mome x unif   -17.45
 34 a  45 fuer z unif     0.14
 34 a  45 mome x unif     0.56
 10 a  21 fuer y unif    -8.00
 10 a  21 mome x unif   -20.36
 10 a  21 fuer z unif     0.14
 10 a  21 mome x unif     0.56
 94 a 105 fuer y unif    -8.00
 94 a 105 mome x unif   -25.02
 94 a 105 fuer z unif     0.14
 94 a 105 mome x unif     0.56
 46 a  57 fuer y unif    -1.25
```

46	a	57	mome x unif	-2.84				
46	a	57	fuer z unif	0.02				
46	a	57	mome x unif	0.09				
22	a	33	fuer y unif	-1.25				
22	a	33	mome x unif	-2.84				
22	a	33	fuer z unif	0.02				
22	a	33	mome x unif	0.09				
1	a	9	fuer y unif	-1.25				
1	a	9	mome x unif	-3.65				
1	a	9	fuer z unif	0.02				
1	a	9	mome x unif	0.09				
82	a	93	fuer y unif	-1.25				
82	a	93	mome x unif	-3.98				
82	a	93	fuer z unif	0.02				
82	a	93	mome x unif	0.09				
106	a	114	fuer y unif	-1.25				
106	a	114	mome x unif	-3.31				
106	a	114	fuer z unif	0.02				
106	a	114	mome x unif	0.09				

hipo 149 sob. a-19 izda ec-1 (LM-71)
carg en barr

70	a	77	fuer y unif	-8.00				
70	a	77	mome x unif	-22.75				
70	a	77	fuer z unif	0.14				
70	a	77	mome x unif	0.56				
78			fuer y unif	-8.00	0.00	1.80		
79			fuer y unif	-8.00	-1.80	-0.01		
78			mome x unif	-23.93	0.00	1.80		
79			mome x unif	-24.18	-1.80	-0.01		
78			fuer z unif	0.14	0.00	1.80		
79			fuer z unif	0.14	-1.80	-0.01		
78			mome x unif	0.56	0.00	1.80		
79			mome x unif	0.56	-1.80	-0.01		
80	a	81	fuer y unif	-8.00				
80	a	81	mome x unif	-24.52				
80	a	81	fuer z unif	0.14				
80	a	81	mome x unif	0.56				
78			fuer y conc	-25.00	2.60			
78			mome x conc	-74.79	2.60			
78			fuer z conc	0.43	2.60			
78			mome x conc	1.76	2.60			
78			fuer y conc	-25.00	4.20			
78			mome x conc	-74.79	4.20			
78			fuer z conc	0.43	4.20			
78			mome x conc	1.76	4.20			
79			fuer y conc	-25.00	0.80			
79			mome x conc	-75.55	0.80			
79			fuer z conc	0.43	0.80			
79			mome x conc	1.76	0.80			
79			fuer y conc	-25.00	2.40			
79			mome x conc	-75.55	2.40			
79			fuer z conc	0.43	2.40			
79			mome x conc	1.76	2.40			
82	a	93	fuer y unif	-8.00				
82	a	93	mome x unif	-25.46				
82	a	93	fuer z unif	0.14				
82	a	93	mome x unif	0.56				
46	a	57	fuer y unif	-8.00				
46	a	57	mome x unif	-18.15				
46	a	57	fuer z unif	0.14				
46	a	57	mome x unif	0.56				
22	a	33	fuer y unif	-8.00				
22	a	33	mome x unif	-18.18				
22	a	33	fuer z unif	0.14				
22	a	33	mome x unif	0.56				
1	a	9	fuer y unif	-8.00				
1	a	9	mome x unif	-23.38				
1	a	9	fuer z unif	0.14				
1	a	9	mome x unif	0.56				
106	a	114	fuer y unif	-8.00				
106	a	114	mome x unif	-21.19				
106	a	114	fuer z unif	0.14				
106	a	114	mome x unif	0.56				
58	a	69	fuer y unif	-1.25				
58	a	69	mome x unif	-3.17				
58	a	69	fuer z unif	0.02				
58	a	69	mome x unif	0.09				
34	a	45	fuer y unif	-1.25				
34	a	45	mome x unif	-2.73				
34	a	45	fuer z unif	0.02				
34	a	45	mome x unif	0.09				
10	a	21	fuer y unif	-1.25				
10	a	21	mome x unif	-3.18				
10	a	21	fuer z unif	0.02				
10	a	21	mome x unif	0.09				
94	a	105	fuer y unif	-1.25				
94	a	105	mome x unif	-3.91				
94	a	105	fuer z unif	0.02				
94	a	105	mome x unif	0.09				

hipo 150 sob. a-20 izda ec-1 (LM-71)
carg en barr

70	a	80	fuer y unif	-8.00				
81			fuer y unif	-8.00	0.00	1.80		
70	a	80	mome x unif	-23.11				
81			mome x unif	-24.63	0.00	1.80		
70	a	80	fuer z unif	0.14				
81			fuer z unif	0.14	0.00	1.80		
70	a	80	mome x unif	0.56				
81			mome x unif	0.56	0.00	1.80		
81			fuer y conc	-25.00	2.60			
81			mome x conc	-76.96	2.60			
81			fuer z conc	0.43	2.60			
81			mome x conc	1.76	2.60			
81			fuer y conc	-25.00	4.20			
81			mome x conc	-76.96	4.20			
81			fuer z conc	0.43	4.20			
81			mome x conc	1.76	4.20			
82			fuer y unif	-8.00	-1.80	-0.01		
83	a	93	fuer y unif	-8.00				
82			mome x unif	-24.84	-1.80	-0.01		
83	a	93	mome x unif	-25.56				
82			fuer z unif	0.14	-1.80	-0.01		
83	a	93	fuer z unif	0.14				
82			mome x unif	0.56	-1.80	-0.01		
83	a	93	mome x unif	0.56				
82			fuer y conc	-25.00	0.80			
82			mome x conc	-77.61	0.80			
82			fuer z conc	0.43	0.80			
82			mome x conc	1.76	0.80			
82			fuer y conc	-25.00	2.40			
82			mome x conc	-77.61	2.40			
82			fuer z conc	0.43	2.40			
82			mome x conc	1.76	2.40			
46	a	57	fuer y unif	-8.00				
46	a	57	mome x unif	-18.15				
46	a	57	fuer z unif	0.14				
46	a	57	mome x unif	0.56				
22	a	33	fuer y unif	-8.00				

22	a	33	mome	x	unif	-18.18			
22	a	33	fuer	z	unif	0.14			
22	a	33	mome	x	unif	0.56			
1	a	9	fuer	y	unif	-8.00			
1	a	9	mome	x	unif	-23.38			
1	a	9	fuer	z	unif	0.14			
1	a	9	mome	x	unif	0.56			
106	a	114	fuer	y	unif	-8.00			
106	a	114	mome	x	unif	-21.19			
106	a	114	fuer	z	unif	0.14			
106	a	114	mome	x	unif	0.56			
58	a	69	fuer	y	unif	-1.25			
58	a	69	mome	x	unif	-3.17			
58	a	69	fuer	z	unif	0.02			
58	a	69	mome	x	unif	0.09			
34	a	45	fuer	y	unif	-1.25			
34	a	45	mome	x	unif	-2.73			
34	a	45	fuer	z	unif	0.02			
34	a	45	mome	x	unif	0.09			
10	a	21	fuer	y	unif	-1.25			
10	a	21	mome	x	unif	-3.18			
10	a	21	fuer	z	unif	0.02			
10	a	21	mome	x	unif	0.09			
94	a	105	fuer	y	unif	-1.25			
94	a	105	mome	x	unif	-3.91			
94	a	105	fuer	z	unif	0.02			
94	a	105	mome	x	unif	0.09			

hipo 151 sob. a-21 izda ec-1 (LM-71)
carg en barr

70	a	81	fuer	y	unif	-8.00			
70	a	81	mome	x	unif	-23.22			
70	a	81	fuer	z	unif	0.14			
70	a	81	mome	x	unif	0.56			
82	a	83	fuer	y	unif	-8.00			
82	a	83	mome	x	unif	-24.94			
82	a	83	fuer	z	unif	0.14			
82	a	83	mome	x	unif	0.56			
84			fuer	y	unif	-8.00	0.00	1.80	
85			fuer	y	unif	-8.00	-1.80	-0.01	
84			mome	x	unif	-25.22	0.00	1.80	
85			mome	x	unif	-25.39	-1.80	-0.01	
84			fuer	z	unif	0.14	0.00	1.80	
85			fuer	z	unif	0.14	-1.80	-0.01	
84			mome	x	unif	0.56	0.00	1.80	
85			mome	x	unif	0.56	-1.80	-0.01	
86	a	93	fuer	y	unif	-8.00			
86	a	93	mome	x	unif	-25.82			
86	a	93	fuer	z	unif	0.14			
86	a	93	mome	x	unif	0.56			
84			fuer	y	conc	-25.00	2.60		
84			mome	x	conc	-78.83	2.60		
84			fuer	z	conc	0.43	2.60		
84			mome	x	conc	1.76	2.60		
84			fuer	y	conc	-25.00	4.20		
84			mome	x	conc	-78.83	4.20		
84			fuer	z	conc	0.43	4.20		
84			mome	x	conc	1.76	4.20		
85			fuer	y	conc	-25.00	0.80		
85			mome	x	conc	-79.35	0.80		
85			fuer	z	conc	0.43	0.80		
85			mome	x	conc	1.76	0.80		
85			fuer	y	conc	-25.00	2.40		
85			mome	x	conc	-79.35	2.40		
85			fuer	z	conc	0.43	2.40		
85			mome	x	conc	1.76	2.40		
46	a	57	fuer	y	unif	-8.00			
46	a	57	mome	x	unif	-18.15			
46	a	57	fuer	z	unif	0.14			
46	a	57	mome	x	unif	0.56			
22	a	33	fuer	y	unif	-8.00			
22	a	33	mome	x	unif	-18.18			
22	a	33	fuer	z	unif	0.14			
22	a	33	mome	x	unif	0.56			
1	a	9	fuer	y	unif	-8.00			
1	a	9	mome	x	unif	-23.38			
1	a	9	fuer	z	unif	0.14			
1	a	9	mome	x	unif	0.56			
106	a	114	fuer	y	unif	-8.00			
106	a	114	mome	x	unif	-21.19			
106	a	114	fuer	z	unif	0.14			
106	a	114	mome	x	unif	0.56			
58	a	69	fuer	y	unif	-1.25			
58	a	69	mome	x	unif	-3.17			
58	a	69	fuer	z	unif	0.02			
58	a	69	mome	x	unif	0.09			
34	a	45	fuer	y	unif	-1.25			
34	a	45	mome	x	unif	-2.73			
34	a	45	fuer	z	unif	0.02			
34	a	45	mome	x	unif	0.09			
10	a	21	fuer	y	unif	-1.25			
10	a	21	mome	x	unif	-3.18			
10	a	21	fuer	z	unif	0.02			
10	a	21	mome	x	unif	0.09			
94	a	105	fuer	y	unif	-1.25			
94	a	105	mome	x	unif	-3.91			
94	a	105	fuer	z	unif	0.02			
94	a	105	mome	x	unif	0.09			

hipo 152 sob. a-22 izda ec-1 (LM-71)
carg en barr

82	a	89	fuer	y	unif	-8.00			
82	a	89	mome	x	unif	-25.37			
82	a	89	fuer	z	unif	0.14			
82	a	89	mome	x	unif	0.56			
90			fuer	y	unif	-8.00	0.00	1.80	
91			fuer	y	unif	-8.00	-1.80	-0.01	
90			mome	x	unif	-25.98	0.00	1.80	
91			mome	x	unif	-26.04	-1.80	-0.01	
90			fuer	z	unif	0.14	0.00	1.80	
91			fuer	z	unif	0.14	-1.80	-0.01	
90			mome	x	unif	0.56	0.00	1.80	
91			mome	x	unif	0.56	-1.80	-0.01	
92	a	93	fuer	y	unif	-8.00			
92	a	93	mome	x	unif	-26.08			
92	a	93	fuer	z	unif	0.14			
92	a	93	mome	x	unif	0.56			
90			fuer	y	conc	-25.00	2.60		
90			mome	x	conc	-81.20	2.60		
90			fuer	z	conc	0.43	2.60		
90			mome	x	conc	1.76	2.60		
90			fuer	y	conc	-25.00	4.20		
90			mome	x	conc	-81.20	4.20		
90			fuer	z	conc	0.43	4.20		
90			mome	x	conc	1.76	4.20		
91			fuer	y	conc	-25.00	0.80		
91			mome	x	conc	-81.38	0.80		
91			fuer	z	conc	0.43	0.80		
91			mome	x	conc	1.76	0.80		
91			fuer	y	conc	-25.00	2.40		

91		mome x conc	-81.38	2.40	
91		fuer z conc	0.43	2.40	
91		mome x conc	1.76	2.40	
94	a 105	fuer y unif	-8.00		
94	a 105	mome x unif	-25.02		
94	a 105	fuer z unif	0.14		
94	a 105	mome x unif	0.56		
58	a 69	fuer y unif	-8.00		
58	a 69	mome x unif	-20.26		
58	a 69	fuer z unif	0.14		
58	a 69	mome x unif	0.56		
34	a 45	fuer y unif	-8.00		
34	a 45	mome x unif	-17.45		
34	a 45	fuer z unif	0.14		
34	a 45	mome x unif	0.56		
10	a 21	fuer y unif	-8.00		
10	a 21	mome x unif	-20.36		
10	a 21	fuer z unif	0.14		
10	a 21	mome x unif	0.56		
70	a 81	fuer y unif	-1.25		
70	a 81	mome x unif	-3.63		
70	a 81	fuer z unif	0.02		
70	a 81	mome x unif	0.09		
46	a 57	fuer y unif	-1.25		
46	a 57	mome x unif	-2.84		
46	a 57	fuer z unif	0.02		
46	a 57	mome x unif	0.09		
22	a 33	fuer y unif	-1.25		
22	a 33	mome x unif	-2.84		
22	a 33	fuer z unif	0.02		
22	a 33	mome x unif	0.09		
1	a 9	fuer y unif	-1.25		
1	a 9	mome x unif	-3.65		
1	a 9	fuer z unif	0.02		
1	a 9	mome x unif	0.09		
106	a 114	fuer y unif	-1.25		
106	a 114	mome x unif	-3.31		
106	a 114	fuer z unif	0.02		
106	a 114	mome x unif	0.09		

hipo 153 sob. a-23 izda ec-1 (LM-71)
carg en barr

82	a 92	fuer y unif	-8.00		
93		fuer y unif	-8.00	0.00	1.80
82	a 92	mome x unif	-25.46		
93		mome x unif	-26.09	0.00	1.80
82	a 92	fuer z unif	0.14		
93		fuer z unif	0.14	0.00	1.80
82	a 92	mome x unif	0.56		
93		mome x unif	0.56	0.00	1.80
93		fuer y conc	-25.00	2.60	
93		mome x conc	-81.53	2.60	
93		fuer z conc	0.43	2.60	
93		mome x conc	1.76	2.60	
93		fuer y conc	-25.00	4.20	
93		mome x conc	-81.53	4.20	
93		fuer z conc	0.43	4.20	
93		mome x conc	1.76	4.20	
94		fuer y unif	-8.00	-1.80	-0.01
95	a 105	fuer y unif	-8.00		
94		mome x unif	-26.08	-1.80	-0.01
95	a 105	mome x unif	-25.00		
94		fuer z unif	0.14	-1.80	-0.01
95	a 105	fuer z unif	0.14		
94		mome x unif	0.56	-1.80	-0.01
95	a 105	mome x unif	0.56		
94		fuer y conc	-25.00	0.80	
94		mome x conc	-81.49	0.80	
94		fuer z conc	0.43	0.80	
94		mome x conc	1.76	0.80	
94		fuer y conc	-25.00	2.40	
94		mome x conc	-81.49	2.40	
94		fuer z conc	0.43	2.40	
94		mome x conc	1.76	2.40	
58	a 69	fuer y unif	-8.00		
58	a 69	mome x unif	-20.26		
58	a 69	fuer z unif	0.14		
58	a 69	mome x unif	0.56		
34	a 45	fuer y unif	-8.00		
34	a 45	mome x unif	-17.45		
34	a 45	fuer z unif	0.14		
34	a 45	mome x unif	0.56		
10	a 21	fuer y unif	-8.00		
10	a 21	mome x unif	-20.36		
10	a 21	fuer z unif	0.14		
10	a 21	mome x unif	0.56		
70	a 81	fuer y unif	-1.25		
70	a 81	mome x unif	-3.63		
70	a 81	fuer z unif	0.02		
70	a 81	mome x unif	0.09		
46	a 57	fuer y unif	-1.25		
46	a 57	mome x unif	-2.84		
46	a 57	fuer z unif	0.02		
46	a 57	mome x unif	0.09		
22	a 33	fuer y unif	-1.25		
22	a 33	mome x unif	-2.84		
22	a 33	fuer z unif	0.02		
22	a 33	mome x unif	0.09		
1	a 9	fuer y unif	-1.25		
1	a 9	mome x unif	-3.65		
1	a 9	fuer z unif	0.02		
1	a 9	mome x unif	0.09		
106	a 114	fuer y unif	-1.25		
106	a 114	mome x unif	-3.31		
106	a 114	fuer z unif	0.02		
106	a 114	mome x unif	0.09		

hipo 154 sob. a-24 izda ec-1 (LM-71)
carg en barr

82	a 93	fuer y unif	-8.00		
82	a 93	mome x unif	-25.46		
82	a 93	fuer z unif	0.14		
82	a 93	mome x unif	0.56		
94	a 95	fuer y unif	-8.00		
94	a 95	mome x unif	-26.06		
94	a 95	fuer z unif	0.14		
94	a 95	mome x unif	0.56		
96		fuer y unif	-8.00	0.00	1.80
97		fuer y unif	-8.00	-1.80	-0.01
96		mome x unif	-25.97	0.00	1.80
97		mome x unif	-25.87	-1.80	-0.01
96		fuer z unif	0.14	0.00	1.80
97		fuer z unif	0.14	-1.80	-0.01
96		mome x unif	0.56	0.00	1.80
97		mome x unif	0.56	-1.80	-0.01
98	a 105	fuer y unif	-8.00		
98	a 105	mome x unif	-24.85		
98	a 105	fuer z unif	0.14		
98	a 105	mome x unif	0.56		
96		fuer y conc	-25.00	2.60	

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 96        mome x conc   -81.15     2.60
 96        fuer z conc     0.43     2.60
 96        mome x conc     1.76     2.60
 96        fuer y conc   -25.00     4.20
 96        mome x conc   -81.15     4.20
 96        fuer z conc     0.43     4.20
 96        mome x conc     1.76     4.20
 97        fuer y conc   -25.00     0.80
 97        mome x conc   -80.85     0.80
 97        fuer z conc     0.43     0.80
 97        mome x conc     1.76     0.80
 97        fuer y conc   -25.00     2.40
 97        mome x conc   -80.85     2.40
 97        fuer z conc     0.43     2.40
 97        mome x conc     1.76     2.40
 58 a  69 fuer y unif    -8.00
 58 a  69 mome x unif   -20.26
 58 a  69 fuer z unif     0.14
 58 a  69 mome x unif     0.56
 34 a  45 fuer y unif    -8.00
 34 a  45 mome x unif   -17.45
 34 a  45 fuer z unif     0.14
 34 a  45 mome x unif     0.56
 10 a  21 fuer y unif    -8.00
 10 a  21 mome x unif   -20.36
 10 a  21 fuer z unif     0.14
 10 a  21 mome x unif     0.56
 70 a  81 fuer y unif    -1.25
 70 a  81 mome x unif    -3.63
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.09
 46 a  57 fuer y unif    -1.25
 46 a  57 mome x unif    -2.84
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.09
 22 a  33 fuer y unif    -1.25
 22 a  33 mome x unif    -2.84
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.09
  1 a   9 fuer y unif    -1.25
  1 a   9 mome x unif    -3.65
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.09
106 a 114 fuer y unif    -1.25
106 a 114 mome x unif    -3.31
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.09
hipo 155 sob. a-25 izda ec-1 (LM-71)
carg en barr
 94 a 101 fuer y unif    -8.00
 94 a 101 mome x unif   -25.63
 94 a 101 fuer z unif     0.14
 94 a 101 mome x unif     0.56
102       fuer y unif    -8.00     0.00     1.80
103       fuer y unif    -8.00    -1.80    -0.01
102       mome x unif   -24.94     0.00     1.80
103       mome x unif   -24.64    -1.80    -0.01
102       fuer z unif     0.14     0.00     1.80
103       fuer z unif     0.14    -1.80    -0.01
102       mome x unif     0.56     0.00     1.80
103       mome x unif     0.56    -1.80    -0.01
104 a 105 fuer y unif    -8.00
104 a 105 mome x unif   -24.14
104 a 105 fuer z unif     0.14
104 a 105 mome x unif     0.56
102       fuer y conc   -25.00     2.60
102       mome x conc   -77.92     2.60
102       fuer z conc     0.43     2.60
102       mome x conc     1.76     2.60
102       fuer y conc   -25.00     4.20
102       mome x conc   -77.92     4.20
102       fuer z conc     0.43     4.20
102       mome x conc     1.76     4.20
103       fuer y conc   -25.00     0.80
103       mome x conc   -77.01     0.80
103       fuer z conc     0.43     0.80
103       mome x conc     1.76     0.80
103       fuer y conc   -25.00     2.40
103       mome x conc   -77.01     2.40
103       fuer z conc     0.43     2.40
103       mome x conc     1.76     2.40
106 a 114 fuer y unif    -8.00
106 a 114 mome x unif   -21.19
106 a 114 fuer z unif     0.14
106 a 114 mome x unif     0.56
 70 a  81 fuer y unif    -8.00
 70 a  81 mome x unif   -23.22
 70 a  81 fuer z unif     0.14
 70 a  81 mome x unif     0.56
 46 a  57 fuer y unif    -8.00
 46 a  57 mome x unif   -18.15
 46 a  57 fuer z unif     0.14
 46 a  57 mome x unif     0.56
 22 a  33 fuer y unif    -8.00
 22 a  33 mome x unif   -18.18
 22 a  33 fuer z unif     0.14
 22 a  33 mome x unif     0.56
  1 a   9 fuer y unif    -8.00
  1 a   9 mome x unif   -23.38
  1 a   9 fuer z unif     0.14
  1 a   9 mome x unif     0.56
 82 a  93 fuer y unif    -1.25
 82 a  93 mome x unif    -3.98
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.09
 58 a  69 fuer y unif    -1.25
 58 a  69 mome x unif    -3.17
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.09
 34 a  45 fuer y unif    -1.25
 34 a  45 mome x unif    -2.73
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.09
 10 a  21 fuer y unif    -1.25
 10 a  21 mome x unif    -3.18
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.09
hipo 156 sob. a-26 izda ec-1 (LM-71)
carg en barr
 94 a 104 fuer y unif    -8.00
105       fuer y unif    -8.00     0.00     1.80
 94 a 104 mome x unif   -25.20
105       mome x unif   -23.96     0.00     1.80
 94 a 104 fuer z unif     0.14
105       fuer z unif     0.14     0.00     1.80
 94 a 104 mome x unif     0.56
105       mome x unif     0.56     0.00     1.80
105       fuer y conc   -25.00     2.60
```

```
105          mome x conc   -74.88     2.60
105          fuer z conc     0.43     2.60
105          mome x conc     1.76     2.60
105          fuer y conc   -25.00     4.20
105          mome x conc   -74.88     4.20
105          fuer z conc     0.43     4.20
105          mome x conc     1.76     4.20
106          fuer y unif    -8.00    -1.80    -0.01
107 a 114    fuer y unif    -8.00
106          mome x unif   -23.56    -1.80    -0.01
107 a 114    mome x unif   -20.97
106          fuer z unif     0.14    -1.80    -0.01
107 a 114    fuer z unif     0.14
106          mome x unif     0.56    -1.80    -0.01
107 a 114    mome x unif     0.56
106          fuer y conc   -25.00     0.80
106          mome x conc   -73.61     0.80
106          fuer z conc     0.43     0.80
106          mome x conc     1.76     0.80
106          fuer y conc   -25.00     2.40
106          mome x conc   -73.61     2.40
106          fuer z conc     0.43     2.40
106          mome x conc     1.76     2.40
 70 a  81    fuer y unif    -8.00
 70 a  81    mome x unif   -23.22
 70 a  81    fuer z unif     0.14
 70 a  81    mome x unif     0.56
 46 a  57    fuer y unif    -8.00
 46 a  57    mome x unif   -18.15
 46 a  57    fuer z unif     0.14
 46 a  57    mome x unif     0.56
 22 a  33    fuer y unif    -8.00
 22 a  33    mome x unif   -18.18
 22 a  33    fuer z unif     0.14
 22 a  33    mome x unif     0.56
  1 a   9    fuer y unif    -8.00
  1 a   9    mome x unif   -23.38
  1 a   9    fuer z unif     0.14
  1 a   9    mome x unif     0.56
 82 a  93    fuer y unif    -1.25
 82 a  93    mome x unif    -3.98
 82 a  93    fuer z unif     0.02
 82 a  93    mome x unif     0.09
 58 a  69    fuer y unif    -1.25
 58 a  69    mome x unif    -3.17
 58 a  69    fuer z unif     0.02
 58 a  69    mome x unif     0.09
 34 a  45    fuer y unif    -1.25
 34 a  45    mome x unif    -2.73
 34 a  45    fuer z unif     0.02
 34 a  45    mome x unif     0.09
 10 a  21    fuer y unif    -1.25
 10 a  21    mome x unif    -3.18
 10 a  21    fuer z unif     0.02
 10 a  21    mome x unif     0.09
hipo 157 sob. a-27 izda ec-1 (LM-71)
carg en barr
 94 a 105    fuer y unif    -8.00
 94 a 105    mome x unif   -25.02
 94 a 105    fuer z unif     0.14
 94 a 105    mome x unif     0.56
106 a 106    fuer y unif    -8.00
106 a 106    mome x unif   -23.56
106 a 106    fuer z unif     0.14
106 a 106    mome x unif     0.56
107          fuer y unif    -8.00     0.00     3.05
108          fuer y unif    -8.00    -0.55    -0.01
107          mome x unif   -23.12     0.00     3.05
108          mome x unif   -22.63    -0.55    -0.01
107          fuer z unif     0.14     0.00     3.05
108          fuer z unif     0.14    -0.55    -0.01
107          mome x unif     0.56     0.00     3.05
108          mome x unif     0.56    -0.55    -0.01
109 a 114    fuer y unif    -8.00
109 a 114    mome x unif   -20.46
109 a 114    fuer z unif     0.14
109 a 114    mome x unif     0.56
107          fuer y conc   -25.00     3.85
107          mome x conc   -72.24     3.85
107          fuer z conc     0.43     3.85
107          mome x conc     1.76     3.85
108          fuer y conc   -25.00     0.45
108          mome x conc   -70.73     0.45
108          fuer z conc     0.43     0.45
108          mome x conc     1.76     0.45
108          fuer y conc   -25.00     2.05
108          mome x conc   -70.73     2.05
108          fuer z conc     0.43     2.05
108          mome x conc     1.76     2.05
108          fuer y conc   -25.00     3.65
108          mome x conc   -70.73     3.65
108          fuer z conc     0.43     3.65
108          mome x conc     1.76     3.65
 70 a  81    fuer y unif    -8.00
 70 a  81    mome x unif   -23.22
 70 a  81    fuer z unif     0.14
 70 a  81    mome x unif     0.56
 46 a  57    fuer y unif    -8.00
 46 a  57    mome x unif   -18.15
 46 a  57    fuer z unif     0.14
 46 a  57    mome x unif     0.56
 22 a  33    fuer y unif    -8.00
 22 a  33    mome x unif   -18.18
 22 a  33    fuer z unif     0.14
 22 a  33    mome x unif     0.56
  1 a   9    fuer y unif    -8.00
  1 a   9    mome x unif   -23.38
  1 a   9    fuer z unif     0.14
  1 a   9    mome x unif     0.56
 82 a  93    fuer y unif    -1.25
 82 a  93    mome x unif    -3.98
 82 a  93    fuer z unif     0.02
 82 a  93    mome x unif     0.09
 58 a  69    fuer y unif    -1.25
 58 a  69    mome x unif    -3.17
 58 a  69    fuer z unif     0.02
 58 a  69    mome x unif     0.09
 34 a  45    fuer y unif    -1.25
 34 a  45    mome x unif    -2.73
 34 a  45    fuer z unif     0.02
 34 a  45    mome x unif     0.09
 10 a  21    fuer y unif    -1.25
 10 a  21    mome x unif    -3.18
 10 a  21    fuer z unif     0.02
 10 a  21    mome x unif     0.09
hipo 158 sob. v- 1 dcha ec-1 (LM-71)
carg en barr
  1 a   1    fuer y unif    -8.00
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  1 a   1 mome x unif    18.92
  1 a   1 fuer z unif     0.14
  1 a   1 mome x unif     0.56
  2       fuer y unif    -8.00      0.00     3.05
  3       fuer y unif    -8.00     -0.55    -0.01
  2       mome x unif    19.30      0.00     3.05
  3       mome x unif    19.67     -0.55    -0.01
  2       fuer z unif     0.14      0.00     3.05
  3       fuer z unif     0.14     -0.55    -0.01
  2       mome x unif     0.56      0.00     3.05
  3       mome x unif     0.56     -0.55    -0.01
  4 a   9 fuer y unif    -8.00
  4 a   9 mome x unif    20.86
  4 a   9 fuer z unif     0.14
  4 a   9 mome x unif     0.56
  2       fuer y conc   -25.00      3.85
  2       mome x conc    60.31      3.85
  2       fuer z conc     0.43      3.85
  2       mome x conc     1.76      3.85
  3       fuer y conc   -25.00      0.45
  3       mome x conc    61.48      0.45
  3       fuer z conc     0.43      0.45
  3       mome x conc     1.76      0.45
  3       fuer y conc   -25.00      2.05
  3       mome x conc    61.48      2.05
  3       fuer z conc     0.43      2.05
  3       mome x conc     1.76      2.05
  3       fuer y conc   -25.00      3.65
  3       mome x conc    61.48      3.65
  3       fuer z conc     0.43      3.65
  3       mome x conc     1.76      3.65
 22 a  33 fuer y unif    -8.00
 22 a  33 mome x unif    25.50
 22 a  33 fuer z unif     0.14
 22 a  33 mome x unif     0.56
 46 a  57 fuer y unif    -8.00
 46 a  57 mome x unif    25.53
 46 a  57 fuer z unif     0.14
 46 a  57 mome x unif     0.56
 70 a  81 fuer y unif    -8.00
 70 a  81 mome x unif    20.46
 70 a  81 fuer z unif     0.14
 70 a  81 mome x unif     0.56
 94 a 105 fuer y unif    -8.00
 94 a 105 mome x unif    18.66
 94 a 105 fuer z unif     0.14
 94 a 105 mome x unif     0.56
 10 a  21 fuer y unif    -1.25
 10 a  21 mome x unif     3.64
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.09
 34 a  45 fuer y unif    -1.25
 34 a  45 mome x unif     4.10
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.09
 58 a  69 fuer y unif    -1.25
 58 a  69 mome x unif     3.66
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.09
 82 a  93 fuer y unif    -1.25
 82 a  93 mome x unif     2.85
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.09
106 a 114 fuer y unif    -1.25
106 a 114 mome x unif     3.51
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.09
hipo 159 sob. v- 2 dcha ec-1 (LM-71)
carg en barr
  1 a   3 fuer y unif    -8.00
  1 a   3 mome x unif    19.29
  1 a   3 fuer z unif     0.14
  1 a   3 mome x unif     0.56
  4       fuer y unif    -8.00      0.00     4.30
  6       fuer y unif    -8.00     -4.30    -0.01
  4       mome x unif    20.03      0.00     4.30
  6       mome x unif    20.73     -4.30    -0.01
  4       fuer z unif     0.14      0.00     4.30
  6       fuer z unif     0.14     -4.30    -0.01
  4       mome x unif     0.56      0.00     4.30
  6       mome x unif     0.56     -4.30    -0.01
  7 a   9 fuer y unif    -8.00
  7 a   9 mome x unif    21.37
  7 a   9 fuer z unif     0.14
  7 a   9 mome x unif     0.56
  5       fuer y conc   -25.00      0.10
  5       mome x conc    63.70      0.10
  5       fuer z conc     0.43      0.10
  5       mome x conc     1.76      0.10
  5       fuer y conc   -25.00      1.70
  5       mome x conc    63.70      1.70
  5       fuer z conc     0.43      1.70
  5       mome x conc     1.76      1.70
  5       fuer y conc   -25.00      3.30
  5       mome x conc    63.70      3.30
  5       fuer z conc     0.43      3.30
  5       mome x conc     1.76      3.30
  5       fuer y conc   -25.00      4.90
  5       mome x conc    63.70      4.90
  5       fuer z conc     0.43      4.90
  5       mome x conc     1.76      4.90
 22 a  33 fuer y unif    -8.00
 22 a  33 mome x unif    25.50
 22 a  33 fuer z unif     0.14
 22 a  33 mome x unif     0.56
 46 a  57 fuer y unif    -8.00
 46 a  57 mome x unif    25.53
 46 a  57 fuer z unif     0.14
 46 a  57 mome x unif     0.56
 70 a  81 fuer y unif    -8.00
 70 a  81 mome x unif    20.46
 70 a  81 fuer z unif     0.14
 70 a  81 mome x unif     0.56
 94 a 105 fuer y unif    -8.00
 94 a 105 mome x unif    18.66
 94 a 105 fuer z unif     0.14
 94 a 105 mome x unif     0.56
 10 a  21 fuer y unif    -1.25
 10 a  21 mome x unif     3.64
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.09
 34 a  45 fuer y unif    -1.25
 34 a  45 mome x unif     4.10
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.09
 58 a  69 fuer y unif    -1.25
 58 a  69 mome x unif     3.66
 58 a  69 fuer z unif     0.02
```

```
 58 a  69 mome x unif     0.09
 82 a  93 fuer y unif    -1.25
 82 a  93 mome x unif     2.85
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.09
106 a 114 fuer y unif    -1.25
106 a 114 mome x unif     3.51
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.09
hipo 160 sob. v- 3 dcha ec-1 (LM-71)
carg en barr
  1 a   6 fuer y unif    -8.00
  1 a   6 mome x unif    19.82
  1 a   6 fuer z unif     0.14
  1 a   6 mome x unif     0.56
  7       fuer y unif    -8.00     0.00     0.55
  8       fuer y unif    -8.00    -3.05    -0.01
  7       mome x unif    21.06     0.00     0.55
  8       mome x unif    21.37    -3.05    -0.01
  7       fuer z unif     0.14     0.00     0.55
  8       fuer z unif     0.14    -3.05    -0.01
  7       mome x unif     0.56     0.00     0.55
  8       mome x unif     0.56    -3.05    -0.01
  9 a   9 fuer y unif    -8.00
  9 a   9 mome x unif    21.68
  9 a   9 fuer z unif     0.14
  9 a   9 mome x unif     0.56
  7       fuer y conc   -25.00     1.35
  7       mome x conc    65.80     1.35
  7       fuer z conc     0.43     1.35
  7       mome x conc     1.76     1.35
  7       fuer y conc   -25.00     2.95
  7       mome x conc    65.80     2.95
  7       fuer z conc     0.43     2.95
  7       mome x conc     1.76     2.95
  7       fuer y conc   -25.00     4.55
  7       mome x conc    65.80     4.55
  7       fuer z conc     0.43     4.55
  7       mome x conc     1.76     4.55
  8       fuer y conc   -25.00     1.15
  8       mome x conc    66.79     1.15
  8       fuer z conc     0.43     1.15
  8       mome x conc     1.76     1.15
 22 a  33 fuer y unif    -8.00
 22 a  33 mome x unif    25.50
 22 a  33 fuer z unif     0.14
 22 a  33 mome x unif     0.56
 46 a  57 fuer y unif    -8.00
 46 a  57 mome x unif    25.53
 46 a  57 fuer z unif     0.14
 46 a  57 mome x unif     0.56
 70 a  81 fuer y unif    -8.00
 70 a  81 mome x unif    20.46
 70 a  81 fuer z unif     0.14
 70 a  81 mome x unif     0.56
 94 a 105 fuer y unif    -8.00
 94 a 105 mome x unif    18.66
 94 a 105 fuer z unif     0.14
 94 a 105 mome x unif     0.56
 10 a  21 fuer y unif    -1.25
 10 a  21 mome x unif     3.64
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.09
 34 a  45 fuer y unif    -1.25
 34 a  45 mome x unif     4.10
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.09
 58 a  69 fuer y unif    -1.25
 58 a  69 mome x unif     3.66
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.09
 82 a  93 fuer y unif    -1.25
 82 a  93 mome x unif     2.85
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.09
106 a 114 fuer y unif    -1.25
106 a 114 mome x unif     3.51
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.09
hipo 161 sob. v- 4 dcha ec-1 (LM-71)
carg en barr
 10 a  11 fuer y unif    -8.00
 10 a  11 mome x unif    22.13
 10 a  11 fuer z unif     0.14
 10 a  11 mome x unif     0.56
 12       fuer y unif    -8.00     0.00     1.80
 13       fuer y unif    -8.00    -1.80    -0.01
 12       mome x unif    22.56     0.00     1.80
 13       mome x unif    22.84    -1.80    -0.01
 12       fuer z unif     0.14     0.00     1.80
 13       fuer z unif     0.14    -1.80    -0.01
 12       mome x unif     0.56     0.00     1.80
 13       mome x unif     0.56    -1.80    -0.01
 14 a  21 fuer y unif    -8.00
 14 a  21 mome x unif    23.87
 14 a  21 fuer z unif     0.14
 14 a  21 mome x unif     0.56
 12       fuer y conc   -25.00     2.60
 12       mome x conc    70.51     2.60
 12       fuer z conc     0.43     2.60
 12       mome x conc     1.76     2.60
 12       fuer y conc   -25.00     4.20
 12       mome x conc    70.51     4.20
 12       fuer z conc     0.43     4.20
 12       mome x conc     1.76     4.20
 13       fuer y conc   -25.00     0.80
 13       mome x conc    71.36     0.80
 13       fuer z conc     0.43     0.80
 13       mome x conc     1.76     0.80
 13       fuer y conc   -25.00     2.40
 13       mome x conc    71.36     2.40
 13       fuer z conc     0.43     2.40
 13       mome x conc     1.76     2.40
 34 a  45 fuer y unif    -8.00
 34 a  45 mome x unif    26.23
 34 a  45 fuer z unif     0.14
 34 a  45 mome x unif     0.56
 58 a  69 fuer y unif    -8.00
 58 a  69 mome x unif    23.42
 58 a  69 fuer z unif     0.14
 58 a  69 mome x unif     0.56
 82 a  93 fuer y unif    -8.00
 82 a  93 mome x unif    18.22
 82 a  93 fuer z unif     0.14
 82 a  93 mome x unif     0.56
106 a 114 fuer y unif    -8.00
106 a 114 mome x unif    22.49
106 a 114 fuer z unif     0.14
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```
106 a 114 mome x unif     0.56
  1 a   9 fuer y unif    -1.25
  1 a   9 mome x unif     3.17
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.09
 22 a  33 fuer y unif    -1.25
 22 a  33 mome x unif     3.98
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.09
 46 a  57 fuer y unif    -1.25
 46 a  57 mome x unif     3.99
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.09
 70 a  81 fuer y unif    -1.25
 70 a  81 mome x unif     3.20
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.09
 94 a 105 fuer y unif    -1.25
 94 a 105 mome x unif     2.92
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.09
hipo 162 sob. v- 5 dcha ec-1 (LM-71)
carg en barr
 10 a  14 fuer y unif    -8.00
 10 a  14 mome x unif    22.54
 10 a  14 fuer z unif     0.14
 10 a  14 mome x unif     0.56
 15       fuer y unif    -8.00     0.00     1.80
 16       fuer y unif    -8.00    -1.80    -0.01
 15       mome x unif    23.35     0.00     1.80
 16       mome x unif    23.59    -1.80    -0.01
 15       fuer z unif     0.14     0.00     1.80
 16       fuer z unif     0.14    -1.80    -0.01
 15       mome x unif     0.56     0.00     1.80
 16       mome x unif     0.56    -1.80    -0.01
 17 a  21 fuer y unif    -8.00
 17 a  21 mome x unif    24.23
 17 a  21 fuer z unif     0.14
 17 a  21 mome x unif     0.56
 15       fuer y conc   -25.00     2.60
 15       mome x conc    72.96     2.60
 15       fuer z conc     0.43     2.60
 15       mome x conc     1.76     2.60
 15       fuer y conc   -25.00     4.20
 15       mome x conc    72.96     4.20
 15       fuer z conc     0.43     4.20
 15       mome x conc     1.76     4.20
 16       fuer y conc   -25.00     0.80
 16       mome x conc    73.71     0.80
 16       fuer z conc     0.43     0.80
 16       mome x conc     1.76     0.80
 16       fuer y conc   -25.00     2.40
 16       mome x conc    73.71     2.40
 16       fuer z conc     0.43     2.40
 16       mome x conc     1.76     2.40
 34 a  45 fuer y unif    -8.00
 34 a  45 mome x unif    26.23
 34 a  45 fuer z unif     0.14
 34 a  45 mome x unif     0.56
 58 a  69 fuer y unif    -8.00
 58 a  69 mome x unif    23.42
 58 a  69 fuer z unif     0.14
 58 a  69 mome x unif     0.56
 82 a  93 fuer y unif    -8.00
 82 a  93 mome x unif    18.22
 82 a  93 fuer z unif     0.14
 82 a  93 mome x unif     0.56
106 a 114 fuer y unif    -8.00
106 a 114 mome x unif    22.49
106 a 114 fuer z unif     0.14
106 a 114 mome x unif     0.56
  1 a   9 fuer y unif    -1.25
  1 a   9 mome x unif     3.17
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.09
 22 a  33 fuer y unif    -1.25
 22 a  33 mome x unif     3.98
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.09
 46 a  57 fuer y unif    -1.25
 46 a  57 mome x unif     3.99
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.09
 70 a  81 fuer y unif    -1.25
 70 a  81 mome x unif     3.20
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.09
 94 a 105 fuer y unif    -1.25
 94 a 105 mome x unif     2.92
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.09
hipo 163 sob. v- 6 dcha ec-1 (LM-71)
carg en barr
 10 a  17 fuer y unif    -8.00
 10 a  17 mome x unif    22.90
 10 a  17 fuer z unif     0.14
 10 a  17 mome x unif     0.56
 18       fuer y unif    -8.00     0.00     1.80
 19       fuer y unif    -8.00    -1.80    -0.01
 18       mome x unif    24.04     0.00     1.80
 19       mome x unif    24.25    -1.80    -0.01
 18       fuer z unif     0.14     0.00     1.80
 19       fuer z unif     0.14    -1.80    -0.01
 18       mome x unif     0.56     0.00     1.80
 19       mome x unif     0.56    -1.80    -0.01
 20 a  21 fuer y unif    -8.00
 20 a  21 mome x unif    24.55
 20 a  21 fuer z unif     0.14
 20 a  21 mome x unif     0.56
 18       fuer y conc   -25.00     2.60
 18       mome x conc    75.11     2.60
 18       fuer z conc     0.43     2.60
 18       mome x conc     1.76     2.60
 18       fuer y conc   -25.00     4.20
 18       mome x conc    75.11     4.20
 18       fuer z conc     0.43     4.20
 18       mome x conc     1.76     4.20
 19       fuer y conc   -25.00     0.80
 19       mome x conc    75.78     0.80
 19       fuer z conc     0.43     0.80
 19       mome x conc     1.76     0.80
 19       fuer y conc   -25.00     2.40
 19       mome x conc    75.78     2.40
 19       fuer z conc     0.43     2.40
 19       mome x conc     1.76     2.40
 34 a  45 fuer y unif    -8.00
 34 a  45 mome x unif    26.23
 34 a  45 fuer z unif     0.14
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 34 a  45 mome x unif     0.56
 58 a  69 fuer y unif    -8.00
 58 a  69 mome x unif    23.42
 58 a  69 fuer z unif     0.14
 58 a  69 mome x unif     0.56
 82 a  93 fuer y unif    -8.00
 82 a  93 mome x unif    18.22
 82 a  93 fuer z unif     0.14
 82 a  93 mome x unif     0.56
106 a 114 fuer y unif    -8.00
106 a 114 mome x unif    22.49
106 a 114 fuer z unif     0.14
106 a 114 mome x unif     0.56
  1 a   9 fuer y unif    -1.25
  1 a   9 mome x unif     3.17
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.09
 22 a  33 fuer y unif    -1.25
 22 a  33 mome x unif     3.98
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.09
 46 a  57 fuer y unif    -1.25
 46 a  57 mome x unif     3.99
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.09
 70 a  81 fuer y unif    -1.25
 70 a  81 mome x unif     3.20
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.09
 94 a 105 fuer y unif    -1.25
 94 a 105 mome x unif     2.92
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.09
hipo 164 sob. v- 7 dcha ec-1 (LM-71)
carg en barr
 22 a  23 fuer y unif    -8.00
 22 a  23 mome x unif    24.92
 22 a  23 fuer z unif     0.14
 22 a  23 mome x unif     0.56
 24       fuer y unif    -8.00     0.00     1.80
 25       fuer y unif    -8.00    -1.80    -0.01
 24       mome x unif    25.16     0.00     1.80
 25       mome x unif    25.31    -1.80    -0.01
 24       fuer z unif     0.14     0.00     1.80
 25       fuer z unif     0.14    -1.80    -0.01
 24       mome x unif     0.56     0.00     1.80
 25       mome x unif     0.56    -1.80    -0.01
 26 a  33 fuer y unif    -8.00
 26 a  33 mome x unif    25.81
 26 a  33 fuer z unif     0.14
 26 a  33 mome x unif     0.56
 24       fuer y conc   -25.00     2.60
 24       mome x conc    78.61     2.60
 24       fuer z conc     0.43     2.60
 24       mome x conc     1.76     2.60
 24       fuer y conc   -25.00     4.20
 24       mome x conc    78.61     4.20
 24       fuer z conc     0.43     4.20
 24       mome x conc     1.76     4.20
 25       fuer y conc   -25.00     0.80
 25       mome x conc    79.09     0.80
 25       fuer z conc     0.43     0.80
 25       mome x conc     1.76     0.80
 25       fuer y conc   -25.00     2.40
 25       mome x conc    79.09     2.40
 25       fuer z conc     0.43     2.40
 25       mome x conc     1.76     2.40
  1 a   9 fuer y unif    -8.00
  1 a   9 mome x unif    20.30
  1 a   9 fuer z unif     0.14
  1 a   9 mome x unif     0.56
 46 a  57 fuer y unif    -8.00
 46 a  57 mome x unif    25.53
 46 a  57 fuer z unif     0.14
 46 a  57 mome x unif     0.56
 70 a  81 fuer y unif    -8.00
 70 a  81 mome x unif    20.46
 70 a  81 fuer z unif     0.14
 70 a  81 mome x unif     0.56
 94 a 105 fuer y unif    -8.00
 94 a 105 mome x unif    18.66
 94 a 105 fuer z unif     0.14
 94 a 105 mome x unif     0.56
 10 a  21 fuer y unif    -1.25
 10 a  21 mome x unif     3.64
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.09
 34 a  45 fuer y unif    -1.25
 34 a  45 mome x unif     4.10
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.09
 58 a  69 fuer y unif    -1.25
 58 a  69 mome x unif     3.66
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.09
 82 a  93 fuer y unif    -1.25
 82 a  93 mome x unif     2.85
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.09
106 a 114 fuer y unif    -1.25
106 a 114 mome x unif     3.51
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.09
hipo 165 sob. v- 8 dcha ec-1 (LM-71)
carg en barr
 22 a  26 fuer y unif    -8.00
 22 a  26 mome x unif    25.14
 22 a  26 fuer z unif     0.14
 22 a  26 mome x unif     0.56
 27       fuer y unif    -8.00     0.00     1.80
 28       fuer y unif    -8.00    -1.80    -0.01
 27       mome x unif    25.58     0.00     1.80
 28       mome x unif    25.71    -1.80    -0.01
 27       fuer z unif     0.14     0.00     1.80
 28       fuer z unif     0.14    -1.80    -0.01
 27       mome x unif     0.56     0.00     1.80
 28       mome x unif     0.56    -1.80    -0.01
 29 a  33 fuer y unif    -8.00
 29 a  33 mome x unif    25.99
 29 a  33 fuer z unif     0.14
 29 a  33 mome x unif     0.56
 27       fuer y conc   -25.00     2.60
 27       mome x conc    79.95     2.60
 27       fuer z conc     0.43     2.60
 27       mome x conc     1.76     2.60
 27       fuer y conc   -25.00     4.20
 27       mome x conc    79.95     4.20
 27       fuer z conc     0.43     4.20
```

```
 27        mome x conc     1.76     4.20
 28        fuer y conc   -25.00     0.80
 28        mome x conc    80.34     0.80
 28        fuer z conc     0.43     0.80
 28        mome x conc     1.76     0.80
 28        fuer y conc   -25.00     2.40
 28        mome x conc    80.34     2.40
 28        fuer z conc     0.43     2.40
 28        mome x conc     1.76     2.40
  1 a   9 fuer y unif     -8.00
  1 a   9 mome x unif     20.30
  1 a   9 fuer z unif      0.14
  1 a   9 mome x unif      0.56
 46 a  57 fuer y unif     -8.00
 46 a  57 mome x unif     25.53
 46 a  57 fuer z unif      0.14
 46 a  57 mome x unif      0.56
 70 a  81 fuer y unif     -8.00
 70 a  81 mome x unif     20.46
 70 a  81 fuer z unif      0.14
 70 a  81 mome x unif      0.56
 94 a 105 fuer y unif     -8.00
 94 a 105 mome x unif     18.66
 94 a 105 fuer z unif      0.14
 94 a 105 mome x unif      0.56
 10 a  21 fuer y unif     -1.25
 10 a  21 mome x unif      3.64
 10 a  21 fuer z unif      0.02
 10 a  21 mome x unif      0.09
 34 a  45 fuer y unif     -1.25
 34 a  45 mome x unif      4.10
 34 a  45 fuer z unif      0.02
 34 a  45 mome x unif      0.09
 58 a  69 fuer y unif     -1.25
 58 a  69 mome x unif      3.66
 58 a  69 fuer z unif      0.02
 58 a  69 mome x unif      0.09
 82 a  93 fuer y unif     -1.25
 82 a  93 mome x unif      2.85
 82 a  93 fuer z unif      0.02
 82 a  93 mome x unif      0.09
106 a 114 fuer y unif     -1.25
106 a 114 mome x unif      3.51
106 a 114 fuer z unif      0.02
106 a 114 mome x unif      0.09
hipo 166 sob. v- 9 dcha ec-1 (LM-71)
carg en barr
 22 a  29 fuer y unif     -8.00
 22 a  29 mome x unif     25.32
 22 a  29 fuer z unif      0.14
 22 a  29 mome x unif      0.56
 30       fuer y unif     -8.00     0.00     1.80
 31       fuer y unif     -8.00    -1.80    -0.01
 30       mome x unif     25.92     0.00     1.80
 31       mome x unif     26.01    -1.80    -0.01
 30       fuer z unif      0.14     0.00     1.80
 31       fuer z unif      0.14    -1.80    -0.01
 30       mome x unif      0.56     0.00     1.80
 31       mome x unif      0.56    -1.80    -0.01
 32 a  33 fuer y unif     -8.00
 32 a  33 mome x unif     26.13
 32 a  33 fuer z unif      0.14
 32 a  33 mome x unif      0.56
 30       fuer y conc   -25.00     2.60
```

```
 30        mome x conc    80.99     2.60
 30        fuer z conc     0.43     2.60
 30        mome x conc     1.76     2.60
 30        fuer y conc   -25.00     4.20
 30        mome x conc    80.99     4.20
 30        fuer z conc     0.43     4.20
 30        mome x conc     1.76     4.20
 31        fuer y conc   -25.00     0.80
 31        mome x conc    81.29     0.80
 31        fuer z conc     0.43     0.80
 31        mome x conc     1.76     0.80
 31        fuer y conc   -25.00     2.40
 31        mome x conc    81.29     2.40
 31        fuer z conc     0.43     2.40
 31        mome x conc     1.76     2.40
  1 a   9 fuer y unif     -8.00
  1 a   9 mome x unif     20.30
  1 a   9 fuer z unif      0.14
  1 a   9 mome x unif      0.56
 46 a  57 fuer y unif     -8.00
 46 a  57 mome x unif     25.53
 46 a  57 fuer z unif      0.14
 46 a  57 mome x unif      0.56
 70 a  81 fuer y unif     -8.00
 70 a  81 mome x unif     20.46
 70 a  81 fuer z unif      0.14
 70 a  81 mome x unif      0.56
 94 a 105 fuer y unif     -8.00
 94 a 105 mome x unif     18.66
 94 a 105 fuer z unif      0.14
 94 a 105 mome x unif      0.56
 10 a  21 fuer y unif     -1.25
 10 a  21 mome x unif      3.64
 10 a  21 fuer z unif      0.02
 10 a  21 mome x unif      0.09
 34 a  45 fuer y unif     -1.25
 34 a  45 mome x unif      4.10
 34 a  45 fuer z unif      0.02
 34 a  45 mome x unif      0.09
 58 a  69 fuer y unif     -1.25
 58 a  69 mome x unif      3.66
 58 a  69 fuer z unif      0.02
 58 a  69 mome x unif      0.09
 82 a  93 fuer y unif     -1.25
 82 a  93 mome x unif      2.85
 82 a  93 fuer z unif      0.02
 82 a  93 mome x unif      0.09
106 a 114 fuer y unif     -1.25
106 a 114 mome x unif      3.51
106 a 114 fuer z unif      0.02
106 a 114 mome x unif      0.09
hipo 167 sob. v-10 dcha ec-1 (LM-71)
carg en barr
 34 a  35 fuer y unif     -8.00
 34 a  35 mome x unif     26.25
 34 a  35 fuer z unif      0.14
 34 a  35 mome x unif      0.56
 36       fuer y unif     -8.00     0.00     1.80
 37       fuer y unif     -8.00    -1.80    -0.01
 36       mome x unif     26.32     0.00     1.80
 37       mome x unif     26.35    -1.80    -0.01
 36       fuer z unif      0.14     0.00     1.80
 37       fuer z unif      0.14    -1.80    -0.01
 36       mome x unif      0.56     0.00     1.80
```

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 37        mome x unif     0.56    -1.80    -0.01
 38 a  45 fuer y unif    -8.00
 38 a  45 mome x unif    26.30
 38 a  45 fuer z unif     0.14
 38 a  45 mome x unif     0.56
 36        fuer y conc   -25.00     2.60
 36        mome x conc    82.24     2.60
 36        fuer z conc     0.43     2.60
 36        mome x conc     1.76     2.60
 36        fuer y conc   -25.00     4.20
 36        mome x conc    82.24     4.20
 36        fuer z conc     0.43     4.20
 36        mome x conc     1.76     4.20
 37        fuer y conc   -25.00     0.80
 37        mome x conc    82.34     0.80
 37        fuer z conc     0.43     0.80
 37        mome x conc     1.76     0.80
 37        fuer y conc   -25.00     2.40
 37        mome x conc    82.34     2.40
 37        fuer z conc     0.43     2.40
 37        mome x conc     1.76     2.40
 10 a  21 fuer y unif    -8.00
 10 a  21 mome x unif    23.32
 10 a  21 fuer z unif     0.14
 10 a  21 mome x unif     0.56
 58 a  69 fuer y unif    -8.00
 58 a  69 mome x unif    23.42
 58 a  69 fuer z unif     0.14
 58 a  69 mome x unif     0.56
 82 a  93 fuer y unif    -8.00
 82 a  93 mome x unif    18.22
 82 a  93 fuer z unif     0.14
 82 a  93 mome x unif     0.56
106 a 114 fuer y unif    -8.00
106 a 114 mome x unif    22.49
106 a 114 fuer z unif     0.14
106 a 114 mome x unif     0.56
 22 a  33 fuer y unif    -1.25
 22 a  33 mome x unif     3.98
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.09
  1 a   9 fuer y unif    -1.25
  1 a   9 mome x unif     3.17
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.09
 46 a  57 fuer y unif    -1.25
 46 a  57 mome x unif     3.99
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.09
 70 a  81 fuer y unif    -1.25
 70 a  81 mome x unif     3.20
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.09
 94 a 105 fuer y unif    -1.25
 94 a 105 mome x unif     2.92
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.09
hipo 168 sob. v-11 dcha ec-1 (LM-71)
carg en barr
 34 a  38 fuer y unif    -8.00
 34 a  38 mome x unif    26.29
 34 a  38 fuer z unif     0.14
 34 a  38 mome x unif     0.56
 39        fuer y unif    -8.00     0.00     1.80
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```
 40        fuer y unif    -8.00    -1.80    -0.01
 39        mome x unif    26.38     0.00     1.80
 40        mome x unif    26.38    -1.80    -0.01
 39        fuer z unif     0.14     0.00     1.80
 40        fuer z unif     0.14    -1.80    -0.01
 39        mome x unif     0.56     0.00     1.80
 40        mome x unif     0.56    -1.80    -0.01
 41 a  45 fuer y unif    -8.00
 41 a  45 mome x unif    26.31
 41 a  45 fuer z unif     0.14
 41 a  45 mome x unif     0.56
 39        fuer y conc   -25.00     2.60
 39        mome x conc    82.44     2.60
 39        fuer z conc     0.43     2.60
 39        mome x conc     1.76     2.60
 39        fuer y conc   -25.00     4.20
 39        mome x conc    82.44     4.20
 39        fuer z conc     0.43     4.20
 39        mome x conc     1.76     4.20
 40        fuer y conc   -25.00     0.80
 40        mome x conc    82.45     0.80
 40        fuer z conc     0.43     0.80
 40        mome x conc     1.76     0.80
 40        fuer y conc   -25.00     2.40
 40        mome x conc    82.45     2.40
 40        fuer z conc     0.43     2.40
 40        mome x conc     1.76     2.40
 10 a  21 fuer y unif    -8.00
 10 a  21 mome x unif    23.32
 10 a  21 fuer z unif     0.14
 10 a  21 mome x unif     0.56
 58 a  69 fuer y unif    -8.00
 58 a  69 mome x unif    23.42
 58 a  69 fuer z unif     0.14
 58 a  69 mome x unif     0.56
 82 a  93 fuer y unif    -8.00
 82 a  93 mome x unif    18.22
 82 a  93 fuer z unif     0.14
 82 a  93 mome x unif     0.56
106 a 114 fuer y unif    -8.00
106 a 114 mome x unif    22.49
106 a 114 fuer z unif     0.14
106 a 114 mome x unif     0.56
 22 a  33 fuer y unif    -1.25
 22 a  33 mome x unif     3.98
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.09
  1 a   9 fuer y unif    -1.25
  1 a   9 mome x unif     3.17
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.09
 46 a  57 fuer y unif    -1.25
 46 a  57 mome x unif     3.99
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.09
 70 a  81 fuer y unif    -1.25
 70 a  81 mome x unif     3.20
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.09
 94 a 105 fuer y unif    -1.25
 94 a 105 mome x unif     2.92
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.09
hipo 169 sob. v-12 dcha ec-1 (LM-71)
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carg en barr

34	a	41	fuer	y	unif	-8.00	
34	a	41	mome	x	unif	26.30	
34	a	41	fuer	z	unif	0.14	
34	a	41	mome	x	unif	0.56	
42			fuer	y	unif	-8.00	0.00 1.80
43			fuer	y	unif	-8.00	-1.80 -0.01
42			mome	x	unif	26.35	0.00 1.80
43			mome	x	unif	26.33	-1.80 -0.01
42			fuer	z	unif	0.14	0.00 1.80
43			fuer	z	unif	0.14	-1.80 -0.01
42			mome	x	unif	0.56	0.00 1.80
43			mome	x	unif	0.56	-1.80 -0.01
44	a	45	fuer	y	unif	-8.00	
44	a	45	mome	x	unif	26.27	
44	a	45	fuer	z	unif	0.14	
44	a	45	mome	x	unif	0.56	
42			fuer	y	conc	-25.00	2.60
42			mome	x	conc	82.35	2.60
42			fuer	z	conc	0.43	2.60
42			mome	x	conc	1.76	2.60
42			fuer	y	conc	-25.00	4.20
42			mome	x	conc	82.35	4.20
42			fuer	z	conc	0.43	4.20
42			mome	x	conc	1.76	4.20
43			fuer	y	conc	-25.00	0.80
43			mome	x	conc	82.27	0.80
43			fuer	z	conc	0.43	0.80
43			mome	x	conc	1.76	0.80
43			fuer	y	conc	-25.00	2.40
43			mome	x	conc	82.27	2.40
43			fuer	z	conc	0.43	2.40
43			mome	x	conc	1.76	2.40
10	a	21	fuer	y	unif	-8.00	
10	a	21	mome	x	unif	23.32	
10	a	21	fuer	z	unif	0.14	
10	a	21	mome	x	unif	0.56	
58	a	69	fuer	y	unif	-8.00	
58	a	69	mome	x	unif	23.42	
58	a	69	fuer	z	unif	0.14	
58	a	69	mome	x	unif	0.56	
82	a	93	fuer	y	unif	-8.00	
82	a	93	mome	x	unif	18.22	
82	a	93	fuer	z	unif	0.14	
82	a	93	mome	x	unif	0.56	
106	a	114	fuer	y	unif	-8.00	
106	a	114	mome	x	unif	22.49	
106	a	114	fuer	z	unif	0.14	
106	a	114	mome	x	unif	0.56	
22	a	33	fuer	y	unif	-1.25	
22	a	33	mome	x	unif	3.98	
22	a	33	fuer	z	unif	0.02	
22	a	33	mome	x	unif	0.09	
1	a	9	fuer	y	unif	-1.25	
1	a	9	mome	x	unif	3.17	
1	a	9	fuer	z	unif	0.02	
1	a	9	mome	x	unif	0.09	
46	a	57	fuer	y	unif	-1.25	
46	a	57	mome	x	unif	3.99	
46	a	57	fuer	z	unif	0.02	
46	a	57	mome	x	unif	0.09	
70	a	81	fuer	y	unif	-1.25	
70	a	81	mome	x	unif	3.20	
70	a	81	fuer	z	unif	0.02	
70	a	81	mome	x	unif	0.09	
94	a	105	fuer	y	unif	-1.25	
94	a	105	mome	x	unif	2.92	
94	a	105	fuer	z	unif	0.02	
94	a	105	mome	x	unif	0.09	

hipo 170 sob. v-13 dcha ec-1 (LM-71)

carg en barr

46	a	47	fuer	y	unif	-8.00	
46	a	47	mome	x	unif	26.15	
46	a	47	fuer	z	unif	0.14	
46	a	47	mome	x	unif	0.56	
48			fuer	y	unif	-8.00	0.00 1.80
49			fuer	y	unif	-8.00	-1.80 -0.01
48			mome	x	unif	26.04	0.00 1.80
49			mome	x	unif	25.94	-1.80 -0.01
48			fuer	z	unif	0.14	0.00 1.80
49			fuer	z	unif	0.14	-1.80 -0.01
48			mome	x	unif	0.56	0.00 1.80
49			mome	x	unif	0.56	-1.80 -0.01
50	a	57	fuer	y	unif	-8.00	
50	a	57	mome	x	unif	25.36	
50	a	57	fuer	z	unif	0.14	
50	a	57	mome	x	unif	0.56	
48			fuer	y	conc	-25.00	2.60
48			mome	x	conc	81.36	2.60
48			fuer	z	conc	0.43	2.60
48			mome	x	conc	1.76	2.60
48			fuer	y	conc	-25.00	4.20
48			mome	x	conc	81.36	4.20
48			fuer	z	conc	0.43	4.20
48			mome	x	conc	1.76	4.20
49			fuer	y	conc	-25.00	0.80
49			mome	x	conc	81.08	0.80
49			fuer	z	conc	0.43	0.80
49			mome	x	conc	1.76	0.80
49			fuer	y	conc	-25.00	2.40
49			mome	x	conc	81.08	2.40
49			fuer	z	conc	0.43	2.40
49			mome	x	conc	1.76	2.40
22	a	33	fuer	y	unif	-8.00	
22	a	33	mome	x	unif	25.50	
22	a	33	fuer	z	unif	0.14	
22	a	33	mome	x	unif	0.56	
1	a	9	fuer	y	unif	-8.00	
1	a	9	mome	x	unif	20.30	
1	a	9	fuer	z	unif	0.14	
1	a	9	mome	x	unif	0.56	
70	a	81	fuer	y	unif	-8.00	
70	a	81	mome	x	unif	20.46	
70	a	81	fuer	z	unif	0.14	
70	a	81	mome	x	unif	0.56	
94	a	105	fuer	y	unif	-8.00	
94	a	105	mome	x	unif	18.66	
94	a	105	fuer	z	unif	0.14	
94	a	105	mome	x	unif	0.56	
34	a	45	fuer	y	unif	-1.25	
34	a	45	mome	x	unif	4.10	
34	a	45	fuer	z	unif	0.02	
34	a	45	mome	x	unif	0.09	
10	a	21	fuer	y	unif	-1.25	
10	a	21	mome	x	unif	3.64	
10	a	21	fuer	z	unif	0.02	
10	a	21	mome	x	unif	0.09	
58	a	69	fuer	y	unif	-1.25	

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 58 a  69 mome x unif     3.66
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.09
 82 a  93 fuer y unif    -1.25
 82 a  93 mome x unif     2.85
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.09
106 a 114 fuer y unif    -1.25
106 a 114 mome x unif     3.51
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.09
hipo 171 sob. v-14 dcha ec-1 (LM-71)
carg en barr
 46 a  50 fuer y unif    -8.00
 46 a  50 mome x unif    26.01
 46 a  50 fuer z unif     0.14
 46 a  50 mome x unif     0.56
 51       fuer y unif    -8.00     0.00     1.80
 52       fuer y unif    -8.00    -1.80    -0.01
 51       mome x unif    25.74     0.00     1.80
 52       mome x unif    25.62    -1.80    -0.01
 51       fuer z unif     0.14     0.00     1.80
 52       fuer z unif     0.14    -1.80    -0.01
 51       mome x unif     0.56     0.00     1.80
 52       mome x unif     0.56    -1.80    -0.01
 53 a  57 fuer y unif    -8.00
 53 a  57 mome x unif    25.19
 53 a  57 fuer z unif     0.14
 53 a  57 mome x unif     0.56
 51       fuer y conc   -25.00     2.60
 51       mome x conc    80.44     2.60
 51       fuer z conc     0.43     2.60
 51       mome x conc     1.76     2.60
 51       fuer y conc   -25.00     4.20
 51       mome x conc    80.44     4.20
 51       fuer z conc     0.43     4.20
 51       mome x conc     1.76     4.20
 52       fuer y conc   -25.00     0.80
 52       mome x conc    80.06     0.80
 52       fuer z conc     0.43     0.80
 52       mome x conc     1.76     0.80
 52       fuer y conc   -25.00     2.40
 52       mome x conc    80.06     2.40
 52       fuer z conc     0.43     2.40
 52       mome x conc     1.76     2.40
 22 a  33 fuer y unif    -8.00
 22 a  33 mome x unif    25.50
 22 a  33 fuer z unif     0.14
 22 a  33 mome x unif     0.56
  1 a   9 fuer y unif    -8.00
  1 a   9 mome x unif    20.30
  1 a   9 fuer z unif     0.14
  1 a   9 mome x unif     0.56
 70 a  81 fuer y unif    -8.00
 70 a  81 mome x unif    20.46
 70 a  81 fuer z unif     0.14
 70 a  81 mome x unif     0.56
 94 a 105 fuer y unif    -8.00
 94 a 105 mome x unif    18.66
 94 a 105 fuer z unif     0.14
 94 a 105 mome x unif     0.56
 34 a  45 fuer y unif    -1.25
 34 a  45 mome x unif     4.10
 34 a  45 fuer z unif     0.02
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 34 a  45 mome x unif     0.09
 10 a  21 fuer y unif    -1.25
 10 a  21 mome x unif     3.64
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.09
 58 a  69 fuer y unif    -1.25
 58 a  69 mome x unif     3.66
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.09
 82 a  93 fuer y unif    -1.25
 82 a  93 mome x unif     2.85
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.09
106 a 114 fuer y unif    -1.25
106 a 114 mome x unif     3.51
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.09
hipo 172 sob. v-15 dcha ec-1 (LM-71)
carg en barr
 46 a  53 fuer y unif    -8.00
 46 a  53 mome x unif    25.84
 46 a  53 fuer z unif     0.14
 46 a  53 mome x unif     0.56
 54       fuer y unif    -8.00     0.00     1.80
 55       fuer y unif    -8.00    -1.80    -0.01
 54       mome x unif    25.35     0.00     1.80
 55       mome x unif    25.20    -1.80    -0.01
 54       fuer z unif     0.14     0.00     1.80
 55       fuer z unif     0.14    -1.80    -0.01
 54       mome x unif     0.56     0.00     1.80
 55       mome x unif     0.56    -1.80    -0.01
 56 a  57 fuer y unif    -8.00
 56 a  57 mome x unif    24.96
 56 a  57 fuer z unif     0.14
 56 a  57 mome x unif     0.56
 54       fuer y conc   -25.00     2.60
 54       mome x conc    79.22     2.60
 54       fuer z conc     0.43     2.60
 54       mome x conc     1.76     2.60
 54       fuer y conc   -25.00     4.20
 54       mome x conc    79.22     4.20
 54       fuer z conc     0.43     4.20
 54       mome x conc     1.76     4.20
 55       fuer y conc   -25.00     0.80
 55       mome x conc    78.76     0.80
 55       fuer z conc     0.43     0.80
 55       mome x conc     1.76     0.80
 55       fuer y conc   -25.00     2.40
 55       mome x conc    78.76     2.40
 55       fuer z conc     0.43     2.40
 55       mome x conc     1.76     2.40
 22 a  33 fuer y unif    -8.00
 22 a  33 mome x unif    25.50
 22 a  33 fuer z unif     0.14
 22 a  33 mome x unif     0.56
  1 a   9 fuer y unif    -8.00
  1 a   9 mome x unif    20.30
  1 a   9 fuer z unif     0.14
  1 a   9 mome x unif     0.56
 70 a  81 fuer y unif    -8.00
 70 a  81 mome x unif    20.46
 70 a  81 fuer z unif     0.14
 70 a  81 mome x unif     0.56
 94 a 105 fuer y unif    -8.00
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 94 a 105 mome x unif    18.66
 94 a 105 fuer z unif     0.14
 94 a 105 mome x unif     0.56
 34 a  45 fuer y unif    -1.25
 34 a  45 mome x unif     4.10
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.09
 10 a  21 fuer y unif    -1.25
 10 a  21 mome x unif     3.64
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.09
 58 a  69 fuer y unif    -1.25
 58 a  69 mome x unif     3.66
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.09
 82 a  93 fuer y unif    -1.25
 82 a  93 mome x unif     2.85
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.09
106 a 114 fuer y unif    -1.25
106 a 114 mome x unif     3.51
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.09
hipo 173 sob. v-16 dcha ec-1 (LM-71)
carg en barr
 58 a  59 fuer y unif    -8.00
 58 a  59 mome x unif    24.60
 58 a  59 fuer z unif     0.14
 58 a  59 mome x unif     0.56
 60       fuer y unif    -8.00     0.00     1.80
 61       fuer y unif    -8.00    -1.80    -0.01
 60       mome x unif    24.31     0.00     1.80
 61       mome x unif    24.10    -1.80    -0.01
 60       fuer z unif     0.14     0.00     1.80
 61       fuer z unif     0.14    -1.80    -0.01
 60       mome x unif     0.56     0.00     1.80
 61       mome x unif     0.56    -1.80    -0.01
 62 a  69 fuer y unif    -8.00
 62 a  69 mome x unif    23.01
 62 a  69 fuer z unif     0.14
 62 a  69 mome x unif     0.56
 60       fuer y conc   -25.00     2.60
 60       mome x conc    75.96     2.60
 60       fuer z conc     0.43     2.60
 60       mome x conc     1.76     2.60
 60       fuer y conc   -25.00     4.20
 60       mome x conc    75.96     4.20
 60       fuer z conc     0.43     4.20
 60       mome x conc     1.76     4.20
 61       fuer y conc   -25.00     0.80
 61       mome x conc    75.33     0.80
 61       fuer z conc     0.43     0.80
 61       mome x conc     1.76     0.80
 61       fuer y conc   -25.00     2.40
 61       mome x conc    75.33     2.40
 61       fuer z conc     0.43     2.40
 61       mome x conc     1.76     2.40
 34 a  45 fuer y unif    -8.00
 34 a  45 mome x unif    26.23
 34 a  45 fuer z unif     0.14
 34 a  45 mome x unif     0.56
 10 a  21 fuer y unif    -8.00
 10 a  21 mome x unif    23.32
 10 a  21 fuer z unif     0.14
 10 a  21 mome x unif     0.56
 82 a  93 fuer y unif    -8.00
 82 a  93 mome x unif    18.22
 82 a  93 fuer z unif     0.14
 82 a  93 mome x unif     0.56
106 a 114 fuer y unif    -8.00
106 a 114 mome x unif    22.49
106 a 114 fuer z unif     0.14
106 a 114 mome x unif     0.56
 46 a  57 fuer y unif    -1.25
 46 a  57 mome x unif     3.99
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.09
 22 a  33 fuer y unif    -1.25
 22 a  33 mome x unif     3.98
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.09
  1 a   9 fuer y unif    -1.25
  1 a   9 mome x unif     3.17
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.09
 70 a  81 fuer y unif    -1.25
 70 a  81 mome x unif     3.20
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.09
 94 a 105 fuer y unif    -1.25
 94 a 105 mome x unif     2.92
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.09
hipo 174 sob. v-17 dcha ec-1 (LM-71)
carg en barr
 58 a  62 fuer y unif    -8.00
 58 a  62 mome x unif    24.29
 58 a  62 fuer z unif     0.14
 58 a  62 mome x unif     0.56
 63       fuer y unif    -8.00     0.00     1.80
 64       fuer y unif    -8.00    -1.80    -0.01
 63       mome x unif    23.66     0.00     1.80
 64       mome x unif    23.42    -1.80    -0.01
 63       fuer z unif     0.14     0.00     1.80
 64       fuer z unif     0.14    -1.80    -0.01
 63       mome x unif     0.56     0.00     1.80
 64       mome x unif     0.56    -1.80    -0.01
 65 a  69 fuer y unif    -8.00
 65 a  69 mome x unif    22.65
 65 a  69 fuer z unif     0.14
 65 a  69 mome x unif     0.56
 63       fuer y conc   -25.00     2.60
 63       mome x conc    73.92     2.60
 63       fuer z conc     0.43     2.60
 63       mome x conc     1.76     2.60
 63       fuer y conc   -25.00     4.20
 63       mome x conc    73.92     4.20
 63       fuer z conc     0.43     4.20
 63       mome x conc     1.76     4.20
 64       fuer y conc   -25.00     0.80
 64       mome x conc    73.20     0.80
 64       fuer z conc     0.43     0.80
 64       mome x conc     1.76     0.80
 64       fuer y conc   -25.00     2.40
 64       mome x conc    73.20     2.40
 64       fuer z conc     0.43     2.40
 64       mome x conc     1.76     2.40
34 a  45 fuer y unif    -8.00
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34	a	45	mome	x	unif	26.23		
34	a	45	fuer	z	unif	0.14		
34	a	45	mome	x	unif	0.56		
10	a	21	fuer	y	unif	-8.00		
10	a	21	mome	x	unif	23.32		
10	a	21	fuer	z	unif	0.14		
10	a	21	mome	x	unif	0.56		
82	a	93	fuer	y	unif	-8.00		
82	a	93	mome	x	unif	18.22		
82	a	93	fuer	z	unif	0.14		
82	a	93	mome	x	unif	0.56		
106	a	114	fuer	y	unif	-8.00		
106	a	114	mome	x	unif	22.49		
106	a	114	fuer	z	unif	0.14		
106	a	114	mome	x	unif	0.56		
46	a	57	fuer	y	unif	-1.25		
46	a	57	mome	x	unif	3.99		
46	a	57	fuer	z	unif	0.02		
46	a	57	mome	x	unif	0.09		
22	a	33	fuer	y	unif	-1.25		
22	a	33	mome	x	unif	3.98		
22	a	33	fuer	z	unif	0.02		
22	a	33	mome	x	unif	0.09		
1	a	9	fuer	y	unif	-1.25		
1	a	9	mome	x	unif	3.17		
1	a	9	fuer	z	unif	0.02		
1	a	9	mome	x	unif	0.09		
70	a	81	fuer	y	unif	-1.25		
70	a	81	mome	x	unif	3.20		
70	a	81	fuer	z	unif	0.02		
70	a	81	mome	x	unif	0.09		
94	a	105	fuer	y	unif	-1.25		
94	a	105	mome	x	unif	2.92		
94	a	105	fuer	z	unif	0.02		
94	a	105	mome	x	unif	0.09		

hipo 175 sob. v-18 dcha ec-1 (LM-71)
carg en barr

58	a	65	fuer	y	unif	-8.00		
58	a	65	mome	x	unif	23.94		
58	a	65	fuer	z	unif	0.14		
58	a	65	mome	x	unif	0.56		
66			fuer	y	unif	-8.00	0.00	1.80
67			fuer	y	unif	-8.00	-1.80	-0.01
66			mome	x	unif	22.92	0.00	1.80
67			mome	x	unif	22.66	-1.80	-0.01
66			fuer	z	unif	0.14	0.00	1.80
67			fuer	z	unif	0.14	-1.80	-0.01
66			mome	x	unif	0.56	0.00	1.80
67			mome	x	unif	0.56	-1.80	-0.01
68	a	69	fuer	y	unif	-8.00		
68	a	69	mome	x	unif	22.26		
68	a	69	fuer	z	unif	0.14		
68	a	69	mome	x	unif	0.56		
66			fuer	y	conc	-25.00	2.60	
66			mome	x	conc	71.62	2.60	
66			fuer	z	conc	0.43	2.60	
66			mome	x	conc	1.76	2.60	
66			fuer	y	conc	-25.00	4.20	
66			mome	x	conc	71.62	4.20	
66			fuer	z	conc	0.43	4.20	
66			mome	x	conc	1.76	4.20	
67			fuer	y	conc	-25.00	0.80	
67			mome	x	conc	70.81	0.80	
67			fuer	z	conc	0.43	0.80	
67			mome	x	conc	1.76	0.80	
67			fuer	y	conc	-25.00	2.40	
67			mome	x	conc	70.81	2.40	
67			fuer	z	conc	0.43	2.40	
67			mome	x	conc	1.76	2.40	
34	a	45	fuer	y	unif	-8.00		
34	a	45	mome	x	unif	26.23		
34	a	45	fuer	z	unif	0.14		
34	a	45	mome	x	unif	0.56		
10	a	21	fuer	y	unif	-8.00		
10	a	21	mome	x	unif	23.32		
10	a	21	fuer	z	unif	0.14		
10	a	21	mome	x	unif	0.56		
82	a	93	fuer	y	unif	-8.00		
82	a	93	mome	x	unif	18.22		
82	a	93	fuer	z	unif	0.14		
82	a	93	mome	x	unif	0.56		
106	a	114	fuer	y	unif	-8.00		
106	a	114	mome	x	unif	22.49		
106	a	114	fuer	z	unif	0.14		
106	a	114	mome	x	unif	0.56		
46	a	57	fuer	y	unif	-1.25		
46	a	57	mome	x	unif	3.99		
46	a	57	fuer	z	unif	0.02		
46	a	57	mome	x	unif	0.09		
22	a	33	fuer	y	unif	-1.25		
22	a	33	mome	x	unif	3.98		
22	a	33	fuer	z	unif	0.02		
22	a	33	mome	x	unif	0.09		
1	a	9	fuer	y	unif	-1.25		
1	a	9	mome	x	unif	3.17		
1	a	9	fuer	z	unif	0.02		
1	a	9	mome	x	unif	0.09		
70	a	81	fuer	y	unif	-1.25		
70	a	81	mome	x	unif	3.20		
70	a	81	fuer	z	unif	0.02		
70	a	81	mome	x	unif	0.09		
94	a	105	fuer	y	unif	-1.25		
94	a	105	mome	x	unif	2.92		
94	a	105	fuer	z	unif	0.02		
94	a	105	mome	x	unif	0.09		

hipo 176 sob. v-19 dcha ec-1 (LM-71)
carg en barr

70	a	71	fuer	y	unif	-8.00		
70	a	71	mome	x	unif	21.72		
70	a	71	fuer	z	unif	0.14		
70	a	71	mome	x	unif	0.56		
72			fuer	y	unif	-8.00	0.00	1.80
73			fuer	y	unif	-8.00	-1.80	-0.01
72			mome	x	unif	21.32	0.00	1.80
73			mome	x	unif	21.05	-1.80	-0.01
72			fuer	z	unif	0.14	0.00	1.80
73			fuer	z	unif	0.14	-1.80	-0.01
72			mome	x	unif	0.56	0.00	1.80
73			mome	x	unif	0.56	-1.80	-0.01
74	a	81	fuer	y	unif	-8.00		
74	a	81	mome	x	unif	19.92		
74	a	81	fuer	z	unif	0.14		
74	a	81	mome	x	unif	0.56		
72			fuer	y	conc	-25.00	2.60	
72			mome	x	conc	66.62	2.60	
72			fuer	z	conc	0.43	2.60	
72			mome	x	conc	1.76	2.60	
72			fuer	y	conc	-25.00	4.20	

72		mome	x	conc	66.62	4.20
72		fuer	z	conc	0.43	4.20
72		mome	x	conc	1.76	4.20
73		fuer	y	conc	-25.00	0.80
73		mome	x	conc	65.77	0.80
73		fuer	z	conc	0.43	0.80
73		mome	x	conc	1.76	0.80
73		fuer	y	conc	-25.00	2.40
73		mome	x	conc	65.77	2.40
73		fuer	z	conc	0.43	2.40
73		mome	x	conc	1.76	2.40
46	a 57	fuer	y	unif	-8.00	
46	a 57	mome	x	unif	25.53	
46	a 57	fuer	z	unif	0.14	
46	a 57	mome	x	unif	0.56	
22	a 33	fuer	y	unif	-8.00	
22	a 33	mome	x	unif	25.50	
22	a 33	fuer	z	unif	0.14	
22	a 33	mome	x	unif	0.56	
1	a 9	fuer	y	unif	-8.00	
1	a 9	mome	x	unif	20.30	
1	a 9	fuer	z	unif	0.14	
1	a 9	mome	x	unif	0.56	
94	a 105	fuer	y	unif	-8.00	
94	a 105	mome	x	unif	18.66	
94	a 105	fuer	z	unif	0.14	
94	a 105	mome	x	unif	0.56	
58	a 69	fuer	y	unif	-1.25	
58	a 69	mome	x	unif	3.66	
58	a 69	fuer	z	unif	0.02	
58	a 69	mome	x	unif	0.09	
34	a 45	fuer	y	unif	-1.25	
34	a 45	mome	x	unif	4.10	
34	a 45	fuer	z	unif	0.02	
34	a 45	mome	x	unif	0.09	
10	a 21	fuer	y	unif	-1.25	
10	a 21	mome	x	unif	3.64	
10	a 21	fuer	z	unif	0.02	
10	a 21	mome	x	unif	0.09	
82	a 93	fuer	y	unif	-1.25	
82	a 93	mome	x	unif	2.85	
82	a 93	fuer	z	unif	0.02	
82	a 93	mome	x	unif	0.09	
106	a 114	fuer	y	unif	-1.25	
106	a 114	mome	x	unif	3.51	
106	a 114	fuer	z	unif	0.02	
106	a 114	mome	x	unif	0.09	

hipo 177 sob. v-20 dcha ec-1 (LM-71)
carg en barr

70	a 74	fuer	y	unif	-8.00		
70	a 74	mome	x	unif	21.32		
70	a 74	fuer	z	unif	0.14		
70	a 74	mome	x	unif	0.56		
75		fuer	y	unif	-8.00	0.00	1.80
76		fuer	y	unif	-8.00	-1.80	-0.01
75		mome	x	unif	20.51	0.00	1.80
76		mome	x	unif	20.25	-1.80	-0.01
75		fuer	z	unif	0.14	0.00	1.80
76		fuer	z	unif	0.14	-1.80	-0.01
75		mome	x	unif	0.56	0.00	1.80
76		mome	x	unif	0.56	-1.80	-0.01
77	a 81	fuer	y	unif	-8.00		
77	a 81	mome	x	unif	19.52		
77	a 81	fuer	z	unif	0.14		
77	a 81	mome	x	unif	0.56		
75		fuer	y	conc	-25.00	2.60	
75		mome	x	conc	64.10	2.60	
75		fuer	z	conc	0.43	2.60	
75		mome	x	conc	1.76	2.60	
75		fuer	y	conc	-25.00	4.20	
75		mome	x	conc	64.10	4.20	
75		fuer	z	conc	0.43	4.20	
75		mome	x	conc	1.76	4.20	
76		fuer	y	conc	-25.00	0.80	
76		mome	x	conc	63.28	0.80	
76		fuer	z	conc	0.43	0.80	
76		mome	x	conc	1.76	0.80	
76		fuer	y	conc	-25.00	2.40	
76		mome	x	conc	63.28	2.40	
76		fuer	z	conc	0.43	2.40	
76		mome	x	conc	1.76	2.40	
46	a 57	fuer	y	unif	-8.00		
46	a 57	mome	x	unif	25.53		
46	a 57	fuer	z	unif	0.14		
46	a 57	mome	x	unif	0.56		
22	a 33	fuer	y	unif	-8.00		
22	a 33	mome	x	unif	25.50		
22	a 33	fuer	z	unif	0.14		
22	a 33	mome	x	unif	0.56		
1	a 9	fuer	y	unif	-8.00		
1	a 9	mome	x	unif	20.30		
1	a 9	fuer	z	unif	0.14		
1	a 9	mome	x	unif	0.56		
94	a 105	fuer	y	unif	-8.00		
94	a 105	mome	x	unif	18.66		
94	a 105	fuer	z	unif	0.14		
94	a 105	mome	x	unif	0.56		
58	a 69	fuer	y	unif	-1.25		
58	a 69	mome	x	unif	3.66		
58	a 69	fuer	z	unif	0.02		
58	a 69	mome	x	unif	0.09		
34	a 45	fuer	y	unif	-1.25		
34	a 45	mome	x	unif	4.10		
34	a 45	fuer	z	unif	0.02		
34	a 45	mome	x	unif	0.09		
10	a 21	fuer	y	unif	-1.25		
10	a 21	mome	x	unif	3.64		
10	a 21	fuer	z	unif	0.02		
10	a 21	mome	x	unif	0.09		
82	a 93	fuer	y	unif	-1.25		
82	a 93	mome	x	unif	2.85		
82	a 93	fuer	z	unif	0.02		
82	a 93	mome	x	unif	0.09		
106	a 114	fuer	y	unif	-1.25		
106	a 114	mome	x	unif	3.51		
106	a 114	fuer	z	unif	0.02		
106	a 114	mome	x	unif	0.09		

hipo 178 sob. v-21 dcha ec-1 (LM-71)
carg en barr

70	a 77	fuer	y	unif	-8.00		
70	a 77	mome	x	unif	20.93		
70	a 77	fuer	z	unif	0.14		
70	a 77	mome	x	unif	0.56		
78		fuer	y	unif	-8.00	0.00	1.80
79		fuer	y	unif	-8.00	-1.80	-0.01
78		mome	x	unif	19.75	0.00	1.80
79		mome	x	unif	19.50	-1.80	-0.01
78		fuer	z	unif	0.14	0.00	1.80

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 79        fuer z unif      0.14    -1.80    -0.01
 78        mome x unif      0.56     0.00     1.80
 79        mome x unif      0.56    -1.80    -0.01
 80 a  81  fuer y unif     -8.00
 80 a  81  mome x unif     19.16
 80 a  81  fuer z unif      0.14
 80 a  81  mome x unif      0.56
 78        fuer y conc    -25.00     2.60
 78        mome x conc     61.71     2.60
 78        fuer z conc      0.43     2.60
 78        mome x conc      1.76     2.60
 78        fuer y conc    -25.00     4.20
 78        mome x conc     61.71     4.20
 78        fuer z conc      0.43     4.20
 78        mome x conc      1.76     4.20
 79        fuer y conc    -25.00     0.80
 79        mome x conc     60.95     0.80
 79        fuer z conc      0.43     0.80
 79        mome x conc      1.76     0.80
 79        fuer y conc    -25.00     2.40
 79        mome x conc     60.95     2.40
 79        fuer z conc      0.43     2.40
 79        mome x conc      1.76     2.40
 46 a  57  fuer y unif     -8.00
 46 a  57  mome x unif     25.53
 46 a  57  fuer z unif      0.14
 46 a  57  mome x unif      0.56
 22 a  33  fuer y unif     -8.00
 22 a  33  mome x unif     25.50
 22 a  33  fuer z unif      0.14
 22 a  33  mome x unif      0.56
  1 a   9  fuer y unif     -8.00
  1 a   9  mome x unif     20.30
  1 a   9  fuer z unif      0.14
  1 a   9  mome x unif      0.56
 94 a 105  fuer y unif     -8.00
 94 a 105  mome x unif     18.66
 94 a 105  fuer z unif      0.14
 94 a 105  mome x unif      0.56
 58 a  69  fuer y unif     -1.25
 58 a  69  mome x unif      3.66
 58 a  69  fuer z unif      0.02
 58 a  69  mome x unif      0.09
 34 a  45  fuer y unif     -1.25
 34 a  45  mome x unif      4.10
 34 a  45  fuer z unif      0.02
 34 a  45  mome x unif      0.09
 10 a  21  fuer y unif     -1.25
 10 a  21  mome x unif      3.64
 10 a  21  fuer z unif      0.02
 10 a  21  mome x unif      0.09
 82 a  93  fuer y unif     -1.25
 82 a  93  mome x unif      2.85
 82 a  93  fuer z unif      0.02
 82 a  93  mome x unif      0.09
106 a 114  fuer y unif     -1.25
106 a 114  mome x unif      3.51
106 a 114  fuer z unif      0.02
106 a 114  mome x unif      0.09
hipo 179 sob. v-22 dcha ec-1 (LM-71)
carg en barr
 82 a  83  fuer y unif     -8.00
 82 a  83  mome x unif     18.74
 82 a  83  fuer z unif      0.14
 82 a  83  mome x unif      0.56
 84        fuer y unif     -8.00     0.00     1.80
 85        fuer y unif     -8.00    -1.80    -0.01
 84        mome x unif     18.46     0.00     1.80
 85        mome x unif     18.29    -1.80    -0.01
 84        fuer z unif      0.14     0.00     1.80
 85        fuer z unif      0.14    -1.80    -0.01
 84        mome x unif      0.56     0.00     1.80
 85        mome x unif      0.56    -1.80    -0.01
 86 a  93  fuer y unif     -8.00
 86 a  93  mome x unif     17.86
 86 a  93  fuer z unif      0.14
 86 a  93  mome x unif      0.56
 84        fuer y conc    -25.00     2.60
 84        mome x conc     57.67     2.60
 84        fuer z conc      0.43     2.60
 84        mome x conc      1.76     2.60
 84        fuer y conc    -25.00     4.20
 84        mome x conc     57.67     4.20
 84        fuer z conc      0.43     4.20
 84        mome x conc      1.76     4.20
 85        fuer y conc    -25.00     0.80
 85        mome x conc     57.15     0.80
 85        fuer z conc      0.43     0.80
 85        mome x conc      1.76     0.80
 85        fuer y conc    -25.00     2.40
 85        mome x conc     57.15     2.40
 85        fuer z conc      0.43     2.40
 85        mome x conc      1.76     2.40
 58 a  69  fuer y unif     -8.00
 58 a  69  mome x unif     23.42
 58 a  69  fuer z unif      0.14
 58 a  69  mome x unif      0.56
 34 a  45  fuer y unif     -8.00
 34 a  45  mome x unif     26.23
 34 a  45  fuer z unif      0.14
 34 a  45  mome x unif      0.56
 10 a  21  fuer y unif     -8.00
 10 a  21  mome x unif     23.32
 10 a  21  fuer z unif      0.14
 10 a  21  mome x unif      0.56
106 a 114  fuer y unif     -8.00
106 a 114  mome x unif     22.49
106 a 114  fuer z unif      0.14
106 a 114  mome x unif      0.56
 70 a  81  fuer y unif     -1.25
 70 a  81  mome x unif      3.20
 70 a  81  fuer z unif      0.02
 70 a  81  mome x unif      0.09
 46 a  57  fuer y unif     -1.25
 46 a  57  mome x unif      3.99
 46 a  57  fuer z unif      0.02
 46 a  57  mome x unif      0.09
 22 a  33  fuer y unif     -1.25
 22 a  33  mome x unif      3.98
 22 a  33  fuer z unif      0.02
 22 a  33  mome x unif      0.09
  1 a   9  fuer y unif     -1.25
  1 a   9  mome x unif      3.17
  1 a   9  fuer z unif      0.02
  1 a   9  mome x unif      0.09
 94 a 105  fuer y unif     -1.25
 94 a 105  mome x unif      2.92
 94 a 105  fuer z unif      0.02
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 94 a 105 mome x unif     0.09
hipo 180 sob. v-23 dcha ec-1 (LM-71)
carg en barr
 82 a  86 fuer y unif    -8.00
 82 a  86 mome x unif    18.49
 82 a  86 fuer z unif     0.14
 82 a  86 mome x unif     0.56
 87       fuer y unif    -8.00      0.00     1.80
 88       fuer y unif    -8.00     -1.80    -0.01
 87       mome x unif    18.00      0.00     1.80
 88       mome x unif    17.88     -1.80    -0.01
 87       fuer z unif     0.14      0.00     1.80
 88       fuer z unif     0.14     -1.80    -0.01
 87       mome x unif     0.56      0.00     1.80
 88       mome x unif     0.56     -1.80    -0.01
 89 a  93 fuer y unif    -8.00
 89 a  93 mome x unif    17.68
 89 a  93 fuer z unif     0.14
 89 a  93 mome x unif     0.56
 87       fuer y conc   -25.00      2.60
 87       mome x conc    56.25      2.60
 87       fuer z conc     0.43      2.60
 87       mome x conc     1.76      2.60
 87       fuer y conc   -25.00      4.20
 87       mome x conc    56.25      4.20
 87       fuer z conc     0.43      4.20
 87       mome x conc     1.76      4.20
 88       fuer y conc   -25.00      0.80
 88       mome x conc    55.88      0.80
 88       fuer z conc     0.43      0.80
 88       mome x conc     1.76      0.80
 88       fuer y conc   -25.00      2.40
 88       mome x conc    55.88      2.40
 88       fuer z conc     0.43      2.40
 88       mome x conc     1.76      2.40
 58 a  69 fuer y unif    -8.00
 58 a  69 mome x unif    23.42
 58 a  69 fuer z unif     0.14
 58 a  69 mome x unif     0.56
 34 a  45 fuer y unif    -8.00
 34 a  45 mome x unif    26.23
 34 a  45 fuer z unif     0.14
 34 a  45 mome x unif     0.56
 10 a  21 fuer y unif    -8.00
 10 a  21 mome x unif    23.32
 10 a  21 fuer z unif     0.14
 10 a  21 mome x unif     0.56
106 a 114 fuer y unif    -8.00
106 a 114 mome x unif    22.49
106 a 114 fuer z unif     0.14
106 a 114 mome x unif     0.56
 70 a  81 fuer y unif    -1.25
 70 a  81 mome x unif     3.20
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.09
 46 a  57 fuer y unif    -1.25
 46 a  57 mome x unif     3.99
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.09
 22 a  33 fuer y unif    -1.25
 22 a  33 mome x unif     3.98
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.09
  1 a   9 fuer y unif    -1.25
  1 a   9 mome x unif     3.17
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.09
 94 a 105 fuer y unif    -1.25
 94 a 105 mome x unif     2.92
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.09
hipo 181 sob. v-24 dcha ec-1 (LM-71)
carg en barr
 82 a  89 fuer y unif    -8.00
 82 a  89 mome x unif    18.31
 82 a  89 fuer z unif     0.14
 82 a  89 mome x unif     0.56
 90       fuer y unif    -8.00      0.00     1.80
 91       fuer y unif    -8.00     -1.80    -0.01
 90       mome x unif    17.70      0.00     1.80
 91       mome x unif    17.64     -1.80    -0.01
 90       fuer z unif     0.14      0.00     1.80
 91       fuer z unif     0.14     -1.80    -0.01
 90       mome x unif     0.56      0.00     1.80
 91       mome x unif     0.56     -1.80    -0.01
 92 a  93 fuer y unif    -8.00
 92 a  93 mome x unif    17.60
 92 a  93 fuer z unif     0.14
 92 a  93 mome x unif     0.56
 90       fuer y conc   -25.00      2.60
 90       mome x conc    55.30      2.60
 90       fuer z conc     0.43      2.60
 90       mome x conc     1.76      2.60
 90       fuer y conc   -25.00      4.20
 90       mome x conc    55.30      4.20
 90       fuer z conc     0.43      4.20
 90       mome x conc     1.76      4.20
 91       fuer y conc   -25.00      0.80
 91       mome x conc    55.12      0.80
 91       fuer z conc     0.43      0.80
 91       mome x conc     1.76      0.80
 91       fuer y conc   -25.00      2.40
 91       mome x conc    55.12      2.40
 91       fuer z conc     0.43      2.40
 91       mome x conc     1.76      2.40
 58 a  69 fuer y unif    -8.00
 58 a  69 mome x unif    23.42
 58 a  69 fuer z unif     0.14
 58 a  69 mome x unif     0.56
 34 a  45 fuer y unif    -8.00
 34 a  45 mome x unif    26.23
 34 a  45 fuer z unif     0.14
 34 a  45 mome x unif     0.56
 10 a  21 fuer y unif    -8.00
 10 a  21 mome x unif    23.32
 10 a  21 fuer z unif     0.14
 10 a  21 mome x unif     0.56
106 a 114 fuer y unif    -8.00
106 a 114 mome x unif    22.49
106 a 114 fuer z unif     0.14
106 a 114 mome x unif     0.56
 70 a  81 fuer y unif    -1.25
 70 a  81 mome x unif     3.20
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.09
 46 a  57 fuer y unif    -1.25
 46 a  57 mome x unif     3.99
 46 a  57 fuer z unif     0.02
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 46 a  57 mome x unif     0.09
 22 a  33 fuer y unif    -1.25
 22 a  33 mome x unif     3.98
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.09
  1 a   9 fuer y unif    -1.25
  1 a   9 mome x unif     3.17
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.09
 94 a 105 fuer y unif    -1.25
 94 a 105 mome x unif     2.92
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.09
hipo 182 sob. v-25 dcha ec-1 (LM-71)
carg en barr
 94 a  95 fuer y unif    -8.00
 94 a  95 mome x unif    17.62
 94 a  95 fuer z unif     0.14
 94 a  95 mome x unif     0.56
 96       fuer y unif    -8.00     0.00     1.80
 97       fuer y unif    -8.00    -1.80    -0.01
 96       mome x unif    17.71     0.00     1.80
 97       mome x unif    17.81    -1.80    -0.01
 96       fuer z unif     0.14     0.00     1.80
 97       fuer z unif     0.14    -1.80    -0.01
 96       mome x unif     0.56     0.00     1.80
 97       mome x unif     0.56    -1.80    -0.01
 98 a 105 fuer y unif    -8.00
 98 a 105 mome x unif    18.83
 98 a 105 fuer z unif     0.14
 98 a 105 mome x unif     0.56
 96       fuer y conc   -25.00     2.60
 96       mome x conc    55.35     2.60
 96       fuer z conc     0.43     2.60
 96       mome x conc     1.76     2.60
 96       fuer y conc   -25.00     4.20
 96       mome x conc    55.35     4.20
 96       fuer z conc     0.43     4.20
 96       mome x conc     1.76     4.20
 97       fuer y conc   -25.00     0.80
 97       mome x conc    55.65     0.80
 97       fuer z conc     0.43     0.80
 97       mome x conc     1.76     0.80
 97       fuer y conc   -25.00     2.40
 97       mome x conc    55.65     2.40
 97       fuer z conc     0.43     2.40
 97       mome x conc     1.76     2.40
 70 a  81 fuer y unif    -8.00
 70 a  81 mome x unif    20.46
 70 a  81 fuer z unif     0.14
 70 a  81 mome x unif     0.56
 46 a  57 fuer y unif    -8.00
 46 a  57 mome x unif    25.53
 46 a  57 fuer z unif     0.14
 46 a  57 mome x unif     0.56
 22 a  33 fuer y unif    -8.00
 22 a  33 mome x unif    25.50
 22 a  33 fuer z unif     0.14
 22 a  33 mome x unif     0.56
  1 a   9 fuer y unif    -8.00
  1 a   9 mome x unif    20.30
  1 a   9 fuer z unif     0.14
  1 a   9 mome x unif     0.56
 82 a  93 fuer y unif    -1.25
 82 a  93 mome x unif     2.85
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.09
 58 a  69 fuer y unif    -1.25
 58 a  69 mome x unif     3.66
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.09
 34 a  45 fuer y unif    -1.25
 34 a  45 mome x unif     4.10
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.09
 10 a  21 fuer y unif    -1.25
 10 a  21 mome x unif     3.64
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.09
106 a 114 fuer y unif    -1.25
106 a 114 mome x unif     3.51
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.09
hipo 183 sob. v-26 dcha ec-1 (LM-71)
carg en barr
 94 a  98 fuer y unif    -8.00
 94 a  98 mome x unif    17.77
 94 a  98 fuer z unif     0.14
 94 a  98 mome x unif     0.56
 99       fuer y unif    -8.00     0.00     1.80
100       fuer y unif    -8.00    -1.80    -0.01
 99       mome x unif    18.08     0.00     1.80
100       mome x unif    18.27    -1.80    -0.01
 99       fuer z unif     0.14     0.00     1.80
100       fuer z unif     0.14    -1.80    -0.01
 99       mome x unif     0.56     0.00     1.80
100       mome x unif     0.56    -1.80    -0.01
101 a 105 fuer y unif    -8.00
101 a 105 mome x unif    19.10
101 a 105 fuer z unif     0.14
101 a 105 mome x unif     0.56
 99       fuer y conc   -25.00     2.60
 99       mome x conc    56.51     2.60
 99       fuer z conc     0.43     2.60
 99       mome x conc     1.76     2.60
 99       fuer y conc   -25.00     4.20
 99       mome x conc    56.51     4.20
 99       fuer z conc     0.43     4.20
 99       mome x conc     1.76     4.20
100       fuer y conc   -25.00     0.80
100       mome x conc    57.09     0.80
100       fuer z conc     0.43     0.80
100       mome x conc     1.76     0.80
100       fuer y conc   -25.00     2.40
100       mome x conc    57.09     2.40
100       fuer z conc     0.43     2.40
100       mome x conc     1.76     2.40
 70 a  81 fuer y unif    -8.00
 70 a  81 mome x unif    20.46
 70 a  81 fuer z unif     0.14
 70 a  81 mome x unif     0.56
 46 a  57 fuer y unif    -8.00
 46 a  57 mome x unif    25.53
 46 a  57 fuer z unif     0.14
 46 a  57 mome x unif     0.56
 22 a  33 fuer y unif    -8.00
 22 a  33 mome x unif    25.50
 22 a  33 fuer z unif     0.14
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```
 22 a  33 mome x unif     0.56
  1 a   9 fuer y unif    -8.00
  1 a   9 mome x unif    20.30
  1 a   9 fuer z unif     0.14
  1 a   9 mome x unif     0.56
 82 a  93 fuer y unif    -1.25
 82 a  93 mome x unif     2.85
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.09
 58 a  69 fuer y unif    -1.25
 58 a  69 mome x unif     3.66
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.09
 34 a  45 fuer y unif    -1.25
 34 a  45 mome x unif     4.10
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.09
 10 a  21 fuer y unif    -1.25
 10 a  21 mome x unif     3.64
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.09
106 a 114 fuer y unif    -1.25
106 a 114 mome x unif     3.51
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.09
hipo 184 sob. v-27 dcha ec-1 (LM-71)
carg en barr
 94 a 101 fuer y unif    -8.00
 94 a 101 mome x unif    18.05
 94 a 101 fuer z unif     0.14
 94 a 101 mome x unif     0.56
102       fuer y unif    -8.00     0.00     1.80
103       fuer y unif    -8.00    -1.80    -0.01
102       mome x unif    18.74     0.00     1.80
103       mome x unif    19.04    -1.80    -0.01
102       fuer z unif     0.14     0.00     1.80
103       fuer z unif     0.14    -1.80    -0.01
102       mome x unif     0.56     0.00     1.80
103       mome x unif     0.56    -1.80    -0.01
104 a 105 fuer y unif    -8.00
104 a 105 mome x unif    19.54
104 a 105 fuer z unif     0.14
104 a 105 mome x unif     0.56
102       fuer y conc   -25.00     2.60
102       mome x conc    58.58     2.60
102       fuer z conc     0.43     2.60
102       mome x conc     1.76     2.60
102       fuer y conc   -25.00     4.20
102       mome x conc    58.58     4.20
102       fuer z conc     0.43     4.20
102       mome x conc     1.76     4.20
103       fuer y conc   -25.00     0.80
103       mome x conc    59.49     0.80
103       fuer z conc     0.43     0.80
103       mome x conc     1.76     0.80
103       fuer y conc   -25.00     2.40
103       mome x conc    59.49     2.40
103       fuer z conc     0.43     2.40
103       mome x conc     1.76     2.40
 70 a  81 fuer y unif    -8.00
 70 a  81 mome x unif    20.46
 70 a  81 fuer z unif     0.14
 70 a  81 mome x unif     0.56
 46 a  57 fuer y unif    -8.00
```

```
 46 a  57 mome x unif    25.53
 46 a  57 fuer z unif     0.14
 46 a  57 mome x unif     0.56
 22 a  33 fuer y unif    -8.00
 22 a  33 mome x unif    25.50
 22 a  33 fuer z unif     0.14
 22 a  33 mome x unif     0.56
  1 a   9 fuer y unif    -8.00
  1 a   9 mome x unif    20.30
  1 a   9 fuer z unif     0.14
  1 a   9 mome x unif     0.56
 82 a  93 fuer y unif    -1.25
 82 a  93 mome x unif     2.85
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.09
 58 a  69 fuer y unif    -1.25
 58 a  69 mome x unif     3.66
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.09
 34 a  45 fuer y unif    -1.25
 34 a  45 mome x unif     4.10
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.09
 10 a  21 fuer y unif    -1.25
 10 a  21 mome x unif     3.64
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.09
106 a 114 fuer y unif    -1.25
106 a 114 mome x unif     3.51
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.09
hipo 185 sob. v-28 dcha ec-1 (LM-71)
carg en barr
106 a 106 fuer y unif    -8.00
106 a 106 mome x unif    20.12
106 a 106 fuer z unif     0.14
106 a 106 mome x unif     0.56
107       fuer y unif    -8.00     0.00     3.05
108       fuer y unif    -8.00    -0.55    -0.01
107       mome x unif    20.56     0.00     3.05
108       mome x unif    21.05    -0.55    -0.01
107       fuer z unif     0.14     0.00     3.05
108       fuer z unif     0.14    -0.55    -0.01
107       mome x unif     0.56     0.00     3.05
108       mome x unif     0.56    -0.55    -0.01
109 a 114 fuer y unif    -8.00
109 a 114 mome x unif    23.22
109 a 114 fuer z unif     0.14
109 a 114 mome x unif     0.56
107       fuer y conc   -25.00     3.85
107       mome x conc    64.26     3.85
107       fuer z conc     0.43     3.85
107       mome x conc     1.76     3.85
108       fuer y conc   -25.00     0.45
108       mome x conc    65.77     0.45
108       fuer z conc     0.43     0.45
108       mome x conc     1.76     0.45
108       fuer y conc   -25.00     2.05
108       mome x conc    65.77     2.05
108       fuer z conc     0.43     2.05
108       mome x conc     1.76     2.05
108       fuer y conc   -25.00     3.65
108       mome x conc    65.77     3.65
108       fuer z conc     0.43     3.65
```

108		mome x conc	1.76	3.65	
82 a	93	fuer y unif	-8.00		
82 a	93	mome x unif	18.22		
82 a	93	fuer z unif	0.14		
82 a	93	mome x unif	0.56		
58 a	69	fuer y unif	-8.00		
58 a	69	mome x unif	23.42		
58 a	69	fuer z unif	0.14		
58 a	69	mome x unif	0.56		
34 a	45	fuer y unif	-8.00		
34 a	45	mome x unif	26.23		
34 a	45	fuer z unif	0.14		
34 a	45	mome x unif	0.56		
10 a	21	fuer y unif	-8.00		
10 a	21	mome x unif	23.32		
10 a	21	fuer z unif	0.14		
10 a	21	mome x unif	0.56		
94 a	105	fuer y unif	-1.25		
94 a	105	mome x unif	2.92		
94 a	105	fuer z unif	0.02		
94 a	105	mome x unif	0.09		
70 a	81	fuer y unif	-1.25		
70 a	81	mome x unif	3.20		
70 a	81	fuer z unif	0.02		
70 a	81	mome x unif	0.09		
46 a	57	fuer y unif	-1.25		
46 a	57	mome x unif	3.99		
46 a	57	fuer z unif	0.02		
46 a	57	mome x unif	0.09		
22 a	33	fuer y unif	-1.25		
22 a	33	mome x unif	3.98		
22 a	33	fuer z unif	0.02		
22 a	33	mome x unif	0.09		
1 a	9	fuer y unif	-1.25		
1 a	9	mome x unif	3.17		
1 a	9	fuer z unif	0.02		
1 a	9	mome x unif	0.09		

hipo 186 sob. v-29 dcha ec-1 (LM-71)

carg en barr

106 a	108	fuer y unif	-8.00		
106 a	108	mome x unif	20.59		
106 a	108	fuer z unif	0.14		
106 a	108	mome x unif	0.56		
109		fuer y unif	-8.00	0.00	4.30
111		fuer y unif	-8.00	-4.30	-0.01
109		mome x unif	21.58	0.00	4.30
111		mome x unif	22.75	-4.30	-0.01
109		fuer z unif	0.14	0.00	4.30
111		fuer z unif	0.14	-4.30	-0.01
109		mome x unif	0.56	0.00	4.30
111		mome x unif	0.56	-4.30	-0.01
112 a	114	fuer y unif	-8.00		
112 a	114	mome x unif	24.13		
112 a	114	fuer z unif	0.14		
112 a	114	mome x unif	0.56		
110		fuer y conc	-25.00	0.10	
110		mome x conc	69.20	0.10	
110		fuer z conc	0.43	0.10	
110		mome x conc	1.76	0.10	
110		fuer y conc	-25.00	1.70	
110		mome x conc	69.20	1.70	
110		fuer z conc	0.43	1.70	
110		mome x conc	1.76	1.70	
110		fuer y conc	-25.00	3.30	
110		mome x conc	69.20	3.30	
110		fuer z conc	0.43	3.30	
110		mome x conc	1.76	3.30	
110		fuer y conc	-25.00	4.90	
110		mome x conc	69.20	4.90	
110		fuer z conc	0.43	4.90	
110		mome x conc	1.76	4.90	
82 a	93	fuer y unif	-8.00		
82 a	93	mome x unif	18.22		
82 a	93	fuer z unif	0.14		
82 a	93	mome x unif	0.56		
58 a	69	fuer y unif	-8.00		
58 a	69	mome x unif	23.42		
58 a	69	fuer z unif	0.14		
58 a	69	mome x unif	0.56		
34 a	45	fuer y unif	-8.00		
34 a	45	mome x unif	26.23		
34 a	45	fuer z unif	0.14		
34 a	45	mome x unif	0.56		
10 a	21	fuer y unif	-8.00		
10 a	21	mome x unif	23.32		
10 a	21	fuer z unif	0.14		
10 a	21	mome x unif	0.56		
94 a	105	fuer y unif	-1.25		
94 a	105	mome x unif	2.92		
94 a	105	fuer z unif	0.02		
94 a	105	mome x unif	0.09		
70 a	81	fuer y unif	-1.25		
70 a	81	mome x unif	3.20		
70 a	81	fuer z unif	0.02		
70 a	81	mome x unif	0.09		
46 a	57	fuer y unif	-1.25		
46 a	57	mome x unif	3.99		
46 a	57	fuer z unif	0.02		
46 a	57	mome x unif	0.09		
22 a	33	fuer y unif	-1.25		
22 a	33	mome x unif	3.98		
22 a	33	fuer z unif	0.02		
22 a	33	mome x unif	0.09		
1 a	9	fuer y unif	-1.25		
1 a	9	mome x unif	3.17		
1 a	9	fuer z unif	0.02		
1 a	9	mome x unif	0.09		

hipo 187 sob. v-30 dcha ec-1 (LM-71)

carg en barr

106 a	111	fuer y unif	-8.00		
106 a	111	mome x unif	21.44		
106 a	111	fuer z unif	0.14		
106 a	111	mome x unif	0.56		
112		fuer y unif	-8.00	0.00	0.55
113		fuer y unif	-8.00	-3.05	-0.01
112		mome x unif	23.40	0.00	0.55
113		mome x unif	24.11	-3.05	-0.01
112		fuer z unif	0.14	0.00	0.55
113		fuer z unif	0.14	-3.05	-0.01
112		mome x unif	0.56	0.00	0.55
113		mome x unif	0.56	-3.05	-0.01
114 a	114	fuer y unif	-8.00		
114 a	114	mome x unif	24.86		
114 a	114	fuer z unif	0.14		
114 a	114	mome x unif	0.56		
112		fuer y conc	-25.00	1.35	
112		mome x conc	73.14	1.35	
112		fuer z conc	0.43	1.35	

```
112        mome x conc     1.76     1.35
112        fuer y conc   -25.00     2.95
112        mome x conc    73.14     2.95
112        fuer z conc     0.43     2.95
112        mome x conc     1.76     2.95
112        fuer y conc   -25.00     4.55
112        mome x conc    73.14     4.55
112        fuer z conc     0.43     4.55
112        mome x conc     1.76     4.55
113        fuer y conc   -25.00     1.15
113        mome x conc    75.35     1.15
113        fuer z conc     0.43     1.15
113        mome x conc     1.76     1.15
 82 a  93 fuer y unif    -8.00
 82 a  93 mome x unif    18.22
 82 a  93 fuer z unif     0.14
 82 a  93 mome x unif     0.56
 58 a  69 fuer y unif    -8.00
 58 a  69 mome x unif    23.42
 58 a  69 fuer z unif     0.14
 58 a  69 mome x unif     0.56
 34 a  45 fuer y unif    -8.00
 34 a  45 mome x unif    26.23
 34 a  45 fuer z unif     0.14
 34 a  45 mome x unif     0.56
 10 a  21 fuer y unif    -8.00
 10 a  21 mome x unif    23.32
 10 a  21 fuer z unif     0.14
 10 a  21 mome x unif     0.56
 94 a 105 fuer y unif    -1.25
 94 a 105 mome x unif     2.92
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.09
 70 a  81 fuer y unif    -1.25
 70 a  81 mome x unif     3.20
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.09
 46 a  57 fuer y unif    -1.25
 46 a  57 mome x unif     3.99
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.09
 22 a  33 fuer y unif    -1.25
 22 a  33 mome x unif     3.98
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.09
  1 a   9 fuer y unif    -1.25
  1 a   9 mome x unif     3.17
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.09
hipo 188 sob. a- 1 dcha ec-1 (LM-71)
carg en barr
  1 a   6 fuer y unif    -8.00
  1 a   6 mome x unif    19.82
  1 a   6 fuer z unif     0.14
  1 a   6 mome x unif     0.56
  7       fuer y unif    -8.00     0.00     0.55
  8       fuer y unif    -8.00    -3.05    -0.01
  7       mome x unif    21.06     0.00     0.55
  8       mome x unif    21.37    -3.05    -0.01
  7       fuer z unif     0.14     0.00     0.55
  8       fuer z unif     0.14    -3.05    -0.01
  7       mome x unif     0.56     0.00     0.55
  8       mome x unif     0.56    -3.05    -0.01
  9 a   9 fuer y unif    -8.00
```

```
  9 a   9 mome x unif    21.68
  9 a   9 fuer z unif     0.14
  9 a   9 mome x unif     0.56
  7       fuer y conc   -25.00     1.35
  7       mome x conc    65.80     1.35
  7       fuer z conc     0.43     1.35
  7       mome x conc     1.76     1.35
  7       fuer y conc   -25.00     2.95
  7       mome x conc    65.80     2.95
  7       fuer z conc     0.43     2.95
  7       mome x conc     1.76     2.95
  7       fuer y conc   -25.00     4.55
  7       mome x conc    65.80     4.55
  7       fuer z conc     0.43     4.55
  7       mome x conc     1.76     4.55
  8       fuer y conc   -25.00     1.15
  8       mome x conc    66.79     1.15
  8       fuer z conc     0.43     1.15
  8       mome x conc     1.76     1.15
 10 a  21 fuer y unif    -8.00
 10 a  21 mome x unif    23.32
 10 a  21 fuer z unif     0.14
 10 a  21 mome x unif     0.56
 34 a  45 fuer y unif    -8.00
 34 a  45 mome x unif    26.23
 34 a  45 fuer z unif     0.14
 34 a  45 mome x unif     0.56
 58 a  69 fuer y unif    -8.00
 58 a  69 mome x unif    23.42
 58 a  69 fuer z unif     0.14
 58 a  69 mome x unif     0.56
 82 a  93 fuer y unif    -8.00
 82 a  93 mome x unif    18.22
 82 a  93 fuer z unif     0.14
 82 a  93 mome x unif     0.56
106 a 114 fuer y unif    -8.00
106 a 114 mome x unif    22.49
106 a 114 fuer z unif     0.14
106 a 114 mome x unif     0.56
 22 a  33 fuer y unif    -1.25
 22 a  33 mome x unif     3.98
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.09
 46 a  57 fuer y unif    -1.25
 46 a  57 mome x unif     3.99
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.09
 70 a  81 fuer y unif    -1.25
 70 a  81 mome x unif     3.20
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.09
 94 a 105 fuer y unif    -1.25
 94 a 105 mome x unif     2.92
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.09
hipo 189 sob. a- 2 dcha ec-1 (LM-71)
carg en barr
  1 a   8 fuer y unif    -8.00
  9       fuer y unif    -8.00     0.00     1.80
  1 a   8 mome x unif    20.14
  9       mome x unif    21.68     0.00     1.80
  1 a   8 fuer z unif     0.14
  9       fuer z unif     0.14     0.00     1.80
  1 a   8 mome x unif     0.56
```

```
  9          mome x unif      0.56      0.00      1.80
  9          fuer y conc    -25.00      2.60
  9          mome x conc     67.76      2.60
  9          fuer z conc      0.43      2.60
  9          mome x conc      1.76      2.60
  9          fuer y conc    -25.00      4.20
  9          mome x conc     67.76      4.20
  9          fuer z conc      0.43      4.20
  9          mome x conc      1.76      4.20
 10          fuer y unif     -8.00     -1.80     -0.01
 11 a  21    fuer y unif     -8.00
 10          mome x unif     21.99     -1.80     -0.01
 11 a  21    mome x unif     23.46
 10          fuer z unif      0.14     -1.80     -0.01
 11 a  21    fuer z unif      0.14
 10          mome x unif      0.56     -1.80     -0.01
 11 a  21    mome x unif      0.56
 10          fuer y conc    -25.00      0.80
 10          mome x conc     68.71      0.80
 10          fuer z conc      0.43      0.80
 10          mome x conc      1.76      0.80
 10          fuer y conc    -25.00      2.40
 10          mome x conc     68.71      2.40
 10          fuer z conc      0.43      2.40
 10          mome x conc      1.76      2.40
 34 a  45    fuer y unif     -8.00
 34 a  45    mome x unif     26.23
 34 a  45    fuer z unif      0.14
 34 a  45    mome x unif      0.56
 58 a  69    fuer y unif     -8.00
 58 a  69    mome x unif     23.42
 58 a  69    fuer z unif      0.14
 58 a  69    mome x unif      0.56
 82 a  93    fuer y unif     -8.00
 82 a  93    mome x unif     18.22
 82 a  93    fuer z unif      0.14
 82 a  93    mome x unif      0.56
106 a 114    fuer y unif     -8.00
106 a 114    mome x unif     22.49
106 a 114    fuer z unif      0.14
106 a 114    mome x unif      0.56
 22 a  33    fuer y unif     -1.25
 22 a  33    mome x unif      3.98
 22 a  33    fuer z unif      0.02
 22 a  33    mome x unif      0.09
 46 a  57    fuer y unif     -1.25
 46 a  57    mome x unif      3.99
 46 a  57    fuer z unif      0.02
 46 a  57    mome x unif      0.09
 70 a  81    fuer y unif     -1.25
 70 a  81    mome x unif      3.20
 70 a  81    fuer z unif      0.02
 70 a  81    mome x unif      0.09
 94 a 105    fuer y unif     -1.25
 94 a 105    mome x unif      2.92
 94 a 105    fuer z unif      0.02
 94 a 105    mome x unif      0.09
hipo 190 sob. a- 3 dcha ec-1 (LM-71)
carg en barr
  1 a   9    fuer y unif     -8.00
  1 a   9    mome x unif     20.30
  1 a   9    fuer z unif      0.14
  1 a   9    mome x unif      0.56
 10 a  11    fuer y unif     -8.00
 10 a  11    mome x unif     22.13
 10 a  11    fuer z unif      0.14
 10 a  11    mome x unif      0.56
 12          fuer y unif     -8.00      0.00      1.80
 13          fuer y unif     -8.00     -1.80     -0.01
 12          mome x unif     22.56      0.00      1.80
 13          mome x unif     22.84     -1.80     -0.01
 12          fuer z unif      0.14      0.00      1.80
 13          fuer z unif      0.14     -1.80     -0.01
 12          mome x unif      0.56      0.00      1.80
 13          mome x unif      0.56     -1.80     -0.01
 14 a  21    fuer y unif     -8.00
 14 a  21    mome x unif     23.87
 14 a  21    fuer z unif      0.14
 14 a  21    mome x unif      0.56
 12          fuer y conc    -25.00      2.60
 12          mome x conc     70.51      2.60
 12          fuer z conc      0.43      2.60
 12          mome x conc      1.76      2.60
 12          fuer y conc    -25.00      4.20
 12          mome x conc     70.51      4.20
 12          fuer z conc      0.43      4.20
 12          mome x conc      1.76      4.20
 13          fuer y conc    -25.00      0.80
 13          mome x conc     71.36      0.80
 13          fuer z conc      0.43      0.80
 13          mome x conc      1.76      0.80
 13          fuer y conc    -25.00      2.40
 13          mome x conc     71.36      2.40
 13          fuer z conc      0.43      2.40
 13          mome x conc      1.76      2.40
 34 a  45    fuer y unif     -8.00
 34 a  45    mome x unif     26.23
 34 a  45    fuer z unif      0.14
 34 a  45    mome x unif      0.56
 58 a  69    fuer y unif     -8.00
 58 a  69    mome x unif     23.42
 58 a  69    fuer z unif      0.14
 58 a  69    mome x unif      0.56
 82 a  93    fuer y unif     -8.00
 82 a  93    mome x unif     18.22
 82 a  93    fuer z unif      0.14
 82 a  93    mome x unif      0.56
106 a 114    fuer y unif     -8.00
106 a 114    mome x unif     22.49
106 a 114    fuer z unif      0.14
106 a 114    mome x unif      0.56
 22 a  33    fuer y unif     -1.25
 22 a  33    mome x unif      3.98
 22 a  33    fuer z unif      0.02
 22 a  33    mome x unif      0.09
 46 a  57    fuer y unif     -1.25
 46 a  57    mome x unif      3.99
 46 a  57    fuer z unif      0.02
 46 a  57    mome x unif      0.09
 70 a  81    fuer y unif     -1.25
 70 a  81    mome x unif      3.20
 70 a  81    fuer z unif      0.02
 70 a  81    mome x unif      0.09
 94 a 105    fuer y unif     -1.25
 94 a 105    mome x unif      2.92
 94 a 105    fuer z unif      0.02
 94 a 105    mome x unif      0.09
hipo 191 sob. a- 4 dcha ec-1 (LM-71)
```

carg en barr

10	a	17	fuer y unif	-8.00		
10	a	17	mome x unif	22.90		
10	a	17	fuer z unif	0.14		
10	a	17	mome x unif	0.56		
18			fuer y unif	-8.00	0.00	1.80
19			fuer y unif	-8.00	-1.80	-0.01
18			mome x unif	24.04	0.00	1.80
19			mome x unif	24.25	-1.80	-0.01
18			fuer z unif	0.14	0.00	1.80
19			fuer z unif	0.14	-1.80	-0.01
18			mome x unif	0.56	0.00	1.80
19			mome x unif	0.56	-1.80	-0.01
20	a	21	fuer y unif	-8.00		
20	a	21	mome x unif	24.55		
20	a	21	fuer z unif	0.14		
20	a	21	mome x unif	0.56		
18			fuer y conc	-25.00	2.60	
18			mome x conc	75.11	2.60	
18			fuer z conc	0.43	2.60	
18			mome x conc	1.76	2.60	
18			fuer y conc	-25.00	4.20	
18			mome x conc	75.11	4.20	
18			fuer z conc	0.43	4.20	
18			mome x conc	1.76	4.20	
19			fuer y conc	-25.00	0.80	
19			mome x conc	75.78	0.80	
19			fuer z conc	0.43	0.80	
19			mome x conc	1.76	0.80	
19			fuer y conc	-25.00	2.40	
19			mome x conc	75.78	2.40	
19			fuer z conc	0.43	2.40	
19			mome x conc	1.76	2.40	
22	a	33	fuer y unif	-8.00		
22	a	33	mome x unif	25.50		
22	a	33	fuer z unif	0.14		
22	a	33	mome x unif	0.56		
46	a	57	fuer y unif	-8.00		
46	a	57	mome x unif	25.53		
46	a	57	fuer z unif	0.14		
46	a	57	mome x unif	0.56		
70	a	81	fuer y unif	-8.00		
70	a	81	mome x unif	20.46		
70	a	81	fuer z unif	0.14		
70	a	81	mome x unif	0.56		
94	a	105	fuer y unif	-8.00		
94	a	105	mome x unif	18.66		
94	a	105	fuer z unif	0.14		
94	a	105	mome x unif	0.56		
1	a	9	fuer y unif	-1.25		
1	a	9	mome x unif	3.17		
1	a	9	fuer z unif	0.02		
1	a	9	mome x unif	0.09		
34	a	45	fuer y unif	-1.25		
34	a	45	mome x unif	4.10		
34	a	45	fuer z unif	0.02		
34	a	45	mome x unif	0.09		
58	a	69	fuer y unif	-1.25		
58	a	69	mome x unif	3.66		
58	a	69	fuer z unif	0.02		
58	a	69	mome x unif	0.09		
82	a	93	fuer y unif	-1.25		
82	a	93	mome x unif	2.85		
82	a	93	fuer z unif	0.02		
82	a	93	mome x unif	0.09		
106	a	114	fuer y unif	-1.25		
106	a	114	mome x unif	3.51		
106	a	114	fuer z unif	0.02		
106	a	114	mome x unif	0.09		

hipo 192 sob. a- 5 dcha ec-1 (LM-71)

carg en barr

10	a	20	fuer y unif	-8.00		
21			fuer y unif	-8.00	0.00	1.80
10	a	20	mome x unif	23.22		
21			mome x unif	24.65	0.00	1.80
10	a	20	fuer z unif	0.14		
21			fuer z unif	0.14	0.00	1.80
10	a	20	mome x unif	0.56		
21			mome x unif	0.56	0.00	1.80
21			fuer y conc	-25.00	2.60	
21			mome x conc	77.03	2.60	
21			fuer z conc	0.43	2.60	
21			mome x conc	1.76	2.60	
21			fuer y conc	-25.00	4.20	
21			mome x conc	77.03	4.20	
21			fuer z conc	0.43	4.20	
21			mome x conc	1.76	4.20	
22			fuer y unif	-8.00	-1.80	-0.01
23	a	33	fuer y unif	-8.00		
22			mome x unif	24.83	-1.80	-0.01
23	a	33	mome x unif	25.58		
22			fuer z unif	0.14	-1.80	-0.01
23	a	33	fuer z unif	0.14		
22			mome x unif	0.56	-1.80	-0.01
23	a	33	mome x unif	0.56		
22			fuer y conc	-25.00	0.80	
22			mome x conc	77.60	0.80	
22			fuer z conc	0.43	0.80	
22			mome x conc	1.76	0.80	
22			fuer y conc	-25.00	2.40	
22			mome x conc	77.60	2.40	
22			fuer z conc	0.43	2.40	
22			mome x conc	1.76	2.40	
46	a	57	fuer y unif	-8.00		
46	a	57	mome x unif	25.53		
46	a	57	fuer z unif	0.14		
46	a	57	mome x unif	0.56		
70	a	81	fuer y unif	-8.00		
70	a	81	mome x unif	20.46		
70	a	81	fuer z unif	0.14		
70	a	81	mome x unif	0.56		
94	a	105	fuer y unif	-8.00		
94	a	105	mome x unif	18.66		
94	a	105	fuer z unif	0.14		
94	a	105	mome x unif	0.56		
1	a	9	fuer y unif	-1.25		
1	a	9	mome x unif	3.17		
1	a	9	fuer z unif	0.02		
1	a	9	mome x unif	0.09		
34	a	45	fuer y unif	-1.25		
34	a	45	mome x unif	4.10		
34	a	45	fuer z unif	0.02		
34	a	45	mome x unif	0.09		
58	a	69	fuer y unif	-1.25		
58	a	69	mome x unif	3.66		
58	a	69	fuer z unif	0.02		
58	a	69	mome x unif	0.09		
82	a	93	fuer y unif	-1.25		

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 82 a  93 mome x unif     2.85
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.09
106 a 114 fuer y unif    -1.25
106 a 114 mome x unif     3.51
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.09
hipo 193 sob. a- 6 dcha ec-1 (LM-71)
carg en barr
 10 a  21 fuer y unif    -8.00
 10 a  21 mome x unif    23.32
 10 a  21 fuer z unif     0.14
 10 a  21 mome x unif     0.56
 22 a  23 fuer y unif    -8.00
 22 a  23 mome x unif    24.92
 22 a  23 fuer z unif     0.14
 22 a  23 mome x unif     0.56
 24       fuer y unif    -8.00     0.00     1.80
 25       fuer y unif    -8.00    -1.80    -0.01
 24       mome x unif    25.16     0.00     1.80
 25       mome x unif    25.31    -1.80    -0.01
 24       fuer z unif     0.14     0.00     1.80
 25       fuer z unif     0.14    -1.80    -0.01
 24       mome x unif     0.56     0.00     1.80
 25       mome x unif     0.56    -1.80    -0.01
 26 a  33 fuer y unif    -8.00
 26 a  33 mome x unif    25.81
 26 a  33 fuer z unif     0.14
 26 a  33 mome x unif     0.56
 24       fuer y conc   -25.00     2.60
 24       mome x conc    78.61     2.60
 24       fuer z conc     0.43     2.60
 24       mome x conc     1.76     2.60
 24       fuer y conc   -25.00     4.20
 24       mome x conc    78.61     4.20
 24       fuer z conc     0.43     4.20
 24       mome x conc     1.76     4.20
 25       fuer y conc   -25.00     0.80
 25       mome x conc    79.09     0.80
 25       fuer z conc     0.43     0.80
 25       mome x conc     1.76     0.80
 25       fuer y conc   -25.00     2.40
 25       mome x conc    79.09     2.40
 25       fuer z conc     0.43     2.40
 25       mome x conc     1.76     2.40
 46 a  57 fuer y unif    -8.00
 46 a  57 mome x unif    25.53
 46 a  57 fuer z unif     0.14
 46 a  57 mome x unif     0.56
 70 a  81 fuer y unif    -8.00
 70 a  81 mome x unif    20.46
 70 a  81 fuer z unif     0.14
 70 a  81 mome x unif     0.56
 94 a 105 fuer y unif    -8.00
 94 a 105 mome x unif    18.66
 94 a 105 fuer z unif     0.14
 94 a 105 mome x unif     0.56
  1 a   9 fuer y unif    -1.25
  1 a   9 mome x unif     3.17
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.09
 34 a  45 fuer y unif    -1.25
 34 a  45 mome x unif     4.10
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.09
 58 a  69 fuer y unif    -1.25
 58 a  69 mome x unif     3.66
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.09
 82 a  93 fuer y unif    -1.25
 82 a  93 mome x unif     2.85
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.09
106 a 114 fuer y unif    -1.25
106 a 114 mome x unif     3.51
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.09
hipo 194 sob. a- 7 dcha ec-1 (LM-71)
carg en barr
 22 a  29 fuer y unif    -8.00
 22 a  29 mome x unif    25.32
 22 a  29 fuer z unif     0.14
 22 a  29 mome x unif     0.56
 30       fuer y unif    -8.00     0.00     1.80
 31       fuer y unif    -8.00    -1.80    -0.01
 30       mome x unif    25.92     0.00     1.80
 31       mome x unif    26.01    -1.80    -0.01
 30       fuer z unif     0.14     0.00     1.80
 31       fuer z unif     0.14    -1.80    -0.01
 30       mome x unif     0.56     0.00     1.80
 31       mome x unif     0.56    -1.80    -0.01
 32 a  33 fuer y unif    -8.00
 32 a  33 mome x unif    26.13
 32 a  33 fuer z unif     0.14
 32 a  33 mome x unif     0.56
 30       fuer y conc   -25.00     2.60
 30       mome x conc    80.99     2.60
 30       fuer z conc     0.43     2.60
 30       mome x conc     1.76     2.60
 30       fuer y conc   -25.00     4.20
 30       mome x conc    80.99     4.20
 30       fuer z conc     0.43     4.20
 30       mome x conc     1.76     4.20
 31       fuer y conc   -25.00     0.80
 31       mome x conc    81.29     0.80
 31       fuer z conc     0.43     0.80
 31       mome x conc     1.76     0.80
 31       fuer y conc   -25.00     2.40
 31       mome x conc    81.29     2.40
 31       fuer z conc     0.43     2.40
 31       mome x conc     1.76     2.40
 34 a  45 fuer y unif    -8.00
 34 a  45 mome x unif    26.23
 34 a  45 fuer z unif     0.14
 34 a  45 mome x unif     0.56
  1 a   9 fuer y unif    -8.00
  1 a   9 mome x unif    20.30
  1 a   9 fuer z unif     0.14
  1 a   9 mome x unif     0.56
 58 a  69 fuer y unif    -8.00
 58 a  69 mome x unif    23.42
 58 a  69 fuer z unif     0.14
 58 a  69 mome x unif     0.56
 82 a  93 fuer y unif    -8.00
 82 a  93 mome x unif    18.22
 82 a  93 fuer z unif     0.14
 82 a  93 mome x unif     0.56
106 a 114 fuer y unif    -8.00
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106	a	114	mome	x	unif	22.49		
106	a	114	fuer	z	unif	0.14		
106	a	114	mome	x	unif	0.56		
10	a	21	fuer	y	unif	-1.25		
10	a	21	mome	x	unif	3.64		
10	a	21	fuer	z	unif	0.02		
10	a	21	mome	x	unif	0.09		
46	a	57	fuer	y	unif	-1.25		
46	a	57	mome	x	unif	3.99		
46	a	57	fuer	z	unif	0.02		
46	a	57	mome	x	unif	0.09		
70	a	81	fuer	y	unif	-1.25		
70	a	81	mome	x	unif	3.20		
70	a	81	fuer	z	unif	0.02		
70	a	81	mome	x	unif	0.09		
94	a	105	fuer	y	unif	-1.25		
94	a	105	mome	x	unif	2.92		
94	a	105	fuer	z	unif	0.02		
94	a	105	mome	x	unif	0.09		

hipo 195 sob. a- 8 dcha ec-1 (LM-71)
carg en barr

22	a	32	fuer	y	unif	-8.00		
33			fuer	y	unif	-8.00	0.00	1.80
22	a	32	mome	x	unif	25.46		
33			mome	x	unif	26.16	0.00	1.80
22	a	32	fuer	z	unif	0.14		
33			fuer	z	unif	0.14	0.00	1.80
22	a	32	mome	x	unif	0.56		
33			mome	x	unif	0.56	0.00	1.80
33			fuer	y	conc	-25.00	2.60	
33			mome	x	conc	81.75	2.60	
33			fuer	z	conc	0.43	2.60	
33			mome	x	conc	1.76	2.60	
33			fuer	y	conc	-25.00	4.20	
33			mome	x	conc	81.75	4.20	
33			fuer	z	conc	0.43	4.20	
33			mome	x	conc	1.76	4.20	
34			fuer	y	unif	-8.00	-1.80	-0.01
35	a	45	fuer	y	unif	-8.00		
34			mome	x	unif	26.22	-1.80	-0.01
35	a	45	mome	x	unif	26.26		
34			fuer	z	unif	0.14	-1.80	-0.01
35	a	45	fuer	z	unif	0.14		
34			mome	x	unif	0.56	-1.80	-0.01
35	a	45	mome	x	unif	0.56		
34			fuer	y	conc	-25.00	0.80	
34			mome	x	conc	81.94	0.80	
34			fuer	z	conc	0.43	0.80	
34			mome	x	conc	1.76	0.80	
34			fuer	y	conc	-25.00	2.40	
34			mome	x	conc	81.94	2.40	
34			fuer	z	conc	0.43	2.40	
34			mome	x	conc	1.76	2.40	
1	a	9	fuer	y	unif	-8.00		
1	a	9	mome	x	unif	20.30		
1	a	9	fuer	z	unif	0.14		
1	a	9	mome	x	unif	0.56		
58	a	69	fuer	y	unif	-8.00		
58	a	69	mome	x	unif	23.42		
58	a	69	fuer	z	unif	0.14		
58	a	69	mome	x	unif	0.56		
82	a	93	fuer	y	unif	-8.00		
82	a	93	mome	x	unif	18.22		
82	a	93	fuer	z	unif	0.14		
82	a	93	mome	x	unif	0.56		
106	a	114	fuer	y	unif	-8.00		
106	a	114	mome	x	unif	22.49		
106	a	114	fuer	z	unif	0.14		
106	a	114	mome	x	unif	0.56		
10	a	21	fuer	y	unif	-1.25		
10	a	21	mome	x	unif	3.64		
10	a	21	fuer	z	unif	0.02		
10	a	21	mome	x	unif	0.09		
46	a	57	fuer	y	unif	-1.25		
46	a	57	mome	x	unif	3.99		
46	a	57	fuer	z	unif	0.02		
46	a	57	mome	x	unif	0.09		
70	a	81	fuer	y	unif	-1.25		
70	a	81	mome	x	unif	3.20		
70	a	81	fuer	z	unif	0.02		
70	a	81	mome	x	unif	0.09		
94	a	105	fuer	y	unif	-1.25		
94	a	105	mome	x	unif	2.92		
94	a	105	fuer	z	unif	0.02		
94	a	105	mome	x	unif	0.09		

hipo 196 sob. a- 9 dcha ec-1 (LM-71)
carg en barr

22	a	33	fuer	y	unif	-8.00		
22	a	33	mome	x	unif	25.50		
22	a	33	fuer	z	unif	0.14		
22	a	33	mome	x	unif	0.56		
34	a	35	fuer	y	unif	-8.00		
34	a	35	mome	x	unif	26.25		
34	a	35	fuer	z	unif	0.14		
34	a	35	mome	x	unif	0.56		
36			fuer	y	unif	-8.00	0.00	1.80
37			fuer	y	unif	-8.00	-1.80	-0.01
36			mome	x	unif	26.32	0.00	1.80
37			mome	x	unif	26.35	-1.80	-0.01
36			fuer	z	unif	0.14	0.00	1.80
37			fuer	z	unif	0.14	-1.80	-0.01
36			mome	x	unif	0.56	0.00	1.80
37			mome	x	unif	0.56	-1.80	-0.01
38	a	45	fuer	y	unif	-8.00		
38	a	45	mome	x	unif	26.30		
38	a	45	fuer	z	unif	0.14		
38	a	45	mome	x	unif	0.56		
36			fuer	y	conc	-25.00	2.60	
36			mome	x	conc	82.24	2.60	
36			fuer	z	conc	0.43	2.60	
36			mome	x	conc	1.76	2.60	
36			fuer	y	conc	-25.00	4.20	
36			mome	x	conc	82.24	4.20	
36			fuer	z	conc	0.43	4.20	
36			mome	x	conc	1.76	4.20	
37			fuer	y	conc	-25.00	0.80	
37			mome	x	conc	82.34	0.80	
37			fuer	z	conc	0.43	0.80	
37			mome	x	conc	1.76	0.80	
37			fuer	y	conc	-25.00	2.40	
37			mome	x	conc	82.34	2.40	
37			fuer	z	conc	0.43	2.40	
37			mome	x	conc	1.76	2.40	
1	a	9	fuer	y	unif	-8.00		
1	a	9	mome	x	unif	20.30		
1	a	9	fuer	z	unif	0.14		
1	a	9	mome	x	unif	0.56		
58	a	69	fuer	y	unif	-8.00		

```
 58 a  69 mome x unif    23.42
 58 a  69 fuer z unif     0.14
 58 a  69 mome x unif     0.56
 82 a  93 fuer y unif    -8.00
 82 a  93 mome x unif    18.22
 82 a  93 fuer z unif     0.14
 82 a  93 mome x unif     0.56
106 a 114 fuer y unif    -8.00
106 a 114 mome x unif    22.49
106 a 114 fuer z unif     0.14
106 a 114 mome x unif     0.56
 10 a  21 fuer y unif    -1.25
 10 a  21 mome x unif     3.64
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.09
 46 a  57 fuer y unif    -1.25
 46 a  57 mome x unif     3.99
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.09
 70 a  81 fuer y unif    -1.25
 70 a  81 mome x unif     3.20
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.09
 94 a 105 fuer y unif    -1.25
 94 a 105 mome x unif     2.92
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.09
hipo 197 sob. a-10 dcha ec-1 (LM-71)
carg en barr
 34 a  41 fuer y unif    -8.00
 34 a  41 mome x unif    26.30
 34 a  41 fuer z unif     0.14
 34 a  41 mome x unif     0.56
 42       fuer y unif    -8.00     0.00     1.80
 43       fuer y unif    -8.00    -1.80    -0.01
 42       mome x unif    26.35     0.00     1.80
 43       mome x unif    26.33    -1.80    -0.01
 42       fuer z unif     0.14     0.00     1.80
 43       fuer z unif     0.14    -1.80    -0.01
 42       mome x unif     0.56     0.00     1.80
 43       mome x unif     0.56    -1.80    -0.01
 44 a  45 fuer y unif    -8.00
 44 a  45 mome x unif    26.27
 44 a  45 fuer z unif     0.14
 44 a  45 mome x unif     0.56
 42       fuer y conc   -25.00     2.60
 42       mome x conc    82.35     2.60
 42       fuer z conc     0.43     2.60
 42       mome x conc     1.76     2.60
 42       fuer y conc   -25.00     4.20
 42       mome x conc    82.35     4.20
 42       fuer z conc     0.43     4.20
 42       mome x conc     1.76     4.20
 43       fuer y conc   -25.00     0.80
 43       mome x conc    82.27     0.80
 43       fuer z conc     0.43     0.80
 43       mome x conc     1.76     0.80
 43       fuer y conc   -25.00     2.40
 43       mome x conc    82.27     2.40
 43       fuer z conc     0.43     2.40
 43       mome x conc     1.76     2.40
 46 a  57 fuer y unif    -8.00
 46 a  57 mome x unif    25.53
 46 a  57 fuer z unif     0.14
 46 a  57 mome x unif     0.56
 10 a  21 fuer y unif    -8.00
 10 a  21 mome x unif    23.32
 10 a  21 fuer z unif     0.14
 10 a  21 mome x unif     0.56
 70 a  81 fuer y unif    -8.00
 70 a  81 mome x unif    20.46
 70 a  81 fuer z unif     0.14
 70 a  81 mome x unif     0.56
 94 a 105 fuer y unif    -8.00
 94 a 105 mome x unif    18.66
 94 a 105 fuer z unif     0.14
 94 a 105 mome x unif     0.56
 22 a  33 fuer y unif    -1.25
 22 a  33 mome x unif     3.98
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.09
  1 a   9 fuer y unif    -1.25
  1 a   9 mome x unif     3.17
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.09
 58 a  69 fuer y unif    -1.25
 58 a  69 mome x unif     3.66
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.09
 82 a  93 fuer y unif    -1.25
 82 a  93 mome x unif     2.85
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.09
106 a 114 fuer y unif    -1.25
106 a 114 mome x unif     3.51
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.09
hipo 198 sob. a-11 dcha ec-1 (LM-71)
carg en barr
 34 a  44 fuer y unif    -8.00
 45       fuer y unif    -8.00     0.00     1.80
 34 a  44 mome x unif    26.26
 45       mome x unif    26.24     0.00     1.80
 34 a  44 fuer z unif     0.14
 45       fuer z unif     0.14     0.00     1.80
 34 a  44 mome x unif     0.56
 45       mome x unif     0.56     0.00     1.80
 45       fuer y conc   -25.00     2.60
 45       mome x conc    82.00     2.60
 45       fuer z conc     0.43     2.60
 45       mome x conc     1.76     2.60
 45       fuer y conc   -25.00     4.20
 45       mome x conc    82.00     4.20
 45       fuer z conc     0.43     4.20
 45       mome x conc     1.76     4.20
 46       fuer y unif    -8.00    -1.80    -0.01
 47 a  57 fuer y unif    -8.00
 46       mome x unif    26.18    -1.80    -0.01
 47 a  57 mome x unif    25.50
 46       fuer z unif     0.14    -1.80    -0.01
 47 a  57 fuer z unif    .0.14
 46       mome x unif     0.56    -1.80    -0.01
 47 a  57 mome x unif     0.56
 46       fuer y conc   -25.00     0.80
 46       mome x conc    81.81     0.80
 46       fuer z conc     0.43     0.80
 46       mome x conc     1.76     0.80
 46       fuer y conc   -25.00     2.40
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```
 46        mome x conc    81.81     2.40
 46        fuer z conc     0.43     2.40
 46        mome x conc     1.76     2.40
 10 a  21  fuer y unif    -8.00
 10 a  21  mome x unif    23.32
 10 a  21  fuer z unif     0.14
 10 a  21  mome x unif     0.56
 70 a  81  fuer y unif    -8.00
 70 a  81  mome x unif    20.46
 70 a  81  fuer z unif     0.14
 70 a  81  mome x unif     0.56
 94 a 105  fuer y unif    -8.00
 94 a 105  mome x unif    18.66
 94 a 105  fuer z unif     0.14
 94 a 105  mome x unif     0.56
 22 a  33  fuer y unif    -1.25
 22 a  33  mome x unif     3.98
 22 a  33  fuer z unif     0.02
 22 a  33  mome x unif     0.09
  1 a   9  fuer y unif    -1.25
  1 a   9  mome x unif     3.17
  1 a   9  fuer z unif     0.02
  1 a   9  mome x unif     0.09
 58 a  69  fuer y unif    -1.25
 58 a  69  mome x unif     3.66
 58 a  69  fuer z unif     0.02
 58 a  69  mome x unif     0.09
 82 a  93  fuer y unif    -1.25
 82 a  93  mome x unif     2.85
 82 a  93  fuer z unif     0.02
 82 a  93  mome x unif     0.09
106 a 114  fuer y unif    -1.25
106 a 114  mome x unif     3.51
106 a 114  fuer z unif     0.02
106 a 114  mome x unif     0.09
hipo 199 sob. a-12 dcha ec-1 (LM-71)
carg en barr
 34 a  45  fuer y unif    -8.00
 34 a  45  mome x unif    26.23
 34 a  45  fuer z unif     0.14
 34 a  45  mome x unif     0.56
 46 a  47  fuer y unif    -8.00
 46 a  47  mome x unif    26.15
 46 a  47  fuer z unif     0.14
 46 a  47  mome x unif     0.56
 48        fuer y unif    -8.00     0.00     1.80
 49        fuer y unif    -8.00    -1.80    -0.01
 48        mome x unif    26.04     0.00     1.80
 49        mome x unif    25.94    -1.80    -0.01
 48        fuer z unif     0.14     0.00     1.80
 49        fuer z unif     0.14    -1.80    -0.01
 48        mome x unif     0.56     0.00     1.80
 49        mome x unif     0.56    -1.80    -0.01
 50 a  57  fuer y unif    -8.00
 50 a  57  mome x unif    25.36
 50 a  57  fuer z unif     0.14
 50 a  57  mome x unif     0.56
 48        fuer y conc   -25.00     2.60
 48        mome x conc    81.36     2.60
 48        fuer z conc     0.43     2.60
 48        mome x conc     1.76     2.60
 48        fuer y conc   -25.00     4.20
 48        mome x conc    81.36     4.20
 48        fuer z conc     0.43     4.20
 48        mome x conc     1.76     4.20
 49        fuer y conc   -25.00     0.80
 49        mome x conc    81.08     0.80
 49        fuer z conc     0.43     0.80
 49        mome x conc     1.76     0.80
 49        fuer y conc   -25.00     2.40
 49        mome x conc    81.08     2.40
 49        fuer z conc     0.43     2.40
 49        mome x conc     1.76     2.40
 10 a  21  fuer y unif    -8.00
 10 a  21  mome x unif    23.32
 10 a  21  fuer z unif     0.14
 10 a  21  mome x unif     0.56
 70 a  81  fuer y unif    -8.00
 70 a  81  mome x unif    20.46
 70 a  81  fuer z unif     0.14
 70 a  81  mome x unif     0.56
 94 a 105  fuer y unif    -8.00
 94 a 105  mome x unif    18.66
 94 a 105  fuer z unif     0.14
 94 a 105  mome x unif     0.56
 22 a  33  fuer y unif    -1.25
 22 a  33  mome x unif     3.98
 22 a  33  fuer z unif     0.02
 22 a  33  mome x unif     0.09
  1 a   9  fuer y unif    -1.25
  1 a   9  mome x unif     3.17
  1 a   9  fuer z unif     0.02
  1 a   9  mome x unif     0.09
 58 a  69  fuer y unif    -1.25
 58 a  69  mome x unif     3.66
 58 a  69  fuer z unif     0.02
 58 a  69  mome x unif     0.09
 82 a  93  fuer y unif    -1.25
 82 a  93  mome x unif     2.85
 82 a  93  fuer z unif     0.02
 82 a  93  mome x unif     0.09
106 a 114  fuer y unif    -1.25
106 a 114  mome x unif     3.51
106 a 114  fuer z unif     0.02
106 a 114  mome x unif     0.09
hipo 200 sob. a-13 dcha ec-1 (LM-71)
carg en barr
 46 a  53  fuer y unif    -8.00
 46 a  53  mome x unif    25.84
 46 a  53  fuer z unif     0.14
 46 a  53  mome x unif     0.56
 54        fuer y unif    -8.00     0.00     1.80
 55        fuer y unif    -8.00    -1.80    -0.01
 54        mome x unif    25.35     0.00     1.80
 55        mome x unif    25.20    -1.80    -0.01
 54        fuer z unif     0.14     0.00     1.80
 55        fuer z unif     0.14    -1.80    -0.01
 54        mome x unif     0.56     0.00     1.80
 55        mome x unif     0.56    -1.80    -0.01
 56 a  57  fuer y unif    -8.00
 56 a  57  mome x unif    24.96
 56 a  57  fuer z unif     0.14
 56 a  57  mome x unif     0.56
 54        fuer y conc   -25.00     2.60
 54        mome x conc    79.22     2.60
 54        fuer z conc     0.43     2.60
 54        mome x conc     1.76     2.60
 54        fuer y conc   -25.00     4.20
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54			mome x conc	79.22	4.20				
54			fuer z conc	0.43	4.20				
54			mome x conc	1.76	4.20				
55			fuer y conc	-25.00	0.80				
55			mome x conc	78.76	0.80				
55			fuer z conc	0.43	0.80				
55			mome x conc	1.76	0.80				
55			fuer y conc	-25.00	2.40				
55			mome x conc	78.76	2.40				
55			fuer z conc	0.43	2.40				
55			mome x conc	1.76	2.40				
58	a	69	fuer y unif	-8.00					
58	a	69	mome x unif	23.42					
58	a	69	fuer z unif	0.14					
58	a	69	mome x unif	0.56					
22	a	33	fuer y unif	-8.00					
22	a	33	mome x unif	25.50					
22	a	33	fuer z unif	0.14					
22	a	33	mome x unif	0.56					
1	a	9	fuer y unif	-8.00					
1	a	9	mome x unif	20.30					
1	a	9	fuer z unif	0.14					
1	a	9	mome x unif	0.56					
82	a	93	fuer y unif	-8.00					
82	a	93	mome x unif	18.22					
82	a	93	fuer z unif	0.14					
82	a	93	mome x unif	0.56					
106	a	114	fuer y unif	-8.00					
106	a	114	mome x unif	22.49					
106	a	114	fuer z unif	0.14					
106	a	114	mome x unif	0.56					
34	a	45	fuer y unif	-1.25					
34	a	45	mome x unif	4.10					
34	a	45	fuer z unif	0.02					
34	a	45	mome x unif	0.09					
10	a	21	fuer y unif	-1.25					
10	a	21	mome x unif	3.64					
10	a	21	fuer z unif	0.02					
10	a	21	mome x unif	0.09					
70	a	81	fuer y unif	-1.25					
70	a	81	mome x unif	3.20					
70	a	81	fuer z unif	0.02					
70	a	81	mome x unif	0.09					
94	a	105	fuer y unif	-1.25					
94	a	105	mome x unif	2.92					
94	a	105	fuer z unif	0.02					
94	a	105	mome x unif	0.09					

hipo 201 sob. a-14 dcha ec-1 (LM-71)
carg en barr

46	a	56	fuer y unif	-8.00		
57			fuer y unif	-8.00	0.00	1.80
46	a	56	mome x unif	25.61		
57			mome x unif	24.88	0.00	1.80
46	a	56	fuer z unif	0.14		
57			fuer z unif	0.14	0.00	1.80
46	a	56	mome x unif	0.56		
57			mome x unif	0.56	0.00	1.80
57			fuer y conc	-25.00	2.60	
57			mome x conc	77.75	2.60	
57			fuer z conc	0.43	2.60	
57			mome x conc	1.76	2.60	
57			fuer y conc	-25.00	4.20	
57			mome x conc	77.75	4.20	
57			fuer z conc	0.43	4.20	
57			mome x conc	1.76	4.20	
58			fuer y unif	-8.00	-1.80	-0.01
59	a	69	fuer y unif	-8.00		
58			mome x unif	24.70	-1.80	-0.01
59	a	69	mome x unif	23.32		
58			fuer z unif	0.14	-1.80	-0.01
59	a	69	fuer z unif	0.14		
58			mome x unif	0.56	-1.80	-0.01
59	a	69	mome x unif	0.56		
58			fuer y conc	-25.00	0.80	
58			mome x conc	77.19	0.80	
58			fuer z conc	0.43	0.80	
58			mome x conc	1.76	0.80	
58			fuer y conc	-25.00	2.40	
58			mome x conc	77.19	2.40	
58			fuer z conc	0.43	2.40	
58			mome x conc	1.76	2.40	
22	a	33	fuer y unif	-8.00		
22	a	33	mome x unif	25.50		
22	a	33	fuer z unif	0.14		
22	a	33	mome x unif	0.56		
1	a	9	fuer y unif	-8.00		
1	a	9	mome x unif	20.30		
1	a	9	fuer z unif	0.14		
1	a	9	mome x unif	0.56		
82	a	93	fuer y unif	-8.00		
82	a	93	mome x unif	18.22		
82	a	93	fuer z unif	0.14		
82	a	93	mome x unif	0.56		
106	a	114	fuer y unif	-8.00		
106	a	114	mome x unif	22.49		
106	a	114	fuer z unif	0.14		
106	a	114	mome x unif	0.56		
34	a	45	fuer y unif	-1.25		
34	a	45	mome x unif	4.10		
34	a	45	fuer z unif	0.02		
34	a	45	mome x unif	0.09		
10	a	21	fuer y unif	-1.25		
10	a	21	mome x unif	3.64		
10	a	21	fuer z unif	0.02		
10	a	21	mome x unif	0.09		
70	a	81	fuer y unif	-1.25		
70	a	81	mome x unif	3.20		
70	a	81	fuer z unif	0.02		
70	a	81	mome x unif	0.09		
94	a	105	fuer y unif	-1.25		
94	a	105	mome x unif	2.92		
94	a	105	fuer z unif	0.02		
94	a	105	mome x unif	0.09		

hipo 202 sob. a-15 dcha ec-1 (LM-71)
carg en barr

46	a	57	fuer y unif	-8.00		
46	a	57	mome x unif	25.53		
46	a	57	fuer z unif	0.14		
46	a	57	mome x unif	0.56		
58	a	59	fuer y unif	-8.00		
58	a	59	mome x unif	24.60		
58	a	59	fuer z unif	0.14		
58	a	59	mome x unif	0.56		
60			fuer y unif	-8.00	0.00	1.80
61			fuer y unif	-8.00	-1.80	-0.01
60			mome x unif	24.31	0.00	1.80
61			mome x unif	24.10	-1.80	-0.01
60			fuer z unif	0.14	0.00	1.80

```
 61        fuer z unif      0.14    -1.80    -0.01
 60        mome x unif      0.56     0.00     1.80
 61        mome x unif      0.56    -1.80    -0.01
 62 a  69 fuer y unif     -8.00
 62 a  69 mome x unif     23.01
 62 a  69 fuer z unif      0.14
 62 a  69 mome x unif      0.56
 60        fuer y conc    -25.00     2.60
 60        mome x conc     75.96     2.60
 60        fuer z conc      0.43     2.60
 60        mome x conc      1.76     2.60
 60        fuer y conc    -25.00     4.20
 60        mome x conc     75.96     4.20
 60        fuer z conc      0.43     4.20
 60        mome x conc      1.76     4.20
 61        fuer y conc    -25.00     0.80
 61        mome x conc     75.33     0.80
 61        fuer z conc      0.43     0.80
 61        mome x conc      1.76     0.80
 61        fuer y conc    -25.00     2.40
 61        mome x conc     75.33     2.40
 61        fuer z conc      0.43     2.40
 61        mome x conc      1.76     2.40
 22 a  33 fuer y unif     -8.00
 22 a  33 mome x unif     25.50
 22 a  33 fuer z unif      0.14
 22 a  33 mome x unif      0.56
  1 a   9 fuer y unif     -8.00
  1 a   9 mome x unif     20.30
  1 a   9 fuer z unif      0.14
  1 a   9 mome x unif      0.56
 82 a  93 fuer y unif     -8.00
 82 a  93 mome x unif     18.22
 82 a  93 fuer z unif      0.14
 82 a  93 mome x unif      0.56
106 a 114 fuer y unif     -8.00
106 a 114 mome x unif     22.49
106 a 114 fuer z unif      0.14
106 a 114 mome x unif      0.56
 34 a  45 fuer y unif     -1.25
 34 a  45 mome x unif      4.10
 34 a  45 fuer z unif      0.02
 34 a  45 mome x unif      0.09
 10 a  21 fuer y unif     -1.25
 10 a  21 mome x unif      3.64
 10 a  21 fuer z unif      0.02
 10 a  21 mome x unif      0.09
 70 a  81 fuer y unif     -1.25
 70 a  81 mome x unif      3.20
 70 a  81 fuer z unif      0.02
 70 a  81 mome x unif      0.09
 94 a 105 fuer y unif     -1.25
 94 a 105 mome x unif      2.92
 94 a 105 fuer z unif      0.02
 94 a 105 mome x unif      0.09
hipo 203 sob. a-16 dcha ec-1 (LM-71)
carg en barr
 58 a  65 fuer y unif     -8.00
 58 a  65 mome x unif     23.94
 58 a  65 fuer z unif      0.14
 58 a  65 mome x unif      0.56
 66        fuer y unif     -8.00     0.00     1.80
 67        fuer y unif     -8.00    -1.80    -0.01
 66        mome x unif     22.92     0.00     1.80
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 67        mome x unif     22.66    -1.80    -0.01
 66        fuer z unif      0.14     0.00     1.80
 67        fuer z unif      0.14    -1.80    -0.01
 66        mome x unif      0.56     0.00     1.80
 67        mome x unif      0.56    -1.80    -0.01
 68 a  69 fuer y unif     -8.00
 68 a  69 mome x unif     22.26
 68 a  69 fuer z unif      0.14
 68 a  69 mome x unif      0.56
 66        fuer y conc    -25.00     2.60
 66        mome x conc     71.62     2.60
 66        fuer z conc      0.43     2.60
 66        mome x conc      1.76     2.60
 66        fuer y conc    -25.00     4.20
 66        mome x conc     71.62     4.20
 66        fuer z conc      0.43     4.20
 66        mome x conc      1.76     4.20
 67        fuer y conc    -25.00     0.80
 67        mome x conc     70.81     0.80
 67        fuer z conc      0.43     0.80
 67        mome x conc      1.76     0.80
 67        fuer y conc    -25.00     2.40
 67        mome x conc     70.81     2.40
 67        fuer z conc      0.43     2.40
 67        mome x conc      1.76     2.40
 70 a  81 fuer y unif     -8.00
 70 a  81 mome x unif     20.46
 70 a  81 fuer z unif      0.14
 70 a  81 mome x unif      0.56
 34 a  45 fuer y unif     -8.00
 34 a  45 mome x unif     26.23
 34 a  45 fuer z unif      0.14
 34 a  45 mome x unif      0.56
 10 a  21 fuer y unif     -8.00
 10 a  21 mome x unif     23.32
 10 a  21 fuer z unif      0.14
 10 a  21 mome x unif      0.56
 94 a 105 fuer y unif     -8.00
 94 a 105 mome x unif     18.66
 94 a 105 fuer z unif      0.14
 94 a 105 mome x unif      0.56
 46 a  57 fuer y unif     -1.25
 46 a  57 mome x unif      3.99
 46 a  57 fuer z unif      0.02
 46 a  57 mome x unif      0.09
 22 a  33 fuer y unif     -1.25
 22 a  33 mome x unif      3.98
 22 a  33 fuer z unif      0.02
 22 a  33 mome x unif      0.09
  1 a   9 fuer y unif     -1.25
  1 a   9 mome x unif      3.17
  1 a   9 fuer z unif      0.02
  1 a   9 mome x unif      0.09
 82 a  93 fuer y unif     -1.25
 82 a  93 mome x unif      2.85
 82 a  93 fuer z unif      0.02
 82 a  93 mome x unif      0.09
106 a 114 fuer y unif     -1.25
106 a 114 mome x unif      3.51
106 a 114 fuer z unif      0.02
106 a 114 mome x unif      0.09
hipo 204 sob. a-17 dcha ec-1 (LM-71)
carg en barr
 58 a  68 fuer y unif     -8.00
```

69		fuer y unif	-8.00	0.00	1.80
58 a	68	mome x unif	23.55		
69		mome x unif	22.13	0.00	1.80
58 a	68	fuer z unif	0.14		
69		fuer z unif	0.14	0.00	1.80
58 a	68	mome x unif	0.56		
69		mome x unif	0.56	0.00	1.80
69		fuer y conc	-25.00	2.60	
69		mome x conc	69.16	2.60	
69		fuer z conc	0.43	2.60	
69		mome x conc	1.76	2.60	
69		fuer y conc	-25.00	4.20	
69		mome x conc	69.16	4.20	
69		fuer z conc	0.43	4.20	
69		mome x conc	1.76	4.20	
70		fuer y unif	-8.00	-1.80	-0.01
71 a	81	fuer y unif	-8.00		
70		mome x unif	21.86	-1.80	-0.01
71 a	81	mome x unif	20.32		
70		fuer z unif	0.14	-1.80	-0.01
71 a	81	fuer z unif	0.14		
70		mome x unif	0.56	-1.80	-0.01
71 a	81	mome x unif	0.56		
70		fuer y conc	-25.00	0.80	
70		mome x conc	68.31	0.80	
70		fuer z conc	0.43	0.80	
70		mome x conc	1.76	0.80	
70		fuer y conc	-25.00	2.40	
70		mome x conc	68.31	2.40	
70		fuer z conc	0.43	2.40	
70		mome x conc	1.76	2.40	
34 a	45	fuer y unif	-8.00		
34 a	45	mome x unif	26.23		
34 a	45	fuer z unif	0.14		
34 a	45	mome x unif	0.56		
10 a	21	fuer y unif	-8.00		
10 a	21	mome x unif	23.32		
10 a	21	fuer z unif	0.14		
10 a	21	mome x unif	0.56		
94 a	105	fuer y unif	-8.00		
94 a	105	mome x unif	18.66		
94 a	105	fuer z unif	0.14		
94 a	105	mome x unif	0.56		
46 a	57	fuer y unif	-1.25		
46 a	57	mome x unif	3.99		
46 a	57	fuer z unif	0.02		
46 a	57	mome x unif	0.09		
22 a	33	fuer y unif	-1.25		
22 a	33	mome x unif	3.98		
22 a	33	fuer z unif	0.02		
22 a	33	mome x unif	0.09		
1 a	9	fuer y unif	-1.25		
1 a	9	mome x unif	3.17		
1 a	9	fuer z unif	0.02		
1 a	9	mome x unif	0.09		
82 a	93	fuer y unif	-1.25		
82 a	93	mome x unif	2.85		
82 a	93	fuer z unif	0.02		
82 a	93	mome x unif	0.09		
106 a	114	fuer y unif	-1.25		
106 a	114	mome x unif	3.51		
106 a	114	fuer z unif	0.02		
106 a	114	mome x unif	0.09		

hipo 205 sob. a-18 dcha ec-1 (LM-71)

carg en barr

58 a	69	fuer y unif	-8.00		
58 a	69	mome x unif	23.42		
58 a	69	fuer z unif	0.14		
58 a	69	mome x unif	0.56		
70 a	71	fuer y unif	-8.00		
70 a	71	mome x unif	21.72		
70 a	71	fuer z unif	0.14		
70 a	71	mome x unif	0.56		
72		fuer y unif	-8.00	0.00	1.80
73		fuer y unif	-8.00	-1.80	-0.01
72		mome x unif	21.32	0.00	1.80
73		mome x unif	21.05	-1.80	-0.01
72		fuer z unif	0.14	0.00	1.80
73		fuer z unif	0.14	-1.80	-0.01
72		mome x unif	0.56	0.00	1.80
73		mome x unif	0.56	-1.80	-0.01
74 a	81	fuer y unif	-8.00		
74 a	81	mome x unif	19.92		
74 a	81	fuer z unif	0.14		
74 a	81	mome x unif	0.56		
72		fuer y conc	-25.00	2.60	
72		mome x conc	66.62	2.60	
72		fuer z conc	0.43	2.60	
72		mome x conc	1.76	2.60	
72		fuer y conc	-25.00	4.20	
72		mome x conc	66.62	4.20	
72		fuer z conc	0.43	4.20	
72		mome x conc	1.76	4.20	
73		fuer y conc	-25.00	0.80	
73		mome x conc	65.77	0.80	
73		fuer z conc	0.43	0.80	
73		mome x conc	1.76	0.80	
73		fuer y conc	-25.00	2.40	
73		mome x conc	65.77	2.40	
73		fuer z conc	0.43	2.40	
73		mome x conc	1.76	2.40	
34 a	45	fuer y unif	-8.00		
34 a	45	mome x unif	26.23		
34 a	45	fuer z unif	0.14		
34 a	45	mome x unif	0.56		
10 a	21	fuer y unif	-8.00		
10 a	21	mome x unif	23.32		
10 a	21	fuer z unif	0.14		
10 a	21	mome x unif	0.56		
94 a	105	fuer y unif	-8.00		
94 a	105	mome x unif	18.66		
94 a	105	fuer z unif	0.14		
94 a	105	mome x unif	0.56		
46 a	57	fuer y unif	-1.25		
46 a	57	mome x unif	3.99		
46 a	57	fuer z unif	0.02		
46 a	57	mome x unif	0.09		
22 a	33	fuer y unif	-1.25		
22 a	33	mome x unif	3.98		
22 a	33	fuer z unif	0.02		
22 a	33	mome x unif	0.09		
1 a	9	fuer y unif	-1.25		
1 a	9	mome x unif	3.17		
1 a	9	fuer z unif	0.02		
1 a	9	mome x unif	0.09		
82 a	93	fuer y unif	-1.25		
82 a	93	mome x unif	2.85		
82 a	93	fuer z unif	0.02		

```
 82 a  93 mome x unif      0.09
106 a 114 fuer y unif     -1.25
106 a 114 mome x unif      3.51
106 a 114 fuer z unif      0.02
106 a 114 mome x unif      0.09
hipo 206 sob. a-19 dcha ec-1 (LM-71)
carg en barr
 70 a  77 fuer y unif     -8.00
 70 a  77 mome x unif     20.93
 70 a  77 fuer z unif      0.14
 70 a  77 mome x unif      0.56
 78       fuer y unif     -8.00      0.00      1.80
 79       fuer y unif     -8.00     -1.80     -0.01
 78       mome x unif     19.75      0.00      1.80
 79       mome x unif     19.50     -1.80     -0.01
 78       fuer z unif      0.14      0.00      1.80
 79       fuer z unif      0.14     -1.80     -0.01
 78       mome x unif      0.56      0.00      1.80
 79       mome x unif      0.56     -1.80     -0.01
 80 a  81 fuer y unif     -8.00
 80 a  81 mome x unif     19.16
 80 a  81 fuer z unif      0.14
 80 a  81 mome x unif      0.56
 78       fuer y conc    -25.00      2.60
 78       mome x conc     61.71      2.60
 78       fuer z conc      0.43      2.60
 78       mome x conc      1.76      2.60
 78       fuer y conc    -25.00      4.20
 78       mome x conc     61.71      4.20
 78       fuer z conc      0.43      4.20
 78       mome x conc      1.76      4.20
 79       fuer y conc    -25.00      0.80
 79       mome x conc     60.95      0.80
 79       fuer z conc      0.43      0.80
 79       mome x conc      1.76      0.80
 79       fuer y conc    -25.00      2.40
 79       mome x conc     60.95      2.40
 79       fuer z conc      0.43      2.40
 79       mome x conc      1.76      2.40
 82 a  93 fuer y unif     -8.00
 82 a  93 mome x unif     18.22
 82 a  93 fuer z unif      0.14
 82 a  93 mome x unif      0.56
 46 a  57 fuer y unif     -8.00
 46 a  57 mome x unif     25.53
 46 a  57 fuer z unif      0.14
 46 a  57 mome x unif      0.56
 22 a  33 fuer y unif     -8.00
 22 a  33 mome x unif     25.50
 22 a  33 fuer z unif      0.14
 22 a  33 mome x unif      0.56
  1 a   9 fuer y unif     -8.00
  1 a   9 mome x unif     20.30
  1 a   9 fuer z unif      0.14
  1 a   9 mome x unif      0.56
106 a 114 fuer y unif     -8.00
106 a 114 mome x unif     22.49
106 a 114 fuer z unif      0.14
106 a 114 mome x unif      0.56
 58 a  69 fuer y unif     -1.25
 58 a  69 mome x unif      3.66
 58 a  69 fuer z unif      0.02
 58 a  69 mome x unif      0.09
 34 a  45 fuer y unif     -1.25
 34 a  45 mome x unif      4.10
 34 a  45 fuer z unif      0.02
 34 a  45 mome x unif      0.09
 10 a  21 fuer y unif     -1.25
 10 a  21 mome x unif      3.64
 10 a  21 fuer z unif      0.02
 10 a  21 mome x unif      0.09
 94 a 105 fuer y unif     -1.25
 94 a 105 mome x unif      2.92
 94 a 105 fuer z unif      0.02
 94 a 105 mome x unif      0.09
hipo 207 sob. a-20 dcha ec-1 (LM-71)
carg en barr
 70 a  80 fuer y unif     -8.00
 81       fuer y unif     -8.00      0.00      1.80
 70 a  80 mome x unif     20.57
 81       mome x unif     19.05      0.00      1.80
 70 a  80 fuer z unif      0.14
 81       fuer z unif      0.14      0.00      1.80
 70 a  80 mome x unif      0.56
 81       mome x unif      0.56      0.00      1.80
 81       fuer y conc    -25.00      2.60
 81       mome x conc     59.54      2.60
 81       fuer z conc      0.43      2.60
 81       mome x conc      1.76      2.60
 81       fuer y conc    -25.00      4.20
 81       mome x conc     59.54      4.20
 81       fuer z conc      0.43      4.20
 81       mome x conc      1.76      4.20
 82       fuer y unif     -8.00     -1.80     -0.01
 83 a  93 fuer y unif     -8.00
 82       mome x unif     18.84     -1.80     -0.01
 83 a  93 mome x unif     18.12
 82       fuer z unif      0.14     -1.80     -0.01
 83 a  93 fuer z unif      0.14
 82       mome x unif      0.56     -1.80     -0.01
 83 a  93 mome x unif      0.56
 82       fuer y conc    -25.00      0.80
 82       mome x conc     58.89      0.80
 82       fuer z conc      0.43      0.80
 82       mome x conc      1.76      0.80
 82       fuer y conc    -25.00      2.40
 82       mome x conc     58.89      2.40
 82       fuer z conc      0.43      2.40
 82       mome x conc      1.76      2.40
 46 a  57 fuer y unif     -8.00
 46 a  57 mome x unif     25.53
 46 a  57 fuer z unif      0.14
 46 a  57 mome x unif      0.56
 22 a  33 fuer y unif     -8.00
 22 a  33 mome x unif     25.50
 22 a  33 fuer z unif      0.14
 22 a  33 mome x unif      0.56
  1 a   9 fuer y unif     -8.00
  1 a   9 mome x unif     20.30
  1 a   9 fuer z unif      0.14
  1 a   9 mome x unif      0.56
106 a 114 fuer y unif     -8.00
106 a 114 mome x unif     22.49
106 a 114 fuer z unif      0.14
106 a 114 mome x unif      0.56
 58 a  69 fuer y unif     -1.25
 58 a  69 mome x unif      3.66
 58 a  69 fuer z unif      0.02
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58	a	69	mome	x	unif	0.09	
34	a	45	fuer	y	unif	-1.25	
34	a	45	mome	x	unif	4.10	
34	a	45	fuer	z	unif	0.02	
34	a	45	mome	x	unif	0.09	
10	a	21	fuer	y	unif	-1.25	
10	a	21	mome	x	unif	3.64	
10	a	21	fuer	z	unif	0.02	
10	a	21	mome	x	unif	0.09	
94	a	105	fuer	y	unif	-1.25	
94	a	105	mome	x	unif	2.92	
94	a	105	fuer	z	unif	0.02	
94	a	105	mome	x	unif	0.09	

hipo 208 sob. a-21 dcha ec-1 (LM-71)
carg en barr

70	a	81	fuer	y	unif	-8.00	
70	a	81	mome	x	unif	20.46	
70	a	81	fuer	z	unif	0.14	
70	a	81	mome	x	unif	0.56	
82	a	83	fuer	y	unif	-8.00	
82	a	83	mome	x	unif	18.74	
82	a	83	fuer	z	unif	0.14	
82	a	83	mome	x	unif	0.56	
84			fuer	y	unif	-8.00	0.00	1.80
85			fuer	y	unif	-8.00	-1.80	-0.01
84			mome	x	unif	18.46	0.00	1.80
85			mome	x	unif	18.29	-1.80	-0.01
84			fuer	z	unif	0.14	0.00	1.80
85			fuer	z	unif	0.14	-1.80	-0.01
84			mome	x	unif	0.56	0.00	1.80
85			mome	x	unif	0.56	-1.80	-0.01
86	a	93	fuer	y	unif	-8.00	
86	a	93	mome	x	unif	17.86	
86	a	93	fuer	z	unif	0.14	
86	a	93	mome	x	unif	0.56	
84			fuer	y	conc	-25.00	2.60
84			mome	x	conc	57.67	2.60
84			fuer	z	conc	0.43	2.60
84			mome	x	conc	1.76	2.60
84			fuer	y	conc	-25.00	4.20
84			mome	x	conc	57.67	4.20
84			fuer	z	conc	0.43	4.20
84			mome	x	conc	1.76	4.20
85			fuer	y	conc	-25.00	0.80
85			mome	x	conc	57.15	0.80
85			fuer	z	conc	0.43	0.80
85			mome	x	conc	1.76	0.80
85			fuer	y	conc	-25.00	2.40
85			mome	x	conc	57.15	2.40
85			fuer	z	conc	0.43	2.40
85			mome	x	conc	1.76	2.40
46	a	57	fuer	y	unif	-8.00	
46	a	57	mome	x	unif	25.53	
46	a	57	fuer	z	unif	0.14	
46	a	57	mome	x	unif	0.56	
22	a	33	fuer	y	unif	-8.00	
22	a	33	mome	x	unif	25.50	
22	a	33	fuer	z	unif	0.14	
22	a	33	mome	x	unif	0.56	
1	a	9	fuer	y	unif	-8.00	
1	a	9	mome	x	unif	20.30	
1	a	9	fuer	z	unif	0.14	
1	a	9	mome	x	unif	0.56	
106	a	114	fuer	y	unif	-8.00	
106	a	114	mome	x	unif	22.49	
106	a	114	fuer	z	unif	0.14	
106	a	114	mome	x	unif	0.56	
58	a	69	fuer	y	unif	-1.25	
58	a	69	mome	x	unif	3.66	
58	a	69	fuer	z	unif	0.02	
58	a	69	mome	x	unif	0.09	
34	a	45	fuer	y	unif	-1.25	
34	a	45	mome	x	unif	4.10	
34	a	45	fuer	z	unif	0.02	
34	a	45	mome	x	unif	0.09	
10	a	21	fuer	y	unif	-1.25	
10	a	21	mome	x	unif	3.64	
10	a	21	fuer	z	unif	0.02	
10	a	21	mome	x	unif	0.09	
94	a	105	fuer	y	unif	-1.25	
94	a	105	mome	x	unif	2.92	
94	a	105	fuer	z	unif	0.02	
94	a	105	mome	x	unif	0.09	

hipo 209 sob. a-22 dcha ec-1 (LM-71)
carg en barr

82	a	89	fuer	y	unif	-8.00	
82	a	89	mome	x	unif	18.31	
82	a	89	fuer	z	unif	0.14	
82	a	89	mome	x	unif	0.56	
90			fuer	y	unif	-8.00	0.00	1.80
91			fuer	y	unif	-8.00	-1.80	-0.01
90			mome	x	unif	17.70	0.00	1.80
91			mome	x	unif	17.64	-1.80	-0.01
90			fuer	z	unif	0.14	0.00	1.80
91			fuer	z	unif	0.14	-1.80	-0.01
90			mome	x	unif	0.56	0.00	1.80
91			mome	x	unif	0.56	-1.80	-0.01
92	a	93	fuer	y	unif	-8.00	
92	a	93	mome	x	unif	17.60	
92	a	93	fuer	z	unif	0.14	
92	a	93	mome	x	unif	0.56	
90			fuer	y	conc	-25.00	2.60
90			mome	x	conc	55.30	2.60
90			fuer	z	conc	0.43	2.60
90			mome	x	conc	1.76	2.60
90			fuer	y	conc	-25.00	4.20
90			mome	x	conc	55.30	4.20
90			fuer	z	conc	0.43	4.20
90			mome	x	conc	1.76	4.20
91			fuer	y	conc	-25.00	0.80
91			mome	x	conc	55.12	0.80
91			fuer	z	conc	0.43	0.80
91			mome	x	conc	1.76	0.80
91			fuer	y	conc	-25.00	2.40
91			mome	x	conc	55.12	2.40
91			fuer	z	conc	0.43	2.40
91			mome	x	conc	1.76	2.40
94	a	105	fuer	y	unif	-8.00	
94	a	105	mome	x	unif	18.66	
94	a	105	fuer	z	unif	0.14	
94	a	105	mome	x	unif	0.56	
58	a	69	fuer	y	unif	-8.00	
58	a	69	mome	x	unif	23.42	
58	a	69	fuer	z	unif	0.14	
58	a	69	mome	x	unif	0.56	
34	a	45	fuer	y	unif	-8.00	
34	a	45	mome	x	unif	26.23	
34	a	45	fuer	z	unif	0.14	

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 34 a  45 mome x unif      0.56
 10 a  21 fuer y unif     -8.00
 10 a  21 mome x unif     23.32
 10 a  21 fuer z unif      0.14
 10 a  21 mome x unif      0.56
 70 a  81 fuer y unif     -1.25
 70 a  81 mome x unif      3.20
 70 a  81 fuer z unif      0.02
 70 a  81 mome x unif      0.09
 46 a  57 fuer y unif     -1.25
 46 a  57 mome x unif      3.99
 46 a  57 fuer z unif      0.02
 46 a  57 mome x unif      0.09
 22 a  33 fuer y unif     -1.25
 22 a  33 mome x unif      3.98
 22 a  33 fuer z unif      0.02
 22 a  33 mome x unif      0.09
  1 a   9 fuer y unif     -1.25
  1 a   9 mome x unif      3.17
  1 a   9 fuer z unif      0.02
  1 a   9 mome x unif      0.09
106 a 114 fuer y unif     -1.25
106 a 114 mome x unif      3.51
106 a 114 fuer z unif      0.02
106 a 114 mome x unif      0.09
hipo 210 sob. a-23 dcha ec-1 (LM-71)
carg en barr
 82 a  92 fuer y unif     -8.00
 93       fuer y unif     -8.00      0.00      1.80
 82 a  92 mome x unif     18.22
 93       mome x unif     17.59      0.00      1.80
 82 a  92 fuer z unif      0.14
 93       fuer z unif      0.14      0.00      1.80
 82 a  92 mome x unif      0.56
 93       mome x unif      0.56      0.00      1.80
 93       fuer y conc    -25.00      2.60
 93       mome x conc     54.97      2.60
 93       fuer z conc      0.43      2.60
 93       mome x conc      1.76      2.60
 93       fuer y conc    -25.00      4.20
 93       mome x conc     54.97      4.20
 93       fuer z conc      0.43      4.20
 93       mome x conc      1.76      4.20
 94       fuer y unif     -8.00     -1.80     -0.01
 95 a 105 fuer y unif     -8.00
 94       mome x unif     17.60     -1.80     -0.01
 95 a 105 mome x unif     18.68
 94       fuer z unif      0.14     -1.80     -0.01
 95 a 105 fuer z unif      0.14
 94       mome x unif      0.56     -1.80     -0.01
 95 a 105 mome x unif      0.56
 94       fuer y conc    -25.00      0.80
 94       mome x conc     55.01      0.80
 94       fuer z conc      0.43      0.80
 94       mome x conc      1.76      0.80
 94       fuer y conc    -25.00      2.40
 94       mome x conc     55.01      2.40
 94       fuer z conc      0.43      2.40
 94       mome x conc      1.76      2.40
 58 a  69 fuer y unif     -8.00
 58 a  69 mome x unif     23.42
 58 a  69 fuer z unif      0.14
 58 a  69 mome x unif      0.56
 34 a  45 fuer y unif     -8.00
 34 a  45 mome x unif     26.23
 34 a  45 fuer z unif      0.14
 34 a  45 mome x unif      0.56
 10 a  21 fuer y unif     -8.00
 10 a  21 mome x unif     23.32
 10 a  21 fuer z unif      0.14
 10 a  21 mome x unif      0.56
 70 a  81 fuer y unif     -1.25
 70 a  81 mome x unif      3.20
 70 a  81 fuer z unif      0.02
 70 a  81 mome x unif      0.09
 46 a  57 fuer y unif     -1.25
 46 a  57 mome x unif      3.99
 46 a  57 fuer z unif      0.02
 46 a  57 mome x unif      0.09
 22 a  33 fuer y unif     -1.25
 22 a  33 mome x unif      3.98
 22 a  33 fuer z unif      0.02
 22 a  33 mome x unif      0.09
  1 a   9 fuer y unif     -1.25
  1 a   9 mome x unif      3.17
  1 a   9 fuer z unif      0.02
  1 a   9 mome x unif      0.09
106 a 114 fuer y unif     -1.25
106 a 114 mome x unif      3.51
106 a 114 fuer z unif      0.02
106 a 114 mome x unif      0.09
hipo 211 sob. a-24 dcha ec-1 (LM-71)
carg en barr
 82 a  93 fuer y unif     -8.00
 82 a  93 mome x unif     18.22
 82 a  93 fuer z unif      0.14
 82 a  93 mome x unif      0.56
 94 a  95 fuer y unif     -8.00
 94 a  95 mome x unif     17.62
 94 a  95 fuer z unif      0.14
 94 a  95 mome x unif      0.56
 96       fuer y unif     -8.00      0.00      1.80
 97       fuer y unif     -8.00     -1.80     -0.01
 96       mome x unif     17.71      0.00      1.80
 97       mome x unif     17.81     -1.80     -0.01
 96       fuer z unif      0.14      0.00      1.80
 97       fuer z unif      0.14     -1.80     -0.01
 96       mome x unif      0.56      0.00      1.80
 97       mome x unif      0.56     -1.80     -0.01
 98 a 105 fuer y unif     -8.00
 98 a 105 mome x unif     18.83
 98 a 105 fuer z unif      0.14
 98 a 105 mome x unif      0.56
 96       fuer y conc    -25.00      2.60
 96       mome x conc     55.35      2.60
 96       fuer z conc      0.43      2.60
 96       mome x conc      1.76      2.60
 96       fuer y conc    -25.00      4.20
 96       mome x conc     55.35      4.20
 96       fuer z conc      0.43      4.20
 96       mome x conc      1.76      4.20
 97       fuer y conc    -25.00      0.80
 97       mome x conc     55.65      0.80
 97       fuer z conc      0.43      0.80
 97       mome x conc      1.76      0.80
 97       fuer y conc    -25.00      2.40
 97       mome x conc     55.65      2.40
 97       fuer z conc      0.43      2.40
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 97          mome x conc     1.76      2.40
 58 a  69 fuer y unif    -8.00
 58 a  69 mome x unif    23.42
 58 a  69 fuer z unif     0.14
 58 a  69 mome x unif     0.56
 34 a  45 fuer y unif    -8.00
 34 a  45 mome x unif    26.23
 34 a  45 fuer z unif     0.14
 34 a  45 mome x unif     0.56
 10 a  21 fuer y unif    -8.00
 10 a  21 mome x unif    23.32
 10 a  21 fuer z unif     0.14
 10 a  21 mome x unif     0.56
 70 a  81 fuer y unif    -1.25
 70 a  81 mome x unif     3.20
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.09
 46 a  57 fuer y unif    -1.25
 46 a  57 mome x unif     3.99
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.09
 22 a  33 fuer y unif    -1.25
 22 a  33 mome x unif     3.98
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.09
  1 a   9 fuer y unif    -1.25
  1 a   9 mome x unif     3.17
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.09
106 a 114 fuer y unif    -1.25
106 a 114 mome x unif     3.51
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.09
hipo 212 sob. a-25 dcha ec-1 (LM-71)
carg en barr
 94 a 101 fuer y unif    -8.00
 94 a 101 mome x unif    18.05
 94 a 101 fuer z unif     0.14
 94 a 101 mome x unif     0.56
102       fuer y unif    -8.00     0.00      1.80
103       fuer y unif    -8.00    -1.80     -0.01
102       mome x unif    18.74     0.00      1.80
103       mome x unif    19.04    -1.80     -0.01
102       fuer z unif     0.14     0.00      1.80
103       fuer z unif     0.14    -1.80     -0.01
102       mome x unif     0.56     0.00      1.80
103       mome x unif     0.56    -1.80     -0.01
104 a 105 fuer y unif    -8.00
104 a 105 mome x unif    19.54
104 a 105 fuer z unif     0.14
104 a 105 mome x unif     0.56
102       fuer y conc   -25.00     2.60
102       mome x conc    58.58     2.60
102       fuer z conc     0.43     2.60
102       mome x conc     1.76     2.60
102       fuer y conc   -25.00     4.20
102       mome x conc    58.58     4.20
102       fuer z conc     0.43     4.20
102       mome x conc     1.76     4.20
103       fuer y conc   -25.00     0.80
103       mome x conc    59.49     0.80
103       fuer z conc     0.43     0.80
103       mome x conc     1.76     0.80
103       fuer y conc   -25.00     2.40
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103       mome x conc    59.49     2.40
103       fuer z conc     0.43     2.40
103       mome x conc     1.76     2.40
106 a 114 fuer y unif    -8.00
106 a 114 mome x unif    22.49
106 a 114 fuer z unif     0.14
106 a 114 mome x unif     0.56
 70 a  81 fuer y unif    -8.00
 70 a  81 mome x unif    20.46
 70 a  81 fuer z unif     0.14
 70 a  81 mome x unif     0.56
 46 a  57 fuer y unif    -8.00
 46 a  57 mome x unif    25.53
 46 a  57 fuer z unif     0.14
 46 a  57 mome x unif     0.56
 22 a  33 fuer y unif    -8.00
 22 a  33 mome x unif    25.50
 22 a  33 fuer z unif     0.14
 22 a  33 mome x unif     0.56
  1 a   9 fuer y unif    -8.00
  1 a   9 mome x unif    20.30
  1 a   9 fuer z unif     0.14
  1 a   9 mome x unif     0.56
 82 a  93 fuer y unif    -1.25
 82 a  93 mome x unif     2.85
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.09
 58 a  69 fuer y unif    -1.25
 58 a  69 mome x unif     3.66
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.09
 34 a  45 fuer y unif    -1.25
 34 a  45 mome x unif     4.10
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.09
 10 a  21 fuer y unif    -1.25
 10 a  21 mome x unif     3.64
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.09
hipo 213 sob. a-26 dcha ec-1 (LM-71)
carg en barr
 94 a 104 fuer y unif    -8.00
105       fuer y unif    -8.00     0.00      1.80
 94 a 104 mome x unif    18.48
105       mome x unif    19.72     0.00      1.80
 94 a 104 fuer z unif     0.14
105       fuer z unif     0.14     0.00      1.80
 94 a 104 mome x unif     0.56
105       mome x unif     0.56     0.00      1.80
105       fuer y conc   -25.00     2.60
105       mome x conc    61.62     2.60
105       fuer z conc     0.43     2.60
105       mome x conc     1.76     2.60
105       fuer y conc   -25.00     4.20
105       mome x conc    61.62     4.20
105       fuer z conc     0.43     4.20
105       mome x conc     1.76     4.20
106       fuer y unif    -8.00    -1.80     -0.01
107 a 114 fuer y unif    -8.00
106       mome x unif    20.12    -1.80     -0.01
107 a 114 mome x unif    22.71
106       fuer z unif     0.14    -1.80     -0.01
107 a 114 fuer z unif     0.14
106       mome x unif     0.56    -1.80     -0.01
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107	a	114	mome	x	unif	0.56			
106			fuer	y	conc	-25.00	0.80		
106			mome	x	conc	62.89	0.80		
106			fuer	z	conc	0.43	0.80		
106			mome	x	conc	1.76	0.80		
106			fuer	y	conc	-25.00	2.40		
106			mome	x	conc	62.89	2.40		
106			fuer	z	conc	0.43	2.40		
106			mome	x	conc	1.76	2.40		
70	a	81	fuer	y	unif	-8.00			
70	a	81	mome	x	unif	20.46			
70	a	81	fuer	z	unif	0.14			
70	a	81	mome	x	unif	0.56			
46	a	57	fuer	y	unif	-8.00			
46	a	57	mome	x	unif	25.53			
46	a	57	fuer	z	unif	0.14			
46	a	57	mome	x	unif	0.56			
22	a	33	fuer	y	unif	-8.00			
22	a	33	mome	x	unif	25.50			
22	a	33	fuer	z	unif	0.14			
22	a	33	mome	x	unif	0.56			
1	a	9	fuer	y	unif	-8.00			
1	a	9	mome	x	unif	20.30			
1	a	9	fuer	z	unif	0.14			
1	a	9	mome	x	unif	0.56			
82	a	93	fuer	y	unif	-1.25			
82	a	93	mome	x	unif	2.85			
82	a	93	fuer	z	unif	0.02			
82	a	93	mome	x	unif	0.09			
58	a	69	fuer	y	unif	-1.25			
58	a	69	mome	x	unif	3.66			
58	a	69	fuer	z	unif	0.02			
58	a	69	mome	x	unif	0.09			
34	a	45	fuer	y	unif	-1.25			
34	a	45	mome	x	unif	4.10			
34	a	45	fuer	z	unif	0.02			
34	a	45	mome	x	unif	0.09			
10	a	21	fuer	y	unif	-1.25			
10	a	21	mome	x	unif	3.64			
10	a	21	fuer	z	unif	0.02			
10	a	21	mome	x	unif	0.09			

hipo 214 sob. a-27 dcha ec-1 (LM-71)
carg en barr

94	a	105	fuer	y	unif	-8.00			
94	a	105	mome	x	unif	18.66			
94	a	105	fuer	z	unif	0.14			
94	a	105	mome	x	unif	0.56			
106	a	106	fuer	y	unif	-8.00			
106	a	106	mome	x	unif	20.12			
106	a	106	fuer	z	unif	0.14			
106	a	106	mome	x	unif	0.56			
107			fuer	y	unif	-8.00	0.00	3.05	
108			fuer	y	unif	-8.00	-0.55	-0.01	
107			mome	x	unif	20.56	0.00	3.05	
108			mome	x	unif	21.05	-0.55	-0.01	
107			fuer	z	unif	0.14	0.00	3.05	
108			fuer	z	unif	0.14	-0.55	-0.01	
107			mome	x	unif	0.56	0.00	3.05	
108			mome	x	unif	0.56	-0.55	-0.01	
109	a	114	fuer	y	unif	-8.00			
109	a	114	mome	x	unif	23.22			
109	a	114	fuer	z	unif	0.14			
109	a	114	mome	x	unif	0.56			
107			fuer	y	conc	-25.00	3.85		
107			mome	x	conc	64.26	3.85		
107			fuer	z	conc	0.43	3.85		
107			mome	x	conc	1.76	3.85		
108			fuer	y	conc	-25.00	0.45		
108			mome	x	conc	65.77	0.45		
108			fuer	z	conc	0.43	0.45		
108			mome	x	conc	1.76	0.45		
108			fuer	y	conc	-25.00	2.05		
108			mome	x	conc	65.77	2.05		
108			fuer	z	conc	0.43	2.05		
108			mome	x	conc	1.76	2.05		
108			fuer	y	conc	-25.00	3.65		
108			mome	x	conc	65.77	3.65		
108			fuer	z	conc	0.43	3.65		
108			mome	x	conc	1.76	3.65		
70	a	81	fuer	y	unif	-8.00			
70	a	81	mome	x	unif	20.46			
70	a	81	fuer	z	unif	0.14			
70	a	81	mome	x	unif	0.56			
46	a	57	fuer	y	unif	-8.00			
46	a	57	mome	x	unif	25.53			
46	a	57	fuer	z	unif	0.14			
46	a	57	mome	x	unif	0.56			
22	a	33	fuer	y	unif	-8.00			
22	a	33	mome	x	unif	25.50			
22	a	33	fuer	z	unif	0.14			
22	a	33	mome	x	unif	0.56			
1	a	9	fuer	y	unif	-8.00			
1	a	9	mome	x	unif	20.30			
1	a	9	fuer	z	unif	0.14			
1	a	9	mome	x	unif	0.56			
82	a	93	fuer	y	unif	-1.25			
82	a	93	mome	x	unif	2.85			
82	a	93	fuer	z	unif	0.02			
82	a	93	mome	x	unif	0.09			
58	a	69	fuer	y	unif	-1.25			
58	a	69	mome	x	unif	3.66			
58	a	69	fuer	z	unif	0.02			
58	a	69	mome	x	unif	0.09			
34	a	45	fuer	y	unif	-1.25			
34	a	45	mome	x	unif	4.10			
34	a	45	fuer	z	unif	0.02			
34	a	45	mome	x	unif	0.09			
10	a	21	fuer	y	unif	-1.25			
10	a	21	mome	x	unif	3.64			
10	a	21	fuer	z	unif	0.02			
10	a	21	mome	x	unif	0.09			

hipo 215 sob. v- 1 izda ec-1 (sw-2)
carg en barr

1	a	3	fuer	y	unif	-15.00			
1	a	3	mome	x	unif	-45.72			
1	a	3	fuer	z	unif	0.04			
1	a	3	mome	x	unif	0.15			
4			fuer	y	unif	-15.00	0.00	4.00	
4			mome	x	unif	-44.34	0.00	4.00	
4			fuer	z	unif	0.04	0.00	4.00	
4			mome	x	unif	0.15	0.00	4.00	
6			fuer	y	unif	-15.00	-4.00	-0.01	
6			mome	x	unif	-43.03	-4.00	-0.01	
6			fuer	z	unif	0.04	-4.00	-0.01	
6			mome	x	unif	0.15	-4.00	-0.01	
7	a	9	fuer	y	unif	-15.00			
7	a	9	mome	x	unif	-41.83			
7	a	9	fuer	z	unif	0.04			

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  7 a   9 mome x unif     0.15
hipo 216 sob. v- 2 izda ec-1 (sw-2)
carg en barr
 10       fuer y unif   -15.00    1.50   -0.01
 10       mome x unif   -40.67    1.50   -0.01
 10       fuer z unif     0.04    1.50   -0.01
 10       mome x unif     0.15    1.50   -0.01
 11 a  14 fuer y unif   -15.00
 11 a  14 mome x unif   -39.36
 11 a  14 fuer z unif     0.04
 11 a  14 mome x unif     0.15
 15       fuer y unif   -15.00    0.00    1.50
 15       mome x unif   -38.12    0.00    1.50
 15       fuer z unif     0.04    0.00    1.50
 15       mome x unif     0.15    0.00    1.50
 16       fuer y unif   -15.00   -1.50   -0.01
 16       mome x unif   -37.67   -1.50   -0.01
 16       fuer z unif     0.04   -1.50   -0.01
 16       mome x unif     0.15   -1.50   -0.01
 17 a  20 fuer y unif   -15.00
 17 a  20 mome x unif   -36.65
 17 a  20 fuer z unif     0.04
 17 a  20 mome x unif     0.15
 21       fuer y unif   -15.00    0.00    3.50
 21       mome x unif   -35.69    0.00    3.50
 21       fuer z unif     0.04    0.00    3.50
 21       mome x unif     0.15    0.00    3.50
hipo 217 sob. v- 3 izda ec-1 (sw-2)
carg en barr
 22       fuer y unif   -15.00    1.50   -0.01
 22       mome x unif   -35.34    1.50   -0.01
 22       fuer z unif     0.04    1.50   -0.01
 22       mome x unif     0.15    1.50   -0.01
 23 a  26 fuer y unif   -15.00
 23 a  26 mome x unif   -34.60
 23 a  26 fuer z unif     0.04
 23 a  26 mome x unif     0.15
 27       fuer y unif   -15.00    0.00    1.50
 27       mome x unif   -33.93    0.00    1.50
 27       fuer z unif     0.04    0.00    1.50
 27       mome x unif     0.15    0.00    1.50
 28       fuer y unif   -15.00   -1.50   -0.01
 28       mome x unif   -33.70   -1.50   -0.01
 28       fuer z unif     0.04   -1.50   -0.01
 28       mome x unif     0.15   -1.50   -0.01
 29 a  32 fuer y unif   -15.00
 29 a  32 mome x unif   -33.24
 29 a  32 fuer z unif     0.04
 29 a  32 mome x unif     0.15
 33       fuer y unif   -15.00    0.00    3.50
 33       mome x unif   -32.85    0.00    3.50
 33       fuer z unif     0.04    0.00    3.50
 33       mome x unif     0.15    0.00    3.50
hipo 218 sob. v- 4 izda ec-1 (sw-2)
carg en barr
 34       fuer y unif   -15.00    1.50   -0.01
 34       mome x unif   -32.74    1.50   -0.01
 34       fuer z unif     0.04    1.50   -0.01
 34       mome x unif     0.15    1.50   -0.01
 35 a  38 fuer y unif   -15.00
 35 a  38 mome x unif   -32.55
 35 a  38 fuer z unif     0.04
 35 a  38 mome x unif     0.15
 39       fuer y unif   -15.00    0.00    1.50
 39       mome x unif   -32.44    0.00    1.50
 39       fuer z unif     0.04    0.00    1.50
 39       mome x unif     0.15    0.00    1.50
 40       fuer y unif   -15.00   -1.50   -0.01
 40       mome x unif   -32.43   -1.50   -0.01
 40       fuer z unif     0.04   -1.50   -0.01
 40       mome x unif     0.15   -1.50   -0.01
 41 a  44 fuer y unif   -15.00
 41 a  44 mome x unif   -32.53
 41 a  44 fuer z unif     0.04
 41 a  44 mome x unif     0.15
 45       fuer y unif   -15.00    0.00    3.50
 45       mome x unif   -32.70    0.00    3.50
 45       fuer z unif     0.04    0.00    3.50
 45       mome x unif     0.15    0.00    3.50
hipo 219 sob. v- 5 izda ec-1 (sw-2)
carg en barr
 46       fuer y unif   -15.00    1.50   -0.01
 46       mome x unif   -32.81    1.50   -0.01
 46       fuer z unif     0.04    1.50   -0.01
 46       mome x unif     0.15    1.50   -0.01
 47 a  50 fuer y unif   -15.00
 47 a  50 mome x unif   -33.18
 47 a  50 fuer z unif     0.04
 47 a  50 mome x unif     0.15
 51       fuer y unif   -15.00    0.00    1.50
 51       mome x unif   -33.64    0.00    1.50
 51       fuer z unif     0.04    0.00    1.50
 51       mome x unif     0.15    0.00    1.50
 52       fuer y unif   -15.00   -1.50   -0.01
 52       mome x unif   -33.86   -1.50   -0.01
 52       fuer z unif     0.04   -1.50   -0.01
 52       mome x unif     0.15   -1.50   -0.01
 53 a  56 fuer y unif   -15.00
 53 a  56 mome x unif   -34.52
 53 a  56 fuer z unif     0.04
 53 a  56 mome x unif     0.15
 57       fuer y unif   -15.00    0.00    3.50
 57       mome x unif   -35.25    0.00    3.50
 57       fuer z unif     0.04    0.00    3.50
 57       mome x unif     0.15    0.00    3.50
hipo 220 sob. v- 6 izda ec-1 (sw-2)
carg en barr
 58       fuer y unif   -15.00    1.50   -0.01
 58       mome x unif   -35.59    1.50   -0.01
 58       fuer z unif     0.04    1.50   -0.01
 58       mome x unif     0.15    1.50   -0.01
 59 a  62 fuer y unif   -15.00
 59 a  62 mome x unif   -36.53
 59 a  62 fuer z unif     0.04
 59 a  62 mome x unif     0.15
 63       fuer y unif   -15.00    0.00    1.50
 63       mome x unif   -37.55    0.00    1.50
 63       fuer z unif     0.04    0.00    1.50
 63       mome x unif     0.15    0.00    1.50
 64       fuer y unif   -15.00   -1.50   -0.01
 64       mome x unif   -37.98   -1.50   -0.01
 64       fuer z unif     0.04   -1.50   -0.01
 64       mome x unif     0.15   -1.50   -0.01
 65 a  68 fuer y unif   -15.00
 65 a  68 mome x unif   -39.18
 65 a  68 fuer z unif     0.04
 65 a  68 mome x unif     0.15
 69       fuer y unif   -15.00    0.00    3.50
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69		mome x unif	-40.40	0.00	3.50
69		fuer z unif	0.04	0.00	3.50
69		mome x unif	0.15	0.00	3.50

hipo 221 sob. v- 7 izda ec-1 (sw-2)
carg en barr

70		fuer y unif	-15.00	1.50	-0.01
70		mome x unif	-40.91	1.50	-0.01
70		fuer z unif	0.04	1.50	-0.01
70		mome x unif	0.15	1.50	-0.01
71	a 74	fuer y unif	-15.00		
71	a 74	mome x unif	-42.18		
71	a 74	fuer z unif	0.04		
71	a 74	mome x unif	0.15		
75		fuer y unif	-15.00	0.00	1.50
75		mome x unif	-43.44	0.00	1.50
75		fuer z unif	0.04	0.00	1.50
75		mome x unif	0.15	0.00	1.50
76		fuer y unif	-15.00	-1.50	-0.01
76		mome x unif	-43.93	-1.50	-0.01
76		fuer z unif	0.04	-1.50	-0.01
76		mome x unif	0.15	-1.50	-0.01
77	a 80	fuer y unif	-15.00		
77	a 80	mome x unif	-45.09		
77	a 80	fuer z unif	0.04		
77	a 80	mome x unif	0.15		
81		fuer y unif	-15.00	0.00	3.50
81		mome x unif	-46.18	0.00	3.50
81		fuer z unif	0.04	0.00	3.50
81		mome x unif	0.15	0.00	3.50

hipo 222 sob. v- 8 izda ec-1 (sw-2)
carg en barr

82		fuer y unif	-15.00	1.50	-0.01
82		mome x unif	-46.57	1.50	-0.01
82		fuer z unif	0.04	1.50	-0.01
82		mome x unif	0.15	1.50	-0.01
83	a 86	fuer y unif	-15.00		
83	a 86	mome x unif	-47.42		
83	a 86	fuer z unif	0.04		
83	a 86	mome x unif	0.15		
87		fuer y unif	-15.00	0.00	1.50
87		mome x unif	-48.15	0.00	1.50
87		fuer z unif	0.04	0.00	1.50
87		mome x unif	0.15	0.00	1.50
88		fuer y unif	-15.00	-1.50	-0.01
88		mome x unif	-48.38	-1.50	-0.01
88		fuer z unif	0.04	-1.50	-0.01
88		mome x unif	0.15	-1.50	-0.01
89	a 92	fuer y unif	-15.00		
89	a 92	mome x unif	-48.73		
89	a 92	fuer z unif	0.04		
89	a 92	mome x unif	0.15		
93		fuer y unif	-15.00	0.00	3.50
93		mome x unif	-48.91	0.00	3.50
93		fuer z unif	0.04	0.00	3.50
93		mome x unif	0.15	0.00	3.50

hipo 223 sob. v- 9 izda ec-1 (sw-2)
carg en barr

94		fuer y unif	-15.00	1.50	-0.01
94		mome x unif	-48.89	1.50	-0.01
94		fuer z unif	0.04	1.50	-0.01
94		mome x unif	0.15	1.50	-0.01
95	a 98	fuer y unif	-15.00		
95	a 98	mome x unif	-48.55		
95	a 98	fuer z unif	0.04		
95	a 98	mome x unif	0.15		
99		fuer y unif	-15.00	0.00	1.50
99		mome x unif	-47.99	0.00	1.50
99		fuer z unif	0.04	0.00	1.50
99		mome x unif	0.15	0.00	1.50
100		fuer y unif	-15.00	-1.50	-0.01
100		mome x unif	-47.65	-1.50	-0.01
100		fuer z unif	0.04	-1.50	-0.01
100		mome x unif	0.15	-1.50	-0.01
101	a 104	fuer y unif	-15.00		
101	a 104	mome x unif	-46.42		
101	a 104	fuer z unif	0.04		
101	a 104	mome x unif	0.15		
105		fuer y unif	-15.00	0.00	3.50
105		mome x unif	-44.93	0.00	3.50
105		fuer z unif	0.04	0.00	3.50
105		mome x unif	0.15	0.00	3.50

hipo 224 sob. v-10 izda ec-1 (sw-2)
carg en barr

106	a 108	fuer y unif	-15.00		
106	a 108	mome x unif	-43.30		
106	a 108	fuer z unif	0.04		
106	a 108	mome x unif	0.15		
109		fuer y unif	-15.00	0.00	4.00
109		mome x unif	-41.45	0.00	4.00
109		fuer z unif	0.04	0.00	4.00
109		mome x unif	0.15	0.00	4.00
111		fuer y unif	-15.00	-4.00	-0.01
111		mome x unif	-39.24	-4.00	-0.01
111		fuer z unif	0.04	-4.00	-0.01
111		mome x unif	0.15	-4.00	-0.01
112	a 114	fuer y unif	-15.00		
112	a 114	mome x unif	-36.65		
112	a 114	fuer z unif	0.04		
112	a 114	mome x unif	0.15		

hipo 225 sob. a- 1 izda ec-1 (sw-2)
carg en barr

4		fuer y unif	-15.00	1.50	-0.01
4		mome x unif	-44.34	1.50	-0.01
4		fuer z unif	0.04	1.50	-0.01
4		mome x unif	0.15	1.50	-0.01
5	a 8	fuer y unif	-15.00		
9		fuer y unif	-15.00	0.00	1.50
5	a 8	mome x unif	-42.75		
9		mome x unif	-41.24	0.00	1.50
5	a 8	fuer z unif	0.04		
9		fuer z unif	0.04	0.00	1.50
5	a 8	mome x unif	0.15		
9		mome x unif	0.15	0.00	1.50
10		fuer y unif	-15.00	-1.50	-0.01
10		mome x unif	-40.67	-1.50	-0.01
10		fuer z unif	0.04	-1.50	-0.01
10		mome x unif	0.15	-1.50	-0.01
11	a 14	fuer y unif	-15.00		
11	a 14	mome x unif	-39.36		
11	a 14	fuer z unif	0.04		
11	a 14	mome x unif	0.15		
15		fuer y unif	-15.00	0.00	3.50
15		mome x unif	-38.12	0.00	3.50
15		fuer z unif	0.04	0.00	3.50
15		mome x unif	0.15	0.00	3.50

hipo 226 sob. a- 2 izda ec-1 (sw-2)
carg en barr

16		fuer y unif	-15.00	1.50	-0.01

```
 16        mome x unif   -37.67   1.50  -0.01
 16        fuer z unif     0.04   1.50  -0.01
 16        mome x unif     0.15   1.50  -0.01
 17 a  20  fuer y unif   -15.00
 21        fuer y unif   -15.00   0.00   1.50
 17 a  20  mome x unif   -36.65
 21        mome x unif   -35.69   0.00   1.50
 17 a  20  fuer z unif     0.04
 21        fuer z unif     0.04   0.00   1.50
 17 a  20  mome x unif     0.15
 21        mome x unif     0.15   0.00   1.50
 22        fuer y unif   -15.00  -1.50  -0.01
 22        mome x unif   -35.34  -1.50  -0.01
 22        fuer z unif     0.04  -1.50  -0.01
 22        mome x unif     0.15  -1.50  -0.01
 23 a  26  fuer y unif   -15.00
 23 a  26  mome x unif   -34.60
 23 a  26  fuer z unif     0.04
 23 a  26  mome x unif     0.15
 27        fuer y unif   -15.00   0.00   3.50
 27        mome x unif   -33.93   0.00   3.50
 27        fuer z unif     0.04   0.00   3.50
 27        mome x unif     0.15   0.00   3.50
hipo 227 sob. a- 3 izda ec-1 (sw-2)
carg en barr
 28        fuer y unif   -15.00   1.50  -0.01
 28        mome x unif   -33.70   1.50  -0.01
 28        fuer z unif     0.04   1.50  -0.01
 28        mome x unif     0.15   1.50  -0.01
 29 a  32  fuer y unif   -15.00
 33        fuer y unif   -15.00   0.00   1.50
 29 a  32  mome x unif   -33.24
 33        mome x unif   -32.85   0.00   1.50
 29 a  32  fuer z unif     0.04
 33        fuer z unif     0.04   0.00   1.50
 29 a  32  mome x unif     0.15
 33        mome x unif     0.15   0.00   1.50
 34        fuer y unif   -15.00  -1.50  -0.01
 34        mome x unif   -32.74  -1.50  -0.01
 34        fuer z unif     0.04  -1.50  -0.01
 34        mome x unif     0.15  -1.50  -0.01
 35 a  38  fuer y unif   -15.00
 35 a  38  mome x unif   -32.55
 35 a  38  fuer z unif     0.04
 35 a  38  mome x unif     0.15
 39        fuer y unif   -15.00   0.00   3.50
 39        mome x unif   -32.44   0.00   3.50
 39        fuer z unif     0.04   0.00   3.50
 39        mome x unif     0.15   0.00   3.50
hipo 228 sob. a- 4 izda ec-1 (sw-2)
carg en barr
 40        fuer y unif   -15.00   1.50  -0.01
 40        mome x unif   -32.43   1.50  -0.01
 40        fuer z unif     0.04   1.50  -0.01
 40        mome x unif     0.15   1.50  -0.01
 41 a  44  fuer y unif   -15.00
 45        fuer y unif   -15.00   0.00   1.50
 41 a  44  mome x unif   -32.53
 45        mome x unif   -32.70   0.00   1.50
 41 a  44  fuer z unif     0.04
 45        fuer z unif     0.04   0.00   1.50
 41 a  44  mome x unif     0.15
 45        mome x unif     0.15   0.00   1.50
 46        fuer y unif   -15.00  -1.50  -0.01
 46        mome x unif   -32.81  -1.50  -0.01
 46        fuer z unif     0.04  -1.50  -0.01
 46        mome x unif     0.15  -1.50  -0.01
 47 a  50  fuer y unif   -15.00
 47 a  50  mome x unif   -33.18
 47 a  50  fuer z unif     0.04
 47 a  50  mome x unif     0.15
 51        fuer y unif   -15.00   0.00   3.50
 51        mome x unif   -33.64   0.00   3.50
 51        fuer z unif     0.04   0.00   3.50
 51        mome x unif     0.15   0.00   3.50
hipo 229 sob. a- 5 izda ec-1 (sw-2)
carg en barr
 52        fuer y unif   -15.00   1.50  -0.01
 52        mome x unif   -33.86   1.50  -0.01
 52        fuer z unif     0.04   1.50  -0.01
 52        mome x unif     0.15   1.50  -0.01
 53 a  56  fuer y unif   -15.00
 57        fuer y unif   -15.00   0.00   1.50
 53 a  56  mome x unif   -34.52
 57        mome x unif   -35.25   0.00   1.50
 53 a  56  fuer z unif     0.04
 57        fuer z unif     0.04   0.00   1.50
 53 a  56  mome x unif     0.15
 57        mome x unif     0.15   0.00   1.50
 58        fuer y unif   -15.00  -1.50  -0.01
 58        mome x unif   -35.59  -1.50  -0.01
 58        fuer z unif     0.04  -1.50  -0.01
 58        mome x unif     0.15  -1.50  -0.01
 59 a  62  fuer y unif   -15.00
 59 a  62  mome x unif   -36.53
 59 a  62  fuer z unif     0.04
 59 a  62  mome x unif     0.15
 63        fuer y unif   -15.00   0.00   3.50
 63        mome x unif   -37.55   0.00   3.50
 63        fuer z unif     0.04   0.00   3.50
 63        mome x unif     0.15   0.00   3.50
hipo 230 sob. a- 6 izda ec-1 (sw-2)
carg en barr
 64        fuer y unif   -15.00   1.50  -0.01
 64        mome x unif   -37.98   1.50  -0.01
 64        fuer z unif     0.04   1.50  -0.01
 64        mome x unif     0.15   1.50  -0.01
 65 a  68  fuer y unif   -15.00
 69        fuer y unif   -15.00   0.00   1.50
 65 a  68  mome x unif   -39.18
 69        mome x unif   -40.40   0.00   1.50
 65 a  68  fuer z unif     0.04
 69        fuer z unif     0.04   0.00   1.50
 65 a  68  mome x unif     0.15
 69        mome x unif     0.15   0.00   1.50
 70        fuer y unif   -15.00  -1.50  -0.01
 70        mome x unif   -40.91  -1.50  -0.01
 70        fuer z unif     0.04  -1.50  -0.01
 70        mome x unif     0.15  -1.50  -0.01
 71 a  74  fuer y unif   -15.00
 71 a  74  mome x unif   -42.18
 71 a  74  fuer z unif     0.04
 71 a  74  mome x unif     0.15
 75        fuer y unif   -15.00   0.00   3.50
 75        mome x unif   -43.44   0.00   3.50
 75        fuer z unif     0.04   0.00   3.50
 75        mome x unif     0.15   0.00   3.50
hipo 231 sob. a- 7 izda ec-1 (sw-2)
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carg en barr

76		fuer y unif	-15.00	1.50	-0.01
76		mome x unif	-43.93	1.50	-0.01
76		fuer z unif	0.04	1.50	-0.01
76		mome x unif	0.15	1.50	-0.01
77 a	80	fuer y unif	-15.00		
81		fuer y unif	-15.00	0.00	1.50
77 a	80	mome x unif	-45.09		
81		mome x unif	-46.18	0.00	1.50
77 a	80	fuer z unif	0.04		
81		fuer z unif	0.04	0.00	1.50
77 a	80	mome x unif	0.15		
81		mome x unif	0.15	0.00	1.50
82		fuer y unif	-15.00	-1.50	-0.01
82		mome x unif	-46.57	-1.50	-0.01
82		fuer z unif	0.04	-1.50	-0.01
82		mome x unif	0.15	-1.50	-0.01
83 a	86	fuer y unif	-15.00		
83 a	86	mome x unif	-47.42		
83 a	86	fuer z unif	0.04		
83 a	86	mome x unif	0.15		
87		fuer y unif	-15.00	0.00	3.50
87		mome x unif	-48.15	0.00	3.50
87		fuer z unif	0.04	0.00	3.50
87		mome x unif	0.15	0.00	3.50

hipo 232 sob. a- 8 izda ec-1 (sw-2)

carg en barr

88		fuer y unif	-15.00	1.50	-0.01
88		mome x unif	-48.38	1.50	-0.01
88		fuer z unif	0.04	1.50	-0.01
88		mome x unif	0.15	1.50	-0.01
89 a	92	fuer y unif	-15.00		
93		fuer y unif	-15.00	0.00	1.50
89 a	92	mome x unif	-48.73		
93		mome x unif	-48.91	0.00	1.50
89 a	92	fuer z unif	0.04		
93		fuer z unif	0.04	0.00	1.50
89 a	92	mome x unif	0.15		
93		mome x unif	0.15	0.00	1.50
94		fuer y unif	-15.00	-1.50	-0.01
94		mome x unif	-48.89	-1.50	-0.01
94		fuer z unif	0.04	-1.50	-0.01
94		mome x unif	0.15	-1.50	-0.01
95 a	98	fuer y unif	-15.00		
95 a	98	mome x unif	-48.55		
95 a	98	fuer z unif	0.04		
95 a	98	mome x unif	0.15		
99		fuer y unif	-15.00	0.00	3.50
99		mome x unif	-47.99	0.00	3.50
99		fuer z unif	0.04	0.00	3.50
99		mome x unif	0.15	0.00	3.50

hipo 233 sob. a- 9 izda ec-1 (sw-2)

carg en barr

100		fuer y unif	-15.00	1.50	-0.01
100		mome x unif	-47.65	1.50	-0.01
100		fuer z unif	0.04	1.50	-0.01
100		mome x unif	0.15	1.50	-0.01
101 a	104	fuer y unif	-15.00		
105		fuer y unif	-15.00	0.00	1.50
101 a	104	mome x unif	-46.42		
105		mome x unif	-44.93	0.00	1.50
101 a	104	fuer z unif	0.04		
105		fuer z unif	0.04	0.00	1.50
101 a	104	mome x unif	0.15		
105		mome x unif	0.15	0.00	1.50
106		fuer y unif	-15.00	-1.50	-0.01
106		mome x unif	-44.17	-1.50	-0.01
106		fuer z unif	0.04	-1.50	-0.01
106		mome x unif	0.15	-1.50	-0.01
107 a	110	fuer y unif	-15.00		
107 a	110	mome x unif	-41.86		
107 a	110	fuer z unif	0.04		
107 a	110	mome x unif	0.15		
111		fuer y unif	-15.00	0.00	3.50
111		mome x unif	-39.24	0.00	3.50
111		fuer z unif	0.04	0.00	3.50
111		mome x unif	0.15	0.00	3.50

hipo 234 sob. v- 1 dcha ec-1 (sw-2)

carg en barr

1 a	3	fuer y unif	-15.00		
1 a	3	mome x unif	36.18		
1 a	3	fuer z unif	0.04		
1 a	3	mome x unif	0.15		
4		fuer y unif	-15.00	0.00	4.00
4		mome x unif	37.56	0.00	4.00
4		fuer z unif	0.04	0.00	4.00
4		mome x unif	0.15	0.00	4.00
6		fuer y unif	-15.00	-4.00	-0.01
6		mome x unif	38.87	-4.00	-0.01
6		fuer z unif	0.04	-4.00	-0.01
6		mome x unif	0.15	-4.00	-0.01
7 a	9	fuer y unif	-15.00		
7 a	9	mome x unif	40.07		
7 a	9	fuer z unif	0.04		
7 a	9	mome x unif	0.15		

hipo 235 sob. v- 2 dcha ec-1 (sw-2)

carg en barr

10		fuer y unif	-15.00	1.50	-0.01
10		mome x unif	41.23	1.50	-0.01
10		fuer z unif	0.04	1.50	-0.01
10		mome x unif	0.15	1.50	-0.01
11 a	14	fuer y unif	-15.00		
11 a	14	mome x unif	42.54		
11 a	14	fuer z unif	0.04		
11 a	14	mome x unif	0.15		
15		fuer y unif	-15.00	0.00	1.50
15		mome x unif	43.78	0.00	1.50
15		fuer z unif	0.04	0.00	1.50
15		mome x unif	0.15	0.00	1.50
16		fuer y unif	-15.00	-1.50	-0.01
16		mome x unif	44.23	-1.50	-0.01
16		fuer z unif	0.04	-1.50	-0.01
16		mome x unif	0.15	-1.50	-0.01
17 a	20	fuer y unif	-15.00		
17 a	20	mome x unif	45.25		
17 a	20	fuer z unif	0.04		
17 a	20	mome x unif	0.15		
21		fuer y unif	-15.00	0.00	3.50
21		mome x unif	46.21	0.00	3.50
21		fuer z unif	0.04	0.00	3.50
21		mome x unif	0.15	0.00	3.50

hipo 236 sob. v- 3 dcha ec-1 (sw-2)

carg en barr

22		fuer y unif	-15.00	1.50	-0.01
22		mome x unif	46.56	1.50	-0.01
22		fuer z unif	0.04	1.50	-0.01
22		mome x unif	0.15	1.50	-0.01
23 a	26	fuer y unif	-15.00		

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 23 a  26 mome x unif    47.30
 23 a  26 fuer z unif     0.04
 23 a  26 mome x unif     0.15
 27       fuer y unif   -15.00    0.00    1.50
 27       mome x unif    47.97    0.00    1.50
 27       fuer z unif     0.04    0.00    1.50
 27       mome x unif     0.15    0.00    1.50
 28       fuer y unif   -15.00   -1.50   -0.01
 28       mome x unif    48.20   -1.50   -0.01
 28       fuer z unif     0.04   -1.50   -0.01
 28       mome x unif     0.15   -1.50   -0.01
 29 a  32 fuer y unif   -15.00
 29 a  32 mome x unif    48.66
 29 a  32 fuer z unif     0.04
 29 a  32 mome x unif     0.15
 33       fuer y unif   -15.00    0.00    3.50
 33       mome x unif    49.05    0.00    3.50
 33       fuer z unif     0.04    0.00    3.50
 33       mome x unif     0.15    0.00    3.50
hipo 237 sob. v- 4 dcha ec-1 (sw-2)
carg en barr
 34       fuer y unif   -15.00    1.50   -0.01
 34       mome x unif    49.16    1.50   -0.01
 34       fuer z unif     0.04    1.50   -0.01
 34       mome x unif     0.15    1.50   -0.01
 35 a  38 fuer y unif   -15.00
 35 a  38 mome x unif    49.35
 35 a  38 fuer z unif     0.04
 35 a  38 mome x unif     0.15
 39       fuer y unif   -15.00    0.00    1.50
 39       mome x unif    49.46    0.00    1.50
 39       fuer z unif     0.04    0.00    1.50
 39       mome x unif     0.15    0.00    1.50
 40       fuer y unif   -15.00   -1.50   -0.01
 40       mome x unif    49.47   -1.50   -0.01
 40       fuer z unif     0.04   -1.50   -0.01
 40       mome x unif     0.15   -1.50   -0.01
 41 a  44 fuer y unif   -15.00
 41 a  44 mome x unif    49.37
 41 a  44 fuer z unif     0.04
 41 a  44 mome x unif     0.15
 45       fuer y unif   -15.00    0.00    3.50
 45       mome x unif    49.20    0.00    3.50
 45       fuer z unif     0.04    0.00    3.50
 45       mome x unif     0.15    0.00    3.50
hipo 238 sob. v- 5 dcha ec-1 (sw-2)
carg en barr
 46       fuer y unif   -15.00    1.50   -0.01
 46       mome x unif    49.09    1.50   -0.01
 46       fuer z unif     0.04    1.50   -0.01
 46       mome x unif     0.15    1.50   -0.01
 47 a  50 fuer y unif   -15.00
 47 a  50 mome x unif    48.72
 47 a  50 fuer z unif     0.04
 47 a  50 mome x unif     0.15
 51       fuer y unif   -15.00    0.00    1.50
 51       mome x unif    48.26    0.00    1.50
 51       fuer z unif     0.04    0.00    1.50
 51       mome x unif     0.15    0.00    1.50
 52       fuer y unif   -15.00   -1.50   -0.01
 52       mome x unif    48.04   -1.50   -0.01
 52       fuer z unif     0.04   -1.50   -0.01
 52       mome x unif     0.15   -1.50   -0.01
 53 a  56 fuer y unif   -15.00
 53 a  56 mome x unif    47.38
 53 a  56 fuer z unif     0.04
 53 a  56 mome x unif     0.15
 57       fuer y unif   -15.00    0.00    3.50
 57       mome x unif    46.65    0.00    3.50
 57       fuer z unif     0.04    0.00    3.50
 57       mome x unif     0.15    0.00    3.50
hipo 239 sob. v- 6 dcha ec-1 (sw-2)
carg en barr
 58       fuer y unif   -15.00    1.50   -0.01
 58       mome x unif    46.31    1.50   -0.01
 58       fuer z unif     0.04    1.50   -0.01
 58       mome x unif     0.15    1.50   -0.01
 59 a  62 fuer y unif   -15.00
 59 a  62 mome x unif    45.37
 59 a  62 fuer z unif     0.04
 59 a  62 mome x unif     0.15
 63       fuer y unif   -15.00    0.00    1.50
 63       mome x unif    44.35    0.00    1.50
 63       fuer z unif     0.04    0.00    1.50
 63       mome x unif     0.15    0.00    1.50
 64       fuer y unif   -15.00   -1.50   -0.01
 64       mome x unif    43.92   -1.50   -0.01
 64       fuer z unif     0.04   -1.50   -0.01
 64       mome x unif     0.15   -1.50   -0.01
 65 a  68 fuer y unif   -15.00
 65 a  68 mome x unif    42.72
 65 a  68 fuer z unif     0.04
 65 a  68 mome x unif     0.15
 69       fuer y unif   -15.00    0.00    3.50
 69       mome x unif    41.50    0.00    3.50
 69       fuer z unif     0.04    0.00    3.50
 69       mome x unif     0.15    0.00    3.50
hipo 240 sob. v- 7 dcha ec-1 (sw-2)
carg en barr
 70       fuer y unif   -15.00    1.50   -0.01
 70       mome x unif    40.99    1.50   -0.01
 70       fuer z unif     0.04    1.50   -0.01
 70       mome x unif     0.15    1.50   -0.01
 71 a  74 fuer y unif   -15.00
 71 a  74 mome x unif    39.72
 71 a  74 fuer z unif     0.04
 71 a  74 mome x unif     0.15
 75       fuer y unif   -15.00    0.00    1.50
 75       mome x unif    38.46    0.00    1.50
 75       fuer z unif     0.04    0.00    1.50
 75       mome x unif     0.15    0.00    1.50
 76       fuer y unif   -15.00   -1.50   -0.01
 76       mome x unif    37.97   -1.50   -0.01
 76       fuer z unif     0.04   -1.50   -0.01
 76       mome x unif     0.15   -1.50   -0.01
 77 a  80 fuer y unif   -15.00
 77 a  80 mome x unif    36.81
 77 a  80 fuer z unif     0.04
 77 a  80 mome x unif     0.15
 81       fuer y unif   -15.00    0.00    3.50
 81       mome x unif    35.72    0.00    3.50
 81       fuer z unif     0.04    0.00    3.50
 81       mome x unif     0.15    0.00    3.50
hipo 241 sob. v- 8 dcha ec-1 (sw-2)
carg en barr
 82       fuer y unif   -15.00    1.50   -0.01
 82       mome x unif    35.33    1.50   -0.01
 82       fuer z unif     0.04    1.50   -0.01
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 82          mome x unif     0.15    1.50   -0.01
 83 a  86 fuer y unif    -15.00
 83 a  86 mome x unif     34.48
 83 a  86 fuer z unif      0.04
 83 a  86 mome x unif      0.15
 87          fuer y unif    -15.00    0.00    1.50
 87          mome x unif     33.75    0.00    1.50
 87          fuer z unif      0.04    0.00    1.50
 87          mome x unif      0.15    0.00    1.50
 88          fuer y unif    -15.00   -1.50   -0.01
 88          mome x unif     33.52   -1.50   -0.01
 88          fuer z unif      0.04   -1.50   -0.01
 88          mome x unif      0.15   -1.50   -0.01
 89 a  92 fuer y unif    -15.00
 89 a  92 mome x unif     33.17
 89 a  92 fuer z unif      0.04
 89 a  92 mome x unif      0.15
 93          fuer y unif    -15.00    0.00    3.50
 93          mome x unif     32.98    0.00    3.50
 93          fuer z unif      0.04    0.00    3.50
 93          mome x unif      0.15    0.00    3.50
hipo 242 sob. v- 9 dcha ec-1 (sw-2)
carg en barr
 94          fuer y unif    -15.00    1.50   -0.01
 94          mome x unif     33.01    1.50   -0.01
 94          fuer z unif      0.04    1.50   -0.01
 94          mome x unif      0.15    1.50   -0.01
 95 a  98 fuer y unif    -15.00
 95 a  98 mome x unif     33.35
 95 a  98 fuer z unif      0.04
 95 a  98 mome x unif      0.15
 99          fuer y unif    -15.00    0.00    1.50
 99          mome x unif     33.91    0.00    1.50
 99          fuer z unif      0.04    0.00    1.50
 99          mome x unif      0.15    0.00    1.50
100          fuer y unif    -15.00   -1.50   -0.01
100          mome x unif     34.25   -1.50   -0.01
100          fuer z unif      0.04   -1.50   -0.01
100          mome x unif      0.15   -1.50   -0.01
101 a 104 fuer y unif    -15.00
101 a 104 mome x unif     35.48
101 a 104 fuer z unif      0.04
101 a 104 mome x unif      0.15
105          fuer y unif    -15.00    0.00    3.50
105          mome x unif     36.97    0.00    3.50
105          fuer z unif      0.04    0.00    3.50
105          mome x unif      0.15    0.00    3.50
hipo 243 sob. v-10 dcha ec-1 (sw-2)
carg en barr
106 a 108 fuer y unif    -15.00
106 a 108 mome x unif     38.60
106 a 108 fuer z unif      0.04
106 a 108 mome x unif      0.15
109          fuer y unif    -15.00    0.00    4.00
109          mome x unif     40.45    0.00    4.00
109          fuer z unif      0.04    0.00    4.00
109          mome x unif      0.15    0.00    4.00
111          fuer y unif    -15.00   -4.00   -0.01
111          mome x unif     42.66   -4.00   -0.01
111          fuer z unif      0.04   -4.00   -0.01
111          mome x unif      0.15   -4.00   -0.01
112 a 114 fuer y unif    -15.00
112 a 114 mome x unif     45.25
112 a 114 fuer z unif      0.04
112 a 114 mome x unif      0.15
hipo 244 sob. a- 1 dcha ec-1 (sw-2)
carg en barr
  4          fuer y unif    -15.00    1.50   -0.01
  4          mome x unif     37.56    1.50   -0.01
  4          fuer z unif      0.04    1.50   -0.01
  4          mome x unif      0.15    1.50   -0.01
  5 a   8 fuer y unif    -15.00
  9          fuer y unif    -15.00    0.00    1.50
  5 a   8 mome x unif     39.15
  9          mome x unif     40.66    0.00    1.50
  5 a   8 fuer z unif      0.04
  9          fuer z unif      0.04    0.00    1.50
  5 a   8 mome x unif      0.15
  9          mome x unif      0.15    0.00    1.50
 10          fuer y unif    -15.00   -1.50   -0.01
 10          mome x unif     41.23   -1.50   -0.01
 10          fuer z unif      0.04   -1.50   -0.01
 10          mome x unif      0.15   -1.50   -0.01
 11 a  14 fuer y unif    -15.00
 11 a  14 mome x unif     42.54
 11 a  14 fuer z unif      0.04
 11 a  14 mome x unif      0.15
 15          fuer y unif    -15.00    0.00    3.50
 15          mome x unif     43.78    0.00    3.50
 15          fuer z unif      0.04    0.00    3.50
 15          mome x unif      0.15    0.00    3.50
hipo 245 sob. a- 2 dcha ec-1 (sw-2)
carg en barr
 16          fuer y unif    -15.00    1.50   -0.01
 16          mome x unif     44.23    1.50   -0.01
 16          fuer z unif      0.04    1.50   -0.01
 16          mome x unif      0.15    1.50   -0.01
 17 a  20 fuer y unif    -15.00
 21          fuer y unif    -15.00    0.00    1.50
 17 a  20 mome x unif     45.25
 21          mome x unif     46.21    0.00    1.50
 17 a  20 fuer z unif      0.04
 21          fuer z unif      0.04    0.00    1.50
 17 a  20 mome x unif      0.15
 21          mome x unif      0.15    0.00    1.50
 22          fuer y unif    -15.00   -1.50   -0.01
 22          mome x unif     46.56   -1.50   -0.01
 22          fuer z unif      0.04   -1.50   -0.01
 22          mome x unif      0.15   -1.50   -0.01
 23 a  26 fuer y unif    -15.00
 23 a  26 mome x unif     47.30
 23 a  26 fuer z unif      0.04
 23 a  26 mome x unif      0.15
 27          fuer y unif    -15.00    0.00    3.50
 27          mome x unif     47.97    0.00    3.50
 27          fuer z unif      0.04    0.00    3.50
 27          mome x unif      0.15    0.00    3.50
hipo 246 sob. a- 3 dcha ec-1 (sw-2)
carg en barr
 28          fuer y unif    -15.00    1.50   -0.01
 28          mome x unif     48.20    1.50   -0.01
 28          fuer z unif      0.04    1.50   -0.01
 28          mome x unif      0.15    1.50   -0.01
 29 a  32 fuer y unif    -15.00
 33          fuer y unif    -15.00    0.00    1.50
 29 a  32 mome x unif     48.66
 33          mome x unif     49.05    0.00    1.50
 29 a  32 fuer z unif      0.04
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33			fuer z unif	0.04	0.00	1.50
29	a	32	mome x unif	0.15		
33			mome x unif	0.15	0.00	1.50
34			fuer y unif	-15.00	-1.50	-0.01
34			mome x unif	49.16	-1.50	-0.01
34			fuer z unif	0.04	-1.50	-0.01
34			mome x unif	0.15	-1.50	-0.01
35	a	38	fuer y unif	-15.00		
35	a	38	mome x unif	49.35		
35	a	38	fuer z unif	0.04		
35	a	38	mome x unif	0.15		
39			fuer y unif	-15.00	0.00	3.50
39			mome x unif	49.46	0.00	3.50
39			fuer z unif	0.04	0.00	3.50
39			mome x unif	0.15	0.00	3.50

hipo 247 sob. a- 4 dcha ec-1 (sw-2)
carg en barr

40			fuer y unif	-15.00	1.50	-0.01
40			mome x unif	49.47	1.50	-0.01
40			fuer z unif	0.04	1.50	-0.01
40			mome x unif	0.15	1.50	-0.01
41	a	44	fuer y unif	-15.00		
45			fuer y unif	-15.00	0.00	1.50
41	a	44	mome x unif	49.37		
45			mome x unif	49.20	0.00	1.50
41	a	44	fuer z unif	0.04		
45			fuer z unif	0.04	0.00	1.50
41	a	44	mome x unif	0.15		
45			mome x unif	0.15	0.00	1.50
46			fuer y unif	-15.00	-1.50	-0.01
46			mome x unif	49.09	-1.50	-0.01
46			fuer z unif	0.04	-1.50	-0.01
46			mome x unif	0.15	-1.50	-0.01
47	a	50	fuer y unif	-15.00		
47	a	50	mome x unif	48.72		
47	a	50	fuer z unif	0.04		
47	a	50	mome x unif	0.15		
51			fuer y unif	-15.00	0.00	3.50
51			mome x unif	48.26	0.00	3.50
51			fuer z unif	0.04	0.00	3.50
51			mome x unif	0.15	0.00	3.50

hipo 248 sob. a- 5 dcha ec-1 (sw-2)
carg en barr

52			fuer y unif	-15.00	1.50	-0.01
52			mome x unif	48.04	1.50	-0.01
52			fuer z unif	0.04	1.50	-0.01
52			mome x unif	0.15	1.50	-0.01
53	a	56	fuer y unif	-15.00		
57			fuer y unif	-15.00	0.00	1.50
53	a	56	mome x unif	47.38		
57			mome x unif	46.65	0.00	1.50
53	a	56	fuer z unif	0.04		
57			fuer z unif	0.04	0.00	1.50
53	a	56	mome x unif	0.15		
57			mome x unif	0.15	0.00	1.50
58			fuer y unif	-15.00	-1.50	-0.01
58			mome x unif	46.31	-1.50	-0.01
58			fuer z unif	0.04	-1.50	-0.01
58			mome x unif	0.15	-1.50	-0.01
59	a	62	fuer y unif	-15.00		
59	a	62	mome x unif	45.37		
59	a	62	fuer z unif	0.04		
59	a	62	mome x unif	0.15		
63			fuer y unif	-15.00	0.00	3.50
63			mome x unif	44.35	0.00	3.50
63			fuer z unif	0.04	0.00	3.50
63			mome x unif	0.15	0.00	3.50

hipo 249 sob. a- 6 dcha ec-1 (sw-2)
carg en barr

64			fuer y unif	-15.00	1.50	-0.01
64			mome x unif	43.92	1.50	-0.01
64			fuer z unif	0.04	1.50	-0.01
64			mome x unif	0.15	1.50	-0.01
65	a	68	fuer y unif	-15.00		
69			fuer y unif	-15.00	0.00	1.50
65	a	68	mome x unif	42.72		
69			mome x unif	41.50	0.00	1.50
65	a	68	fuer z unif	0.04		
69			fuer z unif	0.04	0.00	1.50
65	a	68	mome x unif	0.15		
69			mome x unif	0.15	0.00	1.50
70			fuer y unif	-15.00	-1.50	-0.01
70			mome x unif	40.99	-1.50	-0.01
70			fuer z unif	0.04	-1.50	-0.01
70			mome x unif	0.15	-1.50	-0.01
71	a	74	fuer y unif	-15.00		
71	a	74	mome x unif	39.72		
71	a	74	fuer z unif	0.04		
71	a	74	mome x unif	0.15		
75			fuer y unif	-15.00	0.00	3.50
75			mome x unif	38.46	0.00	3.50
75			fuer z unif	0.04	0.00	3.50
75			mome x unif	0.15	0.00	3.50

hipo 250 sob. a- 7 dcha ec-1 (sw-2)
carg en barr

76			fuer y unif	-15.00	1.50	-0.01
76			mome x unif	37.97	1.50	-0.01
76			fuer z unif	0.04	1.50	-0.01
76			mome x unif	0.15	1.50	-0.01
77	a	80	fuer y unif	-15.00		
81			fuer y unif	-15.00	0.00	1.50
77	a	80	mome x unif	36.81		
81			mome x unif	35.72	0.00	1.50
77	a	80	fuer z unif	0.04		
81			fuer z unif	0.04	0.00	1.50
77	a	80	mome x unif	0.15		
81			mome x unif	0.15	0.00	1.50
82			fuer y unif	-15.00	-1.50	-0.01
82			mome x unif	35.33	-1.50	-0.01
82			fuer z unif	0.04	-1.50	-0.01
82			mome x unif	0.15	-1.50	-0.01
83	a	86	fuer y unif	-15.00		
83	a	86	mome x unif	34.48		
83	a	86	fuer z unif	0.04		
83	a	86	mome x unif	0.15		
87			fuer y unif	-15.00	0.00	3.50
87			mome x unif	33.75	0.00	3.50
87			fuer z unif	0.04	0.00	3.50
87			mome x unif	0.15	0.00	3.50

hipo 251 sob. a- 8 dcha ec-1 (sw-2)
carg en barr

88			fuer y unif	-15.00	1.50	-0.01
88			mome x unif	33.52	1.50	-0.01
88			fuer z unif	0.04	1.50	-0.01
88			mome x unif	0.15	1.50	-0.01
89	a	92	fuer y unif	-15.00		
93			fuer y unif	-15.00	0.00	1.50
89	a	92	mome x unif	33.17		

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 93        mome x unif    32.98    0.00    1.50
 89 a  92  fuer z unif     0.04
 93        fuer z unif     0.04    0.00    1.50
 89 a  92  mome x unif     0.15
 93        mome x unif     0.15    0.00    1.50
 94        fuer y unif   -15.00   -1.50   -0.01
 94        mome x unif    33.01   -1.50   -0.01
 94        fuer z unif     0.04   -1.50   -0.01
 94        mome x unif     0.15   -1.50   -0.01
 95 a  98  fuer y unif   -15.00
 95 a  98  mome x unif    33.35
 95 a  98  fuer z unif     0.04
 95 a  98  mome x unif     0.15
 99        fuer y unif   -15.00    0.00    3.50
 99        mome x unif    33.91    0.00    3.50
 99        fuer z unif     0.04    0.00    3.50
 99        mome x unif     0.15    0.00    3.50
hipo 252 sob. a- 9 dcha ec-1 (sw-2)
carg en barr
100        fuer y unif   -15.00    1.50   -0.01
100        mome x unif    34.25    1.50   -0.01
100        fuer z unif     0.04    1.50   -0.01
100        mome x unif     0.15    1.50   -0.01
101 a 104  fuer y unif   -15.00
105        fuer y unif   -15.00    0.00    1.50
101 a 104  mome x unif    35.48
105        mome x unif    36.97    0.00    1.50
101 a 104  fuer z unif     0.04
105        fuer z unif     0.04    0.00    1.50
101 a 104  mome x unif     0.15
105        mome x unif     0.15    0.00    1.50
106        fuer y unif   -15.00   -1.50   -0.01
106        mome x unif    37.73   -1.50   -0.01
106        fuer z unif     0.04   -1.50   -0.01
106        mome x unif     0.15   -1.50   -0.01
107 a 110  fuer y unif   -15.00
107 a 110  mome x unif    40.04
107 a 110  fuer z unif     0.04
107 a 110  mome x unif     0.15
111        fuer y unif   -15.00    0.00    3.50
111        mome x unif    42.66    0.00    3.50
111        fuer z unif     0.04    0.00    3.50
111        mome x unif     0.15    0.00    3.50
hipo 253 sobrecarga paseo izda (ec-1)
carga en barra
1 fuer y unif  -1.073
2 fuer y unif  -1.080
3 fuer y unif  -1.075
4 fuer y unif  -0.984
5 fuer y unif  -0.979
6 fuer y unif  -0.975
7 fuer y unif  -0.970
8 fuer y unif  -0.966
9 fuer y unif  -0.961
1 mome x unif -6.394
2 mome x unif -6.490
3 mome x unif -6.508
4 mome x unif -5.917
5 mome x unif -5.930
6 mome x unif -5.935
7 mome x unif -5.945
8 mome x unif -5.950
9 mome x unif -5.956
hipo 254 sobrecarga paseo izda (ec-1)
carga en barra
10 fuer y unif  -0.956
11 fuer y unif  -0.951
12 fuer y unif  -0.947
13 fuer y unif  -0.942
14 fuer y unif  -0.938
15 fuer y unif  -0.933
16 fuer y unif  -0.928
17 fuer y unif  -0.924
18 fuer y unif  -0.919
19 fuer y unif  -0.914
20 fuer y unif  -0.909
21 fuer y unif  -0.904
10 mome x unif -5.955
11 mome x unif -5.958
12 mome x unif -5.955
13 mome x unif -5.957
14 mome x unif -5.953
15 mome x unif -5.949
16 mome x unif -5.942
17 mome x unif -5.937
18 mome x unif -5.927
19 mome x unif -5.917
20 mome x unif -5.901
21 mome x unif -5.884
hipo 255 sobrecarga paseo izda (ec-1)
carga en barra
22 fuer y unif  -0.898
23 fuer y unif  -0.893
24 fuer y unif  -0.888
25 fuer y unif  -0.883
26 fuer y unif  -0.877
27 fuer y unif  -0.872
28 fuer y unif  -0.793
29 fuer y unif  -0.639
30 fuer y unif  -0.635
31 fuer y unif  -0.779
32 fuer y unif  -0.771
33 fuer y unif  -0.612
22 mome x unif -5.864
23 mome x unif -5.846
24 mome x unif -5.826
25 mome x unif -5.802
26 mome x unif -5.777
27 mome x unif -5.752
28 mome x unif -5.194
29 mome x unif -4.082
30 mome x unif -4.059
31 mome x unif -5.123
32 mome x unif -5.076
33 mome x unif -3.915
hipo 256 sobrecarga paseo izda (ec-1)
carga en barra
34 fuer y unif  -0.609
35 fuer y unif  -0.763
36 fuer y unif  -0.838
37 fuer y unif  -0.837
38 fuer y unif  -0.835
39 fuer y unif  -0.834
40 fuer y unif  -0.833
41 fuer y unif  -0.832
42 fuer y unif  -0.831
43 fuer y unif  -0.830
44 fuer y unif  -0.829
```

45 fuer y unif -0.828
34 mome x unif -3.900
35 mome x unif -5.031
36 mome x unif -5.579
37 mome x unif -5.569
38 mome x unif -5.561
39 mome x unif -5.553
40 mome x unif -5.544
41 mome x unif -5.537
42 mome x unif -5.529
43 mome x unif -5.517
44 mome x unif -5.505
45 mome x unif -5.493
hipo 257 sobrecarga paseo izda (ec-1)
carga en barra
46 fuer y unif -0.827
47 fuer y unif -0.825
48 fuer y unif -0.824
49 fuer y unif -0.822
50 fuer y unif -0.820
51 fuer y unif -0.819
52 fuer y unif -0.817
53 fuer y unif -0.816
54 fuer y unif -0.814
55 fuer y unif -0.813
56 fuer y unif -0.812
57 fuer y unif -0.811
46 mome x unif -5.479
47 mome x unif -5.459
48 mome x unif -5.441
49 mome x unif -5.419
50 mome x unif -5.396
51 mome x unif -5.371
52 mome x unif -5.349
53 mome x unif -5.324
54 mome x unif -5.302
55 mome x unif -5.276
56 mome x unif -5.254
57 mome x unif -5.229
hipo 258 sobrecarga paseo izda (ec-1)
carga en barra
58 fuer y unif -0.811
59 fuer y unif -0.811
60 fuer y unif -0.812
61 fuer y unif -0.813
62 fuer y unif -0.815
63 fuer y unif -0.817
64 fuer y unif -0.820
65 fuer y unif -0.824
66 fuer y unif -0.829
67 fuer y unif -0.835
68 fuer y unif -0.841
69 fuer y unif -0.848
58 mome x unif -5.211
59 mome x unif -5.192
60 mome x unif -5.178
61 mome x unif -5.163
62 mome x unif -5.157
63 mome x unif -5.150
64 mome x unif -5.148
65 mome x unif -5.149
66 mome x unif -5.160
67 mome x unif -5.171
68 mome x unif -5.190
69 mome x unif -5.208
hipo 259 sobrecarga paseo izda (ec-1)
carga en barra
70 fuer y unif -0.856
71 fuer y unif -0.865
72 fuer y unif -0.874
73 fuer y unif -0.884
74 fuer y unif -0.894
75 fuer y unif -0.905
76 fuer y unif -0.916
77 fuer y unif -0.928
78 fuer y unif -0.939
79 fuer y unif -0.951
80 fuer y unif -0.963
81 fuer y unif -0.975
70 mome x unif -5.235
71 mome x unif -5.264
72 mome x unif -5.298
73 mome x unif -5.337
74 mome x unif -5.379
75 mome x unif -5.424
76 mome x unif -5.473
77 mome x unif -5.521
78 mome x unif -5.573
79 mome x unif -5.626
80 mome x unif -5.681
81 mome x unif -5.736
hipo 260 sobrecarga paseo izda (ec-1)
carga en barra
82 fuer y unif -0.987
83 fuer y unif -1.000
84 fuer y unif -1.012
85 fuer y unif -1.022
86 fuer y unif -1.033
87 fuer y unif -1.043
88 fuer y unif -1.053
89 fuer y unif -1.061
90 fuer y unif -1.069
91 fuer y unif -1.075
92 fuer y unif -1.080
93 fuer y unif -1.084
82 mome x unif -5.794
83 mome x unif -5.854
84 mome x unif -5.912
85 mome x unif -5.964
86 mome x unif -6.017
87 mome x unif -6.070
88 mome x unif -6.119
89 mome x unif -6.165
90 mome x unif -6.206
91 mome x unif -6.242
92 mome x unif -6.271
93 mome x unif -6.294
hipo 261 sobrecarga paseo izda (ec-1)
carga en barra
94 fuer y unif -1.086
95 fuer y unif -1.086
96 fuer y unif -1.085
97 fuer y unif -1.082
98 fuer y unif -1.077
99 fuer y unif -1.072
100 fuer y unif -1.065
101 fuer y unif -1.057
102 fuer y unif -1.047

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103 fuer y unif  -1.037
104 fuer y unif  -1.026
105 fuer y unif  -1.014
94 mome x unif -6.309
95 mome x unif -6.316
96 mome x unif -6.316
97 mome x unif -6.308
98 mome x unif -6.295
99 mome x unif -6.278
100 mome x unif -6.255
101 mome x unif -6.228
102 mome x unif -6.195
103 mome x unif -6.161
104 mome x unif -6.124
105 mome x unif -6.088
hipo 262 sobrecarga paseo izda (ec-1)
carga en barra
106 fuer y unif  -1.001
107 fuer y unif  -0.987
108 fuer y unif  -0.972
109 fuer y unif  -0.956
110 fuer y unif  -0.938
111 fuer y unif  -0.918
112 fuer y unif  -0.967
113 fuer y unif  -0.941
114 fuer y unif  -0.913
106 mome x unif -6.045
107 mome x unif -6.007
108 mome x unif -5.958
109 mome x unif -5.906
110 mome x unif -5.842
111 mome x unif -5.775
112 mome x unif -6.197
113 mome x unif -6.095
114 mome x unif -5.973
hipo 263 sobrecarga paseo dcha (ec-1)
carga en barra
1 fuer y unif  -0.884
2 fuer y unif  -0.900
3 fuer y unif  -0.910
4 fuer y unif  -0.838
5 fuer y unif  -0.848
6 fuer y unif  -0.858
7 fuer y unif  -0.868
8 fuer y unif  -0.878
9 fuer y unif  -0.889
1 mome x unif 5.742
2 mome x unif 5.819
3 mome x unif 5.849
4 mome x unif 5.298
5 mome x unif 5.330
6 mome x unif 5.368
7 mome x unif 5.402
8 mome x unif 5.440
9 mome x unif 5.478
hipo 264 sobrecarga paseo dcha (ec-1)
carga en barra
10 fuer y unif  -0.900
11 fuer y unif  -0.910
12 fuer y unif  -0.921
13 fuer y unif  -0.932
14 fuer y unif  -0.943
15 fuer y unif  -0.954
16 fuer y unif  -0.964
17 fuer y unif  -0.974
18 fuer y unif  -0.984
19 fuer y unif  -0.993
20 fuer y unif  -1.003
21 fuer y unif  -1.011
10 mome x unif 5.521
11 mome x unif 5.562
12 mome x unif 5.608
13 mome x unif 5.652
14 mome x unif 5.698
15 mome x unif 5.742
16 mome x unif 5.786
17 mome x unif 5.828
18 mome x unif 5.869
19 mome x unif 5.908
20 mome x unif 5.947
21 mome x unif 5.982
hipo 265 sobrecarga paseo dcha (ec-1)
carga en barra
22 fuer y unif  -1.019
23 fuer y unif  -1.027
24 fuer y unif  -1.033
25 fuer y unif  -1.039
26 fuer y unif  -1.045
27 fuer y unif  -1.050
28 fuer y unif  -1.055
29 fuer y unif  -1.059
30 fuer y unif  -1.062
31 fuer y unif  -1.066
32 fuer y unif  -1.069
33 fuer y unif  -1.071
22 mome x unif 6.015
23 mome x unif 6.044
24 mome x unif 6.068
25 mome x unif 6.089
26 mome x unif 6.111
27 mome x unif 6.129
28 mome x unif 6.146
29 mome x unif 6.157
30 mome x unif 6.169
31 mome x unif 6.182
32 mome x unif 6.191
33 mome x unif 6.197
hipo 266 sobrecarga paseo dcha (ec-1)
carga en barra
34 fuer y unif  -1.074
35 fuer y unif  -1.077
36 fuer y unif  -1.080
37 fuer y unif  -1.082
38 fuer y unif  -1.083
39 fuer y unif  -1.084
40 fuer y unif  -1.084
41 fuer y unif  -1.083
42 fuer y unif  -1.082
43 fuer y unif  -1.081
44 fuer y unif  -1.078
45 fuer y unif  -1.075
34 mome x unif 6.208
35 mome x unif 6.223
36 mome x unif 6.236
37 mome x unif 6.245
38 mome x unif 6.251
39 mome x unif 6.255
40 mome x unif 6.256
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41 mome x unif 6.252
42 mome x unif 6.247
43 mome x unif 6.240
44 mome x unif 6.229
45 mome x unif 6.214
hipo 267 sobrecarga paseo dcha (ec-1)
carga en barra
46 fuer y unif -1.072
47 fuer y unif -1.070
48 fuer y unif -1.067
49 fuer y unif -1.063
50 fuer y unif -1.060
51 fuer y unif -1.056
52 fuer y unif -1.051
53 fuer y unif -1.046
54 fuer y unif -1.041
55 fuer y unif -1.035
56 fuer y unif -1.029
57 fuer y unif -1.022
46 mome x unif 6.202
47 mome x unif 6.195
48 mome x unif 6.185
49 mome x unif 6.174
50 mome x unif 6.162
51 mome x unif 6.149
52 mome x unif 6.133
53 mome x unif 6.116
54 mome x unif 6.096
55 mome x unif 6.076
56 mome x unif 6.052
57 mome x unif 6.026
hipo 268 sobrecarga paseo dcha (ec-1)
carga en barra
58 fuer y unif -1.014
59 fuer y unif -1.006
60 fuer y unif -0.998
61 fuer y unif -0.990
62 fuer y unif -0.981
63 fuer y unif -0.972
64 fuer y unif -0.962
65 fuer y unif -0.952
66 fuer y unif -0.942
67 fuer y unif -0.933
68 fuer y unif -0.923
69 fuer y unif -0.914
58 mome x unif 5.996
59 mome x unif 5.966
60 mome x unif 5.933
61 mome x unif 5.902
62 mome x unif 5.865
63 mome x unif 5.830
64 mome x unif 5.792
65 mome x unif 5.753
66 mome x unif 5.713
67 mome x unif 5.676
68 mome x unif 5.639
69 mome x unif 5.609
hipo 269 sobrecarga paseo dcha (ec-1)
carga en barra
70 fuer y unif -0.906
71 fuer y unif -0.897
72 fuer y unif -0.889
73 fuer y unif -0.881
74 fuer y unif -0.874
75 fuer y unif -0.867
76 fuer y unif -0.860
77 fuer y unif -0.854
78 fuer y unif -0.848
79 fuer y unif -0.842
80 fuer y unif -0.836
81 fuer y unif -0.831
70 mome x unif 5.576
71 mome x unif 5.548
72 mome x unif 5.521
73 mome x unif 5.498
74 mome x unif 5.474
75 mome x unif 5.455
76 mome x unif 5.432
77 mome x unif 5.416
78 mome x unif 5.396
79 mome x unif 5.378
80 mome x unif 5.359
81 mome x unif 5.346
hipo 270 sobrecarga paseo dcha (ec-1)
carga en barra
82 fuer y unif -0.825
83 fuer y unif -0.820
84 fuer y unif -0.815
85 fuer y unif -0.811
86 fuer y unif -0.807
87 fuer y unif -0.804
88 fuer y unif -0.801
89 fuer y unif -0.799
90 fuer y unif -0.798
91 fuer y unif -0.798
92 fuer y unif -0.798
93 fuer y unif -0.799
82 mome x unif 5.329
83 mome x unif 5.312
84 mome x unif 5.294
85 mome x unif 5.281
86 mome x unif 5.268
87 mome x unif 5.258
88 mome x unif 5.250
89 mome x unif 5.247
90 mome x unif 5.245
91 mome x unif 5.247
92 mome x unif 5.252
93 mome x unif 5.263
hipo 271 sobrecarga paseo dcha (ec-1)
carga en barra
94 fuer y unif -0.801
95 fuer y unif -0.803
96 fuer y unif -0.805
97 fuer y unif -0.808
98 fuer y unif -0.811
99 fuer y unif -0.813
100 fuer y unif -0.816
101 fuer y unif -0.819
102 fuer y unif -0.823
103 fuer y unif -0.828
104 fuer y unif -0.834
105 fuer y unif -0.840
94 mome x unif 5.274
95 mome x unif 5.286
96 mome x unif 5.298
97 mome x unif 5.308
98 mome x unif 5.316

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99 mome x unif 5.318
100 mome x unif 5.321
101 mome x unif 5.320
102 mome x unif 5.325
103 mome x unif 5.327
104 mome x unif 5.337
105 mome x unif 5.345
hipo 272 sobrecarga paseo dcha (ec-1)
carga en barra
106 fuer y unif  -0.849
107 fuer y unif  -0.860
108 fuer y unif  -0.873
109 fuer y unif  -0.889
110 fuer y unif  -0.908
111 fuer y unif  -0.929
112 fuer y unif  -1.028
113 fuer y unif  -1.056
114 fuer y unif  -1.090
106 mome x unif 5.370
107 mome x unif 5.397
108 mome x unif 5.441
109 mome x unif 5.492
110 mome x unif 5.561
111 mome x unif 5.638
112 mome x unif 6.252
113 mome x unif 6.357
114 mome x unif 6.500
calc y alma
2 2 2
```

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estr Viaducto Papiol     (sobrecarga ec.2)
nume de nudo  196
nume de barr  206
nume de hipo 23
nume de apoy   11
tipo port espa
list todo

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hipo 351 frenado + (dcha) (sin sob) ec-1
carg en barr
1    a  60 fuer x unif  2.00
1    a  60 mome z unif -4.29
1    a  60 mome y unif  4.70
hipo 352 frenado + (izda) (sin sob) ec-1
carg en barr
1    a  60 fuer x unif  2.00
1    a  60 mome z unif -4.29
1    a  60 mome y unif -4.70
hipo 353 frenado - (dcha) (sin sob) ec-1
carg en barr
1    a  60 fuer x unif -2.00
1    a  60 mome z unif  4.29
1    a  60 mome y unif -4.70
hipo 354 frenado - (izda) (sin sob) ec-1
carg en barr
1    a  60 fuer x unif -2.00
1    a  60 mome z unif  4.29
1    a  60 mome y unif  4.70
hipo 355 arranque + (dcha) (sin sob) ec-1
carg en barr
1   a   6  fuer x unif  3.30
1   a   6  mome z unif -7.08
1   a   6  mome y unif  7.76
hipo 356 arranque + (izda) (sin sob) ec-1
carg en barr
1   a   6  fuer x unif  3.30
1   a   6  mome z unif -7.08
1   a   6  mome y unif -7.76
hipo 357 arranque - (dcha) (sin sob) ec-1
carg en barr
1   a   6  fuer x unif -3.30
1   a   6  mome z unif  7.08
1   a   6  mome y unif -7.76
hipo 358 arranque - (izda) (sin sob) ec-1
carg en barr
1   a   6  fuer x unif -3.30
1   a   6  mome z unif  7.08
1   a   6  mome y unif  7.76
hipo 359 frenado + (dcha) (max sob) ec-1
carg en barr
1    a  60 fuer x unif  2.00
1    a  60 mome z unif -4.29
1    a  60 mome y unif  4.70
1  a 114 fuer y unif  -8.0
1  a 114 mome x unif  21.84
hipo 360 frenado + (izda) (max sob) ec-1
carg en barr
1    a  60 fuer x unif  2.00
1    a  60 mome z unif -4.29
1    a  60 mome y unif -4.70
1  a 114 fuer y unif  -8.0
1  a 114 mome x unif -21.84
hipo 361 frenado - (dcha) (max sob) ec-1
carg en barr
1    a  60 fuer x unif -2.00
1    a  60 mome z unif  4.29
1    a  60 mome y unif -4.70
1  a 114 fuer y unif  -8.0
1  a 114 mome x unif  21.84
hipo 362 frenado - (izda) (max sob) ec-1
carg en barr
1    a  60 fuer x unif -2.00
1    a  60 mome z unif  4.29
1    a  60 mome y unif  4.70
1  a 114 fuer y unif  -8.0
1  a 114 mome x unif -21.84
hipo 363 frenado (dcha) arranque (izda) + (max sob) ec-1
carg en barr
1    a  60 fuer x unif  2.00
1    a  60 mome z unif -4.29
1    a  60 mome y unif  4.70
*
1   a   6  fuer x unif  3.30
1   a   6  mome z unif -7.08
1   a   6  mome y unif -7.76
*
1  a 114 fuer y unif  -8.0
1  a 114 fuer y unif  -8.0
hipo 364 frenado (izda) arranque + (dcha) (max sob) ec-1
carg en barr
1    a  60 fuer x unif  2.00
1    a  60 mome z unif -4.29
1    a  60 mome y unif -4.70
*
1   a   6  fuer x unif  3.30
1   a   6  mome z unif -7.08
1   a   6  mome y unif  7.76
*
1  a 114 fuer y unif  -8.0
1  a 114 fuer y unif  -8.0
hipo 365 frenado (dcha) arranque - (izda) (max sob) ec-1
carg en barr
1    a  60 fuer x unif -2.00
1    a  60 mome z unif  4.29
1    a  60 mome y unif -4.70
*
1   a   6  fuer x unif -3.30
1   a   6  mome z unif  7.08
1   a   6  mome y unif  7.76
*
1  a 114 fuer y unif  -8.0
1  a 114 fuer y unif  -8.0
hipo 366 frenado (izda) arranque - (dcha) (max sob) ec-1
carg en barr
1    a  60 fuer x unif -2.00
1    a  60 mome z unif  4.29
1    a  60 mome y unif  4.70
*
1   a   6  fuer x unif -3.30
1   a   6  mome z unif  7.08
1   a   6  mome y unif -7.76
*
1  a 114 fuer y unif  -8.0
1  a 114 fuer y unif  -8.0
```

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hipo 367 sob. min (dcha) ec-1
carg en barr
1  a 114 fuer y unif -1.25
1  a 114 mome x unif  3.31
hipo 368 sob. min (izda) ec-1
carg en barr
1  a 114 fuer y unif -1.25
1  a 114 mome x unif -3.31
hipo 369 sob. max (dcha) ec-1
carg en barr
1  a 114 fuer y unif -8.00
1  a 114 mome x unif  21.84
hipo 370 sob. max (izda) ec-1
carg en barr
1  a 114 fuer y unif -8.00
1  a 114 mome x unif -21.84
hipo 371 sob. max (2 vias) ec-1
carg en barr
1  a 114 fuer y unif -8.00
1  a 114 fuer y unif -8.00
hipo 372 fc sin sob. 1 via ec-1
carg en barr
  1 a 114 fuer z unif      0.144
  1 a 114 mome x unif      0.565
hipo 373 fc sin sob. 1 via ec-1
carg en barr
  1 a 114 fuer z unif      0.144
  1 a 114 mome x unif      0.565
calcula y almacena
2 2 2
```

```
estr Viaducto Papiol  (sobrecarga ipf.1)
nume de nudo  196
nume de barr  206
nume de hipo 134
nume de apoy   11
tipo port espa
list todo

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hipo 101 sob. v- 1 izda ipf-75
carg en barr
  1 a   6 fuer y unif   -13.20
  7       fuer y unif   -13.20      0.00      0.01
  7       fuer y unif   -11.00      0.01     -0.01
  8 a   9 fuer y unif   -11.00
  1 a   6 mome x unif   -39.37
  7       mome x unif   -37.33      0.00      0.01
  7       mome x unif   -31.11      0.01     -0.01
  8 a   9 mome x unif   -30.46
  1 a   6 fuer z unif     0.20
  7       fuer z unif     0.20      0.00      0.01
  7       fuer z unif     0.16      0.01     -0.01
  8 a   9 fuer z unif     0.16
  1 a   6 mome x unif     0.78
  7       mome x unif     0.78      0.00      0.01
  7       mome x unif     0.65      0.01     -0.01
  8 a   9 mome x unif     0.65
 22 a  33 fuer y unif   -11.00
 22 a  33 mome x unif   -25.00
 22 a  33 fuer z unif     0.16
 22 a  33 mome x unif     0.65
 46 a  57 fuer y unif   -11.00
 46 a  57 mome x unif   -24.96
 46 a  57 fuer z unif     0.16
 46 a  57 mome x unif     0.65
 70 a  81 fuer y unif   -11.00
 70 a  81 mome x unif   -31.93
 70 a  81 fuer z unif     0.16
 70 a  81 mome x unif     0.65
 94 a 105 fuer y unif   -11.00
 94 a 105 mome x unif   -34.40
 94 a 105 fuer z unif     0.16
 94 a 105 mome x unif     0.65
 10 a  21 fuer y unif    -1.10
 10 a  21 mome x unif    -2.80
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.06
 34 a  45 fuer y unif    -1.10
 34 a  45 mome x unif    -2.40
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.06
 58 a  69 fuer y unif    -1.10
 58 a  69 mome x unif    -2.79
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.06
 82 a  93 fuer y unif    -1.10
 82 a  93 mome x unif    -3.50
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.06
106 a 114 fuer y unif    -1.10
106 a 114 mome x unif    -2.91
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.06
hipo 102 sob. v- 2 izda ipf-75
carg en barr
  1 a   1 fuer y unif   -11.00
  1 a   1 mome x unif   -34.05
  1 a   1 fuer z unif     0.16
  1 a   1 mome x unif     0.65
  2       fuer y unif   -11.00      0.00      2.50
  2       fuer y unif   -13.20      2.50     -0.01
  3 a   7 fuer y unif   -13.20
  8       fuer y unif   -13.20      0.00      2.50
  8       fuer y unif   -11.00      2.50     -0.01
  2       mome x unif   -33.52      0.00      2.50
  2       mome x unif   -40.23      2.50     -0.01
  3 a   7 mome x unif   -38.47
  8       mome x unif   -36.81      0.00      2.50
  8       mome x unif   -30.67      2.50     -0.01
  2       fuer z unif     0.16      0.00      2.50
  2       fuer z unif     0.20      2.50     -0.01
  3 a   7 fuer z unif     0.20
  8       fuer z unif     0.20      0.00      2.50
  8       fuer z unif     0.16      2.50     -0.01
  2       mome x unif     0.65      0.00      2.50
  2       mome x unif     0.78      2.50     -0.01
  3 a   7 mome x unif   -36.81
  8       mome x unif     0.78      0.00      2.50
  8       mome x unif     0.65      2.50     -0.01
  9 a   9 fuer y unif   -11.00
  9 a   9 mome x unif   -30.24
  9 a   9 fuer z unif     0.16
  9 a   9 mome x unif     0.65
 22 a  33 fuer y unif   -11.00
 22 a  33 mome x unif   -25.00
 22 a  33 fuer z unif     0.16
 22 a  33 mome x unif     0.65
 46 a  57 fuer y unif   -11.00
 46 a  57 mome x unif   -24.96
 46 a  57 fuer z unif     0.16
 46 a  57 mome x unif     0.65
 70 a  81 fuer y unif   -11.00
 70 a  81 mome x unif   -31.93
 70 a  81 fuer z unif     0.16
 70 a  81 mome x unif     0.65
 94 a 105 fuer y unif   -11.00
 94 a 105 mome x unif   -34.40
 94 a 105 fuer z unif     0.16
 94 a 105 mome x unif     0.65
 10 a  21 fuer y unif    -1.10
 10 a  21 mome x unif    -2.80
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.06
 34 a  45 fuer y unif    -1.10
 34 a  45 mome x unif    -2.40
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.06
 58 a  69 fuer y unif    -1.10
 58 a  69 mome x unif    -2.79
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.06
 82 a  93 fuer y unif    -1.10
 82 a  93 mome x unif    -3.50
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.06
```

```
106 a 114 fuer y unif    -1.10
106 a 114 mome x unif    -2.91
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.06
hipo 103 sob. v- 3 izda ipf-75
carg en barr
  1 a   3 fuer y unif   -11.00
  4       fuer y unif   -11.00      0.00      0.01
  4       fuer y unif   -13.20      0.01     -0.01
  5 a   9 fuer y unif   -13.20
  1 a   3 mome x unif   -33.53
  4       mome x unif   -32.52      0.00      0.01
  4       mome x unif   -39.02      0.01     -0.01
  5 a   9 mome x unif   -37.37
  1 a   3 fuer z unif     0.16
  4       fuer z unif     0.16      0.00      0.01
  4       fuer z unif     0.20      0.01     -0.01
  5 a   9 fuer z unif     0.20
  1 a   3 mome x unif     0.65
  4       mome x unif     0.65      0.00      0.01
  4       mome x unif     0.78      0.01     -0.01
  5 a   9 mome x unif     0.78
 22 a  33 fuer y unif   -11.00
 22 a  33 mome x unif   -25.00
 22 a  33 fuer z unif     0.16
 22 a  33 mome x unif     0.65
 46 a  57 fuer y unif   -11.00
 46 a  57 mome x unif   -24.96
 46 a  57 fuer z unif     0.16
 46 a  57 mome x unif     0.65
 70 a  81 fuer y unif   -11.00
 70 a  81 mome x unif   -31.93
 70 a  81 fuer z unif     0.16
 70 a  81 mome x unif     0.65
 94 a 105 fuer y unif   -11.00
 94 a 105 mome x unif   -34.40
 94 a 105 fuer z unif     0.16
 94 a 105 mome x unif     0.65
 10 a  21 fuer y unif    -1.10
 10 a  21 mome x unif    -2.80
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.06
 34 a  45 fuer y unif    -1.10
 34 a  45 mome x unif    -2.40
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.06
 58 a  69 fuer y unif    -1.10
 58 a  69 mome x unif    -2.79
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.06
 82 a  93 fuer y unif    -1.10
 82 a  93 mome x unif    -3.50
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.06
106 a 114 fuer y unif    -1.10
106 a 114 mome x unif    -2.91
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.06
hipo 104 sob. v- 4 izda ipf-75
carg en barr
 10 a  15 fuer y unif   -13.20
 16       fuer y unif   -13.20      0.00      0.01
 16       fuer y unif   -11.00      0.01     -0.01
 17 a  21 fuer y unif   -11.00
 10 a  15 mome x unif   -34.67
 16       mome x unif   -33.15      0.00      0.01
 16       mome x unif   -27.63      0.01     -0.01
 17 a  21 mome x unif   -26.74
 10 a  15 fuer z unif     0.20
 16       fuer z unif     0.20      0.00      0.01
 16       fuer z unif     0.16      0.01     -0.01
 17 a  21 fuer z unif     0.16
 10 a  15 mome x unif     0.78
 16       mome x unif     0.78      0.00      0.01
 16       mome x unif     0.65      0.01     -0.01
 17 a  21 mome x unif     0.65
 34 a  45 fuer y unif   -11.00
 34 a  45 mome x unif   -23.99
 34 a  45 fuer z unif     0.16
 34 a  45 mome x unif     0.65
 58 a  69 fuer y unif   -11.00
 58 a  69 mome x unif   -27.86
 58 a  69 fuer z unif     0.16
 58 a  69 mome x unif     0.65
 82 a  93 fuer y unif   -11.00
 82 a  93 mome x unif   -35.01
 82 a  93 fuer z unif     0.16
 82 a  93 mome x unif     0.65
106 a 114 fuer y unif   -11.00
106 a 114 mome x unif   -29.13
106 a 114 fuer z unif     0.16
106 a 114 mome x unif     0.65
  1 a   9 fuer y unif    -1.10
  1 a   9 mome x unif    -3.21
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.06
 22 a  33 fuer y unif    -1.10
 22 a  33 mome x unif    -2.50
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.06
 46 a  57 fuer y unif    -1.10
 46 a  57 mome x unif    -2.50
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.06
 70 a  81 fuer y unif    -1.10
 70 a  81 mome x unif    -3.19
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.06
 94 a 105 fuer y unif    -1.10
 94 a 105 mome x unif    -3.44
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.06
hipo 105 sob. v- 5 izda ipf-75
carg en barr
 10 a  12 fuer y unif   -11.00
 10 a  12 mome x unif   -29.43
 10 a  12 fuer z unif     0.16
 10 a  12 mome x unif     0.65
 13       fuer y unif   -11.00      0.00      0.01
 13       fuer y unif   -13.20      0.01     -0.01
 14 a  18 fuer y unif   -13.20
 19       fuer y unif   -13.20      0.00      0.01
 19       fuer y unif   -11.00      0.01     -0.01
 13       mome x unif   -28.66      0.00      0.01
 13       mome x unif   -34.39      0.01     -0.01
 14 a  18 mome x unif   -33.19
 19       mome x unif   -32.06      0.00      0.01
 19       mome x unif   -26.72      0.01     -0.01
```

```
 13        fuer z unif      0.16      0.00      0.01
 13        fuer z unif      0.20      0.01     -0.01
 14 a  18  fuer z unif      0.20
 19        fuer z unif      0.20      0.00      0.01
 19        fuer z unif      0.16      0.01     -0.01
 13        mome x unif      0.65      0.00      0.01
 13        mome x unif      0.78      0.01     -0.01
 14 a  18  mome x unif    -32.06
 19        mome x unif      0.78      0.00      0.01
 19        mome x unif      0.65      0.01     -0.01
 20 a  21  fuer y unif    -11.00
 20 a  21  mome x unif    -26.30
 20 a  21  fuer z unif      0.16
 20 a  21  mome x unif      0.65
 34 a  45  fuer y unif    -11.00
 34 a  45  mome x unif    -23.99
 34 a  45  fuer z unif      0.16
 34 a  45  mome x unif      0.65
 58 a  69  fuer y unif    -11.00
 58 a  69  mome x unif    -27.86
 58 a  69  fuer z unif      0.16
 58 a  69  mome x unif      0.65
 82 a  93  fuer y unif    -11.00
 82 a  93  mome x unif    -35.01
 82 a  93  fuer z unif      0.16
 82 a  93  mome x unif      0.65
106 a 114  fuer y unif    -11.00
106 a 114  mome x unif    -29.13
106 a 114  fuer z unif      0.16
106 a 114  mome x unif      0.65
  1 a   9  fuer y unif     -1.10
  1 a   9  mome x unif     -3.21
  1 a   9  fuer z unif      0.02
  1 a   9  mome x unif      0.06
 22 a  33  fuer y unif     -1.10
 22 a  33  mome x unif     -2.50
 22 a  33  fuer z unif      0.02
 22 a  33  mome x unif      0.06
 46 a  57  fuer y unif     -1.10
 46 a  57  mome x unif     -2.50
 46 a  57  fuer z unif      0.02
 46 a  57  mome x unif      0.06
 70 a  81  fuer y unif     -1.10
 70 a  81  mome x unif     -3.19
 70 a  81  fuer z unif      0.02
 70 a  81  mome x unif      0.06
 94 a 105  fuer y unif     -1.10
 94 a 105  mome x unif     -3.44
 94 a 105  fuer z unif      0.02
 94 a 105  mome x unif      0.06
hipo 106 sob. v- 6 izda ipf-75
carg en barr
 10 a  15  fuer y unif    -11.00
 16        fuer y unif    -11.00      0.00      0.01
 16        fuer y unif    -13.20      0.01     -0.01
 17 a  21  fuer y unif    -13.20
 10 a  15  mome x unif    -28.89
 16        mome x unif    -27.63      0.00      0.01
 16        mome x unif    -33.15      0.01     -0.01
 17 a  21  mome x unif    -32.09
 10 a  15  fuer z unif      0.16
 16        fuer z unif      0.16      0.00      0.01
 16        fuer z unif      0.20      0.01     -0.01
 17 a  21  fuer z unif      0.20
 10 a  15  mome x unif      0.65
 16        mome x unif      0.65      0.00      0.01
 16        mome x unif      0.78      0.01     -0.01
 17 a  21  mome x unif      0.78
 34 a  45  fuer y unif    -11.00
 34 a  45  mome x unif    -23.99
 34 a  45  fuer z unif      0.16
 34 a  45  mome x unif      0.65
 58 a  69  fuer y unif    -11.00
 58 a  69  mome x unif    -27.86
 58 a  69  fuer z unif      0.16
 58 a  69  mome x unif      0.65
 82 a  93  fuer y unif    -11.00
 82 a  93  mome x unif    -35.01
 82 a  93  fuer z unif      0.16
 82 a  93  mome x unif      0.65
106 a 114  fuer y unif    -11.00
106 a 114  mome x unif    -29.13
106 a 114  fuer z unif      0.16
106 a 114  mome x unif      0.65
  1 a   9  fuer y unif     -1.10
  1 a   9  mome x unif     -3.21
  1 a   9  fuer z unif      0.02
  1 a   9  mome x unif      0.06
 22 a  33  fuer y unif     -1.10
 22 a  33  mome x unif     -2.50
 22 a  33  fuer z unif      0.02
 22 a  33  mome x unif      0.06
 46 a  57  fuer y unif     -1.10
 46 a  57  mome x unif     -2.50
 46 a  57  fuer z unif      0.02
 46 a  57  mome x unif      0.06
 70 a  81  fuer y unif     -1.10
 70 a  81  mome x unif     -3.19
 70 a  81  fuer z unif      0.02
 70 a  81  mome x unif      0.06
 94 a 105  fuer y unif     -1.10
 94 a 105  mome x unif     -3.44
 94 a 105  fuer z unif      0.02
 94 a 105  mome x unif      0.06
hipo 107 sob. v- 7 izda ipf-75
carg en barr
 22 a  27  fuer y unif    -13.20
 28        fuer y unif    -13.20      0.00      0.01
 28        fuer y unif    -11.00      0.01     -0.01
 29 a  33  fuer y unif    -11.00
 22 a  27  mome x unif    -30.48
 28        mome x unif    -29.65      0.00      0.01
 28        mome x unif    -24.71      0.01     -0.01
 29 a  33  mome x unif    -24.33
 22 a  27  fuer z unif      0.20
 28        fuer z unif      0.20      0.00      0.01
 28        fuer z unif      0.16      0.01     -0.01
 29 a  33  fuer z unif      0.16
 22 a  27  mome x unif      0.78
 28        mome x unif      0.78      0.00      0.01
 28        mome x unif      0.65      0.01     -0.01
 29 a  33  mome x unif      0.65
  1 a   9  fuer y unif    -11.00
  1 a   9  mome x unif    -32.15
  1 a   9  fuer z unif      0.16
  1 a   9  mome x unif      0.65
 46 a  57  fuer y unif    -11.00
 46 a  57  mome x unif    -24.96
```

```
 46 a  57 fuer z unif     0.16
 46 a  57 mome x unif     0.65
 70 a  81 fuer y unif   -11.00
 70 a  81 mome x unif   -31.93
 70 a  81 fuer z unif     0.16
 70 a  81 mome x unif     0.65
 94 a 105 fuer y unif   -11.00
 94 a 105 mome x unif   -34.40
 94 a 105 fuer z unif     0.16
 94 a 105 mome x unif     0.65
 10 a  21 fuer y unif    -1.10
 10 a  21 mome x unif    -2.80
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.06
 34 a  45 fuer y unif    -1.10
 34 a  45 mome x unif    -2.40
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.06
 58 a  69 fuer y unif    -1.10
 58 a  69 mome x unif    -2.79
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.06
 82 a  93 fuer y unif    -1.10
 82 a  93 mome x unif    -3.50
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.06
106 a 114 fuer y unif    -1.10
106 a 114 mome x unif    -2.91
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.06
hipo 108 sob. v- 8 izda ipf-75
carg en barr
 22 a  24 fuer y unif   -11.00
 22 a  24 mome x unif   -25.69
 22 a  24 fuer z unif     0.16
 22 a  24 mome x unif     0.65
 25       fuer y unif   -11.00      0.00      0.01
 25       fuer y unif   -13.20      0.01     -0.01
 26 a  30 fuer y unif   -13.20
 31       fuer y unif   -13.20      0.00      0.01
 31       fuer y unif   -11.00      0.01     -0.01
 25       mome x unif   -25.26      0.00      0.01
 25       mome x unif   -30.31      0.01     -0.01
 26 a  30 mome x unif   -29.69
 31       mome x unif   -29.15      0.00      0.01
 31       mome x unif   -24.29      0.01     -0.01
 25       fuer z unif     0.16      0.00      0.01
 25       fuer z unif     0.20      0.01     -0.01
 26 a  30 fuer z unif     0.20
 31       fuer z unif     0.20      0.00      0.01
 31       fuer z unif     0.16      0.01     -0.01
 25       mome x unif     0.65      0.00      0.01
 25       mome x unif     0.78      0.01     -0.01
 26 a  30 mome x unif   -29.15
 31       mome x unif     0.78      0.00      0.01
 31       mome x unif     0.65      0.01     -0.01
 32 a  33 fuer y unif   -11.00
 32 a  33 mome x unif   -24.14
 32 a  33 fuer z unif     0.16
 32 a  33 mome x unif     0.65
  1 a   9 fuer y unif   -11.00
  1 a   9 mome x unif   -32.15
  1 a   9 fuer z unif     0.16
  1 a   9 mome x unif     0.65
```

```
 46 a  57 fuer y unif   -11.00
 46 a  57 mome x unif   -24.96
 46 a  57 fuer z unif     0.16
 46 a  57 mome x unif     0.65
 70 a  81 fuer y unif   -11.00
 70 a  81 mome x unif   -31.93
 70 a  81 fuer z unif     0.16
 70 a  81 mome x unif     0.65
 94 a 105 fuer y unif   -11.00
 94 a 105 mome x unif   -34.40
 94 a 105 fuer z unif     0.16
 94 a 105 mome x unif     0.65
 10 a  21 fuer y unif    -1.10
 10 a  21 mome x unif    -2.80
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.06
 34 a  45 fuer y unif    -1.10
 34 a  45 mome x unif    -2.40
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.06
 58 a  69 fuer y unif    -1.10
 58 a  69 mome x unif    -2.79
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.06
 82 a  93 fuer y unif    -1.10
 82 a  93 mome x unif    -3.50
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.06
106 a 114 fuer y unif    -1.10
106 a 114 mome x unif    -2.91
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.06
hipo 109 sob. v- 9 izda ipf-75
carg en barr
 22 a  27 fuer y unif   -11.00
 28       fuer y unif   -11.00      0.00      0.01
 28       fuer y unif   -13.20      0.01     -0.01
 29 a  33 fuer y unif   -13.20
 22 a  27 mome x unif   -25.40
 28       mome x unif   -24.71      0.00      0.01
 28       mome x unif   -29.65      0.01     -0.01
 29 a  33 mome x unif   -29.19
 22 a  27 fuer z unif     0.16
 28       fuer z unif     0.16      0.00      0.01
 28       fuer z unif     0.20      0.01     -0.01
 29 a  33 fuer z unif     0.20
 22 a  27 mome x unif     0.65
 28       mome x unif     0.65      0.00      0.01
 28       mome x unif     0.78      0.01     -0.01
 29 a  33 mome x unif     0.78
  1 a   9 fuer y unif   -11.00
  1 a   9 mome x unif   -32.15
  1 a   9 fuer z unif     0.16
  1 a   9 mome x unif     0.65
 46 a  57 fuer y unif   -11.00
 46 a  57 mome x unif   -24.96
 46 a  57 fuer z unif     0.16
 46 a  57 mome x unif     0.65
 70 a  81 fuer y unif   -11.00
 70 a  81 mome x unif   -31.93
 70 a  81 fuer z unif     0.16
 70 a  81 mome x unif     0.65
 94 a 105 fuer y unif   -11.00
 94 a 105 mome x unif   -34.40
```

94	a	105	fuer	z	unif	0.16
94	a	105	mome	x	unif	0.65
10	a	21	fuer	y	unif	-1.10
10	a	21	mome	x	unif	-2.80
10	a	21	fuer	z	unif	0.02
10	a	21	mome	x	unif	0.06
34	a	45	fuer	y	unif	-1.10
34	a	45	mome	x	unif	-2.40
34	a	45	fuer	z	unif	0.02
34	a	45	mome	x	unif	0.06
58	a	69	fuer	y	unif	-1.10
58	a	69	mome	x	unif	-2.79
58	a	69	fuer	z	unif	0.02
58	a	69	mome	x	unif	0.06
82	a	93	fuer	y	unif	-1.10
82	a	93	mome	x	unif	-3.50
82	a	93	fuer	z	unif	0.02
82	a	93	mome	x	unif	0.06
106	a	114	fuer	y	unif	-1.10
106	a	114	mome	x	unif	-2.91
106	a	114	fuer	z	unif	0.02
106	a	114	mome	x	unif	0.06

hipo 110 sob. v-10 izda ipf-75
carg en barr

34	a	39	fuer	y	unif	-13.20		
40			fuer	y	unif	-13.20	0.00	0.01
40			fuer	y	unif	-11.00	0.01	-0.01
41	a	45	fuer	y	unif	-11.00		
34	a	39	mome	x	unif	-28.68		
40			mome	x	unif	-28.54	0.00	0.01
40			mome	x	unif	-23.78	0.01	-0.01
41	a	45	mome	x	unif	-23.89		
34	a	39	fuer	z	unif	0.20		
40			fuer	z	unif	0.20	0.00	0.01
40			fuer	z	unif	0.16	0.01	-0.01
41	a	45	fuer	z	unif	0.16		
34	a	39	mome	x	unif	0.78		
40			mome	x	unif	0.78	0.00	0.01
40			mome	x	unif	0.65	0.01	-0.01
41	a	45	mome	x	unif	0.65		
10	a	21	fuer	y	unif	-11.00		
10	a	21	mome	x	unif	-28.00		
10	a	21	fuer	z	unif	0.16		
10	a	21	mome	x	unif	0.65		
58	a	69	fuer	y	unif	-11.00		
58	a	69	mome	x	unif	-27.86		
58	a	69	fuer	z	unif	0.16		
58	a	69	mome	x	unif	0.65		
82	a	93	fuer	y	unif	-11.00		
82	a	93	mome	x	unif	-35.01		
82	a	93	fuer	z	unif	0.16		
82	a	93	mome	x	unif	0.65		
106	a	114	fuer	y	unif	-11.00		
106	a	114	mome	x	unif	-29.13		
106	a	114	fuer	z	unif	0.16		
106	a	114	mome	x	unif	0.65		
22	a	33	fuer	y	unif	-1.10		
22	a	33	mome	x	unif	-2.50		
22	a	33	fuer	z	unif	0.02		
22	a	33	mome	x	unif	0.06		
1	a	9	fuer	y	unif	-1.10		
1	a	9	mome	x	unif	-3.21		
1	a	9	fuer	z	unif	0.02		
1	a	9	mome	x	unif	0.06		
46	a	57	fuer	y	unif	-1.10		
46	a	57	mome	x	unif	-2.50		
46	a	57	fuer	z	unif	0.02		
46	a	57	mome	x	unif	0.06		
70	a	81	fuer	y	unif	-1.10		
70	a	81	mome	x	unif	-3.19		
70	a	81	fuer	z	unif	0.02		
70	a	81	mome	x	unif	0.06		
94	a	105	fuer	y	unif	-1.10		
94	a	105	mome	x	unif	-3.44		
94	a	105	fuer	z	unif	0.02		
94	a	105	mome	x	unif	0.06		

hipo 111 sob. v-11 izda ipf-75
carg en barr

34	a	36	fuer	y	unif	-11.00		
34	a	36	mome	x	unif	-23.94		
34	a	36	fuer	z	unif	0.16		
34	a	36	mome	x	unif	0.65		
37			fuer	y	unif	-11.00	0.00	0.01
37			fuer	y	unif	-13.20	0.01	-0.01
38	a	42	fuer	y	unif	-13.20		
43			fuer	y	unif	-13.20	0.00	0.01
43			fuer	y	unif	-11.00	0.01	-0.01
37			mome	x	unif	-23.83	0.00	0.01
37			mome	x	unif	-28.60	0.01	-0.01
38	a	42	mome	x	unif	-28.58		
43			mome	x	unif	-28.63	0.00	0.01
43			mome	x	unif	-23.86	0.01	-0.01
37			fuer	z	unif	0.16	0.00	0.01
37			fuer	z	unif	0.20	0.01	-0.01
38	a	42	fuer	z	unif	0.20		
43			fuer	z	unif	0.20	0.00	0.01
43			fuer	z	unif	0.16	0.01	-0.01
37			mome	x	unif	0.65	0.00	0.01
37			mome	x	unif	0.78	0.01	-0.01
38	a	42	mome	x	unif	-28.63		
43			mome	x	unif	0.78	0.00	0.01
43			mome	x	unif	0.65	0.01	-0.01
44	a	45	fuer	y	unif	-11.00		
44	a	45	mome	x	unif	-23.94		
44	a	45	fuer	z	unif	0.16		
44	a	45	mome	x	unif	0.65		
10	a	21	fuer	y	unif	-11.00		
10	a	21	mome	x	unif	-28.00		
10	a	21	fuer	z	unif	0.16		
10	a	21	mome	x	unif	0.65		
58	a	69	fuer	y	unif	-11.00		
58	a	69	mome	x	unif	-27.86		
58	a	69	fuer	z	unif	0.16		
58	a	69	mome	x	unif	0.65		
82	a	93	fuer	y	unif	-11.00		
82	a	93	mome	x	unif	-35.01		
82	a	93	fuer	z	unif	0.16		
82	a	93	mome	x	unif	0.65		
106	a	114	fuer	y	unif	-11.00		
106	a	114	mome	x	unif	-29.13		
106	a	114	fuer	z	unif	0.16		
106	a	114	mome	x	unif	0.65		
22	a	33	fuer	y	unif	-1.10		
22	a	33	mome	x	unif	-2.50		
22	a	33	fuer	z	unif	0.02		
22	a	33	mome	x	unif	0.06		
1	a	9	fuer	y	unif	-1.10		
1	a	9	mome	x	unif	-3.21		

```
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.06
 46 a  57 fuer y unif    -1.10
 46 a  57 mome x unif    -2.50
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.06
 70 a  81 fuer y unif    -1.10
 70 a  81 mome x unif    -3.19
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.06
 94 a 105 fuer y unif    -1.10
 94 a 105 mome x unif    -3.44
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.06
hipo 112 sob. v-12 izda ipf-75
carg en barr
 34 a  39 fuer y unif   -11.00
 40       fuer y unif   -11.00     0.00     0.01
 40       fuer y unif   -13.20     0.01    -0.01
 41 a  45 fuer y unif   -13.20
 34 a  39 mome x unif   -23.90
 40       mome x unif   -23.78     0.00     0.01
 40       mome x unif   -28.54     0.01    -0.01
 41 a  45 mome x unif   -28.67
 34 a  39 fuer z unif     0.16
 40       fuer z unif     0.16     0.00     0.01
 40       fuer z unif     0.20     0.01    -0.01
 41 a  45 fuer z unif     0.20
 34 a  39 mome x unif     0.65
 40       mome x unif     0.65     0.00     0.01
 40       mome x unif     0.78     0.01    -0.01
 41 a  45 mome x unif     0.78
 10 a  21 fuer y unif   -11.00
 10 a  21 mome x unif   -28.00
 10 a  21 fuer z unif     0.16
 10 a  21 mome x unif     0.65
 58 a  69 fuer y unif   -11.00
 58 a  69 mome x unif   -27.86
 58 a  69 fuer z unif     0.16
 58 a  69 mome x unif     0.65
 82 a  93 fuer y unif   -11.00
 82 a  93 mome x unif   -35.01
 82 a  93 fuer z unif     0.16
 82 a  93 mome x unif     0.65
106 a 114 fuer y unif   -11.00
106 a 114 mome x unif   -29.13
106 a 114 fuer z unif     0.16
106 a 114 mome x unif     0.65
 22 a  33 fuer y unif    -1.10
 22 a  33 mome x unif    -2.50
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.06
  1 a   9 fuer y unif    -1.10
  1 a   9 mome x unif    -3.21
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.06
 46 a  57 fuer y unif    -1.10
 46 a  57 mome x unif    -2.50
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.06
 70 a  81 fuer y unif    -1.10
 70 a  81 mome x unif    -3.19
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.06
 94 a 105 fuer y unif    -1.10
 94 a 105 mome x unif    -3.44
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.06
hipo 113 sob. v-13 izda ipf-75
carg en barr
 46 a  51 fuer y unif   -13.20
 52       fuer y unif   -13.20     0.00     0.01
 52       fuer y unif   -11.00     0.01    -0.01
 53 a  57 fuer y unif   -11.00
 46 a  51 mome x unif   -29.24
 52       mome x unif   -29.80     0.00     0.01
 52       mome x unif   -24.83     0.01    -0.01
 53 a  57 mome x unif   -25.43
 46 a  51 fuer z unif     0.20
 52       fuer z unif     0.20     0.00     0.01
 52       fuer z unif     0.16     0.01    -0.01
 53 a  57 fuer z unif     0.16
 46 a  51 mome x unif     0.78
 52       mome x unif     0.78     0.00     0.01
 52       mome x unif     0.65     0.01    -0.01
 53 a  57 mome x unif     0.65
 22 a  33 fuer y unif   -11.00
 22 a  33 mome x unif   -25.00
 22 a  33 fuer z unif     0.16
 22 a  33 mome x unif     0.65
  1 a   9 fuer y unif   -11.00
  1 a   9 mome x unif   -32.15
  1 a   9 fuer z unif     0.16
  1 a   9 mome x unif     0.65
 70 a  81 fuer y unif   -11.00
 70 a  81 mome x unif   -31.93
 70 a  81 fuer z unif     0.16
 70 a  81 mome x unif     0.65
 94 a 105 fuer y unif   -11.00
 94 a 105 mome x unif   -34.40
 94 a 105 fuer z unif     0.16
 94 a 105 mome x unif     0.65
 34 a  45 fuer y unif    -1.10
 34 a  45 mome x unif    -2.40
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.06
 10 a  21 fuer y unif    -1.10
 10 a  21 mome x unif    -2.80
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.06
 58 a  69 fuer y unif    -1.10
 58 a  69 mome x unif    -2.79
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.06
 82 a  93 fuer y unif    -1.10
 82 a  93 mome x unif    -3.50
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.06
106 a 114 fuer y unif    -1.10
106 a 114 mome x unif    -2.91
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.06
hipo 114 sob. v-14 izda ipf-75
carg en barr
 46 a  48 fuer y unif   -11.00
 46 a  48 mome x unif   -24.16
 46 a  48 fuer z unif     0.16
 46 a  48 mome x unif     0.65
```

49			fuer	y	unif	-11.00	0.00	0.01
49			fuer	y	unif	-13.20	0.01	-0.01
50	a	54	fuer	y	unif	-13.20		
55			fuer	y	unif	-13.20	0.00	0.01
55			fuer	y	unif	-11.00	0.01	-0.01
49			mome	x	unif	-24.39	0.00	0.01
49			mome	x	unif	-29.26	0.01	-0.01
50	a	54	mome	x	unif	-29.83		
55			mome	x	unif	-30.49	0.00	0.01
55			mome	x	unif	-25.40	0.01	-0.01
49			fuer	z	unif	0.16	0.00	0.01
49			fuer	z	unif	0.20	0.01	-0.01
50	a	54	fuer	z	unif	0.20		
55			fuer	z	unif	0.20	0.00	0.01
55			fuer	z	unif	0.16	0.01	-0.01
49			mome	x	unif	0.65	0.00	0.01
49			mome	x	unif	0.78	0.01	-0.01
50	a	54	mome	x	unif	-30.49		
55			mome	x	unif	0.78	0.00	0.01
55			mome	x	unif	0.65	0.01	-0.01
56	a	57	fuer	y	unif	-11.00		
56	a	57	mome	x	unif	-25.73		
56	a	57	fuer	z	unif	0.16		
56	a	57	mome	x	unif	0.65		
22	a	33	fuer	y	unif	-11.00		
22	a	33	mome	x	unif	-25.00		
22	a	33	fuer	z	unif	0.16		
22	a	33	mome	x	unif	0.65		
1	a	9	fuer	y	unif	-11.00		
1	a	9	mome	x	unif	-32.15		
1	a	9	fuer	z	unif	0.16		
1	a	9	mome	x	unif	0.65		
70	a	81	fuer	y	unif	-11.00		
70	a	81	mome	x	unif	-31.93		
70	a	81	fuer	z	unif	0.16		
70	a	81	mome	x	unif	0.65		
94	a	105	fuer	y	unif	-11.00		
94	a	105	mome	x	unif	-34.40		
94	a	105	fuer	z	unif	0.16		
94	a	105	mome	x	unif	0.65		
34	a	45	fuer	y	unif	-1.10		
34	a	45	mome	x	unif	-2.40		
34	a	45	fuer	z	unif	0.02		
34	a	45	mome	x	unif	0.06		
10	a	21	fuer	y	unif	-1.10		
10	a	21	mome	x	unif	-2.80		
10	a	21	fuer	z	unif	0.02		
10	a	21	mome	x	unif	0.06		
58	a	69	fuer	y	unif	-1.10		
58	a	69	mome	x	unif	-2.79		
58	a	69	fuer	z	unif	0.02		
58	a	69	mome	x	unif	0.06		
82	a	93	fuer	y	unif	-1.10		
82	a	93	mome	x	unif	-3.50		
82	a	93	fuer	z	unif	0.02		
82	a	93	mome	x	unif	0.06		
106	a	114	fuer	y	unif	-1.10		
106	a	114	mome	x	unif	-2.91		
106	a	114	fuer	z	unif	0.02		
106	a	114	mome	x	unif	0.06		

hipo 115 sob. v-15 izda ipf-75
carg en barr

46	a	51	fuer	y	unif	-11.00		
52			fuer	y	unif	-11.00	0.00	0.01
52			fuer	y	unif	-13.20	0.01	-0.01
53	a	57	fuer	y	unif	-13.20		
46	a	51	mome	x	unif	-24.36		
52			mome	x	unif	-24.83	0.00	0.01
52			mome	x	unif	-29.80	0.01	-0.01
53	a	57	mome	x	unif	-30.52		
46	a	51	fuer	z	unif	0.16		
52			fuer	z	unif	0.16	0.00	0.01
52			fuer	z	unif	0.20	0.01	-0.01
53	a	57	fuer	z	unif	0.20		
46	a	51	mome	x	unif	0.65		
52			mome	x	unif	0.65	0.00	0.01
52			mome	x	unif	0.78	0.01	-0.01
53	a	57	mome	x	unif	0.78		
22	a	33	fuer	y	unif	-11.00		
22	a	33	mome	x	unif	-25.00		
22	a	33	fuer	z	unif	0.16		
22	a	33	mome	x	unif	0.65		
1	a	9	fuer	y	unif	-11.00		
1	a	9	mome	x	unif	-32.15		
1	a	9	fuer	z	unif	0.16		
1	a	9	mome	x	unif	0.65		
70	a	81	fuer	y	unif	-11.00		
70	a	81	mome	x	unif	-31.93		
70	a	81	fuer	z	unif	0.16		
70	a	81	mome	x	unif	0.65		
94	a	105	fuer	y	unif	-11.00		
94	a	105	mome	x	unif	-34.40		
94	a	105	fuer	z	unif	0.16		
94	a	105	mome	x	unif	0.65		
34	a	45	fuer	y	unif	-1.10		
34	a	45	mome	x	unif	-2.40		
34	a	45	fuer	z	unif	0.02		
34	a	45	mome	x	unif	0.06		
10	a	21	fuer	y	unif	-1.10		
10	a	21	mome	x	unif	-2.80		
10	a	21	fuer	z	unif	0.02		
10	a	21	mome	x	unif	0.06		
58	a	69	fuer	y	unif	-1.10		
58	a	69	mome	x	unif	-2.79		
58	a	69	fuer	z	unif	0.02		
58	a	69	mome	x	unif	0.06		
82	a	93	fuer	y	unif	-1.10		
82	a	93	mome	x	unif	-3.50		
82	a	93	fuer	z	unif	0.02		
82	a	93	mome	x	unif	0.06		
106	a	114	fuer	y	unif	-1.10		
106	a	114	mome	x	unif	-2.91		
106	a	114	fuer	z	unif	0.02		
106	a	114	mome	x	unif	0.06		

hipo 116 sob. v-16 izda ipf-75
carg en barr

58	a	63	fuer	y	unif	-13.20		
64			fuer	y	unif	-13.20	0.00	0.01
64			fuer	y	unif	-11.00	0.01	-0.01
65	a	69	fuer	y	unif	-11.00		
58	a	63	mome	x	unif	-32.18		
64			mome	x	unif	-33.42	0.00	0.01
64			mome	x	unif	-27.85	0.01	-0.01
65	a	69	mome	x	unif	-28.91		
58	a	63	fuer	z	unif	0.20		
64			fuer	z	unif	0.20	0.00	0.01
64			fuer	z	unif	0.16	0.01	-0.01
65	a	69	fuer	z	unif	0.16		

```
 58 a  63 mome x unif     0.78
 64       mome x unif     0.78      0.00      0.01
 64       mome x unif     0.65      0.01     -0.01
 65 a  69 mome x unif     0.65
 34 a  45 fuer y unif   -11.00
 34 a  45 mome x unif   -23.99
 34 a  45 fuer z unif     0.16
 34 a  45 mome x unif     0.65
 10 a  21 fuer y unif   -11.00
 10 a  21 mome x unif   -28.00
 10 a  21 fuer z unif     0.16
 10 a  21 mome x unif     0.65
 82 a  93 fuer y unif   -11.00
 82 a  93 mome x unif   -35.01
 82 a  93 fuer z unif     0.16
 82 a  93 mome x unif     0.65
106 a 114 fuer y unif   -11.00
106 a 114 mome x unif   -29.13
106 a 114 fuer z unif     0.16
106 a 114 mome x unif     0.65
 46 a  57 fuer y unif    -1.10
 46 a  57 mome x unif    -2.50
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.06
 22 a  33 fuer y unif    -1.10
 22 a  33 mome x unif    -2.50
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.06
  1 a   9 fuer y unif    -1.10
  1 a   9 mome x unif    -3.21
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.06
 70 a  81 fuer y unif    -1.10
 70 a  81 mome x unif    -3.19
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.06
 94 a 105 fuer y unif    -1.10
 94 a 105 mome x unif    -3.44
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.06
hipo 117 sob. v-17 izda ipf-75
carg en barr
 58 a  60 fuer y unif   -11.00
 58 a  60 mome x unif   -26.37
 58 a  60 fuer z unif     0.16
 58 a  60 mome x unif     0.65
 61       fuer y unif   -11.00      0.00      0.01
 61       fuer y unif   -13.20      0.01     -0.01
 62 a  66 fuer y unif   -13.20
 67       fuer y unif   -13.20      0.00      0.01
 67       fuer y unif   -11.00      0.01     -0.01
 61       mome x unif   -26.92      0.00      0.01
 61       mome x unif   -32.30      0.01     -0.01
 62 a  66 mome x unif   -33.46
 67       mome x unif   -34.68      0.00      0.01
 67       mome x unif   -28.90      0.01     -0.01
 61       fuer z unif     0.16      0.00      0.01
 61       fuer z unif     0.20      0.01     -0.01
 62 a  66 fuer z unif     0.20
 67       fuer z unif     0.20      0.00      0.01
 67       fuer z unif     0.16      0.01     -0.01
 61       mome x unif     0.65      0.00      0.01
 61       mome x unif     0.78      0.01     -0.01
 62 a  66 mome x unif   -34.68
 67       mome x unif     0.78      0.00      0.01
 67       mome x unif     0.65      0.01     -0.01
 68 a  69 fuer y unif   -11.00
 68 a  69 mome x unif   -29.45
 68 a  69 fuer z unif     0.16
 68 a  69 mome x unif     0.65
 34 a  45 fuer y unif   -11.00
 34 a  45 mome x unif   -23.99
 34 a  45 fuer z unif     0.16
 34 a  45 mome x unif     0.65
 10 a  21 fuer y unif   -11.00
 10 a  21 mome x unif   -28.00
 10 a  21 fuer z unif     0.16
 10 a  21 mome x unif     0.65
 82 a  93 fuer y unif   -11.00
 82 a  93 mome x unif   -35.01
 82 a  93 fuer z unif     0.16
 82 a  93 mome x unif     0.65
106 a 114 fuer y unif   -11.00
106 a 114 mome x unif   -29.13
106 a 114 fuer z unif     0.16
106 a 114 mome x unif     0.65
 46 a  57 fuer y unif    -1.10
 46 a  57 mome x unif    -2.50
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.06
 22 a  33 fuer y unif    -1.10
 22 a  33 mome x unif    -2.50
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.06
  1 a   9 fuer y unif    -1.10
  1 a   9 mome x unif    -3.21
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.06
 70 a  81 fuer y unif    -1.10
 70 a  81 mome x unif    -3.19
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.06
 94 a 105 fuer y unif    -1.10
 94 a 105 mome x unif    -3.44
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.06
hipo 118 sob. v-18 izda ipf-75
carg en barr
 58 a  63 fuer y unif   -11.00
 64       fuer y unif   -11.00      0.00      0.01
 64       fuer y unif   -13.20      0.01     -0.01
 65 a  69 fuer y unif   -13.20
 58 a  63 mome x unif   -26.82
 64       mome x unif   -27.85      0.00      0.01
 64       mome x unif   -33.42      0.01     -0.01
 65 a  69 mome x unif   -34.69
 58 a  63 fuer z unif     0.16
 64       fuer z unif     0.16      0.00      0.01
 64       fuer z unif     0.20      0.01     -0.01
 65 a  69 fuer z unif     0.20
 58 a  63 mome x unif     0.65
 64       mome x unif     0.65      0.00      0.01
 64       mome x unif     0.78      0.01     -0.01
 65 a  69 mome x unif     0.78
 34 a  45 fuer y unif   -11.00
 34 a  45 mome x unif   -23.99
 34 a  45 fuer z unif     0.16
 34 a  45 mome x unif     0.65
```

```
 10 a  21 fuer y unif   -11.00
 10 a  21 mome x unif   -28.00
 10 a  21 fuer z unif     0.16
 10 a  21 mome x unif     0.65
 82 a  93 fuer y unif   -11.00
 82 a  93 mome x unif   -35.01
 82 a  93 fuer z unif     0.16
 82 a  93 mome x unif     0.65
106 a 114 fuer y unif   -11.00
106 a 114 mome x unif   -29.13
106 a 114 fuer z unif     0.16
106 a 114 mome x unif     0.65
 46 a  57 fuer y unif    -1.10
 46 a  57 mome x unif    -2.50
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.06
 22 a  33 fuer y unif    -1.10
 22 a  33 mome x unif    -2.50
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.06
  1 a   9 fuer y unif    -1.10
  1 a   9 mome x unif    -3.21
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.06
 70 a  81 fuer y unif    -1.10
 70 a  81 mome x unif    -3.19
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.06
 94 a 105 fuer y unif    -1.10
 94 a 105 mome x unif    -3.44
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.06
hipo 119 sob. v-19 izda ipf-75
carg en barr
 70 a  75 fuer y unif   -13.20
 76       fuer y unif   -13.20      0.00      0.01
 76       fuer y unif   -11.00      0.01     -0.01
 77 a  81 fuer y unif   -11.00
 70 a  75 mome x unif   -37.12
 76       mome x unif   -38.66      0.00      0.01
 76       mome x unif   -32.22      0.01     -0.01
 77 a  81 mome x unif   -33.21
 70 a  75 fuer z unif     0.20
 76       fuer z unif     0.20      0.00      0.01
 76       fuer z unif     0.16      0.01     -0.01
 77 a  81 fuer z unif     0.16
 70 a  75 mome x unif     0.78
 76       mome x unif     0.78      0.00      0.01
 76       mome x unif     0.65      0.01     -0.01
 77 a  81 mome x unif     0.65
 46 a  57 fuer y unif   -11.00
 46 a  57 mome x unif   -24.96
 46 a  57 fuer z unif     0.16
 46 a  57 mome x unif     0.65
 22 a  33 fuer y unif   -11.00
 22 a  33 mome x unif   -25.00
 22 a  33 fuer z unif     0.16
 22 a  33 mome x unif     0.65
  1 a   9 fuer y unif   -11.00
  1 a   9 mome x unif   -32.15
  1 a   9 fuer z unif     0.16
  1 a   9 mome x unif     0.65
 94 a 105 fuer y unif   -11.00
 94 a 105 mome x unif   -34.40
 94 a 105 fuer z unif     0.16
 94 a 105 mome x unif     0.65
 58 a  69 fuer y unif    -1.10
 58 a  69 mome x unif    -2.79
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.06
 34 a  45 fuer y unif    -1.10
 34 a  45 mome x unif    -2.40
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.06
 10 a  21 fuer y unif    -1.10
 10 a  21 mome x unif    -2.80
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.06
 82 a  93 fuer y unif    -1.10
 82 a  93 mome x unif    -3.50
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.06
106 a 114 fuer y unif    -1.10
106 a 114 mome x unif    -2.91
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.06
hipo 120 sob. v-20 izda ipf-75
carg en barr
 70 a  72 fuer y unif   -11.00
 70 a  72 mome x unif   -30.37
 70 a  72 fuer z unif     0.16
 70 a  72 mome x unif     0.65
 73       fuer y unif   -11.00      0.00      0.01
 73       fuer y unif   -13.20      0.01     -0.01
 74 a  78 fuer y unif   -13.20
 79       fuer y unif   -13.20      0.00      0.01
 79       fuer y unif   -11.00      0.01     -0.01
 73       mome x unif   -31.12      0.00      0.01
 73       mome x unif   -37.34      0.01     -0.01
 74 a  78 mome x unif   -38.64
 79       mome x unif   -39.89      0.00      0.01
 79       mome x unif   -33.24      0.01     -0.01
 73       fuer z unif     0.16      0.00      0.01
 73       fuer z unif     0.20      0.01     -0.01
 74 a  78 fuer z unif     0.20
 79       fuer z unif     0.20      0.00      0.01
 79       fuer z unif     0.16      0.01     -0.01
 73       mome x unif     0.65      0.00      0.01
 73       mome x unif     0.78      0.01     -0.01
 74 a  78 mome x unif   -39.89
 79       mome x unif     0.78      0.00      0.01
 79       mome x unif     0.65      0.01     -0.01
 80 a  81 fuer y unif   -11.00
 80 a  81 mome x unif   -33.71
 80 a  81 fuer z unif     0.16
 80 a  81 mome x unif     0.65
 46 a  57 fuer y unif   -11.00
 46 a  57 mome x unif   -24.96
 46 a  57 fuer z unif     0.16
 46 a  57 mome x unif     0.65
 22 a  33 fuer y unif   -11.00
 22 a  33 mome x unif   -25.00
 22 a  33 fuer z unif     0.16
 22 a  33 mome x unif     0.65
  1 a   9 fuer y unif   -11.00
  1 a   9 mome x unif   -32.15
  1 a   9 fuer z unif     0.16
  1 a   9 mome x unif     0.65
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```
 94 a 105 fuer y unif   -11.00
 94 a 105 mome x unif   -34.40
 94 a 105 fuer z unif     0.16
 94 a 105 mome x unif     0.65
 58 a  69 fuer y unif    -1.10
 58 a  69 mome x unif    -2.79
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.06
 34 a  45 fuer y unif    -1.10
 34 a  45 mome x unif    -2.40
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.06
 10 a  21 fuer y unif    -1.10
 10 a  21 mome x unif    -2.80
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.06
 82 a  93 fuer y unif    -1.10
 82 a  93 mome x unif    -3.50
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.06
106 a 114 fuer y unif    -1.10
106 a 114 mome x unif    -2.91
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.06
hipo 121 sob. v-21 izda ipf-75
carg en barr
 70 a  75 fuer y unif   -11.00
 76       fuer y unif   -11.00     0.00     0.01
 76       fuer y unif   -13.20     0.01    -0.01
 77 a  81 fuer y unif   -13.20
 70 a  75 mome x unif   -30.93
 76       mome x unif   -32.22     0.00     0.01
 76       mome x unif   -38.66     0.01    -0.01
 77 a  81 mome x unif   -39.86
 70 a  75 fuer z unif     0.16
 76       fuer z unif     0.16     0.00     0.01
 76       fuer z unif     0.20     0.01    -0.01
 77 a  81 fuer z unif     0.20
 70 a  75 mome x unif     0.65
 76       mome x unif     0.65     0.00     0.01
 76       mome x unif     0.78     0.01    -0.01
 77 a  81 mome x unif     0.78
 46 a  57 fuer y unif   -11.00
 46 a  57 mome x unif   -24.96
 46 a  57 fuer z unif     0.16
 46 a  57 mome x unif     0.65
 22 a  33 fuer y unif   -11.00
 22 a  33 mome x unif   -25.00
 22 a  33 fuer z unif     0.16
 22 a  33 mome x unif     0.65
  1 a   9 fuer y unif   -11.00
  1 a   9 mome x unif   -32.15
  1 a   9 fuer z unif     0.16
  1 a   9 mome x unif     0.65
 94 a 105 fuer y unif   -11.00
 94 a 105 mome x unif   -34.40
 94 a 105 fuer z unif     0.16
 94 a 105 mome x unif     0.65
 58 a  69 fuer y unif    -1.10
 58 a  69 mome x unif    -2.79
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.06
 34 a  45 fuer y unif    -1.10
 34 a  45 mome x unif    -2.40
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.06
 10 a  21 fuer y unif    -1.10
 10 a  21 mome x unif    -2.80
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.06
 82 a  93 fuer y unif    -1.10
 82 a  93 mome x unif    -3.50
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.06
106 a 114 fuer y unif    -1.10
106 a 114 mome x unif    -2.91
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.06
hipo 122 sob. v-22 izda ipf-75
carg en barr
 82 a  87 fuer y unif   -13.20
 88       fuer y unif   -13.20     0.00     0.01
 88       fuer y unif   -11.00     0.01    -0.01
 89 a  93 fuer y unif   -11.00
 82 a  87 mome x unif   -41.68
 88       mome x unif   -42.57     0.00     0.01
 88       mome x unif   -35.48     0.01    -0.01
 89 a  93 mome x unif   -35.74
 82 a  87 fuer z unif     0.20
 88       fuer z unif     0.20     0.00     0.01
 88       fuer z unif     0.16     0.01    -0.01
 89 a  93 fuer z unif     0.16
 82 a  87 mome x unif     0.78
 88       mome x unif     0.78     0.00     0.01
 88       mome x unif     0.65     0.01    -0.01
 89 a  93 mome x unif     0.65
 58 a  69 fuer y unif   -11.00
 58 a  69 mome x unif   -27.86
 58 a  69 fuer z unif     0.16
 58 a  69 mome x unif     0.65
 34 a  45 fuer y unif   -11.00
 34 a  45 mome x unif   -23.99
 34 a  45 fuer z unif     0.16
 34 a  45 mome x unif     0.65
 10 a  21 fuer y unif   -11.00
 10 a  21 mome x unif   -28.00
 10 a  21 fuer z unif     0.16
 10 a  21 mome x unif     0.65
106 a 114 fuer y unif   -11.00
106 a 114 mome x unif   -29.13
106 a 114 fuer z unif     0.16
106 a 114 mome x unif     0.65
 70 a  81 fuer y unif    -1.10
 70 a  81 mome x unif    -3.19
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.06
 46 a  57 fuer y unif    -1.10
 46 a  57 mome x unif    -2.50
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.06
 22 a  33 fuer y unif    -1.10
 22 a  33 mome x unif    -2.50
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.06
  1 a   9 fuer y unif    -1.10
  1 a   9 mome x unif    -3.21
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.06
```

```
 94 a 105 fuer y unif    -1.10
 94 a 105 mome x unif    -3.44
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.06
hipo 123 sob. v-23 izda ipf-75
carg en barr
 82 a  84 fuer y unif   -11.00
 82 a  84 mome x unif   -34.42
 82 a  84 fuer z unif     0.16
 82 a  84 mome x unif     0.65
 85       fuer y unif   -11.00     0.00     0.01
 85       fuer y unif   -13.20     0.01    -0.01
 86 a  90 fuer y unif   -13.20
 91       fuer y unif   -13.20     0.00     0.01
 91       fuer y unif   -11.00     0.01    -0.01
 85       mome x unif   -34.91     0.00     0.01
 85       mome x unif   -41.90     0.01    -0.01
 86 a  90 mome x unif   -42.51
 91       mome x unif   -42.97     0.00     0.01
 91       mome x unif   -35.80     0.01    -0.01
 85       fuer z unif     0.16     0.00     0.01
 85       fuer z unif     0.20     0.01    -0.01
 86 a  90 fuer z unif     0.20
 91       fuer z unif     0.20     0.00     0.01
 91       fuer z unif     0.16     0.01    -0.01
 85       mome x unif     0.65     0.00     0.01
 85       mome x unif     0.78     0.01    -0.01
 86 a  90 mome x unif   -42.97
 91       mome x unif     0.78     0.00     0.01
 91       mome x unif     0.65     0.01    -0.01
 92 a  93 fuer y unif   -11.00
 92 a  93 mome x unif   -35.86
 92 a  93 fuer z unif     0.16
 92 a  93 mome x unif     0.65
 58 a  69 fuer y unif   -11.00
 58 a  69 mome x unif   -27.86
 58 a  69 fuer z unif     0.16
 58 a  69 mome x unif     0.65
 34 a  45 fuer y unif   -11.00
 34 a  45 mome x unif   -23.99
 34 a  45 fuer z unif     0.16
 34 a  45 mome x unif     0.65
 10 a  21 fuer y unif   -11.00
 10 a  21 mome x unif   -28.00
 10 a  21 fuer z unif     0.16
 10 a  21 mome x unif     0.65
106 a 114 fuer y unif   -11.00
106 a 114 mome x unif   -29.13
106 a 114 fuer z unif     0.16
106 a 114 mome x unif     0.65
 70 a  81 fuer y unif    -1.10
 70 a  81 mome x unif    -3.19
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.06
 46 a  57 fuer y unif    -1.10
 46 a  57 mome x unif    -2.50
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.06
 22 a  33 fuer y unif    -1.10
 22 a  33 mome x unif    -2.50
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.06
  1 a   9 fuer y unif    -1.10
  1 a   9 mome x unif    -3.21
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.06
 94 a 105 fuer y unif    -1.10
 94 a 105 mome x unif    -3.44
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.06
hipo 124 sob. v-24 izda ipf-75
carg en barr
 82 a  87 fuer y unif   -11.00
 88       fuer y unif   -11.00     0.00     0.01
 88       fuer y unif   -13.20     0.01    -0.01
 89 a  93 fuer y unif   -13.20
 82 a  87 mome x unif   -34.73
 88       mome x unif   -35.48     0.00     0.01
 88       mome x unif   -42.57     0.01    -0.01
 89 a  93 mome x unif   -42.89
 82 a  87 fuer z unif     0.16
 88       fuer z unif     0.16     0.00     0.01
 88       fuer z unif     0.20     0.01    -0.01
 89 a  93 fuer z unif     0.20
 82 a  87 mome x unif     0.65
 88       mome x unif     0.65     0.00     0.01
 88       mome x unif     0.78     0.01    -0.01
 89 a  93 mome x unif     0.78
 58 a  69 fuer y unif   -11.00
 58 a  69 mome x unif   -27.86
 58 a  69 fuer z unif     0.16
 58 a  69 mome x unif     0.65
 34 a  45 fuer y unif   -11.00
 34 a  45 mome x unif   -23.99
 34 a  45 fuer z unif     0.16
 34 a  45 mome x unif     0.65
 10 a  21 fuer y unif   -11.00
 10 a  21 mome x unif   -28.00
 10 a  21 fuer z unif     0.16
 10 a  21 mome x unif     0.65
106 a 114 fuer y unif   -11.00
106 a 114 mome x unif   -29.13
106 a 114 fuer z unif     0.16
106 a 114 mome x unif     0.65
 70 a  81 fuer y unif    -1.10
 70 a  81 mome x unif    -3.19
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.06
 46 a  57 fuer y unif    -1.10
 46 a  57 mome x unif    -2.50
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.06
 22 a  33 fuer y unif    -1.10
 22 a  33 mome x unif    -2.50
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.06
  1 a   9 fuer y unif    -1.10
  1 a   9 mome x unif    -3.21
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.06
 94 a 105 fuer y unif    -1.10
 94 a 105 mome x unif    -3.44
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.06
hipo 125 sob. v-25 izda ipf-75
carg en barr
 94 a  99 fuer y unif   -13.20
100       fuer y unif   -13.20     0.00     0.01
```

100		fuer y unif	-11.00	0.01	-0.01
101	a 105	fuer y unif	-11.00		
94	a 99	mome x unif	-42.63		
100		mome x unif	-41.93	0.00	0.01
100		mome x unif	-34.94	0.01	-0.01
101	a 105	mome x unif	-33.79		
94	a 99	fuer z unif	0.20		
100		fuer z unif	0.20	0.00	0.01
100		fuer z unif	0.16	0.01	-0.01
101	a 105	fuer z unif	0.16		
94	a 99	mome x unif	0.78		
100		mome x unif	0.78	0.00	0.01
100		mome x unif	0.65	0.01	-0.01
101	a 105	mome x unif	0.65		
70	a 81	fuer y unif	-11.00		
70	a 81	mome x unif	-31.93		
70	a 81	fuer z unif	0.16		
70	a 81	mome x unif	0.65		
46	a 57	fuer y unif	-11.00		
46	a 57	mome x unif	-24.96		
46	a 57	fuer z unif	0.16		
46	a 57	mome x unif	0.65		
22	a 33	fuer y unif	-11.00		
22	a 33	mome x unif	-25.00		
22	a 33	fuer z unif	0.16		
22	a 33	mome x unif	0.65		
1	a 9	fuer y unif	-11.00		
1	a 9	mome x unif	-32.15		
1	a 9	fuer z unif	0.16		
1	a 9	mome x unif	0.65		
82	a 93	fuer y unif	-1.10		
82	a 93	mome x unif	-3.50		
82	a 93	fuer z unif	0.02		
82	a 93	mome x unif	0.06		
58	a 69	fuer y unif	-1.10		
58	a 69	mome x unif	-2.79		
58	a 69	fuer z unif	0.02		
58	a 69	mome x unif	0.06		
34	a 45	fuer y unif	-1.10		
34	a 45	mome x unif	-2.40		
34	a 45	fuer z unif	0.02		
34	a 45	mome x unif	0.06		
10	a 21	fuer y unif	-1.10		
10	a 21	mome x unif	-2.80		
10	a 21	fuer z unif	0.02		
10	a 21	mome x unif	0.06		
106	a 114	fuer y unif	-1.10		
106	a 114	mome x unif	-2.91		
106	a 114	fuer z unif	0.02		
106	a 114	mome x unif	0.06		

hipo 126 sob. v-26 izda ipf-75
carg en barr

94	a 96	fuer y unif	-11.00		
94	a 96	mome x unif	-35.78		
94	a 96	fuer z unif	0.16		
94	a 96	mome x unif	0.65		
97		fuer y unif	-11.00	0.00	0.01
97		fuer y unif	-13.20	0.01	-0.01
98	a 102	fuer y unif	-13.20		
103		fuer y unif	-13.20	0.00	0.01
103		fuer y unif	-11.00	0.01	-0.01
97		mome x unif	-35.57	0.00	0.01
97		mome x unif	-42.69	0.01	-0.01
98	a 102	mome x unif	-41.81		
103		mome x unif	-40.66	0.00	0.01
103		mome x unif	-33.89	0.01	-0.01
97		fuer z unif	0.16	0.00	0.01
97		fuer z unif	0.20	0.01	-0.01
98	a 102	fuer z unif	0.20		
103		fuer z unif	0.20	0.00	0.01
103		fuer z unif	0.16	0.01	-0.01
97		mome x unif	0.65	0.00	0.01
97		mome x unif	0.78	0.01	-0.01
98	a 102	mome x unif	-40.66		
103		mome x unif	0.78	0.00	0.01
103		mome x unif	0.65	0.01	-0.01
104	a 105	fuer y unif	-11.00		
104	a 105	mome x unif	-33.19		
104	a 105	fuer z unif	0.16		
104	a 105	mome x unif	0.65		
70	a 81	fuer y unif	-11.00		
70	a 81	mome x unif	-31.93		
70	a 81	fuer z unif	0.16		
70	a 81	mome x unif	0.65		
46	a 57	fuer y unif	-11.00		
46	a 57	mome x unif	-24.96		
46	a 57	fuer z unif	0.16		
46	a 57	mome x unif	0.65		
22	a 33	fuer y unif	-11.00		
22	a 33	mome x unif	-25.00		
22	a 33	fuer z unif	0.16		
22	a 33	mome x unif	0.65		
1	a 9	fuer y unif	-11.00		
1	a 9	mome x unif	-32.15		
1	a 9	fuer z unif	0.16		
1	a 9	mome x unif	0.65		
82	a 93	fuer y unif	-1.10		
82	a 93	mome x unif	-3.50		
82	a 93	fuer z unif	0.02		
82	a 93	mome x unif	0.06		
58	a 69	fuer y unif	-1.10		
58	a 69	mome x unif	-2.79		
58	a 69	fuer z unif	0.02		
58	a 69	mome x unif	0.06		
34	a 45	fuer y unif	-1.10		
34	a 45	mome x unif	-2.40		
34	a 45	fuer z unif	0.02		
34	a 45	mome x unif	0.06		
10	a 21	fuer y unif	-1.10		
10	a 21	mome x unif	-2.80		
10	a 21	fuer z unif	0.02		
10	a 21	mome x unif	0.06		
106	a 114	fuer y unif	-1.10		
106	a 114	mome x unif	-2.91		
106	a 114	fuer z unif	0.02		
106	a 114	mome x unif	0.06		

hipo 127 sob. v-27 izda ipf-75
carg en barr

94	a 99	fuer y unif	-11.00		
100		fuer y unif	-11.00	0.00	0.01
100		fuer y unif	-13.20	0.01	-0.01
101	a 105	fuer y unif	-13.20		
94	a 99	mome x unif	-35.52		
100		mome x unif	-34.94	0.00	0.01
100		mome x unif	-41.93	0.01	-0.01
101	a 105	mome x unif	-40.55		
94	a 99	fuer z unif	0.16		
100		fuer z unif	0.16	0.00	0.01

100		fuer z unif	0.20	0.01	-0.01
101	a 105	fuer z unif	0.20		
94	a 99	mome x unif	0.65		
100		mome x unif	0.65	0.00	0.01
100		mome x unif	0.78	0.01	-0.01
101	a 105	mome x unif	0.78		
70	a 81	fuer y unif	-11.00		
70	a 81	mome x unif	-31.93		
70	a 81	fuer z unif	0.16		
70	a 81	mome x unif	0.65		
46	a 57	fuer y unif	-11.00		
46	a 57	mome x unif	-24.96		
46	a 57	fuer z unif	0.16		
46	a 57	mome x unif	0.65		
22	a 33	fuer y unif	-11.00		
22	a 33	mome x unif	-25.00		
22	a 33	fuer z unif	0.16		
22	a 33	mome x unif	0.65		
1	a 9	fuer y unif	-11.00		
1	a 9	mome x unif	-32.15		
1	a 9	fuer z unif	0.16		
1	a 9	mome x unif	0.65		
82	a 93	fuer y unif	-1.10		
82	a 93	mome x unif	-3.50		
82	a 93	fuer z unif	0.02		
82	a 93	mome x unif	0.06		
58	a 69	fuer y unif	-1.10		
58	a 69	mome x unif	-2.79		
58	a 69	fuer z unif	0.02		
58	a 69	mome x unif	0.06		
34	a 45	fuer y unif	-1.10		
34	a 45	mome x unif	-2.40		
34	a 45	fuer z unif	0.02		
34	a 45	mome x unif	0.06		
10	a 21	fuer y unif	-1.10		
10	a 21	mome x unif	-2.80		
10	a 21	fuer z unif	0.02		
10	a 21	mome x unif	0.06		
106	a 114	fuer y unif	-1.10		
106	a 114	mome x unif	-2.91		
106	a 114	fuer z unif	0.02		
106	a 114	mome x unif	0.06		
hipo 128 sob. v-28 izda ipf-75					
carg en barr					
106	a 111	fuer y unif	-13.20		
112		fuer y unif	-13.20	0.00	0.01
112		fuer y unif	-11.00	0.01	-0.01
113	a 114	fuer y unif	-11.00		
106	a 111	mome x unif	-36.70		
112		mome x unif	-33.46	0.00	0.01
112		mome x unif	-27.88	0.01	-0.01
113	a 114	mome x unif	-26.39		
106	a 111	fuer z unif	0.20		
112		fuer z unif	0.20	0.00	0.01
112		fuer z unif	0.16	0.01	-0.01
113	a 114	fuer z unif	0.16		
106	a 111	mome x unif	0.78		
112		mome x unif	0.78	0.00	0.01
112		mome x unif	0.65	0.01	-0.01
113	a 114	mome x unif	0.65		
82	a 93	fuer y unif	-11.00		
82	a 93	mome x unif	-35.01		
82	a 93	fuer z unif	0.16		
82	a 93	mome x unif	0.65		
58	a 69	fuer y unif	-11.00		
58	a 69	mome x unif	-27.86		
58	a 69	fuer z unif	0.16		
58	a 69	mome x unif	0.65		
34	a 45	fuer y unif	-11.00		
34	a 45	mome x unif	-23.99		
34	a 45	fuer z unif	0.16		
34	a 45	mome x unif	0.65		
10	a 21	fuer y unif	-11.00		
10	a 21	mome x unif	-28.00		
10	a 21	fuer z unif	0.16		
10	a 21	mome x unif	0.65		
94	a 105	fuer y unif	-1.10		
94	a 105	mome x unif	-3.44		
94	a 105	fuer z unif	0.02		
94	a 105	mome x unif	0.06		
70	a 81	fuer y unif	-1.10		
70	a 81	mome x unif	-3.19		
70	a 81	fuer z unif	0.02		
70	a 81	mome x unif	0.06		
46	a 57	fuer y unif	-1.10		
46	a 57	mome x unif	-2.50		
46	a 57	fuer z unif	0.02		
46	a 57	mome x unif	0.06		
22	a 33	fuer y unif	-1.10		
22	a 33	mome x unif	-2.50		
22	a 33	fuer z unif	0.02		
22	a 33	mome x unif	0.06		
1	a 9	fuer y unif	-1.10		
1	a 9	mome x unif	-3.21		
1	a 9	fuer z unif	0.02		
1	a 9	mome x unif	0.06		
hipo 129 sob. v-29 izda ipf-75					
carg en barr					
106	a 106	fuer y unif	-11.00		
106	a 106	mome x unif	-32.39		
106	a 106	fuer z unif	0.16		
106	a 106	mome x unif	0.65		
107		fuer y unif	-11.00	0.00	2.50
107		fuer y unif	-13.20	2.50	-0.01
108	a 112	fuer y unif	-13.20		
113		fuer y unif	-13.20	0.00	2.50
113		fuer y unif	-11.00	2.50	-0.01
107		mome x unif	-31.78	0.00	2.50
107		mome x unif	-38.14	2.50	-0.01
108	a 112	mome x unif	-35.40		
113		mome x unif	-32.29	0.00	2.50
113		mome x unif	-26.91	2.50	-0.01
107		fuer z unif	0.16	0.00	2.50
107		fuer z unif	0.20	2.50	-0.01
108	a 112	fuer z unif	0.20		
113		fuer z unif	0.20	0.00	2.50
113		fuer z unif	0.16	2.50	-0.01
107		mome x unif	0.65	0.00	2.50
107		mome x unif	0.78	2.50	-0.01
108	a 112	mome x unif	-32.29		
113		mome x unif	0.78	0.00	2.50
113		mome x unif	0.65	2.50	-0.01
114	a 114	fuer y unif	-11.00		
114	a 114	mome x unif	-25.87		
114	a 114	fuer z unif	0.16		
114	a 114	mome x unif	0.65		
82	a 93	fuer y unif	-11.00		
82	a 93	mome x unif	-35.01		

```
 82 a  93 fuer z unif     0.16
 82 a  93 mome x unif     0.65
 58 a  69 fuer y unif   -11.00
 58 a  69 mome x unif   -27.86
 58 a  69 fuer z unif     0.16
 58 a  69 mome x unif     0.65
 34 a  45 fuer y unif   -11.00
 34 a  45 mome x unif   -23.99
 34 a  45 fuer z unif     0.16
 34 a  45 mome x unif     0.65
 10 a  21 fuer y unif   -11.00
 10 a  21 mome x unif   -28.00
 10 a  21 fuer z unif     0.16
 10 a  21 mome x unif     0.65
 94 a 105 fuer y unif    -1.10
 94 a 105 mome x unif    -3.44
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.06
 70 a  81 fuer y unif    -1.10
 70 a  81 mome x unif    -3.19
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.06
 46 a  57 fuer y unif    -1.10
 46 a  57 mome x unif    -2.50
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.06
 22 a  33 fuer y unif    -1.10
 22 a  33 mome x unif    -2.50
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.06
  1 a   9 fuer y unif    -1.10
  1 a   9 mome x unif    -3.21
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.06
hipo 130 sob. v-30 izda ipf-75
carg en barr
106 a 108 fuer y unif   -11.00
109       fuer y unif   -11.00      0.00     0.01
109       fuer y unif   -13.20      0.01    -0.01
110 a 114 fuer y unif   -13.20
106 a 108 mome x unif   -31.75
109       mome x unif   -30.39      0.00     0.01
109       mome x unif   -36.47      0.01    -0.01
110 a 114 mome x unif   -33.29
106 a 108 fuer z unif     0.16
109       fuer z unif     0.16      0.00     0.01
109       fuer z unif     0.20      0.01    -0.01
110 a 114 fuer z unif     0.20
106 a 108 mome x unif     0.65
109       mome x unif     0.65      0.00     0.01
109       mome x unif     0.78      0.01    -0.01
110 a 114 mome x unif     0.78
 82 a  93 fuer y unif   -11.00
 82 a  93 mome x unif   -35.01
 82 a  93 fuer z unif     0.16
 82 a  93 mome x unif     0.65
 58 a  69 fuer y unif   -11.00
 58 a  69 mome x unif   -27.86
 58 a  69 fuer z unif     0.16
 58 a  69 mome x unif     0.65
 34 a  45 fuer y unif   -11.00
 34 a  45 mome x unif   -23.99
 34 a  45 fuer z unif     0.16
 34 a  45 mome x unif     0.65
 10 a  21 fuer y unif   -11.00
 10 a  21 mome x unif   -28.00
 10 a  21 fuer z unif     0.16
 10 a  21 mome x unif     0.65
 94 a 105 fuer y unif    -1.10
 94 a 105 mome x unif    -3.44
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.06
 70 a  81 fuer y unif    -1.10
 70 a  81 mome x unif    -3.19
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.06
 46 a  57 fuer y unif    -1.10
 46 a  57 mome x unif    -2.50
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.06
 22 a  33 fuer y unif    -1.10
 22 a  33 mome x unif    -2.50
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.06
  1 a   9 fuer y unif    -1.10
  1 a   9 mome x unif    -3.21
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.06
hipo 131 sob. a- 1 izda ipf-75
carg en barr
  1 a   3 fuer y unif   -11.00
  4       fuer y unif   -11.00      0.00     0.01
  4       fuer y unif   -13.20      0.01    -0.01
  5 a   9 fuer y unif   -13.20
  1 a   3 mome x unif   -33.53
  4       mome x unif   -32.52      0.00     0.01
  4       mome x unif   -39.02      0.01    -0.01
  5 a   9 mome x unif   -37.37
  1 a   3 fuer z unif     0.16
  4       fuer z unif     0.16      0.00     0.01
  4       fuer z unif     0.20      0.01    -0.01
  5 a   9 fuer z unif     0.20
  1 a   3 mome x unif     0.65
  4       mome x unif     0.65      0.00     0.01
  4       mome x unif     0.78      0.01    -0.01
  5 a   9 mome x unif     0.78
 10 a  21 fuer y unif   -11.00
 10 a  21 mome x unif   -28.00
 10 a  21 fuer z unif     0.16
 10 a  21 mome x unif     0.65
 34 a  45 fuer y unif   -11.00
 34 a  45 mome x unif   -23.99
 34 a  45 fuer z unif     0.16
 34 a  45 mome x unif     0.65
 58 a  69 fuer y unif   -11.00
 58 a  69 mome x unif   -27.86
 58 a  69 fuer z unif     0.16
 58 a  69 mome x unif     0.65
 82 a  93 fuer y unif   -11.00
 82 a  93 mome x unif   -35.01
 82 a  93 fuer z unif     0.16
 82 a  93 mome x unif     0.65
106 a 114 fuer y unif   -11.00
106 a 114 mome x unif   -29.13
106 a 114 fuer z unif     0.16
106 a 114 mome x unif     0.65
 22 a  33 fuer y unif    -1.10
 22 a  33 mome x unif    -2.50
```

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 22 a  33 fuer z unif      0.02
 22 a  33 mome x unif      0.06
 46 a  57 fuer y unif     -1.10
 46 a  57 mome x unif     -2.50
 46 a  57 fuer z unif      0.02
 46 a  57 mome x unif      0.06
 70 a  81 fuer y unif     -1.10
 70 a  81 mome x unif     -3.19
 70 a  81 fuer z unif      0.02
 70 a  81 mome x unif      0.06
 94 a 105 fuer y unif     -1.10
 94 a 105 mome x unif     -3.44
 94 a 105 fuer z unif      0.02
 94 a 105 mome x unif      0.06
hipo 132 sob. a- 2 izda ipf-75
carg en barr
  1 a   6 fuer y unif    -11.00
  7       fuer y unif    -11.00      0.00      0.01
  7       fuer y unif    -13.20      0.01     -0.01
  8 a   9 fuer y unif    -13.20
  1 a   6 mome x unif    -32.80
  7       mome x unif    -31.11      0.00      0.01
  7       mome x unif    -37.33      0.01     -0.01
  8 a   9 mome x unif    -36.55
  1 a   6 fuer z unif      0.16
  7       fuer z unif      0.16      0.00      0.01
  7       fuer z unif      0.20      0.01     -0.01
  8 a   9 fuer z unif      0.20
  1 a   6 mome x unif      0.65
  7       mome x unif      0.65      0.00      0.01
  7       mome x unif      0.78      0.01     -0.01
  8 a   9 mome x unif      0.78
 10 a  12 fuer y unif    -13.20
 13       fuer y unif    -13.20      0.00      0.01
 13       fuer y unif    -11.00      0.01     -0.01
 14 a  21 fuer y unif    -11.00
 10 a  12 mome x unif    -35.32
 13       mome x unif    -34.39      0.00      0.01
 13       mome x unif    -28.66      0.01     -0.01
 14 a  21 mome x unif    -27.24
 10 a  12 fuer z unif      0.20
 13       fuer z unif      0.20      0.00      0.01
 13       fuer z unif      0.16      0.01     -0.01
 14 a  21 fuer z unif      0.16
 10 a  12 mome x unif      0.78
 13       mome x unif      0.78      0.00      0.01
 13       mome x unif      0.65      0.01     -0.01
 14 a  21 mome x unif      0.65
 34 a  45 fuer y unif    -11.00
 34 a  45 mome x unif    -23.99
 34 a  45 fuer z unif      0.16
 34 a  45 mome x unif      0.65
 58 a  69 fuer y unif    -11.00
 58 a  69 mome x unif    -27.86
 58 a  69 fuer z unif      0.16
 58 a  69 mome x unif      0.65
 82 a  93 fuer y unif    -11.00
 82 a  93 mome x unif    -35.01
 82 a  93 fuer z unif      0.16
 82 a  93 mome x unif      0.65
106 a 114 fuer y unif    -11.00
106 a 114 mome x unif    -29.13
106 a 114 fuer z unif      0.16
106 a 114 mome x unif      0.65
 22 a  33 fuer y unif     -1.10
 22 a  33 mome x unif     -2.50
 22 a  33 fuer z unif      0.02
 22 a  33 mome x unif      0.06
 46 a  57 fuer y unif     -1.10
 46 a  57 mome x unif     -2.50
 46 a  57 fuer z unif      0.02
 46 a  57 mome x unif      0.06
 70 a  81 fuer y unif     -1.10
 70 a  81 mome x unif     -3.19
 70 a  81 fuer z unif      0.02
 70 a  81 mome x unif      0.06
 94 a 105 fuer y unif     -1.10
 94 a 105 mome x unif     -3.44
 94 a 105 fuer z unif      0.02
 94 a 105 mome x unif      0.06
hipo 133 sob. a- 3 izda ipf-75
carg en barr
  1 a   9 fuer y unif    -11.00
  1 a   9 mome x unif    -32.15
  1 a   9 fuer z unif      0.16
  1 a   9 mome x unif      0.65
 10 a  15 fuer y unif    -13.20
 16       fuer y unif    -13.20      0.00      0.01
 16       fuer y unif    -11.00      0.01     -0.01
 17 a  21 fuer y unif    -11.00
 10 a  15 mome x unif    -34.67
 16       mome x unif    -33.15      0.00      0.01
 16       mome x unif    -27.63      0.01     -0.01
 17 a  21 mome x unif    -26.74
 10 a  15 fuer z unif      0.20
 16       fuer z unif      0.20      0.00      0.01
 16       fuer z unif      0.16      0.01     -0.01
 17 a  21 fuer z unif      0.16
 10 a  15 mome x unif      0.78
 16       mome x unif      0.78      0.00      0.01
 16       mome x unif      0.65      0.01     -0.01
 17 a  21 mome x unif      0.65
 34 a  45 fuer y unif    -11.00
 34 a  45 mome x unif    -23.99
 34 a  45 fuer z unif      0.16
 34 a  45 mome x unif      0.65
 58 a  69 fuer y unif    -11.00
 58 a  69 mome x unif    -27.86
 58 a  69 fuer z unif      0.16
 58 a  69 mome x unif      0.65
 82 a  93 fuer y unif    -11.00
 82 a  93 mome x unif    -35.01
 82 a  93 fuer z unif      0.16
 82 a  93 mome x unif      0.65
106 a 114 fuer y unif    -11.00
106 a 114 mome x unif    -29.13
106 a 114 fuer z unif      0.16
106 a 114 mome x unif      0.65
 22 a  33 fuer y unif     -1.10
 22 a  33 mome x unif     -2.50
 22 a  33 fuer z unif      0.02
 22 a  33 mome x unif      0.06
 46 a  57 fuer y unif     -1.10
 46 a  57 mome x unif     -2.50
 46 a  57 fuer z unif      0.02
 46 a  57 mome x unif      0.06
 70 a  81 fuer y unif     -1.10
 70 a  81 mome x unif     -3.19
```

```
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.06
 94 a 105 fuer y unif    -1.10
 94 a 105 mome x unif    -3.44
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.06
hipo 134 sob. a- 4 izda ipf-75
carg en barr
 10 a  15 fuer y unif   -11.00
 16       fuer y unif   -11.00     0.00     0.01
 16       fuer y unif   -13.20     0.01    -0.01
 17 a  21 fuer y unif   -13.20
 10 a  15 mome x unif   -28.89
 16       mome x unif   -27.63     0.00     0.01
 16       mome x unif   -33.15     0.01    -0.01
 17 a  21 mome x unif   -32.09
 10 a  15 fuer z unif     0.16
 16       fuer z unif     0.16     0.00     0.01
 16       fuer z unif     0.20     0.01    -0.01
 17 a  21 fuer z unif     0.20
 10 a  15 mome x unif     0.65
 16       mome x unif     0.65     0.00     0.01
 16       mome x unif     0.78     0.01    -0.01
 17 a  21 mome x unif     0.78
 22 a  33 fuer y unif   -11.00
 22 a  33 mome x unif   -25.00
 22 a  33 fuer z unif     0.16
 22 a  33 mome x unif     0.65
 46 a  57 fuer y unif   -11.00
 46 a  57 mome x unif   -24.96
 46 a  57 fuer z unif     0.16
 46 a  57 mome x unif     0.65
 70 a  81 fuer y unif   -11.00
 70 a  81 mome x unif   -31.93
 70 a  81 fuer z unif     0.16
 70 a  81 mome x unif     0.65
 94 a 105 fuer y unif   -11.00
 94 a 105 mome x unif   -34.40
 94 a 105 fuer z unif     0.16
 94 a 105 mome x unif     0.65
  1 a   9 fuer y unif    -1.10
  1 a   9 mome x unif    -3.21
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.06
 34 a  45 fuer y unif    -1.10
 34 a  45 mome x unif    -2.40
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.06
 58 a  69 fuer y unif    -1.10
 58 a  69 mome x unif    -2.79
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.06
 82 a  93 fuer y unif    -1.10
 82 a  93 mome x unif    -3.50
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.06
106 a 114 fuer y unif    -1.10
106 a 114 mome x unif    -2.91
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.06
hipo 135 sob. a- 5 izda ipf-75
carg en barr
 10 a  18 fuer y unif   -11.00
 19       fuer y unif   -11.00     0.00     0.01
 19       fuer y unif   -13.20     0.01    -0.01
 20 a  21 fuer y unif   -13.20
 10 a  18 mome x unif   -28.42
 19       mome x unif   -26.72     0.00     0.01
 19       mome x unif   -32.06     0.01    -0.01
 20 a  21 mome x unif   -31.56
 10 a  18 fuer z unif     0.16
 19       fuer z unif     0.16     0.00     0.01
 19       fuer z unif     0.20     0.01    -0.01
 20 a  21 fuer z unif     0.20
 10 a  18 mome x unif     0.65
 19       mome x unif     0.65     0.00     0.01
 19       mome x unif     0.78     0.01    -0.01
 20 a  21 mome x unif     0.78
 22 a  24 fuer y unif   -13.20
 25       fuer y unif   -13.20     0.00     0.01
 25       fuer y unif   -11.00     0.01    -0.01
 26 a  33 fuer y unif   -11.00
 22 a  24 mome x unif   -30.83
 25       mome x unif   -30.31     0.00     0.01
 25       mome x unif   -25.26     0.01    -0.01
 26 a  33 mome x unif   -24.58
 22 a  24 fuer z unif     0.20
 25       fuer z unif     0.20     0.00     0.01
 25       fuer z unif     0.16     0.01    -0.01
 26 a  33 fuer z unif     0.16
 22 a  24 mome x unif     0.78
 25       mome x unif     0.78     0.00     0.01
 25       mome x unif     0.65     0.01    -0.01
 26 a  33 mome x unif     0.65
 46 a  57 fuer y unif   -11.00
 46 a  57 mome x unif   -24.96
 46 a  57 fuer z unif     0.16
 46 a  57 mome x unif     0.65
 70 a  81 fuer y unif   -11.00
 70 a  81 mome x unif   -31.93
 70 a  81 fuer z unif     0.16
 70 a  81 mome x unif     0.65
 94 a 105 fuer y unif   -11.00
 94 a 105 mome x unif   -34.40
 94 a 105 fuer z unif     0.16
 94 a 105 mome x unif     0.65
  1 a   9 fuer y unif    -1.10
  1 a   9 mome x unif    -3.21
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.06
 34 a  45 fuer y unif    -1.10
 34 a  45 mome x unif    -2.40
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.06
 58 a  69 fuer y unif    -1.10
 58 a  69 mome x unif    -2.79
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.06
 82 a  93 fuer y unif    -1.10
 82 a  93 mome x unif    -3.50
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.06
106 a 114 fuer y unif    -1.10
106 a 114 mome x unif    -2.91
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.06
hipo 136 sob. a- 6 izda ipf-75
carg en barr
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10	a	21	fuer	y	unif	-11.00
10	a	21	mome	x	unif	-28.00
10	a	21	fuer	z	unif	0.16
10	a	21	mome	x	unif	0.65
22	a	27	fuer	y	unif	-13.20
28			fuer	y	unif	-13.20	0.00	0.01
28			fuer	y	unif	-11.00	0.01	-0.01
29	a	33	fuer	y	unif	-11.00
22	a	27	mome	x	unif	-30.48
28			mome	x	unif	-29.65	0.00	0.01
28			mome	x	unif	-24.71	0.01	-0.01
29	a	33	mome	x	unif	-24.33
22	a	27	fuer	z	unif	0.20
28			fuer	z	unif	0.20	0.00	0.01
28			fuer	z	unif	0.16	0.01	-0.01
29	a	33	fuer	z	unif	0.16
22	a	27	mome	x	unif	0.78
28			mome	x	unif	0.78	0.00	0.01
28			mome	x	unif	0.65	0.01	-0.01
29	a	33	mome	x	unif	0.65
46	a	57	fuer	y	unif	-11.00
46	a	57	mome	x	unif	-24.96
46	a	57	fuer	z	unif	0.16
46	a	57	mome	x	unif	0.65
70	a	81	fuer	y	unif	-11.00
70	a	81	mome	x	unif	-31.93
70	a	81	fuer	z	unif	0.16
70	a	81	mome	x	unif	0.65
94	a	105	fuer	y	unif	-11.00
94	a	105	mome	x	unif	-34.40
94	a	105	fuer	z	unif	0.16
94	a	105	mome	x	unif	0.65
1	a	9	fuer	y	unif	-1.10
1	a	9	mome	x	unif	-3.21
1	a	9	fuer	z	unif	0.02
1	a	9	mome	x	unif	0.06
34	a	45	fuer	y	unif	-1.10
34	a	45	mome	x	unif	-2.40
34	a	45	fuer	z	unif	0.02
34	a	45	mome	x	unif	0.06
58	a	69	fuer	y	unif	-1.10
58	a	69	mome	x	unif	-2.79
58	a	69	fuer	z	unif	0.02
58	a	69	mome	x	unif	0.06
82	a	93	fuer	y	unif	-1.10
82	a	93	mome	x	unif	-3.50
82	a	93	fuer	z	unif	0.02
82	a	93	mome	x	unif	0.06
106	a	114	fuer	y	unif	-1.10
106	a	114	mome	x	unif	-2.91
106	a	114	fuer	z	unif	0.02
106	a	114	mome	x	unif	0.06

hipo 137 sob. a- 7 izda ipf-75
carg en barr

22	a	27	fuer	y	unif	-11.00
28			fuer	y	unif	-11.00	0.00	0.01
28			fuer	y	unif	-13.20	0.01	-0.01
29	a	33	fuer	y	unif	-13.20
22	a	27	mome	x	unif	-25.40
28			mome	x	unif	-24.71	0.00	0.01
28			mome	x	unif	-29.65	0.01	-0.01
29	a	33	mome	x	unif	-29.19
22	a	27	fuer	z	unif	0.16
28			fuer	z	unif	0.16	0.00	0.01
28			fuer	z	unif	0.20	0.01	-0.01
29	a	33	fuer	z	unif	0.20
22	a	27	mome	x	unif	0.65
28			mome	x	unif	0.65	0.00	0.01
28			mome	x	unif	0.78	0.01	-0.01
29	a	33	mome	x	unif	0.78
34	a	45	fuer	y	unif	-11.00
34	a	45	mome	x	unif	-23.99
34	a	45	fuer	z	unif	0.16
34	a	45	mome	x	unif	0.65
1	a	9	fuer	y	unif	-11.00
1	a	9	mome	x	unif	-32.15
1	a	9	fuer	z	unif	0.16
1	a	9	mome	x	unif	0.65
58	a	69	fuer	y	unif	-11.00
58	a	69	mome	x	unif	-27.86
58	a	69	fuer	z	unif	0.16
58	a	69	mome	x	unif	0.65
82	a	93	fuer	y	unif	-11.00
82	a	93	mome	x	unif	-35.01
82	a	93	fuer	z	unif	0.16
82	a	93	mome	x	unif	0.65
106	a	114	fuer	y	unif	-11.00
106	a	114	mome	x	unif	-29.13
106	a	114	fuer	z	unif	0.16
106	a	114	mome	x	unif	0.65
10	a	21	fuer	y	unif	-1.10
10	a	21	mome	x	unif	-2.80
10	a	21	fuer	z	unif	0.02
10	a	21	mome	x	unif	0.06
46	a	57	fuer	y	unif	-1.10
46	a	57	mome	x	unif	-2.50
46	a	57	fuer	z	unif	0.02
46	a	57	mome	x	unif	0.06
70	a	81	fuer	y	unif	-1.10
70	a	81	mome	x	unif	-3.19
70	a	81	fuer	z	unif	0.02
70	a	81	mome	x	unif	0.06
94	a	105	fuer	y	unif	-1.10
94	a	105	mome	x	unif	-3.44
94	a	105	fuer	z	unif	0.02
94	a	105	mome	x	unif	0.06

hipo 138 sob. a- 8 izda ipf-75
carg en barr

22	a	30	fuer	y	unif	-11.00
31			fuer	y	unif	-11.00	0.00	0.01
31			fuer	y	unif	-13.20	0.01	-0.01
32	a	33	fuer	y	unif	-13.20
22	a	30	mome	x	unif	-25.17
31			mome	x	unif	-24.29	0.00	0.01
31			mome	x	unif	-29.15	0.01	-0.01
32	a	33	mome	x	unif	-28.96
22	a	30	fuer	z	unif	0.16
31			fuer	z	unif	0.16	0.00	0.01
31			fuer	z	unif	0.20	0.01	-0.01
32	a	33	fuer	z	unif	0.20
22	a	30	mome	x	unif	0.65
31			mome	x	unif	0.65	0.00	0.01
31			mome	x	unif	0.78	0.01	-0.01
32	a	33	mome	x	unif	0.78
34	a	36	fuer	y	unif	-13.20
37			fuer	y	unif	-13.20	0.00	0.01
37			fuer	y	unif	-11.00	0.01	-0.01
38	a	45	fuer	y	unif	-11.00

28			fuer	z	unif	0.20	0.01	-0.01
29	a	33	fuer	z	unif	0.20
22	a	27	mome	x	unif	0.65
28			mome	x	unif	0.65	0.00	0.01
28			mome	x	unif	0.78	0.01	-0.01
29	a	33	mome	x	unif	0.78
34	a	45	fuer	y	unif	-11.00
34	a	45	mome	x	unif	-23.99
34	a	45	fuer	z	unif	0.16
34	a	45	mome	x	unif	0.65
1	a	9	fuer	y	unif	-11.00
1	a	9	mome	x	unif	-32.15
1	a	9	fuer	z	unif	0.16
1	a	9	mome	x	unif	0.65
58	a	69	fuer	y	unif	-11.00
58	a	69	mome	x	unif	-27.86
58	a	69	fuer	z	unif	0.16
58	a	69	mome	x	unif	0.65
82	a	93	fuer	y	unif	-11.00
82	a	93	mome	x	unif	-35.01
82	a	93	fuer	z	unif	0.16
82	a	93	mome	x	unif	0.65
106	a	114	fuer	y	unif	-11.00
106	a	114	mome	x	unif	-29.13
106	a	114	fuer	z	unif	0.16
106	a	114	mome	x	unif	0.65
10	a	21	fuer	y	unif	-1.10
10	a	21	mome	x	unif	-2.80
10	a	21	fuer	z	unif	0.02
10	a	21	mome	x	unif	0.06
46	a	57	fuer	y	unif	-1.10
46	a	57	mome	x	unif	-2.50
46	a	57	fuer	z	unif	0.02
46	a	57	mome	x	unif	0.06
70	a	81	fuer	y	unif	-1.10
70	a	81	mome	x	unif	-3.19
70	a	81	fuer	z	unif	0.02
70	a	81	mome	x	unif	0.06
94	a	105	fuer	y	unif	-1.10
94	a	105	mome	x	unif	-3.44
94	a	105	fuer	z	unif	0.02
94	a	105	mome	x	unif	0.06

hipo 138 sob. a- 8 izda ipf-75
carg en barr

22	a	30	fuer	y	unif	-11.00
31			fuer	y	unif	-11.00	0.00	0.01
31			fuer	y	unif	-13.20	0.01	-0.01
32	a	33	fuer	y	unif	-13.20
22	a	30	mome	x	unif	-25.17
31			mome	x	unif	-24.29	0.00	0.01
31			mome	x	unif	-29.15	0.01	-0.01
32	a	33	mome	x	unif	-28.96
22	a	30	fuer	z	unif	0.16
31			fuer	z	unif	0.16	0.00	0.01
31			fuer	z	unif	0.20	0.01	-0.01
32	a	33	fuer	z	unif	0.20
22	a	30	mome	x	unif	0.65
31			mome	x	unif	0.65	0.00	0.01
31			mome	x	unif	0.78	0.01	-0.01
32	a	33	mome	x	unif	0.78
34	a	36	fuer	y	unif	-13.20
37			fuer	y	unif	-13.20	0.00	0.01
37			fuer	y	unif	-11.00	0.01	-0.01
38	a	45	fuer	y	unif	-11.00

```
 34 a  36 mome x unif   -28.73
 37       mome x unif   -28.60      0.00      0.01
 37       mome x unif   -23.83      0.01     -0.01
 38 a  45 mome x unif   -23.89
 34 a  36 fuer z unif     0.20
 37       fuer z unif     0.20      0.00      0.01
 37       fuer z unif     0.16      0.01     -0.01
 38 a  45 fuer z unif     0.16
 34 a  36 mome x unif     0.78
 37       mome x unif     0.78      0.00      0.01
 37       mome x unif     0.65      0.01     -0.01
 38 a  45 mome x unif     0.65
  1 a   9 fuer y unif   -11.00
  1 a   9 mome x unif   -32.15
  1 a   9 fuer z unif     0.16
  1 a   9 mome x unif     0.65
 58 a  69 fuer y unif   -11.00
 58 a  69 mome x unif   -27.86
 58 a  69 fuer z unif     0.16
 58 a  69 mome x unif     0.65
 82 a  93 fuer y unif   -11.00
 82 a  93 mome x unif   -35.01
 82 a  93 fuer z unif     0.16
 82 a  93 mome x unif     0.65
106 a 114 fuer y unif   -11.00
106 a 114 mome x unif   -29.13
106 a 114 fuer z unif     0.16
106 a 114 mome x unif     0.65
 10 a  21 fuer y unif    -1.10
 10 a  21 mome x unif    -2.80
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.06
 46 a  57 fuer y unif    -1.10
 46 a  57 mome x unif    -2.50
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.06
 70 a  81 fuer y unif    -1.10
 70 a  81 mome x unif    -3.19
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.06
 94 a 105 fuer y unif    -1.10
 94 a 105 mome x unif    -3.44
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.06
hipo 139 sob. a- 9 izda ipf-75
carg en barr
 22 a  33 fuer y unif   -11.00
 22 a  33 mome x unif   -25.00
 22 a  33 fuer z unif     0.16
 22 a  33 mome x unif     0.65
 34 a  39 fuer y unif   -13.20
 40       fuer y unif   -13.20      0.00      0.01
 40       fuer y unif   -11.00      0.01     -0.01
 41 a  45 fuer y unif   -11.00
 34 a  39 mome x unif   -28.68
 40       mome x unif   -28.54      0.00      0.01
 40       mome x unif   -23.78      0.01     -0.01
 41 a  45 mome x unif   -23.89
 34 a  39 fuer z unif     0.20
 40       fuer z unif     0.20      0.00      0.01
 40       fuer z unif     0.16      0.01     -0.01
 41 a  45 fuer z unif     0.16
 34 a  39 mome x unif     0.78
 40       mome x unif     0.78      0.00      0.01
```

```
 40       mome x unif     0.65      0.01     -0.01
 41 a  45 mome x unif     0.65
  1 a   9 fuer y unif   -11.00
  1 a   9 mome x unif   -32.15
  1 a   9 fuer z unif     0.16
  1 a   9 mome x unif     0.65
 58 a  69 fuer y unif   -11.00
 58 a  69 mome x unif   -27.86
 58 a  69 fuer z unif     0.16
 58 a  69 mome x unif     0.65
 82 a  93 fuer y unif   -11.00
 82 a  93 mome x unif   -35.01
 82 a  93 fuer z unif     0.16
 82 a  93 mome x unif     0.65
106 a 114 fuer y unif   -11.00
106 a 114 mome x unif   -29.13
106 a 114 fuer z unif     0.16
106 a 114 mome x unif     0.65
 10 a  21 fuer y unif    -1.10
 10 a  21 mome x unif    -2.80
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.06
 46 a  57 fuer y unif    -1.10
 46 a  57 mome x unif    -2.50
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.06
 70 a  81 fuer y unif    -1.10
 70 a  81 mome x unif    -3.19
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.06
 94 a 105 fuer y unif    -1.10
 94 a 105 mome x unif    -3.44
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.06
hipo 140 sob. a-10 izda ipf-75
carg en barr
 34 a  39 fuer y unif   -11.00
 40       fuer y unif   -11.00      0.00      0.01
 40       fuer y unif   -13.20      0.01     -0.01
 41 a  45 fuer y unif   -13.20
 34 a  39 mome x unif   -23.90
 40       mome x unif   -23.78      0.00      0.01
 40       mome x unif   -28.54      0.01     -0.01
 41 a  45 mome x unif   -28.67
 34 a  39 fuer z unif     0.16
 40       fuer z unif     0.16      0.00      0.01
 40       fuer z unif     0.20      0.01     -0.01
 41 a  45 fuer z unif     0.20
 34 a  39 mome x unif     0.65
 40       mome x unif     0.65      0.00      0.01
 40       mome x unif     0.78      0.01     -0.01
 41 a  45 mome x unif     0.78
 46 a  57 fuer y unif   -11.00
 46 a  57 mome x unif   -24.96
 46 a  57 fuer z unif     0.16
 46 a  57 mome x unif     0.65
 10 a  21 fuer y unif   -11.00
 10 a  21 mome x unif   -28.00
 10 a  21 fuer z unif     0.16
 10 a  21 mome x unif     0.65
 70 a  81 fuer y unif   -11.00
 70 a  81 mome x unif   -31.93
 70 a  81 fuer z unif     0.16
 70 a  81 mome x unif     0.65
```

```
 94 a 105 fuer y unif   -11.00
 94 a 105 mome x unif   -34.40
 94 a 105 fuer z unif     0.16
 94 a 105 mome x unif     0.65
 22 a  33 fuer y unif    -1.10
 22 a  33 mome x unif    -2.50
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.06
  1 a   9 fuer y unif    -1.10
  1 a   9 mome x unif    -3.21
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.06
 58 a  69 fuer y unif    -1.10
 58 a  69 mome x unif    -2.79
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.06
 82 a  93 fuer y unif    -1.10
 82 a  93 mome x unif    -3.50
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.06
106 a 114 fuer y unif    -1.10
106 a 114 mome x unif    -2.91
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.06
hipo 141 sob. a-11 izda ipf-75
carg en barr
 34 a  42 fuer y unif   -11.00
 43       fuer y unif   -11.00     0.00     0.01
 43       fuer y unif   -13.20     0.01    -0.01
 44 a  45 fuer y unif   -13.20
 34 a  42 mome x unif   -23.92
 43       mome x unif   -23.86     0.00     0.01
 43       mome x unif   -28.63     0.01    -0.01
 44 a  45 mome x unif   -28.73
 34 a  42 fuer z unif     0.16
 43       fuer z unif     0.16     0.00     0.01
 43       fuer z unif     0.20     0.01    -0.01
 44 a  45 fuer z unif     0.20
 34 a  42 mome x unif     0.65
 43       mome x unif     0.65     0.00     0.01
 43       mome x unif     0.78     0.01    -0.01
 44 a  45 mome x unif     0.78
 46 a  48 fuer y unif   -13.20
 49       fuer y unif   -13.20     0.00     0.01
 49       fuer y unif   -11.00     0.01    -0.01
 50 a  57 fuer y unif   -11.00
 46 a  48 mome x unif   -28.99
 49       mome x unif   -29.26     0.00     0.01
 49       mome x unif   -24.39     0.01    -0.01
 50 a  57 mome x unif   -25.18
 46 a  48 fuer z unif     0.20
 49       fuer z unif     0.20     0.00     0.01
 49       fuer z unif     0.16     0.01    -0.01
 50 a  57 fuer z unif     0.16
 46 a  48 mome x unif     0.78
 49       mome x unif     0.78     0.00     0.01
 49       mome x unif     0.65     0.01    -0.01
 50 a  57 mome x unif     0.65
 10 a  21 fuer y unif   -11.00
 10 a  21 mome x unif   -28.00
 10 a  21 fuer z unif     0.16
 10 a  21 mome x unif     0.65
 70 a  81 fuer y unif   -11.00
 70 a  81 mome x unif   -31.93
 70 a  81 fuer z unif     0.16
 70 a  81 mome x unif     0.65
 94 a 105 fuer y unif   -11.00
 94 a 105 mome x unif   -34.40
 94 a 105 fuer z unif     0.16
 94 a 105 mome x unif     0.65
 22 a  33 fuer y unif    -1.10
 22 a  33 mome x unif    -2.50
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.06
  1 a   9 fuer y unif    -1.10
  1 a   9 mome x unif    -3.21
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.06
 58 a  69 fuer y unif    -1.10
 58 a  69 mome x unif    -2.79
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.06
 82 a  93 fuer y unif    -1.10
 82 a  93 mome x unif    -3.50
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.06
106 a 114 fuer y unif    -1.10
106 a 114 mome x unif    -2.91
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.06
hipo 142 sob. a-12 izda ipf-75
carg en barr
 34 a  45 fuer y unif   -11.00
 34 a  45 mome x unif   -23.99
 34 a  45 fuer z unif     0.16
 34 a  45 mome x unif     0.65
 46 a  51 fuer y unif   -13.20
 52       fuer y unif   -13.20     0.00     0.01
 52       fuer y unif   -11.00     0.01    -0.01
 53 a  57 fuer y unif   -11.00
 46 a  51 mome x unif   -29.24
 52       mome x unif   -29.80     0.00     0.01
 52       mome x unif   -24.83     0.01    -0.01
 53 a  57 mome x unif   -25.43
 46 a  51 fuer z unif     0.20
 52       fuer z unif     0.20     0.00     0.01
 52       fuer z unif     0.16     0.01    -0.01
 53 a  57 fuer z unif     0.16
 46 a  51 mome x unif     0.78
 52       mome x unif     0.78     0.00     0.01
 52       mome x unif     0.65     0.01    -0.01
 53 a  57 mome x unif     0.65
 10 a  21 fuer y unif   -11.00
 10 a  21 mome x unif   -28.00
 10 a  21 fuer z unif     0.16
 10 a  21 mome x unif     0.65
 70 a  81 fuer y unif   -11.00
 70 a  81 mome x unif   -31.93
 70 a  81 fuer z unif     0.16
 70 a  81 mome x unif     0.65
 94 a 105 fuer y unif   -11.00
 94 a 105 mome x unif   -34.40
 94 a 105 fuer z unif     0.16
 94 a 105 mome x unif     0.65
 22 a  33 fuer y unif    -1.10
 22 a  33 mome x unif    -2.50
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.06
```

```
  1 a   9 fuer y unif    -1.10
  1 a   9 mome x unif    -3.21
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.06
 58 a  69 fuer y unif    -1.10
 58 a  69 mome x unif    -2.79
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.06
 82 a  93 fuer y unif    -1.10
 82 a  93 mome x unif    -3.50
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.06
106 a 114 fuer y unif    -1.10
106 a 114 mome x unif    -2.91
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.06
hipo 143 sob. a-13 izda ipf-75
carg en barr
 46 a  51 fuer y unif   -11.00
 52       fuer y unif   -11.00     0.00     0.01
 52       fuer y unif   -13.20     0.01    -0.01
 53 a  57 fuer y unif   -13.20
 46 a  51 mome x unif   -24.36
 52       mome x unif   -24.83     0.00     0.01
 52       mome x unif   -29.80     0.01    -0.01
 53 a  57 mome x unif   -30.52
 46 a  51 fuer z unif     0.16
 52       fuer z unif     0.16     0.00     0.01
 52       fuer z unif     0.20     0.01    -0.01
 53 a  57 fuer z unif     0.20
 46 a  51 mome x unif     0.65
 52       mome x unif     0.65     0.00     0.01
 52       mome x unif     0.78     0.01    -0.01
 53 a  57 mome x unif     0.78
 58 a  69 fuer y unif   -11.00
 58 a  69 mome x unif   -27.86
 58 a  69 fuer z unif     0.16
 58 a  69 mome x unif     0.65
 22 a  33 fuer y unif   -11.00
 22 a  33 mome x unif   -25.00
 22 a  33 fuer z unif     0.16
 22 a  33 mome x unif     0.65
  1 a   9 fuer y unif   -11.00
  1 a   9 mome x unif   -32.15
  1 a   9 fuer z unif     0.16
  1 a   9 mome x unif     0.65
 82 a  93 fuer y unif   -11.00
 82 a  93 mome x unif   -35.01
 82 a  93 fuer z unif     0.16
 82 a  93 mome x unif     0.65
106 a 114 fuer y unif   -11.00
106 a 114 mome x unif   -29.13
106 a 114 fuer z unif     0.16
106 a 114 mome x unif     0.65
 34 a  45 fuer y unif    -1.10
 34 a  45 mome x unif    -2.40
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.06
 10 a  21 fuer y unif    -1.10
 10 a  21 mome x unif    -2.80
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.06
 70 a  81 fuer y unif    -1.10
 70 a  81 mome x unif    -3.19
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.06
 94 a 105 fuer y unif    -1.10
 94 a 105 mome x unif    -3.44
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.06
hipo 144 sob. a-14 izda ipf-75
carg en barr
 46 a  54 fuer y unif   -11.00
 55       fuer y unif   -11.00     0.00     0.01
 55       fuer y unif   -13.20     0.01    -0.01
 56 a  57 fuer y unif   -13.20
 46 a  54 mome x unif   -24.63
 55       mome x unif   -25.40     0.00     0.01
 55       mome x unif   -30.49     0.01    -0.01
 56 a  57 mome x unif   -30.88
 46 a  54 fuer z unif     0.16
 55       fuer z unif     0.16     0.00     0.01
 55       fuer z unif     0.20     0.01    -0.01
 56 a  57 fuer z unif     0.20
 46 a  54 mome x unif     0.65
 55       mome x unif     0.65     0.00     0.01
 55       mome x unif     0.78     0.01    -0.01
 56 a  57 mome x unif     0.78
 58 a  60 fuer y unif   -13.20
 61       fuer y unif   -13.20     0.00     0.01
 61       fuer y unif   -11.00     0.01    -0.01
 62 a  69 fuer y unif   -11.00
 58 a  60 mome x unif   -31.64
 61       mome x unif   -32.30     0.00     0.01
 61       mome x unif   -26.92     0.01    -0.01
 62 a  69 mome x unif   -28.42
 58 a  60 fuer z unif     0.20
 61       fuer z unif     0.20     0.00     0.01
 61       fuer z unif     0.16     0.01    -0.01
 62 a  69 fuer z unif     0.16
 58 a  60 mome x unif     0.78
 61       mome x unif     0.78     0.00     0.01
 61       mome x unif     0.65     0.01    -0.01
 62 a  69 mome x unif     0.65
 22 a  33 fuer y unif   -11.00
 22 a  33 mome x unif   -25.00
 22 a  33 fuer z unif     0.16
 22 a  33 mome x unif     0.65
  1 a   9 fuer y unif   -11.00
  1 a   9 mome x unif   -32.15
  1 a   9 fuer z unif     0.16
  1 a   9 mome x unif     0.65
 82 a  93 fuer y unif   -11.00
 82 a  93 mome x unif   -35.01
 82 a  93 fuer z unif     0.16
 82 a  93 mome x unif     0.65
106 a 114 fuer y unif   -11.00
106 a 114 mome x unif   -29.13
106 a 114 fuer z unif     0.16
106 a 114 mome x unif     0.65
 34 a  45 fuer y unif    -1.10
 34 a  45 mome x unif    -2.40
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.06
 10 a  21 fuer y unif    -1.10
 10 a  21 mome x unif    -2.80
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.06
```

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 70 a  81 fuer y unif    -1.10
 70 a  81 mome x unif    -3.19
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.06
 94 a 105 fuer y unif    -1.10
 94 a 105 mome x unif    -3.44
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.06
hipo 145 sob. a-15 izda ipf-75
carg en barr
 46 a  57 fuer y unif   -11.00
 46 a  57 mome x unif   -24.96
 46 a  57 fuer z unif     0.16
 46 a  57 mome x unif     0.65
 58 a  63 fuer y unif   -13.20
 64       fuer y unif   -13.20      0.00      0.01
 64       fuer y unif   -11.00      0.01     -0.01
 65 a  69 fuer y unif   -11.00
 58 a  63 mome x unif   -32.18
 64       mome x unif   -33.42      0.00      0.01
 64       mome x unif   -27.85      0.01     -0.01
 65 a  69 mome x unif   -28.91
 58 a  63 fuer z unif     0.20
 64       fuer z unif     0.20      0.00      0.01
 64       fuer z unif     0.16      0.01     -0.01
 65 a  69 fuer z unif     0.16
 58 a  63 mome x unif     0.78
 64       mome x unif     0.78      0.00      0.01
 64       mome x unif     0.65      0.01     -0.01
 65 a  69 mome x unif     0.65
 22 a  33 fuer y unif   -11.00
 22 a  33 mome x unif   -25.00
 22 a  33 fuer z unif     0.16
 22 a  33 mome x unif     0.65
  1 a   9 fuer y unif   -11.00
  1 a   9 mome x unif   -32.15
  1 a   9 fuer z unif     0.16
  1 a   9 mome x unif     0.65
 82 a  93 fuer y unif   -11.00
 82 a  93 mome x unif   -35.01
 82 a  93 fuer z unif     0.16
 82 a  93 mome x unif     0.65
106 a 114 fuer y unif   -11.00
106 a 114 mome x unif   -29.13
106 a 114 fuer z unif     0.16
106 a 114 mome x unif     0.65
 34 a  45 fuer y unif    -1.10
 34 a  45 mome x unif    -2.40
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.06
 10 a  21 fuer y unif    -1.10
 10 a  21 mome x unif    -2.80
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.06
 70 a  81 fuer y unif    -1.10
 70 a  81 mome x unif    -3.19
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.06
 94 a 105 fuer y unif    -1.10
 94 a 105 mome x unif    -3.44
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.06
hipo 146 sob. a-16 izda ipf-75
carg en barr
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```
 58 a  63 fuer y unif   -11.00
 64       fuer y unif   -11.00      0.00      0.01
 64       fuer y unif   -13.20      0.01     -0.01
 65 a  69 fuer y unif   -13.20
 58 a  63 mome x unif   -26.82
 64       mome x unif   -27.85      0.00      0.01
 64       mome x unif   -33.42      0.01     -0.01
 65 a  69 mome x unif   -34.69
 58 a  63 fuer z unif     0.16
 64       fuer z unif     0.16      0.00      0.01
 64       fuer z unif     0.20      0.01     -0.01
 65 a  69 fuer z unif     0.20
 58 a  63 mome x unif     0.65
 64       mome x unif     0.65      0.00      0.01
 64       mome x unif     0.78      0.01     -0.01
 65 a  69 mome x unif     0.78
 70 a  81 fuer y unif   -11.00
 70 a  81 mome x unif   -31.93
 70 a  81 fuer z unif     0.16
 70 a  81 mome x unif     0.65
 34 a  45 fuer y unif   -11.00
 34 a  45 mome x unif   -23.99
 34 a  45 fuer z unif     0.16
 34 a  45 mome x unif     0.65
 10 a  21 fuer y unif   -11.00
 10 a  21 mome x unif   -28.00
 10 a  21 fuer z unif     0.16
 10 a  21 mome x unif     0.65
 94 a 105 fuer y unif   -11.00
 94 a 105 mome x unif   -34.40
 94 a 105 fuer z unif     0.16
 94 a 105 mome x unif     0.65
 46 a  57 fuer y unif    -1.10
 46 a  57 mome x unif    -2.50
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.06
 22 a  33 fuer y unif    -1.10
 22 a  33 mome x unif    -2.50
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.06
  1 a   9 fuer y unif    -1.10
  1 a   9 mome x unif    -3.21
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.06
 82 a  93 fuer y unif    -1.10
 82 a  93 mome x unif    -3.50
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.06
106 a 114 fuer y unif    -1.10
106 a 114 mome x unif    -2.91
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.06
hipo 147 sob. a-17 izda ipf-75
carg en barr
 58 a  66 fuer y unif   -11.00
 67       fuer y unif   -11.00      0.00      0.01
 67       fuer y unif   -13.20      0.01     -0.01
 68 a  69 fuer y unif   -13.20
 58 a  66 mome x unif   -27.32
 67       mome x unif   -28.90      0.00      0.01
 67       mome x unif   -34.68      0.01     -0.01
 68 a  69 mome x unif   -35.34
 58 a  66 fuer z unif     0.16
 67       fuer z unif     0.16      0.00      0.01
```

67			fuer	z	unif	0.20	0.01 -0.01
68	a	69	fuer	z	unif	0.20	
58	a	66	mome	x	unif	0.65	
67			mome	x	unif	0.65	0.00 0.01
67			mome	x	unif	0.78	0.01 -0.01
68	a	69	mome	x	unif	0.78	
70	a	72	fuer	y	unif	-13.20	
73			fuer	y	unif	-13.20	0.00 0.01
73			fuer	y	unif	-11.00	0.01 -0.01
74	a	81	fuer	y	unif	-11.00	
70	a	72	mome	x	unif	-36.45	
73			mome	x	unif	-37.34	0.00 0.01
73			mome	x	unif	-31.12	0.01 -0.01
74	a	81	mome	x	unif	-32.68	
70	a	72	fuer	z	unif	0.20	
73			fuer	z	unif	0.20	0.00 0.01
73			fuer	z	unif	0.16	0.01 -0.01
74	a	81	fuer	z	unif	0.16	
70	a	72	mome	x	unif	0.78	
73			mome	x	unif	0.78	0.00 0.01
73			mome	x	unif	0.65	0.01 -0.01
74	a	81	mome	x	unif	0.65	
34	a	45	fuer	y	unif	-11.00	
34	a	45	mome	x	unif	-23.99	
34	a	45	fuer	z	unif	0.16	
34	a	45	mome	x	unif	0.65	
10	a	21	fuer	y	unif	-11.00	
10	a	21	mome	x	unif	-28.00	
10	a	21	fuer	z	unif	0.16	
10	a	21	mome	x	unif	0.65	
94	a	105	fuer	y	unif	-11.00	
94	a	105	mome	x	unif	-34.40	
94	a	105	fuer	z	unif	0.16	
94	a	105	mome	x	unif	0.65	
46	a	57	fuer	y	unif	-1.10	
46	a	57	mome	x	unif	-2.50	
46	a	57	fuer	z	unif	0.02	
46	a	57	mome	x	unif	0.06	
22	a	33	fuer	y	unif	-1.10	
22	a	33	mome	x	unif	-2.50	
22	a	33	fuer	z	unif	0.02	
22	a	33	mome	x	unif	0.06	
1	a	9	fuer	y	unif	-1.10	
1	a	9	mome	x	unif	-3.21	
1	a	9	fuer	z	unif	0.02	
1	a	9	mome	x	unif	0.06	
82	a	93	fuer	y	unif	-1.10	
82	a	93	mome	x	unif	-3.50	
82	a	93	fuer	z	unif	0.02	
82	a	93	mome	x	unif	0.06	
106	a	114	fuer	y	unif	-1.10	
106	a	114	mome	x	unif	-2.91	
106	a	114	fuer	z	unif	0.02	
106	a	114	mome	x	unif	0.06	

hipo 148 sob. a-18 izda ipf-75
carg en barr

58	a	69	fuer	y	unif	-11.00	
58	a	69	mome	x	unif	-27.86	
58	a	69	fuer	z	unif	0.16	
58	a	69	mome	x	unif	0.65	
70	a	75	fuer	y	unif	-13.20	
76			fuer	y	unif	-13.20	0.00 0.01
76			fuer	y	unif	-11.00	0.01 -0.01
77	a	81	fuer	y	unif	-11.00	
70	a	75	mome	x	unif	-37.12	
76			mome	x	unif	-38.66	0.00 0.01
76			mome	x	unif	-32.22	0.01 -0.01
77	a	81	mome	x	unif	-33.21	
70	a	75	fuer	z	unif	0.20	
76			fuer	z	unif	0.20	0.00 0.01
76			fuer	z	unif	0.16	0.01 -0.01
77	a	81	fuer	z	unif	0.16	
70	a	75	mome	x	unif	0.78	
76			mome	x	unif	0.78	0.00 0.01
76			mome	x	unif	0.65	0.01 -0.01
77	a	81	mome	x	unif	0.65	
34	a	45	fuer	y	unif	-11.00	
34	a	45	mome	x	unif	-23.99	
34	a	45	fuer	z	unif	0.16	
34	a	45	mome	x	unif	0.65	
10	a	21	fuer	y	unif	-11.00	
10	a	21	mome	x	unif	-28.00	
10	a	21	fuer	z	unif	0.16	
10	a	21	mome	x	unif	0.65	
94	a	105	fuer	y	unif	-11.00	
94	a	105	mome	x	unif	-34.40	
94	a	105	fuer	z	unif	0.16	
94	a	105	mome	x	unif	0.65	
46	a	57	fuer	y	unif	-1.10	
46	a	57	mome	x	unif	-2.50	
46	a	57	fuer	z	unif	0.02	
46	a	57	mome	x	unif	0.06	
22	a	33	fuer	y	unif	-1.10	
22	a	33	mome	x	unif	-2.50	
22	a	33	fuer	z	unif	0.02	
22	a	33	mome	x	unif	0.06	
1	a	9	fuer	y	unif	-1.10	
1	a	9	mome	x	unif	-3.21	
1	a	9	fuer	z	unif	0.02	
1	a	9	mome	x	unif	0.06	
82	a	93	fuer	y	unif	-1.10	
82	a	93	mome	x	unif	-3.50	
82	a	93	fuer	z	unif	0.02	
82	a	93	mome	x	unif	0.06	
106	a	114	fuer	y	unif	-1.10	
106	a	114	mome	x	unif	-2.91	
106	a	114	fuer	z	unif	0.02	
106	a	114	mome	x	unif	0.06	

hipo 149 sob. a-19 izda ipf-75
carg en barr

70	a	75	fuer	y	unif	-11.00	
76			fuer	y	unif	-11.00	0.00 0.01
76			fuer	y	unif	-13.20	0.01 -0.01
77	a	81	fuer	y	unif	-13.20	
70	a	75	mome	x	unif	-30.93	
76			mome	x	unif	-32.22	0.00 0.01
76			mome	x	unif	-38.66	0.01 -0.01
77	a	81	mome	x	unif	-39.86	
70	a	75	fuer	z	unif	0.16	
76			fuer	z	unif	0.16	0.00 0.01
76			fuer	z	unif	0.20	0.01 -0.01
77	a	81	fuer	z	unif	0.20	
70	a	75	mome	x	unif	0.65	
76			mome	x	unif	0.65	0.00 0.01
76			mome	x	unif	0.78	0.01 -0.01
77	a	81	mome	x	unif	0.78	
82	a	93	fuer	y	unif	-11.00	
82	a	93	mome	x	unif	-35.01	

```
 82 a  93 fuer z unif     0.16
 82 a  93 mome x unif     0.65
 46 a  57 fuer y unif   -11.00
 46 a  57 mome x unif   -24.96
 46 a  57 fuer z unif     0.16
 46 a  57 mome x unif     0.65
 22 a  33 fuer y unif   -11.00
 22 a  33 mome x unif   -25.00
 22 a  33 fuer z unif     0.16
 22 a  33 mome x unif     0.65
  1 a   9 fuer y unif   -11.00
  1 a   9 mome x unif   -32.15
  1 a   9 fuer z unif     0.16
  1 a   9 mome x unif     0.65
106 a 114 fuer y unif   -11.00
106 a 114 mome x unif   -29.13
106 a 114 fuer z unif     0.16
106 a 114 mome x unif     0.65
 58 a  69 fuer y unif    -1.10
 58 a  69 mome x unif    -2.79
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.06
 34 a  45 fuer y unif    -1.10
 34 a  45 mome x unif    -2.40
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.06
 10 a  21 fuer y unif    -1.10
 10 a  21 mome x unif    -2.80
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.06
 94 a 105 fuer y unif    -1.10
 94 a 105 mome x unif    -3.44
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.06
hipo 150 sob. a-20 izda ipf-75
carg en barr
 70 a  78 fuer y unif   -11.00
 79       fuer y unif   -11.00     0.00     0.01
 79       fuer y unif   -13.20     0.01    -0.01
 80 a  81 fuer y unif   -13.20
 70 a  78 mome x unif   -31.45
 79       mome x unif   -33.24     0.00     0.01
 79       mome x unif   -39.89     0.01    -0.01
 80 a  81 mome x unif   -40.45
 70 a  78 fuer z unif     0.16
 79       fuer z unif     0.16     0.00     0.01
 79       fuer z unif     0.20     0.01    -0.01
 80 a  81 fuer z unif     0.20
 70 a  78 mome x unif     0.65
 79       mome x unif     0.65     0.00     0.01
 79       mome x unif     0.78     0.01    -0.01
 80 a  81 mome x unif     0.78
 82 a  84 fuer y unif   -13.20
 85       fuer y unif   -13.20     0.00     0.01
 85       fuer y unif   -11.00     0.01    -0.01
 86 a  93 fuer y unif   -11.00
 82 a  84 mome x unif   -41.30
 85       mome x unif   -41.90     0.00     0.01
 85       mome x unif   -34.91     0.01    -0.01
 86 a  93 mome x unif   -35.50
 82 a  84 fuer z unif     0.20
 85       fuer z unif     0.20     0.00     0.01
 85       fuer z unif     0.16     0.01    -0.01
 86 a  93 fuer z unif     0.16
 82 a  84 mome x unif     0.78
 85       mome x unif     0.78     0.00     0.01
 85       mome x unif     0.65     0.01    -0.01
 86 a  93 mome x unif     0.65
 46 a  57 fuer y unif   -11.00
 46 a  57 mome x unif   -24.96
 46 a  57 fuer z unif     0.16
 46 a  57 mome x unif     0.65
 22 a  33 fuer y unif   -11.00
 22 a  33 mome x unif   -25.00
 22 a  33 fuer z unif     0.16
 22 a  33 mome x unif     0.65
  1 a   9 fuer y unif   -11.00
  1 a   9 mome x unif   -32.15
  1 a   9 fuer z unif     0.16
  1 a   9 mome x unif     0.65
106 a 114 fuer y unif   -11.00
106 a 114 mome x unif   -29.13
106 a 114 fuer z unif     0.16
106 a 114 mome x unif     0.65
 58 a  69 fuer y unif    -1.10
 58 a  69 mome x unif    -2.79
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.06
 34 a  45 fuer y unif    -1.10
 34 a  45 mome x unif    -2.40
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.06
 10 a  21 fuer y unif    -1.10
 10 a  21 mome x unif    -2.80
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.06
 94 a 105 fuer y unif    -1.10
 94 a 105 mome x unif    -3.44
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.06
hipo 151 sob. a-21 izda ipf-75
carg en barr
 70 a  81 fuer y unif   -11.00
 70 a  81 mome x unif   -31.93
 70 a  81 fuer z unif     0.16
 70 a  81 mome x unif     0.65
 82 a  87 fuer y unif   -13.20
 88       fuer y unif   -13.20     0.00     0.01
 88       fuer y unif   -11.00     0.01    -0.01
 89 a  93 fuer y unif   -11.00
 82 a  87 mome x unif   -41.68
 88       mome x unif   -42.57     0.00     0.01
 88       mome x unif   -35.48     0.01    -0.01
 89 a  93 mome x unif   -35.74
 82 a  87 fuer z unif     0.20
 88       fuer z unif     0.20     0.00     0.01
 88       fuer z unif     0.16     0.01    -0.01
 89 a  93 fuer z unif     0.16
 82 a  87 mome x unif     0.78
 88       mome x unif     0.78     0.00     0.01
 88       mome x unif     0.65     0.01    -0.01
 89 a  93 mome x unif     0.65
 46 a  57 fuer y unif   -11.00
 46 a  57 mome x unif   -24.96
 46 a  57 fuer z unif     0.16
 46 a  57 mome x unif     0.65
 22 a  33 fuer y unif   -11.00
 22 a  33 mome x unif   -25.00
```

```
 22 a  33 fuer z unif     0.16
 22 a  33 mome x unif     0.65
  1 a   9 fuer y unif   -11.00
  1 a   9 mome x unif   -32.15
  1 a   9 fuer z unif     0.16
  1 a   9 mome x unif     0.65
106 a 114 fuer y unif   -11.00
106 a 114 mome x unif   -29.13
106 a 114 fuer z unif     0.16
106 a 114 mome x unif     0.65
 58 a  69 fuer y unif    -1.10
 58 a  69 mome x unif    -2.79
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.06
 34 a  45 fuer y unif    -1.10
 34 a  45 mome x unif    -2.40
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.06
 10 a  21 fuer y unif    -1.10
 10 a  21 mome x unif    -2.80
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.06
 94 a 105 fuer y unif    -1.10
 94 a 105 mome x unif    -3.44
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.06
hipo 152 sob. a-22 izda ipf-75
carg en barr
 82 a  87 fuer y unif   -11.00
 88       fuer y unif   -11.00     0.00     0.01
 88       fuer y unif   -13.20     0.01    -0.01
 89 a  93 fuer y unif   -13.20
 82 a  87 mome x unif   -34.73
 88       mome x unif   -35.48     0.00     0.01
 88       mome x unif   -42.57     0.01    -0.01
 89 a  93 mome x unif   -42.89
 82 a  87 fuer z unif     0.16
 88       fuer z unif     0.16     0.00     0.01
 88       fuer z unif     0.20     0.01    -0.01
 89 a  93 fuer z unif     0.20
 82 a  87 mome x unif     0.65
 88       mome x unif     0.65     0.00     0.01
 88       mome x unif     0.78     0.01    -0.01
 89 a  93 mome x unif     0.78
 94 a 105 fuer y unif   -11.00
 94 a 105 mome x unif   -34.40
 94 a 105 fuer z unif     0.16
 94 a 105 mome x unif     0.65
 58 a  69 fuer y unif   -11.00
 58 a  69 mome x unif   -27.86
 58 a  69 fuer z unif     0.16
 58 a  69 mome x unif     0.65
 34 a  45 fuer y unif   -11.00
 34 a  45 mome x unif   -23.99
 34 a  45 fuer z unif     0.16
 34 a  45 mome x unif     0.65
 10 a  21 fuer y unif   -11.00
 10 a  21 mome x unif   -28.00
 10 a  21 fuer z unif     0.16
 10 a  21 mome x unif     0.65
 70 a  81 fuer y unif    -1.10
 70 a  81 mome x unif    -3.19
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.06
 46 a  57 fuer y unif    -1.10
 46 a  57 mome x unif    -2.50
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.06
 22 a  33 fuer y unif    -1.10
 22 a  33 mome x unif    -2.50
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.06
  1 a   9 fuer y unif    -1.10
  1 a   9 mome x unif    -3.21
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.06
106 a 114 fuer y unif    -1.10
106 a 114 mome x unif    -2.91
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.06
hipo 153 sob. a-23 izda ipf-75
carg en barr
 82 a  90 fuer y unif   -11.00
 91       fuer y unif   -11.00     0.00     0.01
 91       fuer y unif   -13.20     0.01    -0.01
 92 a  93 fuer y unif   -13.20
 82 a  90 mome x unif   -34.94
 91       mome x unif   -35.80     0.00     0.01
 91       mome x unif   -42.97     0.01    -0.01
 92 a  93 mome x unif   -43.04
 82 a  90 fuer z unif     0.16
 91       fuer z unif     0.16     0.00     0.01
 91       fuer z unif     0.20     0.01    -0.01
 92 a  93 fuer z unif     0.20
 82 a  90 mome x unif     0.65
 91       mome x unif     0.65     0.00     0.01
 91       mome x unif     0.78     0.01    -0.01
 92 a  93 mome x unif     0.78
 94 a  96 fuer y unif   -13.20
 97       fuer y unif   -13.20     0.00     0.01
 97       fuer y unif   -11.00     0.01    -0.01
 98 a 105 fuer y unif   -11.00
 94 a  96 mome x unif   -42.94
 97       mome x unif   -42.69     0.00     0.01
 97       mome x unif   -35.57     0.01    -0.01
 98 a 105 mome x unif   -34.17
 94 a  96 fuer z unif     0.20
 97       fuer z unif     0.20     0.00     0.01
 97       fuer z unif     0.16     0.01    -0.01
 98 a 105 fuer z unif     0.16
 94 a  96 mome x unif     0.78
 97       mome x unif     0.78     0.00     0.01
 97       mome x unif     0.65     0.01    -0.01
 98 a 105 mome x unif     0.65
 58 a  69 fuer y unif   -11.00
 58 a  69 mome x unif   -27.86
 58 a  69 fuer z unif     0.16
 58 a  69 mome x unif     0.65
 34 a  45 fuer y unif   -11.00
 34 a  45 mome x unif   -23.99
 34 a  45 fuer z unif     0.16
 34 a  45 mome x unif     0.65
 10 a  21 fuer y unif   -11.00
 10 a  21 mome x unif   -28.00
 10 a  21 fuer z unif     0.16
 10 a  21 mome x unif     0.65
 70 a  81 fuer y unif    -1.10
 70 a  81 mome x unif    -3.19
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```
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.06
 46 a  57 fuer y unif    -1.10
 46 a  57 mome x unif    -2.50
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.06
 22 a  33 fuer y unif    -1.10
 22 a  33 mome x unif    -2.50
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.06
  1 a   9 fuer y unif    -1.10
  1 a   9 mome x unif    -3.21
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.06
106 a 114 fuer y unif    -1.10
106 a 114 mome x unif    -2.91
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.06
hipo 154 sob. a-24 izda ipf-75
carg en barr
 82 a  93 fuer y unif   -11.00
 82 a  93 mome x unif   -35.01
 82 a  93 fuer z unif     0.16
 82 a  93 mome x unif     0.65
 94 a  99 fuer y unif   -13.20
100       fuer y unif   -13.20     0.00     0.01
100       fuer y unif   -11.00     0.01    -0.01
101 a 105 fuer y unif   -11.00
 94 a  99 mome x unif   -42.63
100       mome x unif   -41.93     0.00     0.01
100       mome x unif   -34.94     0.01    -0.01
101 a 105 mome x unif   -33.79
 94 a  99 fuer z unif     0.20
100       fuer z unif     0.20     0.00     0.01
100       fuer z unif     0.16     0.01    -0.01
101 a 105 fuer z unif     0.16
 94 a  99 mome x unif     0.78
100       mome x unif     0.78     0.00     0.01
100       mome x unif     0.65     0.01    -0.01
101 a 105 mome x unif     0.65
 58 a  69 fuer y unif   -11.00
 58 a  69 mome x unif   -27.86
 58 a  69 fuer z unif     0.16
 58 a  69 mome x unif     0.65
 34 a  45 fuer y unif   -11.00
 34 a  45 mome x unif   -23.99
 34 a  45 fuer z unif     0.16
 34 a  45 mome x unif     0.65
 10 a  21 fuer y unif   -11.00
 10 a  21 mome x unif   -28.00
 10 a  21 fuer z unif     0.16
 10 a  21 mome x unif     0.65
 70 a  81 fuer y unif    -1.10
 70 a  81 mome x unif    -3.19
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.06
 46 a  57 fuer y unif    -1.10
 46 a  57 mome x unif    -2.50
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.06
 22 a  33 fuer y unif    -1.10
 22 a  33 mome x unif    -2.50
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.06
  1 a   9 fuer y unif    -1.10
  1 a   9 mome x unif    -3.21
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.06
106 a 114 fuer y unif    -1.10
106 a 114 mome x unif    -2.91
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.06
hipo 155 sob. a-25 izda ipf-75
carg en barr
 94 a  99 fuer y unif   -11.00
100       fuer y unif   -11.00     0.00     0.01
100       fuer y unif   -13.20     0.01    -0.01
101 a 105 fuer y unif   -13.20
 94 a  99 mome x unif   -35.52
100       mome x unif   -34.94     0.00     0.01
100       mome x unif   -41.93     0.01    -0.01
101 a 105 mome x unif   -40.55
 94 a  99 fuer z unif     0.16
100       fuer z unif     0.16     0.00     0.01
100       fuer z unif     0.20     0.01    -0.01
101 a 105 fuer z unif     0.20
 94 a  99 mome x unif     0.65
100       mome x unif     0.65     0.00     0.01
100       mome x unif     0.78     0.01    -0.01
101 a 105 mome x unif     0.78
106 a 114 fuer y unif   -11.00
106 a 114 mome x unif   -29.13
106 a 114 fuer z unif     0.16
106 a 114 mome x unif     0.65
 70 a  81 fuer y unif   -11.00
 70 a  81 mome x unif   -31.93
 70 a  81 fuer z unif     0.16
 70 a  81 mome x unif     0.65
 46 a  57 fuer y unif   -11.00
 46 a  57 mome x unif   -24.96
 46 a  57 fuer z unif     0.16
 46 a  57 mome x unif     0.65
 22 a  33 fuer y unif   -11.00
 22 a  33 mome x unif   -25.00
 22 a  33 fuer z unif     0.16
 22 a  33 mome x unif     0.65
  1 a   9 fuer y unif   -11.00
  1 a   9 mome x unif   -32.15
  1 a   9 fuer z unif     0.16
  1 a   9 mome x unif     0.65
 82 a  93 fuer y unif    -1.10
 82 a  93 mome x unif    -3.50
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.06
 58 a  69 fuer y unif    -1.10
 58 a  69 mome x unif    -2.79
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.06
 34 a  45 fuer y unif    -1.10
 34 a  45 mome x unif    -2.40
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.06
 10 a  21 fuer y unif    -1.10
 10 a  21 mome x unif    -2.80
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.06
hipo 156 sob. a-26 izda ipf-75
carg en barr
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```
 94 a 102 fuer y unif   -11.00
103       fuer y unif   -11.00      0.00      0.01
103       fuer y unif   -13.20      0.01     -0.01
104 a 105 fuer y unif   -13.20
 94 a 102 mome x unif   -35.07
103       mome x unif   -33.89      0.00      0.01
103       mome x unif   -40.66      0.01     -0.01
104 a 105 mome x unif   -39.83
 94 a 102 fuer z unif     0.16
103       fuer z unif     0.16      0.00      0.01
103       fuer z unif     0.20      0.01     -0.01
104 a 105 fuer z unif     0.20
 94 a 102 mome x unif     0.65
103       mome x unif     0.65      0.00      0.01
103       mome x unif     0.78      0.01     -0.01
104 a 105 mome x unif     0.78
106 a 108 fuer y unif   -13.20
109       fuer y unif   -13.20      0.00      0.01
109       fuer y unif   -11.00      0.01     -0.01
110 a 114 fuer y unif   -11.00
106 a 108 mome x unif   -38.11
109       mome x unif   -36.47      0.00      0.01
109       mome x unif   -30.39      0.01     -0.01
110 a 114 mome x unif   -27.74
106 a 108 fuer z unif     0.20
109       fuer z unif     0.20      0.00      0.01
109       fuer z unif     0.16      0.01     -0.01
110 a 114 fuer z unif     0.16
106 a 108 mome x unif     0.78
109       mome x unif     0.78      0.00      0.01
109       mome x unif     0.65      0.01     -0.01
110 a 114 mome x unif     0.65
 70 a  81 fuer y unif   -11.00
 70 a  81 mome x unif   -31.93
 70 a  81 fuer z unif     0.16
 70 a  81 mome x unif     0.65
 46 a  57 fuer y unif   -11.00
 46 a  57 mome x unif   -24.96
 46 a  57 fuer z unif     0.16
 46 a  57 mome x unif     0.65
 22 a  33 fuer y unif   -11.00
 22 a  33 mome x unif   -25.00
 22 a  33 fuer z unif     0.16
 22 a  33 mome x unif     0.65
  1 a   9 fuer y unif   -11.00
  1 a   9 mome x unif   -32.15
  1 a   9 fuer z unif     0.16
  1 a   9 mome x unif     0.65
 82 a  93 fuer y unif    -1.10
 82 a  93 mome x unif    -3.50
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.06
 58 a  69 fuer y unif    -1.10
 58 a  69 mome x unif    -2.79
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.06
 34 a  45 fuer y unif    -1.10
 34 a  45 mome x unif    -2.40
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.06
 10 a  21 fuer y unif    -1.10
 10 a  21 mome x unif    -2.80
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.06
```

hipo 157 sob. a-27 izda ipf-75
carg en barr

```
 94 a 105 fuer y unif   -11.00
 94 a 105 mome x unif   -34.40
 94 a 105 fuer z unif     0.16
 94 a 105 mome x unif     0.65
106 a 111 fuer y unif   -13.20
112       fuer y unif   -13.20      0.00      0.01
112       fuer y unif   -11.00      0.01     -0.01
113 a 114 fuer y unif   -11.00
106 a 111 mome x unif   -36.70
112       mome x unif   -33.46      0.00      0.01
112       mome x unif   -27.88      0.01     -0.01
113 a 114 mome x unif   -26.39
106 a 111 fuer z unif     0.20
112       fuer z unif     0.20      0.00      0.01
112       fuer z unif     0.16      0.01     -0.01
113 a 114 fuer z unif     0.16
106 a 111 mome x unif     0.78
112       mome x unif     0.78      0.00      0.01
112       mome x unif     0.65      0.01     -0.01
113 a 114 mome x unif     0.65
 70 a  81 fuer y unif   -11.00
 70 a  81 mome x unif   -31.93
 70 a  81 fuer z unif     0.16
 70 a  81 mome x unif     0.65
 46 a  57 fuer y unif   -11.00
 46 a  57 mome x unif   -24.96
 46 a  57 fuer z unif     0.16
 46 a  57 mome x unif     0.65
 22 a  33 fuer y unif   -11.00
 22 a  33 mome x unif   -25.00
 22 a  33 fuer z unif     0.16
 22 a  33 mome x unif     0.65
  1 a   9 fuer y unif   -11.00
  1 a   9 mome x unif   -32.15
  1 a   9 fuer z unif     0.16
  1 a   9 mome x unif     0.65
 82 a  93 fuer y unif    -1.10
 82 a  93 mome x unif    -3.50
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.06
 58 a  69 fuer y unif    -1.10
 58 a  69 mome x unif    -2.79
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.06
 34 a  45 fuer y unif    -1.10
 34 a  45 mome x unif    -2.40
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.06
 10 a  21 fuer y unif    -1.10
 10 a  21 mome x unif    -2.80
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.06
```

hipo 158 sob. v- 1 dcha ipf-75
carg en barr

```
  1 a   6 fuer y unif   -13.20
  7       fuer y unif   -13.20      0.00      0.01
  7       fuer y unif   -11.00      0.01     -0.01
  8 a   9 fuer y unif   -11.00
  1 a   6 mome x unif    32.71
  7       mome x unif    34.74      0.00      0.01
  7       mome x unif    28.95      0.01     -0.01
  8 a   9 mome x unif    29.60
```

```
  1 a   6 fuer z unif     0.20
  7       fuer z unif     0.20      0.00      0.01
  7       fuer z unif     0.16      0.01     -0.01
  8 a   9 fuer z unif     0.16
  1 a   6 mome x unif     0.78
  7       mome x unif     0.78      0.00      0.01
  7       mome x unif     0.65      0.01     -0.01
  8 a   9 mome x unif     0.65
 22 a  33 fuer y unif   -11.00
 22 a  33 mome x unif    35.06
 22 a  33 fuer z unif     0.16
 22 a  33 mome x unif     0.65
 46 a  57 fuer y unif   -11.00
 46 a  57 mome x unif    35.10
 46 a  57 fuer z unif     0.16
 46 a  57 mome x unif     0.65
 70 a  81 fuer y unif   -11.00
 70 a  81 mome x unif    28.13
 70 a  81 fuer z unif     0.16
 70 a  81 mome x unif     0.65
 94 a 105 fuer y unif   -11.00
 94 a 105 mome x unif    25.66
 94 a 105 fuer z unif     0.16
 94 a 105 mome x unif     0.65
 10 a  21 fuer y unif    -1.10
 10 a  21 mome x unif     3.21
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.06
 34 a  45 fuer y unif    -1.10
 34 a  45 mome x unif     3.61
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.06
 58 a  69 fuer y unif    -1.10
 58 a  69 mome x unif     3.22
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.06
 82 a  93 fuer y unif    -1.10
 82 a  93 mome x unif     2.50
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.06
106 a 114 fuer y unif    -1.10
106 a 114 mome x unif     3.09
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.06
hipo 159 sob. v- 2 dcha ipf-75
carg en barr
  1 a   1 fuer y unif   -11.00
  1 a   1 mome x unif    26.01
  1 a   1 fuer z unif     0.16
  1 a   1 mome x unif     0.65
  2       fuer y unif   -11.00      0.00      2.50
  2       fuer y unif   -13.20      2.50     -0.01
  3 a   7 fuer y unif   -13.20
  8       fuer y unif   -13.20      0.00      2.50
  8       fuer y unif   -11.00      2.50     -0.01
  2       mome x unif    26.54      0.00      2.50
  2       mome x unif    31.85      2.50     -0.01
  3 a   7 mome x unif    33.60
  8       mome x unif    35.26      0.00      2.50
  8       mome x unif    29.39      2.50     -0.01
  2       fuer z unif     0.16      0.00      2.50
  2       fuer z unif     0.20      2.50     -0.01
  3 a   7 fuer z unif     0.20
  8       fuer z unif     0.20      0.00      2.50
  8       fuer z unif     0.16      2.50     -0.01
  2       mome x unif     0.65      0.00      2.50
  2       mome x unif     0.78      2.50     -0.01
  3 a   7 mome x unif    35.26
  8       mome x unif     0.78      0.00      2.50
  8       mome x unif     0.65      2.50     -0.01
  9 a   9 fuer y unif   -11.00
  9 a   9 mome x unif    29.82
  9 a   9 fuer z unif     0.16
  9 a   9 mome x unif     0.65
 22 a  33 fuer y unif   -11.00
 22 a  33 mome x unif    35.06
 22 a  33 fuer z unif     0.16
 22 a  33 mome x unif     0.65
 46 a  57 fuer y unif   -11.00
 46 a  57 mome x unif    35.10
 46 a  57 fuer z unif     0.16
 46 a  57 mome x unif     0.65
 70 a  81 fuer y unif   -11.00
 70 a  81 mome x unif    28.13
 70 a  81 fuer z unif     0.16
 70 a  81 mome x unif     0.65
 94 a 105 fuer y unif   -11.00
 94 a 105 mome x unif    25.66
 94 a 105 fuer z unif     0.16
 94 a 105 mome x unif     0.65
 10 a  21 fuer y unif    -1.10
 10 a  21 mome x unif     3.21
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.06
 34 a  45 fuer y unif    -1.10
 34 a  45 mome x unif     3.61
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.06
 58 a  69 fuer y unif    -1.10
 58 a  69 mome x unif     3.22
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.06
 82 a  93 fuer y unif    -1.10
 82 a  93 mome x unif     2.50
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.06
106 a 114 fuer y unif    -1.10
106 a 114 mome x unif     3.09
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.06
hipo 160 sob. v- 3 dcha ipf-75
carg en barr
  1 a   3 fuer y unif   -11.00
  4       fuer y unif   -11.00      0.00      0.01
  4       fuer y unif   -13.20      0.01     -0.01
  5 a   9 fuer y unif   -13.20
  1 a   3 mome x unif    26.53
  4       mome x unif    27.54      0.00      0.01
  4       mome x unif    33.05      0.01     -0.01
  5 a   9 mome x unif    34.71
  1 a   3 fuer z unif     0.16
  4       fuer z unif     0.16      0.00      0.01
  4       fuer z unif     0.20      0.01     -0.01
  5 a   9 fuer z unif     0.20
  1 a   3 mome x unif     0.65
  4       mome x unif     0.65      0.00      0.01
  4       mome x unif     0.78      0.01     -0.01
  5 a   9 mome x unif     0.78
```

```
 22 a  33 fuer y unif   -11.00
 22 a  33 mome x unif    35.06
 22 a  33 fuer z unif     0.16
 22 a  33 mome x unif     0.65
 46 a  57 fuer y unif   -11.00
 46 a  57 mome x unif    35.10
 46 a  57 fuer z unif     0.16
 46 a  57 mome x unif     0.65
 70 a  81 fuer y unif   -11.00
 70 a  81 mome x unif    28.13
 70 a  81 fuer z unif     0.16
 70 a  81 mome x unif     0.65
 94 a 105 fuer y unif   -11.00
 94 a 105 mome x unif    25.66
 94 a 105 fuer z unif     0.16
 94 a 105 mome x unif     0.65
 10 a  21 fuer y unif    -1.10
 10 a  21 mome x unif     3.21
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.06
 34 a  45 fuer y unif    -1.10
 34 a  45 mome x unif     3.61
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.06
 58 a  69 fuer y unif    -1.10
 58 a  69 mome x unif     3.22
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.06
 82 a  93 fuer y unif    -1.10
 82 a  93 mome x unif     2.50
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.06
106 a 114 fuer y unif    -1.10
106 a 114 mome x unif     3.09
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.06
hipo 161 sob. v- 4 dcha ipf-75
carg en barr
 10 a  15 fuer y unif   -13.20
 16       fuer y unif   -13.20      0.00     0.01
 16       fuer y unif   -11.00      0.01    -0.01
 17 a  21 fuer y unif   -11.00
 10 a  15 mome x unif    37.40
 16       mome x unif    38.92      0.00     0.01
 16       mome x unif    32.43      0.01    -0.01
 17 a  21 mome x unif    33.32
 10 a  15 fuer z unif     0.20
 16       fuer z unif     0.20      0.00     0.01
 16       fuer z unif     0.16      0.01    -0.01
 17 a  21 fuer z unif     0.16
 10 a  15 mome x unif     0.78
 16       mome x unif     0.78      0.00     0.01
 16       mome x unif     0.65      0.01    -0.01
 17 a  21 mome x unif     0.65
 34 a  45 fuer y unif   -11.00
 34 a  45 mome x unif    36.07
 34 a  45 fuer z unif     0.16
 34 a  45 mome x unif     0.65
 58 a  69 fuer y unif   -11.00
 58 a  69 mome x unif    32.20
 58 a  69 fuer z unif     0.16
 58 a  69 mome x unif     0.65
 82 a  93 fuer y unif   -11.00
 82 a  93 mome x unif    25.05
 82 a  93 fuer z unif     0.16
 82 a  93 mome x unif     0.65
106 a 114 fuer y unif   -11.00
106 a 114 mome x unif    30.93
106 a 114 fuer z unif     0.16
106 a 114 mome x unif     0.65
  1 a   9 fuer y unif    -1.10
  1 a   9 mome x unif     2.79
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.06
 22 a  33 fuer y unif    -1.10
 22 a  33 mome x unif     3.51
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.06
 46 a  57 fuer y unif    -1.10
 46 a  57 mome x unif     3.51
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.06
 70 a  81 fuer y unif    -1.10
 70 a  81 mome x unif     2.81
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.06
 94 a 105 fuer y unif    -1.10
 94 a 105 mome x unif     2.57
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.06
hipo 162 sob. v- 5 dcha ipf-75
carg en barr
 10 a  12 fuer y unif   -11.00
 10 a  12 mome x unif    30.63
 10 a  12 fuer z unif     0.16
 10 a  12 mome x unif     0.65
 13       fuer y unif   -11.00      0.00     0.01
 13       fuer y unif   -13.20      0.01    -0.01
 14 a  18 fuer y unif   -13.20
 19       fuer y unif   -13.20      0.00     0.01
 19       fuer y unif   -11.00      0.01    -0.01
 13       mome x unif    31.40      0.00     0.01
 13       mome x unif    37.68      0.01    -0.01
 14 a  18 mome x unif    38.88
 19       mome x unif    40.01      0.00     0.01
 19       mome x unif    33.34      0.01    -0.01
 13       fuer z unif     0.16      0.00     0.01
 13       fuer z unif     0.20      0.01    -0.01
 14 a  18 fuer z unif     0.20
 19       fuer z unif     0.20      0.00     0.01
 19       fuer z unif     0.16      0.01    -0.01
 13       mome x unif     0.65      0.00     0.01
 13       mome x unif     0.78      0.01    -0.01
 14 a  18 mome x unif    40.01
 19       mome x unif     0.78      0.00     0.01
 19       mome x unif     0.65      0.01    -0.01
 20 a  21 fuer y unif   -11.00
 20 a  21 mome x unif    33.76
 20 a  21 fuer z unif     0.16
 20 a  21 mome x unif     0.65
 34 a  45 fuer y unif   -11.00
 34 a  45 mome x unif    36.07
 34 a  45 fuer z unif     0.16
 34 a  45 mome x unif     0.65
 58 a  69 fuer y unif   -11.00
 58 a  69 mome x unif    32.20
 58 a  69 fuer z unif     0.16
 58 a  69 mome x unif     0.65
```

82	a	93	fuer y unif	-11.00		
82	a	93	mome x unif	25.05		
82	a	93	fuer z unif	0.16		
82	a	93	mome x unif	0.65		
106	a	114	fuer y unif	-11.00		
106	a	114	mome x unif	30.93		
106	a	114	fuer z unif	0.16		
106	a	114	mome x unif	0.65		
1	a	9	fuer y unif	-1.10		
1	a	9	mome x unif	2.79		
1	a	9	fuer z unif	0.02		
1	a	9	mome x unif	0.06		
22	a	33	fuer y unif	-1.10		
22	a	33	mome x unif	3.51		
22	a	33	fuer z unif	0.02		
22	a	33	mome x unif	0.06		
46	a	57	fuer y unif	-1.10		
46	a	57	mome x unif	3.51		
46	a	57	fuer z unif	0.02		
46	a	57	mome x unif	0.06		
70	a	81	fuer y unif	-1.10		
70	a	81	mome x unif	2.81		
70	a	81	fuer z unif	0.02		
70	a	81	mome x unif	0.06		
94	a	105	fuer y unif	-1.10		
94	a	105	mome x unif	2.57		
94	a	105	fuer z unif	0.02		
94	a	105	mome x unif	0.06		

hipo 163 sob. v- 6 dcha ipf-75
carg en barr

10	a	15	fuer y unif	-11.00		
16			fuer y unif	-11.00	0.00	0.01
16			fuer y unif	-13.20	0.01	-0.01
17	a	21	fuer y unif	-13.20		
10	a	15	mome x unif	31.17		
16			mome x unif	32.43	0.00	0.01
16			mome x unif	38.92	0.01	-0.01
17	a	21	mome x unif	39.98		
10	a	15	fuer z unif	0.16		
16			fuer z unif	0.16	0.00	0.01
16			fuer z unif	0.20	0.01	-0.01
17	a	21	fuer z unif	0.20		
10	a	15	mome x unif	0.65		
16			mome x unif	0.65	0.00	0.01
16			mome x unif	0.78	0.01	-0.01
17	a	21	mome x unif	0.78		
34	a	45	fuer y unif	-11.00		
34	a	45	mome x unif	36.07		
34	a	45	fuer z unif	0.16		
34	a	45	mome x unif	0.65		
58	a	69	fuer y unif	-11.00		
58	a	69	mome x unif	32.20		
58	a	69	fuer z unif	0.16		
58	a	69	mome x unif	0.65		
82	a	93	fuer y unif	-11.00		
82	a	93	mome x unif	25.05		
82	a	93	fuer z unif	0.16		
82	a	93	mome x unif	0.65		
106	a	114	fuer y unif	-11.00		
106	a	114	mome x unif	30.93		
106	a	114	fuer z unif	0.16		
106	a	114	mome x unif	0.65		
1	a	9	fuer y unif	-1.10		
1	a	9	mome x unif	2.79		
1	a	9	fuer z unif	0.02		
1	a	9	mome x unif	0.06		
22	a	33	fuer y unif	-1.10		
22	a	33	mome x unif	3.51		
22	a	33	fuer z unif	0.02		
22	a	33	mome x unif	0.06		
46	a	57	fuer y unif	-1.10		
46	a	57	mome x unif	3.51		
46	a	57	fuer z unif	0.02		
46	a	57	mome x unif	0.06		
70	a	81	fuer y unif	-1.10		
70	a	81	mome x unif	2.81		
70	a	81	fuer z unif	0.02		
70	a	81	mome x unif	0.06		
94	a	105	fuer y unif	-1.10		
94	a	105	mome x unif	2.57		
94	a	105	fuer z unif	0.02		
94	a	105	mome x unif	0.06		

hipo 164 sob. v- 7 dcha ipf-75
carg en barr

22	a	27	fuer y unif	-13.20		
28			fuer y unif	-13.20	0.00	0.01
28			fuer y unif	-11.00	0.01	-0.01
29	a	33	fuer y unif	-11.00		
22	a	27	mome x unif	41.59		
28			mome x unif	42.42	0.00	0.01
28			mome x unif	35.35	0.01	-0.01
29	a	33	mome x unif	35.73		
22	a	27	fuer z unif	0.20		
28			fuer z unif	0.20	0.00	0.01
28			fuer z unif	0.16	0.01	-0.01
29	a	33	fuer z unif	0.16		
22	a	27	mome x unif	0.78		
28			mome x unif	0.78	0.00	0.01
28			mome x unif	0.65	0.01	-0.01
29	a	33	mome x unif	0.65		
1	a	9	fuer y unif	-11.00		
1	a	9	mome x unif	27.91		
1	a	9	fuer z unif	0.16		
1	a	9	mome x unif	0.65		
46	a	57	fuer y unif	-11.00		
46	a	57	mome x unif	35.10		
46	a	57	fuer z unif	0.16		
46	a	57	mome x unif	0.65		
70	a	81	fuer y unif	-11.00		
70	a	81	mome x unif	28.13		
70	a	81	fuer z unif	0.16		
70	a	81	mome x unif	0.65		
94	a	105	fuer y unif	-11.00		
94	a	105	mome x unif	25.66		
94	a	105	fuer z unif	0.16		
94	a	105	mome x unif	0.65		
10	a	21	fuer y unif	-1.10		
10	a	21	mome x unif	3.21		
10	a	21	fuer z unif	0.02		
10	a	21	mome x unif	0.06		
34	a	45	fuer y unif	-1.10		
34	a	45	mome x unif	3.61		
34	a	45	fuer z unif	0.02		
34	a	45	mome x unif	0.06		
58	a	69	fuer y unif	-1.10		
58	a	69	mome x unif	3.22		
58	a	69	fuer z unif	0.02		
58	a	69	mome x unif	0.06		

```
 82 a  93 fuer y unif    -1.10
 82 a  93 mome x unif     2.50
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.06
106 a 114 fuer y unif    -1.10
106 a 114 mome x unif     3.09
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.06
hipo 165 sob. v- 8 dcha ipf-75
carg en barr
 22 a  24 fuer y unif   -11.00
 22 a  24 mome x unif    34.37
 22 a  24 fuer z unif     0.16
 22 a  24 mome x unif     0.65
 25       fuer y unif   -11.00      0.00      0.01
 25       fuer y unif   -13.20      0.01     -0.01
 26 a  30 fuer y unif   -13.20
 31       fuer y unif   -13.20      0.00      0.01
 31       fuer y unif   -11.00      0.01     -0.01
 25       mome x unif    34.80      0.00      0.01
 25       mome x unif    41.76      0.01     -0.01
 26 a  30 mome x unif    42.38
 31       mome x unif    42.92      0.00      0.01
 31       mome x unif    35.77      0.01     -0.01
 25       fuer z unif     0.16      0.00      0.01
 25       fuer z unif     0.20      0.01     -0.01
 26 a  30 fuer z unif     0.20
 31       fuer z unif     0.20      0.00      0.01
 31       fuer z unif     0.16      0.01     -0.01
 25       mome x unif     0.65      0.00      0.01
 25       mome x unif     0.78      0.01     -0.01
 26 a  30 mome x unif    42.92
 31       mome x unif     0.78      0.00      0.01
 31       mome x unif     0.65      0.01     -0.01
 32 a  33 fuer y unif   -11.00
 32 a  33 mome x unif    35.92
 32 a  33 fuer z unif     0.16
 32 a  33 mome x unif     0.65
  1 a   9 fuer y unif   -11.00
  1 a   9 mome x unif    27.91
  1 a   9 fuer z unif     0.16
  1 a   9 mome x unif     0.65
 46 a  57 fuer y unif   -11.00
 46 a  57 mome x unif    35.10
 46 a  57 fuer z unif     0.16
 46 a  57 mome x unif     0.65
 70 a  81 fuer y unif   -11.00
 70 a  81 mome x unif    28.13
 70 a  81 fuer z unif     0.16
 70 a  81 mome x unif     0.65
 94 a 105 fuer y unif   -11.00
 94 a 105 mome x unif    25.66
 94 a 105 fuer z unif     0.16
 94 a 105 mome x unif     0.65
 10 a  21 fuer y unif    -1.10
 10 a  21 mome x unif     3.21
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.06
 34 a  45 fuer y unif    -1.10
 34 a  45 mome x unif     3.61
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.06
 58 a  69 fuer y unif    -1.10
 58 a  69 mome x unif     3.22
```

```
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.06
 82 a  93 fuer y unif    -1.10
 82 a  93 mome x unif     2.50
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.06
106 a 114 fuer y unif    -1.10
106 a 114 mome x unif     3.09
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.06
hipo 166 sob. v- 9 dcha ipf-75
carg en barr
 22 a  27 fuer y unif   -11.00
 28       fuer y unif   -11.00      0.00      0.01
 28       fuer y unif   -13.20      0.01     -0.01
 29 a  33 fuer y unif   -13.20
 22 a  27 mome x unif    34.66
 28       mome x unif    35.35      0.00      0.01
 28       mome x unif    42.42      0.01     -0.01
 29 a  33 mome x unif    42.88
 22 a  27 fuer z unif     0.16
 28       fuer z unif     0.16      0.00      0.01
 28       fuer z unif     0.20      0.01     -0.01
 29 a  33 fuer z unif     0.20
 22 a  27 mome x unif     0.65
 28       mome x unif     0.65      0.00      0.01
 28       mome x unif     0.78      0.01     -0.01
 29 a  33 mome x unif     0.78
  1 a   9 fuer y unif   -11.00
  1 a   9 mome x unif    27.91
  1 a   9 fuer z unif     0.16
  1 a   9 mome x unif     0.65
 46 a  57 fuer y unif   -11.00
 46 a  57 mome x unif    35.10
 46 a  57 fuer z unif     0.16
 46 a  57 mome x unif     0.65
 70 a  81 fuer y unif   -11.00
 70 a  81 mome x unif    28.13
 70 a  81 fuer z unif     0.16
 70 a  81 mome x unif     0.65
 94 a 105 fuer y unif   -11.00
 94 a 105 mome x unif    25.66
 94 a 105 fuer z unif     0.16
 94 a 105 mome x unif     0.65
 10 a  21 fuer y unif    -1.10
 10 a  21 mome x unif     3.21
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.06
 34 a  45 fuer y unif    -1.10
 34 a  45 mome x unif     3.61
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.06
 58 a  69 fuer y unif    -1.10
 58 a  69 mome x unif     3.22
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.06
 82 a  93 fuer y unif    -1.10
 82 a  93 mome x unif     2.50
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.06
106 a 114 fuer y unif    -1.10
106 a 114 mome x unif     3.09
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.06
```

hipo 167 sob. v-10 dcha ipf-75
carg en barr

34	a	39	fuer y unif	-13.20		
40			fuer y unif	-13.20	0.00	0.01
40			fuer y unif	-11.00	0.01	-0.01
41	a	45	fuer y unif	-11.00		
34	a	39	mome x unif	43.39		
40			mome x unif	43.53	0.00	0.01
40			mome x unif	36.28	0.01	-0.01
41	a	45	mome x unif	36.17		
34	a	39	fuer z unif	0.20		
40			fuer z unif	0.20	0.00	0.01
40			fuer z unif	0.16	0.01	-0.01
41	a	45	fuer z unif	0.16		
34	a	39	mome x unif	0.78		
40			mome x unif	0.78	0.00	0.01
40			mome x unif	0.65	0.01	-0.01
41	a	45	mome x unif	0.65		
10	a	21	fuer y unif	-11.00		
10	a	21	mome x unif	32.06		
10	a	21	fuer z unif	0.16		
10	a	21	mome x unif	0.65		
58	a	69	fuer y unif	-11.00		
58	a	69	mome x unif	32.20		
58	a	69	fuer z unif	0.16		
58	a	69	mome x unif	0.65		
82	a	93	fuer y unif	-11.00		
82	a	93	mome x unif	25.05		
82	a	93	fuer z unif	0.16		
82	a	93	mome x unif	0.65		
106	a	114	fuer y unif	-11.00		
106	a	114	mome x unif	30.93		
106	a	114	fuer z unif	0.16		
106	a	114	mome x unif	0.65		
22	a	33	fuer y unif	-1.10		
22	a	33	mome x unif	3.51		
22	a	33	fuer z unif	0.02		
22	a	33	mome x unif	0.06		
1	a	9	fuer y unif	-1.10		
1	a	9	mome x unif	2.79		
1	a	9	fuer z unif	0.02		
1	a	9	mome x unif	0.06		
46	a	57	fuer y unif	-1.10		
46	a	57	mome x unif	3.51		
46	a	57	fuer z unif	0.02		
46	a	57	mome x unif	0.06		
70	a	81	fuer y unif	-1.10		
70	a	81	mome x unif	2.81		
70	a	81	fuer z unif	0.02		
70	a	81	mome x unif	0.06		
94	a	105	fuer y unif	-1.10		
94	a	105	mome x unif	2.57		
94	a	105	fuer z unif	0.02		
94	a	105	mome x unif	0.06		

hipo 168 sob. v-11 dcha ipf-75
carg en barr

34	a	36	fuer y unif	-11.00		
34	a	36	mome x unif	36.12		
34	a	36	fuer z unif	0.16		
34	a	36	mome x unif	0.65		
37			fuer y unif	-11.00	0.00	0.01
37			fuer y unif	-13.20	0.01	-0.01
38	a	42	fuer y unif	-13.20		
43			fuer y unif	-13.20	0.00	0.01
37			mome x unif	36.23	0.00	0.01
37			mome x unif	43.47	0.01	-0.01
38	a	42	mome x unif	43.49		
43			mome x unif	43.44	0.00	0.01
43			mome x unif	36.20	0.01	-0.01
37			fuer z unif	0.16	0.00	0.01
37			fuer z unif	0.20	0.01	-0.01
38	a	42	fuer z unif	0.20		
43			fuer z unif	0.20	0.00	0.01
43			fuer z unif	0.16	0.01	-0.01
37			mome x unif	0.65	0.00	0.01
37			mome x unif	0.78	0.01	-0.01
38	a	42	mome x unif	43.44		
43			mome x unif	0.78	0.00	0.01
43			mome x unif	0.65	0.01	-0.01
44	a	45	fuer y unif	-11.00		
44	a	45	mome x unif	36.12		
44	a	45	fuer z unif	0.16		
44	a	45	mome x unif	0.65		
10	a	21	fuer y unif	-11.00		
10	a	21	mome x unif	32.06		
10	a	21	fuer z unif	0.16		
10	a	21	mome x unif	0.65		
58	a	69	fuer y unif	-11.00		
58	a	69	mome x unif	32.20		
58	a	69	fuer z unif	0.16		
58	a	69	mome x unif	0.65		
82	a	93	fuer y unif	-11.00		
82	a	93	mome x unif	25.05		
82	a	93	fuer z unif	0.16		
82	a	93	mome x unif	0.65		
106	a	114	fuer y unif	-11.00		
106	a	114	mome x unif	30.93		
106	a	114	fuer z unif	0.16		
106	a	114	mome x unif	0.65		
22	a	33	fuer y unif	-1.10		
22	a	33	mome x unif	3.51		
22	a	33	fuer z unif	0.02		
22	a	33	mome x unif	0.06		
1	a	9	fuer y unif	-1.10		
1	a	9	mome x unif	2.79		
1	a	9	fuer z unif	0.02		
1	a	9	mome x unif	0.06		
46	a	57	fuer y unif	-1.10		
46	a	57	mome x unif	3.51		
46	a	57	fuer z unif	0.02		
46	a	57	mome x unif	0.06		
70	a	81	fuer y unif	-1.10		
70	a	81	mome x unif	2.81		
70	a	81	fuer z unif	0.02		
70	a	81	mome x unif	0.06		
94	a	105	fuer y unif	-1.10		
94	a	105	mome x unif	2.57		
94	a	105	fuer z unif	0.02		
94	a	105	mome x unif	0.06		

hipo 169 sob. v-12 dcha ipf-75
carg en barr

34	a	39	fuer y unif	-11.00		
40			fuer y unif	-11.00	0.00	0.01
40			fuer y unif	-13.20	0.01	-0.01
41	a	45	fuer y unif	-13.20		
34	a	39	mome x unif	36.16		
40			mome x unif	36.28	0.00	0.01

40			mome	x	unif	43.53	0.01 -0.01
41	a	45	mome	x	unif	43.40	
34	a	39	fuer	z	unif	0.16	
40			fuer	z	unif	0.16	0.00 0.01
40			fuer	z	unif	0.20	0.01 -0.01
41	a	45	fuer	z	unif	0.20	
34	a	39	mome	x	unif	0.65	
40			mome	x	unif	0.65	0.00 0.01
40			mome	x	unif	0.78	0.01 -0.01
41	a	45	mome	x	unif	0.78	
10	a	21	fuer	y	unif	-11.00	
10	a	21	mome	x	unif	32.06	
10	a	21	fuer	z	unif	0.16	
10	a	21	mome	x	unif	0.65	
58	a	69	fuer	y	unif	-11.00	
58	a	69	mome	x	unif	32.20	
58	a	69	fuer	z	unif	0.16	
58	a	69	mome	x	unif	0.65	
82	a	93	fuer	y	unif	-11.00	
82	a	93	mome	x	unif	25.05	
82	a	93	fuer	z	unif	0.16	
82	a	93	mome	x	unif	0.65	
106	a	114	fuer	y	unif	-11.00	
106	a	114	mome	x	unif	30.93	
106	a	114	fuer	z	unif	0.16	
106	a	114	mome	x	unif	0.65	
22	a	33	fuer	y	unif	-1.10	
22	a	33	mome	x	unif	3.51	
22	a	33	fuer	z	unif	0.02	
22	a	33	mome	x	unif	0.06	
1	a	9	fuer	y	unif	-1.10	
1	a	9	mome	x	unif	2.79	
1	a	9	fuer	z	unif	0.02	
1	a	9	mome	x	unif	0.06	
46	a	57	fuer	y	unif	-1.10	
46	a	57	mome	x	unif	3.51	
46	a	57	fuer	z	unif	0.02	
46	a	57	mome	x	unif	0.06	
70	a	81	fuer	y	unif	-1.10	
70	a	81	mome	x	unif	2.81	
70	a	81	fuer	z	unif	0.02	
70	a	81	mome	x	unif	0.06	
94	a	105	fuer	y	unif	-1.10	
94	a	105	mome	x	unif	2.57	
94	a	105	fuer	z	unif	0.02	
94	a	105	mome	x	unif	0.06	

hipo 170 sob. v-13 dcha ipf-75
carg en barr

46	a	51	fuer	y	unif	-13.20	
52			fuer	y	unif	-13.20	0.00 0.01
52			fuer	y	unif	-11.00	0.01 -0.01
53	a	57	fuer	y	unif	-11.00	
46	a	51	mome	x	unif	42.83	
52			mome	x	unif	42.27	0.00 0.01
52			mome	x	unif	35.23	0.01 -0.01
53	a	57	mome	x	unif	34.63	
46	a	51	fuer	z	unif	0.20	
52			fuer	z	unif	0.20	0.00 0.01
52			fuer	z	unif	0.16	0.01 -0.01
53	a	57	fuer	z	unif	0.16	
46	a	51	mome	x	unif	0.78	
52			mome	x	unif	0.78	0.00 0.01
52			mome	x	unif	0.65	0.01 -0.01
53	a	57	mome	x	unif	0.65	

22	a	33	fuer	y	unif	-11.00	
22	a	33	mome	x	unif	35.06	
22	a	33	fuer	z	unif	0.16	
22	a	33	mome	x	unif	0.65	
1	a	9	fuer	y	unif	-11.00	
1	a	9	mome	x	unif	27.91	
1	a	9	fuer	z	unif	0.16	
1	a	9	mome	x	unif	0.65	
70	a	81	fuer	y	unif	-11.00	
70	a	81	mome	x	unif	28.13	
70	a	81	fuer	z	unif	0.16	
70	a	81	mome	x	unif	0.65	
94	a	105	fuer	y	unif	-11.00	
94	a	105	mome	x	unif	25.66	
94	a	105	fuer	z	unif	0.16	
94	a	105	mome	x	unif	0.65	
34	a	45	fuer	y	unif	-1.10	
34	a	45	mome	x	unif	3.61	
34	a	45	fuer	z	unif	0.02	
34	a	45	mome	x	unif	0.06	
10	a	21	fuer	y	unif	-1.10	
10	a	21	mome	x	unif	3.21	
10	a	21	fuer	z	unif	0.02	
10	a	21	mome	x	unif	0.06	
58	a	69	fuer	y	unif	-1.10	
58	a	69	mome	x	unif	3.22	
58	a	69	fuer	z	unif	0.02	
58	a	69	mome	x	unif	0.06	
82	a	93	fuer	y	unif	-1.10	
82	a	93	mome	x	unif	2.50	
82	a	93	fuer	z	unif	0.02	
82	a	93	mome	x	unif	0.06	
106	a	114	fuer	y	unif	-1.10	
106	a	114	mome	x	unif	3.09	
106	a	114	fuer	z	unif	0.02	
106	a	114	mome	x	unif	0.06	

hipo 171 sob. v-14 dcha ipf-75
carg en barr

46	a	48	fuer	y	unif	-11.00	
46	a	48	mome	x	unif	35.90	
46	a	48	fuer	z	unif	0.16	
46	a	48	mome	x	unif	0.65	
49			fuer	y	unif	-11.00	0.00 0.01
49			fuer	y	unif	-13.20	0.01 -0.01
50	a	54	fuer	y	unif	-13.20	
55			fuer	y	unif	-13.20	0.00 0.01
55			fuer	y	unif	-11.00	0.01 -0.01
49			mome	x	unif	35.67	0.00 0.01
49			mome	x	unif	42.81	0.01 -0.01
50	a	54	mome	x	unif	42.24	
55			mome	x	unif	41.59	0.00 0.01
55			mome	x	unif	34.66	0.01 -0.01
49			fuer	z	unif	0.16	0.00 0.01
49			fuer	z	unif	0.20	0.01 -0.01
50	a	54	fuer	z	unif	0.20	
55			fuer	z	unif	0.20	0.00 0.01
55			fuer	z	unif	0.16	0.01 -0.01
49			mome	x	unif	0.65	0.00 0.01
49			mome	x	unif	0.78	0.01 -0.01
50	a	54	mome	x	unif	41.59	
55			mome	x	unif	0.78	0.00 0.01
55			mome	x	unif	0.65	0.01 -0.01
56	a	57	fuer	y	unif	-11.00	
56	a	57	mome	x	unif	34.33	

```
 56 a  57 fuer z unif     0.16
 56 a  57 mome x unif     0.65
 22 a  33 fuer y unif   -11.00
 22 a  33 mome x unif    35.06
 22 a  33 fuer z unif     0.16
 22 a  33 mome x unif     0.65
  1 a   9 fuer y unif   -11.00
  1 a   9 mome x unif    27.91
  1 a   9 fuer z unif     0.16
  1 a   9 mome x unif     0.65
 70 a  81 fuer y unif   -11.00
 70 a  81 mome x unif    28.13
 70 a  81 fuer z unif     0.16
 70 a  81 mome x unif     0.65
 94 a 105 fuer y unif   -11.00
 94 a 105 mome x unif    25.66
 94 a 105 fuer z unif     0.16
 94 a 105 mome x unif     0.65
 34 a  45 fuer y unif    -1.10
 34 a  45 mome x unif     3.61
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.06
 10 a  21 fuer y unif    -1.10
 10 a  21 mome x unif     3.21
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.06
 58 a  69 fuer y unif    -1.10
 58 a  69 mome x unif     3.22
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.06
 82 a  93 fuer y unif    -1.10
 82 a  93 mome x unif     2.50
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.06
106 a 114 fuer y unif    -1.10
106 a 114 mome x unif     3.09
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.06
hipo 172 sob. v-15 dcha ipf-75
carg en barr
 46 a  51 fuer y unif   -11.00
 52       fuer y unif   -11.00     0.00     0.01
 52       fuer y unif   -13.20     0.01    -0.01
 53 a  57 fuer y unif   -13.20
 46 a  51 mome x unif    35.70
 52       mome x unif    35.23     0.00     0.01
 52       mome x unif    42.27     0.01    -0.01
 53 a  57 mome x unif    41.56
 46 a  51 fuer z unif     0.16
 52       fuer z unif     0.16     0.00     0.01
 52       fuer z unif     0.20     0.01    -0.01
 53 a  57 fuer z unif     0.20
 46 a  51 mome x unif     0.65
 52       mome x unif     0.65     0.00     0.01
 52       mome x unif     0.78     0.01    -0.01
 53 a  57 mome x unif     0.78
 22 a  33 fuer y unif   -11.00
 22 a  33 mome x unif    35.06
 22 a  33 fuer z unif     0.16
 22 a  33 mome x unif     0.65
  1 a   9 fuer y unif   -11.00
  1 a   9 mome x unif    27.91
  1 a   9 fuer z unif     0.16
  1 a   9 mome x unif     0.65
 70 a  81 fuer y unif   -11.00
 70 a  81 mome x unif    28.13
 70 a  81 fuer z unif     0.16
 70 a  81 mome x unif     0.65
 94 a 105 fuer y unif   -11.00
 94 a 105 mome x unif    25.66
 94 a 105 fuer z unif     0.16
 94 a 105 mome x unif     0.65
 34 a  45 fuer y unif    -1.10
 34 a  45 mome x unif     3.61
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.06
 10 a  21 fuer y unif    -1.10
 10 a  21 mome x unif     3.21
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.06
 58 a  69 fuer y unif    -1.10
 58 a  69 mome x unif     3.22
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.06
 82 a  93 fuer y unif    -1.10
 82 a  93 mome x unif     2.50
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.06
106 a 114 fuer y unif    -1.10
106 a 114 mome x unif     3.09
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.06
hipo 173 sob. v-16 dcha ipf-75
carg en barr
 58 a  63 fuer y unif   -13.20
 64       fuer y unif   -13.20     0.00     0.01
 64       fuer y unif   -11.00     0.01    -0.01
 65 a  69 fuer y unif   -11.00
 58 a  63 mome x unif    39.89
 64       mome x unif    38.65     0.00     0.01
 64       mome x unif    32.21     0.01    -0.01
 65 a  69 mome x unif    31.15
 58 a  63 fuer z unif     0.20
 64       fuer z unif     0.20     0.00     0.01
 64       fuer z unif     0.16     0.01    -0.01
 65 a  69 fuer z unif     0.16
 58 a  63 mome x unif     0.78
 64       mome x unif     0.78     0.00     0.01
 64       mome x unif     0.65     0.01    -0.01
 65 a  69 mome x unif     0.65
 34 a  45 fuer y unif   -11.00
 34 a  45 mome x unif    36.07
 34 a  45 fuer z unif     0.16
 34 a  45 mome x unif     0.65
 10 a  21 fuer y unif   -11.00
 10 a  21 mome x unif    32.06
 10 a  21 fuer z unif     0.16
 10 a  21 mome x unif     0.65
 82 a  93 fuer y unif   -11.00
 82 a  93 mome x unif    25.05
 82 a  93 fuer z unif     0.16
 82 a  93 mome x unif     0.65
106 a 114 fuer y unif   -11.00
106 a 114 mome x unif    30.93
106 a 114 fuer z unif     0.16
106 a 114 mome x unif     0.65
 46 a  57 fuer y unif    -1.10
 46 a  57 mome x unif     3.51
```

```
 46 a  57 fuer z unif      0.02
 46 a  57 mome x unif      0.06
 22 a  33 fuer y unif     -1.10
 22 a  33 mome x unif      3.51
 22 a  33 fuer z unif      0.02
 22 a  33 mome x unif      0.06
  1 a   9 fuer y unif     -1.10
  1 a   9 mome x unif      2.79
  1 a   9 fuer z unif      0.02
  1 a   9 mome x unif      0.06
 70 a  81 fuer y unif     -1.10
 70 a  81 mome x unif      2.81
 70 a  81 fuer z unif      0.02
 70 a  81 mome x unif      0.06
 94 a 105 fuer y unif     -1.10
 94 a 105 mome x unif      2.57
 94 a 105 fuer z unif      0.02
 94 a 105 mome x unif      0.06
hipo 174 sob. v-17 dcha ipf-75
carg en barr
 58 a  60 fuer y unif    -11.00
 58 a  60 mome x unif     33.69
 58 a  60 fuer z unif      0.16
 58 a  60 mome x unif      0.65
 61       fuer y unif    -11.00      0.00      0.01
 61       fuer y unif    -13.20      0.01     -0.01
 62 a  66 fuer y unif    -13.20
 67       fuer y unif    -13.20      0.00      0.01
 67       fuer y unif    -11.00      0.01     -0.01
 61       mome x unif     33.14      0.00      0.01
 61       mome x unif     39.77      0.01     -0.01
 62 a  66 mome x unif     38.61
 67       mome x unif     37.39      0.00      0.01
 67       mome x unif     31.16      0.01     -0.01
 61       fuer z unif      0.16      0.00      0.01
 61       fuer z unif      0.20      0.01     -0.01
 62 a  66 fuer z unif      0.20
 67       fuer z unif      0.20      0.00      0.01
 67       fuer z unif      0.16      0.01     -0.01
 61       mome x unif      0.65      0.00      0.01
 61       mome x unif      0.78      0.01     -0.01
 62 a  66 mome x unif     37.39
 67       mome x unif      0.78      0.00      0.01
 67       mome x unif      0.65      0.01     -0.01
 68 a  69 fuer y unif    -11.00
 68 a  69 mome x unif     30.61
 68 a  69 fuer z unif      0.16
 68 a  69 mome x unif      0.65
 34 a  45 fuer y unif    -11.00
 34 a  45 mome x unif     36.07
 34 a  45 fuer z unif      0.16
 34 a  45 mome x unif      0.65
 10 a  21 fuer y unif    -11.00
 10 a  21 mome x unif     32.06
 10 a  21 fuer z unif      0.16
 10 a  21 mome x unif      0.65
 82 a  93 fuer y unif    -11.00
 82 a  93 mome x unif     25.05
 82 a  93 fuer z unif      0.16
 82 a  93 mome x unif      0.65
106 a 114 fuer y unif    -11.00
106 a 114 mome x unif     30.93
106 a 114 fuer z unif      0.16
106 a 114 mome x unif      0.65
```

```
 46 a  57 fuer y unif     -1.10
 46 a  57 mome x unif      3.51
 46 a  57 fuer z unif      0.02
 46 a  57 mome x unif      0.06
 22 a  33 fuer y unif     -1.10
 22 a  33 mome x unif      3.51
 22 a  33 fuer z unif      0.02
 22 a  33 mome x unif      0.06
  1 a   9 fuer y unif     -1.10
  1 a   9 mome x unif      2.79
  1 a   9 fuer z unif      0.02
  1 a   9 mome x unif      0.06
 70 a  81 fuer y unif     -1.10
 70 a  81 mome x unif      2.81
 70 a  81 fuer z unif      0.02
 70 a  81 mome x unif      0.06
 94 a 105 fuer y unif     -1.10
 94 a 105 mome x unif      2.57
 94 a 105 fuer z unif      0.02
 94 a 105 mome x unif      0.06
hipo 175 sob. v-18 dcha ipf-75
carg en barr
 58 a  63 fuer y unif    -11.00
 64       fuer y unif    -11.00      0.00      0.01
 64       fuer y unif    -13.20      0.01     -0.01
 65 a  69 fuer y unif    -13.20
 58 a  63 mome x unif     33.24
 64       mome x unif     32.21      0.00      0.01
 64       mome x unif     38.65      0.01     -0.01
 65 a  69 mome x unif     37.38
 58 a  63 fuer z unif      0.16
 64       fuer z unif      0.16      0.00      0.01
 64       fuer z unif      0.20      0.01     -0.01
 65 a  69 fuer z unif      0.20
 58 a  63 mome x unif      0.65
 64       mome x unif      0.65      0.00      0.01
 64       mome x unif      0.78      0.01     -0.01
 65 a  69 mome x unif      0.78
 34 a  45 fuer y unif    -11.00
 34 a  45 mome x unif     36.07
 34 a  45 fuer z unif      0.16
 34 a  45 mome x unif      0.65
 10 a  21 fuer y unif    -11.00
 10 a  21 mome x unif     32.06
 10 a  21 fuer z unif      0.16
 10 a  21 mome x unif      0.65
 82 a  93 fuer y unif    -11.00
 82 a  93 mome x unif     25.05
 82 a  93 fuer z unif      0.16
 82 a  93 mome x unif      0.65
106 a 114 fuer y unif    -11.00
106 a 114 mome x unif     30.93
106 a 114 fuer z unif      0.16
106 a 114 mome x unif      0.65
 46 a  57 fuer y unif     -1.10
 46 a  57 mome x unif      3.51
 46 a  57 fuer z unif      0.02
 46 a  57 mome x unif      0.06
 22 a  33 fuer y unif     -1.10
 22 a  33 mome x unif      3.51
 22 a  33 fuer z unif      0.02
 22 a  33 mome x unif      0.06
  1 a   9 fuer y unif     -1.10
  1 a   9 mome x unif      2.79
```

```
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.06
 70 a  81 fuer y unif    -1.10
 70 a  81 mome x unif     2.81
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.06
 94 a 105 fuer y unif    -1.10
 94 a 105 mome x unif     2.57
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.06
hipo 176 sob. v-19 dcha ipf-75
carg en barr
 70 a  75 fuer y unif   -13.20
 76       fuer y unif   -13.20     0.00     0.01
 76       fuer y unif   -11.00     0.01    -0.01
 77 a  81 fuer y unif   -11.00
 70 a  75 mome x unif    34.96
 76       mome x unif    33.41     0.00     0.01
 76       mome x unif    27.84     0.01    -0.01
 77 a  81 mome x unif    26.85
 70 a  75 fuer z unif     0.20
 76       fuer z unif     0.20     0.00     0.01
 76       fuer z unif     0.16     0.01    -0.01
 77 a  81 fuer z unif     0.16
 70 a  75 mome x unif     0.78
 76       mome x unif     0.78     0.00     0.01
 76       mome x unif     0.65     0.01    -0.01
 77 a  81 mome x unif     0.65
 46 a  57 fuer y unif   -11.00
 46 a  57 mome x unif    35.10
 46 a  57 fuer z unif     0.16
 46 a  57 mome x unif     0.65
 22 a  33 fuer y unif   -11.00
 22 a  33 mome x unif    35.06
 22 a  33 fuer z unif     0.16
 22 a  33 mome x unif     0.65
  1 a   9 fuer y unif   -11.00
  1 a   9 mome x unif    27.91
  1 a   9 fuer z unif     0.16
  1 a   9 mome x unif     0.65
 94 a 105 fuer y unif   -11.00
 94 a 105 mome x unif    25.66
 94 a 105 fuer z unif     0.16
 94 a 105 mome x unif     0.65
 58 a  69 fuer y unif    -1.10
 58 a  69 mome x unif     3.22
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.06
 34 a  45 fuer y unif    -1.10
 34 a  45 mome x unif     3.61
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.06
 10 a  21 fuer y unif    -1.10
 10 a  21 mome x unif     3.21
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.06
 82 a  93 fuer y unif    -1.10
 82 a  93 mome x unif     2.50
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.06
106 a 114 fuer y unif    -1.10
106 a 114 mome x unif     3.09
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.06
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hipo 177 sob. v-20 dcha ipf-75
carg en barr
 70 a  72 fuer y unif   -11.00
 70 a  72 mome x unif    29.69
 70 a  72 fuer z unif     0.16
 70 a  72 mome x unif     0.65
 73       fuer y unif   -11.00     0.00     0.01
 73       fuer y unif   -13.20     0.01    -0.01
 74 a  78 fuer y unif   -13.20
 79       fuer y unif   -13.20     0.00     0.01
 79       fuer y unif   -11.00     0.01    -0.01
 73       mome x unif    28.94     0.00     0.01
 73       mome x unif    34.73     0.01    -0.01
 74 a  78 mome x unif    33.44
 79       mome x unif    32.18     0.00     0.01
 79       mome x unif    26.82     0.01    -0.01
 73       fuer z unif     0.16     0.00     0.01
 73       fuer z unif     0.20     0.01    -0.01
 74 a  78 fuer z unif     0.20
 79       fuer z unif     0.20     0.00     0.01
 79       fuer z unif     0.16     0.01    -0.01
 73       mome x unif     0.65     0.00     0.01
 73       mome x unif     0.78     0.01    -0.01
 74 a  78 mome x unif    32.18
 79       mome x unif     0.78     0.00     0.01
 79       mome x unif     0.65     0.01    -0.01
 80 a  81 fuer y unif   -11.00
 80 a  81 mome x unif    26.35
 80 a  81 fuer z unif     0.16
 80 a  81 mome x unif     0.65
 46 a  57 fuer y unif   -11.00
 46 a  57 mome x unif    35.10
 46 a  57 fuer z unif     0.16
 46 a  57 mome x unif     0.65
 22 a  33 fuer y unif   -11.00
 22 a  33 mome x unif    35.06
 22 a  33 fuer z unif     0.16
 22 a  33 mome x unif     0.65
  1 a   9 fuer y unif   -11.00
  1 a   9 mome x unif    27.91
  1 a   9 fuer z unif     0.16
  1 a   9 mome x unif     0.65
 94 a 105 fuer y unif   -11.00
 94 a 105 mome x unif    25.66
 94 a 105 fuer z unif     0.16
 94 a 105 mome x unif     0.65
 58 a  69 fuer y unif    -1.10
 58 a  69 mome x unif     3.22
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.06
 34 a  45 fuer y unif    -1.10
 34 a  45 mome x unif     3.61
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.06
 10 a  21 fuer y unif    -1.10
 10 a  21 mome x unif     3.21
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.06
 82 a  93 fuer y unif    -1.10
 82 a  93 mome x unif     2.50
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.06
106 a 114 fuer y unif    -1.10
106 a 114 mome x unif     3.09
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106	a	114	fuer z unif	0.02		
106	a	114	mome x unif	0.06		
hipo 178 sob. v-21 dcha ipf-75						
carg en barr						
70	a	75	fuer y unif	-11.00		
76			fuer y unif	-11.00	0.00	0.01
76			fuer y unif	-13.20	0.01	-0.01
77	a	81	fuer y unif	-13.20		
70	a	75	mome x unif	29.13		
76			mome x unif	27.84	0.00	0.01
76			mome x unif	33.41	0.01	-0.01
77	a	81	mome x unif	32.21		
70	a	75	fuer z unif	0.16		
76			fuer z unif	0.16	0.00	0.01
76			fuer z unif	0.20	0.01	-0.01
77	a	81	fuer z unif	0.20		
70	a	75	mome x unif	0.65		
76			mome x unif	0.65	0.00	0.01
76			mome x unif	0.78	0.01	-0.01
77	a	81	mome x unif	0.78		
46	a	57	fuer y unif	-11.00		
46	a	57	mome x unif	35.10		
46	a	57	fuer z unif	0.16		
46	a	57	mome x unif	0.65		
22	a	33	fuer y unif	-11.00		
22	a	33	mome x unif	35.06		
22	a	33	fuer z unif	0.16		
22	a	33	mome x unif	0.65		
1	a	9	fuer y unif	-11.00		
1	a	9	mome x unif	27.91		
1	a	9	fuer z unif	0.16		
1	a	9	mome x unif	0.65		
94	a	105	fuer y unif	-11.00		
94	a	105	mome x unif	25.66		
94	a	105	fuer z unif	0.16		
94	a	105	mome x unif	0.65		
58	a	69	fuer y unif	-1.10		
58	a	69	mome x unif	3.22		
58	a	69	fuer z unif	0.02		
58	a	69	mome x unif	0.06		
34	a	45	fuer y unif	-1.10		
34	a	45	mome x unif	3.61		
34	a	45	fuer z unif	0.02		
34	a	45	mome x unif	0.06		
10	a	21	fuer y unif	-1.10		
10	a	21	mome x unif	3.21		
10	a	21	fuer z unif	0.02		
10	a	21	mome x unif	0.06		
82	a	93	fuer y unif	-1.10		
82	a	93	mome x unif	2.50		
82	a	93	fuer z unif	0.02		
82	a	93	mome x unif	0.06		
106	a	114	fuer y unif	-1.10		
106	a	114	mome x unif	3.09		
106	a	114	fuer z unif	0.02		
106	a	114	mome x unif	0.06		
hipo 179 sob. v-22 dcha ipf-75						
carg en barr						
82	a	87	fuer y unif	-13.20		
88			fuer y unif	-13.20	0.00	0.01
88			fuer y unif	-11.00	0.01	-0.01
89	a	93	fuer y unif	-11.00		
82	a	87	mome x unif	30.40		
88			mome x unif	29.50	0.00	0.01
88			mome x unif	24.58	0.01	-0.01
89	a	93	mome x unif	24.32		
82	a	87	fuer z unif	0.20		
88			fuer z unif	0.20	0.00	0.01
88			fuer z unif	0.16	0.01	-0.01
89	a	93	fuer z unif	0.16		
82	a	87	mome x unif	0.78		
88			mome x unif	0.78	0.00	0.01
88			mome x unif	0.65	0.01	-0.01
89	a	93	mome x unif	0.65		
58	a	69	fuer y unif	-11.00		
58	a	69	mome x unif	32.20		
58	a	69	fuer z unif	0.16		
58	a	69	mome x unif	0.65		
34	a	45	fuer y unif	-11.00		
34	a	45	mome x unif	36.07		
34	a	45	fuer z unif	0.16		
34	a	45	mome x unif	0.65		
10	a	21	fuer y unif	-11.00		
10	a	21	mome x unif	32.06		
10	a	21	fuer z unif	0.16		
10	a	21	mome x unif	0.65		
106	a	114	fuer y unif	-11.00		
106	a	114	mome x unif	30.93		
106	a	114	fuer z unif	0.16		
106	a	114	mome x unif	0.65		
70	a	81	fuer y unif	-1.10		
70	a	81	mome x unif	2.81		
70	a	81	fuer z unif	0.02		
70	a	81	mome x unif	0.06		
46	a	57	fuer y unif	-1.10		
46	a	57	mome x unif	3.51		
46	a	57	fuer z unif	0.02		
46	a	57	mome x unif	0.06		
22	a	33	fuer y unif	-1.10		
22	a	33	mome x unif	3.51		
22	a	33	fuer z unif	0.02		
22	a	33	mome x unif	0.06		
1	a	9	fuer y unif	-1.10		
1	a	9	mome x unif	2.79		
1	a	9	fuer z unif	0.02		
1	a	9	mome x unif	0.06		
94	a	105	fuer y unif	-1.10		
94	a	105	mome x unif	2.57		
94	a	105	fuer z unif	0.02		
94	a	105	mome x unif	0.06		
hipo 180 sob. v-23 dcha ipf-75						
carg en barr						
82	a	84	fuer y unif	-11.00		
82	a	84	mome x unif	25.64		
82	a	84	fuer z unif	0.16		
82	a	84	mome x unif	0.65		
85			fuer y unif	-11.00	0.00	0.01
85			fuer y unif	-13.20	0.01	-0.01
86	a	90	fuer y unif	-13.20		
91			fuer y unif	-13.20	0.00	0.01
91			fuer y unif	-11.00	0.01	-0.01
85			mome x unif	25.15	0.00	0.01
85			mome x unif	30.18	0.01	-0.01
86	a	90	mome x unif	29.56		
91			mome x unif	29.11	0.00	0.01
91			mome x unif	24.26	0.01	-0.01
85			fuer z unif	0.16	0.00	0.01
85			fuer z unif	0.20	0.01	-0.01

86	a	90	fuer	z	unif	0.20	
91			fuer	z	unif	0.20	0.00 0.01
91			fuer	z	unif	0.16	0.01 -0.01
85			mome	x	unif	0.65	0.00 0.01
85			mome	x	unif	0.78	0.01 -0.01
86	a	90	mome	x	unif	29.11	
91			mome	x	unif	0.78	0.00 0.01
91			mome	x	unif	0.65	0.01 -0.01
92	a	93	fuer	y	unif	-11.00	
92	a	93	mome	x	unif	24.20	
92	a	93	fuer	z	unif	0.16	
92	a	93	mome	x	unif	0.65	
58	a	69	fuer	y	unif	-11.00	
58	a	69	mome	x	unif	32.20	
58	a	69	fuer	z	unif	0.16	
58	a	69	mome	x	unif	0.65	
34	a	45	fuer	y	unif	-11.00	
34	a	45	mome	x	unif	36.07	
34	a	45	fuer	z	unif	0.16	
34	a	45	mome	x	unif	0.65	
10	a	21	fuer	y	unif	-11.00	
10	a	21	mome	x	unif	32.06	
10	a	21	fuer	z	unif	0.16	
10	a	21	mome	x	unif	0.65	
106	a	114	fuer	y	unif	-11.00	
106	a	114	mome	x	unif	30.93	
106	a	114	fuer	z	unif	0.16	
106	a	114	mome	x	unif	0.65	
70	a	81	fuer	y	unif	-1.10	
70	a	81	mome	x	unif	2.81	
70	a	81	fuer	z	unif	0.02	
70	a	81	mome	x	unif	0.06	
46	a	57	fuer	y	unif	-1.10	
46	a	57	mome	x	unif	3.51	
46	a	57	fuer	z	unif	0.02	
46	a	57	mome	x	unif	0.06	
22	a	33	fuer	y	unif	-1.10	
22	a	33	mome	x	unif	3.51	
22	a	33	fuer	z	unif	0.02	
22	a	33	mome	x	unif	0.06	
1	a	9	fuer	y	unif	-1.10	
1	a	9	mome	x	unif	2.79	
1	a	9	fuer	z	unif	0.02	
1	a	9	mome	x	unif	0.06	
94	a	105	fuer	y	unif	-1.10	
94	a	105	mome	x	unif	2.57	
94	a	105	fuer	z	unif	0.02	
94	a	105	mome	x	unif	0.06	

hipo 181 sob. v-24 dcha ipf-75
carg en barr

82	a	87	fuer	y	unif	-11.00	
88			fuer	y	unif	-11.00	0.00 0.01
88			fuer	y	unif	-13.20	0.01 -0.01
89	a	93	fuer	y	unif	-13.20	
82	a	87	mome	x	unif	25.33	
88			mome	x	unif	24.58	0.00 0.01
88			mome	x	unif	29.50	0.01 -0.01
89	a	93	mome	x	unif	29.18	
82	a	87	fuer	z	unif	0.16	
88			fuer	z	unif	0.16	0.00 0.01
88			fuer	z	unif	0.20	0.01 -0.01
89	a	93	fuer	z	unif	0.20	
82	a	87	mome	x	unif	0.65	
88			mome	x	unif	0.65	0.00 0.01
88			mome	x	unif	0.78	0.01 -0.01
89	a	93	mome	x	unif	0.78	
58	a	69	fuer	y	unif	-11.00	
58	a	69	mome	x	unif	32.20	
58	a	69	fuer	z	unif	0.16	
58	a	69	mome	x	unif	0.65	
34	a	45	fuer	y	unif	-11.00	
34	a	45	mome	x	unif	36.07	
34	a	45	fuer	z	unif	0.16	
34	a	45	mome	x	unif	0.65	
10	a	21	fuer	y	unif	-11.00	
10	a	21	mome	x	unif	32.06	
10	a	21	fuer	z	unif	0.16	
10	a	21	mome	x	unif	0.65	
106	a	114	fuer	y	unif	-11.00	
106	a	114	mome	x	unif	30.93	
106	a	114	fuer	z	unif	0.16	
106	a	114	mome	x	unif	0.65	
70	a	81	fuer	y	unif	-1.10	
70	a	81	mome	x	unif	2.81	
70	a	81	fuer	z	unif	0.02	
70	a	81	mome	x	unif	0.06	
46	a	57	fuer	y	unif	-1.10	
46	a	57	mome	x	unif	3.51	
46	a	57	fuer	z	unif	0.02	
46	a	57	mome	x	unif	0.06	
22	a	33	fuer	y	unif	-1.10	
22	a	33	mome	x	unif	3.51	
22	a	33	fuer	z	unif	0.02	
22	a	33	mome	x	unif	0.06	
1	a	9	fuer	y	unif	-1.10	
1	a	9	mome	x	unif	2.79	
1	a	9	fuer	z	unif	0.02	
1	a	9	mome	x	unif	0.06	
94	a	105	fuer	y	unif	-1.10	
94	a	105	mome	x	unif	2.57	
94	a	105	fuer	z	unif	0.02	
94	a	105	mome	x	unif	0.06	

hipo 182 sob. v-25 dcha ipf-75
carg en barr

94	a	99	fuer	y	unif	-13.20	
100			fuer	y	unif	-13.20	0.00 0.01
100			fuer	y	unif	-11.00	0.01 -0.01
101	a	105	fuer	y	unif	-11.00	
94	a	99	mome	x	unif	29.44	
100			mome	x	unif	30.14	0.00 0.01
100			mome	x	unif	25.12	0.01 -0.01
101	a	105	mome	x	unif	26.27	
94	a	99	fuer	z	unif	0.20	
100			fuer	z	unif	0.20	0.00 0.01
100			fuer	z	unif	0.16	0.01 -0.01
101	a	105	fuer	z	unif	0.16	
94	a	99	mome	x	unif	0.78	
100			mome	x	unif	0.78	0.00 0.01
100			mome	x	unif	0.65	0.01 -0.01
101	a	105	mome	x	unif	0.65	
70	a	81	fuer	y	unif	-11.00	
70	a	81	mome	x	unif	28.13	
70	a	81	fuer	z	unif	0.16	
70	a	81	mome	x	unif	0.65	
46	a	57	fuer	y	unif	-11.00	
46	a	57	mome	x	unif	35.10	
46	a	57	fuer	z	unif	0.16	
46	a	57	mome	x	unif	0.65	
88			mome	x	unif	0.78	0.01 -0.01
89	a	93	mome	x	unif	0.78	
58	a	69	fuer	y	unif	-11.00	
58	a	69	mome	x	unif	32.20	
58	a	69	fuer	z	unif	0.16	
58	a	69	mome	x	unif	0.65	
34	a	45	fuer	y	unif	-11.00	
34	a	45	mome	x	unif	36.07	
34	a	45	fuer	z	unif	0.16	
34	a	45	mome	x	unif	0.65	
10	a	21	fuer	y	unif	-11.00	
10	a	21	mome	x	unif	32.06	
10	a	21	fuer	z	unif	0.16	
10	a	21	mome	x	unif	0.65	
106	a	114	fuer	y	unif	-11.00	
106	a	114	mome	x	unif	30.93	
106	a	114	fuer	z	unif	0.16	
106	a	114	mome	x	unif	0.65	
70	a	81	fuer	y	unif	-1.10	
70	a	81	mome	x	unif	2.81	
70	a	81	fuer	z	unif	0.02	
70	a	81	mome	x	unif	0.06	
46	a	57	fuer	y	unif	-1.10	
46	a	57	mome	x	unif	3.51	
46	a	57	fuer	z	unif	0.02	
46	a	57	mome	x	unif	0.06	
22	a	33	fuer	y	unif	-1.10	
22	a	33	mome	x	unif	3.51	
22	a	33	fuer	z	unif	0.02	
22	a	33	mome	x	unif	0.06	
1	a	9	fuer	y	unif	-1.10	
1	a	9	mome	x	unif	2.79	
1	a	9	fuer	z	unif	0.02	
1	a	9	mome	x	unif	0.06	
94	a	105	fuer	y	unif	-1.10	
94	a	105	mome	x	unif	2.57	
94	a	105	fuer	z	unif	0.02	
94	a	105	mome	x	unif	0.06	

hipo 182 sob. v-25 dcha ipf-75
carg en barr

94	a	99	fuer	y	unif	-13.20	
100			fuer	y	unif	-13.20	0.00 0.01
100			fuer	y	unif	-11.00	0.01 -0.01
101	a	105	fuer	y	unif	-11.00	
94	a	99	mome	x	unif	29.44	
100			mome	x	unif	30.14	0.00 0.01
100			mome	x	unif	25.12	0.01 -0.01
101	a	105	mome	x	unif	26.27	
94	a	99	fuer	z	unif	0.20	
100			fuer	z	unif	0.20	0.00 0.01
100			fuer	z	unif	0.16	0.01 -0.01
101	a	105	fuer	z	unif	0.16	
94	a	99	mome	x	unif	0.78	
100			mome	x	unif	0.78	0.00 0.01
100			mome	x	unif	0.65	0.01 -0.01
101	a	105	mome	x	unif	0.65	
70	a	81	fuer	y	unif	-11.00	
70	a	81	mome	x	unif	28.13	
70	a	81	fuer	z	unif	0.16	
70	a	81	mome	x	unif	0.65	
46	a	57	fuer	y	unif	-11.00	
46	a	57	mome	x	unif	35.10	
46	a	57	fuer	z	unif	0.16	
46	a	57	mome	x	unif	0.65	

```
 22 a  33 fuer y unif   -11.00
 22 a  33 mome x unif    35.06
 22 a  33 fuer z unif     0.16
 22 a  33 mome x unif     0.65
  1 a   9 fuer y unif   -11.00
  1 a   9 mome x unif    27.91
  1 a   9 fuer z unif     0.16
  1 a   9 mome x unif     0.65
 82 a  93 fuer y unif    -1.10
 82 a  93 mome x unif     2.50
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.06
 58 a  69 fuer y unif    -1.10
 58 a  69 mome x unif     3.22
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.06
 34 a  45 fuer y unif    -1.10
 34 a  45 mome x unif     3.61
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.06
 10 a  21 fuer y unif    -1.10
 10 a  21 mome x unif     3.21
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.06
106 a 114 fuer y unif    -1.10
106 a 114 mome x unif     3.09
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.06
hipo 183 sob. v-26 dcha ipf-75
carg en barr
 94 a  96 fuer y unif   -11.00
 94 a  96 mome x unif    24.28
 94 a  96 fuer z unif     0.16
 94 a  96 mome x unif     0.65
 97       fuer y unif   -11.00     0.00     0.01
 97       fuer y unif   -13.20     0.01    -0.01
 98 a 102 fuer y unif   -13.20
103       fuer y unif   -13.20     0.00     0.01
103       fuer y unif   -11.00     0.01    -0.01
 97       mome x unif    24.49     0.00     0.01
 97       mome x unif    29.38     0.01    -0.01
 98 a 102 mome x unif    30.26
103       mome x unif    31.41     0.00     0.01
103       mome x unif    26.17     0.01    -0.01
 97       fuer z unif     0.16     0.00     0.01
 97       fuer z unif     0.20     0.01    -0.01
 98 a 102 fuer z unif     0.20
103       fuer z unif     0.20     0.00     0.01
103       fuer z unif     0.16     0.01    -0.01
 97       mome x unif     0.65     0.00     0.01
 97       mome x unif     0.78     0.01    -0.01
 98 a 102 mome x unif    31.41
103       mome x unif     0.78     0.00     0.01
103       mome x unif     0.65     0.01    -0.01
104 a 105 fuer y unif   -11.00
104 a 105 mome x unif    26.87
104 a 105 fuer z unif     0.16
104 a 105 mome x unif     0.65
 70 a  81 fuer y unif   -11.00
 70 a  81 mome x unif    28.13
 70 a  81 fuer z unif     0.16
 70 a  81 mome x unif     0.65
 46 a  57 fuer y unif   -11.00
 46 a  57 mome x unif    35.10
 46 a  57 fuer z unif     0.16
 46 a  57 mome x unif     0.65
 22 a  33 fuer y unif   -11.00
 22 a  33 mome x unif    35.06
 22 a  33 fuer z unif     0.16
 22 a  33 mome x unif     0.65
  1 a   9 fuer y unif   -11.00
  1 a   9 mome x unif    27.91
  1 a   9 fuer z unif     0.16
  1 a   9 mome x unif     0.65
 82 a  93 fuer y unif    -1.10
 82 a  93 mome x unif     2.50
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.06
 58 a  69 fuer y unif    -1.10
 58 a  69 mome x unif     3.22
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.06
 34 a  45 fuer y unif    -1.10
 34 a  45 mome x unif     3.61
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.06
 10 a  21 fuer y unif    -1.10
 10 a  21 mome x unif     3.21
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.06
106 a 114 fuer y unif    -1.10
106 a 114 mome x unif     3.09
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.06
hipo 184 sob. v-27 dcha ipf-75
carg en barr
 94 a  99 fuer y unif   -11.00
100       fuer y unif   -11.00     0.00     0.01
100       fuer y unif   -13.20     0.01    -0.01
101 a 105 fuer y unif   -13.20
 94 a  99 mome x unif    24.54
100       mome x unif    25.12     0.00     0.01
100       mome x unif    30.14     0.01    -0.01
101 a 105 mome x unif    31.52
 94 a  99 fuer z unif     0.16
100       fuer z unif     0.16     0.00     0.01
100       fuer z unif     0.20     0.01    -0.01
101 a 105 fuer z unif     0.20
 94 a  99 mome x unif     0.65
100       mome x unif     0.65     0.00     0.01
100       mome x unif     0.78     0.01    -0.01
101 a 105 mome x unif     0.78
 70 a  81 fuer y unif   -11.00
 70 a  81 mome x unif    28.13
 70 a  81 fuer z unif     0.16
 70 a  81 mome x unif     0.65
 46 a  57 fuer y unif   -11.00
 46 a  57 mome x unif    35.10
 46 a  57 fuer z unif     0.16
 46 a  57 mome x unif     0.65
 22 a  33 fuer y unif   -11.00
 22 a  33 mome x unif    35.06
 22 a  33 fuer z unif     0.16
 22 a  33 mome x unif     0.65
  1 a   9 fuer y unif   -11.00
  1 a   9 mome x unif    27.91
  1 a   9 fuer z unif     0.16
  1 a   9 mome x unif     0.65
```

```
 82 a  93 fuer y unif    -1.10
 82 a  93 mome x unif     2.50
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.06
 58 a  69 fuer y unif    -1.10
 58 a  69 mome x unif     3.22
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.06
 34 a  45 fuer y unif    -1.10
 34 a  45 mome x unif     3.61
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.06
 10 a  21 fuer y unif    -1.10
 10 a  21 mome x unif     3.21
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.06
106 a 114 fuer y unif    -1.10
106 a 114 mome x unif     3.09
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.06
hipo 185 sob. v-28 dcha ipf-75
carg en barr
106 a 111 fuer y unif   -13.20
112       fuer y unif   -13.20     0.00     0.01
112       fuer y unif   -11.00     0.01    -0.01
113 a 114 fuer y unif   -11.00
106 a 111 mome x unif    35.37
112       mome x unif    38.62     0.00     0.01
112       mome x unif    32.18     0.01    -0.01
113 a 114 mome x unif    33.67
106 a 111 fuer z unif     0.20
112       fuer z unif     0.20     0.00     0.01
112       fuer z unif     0.16     0.01    -0.01
113 a 114 fuer z unif     0.16
106 a 111 mome x unif     0.78
112       mome x unif     0.78     0.00     0.01
112       mome x unif     0.65     0.01    -0.01
113 a 114 mome x unif     0.65
 82 a  93 fuer y unif   -11.00
 82 a  93 mome x unif    25.05
 82 a  93 fuer z unif     0.16
 82 a  93 mome x unif     0.65
 58 a  69 fuer y unif   -11.00
 58 a  69 mome x unif    32.20
 58 a  69 fuer z unif     0.16
 58 a  69 mome x unif     0.65
 34 a  45 fuer y unif   -11.00
 34 a  45 mome x unif    36.07
 34 a  45 fuer z unif     0.16
 34 a  45 mome x unif     0.65
 10 a  21 fuer y unif   -11.00
 10 a  21 mome x unif    32.06
 10 a  21 fuer z unif     0.16
 10 a  21 mome x unif     0.65
 94 a 105 fuer y unif    -1.10
 94 a 105 mome x unif     2.57
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.06
 70 a  81 fuer y unif    -1.10
 70 a  81 mome x unif     2.81
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.06
 46 a  57 fuer y unif    -1.10
 46 a  57 mome x unif     3.51
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.06
 22 a  33 fuer y unif    -1.10
 22 a  33 mome x unif     3.51
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.06
  1 a   9 fuer y unif    -1.10
  1 a   9 mome x unif     2.79
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.06
hipo 186 sob. v-29 dcha ipf-75
carg en barr
106 a 106 fuer y unif   -11.00
106 a 106 mome x unif    27.67
106 a 106 fuer z unif     0.16
106 a 106 mome x unif     0.65
107       fuer y unif   -11.00     0.00     2.50
107       fuer y unif   -13.20     2.50    -0.01
108 a 112 fuer y unif   -13.20
113       fuer y unif   -13.20     0.00     2.50
113       fuer y unif   -11.00     2.50    -0.01
107       mome x unif    28.28     0.00     2.50
107       mome x unif    33.93     2.50    -0.01
108 a 112 mome x unif    36.67
113       mome x unif    39.78     0.00     2.50
113       mome x unif    33.15     2.50    -0.01
107       fuer z unif     0.16     0.00     2.50
107       fuer z unif     0.20     2.50    -0.01
108 a 112 fuer z unif     0.20
113       fuer z unif     0.20     0.00     2.50
113       fuer z unif     0.16     2.50    -0.01
107       mome x unif     0.65     0.00     2.50
107       mome x unif     0.78     2.50    -0.01
108 a 112 mome x unif    39.78
113       mome x unif     0.78     0.00     2.50
113       mome x unif     0.65     2.50    -0.01
114 a 114 fuer y unif   -11.00
114 a 114 mome x unif    34.19
114 a 114 fuer z unif     0.16
114 a 114 mome x unif     0.65
 82 a  93 fuer y unif   -11.00
 82 a  93 mome x unif    25.05
 82 a  93 fuer z unif     0.16
 82 a  93 mome x unif     0.65
 58 a  69 fuer y unif   -11.00
 58 a  69 mome x unif    32.20
 58 a  69 fuer z unif     0.16
 58 a  69 mome x unif     0.65
 34 a  45 fuer y unif   -11.00
 34 a  45 mome x unif    36.07
 34 a  45 fuer z unif     0.16
 34 a  45 mome x unif     0.65
 10 a  21 fuer y unif   -11.00
 10 a  21 mome x unif    32.06
 10 a  21 fuer z unif     0.16
 10 a  21 mome x unif     0.65
 94 a 105 fuer y unif    -1.10
 94 a 105 mome x unif     2.57
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.06
 70 a  81 fuer y unif    -1.10
 70 a  81 mome x unif     2.81
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.06
```

46	a	57	fuer	y	unif	-1.10
46	a	57	mome	x	unif	3.51
46	a	57	fuer	z	unif	0.02
46	a	57	mome	x	unif	0.06
22	a	33	fuer	y	unif	-1.10
22	a	33	mome	x	unif	3.51
22	a	33	fuer	z	unif	0.02
22	a	33	mome	x	unif	0.06
1	a	9	fuer	y	unif	-1.10
1	a	9	mome	x	unif	2.79
1	a	9	fuer	z	unif	0.02
1	a	9	mome	x	unif	0.06

hipo 187 sob. v-30 dcha ipf-75
carg en barr

106	a 108	fuer	y	unif	-11.00	
109		fuer	y	unif	-11.00	0.00 0.01
109		fuer	y	unif	-13.20	0.01 -0.01
110	a 114	fuer	y	unif	-13.20	
106	a 108	mome	x	unif	28.31	
109		mome	x	unif	29.67	0.00 0.01
109		mome	x	unif	35.60	0.01 -0.01
110	a 114	mome	x	unif	38.78	
106	a 108	fuer	z	unif	0.16	
109		fuer	z	unif	0.16	0.00 0.01
109		fuer	z	unif	0.20	0.01 -0.01
110	a 114	fuer	z	unif	0.20	
106	a 108	mome	x	unif	0.65	
109		mome	x	unif	0.65	0.00 0.01
109		mome	x	unif	0.78	0.01 -0.01
110	a 114	mome	x	unif	0.78	
82	a 93	fuer	y	unif	-11.00	
82	a 93	mome	x	unif	25.05	
82	a 93	fuer	z	unif	0.16	
82	a 93	mome	x	unif	0.65	
58	a 69	fuer	y	unif	-11.00	
58	a 69	mome	x	unif	32.20	
58	a 69	fuer	z	unif	0.16	
58	a 69	mome	x	unif	0.65	
34	a 45	fuer	y	unif	-11.00	
34	a 45	mome	x	unif	36.07	
34	a 45	fuer	z	unif	0.16	
34	a 45	mome	x	unif	0.65	
10	a 21	fuer	y	unif	-11.00	
10	a 21	mome	x	unif	32.06	
10	a 21	fuer	z	unif	0.16	
10	a 21	mome	x	unif	0.65	
94	a 105	fuer	y	unif	-1.10	
94	a 105	mome	x	unif	2.57	
94	a 105	fuer	z	unif	0.02	
94	a 105	mome	x	unif	0.06	
70	a 81	fuer	y	unif	-1.10	
70	a 81	mome	x	unif	2.81	
70	a 81	fuer	z	unif	0.02	
70	a 81	mome	x	unif	0.06	
46	a 57	fuer	y	unif	-1.10	
46	a 57	mome	x	unif	3.51	
46	a 57	fuer	z	unif	0.02	
46	a 57	mome	x	unif	0.06	
22	a 33	fuer	y	unif	-1.10	
22	a 33	mome	x	unif	3.51	
22	a 33	fuer	z	unif	0.02	
22	a 33	mome	x	unif	0.06	
1	a 9	fuer	y	unif	-1.10	
1	a 9	mome	x	unif	2.79	
1	a 9	fuer	z	unif	0.02	
1	a 9	mome	x	unif	0.06	

hipo 188 sob. a- 1 dcha ipf-75
carg en barr

1	a 3	fuer	y	unif	-11.00	
4		fuer	y	unif	-11.00	0.00 0.01
4		fuer	y	unif	-13.20	0.01 -0.01
5	a 9	fuer	y	unif	-13.20	
1	a 3	mome	x	unif	26.53	
4		mome	x	unif	27.54	0.00 0.01
4		mome	x	unif	33.05	0.01 -0.01
5	a 9	mome	x	unif	34.71	
1	a 3	fuer	z	unif	0.16	
4		fuer	z	unif	0.16	0.00 0.01
4		fuer	z	unif	0.20	0.01 -0.01
5	a 9	fuer	z	unif	0.20	
1	a 3	mome	x	unif	0.65	
4		mome	x	unif	0.65	0.00 0.01
4		mome	x	unif	0.78	0.01 -0.01
5	a 9	mome	x	unif	0.78	
10	a 21	fuer	y	unif	-11.00	
10	a 21	mome	x	unif	32.06	
10	a 21	fuer	z	unif	0.16	
10	a 21	mome	x	unif	0.65	
34	a 45	fuer	y	unif	-11.00	
34	a 45	mome	x	unif	36.07	
34	a 45	fuer	z	unif	0.16	
34	a 45	mome	x	unif	0.65	
58	a 69	fuer	y	unif	-11.00	
58	a 69	mome	x	unif	32.20	
58	a 69	fuer	z	unif	0.16	
58	a 69	mome	x	unif	0.65	
82	a 93	fuer	y	unif	-11.00	
82	a 93	mome	x	unif	25.05	
82	a 93	fuer	z	unif	0.16	
82	a 93	mome	x	unif	0.65	
106	a 114	fuer	y	unif	-11.00	
106	a 114	mome	x	unif	30.93	
106	a 114	fuer	z	unif	0.16	
106	a 114	mome	x	unif	0.65	
22	a 33	fuer	y	unif	-1.10	
22	a 33	mome	x	unif	3.51	
22	a 33	fuer	z	unif	0.02	
22	a 33	mome	x	unif	0.06	
46	a 57	fuer	y	unif	-1.10	
46	a 57	mome	x	unif	3.51	
46	a 57	fuer	z	unif	0.02	
46	a 57	mome	x	unif	0.06	
70	a 81	fuer	y	unif	-1.10	
70	a 81	mome	x	unif	2.81	
70	a 81	fuer	z	unif	0.02	
70	a 81	mome	x	unif	0.06	
94	a 105	fuer	y	unif	-1.10	
94	a 105	mome	x	unif	2.57	
94	a 105	fuer	z	unif	0.02	
94	a 105	mome	x	unif	0.06	

hipo 189 sob. a- 2 dcha ipf-75
carg en barr

1	a 6	fuer	y	unif	-11.00	
7		fuer	y	unif	-11.00	0.00 0.01
7		fuer	y	unif	-13.20	0.01 -0.01
8	a 9	fuer	y	unif	-13.20	
1	a 6	mome	x	unif	27.26	
7		mome	x	unif	28.95	0.00 0.01

```
  7        mome x unif    34.74      0.01     -0.01
  8 a   9  mome x unif    35.52
  1 a   6  fuer z unif     0.16
  7        fuer z unif     0.16      0.00      0.01
  7        fuer z unif     0.20      0.01     -0.01
  8 a   9  fuer z unif     0.20
  1 a   6  mome x unif     0.65
  7        mome x unif     0.65      0.00      0.01
  7        mome x unif     0.78      0.01     -0.01
  8 a   9  mome x unif     0.78
 10 a  12  fuer y unif   -13.20
 13        fuer y unif   -13.20      0.00      0.01
 13        fuer y unif   -11.00      0.01     -0.01
 14 a  21  fuer y unif   -11.00
 10 a  12  mome x unif    36.76
 13        mome x unif    37.68      0.00      0.01
 13        mome x unif    31.40      0.01     -0.01
 14 a  21  mome x unif    32.82
 10 a  12  fuer z unif     0.20
 13        fuer z unif     0.20      0.00      0.01
 13        fuer z unif     0.16      0.01     -0.01
 14 a  21  fuer z unif     0.16
 10 a  12  mome x unif     0.78
 13        mome x unif     0.78      0.00      0.01
 13        mome x unif     0.65      0.01     -0.01
 14 a  21  mome x unif     0.65
 34 a  45  fuer y unif   -11.00
 34 a  45  mome x unif    36.07
 34 a  45  fuer z unif     0.16
 34 a  45  mome x unif     0.65
 58 a  69  fuer y unif   -11.00
 58 a  69  mome x unif    32.20
 58 a  69  fuer z unif     0.16
 58 a  69  mome x unif     0.65
 82 a  93  fuer y unif   -11.00
 82 a  93  mome x unif    25.05
 82 a  93  fuer z unif     0.16
 82 a  93  mome x unif     0.65
106 a 114  fuer y unif   -11.00
106 a 114  mome x unif    30.93
106 a 114  fuer z unif     0.16
106 a 114  mome x unif     0.65
 22 a  33  fuer y unif    -1.10
 22 a  33  mome x unif     3.51
 22 a  33  fuer z unif     0.02
 22 a  33  mome x unif     0.06
 46 a  57  fuer y unif    -1.10
 46 a  57  mome x unif     3.51
 46 a  57  fuer z unif     0.02
 46 a  57  mome x unif     0.06
 70 a  81  fuer y unif    -1.10
 70 a  81  mome x unif     2.81
 70 a  81  fuer z unif     0.02
 70 a  81  mome x unif     0.06
 94 a 105  fuer y unif    -1.10
 94 a 105  mome x unif     2.57
 94 a 105  fuer z unif     0.02
 94 a 105  mome x unif     0.06
hipo 190 sob. a- 3 dcha ipf-75
carg en barr
  1 a   9  fuer y unif   -11.00
  1 a   9  mome x unif    27.91
  1 a   9  fuer z unif     0.16
  1 a   9  mome x unif     0.65
 10 a  15  fuer y unif   -13.20
 16        fuer y unif   -13.20      0.00      0.01
 16        fuer y unif   -11.00      0.01     -0.01
 17 a  21  fuer y unif   -11.00
 10 a  15  mome x unif    37.40
 16        mome x unif    38.92      0.00      0.01
 16        mome x unif    32.43      0.01     -0.01
 17 a  21  mome x unif    33.32
 10 a  15  fuer z unif     0.20
 16        fuer z unif     0.20      0.00      0.01
 16        fuer z unif     0.16      0.01     -0.01
 17 a  21  fuer z unif     0.16
 10 a  15  mome x unif     0.78
 16        mome x unif     0.78      0.00      0.01
 16        mome x unif     0.65      0.01     -0.01
 17 a  21  mome x unif     0.65
 34 a  45  fuer y unif   -11.00
 34 a  45  mome x unif    36.07
 34 a  45  fuer z unif     0.16
 34 a  45  mome x unif     0.65
 58 a  69  fuer y unif   -11.00
 58 a  69  mome x unif    32.20
 58 a  69  fuer z unif     0.16
 58 a  69  mome x unif     0.65
 82 a  93  fuer y unif   -11.00
 82 a  93  mome x unif    25.05
 82 a  93  fuer z unif     0.16
 82 a  93  mome x unif     0.65
106 a 114  fuer y unif   -11.00
106 a 114  mome x unif    30.93
106 a 114  fuer z unif     0.16
106 a 114  mome x unif     0.65
 22 a  33  fuer y unif    -1.10
 22 a  33  mome x unif     3.51
 22 a  33  fuer z unif     0.02
 22 a  33  mome x unif     0.06
 46 a  57  fuer y unif    -1.10
 46 a  57  mome x unif     3.51
 46 a  57  fuer z unif     0.02
 46 a  57  mome x unif     0.06
 70 a  81  fuer y unif    -1.10
 70 a  81  mome x unif     2.81
 70 a  81  fuer z unif     0.02
 70 a  81  mome x unif     0.06
 94 a 105  fuer y unif    -1.10
 94 a 105  mome x unif     2.57
 94 a 105  fuer z unif     0.02
 94 a 105  mome x unif     0.06
hipo 191 sob. a- 4 dcha ipf-75
carg en barr
 10 a  15  fuer y unif   -11.00
 16        fuer y unif   -11.00      0.00      0.01
 16        fuer y unif   -13.20      0.01     -0.01
 17 a  21  fuer y unif   -13.20
 10 a  15  mome x unif    31.17
 16        mome x unif    32.43      0.00      0.01
 16        mome x unif    38.92      0.01     -0.01
 17 a  21  mome x unif    39.98
 10 a  15  fuer z unif     0.16
 16        fuer z unif     0.16      0.00      0.01
 16        fuer z unif     0.20      0.01     -0.01
 17 a  21  fuer z unif     0.20
 10 a  15  mome x unif     0.65
 16        mome x unif     0.65      0.00      0.01
```

16			mome	x	unif	0.78	0.01 -0.01
17	a	21	mome	x	unif	0.78	
22	a	33	fuer	y	unif	-11.00	
22	a	33	mome	x	unif	35.06	
22	a	33	fuer	z	unif	0.16	
22	a	33	mome	x	unif	0.65	
46	a	57	fuer	y	unif	-11.00	
46	a	57	mome	x	unif	35.10	
46	a	57	fuer	z	unif	0.16	
46	a	57	mome	x	unif	0.65	
70	a	81	fuer	y	unif	-11.00	
70	a	81	mome	x	unif	28.13	
70	a	81	fuer	z	unif	0.16	
70	a	81	mome	x	unif	0.65	
94	a	105	fuer	y	unif	-11.00	
94	a	105	mome	x	unif	25.66	
94	a	105	fuer	z	unif	0.16	
94	a	105	mome	x	unif	0.65	
1	a	9	fuer	y	unif	-1.10	
1	a	9	mome	x	unif	2.79	
1	a	9	fuer	z	unif	0.02	
1	a	9	mome	x	unif	0.06	
34	a	45	fuer	y	unif	-1.10	
34	a	45	mome	x	unif	3.61	
34	a	45	fuer	z	unif	0.02	
34	a	45	mome	x	unif	0.06	
58	a	69	fuer	y	unif	-1.10	
58	a	69	mome	x	unif	3.22	
58	a	69	fuer	z	unif	0.02	
58	a	69	mome	x	unif	0.06	
82	a	93	fuer	y	unif	-1.10	
82	a	93	mome	x	unif	2.50	
82	a	93	fuer	z	unif	0.02	
82	a	93	mome	x	unif	0.06	
106	a	114	fuer	y	unif	-1.10	
106	a	114	mome	x	unif	3.09	
106	a	114	fuer	z	unif	0.02	
106	a	114	mome	x	unif	0.06	

hipo 192 sob. a- 5 dcha ipf-75
carg en barr

10	a	18	fuer	y	unif	-11.00	
19			fuer	y	unif	-11.00	0.00 0.01
19			fuer	y	unif	-13.20	0.01 -0.01
20	a	21	fuer	y	unif	-13.20	
10	a	18	mome	x	unif	31.64	
19			mome	x	unif	33.34	0.00 0.01
19			mome	x	unif	40.01	0.01 -0.01
20	a	21	mome	x	unif	40.51	
10	a	18	fuer	z	unif	0.16	
19			fuer	z	unif	0.16	0.00 0.01
19			fuer	z	unif	0.20	0.01 -0.01
20	a	21	fuer	z	unif	0.20	
10	a	18	mome	x	unif	0.65	
19			mome	x	unif	0.65	0.00 0.01
19			mome	x	unif	0.78	0.01 -0.01
20	a	21	mome	x	unif	0.78	
22	a	24	fuer	y	unif	-13.20	
25			fuer	y	unif	-13.20	0.00 0.01
25			fuer	y	unif	-11.00	0.01 -0.01
26	a	33	fuer	y	unif	-11.00	
22	a	24	mome	x	unif	41.24	
25			mome	x	unif	41.76	0.00 0.01
25			mome	x	unif	34.80	0.01 -0.01
26	a	33	mome	x	unif	35.48	
22	a	24	fuer	z	unif	0.20	
25			fuer	z	unif	0.20	0.00 0.01
25			fuer	z	unif	0.16	0.01 -0.01
26	a	33	fuer	z	unif	0.16	
22	a	24	mome	x	unif	0.78	
25			mome	x	unif	0.78	0.00 0.01
25			mome	x	unif	0.65	0.01 -0.01
26	a	33	mome	x	unif	0.65	
46	a	57	fuer	y	unif	-11.00	
46	a	57	mome	x	unif	35.10	
46	a	57	fuer	z	unif	0.16	
46	a	57	mome	x	unif	0.65	
70	a	81	fuer	y	unif	-11.00	
70	a	81	mome	x	unif	28.13	
70	a	81	fuer	z	unif	0.16	
70	a	81	mome	x	unif	0.65	
94	a	105	fuer	y	unif	-11.00	
94	a	105	mome	x	unif	25.66	
94	a	105	fuer	z	unif	0.16	
94	a	105	mome	x	unif	0.65	
1	a	9	fuer	y	unif	-1.10	
1	a	9	mome	x	unif	2.79	
1	a	9	fuer	z	unif	0.02	
1	a	9	mome	x	unif	0.06	
34	a	45	fuer	y	unif	-1.10	
34	a	45	mome	x	unif	3.61	
34	a	45	fuer	z	unif	0.02	
34	a	45	mome	x	unif	0.06	
58	a	69	fuer	y	unif	-1.10	
58	a	69	mome	x	unif	3.22	
58	a	69	fuer	z	unif	0.02	
58	a	69	mome	x	unif	0.06	
82	a	93	fuer	y	unif	-1.10	
82	a	93	mome	x	unif	2.50	
82	a	93	fuer	z	unif	0.02	
82	a	93	mome	x	unif	0.06	
106	a	114	fuer	y	unif	-1.10	
106	a	114	mome	x	unif	3.09	
106	a	114	fuer	z	unif	0.02	
106	a	114	mome	x	unif	0.06	

hipo 193 sob. a- 6 dcha ipf-75
carg en barr

10	a	21	fuer	y	unif	-11.00	
10	a	21	mome	x	unif	32.06	
10	a	21	fuer	z	unif	0.16	
10	a	21	mome	x	unif	0.65	
22	a	27	fuer	y	unif	-13.20	
28			fuer	y	unif	-13.20	0.00 0.01
28			fuer	y	unif	-11.00	0.01 -0.01
29	a	33	fuer	y	unif	-11.00	
22	a	27	mome	x	unif	41.59	
28			mome	x	unif	42.42	0.00 0.01
28			mome	x	unif	35.35	0.01 -0.01
29	a	33	mome	x	unif	35.73	
22	a	27	fuer	z	unif	0.20	
28			fuer	z	unif	0.20	0.00 0.01
28			fuer	z	unif	0.16	0.01 -0.01
29	a	33	fuer	z	unif	0.16	
22	a	27	mome	x	unif	0.78	
28			mome	x	unif	0.78	0.00 0.01
28			mome	x	unif	0.65	0.01 -0.01
29	a	33	mome	x	unif	0.65	
46	a	57	fuer	y	unif	-11.00	
46	a	57	mome	x	unif	35.10	

```
 46 a  57 fuer z unif     0.16
 46 a  57 mome x unif     0.65
 70 a  81 fuer y unif   -11.00
 70 a  81 mome x unif    28.13
 70 a  81 fuer z unif     0.16
 70 a  81 mome x unif     0.65
 94 a 105 fuer y unif   -11.00
 94 a 105 mome x unif    25.66
 94 a 105 fuer z unif     0.16
 94 a 105 mome x unif     0.65
  1 a   9 fuer y unif    -1.10
  1 a   9 mome x unif     2.79
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.06
 34 a  45 fuer y unif    -1.10
 34 a  45 mome x unif     3.61
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.06
 58 a  69 fuer y unif    -1.10
 58 a  69 mome x unif     3.22
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.06
 82 a  93 fuer y unif    -1.10
 82 a  93 mome x unif     2.50
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.06
106 a 114 fuer y unif    -1.10
106 a 114 mome x unif     3.09
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.06
hipo 194 sob. a- 7 dcha ipf-75
carg en barr
 22 a  27 fuer y unif   -11.00
 28       fuer y unif   -11.00      0.00      0.01
 28       fuer y unif   -13.20      0.01     -0.01
 29 a  33 fuer y unif   -13.20
 22 a  27 mome x unif    34.66
 28       mome x unif    35.35      0.00      0.01
 28       mome x unif    42.42      0.01     -0.01
 29 a  33 mome x unif    42.88
 22 a  27 fuer z unif     0.16
 28       fuer z unif     0.16      0.00      0.01
 28       fuer z unif     0.20      0.01     -0.01
 29 a  33 fuer z unif     0.20
 22 a  27 mome x unif     0.65
 28       mome x unif     0.65      0.00      0.01
 28       mome x unif     0.78      0.01     -0.01
 29 a  33 mome x unif     0.78
 34 a  45 fuer y unif   -11.00
 34 a  45 mome x unif    36.07
 34 a  45 fuer z unif     0.16
 34 a  45 mome x unif     0.65
  1 a   9 fuer y unif   -11.00
  1 a   9 mome x unif    27.91
  1 a   9 fuer z unif     0.16
  1 a   9 mome x unif     0.65
 58 a  69 fuer y unif   -11.00
 58 a  69 mome x unif    32.20
 58 a  69 fuer z unif     0.16
 58 a  69 mome x unif     0.65
 82 a  93 fuer y unif   -11.00
 82 a  93 mome x unif    25.05
 82 a  93 fuer z unif     0.16
 82 a  93 mome x unif     0.65
106 a 114 fuer y unif   -11.00
106 a 114 mome x unif    30.93
106 a 114 fuer z unif     0.16
106 a 114 mome x unif     0.65
 10 a  21 fuer y unif    -1.10
 10 a  21 mome x unif     3.21
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.06
 46 a  57 fuer y unif    -1.10
 46 a  57 mome x unif     3.51
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.06
 70 a  81 fuer y unif    -1.10
 70 a  81 mome x unif     2.81
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.06
 94 a 105 fuer y unif    -1.10
 94 a 105 mome x unif     2.57
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.06
hipo 195 sob. a- 8 dcha ipf-75
carg en barr
 22 a  30 fuer y unif   -11.00
 31       fuer y unif   -11.00      0.00      0.01
 31       fuer y unif   -13.20      0.01     -0.01
 32 a  33 fuer y unif   -13.20
 22 a  30 mome x unif    34.89
 31       mome x unif    35.77      0.00      0.01
 31       mome x unif    42.92      0.01     -0.01
 32 a  33 mome x unif    43.11
 22 a  30 fuer z unif     0.16
 31       fuer z unif     0.16      0.00      0.01
 31       fuer z unif     0.20      0.01     -0.01
 32 a  33 fuer z unif     0.20
 22 a  30 mome x unif     0.65
 31       mome x unif     0.65      0.00      0.01
 31       mome x unif     0.78      0.01     -0.01
 32 a  33 mome x unif     0.78
 34 a  36 fuer y unif   -13.20
 37       fuer y unif   -13.20      0.00      0.01
 37       fuer y unif   -11.00      0.01     -0.01
 38 a  45 fuer y unif   -11.00
 34 a  36 mome x unif    43.34
 37       mome x unif    43.47      0.00      0.01
 37       mome x unif    36.23      0.01     -0.01
 38 a  45 mome x unif    36.17
 34 a  36 fuer z unif     0.20
 37       fuer z unif     0.20      0.00      0.01
 37       fuer z unif     0.16      0.01     -0.01
 38 a  45 fuer z unif     0.16
 34 a  36 mome x unif     0.78
 37       mome x unif     0.78      0.00      0.01
 37       mome x unif     0.65      0.01     -0.01
 38 a  45 mome x unif     0.65
  1 a   9 fuer y unif   -11.00
  1 a   9 mome x unif    27.91
  1 a   9 fuer z unif     0.16
  1 a   9 mome x unif     0.65
 58 a  69 fuer y unif   -11.00
 58 a  69 mome x unif    32.20
 58 a  69 fuer z unif     0.16
 58 a  69 mome x unif     0.65
 82 a  93 fuer y unif   -11.00
 82 a  93 mome x unif    25.05
```

```
 82 a  93 fuer z unif      0.16
 82 a  93 mome x unif      0.65
106 a 114 fuer y unif    -11.00
106 a 114 mome x unif     30.93
106 a 114 fuer z unif      0.16
106 a 114 mome x unif      0.65
 10 a  21 fuer y unif     -1.10
 10 a  21 mome x unif      3.21
 10 a  21 fuer z unif      0.02
 10 a  21 mome x unif      0.06
 46 a  57 fuer y unif     -1.10
 46 a  57 mome x unif      3.51
 46 a  57 fuer z unif      0.02
 46 a  57 mome x unif      0.06
 70 a  81 fuer y unif     -1.10
 70 a  81 mome x unif      2.81
 70 a  81 fuer z unif      0.02
 70 a  81 mome x unif      0.06
 94 a 105 fuer y unif     -1.10
 94 a 105 mome x unif      2.57
 94 a 105 fuer z unif      0.02
 94 a 105 mome x unif      0.06
hipo 196 sob. a- 9 dcha ipf-75
carg en barr
 22 a  33 fuer y unif    -11.00
 22 a  33 mome x unif     35.06
 22 a  33 fuer z unif      0.16
 22 a  33 mome x unif      0.65
 34 a  39 fuer y unif    -13.20
 40       fuer y unif    -13.20      0.00      0.01
 40       fuer y unif    -11.00      0.01     -0.01
 41 a  45 fuer y unif    -11.00
 34 a  39 mome x unif     43.39
 40       mome x unif     43.53      0.00      0.01
 40       mome x unif     36.28      0.01     -0.01
 41 a  45 mome x unif     36.17
 34 a  39 fuer z unif      0.20
 40       fuer z unif      0.20      0.00      0.01
 40       fuer z unif      0.16      0.01     -0.01
 41 a  45 fuer z unif      0.16
 34 a  39 mome x unif      0.78
 40       mome x unif      0.78      0.00      0.01
 40       mome x unif      0.65      0.01     -0.01
 41 a  45 mome x unif      0.65
  1 a   9 fuer y unif    -11.00
  1 a   9 mome x unif     27.91
  1 a   9 fuer z unif      0.16
  1 a   9 mome x unif      0.65
 58 a  69 fuer y unif    -11.00
 58 a  69 mome x unif     32.20
 58 a  69 fuer z unif      0.16
 58 a  69 mome x unif      0.65
 82 a  93 fuer y unif    -11.00
 82 a  93 mome x unif     25.05
 82 a  93 fuer z unif      0.16
 82 a  93 mome x unif      0.65
106 a 114 fuer y unif    -11.00
106 a 114 mome x unif     30.93
106 a 114 fuer z unif      0.16
106 a 114 mome x unif      0.65
 10 a  21 fuer y unif     -1.10
 10 a  21 mome x unif      3.21
 10 a  21 fuer z unif      0.02
 10 a  21 mome x unif      0.06
```

```
 46 a  57 fuer y unif     -1.10
 46 a  57 mome x unif      3.51
 46 a  57 fuer z unif      0.02
 46 a  57 mome x unif      0.06
 70 a  81 fuer y unif     -1.10
 70 a  81 mome x unif      2.81
 70 a  81 fuer z unif      0.02
 70 a  81 mome x unif      0.06
 94 a 105 fuer y unif     -1.10
 94 a 105 mome x unif      2.57
 94 a 105 fuer z unif      0.02
 94 a 105 mome x unif      0.06
hipo 197 sob. a-10 dcha ipf-75
carg en barr
 34 a  39 fuer y unif    -11.00
 40       fuer y unif    -11.00      0.00      0.01
 40       fuer y unif    -13.20      0.01     -0.01
 41 a  45 fuer y unif    -13.20
 34 a  39 mome x unif     36.16
 40       mome x unif     36.28      0.00      0.01
 40       mome x unif     43.53      0.01     -0.01
 41 a  45 mome x unif     43.40
 34 a  39 fuer z unif      0.16
 40       fuer z unif      0.16      0.00      0.01
 40       fuer z unif      0.20      0.01     -0.01
 41 a  45 fuer z unif      0.20
 34 a  39 mome x unif      0.65
 40       mome x unif      0.65      0.00      0.01
 40       mome x unif      0.78      0.01     -0.01
 41 a  45 mome x unif      0.78
 46 a  57 fuer y unif    -11.00
 46 a  57 mome x unif     35.10
 46 a  57 fuer z unif      0.16
 46 a  57 mome x unif      0.65
 10 a  21 fuer y unif    -11.00
 10 a  21 mome x unif     32.06
 10 a  21 fuer z unif      0.16
 10 a  21 mome x unif      0.65
 70 a  81 fuer y unif    -11.00
 70 a  81 mome x unif     28.13
 70 a  81 fuer z unif      0.16
 70 a  81 mome x unif      0.65
 94 a 105 fuer y unif    -11.00
 94 a 105 mome x unif     25.66
 94 a 105 fuer z unif      0.16
 94 a 105 mome x unif      0.65
 22 a  33 fuer y unif     -1.10
 22 a  33 mome x unif      3.51
 22 a  33 fuer z unif      0.02
 22 a  33 mome x unif      0.06
  1 a   9 fuer y unif     -1.10
  1 a   9 mome x unif      2.79
  1 a   9 fuer z unif      0.02
  1 a   9 mome x unif      0.06
 58 a  69 fuer y unif     -1.10
 58 a  69 mome x unif      3.22
 58 a  69 fuer z unif      0.02
 58 a  69 mome x unif      0.06
 82 a  93 fuer y unif     -1.10
 82 a  93 mome x unif      2.50
 82 a  93 fuer z unif      0.02
 82 a  93 mome x unif      0.06
106 a 114 fuer y unif     -1.10
106 a 114 mome x unif      3.09
```

```
106 a 114 fuer z unif      0.02
106 a 114 mome x unif      0.06
hipo 198 sob. a-11 dcha ipf-75
carg en barr
 34 a  42 fuer y unif    -11.00
 43       fuer y unif    -11.00      0.00      0.01
 43       fuer y unif    -13.20      0.01     -0.01
 44 a  45 fuer y unif    -13.20
 34 a  42 mome x unif     36.14
 43       mome x unif     36.20      0.00      0.01
 43       mome x unif     43.44      0.01     -0.01
 44 a  45 mome x unif     43.34
 34 a  42 fuer z unif      0.16
 43       fuer z unif      0.16      0.00      0.01
 43       fuer z unif      0.20      0.01     -0.01
 44 a  45 fuer z unif      0.20
 34 a  42 mome x unif      0.65
 43       mome x unif      0.65      0.00      0.01
 43       mome x unif      0.78      0.01     -0.01
 44 a  45 mome x unif      0.78
 46 a  48 fuer y unif    -13.20
 49       fuer y unif    -13.20      0.00      0.01
 49       fuer y unif    -11.00      0.01     -0.01
 50 a  57 fuer y unif    -11.00
 46 a  48 mome x unif     43.08
 49       mome x unif     42.81      0.00      0.01
 49       mome x unif     35.67      0.01     -0.01
 50 a  57 mome x unif     34.88
 46 a  48 fuer z unif      0.20
 49       fuer z unif      0.20      0.00      0.01
 49       fuer z unif      0.16      0.01     -0.01
 50 a  57 fuer z unif      0.16
 46 a  48 mome x unif      0.78
 49       mome x unif      0.78      0.00      0.01
 49       mome x unif      0.65      0.01     -0.01
 50 a  57 mome x unif      0.65
 10 a  21 fuer y unif    -11.00
 10 a  21 mome x unif     32.06
 10 a  21 fuer z unif      0.16
 10 a  21 mome x unif      0.65
 70 a  81 fuer y unif    -11.00
 70 a  81 mome x unif     28.13
 70 a  81 fuer z unif      0.16
 70 a  81 mome x unif      0.65
 94 a 105 fuer y unif    -11.00
 94 a 105 mome x unif     25.66
 94 a 105 fuer z unif      0.16
 94 a 105 mome x unif      0.65
 22 a  33 fuer y unif     -1.10
 22 a  33 mome x unif      3.51
 22 a  33 fuer z unif      0.02
 22 a  33 mome x unif      0.06
  1 a   9 fuer y unif     -1.10
  1 a   9 mome x unif      2.79
  1 a   9 fuer z unif      0.02
  1 a   9 mome x unif      0.06
 58 a  69 fuer y unif     -1.10
 58 a  69 mome x unif      3.22
 58 a  69 fuer z unif      0.02
 58 a  69 mome x unif      0.06
 82 a  93 fuer y unif     -1.10
 82 a  93 mome x unif      2.50
 82 a  93 fuer z unif      0.02
 82 a  93 mome x unif      0.06
106 a 114 fuer y unif     -1.10
106 a 114 mome x unif      3.09
106 a 114 fuer z unif      0.02
106 a 114 mome x unif      0.06
hipo 199 sob. a-12 dcha ipf-75
carg en barr
 34 a  45 fuer y unif    -11.00
 34 a  45 mome x unif     36.07
 34 a  45 fuer z unif      0.16
 34 a  45 mome x unif      0.65
 46 a  51 fuer y unif    -13.20
 52       fuer y unif    -13.20      0.00      0.01
 52       fuer y unif    -11.00      0.01     -0.01
 53 a  57 fuer y unif    -11.00
 46 a  51 mome x unif     42.83
 52       mome x unif     42.27      0.00      0.01
 52       mome x unif     35.23      0.01     -0.01
 53 a  57 mome x unif     34.63
 46 a  51 fuer z unif      0.20
 52       fuer z unif      0.20      0.00      0.01
 52       fuer z unif      0.16      0.01     -0.01
 53 a  57 fuer z unif      0.16
 46 a  51 mome x unif      0.78
 52       mome x unif      0.78      0.00      0.01
 52       mome x unif      0.65      0.01     -0.01
 53 a  57 mome x unif      0.65
 10 a  21 fuer y unif    -11.00
 10 a  21 mome x unif     32.06
 10 a  21 fuer z unif      0.16
 10 a  21 mome x unif      0.65
 70 a  81 fuer y unif    -11.00
 70 a  81 mome x unif     28.13
 70 a  81 fuer z unif      0.16
 70 a  81 mome x unif      0.65
 94 a 105 fuer y unif    -11.00
 94 a 105 mome x unif     25.66
 94 a 105 fuer z unif      0.16
 94 a 105 mome x unif      0.65
 22 a  33 fuer y unif     -1.10
 22 a  33 mome x unif      3.51
 22 a  33 fuer z unif      0.02
 22 a  33 mome x unif      0.06
  1 a   9 fuer y unif     -1.10
  1 a   9 mome x unif      2.79
  1 a   9 fuer z unif      0.02
  1 a   9 mome x unif      0.06
 58 a  69 fuer y unif     -1.10
 58 a  69 mome x unif      3.22
 58 a  69 fuer z unif      0.02
 58 a  69 mome x unif      0.06
 82 a  93 fuer y unif     -1.10
 82 a  93 mome x unif      2.50
 82 a  93 fuer z unif      0.02
 82 a  93 mome x unif      0.06
106 a 114 fuer y unif     -1.10
106 a 114 mome x unif      3.09
106 a 114 fuer z unif      0.02
106 a 114 mome x unif      0.06
hipo 200 sob. a-13 dcha ipf-75
carg en barr
 46 a  51 fuer y unif    -11.00
 52       fuer y unif    -11.00      0.00      0.01
 52       fuer y unif    -13.20      0.01     -0.01
 53 a  57 fuer y unif    -13.20
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```
 46 a  51 mome x unif    35.70
 52       mome x unif    35.23      0.00      0.01
 52       mome x unif    42.27      0.01     -0.01
 53 a  57 mome x unif    41.56
 46 a  51 fuer z unif     0.16
 52       fuer z unif     0.16      0.00      0.01
 52       fuer z unif     0.20      0.01     -0.01
 53 a  57 fuer z unif     0.20
 46 a  51 mome x unif     0.65
 52       mome x unif     0.65      0.00      0.01
 52       mome x unif     0.78      0.01     -0.01
 53 a  57 mome x unif     0.78
 58 a  69 fuer y unif   -11.00
 58 a  69 mome x unif    32.20
 58 a  69 fuer z unif     0.16
 58 a  69 mome x unif     0.65
 22 a  33 fuer y unif   -11.00
 22 a  33 mome x unif    35.06
 22 a  33 fuer z unif     0.16
 22 a  33 mome x unif     0.65
  1 a   9 fuer y unif   -11.00
  1 a   9 mome x unif    27.91
  1 a   9 fuer z unif     0.16
  1 a   9 mome x unif     0.65
 82 a  93 fuer y unif   -11.00
 82 a  93 mome x unif    25.05
 82 a  93 fuer z unif     0.16
 82 a  93 mome x unif     0.65
106 a 114 fuer y unif   -11.00
106 a 114 mome x unif    30.93
106 a 114 fuer z unif     0.16
106 a 114 mome x unif     0.65
 34 a  45 fuer y unif    -1.10
 34 a  45 mome x unif     3.61
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.06
 10 a  21 fuer y unif    -1.10
 10 a  21 mome x unif     3.21
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.06
 70 a  81 fuer y unif    -1.10
 70 a  81 mome x unif     2.81
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.06
 94 a 105 fuer y unif    -1.10
 94 a 105 mome x unif     2.57
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.06
hipo 201 sob. a-14 dcha ipf-75
carg en barr
 46 a  54 fuer y unif   -11.00
 55       fuer y unif   -11.00      0.00      0.01
 55       fuer y unif   -13.20      0.01     -0.01
 56 a  57 fuer y unif   -13.20
 46 a  54 mome x unif    35.43
 55       mome x unif    34.66      0.00      0.01
 55       mome x unif    41.59      0.01     -0.01
 56 a  57 mome x unif    41.19
 46 a  54 fuer z unif     0.16
 55       fuer z unif     0.16      0.00      0.01
 55       fuer z unif     0.20      0.01     -0.01
 56 a  57 fuer z unif     0.20
 46 a  54 mome x unif     0.65
 55       mome x unif     0.65      0.00      0.01
 55       mome x unif     0.78      0.01     -0.01
 56 a  57 mome x unif     0.78
 58 a  60 fuer y unif   -13.20
 61       fuer y unif   -13.20      0.00      0.01
 61       fuer y unif   -11.00      0.01     -0.01
 62 a  69 fuer y unif   -11.00
 58 a  60 mome x unif    40.43
 61       mome x unif    39.77      0.00      0.01
 61       mome x unif    33.14      0.01     -0.01
 62 a  69 mome x unif    31.64
 58 a  60 fuer z unif     0.20
 61       fuer z unif     0.20      0.00      0.01
 61       fuer z unif     0.16      0.01     -0.01
 62 a  69 fuer z unif     0.16
 58 a  60 mome x unif     0.78
 61       mome x unif     0.78      0.00      0.01
 61       mome x unif     0.65      0.01     -0.01
 62 a  69 mome x unif     0.65
 22 a  33 fuer y unif   -11.00
 22 a  33 mome x unif    35.06
 22 a  33 fuer z unif     0.16
 22 a  33 mome x unif     0.65
  1 a   9 fuer y unif   -11.00
  1 a   9 mome x unif    27.91
  1 a   9 fuer z unif     0.16
  1 a   9 mome x unif     0.65
 82 a  93 fuer y unif   -11.00
 82 a  93 mome x unif    25.05
 82 a  93 fuer z unif     0.16
 82 a  93 mome x unif     0.65
106 a 114 fuer y unif   -11.00
106 a 114 mome x unif    30.93
106 a 114 fuer z unif     0.16
106 a 114 mome x unif     0.65
 34 a  45 fuer y unif    -1.10
 34 a  45 mome x unif     3.61
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.06
 10 a  21 fuer y unif    -1.10
 10 a  21 mome x unif     3.21
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.06
 70 a  81 fuer y unif    -1.10
 70 a  81 mome x unif     2.81
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.06
 94 a 105 fuer y unif    -1.10
 94 a 105 mome x unif     2.57
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.06
hipo 202 sob. a-15 dcha ipf-75
carg en barr
 46 a  57 fuer y unif   -11.00
 46 a  57 mome x unif    35.10
 46 a  57 fuer z unif     0.16
 46 a  57 mome x unif     0.65
 58 a  63 fuer y unif   -13.20
 64       fuer y unif   -13.20      0.00      0.01
 64       fuer y unif   -11.00      0.01     -0.01
 65 a  69 fuer y unif   -11.00
 58 a  63 mome x unif    39.89
 64       mome x unif    38.65      0.00      0.01
 64       mome x unif    32.21      0.01     -0.01
 65 a  69 mome x unif    31.15
```

58	a	63	fuer	z	unif	0.20		
64			fuer	z	unif	0.20	0.00	0.01
64			fuer	z	unif	0.16	0.01	-0.01
65	a	69	fuer	z	unif	0.16		
58	a	63	mome	x	unif	0.78		
64			mome	x	unif	0.78	0.00	0.01
64			mome	x	unif	0.65	0.01	-0.01
65	a	69	mome	x	unif	0.65		
22	a	33	fuer	y	unif	-11.00		
22	a	33	mome	x	unif	35.06		
22	a	33	fuer	z	unif	0.16		
22	a	33	mome	x	unif	0.65		
1	a	9	fuer	y	unif	-11.00		
1	a	9	mome	x	unif	27.91		
1	a	9	fuer	z	unif	0.16		
1	a	9	mome	x	unif	0.65		
82	a	93	fuer	y	unif	-11.00		
82	a	93	mome	x	unif	25.05		
82	a	93	fuer	z	unif	0.16		
82	a	93	mome	x	unif	0.65		
106	a	114	fuer	y	unif	-11.00		
106	a	114	mome	x	unif	30.93		
106	a	114	fuer	z	unif	0.16		
106	a	114	mome	x	unif	0.65		
34	a	45	fuer	y	unif	-1.10		
34	a	45	mome	x	unif	3.61		
34	a	45	fuer	z	unif	0.02		
34	a	45	mome	x	unif	0.06		
10	a	21	fuer	y	unif	-1.10		
10	a	21	mome	x	unif	3.21		
10	a	21	fuer	z	unif	0.02		
10	a	21	mome	x	unif	0.06		
70	a	81	fuer	y	unif	-1.10		
70	a	81	mome	x	unif	2.81		
70	a	81	fuer	z	unif	0.02		
70	a	81	mome	x	unif	0.06		
94	a	105	fuer	y	unif	-1.10		
94	a	105	mome	x	unif	2.57		
94	a	105	fuer	z	unif	0.02		
94	a	105	mome	x	unif	0.06		

hipo 203 sob. a-16 dcha ipf-75
carg en barr

58	a	63	fuer	y	unif	-11.00		
64			fuer	y	unif	-11.00	0.00	0.01
64			fuer	y	unif	-13.20	0.01	-0.01
65	a	69	fuer	y	unif	-13.20		
58	a	63	mome	x	unif	33.24		
64			mome	x	unif	32.21	0.00	0.01
64			mome	x	unif	38.65	0.01	-0.01
65	a	69	mome	x	unif	37.38		
58	a	63	fuer	z	unif	0.16		
64			fuer	z	unif	0.16	0.00	0.01
64			fuer	z	unif	0.20	0.01	-0.01
65	a	69	fuer	z	unif	0.20		
58	a	63	mome	x	unif	0.65		
64			mome	x	unif	0.65	0.00	0.01
64			mome	x	unif	0.78	0.01	-0.01
65	a	69	mome	x	unif	0.78		
70	a	81	fuer	y	unif	-11.00		
70	a	81	mome	x	unif	28.13		
70	a	81	fuer	z	unif	0.16		
70	a	81	mome	x	unif	0.65		
34	a	45	fuer	y	unif	-11.00		
34	a	45	mome	x	unif	36.07		
34	a	45	fuer	z	unif	0.16		
34	a	45	mome	x	unif	0.65		
10	a	21	fuer	y	unif	-11.00		
10	a	21	mome	x	unif	32.06		
10	a	21	fuer	z	unif	0.16		
10	a	21	mome	x	unif	0.65		
94	a	105	fuer	y	unif	-11.00		
94	a	105	mome	x	unif	25.66		
94	a	105	fuer	z	unif	0.16		
94	a	105	mome	x	unif	0.65		
46	a	57	fuer	y	unif	-1.10		
46	a	57	mome	x	unif	3.51		
46	a	57	fuer	z	unif	0.02		
46	a	57	mome	x	unif	0.06		
22	a	33	fuer	y	unif	-1.10		
22	a	33	mome	x	unif	3.51		
22	a	33	fuer	z	unif	0.02		
22	a	33	mome	x	unif	0.06		
1	a	9	fuer	y	unif	-1.10		
1	a	9	mome	x	unif	2.79		
1	a	9	fuer	z	unif	0.02		
1	a	9	mome	x	unif	0.06		
82	a	93	fuer	y	unif	-1.10		
82	a	93	mome	x	unif	2.50		
82	a	93	fuer	z	unif	0.02		
82	a	93	mome	x	unif	0.06		
106	a	114	fuer	y	unif	-1.10		
106	a	114	mome	x	unif	3.09		
106	a	114	fuer	z	unif	0.02		
106	a	114	mome	x	unif	0.06		

hipo 204 sob. a-17 dcha ipf-75
carg en barr

58	a	66	fuer	y	unif	-11.00		
67			fuer	y	unif	-11.00	0.00	0.01
67			fuer	y	unif	-13.20	0.01	-0.01
68	a	69	fuer	y	unif	-13.20		
58	a	66	mome	x	unif	32.74		
67			mome	x	unif	31.16	0.00	0.01
67			mome	x	unif	37.39	0.01	-0.01
68	a	69	mome	x	unif	36.74		
58	a	66	fuer	z	unif	0.16		
67			fuer	z	unif	0.16	0.00	0.01
67			fuer	z	unif	0.20	0.01	-0.01
68	a	69	fuer	z	unif	0.20		
58	a	66	mome	x	unif	0.65		
67			mome	x	unif	0.65	0.00	0.01
67			mome	x	unif	0.78	0.01	-0.01
68	a	69	mome	x	unif	0.78		
70	a	72	fuer	y	unif	-13.20		
73			fuer	y	unif	-13.20	0.00	0.01
73			fuer	y	unif	-11.00	0.01	-0.01
74	a	81	fuer	y	unif	-11.00		
70	a	72	mome	x	unif	35.62		
73			mome	x	unif	34.73	0.00	0.01
73			mome	x	unif	28.94	0.01	-0.01
74	a	81	mome	x	unif	27.38		
70	a	72	fuer	z	unif	0.20		
73			fuer	z	unif	0.20	0.00	0.01
73			fuer	z	unif	0.16	0.01	-0.01
74	a	81	fuer	z	unif	0.16		
70	a	72	mome	x	unif	0.78		
73			mome	x	unif	0.78	0.00	0.01
73			mome	x	unif	0.65	0.01	-0.01
74	a	81	mome	x	unif	0.65		

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 34 a  45 fuer y unif   -11.00
 34 a  45 mome x unif    36.07
 34 a  45 fuer z unif     0.16
 34 a  45 mome x unif     0.65
 10 a  21 fuer y unif   -11.00
 10 a  21 mome x unif    32.06
 10 a  21 fuer z unif     0.16
 10 a  21 mome x unif     0.65
 94 a 105 fuer y unif   -11.00
 94 a 105 mome x unif    25.66
 94 a 105 fuer z unif     0.16
 94 a 105 mome x unif     0.65
 46 a  57 fuer y unif    -1.10
 46 a  57 mome x unif     3.51
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.06
 22 a  33 fuer y unif    -1.10
 22 a  33 mome x unif     3.51
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.06
  1 a   9 fuer y unif    -1.10
  1 a   9 mome x unif     2.79
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.06
 82 a  93 fuer y unif    -1.10
 82 a  93 mome x unif     2.50
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.06
106 a 114 fuer y unif    -1.10
106 a 114 mome x unif     3.09
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.06
hipo 205 sob. a-18 dcha ipf-75
carg en barr
 58 a  69 fuer y unif   -11.00
 58 a  69 mome x unif    32.20
 58 a  69 fuer z unif     0.16
 58 a  69 mome x unif     0.65
 70 a  75 fuer y unif   -13.20
 76       fuer y unif   -13.20      0.00      0.01
 76       fuer y unif   -11.00      0.01     -0.01
 77 a  81 fuer y unif   -11.00
 70 a  75 mome x unif    34.96
 76       mome x unif    33.41      0.00      0.01
 76       mome x unif    27.84      0.01     -0.01
 77 a  81 mome x unif    26.85
 70 a  75 fuer z unif     0.20
 76       fuer z unif     0.20      0.00      0.01
 76       fuer z unif     0.16      0.01     -0.01
 77 a  81 fuer z unif     0.16
 70 a  75 mome x unif     0.78
 76       mome x unif     0.78      0.00      0.01
 76       mome x unif     0.65      0.01     -0.01
 77 a  81 mome x unif     0.65
 34 a  45 fuer y unif   -11.00
 34 a  45 mome x unif    36.07
 34 a  45 fuer z unif     0.16
 34 a  45 mome x unif     0.65
 10 a  21 fuer y unif   -11.00
 10 a  21 mome x unif    32.06
 10 a  21 fuer z unif     0.16
 10 a  21 mome x unif     0.65
 94 a 105 fuer y unif   -11.00
 94 a 105 mome x unif    25.66
 94 a 105 fuer z unif     0.16
 94 a 105 mome x unif     0.65
 46 a  57 fuer y unif    -1.10
 46 a  57 mome x unif     3.51
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.06
 22 a  33 fuer y unif    -1.10
 22 a  33 mome x unif     3.51
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.06
  1 a   9 fuer y unif    -1.10
  1 a   9 mome x unif     2.79
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.06
 82 a  93 fuer y unif    -1.10
 82 a  93 mome x unif     2.50
 82 a  93 fuer z unif     0.02
 82 a  93 mome x unif     0.06
106 a 114 fuer y unif    -1.10
106 a 114 mome x unif     3.09
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.06
hipo 206 sob. a-19 dcha ipf-75
carg en barr
 70 a  75 fuer y unif   -11.00
 76       fuer y unif   -11.00      0.00      0.01
 76       fuer y unif   -13.20      0.01     -0.01
 77 a  81 fuer y unif   -13.20
 70 a  75 mome x unif    29.13
 76       mome x unif    27.84      0.00      0.01
 76       mome x unif    33.41      0.01     -0.01
 77 a  81 mome x unif    32.21
 70 a  75 fuer z unif     0.16
 76       fuer z unif     0.16      0.00      0.01
 76       fuer z unif     0.20      0.01     -0.01
 77 a  81 fuer z unif     0.20
 70 a  75 mome x unif     0.65
 76       mome x unif     0.65      0.00      0.01
 76       mome x unif     0.78      0.01     -0.01
 77 a  81 mome x unif     0.78
 82 a  93 fuer y unif   -11.00
 82 a  93 mome x unif    25.05
 82 a  93 fuer z unif     0.16
 82 a  93 mome x unif     0.65
 46 a  57 fuer y unif   -11.00
 46 a  57 mome x unif    35.10
 46 a  57 fuer z unif     0.16
 46 a  57 mome x unif     0.65
 22 a  33 fuer y unif   -11.00
 22 a  33 mome x unif    35.06
 22 a  33 fuer z unif     0.16
 22 a  33 mome x unif     0.65
  1 a   9 fuer y unif   -11.00
  1 a   9 mome x unif    27.91
  1 a   9 fuer z unif     0.16
  1 a   9 mome x unif     0.65
106 a 114 fuer y unif   -11.00
106 a 114 mome x unif    30.93
106 a 114 fuer z unif     0.16
106 a 114 mome x unif     0.65
 58 a  69 fuer y unif    -1.10
 58 a  69 mome x unif     3.22
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.06
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 34 a  45 fuer y unif    -1.10
 34 a  45 mome x unif     3.61
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.06
 10 a  21 fuer y unif    -1.10
 10 a  21 mome x unif     3.21
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.06
 94 a 105 fuer y unif    -1.10
 94 a 105 mome x unif     2.57
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.06
hipo 207 sob. a-20 dcha ipf-75
carg en barr
 70 a  78 fuer y unif   -11.00
 79       fuer y unif   -11.00     0.00     0.01
 79       fuer y unif   -13.20     0.01    -0.01
 80 a  81 fuer y unif   -13.20
 70 a  78 mome x unif    28.61
 79       mome x unif    26.82     0.00     0.01
 79       mome x unif    32.18     0.01    -0.01
 80 a  81 mome x unif    31.62
 70 a  78 fuer z unif     0.16
 79       fuer z unif     0.16     0.00     0.01
 79       fuer z unif     0.20     0.01    -0.01
 80 a  81 fuer z unif     0.20
 70 a  78 mome x unif     0.65
 79       mome x unif     0.65     0.00     0.01
 79       mome x unif     0.78     0.01    -0.01
 80 a  81 mome x unif     0.78
 82 a  84 fuer y unif   -13.20
 85       fuer y unif   -13.20     0.00     0.01
 85       fuer y unif   -11.00     0.01    -0.01
 86 a  93 fuer y unif   -11.00
 82 a  84 mome x unif    30.77
 85       mome x unif    30.18     0.00     0.01
 85       mome x unif    25.15     0.01    -0.01
 86 a  93 mome x unif    24.56
 82 a  84 fuer z unif     0.20
 85       fuer z unif     0.20     0.00     0.01
 85       fuer z unif     0.16     0.01    -0.01
 86 a  93 fuer z unif     0.16
 82 a  84 mome x unif     0.78
 85       mome x unif     0.78     0.00     0.01
 85       mome x unif     0.65     0.01    -0.01
 86 a  93 mome x unif     0.65
 46 a  57 fuer y unif   -11.00
 46 a  57 mome x unif    35.10
 46 a  57 fuer z unif     0.16
 46 a  57 mome x unif     0.65
 22 a  33 fuer y unif   -11.00
 22 a  33 mome x unif    35.06
 22 a  33 fuer z unif     0.16
 22 a  33 mome x unif     0.65
  1 a   9 fuer y unif   -11.00
  1 a   9 mome x unif    27.91
  1 a   9 fuer z unif     0.16
  1 a   9 mome x unif     0.65
106 a 114 fuer y unif   -11.00
106 a 114 mome x unif    30.93
106 a 114 fuer z unif     0.16
106 a 114 mome x unif     0.65
 58 a  69 fuer y unif    -1.10
 58 a  69 mome x unif     3.22
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.06
 34 a  45 fuer y unif    -1.10
 34 a  45 mome x unif     3.61
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.06
 10 a  21 fuer y unif    -1.10
 10 a  21 mome x unif     3.21
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.06
 94 a 105 fuer y unif    -1.10
 94 a 105 mome x unif     2.57
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.06
hipo 208 sob. a-21 dcha ipf-75
carg en barr
 70 a  81 fuer y unif   -11.00
 70 a  81 mome x unif    28.13
 70 a  81 fuer z unif     0.16
 70 a  81 mome x unif     0.65
 82 a  87 fuer y unif   -13.20
 88       fuer y unif   -13.20     0.00     0.01
 88       fuer y unif   -11.00     0.01    -0.01
 89 a  93 fuer y unif   -11.00
 82 a  87 mome x unif    30.40
 88       mome x unif    29.50     0.00     0.01
 88       mome x unif    24.58     0.01    -0.01
 89 a  93 mome x unif    24.32
 82 a  87 fuer z unif     0.20
 88       fuer z unif     0.20     0.00     0.01
 88       fuer z unif     0.16     0.01    -0.01
 89 a  93 fuer z unif     0.16
 82 a  87 mome x unif     0.78
 88       mome x unif     0.78     0.00     0.01
 88       mome x unif     0.65     0.01    -0.01
 89 a  93 mome x unif     0.65
 46 a  57 fuer y unif   -11.00
 46 a  57 mome x unif    35.10
 46 a  57 fuer z unif     0.16
 46 a  57 mome x unif     0.65
 22 a  33 fuer y unif   -11.00
 22 a  33 mome x unif    35.06
 22 a  33 fuer z unif     0.16
 22 a  33 mome x unif     0.65
  1 a   9 fuer y unif   -11.00
  1 a   9 mome x unif    27.91
  1 a   9 fuer z unif     0.16
  1 a   9 mome x unif     0.65
106 a 114 fuer y unif   -11.00
106 a 114 mome x unif    30.93
106 a 114 fuer z unif     0.16
106 a 114 mome x unif     0.65
 58 a  69 fuer y unif    -1.10
 58 a  69 mome x unif     3.22
 58 a  69 fuer z unif     0.02
 58 a  69 mome x unif     0.06
 34 a  45 fuer y unif    -1.10
 34 a  45 mome x unif     3.61
 34 a  45 fuer z unif     0.02
 34 a  45 mome x unif     0.06
 10 a  21 fuer y unif    -1.10
 10 a  21 mome x unif     3.21
 10 a  21 fuer z unif     0.02
 10 a  21 mome x unif     0.06
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 94 a 105 fuer y unif    -1.10
 94 a 105 mome x unif     2.57
 94 a 105 fuer z unif     0.02
 94 a 105 mome x unif     0.06
hipo 209 sob. a-22 dcha ipf-75
carg en barr
 82 a  87 fuer y unif   -11.00
 88       fuer y unif   -11.00      0.00      0.01
 88       fuer y unif   -13.20      0.01     -0.01
 89 a  93 fuer y unif   -13.20
 82 a  87 mome x unif    25.33
 88       mome x unif    24.58      0.00      0.01
 88       mome x unif    29.50      0.01     -0.01
 89 a  93 mome x unif    29.18
 82 a  87 fuer z unif     0.16
 88       fuer z unif     0.16      0.00      0.01
 88       fuer z unif     0.20      0.01     -0.01
 89 a  93 fuer z unif     0.20
 82 a  87 mome x unif     0.65
 88       mome x unif     0.65      0.00      0.01
 88       mome x unif     0.78      0.01     -0.01
 89 a  93 mome x unif     0.78
 94 a 105 fuer y unif   -11.00
 94 a 105 mome x unif    25.66
 94 a 105 fuer z unif     0.16
 94 a 105 mome x unif     0.65
 58 a  69 fuer y unif   -11.00
 58 a  69 mome x unif    32.20
 58 a  69 fuer z unif     0.16
 58 a  69 mome x unif     0.65
 34 a  45 fuer y unif   -11.00
 34 a  45 mome x unif    36.07
 34 a  45 fuer z unif     0.16
 34 a  45 mome x unif     0.65
 10 a  21 fuer y unif   -11.00
 10 a  21 mome x unif    32.06
 10 a  21 fuer z unif     0.16
 10 a  21 mome x unif     0.65
 70 a  81 fuer y unif    -1.10
 70 a  81 mome x unif     2.81
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.06
 46 a  57 fuer y unif    -1.10
 46 a  57 mome x unif     3.51
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.06
 22 a  33 fuer y unif    -1.10
 22 a  33 mome x unif     3.51
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.06
  1 a   9 fuer y unif    -1.10
  1 a   9 mome x unif     2.79
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.06
106 a 114 fuer y unif    -1.10
106 a 114 mome x unif     3.09
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.06
hipo 210 sob. a-23 dcha ipf-75
carg en barr
 82 a  90 fuer y unif   -11.00
 91       fuer y unif   -11.00      0.00      0.01
 91       fuer y unif   -13.20      0.01     -0.01
 92 a  93 fuer y unif   -13.20
 82 a  90 mome x unif    25.12
 91       mome x unif    24.26      0.00      0.01
 91       mome x unif    29.11      0.01     -0.01
 92 a  93 mome x unif    29.04
 82 a  90 fuer z unif     0.16
 91       fuer z unif     0.16      0.00      0.01
 91       fuer z unif     0.20      0.01     -0.01
 92 a  93 fuer z unif     0.20
 82 a  90 mome x unif     0.65
 91       mome x unif     0.65      0.00      0.01
 91       mome x unif     0.78      0.01     -0.01
 92 a  93 mome x unif     0.78
 94 a  96 fuer y unif   -13.20
 97       fuer y unif   -13.20      0.00      0.01
 97       fuer y unif   -11.00      0.01     -0.01
 98 a 105 fuer y unif   -11.00
 94 a  96 mome x unif    29.14
 97       mome x unif    29.38      0.00      0.01
 97       mome x unif    24.49      0.01     -0.01
 98 a 105 mome x unif    25.89
 94 a  96 fuer z unif     0.20
 97       fuer z unif     0.20      0.00      0.01
 97       fuer z unif     0.16      0.01     -0.01
 98 a 105 fuer z unif     0.16
 94 a  96 mome x unif     0.78
 97       mome x unif     0.78      0.00      0.01
 97       mome x unif     0.65      0.01     -0.01
 98 a 105 mome x unif     0.65
 58 a  69 fuer y unif   -11.00
 58 a  69 mome x unif    32.20
 58 a  69 fuer z unif     0.16
 58 a  69 mome x unif     0.65
 34 a  45 fuer y unif   -11.00
 34 a  45 mome x unif    36.07
 34 a  45 fuer z unif     0.16
 34 a  45 mome x unif     0.65
 10 a  21 fuer y unif   -11.00
 10 a  21 mome x unif    32.06
 10 a  21 fuer z unif     0.16
 10 a  21 mome x unif     0.65
 70 a  81 fuer y unif    -1.10
 70 a  81 mome x unif     2.81
 70 a  81 fuer z unif     0.02
 70 a  81 mome x unif     0.06
 46 a  57 fuer y unif    -1.10
 46 a  57 mome x unif     3.51
 46 a  57 fuer z unif     0.02
 46 a  57 mome x unif     0.06
 22 a  33 fuer y unif    -1.10
 22 a  33 mome x unif     3.51
 22 a  33 fuer z unif     0.02
 22 a  33 mome x unif     0.06
  1 a   9 fuer y unif    -1.10
  1 a   9 mome x unif     2.79
  1 a   9 fuer z unif     0.02
  1 a   9 mome x unif     0.06
106 a 114 fuer y unif    -1.10
106 a 114 mome x unif     3.09
106 a 114 fuer z unif     0.02
106 a 114 mome x unif     0.06
hipo 211 sob. a-24 dcha ipf-75
carg en barr
 82 a  93 fuer y unif   -11.00
 82 a  93 mome x unif    25.05
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82	a	93	fuer	z	unif	0.16		
82	a	93	mome	x	unif	0.65		
94	a	99	fuer	y	unif	-13.20		
100			fuer	y	unif	-13.20	0.00	0.01
100			fuer	y	unif	-11.00	0.01	-0.01
101	a	105	fuer	y	unif	-11.00		
94	a	99	mome	x	unif	29.44		
100			mome	x	unif	30.14	0.00	0.01
100			mome	x	unif	25.12	0.01	-0.01
101	a	105	mome	x	unif	26.27		
94	a	99	fuer	z	unif	0.20		
100			fuer	z	unif	0.20	0.00	0.01
100			fuer	z	unif	0.16	0.01	-0.01
101	a	105	fuer	z	unif	0.16		
94	a	99	mome	x	unif	0.78		
100			mome	x	unif	0.78	0.00	0.01
100			mome	x	unif	0.65	0.01	-0.01
101	a	105	mome	x	unif	0.65		
58	a	69	fuer	y	unif	-11.00		
58	a	69	mome	x	unif	32.20		
58	a	69	fuer	z	unif	0.16		
58	a	69	mome	x	unif	0.65		
34	a	45	fuer	y	unif	-11.00		
34	a	45	mome	x	unif	36.07		
34	a	45	fuer	z	unif	0.16		
34	a	45	mome	x	unif	0.65		
10	a	21	fuer	y	unif	-11.00		
10	a	21	mome	x	unif	32.06		
10	a	21	fuer	z	unif	0.16		
10	a	21	mome	x	unif	0.65		
70	a	81	fuer	y	unif	-1.10		
70	a	81	mome	x	unif	2.81		
70	a	81	fuer	z	unif	0.02		
70	a	81	mome	x	unif	0.06		
46	a	57	fuer	y	unif	-1.10		
46	a	57	mome	x	unif	3.51		
46	a	57	fuer	z	unif	0.02		
46	a	57	mome	x	unif	0.06		
22	a	33	fuer	y	unif	-1.10		
22	a	33	mome	x	unif	3.51		
22	a	33	fuer	z	unif	0.02		
22	a	33	mome	x	unif	0.06		
1	a	9	fuer	y	unif	-1.10		
1	a	9	mome	x	unif	2.79		
1	a	9	fuer	z	unif	0.02		
1	a	9	mome	x	unif	0.06		
106	a	114	fuer	y	unif	-1.10		
106	a	114	mome	x	unif	3.09		
106	a	114	fuer	z	unif	0.02		
106	a	114	mome	x	unif	0.06		

hipo 212 sob. a-25 dcha ipf-75
carg en barr

94	a	99	fuer	y	unif	-11.00		
100			fuer	y	unif	-11.00	0.00	0.01
100			fuer	y	unif	-13.20	0.01	-0.01
101	a	105	fuer	y	unif	-13.20		
94	a	99	mome	x	unif	24.54		
100			mome	x	unif	25.12	0.00	0.01
100			mome	x	unif	30.14	0.01	-0.01
101	a	105	mome	x	unif	31.52		
94	a	99	fuer	z	unif	0.16		
100			fuer	z	unif	0.16	0.00	0.01
100			fuer	z	unif	0.20	0.01	-0.01
101	a	105	fuer	z	unif	0.20		
94	a	99	mome	x	unif	0.65		
100			mome	x	unif	0.65	0.00	0.01
100			mome	x	unif	0.78	0.01	-0.01
101	a	105	mome	x	unif	0.78		
106	a	114	fuer	y	unif	-11.00		
106	a	114	mome	x	unif	30.93		
106	a	114	fuer	z	unif	0.16		
106	a	114	mome	x	unif	0.65		
70	a	81	fuer	y	unif	-11.00		
70	a	81	mome	x	unif	28.13		
70	a	81	fuer	z	unif	0.16		
70	a	81	mome	x	unif	0.65		
46	a	57	fuer	y	unif	-11.00		
46	a	57	mome	x	unif	35.10		
46	a	57	fuer	z	unif	0.16		
46	a	57	mome	x	unif	0.65		
22	a	33	fuer	y	unif	-11.00		
22	a	33	mome	x	unif	35.06		
22	a	33	fuer	z	unif	0.16		
22	a	33	mome	x	unif	0.65		
1	a	9	fuer	y	unif	-11.00		
1	a	9	mome	x	unif	27.91		
1	a	9	fuer	z	unif	0.16		
1	a	9	mome	x	unif	0.65		
82	a	93	fuer	y	unif	-1.10		
82	a	93	mome	x	unif	2.50		
82	a	93	fuer	z	unif	0.02		
82	a	93	mome	x	unif	0.06		
58	a	69	fuer	y	unif	-1.10		
58	a	69	mome	x	unif	3.22		
58	a	69	fuer	z	unif	0.02		
58	a	69	mome	x	unif	0.06		
34	a	45	fuer	y	unif	-1.10		
34	a	45	mome	x	unif	3.61		
34	a	45	fuer	z	unif	0.02		
34	a	45	mome	x	unif	0.06		
10	a	21	fuer	y	unif	-1.10		
10	a	21	mome	x	unif	3.21		
10	a	21	fuer	z	unif	0.02		
10	a	21	mome	x	unif	0.06		

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carg en barr

94	a	102	fuer	y	unif	-11.00		
103			fuer	y	unif	-11.00	0.00	0.01
103			fuer	y	unif	-13.20	0.01	-0.01
104	a	105	fuer	y	unif	-13.20		
94	a	102	mome	x	unif	24.99		
103			mome	x	unif	26.17	0.00	0.01
103			mome	x	unif	31.41	0.01	-0.01
104	a	105	mome	x	unif	32.24		
94	a	102	fuer	z	unif	0.16		
103			fuer	z	unif	0.16	0.00	0.01
103			fuer	z	unif	0.20	0.01	-0.01
104	a	105	fuer	z	unif	0.20		
94	a	102	mome	x	unif	0.65		
103			mome	x	unif	0.65	0.00	0.01
103			mome	x	unif	0.78	0.01	-0.01
104	a	105	mome	x	unif	0.78		
106	a	108	fuer	y	unif	-13.20		
109			fuer	y	unif	-13.20	0.00	0.01
109			fuer	y	unif	-11.00	0.01	-0.01
110	a	114	fuer	y	unif	-11.00		
106	a	108	mome	x	unif	33.97		
109			mome	x	unif	35.60	0.00	0.01

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109          mome x unif    29.67      0.01     -0.01
110 a 114    mome x unif    32.32
106 a 108    fuer z unif     0.20
109          fuer z unif     0.20      0.00      0.01
109          fuer z unif     0.16      0.01     -0.01
110 a 114    fuer z unif     0.16
106 a 108    mome x unif     0.78
109          mome x unif     0.78      0.00      0.01
109          mome x unif     0.65      0.01     -0.01
110 a 114    mome x unif     0.65
 70 a  81    fuer y unif   -11.00
 70 a  81    mome x unif    28.13
 70 a  81    fuer z unif     0.16
 70 a  81    mome x unif     0.65
 46 a  57    fuer y unif   -11.00
 46 a  57    mome x unif    35.10
 46 a  57    fuer z unif     0.16
 46 a  57    mome x unif     0.65
 22 a  33    fuer y unif   -11.00
 22 a  33    mome x unif    35.06
 22 a  33    fuer z unif     0.16
 22 a  33    mome x unif     0.65
  1 a   9    fuer y unif   -11.00
  1 a   9    mome x unif    27.91
  1 a   9    fuer z unif     0.16
  1 a   9    mome x unif     0.65
 82 a  93    fuer y unif    -1.10
 82 a  93    mome x unif     2.50
 82 a  93    fuer z unif     0.02
 82 a  93    mome x unif     0.06
 58 a  69    fuer y unif    -1.10
 58 a  69    mome x unif     3.22
 58 a  69    fuer z unif     0.02
 58 a  69    mome x unif     0.06
 34 a  45    fuer y unif    -1.10
 34 a  45    mome x unif     3.61
 34 a  45    fuer z unif     0.02
 34 a  45    mome x unif     0.06
 10 a  21    fuer y unif    -1.10
 10 a  21    mome x unif     3.21
 10 a  21    fuer z unif     0.02
 10 a  21    mome x unif     0.06
hipo 214 sob. a-27 dcha ipf-75
carg en barr
 94 a 105    fuer y unif   -11.00
 94 a 105    mome x unif    25.66
 94 a 105    fuer z unif     0.16
 94 a 105    mome x unif     0.65
106 a 111    fuer y unif   -13.20
112          fuer y unif   -13.20      0.00      0.01
112          fuer y unif   -11.00      0.01     -0.01
113 a 114    fuer y unif   -11.00
106 a 111    mome x unif    35.37
112          mome x unif    38.62      0.00      0.01
112          mome x unif    32.18      0.01     -0.01
113 a 114    mome x unif    33.67
106 a 111    fuer z unif     0.20
112          fuer z unif     0.20      0.00      0.01
112          fuer z unif     0.16      0.01     -0.01
113 a 114    fuer z unif     0.16
106 a 111    mome x unif     0.78
112          mome x unif     0.78      0.00      0.01
112          mome x unif     0.65      0.01     -0.01
113 a 114    mome x unif     0.65
```

```
 70 a  81    fuer y unif   -11.00
 70 a  81    mome x unif    28.13
 70 a  81    fuer z unif     0.16
 70 a  81    mome x unif     0.65
 46 a  57    fuer y unif   -11.00
 46 a  57    mome x unif    35.10
 46 a  57    fuer z unif     0.16
 46 a  57    mome x unif     0.65
 22 a  33    fuer y unif   -11.00
 22 a  33    mome x unif    35.06
 22 a  33    fuer z unif     0.16
 22 a  33    mome x unif     0.65
  1 a   9    fuer y unif   -11.00
  1 a   9    mome x unif    27.91
  1 a   9    fuer z unif     0.16
  1 a   9    mome x unif     0.65
 82 a  93    fuer y unif    -1.10
 82 a  93    mome x unif     2.50
 82 a  93    fuer z unif     0.02
 82 a  93    mome x unif     0.06
 58 a  69    fuer y unif    -1.10
 58 a  69    mome x unif     3.22
 58 a  69    fuer z unif     0.02
 58 a  69    mome x unif     0.06
 34 a  45    fuer y unif    -1.10
 34 a  45    mome x unif     3.61
 34 a  45    fuer z unif     0.02
 34 a  45    mome x unif     0.06
 10 a  21    fuer y unif    -1.10
 10 a  21    mome x unif     3.21
 10 a  21    fuer z unif     0.02
hipo 215 sobrecarga paseo izda (ipf-75)
carga en barra
1 fuer y unif  -1.073
2 fuer y unif  -1.080
3 fuer y unif  -1.075
4 fuer y unif  -0.984
5 fuer y unif  -0.979
6 fuer y unif  -0.975
7 fuer y unif  -0.970
8 fuer y unif  -0.966
9 fuer y unif  -0.961
1 mome x unif -6.394
2 mome x unif -6.490
3 mome x unif -6.508
4 mome x unif -5.917
5 mome x unif -5.930
6 mome x unif -5.935
7 mome x unif -5.945
8 mome x unif -5.950
9 mome x unif -5.956
hipo 216 sobrecarga paseo izda (ipf-75)
carga en barra
10 fuer y unif  -0.956
11 fuer y unif  -0.951
12 fuer y unif  -0.947
13 fuer y unif  -0.942
14 fuer y unif  -0.938
15 fuer y unif  -0.933
16 fuer y unif  -0.928
17 fuer y unif  -0.924
18 fuer y unif  -0.919
19 fuer y unif  -0.914
20 fuer y unif  -0.909
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 21 fuer y unif  -0.904
 10 mome x unif -5.955
 11 mome x unif -5.958
 12 mome x unif -5.955
 13 mome x unif -5.957
 14 mome x unif -5.953
 15 mome x unif -5.949
 16 mome x unif -5.942
 17 mome x unif -5.937
 18 mome x unif -5.927
 19 mome x unif -5.917
 20 mome x unif -5.901
 21 mome x unif -5.884
hipo 217 sobrecarga paseo izda (ipf-75)
carga en barra
 22 fuer y unif  -0.898
 23 fuer y unif  -0.893
 24 fuer y unif  -0.888
 25 fuer y unif  -0.883
 26 fuer y unif  -0.877
 27 fuer y unif  -0.872
 28 fuer y unif  -0.793
 29 fuer y unif  -0.639
 30 fuer y unif  -0.635
 31 fuer y unif  -0.779
 32 fuer y unif  -0.771
 33 fuer y unif  -0.612
 22 mome x unif -5.864
 23 mome x unif -5.846
 24 mome x unif -5.826
 25 mome x unif -5.802
 26 mome x unif -5.777
 27 mome x unif -5.752
 28 mome x unif -5.194
 29 mome x unif -4.082
 30 mome x unif -4.059
 31 mome x unif -5.123
 32 mome x unif -5.076
 33 mome x unif -3.915
hipo 218 sobrecarga paseo izda (ipf-75)
carga en barra
 34 fuer y unif  -0.609
 35 fuer y unif  -0.763
 36 fuer y unif  -0.838
 37 fuer y unif  -0.837
 38 fuer y unif  -0.835
 39 fuer y unif  -0.834
 40 fuer y unif  -0.833
 41 fuer y unif  -0.832
 42 fuer y unif  -0.831
 43 fuer y unif  -0.830
 44 fuer y unif  -0.829
 45 fuer y unif  -0.828
 34 mome x unif -3.900
 35 mome x unif -5.031
 36 mome x unif -5.579
 37 mome x unif -5.569
 38 mome x unif -5.561
 39 mome x unif -5.553
 40 mome x unif -5.544
 41 mome x unif -5.537
 42 mome x unif -5.529
 43 mome x unif -5.517
 44 mome x unif -5.505
 45 mome x unif -5.493
hipo 219 sobrecarga paseo izda (ipf-75)
carga en barra
 46 fuer y unif  -0.827
 47 fuer y unif  -0.825
 48 fuer y unif  -0.824
 49 fuer y unif  -0.822
 50 fuer y unif  -0.820
 51 fuer y unif  -0.819
 52 fuer y unif  -0.817
 53 fuer y unif  -0.816
 54 fuer y unif  -0.814
 55 fuer y unif  -0.813
 56 fuer y unif  -0.812
 57 fuer y unif  -0.811
 46 mome x unif -5.479
 47 mome x unif -5.459
 48 mome x unif -5.441
 49 mome x unif -5.419
 50 mome x unif -5.396
 51 mome x unif -5.371
 52 mome x unif -5.349
 53 mome x unif -5.324
 54 mome x unif -5.302
 55 mome x unif -5.276
 56 mome x unif -5.254
 57 mome x unif -5.229
hipo 220 sobrecarga paseo izda (ipf-75)
carga en barra
 58 fuer y unif  -0.811
 59 fuer y unif  -0.811
 60 fuer y unif  -0.812
 61 fuer y unif  -0.813
 62 fuer y unif  -0.815
 63 fuer y unif  -0.817
 64 fuer y unif  -0.820
 65 fuer y unif  -0.824
 66 fuer y unif  -0.829
 67 fuer y unif  -0.835
 68 fuer y unif  -0.841
 69 fuer y unif  -0.848
 58 mome x unif -5.211
 59 mome x unif -5.192
 60 mome x unif -5.178
 61 mome x unif -5.163
 62 mome x unif -5.157
 63 mome x unif -5.150
 64 mome x unif -5.148
 65 mome x unif -5.149
 66 mome x unif -5.160
 67 mome x unif -5.171
 68 mome x unif -5.190
 69 mome x unif -5.208
hipo 221 sobrecarga paseo izda (ipf-75)
carga en barra
 70 fuer y unif  -0.856
 71 fuer y unif  -0.865
 72 fuer y unif  -0.874
 73 fuer y unif  -0.884
 74 fuer y unif  -0.894
 75 fuer y unif  -0.905
 76 fuer y unif  -0.916
 77 fuer y unif  -0.928
 78 fuer y unif  -0.939
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79 fuer y unif -0.951
80 fuer y unif -0.963
81 fuer y unif -0.975
70 mome x unif -5.235
71 mome x unif -5.264
72 mome x unif -5.298
73 mome x unif -5.337
74 mome x unif -5.379
75 mome x unif -5.424
76 mome x unif -5.473
77 mome x unif -5.521
78 mome x unif -5.573
79 mome x unif -5.626
80 mome x unif -5.681
81 mome x unif -5.736
hipo 222 sobrecarga paseo izda (ipf-75)
carga en barra
82 fuer y unif -0.987
83 fuer y unif -1.000
84 fuer y unif -1.012
85 fuer y unif -1.022
86 fuer y unif -1.033
87 fuer y unif -1.043
88 fuer y unif -1.053
89 fuer y unif -1.061
90 fuer y unif -1.069
91 fuer y unif -1.075
92 fuer y unif -1.080
93 fuer y unif -1.084
82 mome x unif -5.794
83 mome x unif -5.854
84 mome x unif -5.912
85 mome x unif -5.964
86 mome x unif -6.017
87 mome x unif -6.070
88 mome x unif -6.119
89 mome x unif -6.165
90 mome x unif -6.206
91 mome x unif -6.242
92 mome x unif -6.271
93 mome x unif -6.294
hipo 223 sobrecarga paseo izda (ipf-75)
carga en barra
94 fuer y unif -1.086
95 fuer y unif -1.086
96 fuer y unif -1.085
97 fuer y unif -1.082
98 fuer y unif -1.077
99 fuer y unif -1.072
100 fuer y unif -1.065
101 fuer y unif -1.057
102 fuer y unif -1.047
103 fuer y unif -1.037
104 fuer y unif -1.026
105 fuer y unif -1.014
94 mome x unif -6.309
95 mome x unif -6.316
96 mome x unif -6.316
97 mome x unif -6.308
98 mome x unif -6.295
99 mome x unif -6.278
100 mome x unif -6.255
101 mome x unif -6.228
102 mome x unif -6.195
103 mome x unif -6.161
104 mome x unif -6.124
105 mome x unif -6.088
hipo 224 sobrecarga paseo izda (ipf-75)
carga en barra
106 fuer y unif -1.001
107 fuer y unif -0.987
108 fuer y unif -0.972
109 fuer y unif -0.956
110 fuer y unif -0.938
111 fuer y unif -0.918
112 fuer y unif -0.967
113 fuer y unif -0.941
114 fuer y unif -0.913
106 mome x unif -6.045
107 mome x unif -6.007
108 mome x unif -5.958
109 mome x unif -5.906
110 mome x unif -5.842
111 mome x unif -5.775
112 mome x unif -6.197
113 mome x unif -6.095
114 mome x unif -5.973
hipo 225 sobrecarga paseo dcha (ipf-75)
carga en barra
1 fuer y unif -0.884
2 fuer y unif -0.900
3 fuer y unif -0.910
4 fuer y unif -0.838
5 fuer y unif -0.848
6 fuer y unif -0.858
7 fuer y unif -0.868
8 fuer y unif -0.878
9 fuer y unif -0.889
1 mome x unif 5.742
2 mome x unif 5.819
3 mome x unif 5.849
4 mome x unif 5.298
5 mome x unif 5.330
6 mome x unif 5.368
7 mome x unif 5.402
8 mome x unif 5.440
9 mome x unif 5.478
hipo 226 sobrecarga paseo dcha (ipf-75)
carga en barra
10 fuer y unif -0.900
11 fuer y unif -0.910
12 fuer y unif -0.921
13 fuer y unif -0.932
14 fuer y unif -0.943
15 fuer y unif -0.954
16 fuer y unif -0.964
17 fuer y unif -0.974
18 fuer y unif -0.984
19 fuer y unif -0.993
20 fuer y unif -1.003
21 fuer y unif -1.011
10 mome x unif 5.521
11 mome x unif 5.562
12 mome x unif 5.608
13 mome x unif 5.652
14 mome x unif 5.698
15 mome x unif 5.742
16 mome x unif 5.786

17 mome x unif 5.828
18 mome x unif 5.869
19 mome x unif 5.908
20 mome x unif 5.947
21 mome x unif 5.982
hipo 227 sobrecarga paseo dcha (ipf-75)
carga en barra
22 fuer y unif -1.019
23 fuer y unif -1.027
24 fuer y unif -1.033
25 fuer y unif -1.039
26 fuer y unif -1.045
27 fuer y unif -1.050
28 fuer y unif -1.055
29 fuer y unif -1.059
30 fuer y unif -1.062
31 fuer y unif -1.066
32 fuer y unif -1.069
33 fuer y unif -1.071
22 mome x unif 6.015
23 mome x unif 6.044
24 mome x unif 6.068
25 mome x unif 6.089
26 mome x unif 6.111
27 mome x unif 6.129
28 mome x unif 6.146
29 mome x unif 6.157
30 mome x unif 6.169
31 mome x unif 6.182
32 mome x unif 6.191
33 mome x unif 6.197
hipo 228 sobrecarga paseo dcha (ipf-75)
carga en barra
34 fuer y unif -1.074
35 fuer y unif -1.077
36 fuer y unif -1.080
37 fuer y unif -1.082
38 fuer y unif -1.083
39 fuer y unif -1.084
40 fuer y unif -1.084
41 fuer y unif -1.083
42 fuer y unif -1.082
43 fuer y unif -1.081
44 fuer y unif -1.078
45 fuer y unif -1.075
34 mome x unif 6.208
35 mome x unif 6.223
36 mome x unif 6.236
37 mome x unif 6.245
38 mome x unif 6.251
39 mome x unif 6.255
40 mome x unif 6.256
41 mome x unif 6.252
42 mome x unif 6.247
43 mome x unif 6.240
44 mome x unif 6.229
45 mome x unif 6.214
hipo 229 sobrecarga paseo dcha (ipf-75)
carga en barra
46 fuer y unif -1.072
47 fuer y unif -1.070
48 fuer y unif -1.067
49 fuer y unif -1.063
50 fuer y unif -1.060
51 fuer y unif -1.056
52 fuer y unif -1.051
53 fuer y unif -1.046
54 fuer y unif -1.041
55 fuer y unif -1.035
56 fuer y unif -1.029
57 fuer y unif -1.022
46 mome x unif 6.202
47 mome x unif 6.195
48 mome x unif 6.185
49 mome x unif 6.174
50 mome x unif 6.162
51 mome x unif 6.149
52 mome x unif 6.133
53 mome x unif 6.116
54 mome x unif 6.096
55 mome x unif 6.076
56 mome x unif 6.052
57 mome x unif 6.026
hipo 230 sobrecarga paseo dcha (ipf-75)
carga en barra
58 fuer y unif -1.014
59 fuer y unif -1.006
60 fuer y unif -0.998
61 fuer y unif -0.990
62 fuer y unif -0.981
63 fuer y unif -0.972
64 fuer y unif -0.962
65 fuer y unif -0.952
66 fuer y unif -0.942
67 fuer y unif -0.933
68 fuer y unif -0.923
69 fuer y unif -0.914
58 mome x unif 5.996
59 mome x unif 5.966
60 mome x unif 5.933
61 mome x unif 5.902
62 mome x unif 5.865
63 mome x unif 5.830
64 mome x unif 5.792
65 mome x unif 5.753
66 mome x unif 5.713
67 mome x unif 5.676
68 mome x unif 5.639
69 mome x unif 5.609
hipo 231 sobrecarga paseo dcha (ipf-75)
carga en barra
70 fuer y unif -0.906
71 fuer y unif -0.897
72 fuer y unif -0.889
73 fuer y unif -0.881
74 fuer y unif -0.874
75 fuer y unif -0.867
76 fuer y unif -0.860
77 fuer y unif -0.854
78 fuer y unif -0.848
79 fuer y unif -0.842
80 fuer y unif -0.836
81 fuer y unif -0.831
70 mome x unif 5.576
71 mome x unif 5.548
72 mome x unif 5.521
73 mome x unif 5.498
74 mome x unif 5.474

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75 mome x unif 5.455
76 mome x unif 5.432
77 mome x unif 5.416
78 mome x unif 5.396
79 mome x unif 5.378
80 mome x unif 5.359
81 mome x unif 5.346
hipo 232 sobrecarga paseo dcha (ipf-75)
carga en barra
82 fuer y unif  -0.825
83 fuer y unif  -0.820
84 fuer y unif  -0.815
85 fuer y unif  -0.811
86 fuer y unif  -0.807
87 fuer y unif  -0.804
88 fuer y unif  -0.801
89 fuer y unif  -0.799
90 fuer y unif  -0.798
91 fuer y unif  -0.798
92 fuer y unif  -0.798
93 fuer y unif  -0.799
82 mome x unif 5.329
83 mome x unif 5.312
84 mome x unif 5.294
85 mome x unif 5.281
86 mome x unif 5.268
87 mome x unif 5.258
88 mome x unif 5.250
89 mome x unif 5.247
90 mome x unif 5.245
91 mome x unif 5.247
92 mome x unif 5.252
93 mome x unif 5.263
hipo 233 sobrecarga paseo dcha (ipf-75)
carga en barra
94 fuer y unif  -0.801
95 fuer y unif  -0.803
96 fuer y unif  -0.805
97 fuer y unif  -0.808
98 fuer y unif  -0.811
99 fuer y unif  -0.813
100 fuer y unif  -0.816
101 fuer y unif  -0.819
102 fuer y unif  -0.823
103 fuer y unif  -0.828
104 fuer y unif  -0.834
105 fuer y unif  -0.840
94 mome x unif 5.274
95 mome x unif 5.286
96 mome x unif 5.298
97 mome x unif 5.308
98 mome x unif 5.316
99 mome x unif 5.318
100 mome x unif 5.321
101 mome x unif 5.320
102 mome x unif 5.325
103 mome x unif 5.327
104 mome x unif 5.337
105 mome x unif 5.345
hipo 234 sobrecarga paseo dcha (ipf-75)
carga en barra
106 fuer y unif  -0.849
107 fuer y unif  -0.860
108 fuer y unif  -0.873
109 fuer y unif  -0.889
110 fuer y unif  -0.908
111 fuer y unif  -0.929
112 fuer y unif  -1.028
113 fuer y unif  -1.056
114 fuer y unif  -1.090
106 mome x unif 5.370
107 mome x unif 5.397
108 mome x unif 5.441
109 mome x unif 5.492
110 mome x unif 5.561
111 mome x unif 5.638
112 mome x unif 6.252
113 mome x unif 6.357
114 mome x unif 6.500
calc y alma
2 2 2
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estr Viaducto Papiol   (sobrecarga ipf.2)
nume de nudo  196
nume de barr  206
nume de hipo 17
nume de apoy   11
tipo port espa
list todo

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hipo 291 frenado + (dcha) (sin sob) ipf-75
carg en barr
1    a  60 fuer x unif  1.25
1    a  60 mome z unif  2.68
1    a  60 mome y unif  2.94
hipo 292 frenado + (izda) (sin sob) ipf-75
carg en barr
1    a  60 fuer x unif  1.25
1    a  60 mome z unif  2.68
1    a  60 mome y unif -2.94
hipo 293 frenado - (dcha) (sin sob) ipf-75
carg en barr
1    a  60 fuer x unif -1.25
1    a  60 mome z unif -2.68
1    a  60 mome y unif -2.94
hipo 294 frenado - (izda) (sin sob) ipf-75
carg en barr
1    a  60 fuer x unif -1.25
1    a  60 mome z unif -2.68
1    a  60 mome y unif  2.94
hipo 295 frenado + (dcha) (max sob) ipf-75
carg en barr
1    a  60 fuer x unif  1.25
1    a  60 mome z unif  2.68
1    a  60 mome y unif  2.94
1  a 114 fuer y unif -11.10
1  a 114 mome x unif  29.42
hipo 296 frenado + (izda) (max sob) ipf-75
carg en barr
1    a  60 fuer x unif  1.25
1    a  60 mome z unif  2.68
1    a  60 mome y unif -2.94
1  a 114 fuer y unif -11.10
1  a 114 mome x unif -29.42
hipo 297 frenado - (dcha) (max sob) ipf-75
carg en barr
1    a  60 fuer x unif -1.25
1    a  60 mome z unif -2.68
1    a  60 mome y unif -2.94
1  a 114 fuer y unif -11.10
1  a 114 mome x unif  29.42
hipo 298 frenado - (izda) (max sob) ipf-75
carg en barr
1    a  60 fuer x unif -1.25
1    a  60 mome z unif -2.68
1    a  60 mome y unif  2.94
1  a 114 fuer y unif -11.10
1  a 114 mome x unif -29.42
hipo 299 frenado + (2 vias) (max sob) ipf-75
carg en barr
1    a  60 fuer x unif  1.25
1    a  60 mome z unif  2.68
1    a  60 fuer x unif  1.125
1    a  60 mome z unif  1.998
1  a 114 fuer y unif -11.10
1  a 114 fuer y unif -11.10
hipo 300 frenado - (2 vias) (max sob) ipf-75
carg en barr
1    a  60 fuer x unif -1.25
1    a  60 mome z unif -2.68
1    a  60 fuer x unif -1.125
1    a  60 mome z unif -1.998
1  a 114 fuer y unif -11.10
1  a 114 fuer y unif -11.10
hipo 301 sob. minima (dcha) ipf-75
carg en barr
1  a 114 fuer y unif  -1.11
1  a 114 mome x unif   2.94
hipo 302 sob. minima (izda) ipf-75
carg en barr
1  a 114 fuer y unif  -1.11
1  a 114 mome x unif  -2.94
hipo 303 sob. maxima (dcha) ipf-75
carg en barr
1  a 114 fuer y unif -11.10
1  a 114 mome x unif  29.42
hipo 304 sob. maxima (izda) ipf-75
carg en barr
1  a 114 fuer y unif -11.10
1  a 114 mome x unif -29.42
hipo 305 sob. maxima (2 vias) ipf-75
carg en barr
1  a 114 fuer y unif -11.10
hipo 306 fc sin sobrecarga ipf-75
carg en barr
1   a 114 fuer z unif     0.17
1   a 114 mome x unif     0.65
hipo 307 fc sin sobrecarga ipf-75
carg en barr
1   a 114 fuer z unif     0.17
1   a 114 mome x unif     0.65
calcula y almacena
2 2 2
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LISTADO DE HIPÓTESIS SIMPLES

proc Viaducto Papiol

HIPOTESIS 1

hipo 1 peso propio

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
1	3	0.00	387.36	-0.64	-7.74	0.00	-0.01
1	8	0.00	-268.98	0.64	1.39	3.21	1640.89
2	8	0.00	268.98	-0.64	-1.39	-3.21	-1640.89
2	9	0.00	-150.61	0.64	-3.59	6.42	2689.88
3	9	0.00	150.61	-0.64	5.69	-6.42	-2689.87
3	10	0.00	-32.23	0.64	-9.49	9.63	3146.98
4	10	0.00	32.23	-0.64	8.29	-9.63	-3146.98
4	11	0.00	86.14	0.64	-11.16	12.84	3012.21
5	11	0.00	-86.14	-0.64	12.31	-12.84	-3012.21
5	12	0.00	204.52	0.64	-14.14	16.05	2285.56
6	12	0.00	-204.52	-0.64	15.92	-16.05	-2285.55
6	13	0.00	322.89	0.64	-16.74	19.25	967.04
7	13	0.00	-322.89	-0.64	16.38	-19.25	-967.05
7	14	0.00	441.27	0.64	-16.25	22.46	-943.37
8	14	0.00	-441.27	-0.64	15.52	-22.46	943.39
8	15	0.00	559.64	0.64	-14.47	25.67	-3445.64
9	15	0.00	-559.64	-0.64	14.53	-25.67	3445.64
9	18	0.00	678.02	0.64	-12.61	28.88	-6539.76
10	18	0.00	698.45	0.56	51.61	-28.88	6539.80
10	24	0.00	-580.07	-0.56	-48.88	26.09	-3343.43
11	24	0.00	580.07	0.56	47.61	-26.09	3343.45
11	25	0.00	-461.70	-0.56	-44.14	23.29	-739.01
12	25	0.00	461.70	0.56	43.55	-23.29	739.04
12	26	0.00	-343.32	-0.56	-39.35	20.49	1273.52
13	26	0.00	343.32	0.56	38.84	-20.49	-1273.54
13	27	0.00	-224.95	-0.56	-33.96	17.70	2694.20
14	27	0.00	224.95	0.56	34.99	-17.70	-2694.19
14	28	0.00	-106.57	-0.56	-29.49	14.90	3522.98
15	28	0.00	106.57	0.56	32.23	-14.90	-3522.96
15	29	0.00	11.80	-0.56	-26.13	12.11	3759.88
16	29	0.00	-11.80	0.56	24.71	-12.11	-3759.89
16	30	0.00	130.18	-0.56	-18.06	9.31	3404.94
17	30	0.00	-130.18	0.56	19.42	-9.31	-3404.93
17	31	0.00	248.55	-0.56	-12.24	6.52	2458.10
18	31	0.00	-248.55	0.56	13.18	-6.52	-2458.10
18	32	0.00	366.93	-0.56	-5.50	3.72	919.37
19	32	0.00	-366.93	0.56	5.50	-3.72	-919.37
19	33	0.00	485.30	-0.56	2.62	0.93	-1211.20
20	33	0.00	-485.30	0.56	-3.08	-0.93	1211.20
20	34	0.00	603.68	-0.56	11.61	-1.87	-3933.65
21	34	0.00	-603.68	0.56	-13.18	1.87	3933.65
21	37	0.00	722.06	-0.56	22.08	-4.67	-7248.03
22	37	0.00	713.40	0.25	66.57	4.67	7248.01
22	44	0.00	-595.03	-0.25	-57.32	-5.91	-3976.95
23	44	0.00	595.03	0.25	55.73	5.91	3976.97
23	45	0.00	-476.65	-0.25	-46.16	-7.16	-1297.77
24	45	0.00	476.65	0.25	45.66	7.16	1297.79
24	46	0.00	-358.28	-0.25	-35.79	-8.40	789.57
25	46	0.00	358.28	0.25	35.79	8.40	-789.57
25	47	0.00	-239.90	-0.25	-25.64	-9.65	2285.01
26	47	0.00	239.90	0.25	26.51	9.65	-2285.00
26	48	0.00	-121.53	-0.25	-16.11	-10.89	3188.58
27	48	0.00	121.53	0.25	16.17	10.89	-3188.58
27	49	0.00	-3.15	-0.25	-5.54	-12.14	3500.28
28	49	0.00	3.15	0.25	6.88	12.14	-3500.28
28	50	0.00	115.22	-0.25	1.17	-13.39	3220.09
29	50	0.00	-115.22	0.25	0.11	13.39	-3220.09
29	51	0.00	233.60	-0.25	2.66	-14.63	2348.05
30	51	0.00	-233.60	0.25	-1.77	14.63	-2348.05
30	52	0.00	351.97	-0.25	4.69	-15.88	884.12
31	52	0.00	-351.97	0.25	-4.69	15.88	-884.12
31	53	0.00	470.35	-0.25	13.19	-17.12	-1171.67
32	53	0.00	-470.35	0.25	-13.66	17.12	1171.66
32	54	0.00	588.72	-0.25	22.16	-18.37	-3819.37
33	54	0.00	-588.72	0.25	-22.09	18.37	3819.37
33	57	0.00	707.10	-0.25	24.99	-19.62	-7058.94
34	57	0.00	709.33	0.27	61.49	19.62	7058.94
34	64	0.00	-590.96	-0.27	-58.54	-20.95	-3808.22
35	64	0.00	590.96	0.27	58.61	20.95	3808.22
35	65	0.00	-472.58	-0.27	-49.91	-22.28	-1149.38
36	65	0.00	472.58	0.27	49.02	22.28	1149.41
36	66	0.00	-354.20	-0.27	-37.37	-23.62	917.56
37	66	0.00	354.20	0.27	37.38	23.62	-917.56
37	67	0.00	-235.83	-0.27	-25.73	-24.95	2392.64
38	67	0.00	235.83	0.27	26.60	24.95	-2392.64
38	68	0.00	-117.46	-0.27	-14.95	-26.28	3275.84
39	68	0.00	117.46	0.27	13.77	26.28	-3275.85
39	69	0.00	0.92	-0.27	-2.14	-27.62	3567.19
40	69	0.00	-0.92	0.27	6.28	27.62	-3567.18
40	70	0.00	119.29	-0.27	5.30	-28.95	3266.65
41	70	0.00	-119.29	0.27	-6.60	28.95	-3266.65
41	71	0.00	237.67	-0.27	18.13	-30.29	2374.21
42	71	0.00	-237.67	0.27	-17.18	30.29	-2374.22
42	72	0.00	356.05	-0.27	28.63	-31.62	889.92
43	72	0.00	-356.05	0.27	-28.29	31.62	-889.93
43	73	0.00	474.42	-0.27	39.64	-32.95	-1186.23
44	73	0.00	-474.42	0.27	-39.66	32.95	1186.23
44	74	0.00	592.80	-0.27	50.89	-34.29	-3854.29
45	74	0.00	-592.80	0.27	-52.35	34.29	3854.27
45	77	0.00	711.17	-0.27	63.43	-35.62	-7114.22
46	77	0.00	710.55	-0.31	36.95	35.62	7114.26
46	84	0.00	-592.18	0.31	-26.10	-34.05	-3857.45
47	84	0.00	592.18	-0.31	26.02	34.05	3857.45
47	85	0.00	-473.80	0.31	-15.45	-32.48	-1192.45
48	85	0.00	473.80	-0.31	14.99	32.48	1192.45
48	86	0.00	-355.43	0.31	-4.72	-30.91	880.60
49	86	0.00	355.43	-0.31	5.05	30.91	-880.60
49	87	0.00	-237.05	0.31	4.85	-29.35	2361.81
50	87	0.00	237.05	-0.31	-4.80	29.35	-2361.81
50	88	0.00	-118.68	0.31	14.30	-27.78	3251.15
51	88	0.00	118.68	-0.31	-13.06	27.78	-3251.15
51	89	0.00	-0.30	0.31	22.16	-26.21	3548.61
52	89	0.00	0.30	-0.31	-22.16	26.21	-3548.61
52	90	0.00	118.07	0.31	30.84	-24.64	3254.18
53	90	0.00	-118.07	-0.31	-29.54	24.64	-3254.20
53	91	0.00	236.45	0.31	37.74	-23.07	2367.89
54	91	0.00	-236.45	-0.31	-36.84	23.07	-2367.90
54	92	0.00	354.82	0.31	44.54	-21.50	889.72
55	92	0.00	-354.82	-0.31	-44.18	21.50	-889.74
55	93	0.00	473.20	0.31	51.38	-19.93	-1180.29
56	93	0.00	-473.20	-0.31	-51.36	19.93	1180.30
56	94	0.00	591.57	0.31	58.03	-18.37	-3842.20
57	94	0.00	-591.57	-0.31	-58.11	18.37	3842.20
57	97	0.00	709.95	0.31	64.24	-16.80	-7096.04

58	97	0.00	709.90	-0.49	-10.96	16.80	7095.99
58	104	0.00	-591.53	0.49	16.54	-14.37	-3842.40
59	104	0.00	591.53	-0.49	-16.46	14.37	3842.40
59	105	0.00	-473.15	0.49	21.46	-11.94	-1180.70
60	105	0.00	473.15	-0.49	-21.96	11.94	1180.69
60	106	0.00	-354.78	0.49	26.36	-9.51	889.12
61	106	0.00	354.78	-0.49	-26.38	9.51	-889.12
61	107	0.00	-236.40	0.49	30.20	-7.08	2367.07
62	107	0.00	236.40	-0.49	-29.25	7.08	-2367.08
62	108	0.00	-118.03	0.49	32.48	-4.65	3253.14
63	108	0.00	118.03	-0.49	-31.24	4.65	-3253.16
63	109	0.00	0.35	0.49	33.84	-2.22	3547.36
64	109	0.00	-0.35	-0.49	-35.19	2.22	-3547.35
64	110	0.00	118.72	0.49	37.19	0.21	3249.67
65	110	0.00	-118.72	-0.49	-34.66	-0.21	-3249.70
65	111	0.00	237.10	0.49	36.06	2.64	2360.17
66	111	0.00	-237.10	-0.49	-35.16	-2.64	-2360.18
66	112	0.00	355.47	0.49	35.96	5.07	878.74
67	112	0.00	-355.47	-0.49	-35.94	-5.07	-878.74
67	113	0.00	473.85	0.49	36.12	7.50	-1194.53
68	113	0.00	-473.85	-0.49	-36.57	-7.50	1194.52
68	114	0.00	592.22	0.49	36.12	9.93	-3859.66
69	114	0.00	-592.22	-0.49	-36.12	-9.93	3859.66
69	117	0.00	710.60	0.49	35.05	12.36	-7116.73
70	117	0.00	711.36	-0.57	-46.55	-12.36	7116.68
70	124	0.00	-592.98	0.57	44.85	15.19	-3855.84
71	124	0.00	592.98	-0.57	-43.31	-15.19	3855.86
71	125	0.00	-474.61	0.57	41.01	18.01	-1186.88
72	125	0.00	474.61	-0.57	-41.49	-18.01	1186.86
72	126	0.00	-356.23	0.57	38.59	20.84	890.23
73	126	0.00	356.23	-0.57	-38.23	-20.84	-890.24
73	127	0.00	-237.86	0.57	34.76	23.67	2375.46
74	127	0.00	237.86	-0.57	-33.85	-23.67	-2375.47
74	128	0.00	-119.48	0.57	29.83	26.49	3268.81
75	128	0.00	119.48	-0.57	-29.83	-26.49	-3268.82
75	129	0.00	-1.11	0.57	25.23	29.32	3570.30
76	129	0.00	1.11	-0.57	-23.87	-29.32	-3570.31
76	130	0.00	117.27	0.57	18.72	32.15	3279.90
77	130	0.00	-117.27	-0.57	-17.41	-32.15	-3279.91
77	131	0.00	235.64	0.57	11.76	34.97	2397.66
78	131	0.00	-235.64	-0.57	-12.67	-34.97	-2397.65
78	132	0.00	354.02	0.57	6.55	37.80	923.51
79	132	0.00	-354.02	-0.57	-5.47	-37.80	-923.52
79	133	0.00	472.39	0.57	-1.10	40.62	-1142.48
80	133	0.00	-472.39	-0.57	1.53	-40.62	1142.48
80	134	0.00	590.77	0.57	-8.51	43.45	-3800.41
81	134	0.00	-590.77	-0.57	7.07	-43.45	3800.41
81	137	0.00	709.14	0.57	-14.42	46.28	-7050.16
82	137	0.00	706.52	0.69	-48.85	-46.28	7050.16
82	144	0.00	-588.15	-0.69	41.18	42.81	-3813.50
83	144	0.00	588.15	0.69	-44.15	-42.81	3813.47
83	145	0.00	-469.77	-0.69	36.23	39.34	-1168.65
84	145	0.00	469.77	0.69	-36.25	-39.34	1168.65
84	146	0.00	-351.40	-0.69	28.08	35.87	884.29
85	146	0.00	351.40	0.69	-28.09	-35.87	-884.30
85	147	0.00	-233.03	-0.69	19.69	32.40	2345.33
86	147	0.00	233.03	0.69	-17.86	-32.40	-2345.34
86	148	0.00	-114.65	-0.69	9.29	28.93	3214.55
87	148	0.00	114.65	0.69	-9.22	-28.93	-3214.55
87	149	0.00	3.73	-0.69	0.50	25.46	3491.85
88	149	0.00	-3.73	0.69	0.76	-25.46	-3491.85
88	150	0.00	122.10	-0.69	-9.61	21.99	3177.29
89	150	0.00	-122.10	0.69	9.67	-21.99	-3177.29
89	151	0.00	240.47	-0.69	-18.60	18.53	2270.87
90	151	0.00	-240.47	0.69	19.50	-18.53	-2270.86
90	152	0.00	358.85	-0.69	-28.48	15.06	772.57
91	152	0.00	-358.85	0.69	28.46	-15.06	-772.57
91	153	0.00	477.22	-0.69	-37.46	11.59	-1317.63
92	153	0.00	-477.22	0.69	36.94	-11.59	1317.65
92	154	0.00	595.60	-0.69	-45.94	8.12	-3999.72
93	154	0.00	-595.60	0.69	44.42	-8.12	3999.74
93	157	0.00	713.97	-0.69	-53.39	4.65	-7273.62
94	157	0.00	723.54	0.23	-33.04	-4.65	7273.71
94	163	0.00	-605.17	-0.23	24.14	3.52	-3951.91
95	163	0.00	605.17	0.23	-25.64	-3.52	3951.90
95	164	0.00	-486.79	-0.23	16.84	2.39	-1222.01
96	164	0.00	486.79	0.23	-17.31	-2.39	1222.00
96	165	0.00	-368.42	-0.23	8.68	1.26	916.01
97	165	0.00	368.42	0.23	-8.66	-1.26	-916.02
97	166	0.00	-250.04	-0.23	0.26	0.12	2462.16
98	166	0.00	250.04	0.23	0.67	-0.12	-2462.16
98	167	0.00	-131.67	-0.23	-8.77	-1.01	3416.43
99	167	0.00	131.67	0.23	10.07	1.01	-3416.43
99	168	0.00	-13.29	-0.23	-17.77	-2.14	3778.82
100	168	0.00	13.29	0.23	17.85	2.14	-3778.82
100	169	0.00	105.09	-0.23	-25.05	-3.27	3549.33
101	169	0.00	-105.08	0.23	26.40	3.27	-3549.33
101	170	0.00	223.46	-0.23	-33.00	-4.40	2727.98
102	170	0.00	-223.46	0.23	33.00	4.40	-2727.97
102	171	0.00	341.83	-0.23	-38.92	-5.53	1314.73
103	171	0.00	-341.83	0.23	39.95	5.53	-1314.69
103	172	0.00	460.21	-0.23	-45.10	-6.66	-690.39
104	172	0.00	-460.21	0.23	45.10	6.66	690.39
104	173	0.00	578.58	-0.23	-49.37	-7.79	-3287.34
105	173	0.00	-578.58	0.23	49.30	7.79	3287.34
105	176	0.00	696.96	-0.23	-52.63	-8.92	-6476.23
106	176	0.00	671.49	-0.20	14.83	8.92	6476.24
106	182	0.00	-553.11	0.20	-17.13	-7.93	-3414.71
107	182	0.00	553.11	-0.20	15.76	7.93	3414.72
107	183	0.00	-434.74	0.20	-16.94	-6.94	-945.12
108	183	0.00	434.74	-0.20	16.92	6.94	945.12
108	184	0.00	-316.36	0.20	-16.92	-5.95	932.65
109	184	0.00	316.36	-0.20	17.25	5.95	-932.64
109	185	0.00	-197.99	0.20	-16.03	-4.96	2218.53
110	185	0.00	197.99	-0.20	16.07	4.96	-2218.53
110	186	0.00	-79.61	0.20	-13.60	-3.97	2912.54
111	186	0.00	79.61	-0.20	15.87	3.97	-2912.53
111	187	0.00	38.76	0.20	-12.12	-2.97	3014.66
112	187	0.00	-38.76	-0.20	12.12	2.97	-3014.66
112	188	0.00	157.14	0.20	-7.27	-1.98	2524.92
113	188	0.00	-157.14	-0.20	8.23	1.98	-2524.91
113	189	0.00	275.51	0.20	-2.10	-0.99	1443.30
114	189	0.00	-275.51	-0.20	2.13	0.99	-1443.30
114	192	0.00	501.45	0.20	5.14	0.00	-0.01
134	6	-0.64	240.32	0.00	0.01	0.00	-1.08
134	3	0.64	-240.32	0.00	-0.01	0.00	1022.46
135	3	0.00	-242.40	0.00	0.00	0.00	-1030.20
135	1	0.00	242.40	0.00	0.00	0.00	0.00
136	22	1.20	755.14	0.00	0.00	0.00	2.02
136	18	-1.20	-755.14	0.00	0.00	0.00	1319.61
137	18	0.00	-731.79	0.00	0.00	0.00	-1280.47
137	16	0.00	731.79	0.00	0.00	0.00	0.00
138	43	-0.31	797.98	0.00	0.00	0.00	-0.52
138	37	0.31	-797.98	0.00	0.00	0.00	1397.43
139	37	0.00	-747.93	0.00	0.00	0.00	-1308.77
139	35	0.00	747.93	0.00	0.00	0.00	0.00
140	63	0.02	788.77	0.00	0.00	-0.01	0.03
140	57	-0.02	-788.77	0.00	0.00	0.00	1380.72

141	57	0.00	-738.12	0.00	0.00	0.00	-1291.29
141	55	0.00	738.12	0.00	0.00	0.00	0.00
142	83	-0.59	794.80	0.00	0.00	0.00	-0.98
142	77	0.59	-794.80	0.00	0.00	0.00	1392.69
143	77	-0.01	-737.38	0.00	0.00	0.00	-1289.61
143	75	0.01	737.38	0.00	0.00	-0.01	0.00
144	103	-0.17	781.05	0.00	0.00	0.00	-0.29
144	97	0.17	-781.05	0.00	0.00	0.01	1368.62
145	97	0.00	-749.27	0.00	0.00	-0.01	-1309.81
145	95	0.00	749.27	0.00	0.00	0.00	0.00
146	123	-0.08	764.01	0.00	0.00	0.00	-0.14
146	117	0.08	-764.01	0.00	0.00	0.00	1337.94
147	117	0.00	-768.40	0.00	0.00	0.01	-1343.90
147	115	0.00	768.40	0.00	0.00	0.01	0.00
148	143	1.26	745.33	0.00	0.00	0.00	2.13
148	137	-1.26	-745.33	0.00	0.00	0.00	1302.65
149	137	0.00	-780.79	0.00	0.00	0.00	-1365.91
149	135	0.00	780.79	0.00	0.00	0.00	0.00
150	162	-0.47	748.91	0.00	0.00	0.00	-0.79
150	157	0.47	-748.91	0.00	0.00	0.00	1311.71
151	157	0.00	-799.07	0.00	0.00	0.00	-1398.00
151	156	0.00	799.07	0.00	0.00	0.00	0.00
152	181	-0.43	728.93	0.00	0.00	0.00	-0.72
152	176	0.43	-728.93	0.00	0.00	0.00	1276.64
153	176	0.00	-749.98	0.00	0.00	0.00	-1312.10
153	174	0.00	749.98	0.00	0.00	0.00	0.00
154	195	0.20	299.05	0.00	-0.01	0.00	0.33
154	192	-0.20	-299.05	0.00	0.01	0.00	1270.62
155	192	0.00	-297.76	0.00	0.01	0.00	-1265.48
155	190	0.00	297.76	0.00	-0.01	0.00	0.00
156	7	0.64	-240.32	0.00	0.00	0.00	0.00
156	4	-0.64	240.32	0.00	0.00	0.00	-1021.38
157	4	0.00	242.40	0.00	0.00	0.00	1030.20
157	2	0.00	-242.40	0.00	0.00	0.00	0.00
158	23	-1.20	-755.14	0.00	0.00	0.00	0.00
158	19	1.20	755.14	0.00	0.00	0.00	-1321.63
159	19	0.00	731.79	0.00	0.00	0.00	1280.47
159	17	0.00	-731.79	0.00	0.00	0.00	0.00
160	42	0.31	-797.98	0.00	0.00	0.00	0.00
160	38	-0.31	797.98	0.00	0.00	0.00	-1396.90
161	38	0.00	747.93	0.00	0.00	0.00	1308.78
161	36	0.00	-747.93	0.00	0.00	0.00	0.00
162	62	-0.01	-788.77	0.00	0.00	0.00	0.00
162	58	0.01	788.77	0.00	0.00	0.00	-1380.76
163	58	0.00	738.12	0.00	0.00	0.00	1291.29
163	56	0.00	-738.12	0.00	0.00	0.00	0.00
164	82	0.58	-794.81	0.00	0.00	0.00	0.00
164	78	-0.58	794.81	0.00	0.00	0.00	-1391.71
165	78	0.00	737.38	0.00	0.00	0.00	1289.62
165	76	0.00	-737.38	0.00	0.00	0.00	0.00
166	102	0.17	-781.04	0.00	0.00	0.00	0.00
166	98	-0.17	781.04	0.00	0.00	0.00	-1368.33
167	98	0.00	749.27	0.00	0.00	0.00	1309.81
167	96	0.00	-749.27	0.00	0.00	0.00	0.00
168	122	0.08	-764.01	0.00	0.00	0.00	0.00
168	118	-0.08	764.01	0.00	0.00	0.00	-1337.81
169	118	0.00	768.41	0.00	0.00	0.00	1343.90
169	116	0.00	-768.41	0.00	0.00	0.00	0.00
170	142	-1.26	-745.33	0.00	0.00	0.00	0.00
170	138	1.26	745.33	0.00	0.00	0.00	-1304.76
171	138	0.00	780.79	0.00	0.00	0.00	1365.91
171	136	0.00	-780.79	0.00	0.00	0.00	0.00
172	161	0.47	-748.91	0.00	0.00	0.00	0.00
172	158	-0.47	748.91	0.00	0.00	0.00	-1310.92
173	158	0.00	799.07	0.00	0.00	0.00	1398.00
173	155	0.00	-799.07	0.00	0.00	0.00	0.00
174	180	0.42	-728.92	0.00	0.00	0.00	0.00
174	177	-0.42	728.92	0.00	0.00	0.00	-1275.92
175	177	0.00	749.98	0.00	0.00	0.00	1312.11
175	175	0.00	-749.98	0.00	0.00	0.00	0.00
176	196	-0.20	-299.05	0.00	0.00	0.00	0.00
176	193	0.20	299.05	0.00	0.00	0.00	-1270.95
177	193	0.00	297.76	0.00	0.00	0.00	1265.48
177	191	0.00	-297.76	0.00	0.00	0.00	0.00
182	7	240.32	0.00	-0.64	0.00	0.00	0.00
182	6	-240.32	0.00	0.64	0.00	1.08	-0.01
183	2	242.40	0.00	0.00	0.00	0.00	0.00
183	1	-242.40	0.00	0.00	0.00	0.00	-0.01
184	23	755.14	0.00	1.20	0.00	0.00	0.00
184	22	-755.14	0.00	-1.20	0.00	-2.02	0.00
185	17	731.79	0.00	0.00	0.00	0.00	0.00
185	16	-731.79	0.00	0.00	0.00	0.00	0.00
186	42	797.98	0.00	-0.31	0.00	0.00	0.00
186	43	-797.98	0.00	0.31	0.00	0.52	0.00
187	36	747.93	0.00	0.00	0.00	0.00	0.00
187	35	-747.93	0.00	0.00	0.00	0.00	0.00
188	62	788.76	0.00	0.02	0.00	0.00	0.00
188	63	-788.76	0.00	-0.02	0.00	-0.03	0.00
189	56	738.13	0.00	0.00	0.00	0.00	0.00
189	55	-738.13	0.00	0.00	0.00	0.00	0.00
190	82	794.81	0.00	-0.58	0.00	0.00	0.00
190	83	-794.81	0.00	0.58	0.00	0.98	0.00
191	76	737.38	0.00	0.00	0.00	0.00	0.00
191	75	-737.38	0.00	0.00	0.00	0.00	0.00
192	102	781.04	0.00	-0.17	0.00	0.00	0.00
192	103	-781.04	0.00	0.17	0.00	0.29	0.00
193	96	749.27	0.00	0.00	0.00	0.00	0.00
193	95	-749.27	0.00	0.00	0.00	0.00	0.00
194	122	764.01	0.00	-0.08	0.00	0.00	0.00
194	123	-764.01	0.00	0.08	0.00	0.13	0.00
195	116	768.41	0.00	0.00	0.00	0.00	0.00
195	115	-768.41	0.00	0.00	0.00	0.00	0.00
196	142	745.33	0.00	1.26	0.00	0.00	0.00
196	143	-745.33	0.00	-1.26	0.00	-2.12	0.00
197	136	780.79	0.00	0.00	0.00	0.00	0.00
197	135	-780.79	0.00	0.00	0.00	0.00	0.00
198	161	748.91	0.00	-0.47	0.00	0.00	0.00
198	162	-748.91	0.00	0.47	0.00	0.79	0.00
199	155	799.06	0.00	0.00	0.00	0.00	0.00
199	156	-799.06	0.00	0.00	0.00	0.00	0.00
200	180	728.92	0.00	-0.42	0.00	0.00	0.00
200	181	-728.92	0.00	0.42	0.00	0.72	0.00
201	175	749.98	0.00	0.00	0.00	0.00	0.00
201	174	-749.98	0.00	0.00	0.00	0.00	0.00
202	196	299.05	0.00	0.20	0.00	0.00	0.00
202	195	-299.05	0.00	-0.20	0.00	-0.33	0.00
203	191	297.76	0.00	0.00	0.00	0.00	0.00
203	190	-297.76	0.00	0.00	0.00	0.00	0.01
206	21	1638.81	0.00	1.20	0.00	-48.61	0.04
206	20	-1599.93	0.00	-1.20	0.00	45.96	-0.04
207	20	1599.93	0.00	1.20	0.00	-45.96	0.04
207	19	-1486.93	0.00	-1.20	0.00	41.16	-0.04
208	40	1757.90	0.00	-0.31	0.00	-85.15	0.00
208	39	-1747.29	0.00	0.31	0.00	85.34	0.00
209	39	1747.29	0.00	-0.31	0.00	-85.34	0.00
209	41	-1658.92	0.00	0.31	0.00	86.89	0.00
210	41	1658.92	0.00	-0.31	0.00	-86.89	0.00
210	38	-1545.92	0.00	0.31	0.00	88.13	0.00

211	60	1786.59	0.00	0.02	0.00	-89.69	0.01
211	59	-1728.26	0.00	-0.02	0.00	89.63	-0.01
212	59	1728.26	0.00	0.02	0.00	-89.63	0.01
212	61	-1639.89	0.00	-0.02	0.00	89.54	-0.01
213	61	1639.89	0.00	0.02	0.00	-89.54	0.01
213	58	-1526.89	0.00	-0.02	0.00	89.47	-0.01
214	80	1791.89	0.00	-0.58	0.00	-94.96	0.04
214	79	-1733.56	0.00	0.58	0.00	96.87	-0.04
215	79	1733.56	0.00	-0.58	0.00	-96.87	0.04
215	81	-1645.19	0.00	0.58	0.00	99.78	-0.04
216	81	1645.19	0.00	-0.58	0.00	-99.78	0.04
216	78	-1532.19	0.00	0.58	0.00	102.10	-0.04
217	100	1790.01	0.00	-0.17	0.00	-56.40	-0.03
217	99	-1731.69	0.00	0.17	0.00	56.96	0.03
218	99	1731.69	0.00	-0.17	0.00	-56.96	-0.03
218	101	-1643.31	0.00	0.17	0.00	57.83	0.03
219	101	1643.31	0.00	-0.17	0.00	-57.83	-0.03
219	98	-1530.31	0.00	0.17	0.00	58.51	0.03
220	120	1792.12	0.00	-0.08	0.00	7.07	-0.02
220	119	-1733.79	0.00	0.08	0.00	-6.81	0.02
221	119	1733.79	0.00	-0.08	0.00	6.81	-0.02
221	121	-1645.41	0.00	0.08	0.00	-6.41	0.02
222	121	1645.41	0.00	-0.08	0.00	6.41	-0.02
222	118	-1532.41	0.00	0.08	0.00	-6.09	0.02
223	140	1785.83	0.00	1.26	0.00	45.66	-0.01
223	139	-1727.50	0.00	-1.26	0.00	-49.81	0.01
224	139	1727.50	0.00	1.26	0.00	49.81	-0.01
224	141	-1639.12	0.00	-1.26	0.00	-56.11	0.01
225	141	1639.12	0.00	1.26	0.00	56.11	-0.01
225	138	-1526.12	0.00	-1.26	0.00	-61.15	0.01
226	160	1736.98	0.00	-0.47	0.00	90.96	0.08
226	159	-1660.98	0.00	0.47	0.00	-88.94	-0.08
227	159	1660.98	0.00	-0.47	0.00	88.94	0.08
227	158	-1547.98	0.00	0.47	0.00	-87.07	-0.08
228	179	1657.31	0.00	-0.42	0.00	39.46	0.00
228	178	-1591.91	0.00	0.42	0.00	-37.88	0.00
229	178	1591.91	0.00	-0.42	0.00	37.88	0.00
229	177	-1478.91	0.00	0.42	0.00	-36.19	0.00
230	5	482.72	0.00	-0.64	0.00	9.46	-0.02
230	4	-482.72	0.00	0.64	0.00	-8.82	0.02
231	194	596.81	0.00	0.20	0.00	-5.67	0.00
231	193	-596.81	0.00	-0.20	0.00	5.48	0.00

HIPOTESIS 3

hipo 3 carga muerta (limite superior)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
1	3	0.00	212.21	-2.48	-52.45	0.00	-0.01
1	8	0.00	-147.36	2.48	28.35	12.41	898.95
2	8	0.00	147.36	-2.48	-28.35	-12.41	-898.95
2	9	0.00	-82.51	2.48	7.55	24.82	1473.62
3	9	0.00	82.51	-2.48	-6.40	-24.82	-1473.63
3	10	0.00	-17.66	2.48	-11.22	37.23	1724.05
4	10	0.00	17.66	-2.48	10.57	-37.23	-1724.05
4	11	0.00	47.19	2.48	-25.17	49.65	1650.23
5	11	0.00	-47.19	-2.48	25.80	-49.65	-1650.22
5	12	0.00	112.04	2.48	-37.40	62.06	1252.14
6	12	0.00	-112.04	-2.48	38.37	-62.06	-1252.11
6	13	0.00	176.89	2.48	-47.07	74.47	529.79
7	13	0.00	-176.89	-2.48	46.87	-74.47	-529.81
7	14	0.00	241.74	2.48	-52.82	86.88	-516.79
8	14	0.01	-241.74	-2.48	52.42	-86.88	516.83
8	15	-0.01	306.59	2.48	-55.72	99.29	-1887.64
9	15	0.01	-306.59	-2.48	55.76	-99.29	1887.64
9	18	-0.01	371.44	2.48	-56.43	111.70	-3582.71
10	18	0.01	382.65	1.50	134.68	-111.70	3582.72
10	24	-0.01	-317.80	-1.50	-132.78	104.18	-1831.57
11	24	0.01	317.80	1.50	132.09	-104.18	1831.62
11	25	-0.01	-252.95	-1.50	-127.74	96.66	-404.74
12	25	0.00	252.95	1.50	127.41	-96.66	404.85
12	26	0.00	-188.10	-1.50	-120.69	89.14	697.78
13	26	0.00	188.10	1.50	120.41	-89.14	-697.83
13	27	0.00	-123.25	-1.50	-111.43	81.63	1476.18
14	27	0.00	123.25	1.50	111.99	-81.63	-1476.14
14	28	0.00	-58.40	-1.50	-100.87	74.11	1930.25
15	28	0.00	58.40	1.50	102.37	-74.11	-1930.18
15	29	0.00	6.45	-1.50	-89.15	66.59	2060.04
16	29	0.00	-6.45	1.50	88.37	-66.59	-2060.07
16	30	0.00	71.30	-1.50	-73.17	59.07	1865.69
17	30	0.00	-71.30	1.50	73.91	-59.07	-1865.66
17	31	0.00	136.15	-1.50	-56.81	51.55	1347.02
18	31	0.00	-136.15	1.50	57.33	-51.55	-1347.00
18	32	0.00	201.00	-1.50	-38.40	44.03	504.10
19	32	0.00	-201.00	1.50	38.40	-44.03	-504.10
19	33	0.00	265.85	-1.50	-17.75	36.51	-663.03
20	33	0.00	-265.85	1.50	17.50	-36.51	663.04
20	34	0.00	330.70	-1.50	4.83	28.99	-2154.43
21	34	0.00	-330.70	1.50	-5.69	-28.99	2154.42
21	37	0.00	395.55	-1.50	29.61	21.47	-3970.09
22	37	0.00	390.82	2.28	241.33	-21.47	3970.07
22	44	0.00	-325.97	-2.28	-215.90	10.06	-2178.09
23	44	0.00	325.97	2.28	215.03	-10.06	2178.18
23	45	0.00	-261.12	-2.28	-188.21	-1.35	-710.44
24	45	0.00	261.12	2.28	187.94	1.35	710.51
24	46	0.00	-196.27	-2.28	-159.84	-12.76	433.00
25	46	0.00	196.27	2.28	159.84	12.76	-433.00
25	47	0.00	-131.42	-2.28	-130.51	-24.18	1252.23
26	47	0.00	131.42	2.28	130.99	24.18	-1252.18
26	48	0.00	-66.57	-2.28	-100.49	-35.59	1747.17
27	48	0.00	66.57	2.28	100.52	35.59	-1747.17
27	49	0.00	-1.72	-2.28	-68.97	-47.00	1917.91
28	49	0.00	1.72	2.28	69.70	47.00	-1917.88
28	50	0.00	63.13	-2.28	-37.90	-58.41	1764.36
29	50	0.00	-63.13	2.28	38.61	58.41	-1764.35
29	51	0.00	127.98	-2.28	-7.46	-69.83	1286.59
30	51	0.00	-127.98	2.28	7.95	69.83	-1286.59
30	52	0.00	192.83	-2.28	23.98	-81.24	484.57
31	52	0.00	-192.83	2.28	-23.98	81.24	-484.57
31	53	0.00	257.68	-2.28	58.20	-92.65	-641.68
32	53	0.00	-257.68	2.28	-58.46	92.65	641.66
32	54	0.00	322.53	-2.28	93.29	-104.06	-2092.18
33	54	0.00	-322.53	2.28	-93.24	104.06	2092.19
33	57	0.00	387.38	-2.28	127.02	-115.48	-3866.96
34	57	-0.01	388.61	-0.31	230.23	115.48	3866.96
34	64	0.01	-323.76	0.31	-195.96	-113.91	-2086.02
35	64	-0.01	323.76	-0.31	196.00	113.91	2086.02
35	65	0.01	-258.91	0.31	-159.73	-112.35	-629.33
36	65	-0.01	258.91	-0.31	159.23	112.35	629.46
36	66	0.01	-194.06	0.31	-121.83	-110.79	502.98
37	66	-0.01	194.06	-0.31	121.84	110.79	-502.98
37	67	0.01	-129.21	0.31	-84.19	-109.23	1311.16
38	67	-0.01	129.21	-0.31	84.67	109.23	-1311.13
38	68	0.01	-64.36	0.31	-46.87	-107.66	1795.05
39	68	-0.01	64.36	-0.31	46.22	107.66	-1795.07
39	69	0.01	0.49	0.31	-8.32	-106.10	1954.76
40	69	0.00	-0.49	-0.31	10.59	106.10	-1954.74
40	70	0.00	65.34	0.31	27.36	-104.54	1790.18
41	70	0.00	-65.34	-0.31	-28.08	104.54	-1790.16
41	71	0.00	130.19	0.31	65.90	-102.97	1301.33
42	71	0.00	-130.19	-0.31	-65.38	102.97	-1301.36
42	72	0.00	195.04	0.31	103.01	-101.41	488.28
43	72	0.00	-195.04	-0.31	-102.82	101.41	-488.33
43	73	0.00	259.89	0.31	140.25	-99.85	-648.99
44	73	0.00	-259.89	-0.31	-140.26	99.85	648.99
44	74	0.00	324.74	0.31	177.39	-98.28	-2110.58
45	74	0.00	-324.74	-0.31	-178.19	98.28	2110.51
45	77	0.00	389.59	0.31	214.89	-96.72	-3896.35
46	77	0.00	389.25	-0.54	140.27	96.72	3896.37
46	84	0.00	-324.40	0.54	-104.09	-94.01	-2112.25
47	84	0.00	324.40	-0.54	104.05	94.01	2112.25
47	85	0.00	-259.55	0.54	-68.45	-91.30	-652.34
48	85	0.00	259.55	-0.54	68.20	91.30	652.37
48	86	0.00	-194.70	0.54	-33.28	-88.59	483.25
49	86	0.00	194.70	-0.54	33.46	88.59	-483.24
49	87	0.00	-129.85	0.54	0.66	-85.88	1294.62
50	87	0.00	129.85	-0.54	-0.64	85.88	-1294.62
50	88	0.00	-65.00	0.54	33.89	-83.16	1781.76
51	88	0.00	65.00	-0.54	-33.21	83.17	-1781.77
51	89	0.00	-0.15	0.54	65.51	-80.45	1944.65
52	89	0.00	0.15	-0.54	-65.51	80.45	-1944.65
52	90	0.00	64.70	0.54	96.81	-77.74	1783.28
53	90	0.00	-64.70	-0.54	-96.10	77.74	-1783.32
53	91	0.00	129.55	0.54	126.30	-75.03	1297.70
54	91	0.00	-129.55	-0.54	-125.81	75.03	-1297.75
54	92	0.00	194.40	0.54	154.78	-72.32	487.88
55	92	0.00	-194.40	-0.54	-154.59	72.32	-487.94
55	93	0.00	259.25	0.54	182.28	-69.61	-646.18
56	93	0.00	-259.25	-0.54	-182.27	69.61	646.18
56	94	0.00	324.10	0.54	208.62	-66.90	-2104.54
57	94	0.00	-324.10	-0.54	-208.66	66.90	2104.54
57	97	0.00	388.95	0.54	233.59	-64.19	-3887.18

58	97	0.00	388.91	-1.36	0.58	64.19	3887.08
58	104	0.00	-324.06	1.36	22.82	-57.36	-2104.62
59	104	0.00	324.06	-1.36	-22.78	57.36	2104.62
59	105	0.00	-259.21	1.36	44.55	-50.54	-646.43
60	105	0.00	259.21	-1.36	-44.82	50.54	646.41
60	106	0.00	-194.36	1.36	64.90	-43.72	487.52
61	106	0.00	194.36	-1.36	-64.91	43.72	-487.52
61	107	0.00	-129.51	1.36	83.26	-36.89	1297.21
62	107	0.00	129.51	-1.36	-82.74	36.89	-1297.24
62	108	0.00	-64.66	1.36	99.26	-30.07	1782.68
63	108	0.00	64.66	-1.36	-98.59	30.07	-1782.72
63	109	0.00	0.19	1.36	113.19	-23.24	1943.91
64	109	0.00	-0.19	-1.36	-113.93	23.24	-1943.87
64	110	0.00	65.04	1.36	126.58	-16.42	1780.81
65	110	0.00	-65.04	-1.36	-125.19	16.42	-1780.91
65	111	0.00	129.89	1.36	135.76	-9.60	1293.61
66	111	0.00	-129.89	-1.36	-135.27	9.60	-1293.66
66	112	0.00	194.74	1.36	143.72	-2.77	482.10
67	112	0.00	-194.74	-1.36	-143.71	2.77	-482.10
67	113	0.00	259.59	1.36	150.01	4.05	-653.69
68	113	0.00	-259.59	-1.36	-150.26	-4.05	653.64
68	114	0.00	324.44	1.36	154.38	10.88	-2113.68
69	114	0.00	-324.44	-1.36	-154.38	-10.88	2113.68
69	117	0.00	389.29	1.36	156.31	17.70	-3897.99
70	117	0.00	389.63	-2.34	-134.79	-17.70	3897.87
70	124	0.00	-324.78	2.34	134.46	29.40	-2111.85
71	124	0.00	324.78	-2.34	-133.62	-29.40	2111.91
71	125	0.00	-259.93	2.34	131.04	41.09	-650.12
72	125	0.00	259.93	-2.34	-131.30	-41.09	650.07
72	126	0.00	-195.08	2.34	126.50	52.79	487.46
73	126	0.00	195.08	-2.34	-126.31	-52.79	-487.51
73	127	0.00	-130.23	2.34	119.26	64.49	1300.79
74	127	0.00	130.23	-2.34	-118.77	-64.49	-1300.83
74	128	0.00	-65.38	2.34	109.49	76.18	1789.86
75	128	0.00	65.38	-2.34	-109.49	-76.18	-1789.86
75	129	0.00	-0.53	2.34	98.04	87.88	1954.64
76	129	0.01	0.53	-2.34	-97.30	-87.88	-1954.68
76	130	-0.01	64.32	2.34	83.67	99.57	1795.21
77	130	0.01	-64.32	-2.34	-82.95	-99.57	-1795.24
77	131	-0.01	129.17	2.34	67.25	111.27	1311.54
78	131	0.01	-129.17	-2.34	-67.75	-111.27	-1311.51
78	132	-0.01	194.02	2.34	50.05	122.97	503.54
79	132	0.01	-194.02	-2.34	-49.47	-122.97	-503.60
79	133	-0.01	258.87	2.34	29.77	134.66	-628.60
80	133	0.01	-258.87	-2.34	-29.53	-134.66	628.62
80	134	-0.01	323.72	2.34	7.93	146.36	-2085.10
81	134	0.01	-323.72	-2.34	-8.72	-146.36	2085.10
81	137	-0.01	388.57	2.34	-14.65	158.05	-3865.80
82	137	0.01	387.25	2.06	-189.41	-158.05	3865.83
82	144	-0.01	-322.40	-2.06	164.36	147.75	-2091.74
83	144	0.01	322.40	2.06	-165.99	-147.75	2091.61
83	145	-0.01	-257.55	-2.06	139.34	137.45	-641.74
84	145	0.01	257.55	2.06	-139.35	-137.45	641.74
84	146	-0.01	-192.70	-2.06	111.20	127.15	483.87
85	146	0.01	192.70	2.06	-111.21	-127.15	-483.87
85	147	-0.01	-127.85	-2.06	81.74	116.85	1285.21
86	147	0.01	127.85	2.06	-80.74	-116.85	-1285.27
86	148	-0.01	-63.00	-2.06	50.06	106.55	1762.39
87	148	0.01	63.00	2.06	-50.03	-106.55	-1762.39
87	149	-0.01	1.85	-2.06	18.25	96.25	1915.25
88	149	0.00	-1.85	2.06	-17.56	-96.25	-1915.25
88	150	0.00	66.70	-2.06	-15.16	85.95	1743.86
89	150	0.00	-66.70	2.06	15.20	-85.95	-1743.86
89	151	0.00	131.55	-2.06	-48.75	75.65	1248.22
90	151	0.00	-131.55	2.06	49.25	-75.65	-1248.20
90	152	0.00	196.40	-2.06	-83.42	65.35	428.32
91	152	0.00	-196.40	2.06	83.41	-65.35	-428.33
91	153	0.00	261.25	-2.06	-118.01	55.05	-715.83
92	153	0.00	-261.25	2.06	117.73	-55.05	715.87
92	154	0.00	326.10	-2.06	-152.60	44.75	-2184.27
93	154	0.00	-326.10	2.06	151.77	-44.75	2184.33
93	157	0.00	390.95	-2.06	-186.70	34.45	-3976.94
94	157	0.00	395.77	0.75	-140.15	-34.45	3977.00
94	163	0.00	-330.92	-0.75	105.33	30.72	-2160.26
95	163	0.00	330.92	0.75	-106.15	-30.72	2160.22
95	164	0.00	-266.07	-0.75	71.65	26.98	-667.74
96	164	0.00	266.07	0.75	-71.90	-26.98	667.72
96	165	0.00	-201.22	-0.75	37.97	23.25	500.51
97	165	0.00	201.22	0.75	-37.96	-23.25	-500.51
97	166	0.00	-136.37	-0.75	4.81	19.52	1344.48
98	166	0.00	136.37	0.75	-4.30	-19.52	-1344.49
98	167	0.00	-71.52	-0.75	-27.80	15.79	1864.21
99	167	0.00	71.52	0.75	28.50	-15.79	-1864.20
99	168	0.00	-6.67	-0.75	-59.30	12.05	2059.68
100	168	0.00	6.67	0.75	59.35	-12.05	-2059.68
100	169	0.00	58.18	-0.75	-88.62	8.32	1930.90
101	169	0.00	-58.18	0.75	89.35	-8.32	-1930.86
101	170	0.00	123.03	-0.75	-116.80	4.59	1477.84
102	170	0.00	-123.03	0.75	116.80	-4.59	-1477.84
102	171	0.00	187.88	-0.75	-142.10	0.86	700.55
103	171	0.00	-187.88	0.75	142.65	-0.86	-700.44
103	172	0.00	252.73	-0.75	-165.50	-2.87	-401.07
104	172	0.00	-252.73	0.75	165.50	2.87	401.07
104	173	0.00	317.58	-0.75	-185.63	-6.61	-1826.83
105	173	0.00	-317.58	0.75	185.59	6.61	1826.83
105	176	0.00	382.43	-0.75	-202.69	-10.34	-3576.87
106	176	0.00	371.31	-0.23	38.90	10.34	3576.93
106	182	0.00	-306.46	0.23	-52.65	-9.19	-1882.47
107	182	0.00	306.46	-0.23	51.90	9.19	1882.49
107	183	0.00	-241.62	0.23	-61.98	-8.04	-512.31
108	183	0.00	241.62	-0.23	61.97	8.04	512.31
108	184	0.00	-176.76	0.23	-68.02	-6.89	533.64
109	184	0.00	176.76	-0.23	68.21	6.89	-533.62
109	185	0.00	-111.91	0.23	-69.91	-5.74	1255.32
110	185	0.00	111.91	-0.23	69.93	5.74	-1255.32
110	186	0.00	-47.06	0.23	-66.91	-4.59	1652.77
111	186	0.00	47.06	-0.23	68.20	4.59	-1652.72
111	187	0.00	17.78	0.23	-60.15	-3.45	1725.91
112	187	0.00	-17.78	-0.23	60.15	3.45	-1725.91
112	188	0.00	82.63	0.23	-46.82	-2.30	1474.86
113	188	0.00	-82.63	-0.23	47.38	2.30	-1474.85
113	189	0.00	147.48	0.23	-28.31	-1.15	899.55
114	189	0.00	-147.48	-0.23	28.33	1.15	-899.55
114	192	0.00	212.34	0.23	-3.20	0.00	-0.01
134	6	-2.48	99.44	0.00	0.00	0.00	-4.19
134	3	2.48	-99.44	0.00	0.00	0.00	426.82
135	3	0.00	-112.77	0.00	0.00	0.00	-479.27
135	1	0.00	112.77	0.00	0.00	0.00	0.00
136	22	3.99	401.30	0.00	0.00	0.00	6.72
136	18	-3.99	-401.30	0.00	0.00	0.00	695.63
137	18	0.00	-352.79	0.00	0.00	0.00	-617.30
137	16	0.00	352.79	0.00	0.00	0.00	0.00
138	43	0.79	470.89	0.00	0.00	0.00	1.31
138	37	-0.79	-470.89	0.00	0.00	0.00	823.00
139	37	0.00	-315.49	0.00	0.00	0.00	-552.06
139	35	0.00	315.49	0.00	0.00	0.00	0.00
140	63	-2.59	489.16	0.00	0.00	0.00	-4.37
140	57	2.59	-489.16	0.00	0.00	0.00	860.67

141	57	0.00	-286.83	0.00	0.00	0.00	-501.78	173	158	0.01	487.46	0.00	0.00	0.00	852.83
141	55	0.00	286.83	0.00	0.00	0.00	0.00	173	155	-0.01	-487.46	0.00	0.00	0.00	0.00
142	83	-0.23	490.97	0.00	0.00	0.00	-0.39	174	180	0.98	-329.88	0.00	0.00	0.00	0.00
142	77	0.23	-490.97	0.00	0.00	0.00	860.09	174	177	-0.98	329.88	0.00	0.00	0.00	-577.42
143	77	0.00	-287.87	0.00	0.00	0.00	-503.45	175	177	0.00	423.87	0.00	0.00	0.00	741.57
143	75	0.00	287.87	0.00	0.00	0.00	0.00	175	175	0.00	-423.87	0.00	0.00	0.00	0.00
144	103	-0.83	455.88	0.00	0.00	0.00	-1.39	176	196	-0.23	-105.84	0.00	0.00	0.00	0.00
144	97	0.83	-455.88	0.00	0.00	0.00	800.06	176	193	0.23	105.84	0.00	0.00	0.00	-449.81
145	97	0.00	-321.98	0.00	0.00	0.00	-562.86	177	193	0.00	106.50	0.00	0.00	0.00	452.62
145	95	0.00	321.98	0.00	0.00	0.00	0.00	177	191	0.00	-106.50	0.00	0.00	0.00	0.00
146	123	-0.97	395.77	0.00	0.00	0.00	-1.64	182	7	99.44	0.00	-2.48	0.00	0.00	0.00
146	117	0.97	-395.77	0.00	0.00	0.00	694.66	182	6	-99.44	0.00	2.48	0.00	4.19	0.00
147	117	0.00	-383.14	0.00	0.00	0.00	-670.10	183	2	112.77	0.00	0.00	0.00	0.00	0.00
147	115	0.00	383.14	0.00	0.00	0.00	0.00	183	1	-112.77	0.00	0.00	0.00	0.00	0.00
148	143	4.40	331.59	0.00	0.00	0.00	7.42	184	23	401.30	0.00	3.99	0.00	0.00	0.00
148	137	-4.40	-331.59	0.00	0.00	0.00	573.06	184	22	-401.30	0.00	-3.99	0.00	-6.72	0.00
149	137	0.00	-444.22	0.00	0.00	0.00	-777.12	185	17	352.79	0.00	0.00	0.00	0.00	0.00
149	135	0.00	444.22	0.00	0.00	0.00	0.00	185	16	-352.79	0.00	0.00	0.00	0.00	0.00
150	162	-1.32	299.27	0.00	0.00	0.00	-2.22	186	42	470.89	0.00	0.78	0.00	0.00	0.00
150	157	1.32	-299.27	0.00	0.00	0.00	526.06	186	43	-470.89	0.00	-0.78	0.00	-1.31	0.00
151	157	0.00	-487.46	0.00	0.00	0.00	-852.83	187	36	315.49	0.00	0.00	0.00	0.00	0.00
151	156	0.00	487.46	0.00	0.00	0.00	0.00	187	35	-315.49	0.00	0.00	0.00	0.00	0.00
152	181	-0.98	329.88	0.00	0.00	0.00	-1.65	188	62	489.17	0.00	-2.60	0.00	0.00	0.00
152	176	0.98	-329.88	0.00	0.00	0.00	579.07	188	63	-489.17	0.00	2.60	0.00	4.37	0.00
153	176	0.00	-423.87	0.00	0.00	0.00	-741.56	189	56	286.83	0.00	0.00	0.00	0.00	0.00
153	174	0.00	423.87	0.00	0.00	0.00	0.00	189	55	-286.83	0.00	0.00	0.00	0.00	0.00
154	195	0.23	105.84	0.00	0.00	0.00	0.39	190	82	490.97	0.00	-0.23	0.00	0.00	0.00
154	192	-0.23	-105.84	0.00	0.00	0.00	449.42	190	83	-490.97	0.00	0.23	0.00	0.39	0.00
155	192	0.00	-106.50	0.00	0.00	0.00	-452.62	191	76	287.87	0.00	0.00	0.00	0.00	0.00
155	190	0.00	106.50	0.00	0.00	0.00	0.00	191	75	-287.87	0.00	0.00	0.00	0.00	0.00
156	7	2.48	-99.44	0.00	0.00	0.00	0.00	192	102	455.88	0.00	-0.82	0.00	0.00	0.00
156	4	-2.48	99.44	0.00	0.00	0.00	-422.63	192	103	-455.88	0.00	0.82	0.00	1.39	0.00
157	4	0.00	112.77	0.00	0.00	0.00	479.27	193	96	321.98	0.00	0.00	0.00	0.00	0.00
157	2	0.00	-112.77	0.00	0.00	0.00	0.00	193	95	-321.98	0.00	0.00	0.00	0.00	0.00
158	23	-3.99	-401.30	0.00	0.00	0.00	0.00	194	122	395.77	0.00	-0.97	0.00	0.00	0.00
158	19	3.99	401.30	0.00	0.00	0.00	-702.35	194	123	-395.77	0.00	0.97	0.00	1.64	0.00
159	19	0.00	352.79	0.00	0.00	0.00	617.31	195	116	383.14	0.00	0.00	0.00	0.00	0.00
159	17	0.00	-352.79	0.00	0.00	0.00	0.00	195	115	-383.14	0.00	0.00	0.00	0.00	0.00
160	42	-0.79	-470.89	0.00	0.00	0.00	0.00	196	142	331.59	0.00	4.40	0.00	0.00	0.00
160	38	0.79	470.89	0.00	0.00	0.00	-824.30	196	143	-331.59	0.00	-4.40	0.00	-7.42	0.00
161	38	0.00	315.49	0.00	0.00	0.00	552.06	197	136	444.23	0.00	0.00	0.00	0.00	0.00
161	36	0.00	-315.49	0.00	0.00	0.00	0.00	197	135	-444.23	0.00	0.00	0.00	0.00	0.00
162	62	2.58	-489.16	0.00	0.00	0.00	0.00	198	161	299.27	0.00	-1.31	0.00	0.00	0.00
162	58	-2.58	489.16	0.00	0.00	0.00	-856.29	198	162	-299.27	0.00	1.31	0.00	2.22	0.00
163	58	0.00	286.83	0.00	0.00	0.00	501.78	199	155	487.46	0.00	0.00	0.00	0.00	0.00
163	56	0.00	-286.83	0.00	0.00	0.00	0.00	199	156	-487.46	0.00	0.00	0.00	0.00	0.00
164	82	0.23	-490.97	0.00	0.00	0.00	0.00	200	180	329.88	0.00	-0.98	0.00	0.00	0.00
164	78	-0.23	490.97	0.00	0.00	0.00	-859.70	200	181	-329.88	0.00	0.98	0.00	1.65	0.00
165	78	-0.01	287.87	0.00	0.00	0.00	503.47	201	175	423.87	0.00	0.00	0.00	0.00	0.00
165	76	0.01	-287.87	0.00	0.00	0.00	0.00	201	174	-423.87	0.00	0.00	0.00	0.00	0.00
166	102	0.82	-455.88	0.00	0.00	0.00	0.00	202	196	105.84	0.00	0.23	0.00	0.00	0.00
166	98	-0.82	455.88	0.00	0.00	0.00	-798.68	202	195	-105.84	0.00	-0.23	0.00	-0.39	0.00
167	98	0.00	321.98	0.00	0.00	0.00	562.86	203	191	106.50	0.00	0.00	0.00	0.00	0.00
167	96	0.00	-321.98	0.00	0.00	0.00	0.00	203	190	-106.50	0.00	0.00	0.00	0.00	0.00
168	122	0.97	-395.77	0.00	0.00	0.00	0.00	206	21	754.09	0.00	3.99	0.00	-109.76	0.02
168	118	-0.97	395.77	0.00	0.00	0.00	-693.02	206	20	-754.09	0.00	-3.99	0.00	100.99	-0.02
169	118	0.00	383.14	0.00	0.00	0.00	670.10	207	20	754.09	0.00	3.99	0.00	-100.99	0.02
169	116	0.00	-383.14	0.00	0.00	0.00	0.00	207	19	-754.09	0.00	-3.99	0.00	85.05	-0.02
170	142	-4.39	-331.59	0.00	0.00	0.00	0.00	208	40	786.38	0.00	0.78	0.00	-279.72	0.04
170	138	4.39	331.59	0.00	0.00	0.00	-580.47	208	39	-786.38	0.00	-0.78	0.00	279.25	-0.04
171	138	0.00	444.22	0.00	0.00	0.00	777.12	209	39	786.38	0.00	0.78	0.00	-279.25	0.04
171	136	0.00	-444.22	0.00	0.00	0.00	0.00	209	41	-786.38	0.00	-0.78	0.00	275.36	-0.04
172	161	1.32	-299.27	0.00	0.00	0.00	0.00	210	41	786.38	0.00	0.78	0.00	-275.36	0.04
172	158	-1.32	299.27	0.00	0.00	0.00	-523.85	210	38	-786.38	0.00	-0.78	0.00	272.24	-0.04

211	60	775.99	0.00	-2.60	0.00	-322.59	0.01
211	59	-775.99	0.00	2.60	0.00	331.16	-0.01
212	59	775.99	0.00	-2.60	0.00	-331.16	0.01
212	61	-775.99	0.00	2.60	0.00	344.13	-0.01
213	61	775.99	0.00	-2.60	0.00	-344.13	0.01
213	58	-775.99	0.00	2.60	0.00	354.51	-0.01
214	80	778.84	0.00	-0.23	0.00	-353.41	0.01
214	79	-778.84	0.00	0.23	0.00	354.17	-0.01
215	79	778.84	0.00	-0.23	0.00	-354.17	0.01
215	81	-778.84	0.00	0.23	0.00	355.32	-0.01
216	81	778.84	0.00	-0.23	0.00	-355.32	0.01
216	78	-778.84	0.00	0.23	0.00	356.23	-0.01
217	100	777.86	0.00	-0.82	0.00	-225.69	-0.03
217	99	-777.86	0.00	0.82	0.00	228.41	0.03
218	99	777.86	0.00	-0.82	0.00	-228.41	-0.03
218	101	-777.86	0.00	0.82	0.00	232.52	0.03
219	101	777.86	0.00	-0.82	0.00	-232.52	-0.03
219	98	-777.86	0.00	0.82	0.00	235.81	0.03
220	120	778.92	0.00	-0.97	0.00	-10.93	-0.01
220	119	-778.92	0.00	0.97	0.00	14.15	0.01
221	119	778.92	0.00	-0.97	0.00	-14.15	-0.01
221	121	-778.92	0.00	0.97	0.00	19.02	0.01
222	121	778.92	0.00	-0.97	0.00	-19.02	-0.01
222	118	-778.92	0.00	0.97	0.00	22.92	0.01
223	140	775.81	0.00	4.40	0.00	142.54	-0.02
223	139	-775.81	0.00	-4.40	0.00	-157.05	0.02
224	139	775.81	0.00	4.40	0.00	157.05	-0.02
224	141	-775.81	0.00	-4.40	0.00	-179.05	0.02
225	141	775.81	0.00	4.40	0.00	179.05	-0.02
225	138	-775.81	0.00	-4.40	0.00	-196.65	0.02
226	160	786.72	0.00	-1.31	0.00	339.88	0.03
226	159	-786.72	0.00	1.31	0.00	-334.23	-0.03
227	159	786.72	0.00	-1.31	0.00	334.23	0.03
227	158	-786.72	0.00	1.31	0.00	-328.98	-0.03
228	179	753.74	0.00	-0.98	0.00	171.66	0.00
228	178	-753.74	0.00	0.98	0.00	-168.05	0.00
229	178	753.74	0.00	-0.98	0.00	168.05	0.00
229	177	-753.74	0.00	0.98	0.00	-164.14	0.00
230	5	212.21	0.00	-2.48	0.00	59.12	-0.01
230	4	-212.21	0.00	2.48	0.00	-56.64	0.01
231	194	212.34	0.00	0.23	0.00	2.58	0.00
231	193	-212.34	0.00	-0.23	0.00	-2.81	0.00

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E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
1	3	0.00	0.00	-0.04	0.00	0.00	0.00
1	8	0.00	0.00	0.04	0.00	0.20	0.00
2	8	-0.02	0.00	-0.04	0.00	-0.20	0.00
2	9	0.02	0.00	0.04	0.00	0.41	0.00
3	9	-0.02	0.00	-0.04	0.00	-0.41	0.00
3	10	0.02	0.00	0.04	0.00	0.61	0.00
4	10	-0.02	0.00	-0.04	0.00	-0.61	0.00
4	11	0.02	0.00	0.04	0.00	0.82	0.00
5	11	-0.01	0.00	-0.04	0.00	-0.82	0.00
5	12	0.01	0.00	0.04	0.00	1.02	0.00
6	12	-0.01	0.00	-0.04	0.00	-1.02	0.00
6	13	0.01	0.00	0.04	0.00	1.23	0.00
7	13	0.00	0.00	-0.04	0.00	-1.23	0.00
7	14	0.00	0.00	0.04	0.00	1.43	0.00
8	14	0.01	0.00	-0.04	0.00	-1.43	0.00
8	15	-0.01	0.00	0.04	0.00	1.63	0.00
9	15	-0.03	0.00	-0.04	0.00	-1.63	0.00
9	18	0.03	0.00	0.04	0.00	1.84	0.00
10	18	0.03	0.00	-0.07	0.20	-1.84	0.00
10	24	-0.03	0.00	0.07	-0.20	2.21	0.00
11	24	0.00	0.00	-0.07	0.20	-2.21	0.00
11	25	0.00	0.00	0.07	-0.20	2.57	0.00
12	25	0.00	0.00	-0.07	0.20	-2.57	0.00
12	26	0.00	0.00	0.07	-0.20	2.94	0.00
13	26	-0.02	0.00	-0.07	0.20	-2.94	0.00
13	27	0.02	0.00	0.07	-0.20	3.31	0.00
14	27	0.03	0.00	-0.07	0.20	-3.31	0.00
14	28	-0.03	0.00	0.07	-0.20	3.67	0.00
15	28	0.02	0.00	-0.07	0.20	-3.67	0.00
15	29	-0.02	0.00	0.07	-0.20	4.04	0.00
16	29	0.00	0.00	-0.07	0.20	-4.04	0.00
16	30	0.00	0.00	0.07	-0.20	4.41	0.00
17	30	-0.01	0.00	-0.07	0.20	-4.41	0.00
17	31	0.01	0.00	0.07	-0.20	4.78	0.00
18	31	0.00	0.00	-0.07	0.20	-4.78	0.00
18	32	0.00	0.00	0.07	-0.20	5.14	0.00
19	32	0.01	0.00	-0.07	0.20	-5.14	0.00
19	33	-0.01	0.00	0.07	-0.20	5.51	0.00
20	33	0.00	0.00	-0.07	0.20	-5.51	0.00
20	34	0.00	0.00	0.07	-0.20	5.88	0.00
21	34	0.00	0.00	-0.07	0.20	-5.88	0.00
21	37	0.00	0.00	0.07	-0.20	6.24	0.00
22	37	0.02	0.00	0.08	-0.37	-6.24	0.00
22	44	-0.02	0.00	-0.08	0.37	5.86	0.00
23	44	0.02	0.00	0.08	-0.37	-5.86	0.00
23	45	-0.02	0.00	-0.08	0.37	5.48	0.00
24	45	0.03	0.00	0.08	-0.37	-5.48	0.00
24	46	-0.03	0.00	-0.08	0.37	5.09	0.00
25	46	0.00	0.00	0.08	-0.37	-5.09	0.00
25	47	0.00	0.00	-0.08	0.37	4.71	0.00
26	47	-0.02	0.00	0.08	-0.37	-4.71	0.00
26	48	0.02	0.00	-0.08	0.37	4.32	0.00
27	48	0.02	0.00	0.08	-0.37	-4.32	0.00
27	49	-0.02	0.00	-0.08	0.37	3.94	0.00
28	49	0.01	0.00	0.08	-0.37	-3.94	0.00
28	50	-0.01	0.00	-0.08	0.37	3.56	0.00
29	50	0.00	0.00	0.08	-0.37	-3.56	0.00
29	51	0.00	0.00	-0.08	0.37	3.17	0.00
30	51	-0.01	0.00	0.08	-0.37	-3.17	0.00
30	52	0.01	0.00	-0.08	0.37	2.79	0.00
31	52	-0.01	0.00	0.08	-0.37	-2.79	0.00
31	53	0.01	0.00	-0.08	0.37	2.40	0.00
32	53	0.01	0.00	0.08	-0.37	-2.40	0.00
32	54	-0.01	0.00	-0.08	0.37	2.02	0.00
33	54	0.00	0.00	0.08	-0.37	-2.02	0.00
33	57	0.00	0.00	-0.08	0.37	1.63	0.00
34	57	0.00	0.00	-0.02	0.17	-1.63	0.00
34	64	0.00	0.00	0.02	-0.17	1.73	0.00
35	64	0.01	0.00	-0.02	0.17	-1.73	0.00
35	65	-0.01	0.00	0.02	-0.17	1.83	0.00
36	65	0.01	0.00	-0.02	0.17	-1.83	0.00
36	66	-0.01	0.00	0.02	-0.17	1.92	0.00
37	66	0.00	0.00	-0.02	0.17	-1.92	0.00
37	67	0.00	0.00	0.02	-0.17	2.02	0.00
38	67	0.00	0.00	-0.02	0.17	-2.02	0.00
38	68	0.00	0.00	0.02	-0.17	2.12	0.00
39	68	-0.01	0.00	-0.02	0.17	-2.12	0.00
39	69	0.01	0.00	0.02	-0.17	2.21	0.00
40	69	0.01	0.00	-0.02	0.17	-2.21	0.00
40	70	-0.01	0.00	0.02	-0.17	2.31	0.00
41	70	0.00	0.00	-0.02	0.17	-2.31	0.00
41	71	0.00	0.00	0.02	-0.17	2.40	0.00
42	71	0.00	0.00	-0.02	0.17	-2.40	0.00
42	72	0.00	0.00	0.02	-0.17	2.50	0.00
43	72	-0.01	0.00	-0.02	0.17	-2.50	0.00
43	73	0.01	0.00	0.02	-0.17	2.60	0.00
44	73	-0.01	0.00	-0.02	0.17	-2.60	0.00
44	74	0.01	0.00	0.02	-0.17	2.69	0.00
45	74	0.00	0.00	-0.02	0.17	-2.69	0.00
45	77	0.00	0.00	0.02	-0.17	2.79	0.00
46	77	0.00	0.00	0.01	-0.06	-2.79	0.00
46	84	0.00	0.00	-0.01	0.06	2.75	0.00
47	84	0.02	0.00	0.01	-0.06	-2.75	0.00
47	85	-0.02	0.00	-0.01	0.06	2.71	0.00
48	85	0.00	0.00	0.01	-0.06	-2.71	0.00
48	86	0.00	0.00	-0.01	0.06	2.68	0.00
49	86	0.01	0.00	0.01	-0.06	-2.68	0.00
49	87	-0.01	0.00	-0.01	0.06	2.64	0.00
50	87	0.00	0.00	0.01	-0.06	-2.64	0.00
50	88	0.00	0.00	-0.01	0.06	2.60	0.00
51	88	-0.01	0.00	0.01	-0.06	-2.60	0.00
51	89	0.01	0.00	-0.01	0.06	2.56	0.00
52	89	0.00	0.00	0.01	-0.06	-2.56	0.00
52	90	0.00	0.00	-0.01	0.06	2.53	0.00
53	90	-0.01	0.00	0.01	-0.06	-2.53	0.00
53	91	0.01	0.00	-0.01	0.06	2.49	0.00
54	91	0.01	0.00	0.01	-0.06	-2.49	0.00
54	92	-0.01	0.00	-0.01	0.06	2.45	0.00
55	92	0.01	0.00	0.01	-0.06	-2.45	0.00
55	93	-0.01	0.00	-0.01	0.06	2.41	0.00
56	93	0.00	0.00	0.01	-0.06	-2.41	0.00
56	94	0.00	0.00	-0.01	0.06	2.38	0.00
57	94	-0.01	0.00	0.01	-0.06	-2.38	0.00
57	97	0.01	0.00	-0.01	0.06	2.34	0.00

58	97	0.01	0.00	-0.02	0.12	-2.34	0.00
58	104	-0.01	0.00	0.02	-0.12	2.46	0.00
59	104	0.00	0.00	-0.02	0.12	-2.46	0.00
59	105	0.00	0.00	0.02	-0.12	2.59	0.00
60	105	-0.01	0.00	-0.02	0.12	-2.59	0.00
60	106	0.01	0.00	0.02	-0.12	2.71	0.00
61	106	0.00	0.00	-0.02	0.12	-2.71	0.00
61	107	0.00	0.00	0.02	-0.12	2.83	0.00
62	107	0.01	0.00	-0.02	0.12	-2.83	0.00
62	108	-0.01	0.00	0.02	-0.12	2.96	0.00
63	108	0.00	0.00	-0.02	0.12	-2.96	0.00
63	109	0.00	0.00	0.02	-0.12	3.08	0.00
64	109	0.01	0.00	-0.02	0.12	-3.08	0.00
64	110	-0.01	0.00	0.02	-0.12	3.20	0.00
65	110	-0.01	0.00	-0.02	0.12	-3.20	0.00
65	111	0.01	0.00	0.02	-0.12	3.32	0.00
66	111	-0.01	0.00	-0.02	0.12	-3.32	0.00
66	112	0.01	0.00	0.02	-0.12	3.45	0.00
67	112	0.00	0.00	-0.02	0.12	-3.45	0.00
67	113	0.00	0.00	0.02	-0.12	3.57	0.00
68	113	0.00	0.00	-0.02	0.12	-3.57	0.00
68	114	0.00	0.00	0.02	-0.12	3.69	0.00
69	114	-0.01	0.00	-0.02	0.12	-3.69	0.00
69	117	0.01	0.00	0.02	-0.12	3.82	0.00
70	117	0.01	0.00	0.01	-0.08	-3.82	0.00
70	124	-0.01	0.00	-0.01	0.08	3.75	0.00
71	124	-0.02	0.00	0.01	-0.08	-3.75	0.00
71	125	0.02	0.00	-0.01	0.08	3.69	0.00
72	125	-0.01	0.00	0.01	-0.08	-3.69	0.00
72	126	0.01	0.00	-0.01	0.08	3.62	0.00
73	126	0.00	0.00	0.01	-0.08	-3.62	0.00
73	127	0.00	0.00	-0.01	0.08	3.56	0.00
74	127	0.00	0.00	0.01	-0.08	-3.56	0.00
74	128	0.00	0.00	-0.01	0.08	3.50	0.00
75	128	0.00	0.00	0.01	-0.08	-3.50	0.00
75	129	0.00	0.00	-0.01	0.08	3.43	0.00
76	129	-0.01	0.00	0.01	-0.08	-3.43	0.00
76	130	0.01	0.00	-0.01	0.08	3.37	0.00
77	130	0.00	0.00	0.01	-0.08	-3.37	0.00
77	131	0.00	0.00	-0.01	0.08	3.30	0.00
78	131	-0.01	0.00	0.01	-0.08	-3.30	0.00
78	132	0.01	0.00	-0.01	0.08	3.24	0.00
79	132	0.00	0.00	0.01	-0.08	-3.24	0.00
79	133	0.00	0.00	-0.01	0.08	3.17	0.00
80	133	0.00	0.00	0.01	-0.08	-3.17	0.00
80	134	0.00	0.00	-0.01	0.08	3.11	0.00
81	134	0.00	0.00	0.01	-0.08	-3.11	0.00
81	137	0.00	0.00	-0.01	0.08	3.05	0.00
82	137	0.00	0.00	0.00	0.02	-3.05	0.00
82	144	0.00	0.00	0.00	-0.02	3.04	0.00
83	144	0.00	0.00	0.00	0.02	-3.04	0.00
83	145	0.00	0.00	0.00	-0.02	3.04	0.00
84	145	0.01	0.00	0.00	0.02	-3.04	0.00
84	146	-0.01	0.00	0.00	-0.02	3.04	0.00
85	146	0.00	0.00	0.00	0.02	-3.04	0.00
85	147	0.00	0.00	0.00	-0.02	3.04	0.00
86	147	-0.01	0.00	0.00	0.02	-3.04	0.00
86	148	0.01	0.00	0.00	-0.02	3.04	0.00
87	148	-0.01	0.00	0.00	0.02	-3.04	0.00
87	149	0.01	0.00	0.00	-0.02	3.03	0.00
88	149	0.00	0.00	0.00	0.02	-3.03	0.00
88	150	0.00	0.00	0.00	-0.02	3.03	0.00
89	150	0.00	0.00	0.00	0.02	-3.03	0.00
89	151	0.00	0.00	0.00	-0.02	3.03	0.00
90	151	0.00	0.00	0.00	0.02	-3.03	0.00
90	152	0.00	0.00	0.00	-0.02	3.03	0.00
91	152	0.01	0.00	0.00	0.02	-3.03	0.00
91	153	-0.01	0.00	0.00	-0.02	3.02	0.00
92	153	0.01	0.00	0.00	0.02	-3.02	0.00
92	154	-0.01	0.00	0.00	-0.02	3.02	0.00
93	154	0.00	0.00	0.00	0.02	-3.02	0.00
93	157	0.00	0.00	0.00	-0.02	3.02	0.00
94	157	0.00	0.00	0.00	0.07	-3.02	0.00
94	163	0.00	0.00	0.00	-0.07	3.03	0.00
95	163	0.00	0.00	0.00	0.07	-3.03	0.00
95	164	0.00	0.00	0.00	-0.07	3.04	0.00
96	164	0.00	0.00	0.00	0.07	-3.04	0.00
96	165	0.00	0.00	0.00	-0.07	3.05	0.00
97	165	0.00	0.00	0.00	0.07	-3.05	0.00
97	166	0.00	0.00	0.00	-0.07	3.06	0.00
98	166	0.00	0.00	0.00	0.07	-3.06	0.00
98	167	0.00	0.00	0.00	-0.07	3.07	0.00
99	167	0.00	0.00	0.00	0.07	-3.07	0.00
99	168	0.00	0.00	0.00	-0.07	3.08	0.00
100	168	0.00	0.00	0.00	0.07	-3.08	0.00
100	169	0.00	0.00	0.00	-0.07	3.09	0.00
101	169	0.00	0.00	0.00	0.07	-3.09	0.00
101	170	0.00	0.00	0.00	-0.07	3.10	0.00
102	170	0.00	0.00	0.00	0.07	-3.10	0.00
102	171	0.00	0.00	0.00	-0.07	3.11	0.00
103	171	0.00	0.00	0.00	0.07	-3.11	0.00
103	172	0.00	0.00	0.00	-0.07	3.12	0.00
104	172	0.00	0.00	0.00	0.07	-3.12	0.00
104	173	0.00	0.00	0.00	-0.07	3.13	0.00
105	173	0.00	0.00	0.00	0.07	-3.13	0.00
105	176	0.00	0.00	0.00	-0.07	3.14	0.00
106	176	0.00	0.00	0.07	-0.10	-3.14	0.00
106	182	0.00	0.00	-0.07	0.10	2.79	0.00
107	182	0.00	0.00	0.07	-0.10	-2.79	0.00
107	183	0.00	0.00	-0.07	0.10	2.44	0.00
108	183	0.00	0.00	0.07	-0.10	-2.44	0.00
108	184	0.00	0.00	-0.07	0.10	2.09	0.00
109	184	0.00	0.00	0.07	-0.10	-2.09	0.00
109	185	0.00	0.00	-0.07	0.10	1.74	0.00
110	185	0.00	0.00	0.07	-0.10	-1.74	0.00
110	186	0.00	0.00	-0.07	0.10	1.39	0.00
111	186	0.00	0.00	0.07	-0.10	-1.39	0.00
111	187	0.00	0.00	-0.07	0.10	1.05	0.00
112	187	0.00	0.00	0.07	-0.10	-1.05	0.00
112	188	0.00	0.00	-0.07	0.10	0.70	0.00
113	188	0.00	0.00	0.07	-0.10	-0.70	0.00
113	189	0.00	0.00	-0.07	0.10	0.35	0.00
114	189	0.00	0.00	0.07	-0.10	-0.35	0.00
114	192	0.00	0.00	-0.07	0.10	0.00	0.00
134	6	-0.04	-0.01	0.01	0.00	0.41	-0.07
134	3	0.04	0.01	-0.01	0.00	0.03	0.04
135	3	0.00	-0.01	-0.10	0.00	0.08	-0.03
135	1	0.00	0.01	0.10	0.00	-0.30	0.00
136	22	-0.03	0.04	-0.01	0.00	-0.19	-0.05
136	18	0.03	-0.04	0.01	0.00	0.01	0.13
137	18	0.00	0.04	-0.24	0.00	-0.11	0.07
137	16	0.00	-0.04	0.24	0.00	0.13	0.00
138	43	0.15	-0.09	-0.05	0.00	0.19	0.25
138	37	-0.15	0.09	0.05	0.00	-0.04	-0.41
139	37	0.00	-0.09	-0.20	0.00	-0.02	-0.16
139	35	0.00	0.09	0.20	0.00	0.07	0.00
140	63	-0.10	0.11	0.42	0.00	-0.13	-0.16
140	57	0.10	-0.11	-0.42	0.00	0.32	0.35

141	57	0.00	0.11	0.40	0.00	-0.07	0.19
141	55	0.00	-0.11	-0.40	0.00	-0.02	0.00
142	83	0.03	-0.05	-0.04	0.00	0.07	0.05
142	77	-0.03	0.05	0.04	0.00	-0.11	-0.14
143	77	0.00	-0.05	-0.18	0.00	0.18	-0.09
143	75	0.00	0.05	0.18	0.00	-0.02	0.00
144	103	-0.03	0.04	-0.02	0.00	0.06	-0.05
144	97	0.03	-0.04	0.02	0.00	-0.11	0.12
145	97	0.00	0.04	-0.04	0.00	-0.05	0.06
145	95	0.00	-0.04	0.04	0.00	-0.06	0.00
146	123	0.04	-0.04	-0.11	0.00	0.12	0.06
146	117	-0.04	0.04	0.11	0.00	0.17	-0.13
147	117	0.00	-0.04	0.15	0.00	-0.01	-0.07
147	115	0.00	0.04	-0.15	0.00	0.01	0.00
148	143	-0.01	0.02	0.07	0.00	-0.07	-0.02
148	137	0.01	-0.02	-0.07	0.00	-0.05	0.06
149	137	0.00	0.02	0.19	0.00	-0.03	0.04
149	135	0.00	-0.02	-0.19	0.00	-0.04	0.00
150	162	0.00	0.01	-0.09	0.00	0.00	0.00
150	157	0.00	-0.01	0.09	0.00	-0.01	0.03
151	157	0.00	0.01	0.06	0.00	0.06	0.02
151	156	0.00	-0.01	-0.06	0.00	0.10	0.00
152	181	0.07	-0.01	-0.01	0.00	-0.01	0.12
152	176	-0.07	0.01	0.01	0.00	0.03	-0.14
153	176	0.00	-0.01	0.04	0.00	-0.01	-0.02
153	174	0.00	0.01	-0.04	0.00	-0.05	0.00
154	195	-0.07	0.00	0.00	0.00	0.00	-0.12
154	192	0.07	0.00	0.00	0.00	0.00	0.11
155	192	0.00	0.00	0.00	0.00	0.00	-0.01
155	190	0.00	0.00	0.00	0.00	0.00	0.00
156	7	0.04	0.01	0.00	0.00	0.00	0.00
156	4	-0.04	-0.01	0.00	0.00	0.00	0.03
157	4	0.00	0.01	0.00	0.00	0.00	0.03
157	2	0.00	-0.01	0.00	0.00	0.00	0.00
158	23	0.03	-0.04	0.00	0.00	0.00	0.00
158	19	-0.03	0.04	0.00	0.00	0.00	-0.07
159	19	0.00	-0.04	0.00	0.00	0.00	-0.07
159	17	0.00	0.04	0.00	0.00	0.00	0.00
160	42	-0.15	0.09	0.00	0.00	0.00	0.00
160	38	0.15	-0.09	0.00	0.00	0.00	0.16
161	38	0.00	0.09	0.00	0.00	0.00	0.16
161	36	0.00	-0.09	0.00	0.00	0.00	0.00
162	62	0.10	-0.11	0.00	0.00	0.00	0.00
162	58	-0.10	0.11	0.00	0.00	0.00	-0.19
163	58	0.00	-0.11	0.00	0.00	0.00	-0.19
163	56	0.00	0.11	0.00	0.00	0.00	0.00
164	82	-0.03	0.05	0.00	0.00	0.00	0.00
164	78	0.03	-0.05	0.00	0.00	0.00	0.09
165	78	0.00	0.05	0.00	0.00	0.00	0.09
165	76	0.00	-0.05	0.00	0.00	0.00	0.00
166	102	0.03	-0.04	0.00	0.00	0.00	0.00
166	98	-0.03	0.04	0.00	0.00	0.00	-0.06
167	98	0.00	-0.04	0.00	0.00	0.00	-0.06
167	96	0.00	0.04	0.00	0.00	0.00	0.00
168	122	-0.04	0.04	0.00	0.00	0.00	0.00
168	118	0.04	-0.04	0.00	0.00	0.00	0.07
169	118	0.00	0.04	0.00	0.00	0.00	0.07
169	116	0.00	-0.04	0.00	0.00	0.00	0.00
170	142	0.01	-0.02	0.00	0.00	0.00	0.00
170	138	-0.01	0.02	0.00	0.00	0.00	-0.04
171	138	0.00	-0.02	0.00	0.00	0.00	-0.04
171	136	0.00	0.02	0.00	0.00	0.00	0.00
172	161	0.00	-0.01	0.00	0.00	0.00	0.00
172	158	0.00	0.01	0.00	0.00	0.00	-0.02
173	158	0.00	-0.01	0.00	0.00	0.00	-0.02
173	155	0.00	0.01	0.00	0.00	0.00	0.00
174	180	-0.07	0.01	0.00	0.00	0.00	0.00
174	177	0.07	-0.01	0.00	0.00	0.00	0.02
175	177	0.00	0.01	0.00	0.00	0.00	0.02
175	175	0.00	-0.01	0.00	0.00	0.00	0.00
176	196	0.07	0.00	0.00	0.00	0.00	0.00
176	193	-0.07	0.00	0.00	0.00	0.00	0.01
177	193	0.00	0.00	0.00	0.00	0.00	0.01
177	191	0.00	0.00	0.00	0.00	0.00	0.00
182	7	-0.01	0.00	-0.04	0.00	0.00	0.00
182	6	0.01	0.00	0.04	0.00	0.07	0.00
183	2	0.01	0.00	0.00	0.00	0.00	0.00
183	1	-0.01	0.00	0.00	0.00	0.00	0.00
184	23	0.04	0.00	-0.03	0.00	0.00	0.00
184	22	-0.04	0.00	0.03	0.00	0.05	0.00
185	17	-0.04	0.00	0.00	0.00	0.00	0.00
185	16	0.04	0.00	0.00	0.00	0.00	0.00
186	42	-0.09	0.00	0.15	0.00	0.00	0.00
186	43	0.09	0.00	-0.15	0.00	-0.25	0.00
187	36	0.09	0.00	0.00	0.00	0.00	0.00
187	35	-0.09	0.00	0.00	0.00	0.00	0.00
188	62	0.11	0.00	-0.10	0.00	0.00	0.00
188	63	-0.11	0.00	0.10	0.00	0.16	0.00
189	56	-0.11	0.00	0.00	0.00	0.00	0.00
189	55	0.11	0.00	0.00	0.00	0.00	0.00
190	82	-0.05	0.00	0.03	0.00	0.00	0.00
190	83	0.05	0.00	-0.03	0.00	-0.05	0.00
191	76	0.05	0.00	0.00	0.00	0.00	0.00
191	75	-0.05	0.00	0.00	0.00	0.00	0.00
192	102	0.04	0.00	-0.03	0.00	0.00	0.00
192	103	-0.04	0.00	0.03	0.00	0.05	0.00
193	96	-0.04	0.00	0.00	0.00	0.00	0.00
193	95	0.04	0.00	0.00	0.00	0.00	0.00
194	122	-0.04	0.00	0.04	0.00	0.00	0.00
194	123	0.04	0.00	-0.04	0.00	-0.06	0.00
195	116	0.04	0.00	0.00	0.00	0.00	0.00
195	115	-0.04	0.00	0.00	0.00	0.00	0.00
196	142	0.02	0.00	-0.01	0.00	0.00	0.00
196	143	-0.02	0.00	0.01	0.00	0.02	0.00
197	136	-0.02	0.00	0.00	0.00	0.00	0.00
197	135	0.02	0.00	0.00	0.00	0.00	0.00
198	161	0.01	0.00	0.00	0.00	0.00	0.00
198	162	-0.01	0.00	0.00	0.00	0.00	0.00
199	155	-0.01	0.00	0.00	0.00	0.00	0.00
199	156	0.01	0.00	0.00	0.00	0.00	0.00
200	180	-0.01	0.00	0.07	0.00	0.00	0.00
200	181	0.01	0.00	-0.07	0.00	-0.12	0.00
201	175	0.01	0.00	0.00	0.00	0.00	0.00
201	174	-0.01	0.00	0.00	0.00	0.00	0.00
202	196	0.00	0.00	-0.07	0.00	0.00	0.00
202	195	0.00	0.00	0.07	0.00	0.12	0.00
203	191	0.00	0.00	0.00	0.00	0.00	0.00
203	190	0.00	0.00	0.00	0.00	0.00	0.00
206	21	0.00	0.00	-0.03	0.00	0.06	0.00
206	20	0.00	0.00	0.03	0.00	0.01	0.00
207	20	0.00	0.00	-0.03	0.00	-0.01	0.00
207	19	0.00	0.00	0.03	0.00	0.14	0.00
208	40	0.00	0.00	0.15	0.00	-1.13	0.00
208	39	0.00	0.00	-0.15	0.00	1.04	0.00
209	39	0.00	0.00	0.15	0.00	-1.04	0.00
209	41	0.00	0.00	-0.15	0.00	0.29	0.00
210	41	0.00	0.00	0.15	0.00	-0.29	0.00
210	38	0.00	0.00	-0.15	0.00	-0.31	0.00

211	60	0.00	0.00	-0.10	0.00	0.81	0.00
211	59	0.00	0.00	0.10	0.00	-0.49	0.00
212	59	0.00	0.00	-0.10	0.00	0.49	0.00
212	61	0.00	0.00	0.10	0.00	-0.01	0.00
213	61	0.00	0.00	-0.10	0.00	0.01	0.00
213	58	0.00	0.00	0.10	0.00	0.38	0.00
214	80	0.00	0.00	0.03	0.00	-0.14	0.00
214	79	0.00	0.00	-0.03	0.00	0.05	0.00
215	79	0.00	0.00	0.03	0.00	-0.05	0.00
215	81	0.00	0.00	-0.03	0.00	-0.08	0.00
216	81	0.00	0.00	0.03	0.00	0.08	0.00
216	78	0.00	0.00	-0.03	0.00	-0.19	0.00
217	100	0.00	0.00	-0.03	0.00	0.27	0.00
217	99	0.00	0.00	0.03	0.00	-0.16	0.00
218	99	0.00	0.00	-0.03	0.00	0.16	0.00
218	101	0.00	0.00	0.03	0.00	0.00	0.00
219	101	0.00	0.00	-0.03	0.00	0.00	0.00
219	98	0.00	0.00	0.03	0.00	0.13	0.00
220	120	0.00	0.00	0.04	0.00	-0.32	0.00
220	119	0.00	0.00	-0.04	0.00	0.20	0.00
221	119	0.00	0.00	0.04	0.00	-0.20	0.00
221	121	0.00	0.00	-0.04	0.00	0.01	0.00
222	121	0.00	0.00	0.04	0.00	-0.01	0.00
222	118	0.00	0.00	-0.04	0.00	-0.14	0.00
223	140	0.00	0.00	-0.01	0.00	0.08	0.00
223	139	0.00	0.00	0.01	0.00	-0.04	0.00
224	139	0.00	0.00	-0.01	0.00	0.04	0.00
224	141	0.00	0.00	0.01	0.00	0.02	0.00
225	141	0.00	0.00	-0.01	0.00	-0.02	0.00
225	138	0.00	0.00	0.01	0.00	0.07	0.00
226	160	0.00	0.00	0.00	0.00	-0.03	0.00
226	159	0.00	0.00	0.00	0.00	0.04	0.00
227	159	0.00	0.00	0.00	0.00	-0.04	0.00
227	158	0.00	0.00	0.00	0.00	0.04	0.00
228	179	0.00	0.00	0.07	0.00	-0.51	0.00
228	178	0.00	0.00	-0.07	0.00	0.24	0.00
229	178	0.00	0.00	0.07	0.00	-0.24	0.00
229	177	0.00	0.00	-0.07	0.00	-0.05	0.00
230	5	0.00	0.00	-0.04	0.00	0.11	0.00
230	4	0.00	0.00	0.04	0.00	-0.07	0.00
231	194	0.00	0.00	-0.07	0.00	0.09	0.00
231	193	0.00	0.00	0.07	0.00	-0.02	0.00

proc Viaducto Papiol

HIPOTESIS 9

hipo 9 gradiente de temperatura

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
1	3	0.00	30.19	0.01	-1.15	0.00	0.00
1	8	0.00	-30.19	-0.01	1.15	-0.06	150.96
2	8	0.00	30.19	0.01	-1.15	0.06	-150.96
2	9	0.00	-30.19	-0.01	1.15	-0.13	301.91
3	9	0.00	30.19	0.01	-0.91	0.13	-301.91
3	10	0.00	-30.19	-0.01	0.91	-0.19	452.86
4	10	0.00	30.19	0.01	-1.09	0.19	-452.86
4	11	0.00	-30.19	-0.01	1.09	-0.26	603.81
5	11	0.00	30.19	0.01	-0.86	0.26	-603.81
5	12	0.00	-30.19	-0.01	0.86	-0.32	754.76
6	12	0.00	30.19	0.01	-0.27	0.32	-754.76
6	13	0.00	-30.19	-0.01	0.27	-0.38	905.71
7	13	0.00	30.19	0.01	-0.61	0.38	-905.71
7	14	0.00	-30.19	-0.01	0.61	-0.45	1056.67
8	14	0.00	30.19	0.01	0.21	0.45	-1056.67
8	15	0.00	-30.19	-0.01	-0.21	-0.51	1207.62
9	15	0.00	30.19	0.01	0.19	0.51	-1207.62
9	18	0.00	-30.19	-0.01	-0.19	-0.58	1358.57
10	18	0.00	-5.14	-0.01	-2.62	0.58	-1358.57
10	24	0.00	5.14	0.01	2.62	-0.52	1332.89
11	24	0.00	-5.14	-0.01	-2.11	0.52	-1332.89
11	25	0.00	5.14	0.01	2.11	-0.46	1307.21
12	25	0.00	-5.14	-0.01	-1.06	0.46	-1307.21
12	26	0.00	5.14	0.01	1.06	-0.40	1281.53
13	26	0.00	-5.14	-0.01	-1.58	0.40	-1281.53
13	27	0.00	5.14	0.01	1.58	-0.35	1255.85
14	27	0.00	-5.14	-0.01	-1.10	0.35	-1255.85
14	28	0.00	5.14	0.01	1.10	-0.29	1230.17
15	28	0.00	-5.14	-0.01	-0.14	0.29	-1230.17
15	29	0.00	5.14	0.01	0.14	-0.23	1204.49
16	29	0.00	-5.14	-0.01	-0.60	0.23	-1204.49
16	30	0.00	5.14	0.01	0.60	-0.17	1178.81
17	30	0.00	-5.14	-0.01	-0.13	0.17	-1178.81
17	31	0.00	5.14	0.01	0.13	-0.12	1153.13
18	31	0.00	-5.14	-0.01	0.31	0.12	-1153.13
18	32	0.00	5.14	0.01	-0.31	-0.06	1127.45
19	32	0.00	-5.14	-0.01	0.31	0.06	-1127.45
19	33	0.00	5.14	0.01	-0.31	0.00	1101.77
20	33	0.00	-5.14	-0.01	0.73	0.00	-1101.77
20	34	0.00	5.14	0.01	-0.73	0.06	1076.09
21	34	0.00	-5.14	-0.01	1.16	-0.06	-1076.09
21	37	0.00	5.14	0.01	-1.16	0.11	1050.41
22	37	0.00	1.33	-0.01	-1.97	-0.11	-1050.41
22	44	0.00	-1.33	0.01	1.97	0.16	1057.04
23	44	0.00	1.33	-0.01	-1.55	-0.16	-1057.04
23	45	0.00	-1.33	0.01	1.55	0.20	1063.67
24	45	0.00	1.33	-0.01	-1.15	-0.20	-1063.67
24	46	0.00	-1.33	0.01	1.15	0.24	1070.30
25	46	0.00	1.33	-0.01	-1.15	-0.24	-1070.30
25	47	0.00	-1.33	0.01	1.15	0.29	1076.93
26	47	0.00	1.33	-0.01	-0.74	-0.29	-1076.93
26	48	0.00	-1.33	0.01	0.74	0.33	1083.56
27	48	0.00	1.33	-0.01	-0.72	-0.33	-1083.56
27	49	0.00	-1.33	0.01	0.72	0.37	1090.19
28	49	0.00	1.33	-0.01	-0.30	-0.37	-1090.20
28	50	0.00	-1.33	0.01	0.30	0.42	1096.83
29	50	0.00	1.33	-0.01	0.14	-0.42	-1096.83
29	51	0.00	-1.33	0.01	-0.14	0.46	1103.46
30	51	0.00	1.33	-0.01	0.56	-0.46	-1103.46
30	52	0.00	-1.33	0.01	-0.56	0.50	1110.09
31	52	0.00	1.33	-0.01	0.56	-0.50	-1110.09
31	53	0.00	-1.33	0.01	-0.56	0.55	1116.72
32	53	0.00	1.33	-0.01	1.00	-0.55	-1116.72
32	54	0.00	-1.33	0.01	-1.00	0.59	1123.35
33	54	0.00	1.33	-0.01	0.98	-0.59	-1123.35
33	57	0.00	-1.33	0.01	-0.98	0.63	1129.98
34	57	0.00	-0.35	0.01	-1.67	-0.63	-1129.98
34	64	0.00	0.35	-0.01	1.67	0.59	1128.24
35	64	0.00	-0.35	0.01	-1.69	-0.59	-1128.24
35	65	0.00	0.35	-0.01	1.69	0.55	1126.51
36	65	0.00	-0.35	0.01	-0.81	-0.55	-1126.51
36	66	0.00	0.35	-0.01	0.81	0.51	1124.77
37	66	0.00	-0.35	0.01	-0.79	-0.51	-1124.77
37	67	0.00	0.35	-0.01	0.79	0.46	1123.04
38	67	0.00	-0.35	0.01	-0.39	-0.46	-1123.04
38	68	0.00	0.35	-0.01	0.39	0.42	1121.30
39	68	0.00	-0.35	0.01	-0.79	-0.42	-1121.30
39	69	0.00	0.35	-0.01	0.79	0.38	1119.57
40	69	0.00	-0.35	0.01	0.51	-0.38	-1119.57
40	70	0.00	0.35	-0.01	-0.51	0.34	1117.83
41	70	0.00	-0.35	0.01	0.06	-0.34	-1117.83
41	71	0.00	0.35	-0.01	-0.06	0.29	1116.10
42	71	0.00	-0.35	0.01	0.51	-0.29	-1116.10
42	72	0.00	0.35	-0.01	-0.51	0.25	1114.36
43	72	0.00	-0.35	0.01	0.93	-0.25	-1114.36
43	73	0.00	0.35	-0.01	-0.93	0.21	1112.63
44	73	0.00	-0.35	0.01	0.96	-0.21	-1112.63
44	74	0.00	0.35	-0.01	-0.96	0.16	1110.89
45	74	0.00	-0.35	0.01	1.38	-0.16	-1110.89
45	77	0.00	0.35	-0.01	-1.38	0.12	1109.15
46	77	0.00	0.11	0.00	-1.41	-0.12	-1109.15
46	84	0.00	-0.11	0.00	1.41	0.12	1109.71
47	84	0.00	0.11	0.00	-1.39	-0.12	-1109.71
47	85	0.00	-0.11	0.00	1.39	0.11	1110.26
48	85	0.00	0.11	0.00	-0.97	-0.11	-1110.26
48	86	0.00	-0.11	0.00	0.97	0.11	1110.81
49	86	0.00	0.11	0.00	-0.55	-0.11	-1110.81
49	87	0.00	-0.11	0.00	0.55	0.10	1111.36
50	87	0.00	0.11	0.00	-0.52	-0.10	-1111.36
50	88	0.00	-0.11	0.00	0.52	0.10	1111.92
51	88	0.00	0.11	0.00	-0.10	-0.10	-1111.92
51	89	0.00	-0.11	0.00	0.10	0.09	1112.47
52	89	0.00	0.11	0.00	-0.10	-0.09	-1112.47
52	90	0.00	-0.11	0.00	0.10	0.09	1113.02
53	90	0.00	0.11	0.00	0.34	-0.09	-1113.02
53	91	0.00	-0.11	0.00	-0.34	0.08	1113.57
54	91	0.00	0.11	0.00	0.77	-0.08	-1113.57
54	92	0.00	-0.11	0.00	-0.77	0.08	1114.12
55	92	0.00	0.11	0.00	1.21	-0.08	-1114.12
55	93	0.00	-0.11	0.00	-1.21	0.07	1114.67
56	93	0.00	0.11	0.00	1.19	-0.07	-1114.67
56	94	0.00	-0.11	0.00	-1.19	0.06	1115.23
57	94	0.00	0.11	0.00	1.21	-0.06	-1115.23
57	97	0.00	-0.11	0.00	-1.21	0.06	1115.78

58	97	0.00	-0.11	0.00	-1.22	-0.06	-1115.78
58	104	0.00	0.11	0.00	1.22	0.07	1115.23
59	104	0.00	-0.11	0.00	-1.25	-0.07	-1115.23
59	105	0.00	0.11	0.00	1.25	0.08	1114.67
60	105	0.00	-0.11	0.00	-0.78	-0.08	-1114.68
60	106	0.00	0.11	0.00	0.78	0.09	1114.12
61	106	0.00	-0.11	0.00	-0.80	-0.09	-1114.12
61	107	0.00	0.11	0.00	0.80	0.10	1113.57
62	107	0.00	-0.11	0.00	-0.36	-0.10	-1113.57
62	108	0.00	0.11	0.00	0.36	0.11	1113.02
63	108	0.00	-0.11	0.00	0.07	-0.11	-1113.02
63	109	0.00	0.11	0.00	-0.07	0.11	1112.47
64	109	0.00	-0.11	0.00	-0.36	-0.11	-1112.47
64	110	0.00	0.11	0.00	0.36	0.12	1111.92
65	110	0.00	-0.11	0.00	0.51	-0.12	-1111.92
65	111	0.00	0.11	0.00	-0.51	0.13	1111.37
66	111	0.00	-0.11	0.00	0.93	-0.13	-1111.36
66	112	0.00	0.11	0.00	-0.93	0.14	1110.81
67	112	0.00	-0.11	0.00	0.96	-0.14	-1110.81
67	113	0.00	0.11	0.00	-0.96	0.15	1110.26
68	113	0.00	-0.11	0.00	1.38	-0.15	-1110.26
68	114	0.00	0.11	0.00	-1.38	0.16	1109.71
69	114	0.00	-0.11	0.00	1.38	-0.16	-1109.71
69	117	0.00	0.11	0.00	-1.38	0.17	1109.16
70	117	0.00	0.35	-0.01	-0.93	-0.17	-1109.16
70	124	0.00	-0.35	0.01	0.93	0.22	1110.89
71	124	0.00	0.35	-0.01	-1.38	-0.22	-1110.89
71	125	0.00	-0.35	0.01	1.38	0.27	1112.63
72	125	0.00	0.35	-0.01	-0.93	-0.27	-1112.63
72	126	0.00	-0.35	0.01	0.93	0.32	1114.36
73	126	0.00	0.35	-0.01	-0.49	-0.32	-1114.36
73	127	0.00	-0.35	0.01	0.49	0.37	1116.09
74	127	0.00	0.35	-0.01	-0.06	-0.37	-1116.09
74	128	0.00	-0.35	0.01	0.06	0.43	1117.83
75	128	0.00	0.35	-0.01	-0.06	-0.43	-1117.83
75	129	0.00	-0.35	0.01	0.06	0.48	1119.56
76	129	0.00	0.35	-0.01	0.36	-0.48	-1119.56
76	130	0.00	-0.35	0.01	-0.36	0.53	1121.30
77	130	0.00	0.35	-0.01	0.81	-0.53	-1121.30
77	131	0.00	-0.35	0.01	-0.81	0.58	1123.03
78	131	0.00	0.35	-0.01	0.39	-0.58	-1123.03
78	132	0.00	-0.35	0.01	-0.39	0.63	1124.77
79	132	0.00	0.35	-0.01	1.69	-0.63	-1124.76
79	133	0.00	-0.35	0.01	-1.69	0.68	1126.50
80	133	0.00	0.35	-0.01	1.26	-0.68	-1126.50
80	134	0.00	-0.35	0.01	-1.26	0.73	1128.23
81	134	0.00	0.35	-0.01	1.69	-0.73	-1128.23
81	137	0.00	-0.35	0.01	-1.69	0.78	1129.97
82	137	0.00	-1.32	0.02	-1.46	-0.78	-1129.97
82	144	0.00	1.32	-0.02	1.46	0.66	1123.34
83	144	0.00	-1.32	0.02	-0.59	-0.66	-1123.34
83	145	0.00	1.32	-0.02	0.59	0.54	1116.72
84	145	0.00	-1.32	0.02	-0.57	-0.54	-1116.72
84	146	0.00	1.32	-0.02	0.57	0.42	1110.10
85	146	0.00	-1.32	0.02	-0.59	-0.42	-1110.10
85	147	0.00	1.32	-0.02	0.59	0.30	1103.48
86	147	0.00	-1.32	0.02	0.27	-0.30	-1103.48
86	148	0.00	1.32	-0.02	-0.27	0.18	1096.85
87	148	0.00	-1.32	0.02	0.30	-0.18	-1096.85
87	149	0.00	1.32	-0.02	-0.30	0.05	1090.23
88	149	0.00	-1.32	0.02	0.69	-0.05	-1090.23
88	150	0.00	1.32	-0.02	-0.69	-0.07	1083.61
89	150	0.00	-1.32	0.02	0.71	0.07	-1083.61
89	151	0.00	1.32	-0.02	-0.71	-0.19	1076.99
90	151	0.00	-1.32	0.02	1.14	0.19	-1076.99
90	152	0.00	1.32	-0.02	-1.14	-0.31	1070.36
91	152	0.00	-1.32	0.02	1.12	0.31	-1070.36
91	153	0.00	1.32	-0.02	-1.12	-0.43	1063.74
92	153	0.00	-1.32	0.02	1.54	0.43	-1063.74
92	154	0.00	1.32	-0.02	-1.54	-0.55	1057.12
93	154	0.00	-1.32	0.02	1.95	0.55	-1057.12
93	157	0.00	1.32	-0.02	-1.95	-0.68	1050.49
94	157	0.00	5.13	-0.02	-1.35	0.68	-1050.49
94	163	0.00	-5.13	0.02	1.35	-0.59	1076.15
95	163	0.00	5.13	-0.02	-0.94	0.59	-1076.15
95	164	0.00	-5.13	0.02	0.94	-0.49	1101.81
96	164	0.00	5.13	-0.02	-0.52	0.49	-1101.81
96	165	0.00	-5.13	0.02	0.52	-0.40	1127.47
97	165	0.00	5.13	-0.02	-0.50	0.40	-1127.47
97	166	0.00	-5.13	0.02	0.50	-0.31	1153.13
98	166	0.00	5.13	-0.02	-0.06	0.31	-1153.13
98	167	0.00	-5.13	0.02	0.06	-0.22	1178.79
99	167	0.00	5.13	-0.02	0.39	0.22	-1178.79
99	168	0.00	-5.13	0.02	-0.39	-0.13	1204.45
100	168	0.00	5.13	-0.02	0.41	0.13	-1204.45
100	169	0.00	-5.13	0.02	-0.41	-0.04	1230.11
101	169	0.00	5.13	-0.02	0.88	0.04	-1230.11
101	170	0.00	-5.13	0.02	-0.88	0.05	1255.77
102	170	0.00	5.13	-0.02	0.88	-0.05	-1255.76
102	171	0.00	-5.13	0.02	-0.88	0.15	1281.42
103	171	0.00	5.13	-0.02	1.88	-0.15	-1281.42
103	172	0.00	-5.13	0.02	-1.88	0.24	1307.08
104	172	0.00	5.13	-0.02	1.88	-0.24	-1307.08
104	173	0.00	-5.13	0.02	-1.88	0.33	1332.74
105	173	0.00	5.13	-0.02	1.91	-0.33	-1332.74
105	176	0.00	-5.13	0.02	-1.91	0.42	1358.40
106	176	0.00	-30.19	0.01	-0.16	-0.42	-1358.40
106	182	0.00	30.19	-0.01	0.16	0.37	1207.47
107	182	0.00	-30.19	0.01	0.32	-0.37	-1207.47
107	183	0.00	30.19	-0.01	-0.32	0.33	1056.54
108	183	0.00	-30.19	0.01	0.34	-0.33	-1056.54
108	184	0.00	30.19	-0.01	-0.34	0.28	905.60
109	184	0.00	-30.19	0.01	0.67	-0.28	-905.60
109	185	0.00	30.19	-0.01	-0.67	0.23	754.67
110	185	0.00	-30.19	0.01	0.68	-0.23	-754.67
110	186	0.00	30.19	-0.01	-0.68	0.19	603.74
111	186	0.00	-30.19	0.01	1.15	-0.19	-603.73
111	187	0.00	30.19	-0.01	-1.15	0.14	452.80
112	187	0.00	-30.19	0.01	1.15	-0.14	-452.80
112	188	0.00	30.19	-0.01	-1.15	0.09	301.87
113	188	0.00	-30.19	0.01	1.27	-0.09	-301.87
113	189	0.00	30.19	-0.01	-1.27	0.05	150.94
114	189	0.00	-30.19	0.01	1.27	-0.05	-150.94
114	192	0.00	30.19	-0.01	-1.27	0.00	0.00
134	6	0.01	14.96	0.00	0.00	0.00	0.02
134	3	-0.01	-14.96	0.00	0.00	0.00	63.57
135	3	0.00	-15.23	0.00	0.00	0.00	-64.72
135	1	0.00	15.23	0.00	0.00	0.00	0.00
136	22	-0.02	-18.48	0.00	0.00	0.00	-0.04
136	18	0.02	18.48	0.00	0.00	0.00	-32.31
137	18	0.00	16.84	0.00	0.00	0.00	29.47
137	16	0.00	-16.84	0.00	0.00	0.00	0.00
138	43	0.00	2.34	0.00	0.00	0.00	0.00
138	37	0.00	-2.34	0.00	0.00	0.00	4.08
139	37	0.00	-4.13	0.00	0.00	0.00	-7.22
139	35	0.00	4.13	0.00	0.00	0.00	0.00
140	63	0.02	-1.72	0.00	0.00	0.00	0.03
140	57	-0.02	1.72	0.00	0.00	0.00	-3.04

141	57	0.00	-0.05	0.00	0.00	0.00	-0.08
141	55	0.00	0.05	0.00	0.00	0.00	0.00
142	83	-0.01	-0.69	0.00	0.00	0.00	-0.01
142	77	0.01	0.69	0.00	0.00	0.00	-1.20
143	77	0.00	-1.15	0.00	0.00	0.00	-2.01
143	75	0.00	1.15	0.00	0.00	0.00	0.00
144	103	0.00	-1.06	0.00	0.00	0.00	0.00
144	97	0.00	1.06	0.00	0.00	0.00	-1.85
145	97	0.00	-0.84	0.00	0.00	0.00	-1.46
145	95	0.00	0.84	0.00	0.00	0.00	0.00
146	123	-0.01	-0.68	0.00	0.00	0.00	-0.01
146	117	0.01	0.68	0.00	0.00	0.00	-1.18
147	117	0.00	-1.14	0.00	0.00	0.00	-1.99
147	115	0.00	1.14	0.00	0.00	0.00	0.00
148	143	0.03	-1.72	0.00	0.00	0.00	0.06
148	137	-0.03	1.72	0.00	0.00	0.00	-3.07
149	137	0.00	-0.05	0.00	0.00	0.00	-0.09
149	135	0.00	0.05	0.00	0.00	0.00	0.00
150	162	-0.04	2.26	0.00	0.00	0.00	-0.07
150	157	0.04	-2.26	0.00	0.00	0.00	4.03
151	157	0.00	-4.20	0.00	0.00	0.00	-7.34
151	156	0.00	4.20	0.00	0.00	0.00	0.00
152	181	0.03	-18.37	0.00	0.00	0.00	0.05
152	176	-0.03	18.37	0.00	0.00	0.00	-32.21
153	176	0.00	16.95	0.00	0.00	0.00	29.65
153	174	0.00	-16.95	0.00	0.00	0.00	0.00
154	195	-0.01	14.94	0.00	0.00	0.00	-0.02
154	192	0.01	-14.94	0.00	0.00	0.00	63.52
155	192	0.00	-15.24	0.00	0.00	0.00	-64.79
155	190	0.00	15.24	0.00	0.00	0.00	0.00
156	7	-0.01	-14.96	0.00	0.00	0.00	0.00
156	4	0.01	14.96	0.00	0.00	0.00	-63.59
157	4	0.00	15.23	0.00	0.00	0.00	64.72
157	2	0.00	-15.23	0.00	0.00	0.00	0.00
158	23	0.02	18.48	0.00	0.00	0.00	0.00
158	19	-0.02	-18.48	0.00	0.00	0.00	32.35
159	19	0.00	-16.84	0.00	0.00	0.00	-29.47
159	17	0.00	16.84	0.00	0.00	0.00	0.00
160	42	0.00	-2.34	0.00	0.00	0.00	0.00
160	38	0.00	2.34	0.00	0.00	0.00	-4.09
161	38	0.00	4.13	0.00	0.00	0.00	7.22
161	36	0.00	-4.13	0.00	0.00	0.00	0.00
162	62	-0.02	1.72	0.00	0.00	0.00	0.00
162	58	0.02	-1.72	0.00	0.00	0.00	3.01
163	58	0.00	0.05	0.00	0.00	0.00	0.08
163	56	0.00	-0.05	0.00	0.00	0.00	0.00
164	82	0.01	0.69	0.00	0.00	0.00	0.00
164	78	-0.01	-0.69	0.00	0.00	0.00	1.21
165	78	0.00	1.15	0.00	0.00	0.00	2.01
165	76	0.00	-1.15	0.00	0.00	0.00	0.00
166	102	0.00	1.06	0.00	0.00	0.00	0.00
166	98	0.00	-1.06	0.00	0.00	0.00	1.85
167	98	0.00	0.84	0.00	0.00	0.00	1.46
167	96	0.00	-0.84	0.00	0.00	0.00	0.00
168	122	0.01	0.68	0.00	0.00	0.00	0.00
168	118	-0.01	-0.68	0.00	0.00	0.00	1.20
169	118	0.00	1.14	0.00	0.00	0.00	1.99
169	116	0.00	-1.14	0.00	0.00	0.00	0.00
170	142	-0.03	1.72	0.00	0.00	0.00	0.00
170	138	0.03	-1.72	0.00	0.00	0.00	3.01
171	138	0.00	0.05	0.00	0.00	0.00	0.09
171	136	0.00	-0.05	0.00	0.00	0.00	0.00
172	161	0.04	-2.26	0.00	0.00	0.00	0.00
172	158	-0.04	2.26	0.00	0.00	0.00	-3.96
173	158	0.00	4.20	0.00	0.00	0.00	7.34
173	155	0.00	-4.20	0.00	0.00	0.00	0.00
174	180	-0.03	18.37	0.00	0.00	0.00	0.00
174	177	0.03	-18.37	0.00	0.00	0.00	32.16
175	177	0.00	-16.95	0.00	0.00	0.00	-29.65
175	175	0.00	16.95	0.00	0.00	0.00	0.00
176	196	0.01	-14.94	0.00	0.00	0.00	0.00
176	193	-0.01	14.94	0.00	0.00	0.00	-63.50
177	193	0.00	15.24	0.00	0.00	0.00	64.79
177	191	0.00	-15.24	0.00	0.00	0.00	0.00
182	7	14.96	0.00	0.01	0.00	0.00	0.00
182	6	-14.96	0.00	-0.01	0.00	-0.02	0.00
183	2	15.23	0.00	0.00	0.00	0.00	0.00
183	1	-15.23	0.00	0.00	0.00	0.00	0.00
184	23	-18.48	0.00	-0.02	0.00	0.00	0.00
184	22	18.48	0.00	0.02	0.00	0.04	0.00
185	17	-16.84	0.00	0.00	0.00	0.00	0.00
185	16	16.84	0.00	0.00	0.00	0.00	0.00
186	42	2.34	0.00	0.00	0.00	0.00	0.00
186	43	-2.34	0.00	0.00	0.00	0.00	0.00
187	36	4.13	0.00	0.00	0.00	0.00	0.00
187	35	-4.13	0.00	0.00	0.00	0.00	0.00
188	62	-1.72	0.00	0.02	0.00	0.00	0.00
188	63	1.72	0.00	-0.02	0.00	-0.03	0.00
189	56	0.05	0.00	0.00	0.00	0.00	0.00
189	55	-0.05	0.00	0.00	0.00	0.00	0.00
190	82	-0.69	0.00	-0.01	0.00	0.00	0.00
190	83	0.69	0.00	0.01	0.00	0.01	0.00
191	76	1.15	0.00	0.00	0.00	0.00	0.00
191	75	-1.15	0.00	0.00	0.00	0.00	0.00
192	102	-1.06	0.00	0.00	0.00	0.00	0.00
192	103	1.06	0.00	0.00	0.00	0.00	0.00
193	96	0.84	0.00	0.00	0.00	0.00	0.00
193	95	-0.84	0.00	0.00	0.00	0.00	0.00
194	122	-0.68	0.00	-0.01	0.00	0.00	0.00
194	123	0.68	0.00	0.01	0.00	0.01	0.00
195	116	1.14	0.00	0.00	0.00	0.00	0.00
195	115	-1.14	0.00	0.00	0.00	0.00	0.00
196	142	-1.72	0.00	0.03	0.00	0.00	0.00
196	143	1.72	0.00	-0.03	0.00	-0.06	0.00
197	136	0.05	0.00	0.00	0.00	0.00	0.00
197	135	-0.05	0.00	0.00	0.00	0.00	0.00
198	161	2.26	0.00	-0.04	0.00	0.00	0.00
198	162	-2.26	0.00	0.04	0.00	0.07	0.00
199	155	4.20	0.00	0.00	0.00	0.00	0.00
199	156	-4.20	0.00	0.00	0.00	0.00	0.00
200	180	-18.37	0.00	0.03	0.00	0.00	0.00
200	181	18.37	0.00	-0.03	0.00	-0.05	0.00
201	175	-16.95	0.00	0.00	0.00	0.00	0.00
201	174	16.95	0.00	0.00	0.00	0.00	0.00
202	196	14.94	0.00	-0.01	0.00	0.00	0.00
202	195	-14.94	0.00	0.01	0.00	0.02	0.00
203	191	15.24	0.00	0.00	0.00	0.00	0.00
203	190	-15.24	0.00	0.00	0.00	0.00	0.00
206	21	-35.33	0.00	-0.02	0.00	3.02	0.00
206	20	35.33	0.00	0.02	0.00	-2.97	0.00
207	20	-35.33	0.00	-0.02	0.00	2.97	0.00
207	19	35.33	0.00	0.02	0.00	-2.87	0.00
208	40	6.46	0.00	0.00	0.00	3.11	0.00
208	39	-6.46	0.00	0.00	0.00	-3.11	0.00
209	39	6.46	0.00	0.00	0.00	3.11	0.00
209	41	-6.46	0.00	0.00	0.00	-3.12	0.00
210	41	6.46	0.00	0.00	0.00	3.12	0.00
210	38	-6.46	0.00	0.00	0.00	-3.13	0.00

211	60	-1.67	0.00	0.02	0.00	2.88	0.00
211	59	1.67	0.00	-0.02	0.00	-2.94	0.00
212	59	-1.67	0.00	0.02	0.00	2.94	0.00
212	61	1.67	0.00	-0.02	0.00	-3.03	0.00
213	61	-1.67	0.00	0.02	0.00	3.03	0.00
213	58	1.67	0.00	-0.02	0.00	-3.09	0.00
214	80	0.46	0.00	-0.01	0.00	3.32	0.00
214	79	-0.46	0.00	0.01	0.00	-3.29	0.00
215	79	0.46	0.00	-0.01	0.00	3.29	0.00
215	81	-0.46	0.00	0.01	0.00	-3.25	0.00
216	81	0.46	0.00	-0.01	0.00	3.25	0.00
216	78	-0.46	0.00	0.01	0.00	-3.22	0.00
217	100	-0.22	0.00	0.00	0.00	3.35	0.00
217	99	0.22	0.00	0.00	0.00	-3.34	0.00
218	99	-0.22	0.00	0.00	0.00	3.34	0.00
218	101	0.22	0.00	0.00	0.00	-3.32	0.00
219	101	-0.22	0.00	0.00	0.00	3.32	0.00
219	98	0.22	0.00	0.00	0.00	-3.31	0.00
220	120	0.46	0.00	-0.01	0.00	3.29	0.00
220	119	-0.46	0.00	0.01	0.00	-3.27	0.00
221	119	0.46	0.00	-0.01	0.00	3.27	0.00
221	121	-0.46	0.00	0.01	0.00	-3.22	0.00
222	121	0.46	0.00	-0.01	0.00	3.22	0.00
222	118	-0.46	0.00	0.01	0.00	-3.19	0.00
223	140	-1.67	0.00	0.03	0.00	2.67	0.00
223	139	1.67	0.00	-0.03	0.00	-2.79	0.00
224	139	-1.67	0.00	0.03	0.00	2.79	0.00
224	141	1.67	0.00	-0.03	0.00	-2.96	0.00
225	141	-1.67	0.00	0.03	0.00	2.96	0.00
225	138	1.67	0.00	-0.03	0.00	-3.10	0.00
226	160	6.46	0.00	-0.04	0.00	3.74	0.00
226	159	-6.46	0.00	0.04	0.00	-3.56	0.00
227	159	6.46	0.00	-0.04	0.00	3.56	0.00
227	158	-6.46	0.00	0.04	0.00	-3.39	0.00
228	179	-35.32	0.00	0.03	0.00	2.30	0.00
228	178	35.32	0.00	-0.03	0.00	-2.40	0.00
229	178	-35.32	0.00	0.03	0.00	2.40	0.00
229	177	35.32	0.00	-0.03	0.00	-2.51	0.00
230	5	30.19	0.00	0.01	0.00	1.12	0.00
230	4	-30.19	0.00	-0.01	0.00	-1.13	0.00
231	194	30.19	0.00	-0.01	0.00	1.30	0.00
231	193	-30.19	0.00	0.01	0.00	-1.29	0.00

HIPOTESIS 10

hipo 10 fluencia y retraccion

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
1	3	0.03	0.00	0.12	-0.01	0.00	0.00
1	8	-0.03	0.00	-0.12	0.01	-0.58	0.00
2	8	0.00	0.00	0.12	-0.01	0.58	0.00
2	9	0.00	0.00	-0.12	0.01	-1.17	0.00
3	9	-0.04	0.00	0.12	-0.01	1.17	0.00
3	10	0.04	0.00	-0.12	0.01	-1.75	0.00
4	10	0.06	0.00	0.12	-0.01	1.75	0.00
4	11	-0.06	0.00	-0.12	0.01	-2.33	0.00
5	11	-0.06	0.00	0.12	-0.01	2.33	0.00
5	12	0.06	0.00	-0.12	0.01	-2.92	0.00
6	12	-0.01	0.00	0.12	-0.01	2.92	0.00
6	13	0.01	0.00	-0.12	0.01	-3.50	0.00
7	13	0.06	0.00	0.12	-0.01	3.50	0.00
7	14	-0.06	0.00	-0.12	0.01	-4.09	0.00
8	14	0.06	0.00	0.12	-0.01	4.09	0.00
8	15	-0.06	0.00	-0.12	0.01	-4.67	0.00
9	15	0.00	0.00	0.12	-0.01	4.67	0.00
9	18	0.00	0.00	-0.12	0.01	-5.25	0.00
10	18	0.04	0.00	0.21	-0.57	5.25	0.00
10	24	-0.04	0.00	-0.21	0.57	-6.30	0.00
11	24	-0.04	0.00	0.21	-0.57	6.30	0.00
11	25	0.04	0.00	-0.21	0.57	-7.35	0.00
12	25	-0.04	0.00	0.21	-0.57	7.35	0.00
12	26	0.04	0.00	-0.21	0.57	-8.40	0.00
13	26	0.03	0.00	0.21	-0.57	8.40	0.00
13	27	-0.03	0.00	-0.21	0.57	-9.45	0.00
14	27	-0.02	0.00	0.21	-0.57	9.45	0.00
14	28	0.02	0.00	-0.21	0.57	-10.50	0.00
15	28	0.01	0.00	0.21	-0.57	10.50	0.00
15	29	-0.01	0.00	-0.21	0.57	-11.55	0.00
16	29	-0.02	0.00	0.21	-0.57	11.55	0.00
16	30	0.02	0.00	-0.21	0.57	-12.60	0.00
17	30	-0.01	0.00	0.21	-0.57	12.60	0.00
17	31	0.01	0.00	-0.21	0.57	-13.65	0.00
18	31	0.03	0.00	0.21	-0.57	13.65	0.00
18	32	-0.03	0.00	-0.21	0.57	-14.69	0.00
19	32	-0.03	0.00	0.21	-0.57	14.69	0.00
19	33	0.03	0.00	-0.21	0.57	-15.74	0.00
20	33	0.05	0.00	0.21	-0.57	15.74	0.00
20	34	-0.05	0.00	-0.21	0.57	-16.79	0.00
21	34	0.05	0.00	0.21	-0.57	16.79	0.00
21	37	-0.05	0.00	-0.21	0.57	-17.84	0.00
22	37	-0.03	0.00	-0.22	1.05	17.84	0.00
22	44	0.03	0.00	0.22	-1.05	-16.74	0.00
23	44	-0.02	0.00	-0.22	1.05	16.74	0.00
23	45	0.02	0.00	0.22	-1.05	-15.65	0.00
24	45	-0.04	0.00	-0.22	1.05	15.65	0.00
24	46	0.04	0.00	0.22	-1.05	-14.55	0.00
25	46	-0.01	0.00	-0.22	1.05	14.55	0.00
25	47	0.01	0.00	0.22	-1.05	-13.45	0.00
26	47	-0.03	0.00	-0.22	1.05	13.45	0.00
26	48	0.03	0.00	0.22	-1.05	-12.35	0.00
27	48	-0.05	0.00	-0.22	1.05	12.35	0.00
27	49	0.05	0.00	0.22	-1.05	-11.26	0.00
28	49	-0.01	0.00	-0.22	1.05	11.26	0.00
28	50	0.01	0.00	0.22	-1.05	-10.16	0.00
29	50	0.05	0.00	-0.22	1.05	10.16	0.00
29	51	-0.05	0.00	0.22	-1.05	-9.06	0.00
30	51	0.02	0.00	-0.22	1.05	9.06	0.00
30	52	-0.02	0.00	0.22	-1.05	-7.96	0.00
31	52	0.04	0.00	-0.22	1.05	7.96	0.00
31	53	-0.04	0.00	0.22	-1.05	-6.87	0.00
32	53	0.05	0.00	-0.22	1.05	6.87	0.00
32	54	-0.05	0.00	0.22	-1.05	-5.77	0.00
33	54	0.03	0.00	-0.22	1.05	5.77	0.00
33	57	-0.03	0.00	0.22	-1.05	-4.67	0.00
34	57	0.00	0.00	0.05	-0.49	4.67	0.00
34	64	0.00	0.00	-0.05	0.49	-4.95	0.00
35	64	0.06	0.00	0.05	-0.49	4.95	0.00
35	65	-0.06	0.00	-0.05	0.49	-5.22	0.00
36	65	0.03	0.00	0.05	-0.49	5.22	0.00
36	66	-0.03	0.00	-0.05	0.49	-5.50	0.00
37	66	0.03	0.00	0.05	-0.49	5.50	0.00
37	67	-0.03	0.00	-0.05	0.49	-5.77	0.00
38	67	-0.05	0.00	0.05	-0.49	5.77	0.00
38	68	0.05	0.00	-0.05	0.49	-6.04	0.00
39	68	0.01	0.00	0.05	-0.49	6.04	0.00
39	69	-0.01	0.00	-0.05	0.49	-6.32	0.00
40	69	0.00	0.00	0.05	-0.49	6.32	0.00
40	70	0.00	0.00	-0.05	0.49	-6.59	0.00
41	70	0.00	0.00	0.05	-0.49	6.59	0.00
41	71	0.00	0.00	-0.05	0.49	-6.87	0.00
42	71	0.04	0.00	0.05	-0.49	6.87	0.00
42	72	-0.04	0.00	-0.05	0.49	-7.14	0.00
43	72	0.00	0.00	0.05	-0.49	7.14	0.00
43	73	0.00	0.00	-0.05	0.49	-7.42	0.00
44	73	0.01	0.00	0.05	-0.49	7.42	0.00
44	74	-0.01	0.00	-0.05	0.49	-7.69	0.00
45	74	-0.04	0.00	0.05	-0.49	7.69	0.00
45	77	0.04	0.00	-0.05	0.49	-7.97	0.00
46	77	0.03	0.00	-0.02	0.17	7.97	0.00
46	84	-0.03	0.00	0.02	-0.17	-7.86	0.00
47	84	0.00	0.00	-0.02	0.17	7.86	0.00
47	85	0.00	0.00	0.02	-0.17	-7.75	0.00
48	85	-0.04	0.00	-0.02	0.17	7.75	0.00
48	86	0.04	0.00	0.02	-0.17	-7.65	0.00
49	86	0.03	0.00	-0.02	0.17	7.65	0.00
49	87	-0.03	0.00	0.02	-0.17	-7.54	0.00
50	87	-0.01	0.00	-0.02	0.17	7.54	0.00
50	88	0.01	0.00	0.02	-0.17	-7.43	0.00
51	88	0.03	0.00	-0.02	0.17	7.43	0.00
51	89	-0.03	0.00	0.02	-0.17	-7.33	0.00
52	89	0.04	0.00	-0.02	0.17	7.33	0.00
52	90	-0.04	0.00	0.02	-0.17	-7.22	0.00
53	90	-0.05	0.00	-0.02	0.17	7.22	0.00
53	91	0.05	0.00	0.02	-0.17	-7.11	0.00
54	91	-0.05	0.00	-0.02	0.17	7.11	0.00
54	92	0.05	0.00	0.02	-0.17	-7.01	0.00
55	92	0.03	0.00	-0.02	0.17	7.01	0.00
55	93	-0.03	0.00	0.02	-0.17	-6.90	0.00
56	93	0.02	0.00	-0.02	0.17	6.90	0.00
56	94	-0.02	0.00	0.02	-0.17	-6.79	0.00
57	94	0.02	0.00	-0.02	0.17	6.79	0.00
57	97	-0.02	0.00	0.02	-0.17	-6.69	0.00

58	97	-0.01	0.00	0.07	-0.35	6.69	0.00
58	104	0.01	0.00	-0.07	0.35	-7.04	0.00
59	104	-0.02	0.00	0.07	-0.35	7.04	0.00
59	105	0.02	0.00	-0.07	0.35	-7.39	0.00
60	105	0.02	0.00	0.07	-0.35	7.39	0.00
60	106	-0.02	0.00	-0.07	0.35	-7.74	0.00
61	106	0.00	0.00	0.07	-0.35	7.74	0.00
61	107	0.00	0.00	-0.07	0.35	-8.09	0.00
62	107	0.01	0.00	0.07	-0.35	8.09	0.00
62	108	-0.01	0.00	-0.07	0.35	-8.44	0.00
63	108	0.03	0.00	0.07	-0.35	8.44	0.00
63	109	-0.03	0.00	-0.07	0.35	-8.80	0.00
64	109	0.03	0.00	0.07	-0.35	8.80	0.00
64	110	-0.03	0.00	-0.07	0.35	-9.15	0.00
65	110	-0.03	0.00	0.07	-0.35	9.15	0.00
65	111	0.03	0.00	-0.07	0.35	-9.50	0.00
66	111	-0.01	0.00	0.07	-0.35	9.50	0.00
66	112	0.01	0.00	-0.07	0.35	-9.85	0.00
67	112	0.03	0.00	0.07	-0.35	9.85	0.00
67	113	-0.03	0.00	-0.07	0.35	-10.20	0.00
68	113	0.00	0.00	0.07	-0.35	10.20	0.00
68	114	0.00	0.00	-0.07	0.35	-10.55	0.00
69	114	0.02	0.00	0.07	-0.35	10.55	0.00
69	117	-0.02	0.00	-0.07	0.35	-10.91	0.00
70	117	-0.02	0.00	-0.04	0.22	10.91	0.00
70	124	0.02	0.00	0.04	-0.22	-10.72	0.00
71	124	-0.03	0.00	-0.04	0.22	10.72	0.00
71	125	0.03	0.00	0.04	-0.22	-10.54	0.00
72	125	-0.01	0.00	-0.04	0.22	10.54	0.00
72	126	0.01	0.00	0.04	-0.22	-10.36	0.00
73	126	-0.02	0.00	-0.04	0.22	10.36	0.00
73	127	0.02	0.00	0.04	-0.22	-10.17	0.00
74	127	0.02	0.00	-0.04	0.22	10.17	0.00
74	128	-0.02	0.00	0.04	-0.22	-9.99	0.00
75	128	0.00	0.00	-0.04	0.22	9.99	0.00
75	129	0.00	0.00	0.04	-0.22	-9.80	0.00
76	129	0.01	0.00	-0.04	0.22	9.80	0.00
76	130	-0.01	0.00	0.04	-0.22	-9.62	0.00
77	130	0.00	0.00	-0.04	0.22	9.62	0.00
77	131	0.00	0.00	0.04	-0.22	-9.44	0.00
78	131	0.01	0.00	-0.04	0.22	9.44	0.00
78	132	-0.01	0.00	0.04	-0.22	-9.25	0.00
79	132	-0.01	0.00	-0.04	0.22	9.25	0.00
79	133	0.01	0.00	0.04	-0.22	-9.07	0.00
80	133	0.02	0.00	-0.04	0.22	9.07	0.00
80	134	-0.02	0.00	0.04	-0.22	-8.89	0.00
81	134	0.02	0.00	-0.04	0.22	8.89	0.00
81	137	-0.02	0.00	0.04	-0.22	-8.70	0.00
82	137	0.00	0.00	0.00	-0.05	8.70	0.00
82	144	0.00	0.00	0.00	0.05	-8.70	0.00
83	144	0.02	0.00	0.00	-0.05	8.70	0.00
83	145	-0.02	0.00	0.00	0.05	-8.69	0.00
84	145	-0.02	0.00	0.00	-0.05	8.69	0.00
84	146	0.02	0.00	0.00	0.05	-8.68	0.00
85	146	0.01	0.00	0.00	-0.05	8.68	0.00
85	147	-0.01	0.00	0.00	0.05	-8.68	0.00
86	147	0.00	0.00	0.00	-0.05	8.68	0.00
86	148	0.00	0.00	0.00	0.05	-8.67	0.00
87	148	0.00	0.00	0.00	-0.05	8.67	0.00
87	149	0.00	0.00	0.00	0.05	-8.67	0.00
88	149	-0.01	0.00	0.00	-0.05	8.67	0.00
88	150	0.01	0.00	0.00	0.05	-8.66	0.00
89	150	-0.01	0.00	0.00	-0.05	8.66	0.00
89	151	0.01	0.00	0.00	0.05	-8.65	0.00
90	151	0.01	0.00	0.00	-0.05	8.65	0.00
90	152	-0.01	0.00	0.00	0.05	-8.65	0.00
91	152	-0.01	0.00	0.00	-0.05	8.65	0.00
91	153	0.01	0.00	0.00	0.05	-8.64	0.00
92	153	-0.01	0.00	0.00	-0.05	8.64	0.00
92	154	0.01	0.00	0.00	0.05	-8.64	0.00
93	154	-0.01	0.00	0.00	-0.05	8.64	0.00
93	157	0.01	0.00	0.00	0.05	-8.63	0.00
94	157	0.01	0.00	0.01	-0.19	8.63	0.00
94	163	-0.01	0.00	-0.01	0.19	-8.66	0.00
95	163	0.01	0.00	0.01	-0.19	8.66	0.00
95	164	-0.01	0.00	-0.01	0.19	-8.69	0.00
96	164	-0.01	0.00	0.01	-0.19	8.69	0.00
96	165	0.01	0.00	-0.01	0.19	-8.71	0.00
97	165	-0.01	0.00	0.01	-0.19	8.71	0.00
97	166	0.01	0.00	-0.01	0.19	-8.74	0.00
98	166	0.01	0.00	0.01	-0.19	8.74	0.00
98	167	-0.01	0.00	-0.01	0.19	-8.77	0.00
99	167	0.01	0.00	0.01	-0.19	8.77	0.00
99	168	-0.01	0.00	-0.01	0.19	-8.80	0.00
100	168	-0.01	0.00	0.01	-0.19	8.80	0.00
100	169	0.01	0.00	-0.01	0.19	-8.82	0.00
101	169	0.01	0.00	0.01	-0.19	8.82	0.00
101	170	-0.01	0.00	-0.01	0.19	-8.85	0.00
102	170	0.00	0.00	0.01	-0.19	8.85	0.00
102	171	0.00	0.00	0.00	-0.01	0.19	-8.88	0.00
103	171	0.01	0.00	0.01	-0.19	8.88	0.00
103	172	-0.01	0.00	-0.01	0.19	-8.91	0.00
104	172	-0.01	0.00	0.01	-0.19	8.91	0.00
104	173	0.01	0.00	-0.01	0.19	-8.94	0.00
105	173	0.00	0.00	0.01	-0.19	8.94	0.00
105	176	0.00	0.00	-0.01	0.19	-8.96	0.00
106	176	0.00	0.00	-0.20	0.29	8.96	0.00
106	182	0.00	0.00	0.20	-0.29	-7.97	0.00
107	182	0.00	0.00	-0.20	0.29	7.97	0.00
107	183	0.00	0.00	0.20	-0.29	-6.97	0.00
108	183	0.00	0.00	-0.20	0.29	6.97	0.00
108	184	0.00	0.00	0.20	-0.29	-5.98	0.00
109	184	0.00	0.00	-0.20	0.29	5.98	0.00
109	185	0.00	0.00	0.20	-0.29	-4.98	0.00
110	185	0.00	0.00	-0.20	0.29	4.98	0.00
110	186	0.00	0.00	0.20	-0.29	-3.98	0.00
111	186	0.00	0.00	-0.20	0.29	3.98	0.00
111	187	0.00	0.00	0.20	-0.29	-2.99	0.00
112	187	0.00	0.00	-0.20	0.29	2.99	0.00
112	188	0.00	0.00	0.20	-0.29	-1.99	0.00
113	188	0.00	0.00	-0.20	0.29	1.99	0.00
113	189	0.00	0.00	0.20	-0.29	-1.00	0.00
114	189	0.00	0.00	-0.20	0.29	1.00	0.00
114	192	0.00	0.00	0.20	-0.29	0.00	0.00
134	6	0.12	0.02	-0.35	0.00	0.42	0.20
134	3	-0.12	-0.02	0.35	0.00	0.37	-0.10
135	3	0.00	0.02	-0.30	0.00	0.10	0.10
135	1	0.00	-0.02	0.30	0.00	0.04	0.00
136	22	0.09	-0.12	1.67	0.00	0.71	0.16
136	18	-0.09	0.12	-1.67	0.00	0.97	-0.36
137	18	0.00	-0.12	1.19	0.00	0.20	-0.20
137	16	0.00	0.12	-1.19	0.00	-0.22	0.00
138	43	-0.43	0.26	0.55	0.00	0.01	-0.72
138	37	0.43	-0.26	-0.55	0.00	0.80	1.17
139	37	0.00	0.26	-0.76	0.00	-0.54	0.45
139	35	0.00	-0.26	0.76	0.00	-0.79	0.00
140	63	0.27	-0.31	-0.38	0.00	0.18	0.46
140	57	-0.27	0.31	0.38	0.00	0.05	-1.00

141	57	0.00	-0.31	-0.29	0.00	0.00	-0.54
141	55	0.00	0.31	0.29	0.00	0.43	0.00
142	83	-0.08	0.15	0.03	0.00	-0.36	-0.13
142	77	0.08	-0.15	-0.03	0.00	0.02	0.40
143	77	0.00	0.15	0.30	0.00	-0.09	0.27
143	75	0.00	-0.15	-0.30	0.00	-0.37	0.00
144	103	0.09	-0.11	0.07	0.00	0.02	0.15
144	97	-0.09	0.11	-0.07	0.00	-0.06	-0.34
145	97	0.00	-0.10	0.39	0.00	0.05	-0.18
145	95	0.00	0.10	-0.39	0.00	-0.34	0.00
146	123	-0.11	0.11	0.47	0.00	0.23	-0.18
146	117	0.11	-0.11	-0.47	0.00	0.04	0.38
147	117	0.00	0.11	0.31	0.00	0.04	0.20
147	115	0.00	-0.11	-0.31	0.00	-0.23	0.00
148	143	0.04	-0.06	0.01	0.00	0.25	0.06
148	137	-0.04	0.06	-0.01	0.00	0.24	-0.17
149	137	0.00	-0.06	-0.33	0.00	-0.03	-0.11
149	135	0.00	0.06	0.33	0.00	-0.35	0.00
150	162	0.01	-0.04	0.20	0.00	-0.22	0.01
150	157	-0.01	0.04	-0.20	0.00	0.02	-0.08
151	157	0.00	-0.04	-0.01	0.00	0.04	-0.06
151	156	0.00	0.04	0.01	0.00	0.09	0.00
152	181	-0.20	0.04	-0.06	0.00	0.08	-0.35
152	176	0.20	-0.04	0.06	0.00	0.11	0.41
153	176	0.00	0.04	0.02	0.00	-0.06	0.07
153	174	0.00	-0.04	-0.02	0.00	-0.04	0.00
154	195	0.20	0.01	0.00	0.00	0.00	0.34
154	192	-0.20	-0.01	0.00	0.00	0.00	-0.31
155	192	0.00	0.01	0.00	0.00	0.00	0.03
155	190	0.00	-0.01	0.00	0.00	0.00	0.00
156	7	-0.12	-0.02	0.00	0.00	0.00	0.00
156	4	0.12	0.02	0.00	0.00	0.00	-0.10
157	4	0.00	-0.02	0.00	0.00	0.00	-0.10
157	2	0.00	0.02	0.00	0.00	0.00	0.00
158	23	-0.09	0.12	0.00	0.00	0.00	0.00
158	19	0.09	-0.12	0.00	0.00	0.00	0.21
159	19	0.00	0.12	0.00	0.00	0.00	0.20
159	17	0.00	-0.12	0.00	0.00	0.00	0.00
160	42	0.43	-0.26	0.00	0.00	0.00	0.00
160	38	-0.43	0.26	0.00	0.00	0.00	-0.45
161	38	0.00	-0.26	0.00	0.00	0.00	-0.45
161	36	0.00	0.26	0.00	0.00	0.00	0.00
162	62	-0.27	0.31	0.00	0.00	0.00	0.00
162	58	0.27	-0.31	0.00	0.00	0.00	0.54
163	58	0.00	0.31	0.00	0.00	0.00	0.54
163	56	0.00	-0.31	0.00	0.00	0.00	0.00
164	82	0.08	-0.15	0.00	0.00	0.00	0.00
164	78	-0.08	0.15	0.00	0.00	0.00	-0.27
165	78	0.00	-0.15	0.00	0.00	0.00	-0.27
165	76	0.00	0.15	0.00	0.00	0.00	0.00
166	102	-0.09	0.11	0.00	0.00	0.00	0.00
166	98	0.09	-0.11	0.00	0.00	0.00	0.18
167	98	0.00	0.10	0.00	0.00	0.00	0.18
167	96	0.00	-0.10	0.00	0.00	0.00	0.00
168	122	0.11	-0.11	0.00	0.00	0.00	0.00
168	118	-0.11	0.11	0.00	0.00	0.00	-0.20
169	118	0.00	-0.11	0.00	0.00	0.00	-0.20
169	116	0.00	0.11	0.00	0.00	0.00	0.00
170	142	-0.04	0.06	0.00	0.00	0.00	0.00
170	138	0.04	-0.06	0.00	0.00	0.00	0.11
171	138	0.00	0.06	0.00	0.00	0.00	0.11
171	136	0.00	-0.06	0.00	0.00	0.00	0.00
172	161	-0.01	0.04	0.00	0.00	0.00	0.00
172	158	0.01	-0.04	0.00	0.00	0.00	0.06
173	158	0.00	0.04	0.00	0.00	0.00	0.06
173	155	0.00	-0.04	0.00	0.00	0.00	0.00
174	180	0.20	-0.04	0.00	0.00	0.00	0.00
174	177	-0.20	0.04	0.00	0.00	0.00	-0.07
175	177	0.00	-0.04	0.00	0.00	0.00	-0.07
175	175	0.00	0.04	0.00	0.00	0.00	0.00
176	196	-0.20	-0.01	0.00	0.00	0.00	0.00
176	193	0.20	0.01	0.00	0.00	0.00	-0.03
177	193	0.00	-0.01	0.00	0.00	0.00	-0.03
177	191	0.00	0.01	0.00	0.00	0.00	0.00
182	7	0.02	0.00	0.12	0.00	0.00	0.00
182	6	-0.02	0.00	-0.12	0.00	-0.20	0.00
183	2	-0.02	0.00	0.00	0.00	0.00	0.00
183	1	0.02	0.00	0.00	0.00	0.00	0.00
184	23	-0.12	0.00	0.09	0.00	0.00	0.00
184	22	0.12	0.00	-0.09	0.00	-0.16	0.00
185	17	0.12	0.00	0.00	0.00	0.00	0.00
185	16	-0.12	0.00	0.00	0.00	0.00	0.00
186	42	0.26	0.00	-0.43	0.00	0.00	0.00
186	43	-0.26	0.00	0.43	0.00	0.72	0.00
187	36	-0.26	0.00	0.00	0.00	0.00	0.00
187	35	0.26	0.00	0.00	0.00	0.00	0.00
188	62	-0.31	0.00	0.27	0.00	0.00	0.00
188	63	0.31	0.00	-0.27	0.00	-0.46	0.00
189	56	0.31	0.00	0.00	0.00	0.00	0.00
189	55	-0.31	0.00	0.00	0.00	0.00	0.00
190	82	0.15	0.00	-0.08	0.00	0.00	0.00
190	83	-0.15	0.00	0.08	0.00	0.13	0.00
191	76	-0.15	0.00	0.00	0.00	0.00	0.00
191	75	0.15	0.00	0.00	0.00	0.00	0.00
192	102	-0.11	0.00	0.09	0.00	0.00	0.00
192	103	0.11	0.00	-0.09	0.00	-0.15	0.00
193	96	0.10	0.00	0.00	0.00	0.00	0.00
193	95	-0.10	0.00	0.00	0.00	0.00	0.00
194	122	0.11	0.00	-0.11	0.00	0.00	0.00
194	123	-0.11	0.00	0.11	0.00	0.18	0.00
195	116	-0.11	0.00	0.00	0.00	0.00	0.00
195	115	0.11	0.00	0.00	0.00	0.00	0.00
196	142	-0.06	0.00	0.04	0.00	0.00	0.00
196	143	0.06	0.00	-0.04	0.00	-0.06	0.00
197	136	0.06	0.00	0.00	0.00	0.00	0.00
197	135	-0.06	0.00	0.00	0.00	0.00	0.00
198	161	-0.04	0.00	0.01	0.00	0.00	0.00
198	162	0.04	0.00	-0.01	0.00	-0.01	0.00
199	155	0.04	0.00	0.00	0.00	0.00	0.00
199	156	-0.04	0.00	0.00	0.00	0.00	0.00
200	180	0.04	0.00	-0.20	0.00	0.00	0.00
200	181	-0.04	0.00	0.20	0.00	0.35	0.00
201	175	-0.04	0.00	0.00	0.00	0.00	0.00
201	174	0.04	0.00	0.00	0.00	0.00	0.00
202	196	0.01	0.00	0.20	0.00	0.00	0.00
202	195	-0.01	0.00	-0.20	0.00	-0.34	0.00
203	191	-0.01	0.00	0.00	0.00	0.00	0.00
203	190	0.01	0.00	0.00	0.00	0.00	0.00
206	21	0.00	0.00	0.09	0.00	-0.17	0.00
206	20	0.00	0.00	-0.09	0.00	-0.04	0.00
207	20	0.00	0.00	0.09	0.00	0.04	0.00
207	19	0.00	0.00	-0.09	0.00	-0.41	0.00
208	40	0.00	0.00	-0.43	0.00	3.22	0.00
208	39	0.00	0.00	0.43	0.00	-2.97	0.00
209	39	0.00	0.00	-0.43	0.00	2.97	0.00
209	41	0.00	0.00	0.43	0.00	-0.82	0.00
210	41	0.00	0.00	-0.43	0.00	0.82	0.00
210	38	0.00	0.00	0.43	0.00	0.90	0.00

211	60	0.00	0.00	0.27	0.00	-2.30	0.00
211	59	0.00	0.00	-0.27	0.00	1.40	0.00
212	59	0.00	0.00	0.27	0.00	-1.40	0.00
212	61	0.00	0.00	-0.27	0.00	0.02	0.00
213	61	0.00	0.00	0.27	0.00	-0.02	0.00
213	58	0.00	0.00	-0.27	0.00	-1.07	0.00
214	80	0.00	0.00	-0.08	0.00	0.41	0.00
214	79	0.00	0.00	0.08	0.00	-0.15	0.00
215	79	0.00	0.00	-0.08	0.00	0.15	0.00
215	81	0.00	0.00	0.08	0.00	0.23	0.00
216	81	0.00	0.00	-0.08	0.00	-0.23	0.00
216	78	0.00	0.00	0.08	0.00	0.53	0.00
217	100	0.00	0.00	0.09	0.00	-0.76	0.00
217	99	0.00	0.00	-0.09	0.00	0.46	0.00
218	99	0.00	0.00	0.09	0.00	-0.46	0.00
218	101	0.00	0.00	-0.09	0.00	0.00	0.00
219	101	0.00	0.00	0.09	0.00	0.00	0.00
219	98	0.00	0.00	-0.09	0.00	-0.37	0.00
220	120	0.00	0.00	-0.11	0.00	0.93	0.00
220	119	0.00	0.00	0.11	0.00	-0.57	0.00
221	119	0.00	0.00	-0.11	0.00	0.57	0.00
221	121	0.00	0.00	0.11	0.00	-0.04	0.00
222	121	0.00	0.00	-0.11	0.00	0.04	0.00
222	118	0.00	0.00	0.11	0.00	0.39	0.00
223	140	0.00	0.00	0.04	0.00	-0.22	0.00
223	139	0.00	0.00	-0.04	0.00	0.11	0.00
224	139	0.00	0.00	0.04	0.00	-0.11	0.00
224	141	0.00	0.00	-0.04	0.00	-0.07	0.00
225	141	0.00	0.00	0.04	0.00	0.07	0.00
225	138	0.00	0.00	-0.04	0.00	-0.21	0.00
226	160	0.00	0.00	0.01	0.00	0.07	0.00
226	159	0.00	0.00	-0.01	0.00	-0.10	0.00
227	159	0.00	0.00	0.01	0.00	0.10	0.00
227	158	0.00	0.00	-0.01	0.00	-0.13	0.00
228	179	0.00	0.00	-0.20	0.00	1.45	0.00
228	178	0.00	0.00	0.20	0.00	-0.69	0.00
229	178	0.00	0.00	-0.20	0.00	0.69	0.00
229	177	0.00	0.00	0.20	0.00	0.13	0.00
230	5	0.00	0.00	0.12	0.00	-0.31	0.00
230	4	0.00	0.00	-0.12	0.00	0.19	0.00
231	194	0.00	0.00	0.20	0.00	-0.25	0.00
231	193	0.00	0.00	-0.20	0.00	0.05	0.00

proc Viaducto Papiol

HIPOTESIS 11

hipo 11 asiento-1

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
1	3	0.00	-6.17	0.00	-0.08	0.00	0.00
1	8	0.00	6.17	0.00	0.08	-0.02	-30.84
2	8	0.00	-6.17	0.00	-0.08	0.02	30.84
2	9	0.00	6.17	0.00	0.08	-0.04	-61.69
3	9	0.00	-6.17	0.00	-0.12	0.04	61.69
3	10	0.00	6.17	0.00	0.12	-0.06	-92.54
4	10	0.00	-6.17	0.00	-0.09	0.06	92.54
4	11	0.00	6.17	0.00	0.09	-0.08	-123.38
5	11	0.00	-6.17	0.00	-0.14	0.08	123.38
5	12	0.00	6.17	0.00	0.14	-0.10	-154.23
6	12	0.00	-6.17	0.00	-0.26	0.10	154.23
6	13	0.00	6.17	0.00	0.26	-0.12	-185.08
7	13	0.00	-6.17	0.00	-0.19	0.12	185.08
7	14	0.00	6.17	0.00	0.19	-0.14	-215.92
8	14	0.00	-6.17	0.00	-0.35	0.14	215.92
8	15	0.00	6.17	0.00	0.35	-0.16	-246.77
9	15	0.00	-6.17	0.00	-0.35	0.16	246.77
9	18	0.00	6.17	0.00	0.35	-0.18	-277.62
10	18	0.00	5.82	0.00	0.21	0.18	277.61
10	24	0.00	-5.82	0.00	-0.21	-0.16	-248.50
11	24	0.00	5.82	0.00	0.12	0.16	248.50
11	25	0.00	-5.82	0.00	-0.12	-0.14	-219.38
12	25	0.00	5.82	0.00	-0.06	0.14	219.38
12	26	0.00	-5.82	0.00	0.06	-0.12	-190.26
13	26	0.00	5.82	0.00	0.02	0.12	190.26
13	27	0.00	-5.82	0.00	-0.02	-0.11	-161.14
14	27	0.00	5.82	0.00	-0.04	0.11	161.14
14	28	0.00	-5.82	0.00	0.04	-0.09	-132.03
15	28	0.00	5.82	0.00	-0.14	0.09	132.03
15	29	0.00	-5.82	0.00	0.14	-0.07	-102.91
16	29	0.00	5.82	0.00	-0.10	0.07	102.91
16	30	0.00	-5.82	0.00	0.10	-0.05	-73.79
17	30	0.00	5.82	0.00	-0.13	0.05	73.79
17	31	0.00	-5.82	0.00	0.13	-0.03	-44.67
18	31	0.00	5.82	0.00	-0.15	0.03	44.67
18	32	0.00	-5.82	0.00	0.15	-0.01	-15.56
19	32	0.00	5.82	0.00	-0.15	0.01	15.56
19	33	0.00	-5.82	0.00	0.15	0.01	13.56
20	33	0.00	5.82	0.00	-0.15	-0.01	-13.56
20	34	0.00	-5.82	0.00	0.15	0.03	42.68
21	34	0.00	5.82	0.00	-0.13	-0.03	-42.68
21	37	0.00	-5.82	0.00	0.13	0.05	71.80
22	37	0.00	-1.50	0.00	-0.08	-0.05	-71.80
22	44	0.00	1.50	0.00	0.08	0.04	64.27
23	44	0.00	-1.50	0.00	-0.06	-0.04	-64.27
23	45	0.00	1.50	0.00	0.06	0.04	56.75
24	45	0.00	-1.50	0.00	-0.04	-0.04	-56.75
24	46	0.00	1.50	0.00	0.04	0.04	49.22
25	46	0.00	-1.50	0.00	-0.04	-0.04	-49.22
25	47	0.00	1.50	0.00	0.04	0.04	41.70
26	47	0.00	-1.50	0.00	-0.02	-0.04	-41.70
26	48	0.00	1.50	0.00	0.02	0.03	34.17
27	48	0.00	-1.50	0.00	-0.02	-0.03	-34.17
27	49	0.00	1.50	0.00	0.02	0.03	26.65
28	49	0.00	-1.50	0.00	-0.01	-0.03	-26.65
28	50	0.00	1.50	0.00	0.01	0.03	19.12
29	50	0.00	-1.50	0.00	0.00	-0.03	-19.12
29	51	0.00	1.50	0.00	0.00	0.03	11.60
30	51	0.00	-1.50	0.00	0.00	-0.03	-11.60
30	52	0.00	1.50	0.00	0.00	0.03	4.07
31	52	0.00	-1.50	0.00	0.00	-0.03	-4.07
31	53	0.00	1.50	0.00	0.00	0.02	-3.45
32	53	0.00	-1.50	0.00	0.00	-0.02	3.45
32	54	0.00	1.50	0.00	0.00	0.02	-10.98
33	54	0.00	-1.50	0.00	0.00	-0.02	10.98
33	57	0.00	1.50	0.00	0.00	0.02	-18.50
34	57	0.00	0.39	0.00	0.01	-0.02	18.50
34	64	0.00	-0.39	0.00	-0.01	0.02	-16.56
35	64	0.00	0.39	0.00	0.01	-0.02	16.56
35	65	0.00	-0.39	0.00	-0.01	0.02	-14.62
36	65	0.00	0.39	0.00	0.00	-0.02	14.62
36	66	0.00	-0.39	0.00	0.00	0.01	-12.68
37	66	0.00	0.39	0.00	0.00	-0.01	12.68
37	67	0.00	-0.39	0.00	0.00	0.01	-10.75
38	67	0.00	0.39	0.00	-0.01	-0.01	10.75
38	68	0.00	-0.39	0.00	0.01	0.01	-8.81
39	68	0.00	0.39	0.00	0.00	-0.01	8.81
39	69	0.00	-0.39	0.00	0.00	0.01	-6.87
40	69	0.00	0.39	0.00	-0.01	-0.01	6.87
40	70	0.00	-0.39	0.00	0.01	0.01	-4.93
41	70	0.00	0.39	0.00	-0.01	-0.01	4.93
41	71	0.00	-0.39	0.00	0.01	0.01	-2.99
42	71	0.00	0.39	0.00	-0.01	-0.01	2.99
42	72	0.00	-0.39	0.00	0.01	0.01	-1.05
43	72	0.00	0.39	0.00	-0.01	-0.01	1.05
43	73	0.00	-0.39	0.00	0.01	0.01	0.88
44	73	0.00	0.39	0.00	-0.01	-0.01	-0.88
44	74	0.00	-0.39	0.00	0.01	0.00	2.82
45	74	0.00	0.39	0.00	-0.01	0.00	-2.82
45	77	0.00	-0.39	0.00	0.01	0.00	4.76
46	77	0.00	-0.10	0.00	0.00	0.00	-4.76
46	84	0.00	0.10	0.00	0.00	0.00	4.26
47	84	0.00	-0.10	0.00	0.00	0.00	-4.26
47	85	0.00	0.10	0.00	0.00	0.00	3.76
48	85	0.00	-0.10	0.00	0.00	0.00	-3.76
48	86	0.00	0.10	0.00	0.00	0.00	3.26
49	86	0.00	-0.10	0.00	0.00	0.00	-3.26
49	87	0.00	0.10	0.00	0.00	0.00	2.77
50	87	0.00	-0.10	0.00	0.00	0.00	-2.77
50	88	0.00	0.10	0.00	0.00	0.00	2.27
51	88	0.00	-0.10	0.00	0.00	0.00	-2.27
51	89	0.00	0.10	0.00	0.00	0.00	1.77
52	89	0.00	-0.10	0.00	0.00	0.00	-1.77
52	90	0.00	0.10	0.00	0.00	0.00	1.27
53	90	0.00	-0.10	0.00	0.00	0.00	-1.27
53	91	0.00	0.10	0.00	0.00	0.00	0.77
54	91	0.00	-0.10	0.00	0.00	0.00	-0.77
54	92	0.00	0.10	0.00	0.00	0.00	0.27
55	92	0.00	-0.10	0.00	0.00	0.00	-0.27
55	93	0.00	0.10	0.00	0.00	0.00	-0.23
56	93	0.00	-0.10	0.00	0.00	0.00	0.23
56	94	0.00	0.10	0.00	0.00	0.00	-0.73
57	94	0.00	-0.10	0.00	0.00	0.00	0.73
57	97	0.00	0.10	0.00	0.00	0.00	-1.23

58	97	0.00	0.03	0.00	0.00	0.00	1.23
58	104	0.00	-0.03	0.00	0.00	0.00	-1.10
59	104	0.00	0.03	0.00	0.00	0.00	1.10
59	105	0.00	-0.03	0.00	0.00	0.00	-0.97
60	105	0.00	0.03	0.00	0.00	0.00	0.97
60	106	0.00	-0.03	0.00	0.00	0.00	-0.84
61	106	0.00	0.03	0.00	0.00	0.00	0.84
61	107	0.00	-0.03	0.00	0.00	0.00	-0.71
62	107	0.00	0.03	0.00	0.00	0.00	0.71
62	108	0.00	-0.03	0.00	0.00	0.00	-0.58
63	108	0.00	0.03	0.00	0.00	0.00	0.58
63	109	0.00	-0.03	0.00	0.00	0.00	-0.45
64	109	0.00	0.03	0.00	0.00	0.00	0.45
64	110	0.00	-0.03	0.00	0.00	0.00	-0.33
65	110	0.00	0.03	0.00	0.00	0.00	0.33
65	111	0.00	-0.03	0.00	0.00	0.00	-0.20
66	111	0.00	0.03	0.00	0.00	0.00	0.20
66	112	0.00	-0.03	0.00	0.00	0.00	-0.07
67	112	0.00	0.03	0.00	0.00	0.00	0.07
67	113	0.00	-0.03	0.00	0.00	0.00	0.06
68	113	0.00	0.03	0.00	0.00	0.00	-0.06
68	114	0.00	-0.03	0.00	0.00	0.00	0.19
69	114	0.00	0.03	0.00	0.00	0.00	-0.19
69	117	0.00	-0.03	0.00	0.00	0.00	0.32
70	117	0.00	-0.01	0.00	0.00	0.00	-0.32
70	124	0.00	0.01	0.00	0.00	0.00	0.28
71	124	0.00	-0.01	0.00	0.00	0.00	-0.28
71	125	0.00	0.01	0.00	0.00	0.00	0.25
72	125	0.00	-0.01	0.00	0.00	0.00	-0.25
72	126	0.00	0.01	0.00	0.00	0.00	0.22
73	126	0.00	-0.01	0.00	0.00	0.00	-0.22
73	127	0.00	0.01	0.00	0.00	0.00	0.18
74	127	0.00	-0.01	0.00	0.00	0.00	-0.18
74	128	0.00	0.01	0.00	0.00	0.00	0.15
75	128	0.00	-0.01	0.00	0.00	0.00	-0.15
75	129	0.00	0.01	0.00	0.00	0.00	0.12
76	129	0.00	-0.01	0.00	0.00	0.00	-0.12
76	130	0.00	0.01	0.00	0.00	0.00	0.08
77	130	0.00	-0.01	0.00	0.00	0.00	-0.08
77	131	0.00	0.01	0.00	0.00	0.00	0.05
78	131	0.00	-0.01	0.00	0.00	0.00	-0.05
78	132	0.00	0.01	0.00	0.00	0.00	0.02
79	132	0.00	-0.01	0.00	0.00	0.00	-0.02
79	133	0.00	0.01	0.00	0.00	0.00	-0.02
80	133	0.00	-0.01	0.00	0.00	0.00	0.02
80	134	0.00	0.01	0.00	0.00	0.00	-0.05
81	134	0.00	-0.01	0.00	0.00	0.00	0.05
81	137	0.00	0.01	0.00	0.00	0.00	-0.08
82	137	0.00	0.00	0.00	0.00	0.00	0.08
82	144	0.00	0.00	0.00	0.00	0.00	-0.07
83	144	0.00	0.00	0.00	0.00	0.00	0.07
83	145	0.00	0.00	0.00	0.00	0.00	-0.06
84	145	0.00	0.00	0.00	0.00	0.00	0.06
84	146	0.00	0.00	0.00	0.00	0.00	-0.06
85	146	0.00	0.00	0.00	0.00	0.00	0.06
85	147	0.00	0.00	0.00	0.00	0.00	-0.05
86	147	0.00	0.00	0.00	0.00	0.00	0.05
86	148	0.00	0.00	0.00	0.00	0.00	-0.04
87	148	0.00	0.00	0.00	0.00	0.00	0.04
87	149	0.00	0.00	0.00	0.00	0.00	-0.03
88	149	0.00	0.00	0.00	0.00	0.00	0.03
88	150	0.00	0.00	0.00	0.00	0.00	-0.02
89	150	0.00	0.00	0.00	0.00	0.00	0.02
89	151	0.00	0.00	0.00	0.00	0.00	-0.01
90	151	0.00	0.00	0.00	0.00	0.00	0.01
90	152	0.00	0.00	0.00	0.00	0.00	0.00
91	152	0.00	0.00	0.00	0.00	0.00	0.00
91	153	0.00	0.00	0.00	0.00	0.00	0.00
92	153	0.00	0.00	0.00	0.00	0.00	0.00
92	154	0.00	0.00	0.00	0.00	0.00	0.01
93	154	0.00	0.00	0.00	0.00	0.00	-0.01
93	157	0.00	0.00	0.00	0.00	0.00	0.02
94	157	0.00	0.00	0.00	0.00	0.00	-0.02
94	163	0.00	0.00	0.00	0.00	0.00	0.02
95	163	0.00	0.00	0.00	0.00	0.00	-0.02
95	164	0.00	0.00	0.00	0.00	0.00	0.02
96	164	0.00	0.00	0.00	0.00	0.00	-0.02
96	165	0.00	0.00	0.00	0.00	0.00	0.01
97	165	0.00	0.00	0.00	0.00	0.00	-0.01
97	166	0.00	0.00	0.00	0.00	0.00	0.01
98	166	0.00	0.00	0.00	0.00	0.00	-0.01
98	167	0.00	0.00	0.00	0.00	0.00	0.01
99	167	0.00	0.00	0.00	0.00	0.00	-0.01
99	168	0.00	0.00	0.00	0.00	0.00	0.01
100	168	0.00	0.00	0.00	0.00	0.00	-0.01
100	169	0.00	0.00	0.00	0.00	0.00	0.01
101	169	0.00	0.00	0.00	0.00	0.00	-0.01
101	170	0.00	0.00	0.00	0.00	0.00	0.00
102	170	0.00	0.00	0.00	0.00	0.00	0.00
102	171	0.00	0.00	0.00	0.00	0.00	0.00
103	171	0.00	0.00	0.00	0.00	0.00	0.00
103	172	0.00	0.00	0.00	0.00	0.00	0.00
104	172	0.00	0.00	0.00	0.00	0.00	0.00
104	173	0.00	0.00	0.00	0.00	0.00	0.00
105	173	0.00	0.00	0.00	0.00	0.00	0.00
105	176	0.00	0.00	0.00	0.00	0.00	-0.01
106	176	0.00	0.00	0.00	0.00	0.00	0.01
106	182	0.00	0.00	0.00	0.00	0.00	-0.01
107	182	0.00	0.00	0.00	0.00	0.00	0.01
107	183	0.00	0.00	0.00	0.00	0.00	0.00
108	183	0.00	0.00	0.00	0.00	0.00	0.00
108	184	0.00	0.00	0.00	0.00	0.00	0.00
109	184	0.00	0.00	0.00	0.00	0.00	0.00
109	185	0.00	0.00	0.00	0.00	0.00	0.00
110	185	0.00	0.00	0.00	0.00	0.00	0.00
110	186	0.00	0.00	0.00	0.00	0.00	0.00
111	186	0.00	0.00	0.00	0.00	0.00	0.00
111	187	0.00	0.00	0.00	0.00	0.00	0.00
112	187	0.00	0.00	0.00	0.00	0.00	0.00
112	188	0.00	0.00	0.00	0.00	0.00	0.00
113	188	0.00	0.00	0.00	0.00	0.00	0.00
113	189	0.00	0.00	0.00	0.00	0.00	0.00
114	189	0.00	0.00	0.00	0.00	0.00	0.00
114	192	0.00	0.00	0.00	0.00	0.00	0.00
134	6	0.00	-3.10	0.00	0.00	0.00	0.01
134	3	0.00	3.10	0.00	0.00	0.00	-13.15
135	3	0.00	3.08	0.00	0.00	0.00	13.07
135	1	0.00	-3.08	0.00	0.00	0.00	0.00
136	22	-0.01	6.16	0.00	0.00	0.00	-0.01
136	18	0.01	-6.16	0.00	0.00	0.00	10.79
137	18	0.00	-5.84	0.00	0.00	0.00	-10.21
137	16	0.00	5.84	0.00	0.00	0.00	0.00
138	43	0.00	-3.65	0.00	0.00	0.00	0.01
138	37	0.00	3.65	0.00	0.00	0.00	-6.39
139	37	0.00	3.68	0.00	0.00	0.00	6.44
139	35	0.00	-3.68	0.00	0.00	0.00	0.00
140	63	0.00	0.95	0.00	0.00	0.00	0.00
140	57	0.00	-0.95	0.00	0.00	0.00	1.66

141	57	0.00	-0.94	0.00	0.00	0.00	-1.65	173	158	0.00	0.00	0.00	0.00	0.00	0.00
141	55	0.00	0.94	0.00	0.00	0.00	0.00	173	155	0.00	0.00	0.00	0.00	0.00	0.00
142	83	0.00	-0.24	0.00	0.00	0.00	0.00	174	180	0.00	0.00	0.00	0.00	0.00	0.00
142	77	0.00	0.24	0.00	0.00	0.00	-0.42	174	177	0.00	0.00	0.00	0.00	0.00	0.00
143	77	0.00	0.24	0.00	0.00	0.00	0.43	175	177	0.00	0.00	0.00	0.00	0.00	0.00
143	75	0.00	-0.24	0.00	0.00	0.00	0.00	175	175	0.00	0.00	0.00	0.00	0.00	0.00
144	103	0.00	0.06	0.00	0.00	0.00	0.00	176	196	0.00	0.00	0.00	0.00	0.00	0.00
144	97	0.00	-0.06	0.00	0.00	0.00	0.11	176	193	0.00	0.00	0.00	0.00	0.00	0.00
145	97	0.00	-0.06	0.00	0.00	0.00	-0.11	177	193	0.00	0.00	0.00	0.00	0.00	0.00
145	95	0.00	0.06	0.00	0.00	0.00	0.00	177	191	0.00	0.00	0.00	0.00	0.00	0.00
146	123	0.00	-0.02	0.00	0.00	0.00	0.00	182	7	-3.06	0.00	0.00	0.00	0.00	0.00
146	117	0.00	0.02	0.00	0.00	0.00	-0.03	182	6	3.06	0.00	0.00	0.00	-0.01	0.00
147	117	0.00	0.02	0.00	0.00	0.00	0.03	183	2	-3.11	0.00	0.00	0.00	0.00	0.00
147	115	0.00	-0.02	0.00	0.00	0.00	0.00	183	1	3.11	0.00	0.00	0.00	0.00	0.00
148	143	0.00	0.00	0.00	0.00	0.00	0.00	184	23	6.16	0.00	-0.01	0.00	0.00	0.00
148	137	0.00	0.00	0.00	0.00	0.00	0.01	184	22	-6.16	0.00	0.01	0.00	0.01	0.00
149	137	0.00	0.00	0.00	0.00	0.00	-0.01	185	17	5.84	0.00	0.00	0.00	0.00	0.00
149	135	0.00	0.00	0.00	0.00	0.00	0.00	185	16	-5.84	0.00	0.00	0.00	0.00	0.00
150	162	0.00	0.00	0.00	0.00	0.00	0.00	186	42	-3.65	0.00	0.00	0.00	0.00	0.00
150	157	0.00	0.00	0.00	0.00	0.00	0.00	186	43	3.65	0.00	0.00	0.00	-0.01	0.00
151	157	0.00	0.00	0.00	0.00	0.00	0.00	187	36	-3.68	0.00	0.00	0.00	0.00	0.00
151	156	0.00	0.00	0.00	0.00	0.00	0.00	187	35	3.68	0.00	0.00	0.00	0.00	0.00
152	181	0.00	0.00	0.00	0.00	0.00	0.00	188	62	0.95	0.00	0.00	0.00	0.00	0.00
152	176	0.00	0.00	0.00	0.00	0.00	0.00	188	63	-0.95	0.00	0.00	0.00	0.00	0.00
153	176	0.00	0.00	0.00	0.00	0.00	0.00	189	56	0.94	0.00	0.00	0.00	0.00	0.00
153	174	0.00	0.00	0.00	0.00	0.00	0.00	189	55	-0.94	0.00	0.00	0.00	0.00	0.00
154	195	0.00	0.00	0.00	0.00	0.00	0.00	190	82	-0.24	0.00	0.00	0.00	0.00	0.00
154	192	0.00	0.00	0.00	0.00	0.00	0.00	190	83	0.24	0.00	0.00	0.00	0.00	0.00
155	192	0.00	0.00	0.00	0.00	0.00	0.00	191	76	-0.24	0.00	0.00	0.00	0.00	0.00
155	190	0.00	0.00	0.00	0.00	0.00	0.00	191	75	0.24	0.00	0.00	0.00	0.00	0.00
156	7	0.00	3.10	0.00	0.00	0.00	-0.01	192	102	0.06	0.00	0.00	0.00	0.00	0.00
156	4	0.00	-3.10	0.00	0.00	0.00	13.14	192	103	-0.06	0.00	0.00	0.00	0.00	0.00
157	4	0.00	-3.08	0.00	0.00	0.00	-13.07	193	96	0.06	0.00	0.00	0.00	0.00	0.00
157	2	0.00	3.08	0.00	0.00	0.00	0.01	193	95	-0.06	0.00	0.00	0.00	0.00	0.00
158	23	0.01	-6.16	0.00	0.00	0.00	0.00	194	122	-0.02	0.00	0.00	0.00	0.00	0.00
158	19	-0.01	6.16	0.00	0.00	0.00	-10.77	194	123	0.02	0.00	0.00	0.00	0.00	0.00
159	19	0.00	5.84	0.00	0.00	0.00	10.21	195	116	-0.02	0.00	0.00	0.00	0.00	0.00
159	17	0.00	-5.84	0.00	0.00	0.00	0.00	195	115	0.02	0.00	0.00	0.00	0.00	0.00
160	42	0.00	3.65	0.00	0.00	0.00	0.00	196	142	0.00	0.00	0.00	0.00	0.00	0.00
160	38	0.00	-3.65	0.00	0.00	0.00	6.39	196	143	0.00	0.00	0.00	0.00	0.00	0.00
161	38	0.00	-3.68	0.00	0.00	0.00	-6.44	197	136	0.00	0.00	0.00	0.00	0.00	0.00
161	36	0.00	3.68	0.00	0.00	0.00	0.00	197	135	0.00	0.00	0.00	0.00	0.00	0.00
162	62	0.00	-0.95	0.00	0.00	0.00	0.00	198	161	0.00	0.00	0.00	0.00	0.00	0.00
162	58	0.00	0.95	0.00	0.00	0.00	-1.66	198	162	0.00	0.00	0.00	0.00	0.00	0.00
163	58	0.00	0.94	0.00	0.00	0.00	1.65	199	155	0.00	0.00	0.00	0.00	0.00	0.00
163	56	0.00	-0.94	0.00	0.00	0.00	0.00	199	156	0.00	0.00	0.00	0.00	0.00	0.00
164	82	0.00	0.24	0.00	0.00	0.00	0.00	200	180	0.00	0.00	0.00	0.00	0.00	0.00
164	78	0.00	-0.24	0.00	0.00	0.00	0.42	200	181	0.00	0.00	0.00	0.00	0.00	0.00
165	78	0.00	-0.24	0.00	0.00	0.00	-0.43	201	175	0.00	0.00	0.00	0.00	0.00	0.00
165	76	0.00	0.24	0.00	0.00	0.00	0.00	201	174	0.00	0.00	0.00	0.00	0.00	0.00
166	102	0.00	-0.06	0.00	0.00	0.00	0.00	202	196	0.00	0.00	0.00	0.00	0.00	0.00
166	98	0.00	0.06	0.00	0.00	0.00	-0.11	202	195	0.00	0.00	0.00	0.00	0.00	0.00
167	98	0.00	0.06	0.00	0.00	0.00	0.11	203	191	0.00	0.00	0.00	0.00	0.00	0.00
167	96	0.00	-0.06	0.00	0.00	0.00	0.00	203	190	0.00	0.00	0.00	0.00	0.00	0.00
168	122	0.00	0.02	0.00	0.00	0.00	0.00	206	21	11.99	0.00	-0.01	0.00	-0.51	0.00
168	118	0.00	-0.02	0.00	0.00	0.00	0.03	206	20	-11.99	0.00	0.01	0.00	0.53	0.00
169	118	0.00	-0.02	0.00	0.00	0.00	-0.03	207	20	11.99	0.00	-0.01	0.00	-0.53	0.00
169	116	0.00	0.02	0.00	0.00	0.00	0.00	207	19	-11.99	0.00	0.01	0.00	0.56	0.00
170	142	0.00	0.00	0.00	0.00	0.00	0.00	208	40	-7.33	0.00	0.00	0.00	-0.09	0.00
170	138	0.00	0.00	0.00	0.00	0.00	-0.01	208	39	7.33	0.00	0.00	0.00	0.09	0.00
171	138	0.00	0.00	0.00	0.00	0.00	0.01	209	39	-7.33	0.00	0.00	0.00	-0.09	0.00
171	136	0.00	0.00	0.00	0.00	0.00	0.00	209	41	7.33	0.00	0.00	0.00	0.07	0.00
172	161	0.00	0.00	0.00	0.00	0.00	0.00	210	41	-7.33	0.00	0.00	0.00	-0.07	0.00
172	158	0.00	0.00	0.00	0.00	0.00	0.00	210	38	7.33	0.00	0.00	0.00	0.05	0.00

211	60	1.89	0.00	0.00	0.00	-0.01	0.00
211	59	-1.89	0.00	0.00	0.00	0.01	0.00
212	59	1.89	0.00	0.00	0.00	-0.01	0.00
212	61	-1.89	0.00	0.00	0.00	0.01	0.00
213	61	1.89	0.00	0.00	0.00	-0.01	0.00
213	58	-1.89	0.00	0.00	0.00	0.01	0.00
214	80	-0.49	0.00	0.00	0.00	0.00	0.00
214	79	0.49	0.00	0.00	0.00	0.00	0.00
215	79	-0.49	0.00	0.00	0.00	0.00	0.00
215	81	0.49	0.00	0.00	0.00	0.00	0.00
216	81	-0.49	0.00	0.00	0.00	0.00	0.00
216	78	0.49	0.00	0.00	0.00	0.00	0.00
217	100	0.13	0.00	0.00	0.00	0.00	0.00
217	99	-0.13	0.00	0.00	0.00	0.00	0.00
218	99	0.13	0.00	0.00	0.00	0.00	0.00
218	101	-0.13	0.00	0.00	0.00	0.00	0.00
219	101	0.13	0.00	0.00	0.00	0.00	0.00
219	98	-0.13	0.00	0.00	0.00	0.00	0.00
220	120	-0.03	0.00	0.00	0.00	0.00	0.00
220	119	0.03	0.00	0.00	0.00	0.00	0.00
221	119	-0.03	0.00	0.00	0.00	0.00	0.00
221	121	0.03	0.00	0.00	0.00	0.00	0.00
222	121	-0.03	0.00	0.00	0.00	0.00	0.00
222	118	0.03	0.00	0.00	0.00	0.00	0.00
223	140	0.01	0.00	0.00	0.00	0.00	0.00
223	139	-0.01	0.00	0.00	0.00	0.00	0.00
224	139	0.01	0.00	0.00	0.00	0.00	0.00
224	141	-0.01	0.00	0.00	0.00	0.00	0.00
225	141	0.01	0.00	0.00	0.00	0.00	0.00
225	138	-0.01	0.00	0.00	0.00	0.00	0.00
226	160	0.00	0.00	0.00	0.00	0.00	0.00
226	159	0.00	0.00	0.00	0.00	0.00	0.00
227	159	0.00	0.00	0.00	0.00	0.00	0.00
227	158	0.00	0.00	0.00	0.00	0.00	0.00
228	179	0.00	0.00	0.00	0.00	0.00	0.00
228	178	0.00	0.00	0.00	0.00	0.00	0.00
229	178	0.00	0.00	0.00	0.00	0.00	0.00
229	177	0.00	0.00	0.00	0.00	0.00	0.00
230	5	-6.17	0.00	0.00	0.00	0.07	0.00
230	4	6.17	0.00	0.00	0.00	-0.07	0.00
231	194	0.00	0.00	0.00	0.00	0.00	0.00
231	193	0.00	0.00	0.00	0.00	0.00	0.00

proc Viaducto Papiol

HIPOTESIS 21

hipo 21 viento + trans estructura

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
1	3	0.00	-0.01	-5.52	-43.38	0.00	-0.01
1	8	0.00	0.01	3.40	42.77	22.29	-0.02
2	8	0.00	-0.01	-3.40	-42.77	-22.29	0.02
2	9	0.00	0.01	1.28	42.15	33.99	-0.04
3	9	0.00	-0.01	-1.28	-42.15	-33.99	0.01
3	10	0.00	0.01	-0.83	41.54	35.13	-0.04
4	10	0.00	-0.01	0.83	-41.54	-35.13	0.05
4	11	0.00	0.01	-2.93	40.93	25.74	-0.08
5	11	0.00	-0.01	2.93	-40.93	-25.74	0.06
5	12	0.00	0.01	-5.02	40.32	5.86	-0.09
6	12	0.00	-0.01	5.02	-40.32	-5.86	0.06
6	13	0.00	0.01	-7.11	39.72	-24.48	-0.09
7	13	0.00	-0.01	7.11	-39.72	24.48	0.10
7	14	0.00	0.01	-9.19	39.12	-65.25	-0.13
8	14	-0.01	-0.01	9.19	-39.12	65.25	0.10
8	15	0.01	0.01	-11.27	38.51	-116.40	-0.12
9	15	-0.01	-0.01	11.27	-38.51	116.40	0.12
9	18	0.01	0.01	-13.34	37.91	-177.92	-0.15
10	18	-0.01	-0.01	-13.29	-58.25	177.93	0.15
10	24	0.01	0.01	11.21	57.64	-116.67	-0.18
11	24	-0.01	-0.01	-11.21	-57.64	116.67	0.16
11	25	0.01	0.01	9.10	57.03	-65.89	-0.19
12	25	0.00	-0.01	-9.10	-57.03	65.89	0.15
12	26	0.00	0.01	6.97	56.41	-25.71	-0.18
13	26	0.00	-0.01	-6.97	-56.41	25.71	0.20
13	27	0.00	0.01	4.80	55.79	3.73	-0.24
14	27	0.00	-0.01	-4.80	-55.79	-3.73	0.22
14	28	0.00	0.01	2.62	55.15	22.29	-0.25
15	28	0.00	-0.01	-2.62	-55.15	-22.29	0.21
15	29	0.00	0.01	0.40	54.51	29.84	-0.24
16	29	0.00	-0.01	-0.40	-54.51	-29.84	0.26
16	30	0.00	0.01	-1.84	53.86	26.26	-0.29
17	30	0.00	-0.01	1.84	-53.86	-26.26	0.27
17	31	0.00	0.01	-4.10	53.20	11.41	-0.31
18	31	0.00	-0.01	4.10	-53.20	-11.41	0.29
18	32	0.00	0.01	-6.39	52.54	-14.82	-0.32
19	32	0.00	-0.01	6.39	-52.54	14.82	0.32
19	33	0.00	0.01	-8.70	51.87	-52.55	-0.35
20	33	-0.01	-0.01	8.70	-51.87	52.55	0.33
20	34	0.01	0.01	-11.04	51.19	-101.90	-0.37
21	34	-0.01	-0.01	11.04	-51.19	101.90	0.35
21	37	0.01	0.01	-13.40	50.51	-162.99	-0.38
22	37	-0.02	-0.01	-16.24	-48.13	163.00	0.37
22	44	0.02	0.01	13.86	47.44	-87.75	-0.40
23	44	-0.01	-0.01	-13.86	-47.44	87.75	0.38
23	45	0.01	0.01	11.47	46.74	-24.42	-0.41
24	45	-0.01	-0.01	-11.47	-46.74	24.42	0.39
24	46	0.01	0.01	9.05	46.04	26.89	-0.42
25	46	-0.01	-0.01	-9.05	-46.04	-26.89	0.42
25	47	0.01	0.01	6.63	45.34	66.09	-0.45
26	47	0.00	-0.01	-6.63	-45.34	-66.09	0.43
26	48	0.00	0.01	4.18	44.63	93.12	-0.46
27	48	0.00	-0.01	-4.18	-44.63	-93.12	0.46
27	49	0.00	0.01	1.72	43.92	107.89	-0.48
28	49	0.00	-0.01	-1.72	-43.92	-107.89	0.47
28	50	0.00	0.01	-0.76	43.20	110.31	-0.50
29	50	0.00	-0.01	0.76	-43.20	-110.31	0.48
29	51	0.00	0.01	-3.25	42.48	100.31	-0.51
30	51	-0.01	-0.01	3.25	-42.48	-100.31	0.49
30	52	0.01	0.01	-5.75	41.75	77.81	-0.52
31	52	-0.01	-0.01	5.76	-41.75	-77.81	0.52
31	53	0.01	0.01	-8.28	41.02	42.73	-0.55
32	53	-0.01	-0.01	8.28	-41.02	-42.73	0.53
32	54	0.01	0.01	-10.81	40.28	-4.99	-0.56
33	54	-0.01	-0.01	10.81	-40.28	4.99	0.56
33	57	0.01	0.01	-13.37	39.54	-65.44	-0.59
34	57	-0.01	0.00	-14.25	-25.66	65.44	0.57
34	64	0.01	0.00	11.69	24.92	-0.60	-0.58
35	64	-0.01	0.00	-11.69	-24.92	0.60	0.58
35	65	0.01	0.00	9.13	24.18	51.44	-0.60
36	65	0.00	0.00	-9.13	-24.18	-51.44	0.58
36	66	0.00	0.00	6.57	23.44	90.69	-0.59
37	66	0.00	0.00	-6.57	-23.44	-90.69	0.59
37	67	0.00	0.00	4.01	22.69	117.14	-0.60
38	67	0.00	0.00	-4.01	-22.70	-117.14	0.59
38	68	0.00	0.00	1.45	21.95	130.79	-0.61
39	68	0.00	0.00	-1.45	-21.95	-130.79	0.61
39	69	0.00	0.00	-1.11	21.21	131.64	-0.63
40	69	0.00	0.00	1.11	-21.21	-131.64	0.60
40	70	0.00	0.00	-3.67	20.47	119.69	-0.61
41	70	0.00	0.00	3.67	-20.47	-119.69	0.62
41	71	0.00	0.00	-6.23	19.73	94.95	-0.63
42	71	0.00	0.00	6.23	-19.73	-94.95	0.63
42	72	0.00	0.00	-8.79	18.98	57.41	-0.64
43	72	-0.01	0.00	8.79	-18.98	-57.41	0.63
43	73	0.01	0.00	-11.35	18.24	7.07	-0.64
44	73	-0.01	0.00	11.35	-18.24	-7.07	0.64
44	74	0.01	0.00	-13.91	17.50	-56.06	-0.66
45	74	-0.01	0.00	13.91	-17.50	56.06	0.65
45	77	0.01	0.00	-16.47	16.76	-131.99	-0.66
46	77	-0.01	0.00	-15.11	-7.92	131.99	0.66
46	84	0.01	0.00	12.55	7.18	-62.85	-0.66
47	84	-0.01	0.00	-12.55	-7.18	62.85	0.66
47	85	0.01	0.00	9.99	6.43	-6.51	-0.67
48	85	-0.01	0.00	-9.99	-6.43	6.51	0.66
48	86	0.01	0.00	7.43	5.69	37.03	-0.67
49	86	0.00	0.00	-7.43	-5.69	-37.03	0.66
49	87	0.00	0.00	4.87	4.95	67.78	-0.67
50	87	0.00	0.00	-4.87	-4.95	-67.78	0.67
50	88	0.00	0.00	2.31	4.21	85.73	-0.67
51	88	0.00	0.00	-2.31	-4.21	-85.73	0.67
51	89	0.00	0.00	-0.25	3.46	90.89	-0.67
52	89	0.00	0.00	0.25	-3.46	-90.89	0.67
52	90	0.00	0.00	-2.81	2.72	83.24	-0.68
53	90	0.00	0.00	2.81	-2.72	-83.24	0.67
53	91	0.00	0.00	-5.37	1.98	62.80	-0.68
54	91	-0.01	0.00	5.37	-1.98	-62.80	0.68
54	92	0.01	0.00	-7.93	1.24	29.56	-0.68
55	92	-0.01	0.00	7.93	-1.24	-29.56	0.68
55	93	0.01	0.00	-10.49	0.49	-16.48	-0.68
56	93	-0.01	0.00	10.49	-0.49	16.48	0.68
56	94	0.01	0.00	-13.05	-0.25	-75.31	-0.69
57	94	-0.01	0.00	13.05	0.25	75.31	0.69
57	97	0.01	0.00	-15.61	-0.99	-146.95	-0.69

58	97	-0.01	0.00	-15.73	0.88	146.94	0.69
58	104	0.01	0.00	13.17	-1.62	-74.68	-0.69
59	104	-0.01	0.00	-13.17	1.62	74.68	0.69
59	105	0.01	0.00	10.61	-2.37	-15.22	-0.68
60	105	0.00	0.00	-10.61	2.37	15.22	0.69
60	106	0.00	0.00	8.05	-3.11	31.45	-0.68
61	106	0.00	0.00	-8.05	3.11	-31.45	0.68
61	107	0.00	0.00	5.49	-3.85	65.31	-0.68
62	107	0.00	0.00	-5.49	3.85	-65.31	0.68
62	108	0.00	0.00	2.93	-4.59	86.38	-0.67
63	108	0.00	0.00	-2.93	4.59	-86.38	0.67
63	109	0.00	0.00	0.37	-5.34	94.66	-0.67
64	109	0.00	0.00	-0.37	5.34	-94.66	0.67
64	110	0.00	0.00	-2.18	-6.08	90.13	-0.66
65	110	0.00	0.00	2.18	6.08	-90.13	0.67
65	111	0.00	0.00	-4.74	-6.82	72.81	-0.66
66	111	0.00	0.00	4.74	6.82	-72.81	0.67
66	112	0.00	0.00	-7.30	-7.56	42.69	-0.66
67	112	-0.01	0.00	7.30	7.56	-42.69	0.66
67	113	0.01	0.00	-9.86	-8.31	-0.23	-0.66
68	113	-0.01	0.00	9.86	8.31	0.23	0.66
68	114	0.01	0.00	-12.42	-9.05	-55.94	-0.65
69	114	-0.01	0.00	12.42	9.05	55.94	0.65
69	117	0.01	0.00	-14.98	-9.79	-124.45	-0.65
70	117	-0.01	0.00	-16.64	22.78	124.46	0.66
70	124	0.01	0.00	14.08	-23.52	-47.65	-0.64
71	124	-0.01	0.00	-14.08	23.52	47.65	0.63
71	125	0.01	0.00	11.52	-24.26	16.36	-0.62
72	125	-0.01	0.00	-11.52	24.26	-16.36	0.63
72	126	0.01	0.00	8.96	-25.01	67.58	-0.61
73	126	0.00	0.00	-8.96	25.01	-67.57	0.62
73	127	0.00	0.00	6.40	-25.75	105.99	-0.61
74	127	0.00	0.00	-6.40	25.75	-105.99	0.62
74	128	0.00	0.00	3.84	-26.49	131.61	-0.60
75	128	0.00	0.00	-3.84	26.49	-131.61	0.60
75	129	0.00	0.00	1.28	-27.23	144.43	-0.58
76	129	0.00	0.00	-1.28	27.23	-144.43	0.60
76	130	0.00	0.00	-1.28	-27.98	144.45	-0.58
77	130	0.00	0.00	1.27	27.98	-144.46	0.59
77	131	0.00	0.00	-3.83	-28.72	131.68	-0.57
78	131	0.00	0.00	3.83	28.72	-131.68	0.56
78	132	0.00	0.00	-6.39	-29.46	106.11	-0.55
79	132	-0.01	0.00	6.39	29.46	-106.11	0.58
79	133	0.01	0.00	-8.95	-30.20	67.74	-0.57
80	133	-0.01	0.00	8.95	30.20	-67.74	0.56
80	134	0.01	0.00	-11.51	-30.94	16.58	-0.54
81	134	-0.01	0.00	11.51	30.94	-16.58	0.55
81	137	0.01	0.00	-14.07	-31.69	-47.39	-0.54
82	137	-0.01	0.01	-11.38	41.08	47.39	0.53
82	144	0.01	-0.01	8.83	-41.82	3.13	-0.50
83	144	-0.01	0.01	-8.83	41.82	-3.13	0.54
83	145	0.01	-0.01	6.30	-42.55	40.96	-0.51
84	145	-0.01	0.01	-6.30	42.55	-40.96	0.51
84	146	0.01	-0.01	3.80	-43.28	66.21	-0.48
85	146	-0.01	0.01	-3.80	43.28	-66.21	0.48
85	147	0.01	-0.01	1.32	-43.99	78.99	-0.45
86	147	-0.01	0.01	-1.32	43.99	-78.99	0.49
86	148	0.01	-0.01	-1.14	-44.71	79.43	-0.46
87	148	-0.01	0.01	1.14	44.71	-79.43	0.46
87	149	0.01	-0.01	-3.57	-45.41	67.64	-0.43
88	149	-0.01	0.01	3.57	45.41	-67.64	0.45
88	150	0.01	-0.01	-5.98	-46.11	43.75	-0.42
89	150	-0.01	0.01	5.98	46.11	-43.75	0.42
89	151	0.01	-0.01	-8.37	-46.80	7.86	-0.39
90	151	-0.01	0.01	8.37	46.80	-7.86	0.41
90	152	0.01	-0.01	-10.72	-47.49	-39.87	-0.38
91	152	-0.01	0.01	10.72	47.49	39.87	0.38
91	153	0.01	-0.01	-13.06	-48.16	-99.34	-0.35
92	153	-0.02	0.01	13.06	48.16	99.34	0.37
92	154	0.02	-0.01	-15.36	-48.83	-170.40	-0.34
93	154	-0.02	0.01	15.36	48.83	170.40	0.36
93	157	0.02	-0.01	-17.64	-49.49	-252.91	-0.33
94	157	-0.02	0.00	-16.47	34.04	252.91	0.33
94	163	0.02	0.00	14.21	-34.70	-176.22	-0.31
95	163	-0.02	0.00	-14.21	34.70	176.22	0.32
95	164	0.02	0.00	11.95	-35.35	-110.83	-0.30
96	164	-0.01	0.00	-11.95	35.35	110.83	0.31
96	165	0.01	0.00	9.70	-36.01	-56.70	-0.29
97	165	-0.01	0.00	-9.70	36.01	56.70	0.29
97	166	0.01	0.00	7.45	-36.66	-13.82	-0.27
98	166	-0.01	0.00	-7.45	36.66	13.82	0.28
98	167	0.01	0.00	5.21	-37.31	17.83	-0.26
99	167	-0.01	0.00	-5.21	37.31	-17.83	0.28
99	168	0.01	0.00	2.97	-37.96	38.28	-0.25
100	168	-0.01	0.00	-2.97	37.96	-38.28	0.26
100	169	0.01	0.00	0.74	-38.61	47.55	-0.23
101	169	-0.01	0.00	-0.74	38.61	-47.55	0.25
101	170	0.01	0.00	-1.49	-39.25	45.66	-0.23
102	170	-0.01	0.00	1.49	39.25	-45.66	0.23
102	171	0.01	0.00	-3.72	-39.90	32.63	-0.20
103	171	-0.01	0.00	3.72	39.90	-32.63	0.23
103	172	0.01	0.00	-5.94	-40.54	8.48	-0.21
104	172	-0.01	0.00	5.94	40.54	-8.48	0.21
104	173	0.01	0.00	-8.16	-41.19	-26.75	-0.19
105	173	-0.01	0.00	8.16	41.19	26.75	0.19
105	176	0.01	0.00	-10.37	-41.83	-73.06	-0.17
106	176	-0.01	0.01	-11.69	47.11	73.06	0.19
106	182	0.01	-0.01	9.48	-47.76	-20.12	-0.15
107	182	-0.01	0.01	-9.48	47.76	20.12	0.17
107	183	0.01	-0.01	7.26	-48.40	21.72	-0.14
108	183	-0.01	0.01	-7.26	48.40	-21.72	0.14
108	184	0.01	-0.01	5.02	-49.05	52.42	-0.10
109	184	-0.01	0.01	-5.02	49.05	-52.42	0.12
109	185	0.01	-0.01	2.78	-49.70	71.93	-0.08
110	185	-0.01	0.01	-2.78	49.70	-71.93	0.09
110	186	0.01	-0.01	0.53	-50.35	80.21	-0.05
111	186	-0.01	0.01	-0.53	50.35	-80.21	0.09
111	187	0.01	-0.01	-1.73	-51.01	77.19	-0.06
112	187	-0.01	0.01	1.73	51.01	-77.19	0.06
112	188	0.01	-0.01	-4.00	-51.67	62.85	-0.02
113	188	-0.01	0.01	4.00	51.67	-62.85	0.04
113	189	0.01	-0.01	-6.28	-52.33	37.14	-0.01
114	189	-0.01	0.01	6.28	52.33	-37.14	0.01
114	192	0.01	-0.01	-8.57	-52.99	0.00	0.03
134	6	-5.52	-6.20	0.00	0.00	0.00	-9.31
134	3	5.52	6.20	0.00	0.00	0.00	-17.05
135	3	0.00	-6.20	0.00	0.00	0.00	-26.33
135	1	0.00	6.20	0.00	0.00	0.00	0.00
136	22	-26.63	-18.64	0.00	0.00	0.00	-44.90
136	18	26.63	18.64	0.00	0.00	0.00	12.28
137	18	0.00	-18.64	0.00	0.00	0.00	-32.62
137	16	0.00	18.64	0.00	0.00	0.00	0.00
138	43	-29.64	-13.59	0.01	-0.01	0.00	-49.97
138	37	29.64	13.59	-0.01	0.01	-0.01	26.17
139	37	0.01	-13.59	0.00	0.00	0.00	-23.79
139	35	-0.01	13.59	0.00	0.00	0.00	0.00
140	63	-27.61	-9.34	0.00	0.00	0.00	-46.56
140	57	27.61	9.34	0.00	0.00	0.00	30.22

141	57	0.02	-9.34	0.00	0.00	0.00	-16.34
141	55	-0.02	9.34	0.00	0.00	0.00	0.00
142	83	-31.58	-12.68	0.00	0.00	0.00	-53.23
142	77	31.58	12.68	0.00	0.00	0.00	31.03
143	77	0.01	-12.68	0.00	0.00	0.00	-22.19
143	75	-0.01	12.68	0.00	0.00	0.00	0.00
144	103	-31.34	-15.13	0.00	0.00	0.00	-52.83
144	97	31.34	15.13	0.00	0.00	0.00	26.34
145	97	-0.01	-15.13	0.00	0.00	0.00	-26.44
145	95	0.01	15.13	0.00	0.00	0.00	0.00
146	123	-31.61	-11.53	0.00	-0.01	0.00	-53.31
146	117	31.61	11.53	0.00	0.01	-0.01	33.14
147	117	0.00	-11.53	0.00	0.00	0.00	-20.16
147	115	0.00	11.53	0.00	0.00	0.00	0.00
148	143	-25.46	-9.58	0.00	0.00	0.00	-42.91
148	137	25.46	9.58	0.00	0.00	0.00	26.15
149	137	0.01	-9.58	0.00	0.00	0.00	-16.76
149	135	-0.01	9.58	0.00	0.00	0.00	0.00
150	162	-34.10	-20.84	0.00	0.00	0.00	-57.50
150	157	34.10	20.84	0.00	0.00	0.00	21.02
151	157	0.00	-20.84	0.00	0.00	0.00	-36.47
151	156	0.00	20.84	0.00	0.00	0.00	0.00
152	181	-22.06	-9.12	0.00	0.00	0.00	-37.19
152	176	22.06	9.12	0.00	0.00	0.00	21.24
153	176	0.00	-9.12	0.00	0.00	0.00	-15.95
153	174	0.00	9.12	0.00	0.00	0.00	0.00
154	195	-8.57	-7.94	-0.01	0.01	0.00	-14.45
154	192	8.57	7.94	0.01	-0.01	0.02	-19.28
155	192	0.00	-7.93	0.01	-0.01	-0.02	-33.71
155	190	0.00	7.93	-0.01	0.01	0.00	0.00
156	7	5.52	6.20	0.00	0.00	0.00	0.00
156	4	-5.52	-6.20	0.00	0.00	0.00	26.36
157	4	0.00	6.20	0.00	0.00	0.00	26.33
157	2	0.00	-6.20	0.00	0.00	0.00	0.00
158	23	26.63	18.64	0.00	0.00	0.00	0.00
158	19	-26.63	-18.64	0.00	0.00	0.00	32.63
159	19	0.00	18.64	0.00	0.00	0.00	32.61
159	17	0.00	-18.64	0.00	0.00	0.00	0.00
160	42	29.63	13.59	-0.01	0.00	0.00	0.00
160	38	-29.63	-13.59	0.01	0.00	0.01	23.79
161	38	0.01	13.59	0.00	0.00	0.00	23.79
161	36	-0.01	-13.59	0.00	0.00	0.00	0.00
162	62	27.62	9.34	0.00	0.00	0.00	0.00
162	58	-27.62	-9.34	0.00	0.00	0.00	16.35
163	58	-0.01	9.34	0.00	0.00	0.00	16.34
163	56	0.01	-9.34	0.00	0.00	0.00	0.00
164	82	31.57	12.68	0.00	0.00	0.00	0.00
164	78	-31.57	-12.68	0.00	0.00	0.00	22.20
165	78	-0.02	12.68	0.00	0.00	0.00	22.18
165	76	0.02	-12.68	0.00	0.00	0.00	0.00
166	102	31.34	15.13	0.00	0.00	0.00	0.00
166	98	-31.34	-15.13	0.00	0.00	0.00	26.50
167	98	-0.01	15.13	0.00	0.00	0.00	26.44
167	96	0.01	-15.13	0.00	0.00	0.00	0.00
168	122	31.62	11.53	0.00	0.00	0.00	0.00
168	118	-31.62	-11.53	0.00	0.00	0.01	20.18
169	118	0.01	11.53	0.00	0.00	0.00	20.16
169	116	-0.01	-11.53	0.00	0.00	0.00	0.00
170	142	25.44	9.58	0.00	0.00	0.00	0.00
170	138	-25.44	-9.58	0.00	0.00	0.00	16.77
171	138	0.01	9.58	0.00	0.00	0.00	16.76
171	136	-0.01	-9.58	0.00	0.00	0.00	0.00
172	161	34.11	20.84	0.00	0.00	0.00	0.00
172	158	-34.11	-20.84	0.00	0.00	0.00	36.48
173	158	0.00	20.84	0.00	0.00	0.00	36.46
173	155	0.00	-20.84	0.00	0.00	0.00	0.00
174	180	22.06	9.12	0.00	0.00	0.00	0.00
174	177	-22.06	-9.12	0.00	0.00	0.00	15.96
175	177	0.00	9.12	0.00	0.00	0.00	15.95
175	175	0.00	-9.12	0.00	0.00	0.00	0.00
176	196	8.57	7.94	0.01	0.00	0.00	0.00
176	193	-8.57	-7.94	-0.01	0.00	-0.02	33.74
177	193	0.00	7.93	-0.01	0.00	0.02	33.71
177	191	0.00	-7.93	0.01	0.00	0.00	0.00
182	7	-6.20	0.00	-5.52	0.00	0.00	0.00
182	6	6.20	0.00	5.52	0.00	9.31	0.00
183	2	6.20	0.00	0.00	0.00	0.00	0.00
183	1	-6.20	0.00	0.00	0.00	0.00	0.00
184	23	-18.64	0.00	-26.63	0.00	0.00	0.00
184	22	18.64	0.00	26.63	0.00	44.90	0.00
185	17	18.64	0.00	0.00	0.00	0.00	0.00
185	16	-18.64	0.00	0.00	0.00	0.00	0.00
186	42	-13.59	0.00	-29.64	0.00	0.00	0.00
186	43	13.59	0.00	29.64	0.00	49.97	0.00
187	36	13.59	0.00	0.00	0.00	0.00	0.00
187	35	-13.59	0.00	0.00	0.00	0.00	0.00
188	62	-9.34	0.00	-27.61	0.00	0.00	0.00
188	63	9.34	0.00	27.61	0.00	46.56	0.00
189	56	9.34	0.00	0.00	0.00	0.00	0.00
189	55	-9.34	0.00	0.00	0.00	0.00	0.00
190	82	-12.68	0.00	-31.57	0.00	0.00	0.00
190	83	12.68	0.00	31.57	0.00	53.23	0.00
191	76	12.68	0.00	0.00	0.00	0.00	0.00
191	75	-12.68	0.00	0.00	0.00	0.00	0.00
192	102	-15.13	0.00	-31.34	0.00	0.00	0.00
192	103	15.13	0.00	31.34	0.00	52.84	0.00
193	96	15.12	0.00	0.00	0.00	0.00	0.00
193	95	-15.12	0.00	0.00	0.00	0.00	0.00
194	122	-11.53	0.00	-31.63	0.00	0.00	0.00
194	123	11.53	0.00	31.63	0.00	53.32	0.00
195	116	11.53	0.00	0.00	0.00	0.00	0.00
195	115	-11.53	0.00	0.00	0.00	0.00	0.00
196	142	-9.58	0.00	-25.45	0.00	0.00	0.00
196	143	9.58	0.00	25.45	0.00	42.90	0.00
197	136	9.58	0.00	0.00	0.00	0.00	0.00
197	135	-9.58	0.00	0.00	0.00	0.00	0.00
198	161	-20.84	0.00	-34.11	0.00	0.00	0.00
198	162	20.84	0.00	34.11	0.00	57.50	0.00
199	155	20.84	0.00	0.00	0.00	0.00	0.00
199	156	-20.84	0.00	0.00	0.00	0.00	0.00
200	180	-9.11	0.00	-22.06	0.00	0.00	0.00
200	181	9.11	0.00	22.06	0.00	37.19	0.00
201	175	9.12	0.00	0.00	0.00	0.00	0.00
201	174	-9.12	0.00	0.00	0.00	0.00	0.00
202	196	-7.94	-0.01	-8.57	0.00	0.00	0.00
202	195	7.94	0.01	8.57	0.00	14.45	-0.01
203	191	7.93	-0.01	0.00	0.00	0.00	0.00
203	190	-7.93	0.01	0.00	0.00	0.00	-0.01
206	21	0.00	0.00	-28.76	0.00	236.97	0.00
206	20	0.00	0.00	28.01	0.00	-174.52	0.00
207	20	0.00	0.00	-28.01	0.00	174.52	0.00
207	19	0.00	0.00	26.63	0.00	-65.24	0.00
208	40	0.00	0.00	-32.99	0.01	348.34	-0.01
208	39	0.00	0.00	32.78	-0.01	-328.61	0.01
209	39	0.00	0.00	-32.78	0.01	328.61	-0.01
209	41	0.00	0.00	31.06	-0.01	-169.00	0.01
210	41	0.00	0.00	-31.06	0.01	169.00	-0.01
210	38	0.00	0.00	29.64	-0.01	-47.58	0.01

211	60	0.00	0.00	-31.99	0.00	399.87	0.00
211	59	0.00	0.00	30.85	0.00	-296.19	0.00
212	59	0.00	0.00	-30.85	0.00	296.19	0.00
212	61	0.00	0.00	29.12	0.00	-146.24	0.00
213	61	0.00	0.00	-29.12	0.00	146.24	0.00
213	58	0.00	0.00	27.61	0.00	-32.69	0.00
214	80	0.00	0.00	-35.95	0.00	460.26	0.00
214	79	0.00	0.00	34.81	0.00	-343.51	0.00
215	79	0.00	0.00	-34.81	0.00	343.51	0.00
215	81	0.00	0.00	33.08	0.00	-173.77	0.00
216	81	0.00	0.00	-33.08	0.00	173.77	0.00
216	78	0.00	0.00	31.57	0.00	-44.38	0.00
217	100	0.00	0.00	-35.71	0.00	465.92	0.00
217	99	0.00	0.00	34.58	0.00	-349.94	0.00
218	99	0.00	0.00	-34.58	0.00	349.94	0.00
218	101	0.00	0.00	32.85	0.00	-181.38	0.00
219	101	0.00	0.00	-32.85	0.00	181.38	0.00
219	98	0.00	0.00	31.34	0.00	-52.94	0.00
220	120	0.00	0.00	-36.00	0.01	456.84	0.00
220	119	0.00	0.00	34.86	-0.01	-339.92	0.00
221	119	0.00	0.00	-34.86	0.01	339.92	0.00
221	121	0.00	0.00	33.13	-0.01	-169.93	0.00
222	121	0.00	0.00	-33.13	0.01	169.93	0.00
222	118	0.00	0.00	31.62	-0.01	-40.35	0.00
223	140	0.00	0.00	-29.82	0.00	374.10	0.00
223	139	0.00	0.00	28.69	0.00	-277.56	0.00
224	139	0.00	0.00	-28.69	0.00	277.56	0.00
224	141	0.00	0.00	26.96	0.00	-138.42	0.00
225	141	0.00	0.00	-26.96	0.00	138.42	0.00
225	138	0.00	0.00	25.45	0.00	-33.53	0.00
226	160	0.00	0.00	-36.97	0.00	367.93	0.00
226	159	0.00	0.00	35.49	0.00	-212.15	0.00
227	159	0.00	0.00	-35.49	0.00	212.15	0.00
227	158	0.00	0.00	34.11	0.00	-72.95	0.00
228	179	0.00	0.00	-24.71	0.00	211.96	0.00
228	178	0.00	0.00	23.44	0.00	-122.90	0.00
229	178	0.00	0.00	-23.44	0.00	122.90	0.00
229	177	0.00	0.00	22.06	0.00	-31.91	0.00
230	5	-0.01	0.00	-5.52	0.00	58.21	0.00
230	4	0.01	0.00	5.52	0.00	-52.69	0.00
231	194	-0.01	-0.01	-8.57	0.00	76.02	-0.01
231	193	0.01	0.01	8.57	0.00	-67.45	0.00

proc Viaducto Papiol

HIPOTESIS 23

hipo 23 viento + trans est.+ sobrecarga

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
1	3	0.00	-0.01	-6.70	-99.03	0.00	-0.02
1	8	0.00	0.01	4.02	91.80	26.80	-0.03
2	8	0.00	-0.01	-4.02	-91.80	-26.80	0.03
2	9	0.00	0.01	1.34	84.59	40.20	-0.08
3	9	0.00	-0.01	-1.34	-84.59	-40.20	0.01
3	10	0.00	0.01	-1.33	77.41	40.24	-0.06
4	10	0.00	-0.01	1.33	-77.41	-40.24	0.09
4	11	0.00	0.01	-3.98	70.25	26.96	-0.14
5	11	0.00	-0.01	3.98	-70.25	-26.96	0.11
5	12	0.00	0.01	-6.63	63.11	0.41	-0.16
6	12	0.00	-0.01	6.63	-63.11	-0.41	0.11
6	13	0.00	0.01	-9.28	56.00	-39.37	-0.16
7	13	0.00	-0.01	9.28	-56.00	39.37	0.18
7	14	0.00	0.01	-11.91	48.91	-92.33	-0.22
8	14	-0.01	-0.01	11.91	-48.91	92.33	0.19
8	15	0.01	0.01	-14.53	41.84	-158.43	-0.23
9	15	-0.01	-0.01	14.53	-41.84	158.43	0.23
9	18	0.01	0.01	-17.16	34.77	-237.66	-0.28
10	18	-0.02	-0.01	-17.06	-128.60	237.66	0.29
10	24	0.02	0.01	14.43	121.50	-158.93	-0.34
11	24	-0.01	-0.01	-14.43	-121.50	158.93	0.30
11	25	0.01	0.01	11.76	114.32	-93.44	-0.35
12	25	0.00	-0.01	-11.76	-114.32	93.44	0.26
12	26	0.00	0.01	9.06	107.05	-41.37	-0.31
13	26	-0.01	-0.01	-9.06	-107.05	41.37	0.35
13	27	0.01	0.01	6.33	99.69	-2.89	-0.41
14	27	0.00	-0.01	-6.33	-99.69	2.89	0.37
14	28	0.00	0.01	3.56	92.23	21.84	-0.42
15	28	0.00	-0.01	-3.56	-92.23	-21.84	0.35
15	29	0.00	0.01	0.76	84.69	32.64	-0.40
16	29	0.00	-0.01	-0.76	-84.69	-32.64	0.43
16	30	0.00	0.01	-2.08	77.06	29.35	-0.49
17	30	0.00	-0.01	2.08	-77.06	-29.35	0.45
17	31	0.00	0.01	-4.94	69.34	11.82	-0.51
18	31	0.00	-0.01	4.94	-69.34	-11.82	0.48
18	32	0.00	0.01	-7.84	61.55	-20.11	-0.53
19	32	0.00	-0.01	7.84	-61.55	20.11	0.53
19	33	0.00	0.01	-10.76	53.67	-66.59	-0.59
20	33	-0.01	-0.01	10.76	-53.67	66.59	0.57
20	34	0.01	0.01	-13.71	45.71	-127.76	-0.62
21	34	-0.01	-0.01	13.71	-45.72	127.76	0.60
21	37	0.01	0.01	-16.70	37.68	-203.78	-0.65
22	37	-0.02	-0.01	-20.77	-115.59	203.79	0.64
22	44	0.02	0.01	17.77	107.49	-107.43	-0.68
23	44	-0.01	-0.01	-17.77	-107.49	107.43	0.64
23	45	0.01	0.01	14.74	99.33	-26.16	-0.68
24	45	-0.01	-0.01	-14.74	-99.34	26.16	0.65
24	46	0.01	0.01	11.69	91.12	39.91	-0.69
25	46	-0.01	-0.01	-11.69	-91.12	-39.91	0.69
25	47	0.01	0.01	8.62	82.85	90.68	-0.73
26	47	-0.01	-0.01	-8.62	-82.85	-90.68	0.70
26	48	0.01	0.01	5.52	74.52	126.03	-0.74
27	48	-0.01	-0.01	-5.52	-74.52	-126.03	0.74
27	49	0.01	0.01	2.41	66.14	145.88	-0.78
28	49	0.00	-0.01	-2.41	-66.14	-145.88	0.75
28	50	0.00	0.01	-0.72	57.70	150.11	-0.80
29	50	0.00	-0.01	0.72	-57.70	-150.11	0.77
29	51	0.00	0.01	-3.87	49.21	138.63	-0.82
30	51	-0.01	-0.01	3.87	-49.22	-138.63	0.80
30	52	0.01	0.01	-7.05	40.67	111.34	-0.84
31	52	-0.01	-0.01	7.05	-40.67	-111.34	0.84
31	53	0.01	0.01	-10.24	32.08	68.14	-0.88
32	53	-0.01	-0.01	10.24	-32.08	-68.14	0.87
32	54	0.01	0.01	-13.45	23.44	8.95	-0.91
33	54	-0.01	-0.01	13.45	-23.44	-8.94	0.91
33	57	0.01	0.01	-16.67	14.74	-66.35	-0.95
34	57	-0.01	0.00	-17.82	-83.57	66.35	0.93
34	64	0.01	0.00	14.59	74.85	14.67	-0.95
35	64	-0.01	0.00	-14.59	-74.85	-14.67	0.95
35	65	0.01	0.00	11.35	66.13	79.51	-0.97
36	65	0.00	0.00	-11.35	-66.14	-79.51	0.92
36	66	0.00	0.00	8.11	57.42	128.15	-0.94
37	66	0.00	0.00	-8.11	-57.42	-128.15	0.94
37	67	0.00	0.00	4.87	48.70	160.61	-0.96
38	67	0.00	0.00	-4.87	-48.70	-160.61	0.94
38	68	0.00	0.00	1.64	39.98	176.88	-0.96
39	68	0.00	0.00	-1.64	-39.98	-176.88	0.97
39	69	0.00	0.00	-1.60	31.26	176.97	-0.99
40	69	0.00	0.00	1.60	-31.26	-176.97	0.95
40	70	0.00	0.00	-4.84	22.54	160.86	-0.97
41	70	0.00	0.00	4.84	-22.54	-160.86	0.98
41	71	0.00	0.00	-8.08	13.82	128.57	-1.00
42	71	-0.01	0.00	8.08	-13.82	-128.57	0.99
42	72	0.01	0.00	-11.31	5.10	80.09	-1.01
43	72	-0.01	0.00	11.31	-5.10	-80.09	1.01
43	73	0.01	0.00	-14.55	-3.62	15.43	-1.03
44	73	-0.01	0.00	14.55	3.62	-15.43	1.03
44	74	0.01	0.00	-17.79	-12.33	-65.43	-1.05
45	74	-0.02	0.00	17.79	12.33	65.43	1.05
45	77	0.02	0.00	-21.03	-21.05	-162.47	-1.07
46	77	-0.01	0.00	-19.06	-57.45	162.47	1.06
46	84	0.01	0.00	15.83	48.73	-75.25	-1.07
47	84	-0.01	0.00	-15.82	-48.73	75.25	1.07
47	85	0.01	0.00	12.59	40.01	-4.22	-1.07
48	85	-0.01	0.00	-12.59	-40.01	4.22	1.06
48	86	0.01	0.00	9.35	31.29	50.62	-1.06
49	86	-0.01	0.00	-9.35	-31.29	-50.62	1.05
49	87	0.01	0.00	6.11	22.57	89.28	-1.05
50	87	-0.01	0.00	-6.11	-22.57	-89.28	1.05
50	88	0.01	0.00	2.88	13.85	111.75	-1.06
51	88	0.00	0.00	-2.87	-13.85	-111.75	1.05
51	89	0.00	0.00	-0.36	5.13	118.03	-1.06
52	89	0.00	0.00	0.36	-5.13	-118.03	1.06
52	90	0.00	0.00	-3.60	-3.59	108.12	-1.06
53	90	-0.01	0.00	3.60	3.59	-108.12	1.06
53	91	0.01	0.00	-6.84	-12.30	82.02	-1.07
54	91	-0.01	0.00	6.84	12.30	-82.02	1.07
54	92	0.01	0.00	-10.07	-21.02	39.74	-1.08
55	92	-0.01	0.00	10.08	21.02	-39.74	1.09
55	93	0.01	0.00	-13.31	-29.74	-18.73	-1.09
56	93	-0.01	0.00	13.31	29.74	18.73	1.09
56	94	0.01	0.00	-16.55	-38.46	-93.38	-1.10
57	94	-0.01	0.00	16.55	38.46	93.38	1.10
57	97	0.01	0.00	-19.79	-47.18	-184.23	-1.10

58	97	-0.01	0.00	-19.97	-44.38	184.22	1.11
58	104	0.01	0.00	16.74	35.66	-92.45	-1.10
59	104	-0.01	0.00	-16.74	-35.66	92.45	1.10
59	105	0.01	0.00	13.50	26.94	-16.87	-1.10
60	105	-0.01	0.00	-13.50	-26.94	16.87	1.08
60	106	0.01	0.00	10.26	18.23	42.53	-1.08
61	106	-0.01	0.00	-10.26	-18.23	-42.53	1.08
61	107	0.01	0.00	7.02	9.51	85.74	-1.07
62	107	0.00	0.00	-7.02	-9.51	-85.74	1.07
62	108	0.00	0.00	3.79	0.79	112.76	-1.06
63	108	0.00	0.00	-3.79	-0.79	-112.76	1.06
63	109	0.00	0.00	0.55	-7.93	123.59	-1.05
64	109	0.00	0.00	-0.55	7.93	-123.59	1.05
64	110	0.00	0.00	-2.69	-16.65	118.24	-1.04
65	110	0.00	0.00	2.69	16.65	-118.24	1.06
65	111	0.00	0.00	-5.93	-25.37	96.70	-1.05
66	111	-0.01	0.00	5.93	25.37	-96.70	1.06
66	112	0.01	0.00	-9.16	-34.09	58.97	-1.05
67	112	-0.01	0.00	9.16	34.09	-58.97	1.05
67	113	0.01	0.00	-12.40	-42.81	5.05	-1.05
68	113	-0.01	0.00	12.40	42.81	-5.05	1.06
68	114	0.01	0.00	-15.64	-51.52	-65.05	-1.06
69	114	-0.01	0.00	15.64	51.52	65.05	1.06
69	117	0.01	0.00	-18.88	-60.24	-151.34	-1.05
70	117	-0.01	0.00	-21.28	-12.16	151.35	1.05
70	124	0.01	0.00	18.04	3.44	-53.06	-1.03
71	124	-0.02	0.00	-18.04	-3.44	53.06	1.03
71	125	0.02	0.00	14.80	-5.28	29.04	-1.00
72	125	-0.01	0.00	-14.80	5.28	-29.04	1.01
72	126	0.01	0.00	11.56	-14.00	94.95	-0.98
73	126	-0.01	0.00	-11.56	14.00	-94.95	0.99
73	127	0.01	0.00	8.33	-22.72	144.67	-0.97
74	127	0.00	0.00	-8.33	22.72	-144.67	0.97
74	128	0.00	0.00	5.09	-31.44	178.20	-0.95
75	128	0.00	0.00	-5.09	31.44	-178.20	0.95
75	129	0.00	0.00	1.85	-40.16	195.55	-0.93
76	129	0.00	0.00	-1.85	40.16	-195.55	0.94
76	130	0.00	0.00	-1.39	-48.88	196.71	-0.92
77	130	0.00	0.00	1.39	48.88	-196.71	0.94
77	131	0.00	0.00	-4.62	-57.59	181.69	-0.92
78	131	0.00	0.00	4.62	57.59	-181.69	0.90
78	132	0.00	0.00	-7.86	-66.31	150.47	-0.87
79	132	-0.01	0.00	7.86	66.31	-150.47	0.95
79	133	0.01	0.00	-11.10	-75.03	103.07	-0.93
80	133	-0.01	0.00	11.10	75.03	-103.07	0.90
80	134	0.01	0.00	-14.34	-83.75	39.48	-0.87
81	134	-0.01	0.00	14.34	83.75	-39.48	0.91
81	137	0.01	0.00	-17.57	-92.47	-40.29	-0.88
82	137	-0.02	0.01	-13.77	17.46	40.30	0.89
82	144	0.02	-0.01	10.55	-26.14	20.48	-0.85
83	144	-0.01	0.01	-10.55	26.14	-20.48	0.87
83	145	0.01	-0.01	7.35	-34.75	65.22	-0.83
84	145	-0.01	0.01	-7.35	34.75	-65.22	0.83
84	146	0.01	-0.01	4.18	-43.28	94.04	-0.78
85	146	-0.01	0.01	-4.18	43.28	-94.04	0.78
85	147	0.01	-0.01	1.04	-51.73	107.10	-0.74
86	147	-0.01	0.01	-1.04	51.73	-107.10	0.78
86	148	0.01	-0.01	-2.06	-60.10	104.53	-0.74
87	148	-0.01	0.01	2.06	60.10	-104.53	0.74
87	149	0.01	-0.01	-5.14	-68.39	86.50	-0.70
88	149	-0.01	0.01	5.14	68.39	-86.50	0.72
88	150	0.01	-0.01	-8.19	-76.60	53.15	-0.68
89	150	-0.01	0.01	8.19	76.60	-53.15	0.68
89	151	0.01	-0.01	-11.21	-84.72	4.64	-0.64
90	151	-0.02	0.01	11.21	84.72	-4.64	0.67
90	152	0.02	-0.01	-14.19	-92.76	-58.86	-0.63
91	152	-0.01	0.01	14.19	92.76	58.86	0.63
91	153	0.01	-0.01	-17.14	-100.70	-137.20	-0.58
92	153	-0.02	0.01	17.14	100.70	137.20	0.62
92	154	0.02	-0.01	-20.05	-108.55	-230.20	-0.58
93	154	-0.03	0.01	20.05	108.55	230.20	0.62
93	157	0.03	-0.01	-22.93	-116.31	-337.69	-0.58
94	157	-0.03	0.01	-21.34	13.27	337.69	0.58
94	163	0.03	-0.01	18.48	-20.97	-238.12	-0.55
95	163	-0.02	0.01	-18.48	20.97	238.12	0.55
95	164	0.02	-0.01	15.63	-28.65	-152.83	-0.52
96	164	-0.02	0.01	-15.63	28.65	152.83	0.53
96	165	0.02	-0.01	12.78	-36.32	-81.80	-0.50
97	165	-0.02	0.01	-12.78	36.32	81.80	0.50
97	166	0.02	-0.01	9.94	-43.98	-25.00	-0.46
98	166	-0.01	0.01	-9.94	43.98	25.00	0.48
98	167	0.01	-0.01	7.10	-51.62	17.61	-0.44
99	167	-0.01	0.01	-7.10	51.62	-17.61	0.46
99	168	0.01	-0.01	4.27	-59.24	46.04	-0.43
100	168	-0.01	0.01	-4.27	59.24	-46.04	0.43
100	169	0.01	-0.01	1.44	-66.85	60.32	-0.39
101	169	-0.01	0.01	-1.44	66.85	-60.32	0.42
101	170	0.01	-0.01	-1.38	-74.45	60.49	-0.38
102	170	-0.01	0.01	1.38	74.45	-60.49	0.38
102	171	0.01	-0.01	-4.19	-82.03	46.57	-0.35
103	171	-0.01	0.01	4.19	82.03	-46.57	0.41
103	172	0.01	-0.01	-7.00	-89.60	18.60	-0.38
104	172	-0.01	0.01	7.00	89.60	-18.60	0.38
104	173	0.01	-0.01	-9.80	-97.14	-23.41	-0.34
105	173	-0.01	0.01	9.80	97.14	23.41	0.34
105	176	0.01	-0.01	-12.60	-104.68	-79.43	-0.31
106	176	-0.02	0.01	-14.50	47.25	79.43	0.34
106	182	0.02	-0.01	11.70	-54.79	-13.91	-0.28
107	182	-0.01	0.01	-11.70	54.79	13.91	0.30
107	183	0.01	-0.01	8.89	-62.37	37.58	-0.24
108	183	-0.01	0.01	-8.89	62.37	-37.58	0.24
108	184	0.01	-0.01	6.06	-69.97	74.97	-0.18
109	184	-0.01	0.01	-6.06	69.97	-74.97	0.21
109	185	0.01	-0.01	3.23	-77.61	98.21	-0.15
110	185	-0.01	0.01	-3.23	77.61	-98.21	0.15
110	186	0.01	-0.01	0.38	-85.29	107.23	-0.09
111	186	-0.01	0.01	-0.38	85.29	-107.23	0.16
111	187	0.01	-0.01	-2.48	-92.99	101.98	-0.10
112	187	-0.01	0.01	2.48	92.99	-101.98	0.10
112	188	0.01	-0.01	-5.35	-100.72	82.39	-0.03
113	188	-0.01	0.01	5.35	100.72	-82.39	0.07
113	189	0.01	-0.01	-8.24	-108.49	48.42	-0.01
114	189	-0.01	0.01	8.24	108.49	-48.42	0.01
114	192	0.01	-0.01	-11.13	-116.29	0.00	0.05
134	6	-6.70	-12.98	0.00	0.00	0.00	-11.30
134	3	6.70	12.98	0.00	0.00	0.00	-43.88
135	3	0.00	-12.98	0.00	0.00	0.00	-55.15
135	1	0.00	12.98	0.00	0.00	0.00	0.00
136	22	-34.22	-43.29	0.00	0.00	0.00	-57.69
136	18	34.22	43.29	0.00	0.00	0.00	-18.07
137	18	0.00	-43.29	0.00	0.00	0.00	-75.75
137	16	0.00	43.29	0.00	0.00	0.00	0.00
138	43	-37.46	-40.30	0.01	-0.01	0.00	-63.18
138	37	37.46	40.30	-0.01	0.01	-0.01	-7.37
139	37	0.01	-40.30	0.00	0.00	0.00	-70.53
139	35	-0.01	40.30	0.00	0.00	0.00	0.00
140	63	-34.48	-36.29	0.00	0.00	0.00	-58.17
140	57	34.48	36.29	0.00	0.00	0.00	-5.35

141	57	0.02	-36.29	0.00	0.00	0.00	-63.48
141	55	-0.02	36.29	0.00	0.00	0.00	0.00
142	83	-40.09	-41.73	0.00	0.00	0.00	-67.59
142	77	40.09	41.73	0.00	0.00	0.00	-5.49
143	77	0.00	-41.74	0.00	0.00	0.00	-73.01
143	75	0.00	41.74	0.00	0.00	0.00	0.00
144	103	-39.79	-45.31	0.00	0.00	0.00	-67.03
144	97	39.79	45.31	0.00	0.00	0.00	-12.35
145	97	-0.02	-45.32	0.00	0.00	0.00	-79.21
145	95	0.02	45.32	0.00	0.00	0.00	0.00
146	123	-40.12	-40.03	0.00	-0.01	0.00	-67.70
146	117	40.12	40.03	0.00	0.01	-0.01	-2.39
147	117	0.02	-40.04	0.00	0.00	0.00	-70.01
147	115	-0.02	40.04	0.00	0.00	0.00	0.00
148	143	-31.36	-36.53	0.00	0.00	0.00	-52.84
148	137	31.36	36.53	0.00	0.00	0.00	-11.10
149	137	0.01	-36.53	0.00	0.00	0.00	-63.91
149	135	-0.01	36.53	0.00	0.00	0.00	0.00
150	162	-44.27	-50.77	0.00	0.00	0.00	-74.65
150	157	44.27	50.77	0.00	0.00	0.00	-14.21
151	157	0.01	-50.77	0.00	0.00	0.00	-88.83
151	156	-0.01	50.77	0.00	0.00	0.00	0.00
152	181	-27.10	-29.46	0.00	0.00	0.00	-45.70
152	176	27.10	29.46	0.00	0.00	0.00	-5.88
153	176	0.00	-29.47	0.00	0.00	0.00	-51.56
153	174	0.00	29.47	0.00	0.00	0.00	0.00
154	195	-11.13	-15.89	-0.01	0.01	0.00	-18.77
154	192	11.13	15.89	0.01	-0.01	0.03	-48.78
155	192	0.00	-15.88	0.01	-0.01	-0.03	-67.50
155	190	0.00	15.88	-0.01	0.01	0.00	0.00
156	7	6.70	12.98	0.00	0.00	0.00	0.00
156	4	-6.70	-12.98	0.00	0.00	0.00	55.19
157	4	0.00	12.98	0.00	0.00	0.00	55.15
157	2	0.00	-12.98	0.00	0.00	0.00	0.00
158	23	34.22	43.29	0.00	0.00	0.00	0.00
158	19	-34.22	-43.29	0.00	0.00	0.00	75.77
159	19	0.00	43.29	0.00	0.00	0.00	75.75
159	17	0.00	-43.29	0.00	0.00	0.00	0.00
160	42	37.48	40.30	-0.01	0.00	0.00	0.00
160	38	-37.48	-40.30	0.01	0.00	0.01	70.54
161	38	0.01	40.30	0.00	0.00	0.00	70.53
161	36	-0.01	-40.30	0.00	0.00	0.00	0.00
162	62	34.51	36.28	0.00	0.00	0.00	0.00
162	58	-34.51	-36.28	0.00	0.00	0.00	63.52
163	58	0.01	36.29	0.00	0.00	0.00	63.49
163	56	-0.01	-36.29	0.00	0.00	0.00	0.00
164	82	40.09	41.74	0.00	0.00	0.00	0.00
164	78	-40.09	-41.74	0.00	0.00	0.00	73.08
165	78	-0.01	41.74	0.00	0.00	0.00	72.99
165	76	0.01	-41.74	0.00	0.00	0.00	0.00
166	102	39.75	45.31	0.00	0.00	0.00	0.00
166	98	-39.75	-45.31	0.00	0.00	0.00	79.39
167	98	-0.01	45.31	0.00	0.00	0.00	79.20
167	96	0.01	-45.31	0.00	0.00	0.00	0.00
168	122	40.17	40.03	0.00	0.00	0.00	0.00
168	118	-40.17	-40.03	0.00	0.00	0.01	70.10
169	118	0.01	40.04	0.00	0.00	0.00	70.03
169	116	-0.01	-40.04	0.00	0.00	0.00	0.00
170	142	31.34	36.53	0.00	0.00	0.00	0.00
170	138	-31.34	-36.53	0.00	0.00	0.00	63.95
171	138	0.00	36.53	0.00	0.00	0.00	63.91
171	136	0.00	-36.53	0.00	0.00	0.00	0.00
172	161	44.28	50.77	0.00	0.00	0.00	0.00
172	158	-44.28	-50.77	0.00	0.00	0.00	88.87
173	158	-0.01	50.77	0.00	0.00	0.00	88.82
173	155	0.01	-50.77	0.00	0.00	0.00	0.00
174	180	27.10	29.46	0.00	0.00	0.00	0.00
174	177	-27.10	-29.46	0.00	0.00	0.00	51.57
175	177	0.00	29.47	0.00	0.00	0.00	51.56
175	175	0.00	-29.47	0.00	0.00	0.00	0.00
176	196	11.13	15.89	0.01	0.00	0.00	0.00
176	193	-11.13	-15.89	-0.01	0.00	-0.03	67.55
177	193	0.00	15.88	-0.01	0.00	0.03	67.50
177	191	0.00	-15.88	0.01	0.00	0.00	0.00
182	7	-12.98	0.00	-6.70	0.00	0.00	0.00
182	6	12.98	0.00	6.70	0.00	11.30	0.00
183	2	12.98	0.00	0.00	0.00	0.00	0.00
183	1	-12.98	0.00	0.00	0.00	0.00	0.00
184	23	-43.29	0.00	-34.22	0.00	0.00	0.00
184	22	43.29	0.00	34.22	0.00	57.69	0.00
185	17	43.29	0.00	0.00	0.00	0.00	0.00
185	16	-43.29	0.00	0.00	0.00	0.00	0.00
186	42	-40.30	0.00	-37.47	0.00	0.00	0.00
186	43	40.30	0.00	37.47	0.00	63.18	0.00
187	36	40.30	0.00	0.00	0.00	0.00	0.00
187	35	-40.30	0.00	0.00	0.00	0.00	0.00
188	62	-36.28	0.00	-34.50	0.00	0.00	0.00
188	63	36.28	0.00	34.50	0.00	58.17	0.00
189	56	36.29	0.00	0.00	0.00	0.00	0.00
189	55	-36.29	0.00	0.00	0.00	0.00	0.00
190	82	-41.73	0.00	-40.09	0.00	0.00	0.00
190	83	41.73	0.00	40.09	0.00	67.58	0.00
191	76	41.74	0.00	0.00	0.00	0.00	0.00
191	75	-41.74	0.00	0.00	0.00	0.00	0.00
192	102	-45.31	0.00	-39.76	0.00	0.00	0.00
192	103	45.31	0.00	39.76	0.00	67.04	0.00
193	96	45.32	0.00	0.00	0.00	0.00	0.00
193	95	-45.32	0.00	0.00	0.00	0.00	0.00
194	122	-40.03	0.00	-40.15	0.00	0.00	0.00
194	123	40.03	0.00	40.15	0.00	67.71	0.00
195	116	40.03	0.00	0.00	0.00	0.00	0.00
195	115	-40.03	0.00	0.00	0.00	0.00	0.00
196	142	-36.53	0.00	-31.34	0.00	0.00	0.00
196	143	36.53	0.00	31.34	0.00	52.85	0.00
197	136	36.53	0.00	0.00	0.00	0.00	0.00
197	135	-36.53	0.00	0.00	0.00	0.00	0.00
198	161	-50.77	0.00	-44.28	0.00	0.00	0.00
198	162	50.77	0.00	44.28	0.00	74.65	0.00
199	155	50.76	0.00	0.00	0.00	0.00	0.00
199	156	-50.76	0.00	0.00	0.00	0.00	0.00
200	180	-29.46	0.00	-27.11	0.00	0.00	0.00
200	181	29.46	0.00	27.11	0.00	45.70	0.00
201	175	29.47	0.00	0.00	0.00	0.00	0.00
201	174	-29.47	0.00	0.00	0.00	0.00	0.00
202	196	-15.89	-0.01	-11.13	0.00	0.00	0.00
202	195	15.89	0.01	11.13	0.00	18.77	-0.01
203	191	15.88	-0.01	0.00	0.00	0.00	0.00
203	190	-15.88	0.01	0.00	0.00	0.00	-0.01
206	21	0.00	0.00	-35.28	0.00	366.98	-0.01
206	20	0.00	0.00	34.91	0.00	-289.77	0.01
207	20	0.00	0.00	-34.91	0.00	289.77	-0.01
207	19	0.00	0.00	34.22	0.00	-151.52	0.01
208	40	0.00	0.00	-39.15	0.01	508.93	-0.03
208	39	0.00	0.00	39.04	-0.01	-485.47	0.03
209	39	0.00	0.00	-39.04	0.01	485.47	-0.03
209	41	0.00	0.00	38.18	-0.01	-292.40	0.03
210	41	0.00	0.00	-38.18	0.01	292.40	-0.03
210	38	0.00	0.00	37.47	-0.01	-141.07	0.03

211	60	0.00	0.00	-36.68	0.00	565.09	0.00
211	59	0.00	0.00	36.12	0.00	-444.97	0.00
212	59	0.00	0.00	-36.12	0.00	444.97	0.00
212	61	0.00	0.00	35.25	0.00	-266.54	0.00
213	61	0.00	0.00	-35.25	0.00	266.54	0.00
213	58	0.00	0.00	34.50	0.00	-127.01	0.00
214	80	0.00	0.00	-42.28	0.00	652.93	0.00
214	79	0.00	0.00	41.71	0.00	-514.36	0.00
215	79	0.00	0.00	-41.71	0.00	514.36	0.00
215	81	0.00	0.00	40.84	0.00	-307.97	0.00
216	81	0.00	0.00	-40.84	0.00	307.97	0.00
216	78	0.00	0.00	40.09	0.00	-146.07	0.00
217	100	0.00	0.00	-41.95	0.00	661.41	0.01
217	99	0.00	0.00	41.38	0.00	-523.92	-0.01
218	99	0.00	0.00	-41.38	0.00	523.92	0.01
218	101	0.00	0.00	40.51	0.00	-319.18	-0.01
219	101	0.00	0.00	-40.51	0.00	319.18	0.01
219	98	0.00	0.00	39.76	0.00	-158.59	-0.01
220	120	0.00	0.00	-42.34	0.01	647.76	-0.02
220	119	0.00	0.00	41.77	-0.01	-508.98	0.02
221	119	0.00	0.00	-41.77	0.01	508.98	-0.02
221	121	0.00	0.00	40.91	-0.01	-302.28	0.02
222	121	0.00	0.00	-40.91	0.01	302.28	-0.02
222	118	0.00	0.00	40.15	-0.01	-140.12	0.02
223	140	0.00	0.00	-33.53	0.00	527.16	-0.01
223	139	0.00	0.00	32.96	0.00	-417.45	0.01
224	139	0.00	0.00	-32.96	0.00	417.45	-0.01
224	141	0.00	0.00	32.10	0.00	-254.79	0.01
225	141	0.00	0.00	-32.10	0.00	254.79	-0.01
225	138	0.00	0.00	31.34	0.00	-127.86	0.01
226	160	0.00	0.00	-45.71	0.00	551.15	0.00
226	159	0.00	0.00	44.97	0.00	-356.19	0.00
227	159	0.00	0.00	-44.97	0.00	356.19	0.00
227	158	0.00	0.00	44.28	0.00	-177.69	0.00
228	179	0.01	0.00	-28.43	0.00	316.93	0.00
228	178	-0.01	0.00	27.79	0.00	-212.92	0.00
229	178	0.01	0.00	-27.79	0.00	212.92	0.00
229	177	-0.01	0.00	27.10	0.00	-103.13	0.00
230	5	-0.01	0.00	-6.70	0.00	117.04	-0.01
230	4	0.01	0.00	6.70	0.00	-110.33	0.01
231	194	-0.01	-0.01	-11.13	0.00	146.19	-0.01
231	193	0.01	0.01	11.13	0.00	-135.06	0.00

proc Viaducto Papiol

HIPOTESIS 25

hipo 25 viento + long. estructura

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
1	3	0.00	-0.03	0.00	-0.03	0.00	0.00
1	8	-0.53	0.03	0.00	0.03	-0.01	0.00
2	8	0.53	-0.03	0.00	-0.03	0.01	0.00
2	9	-1.06	0.03	0.00	0.03	-0.02	0.01
3	9	1.06	-0.03	0.00	-0.03	0.02	-0.01
3	10	-1.59	0.03	0.00	0.03	-0.04	0.01
4	10	1.59	-0.03	0.00	-0.03	0.04	-0.01
4	11	-2.11	0.03	0.00	0.03	-0.05	0.01
5	11	2.11	-0.03	0.00	-0.03	0.05	-0.01
5	12	-2.64	0.03	0.00	0.03	-0.07	0.01
6	12	2.64	-0.03	0.01	-0.03	0.07	-0.01
6	13	-3.16	0.03	-0.01	0.03	-0.09	0.01
7	13	3.16	-0.03	0.00	-0.03	0.09	-0.01
7	14	-3.68	0.03	0.00	0.03	-0.11	0.01
8	14	3.68	-0.03	0.01	-0.03	0.11	-0.01
8	15	-4.20	0.03	-0.01	0.03	-0.15	0.01
9	15	4.20	-0.03	0.01	-0.03	0.15	-0.01
9	18	-4.72	0.03	-0.01	0.03	-0.18	0.01
10	18	4.72	-0.03	-0.01	-0.09	0.18	-0.01
10	24	-5.24	0.03	0.01	0.09	-0.14	0.00
11	24	5.24	-0.03	-0.01	-0.09	0.14	0.00
11	25	-5.76	0.03	0.01	0.09	-0.11	-0.01
12	25	5.76	-0.03	0.00	-0.09	0.11	0.01
12	26	-6.30	0.03	0.00	0.09	-0.10	-0.01
13	26	6.30	-0.03	0.00	-0.09	0.10	0.01
13	27	-6.84	0.03	0.00	0.09	-0.08	-0.02
14	27	6.84	-0.03	0.00	-0.09	0.08	0.02
14	28	-7.38	0.03	0.00	0.09	-0.07	-0.02
15	28	7.38	-0.03	0.00	-0.09	0.07	0.02
15	29	-7.94	0.03	0.00	0.09	-0.09	-0.02
16	29	7.94	-0.03	0.00	-0.09	0.09	0.02
16	30	-8.50	0.03	0.00	0.09	-0.10	-0.02
17	30	8.50	-0.03	0.00	-0.09	0.10	0.02
17	31	-9.06	0.03	0.00	0.09	-0.12	-0.01
18	31	9.06	-0.03	0.01	-0.09	0.12	0.01
18	32	-9.64	0.03	-0.01	0.09	-0.16	-0.01
19	32	9.64	-0.03	0.01	-0.09	0.16	0.01
19	33	-10.21	0.03	-0.01	0.09	-0.20	0.00
20	33	10.21	-0.03	0.01	-0.09	0.20	0.00
20	34	-10.80	0.03	-0.01	0.09	-0.26	0.01
21	34	10.80	-0.03	0.02	-0.09	0.26	-0.01
21	37	-11.39	0.03	-0.02	0.09	-0.34	0.02
22	37	11.39	-0.04	-0.02	-0.12	0.34	-0.02
22	44	-11.98	0.04	0.02	0.12	-0.22	0.01
23	44	11.98	-0.04	-0.02	-0.12	0.22	-0.01
23	45	-12.58	0.04	0.02	0.12	-0.13	0.01
24	45	12.58	-0.04	-0.01	-0.12	0.13	-0.01
24	46	-13.18	0.04	0.01	0.12	-0.07	0.00
25	46	13.18	-0.04	-0.01	-0.12	0.07	0.00
25	47	-13.79	0.04	0.01	0.12	0.00	0.00
26	47	13.79	-0.04	-0.01	-0.12	0.00	0.00
26	48	-14.40	0.04	0.01	0.12	0.04	0.00
27	48	14.40	-0.04	-0.01	-0.12	-0.04	0.00
27	49	-15.02	0.04	0.01	0.12	0.08	-0.01
28	49	15.02	-0.04	0.00	-0.12	-0.08	0.01
28	50	-15.64	0.04	0.00	0.12	0.09	-0.01
29	50	15.64	-0.04	0.00	-0.12	-0.09	0.01
29	51	-16.26	0.04	0.00	0.12	0.07	0.00
30	51	16.26	-0.04	0.01	-0.12	-0.07	0.00
30	52	-16.89	0.04	-0.01	0.12	0.02	0.00
31	52	16.89	-0.04	0.01	-0.12	-0.02	0.00
31	53	-17.52	0.04	-0.01	0.12	-0.04	0.00
32	53	17.52	-0.04	0.02	-0.12	0.04	0.00
32	54	-18.15	0.04	-0.02	0.12	-0.12	0.01
33	54	18.15	-0.04	0.02	-0.12	0.12	-0.01
33	57	-18.79	0.04	-0.02	0.12	-0.21	0.01
34	57	18.79	-0.04	-0.03	-0.13	0.21	-0.01
34	64	-19.43	0.04	0.03	0.13	-0.08	0.01
35	64	19.43	-0.04	-0.03	-0.13	0.08	-0.01
35	65	-20.07	0.04	0.03	0.13	0.06	0.00
36	65	20.07	-0.04	-0.01	-0.13	-0.06	0.00
36	66	-20.71	0.04	0.01	0.13	0.11	0.00
37	66	20.71	-0.04	-0.01	-0.13	-0.11	0.00
37	67	-21.35	0.04	0.01	0.13	0.17	0.00
38	67	21.35	-0.04	0.00	-0.13	-0.17	0.00
38	68	-21.99	0.04	0.00	0.13	0.18	-0.01
39	68	21.99	-0.04	-0.01	-0.13	-0.18	0.01
39	69	-22.63	0.04	0.01	0.13	0.24	-0.01
40	69	22.63	-0.04	0.02	-0.13	-0.24	0.01
40	70	-23.27	0.04	-0.02	0.13	0.16	-0.01
41	70	23.27	-0.04	0.01	-0.13	-0.16	0.01
41	71	-23.91	0.04	-0.01	0.13	0.13	-0.02
42	71	23.91	-0.04	0.02	-0.13	-0.13	0.02
42	72	-24.55	0.04	-0.02	0.13	0.05	-0.02
43	72	24.55	-0.04	0.02	-0.13	-0.05	0.02
43	73	-25.19	0.04	-0.02	0.13	-0.07	-0.02
44	73	25.19	-0.04	0.03	-0.13	0.07	0.02
44	74	-25.83	0.04	-0.03	0.13	-0.20	-0.03
45	74	25.83	-0.04	0.04	-0.13	0.20	0.03
45	77	-26.47	0.04	-0.04	0.13	-0.38	-0.03
46	77	26.47	-0.03	-0.04	-0.11	0.38	0.03
46	84	-27.11	0.03	0.04	0.11	-0.20	-0.02
47	84	27.11	-0.03	-0.03	-0.11	0.20	0.02
47	85	-27.75	0.03	0.03	0.11	-0.03	-0.01
48	85	27.75	-0.03	-0.02	-0.11	0.03	0.01
48	86	-28.39	0.03	0.02	0.11	0.09	0.00
49	86	28.39	-0.03	-0.01	-0.11	-0.09	0.00
49	87	-29.03	0.03	0.01	0.11	0.16	0.02
50	87	29.03	-0.03	-0.01	-0.11	-0.16	-0.02
50	88	-29.67	0.03	0.01	0.11	0.22	0.03
51	88	29.67	-0.03	0.00	-0.11	-0.22	-0.03
51	89	-30.31	0.03	0.00	0.11	0.23	0.04
52	89	30.31	-0.03	0.00	-0.11	-0.23	-0.04
52	90	-30.95	0.03	0.00	0.11	0.24	0.05
53	90	30.95	-0.03	0.01	-0.11	-0.24	-0.05
53	91	-31.59	0.03	-0.01	0.11	0.18	0.06
54	91	31.59	-0.03	0.02	-0.11	-0.18	-0.06
54	92	-32.23	0.03	-0.02	0.11	0.07	0.07
55	92	32.23	-0.03	0.04	-0.11	-0.07	-0.07
55	93	-32.87	0.03	-0.04	0.11	-0.11	0.09
56	93	32.87	-0.03	0.04	-0.11	0.11	-0.09
56	94	-33.51	0.03	-0.04	0.11	-0.29	0.10
57	94	33.51	-0.03	0.04	-0.11	0.29	-0.10
57	97	-34.15	0.03	-0.04	0.11	-0.47	0.11

58	97	34.15	-0.05	-0.04	-0.08	0.47	-0.11	90	151	54.44	-0.17	0.06	0.13	-0.08	3.78
58	104	-34.79	0.05	0.04	0.08	-0.26	0.06	90	152	-55.03	0.17	-0.06	-0.13	-0.19	-4.47
59	104	34.79	-0.05	-0.04	-0.08	0.26	-0.06	91	152	55.03	-0.17	0.05	0.13	0.19	4.47
59	105	-35.43	0.05	0.04	0.08	-0.04	0.02	91	153	-55.62	0.17	-0.05	-0.13	-0.46	-5.16
60	105	35.43	-0.05	-0.03	-0.08	0.04	-0.02	92	153	55.62	-0.17	0.08	0.13	0.46	5.16
60	106	-36.07	0.05	0.03	0.08	0.09	-0.03	92	154	-56.19	0.17	-0.08	-0.13	-0.84	-5.85
61	106	36.07	-0.05	-0.03	-0.08	-0.09	0.03	93	154	56.19	-0.17	0.10	0.13	0.84	5.85
61	107	-36.71	0.05	0.03	0.08	0.24	-0.07	93	157	-56.76	0.17	-0.10	-0.13	-1.33	-6.55
62	107	36.71	-0.05	-0.01	-0.08	-0.24	0.07	94	157	56.76	0.50	-0.10	0.16	1.33	6.55
62	108	-37.35	0.05	0.01	0.08	0.31	-0.12	94	163	-57.33	-0.50	0.10	-0.16	-0.82	-3.89
63	108	37.35	-0.05	0.00	-0.08	-0.31	0.12	95	163	57.33	0.50	-0.08	0.15	0.82	3.89
63	109	-37.99	0.05	0.00	0.08	0.30	-0.16	95	164	-57.89	-0.50	0.08	-0.15	-0.41	-1.23
64	109	37.99	-0.05	-0.01	-0.08	-0.30	0.16	96	164	57.89	0.50	-0.06	0.15	0.41	1.23
64	110	-38.63	0.05	0.01	0.08	0.37	-0.21	96	165	-58.45	-0.50	0.06	-0.15	-0.11	1.43
65	110	38.63	-0.05	0.02	-0.08	-0.37	0.21	97	165	58.45	0.50	-0.06	0.15	0.11	-1.43
65	111	-39.27	0.05	-0.02	0.08	0.29	-0.25	97	166	-59.02	-0.50	0.06	-0.15	0.18	4.09
66	111	39.27	-0.05	0.03	-0.08	-0.29	0.25	98	166	59.02	0.50	-0.04	0.16	-0.18	-4.09
66	112	-39.91	0.05	-0.03	0.08	0.14	-0.30	98	167	-59.58	-0.50	0.04	-0.16	0.35	6.75
67	112	39.91	-0.05	0.03	-0.08	-0.14	0.30	99	167	59.58	0.50	-0.01	0.16	-0.35	-6.75
67	113	-40.55	0.05	-0.03	0.08	-0.02	-0.34	99	168	-60.14	-0.50	0.01	-0.16	0.42	9.41
68	113	40.55	-0.05	0.05	-0.08	0.02	0.34	100	168	60.14	0.50	-0.01	0.16	-0.42	-9.41
68	114	-41.19	0.05	-0.05	0.08	-0.26	-0.39	100	169	-60.70	-0.50	0.01	-0.16	0.48	12.07
69	114	41.19	-0.05	0.05	-0.08	0.26	0.39	101	169	60.70	0.50	0.01	0.16	-0.48	-12.07
69	117	-41.83	0.05	-0.05	0.08	-0.50	-0.43	101	170	-61.25	-0.50	-0.01	-0.16	0.42	14.73
70	117	41.83	0.00	-0.05	0.02	0.50	0.43	102	170	61.25	0.50	0.01	0.16	-0.42	-14.73
70	124	-42.47	0.00	0.05	-0.02	-0.25	-0.26	102	171	-61.81	-0.50	-0.01	-0.16	0.37	17.39
71	124	42.47	0.00	-0.07	0.02	0.25	0.26	103	171	61.81	0.50	0.06	0.18	-0.37	-17.39
71	125	-43.11	0.00	0.07	-0.02	0.09	-0.08	103	172	-62.36	-0.50	-0.06	-0.18	0.07	20.04
72	125	43.11	0.00	-0.05	0.02	-0.09	0.08	104	172	62.36	0.50	0.06	0.18	-0.07	-20.04
72	126	-43.75	0.00	0.05	-0.02	0.34	0.09	104	173	-62.92	-0.50	-0.06	-0.18	-0.23	22.70
73	126	43.75	0.00	-0.03	0.02	-0.34	-0.09	105	173	62.92	0.50	0.06	0.18	0.23	-22.70
73	127	-44.39	0.00	0.03	-0.02	0.51	0.27	105	176	-63.47	-0.50	-0.06	-0.18	-0.53	25.36
74	127	44.39	0.00	-0.02	0.02	-0.51	-0.27	106	176	63.47	-3.16	-0.08	0.35	0.53	-25.36
74	128	-45.03	0.00	0.02	-0.02	0.59	0.44	106	182	-64.02	3.16	0.08	-0.35	-0.13	9.70
75	128	45.03	0.00	-0.02	0.02	-0.59	-0.44	107	182	64.02	-3.16	-0.06	0.35	0.13	-9.70
75	129	-45.67	0.00	0.02	-0.02	0.66	0.62	107	183	-64.58	3.16	0.06	-0.35	0.15	-5.96
76	129	45.67	0.00	0.00	0.02	-0.66	-0.62	108	183	64.58	-3.16	-0.05	0.35	-0.15	5.96
76	130	-46.31	0.00	0.00	-0.02	0.66	0.79	108	184	-65.14	3.16	0.05	-0.35	0.42	-21.62
77	130	46.31	0.00	0.02	0.02	-0.66	-0.79	109	184	65.14	-3.16	-0.03	0.34	-0.42	21.62
77	131	-46.95	0.00	-0.02	-0.02	0.56	0.97	109	185	-65.70	3.16	0.03	-0.34	0.57	-37.28
78	131	46.95	0.00	0.00	0.02	-0.56	-0.97	110	185	65.70	-3.16	-0.03	0.34	-0.57	37.28
78	132	-47.59	0.00	0.00	-0.02	0.55	1.14	110	186	-66.26	3.16	0.03	-0.34	0.72	-52.93
79	132	47.59	0.00	0.06	0.03	-0.55	-1.14	111	186	66.26	-3.16	0.02	0.30	-0.72	52.93
79	133	-48.23	0.00	-0.06	-0.03	0.26	1.32	111	187	-66.83	3.16	-0.02	-0.30	0.60	-68.59
80	133	48.23	0.00	0.04	0.02	-0.26	-1.32	112	187	66.83	-3.16	0.02	0.30	-0.60	68.59
80	134	-48.87	0.00	-0.04	-0.02	0.06	1.49	112	188	-67.40	3.16	-0.02	-0.30	0.49	-84.25
81	134	48.87	0.00	0.06	0.03	-0.06	-1.49	113	188	67.40	-3.16	0.05	0.27	-0.49	84.25
81	137	-49.51	0.00	-0.06	-0.03	-0.22	1.67	113	189	-67.97	3.16	-0.05	-0.27	0.25	-99.90
82	137	49.51	-0.17	-0.07	0.13	0.22	-1.67	114	189	67.97	-3.16	0.05	0.27	-0.25	99.90
82	144	-50.15	0.17	0.07	-0.13	0.11	0.99	114	192	-68.54	3.16	-0.05	-0.27	0.00	-115.55
83	144	50.15	-0.17	-0.03	0.13	-0.11	-0.99	134	6	0.00	-0.02	0.00	0.00	0.00	0.00
83	145	-50.78	0.17	0.03	-0.13	0.26	0.32	134	3	0.00	0.02	0.00	0.00	0.00	-0.08
84	145	50.78	-0.17	-0.03	0.13	-0.26	-0.32	135	3	0.00	0.01	0.00	0.00	0.00	0.05
84	146	-51.40	0.17	0.03	-0.13	0.39	-0.36	135	1	0.00	-0.01	0.00	0.00	0.00	0.00
85	146	51.40	-0.17	-0.03	0.13	-0.39	0.36	136	22	-0.02	-0.03	0.00	0.00	0.00	-0.03
85	147	-52.02	0.17	0.03	-0.13	0.54	-1.04	136	18	0.02	0.03	0.00	0.00	0.00	-0.02
86	147	52.02	-0.17	0.01	0.13	-0.54	1.04	137	18	0.00	-0.02	0.00	0.00	0.00	-0.04
86	148	-52.64	0.17	-0.01	-0.13	0.48	-1.72	137	16	0.00	0.02	0.00	0.00	0.00	0.00
87	148	52.64	-0.17	0.01	0.13	-0.48	1.72	138	43	-0.04	-0.03	0.00	0.00	0.00	-0.07
87	149	-53.25	0.17	-0.01	-0.13	0.41	-2.41	138	37	0.04	0.03	0.00	0.00	0.00	0.01
88	149	53.25	-0.17	0.03	0.13	-0.41	2.41	139	37	0.00	-0.03	0.00	0.00	0.00	-0.04
88	150	-53.85	0.17	-0.03	-0.13	0.25	-3.09	139	35	0.00	0.03	0.00	0.00	0.00	0.00
89	150	53.85	-0.17	0.03	0.13	-0.25	3.09	140	63	-0.05	-0.03	0.00	0.00	0.00	-0.09
89	151	-54.44	0.17	-0.03	-0.13	0.08	-3.78	140	57	0.05	0.03	0.00	0.00	0.00	0.04

141	57	0.00	-0.02	0.00	0.00	0.00	-0.04
141	55	0.00	0.02	0.00	0.00	0.00	0.00
142	83	-0.08	-0.03	0.00	0.00	0.00	-0.14
142	77	0.08	0.03	0.00	0.00	0.00	0.08
143	77	0.00	-0.03	0.00	0.00	0.00	-0.06
143	75	0.00	0.03	0.00	0.00	0.00	0.00
144	103	-0.10	-0.05	0.00	0.00	0.00	-0.18
144	97	0.10	0.05	0.00	0.00	0.00	0.09
145	97	0.00	-0.04	0.00	0.00	0.00	-0.06
145	95	0.00	0.04	0.00	0.00	0.00	0.00
146	123	-0.13	-0.01	0.00	0.00	0.00	-0.22
146	117	0.13	0.01	0.00	0.00	0.00	0.20
147	117	0.00	-0.05	0.00	0.00	0.00	-0.10
147	115	0.00	0.05	0.00	0.00	0.00	0.00
148	143	-0.13	-0.11	0.00	0.00	0.00	-0.21
148	137	0.13	0.11	0.00	0.00	0.00	0.01
149	137	0.00	0.06	0.00	0.00	0.00	0.10
149	135	0.00	-0.06	0.00	0.00	0.00	0.00
150	162	-0.20	0.25	0.00	0.00	0.00	-0.34
150	157	0.20	-0.25	0.00	0.00	0.00	0.77
151	157	0.00	-0.42	0.00	0.00	0.00	-0.74
151	156	0.00	0.42	0.00	0.00	0.00	0.00
152	181	-0.16	-1.86	0.00	0.00	0.00	-0.28
152	176	0.16	1.86	0.00	0.00	0.00	-2.99
153	176	0.00	1.80	0.00	0.00	0.00	3.15
153	174	0.00	-1.80	0.00	0.00	0.00	0.00
154	195	-0.06	1.54	34.27	-57.78	0.00	-0.11
154	192	0.06	-1.54	-34.27	57.78	-145.64	6.65
155	192	0.00	-1.62	-34.27	57.78	145.64	-6.90
155	190	0.00	1.62	34.27	-57.78	0.00	0.00
156	7	0.00	0.02	0.00	0.00	0.00	0.00
156	4	0.00	-0.02	0.00	0.00	0.00	0.08
157	4	0.00	-0.01	0.00	0.00	0.00	-0.05
157	2	0.00	0.01	0.00	0.00	0.00	0.00
158	23	0.02	0.03	0.00	0.00	0.00	0.00
158	19	-0.02	-0.03	0.00	0.00	0.00	0.04
159	19	0.00	0.02	0.00	0.00	0.00	0.04
159	17	0.00	-0.02	0.00	0.00	0.00	0.00
160	42	0.04	0.03	0.00	0.00	0.00	0.00
160	38	-0.04	-0.03	0.00	0.00	0.00	0.05
161	38	0.00	0.03	0.00	0.00	0.00	0.04
161	36	0.00	-0.03	0.00	0.00	0.00	0.00
162	62	0.05	0.03	0.00	0.00	0.00	0.00
162	58	-0.05	-0.03	0.00	0.00	0.00	0.05
163	58	0.00	0.02	0.00	0.00	0.00	0.04
163	56	0.00	-0.02	0.00	0.00	0.00	0.00
164	82	0.08	0.03	0.00	0.00	0.00	0.00
164	78	-0.08	-0.03	0.00	0.00	0.00	0.06
165	78	0.00	0.03	0.00	0.00	0.00	0.06
165	76	0.00	-0.03	0.00	0.00	0.00	0.00
166	102	0.10	0.05	0.00	0.00	0.00	0.00
166	98	-0.10	-0.05	0.00	0.00	0.00	0.08
167	98	0.00	0.04	0.00	0.00	0.00	0.06
167	96	0.00	-0.04	0.00	0.00	0.00	0.00
168	122	0.13	0.01	0.00	0.00	0.00	0.00
168	118	-0.13	-0.01	0.00	0.00	0.00	0.02
169	118	0.00	0.05	0.00	0.00	0.00	0.10
169	116	0.00	-0.05	0.00	0.00	0.00	0.00
170	142	0.13	0.11	0.00	0.00	0.00	0.00
170	138	-0.13	-0.11	0.00	0.00	0.00	0.20
171	138	0.00	-0.06	0.00	0.00	0.00	-0.10
171	136	0.00	0.06	0.00	0.00	0.00	0.00
172	161	0.20	-0.25	0.00	0.00	0.00	0.00
172	158	-0.20	0.25	0.00	0.00	0.00	-0.43
173	158	0.00	0.42	0.00	0.00	0.00	0.74
173	155	0.00	-0.42	0.00	0.00	0.00	0.00
174	180	0.16	1.86	0.00	0.00	0.00	0.00
174	177	-0.16	-1.86	0.00	0.00	0.00	3.26
175	177	0.00	-1.80	0.00	0.00	0.00	-3.15
175	175	0.00	1.80	0.00	0.00	0.00	0.00
176	196	0.06	-1.54	-34.27	0.00	0.00	0.00
176	193	-0.06	1.54	34.27	0.00	145.64	-6.55
177	193	0.00	1.62	34.27	0.00	-145.64	6.90
177	191	0.00	-1.62	-34.27	0.00	0.00	0.00
182	7	-0.02	0.00	0.00	0.00	0.00	0.00
182	6	0.02	0.00	0.00	0.00	0.00	0.00
183	2	-0.01	0.00	0.00	0.00	0.00	0.00
183	1	0.01	0.00	0.00	0.00	0.00	0.00
184	23	-0.03	0.00	-0.02	0.00	0.00	0.00
184	22	0.03	0.00	0.02	0.00	0.03	0.00
185	17	0.02	0.00	0.00	0.00	0.00	0.00
185	16	-0.02	0.00	0.00	0.00	0.00	0.00
186	42	-0.03	0.00	-0.04	0.00	0.00	0.00
186	43	0.03	0.00	0.04	0.00	0.07	0.00
187	36	0.03	0.00	0.00	0.00	0.00	0.00
187	35	-0.03	0.00	0.00	0.00	0.00	0.00
188	62	-0.03	0.00	-0.05	0.00	0.00	0.00
188	63	0.03	0.00	0.05	0.00	0.09	0.00
189	56	0.02	0.00	0.00	0.00	0.00	0.00
189	55	-0.02	0.00	0.00	0.00	0.00	0.00
190	82	-0.03	0.00	-0.08	0.00	0.00	0.00
190	83	0.03	0.00	0.08	0.00	0.14	0.00
191	76	0.03	0.00	0.00	0.00	0.00	0.00
191	75	-0.03	0.00	0.00	0.00	0.00	0.00
192	102	-0.05	0.00	-0.10	0.00	0.00	0.00
192	103	0.05	0.00	0.10	0.00	0.18	0.00
193	96	0.04	0.00	0.00	0.00	0.00	0.00
193	95	-0.04	0.00	0.00	0.00	0.00	0.00
194	122	-0.01	0.00	-0.13	0.00	0.00	0.00
194	123	0.01	0.00	0.13	0.00	0.22	0.00
195	116	0.05	0.00	0.00	0.00	0.00	0.00
195	115	-0.05	0.00	0.00	0.00	0.00	0.00
196	142	-0.11	0.00	-0.13	0.00	0.00	0.00
196	143	0.11	0.00	0.13	0.00	0.21	0.00
197	136	-0.06	0.00	0.00	0.00	0.00	0.00
197	135	0.06	0.00	0.00	0.00	0.00	0.00
198	161	0.25	0.00	-0.20	0.00	0.00	0.00
198	162	-0.25	0.00	0.20	0.00	0.34	0.00
199	155	0.42	0.00	0.00	0.00	0.00	0.00
199	156	-0.42	0.00	0.00	0.00	0.00	0.00
200	180	-1.86	0.00	-0.16	0.00	0.00	0.00
200	181	1.86	0.00	0.16	0.00	0.28	0.00
201	175	-1.80	0.00	0.00	0.00	0.00	0.00
201	174	1.80	0.00	0.00	0.00	0.00	0.00
202	196	1.54	34.27	-0.06	0.00	0.00	0.00
202	195	-1.54	-34.27	0.06	0.00	0.11	57.78
203	191	1.62	34.27	0.00	0.00	0.00	0.00
203	190	-1.62	-34.27	0.00	0.00	0.00	57.78
206	21	0.00	3.22	-0.02	0.00	0.18	11.07
206	20	0.00	-2.30	0.02	0.00	-0.15	-5.00
207	20	0.00	2.30	-0.02	0.00	0.15	5.00
207	19	0.00	0.00	0.02	0.00	-0.09	0.00
208	40	0.00	4.76	-0.04	0.00	0.47	25.34
208	39	0.00	-4.50	0.04	0.00	-0.45	-22.56
209	39	0.00	4.50	-0.04	0.00	0.45	22.56
209	41	0.00	-2.40	0.04	0.00	-0.25	-5.29
210	41	0.00	2.40	-0.04	0.00	0.25	5.29
210	38	0.00	0.00	0.04	0.00	-0.10	0.00

211	60	0.00	6.07	-0.05	0.00	0.72	41.60
211	59	0.00	-4.68	0.05	0.00	-0.55	-23.85
212	59	0.00	4.68	-0.05	0.00	0.55	23.85
212	61	0.00	-2.57	0.05	0.00	-0.29	-5.71
213	61	0.00	2.57	-0.05	0.00	0.29	5.71
213	58	0.00	0.00	0.05	0.00	-0.09	0.00
214	80	0.00	6.07	-0.08	0.00	1.11	41.60
214	79	0.00	-4.68	0.08	0.00	-0.84	-23.85
215	79	0.00	4.68	-0.08	0.00	0.84	23.85
215	81	0.00	-2.57	0.08	0.00	-0.44	-5.71
216	81	0.00	2.57	-0.08	0.00	0.44	5.71
216	78	0.00	0.00	0.08	0.00	-0.12	0.00
217	100	-0.01	6.07	-0.10	0.00	1.43	41.60
217	99	0.01	-4.68	0.10	0.00	-1.09	-23.85
218	99	-0.01	4.68	-0.10	0.00	1.09	23.85
218	101	0.01	-2.57	0.10	0.00	-0.57	-5.71
219	101	-0.01	2.57	-0.10	0.00	0.57	5.71
219	98	0.01	0.00	0.10	0.00	-0.15	0.00
220	120	0.04	6.07	-0.13	0.00	1.72	41.60
220	119	-0.04	-4.68	0.13	0.00	-1.29	-23.85
221	119	0.04	4.68	-0.13	0.00	1.29	23.85
221	121	-0.04	-2.57	0.13	0.00	-0.64	-5.71
222	121	0.04	2.57	-0.13	0.00	0.64	5.71
222	118	-0.04	0.00	0.13	0.00	-0.11	0.00
223	140	-0.17	6.07	-0.13	0.00	1.65	41.60
223	139	0.17	-4.68	0.13	0.00	-1.23	-23.85
224	139	-0.17	4.68	-0.13	0.00	1.23	23.85
224	141	0.17	-2.57	0.13	0.00	-0.61	-5.71
225	141	-0.17	2.57	-0.13	0.00	0.61	5.71
225	138	0.17	0.00	0.13	0.00	-0.10	0.00
226	160	0.67	4.12	-0.20	0.00	1.98	18.91
226	159	-0.67	-2.32	0.20	0.00	-1.12	-5.06
227	159	0.67	2.32	-0.20	0.00	1.12	5.06
227	158	-0.67	0.00	0.20	0.00	-0.31	0.00
228	179	-3.66	3.85	-0.16	0.00	1.38	16.37
228	178	3.66	-2.30	0.16	0.00	-0.77	-5.00
229	178	-3.66	2.30	-0.16	0.00	0.77	5.00
229	177	3.66	0.00	0.16	0.00	-0.12	0.00
230	5	-0.03	0.00	0.00	0.00	0.03	0.00
230	4	0.03	0.00	0.00	0.00	-0.03	0.00
231	194	3.16	68.54	-0.06	0.00	0.41	68.54
231	193	-3.16	-68.54	0.06	0.00	-0.35	0.00

HIPOTESIS 27

hipo 27 viento + long. est.+ sobrecarga

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
1	3	0.00	-0.35	0.00	-0.04	0.00	0.00
1	8	-0.67	0.35	0.00	0.04	-0.01	0.04
2	8	0.67	-0.35	0.00	-0.04	0.01	-0.04
2	9	-1.34	0.35	0.00	0.04	-0.03	0.07
3	9	1.34	-0.35	0.00	-0.04	0.03	-0.07
3	10	-2.01	0.35	0.00	0.04	-0.05	0.09
4	10	2.01	-0.35	0.00	-0.04	0.05	-0.09
4	11	-2.67	0.35	0.00	0.04	-0.06	0.11
5	11	2.67	-0.35	0.00	-0.04	0.06	-0.11
5	12	-3.33	0.35	0.00	0.04	-0.08	0.12
6	12	3.33	-0.35	0.01	-0.04	0.08	-0.12
6	13	-3.99	0.35	-0.01	0.04	-0.12	0.13
7	13	3.99	-0.35	0.01	-0.04	0.12	-0.13
7	14	-4.65	0.35	-0.01	0.04	-0.14	0.13
8	14	4.65	-0.35	0.01	-0.04	0.14	-0.13
8	15	-5.31	0.35	-0.01	0.04	-0.19	0.13
9	15	5.31	-0.35	0.01	-0.04	0.19	-0.13
9	18	-5.97	0.35	-0.01	0.04	-0.23	0.12
10	18	5.97	-0.38	-0.01	-0.12	0.23	-0.12
10	24	-6.62	0.38	0.01	0.12	-0.18	0.01
11	24	6.62	-0.38	-0.01	-0.12	0.18	-0.01
11	25	-7.29	0.38	0.01	0.12	-0.14	-0.08
12	25	7.29	-0.38	0.00	-0.12	0.14	0.08
12	26	-7.96	0.38	0.00	0.12	-0.13	-0.14
13	26	7.97	-0.38	-0.01	-0.12	0.13	0.14
13	27	-8.65	0.38	0.01	0.12	-0.10	-0.18
14	27	8.65	-0.38	0.00	-0.12	0.10	0.18
14	28	-9.34	0.38	0.00	0.12	-0.09	-0.20
15	28	9.34	-0.38	0.01	-0.12	0.09	0.20
15	29	-10.04	0.38	-0.01	0.12	-0.12	-0.20
16	29	10.04	-0.38	0.00	-0.12	0.12	0.20
16	30	-10.75	0.38	0.00	0.12	-0.12	-0.18
17	30	10.75	-0.38	0.01	-0.12	0.12	0.18
17	31	-11.47	0.38	-0.01	0.12	-0.15	-0.13
18	31	11.47	-0.38	0.01	-0.12	0.15	0.13
18	32	-12.19	0.38	-0.01	0.12	-0.20	-0.06
19	32	12.19	-0.38	0.01	-0.12	0.20	0.06
19	33	-12.92	0.38	-0.01	0.12	-0.25	0.02
20	33	12.92	-0.38	0.01	-0.12	0.25	-0.02
20	34	-13.66	0.38	-0.01	0.12	-0.33	0.13
21	34	13.66	-0.38	0.02	-0.12	0.33	-0.13
21	37	-14.41	0.38	-0.02	0.12	-0.43	0.25
22	37	14.41	-0.42	-0.03	-0.16	0.43	-0.25
22	44	-15.16	0.42	0.03	0.16	-0.28	0.16
23	44	15.16	-0.42	-0.02	-0.16	0.28	-0.16
23	45	-15.91	0.42	0.02	0.16	-0.17	0.08
24	45	15.91	-0.42	-0.02	-0.16	0.17	-0.08
24	46	-16.68	0.42	0.02	0.16	-0.09	0.02
25	46	16.68	-0.42	-0.02	-0.16	0.09	-0.02
25	47	-17.44	0.42	0.02	0.16	0.00	-0.03
26	47	17.44	-0.42	-0.01	-0.16	0.00	0.03
26	48	-18.22	0.42	0.01	0.16	0.05	-0.06
27	48	18.22	-0.42	-0.01	-0.16	-0.05	0.06
27	49	-19.00	0.42	0.01	0.16	0.10	-0.08
28	49	19.00	-0.42	0.00	-0.16	-0.10	0.08
28	50	-19.78	0.42	0.00	0.16	0.11	-0.09
29	50	19.78	-0.42	0.01	-0.16	-0.11	0.09
29	51	-20.57	0.42	-0.01	0.16	0.09	-0.09
30	51	20.57	-0.42	0.01	-0.16	-0.09	0.09
30	52	-21.36	0.42	-0.01	0.16	0.02	-0.07
31	52	21.36	-0.42	0.01	-0.16	-0.02	0.07
31	53	-22.16	0.42	-0.01	0.16	-0.05	-0.04
32	53	22.16	-0.42	0.02	-0.16	0.05	0.04
32	54	-22.96	0.42	-0.02	0.16	-0.16	0.01
33	54	22.96	-0.42	0.02	-0.16	0.16	-0.01
33	57	-23.77	0.42	-0.02	0.16	-0.26	0.06
34	57	23.77	-0.44	-0.03	-0.16	0.26	-0.06
34	64	-24.58	0.44	0.03	0.16	-0.10	0.05
35	64	24.58	-0.44	-0.03	-0.16	0.10	-0.05
35	65	-25.39	0.44	0.03	0.16	0.07	0.05
36	65	25.39	-0.44	-0.01	-0.16	-0.07	-0.05
36	66	-26.20	0.44	0.01	0.16	0.14	0.04
37	66	26.20	-0.44	-0.01	-0.16	-0.14	-0.04
37	67	-27.01	0.44	0.01	0.16	0.21	0.03
38	67	27.01	-0.44	0.00	-0.16	-0.21	-0.03
38	68	-27.82	0.44	0.00	0.16	0.23	0.02
39	68	27.82	-0.44	-0.01	-0.16	-0.23	-0.02
39	69	-28.62	0.44	0.01	0.16	0.30	0.01
40	69	28.62	-0.44	0.02	-0.16	-0.30	-0.01
40	70	-29.43	0.44	-0.02	0.16	0.20	0.00
41	70	29.43	-0.44	0.01	-0.16	-0.20	0.00
41	71	-30.24	0.44	-0.01	0.16	0.16	-0.01
42	71	30.24	-0.44	0.02	-0.16	-0.16	0.01
42	72	-31.05	0.44	-0.02	0.16	0.06	-0.02
43	72	31.05	-0.44	0.03	-0.16	-0.06	0.02
43	73	-31.86	0.44	-0.03	0.16	-0.09	-0.03
44	73	31.86	-0.44	0.03	-0.16	0.09	0.03
44	74	-32.67	0.44	-0.03	0.16	-0.25	-0.04
45	74	32.67	-0.44	0.04	-0.16	0.25	0.04
45	77	-33.48	0.44	-0.04	0.16	-0.48	-0.05
46	77	33.48	-0.43	-0.04	-0.14	0.48	0.05
46	84	-34.29	0.43	0.04	0.14	-0.25	-0.04
47	84	34.29	-0.43	-0.04	-0.14	0.25	0.04
47	85	-35.10	0.43	0.04	0.14	-0.03	-0.02
48	85	35.10	-0.43	-0.03	-0.14	0.03	0.02
48	86	-35.91	0.43	0.03	0.14	0.12	0.00
49	86	35.91	-0.43	-0.02	-0.14	-0.12	0.00
49	87	-36.72	0.43	0.02	0.14	0.20	0.01
50	87	36.72	-0.43	-0.02	-0.14	-0.20	-0.01
50	88	-37.53	0.43	0.02	0.14	0.28	0.03
51	88	37.53	-0.43	0.00	-0.14	-0.28	-0.03
51	89	-38.34	0.43	0.00	0.14	0.29	0.04
52	89	38.34	-0.43	0.00	-0.14	-0.29	-0.04
52	90	-39.15	0.43	0.00	0.14	0.30	0.06
53	90	39.15	-0.43	0.01	-0.14	-0.30	-0.06
53	91	-39.96	0.43	-0.01	0.14	0.23	0.07
54	91	39.96	-0.43	0.03	-0.14	-0.23	-0.07
54	92	-40.77	0.43	-0.03	0.14	0.09	0.09
55	92	40.77	-0.43	0.05	-0.14	-0.09	-0.09
55	93	-41.58	0.43	-0.05	0.14	-0.14	0.10
56	93	41.58	-0.43	0.04	-0.14	0.14	-0.10
56	94	-42.39	0.43	-0.04	0.14	-0.36	0.12
57	94	42.39	-0.43	0.05	-0.14	0.36	-0.12
57	97	-43.20	0.43	-0.05	0.14	-0.59	0.13

58	97	43.20	-0.45	-0.05	-0.10	0.59	-0.13	90	151	68.87	-0.59	0.07	0.16	-0.11	4.63
58	104	-44.00	0.45	0.05	0.10	-0.32	0.08	90	152	-69.61	0.59	-0.07	-0.16	-0.24	-5.55
59	104	44.01	-0.45	-0.05	-0.10	0.32	-0.08	91	152	69.61	-0.59	0.07	0.16	0.24	5.55
59	105	-44.81	0.45	0.05	0.10	-0.05	0.02	91	153	-70.35	0.59	-0.07	-0.16	-0.59	-6.50
60	105	44.81	-0.45	-0.03	-0.10	0.05	-0.02	92	153	70.35	-0.59	0.10	0.16	0.59	6.50
60	106	-45.62	0.45	0.03	0.10	0.12	-0.03	92	154	-71.08	0.59	-0.10	-0.16	-1.07	-7.46
61	106	45.62	-0.45	-0.04	-0.10	-0.12	0.03	93	154	71.08	-0.59	0.12	0.16	1.07	7.46
61	107	-46.43	0.45	0.04	0.10	0.30	-0.08	93	157	-71.80	0.59	-0.12	-0.16	-1.68	-8.45
62	107	46.43	-0.45	-0.02	-0.10	-0.30	0.08	94	157	71.80	0.30	-0.13	0.20	1.68	8.45
62	108	-47.24	0.45	0.02	0.10	0.39	-0.14	94	163	-72.51	-0.30	0.13	-0.20	-1.03	-5.05
63	108	47.24	-0.45	0.00	-0.10	-0.39	0.14	95	163	72.51	0.30	-0.10	0.20	1.03	5.05
63	109	-48.05	0.45	0.00	0.10	0.38	-0.19	95	164	-73.23	-0.30	0.10	-0.20	-0.52	-1.65
64	109	48.05	-0.45	-0.02	-0.10	-0.38	0.19	96	164	73.23	0.30	-0.07	0.19	0.52	1.65
64	110	-48.86	0.45	0.02	0.10	0.47	-0.25	96	165	-73.94	-0.30	0.07	-0.19	-0.14	1.74
65	110	48.86	-0.45	0.02	-0.10	-0.47	0.25	97	165	73.94	0.30	-0.07	0.19	0.14	-1.74
65	111	-49.67	0.45	-0.02	0.10	0.37	-0.30	97	166	-74.65	-0.30	0.07	-0.19	0.22	5.13
66	111	49.67	-0.45	0.04	-0.10	-0.37	0.30	98	166	74.65	0.30	-0.05	0.20	-0.22	-5.13
66	112	-50.48	0.45	-0.04	0.10	0.17	-0.35	98	167	-75.36	-0.30	0.05	-0.20	0.45	8.52
67	112	50.48	-0.45	0.04	-0.10	-0.17	0.35	99	167	75.36	0.30	-0.02	0.20	-0.45	-8.52
67	113	-51.29	0.45	-0.04	0.10	-0.03	-0.41	99	168	-76.07	-0.30	0.02	-0.20	0.53	11.90
68	113	51.29	-0.45	0.06	-0.10	0.03	0.41	100	168	76.07	0.30	-0.01	0.20	-0.53	-11.90
68	114	-52.10	0.45	-0.06	0.10	-0.33	-0.46	100	169	-76.77	-0.30	0.01	-0.20	0.61	15.28
69	114	52.10	-0.45	0.06	-0.10	0.33	0.46	101	169	76.77	0.30	0.01	0.21	-0.61	-15.28
69	117	-52.91	0.45	-0.06	0.10	-0.63	-0.51	101	170	-77.48	-0.30	-0.01	-0.21	0.53	18.65
70	117	52.91	-0.39	-0.06	0.03	0.63	0.51	102	170	77.48	0.30	0.01	0.21	-0.53	-18.65
70	124	-53.72	0.39	0.06	-0.03	-0.31	-0.31	102	171	-78.18	-0.30	-0.01	-0.21	0.46	22.03
71	124	53.72	-0.39	-0.09	0.03	0.31	0.31	103	171	78.18	0.30	0.08	0.22	-0.46	-22.03
71	125	-54.53	0.39	0.09	-0.03	0.12	-0.10	103	172	-78.89	-0.30	-0.08	-0.22	0.09	25.39
72	125	54.53	-0.39	-0.06	0.03	-0.12	0.10	104	172	78.89	0.30	0.08	0.22	-0.09	-25.39
72	126	-55.34	0.39	0.06	-0.03	0.43	0.11	104	173	-79.59	-0.30	-0.08	-0.22	-0.29	28.76
73	126	55.34	-0.39	-0.04	0.03	-0.43	-0.11	105	173	79.59	0.30	0.08	0.22	0.29	-28.76
73	127	-56.15	0.39	0.04	-0.03	0.64	0.32	105	176	-80.29	-0.30	-0.08	-0.22	-0.67	32.12
74	127	56.15	-0.39	-0.02	0.03	-0.64	-0.32	106	176	80.29	-4.35	-0.10	0.44	0.67	-32.12
74	128	-56.96	0.39	0.02	-0.03	0.74	0.53	106	182	-80.99	4.35	0.10	-0.44	-0.16	12.28
75	128	56.96	-0.39	-0.02	0.03	-0.74	-0.53	107	182	80.99	-4.35	-0.07	0.45	0.16	-12.27
75	129	-57.77	0.39	0.02	-0.03	0.84	0.73	107	183	-81.69	4.35	0.07	-0.45	0.19	-7.56
76	129	57.77	-0.39	0.00	0.03	-0.84	-0.73	108	183	81.69	-4.35	-0.07	0.45	-0.19	7.56
76	130	-58.58	0.39	0.00	-0.03	0.83	0.94	108	184	-82.40	4.35	0.07	-0.45	0.53	-27.38
77	130	58.58	-0.39	0.03	0.03	-0.83	-0.94	109	184	82.40	-4.35	-0.04	0.44	-0.53	27.38
77	131	-59.39	0.39	-0.03	-0.03	0.70	1.15	109	185	-83.11	4.35	0.04	-0.44	0.72	-47.20
78	131	59.39	-0.39	0.00	0.03	-0.70	-1.15	110	185	83.11	-4.35	-0.04	0.43	-0.72	47.20
78	132	-60.20	0.39	0.00	-0.03	0.69	1.36	110	186	-83.82	4.35	0.04	-0.43	0.90	-67.01
79	132	60.20	-0.39	0.07	0.03	-0.69	-1.36	111	186	83.82	-4.35	0.03	0.38	-0.90	67.01
79	133	-61.00	0.39	-0.07	-0.03	0.33	1.57	111	187	-84.53	4.35	-0.03	-0.38	0.76	-86.81
80	133	61.00	-0.39	0.05	0.03	-0.33	-1.57	112	187	84.53	-4.35	0.03	0.38	-0.76	86.81
80	134	-61.81	0.39	-0.05	-0.03	0.08	1.78	112	188	-85.25	4.35	-0.03	-0.38	0.62	-106.60
81	134	61.81	-0.39	0.07	0.03	-0.08	-1.78	113	188	85.25	-4.35	0.06	0.34	-0.62	106.60
81	137	-62.62	0.39	-0.07	-0.03	-0.28	1.98	113	189	-85.97	4.35	-0.06	-0.34	0.31	-126.39
82	137	62.62	-0.59	-0.09	0.17	0.28	-1.98	114	189	85.97	-4.35	0.06	0.34	-0.31	126.39
82	144	-63.43	0.59	0.09	-0.17	0.14	1.23	114	192	-86.70	4.35	-0.06	-0.34	0.00	-146.17
83	144	63.43	-0.59	-0.04	0.17	-0.14	-1.22	134	6	0.00	-0.18	0.00	0.00	0.00	0.00
83	145	-64.23	0.59	0.04	-0.17	0.32	0.45	134	3	0.00	0.18	0.00	0.00	0.00	-0.78
84	145	64.23	-0.59	-0.03	0.17	-0.32	-0.45	135	3	0.00	0.17	0.00	0.00	0.00	0.73
84	146	-65.02	0.59	0.03	-0.17	0.50	-0.35	135	1	0.00	-0.17	0.00	0.00	0.00	0.00
85	146	65.02	-0.59	-0.04	0.17	-0.50	0.35	136	22	-0.02	-0.04	0.00	0.00	0.00	-0.03
85	147	-65.81	0.59	0.04	-0.17	0.68	-1.16	136	18	0.02	0.04	0.00	0.00	0.00	-0.04
86	147	65.81	-0.59	0.02	0.17	-0.68	1.16	137	18	0.00	-0.02	0.00	0.00	0.00	-0.03
86	148	-66.58	0.59	-0.02	-0.17	0.60	-2.00	137	16	0.00	0.02	0.00	0.00	0.00	0.00
87	148	66.58	-0.59	0.02	0.17	-0.60	2.00	138	43	-0.05	-0.06	0.00	0.00	0.00	-0.08
87	149	-67.35	0.59	-0.02	-0.17	0.52	-2.86	138	37	0.05	0.06	0.00	0.00	0.00	-0.02
88	149	67.35	-0.59	0.04	0.17	-0.52	2.86	139	37	0.00	-0.01	0.00	0.00	0.00	-0.02
88	150	-68.11	0.59	-0.04	-0.17	0.32	-3.73	139	35	0.00	0.01	0.00	0.00	0.00	0.00
89	150	68.11	-0.59	0.04	0.17	-0.32	3.73	140	63	-0.06	-0.04	0.00	0.00	0.00	-0.11
89	151	-68.87	0.59	-0.04	-0.17	0.11	-4.63	140	57	0.06	0.04	0.00	0.00	0.00	0.04

141	57	0.00	-0.03	0.00	0.00	0.00	-0.04
141	55	0.00	0.03	0.00	0.00	0.00	0.00
142	83	-0.10	-0.04	0.00	0.00	0.00	-0.17
142	77	0.10	0.04	0.00	0.00	0.00	0.10
143	77	0.00	-0.04	0.00	0.00	0.00	-0.08
143	75	0.00	0.04	0.00	0.00	0.00	0.00
144	103	-0.13	-0.06	0.00	0.00	0.00	-0.22
144	97	0.13	0.06	0.00	0.00	0.00	0.12
145	97	0.00	-0.05	0.00	0.00	0.00	-0.08
145	95	0.00	0.05	0.00	0.00	0.00	0.00
146	123	-0.16	-0.01	0.00	0.00	0.00	-0.28
146	117	0.16	0.01	0.00	0.00	0.00	0.25
147	117	0.00	-0.07	0.00	0.00	0.00	-0.12
147	115	0.00	0.07	0.00	0.00	0.00	0.00
148	143	-0.16	-0.13	0.00	0.00	0.00	-0.27
148	137	0.16	0.13	0.00	0.00	0.00	0.03
149	137	0.00	0.06	0.00	0.00	0.00	0.10
149	135	0.00	-0.06	0.00	0.00	0.00	0.00
150	162	-0.26	0.33	0.00	0.00	0.00	-0.43
150	157	0.26	-0.33	0.00	0.00	0.00	1.01
151	157	0.00	-0.55	0.00	0.00	0.00	-0.97
151	156	0.00	0.55	0.00	0.00	0.00	0.00
152	181	-0.21	-2.36	0.00	0.00	0.00	-0.35
152	176	0.21	2.36	0.00	0.00	0.00	-3.78
153	176	0.00	2.28	0.00	0.00	0.00	3.99
153	174	0.00	-2.28	0.00	0.00	0.00	0.00
154	195	-0.08	2.12	43.35	-73.08	0.00	-0.13
154	192	0.08	-2.12	-43.35	73.08	-184.23	9.15
155	192	0.00	-2.23	-43.35	73.08	184.23	-9.46
155	190	0.00	2.23	43.35	-73.08	0.00	0.00
156	7	0.00	0.18	0.00	0.00	0.00	0.00
156	4	0.00	-0.18	0.00	0.00	0.00	0.77
157	4	0.00	-0.17	0.00	0.00	0.00	-0.73
157	2	0.00	0.17	0.00	0.00	0.00	0.00
158	23	0.02	0.04	0.00	0.00	0.00	0.00
158	19	-0.02	-0.04	0.00	0.00	0.00	0.07
159	19	0.00	0.02	0.00	0.00	0.00	0.03
159	17	0.00	-0.02	0.00	0.00	0.00	0.00
160	42	0.05	0.06	0.00	0.00	0.00	0.00
160	38	-0.05	-0.06	0.00	0.00	0.00	0.10
161	38	0.00	0.01	0.00	0.00	0.00	0.02
161	36	0.00	-0.01	0.00	0.00	0.00	0.00
162	62	0.06	0.04	0.00	0.00	0.00	0.00
162	58	-0.06	-0.04	0.00	0.00	0.00	0.07
163	58	0.00	0.03	0.00	0.00	0.00	0.04
163	56	0.00	-0.03	0.00	0.00	0.00	0.00
164	82	0.10	0.04	0.00	0.00	0.00	0.00
164	78	-0.10	-0.04	0.00	0.00	0.00	0.07
165	78	0.00	0.04	0.00	0.00	0.00	0.08
165	76	0.00	-0.04	0.00	0.00	0.00	0.00
166	102	0.13	0.06	0.00	0.00	0.00	0.00
166	98	-0.13	-0.06	0.00	0.00	0.00	0.11
167	98	0.00	0.05	0.00	0.00	0.00	0.08
167	96	0.00	-0.05	0.00	0.00	0.00	0.00
168	122	0.16	0.01	0.00	0.00	0.00	0.00
168	118	-0.16	-0.01	0.00	0.00	0.00	0.03
169	118	0.00	0.07	0.00	0.00	0.00	0.12
169	116	0.00	-0.07	0.00	0.00	0.00	0.00
170	142	0.16	0.13	0.00	0.00	0.00	0.00
170	138	-0.16	-0.13	0.00	0.00	0.00	0.23
171	138	0.00	-0.06	0.00	0.00	0.00	-0.10
171	136	0.00	0.06	0.00	0.00	0.00	0.00
172	161	0.26	-0.33	0.00	0.00	0.00	0.00
172	158	-0.26	0.33	0.00	0.00	0.00	-0.57
173	158	0.00	0.55	0.00	0.00	0.00	0.97
173	155	0.00	-0.55	0.00	0.00	0.00	0.00
174	180	0.21	2.36	0.00	0.00	0.00	0.00
174	177	-0.21	-2.36	0.00	0.00	0.00	4.13
175	177	0.00	-2.28	0.00	0.00	0.00	-3.99
175	175	0.00	2.28	0.00	0.00	0.00	0.00
176	196	0.08	-2.12	-43.35	0.00	0.00	0.00
176	193	-0.08	2.12	43.35	0.00	184.23	-9.01
177	193	0.00	2.23	43.35	0.00	-184.23	9.46
177	191	0.00	-2.23	-43.35	0.00	0.00	0.00
182	7	-0.18	0.00	0.00	0.00	0.00	0.00
182	6	0.18	0.00	0.00	0.00	0.00	0.00
183	2	-0.17	0.00	0.00	0.00	0.00	0.00
183	1	0.17	0.00	0.00	0.00	0.00	0.00
184	23	-0.04	0.00	-0.02	0.00	0.00	0.00
184	22	0.04	0.00	0.02	0.00	0.03	0.00
185	17	0.02	0.00	0.00	0.00	0.00	0.00
185	16	-0.02	0.00	0.00	0.00	0.00	0.00
186	42	-0.06	0.00	-0.05	0.00	0.00	0.00
186	43	0.06	0.00	0.05	0.00	0.08	0.00
187	36	0.01	0.00	0.00	0.00	0.00	0.00
187	35	-0.01	0.00	0.00	0.00	0.00	0.00
188	62	-0.04	0.00	-0.06	0.00	0.00	0.00
188	63	0.04	0.00	0.06	0.00	0.11	0.00
189	56	0.03	0.00	0.00	0.00	0.00	0.00
189	55	-0.03	0.00	0.00	0.00	0.00	0.00
190	82	-0.04	0.00	-0.10	0.00	0.00	0.00
190	83	0.04	0.00	0.10	0.00	0.17	0.00
191	76	0.04	0.00	0.00	0.00	0.00	0.00
191	75	-0.04	0.00	0.00	0.00	0.00	0.00
192	102	-0.06	0.00	-0.13	0.00	0.00	0.00
192	103	0.06	0.00	0.13	0.00	0.22	0.00
193	96	0.05	0.00	0.00	0.00	0.00	0.00
193	95	-0.05	0.00	0.00	0.00	0.00	0.00
194	122	-0.01	0.00	-0.17	0.00	0.00	0.00
194	123	0.01	0.00	0.17	0.00	0.28	0.00
195	116	0.07	0.00	0.00	0.00	0.00	0.00
195	115	-0.07	0.00	0.00	0.00	0.00	0.00
196	142	-0.13	0.00	-0.16	0.00	0.00	0.00
196	143	0.13	0.00	0.16	0.00	0.27	0.00
197	136	-0.06	0.00	0.00	0.00	0.00	0.00
197	135	0.06	0.00	0.00	0.00	0.00	0.00
198	161	0.33	0.00	-0.26	0.00	0.00	0.00
198	162	-0.33	0.00	0.26	0.00	0.43	0.00
199	155	0.55	0.00	0.00	0.00	0.00	0.00
199	156	-0.55	0.00	0.00	0.00	0.00	0.00
200	180	-2.36	0.00	-0.21	0.00	0.00	0.00
200	181	2.36	0.00	0.21	0.00	0.35	0.00
201	175	-2.28	0.00	0.00	0.00	0.00	0.00
201	174	2.28	0.00	0.00	0.00	0.00	0.00
202	196	2.12	43.35	-0.08	0.00	0.00	0.00
202	195	-2.12	-43.35	0.08	0.00	0.13	73.08
203	191	2.23	43.35	0.00	0.00	0.00	0.00
203	190	-2.23	-43.35	0.00	0.00	0.00	73.08
206	21	-0.02	1.61	-0.02	0.00	0.23	5.54
206	20	0.02	-1.15	0.02	0.00	-0.19	-2.50
207	20	-0.02	1.15	-0.02	0.00	0.19	2.50
207	19	0.02	0.00	0.02	0.00	-0.11	0.00
208	40	-0.05	2.38	-0.05	0.00	0.59	12.67
208	39	0.05	-2.25	0.05	0.00	-0.56	-11.28
209	39	-0.05	2.25	-0.05	0.00	0.56	11.28
209	41	0.05	-1.20	0.05	0.00	-0.32	-2.65
210	41	-0.05	1.20	-0.05	0.00	0.32	2.65
210	38	0.05	0.00	0.05	0.00	-0.12	0.00

211	60	-0.01	3.03	-0.06	0.00	0.91	20.80
211	59	0.01	-2.34	0.06	0.00	-0.70	-11.93
212	59	-0.01	2.34	-0.06	0.00	0.70	11.93
212	61	0.01	-1.28	0.06	0.00	-0.37	-2.86
213	61	-0.01	1.28	-0.06	0.00	0.37	2.86
213	58	0.01	0.00	0.06	0.00	-0.11	0.00
214	80	0.00	3.03	-0.10	0.00	1.40	20.80
214	79	0.00	-2.34	0.10	0.00	-1.06	-11.93
215	79	0.00	2.34	-0.10	0.00	1.06	11.93
215	81	0.00	-1.28	0.10	0.00	-0.56	-2.86
216	81	0.00	1.28	-0.10	0.00	0.56	2.86
216	78	0.00	0.00	0.10	0.00	-0.15	0.00
217	100	-0.01	3.03	-0.13	0.00	1.81	20.80
217	99	0.01	-2.34	0.13	0.00	-1.38	-11.93
218	99	-0.01	2.34	-0.13	0.00	1.38	11.93
218	101	0.01	-1.28	0.13	0.00	-0.72	-2.86
219	101	-0.01	1.28	-0.13	0.00	0.72	2.86
219	98	0.01	0.00	0.13	0.00	-0.19	0.00
220	120	0.05	3.03	-0.17	0.00	2.17	20.80
220	119	-0.05	-2.34	0.17	0.00	-1.63	-11.93
221	119	0.05	2.34	-0.17	0.00	1.63	11.93
221	121	-0.05	-1.28	0.17	0.00	-0.80	-2.86
222	121	0.05	1.28	-0.17	0.00	0.80	2.86
222	118	-0.05	0.00	0.17	0.00	-0.14	0.00
223	140	-0.19	3.03	-0.16	0.00	2.08	20.80
223	139	0.19	-2.34	0.16	0.00	-1.56	-11.93
224	139	-0.19	2.34	-0.16	0.00	1.56	11.93
224	141	0.19	-1.28	0.16	0.00	-0.77	-2.86
225	141	-0.19	1.28	-0.16	0.00	0.77	2.86
225	138	0.19	0.00	0.16	0.00	-0.13	0.00
226	160	0.88	2.06	-0.26	0.00	2.51	9.45
226	159	-0.88	-1.16	0.26	0.00	-1.41	-2.53
227	159	0.88	1.16	-0.26	0.00	1.41	2.53
227	158	-0.88	0.00	0.26	0.00	-0.39	0.00
228	179	-4.64	1.92	-0.21	0.00	1.75	8.19
228	178	4.64	-1.15	0.21	0.00	-0.98	-2.50
229	178	-4.64	1.15	-0.21	0.00	0.98	2.50
229	177	4.64	0.00	0.21	0.00	-0.15	0.00
230	5	-0.35	0.00	0.00	0.00	0.04	0.00
230	4	0.35	0.00	0.00	0.00	-0.04	0.00
231	194	4.35	86.70	-0.08	0.00	0.52	86.70
231	193	-4.35	-86.70	0.08	0.00	-0.44	0.00

proc Viaducto Papiol

HIPOTESIS 29

hipo 29 F.Teflon +

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
1	3	-34.75	-3.34	0.00	0.32	-3.11	-58.24
1	8	34.75	3.34	0.00	-0.32	3.12	41.56
2	8	-34.75	-3.34	0.00	0.32	-3.12	-41.56
2	9	34.75	3.34	0.00	-0.32	3.14	24.88
3	9	-34.75	-3.34	-0.03	0.34	-3.14	-24.88
3	10	34.75	3.34	0.03	-0.34	3.29	8.20
4	10	-34.75	-3.34	-0.02	0.33	-3.29	-8.20
4	11	34.75	3.34	0.02	-0.33	3.37	-8.48
5	11	-34.75	-3.34	-0.03	0.33	-3.37	8.48
5	12	34.75	3.34	0.03	-0.33	3.52	-25.16
6	12	-34.75	-3.34	-0.06	0.31	-3.52	25.16
6	13	34.75	3.34	0.06	-0.31	3.80	-41.84
7	13	-34.75	-3.34	-0.04	0.33	-3.80	41.84
7	14	34.75	3.34	0.04	-0.33	4.02	-58.52
8	14	-34.75	-3.34	-0.07	0.28	-4.02	58.52
8	15	34.75	3.34	0.07	-0.28	4.37	-75.20
9	15	-34.75	-3.34	-0.07	0.28	-4.37	75.20
9	18	34.75	3.34	0.07	-0.28	4.72	-91.88
10	18	-146.79	-3.22	-0.03	1.51	1.88	-95.91
10	24	146.79	3.22	0.03	-1.51	-1.73	79.79
11	24	-146.80	-3.22	-0.09	1.54	1.73	-79.79
11	25	146.80	3.22	0.09	-1.54	-1.30	63.68
12	25	-146.80	-3.22	-0.20	1.59	1.30	-63.68
12	26	146.80	3.22	0.20	-1.59	-0.29	47.56
13	26	-146.80	-3.22	-0.14	1.57	0.29	-47.56
13	27	146.80	3.22	0.14	-1.57	0.43	31.45
14	27	-146.80	-3.22	-0.20	1.59	-0.43	-31.45
14	28	146.80	3.22	0.20	-1.59	1.43	15.33
15	28	-146.79	-3.22	-0.31	1.60	-1.43	-15.33
15	29	146.79	3.22	0.31	-1.60	3.00	-0.78
16	29	-146.80	-3.22	-0.26	1.60	-3.00	0.78
16	30	146.80	3.22	0.26	-1.60	4.30	-16.90
17	30	-146.79	-3.22	-0.32	1.59	-4.30	16.90
17	31	146.79	3.22	0.32	-1.59	5.88	-33.01
18	31	-146.80	-3.22	-0.37	1.58	-5.88	33.02
18	32	146.80	3.22	0.37	-1.58	7.75	-49.13
19	32	-146.79	-3.22	-0.37	1.58	-7.75	49.13
19	33	146.79	3.22	0.37	-1.58	9.62	-65.25
20	33	-146.79	-3.22	-0.43	1.55	-9.62	65.25
20	34	146.79	3.22	0.43	-1.55	11.76	-81.36
21	34	-146.80	-3.22	-0.49	1.52	-11.76	81.36
21	37	146.80	3.22	0.49	-1.52	14.20	-97.48
22	37	-263.41	-3.25	0.09	2.16	3.75	-97.97
22	44	263.41	3.25	-0.09	-2.16	-4.20	81.74
23	44	-263.42	-3.25	-0.01	2.20	4.20	-81.74
23	45	263.42	3.25	0.01	-2.20	-4.13	65.50
24	45	-263.42	-3.25	-0.12	2.22	4.13	-65.50
24	46	263.42	3.25	0.12	-2.22	-3.56	49.26
25	46	-263.41	-3.25	-0.11	2.22	3.56	-49.26
25	47	263.41	3.25	0.11	-2.22	-2.98	33.02
26	47	-263.41	-3.25	-0.22	2.23	2.98	-33.02
26	48	263.41	3.25	0.22	-2.23	-1.91	16.78
27	48	-263.41	-3.25	-0.22	2.24	1.91	-16.78
27	49	263.41	3.25	0.22	-2.24	-0.80	0.54
28	49	-263.41	-3.25	-0.32	2.24	0.80	-0.54
28	50	263.41	3.25	0.32	-2.24	0.80	-15.70
29	50	-263.41	-3.25	-0.43	2.23	-0.80	15.70
29	51	263.41	3.25	0.43	-2.23	2.93	-31.93
30	51	-263.41	-3.25	-0.53	2.22	-2.93	31.94
30	52	263.41	3.25	0.53	-2.22	5.56	-48.17
31	52	-263.41	-3.25	-0.53	2.22	-5.56	48.17
31	53	263.41	3.25	0.53	-2.22	8.19	-64.41
32	53	-263.41	-3.25	-0.63	2.19	-8.19	64.41
32	54	263.41	3.25	0.63	-2.19	11.34	-80.65
33	54	-263.41	-3.25	-0.63	2.19	-11.34	80.65
33	57	263.41	3.25	0.63	-2.19	14.48	-96.89
34	57	-378.56	-3.21	0.08	2.35	7.60	-96.09
34	64	378.56	3.21	-0.08	-2.35	-8.01	80.07
35	64	-378.56	-3.21	0.09	2.35	8.01	-80.07
35	65	378.56	3.21	-0.09	-2.35	-8.46	64.04
36	65	-378.56	-3.21	-0.20	2.40	8.46	-64.04
36	66	378.56	3.21	0.20	-2.40	-7.44	48.01
37	66	-378.56	-3.21	-0.21	2.40	7.44	-48.01
37	67	378.56	3.21	0.21	-2.40	-6.38	31.99
38	67	-378.56	-3.21	-0.35	2.41	6.38	-31.99
38	68	378.56	3.21	0.35	-2.41	-4.64	15.96
39	68	-378.56	-3.21	-0.21	2.40	4.64	-15.96
39	69	378.56	3.21	0.21	-2.40	-3.57	-0.06
40	69	-378.55	-3.21	-0.65	2.40	3.57	0.07
40	70	378.55	3.21	0.65	-2.40	-0.32	-16.09
41	70	-378.56	-3.21	-0.50	2.41	0.32	16.09
41	71	378.56	3.21	0.50	-2.41	2.19	-32.12
42	71	-378.56	-3.21	-0.65	2.40	-2.19	32.12
42	72	378.56	3.21	0.65	-2.40	5.44	-48.14
43	72	-378.56	-3.21	-0.80	2.38	-5.44	48.14
43	73	378.56	3.21	0.80	-2.38	9.42	-64.17
44	73	-378.56	-3.21	-0.80	2.38	-9.42	64.17
44	74	378.56	3.21	0.80	-2.38	13.44	-80.19
45	74	-378.56	-3.21	-0.95	2.35	-13.44	80.19
45	77	378.56	3.21	0.95	-2.35	18.17	-96.22
46	77	-494.11	-3.26	0.27	2.03	4.60	-97.44
46	84	494.11	3.26	-0.27	-2.03	-5.96	81.12
47	84	-494.11	-3.26	0.26	2.04	5.96	-81.12
47	85	494.11	3.26	-0.26	-2.04	-7.28	64.80
48	85	-494.11	-3.26	0.08	2.06	7.28	-64.79
48	86	494.11	3.26	-0.08	-2.06	-7.66	48.47
49	86	-494.11	-3.26	-0.11	2.08	7.66	-48.47
49	87	494.11	3.26	0.11	-2.08	-7.11	32.14
50	87	-494.11	-3.26	-0.12	2.08	7.11	-32.14
50	88	494.11	3.26	0.12	-2.08	-6.50	15.82
51	88	-494.11	-3.26	-0.31	2.09	6.50	-15.82
51	89	494.11	3.26	0.31	-2.09	-4.95	-0.51
52	89	-494.11	-3.26	-0.31	2.09	4.95	0.51
52	90	494.11	3.26	0.31	-2.09	-3.40	-16.83
53	90	-494.11	-3.26	-0.51	2.08	3.40	16.83
53	91	494.11	3.26	0.51	-2.08	-0.87	-33.15
54	91	-494.11	-3.26	-0.69	2.07	0.87	33.16
54	92	494.11	3.26	0.69	-2.07	2.60	-49.48
55	92	-494.11	-3.26	-0.89	2.05	-2.60	49.48
55	93	494.11	3.26	0.89	-2.05	7.07	-65.81
56	93	-494.11	-3.26	-0.88	2.05	-7.07	65.81
56	94	494.11	3.26	0.88	-2.05	11.48	-82.13
57	94	-494.11	-3.26	-0.89	2.05	-11.48	82.13
57	97	494.11	3.26	0.89	-2.05	15.94	-98.45

58	97	-609.52	-3.08	0.54	1.37	-1.15	-94.97
58	104	609.52	3.08	-0.54	-1.37	-1.56	79.56
59	104	-609.52	-3.08	0.55	1.37	1.56	-79.56
59	105	609.52	3.08	-0.55	-1.37	-4.33	64.14
60	105	-609.52	-3.08	0.30	1.40	4.33	-64.14
60	106	609.52	3.08	-0.30	-1.40	-5.82	48.73
61	106	-609.52	-3.08	0.31	1.40	5.82	-48.73
61	107	609.52	3.08	-0.31	-1.40	-7.37	33.32
62	107	-609.51	-3.08	0.07	1.41	7.37	-33.32
62	108	609.51	3.08	-0.07	-1.41	-7.71	17.90
63	108	-609.52	-3.08	-0.17	1.42	7.71	-17.90
63	109	609.52	3.08	0.17	-1.42	-6.88	2.49
64	109	-609.52	-3.08	0.07	1.42	6.88	-2.49
64	110	609.52	3.08	-0.07	-1.42	-7.22	-12.92
65	110	-609.52	-3.08	-0.41	1.41	7.22	12.93
65	111	609.52	3.08	0.41	-1.41	-5.17	-28.34
66	111	-609.52	-3.08	-0.64	1.40	5.17	28.34
66	112	609.52	3.08	0.64	-1.40	-1.97	-43.75
67	112	-609.51	-3.08	-0.65	1.40	1.97	43.75
67	113	609.51	3.08	0.65	-1.40	1.29	-59.17
68	113	-609.51	-3.08	-0.88	1.37	-1.29	59.17
68	114	609.51	3.08	0.88	-1.37	5.72	-74.58
69	114	-609.51	-3.08	-0.88	1.37	-5.72	74.58
69	117	609.51	3.08	0.88	-1.37	10.14	-89.99
70	117	-725.08	-3.78	0.91	-0.70	-9.10	-103.70
70	124	725.08	3.78	-0.91	0.70	4.55	84.79
71	124	-725.08	-3.78	1.20	-0.74	-4.55	-84.79
71	125	725.08	3.78	-1.20	0.74	-1.45	65.89
72	125	-725.08	-3.78	0.91	-0.71	1.45	-65.89
72	126	725.08	3.78	-0.91	0.71	-6.00	46.99
73	126	-725.08	-3.78	0.62	-0.69	6.00	-46.99
73	127	725.08	3.78	-0.62	0.69	-9.10	28.09
74	127	-725.08	-3.78	0.34	-0.68	9.10	-28.09
74	128	725.08	3.78	-0.34	0.68	-10.82	9.18
75	128	-725.08	-3.78	0.34	-0.68	10.82	-9.18
75	129	725.08	3.78	-0.34	0.68	-12.55	-9.72
76	129	-725.08	-3.78	0.07	-0.68	12.55	9.72
76	130	725.08	3.78	-0.07	0.68	-12.89	-28.62
77	130	-725.08	-3.78	-0.22	-0.70	12.89	28.62
77	131	725.08	3.78	0.22	0.70	-11.78	-47.53
78	131	-725.08	-3.78	0.05	-0.68	11.78	47.53
78	132	725.08	3.78	-0.05	0.68	-12.06	-66.43
79	132	-725.08	-3.78	-0.79	-0.76	12.06	66.43
79	133	725.08	3.78	0.79	0.76	-8.12	-85.33
80	133	-725.08	-3.78	-0.51	-0.72	8.12	85.33
80	134	725.08	3.78	0.51	0.72	-5.56	-104.24
81	134	-725.08	-3.78	-0.79	-0.76	5.56	104.24
81	137	725.08	3.78	0.79	0.76	-1.63	-123.14
82	137	-840.18	-1.05	1.39	-2.74	-10.99	-69.76
82	144	840.18	1.05	-1.39	2.74	4.05	64.53
83	144	-840.18	-1.05	0.73	-2.69	-4.05	-64.54
83	145	840.18	1.05	-0.73	2.69	0.38	59.31
84	145	-840.18	-1.05	0.72	-2.69	-0.38	-59.31
84	146	840.18	1.05	-0.72	2.69	-3.20	54.08
85	146	-840.18	-1.05	0.73	-2.69	3.20	-54.08
85	147	840.18	1.05	-0.73	2.69	-6.86	48.85
86	147	-840.18	-1.05	0.08	-2.65	6.86	-48.86
86	148	840.18	1.05	-0.08	2.65	-7.25	43.63
87	148	-840.18	-1.05	0.06	-2.65	7.25	-43.63
87	149	840.18	1.05	-0.06	2.65	-7.56	38.40
88	149	-840.18	-1.05	-0.24	-2.64	7.56	-38.40
88	150	840.18	1.05	0.24	2.64	-6.35	33.17
89	150	-840.18	-1.05	-0.26	-2.64	6.35	-33.17
89	151	840.18	1.05	0.26	2.64	-5.05	27.95
90	151	-840.18	-1.05	-0.59	-2.63	5.05	-27.95
90	152	840.18	1.05	0.59	2.63	-2.08	22.72
91	152	-840.18	-1.05	-0.58	-2.63	2.08	-22.72
91	153	840.18	1.05	0.58	2.63	0.81	17.49
92	153	-840.18	-1.05	-0.91	-2.62	-0.81	-17.49
92	154	840.18	1.05	0.91	2.62	5.38	12.27
93	154	-840.18	-1.05	-1.23	-2.61	-5.38	-12.27
93	157	840.18	1.05	1.23	2.61	11.54	7.04
94	157	-956.92	-11.77	1.95	-2.77	-32.00	-202.69
94	163	956.92	11.77	-1.95	2.77	22.27	143.82
95	163	-956.92	-11.77	1.58	-2.71	-22.27	-143.82
95	164	956.92	11.77	-1.58	2.71	14.36	84.95
96	164	-956.92	-11.77	1.22	-2.68	-14.36	-84.95
96	165	956.92	11.77	-1.22	2.68	8.27	26.08
97	165	-956.92	-11.77	1.20	-2.68	-8.27	-26.08
97	166	956.92	11.77	-1.20	2.68	2.28	-32.80
98	166	-956.92	-11.77	0.84	-2.69	-2.28	32.80
98	167	956.92	11.77	-0.84	2.69	-1.90	-91.67
99	167	-956.92	-11.77	0.47	-2.73	1.90	91.67
99	168	956.92	11.77	-0.47	2.73	-4.25	-150.54
100	168	-956.92	-11.77	0.45	-2.73	4.25	150.54
100	169	956.92	11.77	-0.45	2.73	-6.52	-209.42
101	169	-956.92	-11.77	0.09	-2.81	6.52	209.41
101	170	956.92	11.77	-0.09	2.81	-6.96	-268.29
102	170	-956.92	-11.77	0.09	-2.81	6.96	268.29
102	171	956.92	11.77	-0.09	2.81	-7.40	-327.16
103	171	-956.92	-11.77	-0.66	-3.07	7.40	327.16
103	172	956.92	11.77	0.66	3.07	-4.11	-386.03
104	172	-956.92	-11.77	-0.66	-3.07	4.11	386.03
104	173	956.92	11.77	0.66	3.07	-0.83	-444.90
105	173	-956.92	-11.77	-0.68	-3.08	0.83	444.90
105	176	956.92	11.77	0.68	3.08	2.56	-503.78
106	176	-1068.55	47.08	1.40	-5.34	-12.46	316.69
106	182	1068.55	-47.08	-1.40	5.34	5.44	-81.28
107	182	-1068.55	47.08	0.98	-5.37	-5.44	81.28
107	183	1068.55	-47.08	-0.98	5.37	0.55	154.12
108	183	-1068.55	47.08	0.96	-5.37	-0.55	-154.12
108	184	1068.55	-47.08	-0.96	5.37	-4.23	389.53
109	184	-1068.55	47.08	0.57	-5.23	4.23	-389.53
109	185	1068.55	-47.08	-0.57	5.23	-7.09	624.94
110	185	-1068.55	47.08	0.55	-5.21	7.09	-624.94
110	186	1068.55	-47.08	-0.55	5.21	-9.84	860.34
111	186	-1068.55	47.08	-0.28	-4.54	9.84	-860.35
111	187	1068.55	-47.08	0.28	4.54	-8.42	1095.75
112	187	-1068.55	47.08	-0.28	-4.54	8.42	-1095.75
112	188	1068.55	-47.08	0.28	4.54	-7.00	1331.15
113	188	-1068.55	47.08	-0.69	-4.04	7.00	-1331.16
113	189	1068.55	-47.08	0.69	4.04	-3.55	1566.56
114	189	-1068.55	47.08	-0.71	-4.00	3.55	-1566.56
114	192	1068.55	-47.08	0.71	4.00	0.00	1801.97
134	6	0.00	-1.63	17.01	-28.51	0.00	0.00
134	3	0.00	1.63	-17.01	28.51	-72.29	-6.94
135	3	0.00	1.70	-17.74	29.73	75.40	7.24
135	1	0.00	-1.70	17.74	-29.73	0.00	0.00
136	22	0.02	0.43	57.93	-97.05	-0.01	0.04
136	18	-0.02	-0.43	-57.93	97.05	-101.35	0.71
137	18	0.00	0.31	-54.13	90.74	94.73	0.55
137	16	0.00	-0.31	54.13	-90.74	0.01	0.00
138	43	0.56	0.45	63.43	-106.30	-0.02	0.95
138	37	-0.56	-0.45	-63.43	106.30	-111.05	-0.16
139	37	-0.01	0.47	-53.18	89.15	93.05	0.81
139	35	0.01	-0.47	53.18	-89.15	-0.05	0.02
140	63	0.84	0.47	63.89	-107.03	0.03	1.41
140	57	-0.84	-0.47	-63.89	107.03	-111.80	-0.58

141	57	0.00	0.43	-51.33	85.95	89.73	0.75
141	55	0.00	-0.43	51.33	-85.95	-0.04	0.00
142	83	1.39	0.55	64.24	-107.68	-0.02	2.35
142	77	-1.39	-0.55	-64.24	107.68	-112.48	-1.39
143	77	0.00	0.61	-51.29	85.99	89.73	1.07
143	75	0.00	-0.61	51.29	-85.99	0.00	0.00
144	103	1.87	0.80	61.82	-103.69	0.02	3.15
144	97	-1.87	-0.80	-61.82	103.69	-108.37	-1.75
145	97	0.00	0.62	-53.52	89.73	93.60	1.08
145	95	0.00	-0.62	53.52	-89.73	-0.01	0.00
146	123	2.32	0.17	58.05	-97.28	-0.02	3.92
146	117	-2.32	-0.17	-58.05	97.28	-101.66	-3.62
147	117	-0.01	0.87	-57.53	96.41	100.63	1.51
147	115	0.01	-0.87	57.53	-96.41	0.02	0.01
148	143	2.15	1.85	53.93	-90.37	0.00	3.63
148	137	-2.15	-1.85	-53.93	90.37	-94.41	-0.39
149	137	0.00	-0.89	-61.20	102.53	106.99	-1.55
149	135	0.00	0.89	61.20	-102.53	0.00	0.01
150	162	3.19	-3.87	52.51	-88.01	0.00	5.38
150	157	-3.19	3.87	-52.51	88.01	-91.92	-12.15
151	157	0.00	6.86	-64.22	107.65	112.38	12.00
151	156	0.00	-6.86	64.22	-107.65	0.00	0.00
152	181	2.44	30.00	52.97	-88.78	0.00	4.11
152	176	-2.44	-30.00	-52.97	88.78	-92.71	48.40
153	176	0.00	-28.86	-58.65	98.31	102.62	-50.49
153	174	0.00	28.86	58.65	-98.31	-0.01	0.00
154	195	0.92	-22.93	-534.27	900.98	0.00	1.55
154	192	-0.92	22.93	534.27	-900.98	2270.67	-99.00
155	192	0.00	24.15	534.27	-900.98	-2270.66	102.65
155	190	0.00	-24.15	-534.27	900.98	0.00	0.00
156	7	0.00	1.63	0.00	0.00	0.00	0.00
156	4	0.00	-1.63	17.01	0.00	72.12	6.93
157	4	0.00	-1.70	17.74	0.00	-75.22	-7.25
157	2	0.00	1.70	0.00	0.00	0.00	0.00
158	23	-0.02	-0.43	0.00	0.00	0.00	0.00
158	19	0.02	0.43	57.90	0.00	100.76	-0.75
159	19	0.00	-0.31	54.14	0.00	-94.20	-0.55
159	17	0.00	0.31	0.00	0.00	0.00	0.00
160	42	-0.55	-0.45	-0.01	0.00	0.01	0.00
160	38	0.55	0.45	63.43	0.00	110.40	-0.79
161	38	0.00	-0.47	53.20	0.00	-92.55	-0.83
161	36	0.00	0.47	0.00	0.00	0.00	0.00
162	62	-0.83	-0.47	0.01	0.00	0.00	0.00
162	58	0.83	0.47	63.85	0.00	111.15	-0.83
163	58	0.00	-0.43	51.30	0.00	-89.21	-0.75
163	56	0.00	0.43	-0.02	0.00	0.00	0.00
164	82	-1.39	-0.55	-0.01	0.00	0.00	0.00
164	78	1.39	0.55	64.25	0.00	111.85	-0.96
165	78	0.00	-0.61	51.31	0.00	-89.19	-1.06
165	76	0.00	0.61	0.00	0.00	0.00	0.00
166	102	-1.87	-0.80	0.00	0.00	-0.02	0.00
166	98	1.87	0.80	61.87	0.00	107.76	-1.40
167	98	0.00	-0.62	53.53	0.00	-93.04	-1.08
167	96	0.00	0.62	0.01	0.00	0.02	0.00
168	122	-2.32	-0.17	-0.03	0.00	0.01	0.00
168	118	2.32	0.17	58.08	0.00	101.06	-0.30
169	118	0.00	-0.87	57.51	0.00	-100.03	-1.52
169	116	0.00	0.87	0.01	0.00	0.00	0.00
170	142	-2.15	-1.85	0.00	0.00	-0.01	0.00
170	138	2.15	1.85	53.92	0.00	93.86	-3.24
171	138	0.00	0.89	61.17	0.00	-106.40	1.55
171	136	0.00	-0.89	0.00	0.00	-0.01	0.00
172	161	-3.19	3.87	0.00	0.00	0.00	0.00
172	158	3.19	-3.87	52.51	0.00	91.39	6.77
173	158	0.00	-6.86	64.23	0.00	-111.72	-12.00
173	155	0.00	6.86	0.00	0.00	0.00	0.00
174	180	-2.44	-30.00	0.00	0.00	0.00	0.00
174	177	2.44	30.00	52.97	0.00	92.19	-52.50
175	177	0.00	28.86	58.66	0.00	-102.04	50.49
175	175	0.00	-28.86	0.00	0.00	0.00	0.00
176	196	-0.92	22.93	554.49	0.00	0.00	0.00
176	193	0.92	-22.93	-534.27	0.00	-2270.87	97.45
177	193	0.00	-24.15	-534.27	0.00	2270.87	-102.65
177	191	0.00	24.15	554.52	0.00	0.00	0.00
182	7	-1.63	0.00	0.00	0.00	0.00	0.00
182	6	1.63	-17.01	0.00	0.00	0.00	28.51
183	2	-1.70	0.00	0.00	0.00	0.00	0.00
183	1	1.70	-17.74	0.00	0.00	0.00	29.73
184	23	0.43	0.00	0.02	0.00	0.00	0.00
184	22	-0.43	-57.90	-0.02	0.00	-0.03	97.05
185	17	-0.31	0.00	0.00	0.00	0.00	0.00
185	16	0.31	-54.14	0.00	0.00	0.00	90.74
186	42	0.45	0.00	0.55	0.00	0.00	0.00
186	43	-0.45	-63.43	-0.55	0.00	-0.93	106.30
187	36	-0.47	0.00	0.00	0.00	0.00	0.00
187	35	0.47	-53.19	0.00	0.00	0.00	89.15
188	62	0.47	0.00	0.83	0.00	0.00	0.00
188	63	-0.47	-63.86	-0.83	0.00	-1.41	107.03
189	56	-0.43	0.00	0.00	0.00	0.00	0.00
189	55	0.43	-51.28	0.00	0.00	0.00	85.95
190	82	0.55	0.00	1.40	0.00	0.00	0.00
190	83	-0.55	-64.25	-1.40	0.00	-2.35	107.68
191	76	-0.61	0.00	0.00	0.00	0.00	0.00
191	75	0.61	-51.31	0.00	0.00	0.00	85.99
192	102	0.80	0.00	1.87	0.00	0.00	0.00
192	103	-0.80	-61.87	-1.87	0.00	-3.15	103.69
193	96	-0.62	0.00	0.00	0.00	0.00	0.00
193	95	0.62	-53.54	0.00	0.00	0.00	89.73
194	122	0.17	0.00	2.32	0.00	0.00	0.00
194	123	-0.17	-58.05	-2.32	0.00	-3.91	97.28
195	116	-0.87	0.00	0.00	0.00	0.00	0.00
195	115	0.87	-57.52	0.00	0.00	0.00	96.41
196	142	1.85	0.00	2.15	0.00	0.00	0.00
196	143	-1.85	-53.92	-2.15	0.00	-3.63	90.37
197	136	0.89	0.00	0.00	0.00	0.00	0.00
197	135	-0.89	-61.17	0.00	0.00	0.00	102.53
198	161	-3.87	0.00	3.19	0.00	0.00	0.00
198	162	3.87	-52.51	-3.19	0.00	-5.38	88.01
199	155	-6.86	0.00	0.00	0.00	0.00	0.00
199	156	6.86	-64.23	0.00	0.00	0.00	107.65
200	180	29.99	0.00	2.44	0.00	0.00	0.00
200	181	-29.99	-52.97	-2.44	0.00	-4.11	88.78
201	175	28.86	0.00	0.00	0.00	0.00	0.00
201	174	-28.86	-58.66	0.00	0.00	0.00	98.31
202	196	-22.93	-554.49	0.92	0.00	0.00	0.00
202	195	22.93	534.27	-0.92	0.00	-1.55	-900.98
203	191	-24.15	-554.52	0.00	0.00	0.00	0.00
203	190	24.15	534.27	0.00	0.00	0.00	-900.98
206	21	0.11	112.05	0.01	6.57	-1.37	694.69
206	20	-0.11	-112.05	-0.01	-6.57	1.34	-448.19
207	20	0.11	112.05	0.01	6.57	-1.34	448.19
207	19	-0.11	-112.05	-0.01	-6.57	1.30	0.00
208	40	-0.02	116.62	0.53	17.85	-6.71	1119.53
208	39	0.02	-116.62	-0.53	-17.85	6.40	-1049.56
209	39	-0.02	116.62	0.53	17.85	-6.40	1049.56
209	41	0.02	-116.62	-0.53	-17.85	3.74	-466.47
210	41	-0.02	116.62	0.53	17.85	-3.74	466.47
210	38	0.02	-116.62	-0.53	-17.85	1.62	0.00

211	60	0.04	115.14	0.83	21.95	-11.83	1416.27
211	59	-0.04	-115.14	-0.83	-21.95	9.08	-1036.30
212	59	0.04	115.14	0.83	21.95	-9.08	1036.30
212	61	-0.04	-115.14	-0.83	-21.95	4.91	-460.58
213	61	0.04	115.14	0.83	21.95	-4.91	460.58
213	58	-0.04	-115.14	-0.83	-21.95	1.58	0.00
214	80	-0.06	115.55	1.40	22.64	-19.21	1421.29
214	79	0.06	-115.55	-1.40	-22.64	14.60	-1039.97
215	79	-0.06	115.55	1.40	22.64	-14.60	1039.97
215	81	0.06	-115.55	-1.40	-22.64	7.61	-462.21
216	81	-0.06	115.55	1.40	22.64	-7.61	462.21
216	78	0.06	-115.55	-1.40	-22.64	2.02	0.00
217	100	0.18	115.41	1.88	14.71	-25.56	1419.53
217	99	-0.18	-115.41	-1.88	-14.71	19.37	-1038.68
218	99	0.18	115.41	1.88	14.71	-19.37	1038.68
218	101	-0.18	-115.41	-1.88	-14.71	9.98	-461.64
219	101	0.18	115.41	1.88	14.71	-9.98	461.64
219	98	-0.18	-115.41	-1.88	-14.71	2.47	0.00
220	120	-0.70	115.57	2.30	1.03	-30.17	1421.47
220	119	0.70	-115.57	-2.30	-1.03	22.57	-1040.10
221	119	-0.70	115.57	2.30	1.03	-22.57	1040.10
221	121	0.70	-115.57	-2.30	-1.03	11.04	-462.27
222	121	-0.70	115.57	2.30	1.03	-11.04	462.27
222	118	0.70	-115.57	-2.30	-1.03	1.82	0.00
223	140	2.74	115.10	2.14	-12.55	-28.07	1415.68
223	139	-2.74	-115.10	-2.14	12.55	20.99	-1035.86
224	139	2.74	115.10	2.14	-12.55	-20.99	1035.86
224	141	-2.74	-115.10	-2.14	12.55	10.27	-460.38
225	141	2.74	115.10	2.14	-12.55	-10.27	460.39
225	138	-2.74	-115.10	-2.14	12.55	1.69	0.00
226	160	-10.73	116.74	3.19	-20.34	-31.70	968.93
226	159	10.73	-116.74	-3.19	20.34	17.99	-466.96
227	159	-10.73	116.74	3.19	-20.34	-17.99	466.96
227	158	10.73	-116.74	-3.19	20.34	5.23	0.00
228	179	58.86	111.63	2.44	-9.84	-20.79	859.53
228	178	-58.86	-111.63	-2.44	9.84	11.76	-446.51
229	178	58.86	111.63	2.44	-9.84	-11.76	446.51
229	177	-58.86	-111.63	-2.44	9.84	2.01	0.00
230	5	-3.34	34.75	0.00	-3.10	-0.31	34.75
230	4	3.34	-34.75	0.00	3.10	0.31	0.00
231	194	-47.08	-1068.55	0.92	0.00	-6.12	-1068.55
231	193	47.08	1068.55	-0.92	0.00	5.20	0.00

proc Viaducto Papiol

HIPOTESIS 81

hipo 81 Pretensado de servicio (t=0)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
1	3	4444.25	-398.14	0.14	-7.59	0.00	1669.80
1	8	-4513.89	284.71	-0.14	7.59	-0.68	-3372.34
2	8	4513.88	-284.71	0.14	-7.59	0.68	3372.34
2	9	-4561.98	228.65	-0.14	7.59	-1.37	-4708.32
3	9	4561.98	-228.65	0.14	-6.08	1.37	4708.32
3	10	-4650.38	23.69	-0.14	6.08	-2.05	-5617.99
4	10	4650.38	-23.69	0.14	-7.18	2.05	5618.00
4	11	-4724.02	-168.12	-0.14	7.18	-2.73	-5248.96
5	11	4724.02	168.12	0.14	-5.71	2.73	5248.95
5	12	-4705.25	-235.03	-0.14	5.71	-3.42	-4251.86
6	12	4705.23	235.03	0.14	-1.95	3.42	4251.86
6	13	-4654.74	-386.06	-0.14	1.95	-4.10	-2629.60
7	13	4654.74	386.06	0.14	-4.14	4.10	2629.60
7	14	-4662.33	-831.73	-0.14	4.14	-4.78	188.55
8	14	4662.34	831.73	0.14	1.13	4.78	-188.55
8	15	-4618.71	-852.20	-0.14	-1.13	-5.46	5009.05
9	15	4618.69	852.20	0.14	0.97	5.46	-5009.05
9	18	-9907.99	-375.21	-0.14	-0.97	-6.15	5982.87
10	18	9907.99	168.71	-0.01	-18.24	6.15	-5982.87
10	24	-5553.55	645.06	0.01	18.24	-6.08	5555.63
11	24	5553.54	-645.06	-0.01	-14.96	6.08	-5555.64
11	25	-5618.84	747.70	0.01	14.96	-6.01	1349.53
12	25	5618.88	-747.70	-0.01	-8.11	6.01	-1349.54
12	26	-5720.96	346.75	0.01	8.11	-5.94	-1297.99
13	26	5720.95	-346.75	-0.01	-11.51	5.94	1297.99
13	27	-5676.39	138.21	0.01	11.51	-5.87	-2499.43
14	27	5676.37	-138.21	-0.01	-8.31	5.87	2499.43
14	28	-5663.92	7.71	0.01	8.31	-5.81	-2714.79
15	28	5663.93	-7.71	-0.01	-1.79	5.81	2714.79
15	29	-5679.23	11.87	0.01	1.79	-5.74	-2811.80
16	29	5679.22	-11.87	-0.01	-4.94	5.74	2811.81
16	30	-5705.34	25.01	0.01	4.94	-5.67	-2927.53
17	30	5705.37	-25.01	-0.01	-1.65	5.67	2927.53
17	31	-5743.62	-168.20	0.01	1.65	-5.60	-2835.95
18	31	5743.60	168.20	-0.01	1.46	5.60	2835.96
18	32	-5617.79	-601.36	0.01	-1.46	-5.53	-707.78
19	32	5617.80	601.36	-0.01	1.45	5.53	707.78
19	33	-5538.70	-668.87	0.01	-1.45	-5.46	2911.84
20	33	5538.72	668.87	-0.01	4.50	5.46	-2911.84
20	34	-5447.78	-212.41	0.01	-4.50	-5.39	5266.15
21	34	5447.78	212.41	-0.01	7.69	5.39	-5266.15
21	37	-10757.31	-55.39	0.01	-7.69	-5.33	3649.06
22	37	10757.28	72.21	-0.14	-14.26	5.33	-3649.06
22	44	-5553.54	628.25	0.14	14.26	-4.63	4839.23
23	44	5553.53	-628.25	-0.14	-11.10	4.63	-4839.24
23	45	-5618.84	730.89	0.14	11.10	-3.93	717.24
24	45	5618.84	-730.88	-0.14	-8.08	3.93	-717.24
24	46	-5720.92	329.93	0.14	8.08	-3.24	-1846.17
25	46	5720.95	-329.93	-0.14	-8.09	3.24	1846.17
25	47	-5676.39	121.39	0.14	8.09	-2.54	-2963.50
26	47	5676.40	-121.39	-0.14	-5.06	2.54	2963.50
26	48	-5663.94	-9.11	0.14	5.06	-1.84	-3094.76
27	48	5663.90	9.11	-0.14	-4.90	1.84	3094.75
27	49	-5679.19	-4.95	0.14	4.90	-1.15	-3107.66
28	49	5679.23	4.95	-0.14	-1.86	1.15	3107.66
28	50	-5705.36	8.19	0.14	1.86	-0.45	-3139.27
29	50	5705.38	-8.19	-0.14	1.34	0.45	3139.27
29	51	-5743.64	-185.02	0.14	-1.34	0.25	-2963.59
30	51	5743.61	185.02	-0.14	4.40	-0.25	2963.60
30	52	-5617.81	-618.19	0.14	-4.40	0.94	-751.30
31	52	5617.79	618.19	-0.14	4.40	-0.94	751.30
31	53	-5538.69	-685.68	0.14	-4.40	1.64	2952.42
32	53	5538.71	685.68	-0.14	7.63	-1.64	-2952.42
32	54	-5447.78	-229.22	0.14	-7.63	2.34	5390.84
33	54	5447.76	229.22	-0.14	7.46	-2.34	-5390.84
33	57	-10757.28	-72.22	0.14	-7.46	3.04	3857.86
34	57	10757.29	67.85	0.08	-12.26	-3.03	-3857.86
34	64	-5553.55	632.61	-0.08	12.26	2.62	5026.18
35	64	5553.56	-632.61	0.08	-12.42	-2.62	-5026.18
35	65	-5618.87	735.25	-0.08	12.42	2.21	882.34
36	65	5618.86	-735.25	0.08	-6.11	-2.21	-882.34
36	66	-5720.95	334.30	-0.08	6.11	1.79	-1702.92
37	66	5720.96	-334.30	0.08	-5.95	-1.79	1702.92
37	67	-5676.40	125.75	-0.08	5.95	1.38	-2842.09
38	67	5676.40	-125.75	0.08	-3.04	-1.38	2842.09
38	68	-5663.95	-4.74	-0.08	3.04	0.97	-2995.19
39	68	5663.92	4.74	0.08	-5.94	-0.97	2995.20
39	69	-5679.21	-0.58	-0.08	5.94	0.55	-3029.95
40	69	5679.22	0.58	0.08	3.42	-0.55	3029.95
40	70	-5705.35	12.56	-0.08	-3.42	0.14	-3083.41
41	70	5705.36	-12.56	0.08	0.20	-0.14	3083.40
41	71	-5743.61	-180.66	-0.08	-0.20	-0.27	-2929.57
42	71	5743.61	180.66	0.08	3.42	0.27	2929.57
42	72	-5617.81	-613.81	-0.08	-3.42	-0.69	-739.13
43	72	5617.79	613.81	0.08	6.48	0.69	739.13
43	73	-5538.68	-681.31	-0.08	-6.48	-1.10	2942.75
44	73	5538.69	681.31	0.08	6.65	1.10	-2942.75
44	74	-5447.75	-224.86	-0.08	-6.65	-1.51	5359.32
45	74	5447.77	224.86	0.08	9.71	1.51	-5359.31
45	77	-10757.29	-67.84	-0.08	-9.71	-1.93	3804.49
46	77	10757.28	68.93	0.00	-10.20	1.92	-3804.49
46	84	-5553.54	631.51	0.00	10.20	-1.93	4978.27
47	84	5553.56	-631.51	0.00	-10.03	1.93	-4978.27
47	85	-5618.87	734.16	0.00	10.03	-1.93	839.88
48	85	5618.85	-734.16	0.00	-6.98	1.93	-839.88
48	86	-5720.94	333.22	0.00	6.98	-1.94	-1739.93
49	86	5720.96	-333.22	0.00	-3.91	1.94	1739.93
49	87	-5676.38	124.66	0.00	3.91	-1.94	-2873.64
50	87	5676.38	-124.66	0.00	-3.75	1.94	2873.64
50	88	-5663.93	-5.83	0.00	3.75	-1.95	-3021.29
51	88	5663.95	5.83	0.00	-0.69	1.95	3021.29
51	89	-5679.24	-1.67	0.00	0.69	-1.95	-3050.59
52	89	5679.22	1.67	0.00	-0.69	1.95	3050.59
52	90	-5705.34	11.47	0.00	0.69	-1.96	-3098.59
53	90	5705.37	-11.47	0.00	2.53	1.96	3098.60
53	91	-5743.62	-181.75	0.00	-2.53	-1.96	-2939.31
54	91	5743.61	181.75	0.00	5.59	1.96	2939.32
54	92	-5617.80	-614.91	0.00	-5.59	-1.97	-743.42
55	92	5617.80	614.91	0.00	8.81	1.97	743.42
55	93	-5538.70	-682.41	0.00	-8.81	-1.97	2943.91
56	93	5538.72	682.41	0.00	8.65	1.97	-2943.91
56	94	-5447.78	-225.95	0.00	-8.65	-1.98	5365.93
57	94	5447.78	225.95	0.00	8.81	1.98	-5365.93
57	97	-10757.31	-68.93	0.00	-8.81	-1.98	3816.57

58	97	10757.28	68.79	0.01	-8.95	1.98	-3816.57
58	104	-5553.55	631.67	-0.01	8.95	-2.03	4989.61
59	104	5553.57	-631.67	0.01	-9.11	2.03	-4989.61
59	105	-5618.88	734.31	-0.01	9.11	-2.07	850.49
60	105	5618.88	-734.31	0.01	-5.72	2.07	-850.50
60	106	-5720.96	333.36	-0.01	5.72	-2.12	-1730.04
61	106	5720.95	-333.36	0.01	-5.88	2.12	1730.03
61	107	-5676.38	124.81	-0.01	5.88	-2.16	-2864.48
62	107	5676.38	-124.81	0.01	-2.66	2.16	2864.48
62	108	-5663.93	-5.69	-0.01	2.66	-2.21	-3012.86
63	108	5663.93	5.69	0.01	0.40	2.21	3012.86
63	109	-5679.22	-1.53	-0.01	-0.40	-2.25	-3042.89
64	109	5679.22	1.53	0.01	-2.66	2.25	3042.89
64	110	-5705.35	11.62	-0.01	2.66	-2.30	-3091.63
65	110	5705.37	-11.62	0.01	3.63	2.30	3091.63
65	111	-5743.62	-181.60	-0.01	-3.63	-2.34	-2933.06
66	111	5743.61	181.59	0.01	6.69	2.34	2933.07
66	112	-5617.80	-614.76	-0.01	-6.69	-2.39	-737.90
67	112	5617.80	614.76	0.01	6.85	2.39	737.90
67	113	-5538.70	-682.27	-0.01	-6.85	-2.43	2948.70
68	113	5538.71	682.27	0.01	9.92	2.43	-2948.70
68	114	-5447.78	-225.81	-0.01	-9.92	-2.48	5370.00
69	114	5447.76	225.81	0.01	9.92	2.48	-5370.00
69	117	-10757.28	-68.79	-0.01	-9.92	-2.52	3819.91
70	117	10757.29	68.30	-0.09	-6.58	2.52	-3819.91
70	124	-5553.55	632.15	0.09	6.58	-2.08	4990.52
71	124	5553.57	-632.15	-0.09	-9.81	2.08	-4990.52
71	125	-5618.88	734.79	0.09	9.81	-1.64	848.96
72	125	5618.86	-734.79	-0.09	-6.58	1.64	-848.97
72	126	-5720.95	333.84	0.09	6.58	-1.20	-1734.01
73	126	5720.97	-333.84	-0.09	-3.36	1.20	1734.01
73	127	-5676.40	125.29	0.09	3.36	-0.76	-2870.90
74	127	5676.38	-125.30	-0.09	-0.30	0.76	2870.90
74	128	-5663.93	-5.20	0.09	0.30	-0.31	-3021.71
75	128	5663.94	5.20	-0.09	-0.30	0.31	3021.71
75	129	-5679.23	-1.04	0.09	0.30	0.13	-3054.17
76	129	5679.22	1.04	-0.09	2.76	-0.13	3054.17
76	130	-5705.35	12.10	0.09	-2.76	0.57	-3105.34
77	130	5705.35	-12.10	-0.09	5.98	-0.57	3105.34
77	131	-5743.61	-181.11	0.09	-5.98	1.01	-2949.22
78	131	5743.60	181.11	-0.09	2.92	-1.01	2949.22
78	132	-5617.79	-614.27	0.09	-2.92	1.45	-756.48
79	132	5617.81	614.27	-0.09	12.25	-1.45	756.49
79	133	-5538.70	-681.77	0.09	-12.25	1.89	2927.68
80	133	5538.70	681.77	-0.09	9.20	-1.89	-2927.68
80	134	-5447.77	-225.31	0.09	-9.20	2.33	5346.54
81	134	5447.76	225.31	-0.09	12.25	-2.33	-5346.54
81	137	-10757.29	-68.30	0.09	-12.25	2.78	3794.00
82	137	10757.29	70.47	0.17	-10.66	-2.78	-3794.00
82	144	-5553.55	629.99	-0.17	10.66	1.91	4975.42
83	144	5553.56	-629.99	0.17	-4.38	-1.91	-4975.43
83	145	-5618.87	732.63	-0.17	4.38	1.05	844.69
84	145	5618.86	-732.63	0.17	-4.22	-1.05	-844.69
84	146	-5720.94	331.68	-0.17	4.22	0.19	-1727.47
85	146	5720.95	-331.68	0.17	-4.38	-0.19	1727.47
85	147	-5676.38	123.14	-0.17	4.38	-0.67	-2853.55
86	147	5676.39	-123.14	0.17	1.92	0.67	2853.55
86	148	-5663.94	-7.37	-0.17	-1.92	-1.54	-2993.55
87	148	5663.94	7.37	0.17	2.08	1.54	2993.55
87	149	-5679.23	-3.20	-0.17	-2.08	-2.40	-3015.21
88	149	5679.23	3.20	0.17	4.99	2.40	3015.21
88	150	-5705.35	9.94	-0.17	-4.99	-3.26	-3055.56
89	150	5705.35	-9.94	0.17	5.15	3.26	3055.56
89	151	-5743.61	-183.28	-0.17	-5.15	-4.12	-2888.62
90	151	5743.60	183.28	0.17	8.39	4.12	2888.62
90	152	-5617.79	-616.43	-0.17	-8.39	-4.99	-685.08
91	152	5617.80	616.43	0.17	8.23	4.99	685.07
91	153	-5538.69	-683.93	-0.17	-8.23	-5.85	3009.90
92	153	5538.69	683.93	0.17	11.48	5.85	-3009.89
92	154	-5447.75	-227.48	-0.17	-11.48	-6.71	5439.56
93	154	5447.76	227.48	0.17	14.57	6.71	-5439.56
93	157	-10757.28	-70.47	-0.17	-14.57	-7.57	3897.84
94	157	10757.28	61.99	-0.11	-8.97	7.57	-3897.84
94	163	-5553.55	638.48	0.11	8.97	-7.03	5036.83
95	163	5553.55	-638.48	-0.11	-5.89	7.03	-5036.84
95	164	-5618.86	741.12	0.11	5.89	-6.49	863.67
96	164	5618.87	-741.12	-0.11	-2.82	6.49	-863.67
96	165	-5720.95	340.17	0.11	2.82	-5.95	-1750.92
97	165	5720.95	-340.17	-0.11	-2.66	5.95	1750.92
97	166	-5676.38	131.62	0.11	2.66	-5.41	-2919.42
98	166	5676.38	-131.62	-0.11	0.38	5.41	2919.42
98	167	-5663.93	1.12	0.11	-0.38	-4.87	-3101.85
99	167	5663.93	-1.12	-0.11	3.41	4.87	3101.85
99	168	-5679.23	5.28	0.11	-3.41	-4.33	-3165.93
100	168	5679.23	-5.28	-0.11	3.57	4.33	3165.93
100	169	-5705.36	18.43	0.11	-3.57	-3.78	-3248.72
101	169	5705.35	-18.43	-0.11	6.57	3.78	3248.72
101	170	-5743.60	-174.78	0.11	-6.57	-3.24	-3124.20
102	170	5743.60	174.78	-0.11	6.57	3.24	3124.20
102	171	-5617.80	-607.95	0.11	-6.57	-2.70	-963.09
103	171	5617.80	607.95	-0.11	12.69	2.70	963.10
103	172	-5538.70	-675.46	0.11	-12.69	-2.16	2689.45
104	172	5538.70	675.46	-0.11	12.69	2.16	-2689.45
104	173	-5447.76	-219.00	0.11	-12.69	-1.62	5076.69
105	173	5447.77	219.00	-0.11	12.84	1.62	-5076.69
105	176	-9671.08	-142.93	0.11	-12.84	-1.08	5320.86
106	176	9671.08	-22.20	-0.02	-0.32	1.08	-5320.86
106	182	-4452.76	747.72	0.02	0.32	-0.96	6030.89
107	182	4452.76	-747.72	-0.02	2.43	0.96	-6030.89
107	183	-4500.83	920.21	0.02	-2.43	-0.84	1183.29
108	183	4500.83	-920.21	-0.02	2.55	0.84	-1183.29
108	184	-4577.29	515.85	0.02	-2.55	-0.72	-2346.31
109	184	4577.29	-515.85	-0.02	4.40	0.72	2346.31
109	185	-4554.67	283.92	0.02	-4.40	-0.60	-4315.84
110	185	4554.67	-283.92	-0.02	4.49	0.60	4315.84
110	186	-4517.19	177.73	0.02	-4.49	-0.48	-5274.34
111	186	4517.19	-177.73	-0.02	7.17	0.48	5274.35
111	187	-4466.89	90.77	0.02	-7.17	-0.36	-5957.13
112	187	4466.89	-90.77	-0.02	7.17	0.36	5957.13
112	188	-4386.43	-103.51	0.02	-7.17	-0.24	-5768.70
113	188	4386.44	103.51	-0.02	7.82	0.24	5768.71
113	189	-4319.53	-235.74	0.02	-7.82	-0.12	-4779.45
114	189	4319.53	235.74	-0.02	7.84	0.12	4779.45
114	192	-4264.72	-298.91	0.02	-7.84	0.00	-3354.65
134	6	0.14	95.71	-0.19	-0.01	-0.30	0.23
134	3	-0.14	-95.71	0.19	0.01	0.03	406.55
135	3	0.00	-97.44	-0.23	0.01	-0.31	-414.14
135	1	0.00	97.44	0.23	-0.01	0.02	0.00
136	22	-0.15	-108.85	0.30	0.00	-0.21	-0.25
136	18	0.15	108.85	-0.30	0.00	0.02	-190.25
137	18	0.00	97.65	-0.02	0.00	0.15	170.86
137	16	0.00	-97.65	0.02	0.00	0.27	0.00
138	43	-0.13	2.08	0.37	0.00	0.07	-0.21
138	37	0.13	-2.08	-0.37	0.00	0.00	3.85
139	37	0.00	-14.74	0.36	0.00	0.21	-25.80
139	35	0.00	14.74	-0.36	0.00	0.15	0.00
140	63	0.22	-8.68	-0.34	0.00	-0.05	0.37
140	57	-0.22	8.68	0.34	0.00	-0.26	-15.58

141	57	0.00	-4.32	-0.34	0.00	0.01	-7.55	173	158	0.00	2.66	0.00	0.00	0.00	4.66
141	55	0.00	4.32	0.34	0.00	0.06	0.00	173	155	0.00	-2.66	0.00	0.00	0.00	0.00
142	83	-0.08	-6.05	0.10	0.00	-0.06	-0.14	174	180	-0.08	87.06	0.00	0.00	0.00	0.00
142	77	0.08	6.05	-0.10	0.00	-0.09	-10.46	174	177	0.08	-87.06	0.00	0.00	0.00	152.39
143	77	0.00	-7.14	0.01	0.00	-0.09	-12.50	175	177	0.00	-78.07	0.00	0.00	0.00	-136.59
143	75	0.00	7.14	-0.01	0.00	-0.13	0.00	175	175	0.00	78.07	0.00	0.00	0.00	0.00
144	103	0.01	-6.94	0.00	0.00	-0.11	0.01	176	196	-0.02	-85.03	0.00	0.00	0.00	0.00
144	97	-0.01	6.94	0.00	0.00	-0.13	-12.17	176	193	0.02	85.03	0.00	0.00	0.01	-361.36
145	97	0.00	-6.79	0.01	0.00	0.08	-11.88	177	193	0.00	86.86	0.00	0.00	-0.01	369.16
145	95	0.00	6.79	-0.01	0.00	-0.06	0.00	177	191	0.00	-86.86	0.00	0.00	0.00	0.00
146	123	-0.10	-6.80	-0.13	0.00	-0.05	-0.16	182	7	95.71	0.00	0.14	0.00	0.00	0.00
146	117	0.10	6.80	0.13	0.00	0.02	-11.75	182	6	-95.71	0.00	-0.14	0.00	-0.23	0.01
147	117	0.00	-6.31	-0.09	0.00	-0.08	-11.04	183	2	97.44	0.00	0.00	0.00	0.00	0.00
147	115	0.00	6.31	0.09	0.00	-0.14	0.00	183	1	-97.44	0.00	0.00	0.00	0.00	0.01
148	143	0.26	-5.34	0.14	0.00	-0.03	0.44	184	23	-108.85	0.00	-0.15	0.00	0.00	0.00
148	137	-0.26	5.34	-0.14	0.00	-0.07	-9.79	184	22	108.85	0.00	0.15	0.00	0.25	0.00
149	137	0.00	-7.50	0.15	0.00	0.06	-13.12	185	17	-97.65	0.00	0.00	0.00	0.00	0.00
149	135	0.00	7.50	-0.15	0.00	0.04	0.00	185	16	97.65	0.00	0.00	0.00	0.00	0.00
150	162	-0.28	-11.15	0.00	0.00	-0.05	-0.47	186	42	2.08	0.00	-0.13	0.00	0.00	0.00
150	157	0.28	11.15	0.00	0.00	0.00	-19.04	186	43	-2.08	0.00	0.13	0.00	0.21	0.00
151	157	0.00	-2.66	0.04	0.00	0.00	-4.66	187	36	14.74	0.00	0.00	0.00	0.00	0.00
151	156	0.00	2.66	-0.04	0.00	0.07	0.00	187	35	-14.74	0.00	0.00	0.00	0.00	0.00
152	181	0.08	-87.06	-0.03	0.00	0.00	0.14	188	62	-8.68	0.00	0.22	0.00	0.00	0.00
152	176	-0.08	87.06	0.03	0.00	0.01	-152.54	188	63	8.68	0.00	-0.22	0.00	-0.37	0.00
153	176	0.00	78.07	-0.02	0.00	0.01	136.59	189	56	4.32	0.00	0.00	0.00	0.00	0.00
153	174	0.00	-78.07	0.02	0.00	0.00	0.00	189	55	-4.32	0.00	0.00	0.00	0.00	0.00
154	195	0.02	85.03	0.00	0.01	0.00	0.04	190	82	-6.05	0.00	-0.08	0.00	0.00	0.00
154	192	-0.02	-85.03	0.00	-0.01	-0.01	361.32	190	83	6.05	0.00	0.08	0.00	0.14	0.00
155	192	0.00	-86.86	0.00	-0.01	0.01	-369.16	191	76	7.14	0.00	0.00	0.00	0.00	0.00
155	190	0.00	86.86	0.00	0.01	0.00	0.00	191	75	-7.14	0.00	0.00	0.00	0.00	0.00
156	7	-0.14	-95.71	0.00	0.00	0.00	0.00	192	102	-6.94	0.00	0.01	0.00	0.00	0.00
156	4	0.14	95.71	0.00	0.00	0.00	-406.78	192	103	6.94	0.00	-0.01	0.00	-0.01	0.00
157	4	0.00	97.44	0.00	0.00	0.00	414.14	193	96	6.79	0.00	0.00	0.00	0.00	0.00
157	2	0.00	-97.44	0.00	0.00	0.00	0.00	193	95	-6.79	0.00	0.00	0.00	0.00	0.00
158	23	0.15	108.85	0.00	0.00	0.00	0.00	194	122	-6.80	0.00	-0.10	0.00	0.00	0.00
158	19	-0.15	-108.85	0.00	0.00	0.00	190.51	194	123	6.80	0.00	0.10	0.00	0.16	0.00
159	19	0.00	-97.65	0.00	0.00	0.00	-170.86	195	116	6.31	0.00	0.00	0.00	0.00	0.00
159	17	0.00	97.65	0.00	0.00	0.00	0.00	195	115	-6.31	0.00	0.00	0.00	0.00	0.00
160	42	0.13	-2.08	0.00	0.00	0.00	0.00	196	142	-5.34	0.00	0.26	0.00	0.00	0.00
160	38	-0.13	2.08	0.00	0.00	0.00	-3.64	196	143	5.34	0.00	-0.26	0.00	-0.44	0.00
161	38	0.00	14.74	0.00	0.00	0.00	25.80	197	136	7.50	0.00	0.00	0.00	0.00	0.00
161	36	0.00	-14.74	0.00	0.00	0.00	0.00	197	135	-7.50	0.00	0.00	0.00	0.00	0.00
162	62	-0.22	8.68	0.00	0.00	0.00	0.00	198	161	-11.15	0.00	-0.28	0.00	0.00	0.00
162	58	0.22	-8.68	0.00	0.00	0.00	15.20	198	162	11.15	0.00	0.28	0.00	0.47	0.00
163	58	0.00	4.32	0.00	0.00	0.00	7.55	199	155	2.66	0.00	0.00	0.00	0.00	0.00
163	56	0.00	-4.32	0.00	0.00	0.00	0.00	199	156	-2.66	0.00	0.00	0.00	0.00	0.00
164	82	0.08	6.05	0.00	0.00	0.00	0.00	200	180	-87.06	0.00	0.08	0.00	0.00	0.00
164	78	-0.08	-6.05	0.00	0.00	0.00	10.60	200	181	87.06	0.00	-0.08	0.00	-0.14	0.00
165	78	0.00	7.14	0.00	0.00	0.00	12.50	201	175	-78.07	0.00	0.00	0.00	0.00	0.00
165	76	0.00	-7.14	0.00	0.00	0.00	0.00	201	174	78.07	0.00	0.00	0.00	0.00	0.00
166	102	-0.01	6.94	0.00	0.00	0.00	0.00	202	196	85.03	0.00	0.02	0.00	0.00	0.00
166	98	0.01	-6.94	0.00	0.00	0.00	12.16	202	195	-85.03	0.00	-0.02	0.00	-0.04	-0.01
167	98	0.00	6.79	0.00	0.00	0.00	11.88	203	191	86.86	0.00	0.00	0.00	0.00	0.00
167	96	0.00	-6.79	0.00	0.00	0.00	0.00	203	190	-86.86	0.00	0.00	0.00	0.00	-0.01
168	122	0.10	6.80	0.00	0.00	0.00	0.00	206	21	-206.50	0.00	-0.15	0.00	20.57	-0.01
168	118	-0.10	-6.80	0.00	0.00	0.00	11.91	206	20	206.50	0.00	0.15	0.00	-20.24	0.01
169	118	0.00	6.31	0.00	0.00	0.00	11.04	207	20	-206.50	0.00	-0.15	0.00	20.24	-0.01
169	116	0.00	-6.31	0.00	0.00	0.00	0.00	207	19	206.50	0.00	0.15	0.00	-19.64	0.01
170	142	-0.26	5.34	0.00	0.00	0.00	0.00	208	40	16.82	0.00	-0.13	0.00	23.37	0.00
170	138	0.26	-5.34	0.00	0.00	0.00	9.35	208	39	-16.82	0.00	0.13	0.00	-23.29	0.00
171	138	0.00	7.50	0.00	0.00	0.00	13.12	209	39	16.82	0.00	-0.13	0.00	23.29	0.00
171	136	0.00	-7.50	0.00	0.00	0.00	0.00	209	41	-16.82	0.00	0.13	0.00	-22.66	0.00
172	161	0.28	11.15	0.00	0.00	0.00	0.00	210	41	16.82	0.00	-0.13	0.00	22.66	0.00
172	158	-0.28	-11.15	0.00	0.00	0.00	19.52	210	38	-16.82	0.00	0.13	0.00	-22.16	0.00

211	60	-4.37	0.00	0.22	0.00	20.02	0.00
211	59	4.37	0.00	-0.22	0.00	-20.75	0.00
212	59	-4.37	0.00	0.22	0.00	20.75	0.00
212	61	4.37	0.00	-0.22	0.00	-21.86	0.00
213	61	-4.37	0.00	0.22	0.00	21.86	0.00
213	58	4.37	0.00	-0.22	0.00	-22.75	0.00
214	80	1.09	0.00	-0.08	0.00	24.10	0.00
214	79	-1.09	0.00	0.08	0.00	-23.83	0.00
215	79	1.09	0.00	-0.08	0.00	23.83	0.00
215	81	-1.09	0.00	0.08	0.00	-23.42	0.00
216	81	1.09	0.00	-0.08	0.00	23.42	0.00
216	78	-1.09	0.00	0.08	0.00	-23.10	0.00
217	100	-0.15	0.00	0.01	0.00	23.93	0.00
217	99	0.15	0.00	-0.01	0.00	-23.96	0.00
218	99	-0.15	0.00	0.01	0.00	23.96	0.00
218	101	0.15	0.00	-0.01	0.00	-24.00	0.00
219	101	-0.15	0.00	0.01	0.00	24.00	0.00
219	98	0.15	0.00	-0.01	0.00	-24.03	0.00
220	120	-0.49	0.00	-0.10	0.00	24.15	0.00
220	119	0.49	0.00	0.10	0.00	-23.83	0.00
221	119	-0.49	0.00	-0.10	0.00	23.83	0.00
221	121	0.49	0.00	0.10	0.00	-23.34	0.00
222	121	-0.49	0.00	-0.10	0.00	23.34	0.00
222	118	0.49	0.00	0.10	0.00	-22.95	0.00
223	140	2.16	0.00	0.26	0.00	19.26	0.00
223	139	-2.16	0.00	-0.26	0.00	-20.12	0.00
224	139	2.16	0.00	0.26	0.00	20.12	0.00
224	141	-2.16	0.00	-0.26	0.00	-21.43	0.00
225	141	2.16	0.00	0.26	0.00	21.43	0.00
225	138	-2.16	0.00	-0.26	0.00	-22.47	0.00
226	160	-8.49	0.00	-0.28	0.00	26.50	0.00
226	159	8.49	0.00	0.28	0.00	-25.30	0.00
227	159	-8.49	0.00	-0.28	0.00	25.30	0.00
227	158	8.49	0.00	0.28	0.00	-24.17	0.00
228	179	-165.13	0.00	0.08	0.00	15.16	0.00
228	178	165.13	0.00	-0.08	0.00	-15.47	0.00
229	178	-165.13	0.00	0.08	0.00	15.47	0.00
229	177	165.13	0.00	-0.08	0.00	-15.81	0.00
230	5	193.15	0.00	0.14	0.00	7.22	-0.01
230	4	-193.15	0.00	-0.14	0.00	-7.36	0.01
231	194	171.89	0.00	0.02	0.00	7.78	0.00
231	193	-171.89	0.00	-0.02	0.00	-7.80	0.00

proc Viaducto Papiol

HIPOTESIS 82

hipo 82 Pretensado de proceso

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
1	3	8570.92	-8.10	0.09	0.04	0.00	575.81
1	8	-8599.67	8.10	-0.09	-0.04	-0.45	-620.78
2	8	8599.65	-8.10	0.09	0.04	0.45	620.78
2	9	-8619.99	8.10	-0.09	-0.04	-0.90	-663.39
3	9	8619.98	-8.10	0.09	-0.02	0.90	663.39
3	10	-8616.80	8.10	-0.09	0.02	-1.35	-700.06
4	10	9295.65	-8.10	0.09	0.02	1.35	-75.06
4	11	-9323.09	8.10	-0.09	-0.02	-1.80	44.11
5	11	9323.10	-8.10	0.09	-0.04	1.80	-44.11
5	12	-9350.92	8.10	-0.09	0.04	-2.25	13.16
6	12	9350.94	-8.10	0.09	-0.20	2.25	-13.16
6	13	-9368.17	8.10	-0.09	0.20	-2.70	-13.96
7	13	9368.20	-8.10	0.09	-0.10	2.70	13.96
7	14	-9356.14	8.10	-0.09	0.10	-3.15	-31.08
8	14	9333.14	-8.10	0.09	-0.32	3.15	25.33
8	15	-9352.87	8.10	-0.09	0.32	-3.60	-50.48
9	15	9352.87	-8.10	0.09	-0.32	3.60	50.48
9	18	-9372.99	8.10	-0.09	0.32	-4.05	-75.61
10	18	9373.02	16.83	0.07	-0.63	4.05	75.61
10	24	-9383.78	-16.83	-0.07	0.63	-4.39	20.97
11	24	9383.76	16.83	0.07	-0.74	4.39	-20.97
11	25	-9368.52	-16.83	-0.07	0.74	-4.73	109.36
12	25	9339.96	16.83	0.07	-0.90	4.73	-118.97
12	26	-9364.22	-16.83	-0.07	0.90	-5.07	194.09
13	26	9364.21	16.83	0.07	-0.85	5.07	-194.09
13	27	-9388.85	-16.83	-0.07	0.85	-5.41	269.22
14	27	9388.90	16.83	0.07	-0.86	5.41	-269.22
14	28	-9405.16	-16.83	-0.07	0.86	-5.75	346.74
15	28	9405.14	16.83	0.07	-0.82	5.75	-346.74
15	29	-9397.91	-16.83	-0.07	0.82	-6.09	430.24
16	29	8698.54	16.83	0.07	-0.87	6.09	352.75
16	30	-8722.14	-16.83	-0.07	0.87	-6.43	-263.49
17	30	8722.13	16.83	0.07	-0.78	6.43	263.49
17	31	-8746.09	-16.83	-0.07	0.78	-6.77	-174.24
18	31	8746.07	16.83	0.07	-0.66	6.77	174.24
18	32	-8755.72	-16.83	-0.07	0.66	-7.11	-85.28
19	32	8755.72	16.83	0.07	-0.66	7.11	85.28
19	33	-8726.21	-16.83	-0.07	0.66	-7.45	2.70
20	33	8703.25	16.83	0.07	-0.48	7.45	-8.44
20	34	-8705.50	-16.83	-0.07	0.48	-7.79	88.37
21	34	8705.52	16.83	0.07	-0.26	7.79	-88.37
21	37	-8708.13	-16.83	-0.07	0.26	-8.13	168.29
22	37	8708.12	5.45	-0.11	-1.18	8.13	-168.29
22	44	-8703.78	-5.45	0.11	1.18	-7.56	191.13
23	44	8703.79	5.45	-0.11	-0.91	7.56	-191.13
23	45	-8680.00	-5.45	0.11	0.91	-6.98	213.32
24	45	7293.98	5.45	-0.11	-0.64	6.98	205.48
24	46	-7314.03	-5.45	0.11	0.64	-6.41	-184.82
25	46	7314.03	5.45	-0.11	-0.64	6.41	184.82
25	47	-7334.38	-5.45	0.11	0.64	-5.84	-164.20
26	47	7334.38	5.45	-0.11	-0.36	5.84	164.20
26	48	-7346.26	-5.45	0.11	0.36	-5.27	-141.25
27	48	7346.25	5.45	-0.11	-0.34	5.27	141.25
27	49	-7334.56	-5.45	0.11	0.34	-4.69	-112.36
28	49	7315.48	5.45	-0.11	-0.03	4.69	112.97
28	50	-7330.18	-5.45	0.11	0.03	-4.12	-83.37
29	50	7330.17	5.45	-0.11	0.30	4.12	83.37
29	51	-7345.17	-5.45	0.11	-0.30	-3.55	-53.81
30	51	7345.20	5.45	-0.11	0.63	3.55	53.81
30	52	-7350.75	-5.45	0.11	-0.63	-2.97	-23.03
31	52	7350.77	5.45	-0.11	0.63	2.97	23.03
31	53	-7330.24	-5.45	0.11	-0.63	-2.40	10.83
32	53	7307.22	5.45	-0.11	1.00	2.40	-16.58
32	54	-7318.40	-5.45	0.11	-1.00	-1.83	42.37
33	54	7318.42	5.45	-0.11	0.98	1.83	-42.37
33	57	-7329.90	-5.45	0.11	-0.98	-1.26	68.13
34	57	7329.92	-1.26	0.03	-1.70	1.26	-68.13
34	64	-7334.40	1.26	-0.03	1.70	-1.41	60.15
35	64	7334.35	-1.26	0.03	-1.72	1.41	-60.15
35	65	-7319.32	1.26	-0.03	1.72	-1.57	51.49
36	65	7293.96	-1.26	0.03	-0.97	1.57	-54.49
36	66	-7314.01	1.26	-0.03	0.97	-1.72	41.59
37	66	7313.99	-1.26	0.03	-0.95	1.72	-41.59
37	67	-7334.33	1.26	-0.03	0.95	-1.87	28.65
38	67	7334.37	-1.26	0.03	-0.61	1.87	-28.65
38	68	-7346.25	1.26	-0.03	0.61	-2.03	18.04
39	68	7346.22	-1.26	0.03	-0.95	2.03	-18.04
39	69	-7334.54	1.26	-0.03	0.95	-2.18	13.37
40	69	7315.47	-1.26	0.03	0.14	2.18	-12.76
40	70	-7330.17	1.26	-0.03	-0.14	-2.34	8.80
41	70	7330.17	-1.26	0.03	-0.24	2.34	-8.80
41	71	-7345.17	1.26	-0.03	0.24	-2.49	4.80
42	71	7345.17	-1.26	0.03	0.13	2.49	-4.80
42	72	-7350.72	1.26	-0.03	-0.13	-2.65	2.02
43	72	7350.73	-1.26	0.03	0.48	2.65	-2.02
43	73	-7330.20	1.26	-0.03	-0.48	-2.80	2.33
44	73	7307.22	-1.26	0.03	0.50	2.80	-8.07
44	74	-7318.40	1.26	-0.03	-0.50	-2.96	0.31
45	74	7318.43	-1.26	0.03	0.84	2.96	-0.31
45	77	-7329.91	1.26	-0.03	-0.84	-3.11	-7.50
46	77	7329.90	0.34	-0.01	-1.11	3.11	7.50
46	84	-7334.38	-0.34	0.01	1.11	-3.08	-7.47
47	84	7334.38	0.34	-0.01	-1.09	3.08	7.47
47	85	-7319.35	-0.34	0.01	1.09	-3.05	-8.11
48	85	7293.96	0.34	-0.01	-0.75	3.05	5.11
48	86	-7314.00	-0.34	0.01	0.75	-3.02	-10.00
49	86	7314.00	0.34	-0.01	-0.40	3.02	10.00
49	87	-7334.35	-0.34	0.01	0.40	-2.98	-14.93
50	87	7334.37	0.34	-0.01	-0.39	2.98	14.93
50	88	-7346.25	-0.34	0.01	0.39	-2.95	-17.52
51	88	7346.23	0.34	-0.01	-0.04	2.95	17.52
51	89	-7334.54	-0.34	0.01	0.04	-2.92	-14.18
52	89	7315.50	0.34	-0.01	-0.04	2.92	14.80
52	90	-7330.20	-0.34	0.01	0.04	-2.89	-10.74
53	90	7330.19	0.34	-0.01	0.32	2.89	10.74
53	91	-7345.19	-0.34	0.01	-0.32	-2.86	-6.73
54	91	7345.20	0.34	-0.01	0.67	2.86	6.73
54	92	-7350.75	-0.34	0.01	-0.67	-2.82	-1.49
55	92	7350.74	0.34	-0.01	1.03	2.82	1.49
55	93	-7330.21	-0.34	0.01	-1.03	-2.79	6.82
56	93	7307.24	0.34	-0.01	1.01	2.79	-12.57
56	94	-7318.41	-0.34	0.01	-1.01	-2.76	12.81
57	94	7318.42	0.34	-0.01	1.03	2.76	-12.81
57	97	-7329.90	-0.34	0.01	-1.03	-2.73	13.02

58	97	7329.90	-0.16	0.03	-1.15	2.73	-13.02	90	151	7345.19	-1.12	0.02	0.91	3.76	35.51
58	104	-7334.37	0.16	-0.03	1.15	-2.87	10.56	90	152	-7350.74	1.12	-0.02	-0.91	-3.86	-37.57
59	104	7334.39	-0.16	0.03	-1.17	2.87	-10.56	91	152	7350.74	-1.12	0.02	0.89	3.86	37.57
59	105	-7319.36	0.16	-0.03	1.17	-3.01	7.42	91	153	-7330.21	1.12	-0.02	-0.89	-3.96	-36.55
60	105	7293.97	-0.16	0.03	-0.79	3.01	-10.42	92	153	7307.24	-1.12	0.02	1.24	3.96	30.80
60	106	-7314.01	0.16	-0.03	0.79	-3.14	3.03	92	154	-7318.42	1.12	-0.02	-1.24	-4.06	-37.85
61	106	7314.02	-0.16	0.03	-0.81	3.14	-3.03	93	154	7318.42	-1.12	0.02	1.57	4.06	37.85
61	107	-7334.37	0.16	-0.03	0.81	-3.28	-4.39	93	157	-7329.90	1.12	-0.02	-1.57	-4.16	-44.94
62	107	7334.36	-0.16	0.03	-0.44	3.28	4.39	94	157	7329.90	4.31	-0.01	-1.18	4.16	44.94
62	108	-7346.24	0.16	-0.03	0.44	-3.42	-9.48	94	163	-7334.38	-4.31	0.01	1.18	-4.09	-25.05
63	108	7346.22	-0.16	0.03	-0.09	3.42	9.48	95	163	7334.37	4.31	-0.01	-0.85	4.09	25.05
63	109	-7334.54	0.16	-0.03	0.09	-3.56	-8.63	95	164	-7319.35	-4.31	0.01	0.85	-4.02	-5.84
64	109	7315.49	-0.16	0.03	-0.44	3.56	9.24	96	164	7293.97	4.31	-0.01	-0.51	4.02	2.84
64	110	-7330.19	0.16	-0.03	0.44	-3.70	-7.68	96	165	-7314.01	-4.31	0.01	0.51	-3.95	12.12
65	110	7330.20	-0.16	0.03	0.27	3.70	7.68	97	165	7314.01	4.31	-0.01	-0.49	3.95	-12.12
65	111	-7345.20	0.16	-0.03	-0.27	-3.84	-6.16	97	166	-7334.36	-4.31	0.01	0.49	-3.89	27.05
66	111	7345.18	-0.16	0.03	0.62	3.84	6.16	98	166	7334.36	4.31	-0.01	-0.13	3.89	-27.05
66	112	-7350.73	0.16	-0.03	-0.62	-3.97	-3.42	98	167	-7346.24	-4.31	0.01	0.13	-3.82	44.31
67	112	7350.74	-0.16	0.03	0.64	3.97	3.42	99	167	7346.24	4.31	-0.01	0.24	3.82	-44.31
67	113	-7330.21	0.16	-0.03	-0.64	-4.11	2.40	99	168	-7334.55	-4.31	0.01	-0.24	-3.75	67.51
68	113	7307.25	-0.16	0.03	0.98	4.11	-8.14	100	168	7315.49	4.31	-0.01	0.26	3.75	-66.90
68	114	-7318.42	0.16	-0.03	-0.98	-4.25	5.90	100	169	-7330.19	-4.31	0.01	-0.26	-3.68	90.81
69	114	7318.41	-0.16	0.03	0.98	4.25	-5.90	101	169	7330.19	4.31	-0.01	0.64	3.68	-90.81
69	117	-7329.89	0.16	-0.03	-0.98	-4.39	3.61	101	170	-7345.19	-4.31	0.01	-0.64	-3.62	114.68
70	117	7329.90	0.31	-0.02	-0.67	4.39	-3.61	102	170	7345.19	4.31	-0.01	0.64	3.62	-114.68
70	124	-7334.38	-0.31	0.02	0.67	-4.27	3.47	102	171	-7350.74	-4.31	0.01	-0.64	-3.55	139.77
71	124	7334.39	0.31	-0.02	-1.04	4.27	-3.47	103	171	7350.74	4.31	-0.01	1.47	3.55	-139.77
71	125	-7319.36	-0.31	0.02	1.04	-4.15	2.65	103	172	-7330.21	-4.31	0.01	-1.47	-3.48	167.94
72	125	7293.97	0.31	-0.02	-0.67	4.15	-5.65	104	172	7310.37	4.31	-0.01	1.47	3.48	-172.89
72	126	-7314.02	-0.31	0.02	0.67	-4.04	0.59	104	173	-7321.57	-4.31	0.01	-1.47	-3.42	192.98
73	126	7314.00	0.31	-0.02	-0.31	4.04	-0.59	105	173	7321.57	4.31	-0.01	1.49	3.42	-192.98
73	127	-7334.35	-0.31	0.02	0.31	-3.92	-4.51	105	176	-7333.07	-4.31	0.01	-1.49	-3.35	213.04
74	127	7334.35	0.31	-0.02	0.04	3.92	4.51	106	176	7333.06	-24.85	-0.07	-0.02	3.35	-213.04
74	128	-7346.23	-0.31	0.02	-0.04	-3.80	-7.27	106	182	-7337.56	24.85	0.07	0.02	-2.98	87.10
75	128	7346.23	0.31	-0.02	0.04	3.80	7.27	107	182	7337.56	-24.85	-0.07	0.38	2.98	-87.10
75	129	-7334.54	-0.31	0.02	-0.04	-3.69	-4.10	107	183	-7322.56	24.85	0.07	-0.38	-2.60	-39.51
76	129	7315.49	0.31	-0.02	0.39	3.69	4.71	108	183	7370.84	-24.85	-0.07	0.40	2.60	45.43
76	130	-7330.19	-0.31	0.02	-0.39	-3.57	-0.83	108	184	-7391.38	24.85	0.07	-0.40	-2.23	-176.34
77	130	7330.17	0.31	-0.02	0.76	3.57	0.83	109	184	7391.38	-24.85	-0.07	0.66	2.23	176.34
77	131	-7345.17	-0.31	0.02	-0.76	-3.45	3.02	109	185	-7392.89	24.85	0.07	-0.66	-1.86	-303.52
78	131	7345.19	0.31	-0.02	0.41	3.45	-3.02	110	185	7392.89	-24.85	-0.07	0.68	1.86	303.52
78	132	-7350.74	-0.31	0.02	-0.41	-3.33	8.08	110	186	-7345.62	24.85	0.07	-0.68	-1.49	-421.86
79	132	7350.74	0.31	-0.02	1.48	3.33	-8.08	111	186	7345.62	-24.85	-0.07	1.06	1.49	421.86
79	133	-7330.21	-0.31	0.02	-1.48	-3.22	16.22	111	187	-7298.66	24.85	0.07	-1.06	-1.12	-540.24
80	133	7307.24	0.31	-0.02	1.13	3.22	-21.97	112	187	5255.74	-24.85	-0.07	1.06	1.12	599.01
80	134	-7318.42	-0.31	0.02	-1.13	-3.10	22.04	112	188	-5222.14	24.85	0.07	-1.06	-0.74	-717.05
81	134	7318.41	0.31	-0.02	1.48	3.10	-22.04	113	188	5222.14	-24.85	-0.07	1.16	0.74	717.05
81	137	-7329.89	-0.31	0.02	-1.48	-2.98	22.08	113	189	-5188.75	24.85	0.07	-1.16	-0.37	-835.13
82	137	7329.89	-1.12	0.02	-1.22	2.98	-22.08	114	189	5188.75	-24.85	-0.07	1.16	0.37	835.13
82	144	-7334.37	1.12	-0.02	1.22	-3.08	14.82	114	192	-5155.58	24.85	0.07	-1.16	0.00	-953.25
83	144	7334.37	-1.12	0.02	-0.50	3.08	-14.82	134	6	0.09	-4.03	-0.24	0.00	-0.11	0.15
83	145	-7319.35	1.12	-0.02	0.50	-3.18	6.88	134	3	-0.09	4.03	0.24	0.00	0.03	-17.27
84	145	7293.97	-1.12	0.02	-0.48	3.18	-9.88	135	3	0.00	4.07	-0.14	0.00	0.19	17.31
84	146	-7314.02	1.12	-0.02	0.48	-3.28	-2.31	135	1	0.00	-4.07	0.14	0.00	0.33	0.00
85	146	7314.02	-1.12	0.02	-0.50	3.28	2.31	136	22	-0.02	12.37	0.51	0.00	-0.32	-0.04
85	147	-7334.36	1.12	-0.02	0.50	-3.37	-14.53	136	18	0.02	-12.37	-0.51	0.00	0.05	21.68
86	147	7334.35	-1.12	0.02	0.20	3.37	14.53	137	18	0.00	-12.57	0.42	0.00	0.33	-21.99
86	148	-7346.23	1.12	-0.02	-0.20	-3.47	-24.42	137	16	0.00	12.57	-0.42	0.00	0.26	0.00
87	148	7346.23	-1.12	0.02	0.22	3.47	24.42	138	43	-0.18	-6.04	-0.05	0.00	0.13	-0.31
87	149	-7334.54	1.12	-0.02	-0.22	-3.57	-28.37	138	37	0.18	6.04	0.05	0.00	0.21	-10.27
88	149	7315.49	-1.12	0.02	0.54	3.57	28.99	139	37	0.00	5.34	0.16	0.00	0.06	9.35
88	150	-7330.19	1.12	-0.02	-0.54	-3.67	-32.23	139	35	0.00	-5.34	-0.16	0.00	-0.07	0.00
89	150	7330.19	-1.12	0.02	0.56	3.67	32.23	140	63	0.15	-4.17	0.21	0.00	-0.33	0.25
89	151	-7345.20	1.12	-0.02	-0.56	-3.76	-35.51	140	57	-0.15	4.17	-0.21	0.00	0.03	-7.54

141	57	0.00	2.55	-0.10	0.00	-0.31	4.45	173	158	0.00	3.52	0.00	0.00	0.00	6.17
141	55	0.00	-2.55	0.10	0.00	-0.41	0.00	173	155	0.00	-3.52	0.00	0.00	0.00	0.00
142	83	-0.04	0.13	-0.29	0.00	0.29	-0.06	174	180	0.06	15.15	0.00	0.00	0.00	0.00
142	77	0.04	-0.13	0.29	0.00	0.22	0.29	174	177	-0.06	-15.15	0.00	0.00	0.00	26.52
143	77	0.00	-1.47	-0.41	0.00	0.09	-2.58	175	177	0.00	-14.01	0.00	0.00	0.00	-24.51
143	75	0.00	1.47	0.41	0.00	0.30	0.00	175	175	0.00	14.01	0.00	0.00	0.00	0.00
144	103	0.03	-1.06	0.29	0.00	0.00	0.06	176	196	-0.07	-12.30	0.00	0.00	0.00	0.00
144	97	-0.03	1.06	-0.29	0.00	0.06	-1.92	176	193	0.07	12.30	0.00	0.00	0.00	-52.29
145	97	0.00	-0.56	0.50	0.00	0.06	-0.98	177	193	0.00	12.55	0.00	0.00	0.00	53.33
145	95	0.00	0.56	-0.50	0.00	0.13	0.00	177	191	0.00	-12.55	0.00	0.00	0.00	0.00
146	123	-0.05	-0.47	-0.07	0.00	-0.18	-0.09	182	7	-4.03	0.00	0.09	0.00	0.00	0.00
146	117	0.05	0.47	0.07	0.00	-0.08	-0.73	182	6	4.03	0.00	-0.09	0.00	-0.15	0.00
147	117	0.00	-0.93	-0.10	0.00	0.00	-1.63	183	2	-4.07	0.00	0.00	0.00	0.00	0.00
147	115	0.00	0.93	0.10	0.00	0.07	0.00	183	1	4.07	0.00	0.00	0.00	0.00	0.00
148	143	0.04	-1.46	0.05	0.00	-0.05	0.07	184	23	12.37	0.00	-0.02	0.00	0.00	0.00
148	137	-0.04	1.46	-0.05	0.00	0.17	-2.63	184	22	-12.37	0.00	0.02	0.00	0.04	0.00
149	137	0.00	-0.04	-0.19	0.00	-0.02	-0.07	185	17	12.57	0.00	0.00	0.00	0.00	0.00
149	135	0.00	0.04	0.19	0.00	-0.04	0.00	185	16	-12.57	0.00	0.00	0.00	0.00	0.00
150	162	-0.03	1.91	0.01	0.00	-0.06	-0.06	186	42	-6.04	0.00	-0.18	0.00	0.00	0.00
150	157	0.03	-1.91	-0.01	0.00	-0.04	3.39	186	43	6.04	0.00	0.18	0.00	0.31	0.00
151	157	0.00	-3.52	0.03	0.00	-0.02	-6.17	187	36	-5.34	0.00	0.00	0.00	0.00	0.00
151	156	0.00	3.52	-0.03	0.00	0.01	0.00	187	35	5.34	0.00	0.00	0.00	0.00	0.00
152	181	-0.06	-15.15	0.01	0.00	0.00	-0.10	188	62	-4.17	0.00	0.15	0.00	0.00	0.00
152	176	0.06	15.15	-0.01	0.00	0.01	-26.42	188	63	4.17	0.00	-0.15	0.00	-0.25	0.00
153	176	0.00	14.01	0.00	0.00	-0.01	24.51	189	56	-2.55	0.00	0.00	0.00	0.00	0.00
153	174	0.00	-14.01	0.00	0.00	-0.01	0.00	189	55	2.55	0.00	0.00	0.00	0.00	0.00
154	195	0.07	12.30	0.00	0.00	0.00	0.13	190	82	0.13	0.00	-0.04	0.00	0.00	0.00
154	192	-0.07	-12.30	0.00	0.00	0.00	52.16	190	83	-0.13	0.00	0.04	0.00	0.06	0.00
155	192	0.00	-12.55	0.00	0.00	0.00	-53.33	191	76	1.47	0.00	0.00	0.00	0.00	0.00
155	190	0.00	12.55	0.00	0.00	0.00	0.00	191	75	-1.47	0.00	0.00	0.00	0.00	0.00
156	7	-0.09	4.03	0.00	0.00	0.00	0.00	192	102	-1.06	0.00	0.03	0.00	0.00	0.00
156	4	0.09	-4.03	0.00	0.00	0.00	17.11	192	103	1.06	0.00	-0.03	0.00	-0.06	0.00
157	4	0.00	-4.07	0.00	0.00	0.00	-17.31	193	96	0.56	0.00	0.00	0.00	0.00	0.00
157	2	0.00	4.07	0.00	0.00	0.00	0.00	193	95	-0.56	0.00	0.00	0.00	0.00	0.00
158	23	0.02	-12.37	0.00	0.00	0.00	0.00	194	122	-0.47	0.00	-0.05	0.00	0.00	0.00
158	19	-0.02	12.37	0.00	0.00	0.00	-21.64	194	123	0.47	0.00	0.05	0.00	0.09	0.00
159	19	0.00	12.57	0.00	0.00	0.00	21.99	195	116	0.93	0.00	0.00	0.00	0.00	0.00
159	17	0.00	-12.57	0.00	0.00	0.00	0.00	195	115	-0.93	0.00	0.00	0.00	0.00	0.00
160	42	0.18	6.04	0.00	0.00	0.00	0.00	196	142	-1.46	0.00	0.04	0.00	0.00	0.00
160	38	-0.18	-6.04	0.00	0.00	0.00	10.57	196	143	1.46	0.00	-0.04	0.00	-0.07	0.00
161	38	0.00	-5.34	0.00	0.00	0.00	-9.35	197	136	0.04	0.00	0.00	0.00	0.00	0.00
161	36	0.00	5.34	0.00	0.00	0.00	0.00	197	135	-0.04	0.00	0.00	0.00	0.00	0.00
162	62	-0.15	4.17	0.00	0.00	0.00	0.00	198	161	1.91	0.00	-0.03	0.00	0.00	0.00
162	58	0.15	-4.17	0.00	0.00	0.00	7.29	198	162	-1.91	0.00	0.03	0.00	0.06	0.00
163	58	0.00	-2.55	0.00	0.00	0.00	-4.45	199	155	3.52	0.00	0.00	0.00	0.00	0.00
163	56	0.00	2.55	0.00	0.00	0.00	0.00	199	156	-3.52	0.00	0.00	0.00	0.00	0.00
164	82	0.04	-0.13	0.00	0.00	0.00	0.00	200	180	-15.15	0.00	-0.06	0.00	0.00	0.00
164	78	-0.04	0.13	0.00	0.00	0.00	-0.22	200	181	15.15	0.00	0.06	0.00	0.10	0.00
165	78	0.00	1.47	0.00	0.00	0.00	2.58	201	175	-14.01	0.00	0.00	0.00	0.00	0.00
165	76	0.00	-1.47	0.00	0.00	0.00	0.00	201	174	14.01	0.00	0.00	0.00	0.00	0.00
166	102	-0.03	1.06	0.00	0.00	0.00	0.00	202	196	12.30	0.00	0.07	0.00	0.00	0.00
166	98	0.03	-1.06	0.00	0.00	0.00	1.86	202	195	-12.30	0.00	-0.07	0.00	-0.13	0.00
167	98	0.00	0.56	0.00	0.00	0.00	0.98	203	191	12.55	0.00	0.00	0.00	0.00	0.00
167	96	0.00	-0.56	0.00	0.00	0.00	0.00	203	190	-12.55	0.00	0.00	0.00	0.00	0.00
168	122	0.05	0.47	0.00	0.00	0.00	0.00	206	21	24.93	0.00	-0.02	0.00	0.48	0.00
168	118	-0.05	-0.47	0.00	0.00	0.00	0.82	206	20	-24.93	0.00	0.02	0.00	-0.43	0.00
169	118	0.00	0.93	0.00	0.00	0.00	1.63	207	20	24.93	0.00	-0.02	0.00	0.43	0.00
169	116	0.00	-0.93	0.00	0.00	0.00	0.00	207	19	-24.93	0.00	0.02	0.00	-0.34	0.00
170	142	-0.04	1.46	0.00	0.00	0.00	0.00	208	40	-11.38	0.00	-0.18	0.00	2.98	0.00
170	138	0.04	-1.46	0.00	0.00	0.00	2.56	208	39	11.38	0.00	0.18	0.00	-2.87	0.00
171	138	0.00	0.04	0.00	0.00	0.00	0.07	209	39	-11.38	0.00	-0.18	0.00	2.87	0.00
171	136	0.00	-0.04	0.00	0.00	0.00	0.00	209	41	11.38	0.00	0.18	0.00	-1.96	0.00
172	161	0.03	-1.91	0.00	0.00	0.00	0.00	210	41	-11.38	0.00	-0.18	0.00	1.96	0.00
172	158	-0.03	1.91	0.00	0.00	0.00	-3.34	210	38	11.38	0.00	0.18	0.00	-1.23	0.00

211	60	-6.71	0.00	0.15	0.00	1.05	0.00
211	59	6.71	0.00	-0.15	0.00	-1.53	0.00
212	59	-6.71	0.00	0.15	0.00	1.53	0.00
212	61	6.71	0.00	-0.15	0.00	-2.26	0.00
213	61	-6.71	0.00	0.15	0.00	2.26	0.00
213	58	6.71	0.00	-0.15	0.00	-2.84	0.00
214	80	1.60	0.00	-0.04	0.00	2.81	0.00
214	79	-1.60	0.00	0.04	0.00	-2.69	0.00
215	79	1.60	0.00	-0.04	0.00	2.69	0.00
215	81	-1.60	0.00	0.04	0.00	-2.50	0.00
216	81	1.60	0.00	-0.04	0.00	2.50	0.00
216	78	-1.60	0.00	0.04	0.00	-2.35	0.00
217	100	-0.50	0.00	0.03	0.00	2.43	0.00
217	99	0.50	0.00	-0.03	0.00	-2.54	0.00
218	99	-0.50	0.00	0.03	0.00	2.54	0.00
218	101	0.50	0.00	-0.03	0.00	-2.71	0.00
219	101	-0.50	0.00	0.03	0.00	2.71	0.00
219	98	0.50	0.00	-0.03	0.00	-2.84	0.00
220	120	0.46	0.00	-0.05	0.00	3.08	0.00
220	119	-0.46	0.00	0.05	0.00	-2.91	0.00
221	119	0.46	0.00	-0.05	0.00	2.91	0.00
221	121	-0.46	0.00	0.05	0.00	-2.65	0.00
222	121	0.46	0.00	-0.05	0.00	2.65	0.00
222	118	-0.46	0.00	0.05	0.00	-2.45	0.00
223	140	-1.42	0.00	0.04	0.00	2.10	0.00
223	139	1.42	0.00	-0.04	0.00	-2.24	0.00
224	139	-1.42	0.00	0.04	0.00	2.24	0.00
224	141	1.42	0.00	-0.04	0.00	-2.45	0.00
225	141	-1.42	0.00	0.04	0.00	2.45	0.00
225	138	1.42	0.00	-0.04	0.00	-2.63	0.00
226	160	5.43	0.00	-0.03	0.00	3.10	0.00
226	159	-5.43	0.00	0.03	0.00	-2.96	0.00
227	159	5.43	0.00	-0.03	0.00	2.96	0.00
227	158	-5.43	0.00	0.03	0.00	-2.83	0.00
228	179	-29.16	0.00	-0.06	0.00	2.48	0.00
228	178	29.16	0.00	0.06	0.00	-2.26	0.00
229	178	-29.16	0.00	-0.06	0.00	2.26	0.00
229	177	29.16	0.00	0.06	0.00	-2.01	0.00
230	5	-8.10	0.00	0.09	0.00	-0.28	0.00
230	4	8.10	0.00	-0.09	0.00	0.19	0.00
231	194	24.85	0.00	0.07	0.00	0.96	0.00
231	193	-24.85	0.00	-0.07	0.00	-1.04	0.00

proc Viaducto Papiol

HIPOTESIS 121

FUER X MAX envolvente sobrecarga

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
1	3	0.00	126.55	-0.98	-735.57	0.00	-0.12
1	8	-26.50	-172.21	0.56	-2.51	-12.52	1117.92
2	8	26.50	172.21	0.61	-7.28	-12.25	-1117.92
2	9	-53.00	-92.21	-0.61	7.28	24.51	1835.82
3	9	53.00	92.21	-0.51	3.94	25.04	-1835.83
3	10	-79.50	-12.21	0.51	-3.94	-37.77	2153.72
4	10	79.50	12.21	-0.54	3.12	37.77	-2153.72
4	11	-106.00	67.79	0.54	-3.12	-50.35	2071.63
5	11	106.00	-67.79	-0.50	3.91	50.35	-2071.63
5	12	-132.50	147.79	0.50	-3.91	-63.12	1589.53
6	12	132.50	-147.32	-1.09	9.75	45.88	-1601.33
6	13	-159.00	227.32	1.09	-9.75	-55.72	721.60
7	13	159.00	-227.79	-0.46	4.88	76.42	-707.43
7	14	-169.00	307.79	0.46	-4.88	-50.61	-610.08
8	14	169.00	-307.32	-1.02	9.01	26.47	593.56
8	15	-179.00	387.32	1.02	-9.01	2.13	-2308.69
9	15	179.00	-387.32	-1.02	9.06	-2.13	2308.69
9	18	-189.00	467.32	1.02	-9.06	30.75	-4423.81
10	18	189.00	467.68	5.66	17.06	-49.32	4473.83
10	24	-199.00	-387.68	-5.66	-17.06	44.50	-2313.95
11	24	199.00	386.63	-4.16	17.50	-18.58	2269.23
11	25	-209.00	-306.63	4.16	-17.50	15.86	-514.61
12	25	209.00	308.27	-4.84	-0.27	6.64	519.46
12	26	-219.01	-228.27	4.84	0.27	-5.91	843.35
13	26	219.00	226.63	-4.08	16.75	-12.32	-839.99
13	27	-229.00	-146.63	4.08	-16.75	9.21	1794.58
14	27	229.01	148.27	-4.85	0.07	4.75	-1806.14
14	28	-239.01	-68.27	4.85	-0.07	-4.02	2368.93
15	28	239.01	68.27	-4.66	1.92	4.02	-2368.93
15	29	-249.01	11.73	4.66	-1.92	-4.23	2531.73
16	29	249.01	-11.73	-4.75	0.96	4.23	-2531.73
16	30	-259.01	91.73	4.75	-0.96	-3.96	2294.52
17	30	259.01	-91.73	-4.65	1.88	3.96	-2294.52
17	31	-269.01	171.73	4.65	-1.88	-4.21	1657.32
18	31	269.01	-175.87	-5.55	30.87	-38.84	-1770.14
18	32	-279.01	258.34	5.55	-45.55	43.09	706.06
19	32	279.01	-258.34	-5.55	45.55	-43.09	-706.05
19	33	-289.01	340.82	5.55	-60.32	47.35	-770.36
20	33	289.02	-340.82	-5.44	60.02	-47.35	770.39
20	34	-299.02	423.32	5.44	-74.89	51.06	-2659.29
21	34	299.02	-423.32	-5.32	73.82	-51.06	2659.32
21	37	-309.02	505.85	5.32	-88.78	54.17	-4960.84
22	37	309.02	477.91	-3.58	28.98	-54.17	4960.84
22	44	-319.02	-397.91	3.58	-28.98	48.54	-2749.83
23	44	319.02	410.97	-3.85	-52.14	-69.72	2777.67
23	45	-329.02	-328.41	3.85	37.03	65.49	-907.77
24	45	329.02	330.03	-4.72	-55.14	-47.01	911.53
24	46	-339.02	-247.44	4.72	39.97	47.11	553.62
25	46	339.02	247.44	-4.72	-39.97	-47.11	-553.62
25	47	-349.02	-164.85	4.72	24.75	47.22	1605.79
26	47	349.02	164.85	-4.59	-24.14	-47.22	-1605.80
26	48	-359.02	-82.23	4.59	8.86	46.66	2244.95
27	48	359.02	82.23	-4.58	-8.81	-46.66	-2244.95
27	49	-369.02	0.39	4.58	-6.51	46.06	2471.01
28	49	369.02	-2.26	-5.21	-4.82	-34.39	-2504.22
28	50	-379.02	84.90	5.21	-10.55	36.94	2307.76
29	50	379.03	-84.90	-5.06	11.47	-36.94	-2307.76
29	51	-389.03	167.55	5.06	-26.86	38.73	1698.10
30	51	389.03	-167.55	-4.91	27.51	-38.73	-1698.09
30	52	-399.03	250.20	4.91	-42.93	39.78	675.17
31	52	399.03	-250.20	-4.91	42.93	-39.78	-675.17
31	53	-409.03	332.87	4.91	-58.38	40.83	-761.03
32	53	409.03	-335.01	-5.94	37.18	-67.02	841.81
32	54	-419.03	417.68	5.94	-52.66	73.22	-2702.09
33	54	419.03	-417.68	-5.95	52.71	-73.22	2702.09
33	57	-429.03	500.36	5.95	-68.21	79.47	-4975.74
34	57	429.03	493.51	-4.27	-77.15	-79.47	4975.76
34	64	-439.03	-410.83	4.27	61.63	77.32	-2693.45
35	64	439.03	410.83	-4.28	-61.57	-77.32	2693.45
35	65	-449.03	-328.14	4.28	46.02	75.22	-824.59
36	65	449.03	328.14	-3.93	-46.66	-75.22	824.55
36	66	-459.03	-245.44	3.93	31.07	71.37	630.83
37	66	459.03	245.44	-3.92	-31.06	-71.37	-630.83
37	67	-469.03	-162.73	3.92	15.44	67.48	1672.70
38	67	469.04	160.65	-4.83	-32.08	-45.57	-1730.42
38	68	-479.04	-77.95	4.83	16.45	46.24	2348.36
39	68	479.03	80.02	-3.92	-0.04	-62.73	-2301.03
39	69	-489.04	2.69	3.92	-15.60	58.85	2515.83
40	69	489.04	-4.77	-4.44	1.30	-47.77	-2552.76
40	70	-499.04	87.47	4.44	-16.94	46.46	2343.61
41	70	499.04	-87.47	-4.64	16.01	-46.46	-2343.62
41	71	-509.04	170.18	4.64	-31.64	46.15	1720.91
42	71	509.04	-170.18	-4.43	32.32	-46.15	-1720.90
42	72	-519.04	252.89	4.43	-47.94	44.83	684.67
43	72	519.04	-254.97	-5.18	28.42	-64.52	-616.32
43	73	-529.04	337.68	5.18	-44.02	66.95	-843.85
44	73	529.04	-337.68	-5.17	44.00	-66.95	843.85
44	74	-539.04	420.37	5.17	-59.58	69.32	-2717.53
45	74	539.04	-420.37	-4.97	58.54	-69.32	2717.55
45	77	-549.04	503.06	4.97	-74.08	70.67	-5004.69
46	77	549.05	493.58	-4.15	-69.13	-70.67	5004.71
46	84	-559.05	-410.90	4.15	53.63	67.92	-2722.06
47	84	559.05	410.90	-4.14	-53.68	-67.92	2722.06
47	85	-569.05	-328.23	4.14	38.20	65.12	-852.74
48	85	569.05	326.09	-4.90	-58.25	-39.94	771.98
48	86	-579.05	-243.42	4.90	42.79	40.96	673.23
49	86	579.05	243.42	-4.68	-42.53	-40.96	-673.25
49	87	-589.05	-160.77	4.68	27.10	40.88	1705.18
50	87	589.05	160.77	-4.67	-27.07	-40.88	-1705.18
50	88	-599.05	-78.12	4.67	11.66	40.74	2323.84
51	88	599.05	78.12	-4.44	-10.78	-40.74	-2323.85
51	89	-609.05	4.52	4.44	-4.60	39.47	2529.28
52	89	609.05	-4.52	-4.44	4.60	-39.47	-2529.28
52	90	-619.05	87.15	4.44	-19.93	38.19	2321.54
53	90	619.05	-87.15	-4.20	20.86	-38.19	-2321.53
53	91	-629.38	221.91	-0.23	-30.56	37.52	2343.06
54	91	629.38	-221.91	0.46	31.45	-37.52	-2343.05
54	92	-641.25	335.51	-0.46	-46.69	35.19	926.12
55	92	641.25	-337.43	-0.19	28.43	-53.92	-863.13
55	93	-653.13	451.02	0.19	-43.62	54.88	-1131.36
56	93	653.13	-451.02	-0.21	43.64	-54.88	1131.36
56	94	-665.00	564.59	0.21	-58.77	55.91	-3693.75
57	94	665.00	-564.59	-0.19	58.70	-55.91	3693.75
57	97	-676.88	678.15	0.19	-73.76	56.87	-6824.01

58	97	676.88	683.08	0.38	-77.87	-77.60	6803.97	90	151	712.50	-226.53	0.72	4.33	-0.69	-2097.31
58	104	-688.75	-569.54	-0.38	62.88	75.68	-3695.80	90	152	-712.50	337.53	-0.72	-4.33	-2.90	687.18
59	104	688.75	569.54	0.37	-62.81	-75.68	3695.80	91	152	712.50	-337.53	0.70	4.32	2.90	-687.18
59	105	-700.63	-456.02	-0.37	47.90	73.84	-1155.28	91	153	-712.50	448.53	-0.70	-4.32	-6.43	-1277.99
60	105	700.63	453.95	-0.28	-67.92	-50.19	1076.94	92	153	712.50	-446.72	-0.19	-15.01	-16.55	1273.77
60	106	-712.50	-340.46	0.28	53.08	51.59	885.68	92	154	-712.50	557.72	0.19	15.01	17.50	-3784.88
61	106	712.50	340.46	-0.29	-53.10	-51.59	-885.68	93	154	712.50	-557.72	0.08	-16.44	-17.50	3784.87
61	107	-712.50	-226.98	0.29	38.35	53.06	2304.28	93	157	-712.50	668.72	-0.08	16.44	17.09	-6850.91
62	107	712.50	227.40	-0.23	-30.11	-36.79	-2292.65	94	157	712.50	682.45	-0.71	-4.40	-17.09	6850.98
62	108	-712.50	-113.95	0.23	15.45	37.95	3146.03	94	163	-712.50	-571.44	0.71	4.40	20.64	-3716.24
63	108	712.50	113.95	0.04	-14.25	-37.95	-3146.03	95	163	712.50	571.44	-0.44	-5.81	-20.64	3716.24
63	109	-712.50	-0.52	-0.04	-0.32	37.76	3432.21	95	164	-712.50	-460.44	0.44	5.81	22.84	-1136.52
64	109	712.50	0.52	-0.23	-0.98	-37.76	-3432.21	96	164	712.50	460.44	-0.17	-6.25	-22.84	1136.51
64	110	-712.50	112.89	0.23	-13.50	38.92	3151.29	96	165	-712.50	-349.44	0.17	6.25	23.68	888.21
65	110	712.50	-112.89	0.32	15.95	-38.92	-3151.28	97	165	712.50	349.44	-0.15	-6.23	-23.68	-888.21
65	111	-712.50	226.26	-0.32	-30.34	37.30	2303.43	97	166	-712.50	-238.44	0.15	6.23	24.45	2357.93
66	111	712.50	-227.98	-0.28	14.03	-51.33	-2255.70	98	166	712.50	238.92	-0.43	0.83	-0.63	-2345.08
66	112	-712.50	341.34	0.28	-28.32	52.71	832.38	98	167	-712.50	-127.92	0.43	-0.83	2.78	3262.18
67	112	712.50	-341.34	-0.26	28.33	-52.71	-832.38	99	167	712.50	127.92	-0.16	2.07	-2.78	-3262.18
67	113	-712.50	454.67	0.26	-42.52	54.03	-1157.61	99	168	-712.50	-16.92	0.16	-2.07	3.58	3624.28
68	113	712.50	-454.67	0.01	42.08	-54.03	1157.63	100	168	712.50	16.92	-0.15	2.14	-3.58	-3624.28
68	114	-712.50	567.98	-0.01	-56.18	53.99	-3714.22	100	169	-712.50	94.08	0.15	-2.14	4.31	3431.37
69	114	712.50	-567.98	0.01	56.18	-53.99	3714.22	101	169	712.50	-94.08	0.12	3.44	-4.31	-3431.37
69	117	-712.50	681.26	-0.01	-70.20	53.96	-6837.34	101	170	-712.50	205.08	-0.12	-3.44	3.69	2683.48
70	117	712.51	681.73	0.26	-71.34	-74.43	6817.54	102	170	712.50	-205.08	0.13	3.44	-3.69	-2683.47
70	124	-712.51	-568.47	-0.26	57.40	73.15	-3692.06	102	171	-712.50	316.08	-0.13	-3.44	3.06	1380.55
71	124	712.51	568.47	-0.03	-55.92	-73.15	3692.08	103	171	712.50	-317.19	0.03	-1.63	-22.22	-1344.12
71	125	-712.51	-455.22	0.03	42.05	73.28	-1132.85	103	172	-712.50	428.19	-0.03	1.63	22.08	-519.33
72	125	712.51	455.22	0.26	-42.51	-73.28	1132.83	104	172	712.50	-428.19	0.03	-1.63	-22.08	519.33
72	126	-712.51	-342.00	-0.26	28.70	71.99	860.23	104	173	-712.50	539.19	-0.03	1.63	21.95	-2937.77
73	126	712.50	340.52	-0.55	-39.85	-36.85	-908.87	105	173	712.50	-539.19	0.04	-1.69	-21.95	2937.77
73	127	-712.50	-227.32	0.55	26.10	39.62	2328.45	105	176	-712.50	650.19	-0.04	1.69	21.74	-5911.27
74	127	712.50	227.32	-0.28	-25.22	-39.62	-2328.46	106	176	712.50	613.63	0.20	-53.67	-42.86	5883.83
74	128	-712.50	-114.13	0.28	11.53	41.03	3182.07	106	182	-712.50	-500.51	-0.20	40.25	41.86	-3098.46
75	128	712.50	114.13	-0.28	-11.53	-41.03	-3182.07	107	182	712.50	501.12	0.02	-35.87	-23.08	3122.83
75	129	-712.50	-0.96	0.28	-2.10	42.44	3469.81	107	183	-712.50	-387.97	-0.02	22.37	23.00	-900.14
76	129	712.50	0.96	-0.01	3.42	-42.44	-3469.81	108	183	712.50	387.97	0.03	-22.39	-23.00	900.14
76	130	-712.50	112.19	0.01	-17.00	42.50	3191.76	108	184	-712.50	-274.79	-0.03	8.79	22.85	756.76
77	130	712.50	-113.78	-0.69	4.41	-58.98	-3155.55	109	184	712.50	269.99	-0.36	2.51	-3.55	-689.15
77	131	-712.50	226.91	0.69	-17.95	62.44	2303.85	109	185	-712.50	-158.99	0.36	-2.51	5.33	1761.58
78	131	712.50	-225.32	0.00	30.93	-41.14	-2348.02	110	185	712.50	158.99	-0.34	2.54	-5.33	-1761.58
78	132	-712.50	338.44	0.00	-44.42	41.13	938.61	110	186	-712.50	-47.98	0.34	-2.54	7.04	2279.01
79	132	712.51	-340.03	-0.14	31.60	-67.25	-886.48	111	186	712.50	47.98	0.21	4.32	-7.04	-2279.01
79	133	-712.51	453.13	0.14	-45.04	67.94	-1096.42	111	187	-712.50	63.01	-0.21	-4.32	5.98	2241.43
80	133	712.50	-453.13	-0.41	45.46	-67.94	1096.40	112	187	712.50	-63.01	0.21	4.32	-5.98	-2241.43
80	134	-712.50	566.22	0.41	-58.86	69.97	-3644.83	112	188	-712.50	174.01	-0.21	-4.32	4.91	1648.86
81	134	712.50	-566.22	-0.14	57.47	-69.97	3644.85	113	188	712.50	-174.01	0.48	4.95	-4.91	-1648.86
81	137	-712.50	679.30	0.14	-70.84	70.65	-6758.64	113	189	-712.50	285.01	-0.48	-4.95	2.49	501.29
82	137	712.51	675.33	0.80	-53.59	-70.65	6758.65	114	189	712.50	-285.01	0.50	4.96	-2.49	-501.29
82	144	-712.51	-562.27	-0.80	40.27	66.67	-3664.68	114	192	-712.50	396.01	-0.50	-4.96	0.00	-1201.28
83	144	712.50	562.27	1.35	-43.13	-66.67	3664.65	134	6	24.53	97.76	0.00	0.00	-0.01	41.35
83	145	-712.50	-449.22	-1.35	29.85	59.92	-1135.91	134	3	-24.53	-97.76	0.00	0.00	0.00	374.14
84	145	712.50	449.22	1.37	-29.87	-59.92	1135.91	135	3	0.00	-181.84	0.00	0.00	0.00	-772.84
84	146	-712.50	-336.18	-1.37	16.64	53.09	827.60	135	1	0.00	181.84	0.00	0.00	0.00	0.00
85	146	712.50	336.18	1.35	-16.65	-53.09	-827.60	136	22	40.15	160.08	0.01	0.01	-0.01	67.69
85	147	-712.50	-223.16	-1.35	3.45	46.33	2225.91	136	18	-40.15	-160.08	-0.01	-0.01	0.00	212.48
86	147	712.50	221.45	0.76	-20.28	-34.83	-2273.13	137	18	0.03	-336.34	0.00	0.00	0.00	-588.52
86	148	-712.50	-108.43	-0.76	7.11	31.02	3097.86	137	16	-0.03	336.34	0.00	0.00	0.00	0.01
87	148	712.50	108.43	0.78	-7.05	-31.02	-3097.86	138	43	50.09	62.09	-0.01	0.02	0.01	84.49
87	149	-712.50	4.58	-0.78	-6.09	27.13	3357.50	138	37	-50.09	-62.09	0.01	-0.02	0.03	24.20
88	149	712.50	-4.53	0.42	3.43	-4.96	-3252.60	139	37	0.08	-467.92	0.00	0.00	0.00	-818.79
88	150	-712.50	115.53	-0.42	-3.43	2.86	2952.45	139	35	-0.08	467.92	0.00	0.00	0.00	0.01
89	150	712.50	-115.53	0.43	3.49	-2.86	-2952.45	140	63	54.81	-61.66	0.01	0.00	0.00	92.52
89	151	-712.50	226.53	-0.43	-3.49	0.69	2097.31	140	57	-54.81	61.66	-0.01	0.00	0.00	-200.45

141	57	0.19	-398.10	0.00	0.00	-0.01	-696.42
141	55	-0.19	398.10	0.00	0.00	0.00	0.01
142	83	50.12	-60.00	0.00	0.00	0.00	84.56
142	77	-50.12	60.00	0.00	0.00	-0.01	-189.60
143	77	0.12	-499.68	-0.01	0.00	0.00	-873.93
143	75	-0.12	499.68	0.01	0.00	0.00	0.00
144	103	52.08	-37.92	-0.01	-0.01	0.01	87.89
144	97	-52.08	37.92	0.01	0.01	-0.01	-154.32
145	97	0.13	-359.89	0.00	0.00	0.00	-629.11
145	95	-0.13	359.89	0.00	0.00	0.00	-0.01
146	123	50.59	0.16	0.00	0.01	-0.01	85.27
146	117	-50.59	-0.16	0.00	-0.01	0.00	-84.97
147	117	0.12	-343.50	0.00	-0.01	-0.01	-600.75
147	115	-0.12	343.50	0.00	0.01	-0.01	-0.01
148	143	47.86	43.32	0.00	0.01	0.00	80.68
148	137	-47.86	-43.32	0.00	-0.01	0.00	-4.84
149	137	0.12	-389.20	-0.01	0.00	0.00	-680.84
149	135	-0.12	389.20	0.01	0.00	0.00	0.02
150	162	44.91	235.74	0.00	0.00	0.00	75.76
150	157	-44.91	-235.74	0.00	0.00	0.00	336.89
151	157	0.08	-702.20	0.00	-0.01	0.00	-1228.54
151	156	-0.08	702.20	0.00	0.01	0.00	0.00
152	181	43.26	195.55	0.00	0.00	0.00	72.95
152	176	-43.26	-195.55	0.00	0.00	0.00	269.36
153	176	0.04	-675.57	0.00	0.00	0.00	-1181.91
153	174	-0.04	675.57	0.00	0.00	0.00	-0.01
154	195	20.16	123.23	-174.76	294.65	0.00	33.99
154	192	-20.16	-123.23	174.76	-294.65	742.75	489.73
155	192	0.00	-147.56	-349.53	589.31	1485.50	-627.12
155	190	0.00	147.56	349.53	-589.31	0.00	0.00
156	7	21.86	34.81	0.00	0.00	0.00	0.00
156	4	-21.86	-34.81	0.00	0.00	0.00	147.94
157	4	0.00	181.84	0.00	0.00	0.00	772.84
157	2	0.00	-181.84	0.00	0.00	0.00	0.00
158	23	56.10	-625.93	0.00	0.00	0.00	0.00
158	19	-56.10	625.93	0.00	0.00	0.01	-1095.49
159	19	0.02	751.26	0.00	0.00	0.00	1314.54
159	17	-0.02	-751.26	0.00	0.00	0.00	0.00
160	42	59.30	-653.23	-0.01	0.00	0.00	0.00
160	38	-59.30	653.23	0.01	0.00	0.02	-1143.52
161	38	0.05	351.36	0.00	0.00	0.00	614.83
161	36	-0.05	-351.36	0.00	0.00	0.00	0.00
162	62	52.01	-607.31	0.00	0.00	0.00	0.01
162	58	-52.01	607.31	0.00	0.00	0.00	-1063.10
163	58	0.11	344.48	0.00	0.00	0.00	602.63
163	56	-0.11	-344.48	0.00	0.00	0.00	0.01
164	82	55.53	-615.28	0.00	0.00	0.00	-0.01
164	78	-55.53	615.28	0.00	0.00	0.00	-1077.38
165	78	0.09	463.30	0.00	0.00	0.00	810.29
165	76	-0.09	-463.30	0.00	0.00	0.00	0.00
166	102	56.15	-666.03	0.00	0.00	0.00	0.00
166	98	-56.15	666.03	0.00	0.00	-0.01	-1166.80
167	98	0.11	527.00	0.00	0.00	0.00	921.25
167	96	-0.11	-527.00	0.00	0.00	0.00	-0.01
168	122	57.00	-752.53	-0.01	0.00	0.00	0.01
168	118	-57.00	752.53	0.01	0.00	0.01	-1317.70
169	118	0.11	319.49	0.00	0.00	0.00	558.75
169	116	-0.11	-319.49	0.00	0.00	0.00	0.00
170	142	63.83	-814.52	0.00	0.00	0.00	0.00
170	138	-63.83	814.52	0.00	0.00	0.01	-1425.91
171	138	0.09	511.90	0.00	0.00	0.00	895.50
171	136	-0.09	-511.90	0.00	0.00	0.00	-0.02
172	161	56.47	-849.82	0.00	0.00	0.00	0.00
172	158	-56.47	849.82	0.00	0.00	0.00	-1487.55
173	158	0.05	403.14	0.00	0.00	0.00	705.32
173	155	-0.05	-403.14	0.00	0.00	0.00	0.02
174	180	47.39	-768.11	0.00	0.00	0.00	0.00
174	177	-47.39	768.11	0.00	0.00	0.00	-1344.50
175	177	0.03	494.92	0.00	0.00	0.00	865.87
175	175	-0.03	-494.92	0.00	0.00	0.00	0.00
176	196	22.51	-173.57	-187.50	0.00	0.00	0.00
176	193	-22.51	173.57	187.50	0.00	796.87	-737.65
177	193	0.00	165.24	-356.25	0.00	1514.07	702.25
177	191	0.00	-165.24	356.25	0.00	0.00	0.00
182	7	347.06	0.00	-1.00	0.00	0.00	0.00
182	6	-347.06	0.00	1.00	0.00	1.69	-0.01
183	2	326.27	0.00	0.00	0.00	0.00	0.00
183	1	-326.27	0.00	0.00	0.00	0.00	-0.01
184	23	846.46	0.00	-16.35	0.00	0.00	0.00
184	22	-846.46	0.00	16.35	0.00	27.56	0.00
185	17	890.98	0.00	0.00	0.00	0.00	0.00
185	16	-890.98	0.00	0.00	0.00	0.00	0.00
186	42	867.48	0.00	0.30	0.00	0.00	0.00
186	43	-867.48	0.00	-0.30	0.00	-0.51	0.00
187	36	1015.48	0.00	0.00	0.00	0.00	0.00
187	35	-1015.48	0.00	0.00	0.00	0.00	0.00
188	62	852.89	0.00	-9.05	0.00	0.00	0.00
188	63	-852.89	0.00	9.05	0.00	15.27	0.00
189	56	1068.19	0.00	0.00	0.00	0.00	0.00
189	55	-1068.19	0.00	0.00	0.00	0.00	0.00
190	82	878.38	0.00	4.74	0.00	0.00	0.00
190	83	-878.38	0.00	-4.74	0.00	-8.02	0.00
191	76	1077.38	0.00	0.00	0.00	0.00	0.00
191	75	-1077.38	0.00	0.00	0.00	0.00	0.00
192	102	888.11	0.00	3.47	0.00	0.00	0.00
192	103	-888.11	0.00	-3.47	0.00	-5.84	0.00
193	96	1024.01	0.00	0.00	0.00	0.00	0.00
193	95	-1024.01	0.00	0.00	0.00	0.00	0.00
194	122	913.82	0.00	-27.92	0.00	0.00	0.00
194	123	-913.82	0.00	27.92	0.00	47.09	0.00
195	116	946.24	0.00	0.00	0.00	0.00	0.00
195	115	-946.24	0.00	0.00	0.00	-0.01	0.00
196	142	959.30	0.00	-25.91	0.00	0.00	0.00
196	143	-959.30	0.00	25.91	0.00	43.72	0.00
197	136	876.97	0.00	0.00	0.00	0.00	0.00
197	135	-876.97	0.00	0.00	0.00	-0.01	0.00
198	161	1033.69	0.00	-12.61	0.00	0.00	0.00
198	162	-1033.69	0.00	12.61	0.00	21.29	0.00
199	155	925.25	0.00	0.00	0.00	0.00	0.00
199	156	-925.25	0.00	0.00	0.00	-0.01	0.00
200	180	873.15	0.00	-20.54	0.00	0.00	0.00
200	181	-873.15	0.00	20.54	0.00	34.62	0.00
201	175	795.84	0.00	0.00	0.00	0.00	0.00
201	174	-795.84	0.00	0.00	0.00	0.00	0.00
202	196	325.79	187.50	-4.57	0.00	0.00	0.00
202	195	-325.79	-187.50	4.57	0.00	7.71	316.14
203	191	368.87	187.50	0.00	0.00	0.00	0.00
203	190	-368.87	-187.50	0.00	0.00	0.00	316.13
206	21	1573.80	0.00	-23.10	0.00	298.79	0.03
206	20	-1573.80	0.00	23.10	0.00	-247.96	-0.03
207	20	1573.80	0.00	-23.10	0.00	247.96	0.03
207	19	-1573.80	0.00	23.10	0.00	-155.54	-0.03
208	40	1690.53	0.00	-16.11	0.01	646.77	-0.11
208	39	-1690.53	0.00	16.11	-0.01	-637.10	0.11
209	39	1690.53	0.00	-16.11	0.01	637.10	-0.11
209	41	-1690.53	0.00	16.11	-0.01	-556.56	0.11
210	41	1690.53	0.00	-16.11	0.01	556.56	-0.11
210	38	-1690.53	0.00	16.11	-0.01	-492.13	0.11

211	60	1707.82	0.00	-4.67	0.00	715.47	0.00
211	59	-1707.82	0.00	4.67	0.00	-700.06	0.00
212	59	1707.82	0.00	-4.67	0.00	700.06	0.00
212	61	-1707.82	0.00	4.67	0.00	-676.71	0.00
213	61	1707.82	0.00	-4.67	0.00	676.71	0.00
213	58	-1707.82	0.00	4.67	0.00	-658.02	0.00
214	80	1720.68	0.00	-11.85	0.00	803.33	0.06
214	79	-1720.68	0.00	11.85	0.00	-764.21	-0.06
215	79	1720.68	0.00	-11.85	0.00	764.21	0.06
215	81	-1720.68	0.00	11.85	0.00	-704.94	-0.06
216	81	1720.68	0.00	-11.85	0.00	704.94	0.06
216	78	-1720.68	0.00	11.85	0.00	-657.52	-0.06
217	100	1721.10	0.00	-11.81	0.00	615.37	0.00
217	99	-1721.10	0.00	11.81	0.00	-576.40	0.00
218	99	1721.10	0.00	-11.81	0.00	576.40	0.00
218	101	-1721.10	0.00	11.81	0.00	-517.35	0.00
219	101	1721.10	0.00	-11.81	0.00	517.35	0.00
219	98	-1721.10	0.00	11.81	0.00	-470.12	0.00
220	120	1716.81	0.00	-16.61	0.00	312.35	-0.04
220	119	-1716.81	0.00	16.61	0.00	-257.53	0.04
221	119	1716.81	0.00	-16.61	0.00	257.53	-0.04
221	121	-1716.81	0.00	16.61	0.00	-174.48	0.04
222	121	1716.81	0.00	-16.61	0.00	174.48	-0.04
222	118	-1716.81	0.00	16.61	0.00	-108.03	0.04
223	140	1707.41	0.00	-24.26	0.00	19.23	0.00
223	139	-1707.41	0.00	24.26	0.00	60.83	0.00
224	139	1707.41	0.00	-24.26	0.00	-60.83	0.00
224	141	-1707.41	0.00	24.26	0.00	182.14	0.00
225	141	1707.41	0.00	-24.26	0.00	-182.14	0.00
225	138	-1707.41	0.00	24.26	0.00	279.19	0.00
226	160	1693.94	0.00	-26.64	0.00	-253.54	0.09
226	159	-1693.94	0.00	26.64	0.00	368.07	-0.09
227	159	1693.94	0.00	-26.63	0.00	-368.07	0.09
227	158	-1693.94	0.00	26.63	0.00	474.61	-0.09
228	179	1593.27	0.00	-18.95	0.00	-50.18	0.00
228	178	-1593.27	0.00	18.95	0.00	120.29	0.00
229	178	1593.27	0.00	-18.95	0.00	-120.29	0.00
229	177	-1593.27	0.00	18.95	0.00	196.08	0.00
230	5	558.56	0.00	-4.03	0.00	-64.20	-0.01
230	4	-558.56	0.00	4.03	0.00	68.23	0.01
231	194	573.27	375.00	-10.13	0.00	154.16	375.00
231	193	-573.27	-375.00	10.13	0.00	-144.04	0.00

proc Viaducto Papiol

HIPOTESIS 122

FUER X MIN envolvente sobrecarga

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
1	3	0.00	358.54	-0.03	-1.30	0.00	0.00
1	8	26.50	-191.35	0.60	-4.43	-12.32	1099.94
2	8	-26.50	191.35	-0.60	4.43	12.32	-1099.94
2	9	53.00	-111.35	0.60	-4.43	-24.64	1799.86
3	9	-53.00	111.35	0.53	-3.95	-24.91	-1799.86
3	10	79.50	-31.35	-0.53	3.95	37.57	2099.77
4	10	-79.50	31.35	0.56	-4.75	-37.57	-2099.76
4	11	106.00	48.65	-0.56	4.75	50.08	1999.68
5	11	-106.00	-48.65	0.52	-3.99	-50.08	-1999.68
5	12	132.50	128.65	-0.52	3.99	62.79	1499.59
6	12	-132.51	-128.04	1.19	-8.00	-43.35	-1514.77
6	13	159.00	208.04	-1.19	8.00	52.69	617.72
7	13	-159.00	-208.04	0.09	1.55	95.95	-617.74
7	14	169.00	288.04	-0.09	-1.55	-72.89	-643.93
8	14	-169.00	-288.04	3.02	-9.48	91.92	643.99
8	15	179.00	368.04	-3.74	6.66	-85.31	-2305.64
9	15	-179.01	-368.04	4.91	-16.39	42.32	2305.66
9	18	189.01	448.04	-5.63	13.57	-92.16	-4367.31
10	18	-189.01	474.86	-0.77	-62.40	102.82	4424.52
10	24	199.01	-394.86	0.05	59.57	-77.25	-2271.61
11	24	-199.01	393.66	-9.19	-49.23	68.27	2220.41
11	25	209.01	-313.66	8.47	46.41	-47.59	-473.53
12	25	-209.00	315.78	4.83	-2.29	-6.20	479.56
12	26	219.00	-235.78	-4.83	2.29	5.56	877.90
13	26	-219.00	233.67	4.01	-22.52	15.90	-873.49
13	27	229.00	-153.67	-4.01	22.52	-12.46	1820.37
14	27	-229.00	155.78	4.83	-1.94	-4.48	-1835.35
14	28	239.00	-75.78	-4.83	1.94	3.84	2392.80
15	28	-239.01	76.34	5.10	-7.92	13.82	-2399.51
15	29	249.01	3.66	-5.10	7.92	-15.80	2559.76
16	29	-249.01	-4.22	4.74	-1.04	-4.13	-2550.25
16	30	259.01	84.22	-4.74	1.04	3.95	2307.71
17	30	-259.00	-83.66	5.09	-7.97	18.25	-2320.00
17	31	269.00	163.66	-5.09	7.97	-20.18	1680.24
18	31	-269.01	-168.21	5.59	-30.44	42.93	-1777.20
18	32	279.01	250.51	-5.59	45.26	-47.40	708.92
19	32	-279.01	-250.51	5.59	-45.26	47.40	-708.92
19	33	289.01	332.80	-5.59	60.05	-51.87	-770.78
20	33	-289.02	-332.80	5.48	-60.34	51.87	770.76
20	34	299.02	415.07	-5.48	75.10	-55.79	-2661.87
21	34	-299.02	-415.07	8.78	-81.41	82.63	2662.00
21	37	309.02	497.33	-9.50	93.30	-104.82	-4964.48
22	37	-309.02	498.94	-1.22	21.61	125.02	5041.65
22	44	319.02	-416.70	0.50	-9.77	-97.23	-2774.02
23	44	-319.02	416.70	-0.63	8.66	97.23	2774.03
23	45	329.02	-334.46	-0.09	3.13	-72.41	-917.59
24	45	-329.02	334.46	-0.03	-3.48	72.41	917.59
24	46	339.02	-252.24	-0.69	15.22	-50.55	527.74
25	46	-339.02	252.24	0.69	-15.22	50.55	-527.74
25	47	349.02	-170.04	-1.41	26.90	-32.30	1561.98
26	47	-349.02	172.18	4.40	13.89	44.23	-1578.71
26	48	359.02	-89.98	-4.40	0.56	-42.71	2212.67
27	48	-359.02	89.99	4.39	-0.51	42.71	-2212.67
27	49	369.02	-7.80	-4.39	14.89	-41.15	2435.70
28	49	-369.02	6.01	5.02	-1.42	29.46	-2467.44
28	50	379.02	75.97	-5.02	14.40	-31.08	2271.09
29	50	-379.02	-75.97	4.87	-13.50	31.08	-2271.10
29	51	389.02	157.57	-4.87	23.70	-31.94	1665.81
30	51	-389.03	-157.57	4.72	-23.07	31.94	-1665.82
30	52	399.03	239.15	-4.72	33.21	-32.06	652.57
31	52	-399.03	-239.15	4.72	-33.21	32.06	-652.57
31	53	409.03	321.10	-4.72	46.02	-32.18	-769.51
32	53	-409.03	-322.19	8.16	-39.48	59.65	810.68
32	54	419.03	404.12	-8.88	49.34	-78.77	-2647.91
33	54	-419.03	-404.12	8.89	-49.29	78.77	2647.91
33	57	429.03	485.65	-9.61	56.25	-101.54	-4893.79
34	57	-429.03	494.81	-0.34	21.51	101.54	4893.78
34	64	439.03	-413.29	-0.38	-14.59	-78.13	-2644.96
35	64	-439.04	413.29	0.39	14.64	78.13	2644.96
35	65	449.04	-331.38	-1.11	-4.89	-58.36	-804.73
36	65	-449.03	331.94	5.08	55.54	35.95	751.43
36	66	459.03	-249.84	-5.08	-41.59	-37.82	681.59
37	66	-459.03	249.84	5.07	41.60	37.83	-681.58
37	67	469.03	-167.75	-5.07	-27.68	-39.66	1704.13
38	67	-469.04	167.75	4.90	28.30	39.66	-1704.12
38	68	479.04	-85.67	-4.90	-14.39	-40.65	2316.20
39	68	-479.03	85.67	5.07	13.56	40.65	-2316.21
39	69	489.03	-3.58	-5.07	0.32	-42.50	2517.87
40	69	-489.04	3.58	4.50	2.60	42.50	-2517.87
40	70	499.04	78.50	-4.50	11.26	-41.52	2309.12
41	70	-499.04	-78.50	4.70	-12.19	41.52	-2309.11
41	71	509.04	160.58	-4.70	26.03	-41.53	1689.93
42	71	-509.04	-160.58	4.50	-25.35	41.53	-1689.94
42	72	519.04	242.66	-4.50	39.18	-40.52	660.38
43	72	-519.04	-244.28	7.65	-19.27	41.84	-607.36
43	73	529.04	326.35	-8.37	30.23	-58.37	-840.65
44	73	-529.04	-326.35	8.36	-30.25	58.37	840.65
44	74	539.04	408.42	-9.08	41.19	-78.44	-2699.04
45	74	-539.05	-407.93	9.11	-50.08	99.63	2678.04
45	77	549.05	490.00	-9.83	60.99	-123.50	-4944.33
46	77	-549.05	498.81	0.02	40.70	101.10	4967.81
46	84	559.05	-416.74	-0.74	-29.83	-79.48	-2700.38
47	84	-559.05	416.74	0.73	29.77	79.48	2700.38
47	85	569.05	-334.68	-1.45	-18.95	-61.41	-843.24
48	85	-569.05	333.05	2.10	35.69	38.51	781.73
48	86	579.05	-250.99	-2.82	-24.92	-27.32	656.90
49	86	-579.05	250.99	4.69	34.52	37.06	-657.14
49	87	589.05	-168.94	-4.69	-20.97	-37.04	1685.52
50	87	-589.05	168.94	4.68	21.01	37.04	-1685.52
50	88	599.05	-86.89	-4.68	-7.52	-36.95	2303.63
51	88	-599.05	86.89	4.46	8.39	36.95	-2303.63
51	89	609.05	-4.84	-4.46	5.03	-35.73	2511.49
52	89	-609.05	4.84	4.46	-5.03	35.73	-2511.50
52	90	619.05	77.20	-4.46	18.41	-34.50	2309.13
53	90	-619.05	-77.20	4.21	-17.48	34.50	-2309.14
53	91	629.38	230.95	-1.57	19.15	-14.01	2293.91
54	91	-629.38	-230.95	1.33	-18.27	14.01	-2293.92
54	92	641.25	343.99	-2.18	28.28	-22.79	879.95
55	92	-641.26	-343.46	3.71	8.20	48.14	-821.20
55	93	653.13	456.50	-4.56	1.74	-68.80	-1155.30
56	93	-653.13	-456.50	4.57	-1.72	68.80	1155.30
56	94	665.01	569.53	-5.42	11.60	-93.77	-3696.94
57	94	-665.01	-569.53	5.41	-11.68	93.77	3696.94
57	97	676.88	682.55	-6.26	21.50	-122.93	-6803.79

58	97	-676.88	678.07	-5.51	49.65	122.92	6803.78
58	104	688.76	-565.04	4.66	-39.88	-97.49	-3672.58
59	104	-688.76	565.05	-4.65	39.95	97.49	3672.57
59	105	700.63	-452.02	3.80	-30.22	-76.38	-1106.53
60	105	-700.63	450.41	0.25	58.14	50.13	1045.54
60	106	712.50	-337.38	-0.25	-45.20	-51.38	947.31
61	106	-712.51	337.38	0.26	45.18	51.38	-947.31
61	107	712.51	-224.35	-0.26	-32.27	-52.70	2351.63
62	107	-712.50	224.35	-0.02	33.21	52.70	-2351.61
62	108	712.50	-111.31	0.02	-20.32	-52.60	3190.75
63	108	-712.51	111.31	-0.29	21.53	52.60	-3190.74
63	109	712.51	1.73	0.29	-8.66	-51.15	3464.69
64	109	-712.51	-1.73	-0.02	7.34	51.15	-3464.69
64	110	712.51	114.78	0.02	5.53	-51.04	3173.39
65	110	-712.50	-114.24	-0.32	-11.44	36.20	-3166.46
65	111	712.50	227.29	0.32	24.31	-34.61	2312.65
66	111	-712.51	-227.29	0.99	-15.29	11.19	-2312.36
66	112	712.51	340.37	-1.84	24.94	-18.25	893.18
67	112	-712.51	-342.15	2.67	-7.89	35.68	-834.90
67	113	712.51	455.24	-3.52	17.57	-51.16	-1158.54
68	113	-712.51	-455.24	3.25	-18.01	51.16	1158.53
68	114	712.51	568.34	-4.10	27.74	-69.53	-3717.44
69	114	-712.51	-568.34	4.10	-27.74	69.53	3717.44
69	117	712.51	681.46	-4.95	37.51	-92.16	-6841.95
70	117	-712.51	681.24	-5.77	56.54	115.64	6816.65
70	124	712.51	-568.10	4.92	-46.70	-88.90	-3693.30
71	124	-712.51	568.10	-4.64	48.18	88.90	3693.28
71	125	712.51	-454.94	3.79	-38.27	-67.83	-1135.66
72	125	-712.51	454.94	-4.07	37.82	67.83	1135.68
72	126	712.51	-341.76	3.22	-27.82	-49.59	856.06
73	126	-712.50	340.13	0.33	45.20	55.80	-909.40
73	127	712.50	-226.92	-0.33	-31.86	-57.46	2327.03
74	127	-712.50	226.92	0.06	32.74	57.46	-2327.02
74	128	712.50	-113.69	-0.06	-19.30	-57.76	3178.55
75	128	-712.50	113.69	0.06	19.30	57.76	-3178.55
75	129	712.50	-0.43	-0.06	-5.74	-58.07	3463.84
76	129	-712.50	0.96	0.05	-1.21	42.28	-3454.46
76	130	712.50	112.33	-0.05	14.89	-42.51	3176.02
77	130	-712.50	-114.37	0.85	2.22	60.93	-3129.62
77	131	712.50	227.69	-0.85	11.59	-65.19	2274.48
78	131	-712.50	-225.65	0.03	-28.31	41.32	-2331.07
78	132	712.50	339.00	-0.03	42.24	-41.48	919.44
79	132	-712.51	-341.04	2.35	-6.23	33.08	-852.39
79	133	712.51	454.42	-3.20	17.04	-46.94	-1136.23
80	133	-712.51	-454.42	0.57	-39.03	72.29	1135.98
80	134	712.51	567.83	-0.57	53.23	-75.12	-3691.61
81	134	-712.51	-567.82	4.05	-28.97	66.40	3691.85
81	137	712.51	681.26	-4.90	40.06	-88.75	-6814.55
82	137	-712.51	680.87	-4.84	70.48	110.02	6791.35
82	144	712.51	-567.40	3.99	-59.24	-87.94	-3670.70
83	144	-712.51	567.89	-4.36	48.40	67.59	3691.48
83	145	712.51	-454.39	3.51	-37.02	-47.90	-1135.78
84	145	-712.51	454.39	-3.53	36.99	47.90	1135.78
84	146	712.51	-340.86	2.68	-25.46	-32.38	852.35
85	146	-712.51	340.86	-2.66	25.45	32.38	-852.35
85	147	712.51	-227.30	1.81	-13.79	-21.19	2272.73
86	147	-712.50	225.49	-1.19	34.36	8.79	-2322.88
86	148	712.50	-111.91	0.34	-22.56	-4.97	3166.40
87	148	-712.51	111.91	-0.35	22.63	4.97	-3166.40
87	149	712.51	1.70	-0.50	-10.70	-5.32	3441.92
88	149	-712.51	-1.70	0.24	11.94	5.32	-3441.92
88	150	712.51	115.33	-1.09	0.11	-8.64	3149.35
89	150	-712.51	-115.33	1.07	-0.05	8.64	-3149.35
89	151	712.51	228.98	-1.92	12.21	-16.13	2288.58
90	151	-712.51	-223.80	2.31	22.49	-2.70	-2177.21
90	152	712.51	334.80	-3.16	-25.74	-10.98	780.72
91	152	-712.51	-334.80	3.17	25.73	10.98	-780.72
91	153	712.51	445.80	-4.02	-28.98	-28.98	-1170.80
92	153	-712.51	-444.10	4.88	47.06	51.81	1166.95
92	154	712.51	555.10	-5.73	-50.31	-78.36	-3664.95
93	154	-712.51	-555.10	5.46	48.92	78.36	3664.97
93	157	712.51	666.10	-6.31	-52.17	-107.80	-6717.92
94	157	-712.51	671.44	-5.52	-0.37	107.80	6717.99
94	163	712.51	-560.44	4.67	-2.88	-82.35	-3638.26
95	163	-712.51	560.44	-4.94	1.50	82.35	3638.27
95	164	712.51	-449.44	4.09	-4.75	-59.78	-1113.57
96	164	-712.51	459.99	-4.29	63.59	79.90	1079.68
96	165	712.51	-346.27	3.44	-51.05	-60.56	935.97
97	165	-712.51	346.27	-3.46	51.07	60.56	-935.97
97	166	712.51	-232.57	2.61	-38.55	-45.41	2383.08
98	166	-712.51	233.01	-2.34	33.40	21.93	-2371.06
98	167	712.51	-119.32	1.49	-20.91	-12.38	3251.89
99	167	-712.51	119.32	-1.76	22.15	12.38	-3251.88
99	168	712.51	-5.64	0.91	-9.70	-5.71	3564.29
100	168	-712.51	5.64	-0.92	9.77	5.71	-3564.29
100	169	712.51	108.02	0.07	2.61	-3.23	3308.33
101	169	-712.50	-108.02	-0.34	-1.36	3.23	-3308.33
101	170	712.50	221.66	-0.51	13.68	-3.64	2484.11
102	170	-712.50	-221.66	0.51	-13.68	3.64	-2484.12
102	171	712.50	335.28	-1.36	25.91	-8.31	1091.73
103	171	-712.51	-336.43	1.50	-18.53	28.93	-1054.22
103	172	712.51	450.02	-2.35	30.68	-38.58	-911.89
104	172	-712.51	-450.02	2.35	-30.68	38.58	911.89
104	173	712.51	563.59	-3.20	42.74	-52.47	-3445.88
105	173	-712.51	-563.59	3.19	-42.81	52.47	3445.88
105	176	712.51	677.12	-4.04	54.78	-70.55	-6547.68
106	176	-712.51	682.59	-4.64	39.75	70.55	6547.67
106	182	712.51	-569.09	3.79	-27.89	-49.47	-3418.46
107	182	-712.51	566.71	-3.56	48.50	28.65	3323.30
107	183	712.51	-453.24	2.71	-36.74	-13.00	-773.47
108	183	-712.51	453.24	-2.72	36.72	13.00	773.47
108	184	712.51	-339.81	1.87	-25.08	-1.53	1209.17
109	184	-712.50	335.10	-1.43	15.21	-19.25	-1138.19
109	185	712.50	-224.10	0.58	-18.46	24.29	2536.21
110	185	-712.50	224.10	-0.60	18.51	-24.29	-2536.21
110	186	712.50	-113.10	-0.25	-21.76	25.15	3379.23
111	186	-712.50	113.10	-0.30	24.40	-25.15	-3379.22
111	187	712.50	-2.10	-0.55	-27.65	24.54	3667.23
112	187	-712.50	2.10	0.55	27.65	-24.54	-3667.23
112	188	712.50	108.90	-1.40	-30.90	19.69	3400.25
113	188	-712.50	-108.90	1.13	32.19	-19.69	-3400.24
113	189	712.50	219.90	-1.98	-35.44	11.93	2578.26
114	189	-712.50	-219.90	1.96	35.49	-11.93	-2578.26
114	192	712.50	330.90	-2.81	-38.74	0.00	1201.28
134	6	-21.86	-34.81	0.00	0.00	0.01	-36.85
134	3	21.86	34.81	0.00	0.00	0.00	-111.09
135	3	0.00	-181.84	0.00	0.00	0.00	-772.84
135	1	0.00	181.84	0.00	0.00	0.00	0.00
136	22	-56.06	625.93	0.01	0.00	0.01	-94.57
136	18	56.06	-625.93	-0.01	0.00	0.00	1190.06
137	18	-0.03	-473.76	0.00	-0.01	0.01	-828.98
137	16	0.03	473.76	0.00	0.01	0.00	0.00
138	43	-59.24	653.24	0.02	-0.01	0.00	-99.99
138	37	59.24	-653.24	-0.02	0.01	0.00	1243.49
139	37	-0.09	-790.92	0.00	0.00	0.00	-1383.99
139	35	0.09	790.92	0.00	0.00	0.00	0.00
140	63	-51.95	607.30	0.00	0.00	-0.01	-87.65
140	57	51.95	-607.30	0.00	0.00	0.00	1150.76

141	57	-0.12	-820.03	0.00	0.00	-0.02	-1434.58
141	55	0.12	820.03	0.00	0.00	-0.01	0.01
142	83	-55.56	615.27	0.00	0.00	0.01	-93.53
142	77	55.56	-615.27	0.00	0.00	0.01	1170.93
143	77	-0.19	-491.09	0.00	-0.01	0.01	-858.87
143	75	0.19	491.09	0.00	0.01	0.00	-0.02
144	103	-56.01	666.01	-0.01	0.01	0.01	-94.47
144	97	56.01	-666.01	0.01	-0.01	0.01	1261.32
145	97	-0.18	-732.07	0.00	0.01	-0.01	-1279.74
145	95	0.18	732.07	0.00	-0.01	-0.01	0.00
146	123	-56.98	752.52	0.00	-0.01	-0.01	-96.13
146	117	56.98	-752.52	0.00	0.01	-0.01	1413.85
147	117	-0.16	-719.87	0.00	0.00	0.00	-1259.00
147	115	0.16	719.87	0.00	0.00	0.00	0.01
148	143	-63.88	814.51	0.00	-0.01	0.00	-107.71
148	137	63.88	-814.51	0.00	0.01	-0.01	1533.58
149	137	-0.12	-318.73	0.00	0.00	0.00	-557.57
149	135	0.12	318.73	0.00	0.00	0.00	-0.01
150	162	-56.47	849.82	0.01	-0.01	0.00	-95.18
150	157	56.47	-849.82	-0.01	0.01	0.00	1582.74
151	157	-0.09	-223.81	0.00	0.01	0.01	-391.55
151	156	0.09	223.81	0.00	-0.01	0.00	0.00
152	181	-47.36	768.11	0.00	0.00	0.00	-79.90
152	176	47.36	-768.11	0.00	0.00	0.00	1424.40
153	176	-0.04	-483.87	-0.01	0.00	0.00	-846.54
153	174	0.04	483.87	0.01	0.00	0.00	0.00
154	195	-22.51	173.57	187.50	-316.13	0.00	-37.95
154	192	22.51	-173.57	-187.50	316.13	-796.87	775.60
155	192	0.00	-165.24	356.25	-600.63	-1514.07	-702.25
155	190	0.00	165.24	-356.25	600.63	0.00	0.00
156	7	-24.53	-97.76	0.00	0.00	0.00	0.00
156	4	24.53	97.76	0.00	0.00	0.00	-415.49
157	4	0.00	181.84	0.00	0.00	0.00	772.84
157	2	0.00	-181.84	0.00	0.00	0.00	0.00
158	23	-40.15	-160.08	0.00	0.00	0.00	0.00
158	19	40.15	160.08	0.00	0.00	-0.01	-280.17
159	19	-0.02	317.12	0.00	0.00	0.00	554.89
159	17	0.02	-317.12	0.00	0.00	0.00	0.00
160	42	-50.13	-62.09	0.01	0.00	0.00	0.00
160	38	50.13	62.09	-0.01	0.00	-0.02	-108.71
161	38	-0.06	381.31	0.00	0.00	0.00	667.25
161	36	0.06	-381.31	0.00	0.00	0.00	0.01
162	62	-54.87	61.66	0.00	0.00	0.00	0.00
162	58	54.87	-61.66	0.00	0.00	0.00	107.94
163	58	-0.09	622.22	0.00	0.00	0.00	1088.54
163	56	0.09	-622.22	0.00	0.00	0.00	0.00
164	82	-50.16	60.00	0.00	0.00	0.00	0.00
164	78	50.16	-60.00	0.00	0.00	0.00	105.05
165	78	-0.09	518.38	0.00	0.00	0.00	906.59
165	76	0.09	-518.38	0.00	0.00	0.00	0.00
166	102	-52.16	37.92	0.00	0.00	0.00	0.00
166	98	52.16	-37.92	0.00	0.00	0.01	66.43
167	98	-0.11	561.10	0.00	0.00	0.00	980.87
167	96	0.11	-561.10	0.00	0.00	0.00	-0.01
168	122	-50.58	-0.15	0.01	0.00	0.00	0.00
168	118	50.58	0.15	-0.01	0.00	-0.01	-0.27
169	118	-0.09	430.75	0.00	0.00	0.00	753.35
169	116	0.09	-430.75	0.00	0.00	0.00	0.00
170	142	-47.84	-43.32	0.00	0.00	0.00	0.00
170	138	47.84	43.32	0.00	0.00	0.00	-75.82
171	138	-0.10	380.59	0.00	0.00	0.00	665.80
171	136	0.10	-380.59	0.00	0.00	0.00	-0.01
172	161	-44.92	-235.74	0.00	0.00	0.00	0.00
172	158	44.92	235.74	0.00	0.00	0.00	-412.64
173	158	-0.05	576.20	0.00	0.00	0.00	1008.10
173	155	0.05	-576.20	0.00	0.00	0.00	0.00
174	180	-43.28	-195.55	0.00	0.00	0.00	0.00
174	177	43.28	195.55	0.00	0.00	0.00	-342.31
175	177	-0.02	681.21	0.00	0.00	0.00	1191.78
175	175	0.02	-681.21	0.00	0.00	0.00	0.00
176	196	-20.16	-123.23	174.76	0.00	0.00	0.00
176	193	20.16	123.23	-174.76	0.00	-742.75	-523.72
177	193	0.00	198.69	356.25	0.00	-1514.07	844.43
177	191	0.00	-198.69	-356.25	0.00	0.00	0.00
182	7	-73.38	0.00	4.79	0.00	0.00	0.00
182	6	73.38	0.00	-4.79	0.00	-8.07	0.00
183	2	-66.85	0.00	0.00	0.00	0.00	0.00
183	1	66.85	0.00	0.00	0.00	0.00	0.00
184	23	-234.49	0.00	-18.94	0.00	0.00	0.00
184	22	234.49	0.00	18.94	0.00	31.93	0.00
185	17	-204.11	0.00	0.00	0.00	0.00	0.00
185	16	204.11	0.00	0.00	0.00	0.00	0.00
186	42	-280.39	0.00	1.63	0.00	0.00	0.00
186	43	280.39	0.00	-1.63	0.00	-2.76	0.01
187	36	-181.52	0.00	0.00	0.00	0.00	0.00
187	35	181.52	0.00	0.00	0.00	0.00	0.01
188	62	-291.94	0.00	13.47	0.00	0.00	0.00
188	63	291.94	0.00	-13.47	0.00	-22.72	0.01
189	56	-166.12	0.00	0.00	0.00	0.00	0.00
189	55	166.12	0.00	0.00	0.00	0.01	0.00
190	82	-310.56	0.00	0.12	0.00	0.00	0.00
190	83	310.56	0.00	-0.12	0.00	-0.20	0.01
191	76	-187.19	0.00	0.00	0.00	0.00	0.00
191	75	187.19	0.00	0.00	0.00	0.01	0.00
192	102	-300.56	0.00	1.37	0.00	0.00	0.00
192	103	300.56	0.00	-1.37	0.00	-2.31	0.01
193	96	-198.03	0.00	0.00	0.00	0.00	0.00
193	95	198.03	0.00	0.00	0.00	0.01	0.00
194	122	-247.56	0.00	-0.69	0.00	0.00	0.00
194	123	247.56	0.00	0.69	0.00	1.17	0.01
195	116	-219.88	0.00	0.00	0.00	0.00	0.00
195	115	219.88	0.00	0.00	0.00	0.01	-0.01
196	142	-189.35	0.00	13.88	0.00	0.00	0.00
196	143	189.35	0.00	-13.88	0.00	-23.42	0.01
197	136	-249.24	0.00	0.00	0.00	0.00	0.00
197	135	249.24	0.00	0.00	0.00	0.01	-0.01
198	161	-226.74	0.00	-38.38	0.00	0.00	0.00
198	162	226.74	0.00	38.38	0.00	64.71	0.00
199	155	-309.68	0.00	0.00	0.00	0.00	0.00
199	156	309.68	0.00	0.00	0.00	0.01	0.01
200	180	-177.67	0.00	18.05	0.00	0.00	0.00
200	181	177.67	0.00	-18.05	0.00	-30.44	0.00
201	175	-209.56	0.00	0.00	0.00	0.00	0.00
201	174	209.56	0.00	0.00	0.00	0.00	0.00
202	196	-83.57	-187.50	-7.80	0.00	0.00	0.00
202	195	83.57	187.50	7.80	0.00	13.14	-316.13
203	191	-93.36	-187.50	0.00	0.00	0.00	0.00
203	190	93.36	187.50	0.00	0.00	0.00	-316.13
206	21	-136.00	0.00	-3.40	0.00	91.96	-0.01
206	20	136.00	0.00	3.40	0.00	-84.48	0.01
207	20	-136.00	0.00	-3.40	0.00	84.48	-0.01
207	19	136.00	0.00	3.40	0.00	-70.88	0.01
208	40	-131.12	0.00	-8.50	0.00	160.77	-0.01
208	39	131.12	0.00	8.50	0.00	-155.67	0.01
209	39	-131.12	0.00	-8.50	0.00	155.67	-0.01
209	41	131.12	0.00	8.50	0.00	-113.17	0.01
210	41	-131.12	0.00	-8.50	0.00	113.17	-0.01
210	38	131.12	0.00	8.50	0.00	-79.16	0.01

211	60	-131.97	0.00	-4.53	0.00	112.82	0.00
211	59	131.97	0.00	4.53	0.00	-97.88	0.00
212	59	-131.97	0.00	-4.53	0.00	97.88	0.00
212	61	131.97	0.00	4.53	0.00	-75.25	0.00
213	61	-131.97	0.00	-4.53	0.00	75.25	0.00
213	58	131.97	0.00	4.53	0.00	-57.14	0.00
214	80	-131.93	0.00	-4.35	0.00	87.45	0.00
214	79	131.93	0.00	4.35	0.00	-73.11	0.00
215	79	-131.93	0.00	-4.35	0.00	73.11	0.00
215	81	131.93	0.00	4.35	0.00	-51.38	0.00
216	81	-131.93	0.00	-4.35	0.00	51.38	0.00
216	78	131.93	0.00	4.35	0.00	-33.99	0.00
217	100	-133.76	0.00	-3.84	0.00	113.90	0.01
217	99	133.76	0.00	3.84	0.00	-101.24	-0.01
218	99	-133.76	0.00	-3.84	0.00	101.24	0.01
218	101	133.76	0.00	3.84	0.00	-82.06	-0.01
219	101	-133.76	0.00	-3.84	0.00	82.06	0.01
219	98	133.76	0.00	3.84	0.00	-66.71	-0.01
220	120	-132.72	0.00	-2.72	0.00	86.80	0.00
220	119	132.72	0.00	2.72	0.00	-77.84	0.00
221	119	-132.72	0.00	-2.71	0.00	77.84	0.00
221	121	132.72	0.00	2.71	0.00	-64.26	0.00
222	121	-132.72	0.00	-2.71	0.00	64.26	0.00
222	118	132.72	0.00	2.71	0.00	-53.40	0.00
223	140	-132.63	0.00	-2.47	0.00	57.30	0.00
223	139	132.63	0.00	2.47	0.00	-49.14	0.00
224	139	-132.63	0.00	-2.47	0.00	49.14	0.00
224	141	132.63	0.00	2.47	0.00	-36.78	0.00
225	141	-132.63	0.00	-2.47	0.00	36.78	0.00
225	138	132.63	0.00	2.47	0.00	-26.88	0.00
226	160	-133.95	0.00	4.59	0.00	-63.67	-0.01
226	159	133.95	0.00	-4.59	0.00	43.95	0.01
227	159	-133.95	0.00	4.59	0.00	-43.95	-0.01
227	158	133.95	0.00	-4.59	0.00	25.60	0.01
228	179	-151.85	0.00	3.08	0.00	-73.52	0.00
228	178	151.85	0.00	-3.08	0.00	62.14	0.00
229	178	-151.85	0.00	3.08	0.00	-62.14	0.00
229	177	151.85	0.00	-3.08	0.00	49.83	0.00
230	5	-120.38	0.00	1.30	0.00	25.44	0.00
230	4	120.38	0.00	-1.30	0.00	-26.74	0.00
231	194	-131.36	-349.53	1.84	0.00	-78.17	-349.53
231	193	131.36	349.53	-1.84	0.00	76.33	0.00

proc Viaducto Papiol

HIPOTESIS 123

FUER Y MAX envolvente sobrecarga

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
1	3	0.00	558.56	-4.03	75.03	0.00	0.02
1	8	-6.25	-421.67	2.03	-47.90	15.17	2437.20
2	8	6.25	421.67	-2.03	47.90	-15.17	-2437.20
2	9	-12.50	-294.00	0.01	-46.10	17.80	4156.21
3	9	12.50	294.00	0.00	49.34	-17.80	-4156.17
3	10	-18.75	-168.54	-1.50	24.36	13.62	5074.25
4	10	18.75	168.54	1.49	-26.29	-13.62	-5074.24
4	11	53.00	-64.51	-1.63	29.40	-11.00	4156.50
5	11	-53.00	64.51	1.61	-27.81	11.00	-4156.51
5	12	66.25	-34.49	-2.83	18.19	-109.36	720.20
6	12	-66.26	34.49	2.78	-17.63	109.36	-720.21
6	13	79.51	-34.49	-2.78	17.63	-130.89	864.25
7	13	-79.50	34.49	2.81	-17.96	130.89	-864.24
7	14	84.50	-34.49	-2.81	17.96	-133.18	1025.98
8	14	-84.51	34.49	2.74	-17.16	133.18	-1025.99
8	15	89.51	-34.49	-2.74	17.16	-135.14	1187.73
9	15	-89.51	34.49	2.74	-17.18	135.14	-1187.73
9	18	94.51	-34.49	-2.74	17.18	-137.10	1349.46
10	18	56.24	871.47	-12.52	-229.83	184.57	8032.95
10	24	-62.49	-734.83	10.52	209.47	-126.97	-4030.52
11	24	62.49	734.83	-10.50	-211.00	126.97	4030.44
11	25	-68.74	-598.18	8.50	190.54	-79.48	-711.29
12	25	68.75	598.18	-8.44	-191.11	79.48	711.14
12	26	-75.00	-461.51	6.44	170.52	-42.27	1924.69
13	26	75.00	461.51	-6.47	-171.29	42.27	-1924.63
13	27	-81.25	-324.82	4.47	150.61	-14.91	3877.04
14	27	81.25	324.82	-4.44	-149.13	14.91	-3877.10
14	28	-87.50	-203.85	1.82	100.81	-9.62	4304.31
15	28	87.50	203.85	-1.75	-97.45	9.62	-4304.38
15	29	25.51	-123.69	3.09	122.17	25.98	2458.99
16	29	-25.51	123.68	-3.08	-123.10	-25.98	-2458.94
16	30	30.51	-61.24	-1.92	3.97	-11.44	-715.32
17	30	-30.52	61.24	1.91	-4.26	11.44	715.32
17	31	35.52	-61.24	-1.91	4.26	-9.22	-419.86
18	31	-35.52	61.24	1.89	-4.42	9.22	419.86
18	32	40.52	-61.24	-1.89	4.42	-6.94	-124.39
19	32	-40.52	61.24	1.89	-4.42	6.94	124.39
19	33	45.52	-61.24	-1.89	4.42	-4.66	171.06
20	33	-45.52	61.24	1.88	-4.36	4.66	-171.07
20	34	50.52	-61.24	-1.88	4.36	-2.30	466.53
21	34	-50.52	61.24	1.86	-4.17	2.30	-466.53
21	37	55.52	-61.24	-1.86	4.17	0.17	761.99
22	37	131.25	896.55	-12.14	-426.56	-19.65	9220.58
22	44	-137.50	-759.76	10.14	362.83	75.36	-5093.24
23	44	137.50	759.75	-10.09	-364.87	-75.36	5093.10
23	45	-143.75	-622.96	8.09	301.02	120.79	-1649.73
24	45	143.75	622.96	-8.03	-301.65	-120.80	1649.62
24	46	-150.00	-486.15	6.03	237.69	155.95	1109.78
25	46	150.00	486.15	-6.03	-237.69	-155.95	-1109.78
25	47	-156.25	-349.35	4.03	173.63	181.12	3185.11
26	47	156.25	349.35	-3.97	-172.42	-181.12	-3185.18
26	48	-162.50	-230.99	1.26	92.82	183.46	3672.73
27	48	162.50	230.99	-1.26	-92.74	-183.46	-3672.73
27	49	184.49	-123.14	10.85	198.43	139.02	2364.72
28	49	-184.49	123.14	-10.92	-197.53	-139.02	-2364.80
28	50	189.49	-102.30	0.52	-27.38	15.23	-1239.56
29	50	-189.49	102.30	-0.60	26.88	-15.23	1239.57
29	51	194.49	-102.30	0.60	-26.88	6.46	-738.81
30	51	-194.49	102.30	-0.67	26.60	-6.45	738.81
30	52	199.49	-102.30	0.67	-26.60	-1.95	-238.05
31	52	-199.49	102.30	-0.67	26.60	1.95	238.05
31	53	204.49	-102.30	0.67	-26.60	-10.35	262.72
32	53	-204.49	102.30	-0.75	26.70	10.35	-262.71
32	54	209.49	-102.30	0.75	-26.70	-18.35	763.48
33	54	-209.49	102.30	-0.75	26.69	18.35	-763.48
33	57	214.49	-102.30	0.75	-26.69	-26.37	1264.25
34	57	206.26	899.65	-5.46	-432.64	-339.79	9396.63
34	64	-212.51	-763.44	3.46	345.52	362.11	-5252.30
35	64	212.51	763.44	-3.47	-345.41	-362.10	5252.31
35	65	-218.76	-626.84	1.47	261.08	374.44	-1790.00
36	65	218.76	626.84	-1.30	-262.48	-374.44	1789.79
36	66	-225.01	-490.04	-0.70	179.49	375.93	989.03
37	66	225.01	490.05	0.71	-179.47	-375.93	-989.03
37	67	-231.26	-353.25	-2.71	96.43	367.38	3083.86
38	67	231.26	353.25	2.79	-95.32	-367.39	-3083.89
38	68	-237.51	-235.08	-5.05	10.36	328.45	3586.97
39	68	237.51	235.08	4.96	-11.64	-328.45	-3586.97
39	69	145.47	-122.88	8.37	193.05	144.45	2477.14
40	69	-145.46	122.88	-8.54	-190.18	-144.45	-2477.36
40	70	150.47	-103.89	-2.36	-74.79	26.27	-1265.68
41	70	-150.47	103.89	2.42	75.30	-26.27	1265.65
41	71	155.47	-103.89	-2.42	-75.30	2.41	-756.93
42	71	-155.47	103.89	2.36	74.99	-2.41	756.96
42	72	160.47	-103.89	-2.36	-74.99	-21.13	-248.26
43	72	-160.47	103.89	2.30	74.90	21.13	248.29
43	73	165.47	-103.89	-2.30	-74.90	-44.37	260.42
44	73	-165.47	103.89	2.29	74.90	44.37	-260.41
44	74	170.47	-103.89	-2.29	-74.90	-67.60	769.12
45	74	-170.47	103.89	2.23	75.20	67.60	-769.09
45	77	175.47	-103.89	-2.23	-75.20	-90.50	1277.80
46	77	281.26	902.50	-6.49	-317.25	-272.76	9510.65
46	84	-287.51	-765.76	4.49	239.69	300.20	-5353.44
47	84	287.51	765.76	-4.48	-239.80	-300.20	5353.43
47	85	-293.76	-629.02	2.48	162.21	317.61	-1879.85
48	85	293.76	629.02	-2.37	-162.92	-317.62	1879.79
48	86	-300.01	-492.29	0.37	85.31	324.48	910.04
49	86	300.01	492.29	-0.26	-84.97	-324.47	-910.07
49	87	-306.26	-355.58	-1.74	7.33	320.76	3016.35
50	87	306.26	355.58	1.75	-7.27	-320.76	-3016.35
50	88	-312.51	-237.52	-3.47	-60.02	279.99	3530.95
51	88	312.51	237.52	3.58	61.37	-279.99	-3530.93
51	89	304.47	-123.31	6.56	136.48	94.46	2227.32
52	89	-304.47	123.31	-6.56	-136.48	-94.46	-2227.32
52	90	309.48	-104.56	-2.48	-99.43	-4.88	-1266.52
53	90	-309.48	104.56	2.36	98.92	4.88	1266.56
53	91	314.48	-104.56	-2.36	-98.92	-28.42	-754.47
54	91	-314.48	104.56	2.24	98.64	28.42	754.50
54	92	319.48	-104.56	-2.24	-98.64	-51.36	-242.42
55	92	-319.48	104.56	2.11	98.54	51.36	242.45
55	93	324.48	-104.56	-2.11	-98.54	-73.66	269.63
56	93	-324.48	104.56	2.12	98.53	73.66	-269.63
56	94	329.48	-104.56	-2.12	-98.53	-95.99	781.72
57	94	-329.48	104.56	2.11	98.55	95.99	-781.71
57	97	334.48	-104.56	-2.11	-98.55	-118.29	1293.81

58	97	356.26	898.51	-7.57	-115.29	-178.17	9488.99
58	104	-362.51	-761.95	5.57	66.98	211.02	-5351.21
59	104	362.51	761.95	-5.58	-66.87	-211.02	5351.21
59	105	-368.76	-625.41	3.58	18.58	233.91	-1896.21
60	105	368.76	625.41	-3.42	-19.38	-233.90	1896.21
60	106	-375.01	-488.88	1.42	-28.86	246.02	876.10
61	106	375.01	488.88	-1.43	28.84	-246.02	-876.10
61	107	-375.01	-352.38	-0.57	-77.04	248.17	2979.25
62	107	375.01	352.37	0.72	78.23	-248.17	-2979.22
62	108	-375.01	-234.53	-1.88	-104.18	208.75	3491.70
63	108	375.01	234.53	2.02	105.51	-208.75	-3491.66
63	109	349.53	-121.49	0.00	26.52	13.60	2325.77
64	109	-349.53	121.49	0.13	-27.41	-13.60	-2325.76
64	110	349.53	-102.69	-4.45	-84.59	1.57	-1274.69
65	110	-349.53	102.69	4.18	83.60	-1.57	1274.76
65	111	349.53	-102.69	-4.18	-83.60	-19.34	-761.32
66	111	-349.53	102.69	4.05	83.31	19.34	761.35
66	112	349.53	-102.69	-4.05	-83.31	-39.59	-247.90
67	112	-349.53	102.69	4.04	83.31	39.59	247.90
67	113	349.53	-102.69	-4.04	-83.31	-59.80	265.54
68	113	-349.53	102.69	3.91	83.41	59.80	-265.50
68	114	349.53	-102.69	-3.91	-83.41	-79.35	778.95
69	114	-349.53	102.69	3.91	83.41	79.35	-778.95
69	117	349.53	-102.69	-3.91	-83.41	-98.89	1292.40
70	117	375.00	896.52	-9.24	138.43	3.50	9481.54
70	124	-375.00	-760.12	7.24	-136.28	37.73	-5339.97
71	124	375.00	760.12	-7.40	138.42	-37.73	5339.91
71	125	-375.00	-623.71	5.40	-136.13	69.70	-1880.33
72	125	375.00	623.71	-5.25	135.38	-69.70	1880.38
72	126	-375.00	-487.30	3.25	-132.93	90.92	897.15
73	126	375.00	487.30	-3.09	133.29	-90.92	-897.10
73	127	-375.00	-350.89	1.09	-130.70	101.39	2992.58
74	127	375.00	350.89	-0.95	131.83	-101.39	-2992.53
74	128	-375.00	-233.12	0.16	-103.92	72.36	3497.82
75	128	375.00	233.12	-0.16	103.92	-72.36	-3497.82
75	129	-349.47	-121.25	-3.35	-96.93	-101.03	2350.14
76	129	349.47	121.25	3.48	97.83	101.03	-2350.10
76	130	-349.47	-102.29	-1.19	-40.87	-12.12	-1265.10
77	130	349.47	102.29	1.33	40.36	12.12	1265.12
77	131	-349.47	-102.29	-1.33	-40.36	-18.77	-753.67
78	131	349.47	102.29	1.20	40.65	18.77	753.66
78	132	-349.47	-102.29	-1.20	-40.65	-24.76	-242.20
79	132	349.47	102.29	1.60	40.37	24.76	242.25
79	133	-349.47	-102.29	-1.60	-40.37	-32.78	269.20
80	133	349.47	102.29	1.47	40.26	32.78	-269.22
80	134	-349.47	-102.29	-1.47	-40.26	-40.14	780.68
81	134	349.47	102.29	1.60	40.56	40.14	-780.67
81	137	-349.47	-102.29	-1.60	-40.56	-48.16	1292.12
82	137	-375.02	889.42	-12.27	311.89	221.19	9389.03
82	144	375.02	-752.89	10.27	-262.13	-164.86	-5283.30
83	144	-375.01	752.89	-10.56	258.01	164.86	5283.50
83	145	375.01	-616.34	8.56	-208.05	-117.07	-1860.42
84	145	-375.01	616.34	-8.57	208.01	117.07	1860.43
84	146	375.01	-479.77	6.57	-157.87	-79.24	879.85
85	146	-375.01	479.77	-6.56	157.85	79.24	-879.85
85	147	375.01	-343.19	4.56	-107.54	-51.45	2937.21
86	147	-375.01	343.19	-4.85	109.84	51.45	-2937.13
86	148	375.01	-225.29	3.85	-46.92	-56.06	3404.10
87	148	-375.01	225.29	-3.86	46.98	56.06	-3404.10
87	149	349.53	-121.29	-1.03	-141.97	-102.28	2377.21
88	149	-349.54	121.29	0.91	142.83	102.28	-2377.16
88	150	349.53	-102.50	2.68	29.65	-9.30	-1256.61
89	150	-349.53	102.50	-2.68	-29.67	9.30	1256.60
89	151	349.53	-102.50	2.68	29.67	4.12	-744.09
90	151	-349.53	102.50	-2.82	-29.97	-4.12	744.08
90	152	349.53	-102.50	2.82	29.97	18.24	-231.56
91	152	-349.53	102.50	-2.82	-29.96	-18.24	231.57
91	153	349.53	-102.50	2.82	29.96	32.33	280.96
92	153	-349.53	102.50	-2.96	-29.85	-32.33	-280.97
92	154	349.53	-102.50	2.96	29.85	47.12	793.50
93	154	-349.53	102.50	-3.09	-29.55	-47.12	-793.51
93	157	349.53	-102.50	3.09	29.55	62.57	1306.02
94	157	374.98	877.08	-15.16	281.68	236.60	9251.38
94	163	-374.98	-740.37	13.16	-220.95	-165.81	-5207.73
95	163	374.99	740.37	-13.02	218.97	165.81	5207.81
95	164	-374.99	-603.64	11.02	-158.24	-105.74	-1847.80
96	164	374.99	603.64	-10.87	157.54	105.74	1847.86
96	165	-374.99	-466.92	8.87	-96.85	-56.37	828.54
97	165	374.99	466.92	-8.87	96.86	56.37	-828.54
97	166	-374.99	-330.19	6.87	-36.21	-17.05	2821.32
98	166	375.00	330.19	-6.72	37.28	17.05	-2821.30
98	167	-374.99	-212.83	4.91	7.10	-1.99	3231.22
99	167	375.00	212.83	-4.77	-5.88	1.99	-3231.22
99	168	-349.53	-130.57	-0.79	-82.72	-25.14	2401.49
100	168	349.53	130.57	0.79	82.77	25.14	-2401.49
100	169	-349.53	-106.13	2.22	65.89	31.53	-1185.58
101	169	349.53	106.13	-2.08	-66.34	-31.53	1185.56
101	170	-349.53	-106.13	2.08	66.34	41.95	-654.89
102	170	349.53	106.13	-2.08	-66.34	-41.95	654.89
102	171	-349.53	-106.13	2.08	66.34	52.37	-124.22
103	171	349.53	106.13	-1.81	-66.44	-52.37	124.16
103	172	-349.53	-106.13	1.81	66.44	61.43	406.50
104	172	349.53	106.13	-1.81	-66.44	-61.43	-406.50
104	173	-349.53	-106.13	1.81	66.44	70.48	937.16
105	173	349.53	106.13	-1.80	-66.42	-70.48	-937.16
105	176	-349.53	-106.13	1.80	66.42	79.51	1467.84
106	176	-375.01	796.23	-10.24	-44.12	82.72	8021.09
106	182	375.01	-659.60	8.24	44.66	-36.51	-4381.50
107	182	-375.01	659.60	-8.39	-46.41	36.51	4381.48
107	183	375.01	-522.98	6.39	46.79	0.45	-1425.07
108	183	-375.01	522.98	-6.40	-46.82	-0.45	1425.07
108	184	375.01	-386.37	4.40	46.96	27.44	848.33
109	184	-375.00	386.37	-4.53	-46.65	-27.44	-848.35
109	185	375.00	-252.86	2.11	34.93	39.70	1482.57
110	185	-375.00	252.86	-2.12	-34.90	-39.70	-1482.57
110	186	375.01	-138.85	2.06	60.54	-40.56	-1605.51
111	186	-375.01	138.85	-2.36	-61.79	40.56	1605.46
111	187	349.53	-131.36	1.63	73.06	-25.84	-1381.08
112	187	-349.53	131.36	-1.63	-73.06	25.84	1381.08
112	188	349.53	-131.36	1.63	73.06	-17.68	-724.30
113	188	-349.53	131.36	-1.76	-73.34	17.68	724.27
113	189	349.53	-131.36	1.76	73.34	-8.86	-67.49
114	189	-349.53	131.36	-1.77	-73.34	8.86	67.48
114	192	349.53	-131.36	1.77	73.34	0.00	589.30
134	6	-1.00	347.06	0.00	0.01	0.00	-1.69
134	3	1.00	-347.06	0.00	-0.01	0.00	1476.73
135	3	0.00	66.85	0.00	0.00	0.00	284.10
135	1	0.00	-66.85	0.00	0.00	-0.01	0.00
136	22	-16.33	846.46	-0.01	0.00	-0.02	-27.56
136	18	16.33	-846.46	0.01	0.00	-0.02	1509.01
137	18	0.01	204.11	-0.01	0.00	0.00	357.15
137	16	-0.01	-204.11	0.01	0.00	-0.02	0.00
138	43	0.29	867.48	0.02	0.00	-0.01	0.50
138	37	-0.29	-867.48	-0.02	0.00	0.02	1518.07
139	37	0.01	181.51	0.00	0.00	0.00	317.64
139	35	-0.01	-181.51	0.00	0.00	0.00	0.00
140	63	-9.12	852.89	0.01	0.00	0.00	-15.28
140	57	9.12	-852.89	-0.01	0.00	0.01	1508.29

141	57	0.00	166.12	0.00	0.00	0.03	290.59
141	55	0.00	-166.12	0.00	0.00	0.02	-0.01
142	83	4.78	878.38	0.01	0.00	-0.01	8.02
142	77	-4.78	-878.38	-0.01	0.00	0.01	1530.03
143	77	0.06	187.19	0.01	0.00	0.00	327.43
143	75	-0.06	-187.19	-0.01	0.00	-0.01	-0.03
144	103	3.50	888.10	0.00	0.00	0.00	5.84
144	97	-3.50	-888.10	0.00	0.00	0.00	1550.06
145	97	0.03	198.03	0.01	0.00	-0.01	346.16
145	95	-0.03	-198.03	-0.01	0.00	-0.01	-0.01
146	123	-27.90	913.82	0.01	0.00	0.01	-47.11
146	117	27.90	-913.82	-0.01	0.00	0.00	1647.23
147	117	-0.01	219.87	0.00	-0.01	0.00	384.49
147	115	0.01	-219.87	0.00	0.01	-0.01	-0.02
148	143	-25.96	959.29	-0.01	0.00	0.00	-43.70
148	137	25.96	-959.29	0.01	0.00	0.00	1723.02
149	137	0.01	249.24	0.00	0.00	-0.01	436.01
149	135	-0.01	-249.24	0.00	0.00	-0.01	-0.01
150	162	-12.61	1033.70	0.00	0.00	0.00	-21.27
150	157	12.61	-1033.70	0.00	0.00	0.00	1830.70
151	157	-0.06	309.69	0.01	0.01	0.00	541.85
151	156	0.06	-309.69	-0.01	-0.01	0.00	-0.01
152	181	-20.53	873.15	0.00	0.00	0.00	-34.63
152	176	20.53	-873.15	0.00	0.00	0.00	1563.01
153	176	-0.01	209.57	0.00	0.01	0.00	366.64
153	174	0.01	-209.57	0.00	-0.01	0.00	-0.01
154	195	-4.58	325.79	187.50	-316.13	0.00	-7.71
154	192	4.58	-325.79	-187.50	316.13	-796.87	1392.34
155	192	0.00	93.36	187.50	-316.13	-796.88	396.80
155	190	0.00	-93.36	-187.50	316.13	0.00	0.00
156	7	-4.79	73.38	0.00	0.00	0.00	0.00
156	4	4.79	-73.38	0.00	0.00	0.00	311.87
157	4	0.00	326.28	0.00	0.00	0.00	1386.68
157	2	0.00	-326.28	0.00	0.00	0.00	0.00
158	23	18.93	234.50	0.00	0.00	0.00	0.00
158	19	-18.93	-234.50	0.00	0.00	0.00	410.42
159	19	0.01	890.98	0.00	0.00	0.00	1559.02
159	17	-0.01	-890.98	0.00	0.00	0.00	0.00
160	42	-1.64	280.39	0.00	0.00	0.00	0.00
160	38	1.64	-280.39	0.00	0.00	0.00	490.81
161	38	0.01	1015.49	0.00	0.00	0.00	1776.94
161	36	-0.01	-1015.49	0.00	0.00	0.00	0.00
162	62	-13.52	291.94	0.00	0.00	0.00	0.00
162	58	13.52	-291.94	0.00	0.00	0.00	511.07
163	58	-0.03	1068.19	0.00	0.00	0.00	1868.73
163	56	0.03	-1068.19	0.00	0.00	0.00	0.01
164	82	-0.10	310.57	0.00	0.00	0.00	0.01
164	78	0.10	-310.57	0.00	0.00	0.00	543.80
165	78	0.02	1077.37	0.00	0.00	0.00	1884.21
165	76	-0.02	-1077.37	0.00	0.00	0.00	0.01
166	102	-1.33	300.56	0.00	0.00	0.00	0.00
166	98	1.33	-300.56	0.00	0.00	0.00	526.58
167	98	0.04	1024.02	0.00	0.00	0.00	1790.10
167	96	-0.04	-1024.02	0.00	0.00	0.00	-0.01
168	122	0.68	247.56	0.00	0.00	0.00	0.00
168	118	-0.68	-247.56	0.00	0.00	0.00	433.50
169	118	-0.03	946.24	0.00	0.00	0.00	1654.96
169	116	0.03	-946.24	0.00	0.00	0.00	0.00
170	142	-13.82	189.35	0.00	0.00	0.00	0.00
170	138	13.82	-189.35	0.00	0.00	0.00	331.49
171	138	0.01	876.97	0.00	0.00	0.00	1534.16
171	136	-0.01	-876.97	0.00	0.00	0.00	0.01
172	161	38.41	226.74	0.00	0.00	0.00	0.00
172	158	-38.41	-226.74	0.00	0.00	0.00	396.91
173	158	-0.02	925.24	0.00	0.00	0.00	1618.76
173	155	0.02	-925.24	0.00	0.00	0.00	0.00
174	180	-18.04	177.66	0.00	0.00	0.00	0.00
174	177	18.04	-177.66	0.00	0.00	0.00	310.98
175	177	0.00	795.84	0.00	0.00	0.00	1392.34
175	175	0.00	-795.84	0.00	0.00	0.00	0.00
176	196	7.80	83.57	187.50	0.00	0.00	0.00
176	193	-7.80	-83.57	-187.50	0.00	-796.88	355.16
177	193	0.00	368.87	187.50	0.00	-796.87	1567.71
177	191	0.00	-368.87	-187.50	0.00	0.00	0.00
182	7	181.38	0.00	0.01	0.00	0.00	0.00
182	6	-181.38	0.00	-0.01	0.00	-0.02	0.00
183	2	181.84	0.00	0.00	0.00	0.00	0.00
183	1	-181.84	0.00	0.00	0.00	0.00	0.00
184	23	645.12	0.00	-0.02	0.00	0.00	0.00
184	22	-645.12	0.00	0.02	0.00	0.04	0.00
185	17	645.60	0.00	0.00	0.00	0.00	0.00
185	16	-645.60	0.00	0.00	0.00	0.00	0.00
186	42	672.82	0.00	0.01	0.00	0.00	0.00
186	43	-672.82	0.00	-0.01	0.00	-0.02	0.00
187	36	673.18	0.00	0.00	0.00	0.00	0.00
187	35	-673.18	0.00	0.00	0.00	0.00	0.00
188	62	663.97	0.00	0.00	0.00	0.00	0.00
188	63	-663.97	0.00	0.00	0.00	0.00	0.00
189	56	664.26	0.00	0.00	0.00	0.00	0.00
189	55	-664.26	0.00	0.00	0.00	0.00	0.00
190	82	666.34	0.00	0.01	0.00	0.00	0.00
190	83	-666.34	0.00	-0.01	0.00	-0.01	0.00
191	76	666.78	0.00	0.00	0.00	0.00	0.00
191	75	-666.78	0.00	0.00	0.00	0.00	0.00
192	102	665.34	0.00	-0.02	0.00	0.00	0.00
192	103	-665.34	0.00	0.02	0.00	0.03	0.00
193	96	666.10	0.00	0.00	0.00	0.00	0.00
193	95	-666.10	0.00	0.00	0.00	0.00	0.00
194	122	666.40	0.00	0.00	0.00	0.00	0.00
194	123	-666.40	0.00	0.00	0.00	0.00	0.00
195	116	666.83	0.00	0.00	0.00	0.00	0.00
195	115	-666.83	0.00	0.00	0.00	0.00	0.00
196	142	663.73	0.00	0.01	0.00	0.00	0.00
196	143	-663.73	0.00	-0.01	0.00	-0.02	0.00
197	136	664.17	0.00	0.00	0.00	0.00	0.00
197	135	-664.17	0.00	0.00	0.00	0.00	0.00
198	161	673.08	0.00	0.01	0.00	0.00	0.00
198	162	-673.08	0.00	-0.01	0.00	-0.01	0.00
199	155	673.49	0.00	0.00	0.00	0.00	0.00
199	156	-673.49	0.00	0.00	0.00	0.00	0.00
200	180	644.87	0.00	-0.02	0.00	0.00	0.00
200	181	-644.87	0.00	0.02	0.00	0.04	0.00
201	175	645.28	0.00	0.00	0.00	0.00	0.00
201	174	-645.28	0.00	0.00	0.00	0.00	0.00
202	196	197.32	356.25	-0.64	0.00	0.00	0.00
202	195	-197.32	-356.25	0.64	0.00	1.07	600.64
203	191	198.69	356.25	0.00	0.00	0.00	0.00
203	190	-198.69	-356.25	0.00	0.00	0.00	600.64
206	21	1290.71	0.00	-0.02	0.00	0.71	0.03
206	20	-1290.71	0.00	0.02	0.00	-0.67	-0.03
207	20	1290.71	0.00	-0.02	0.00	0.67	0.03
207	19	-1290.71	0.00	0.02	0.00	-0.58	-0.03
208	40	1346.00	0.00	0.01	0.00	0.01	-0.01
208	39	-1346.00	0.00	-0.01	0.00	-0.02	0.01
209	39	1346.00	0.00	0.01	0.00	0.02	-0.01
209	41	-1346.00	0.00	-0.01	0.00	-0.10	0.01
210	41	1346.00	0.00	0.01	0.00	0.10	-0.01
210	38	-1346.00	0.00	-0.01	0.00	-0.15	0.01

211	60	1328.23	0.00	0.00	0.00	-0.23	0.00
211	59	-1328.23	0.00	0.00	0.00	0.23	0.00
212	59	1328.23	0.00	0.00	0.00	-0.23	0.00
212	61	-1328.23	0.00	0.00	0.00	0.23	0.00
213	61	1328.23	0.00	0.00	0.00	-0.23	0.00
213	58	-1328.23	0.00	0.00	0.00	0.23	0.00
214	80	1333.12	0.00	0.01	0.00	-0.74	0.03
214	79	-1333.12	0.00	-0.01	0.00	0.71	-0.03
215	79	1333.12	0.00	0.01	0.00	-0.71	0.03
215	81	-1333.12	0.00	-0.01	0.00	0.67	-0.03
216	81	1333.12	0.00	0.01	0.00	-0.67	0.03
216	78	-1333.12	0.00	-0.01	0.00	0.64	-0.03
217	100	1331.44	0.00	-0.02	0.00	-0.96	-0.02
217	99	-1331.44	0.00	0.02	0.00	1.03	0.02
218	99	1331.44	0.00	-0.02	0.00	-1.03	-0.02
218	101	-1331.44	0.00	0.02	0.00	1.13	0.02
219	101	1331.44	0.00	-0.02	0.00	-1.13	-0.02
219	98	-1331.44	0.00	0.02	0.00	1.21	0.02
220	120	1333.22	0.00	0.00	0.00	-0.67	-0.02
220	119	-1333.22	0.00	0.00	0.00	0.66	0.02
221	119	1333.22	0.00	0.00	0.00	-0.66	-0.02
221	121	-1333.22	0.00	0.00	0.00	0.65	0.02
222	121	1333.22	0.00	0.00	0.00	-0.65	-0.02
222	118	-1333.22	0.00	0.00	0.00	0.64	0.02
223	140	1327.90	0.00	0.01	0.00	-0.15	-0.01
223	139	-1327.90	0.00	-0.01	0.00	0.11	0.01
224	139	1327.90	0.00	0.01	0.00	-0.11	-0.01
224	141	-1327.90	0.00	-0.01	0.00	0.05	0.01
225	141	1327.90	0.00	0.01	0.00	-0.05	-0.01
225	138	-1327.90	0.00	-0.01	0.00	0.01	0.01
226	160	1346.57	0.00	0.01	0.00	0.06	0.07
226	159	-1346.57	0.00	-0.01	0.00	-0.09	-0.07
227	159	1346.57	0.00	0.01	0.00	0.09	0.07
227	158	-1346.57	0.00	-0.01	0.00	-0.11	-0.07
228	179	1290.14	0.00	-0.02	0.00	0.30	0.00
228	178	-1290.14	0.00	0.02	0.00	-0.22	0.00
229	178	1290.14	0.00	-0.02	0.00	0.22	0.00
229	177	-1290.14	0.00	0.02	0.00	-0.14	0.00
230	5	363.22	0.00	0.01	0.00	1.95	-0.01
230	4	-363.22	0.00	-0.01	0.00	-1.96	0.01
231	194	396.01	712.50	-0.64	0.00	6.44	712.50
231	193	-396.01	-712.50	0.64	0.00	-5.80	0.00

proc Viaducto Papiol

HIPOTESIS 124

FUER Y MIN envolvente sobrecarga

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
1	3	0.00	-120.38	1.30	-28.93	0.00	-0.01
1	8	-13.25	120.38	-1.30	28.93	1.15	-573.46
2	8	13.25	-120.38	1.30	-28.93	-1.15	573.46
2	9	-26.50	120.38	-1.30	28.93	2.30	-1146.93
3	9	26.50	-120.38	1.32	-29.83	-2.30	1146.91
3	10	-39.75	120.38	-1.32	29.83	3.35	-1720.37
4	10	39.75	-120.38	1.31	-29.17	-3.35	1720.38
4	11	25.00	124.58	-3.65	65.71	-64.91	-1806.86
5	11	-25.00	-124.58	3.64	-66.39	64.91	1806.84
5	12	31.25	238.64	-4.82	59.28	-20.75	1269.92
6	12	-31.26	-238.64	4.80	-58.29	20.75	-1269.96
6	13	37.50	371.98	-6.16	80.45	-14.72	720.15
7	13	-37.50	-371.98	6.18	-80.72	14.73	-720.12
7	14	43.75	508.57	-8.18	87.58	-50.60	-1467.89
8	14	-43.76	-508.57	8.14	-88.72	50.60	1467.82
8	15	50.01	645.18	-10.14	95.50	-96.31	-4338.79
9	15	-50.01	-645.18	10.14	-95.41	96.31	4338.79
9	18	56.26	781.81	-12.14	102.11	-152.02	-7892.84
10	18	-4.50	-105.79	-5.53	-83.76	140.29	-1349.40
10	24	-0.50	105.79	5.53	83.76	-124.38	831.16
11	24	0.51	-105.79	-5.53	-83.44	124.38	-831.19
11	25	-5.51	105.79	5.53	83.44	-108.47	312.96
12	25	5.51	-105.79	-5.53	-83.19	108.47	-313.03
12	26	-10.51	105.79	5.53	83.19	-92.58	-205.20
13	26	10.51	-105.79	-5.53	-83.11	92.58	205.23
13	27	-15.51	105.79	5.53	83.11	-76.67	-723.45
14	27	15.51	-105.79	-5.53	-83.38	76.67	723.42
14	28	-20.51	105.79	5.53	83.38	-60.79	-1241.64
15	28	20.51	-105.79	-5.51	-84.35	60.79	1241.58
15	29	-25.52	130.20	2.15	-20.88	11.24	2358.71
16	29	25.51	-130.20	-2.16	19.99	-11.24	-2358.72
16	30	100.00	212.38	3.25	111.07	42.77	3194.87
17	30	-100.00	-212.38	-3.29	-109.79	-42.77	-3194.91
17	31	106.25	329.63	2.32	94.99	88.91	2799.67
18	31	-106.25	-329.63	-2.36	-93.93	-88.91	-2799.70
18	32	112.50	466.39	0.36	46.82	95.71	823.02
19	32	-112.50	-466.39	-0.36	-46.82	-95.71	-823.02
19	33	118.75	603.16	-1.64	-0.40	92.51	-1837.43
20	33	-118.75	-603.16	1.60	-0.30	-92.51	1837.43
20	34	125.00	739.94	-3.60	-47.07	79.53	-5181.76
21	34	-125.00	-739.94	3.55	44.99	-79.53	5181.78
21	37	131.25	876.73	-5.55	-92.49	56.80	-9210.09
22	37	154.48	-104.25	-3.66	-103.48	168.93	-1277.85
22	44	-159.48	104.25	3.66	103.48	-138.87	767.35
23	44	159.49	-104.25	-3.60	-103.17	138.87	-767.39
23	45	-164.49	104.25	3.60	103.17	-109.14	256.89
24	45	164.49	-104.25	-3.53	-103.07	109.14	-256.93
24	46	-169.49	104.25	3.53	103.07	-79.72	-253.58
25	46	169.49	-104.25	-3.53	-103.07	79.72	253.58
25	47	-174.49	104.25	3.53	103.07	-50.30	-764.08
26	47	174.49	-104.25	-3.47	-103.36	50.31	764.04
26	48	-179.49	104.25	3.47	103.36	-21.22	-1274.54
27	48	179.49	-104.25	-3.46	-103.39	21.22	1274.54
27	49	-184.50	123.72	-5.55	-115.60	72.91	2332.40
28	49	184.49	-123.72	5.62	116.49	-72.91	-2332.36
28	50	174.99	228.08	7.17	97.78	261.11	3384.31
29	50	-174.99	-228.08	-7.24	-96.43	-261.11	-3384.35
29	51	181.24	345.49	5.62	30.63	321.11	2916.81
30	51	-181.24	-345.49	-5.69	-29.52	-321.11	-2916.82
30	52	187.49	481.74	3.69	-52.01	344.55	862.15
31	52	-187.49	-481.74	-3.69	52.01	-344.55	-862.15
31	53	193.74	618.35	1.69	-130.90	357.99	-1874.65
32	53	-193.74	-618.35	-1.76	130.15	-357.99	1874.70
32	54	199.99	754.95	-0.24	-209.19	361.82	-5294.57
33	54	-199.99	-754.95	0.24	209.30	-361.82	5294.57
33	57	206.24	891.16	-2.24	-291.25	355.63	-9396.45
34	57	115.47	-104.28	-1.95	-86.53	104.03	-1284.30
34	64	-120.47	104.28	1.95	86.53	-82.55	773.62
35	64	120.47	-104.28	-1.95	-86.54	82.55	-773.62
35	65	-125.47	104.28	1.95	86.54	-61.06	262.94
36	65	125.47	-104.28	-1.85	-86.34	61.06	-263.00
36	66	-130.47	104.28	1.85	86.34	-40.07	-247.68
37	66	130.47	-104.28	-1.85	-86.34	40.07	247.68
37	67	-135.47	104.28	1.85	86.34	-19.08	-758.36
38	67	135.47	-104.28	-1.80	-86.61	19.08	758.33
38	68	-140.47	104.28	1.80	86.61	1.66	-1269.00
39	68	140.47	-104.28	-1.85	-86.16	-1.66	1269.03
39	69	-145.48	123.18	-9.08	-180.27	149.45	2229.30
40	69	145.47	-123.18	9.25	182.85	-149.45	-2229.09
40	70	249.99	236.10	3.03	23.50	302.98	3505.08
41	70	-249.99	-236.10	-2.93	-24.89	-302.99	-3505.08
41	71	256.24	354.11	0.70	-60.26	333.29	2996.38
42	71	-256.24	-354.11	-0.80	61.46	-333.29	-2996.35
42	72	262.49	490.89	-1.20	-144.71	332.29	897.26
43	72	-262.49	-490.89	1.10	145.05	-332.29	-897.21
43	73	268.74	627.67	-3.10	-228.30	321.78	-1885.77
44	73	-268.74	-627.67	3.10	228.27	-321.78	1885.78
44	74	274.99	764.44	-5.10	-311.53	301.30	-5352.66
45	74	-274.99	-764.44	4.99	309.49	-301.30	5352.78
45	77	281.24	901.19	-6.99	-392.75	271.35	-9503.48
46	77	274.48	-104.34	-0.63	-43.80	66.73	-1285.05
46	84	-279.48	104.34	0.63	43.80	-51.83	774.09
47	84	279.48	-104.34	-0.63	-43.79	51.83	-774.10
47	85	-284.48	104.34	0.63	43.79	-36.95	263.12
48	85	284.48	-104.34	-0.52	-43.69	36.95	-263.14
48	86	-289.48	104.34	0.52	43.69	-22.62	-247.82
49	86	289.48	-104.34	-0.41	-43.78	22.62	247.80
49	87	-294.48	104.34	0.41	43.78	-8.83	-758.77
50	87	294.48	-104.34	-0.40	-43.80	8.83	758.77
50	88	-299.48	104.34	0.40	43.80	4.92	-1269.73
51	88	299.48	-104.34	-0.29	-44.28	-4.92	1269.72
51	89	-304.48	123.29	-8.63	-181.97	133.73	2471.92
52	89	304.48	-123.29	8.63	181.97	-133.73	-2471.92
52	90	324.99	237.14	2.54	-42.40	215.38	3513.07
53	90	-324.99	-237.14	-2.67	43.80	-215.38	-3513.06
53	91	331.24	355.02	0.01	-129.19	235.03	2999.52
54	91	-331.24	-355.02	-0.13	130.33	-235.03	-2999.46
54	92	337.49	491.66	-1.87	-195.32	230.71	896.16
55	92	-337.49	-491.66	1.73	195.67	-230.71	-896.08
55	93	343.74	628.28	-3.73	-260.67	217.05	-1890.34
56	93	-343.74	-628.28	3.74	260.71	-217.05	1890.34
56	94	349.99	764.88	-5.74	-325.71	193.37	-5359.81
57	94	-349.99	-764.88	5.73	325.60	-193.37	5359.82
57	97	356.24	901.46	-7.73	-390.59	159.72	-9512.33

58	97	334.53	-102.52	-0.57	20.05	-9.86	-1276.37
58	104	-339.53	102.52	0.57	-20.05	0.98	774.50
59	104	339.53	-102.52	-0.58	20.04	-0.98	-774.50
59	105	-344.53	102.52	0.58	-20.04	-7.86	272.62
60	105	344.53	-102.52	-0.44	20.15	7.86	-272.61
60	106	-349.53	102.52	0.44	-20.15	-17.43	-229.26
61	106	349.53	-102.52	-0.44	20.16	17.43	229.26
61	107	-349.53	102.52	0.44	-20.16	-15.21	-741.85
62	107	349.53	-102.52	-0.30	19.86	15.21	741.86
62	108	-349.53	102.52	0.30	-19.86	-13.69	-1254.46
63	108	349.53	-102.52	-0.17	19.38	13.69	1254.46
63	109	-349.54	121.54	-4.03	-118.03	103.79	2366.70
64	109	349.54	-121.54	3.90	117.13	-103.79	-2366.74
64	110	375.00	234.85	-0.21	-81.41	98.96	3532.94
65	110	-375.00	-234.85	-0.09	84.16	-98.96	-3532.88
65	111	375.00	352.52	-2.71	-143.05	101.18	3017.89
66	111	-375.00	-352.52	2.56	144.20	-101.18	-3017.84
66	112	375.00	488.95	-4.56	-166.83	83.36	914.14
67	112	-375.00	-488.95	4.56	166.85	-83.36	-914.14
67	113	375.00	625.37	-6.56	-189.36	55.58	-1871.61
68	113	-375.00	-625.37	6.41	188.65	-55.58	1871.69
68	114	375.00	761.77	-8.41	-211.02	18.51	-5339.51
69	114	-375.00	-761.77	8.41	211.02	-18.51	5339.51
69	117	375.00	898.18	-10.41	-233.28	-28.56	-9489.44
70	117	-349.47	-102.05	4.32	57.72	-76.71	-1289.18
70	124	349.47	102.05	-4.32	-57.72	55.10	778.93
71	124	-349.47	-102.05	4.46	57.41	-55.10	-778.95
71	125	349.47	102.05	-4.46	-57.41	32.78	268.69
72	125	-349.47	-102.05	4.32	57.51	-32.78	-268.66
72	126	349.47	102.05	-4.32	-57.51	11.16	-241.59
73	126	-349.47	-102.05	4.18	57.42	-11.16	241.62
73	127	349.47	102.05	-4.18	-57.42	-9.75	-751.87
74	127	-349.47	-102.05	4.05	57.13	9.75	751.90
74	128	349.47	102.05	-4.05	-57.13	-30.01	-1262.15
75	128	-349.47	-102.05	4.05	57.13	30.01	1262.15
75	129	349.47	121.33	-1.50	4.05	41.13	2343.38
76	129	-349.47	-121.32	1.36	-3.16	-41.13	-2343.38
76	130	375.01	232.08	-3.22	-74.15	-47.32	3567.45
77	130	-375.01	-232.08	3.07	75.58	47.31	-3567.42
77	131	375.01	349.79	-5.50	-81.69	-58.03	3065.67
78	131	-375.01	-349.78	5.64	80.53	58.03	-3065.70
78	132	375.01	486.25	-7.64	-49.64	-91.23	975.59
79	132	-375.01	-486.25	7.21	50.77	91.23	-975.54
79	133	375.01	622.73	-9.21	-19.70	-132.26	-1796.92
80	133	-375.01	-622.73	9.35	20.38	132.26	1796.91
80	134	375.01	759.23	-11.35	10.88	-184.00	-5251.87
81	134	-375.01	-759.23	11.21	-12.87	184.01	5251.87
81	137	375.01	895.75	-13.21	44.30	-245.03	-9389.30
82	137	349.53	-100.88	1.63	49.67	-31.32	-1273.63
82	144	-349.53	100.88	-1.63	-49.67	23.18	769.25
83	144	349.53	-100.88	1.90	50.27	-23.18	-769.21
83	145	-349.53	100.88	-1.90	-50.27	13.68	264.82
84	145	349.53	-100.88	1.91	50.27	-13.68	-264.82
84	146	-349.53	100.88	-1.91	-50.27	4.14	-239.56
85	146	349.53	-100.88	1.90	50.28	-4.14	239.56
85	147	-349.53	100.88	-1.90	-50.28	-5.36	-743.94
86	147	349.53	-100.88	2.17	49.70	5.36	743.98
86	148	-349.53	100.88	-2.17	-49.70	-16.22	-1248.37
87	148	349.53	-100.88	2.18	49.67	16.22	1248.37
87	149	-349.53	121.73	3.34	127.39	-22.60	2324.44
88	149	349.53	-121.72	-3.21	-126.55	22.60	-2324.49
88	150	-374.99	229.43	-2.37	-9.63	-71.97	3651.10
89	150	374.99	-229.43	2.38	9.70	71.97	-3651.10
89	151	-374.99	347.50	-3.90	41.50	-66.75	3157.41
90	151	374.99	-347.50	4.05	-40.23	66.75	-3157.42
90	152	-374.99	484.17	-6.05	103.39	-92.00	1078.27
91	152	374.99	-484.17	6.04	-103.41	92.00	-1078.26
91	153	-374.99	620.85	-8.04	166.65	-127.22	-1684.32
92	153	374.99	-620.85	8.19	-167.32	127.22	1684.25
92	154	-374.99	757.55	-10.19	230.62	-173.19	-5130.27
93	154	374.99	-757.55	10.34	-232.57	173.18	5130.19
93	157	-374.99	894.25	-12.34	295.89	-229.86	-9259.63
94	157	-349.53	-61.42	0.93	1.47	-11.74	-788.13
94	163	349.53	61.42	-0.93	-1.47	7.07	481.01
95	163	-349.53	-61.42	0.80	1.66	-7.07	-481.01
95	164	349.53	61.42	-0.80	-1.66	3.06	173.88
96	164	-349.53	-61.43	0.67	1.72	-3.06	-173.88
96	165	349.53	61.43	-0.67	-1.72	-0.28	-133.24
97	165	-349.53	-61.42	0.66	1.72	0.28	133.24
97	166	349.53	61.42	-0.66	-1.72	-3.58	-440.37
98	166	-349.53	-61.43	0.53	1.55	3.58	440.37
98	167	349.53	61.43	-0.53	-1.55	-6.23	-747.49
99	167	-349.53	-61.42	0.40	1.27	6.23	747.49
99	168	349.53	123.90	3.05	164.58	-38.84	2415.76
100	168	-349.53	-123.90	-3.06	-164.53	38.84	-2415.76
100	169	375.00	203.73	-1.01	55.86	34.46	4238.83
101	169	-375.00	-203.73	0.86	-54.25	-34.46	-4238.85
101	170	375.00	324.55	-1.87	126.95	49.18	3797.98
102	170	-375.00	-324.55	1.87	-126.95	-49.18	-3797.98
102	171	375.00	461.23	-3.87	166.48	34.86	1833.50
103	171	-375.01	-461.23	3.57	-165.05	-34.86	-1833.63
103	172	375.01	597.89	-5.57	204.48	11.99	-814.15
104	172	-375.01	-597.89	5.57	-204.48	-11.99	814.15
104	173	375.01	734.54	-7.57	243.80	-20.87	-4145.19
105	173	-375.01	-734.54	7.57	-243.88	20.87	4145.18
105	176	375.01	871.18	-9.57	283.09	-63.70	-8159.51
106	176	349.53	-45.72	1.40	-21.25	-79.51	-1467.85
106	182	-349.53	45.72	-1.40	21.25	72.52	1239.27
107	182	349.53	-45.72	1.54	-20.75	-72.52	-1239.28
107	183	-349.53	45.72	-1.54	20.75	64.83	1010.70
108	183	349.53	-45.72	1.54	-20.73	-64.83	-1010.71
108	184	-349.53	45.72	-1.54	20.73	57.11	782.13
109	184	349.53	-45.72	1.67	-20.45	-57.11	-782.13
109	185	-349.53	45.72	-1.67	20.45	48.75	553.55
110	185	349.53	-45.72	1.68	-20.44	-48.75	-553.55
110	186	-349.53	75.92	-1.45	29.73	87.98	4000.42
111	186	349.53	-75.93	1.73	-26.61	-87.98	-4000.44
111	187	-375.00	183.35	-4.34	14.06	102.52	4703.76
112	187	375.00	-183.35	4.34	-14.06	-102.52	-4703.75
112	188	-375.00	308.57	-6.82	-109.88	87.44	3698.64
113	188	375.00	-308.57	6.97	111.29	-87.44	-3698.60
113	189	-375.00	436.27	-8.05	-90.48	45.27	1891.62
114	189	375.00	-436.27	8.05	90.52	-45.27	-1891.62
114	192	-375.00	573.27	-10.05	-127.09	0.00	-632.24
134	6	4.79	-73.38	0.00	0.00	0.00	8.07
134	3	-4.79	73.38	0.00	0.00	0.00	-319.95
135	3	0.00	-326.28	0.00	-0.01	0.00	-1386.68
135	1	0.00	326.28	0.00	0.01	0.01	0.00
136	22	-18.93	-234.50	0.01	0.00	0.02	-31.92
136	18	18.93	234.50	-0.01	0.00	0.01	-378.47
137	18	0.00	-890.98	0.02	0.00	0.00	-1559.02
137	16	0.00	890.98	-0.02	0.00	0.02	0.00
138	43	1.67	-280.39	0.00	-0.01	0.01	2.77
138	37	-1.67	280.39	0.00	0.01	0.01	-493.61
139	37	0.01	-1015.48	0.00	0.00	0.00	-1776.95
139	35	-0.01	1015.48	0.00	0.00	0.01	0.01
140	63	13.51	-291.94	0.01	-0.01	0.00	22.72
140	57	-13.51	291.94	-0.01	0.01	0.00	-533.71

141	57	-0.04	-1068.20	0.00	0.00	-0.01	-1868.72
141	55	0.04	1068.20	0.00	0.00	-0.01	0.02
142	83	0.08	-310.57	0.02	0.00	-0.01	0.20
142	77	-0.08	310.57	-0.02	0.00	0.00	-543.98
143	77	-0.09	-1077.37	-0.01	0.00	-0.01	-1884.27
143	75	0.09	1077.37	0.01	0.00	-0.01	0.00
144	103	1.33	-300.56	0.00	0.00	0.00	2.29
144	97	-1.33	300.56	0.00	0.00	0.00	-528.87
145	97	-0.10	-1024.02	-0.02	0.00	-0.01	-1790.09
145	95	0.10	1024.02	0.02	0.00	-0.01	-0.01
146	123	-0.65	-247.56	-0.01	0.00	-0.01	-1.15
146	117	0.65	247.56	0.01	0.00	-0.01	-432.30
147	117	-0.09	-946.24	0.00	0.00	0.00	-1654.88
147	115	0.09	946.24	0.00	0.00	0.01	0.02
148	143	13.87	-189.35	0.00	0.00	0.00	23.38
148	137	-13.87	189.35	0.00	0.00	0.00	-354.83
149	137	-0.01	-876.97	0.00	0.00	0.01	-1534.18
149	135	0.01	876.97	0.00	0.00	0.00	0.00
150	162	-38.43	-226.75	0.01	0.00	0.01	-64.70
150	157	38.43	226.75	-0.01	0.00	-0.01	-332.19
151	157	0.02	-925.24	0.01	0.00	0.00	-1618.80
151	156	-0.02	925.24	-0.01	0.00	0.00	0.00
152	181	18.06	-177.66	0.00	0.00	0.00	30.44
152	176	-18.06	177.66	0.00	0.00	0.00	-341.42
153	176	0.01	-795.84	0.00	0.00	0.00	-1392.34
153	174	-0.01	795.84	0.00	0.00	0.00	0.00
154	195	-7.80	-83.57	-187.50	316.13	0.00	-13.14
154	192	7.80	83.57	187.50	-316.13	796.88	-342.01
155	192	0.00	-368.87	-187.50	316.13	796.87	-1567.71
155	190	0.00	368.87	187.50	-316.13	0.00	0.00
156	7	1.00	-347.06	0.00	0.00	0.00	0.00
156	4	-1.00	347.06	0.00	0.00	0.00	-1475.03
157	4	0.00	-66.85	0.00	0.00	0.00	-284.10
157	2	0.00	66.85	0.00	0.00	0.00	0.00
158	23	16.35	-846.46	0.00	0.00	0.00	0.00
158	19	-16.35	846.46	0.00	0.00	0.00	-1481.47
159	19	0.00	-204.11	0.00	0.00	0.00	-357.14
159	17	0.00	204.11	0.00	0.00	0.00	0.00
160	42	-0.30	-867.49	0.00	0.00	0.00	0.00
160	38	0.30	867.49	0.00	0.00	0.00	-1518.53
161	38	0.02	-181.52	0.00	0.00	0.00	-317.62
161	36	-0.02	181.52	0.00	0.00	0.00	0.00
162	62	9.03	-852.90	0.00	0.00	0.00	-0.01
162	58	-9.03	852.90	0.00	0.00	0.00	-1493.05
163	58	0.04	-166.12	0.00	0.00	0.00	-290.63
163	56	-0.04	166.12	0.00	0.00	0.00	0.01
164	82	-4.74	-878.40	0.00	0.00	0.00	0.00
164	78	4.74	878.40	0.00	0.00	0.00	-1538.05
165	78	-0.05	-187.18	0.00	0.00	0.00	-327.35
165	76	0.05	187.18	0.00	0.00	0.00	0.00
166	102	-3.52	-888.11	0.00	0.00	0.00	0.00
166	98	3.52	888.11	0.00	0.00	0.00	-1555.88
167	98	0.01	-198.03	0.00	0.00	0.00	-346.13
167	96	-0.01	198.03	0.00	0.00	0.00	0.00
168	122	27.91	-913.82	0.00	0.00	0.00	0.00
168	118	-27.91	913.82	0.00	0.00	0.01	-1600.16
169	118	0.04	-219.87	0.00	0.00	0.00	-384.56
169	116	-0.04	219.87	0.00	0.00	0.00	0.00
170	142	25.82	-959.30	0.00	0.00	0.00	0.00
170	138	-25.82	959.30	0.00	0.00	0.00	-1679.35
171	138	-0.05	-249.24	0.00	0.00	0.00	-436.01
171	136	0.05	249.24	0.00	0.00	0.00	0.00
172	161	12.62	-1033.70	0.00	0.00	0.00	0.00
172	158	-12.62	1033.70	0.00	0.00	0.00	-1809.42
173	158	-0.03	-309.69	0.00	0.00	0.00	-541.83
173	155	0.03	309.69	0.00	0.00	0.00	0.00
174	180	20.54	-873.15	0.00	0.00	0.00	0.00
174	177	-20.54	873.15	0.00	0.00	0.00	-1528.36
175	177	0.01	-209.57	0.00	0.00	0.00	-366.65
175	175	-0.01	209.57	0.00	0.00	0.00	0.00
176	196	4.58	-325.79	-187.50	0.00	0.00	0.00
176	193	-4.58	325.79	187.50	0.00	796.87	-1384.63
177	193	0.00	-93.36	-187.50	0.00	796.88	-396.80
177	191	0.00	93.36	187.50	0.00	0.00	0.00
182	7	181.38	0.00	0.01	0.00	0.00	0.00
182	6	-181.38	0.00	-0.01	0.00	-0.02	0.00
183	2	181.84	0.00	0.00	0.00	0.00	0.00
183	1	-181.84	0.00	0.00	0.00	0.00	0.00
184	23	645.12	0.00	-0.02	0.00	0.00	0.00
184	22	-645.12	0.00	0.02	0.00	0.04	0.00
185	17	645.60	0.00	0.00	0.00	0.00	0.00
185	16	-645.60	0.00	0.00	0.00	0.00	0.00
186	42	672.82	0.00	0.01	0.00	0.00	0.00
186	43	-672.82	0.00	-0.01	0.00	-0.02	0.00
187	36	673.18	0.00	0.00	0.00	0.00	0.00
187	35	-673.18	0.00	0.00	0.00	0.00	0.00
188	62	663.97	0.00	0.00	0.00	0.00	0.00
188	63	-663.97	0.00	0.00	0.00	0.00	0.00
189	56	664.26	0.00	0.00	0.00	0.00	0.00
189	55	-664.26	0.00	0.00	0.00	0.00	0.00
190	82	666.34	0.00	0.01	0.00	0.00	0.00
190	83	-666.34	0.00	-0.01	0.00	-0.01	0.00
191	76	666.78	0.00	0.00	0.00	0.00	0.00
191	75	-666.78	0.00	0.00	0.00	0.00	0.00
192	102	665.34	0.00	-0.02	0.00	0.00	0.00
192	103	-665.34	0.00	0.02	0.00	0.03	0.00
193	96	666.10	0.00	0.00	0.00	0.00	0.00
193	95	-666.10	0.00	0.00	0.00	0.00	0.00
194	122	666.40	0.00	0.00	0.00	0.00	0.00
194	123	-666.40	0.00	0.00	0.00	0.00	0.00
195	116	666.83	0.00	0.00	0.00	0.00	0.00
195	115	-666.83	0.00	0.00	0.00	0.00	0.00
196	142	663.73	0.00	0.01	0.00	0.00	0.00
196	143	-663.73	0.00	-0.01	0.00	-0.02	0.00
197	136	664.17	0.00	0.00	0.00	0.00	0.00
197	135	-664.17	0.00	0.00	0.00	0.00	0.00
198	161	673.08	0.00	0.01	0.00	0.00	0.00
198	162	-673.08	0.00	-0.01	0.00	-0.01	0.00
199	155	673.49	0.00	0.00	0.00	0.00	0.00
199	156	-673.49	0.00	0.00	0.00	0.00	0.00
200	180	644.87	0.00	-0.02	0.00	0.00	0.00
200	181	-644.87	0.00	0.02	0.00	0.04	0.00
201	175	645.28	0.00	0.00	0.00	0.00	0.00
201	174	-645.28	0.00	0.00	0.00	0.00	0.00
202	196	165.66	-356.25	0.66	0.00	0.00	0.00
202	195	-165.66	356.25	-0.66	0.00	-1.11	-600.64
203	191	165.24	-356.25	0.00	0.00	0.00	0.00
203	190	-165.24	356.25	0.00	0.00	0.00	-600.63
206	21	1290.71	0.00	-0.02	0.00	0.71	0.03
206	20	-1290.71	0.00	0.02	0.00	-0.67	-0.03
207	20	1290.71	0.00	-0.02	0.00	0.67	0.03
207	19	-1290.71	0.00	0.02	0.00	-0.58	-0.03
208	40	1346.00	0.00	0.01	0.00	0.01	-0.01
208	39	-1346.00	0.00	-0.01	0.00	-0.02	0.01
209	39	1346.00	0.00	0.01	0.00	0.02	-0.01
209	41	-1346.00	0.00	-0.01	0.00	-0.10	0.01
210	41	1346.00	0.00	0.01	0.00	0.10	-0.01
210	38	-1346.00	0.00	-0.01	0.00	-0.15	0.01

211	60	1328.23	0.00	0.00	0.00	-0.23	0.00
211	59	-1328.23	0.00	0.00	0.00	0.23	0.00
212	59	1328.23	0.00	0.00	0.00	-0.23	0.00
212	61	-1328.23	0.00	0.00	0.00	0.23	0.00
213	61	1328.23	0.00	0.00	0.00	-0.23	0.00
213	58	-1328.23	0.00	0.00	0.00	0.23	0.00
214	80	1333.12	0.00	0.01	0.00	-0.74	0.03
214	79	-1333.12	0.00	-0.01	0.00	0.71	-0.03
215	79	1333.12	0.00	0.01	0.00	-0.71	0.03
215	81	-1333.12	0.00	-0.01	0.00	0.67	-0.03
216	81	1333.12	0.00	0.01	0.00	-0.67	0.03
216	78	-1333.12	0.00	-0.01	0.00	0.64	-0.03
217	100	1331.44	0.00	-0.02	0.00	-0.96	-0.02
217	99	-1331.44	0.00	0.02	0.00	1.03	0.02
218	99	1331.44	0.00	-0.02	0.00	-1.03	-0.02
218	101	-1331.44	0.00	0.02	0.00	1.13	0.02
219	101	1331.44	0.00	-0.02	0.00	-1.13	-0.02
219	98	-1331.44	0.00	0.02	0.00	1.21	0.02
220	120	1333.22	0.00	0.00	0.00	-0.67	-0.02
220	119	-1333.22	0.00	0.00	0.00	0.66	0.02
221	119	1333.22	0.00	0.00	0.00	-0.66	-0.02
221	121	-1333.22	0.00	0.00	0.00	0.65	0.02
222	121	1333.22	0.00	0.00	0.00	-0.65	-0.02
222	118	-1333.22	0.00	0.00	0.00	0.64	0.02
223	140	1327.90	0.00	0.01	0.00	-0.15	-0.01
223	139	-1327.90	0.00	-0.01	0.00	0.11	0.01
224	139	1327.90	0.00	0.01	0.00	-0.11	-0.01
224	141	-1327.90	0.00	-0.01	0.00	0.05	0.01
225	141	1327.90	0.00	0.01	0.00	-0.05	-0.01
225	138	-1327.90	0.00	-0.01	0.00	0.01	0.01
226	160	1346.57	0.00	0.01	0.00	0.06	0.07
226	159	-1346.57	0.00	-0.01	0.00	-0.09	-0.07
227	159	1346.57	0.00	0.01	0.00	0.09	0.07
227	158	-1346.57	0.00	-0.01	0.00	-0.11	-0.07
228	179	1290.14	0.00	-0.02	0.00	0.30	0.00
228	178	-1290.14	0.00	0.02	0.00	-0.22	0.00
229	178	1290.14	0.00	-0.02	0.00	0.22	0.00
229	177	-1290.14	0.00	0.02	0.00	-0.14	0.00
230	5	363.22	0.00	0.01	0.00	1.95	-0.01
230	4	-363.22	0.00	-0.01	0.00	-1.96	0.01
231	194	330.90	-712.51	-2.67	0.00	46.15	-712.50
231	193	-330.90	712.51	2.67	0.00	-43.48	0.00

proc Viaducto Papiol

HIPOTESIS 125

FUER Z MAX envolvente sobrecarga

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
1	3	0.00	63.02	24.53	521.79	-0.01	0.08
1	8	3.25	-60.34	-24.53	-505.81	-91.48	301.33
2	8	-3.25	60.34	24.53	505.81	91.48	-301.33
2	9	6.50	-57.64	-24.53	-489.58	-182.96	589.29
3	9	-6.52	57.64	24.52	490.04	182.96	-588.91
3	10	9.77	-54.95	-24.52	-473.77	-274.41	863.39
4	10	-9.76	54.95	24.52	473.44	274.41	-863.57
4	11	13.01	-0.14	-24.66	-304.43	-366.13	1033.31
5	11	-13.02	0.14	24.66	304.82	366.13	-1033.20
5	12	16.27	77.31	-24.86	-76.99	-458.78	833.29
6	12	-16.29	-77.31	24.85	77.64	458.78	-833.23
6	13	19.54	154.75	-25.05	150.19	-552.36	246.12
7	13	-19.53	-154.75	25.05	-150.28	552.36	-246.07
7	14	14.53	232.17	-25.25	378.15	-666.39	-710.52
8	14	-14.55	-232.17	25.24	-378.70	666.39	710.22
8	15	0.04	514.61	-25.98	89.78	-651.87	-1824.55
9	15	-0.04	-514.61	25.98	-89.74	651.87	1824.55
9	18	0.04	638.01	-27.78	140.68	-771.60	-4706.07
10	18	-94.48	87.55	25.69	437.68	-316.51	923.59
10	24	99.48	-85.16	-25.69	-422.79	199.82	-502.51
11	24	-99.49	85.16	25.65	422.60	-199.82	502.67
11	25	104.49	-82.79	-25.65	-407.71	83.32	-93.52
12	25	-104.51	82.79	25.57	407.63	-83.32	93.84
12	26	109.51	-80.42	-25.57	-392.74	-32.77	303.45
13	26	-109.50	80.42	25.61	392.62	32.77	-303.61
13	27	114.50	-78.06	-25.61	-377.73	-149.07	689.09
14	27	-114.51	78.06	25.57	377.99	149.07	-688.95
14	28	119.51	-75.72	-25.57	-363.11	-265.15	1062.68
15	28	119.47	71.96	25.57	361.91	265.44	-1050.47
15	29	-124.47	-69.63	-25.57	-347.04	-381.56	1415.17
16	29	124.48	69.63	25.53	346.50	381.56	-1415.31
16	30	-129.48	-14.96	-25.67	-200.70	-497.69	1676.51
17	30	129.47	14.96	25.72	201.37	497.69	-1676.43
17	31	-134.47	62.35	-25.92	-4.02	-615.03	1568.68
18	31	134.46	-62.35	25.97	4.62	615.03	-1568.68
18	32	-139.46	139.65	-26.17	192.70	-733.63	1074.39
19	32	139.46	-139.65	26.17	-192.70	733.63	-1074.39
19	33	0.03	457.51	-26.61	-147.06	-414.72	21.38
20	33	-0.04	-457.51	26.61	147.07	414.72	-21.33
20	34	0.04	580.79	-28.41	-141.96	-537.59	-2574.42
21	34	-0.05	-580.79	28.41	140.93	537.59	2574.48
21	37	0.05	704.05	-30.21	-135.87	-669.46	-5786.60
22	37	-154.45	390.16	30.30	-224.36	-971.19	3856.93
22	44	159.45	-365.56	-30.36	169.42	831.38	-1939.37
23	44	-159.46	365.56	30.30	-170.20	-831.38	1939.30
23	45	164.46	-288.33	-30.50	-52.43	691.13	-315.30
24	45	-164.47	288.33	30.44	52.31	-691.13	315.32
24	46	169.47	-211.11	-30.64	-275.00	550.20	922.56
25	46	-169.47	211.11	30.64	275.00	-550.20	-922.56
25	47	174.47	-133.90	-30.84	-497.75	408.26	1774.36
26	47	-174.49	133.90	30.77	498.42	-408.26	-1774.17
26	48	179.49	-56.71	-30.97	-721.23	265.66	2239.97
27	48	-179.48	56.71	30.97	721.27	-265.66	-2239.95
27	49	184.48	-2.03	-31.11	-875.31	122.12	2336.69
28	49	-184.50	2.03	31.04	876.20	-122.12	-2336.36
28	50	189.50	52.30	-31.18	-746.13	-21.57	2238.94
29	50	189.49	-56.76	31.21	744.73	18.57	-2239.81
29	51	-194.49	133.35	-31.41	-569.08	-163.39	1775.28
30	51	194.48	-133.35	31.49	569.75	163.39	-1775.06
30	52	-199.48	209.94	-31.69	-394.15	-309.58	927.56
31	52	199.48	-209.94	31.69	394.15	309.58	-927.56
31	53	-204.48	286.89	-31.89	-215.90	-456.77	-303.77
32	53	204.47	-286.89	31.97	215.78	456.76	303.86
32	54	-209.47	363.81	-32.17	-37.63	-605.36	-1919.90
33	54	209.47	-363.81	32.17	37.67	605.36	1919.90
33	57	0.04	701.65	-33.89	-427.00	-581.84	-5774.03
34	57	-214.47	405.42	33.80	-321.59	-1127.05	3963.16
34	64	219.47	-378.87	-33.86	242.35	969.77	-1974.16
35	64	-219.47	378.87	33.86	-242.31	-969.77	1974.16
35	65	224.47	-299.27	-34.06	-8.17	811.72	-289.56
36	65	-224.49	299.27	33.89	7.95	-811.72	289.56
36	66	229.49	-219.47	-34.09	-257.09	653.54	996.56
37	66	-229.49	219.47	34.08	257.11	-653.54	-996.55
37	67	234.49	-139.67	-34.28	-506.30	494.38	1883.69
38	67	-234.51	139.67	34.20	506.98	-494.38	-1883.50
38	68	239.51	-59.88	-34.40	-756.20	334.65	2371.65
39	68	-239.49	59.88	34.48	755.35	-334.65	-2371.92
39	69	244.49	-2.58	-34.62	-930.74	173.53	2477.98
40	69	244.47	-1.58	34.67	931.62	-179.02	-2477.90
40	70	-249.47	58.72	-34.81	-820.75	17.20	2376.88
41	70	249.48	-58.72	34.71	819.80	-17.20	-2377.21
41	71	-254.48	138.51	-34.91	-659.68	-145.09	1894.85
42	71	254.47	-138.51	35.01	660.44	145.09	-1894.59
42	72	-259.47	218.29	-35.21	-500.33	-308.87	1013.32
43	72	259.45	-218.29	35.31	500.72	308.87	-1013.13
43	73	0.05	489.30	-36.48	-496.19	-282.42	165.33
44	73	-0.05	-489.30	36.48	496.19	282.42	-165.31
44	74	0.05	615.07	-38.28	-542.65	-454.60	-2595.64
45	74	-0.07	-615.07	38.28	541.67	454.60	2595.85
45	77	0.07	740.83	-40.08	-588.12	-635.78	-5985.62
46	77	-274.48	393.70	33.76	-344.06	-1095.35	3894.54
46	84	279.48	-368.67	-33.82	255.19	938.26	-1960.35
47	84	-279.48	368.67	33.81	-255.23	-938.26	1960.34
47	85	284.48	-291.00	-34.01	-4.61	780.45	-321.87
48	85	-284.49	291.00	33.90	4.49	-780.45	321.87
48	86	289.49	-213.33	-34.10	-264.30	622.18	928.19
49	86	-289.50	213.33	33.99	264.65	-622.18	-928.09
49	87	294.50	-135.67	-34.19	-524.44	463.46	1789.87
50	87	-294.51	135.67	34.19	524.47	-463.46	-1789.86
50	88	299.51	-58.02	-34.39	-784.23	303.76	2263.37
51	88	-299.52	58.02	34.27	785.09	-303.76	-2263.07
51	89	304.52	-2.88	-34.41	-969.90	143.68	2365.23
52	89	-304.52	2.88	34.41	969.90	-143.68	-2365.23
52	90	309.52	52.10	-34.55	-867.58	-16.89	2270.47
53	90	309.47	-56.76	34.63	867.21	11.36	-2261.93
53	91	-314.47	134.37	-34.83	-710.65	-173.28	1794.82
54	91	314.46	-134.37	34.95	711.33	173.28	-1794.55
54	92	-319.46	211.98	-35.15	-554.72	-336.79	939.40
55	92	319.44	-211.98	35.28	555.09	336.79	-939.18
55	93	0.06	479.97	-35.73	-581.35	-316.17	139.97
56	93	-0.06	-479.97	35.73	581.35	316.17	-139.98
56	94	0.06	603.54	-37.53	-625.43	-484.61	-2568.78
57	94	-0.07	-603.54	37.53	625.38	484.61	2568.79
57	97	0.07	727.10	-39.33	-669.39	-662.06	-5895.43

58	97	-334.49	402.67	33.27	-152.57	-1046.19	3944.13
58	104	339.49	-375.76	-33.32	81.38	891.57	-1969.76
59	104	-339.49	375.76	33.33	-81.34	-891.57	1969.76
59	105	344.49	-296.22	-33.53	-148.19	736.16	-300.54
60	105	-344.50	296.22	33.39	148.07	-736.16	300.60
60	106	349.50	-216.69	-33.59	-377.55	580.48	970.94
61	106	-349.50	216.69	33.59	377.53	-580.48	-970.95
61	107	349.50	-137.19	-33.79	-606.98	412.01	1855.65
62	107	-349.52	137.19	33.65	607.72	-412.01	-1855.40
62	108	349.52	-57.70	-33.85	-837.09	243.24	2342.60
63	108	349.47	56.66	33.74	837.64	-249.41	-2363.25
63	109	-349.47	0.31	-33.88	-995.09	80.23	2464.74
64	109	-349.52	0.72	33.99	994.50	-74.18	-2449.34
64	110	349.52	56.08	-34.13	-864.08	-96.04	2349.94
65	110	349.46	-57.12	34.16	865.57	88.78	-2359.87
65	111	-349.46	136.56	-34.36	-671.94	-260.10	1875.70
66	111	349.44	-136.56	34.50	672.65	260.10	-1875.44
66	112	-349.44	215.98	-34.70	-478.88	-433.09	994.08
67	112	349.44	-215.98	34.70	478.90	433.09	-994.07
67	113	-349.44	295.40	-34.90	-285.01	-607.10	-284.39
68	113	349.43	-295.40	35.04	284.91	607.10	284.50
68	114	0.08	613.34	-36.37	-434.31	-618.66	-2604.48
69	114	-0.08	-613.34	36.37	434.31	618.66	2604.48
69	117	0.08	738.75	-38.17	-427.21	-805.03	-5984.72
70	117	-349.44	387.80	33.88	56.45	-919.99	3850.90
70	124	349.44	-363.31	-33.94	-104.66	750.54	-1934.13
71	124	-349.42	363.31	34.08	105.43	-750.54	1934.09
71	125	349.42	-286.15	-34.28	-291.62	579.64	-310.44
72	125	-349.44	286.15	34.14	291.50	-579.64	310.55
72	126	349.44	-208.96	-34.34	-477.60	408.43	927.22
73	126	-349.45	208.96	34.20	477.97	-408.43	-927.03
73	127	349.45	-131.75	-34.40	-663.98	236.92	1778.82
74	127	-349.46	131.75	34.27	664.66	-236.92	-1778.56
74	128	349.46	-54.52	-34.47	-850.55	65.09	2244.24
75	128	-349.46	54.52	34.47	850.56	-65.08	-2244.24
75	129	349.46	0.24	-34.61	-972.13	-107.71	2340.55
76	129	349.52	0.35	34.52	974.33	98.58	-2342.52
76	130	-349.52	54.30	-34.66	-807.85	-271.41	2246.65
77	130	349.51	-54.30	34.80	808.75	271.41	-2246.32
77	131	-349.51	131.61	-35.00	-570.25	-445.89	1781.56
78	131	349.52	-131.61	34.86	569.58	445.89	-1781.78
78	132	-349.52	208.96	-35.06	-330.94	-620.71	930.33
79	132	349.48	-208.96	35.47	332.02	620.71	-929.95
79	133	-349.48	286.34	-35.67	-93.26	-798.56	-308.29
80	133	349.50	-286.34	35.54	93.38	798.56	308.26
80	134	-374.97	582.95	-36.93	-185.16	-841.64	-2582.62
81	134	374.95	-582.95	37.07	184.18	841.64	2582.70
81	137	-374.95	706.39	-38.87	-111.64	-1031.50	-5806.02
82	137	-349.42	387.28	28.05	-18.31	-801.91	3844.86
82	144	349.42	-362.87	-28.11	-47.88	661.60	-1930.49
83	144	-349.45	362.87	27.84	46.37	-661.60	1930.52
83	145	349.45	-285.82	-28.04	-232.80	521.90	-308.78
84	145	-349.45	285.82	28.03	232.80	-521.90	308.79
84	146	349.45	-208.78	-28.23	-419.18	381.24	927.73
85	146	-349.45	208.78	28.24	419.17	-381.24	-927.74
85	147	349.45	-131.76	-28.44	-605.51	239.54	1779.07
86	147	349.53	130.30	28.31	609.45	-245.64	-1769.40
86	148	-349.53	-53.28	-28.51	-795.78	103.60	2228.36
87	148	349.53	53.28	28.52	795.82	-103.60	-2228.34
87	149	-349.53	1.23	-28.66	-927.61	-39.43	2319.09
88	149	349.52	-1.23	28.78	928.45	39.44	-2318.76
88	150	-349.52	55.58	-28.92	-773.25	-183.59	2215.73
89	150	349.52	-55.58	28.93	773.30	183.59	-2215.71
89	151	-349.52	132.58	-29.13	-543.52	-328.73	1745.32
90	151	349.51	-132.58	29.27	544.21	328.73	-1745.10
90	152	-349.51	209.57	-29.47	-314.43	-475.56	889.73
91	152	349.51	-209.57	29.46	314.41	475.56	-889.73
91	153	-374.98	461.99	-30.36	-174.31	-534.76	-111.40
92	153	374.97	-461.99	30.51	174.26	534.76	111.47
92	154	-374.97	584.98	-32.31	-102.14	-691.81	-2728.92
93	154	374.96	-584.98	32.45	101.10	691.82	2728.96
93	157	-374.96	707.98	-34.25	-29.01	-858.59	-5961.31
94	157	-349.44	391.38	22.65	57.36	-520.08	3869.81
94	163	349.44	-366.32	-22.71	-90.99	406.80	-1936.56
95	163	-349.45	366.32	22.57	90.26	-406.80	1936.59
95	164	349.45	-288.60	-22.77	-241.97	293.44	-299.30
96	164	-349.46	288.60	22.64	241.85	-293.44	299.39
96	165	349.46	-210.89	-22.84	-393.56	179.74	949.33
97	165	-349.46	210.89	22.83	393.58	-179.74	-949.33
97	166	349.46	-133.18	-23.03	-545.31	65.08	1809.51
98	166	-349.47	133.18	22.90	546.00	-65.08	-1809.30
98	167	349.47	-55.49	-23.10	-697.76	-49.92	2280.98
99	167	-349.48	55.49	22.97	698.63	49.92	-2280.72
99	168	349.48	-0.31	-23.11	-802.14	-165.21	2380.85
100	168	-349.48	0.31	23.10	802.19	165.21	-2380.84
100	169	349.48	54.70	-23.24	-620.78	-280.96	2283.86
101	169	349.51	-49.26	23.22	623.87	276.50	-2406.69
101	170	-349.51	126.90	-23.42	-376.95	-393.10	1966.31
102	170	349.51	-126.90	23.42	376.95	393.10	-1966.31
102	171	-349.51	204.52	-23.62	-130.11	-510.69	1137.76
103	171	349.49	-204.52	23.89	131.00	510.69	-1137.66
103	172	-349.50	251.65	-24.34	203.95	-423.44	-293.35
104	172	349.50	-251.65	24.34	-203.95	423.44	293.35
104	173	-374.97	578.71	-25.47	129.79	-544.67	-2335.02
105	173	374.97	-578.71	25.47	-129.84	544.66	2335.01
105	176	-374.97	702.25	-27.27	207.61	-676.54	-5537.46
106	176	-349.49	320.92	19.77	-513.04	-901.92	2529.11
106	182	349.49	-296.44	-19.83	443.17	803.04	-946.70
107	182	-349.44	296.44	19.69	-443.56	-803.04	946.51
107	183	349.44	-219.29	-19.89	229.12	704.10	342.81
108	183	-349.44	219.29	19.88	-229.12	-704.10	-342.81
108	184	349.44	-142.11	-20.08	14.56	604.20	1246.32
109	184	-349.44	142.11	19.95	-14.11	-604.20	-1246.32
109	185	349.44	-64.89	-20.15	-200.57	503.93	1763.82
110	185	-349.44	64.89	20.15	200.60	-503.93	-1763.81
110	186	349.44	12.38	-20.35	-415.45	402.69	1895.07
111	186	349.54	-44.33	20.29	420.18	-409.82	-1355.22
111	187	-349.54	99.16	-20.43	-584.11	307.89	957.13
112	187	349.54	-99.16	20.43	584.11	-307.89	-957.13
112	188	-349.54	101.73	-20.43	-599.74	205.71	454.93
113	188	349.53	-101.73	20.57	599.91	-205.71	-454.70
113	189	-375.00	327.81	-20.83	-313.65	108.17	1288.66
114	189	375.00	-327.80	20.83	313.67	-108.17	-1288.66
114	192	-375.00	440.53	-22.43	-359.12	0.00	-632.18
134	6	-0.03	179.11	0.01	0.00	0.01	-0.06
134	3	0.03	-179.11	-0.01	0.00	0.01	761.29
135	3	0.00	14.63	0.01	0.00	0.00	62.16
135	1	0.00	-14.63	-0.01	0.00	0.00	0.00
136	22	-4.77	462.32	0.05	0.00	-0.03	-8.05
136	18	4.77	-462.32	-0.05	0.00	-0.01	817.20
137	18	-0.01	93.49	0.03	0.00	0.01	163.58
137	16	0.01	-93.49	-0.03	0.00	0.05	0.00
138	43	-0.54	592.41	0.04	0.00	0.01	-0.94
138	37	0.54	-592.41	-0.04	0.00	0.00	1037.98
139	37	-0.02	-592.81	0.04	0.00	-0.04	-1037.34
139	35	0.02	592.81	-0.04	0.00	-0.01	0.01
140	63	8.56	-135.84	0.03	0.00	0.00	14.37
140	57	-8.56	135.84	-0.03	0.00	-0.02	-252.13

141	57	0.03	-586.78	0.03	0.00	0.00	-1026.54
141	55	-0.03	586.78	-0.03	0.00	0.01	0.00
142	83	-0.06	240.19	0.02	0.00	-0.02	0.04
142	77	0.06	-240.19	-0.02	0.00	0.00	420.54
143	77	0.00	-667.65	0.02	0.00	-0.01	-1167.67
143	75	0.00	667.65	-0.02	0.00	-0.02	0.00
144	103	-2.95	-162.15	0.02	0.00	0.00	-4.96
144	97	2.95	162.15	-0.02	0.00	0.01	-279.14
145	97	0.08	-414.76	0.03	-0.01	0.00	-725.05
145	95	-0.08	414.76	-0.03	0.01	0.00	-0.01
146	123	2.21	667.36	0.02	0.00	-0.01	3.72
146	117	-2.21	-667.36	-0.02	0.00	-0.02	1164.86
147	117	0.00	-481.73	0.02	0.00	0.01	-842.52
147	115	0.00	481.73	-0.02	0.00	0.00	0.00
148	143	-16.22	423.04	0.02	0.01	-0.01	-27.32
148	137	16.22	-423.04	-0.02	-0.01	0.00	767.90
149	137	-0.01	69.17	0.02	0.00	0.00	121.01
149	135	0.01	-69.17	-0.02	0.00	-0.01	0.00
150	162	2.44	483.23	0.02	0.00	0.01	4.12
150	157	-2.44	-483.23	-0.02	0.00	0.01	841.75
151	157	0.02	-323.31	0.02	0.01	0.00	-565.64
151	156	-0.02	323.31	-0.02	-0.01	-0.01	-0.01
152	181	-3.73	273.79	0.02	0.01	-0.01	-6.28
152	176	3.73	-273.79	-0.02	-0.01	-0.01	485.52
153	176	0.01	-282.73	0.01	-0.01	-0.01	-494.64
153	174	-0.01	282.73	-0.01	0.01	0.00	0.00
154	195	-0.64	197.32	356.25	-600.64	0.00	-1.08
154	192	0.64	-197.32	-356.25	600.64	-1514.07	839.71
155	192	0.00	-165.24	356.25	-600.63	-1514.07	-702.25
155	190	0.00	165.24	-356.25	600.63	0.00	0.00
156	7	-0.01	-181.38	0.00	0.00	0.00	0.00
156	4	0.01	181.38	0.00	0.00	0.00	-770.88
157	4	0.00	181.84	0.00	0.00	0.00	772.84
157	2	0.00	-181.84	0.00	0.00	0.00	0.00
158	23	-22.42	-143.55	0.00	0.00	0.00	0.00
158	19	22.42	143.55	0.00	0.00	0.00	-251.25
159	19	0.00	645.60	0.00	0.00	0.00	1129.66
159	17	0.00	-645.60	0.00	0.00	0.00	0.00
160	42	-45.68	-83.26	0.01	0.00	0.00	0.00
160	38	45.68	83.26	-0.01	0.00	-0.01	-145.77
161	38	0.00	673.18	0.00	0.00	0.00	1177.96
161	36	0.00	-673.18	0.00	0.00	0.00	0.00
162	62	0.00	-663.97	0.00	0.00	0.00	0.00
162	58	0.00	663.97	0.00	0.00	0.00	-1162.30
163	58	0.00	664.26	0.00	0.00	0.00	1162.07
163	56	0.00	-664.26	0.00	0.00	0.00	0.00
164	82	-0.01	-666.34	0.00	0.00	0.00	0.00
164	78	0.01	666.34	0.00	0.00	0.00	-1166.77
165	78	0.00	666.77	0.00	0.00	0.00	1166.14
165	76	0.00	-666.77	0.00	0.00	0.00	0.00
166	102	50.07	-622.59	0.00	0.00	0.00	0.00
166	98	-50.07	622.59	0.00	0.00	-0.01	-1090.71
167	98	0.00	666.09	0.00	0.00	0.00	1164.42
167	96	0.00	-666.09	0.00	0.00	0.00	0.00
168	122	-44.43	-19.99	0.00	0.00	0.00	0.00
168	118	44.43	19.99	0.00	0.00	-0.01	-35.01
169	118	0.00	666.83	0.00	0.00	0.00	1166.24
169	116	0.00	-666.83	0.00	0.00	0.00	0.00
170	142	-30.46	-54.15	0.00	0.00	0.00	0.00
170	138	30.46	54.15	0.00	0.00	0.00	-94.79
171	138	0.00	664.18	0.00	0.00	0.00	1161.90
171	136	0.00	-664.18	0.00	0.00	0.00	0.00
172	161	-28.26	-168.76	0.00	0.00	0.00	0.00
172	158	28.26	168.76	0.00	0.00	0.00	-295.41
173	158	0.00	673.49	0.00	0.00	0.00	1178.30
173	155	0.00	-673.49	0.00	0.00	0.00	0.00
174	180	0.02	-644.87	0.00	0.00	0.00	0.00
174	177	-0.02	644.87	0.00	0.00	0.00	-1128.78
175	177	0.00	645.28	0.00	0.00	0.00	1128.92
175	175	0.00	-645.28	0.00	0.00	0.00	0.00
176	196	-0.66	-165.66	356.25	0.00	0.00	0.00
176	193	0.66	165.66	-356.25	0.00	-1514.07	-704.08
177	193	0.00	198.69	356.25	0.00	-1514.07	844.43
177	191	0.00	-198.69	-356.25	0.00	0.00	0.00
182	7	97.76	0.00	24.53	0.00	0.00	0.00
182	6	-97.76	0.00	-24.53	0.00	-41.35	0.00
183	2	181.84	0.00	0.00	0.00	0.00	0.00
183	1	-181.84	0.00	0.00	0.00	0.00	0.00
184	23	160.08	0.00	40.15	0.00	0.00	0.00
184	22	-160.08	0.00	-40.15	0.00	-67.70	0.00
185	17	645.60	0.00	0.00	0.00	0.00	0.00
185	16	-645.60	0.00	0.00	0.00	0.00	0.00
186	42	62.10	0.00	50.10	0.00	0.00	0.00
186	43	-62.10	0.00	-50.10	0.00	-84.49	0.00
187	36	673.18	0.00	0.00	0.00	0.00	0.00
187	35	-673.18	0.00	0.00	0.00	0.00	0.00
188	62	-61.66	0.00	54.88	0.00	0.00	0.00
188	63	61.66	0.00	-54.88	0.00	-92.52	0.00
189	56	664.26	0.00	0.00	0.00	0.00	0.00
189	55	-664.26	0.00	0.00	0.00	0.00	0.00
190	82	-60.00	0.00	50.16	0.00	0.00	0.00
190	83	60.00	0.00	-50.16	0.00	-84.54	0.00
191	76	666.78	0.00	0.00	0.00	0.00	0.00
191	75	-666.78	0.00	0.00	0.00	0.00	0.00
192	102	-37.92	0.00	52.12	0.00	0.00	0.00
192	103	37.92	0.00	-52.12	0.00	-87.88	0.00
193	96	666.10	0.00	0.00	0.00	0.00	0.00
193	95	-666.10	0.00	0.00	0.00	0.00	0.00
194	122	0.15	0.00	50.57	0.00	0.00	0.00
194	123	-0.15	0.00	-50.57	0.00	-85.27	0.00
195	116	666.83	0.00	0.00	0.00	0.00	0.00
195	115	-666.83	0.00	0.00	0.00	0.00	0.00
196	142	43.31	0.00	47.85	0.00	0.00	0.00
196	143	-43.31	0.00	-47.85	0.00	-80.67	0.00
197	136	664.17	0.00	0.00	0.00	0.00	0.00
197	135	-664.17	0.00	0.00	0.00	0.00	0.00
198	161	235.73	0.00	44.93	0.00	0.00	0.00
198	162	-235.73	0.00	-44.93	0.00	-75.76	0.00
199	155	673.49	0.00	0.00	0.00	0.00	0.00
199	156	-673.49	0.00	0.00	0.00	0.00	0.00
200	180	195.55	0.00	43.27	0.00	0.00	0.00
200	181	-195.55	0.00	-43.27	0.00	-72.95	0.00
201	175	645.28	0.00	0.00	0.00	0.00	0.00
201	174	-645.28	0.00	0.00	0.00	0.00	0.00
202	196	123.23	-174.76	20.16	0.00	0.00	0.00
202	195	-123.23	174.76	-20.16	0.00	-33.99	-294.65
203	191	181.96	0.00	0.00	0.00	0.00	0.00
203	190	-181.96	0.00	0.00	0.00	0.00	0.00
206	21	716.76	0.00	40.15	-0.01	444.97	-0.03
206	20	-716.76	0.00	-40.15	0.01	-533.30	0.03
207	20	716.76	0.00	40.15	-0.01	533.30	-0.03
207	19	-716.76	0.00	-40.15	0.01	-693.90	0.03
208	40	735.22	0.00	50.11	-0.02	588.10	-0.21
208	39	-735.22	0.00	-50.11	0.02	-618.16	0.21
209	39	735.22	0.00	50.11	-0.02	618.16	-0.21
209	41	-735.22	0.00	-50.11	0.02	-868.72	0.21
210	41	735.22	0.00	50.11	-0.02	868.72	-0.21
210	38	-735.22	0.00	-50.11	0.02	-1069.17	0.21

211	60	605.23	0.00	54.88	0.00	599.63	-0.01
211	59	-605.23	0.00	-54.88	0.00	-780.72	0.01
212	59	605.23	0.00	54.88	0.00	780.72	-0.01
212	61	-605.23	0.00	-54.88	0.00	-1055.11	0.01
213	61	605.23	0.00	54.88	0.00	1055.11	-0.01
213	58	-605.23	0.00	-54.88	0.00	-1274.62	0.01
214	80	606.25	0.00	50.15	0.00	653.39	0.04
214	79	-606.25	0.00	-50.15	0.00	-818.89	-0.04
215	79	606.25	0.00	50.15	0.00	818.89	0.04
215	81	-606.25	0.00	-50.15	0.00	-1069.64	-0.04
216	81	606.25	0.00	50.15	0.00	1069.64	0.04
216	78	-606.25	0.00	-50.15	0.00	-1270.24	-0.04
217	100	601.86	0.00	52.12	0.01	543.69	0.06
217	99	-601.86	0.00	-52.12	-0.01	-715.70	-0.06
218	99	601.86	0.00	52.12	0.01	715.70	0.06
218	101	-601.86	0.00	-52.12	-0.01	-976.32	-0.06
219	101	601.86	0.00	52.12	0.01	976.32	0.06
219	98	-601.86	0.00	-52.12	-0.01	-1184.82	-0.06
220	120	599.37	0.00	50.58	-0.01	425.65	-0.13
220	119	-599.37	0.00	-50.58	0.01	-592.55	0.13
221	119	599.37	0.00	50.58	-0.01	592.55	-0.13
221	121	-599.37	0.00	-50.58	0.01	-845.42	0.13
222	121	599.37	0.00	50.58	-0.01	845.42	-0.13
222	118	-599.37	0.00	-50.58	0.01	-1047.72	0.13
223	140	597.96	0.00	47.85	0.00	305.89	-0.05
223	139	-597.96	0.00	-47.85	0.00	-463.80	0.05
224	139	597.96	0.00	47.85	0.00	463.80	-0.05
224	141	-597.96	0.00	-47.85	0.00	-703.05	0.05
225	141	597.96	0.00	47.85	0.00	703.05	-0.05
225	138	-597.96	0.00	-47.85	0.00	-894.45	0.05
226	160	728.94	0.00	44.93	0.00	77.29	0.03
226	159	-728.94	0.00	-44.93	0.00	-270.50	-0.03
227	159	728.94	0.00	44.93	0.00	270.50	0.03
227	158	-728.94	0.00	-44.93	0.00	-450.23	-0.03
228	179	735.76	0.00	43.27	0.00	269.66	0.01
228	178	-735.76	0.00	-43.27	0.00	-429.74	-0.01
229	178	735.76	0.00	43.27	0.00	429.74	0.01
229	177	-735.76	0.00	-43.27	0.00	-602.80	-0.01
230	5	63.02	0.00	24.53	0.00	-587.67	0.02
230	4	-63.02	0.00	-24.53	0.00	563.14	-0.02
231	194	74.01	-349.53	20.16	0.00	-753.07	-349.53
231	193	-74.01	349.53	-20.16	0.00	732.91	0.00

proc Viaducto Papiol

HIPOTESIS 126

FUER Z MIN envolvente sobrecarga

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
1	3	0.00	60.33	-21.86	-515.46	0.00	-0.08
1	8	-3.25	-58.12	21.86	501.11	78.14	303.21
2	8	3.25	58.12	-21.86	-501.11	-78.14	-303.21
2	9	-6.50	-55.87	21.86	486.56	156.28	595.19
3	9	6.52	55.87	-21.85	-486.09	-156.28	-595.57
3	10	-9.77	-53.60	21.85	471.47	234.39	876.23
4	10	9.76	53.60	-21.86	-471.81	-234.39	-876.05
4	11	-13.01	0.85	21.72	326.95	312.28	1053.91
5	11	13.02	-0.85	-21.71	-326.55	-312.28	-1054.03
5	12	-16.27	77.97	21.51	116.73	389.19	863.98
6	12	16.29	-77.97	-21.50	-116.05	-389.19	-864.07
6	13	-19.54	155.11	21.30	-93.87	465.04	288.37
7	13	19.53	-155.11	-21.31	93.76	-465.04	-288.40
7	14	-14.53	232.28	21.11	-303.77	559.32	-690.81
8	14	14.54	-232.28	-21.10	303.23	-559.32	691.05
8	15	-9.54	309.48	20.90	-513.32	652.55	-2056.15
9	15	9.54	-309.48	-20.90	513.37	-652.55	2056.14
9	18	-4.54	334.20	20.84	-588.28	745.03	-3715.41
10	18	-0.04	703.32	-36.31	-497.44	809.73	5670.89
10	24	0.04	-580.07	34.51	494.89	-647.36	-2462.36
11	24	-0.03	580.07	-34.51	-495.82	647.36	2462.17
11	25	0.03	-456.79	32.71	493.17	-494.00	130.00
12	25	0.00	456.79	-32.71	-493.06	494.00	-130.40
12	26	0.00	-333.49	30.91	490.29	-349.64	2106.12
13	26	-0.01	333.49	-30.91	-491.14	349.64	-2105.92
13	27	-114.47	-126.92	30.70	609.19	-310.32	1864.78
14	27	114.49	126.92	-30.65	-608.48	310.32	-1865.01
14	28	-119.49	-49.57	30.45	790.28	-169.30	2316.96
15	28	-119.49	53.32	-30.46	-786.45	169.02	-2329.50
15	29	124.49	1.56	30.32	904.99	-28.92	2408.80
16	29	-124.50	-1.56	-30.27	-905.90	28.92	-2408.46
16	30	129.50	56.32	30.13	736.55	110.45	2292.02
17	30	-129.49	-56.32	-30.19	-735.63	-110.45	-2292.32
17	31	134.49	133.76	29.99	494.06	249.13	1806.39
18	31	-134.48	-133.76	-30.04	-493.37	-249.13	-1806.58
18	32	139.48	211.22	29.84	251.70	387.06	933.40
19	32	-139.48	-211.22	-29.84	-251.70	-387.06	-933.40
19	33	144.48	288.70	29.64	9.93	523.99	-327.12
20	33	-144.47	-288.70	-29.69	-10.05	-523.99	327.11
20	34	149.47	366.21	29.49	-231.81	660.20	-1975.11
21	34	-149.46	-366.21	-29.55	231.02	-660.20	1975.20
21	37	154.46	391.24	29.49	-315.52	795.95	-3918.94
22	37	-0.04	710.04	-42.86	-747.29	807.16	5926.38
22	44	0.04	-586.50	41.06	704.80	-612.06	-2685.05
23	44	-0.02	586.50	-41.06	-705.87	612.06	2684.76
23	45	0.02	-462.93	39.26	663.31	-425.95	-61.21
24	45	-0.01	462.93	-39.26	-663.34	425.95	60.95
24	46	0.01	-339.35	37.46	620.72	-248.85	1944.76
25	46	-0.01	339.35	-37.46	-620.72	248.85	-1944.76
25	47	-174.48	-130.13	36.82	698.99	-252.22	1796.58
26	47	174.49	130.13	-36.75	-698.31	252.22	-1796.84
26	48	-179.49	-52.52	36.55	855.28	-80.72	2264.20
27	48	179.49	52.52	-36.55	-855.24	80.72	-2264.22
27	49	-184.49	2.60	36.41	958.15	89.82	2360.36
28	49	184.51	-2.60	-36.34	-957.25	-89.82	-2360.73
28	50	-189.51	57.59	36.20	773.14	259.51	2259.96
29	50	-189.48	-53.14	-36.23	-769.95	-256.52	-2259.10
29	51	194.48	130.79	36.03	510.51	425.44	1788.56
30	51	-194.47	-130.79	-36.11	-509.83	-425.44	-1788.75
30	52	199.47	208.44	35.91	250.35	593.74	929.94
31	52	-199.47	-208.44	-35.91	-250.35	-593.74	-929.94
31	53	204.47	286.11	35.71	-9.15	761.03	-317.15
32	53	-204.45	-286.11	-35.79	9.02	-761.03	317.16
32	54	209.45	363.78	35.59	-268.55	927.73	-1952.62
33	54	-209.45	-363.78	-35.59	268.59	-927.73	1952.62
33	57	214.45	388.96	35.53	-357.88	1093.66	-3884.57
34	57	0.00	691.76	-37.98	-660.50	607.20	5700.87
34	64	0.00	-570.76	36.18	616.30	-436.50	-2544.56
35	64	0.00	570.76	-36.18	-616.25	436.50	2544.57
35	65	-224.48	-274.62	34.83	344.11	-517.30	-323.98
36	65	224.51	274.62	-34.65	-344.37	517.30	323.71
36	66	-229.51	-199.62	34.45	506.37	-356.27	872.62
37	66	229.51	199.62	-34.45	-506.35	356.27	-872.63
37	67	-234.51	-124.62	34.25	668.35	-196.27	1693.95
38	67	234.52	124.62	-34.17	-667.74	196.27	-1694.19
38	68	-239.52	-49.62	33.97	829.74	-37.69	2140.51
39	68	239.51	49.62	-34.05	-830.51	37.69	-2140.21
39	69	-244.51	2.88	33.91	943.52	120.37	2228.42
40	69	-244.46	1.28	-33.96	-938.95	-114.88	-2228.51
40	70	249.46	51.07	33.82	765.78	272.66	2132.33
41	70	-249.47	-51.07	-33.72	-766.63	-272.66	-2132.02
41	71	254.47	126.07	33.52	519.02	428.99	1678.45
42	71	-254.46	-126.07	-33.62	-518.35	-428.99	-1678.66
42	72	259.46	201.07	33.42	270.75	584.83	850.10
43	72	-259.44	-201.07	-33.52	-270.43	-584.83	-850.20
43	73	264.44	276.07	33.32	22.83	740.16	-353.35
44	73	-264.44	-276.07	-33.32	-22.84	-740.16	353.35
44	74	269.44	351.07	33.12	-224.76	894.52	-1931.93
45	74	-269.43	-351.07	-33.22	224.03	-894.52	1932.01
45	77	274.43	373.57	33.16	-298.05	1048.64	-3793.71
46	77	0.01	704.97	-37.61	-465.52	674.48	5810.95
46	84	-0.01	-581.90	35.81	439.87	-505.61	-2593.81
47	84	0.01	581.90	-35.81	-439.92	505.61	2593.80
47	85	-0.01	-458.84	34.01	414.22	-345.75	8.08
48	85	0.02	458.84	-34.01	-414.21	345.75	-8.23
48	86	-289.50	-205.81	33.11	437.67	-370.19	931.23
49	86	289.52	205.81	-33.00	-437.31	370.19	-931.39
49	87	-294.52	-128.75	32.80	616.01	-217.43	1778.52
50	87	294.52	128.75	-32.80	-615.98	217.43	-1778.53
50	88	-299.52	-51.70	32.60	794.62	-65.70	2240.40
51	88	299.53	51.70	-32.48	-793.76	65.70	-2240.70
51	89	-304.53	2.85	32.34	924.41	84.51	2334.19
52	89	304.53	-2.85	-32.34	-924.41	-84.51	-2334.19
52	90	-309.53	57.24	32.20	769.60	234.23	2233.71
53	90	-309.46	-52.58	-32.28	-767.42	-228.71	-2242.20
53	91	314.46	129.62	32.08	543.08	377.86	1776.00
54	91	-314.45	-129.62	-32.20	-542.40	-377.86	-1776.20
54	92	319.45	206.65	32.00	318.01	526.62	924.81
55	92	-319.43	-206.65	-32.13	-317.64	-526.62	-924.94
55	93	324.43	283.68	31.93	93.18	675.01	-311.62
56	93	-324.44	-283.68	-31.92	-93.17	-675.01	311.62
56	94	329.44	360.71	31.72	-131.34	822.37	-1933.32
57	94	-329.43	-360.71	-31.73	131.30	-822.37	1933.32
57	97	334.43	385.24	31.67	-188.43	969.01	-3848.33

58	97	0.02	692.55	-34.95	-336.31	718.39	5725.68
58	104	-0.02	-571.55	33.15	323.66	-562.85	-2565.40
59	104	0.02	571.55	-33.15	-323.61	562.85	2565.40
59	105	-0.02	-446.31	31.41	329.88	-416.65	-235.59
60	105	0.03	446.31	-31.41	-329.98	416.65	235.45
60	106	-349.51	-201.71	30.64	410.71	-409.98	888.16
61	106	349.51	201.71	-30.65	-410.73	409.98	-888.15
61	107	-349.51	-126.71	30.45	592.63	-257.24	1709.19
62	107	349.52	126.71	-30.31	-591.95	257.24	-1709.43
62	108	-349.52	-51.71	30.11	773.85	-106.21	2155.47
63	108	-349.47	52.74	-30.00	-772.68	112.37	-2134.80
63	109	349.47	-0.24	29.86	903.58	37.16	2227.90
64	109	349.52	-0.79	-29.97	-904.78	-43.21	-2243.34
64	110	-349.52	53.14	29.83	750.97	192.80	2147.51
65	110	-349.46	-52.11	-29.86	-748.96	-185.54	-2137.49
65	111	349.46	127.10	29.66	534.61	334.33	1689.48
66	111	-349.44	-127.10	-29.79	-533.97	-334.33	-1689.68
66	112	349.44	202.11	29.59	319.61	482.79	866.64
67	112	-349.44	-202.11	-29.60	-319.60	-482.79	-866.65
67	113	349.44	277.10	29.40	105.25	630.28	-331.36
68	113	-349.43	-277.10	-29.53	-105.37	-630.28	331.32
68	114	349.43	352.10	29.33	-108.97	777.43	-1904.32
69	114	-349.43	-352.10	-29.33	108.97	-777.43	1904.33
69	117	349.43	374.60	29.27	-171.45	923.83	-3760.48
70	117	374.97	706.67	-34.38	-150.22	787.74	5815.79
70	124	-374.97	-583.40	32.58	168.33	-620.34	-2590.63
71	124	374.96	583.40	-32.73	-167.29	620.34	2590.70
71	125	-374.96	-455.92	31.03	209.65	-459.10	-207.26
72	125	374.97	455.92	-30.88	-209.73	459.10	207.18
72	126	-349.44	-209.22	30.58	349.56	-402.98	934.20
73	126	349.45	209.22	-30.44	-349.18	402.99	-934.34
73	127	-349.45	-132.02	30.24	545.59	-251.29	1787.44
74	127	349.46	132.02	-30.11	-544.91	251.29	-1787.65
74	128	-349.46	-54.84	29.91	741.37	-101.27	2254.79
75	128	349.46	54.84	-29.91	-741.37	101.27	-2254.79
75	129	-349.46	-0.17	29.77	879.25	47.81	2352.92
76	129	-349.53	-0.42	-29.67	-879.66	-38.68	-2350.92
76	130	349.53	54.92	29.53	733.04	186.80	2251.57
77	130	-349.52	-54.92	-29.67	-732.14	-186.80	-2251.87
77	131	349.52	132.05	29.47	533.81	334.67	1784.44
78	131	-349.53	-132.05	-29.34	-534.48	-334.67	-1784.24
78	132	349.53	209.17	29.14	336.19	480.88	931.17
79	132	-349.49	-209.17	-29.55	-335.11	-480.88	-931.56
79	133	349.49	286.28	29.35	136.87	628.11	-307.06
80	133	-349.50	-286.28	-29.21	-136.75	-628.11	307.11
80	134	349.50	363.37	29.01	-61.45	773.69	-1931.25
81	134	-349.49	-363.37	-29.15	60.71	-773.69	1931.27
81	137	349.49	387.95	29.09	-127.88	919.17	-3848.92
82	137	374.94	705.58	-35.25	174.59	985.20	5800.54
82	144	-374.94	-582.11	33.45	-86.36	-813.47	-2581.35
83	144	374.97	582.11	-33.15	84.34	813.47	2581.42
83	145	-349.44	-287.11	31.82	-25.06	-706.54	-298.72
84	145	349.44	287.11	-31.82	25.05	706.54	298.72
84	146	-349.44	-209.58	31.62	226.08	-547.96	943.03
85	146	349.44	209.58	-31.62	-226.10	547.96	-943.02
85	147	-349.44	-132.03	31.42	477.36	-390.35	1797.04
86	147	-349.54	133.49	-31.29	-478.50	396.45	-1806.61
86	148	349.54	-55.90	31.09	729.90	-240.48	2280.10
87	148	-349.54	55.90	-31.10	-729.85	240.48	-2280.11
87	149	349.54	-0.80	30.96	913.03	-85.44	2382.49
88	149	-349.53	0.80	-31.08	-912.17	85.44	-2382.82
88	150	349.53	54.19	30.95	809.96	69.74	2288.34
89	150	-349.53	-54.19	-30.95	-809.92	-69.74	-2288.36
89	151	349.53	131.84	30.75	658.73	224.00	1823.31
90	151	-349.51	-131.84	-30.89	-658.00	-224.00	-1823.57
90	152	349.51	209.51	30.69	506.92	377.96	970.21
91	152	-349.52	-209.51	-30.69	-506.94	-377.96	-970.20
91	153	349.52	287.20	30.49	355.94	530.89	-271.58
92	153	-349.50	-287.20	-30.62	-356.05	-530.89	271.43
92	154	349.50	364.90	30.42	205.12	683.51	-1901.68
93	154	-349.49	-364.90	-30.56	-205.85	-683.51	1901.61
93	157	349.49	390.11	30.50	171.89	836.04	-3828.47
94	157	374.96	724.92	-31.83	-4.00	700.33	6054.61
94	163	-349.42	-482.11	30.58	-65.08	-720.01	-1762.33
95	163	349.44	482.11	-30.44	64.41	720.01	1762.35
95	164	-349.44	-365.11	29.54	69.18	-570.03	355.70
96	164	349.45	365.11	-29.41	-69.04	570.03	-355.72
96	165	-349.45	-248.09	28.51	202.60	-425.22	1888.72
97	165	349.45	248.09	-28.51	-202.56	425.23	-1888.73
97	166	-349.45	-131.07	27.61	336.09	-284.95	2836.64
98	166	349.46	131.07	-27.47	-335.01	284.95	-2836.77
98	167	-349.46	-14.05	26.57	468.52	-149.84	3199.57
99	167	349.47	14.05	-26.44	-467.31	149.84	-3199.75
99	168	-349.47	80.49	25.60	526.25	-19.85	2994.28
100	168	349.47	-80.49	-25.59	-526.19	19.85	-2994.29
100	169	-349.48	48.03	25.23	750.59	227.83	2371.20
101	169	-349.51	-53.47	-25.21	-751.92	-223.37	-2248.41
101	170	349.51	130.52	25.01	560.47	348.91	1788.44
102	170	-349.51	-130.52	-25.01	-560.47	-348.91	-1788.44
102	171	349.51	207.58	24.81	369.01	473.45	943.20
103	171	-349.50	-207.58	-25.08	-368.27	-473.45	-943.48
103	172	349.50	284.65	24.88	176.80	598.35	-287.06
104	172	-349.49	-284.65	-24.88	-176.80	-598.35	287.06
104	173	349.49	361.73	24.68	-14.69	722.25	-1902.98
105	173	-349.49	-361.73	-24.69	14.65	-722.25	1902.98
105	176	349.49	386.33	24.63	-83.69	845.43	-3812.52
106	176	374.97	638.02	-22.12	-35.76	617.44	4599.11
106	182	-349.49	-265.52	21.23	-392.99	-805.90	-868.93
107	182	349.44	265.52	-21.09	392.65	805.91	869.10
107	183	-349.44	-188.06	20.89	-169.09	-700.97	264.84
108	183	349.44	188.06	-20.88	169.09	700.97	-264.83
108	184	-349.44	-110.63	20.68	54.35	-597.08	1011.54
109	184	349.44	110.63	-20.55	-53.99	597.08	-1011.56
109	185	-349.44	-33.24	20.35	277.31	-494.81	1371.22
110	185	349.44	33.24	-20.35	-277.28	494.81	-1371.22
110	186	-349.44	44.11	20.15	500.44	-393.57	1344.04
111	186	-349.54	-12.16	-20.09	-502.63	400.70	-1883.95
111	187	349.54	66.96	19.95	653.88	-300.68	1646.79
112	187	-349.54	-66.96	-19.95	-653.88	300.68	-1646.79
112	188	349.54	69.37	19.95	669.38	-200.91	1305.97
113	188	-349.53	-69.37	-20.09	-668.88	200.91	-1306.23
113	189	349.53	71.73	20.09	684.12	-100.47	953.48
114	189	-349.53	-71.73	-20.09	-684.10	100.47	-953.49
114	192	349.53	74.01	20.09	699.03	0.00	589.16
134	6	-0.98	-23.46	-0.01	0.00	0.01	-1.66
134	3	0.98	23.46	0.01	0.00	-0.01	-98.03
135	3	0.00	-125.92	-0.01	0.00	-0.02	-535.17
135	1	0.00	125.92	0.01	0.00	0.00	0.00
136	22	-13.01	367.22	-0.02	0.01	0.00	-21.94
136	18	13.01	-367.22	0.02	-0.01	-0.01	664.65
137	18	0.00	-462.11	-0.06	0.00	0.01	-808.59
137	16	0.00	462.11	0.06	0.00	-0.01	0.00
138	43	1.01	485.29	-0.05	0.00	0.02	1.70
138	37	-1.01	-485.29	0.05	0.00	0.03	847.81
139	37	0.00	-484.85	-0.05	0.00	-0.04	-848.41
139	35	0.00	484.85	0.05	0.00	-0.01	0.00
140	63	-5.95	587.47	-0.05	0.00	-0.03	-10.05
140	57	5.95	-587.47	0.05	0.00	-0.03	1038.44

141	57	0.00	-478.96	-0.03	0.00	-0.01	-837.91
141	55	0.00	478.96	0.03	0.00	-0.02	0.00
142	83	-24.71	209.26	-0.02	-0.01	0.01	-41.56
142	77	24.71	-209.26	0.02	0.01	0.00	407.99
143	77	0.02	122.70	-0.02	0.00	0.01	214.64
143	75	-0.02	-122.70	0.02	0.00	0.00	-0.01
144	103	4.93	477.41	-0.03	0.00	0.01	8.31
144	97	-4.93	-477.41	0.03	0.00	0.02	828.08
145	97	0.00	-667.52	-0.04	0.00	0.01	-1166.90
145	95	0.00	667.52	0.04	0.00	-0.02	0.00
146	123	-2.20	665.43	-0.02	0.00	0.01	-3.71
146	117	2.20	-665.43	0.02	0.00	0.00	1168.92
147	117	0.00	-478.97	-0.03	0.00	-0.01	-837.69
147	115	0.00	478.97	0.03	0.00	-0.02	0.00
148	143	-14.01	402.09	-0.02	0.01	0.01	-23.57
148	137	14.01	-402.09	0.02	-0.01	-0.01	727.45
149	137	0.09	-448.28	-0.01	0.00	0.00	-784.21
149	135	-0.09	448.28	0.01	0.00	0.00	0.00
150	162	2.54	670.95	-0.02	0.00	0.00	4.29
150	157	-2.54	-670.95	0.02	0.00	0.01	1170.18
151	157	-0.03	-335.98	-0.02	0.01	0.00	-587.81
151	156	0.03	335.98	0.02	-0.01	0.00	0.00
152	181	-3.07	284.25	-0.01	0.01	0.01	-5.21
152	176	3.07	-284.25	0.01	-0.01	0.00	502.77
153	176	-0.03	-282.50	-0.01	-0.01	0.00	-494.23
153	174	0.03	282.50	0.01	0.01	0.00	0.00
154	195	0.66	165.66	-356.25	600.63	0.00	1.11
154	192	-0.66	-165.66	356.25	-600.63	1514.07	702.96
155	192	0.00	-198.69	-356.25	600.64	1514.07	-844.43
155	190	0.00	198.69	356.25	-600.64	0.00	0.00
156	7	-0.01	-181.38	0.00	0.00	0.00	0.00
156	4	0.01	181.38	0.00	0.00	0.00	-770.88
157	4	0.00	181.84	0.00	0.00	0.00	772.84
157	2	0.00	-181.84	0.00	0.00	0.00	0.00
158	23	52.27	-622.62	0.00	0.00	0.00	0.00
158	19	-52.27	622.62	0.00	0.00	0.01	-1089.70
159	19	0.00	645.60	0.00	0.00	0.00	1129.66
159	17	0.00	-645.60	0.00	0.00	0.00	0.00
160	42	54.58	-605.79	-0.01	0.00	0.00	0.00
160	38	-54.58	605.79	0.01	0.00	0.02	-1060.47
161	38	0.00	673.18	0.00	0.00	0.00	1177.96
161	36	0.00	-673.18	0.00	0.00	0.00	0.00
162	62	0.00	-663.97	0.00	0.00	0.00	0.00
162	58	0.00	663.97	0.00	0.00	0.00	-1162.30
163	58	0.00	664.26	0.00	0.00	0.00	1162.07
163	56	0.00	-664.26	0.00	0.00	0.00	0.00
164	82	-0.01	-666.34	0.00	0.00	0.00	0.00
164	78	0.01	666.34	0.00	0.00	0.00	-1166.77
165	78	0.00	666.77	0.00	0.00	0.00	1166.14
165	76	0.00	-666.77	0.00	0.00	0.00	0.00
166	102	-31.31	29.00	0.00	0.00	0.00	0.00
166	98	31.31	-29.00	0.00	0.00	0.00	50.80
167	98	0.00	666.09	0.00	0.00	0.00	1164.42
167	96	0.00	-666.09	0.00	0.00	0.00	0.00
168	122	51.73	-709.18	-0.01	0.00	0.00	0.01
168	118	-51.73	709.18	0.01	0.00	0.01	-1241.81
169	118	0.00	666.83	0.00	0.00	0.00	1166.24
169	116	0.00	-666.83	0.00	0.00	0.00	0.00
170	142	49.55	-897.50	0.00	0.00	0.00	0.00
170	138	-49.55	897.50	0.00	0.00	0.00	-1571.17
171	138	0.00	664.18	0.00	0.00	0.00	1161.90
171	136	0.00	-664.18	0.00	0.00	0.00	0.00
172	161	38.28	127.69	0.00	0.00	0.00	0.00
172	158	-38.28	-127.69	0.00	0.00	0.00	223.52
173	158	0.00	673.49	0.00	0.00	0.00	1178.30
173	155	0.00	-673.49	0.00	0.00	0.00	0.00
174	180	0.02	-644.87	0.00	0.00	0.00	0.00
174	177	-0.02	644.87	0.00	0.00	0.00	-1128.78
175	177	0.00	645.28	0.00	0.00	0.00	1128.92
175	175	0.00	-645.28	0.00	0.00	0.00	0.00
176	196	0.64	-197.32	-356.25	0.00	0.00	0.00
176	193	-0.64	197.32	356.25	0.00	1514.07	-838.63
177	193	0.00	165.24	-356.25	0.00	1514.07	702.25
177	191	0.00	-165.24	356.25	0.00	0.00	0.00
182	7	-34.81	0.00	-21.86	0.00	0.00	0.00
182	6	34.81	0.00	21.86	0.00	36.85	0.00
183	2	181.84	0.00	0.00	0.00	0.00	0.00
183	1	-181.84	0.00	0.00	0.00	0.00	0.00
184	23	625.93	0.00	-56.09	0.00	0.00	0.00
184	22	-625.93	0.00	56.09	0.00	94.57	0.00
185	17	645.60	0.00	0.00	0.00	0.00	0.00
185	16	-645.60	0.00	0.00	0.00	0.00	0.00
186	42	653.24	0.00	-59.31	0.00	0.00	0.00
186	43	-653.24	0.00	59.31	0.00	99.99	0.00
187	36	673.18	0.00	0.00	0.00	0.00	0.00
187	35	-673.18	0.00	0.00	0.00	0.00	0.00
188	62	607.30	0.00	-51.98	0.00	0.00	0.00
188	63	-607.30	0.00	51.98	0.00	87.65	0.00
189	56	664.26	0.00	0.00	0.00	0.00	0.00
189	55	-664.26	0.00	0.00	0.00	0.00	0.00
190	82	615.27	0.00	-55.48	0.00	0.00	0.00
190	83	-615.27	0.00	55.48	0.00	93.57	0.00
191	76	666.78	0.00	0.00	0.00	0.00	0.00
191	75	-666.78	0.00	0.00	0.00	0.00	0.00
192	102	666.00	0.00	-56.02	0.00	0.00	0.00
192	103	-666.00	0.00	56.02	0.00	94.47	0.00
193	96	666.10	0.00	0.00	0.00	0.00	0.00
193	95	-666.10	0.00	0.00	0.00	0.00	0.00
194	122	752.53	0.00	-56.99	0.00	0.00	0.00
194	123	-752.53	0.00	56.99	0.00	96.15	0.00
195	116	666.83	0.00	0.00	0.00	0.00	0.00
195	115	-666.83	0.00	0.00	0.00	0.00	0.00
196	142	814.51	0.00	-63.87	0.00	0.00	0.00
196	143	-814.51	0.00	63.87	0.00	107.71	0.00
197	136	664.17	0.00	0.00	0.00	0.00	0.00
197	135	-664.17	0.00	0.00	0.00	0.00	0.00
198	161	849.82	0.00	-56.45	0.00	0.00	0.00
198	162	-849.82	0.00	56.45	0.00	95.21	0.00
199	155	673.49	0.00	0.00	0.00	0.00	0.00
199	156	-673.49	0.00	0.00	0.00	0.00	0.00
200	180	768.10	0.00	-47.39	0.00	0.00	0.00
200	181	-768.10	0.00	47.39	0.00	79.89	0.00
201	175	645.28	0.00	0.00	0.00	0.00	0.00
201	174	-645.28	0.00	0.00	0.00	0.00	0.00
202	196	173.57	187.50	-22.51	0.00	0.00	0.00
202	195	-173.57	-187.50	22.51	0.00	37.95	316.13
203	191	181.96	0.00	0.00	0.00	0.00	0.00
203	190	-181.96	0.00	0.00	0.00	0.00	0.00
206	21	1140.02	0.00	-56.09	0.01	151.83	0.04
206	20	-1140.02	0.00	56.09	-0.01	-28.43	-0.04
207	20	1140.02	0.00	-56.09	0.01	28.43	0.04
207	19	-1140.02	0.00	56.09	-0.01	195.94	-0.04
208	40	1161.66	0.00	-59.30	0.02	315.47	0.04
208	39	-1161.66	0.00	59.30	-0.02	-279.89	-0.04
209	39	1161.66	0.00	-59.30	0.02	279.89	0.04
209	41	-1161.66	0.00	59.30	-0.02	16.62	-0.04
210	41	1161.66	0.00	-59.30	0.02	-16.62	0.04
210	38	-1161.66	0.00	59.30	-0.02	253.84	-0.04

211	60	1146.51	0.00	-51.99	0.00	519.67	0.00
211	59	-1146.51	0.00	51.99	0.00	-348.11	0.00
212	59	1146.51	0.00	-51.99	0.00	348.11	0.00
212	61	-1146.51	0.00	51.99	0.00	-88.16	0.00
213	61	1146.51	0.00	-51.99	0.00	88.16	0.00
213	58	-1146.51	0.00	51.99	0.00	119.79	0.00
214	80	1151.47	0.00	-55.48	0.00	542.84	0.03
214	79	-1151.47	0.00	55.48	0.00	-359.75	-0.03
215	79	1151.47	0.00	-55.48	0.00	359.75	0.03
215	81	-1151.47	0.00	55.48	0.00	-82.33	-0.03
216	81	1151.47	0.00	-55.48	0.00	82.33	0.03
216	78	-1151.47	0.00	55.48	0.00	139.61	-0.03
217	100	1141.66	0.00	-56.04	-0.01	353.91	-0.04
217	99	-1141.66	0.00	56.04	0.01	-168.99	0.04
218	99	1141.66	0.00	-56.04	-0.01	168.99	-0.04
218	101	-1141.66	0.00	56.04	0.01	111.20	0.04
219	101	1141.66	0.00	-56.04	-0.01	-111.20	-0.04
219	98	-1141.66	0.00	56.04	0.01	335.34	0.04
220	120	1143.99	0.00	-57.02	0.01	68.32	0.06
220	119	-1143.99	0.00	57.02	-0.01	119.85	-0.06
221	119	1143.99	0.00	-57.02	0.01	-119.85	0.06
221	121	-1143.99	0.00	57.02	-0.01	404.96	-0.06
222	121	1143.99	0.00	-57.02	0.01	-404.96	0.06
222	118	-1143.99	0.00	57.02	-0.01	633.05	-0.06
223	140	1153.35	0.00	-63.89	0.01	-47.35	0.04
223	139	-1153.35	0.00	63.89	-0.01	258.18	-0.04
224	139	1153.35	0.00	-63.89	0.01	-258.18	0.04
224	141	-1153.35	0.00	63.89	-0.01	577.61	-0.04
225	141	1153.35	0.00	-63.89	0.01	-577.61	0.04
225	138	-1153.35	0.00	63.89	-0.01	833.15	-0.04
226	160	1167.96	0.00	-56.46	0.00	-462.34	0.07
226	159	-1167.96	0.00	56.46	0.00	705.11	-0.07
227	159	1167.96	0.00	-56.46	0.00	-705.11	0.07
227	158	-1167.96	0.00	56.46	0.00	930.95	-0.07
228	179	1121.84	0.00	-47.39	0.00	-360.75	-0.01
228	178	-1121.84	0.00	47.39	0.00	536.09	0.01
229	178	1121.84	0.00	-47.39	0.00	-536.09	-0.01
229	177	-1121.84	0.00	47.39	0.00	725.65	0.01
230	5	60.33	0.00	-21.86	0.00	574.17	-0.03
230	4	-60.33	0.00	21.86	0.00	-552.31	0.03
231	194	440.53	375.00	-22.51	0.00	419.45	375.00
231	193	-440.53	-375.00	22.51	0.00	-396.95	0.00

proc Viaducto Papiol

HIPOTESIS 127

MOME X MAX envolvente sobrecarga

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
1	3	0.00	261.81	-2.04	1615.42	0.00	0.26
1	8	6.25	-204.12	1.24	-1432.43	8.18	1177.98
2	8	-6.25	204.12	-1.24	1432.43	-8.18	-1177.98
2	9	12.50	-141.05	0.34	-1235.80	12.23	2060.88
3	9	-12.50	141.05	-0.35	1237.41	-12.23	-2059.91
3	10	18.75	-72.37	-0.65	-844.74	11.46	2606.86
4	10	-18.75	72.37	0.66	843.75	-11.46	-2607.18
4	11	53.00	-18.68	-6.75	-484.36	-163.03	1318.25
5	11	-53.01	18.68	6.73	484.86	163.03	-1318.06
5	12	31.25	71.02	1.41	-284.35	41.21	-1206.38
6	12	-31.25	-71.02	-1.43	283.41	-41.21	1206.60
6	13	37.50	201.81	-1.54	-536.49	50.76	592.74
7	13	-37.50	-201.81	1.56	536.26	-50.76	-592.95
7	14	43.75	275.48	-2.66	-878.32	40.22	-586.88
8	14	-43.75	-275.48	2.62	877.87	-40.22	587.57
8	15	50.00	343.56	-3.62	-1040.62	24.48	-2128.91
9	15	-50.00	-343.56	3.62	1040.66	-24.47	2128.89
9	18	56.25	406.28	-4.52	-1190.95	4.11	-3990.09
10	18	-56.24	388.03	1.64	1584.89	-105.00	2883.18
10	24	62.49	-330.64	-2.45	-1426.10	94.77	-1073.07
11	24	-62.49	330.64	2.42	1425.69	-94.77	1073.61
11	25	68.74	-273.26	-3.22	-1266.90	80.67	449.55
12	25	-68.75	273.26	3.17	1267.26	-80.67	-448.54
12	26	75.00	-215.89	-3.97	-1108.47	62.83	1684.84
13	26	-75.00	215.89	4.00	1107.79	-62.83	-1685.28
13	27	81.25	-147.69	-4.99	-925.24	40.35	2607.37
14	27	-81.25	147.69	4.96	926.23	-40.35	-2607.02
14	28	119.48	-53.52	-19.01	-686.71	218.95	2336.40
15	28	-119.50	53.52	18.92	688.53	-218.95	-2335.86
15	29	124.50	1.31	-19.06	-827.41	112.16	2416.30
16	29	-124.49	-1.31	19.10	826.50	-112.16	-2416.62
16	30	129.49	55.87	-18.01	-696.12	43.58	2305.85
17	30	-129.49	-55.87	17.96	697.04	-43.58	-2305.57
17	31	106.24	162.11	-0.85	-711.50	191.40	1493.32
18	31	-106.24	-162.11	0.81	712.06	-191.40	-1493.04
18	32	112.49	236.07	-1.91	-1107.49	184.59	510.97
19	32	-112.49	-236.07	1.91	1107.49	-184.58	-510.97
19	33	118.74	298.97	-2.81	-1278.24	172.77	-813.54
20	33	-118.74	-298.97	2.77	1277.93	-172.77	814.03
20	34	124.99	361.97	-3.67	-1451.15	156.68	-2452.98
21	34	-124.99	-361.97	3.62	1450.16	-156.68	2453.56
21	37	131.24	425.00	-4.52	-1623.47	136.35	-4407.62
22	37	-131.26	378.30	0.66	1374.76	79.64	2474.80
22	44	137.51	-321.06	-1.46	-1234.90	-84.95	-713.01
23	44	-137.51	321.06	1.41	1234.61	84.96	713.50
23	45	143.76	-263.83	-2.21	-1094.80	-93.99	762.10
24	45	-143.76	263.83	2.15	1095.09	93.99	-761.68
24	46	150.01	-206.61	-2.95	-955.32	-106.76	1951.17
25	46	-150.01	206.60	2.95	955.32	106.76	-1951.17
25	47	156.26	-138.55	-3.95	-793.51	-124.02	2827.18
26	47	-156.26	138.55	3.89	794.59	124.02	-2826.87
26	48	179.47	-56.65	-25.42	-746.12	295.96	2237.87
27	48	-179.47	56.65	25.42	746.17	-295.96	-2237.86
27	49	184.47	-2.52	-25.34	-902.94	183.36	2230.02
28	49	-184.47	2.52	25.27	903.78	-183.36	-2229.68
28	50	189.47	52.39	-25.00	-798.25	78.40	2270.62
29	50	-189.48	-52.39	24.93	799.15	-78.40	-2270.30
29	51	181.23	154.87	-1.57	-806.35	367.76	1443.34
30	51	-181.23	-154.88	1.50	806.90	-367.76	-1443.03
30	52	187.48	229.03	-2.60	-1236.62	357.51	496.66
31	52	-187.48	-229.03	2.60	1236.62	-357.51	-496.66
31	53	193.73	292.11	-3.50	-1421.68	342.25	-793.10
32	53	-193.74	-292.11	3.42	1421.36	-342.25	793.68
32	54	199.99	355.28	-4.32	-1607.49	322.89	-2398.76
33	54	-199.99	-355.28	4.33	1607.54	-322.89	2398.73
33	57	206.24	418.46	-5.23	-1793.68	299.01	-4319.69
34	57	0.01	375.93	-8.47	1279.12	257.05	2278.69
34	64	-0.01	-319.40	7.67	-1152.92	-231.40	-540.37
35	64	0.01	319.40	-7.67	1152.93	231.40	540.34
35	65	-0.04	-289.16	-3.82	-1025.88	239.74	-804.82
36	65	0.03	289.16	3.81	1025.25	-239.73	805.62
36	66	-0.03	-226.57	-4.71	-913.20	203.71	483.71
37	66	0.03	226.57	4.71	913.21	-203.71	-483.69
37	67	-0.03	-153.13	-5.81	-778.86	162.69	1432.66
38	67	0.03	153.13	5.81	779.38	-162.69	-1432.38
38	68	239.47	-57.07	-28.60	-806.05	318.11	2236.75
39	68	-239.46	57.07	28.68	805.25	-318.11	-2237.04
39	69	244.46	-2.48	-28.82	-965.00	162.49	2335.81
40	69	-244.50	2.48	28.54	967.71	-162.49	-2334.69
40	70	249.49	52.60	-28.72	-868.03	75.51	2270.49
41	70	-249.48	-52.60	28.82	867.13	-75.51	-2270.84
41	71	-0.04	154.39	-4.86	-926.18	375.39	1459.88
42	71	0.04	-154.39	4.86	926.77	-375.39	-1459.51
42	72	-0.04	228.60	-5.96	-1365.33	333.62	502.04
43	72	0.04	-228.60	5.96	1365.53	-333.62	-501.52
43	73	-0.04	291.71	-6.86	-1553.38	286.85	-799.58
44	73	0.04	-291.71	6.86	1553.36	-286.85	799.61
44	74	-0.04	354.91	-7.76	-1741.09	235.59	-2416.17
45	74	0.04	-354.91	7.76	1740.17	-235.59	2416.83
45	77	-0.04	418.09	-8.66	-1927.86	179.83	-4349.34
46	77	0.04	414.81	1.32	1381.56	-179.83	4349.97
46	84	-0.04	-352.24	-2.22	-1268.17	156.26	-2432.37
47	84	0.04	352.24	2.22	1268.12	-156.26	2432.40
47	85	-0.04	-289.67	-3.12	-1154.77	128.19	-827.59
48	85	0.03	289.67	3.13	1154.45	-128.19	828.03
48	86	-0.03	-227.12	-4.03	-1041.15	95.62	463.93
49	86	0.03	227.12	4.02	1041.33	-95.61	-463.53
49	87	-0.03	-153.71	-5.12	-903.56	58.05	1415.34
50	87	0.03	153.71	5.12	903.59	-58.05	-1415.32
50	88	299.46	-57.33	-28.69	-853.66	240.76	2237.18
51	88	-299.47	57.33	28.58	854.51	-240.76	-2236.86
51	89	304.47	-2.75	-28.75	-1011.37	148.42	2367.43
52	89	-304.47	2.74	28.75	1011.37	-148.42	-2367.43
52	90	309.47	52.23	-28.89	-909.06	-7.32	2271.99
53	90	-309.48	-52.23	28.77	909.97	7.32	-2271.63
53	91	-0.05	153.59	-5.03	-993.70	291.50	1453.58
54	91	0.05	-153.59	5.03	994.25	-291.50	-1453.20
54	92	-0.05	227.69	-6.13	-1416.44	248.89	500.01
55	92	0.05	-227.69	6.13	1416.64	-248.88	-499.44
55	93	-0.05	290.69	-7.03	-1595.90	201.28	-796.82
56	93	0.05	-290.69	7.03	1595.91	-201.28	796.79
56	94	-0.05	353.76	-7.93	-1773.74	149.18	-2407.91
57	94	0.05	-353.76	7.93	1773.69	-149.18	2407.94
57	97	-0.05	416.82	-8.83	-1951.46	92.58	-4334.41

58	97	-0.04	414.23	5.31	1557.18	-101.86	4335.82
58	104	0.04	-351.70	-6.21	-1431.95	87.77	-2420.97
59	104	-0.04	351.70	6.21	1432.00	-87.77	2420.95
59	105	0.04	-289.18	-7.11	-1306.82	69.17	-818.74
60	105	-0.04	289.18	7.11	1306.47	-69.17	819.29
60	106	0.04	-226.65	-8.01	-1181.33	46.08	470.25
61	106	-0.05	226.65	8.01	1181.32	-46.07	-470.28
61	107	0.05	-153.27	-9.11	-1027.58	3.28	1419.79
62	107	-0.05	153.27	9.11	1028.15	-3.28	-1419.38
62	108	250.53	-55.38	-32.58	-887.05	197.54	2224.68
63	108	-250.54	55.38	32.48	887.89	-197.54	-2224.34
63	109	250.54	-0.67	-32.64	-1031.75	94.75	2344.33
64	109	-250.53	0.67	32.74	1030.86	-94.75	-2344.72
64	110	250.53	54.08	-32.88	-913.31	-69.19	2250.18
65	110	-250.55	-54.08	32.68	915.07	69.19	-2249.47
65	111	0.04	153.68	-10.32	-977.20	200.59	1438.51
66	111	-0.04	-153.68	10.32	977.74	-200.59	-1438.14
66	112	0.04	227.54	-11.42	-1358.38	146.24	485.08
67	112	-0.04	-227.54	11.42	1358.39	-146.24	-485.05
67	113	0.04	290.28	-12.32	-1517.73	86.90	-809.80
68	113	-0.05	-290.28	12.32	1517.42	-86.89	810.38
68	114	0.05	353.09	-13.22	-1674.16	23.05	-2418.79
69	114	-0.05	-353.09	13.22	1674.16	-23.05	2418.79
69	117	0.05	415.87	-14.12	-1830.84	-45.28	-4341.20
70	117	-0.05	415.62	4.82	1737.05	45.30	4342.57
70	124	0.05	-352.98	-5.72	-1589.71	-71.64	-2421.06
71	124	-0.05	352.98	5.72	1590.68	71.64	2420.43
71	125	0.05	-290.32	-6.62	-1443.27	-102.49	-812.16
72	125	-0.05	290.32	6.62	1442.94	102.49	812.74
72	126	0.05	-227.64	-7.52	-1295.45	-137.83	482.15
73	126	-0.06	227.64	7.52	1295.64	137.83	-481.63
73	127	0.06	-154.08	-8.62	-1114.28	-178.17	1435.64
74	127	-0.06	154.08	8.62	1114.82	178.17	-1435.21
74	128	-349.48	-55.14	-33.25	-885.86	34.10	2247.31
75	128	349.48	55.14	33.25	885.86	-34.10	-2247.31
75	129	-349.48	-0.14	-33.24	-1009.45	-66.60	2340.34
76	129	349.47	0.15	33.37	1010.34	66.60	-2339.95
76	130	-349.47	54.35	-33.51	-871.12	-233.71	2243.43
77	130	349.45	-54.36	33.65	872.02	233.71	-2243.08
77	131	0.05	152.83	-11.56	-863.28	-0.33	1441.55
78	131	-0.04	-152.83	11.57	862.73	0.33	-1441.87
78	132	0.04	226.46	-12.67	-1188.67	-60.91	493.65
79	132	-0.06	-226.45	12.67	1189.24	60.91	-492.27
79	133	0.06	288.97	-13.56	-1324.17	-126.48	-796.62
80	133	-0.05	-288.97	13.56	1324.47	126.49	796.11
80	134	0.05	351.56	-14.46	-1457.22	-196.55	-2397.47
81	134	-0.06	-351.56	14.46	1456.31	196.56	2398.02
81	137	0.06	414.14	-15.36	-1589.02	-271.12	-4312.26
82	137	374.98	414.30	-2.68	1804.49	270.21	4304.73
82	144	-374.98	-351.33	1.78	-1633.96	-259.05	-2390.69
83	144	374.98	351.33	-1.49	1632.10	259.05	2391.96
83	145	-374.98	-288.33	0.59	-1461.41	-253.85	-792.82
84	145	374.98	288.33	-0.58	1461.39	253.85	792.85
84	146	-374.98	-225.30	-0.32	-1290.56	-253.19	491.22
85	146	374.98	225.30	0.31	1290.55	253.19	-491.25
85	147	-374.98	-151.40	-1.41	-1083.33	-257.50	1432.69
86	147	374.98	151.40	1.70	1084.44	257.50	-1431.85
86	148	-349.47	-53.99	-26.24	-842.63	12.13	2259.04
87	148	349.47	53.99	26.25	842.68	-12.13	-2259.02
87	149	-349.47	1.27	-27.68	-953.16	-71.86	2320.04
88	149	349.46	-1.27	27.80	953.99	71.86	-2319.70
88	150	-349.46	55.62	-27.94	-798.79	-211.12	2216.50
89	150	349.46	-55.62	27.95	798.84	211.12	-2216.48
89	151	-375.00	142.29	-13.48	-763.57	14.71	2793.06
90	151	375.00	-142.29	13.63	764.69	-14.71	-2792.75
90	152	-375.00	210.28	-14.63	-1071.15	-55.92	1911.34
91	152	375.00	-210.28	14.62	1071.11	55.92	-1911.37
91	153	-375.00	267.19	-15.42	-1208.58	-131.01	717.35
92	153	374.99	-267.19	15.57	1208.87	131.02	-716.87
92	154	-374.99	324.18	-16.37	-1346.25	-210.86	-761.57
93	154	374.98	-324.18	16.51	1345.96	210.85	762.08
93	157	-374.98	381.18	-17.31	-1483.36	-295.40	-2525.46
94	157	374.98	426.78	-2.77	1721.31	239.58	4454.34
94	163	-374.98	-363.57	1.87	-1543.04	-228.00	-2478.46
95	163	374.98	363.57	-1.72	1542.10	228.00	2479.05
95	164	-374.98	-300.35	0.82	-1363.81	-221.63	-819.26
96	164	374.98	300.35	-0.68	1363.50	221.63	819.78
96	165	-374.98	-237.14	-0.22	-1185.21	-220.48	523.95
97	165	374.98	237.14	0.23	1185.22	220.48	-523.92
97	166	-374.98	-163.09	-1.32	-973.54	-224.36	1524.21
98	166	374.98	163.09	1.47	974.11	224.36	-1523.84
98	167	-349.47	-60.98	-21.18	-715.98	-103.19	2348.67
99	167	349.46	60.98	21.31	716.87	103.19	-2348.40
99	168	-349.46	-5.96	-21.32	-826.62	-170.44	2443.75
100	168	349.46	5.96	21.32	826.67	170.44	-2443.74
100	169	-349.46	48.43	-21.46	-674.19	-277.30	2376.58
101	169	349.45	-48.43	21.60	675.10	277.30	-2376.32
101	170	-375.01	146.79	6.66	-741.44	188.75	2672.20
102	170	375.01	-146.79	-6.66	741.44	-188.75	-2672.21
102	171	-375.01	214.85	5.66	-1063.11	219.58	1768.09
103	171	375.01	-214.85	-5.37	1064.49	-219.58	-1767.26
103	172	-375.01	271.83	4.57	-1211.69	244.43	550.25
104	172	375.01	-271.83	-4.57	1211.69	-244.44	-550.24
104	173	-375.01	328.92	3.77	-1362.63	265.30	-951.60
105	173	375.01	-328.92	-3.77	1362.61	-265.30	951.63
105	176	-375.01	386.02	2.97	-1513.58	282.13	-2738.98
106	176	374.99	387.31	-6.31	1227.78	56.93	3840.21
106	182	-374.99	-324.31	5.41	-1069.71	-27.63	-2061.13
107	182	375.00	324.31	-5.26	1068.89	27.63	2061.56
107	183	-375.00	-255.98	4.26	-898.77	-3.71	-604.31
108	183	375.00	255.98	-4.25	898.76	3.71	604.33
108	184	-375.00	-182.05	3.15	-561.16	14.81	490.73
109	184	375.00	182.05	-3.02	561.34	-14.81	-490.53
109	185	-375.05	-82.77	-6.39	-365.23	220.35	918.74
110	185	375.05	82.77	6.40	365.25	-220.35	-918.74
110	186	-375.05	-25.00	-7.25	-529.50	186.24	1188.14
111	186	375.05	25.00	7.54	530.43	-186.24	-1187.73
111	187	-375.01	92.10	-11.49	-922.98	195.22	2231.40
112	187	375.01	-92.10	11.49	922.98	-195.22	-2231.40
112	188	-375.01	160.67	-12.49	-1320.87	135.26	1599.48
113	188	375.00	-160.67	12.63	1321.47	-135.26	-1598.98
113	189	-375.00	223.70	-13.53	-1522.93	69.71	630.92
114	189	375.00	-223.70	13.54	1522.94	-69.71	-630.89
114	192	-375.00	281.42	-14.34	-1713.39	0.00	-631.91
134	6	-0.64	329.47	0.00	0.01	0.00	-1.08
134	3	0.64	-329.47	0.00	-0.01	0.00	1401.34
135	3	0.00	28.18	0.00	0.00	0.00	119.79
135	1	0.00	-28.18	0.00	0.00	0.00	0.00
136	22	-10.67	384.13	0.00	0.01	0.00	-18.01
136	18	10.67	-384.13	0.00	-0.01	0.00	690.30
137	18	0.01	-327.12	0.00	0.01	0.00	-572.39
137	16	-0.01	327.12	0.00	-0.01	0.00	0.00
138	43	45.65	83.27	-0.01	0.02	0.00	76.99
138	37	-45.65	-83.27	0.01	-0.02	0.02	68.77
139	37	-0.02	-390.22	0.01	0.01	0.00	-682.83
139	35	0.02	390.22	-0.01	-0.01	0.00	0.01
140	63	-12.15	363.40	-0.01	0.02	0.00	-20.41
140	57	12.15	-363.40	0.01	-0.02	0.00	656.56

141	57	-0.04	-433.39	0.00	0.01	0.00	-758.20
141	55	0.04	433.39	0.00	-0.01	0.00	0.02
142	83	-17.06	371.10	0.00	0.02	0.00	-28.80
142	77	17.06	-371.10	0.00	-0.02	0.00	678.58
143	77	-0.07	-632.92	0.00	0.02	0.00	-1106.96
143	75	0.07	632.92	0.00	-0.02	0.01	0.00
144	103	-8.68	200.19	0.01	0.02	0.00	-14.45
144	97	8.68	-200.19	-0.01	-0.02	0.00	365.19
145	97	-0.01	-450.48	0.00	0.02	0.00	-787.49
145	95	0.01	450.48	0.00	-0.02	0.00	0.01
146	123	-0.95	341.41	0.00	0.01	0.00	-1.79
146	117	0.95	-341.41	0.00	-0.01	0.00	599.62
147	117	0.00	-417.85	0.00	0.02	0.00	-730.80
147	115	0.00	417.85	0.00	-0.02	0.00	0.00
148	143	-6.39	424.32	0.00	0.02	-0.01	-10.69
148	137	6.39	-424.32	0.00	-0.02	-0.01	753.51
149	137	-0.01	-392.61	0.00	0.02	0.00	-686.81
149	135	0.01	392.61	0.00	-0.02	0.00	-0.01
150	162	-14.32	483.81	0.00	0.01	0.00	-24.14
150	157	14.32	-483.81	0.00	-0.01	0.00	871.02
151	157	-0.05	-178.32	0.01	0.01	0.00	-311.97
151	156	0.05	178.32	-0.01	-0.01	0.00	0.00
152	181	-15.15	404.56	0.00	0.01	0.00	-25.55
152	176	15.15	-404.56	0.00	-0.01	0.00	733.70
153	176	-0.01	-502.81	0.00	0.01	0.00	-879.67
153	174	0.01	502.81	0.00	-0.01	0.00	0.00
154	195	-2.67	160.33	-356.25	600.64	0.00	-4.50
154	192	2.67	-160.33	356.25	-600.64	1514.08	685.92
155	192	0.00	-198.69	-356.25	600.64	1514.07	-844.43
155	190	0.00	198.69	356.25	-600.64	0.00	0.00
156	7	-0.01	-181.38	0.00	0.00	0.00	0.00
156	4	0.01	181.38	0.00	0.00	0.00	-770.88
157	4	0.00	181.84	0.00	0.00	0.00	772.84
157	2	0.00	-181.84	0.00	0.00	0.00	0.00
158	23	0.02	-645.12	0.00	0.00	0.00	0.00
158	19	-0.02	645.12	0.00	0.00	0.00	-1129.07
159	19	0.00	645.60	0.00	0.00	0.00	1129.66
159	17	0.00	-645.60	0.00	0.00	0.00	0.00
160	42	-0.01	-672.82	0.00	0.00	0.00	0.00
160	38	0.01	672.82	0.00	0.00	0.00	-1177.80
161	38	0.00	673.18	0.00	0.00	0.00	1177.96
161	36	0.00	-673.18	0.00	0.00	0.00	0.00
162	62	0.00	-663.97	0.00	0.00	0.00	0.00
162	58	0.00	663.97	0.00	0.00	0.00	-1162.30
163	58	0.00	664.26	0.00	0.00	0.00	1162.07
163	56	0.00	-664.26	0.00	0.00	0.00	0.00
164	82	-0.01	-666.34	0.00	0.00	0.00	0.00
164	78	0.01	666.34	0.00	0.00	0.00	-1166.77
165	78	0.00	666.77	0.00	0.00	0.00	1166.14
165	76	0.00	-666.77	0.00	0.00	0.00	0.00
166	102	0.02	-665.34	0.00	0.00	0.00	0.00
166	98	-0.02	665.34	0.00	0.00	0.00	-1165.63
167	98	0.00	666.09	0.00	0.00	0.00	1164.42
167	96	0.00	-666.09	0.00	0.00	0.00	0.00
168	122	0.00	-666.39	0.00	0.00	0.00	0.00
168	118	0.00	666.39	0.00	0.00	0.00	-1166.89
169	118	0.00	666.83	0.00	0.00	0.00	1166.24
169	116	0.00	-666.83	0.00	0.00	0.00	0.00
170	142	-0.01	-663.72	0.00	0.00	0.00	0.00
170	138	0.01	663.72	0.00	0.00	0.00	-1161.91
171	138	0.00	664.18	0.00	0.00	0.00	1161.90
171	136	0.00	-664.18	0.00	0.00	0.00	0.00
172	161	-0.01	-673.08	0.00	0.00	0.00	0.00
172	158	0.01	673.08	0.00	0.00	0.00	-1178.19
173	158	0.00	673.49	0.00	0.00	0.00	1178.30
173	155	0.00	-673.49	0.00	0.00	0.00	0.00
174	180	0.02	-644.87	0.00	0.00	0.00	0.00
174	177	-0.02	644.87	0.00	0.00	0.00	-1128.78
175	177	0.00	645.28	0.00	0.00	0.00	1128.92
175	175	0.00	-645.28	0.00	0.00	0.00	0.00
176	196	-0.01	-181.49	0.00	0.00	0.00	0.00
176	193	0.01	181.49	0.00	0.00	0.00	-771.35
177	193	0.00	181.96	0.00	0.00	0.00	773.34
177	191	0.00	-181.96	0.00	0.00	0.00	0.00
182	7	181.38	0.00	0.01	0.00	0.00	0.00
182	6	-181.38	0.00	-0.01	0.00	-0.02	0.00
183	2	181.84	0.00	0.00	0.00	0.00	0.00
183	1	-181.84	0.00	0.00	0.00	0.00	0.00
184	23	645.12	0.00	-0.02	0.00	0.00	0.00
184	22	-645.12	0.00	0.02	0.00	0.04	0.00
185	17	645.60	0.00	0.00	0.00	0.00	0.00
185	16	-645.60	0.00	0.00	0.00	0.00	0.00
186	42	672.82	0.00	0.01	0.00	0.00	0.00
186	43	-672.82	0.00	-0.01	0.00	-0.02	0.00
187	36	673.18	0.00	0.00	0.00	0.00	0.00
187	35	-673.18	0.00	0.00	0.00	0.00	0.00
188	62	663.97	0.00	0.00	0.00	0.00	0.00
188	63	-663.97	0.00	0.00	0.00	0.00	0.00
189	56	664.26	0.00	0.00	0.00	0.00	0.00
189	55	-664.26	0.00	0.00	0.00	0.00	0.00
190	82	666.34	0.00	0.01	0.00	0.00	0.00
190	83	-666.34	0.00	-0.01	0.00	-0.01	0.00
191	76	666.78	0.00	0.00	0.00	0.00	0.00
191	75	-666.78	0.00	0.00	0.00	0.00	0.00
192	102	665.34	0.00	-0.02	0.00	0.00	0.00
192	103	-665.34	0.00	0.02	0.00	0.03	0.00
193	96	666.10	0.00	0.00	0.00	0.00	0.00
193	95	-666.10	0.00	0.00	0.00	0.00	0.00
194	122	666.40	0.00	0.00	0.00	0.00	0.00
194	123	-666.40	0.00	0.00	0.00	0.00	0.00
195	116	666.83	0.00	0.00	0.00	0.00	0.00
195	115	-666.83	0.00	0.00	0.00	0.00	0.00
196	142	663.73	0.00	0.01	0.00	0.00	0.00
196	143	-663.73	0.00	-0.01	0.00	-0.02	0.00
197	136	664.17	0.00	0.00	0.00	0.00	0.00
197	135	-664.17	0.00	0.00	0.00	0.00	0.00
198	161	673.08	0.00	0.01	0.00	0.00	0.00
198	162	-673.08	0.00	-0.01	0.00	-0.01	0.00
199	155	673.49	0.00	0.00	0.00	0.00	0.00
199	156	-673.49	0.00	0.00	0.00	0.00	0.00
200	180	644.87	0.00	-0.02	0.00	0.00	0.00
200	181	-644.87	0.00	0.02	0.00	0.04	0.00
201	175	645.28	0.00	0.00	0.00	0.00	0.00
201	174	-645.28	0.00	0.00	0.00	0.00	0.00
202	196	181.49	0.00	0.01	0.00	0.00	0.00
202	195	-181.49	0.00	-0.01	0.00	-0.02	0.01
203	191	181.96	0.00	0.00	0.00	0.00	0.00
203	190	-181.96	0.00	0.00	0.00	0.00	0.00
206	21	1112.47	0.00	-52.26	0.01	91.46	0.04
206	20	-1112.47	0.00	52.26	-0.01	23.52	-0.04
207	20	1112.47	0.00	-52.26	0.01	-23.52	0.04
207	19	-1112.47	0.00	52.26	-0.01	232.56	-0.04
208	40	1135.42	0.00	-54.59	0.02	390.32	0.02
208	39	-1135.42	0.00	54.59	-0.02	-357.57	-0.02
209	39	1135.42	0.00	-54.59	0.02	357.57	0.02
209	41	-1135.42	0.00	54.59	-0.02	-84.64	-0.02
210	41	1135.42	0.00	-54.59	0.02	84.64	0.02
210	38	-1135.42	0.00	54.59	-0.02	133.70	-0.02

211	60	1328.23	0.00	0.00	0.00	-0.23	0.00
211	59	-1328.23	0.00	0.00	0.00	0.23	0.00
212	59	1328.23	0.00	0.00	0.00	-0.23	0.00
212	61	-1328.23	0.00	0.00	0.00	0.23	0.00
213	61	1328.23	0.00	0.00	0.00	-0.23	0.00
213	58	-1328.23	0.00	0.00	0.00	0.23	0.00
214	80	1333.12	0.00	0.01	0.00	-0.74	0.03
214	79	-1333.12	0.00	-0.01	0.00	0.71	-0.03
215	79	1333.12	0.00	0.01	0.00	-0.71	0.03
215	81	-1333.12	0.00	-0.01	0.00	0.67	-0.03
216	81	1333.12	0.00	0.01	0.00	-0.67	0.03
216	78	-1333.12	0.00	-0.01	0.00	0.64	-0.03
217	100	572.65	0.00	45.32	0.01	499.48	0.05
217	99	-572.65	0.00	-45.32	-0.01	-649.04	-0.05
218	99	572.65	0.00	45.32	0.01	649.04	0.05
218	101	-572.65	0.00	-45.32	-0.01	-875.66	-0.05
219	101	572.65	0.00	45.32	0.01	875.66	0.05
219	98	-572.65	0.00	-45.32	-0.01	-1056.95	-0.05
220	120	1118.88	0.00	-51.75	0.01	111.26	0.04
220	119	-1118.88	0.00	51.75	-0.01	59.52	-0.04
221	119	1118.88	0.00	-51.75	0.01	-59.52	0.04
221	121	-1118.88	0.00	51.75	-0.01	318.27	-0.04
222	121	1118.88	0.00	-51.75	0.01	-318.27	0.04
222	118	-1118.88	0.00	51.75	-0.01	525.27	-0.04
223	140	572.24	0.00	-55.29	0.00	-346.15	0.05
223	139	-572.24	0.00	55.29	0.00	528.61	-0.05
224	139	572.24	0.00	-55.29	0.00	-528.61	0.05
224	141	-572.24	0.00	55.29	0.00	805.05	-0.05
225	141	572.24	0.00	-55.29	0.00	-805.05	0.05
225	138	-572.24	0.00	55.29	0.00	1026.21	-0.05
226	160	1135.78	0.00	-51.87	0.00	-507.40	0.07
226	159	-1135.78	0.00	51.87	0.00	730.45	-0.07
227	159	1135.78	0.00	-51.87	0.00	-730.45	0.07
227	158	-1135.78	0.00	51.87	0.00	937.93	-0.07
228	179	1290.14	0.00	-0.02	0.00	0.30	0.00
228	178	-1290.14	0.00	0.02	0.00	-0.22	0.00
229	178	1290.14	0.00	-0.02	0.00	0.22	0.00
229	177	-1290.14	0.00	0.02	0.00	-0.14	0.00
230	5	53.79	0.00	-15.57	0.00	511.22	-0.03
230	4	-53.79	0.00	15.57	0.00	-495.66	0.03
231	194	363.46	0.00	0.01	0.00	1.98	0.00
231	193	-363.46	0.00	-0.01	0.00	-1.99	0.00

proc Viaducto Papiol

HIPOTESIS 128

MOME X MIN envolvente sobrecarga

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
1	3	0.00	265.55	-1.35	-1500.20	0.00	-0.23
1	8	-6.25	-208.34	0.55	1352.54	4.76	1171.56
2	8	6.25	208.34	-0.55	-1352.54	-4.76	-1171.56
2	9	-12.50	-145.72	-0.35	1188.77	5.39	2049.86
3	9	12.50	145.72	0.36	-1187.17	-5.39	-2050.79
3	10	-18.75	-77.45	-1.36	828.25	1.12	2595.30
4	10	18.75	77.45	1.35	-829.24	-1.12	-2594.98
4	11	-25.00	44.79	1.13	483.26	57.99	1528.13
5	11	25.00	-44.79	-1.12	-482.67	-57.99	-1528.32
5	12	-31.24	65.29	-5.37	354.72	-127.74	-1219.97
6	12	31.24	-65.29	5.39	-355.67	127.74	1219.70
6	13	-37.49	197.18	-10.45	690.06	-214.95	601.37
7	13	37.49	-197.18	10.44	-690.29	214.95	-601.11
7	14	-43.74	271.10	-11.54	1067.31	-269.90	-583.01
8	14	43.73	-271.10	11.57	-1067.76	269.90	582.17
8	15	-49.98	339.41	-12.57	1233.21	-330.39	-2128.99
9	15	49.98	-339.41	12.57	-1233.17	330.39	2129.01
9	18	-56.23	402.31	-13.47	1381.76	-395.49	-3996.69
10	18	56.23	393.05	-13.96	-1899.60	278.76	2893.19
10	24	-62.48	-335.80	13.16	1729.39	-210.97	-1084.43
11	24	62.49	335.80	-13.13	-1729.81	210.97	1083.77
11	25	-68.74	-278.52	12.33	1559.50	-147.31	438.65
12	25	68.75	278.52	-12.28	-1559.15	147.31	-439.90
12	26	-75.00	-221.22	11.48	1388.73	-87.92	1675.88
13	26	75.00	221.22	-11.51	-1389.40	87.92	-1675.32
13	27	-81.25	-153.05	10.51	1183.42	-32.88	2597.31
14	27	81.25	153.05	-10.48	-1182.43	32.88	-2597.76
14	28	-119.48	-49.68	24.53	811.96	-208.43	2318.25
15	28	119.50	49.68	-24.44	-810.16	208.43	-2318.89
15	29	-124.50	5.21	24.30	928.70	-74.94	2401.40
16	29	124.49	-5.21	-24.35	-929.61	74.94	-2401.05
16	30	-129.49	60.08	22.98	775.67	19.35	2283.64
17	30	129.50	-60.08	-22.93	-774.76	-19.35	-2283.95
17	31	-106.24	157.03	2.36	837.74	-240.54	1476.03
18	31	106.24	-157.03	-2.32	-837.18	240.54	-1476.35
18	32	-112.49	230.83	1.22	1161.90	-231.72	493.29
19	32	112.49	-230.83	-1.22	-1161.90	231.72	-493.29
19	33	-118.74	293.52	0.32	1290.49	-227.90	-831.30
20	33	118.74	-293.52	-0.27	-1290.80	227.90	830.81
20	34	-124.99	356.30	-0.63	1417.45	-228.79	-2468.76
21	34	124.99	-356.30	0.68	-1418.44	228.79	2468.19
21	37	-131.24	419.06	-1.58	1545.06	-234.44	-4420.00
22	37	131.25	386.00	-14.94	-1980.20	-57.12	2493.54
22	44	-137.50	-328.45	14.14	1790.07	129.82	-720.81
23	44	137.51	328.45	-14.09	-1790.36	-129.82	720.09
23	45	-143.76	-270.89	13.29	1600.15	198.25	764.86
24	45	143.76	270.89	-13.23	-1599.86	-198.25	-765.47
24	46	-150.01	-213.30	12.43	1409.58	262.39	1962.56
25	46	150.01	213.30	-12.43	-1409.58	-262.39	-1962.56
25	47	-156.26	-144.86	11.43	1182.16	322.05	2844.29
26	47	156.27	144.86	-11.37	-1181.08	-322.05	-2844.73
26	48	-179.47	-52.58	31.00	880.18	-111.01	2266.35
27	48	179.47	52.58	-31.00	-880.13	111.01	-2266.37
27	49	-184.47	3.09	30.64	985.77	28.57	2467.11
28	49	184.48	-3.09	-30.57	-984.83	-28.57	-2467.48
28	50	-189.48	57.50	30.02	825.26	159.55	2228.38
29	50	189.49	-57.50	-29.95	-824.37	-159.55	-2228.71
29	51	-181.24	149.00	7.26	775.40	-35.68	1400.60
30	51	181.24	-149.00	-7.19	-774.87	35.68	-1400.90
30	52	-187.49	222.08	6.09	1061.36	-2.46	459.80
31	52	187.49	-222.08	-6.09	-1061.36	2.46	-459.80
31	53	-193.74	284.44	5.19	1174.33	25.75	-820.24
32	53	193.75	-284.44	-5.12	-1174.66	-25.74	819.76
32	54	-200.00	346.87	4.22	1286.95	49.08	-2411.46
33	54	200.00	-346.87	-4.22	-1286.90	-49.07	2411.49
33	57	-206.25	408.90	3.32	1396.29	67.92	-4314.32
34	57	-0.01	379.38	-1.49	-1922.27	-451.59	2281.34
34	64	0.01	-321.70	0.69	1722.90	471.73	-528.64
35	64	-0.01	321.70	-0.69	-1722.89	-471.73	528.67
35	65	0.01	-264.00	-0.11	1523.48	487.86	935.58
36	65	-0.01	264.00	0.11	-1522.75	-487.86	-936.77
36	66	0.02	-227.43	6.98	1334.27	237.67	520.08
37	66	-0.02	227.43	-6.98	-1334.26	-237.67	-520.10
37	67	0.02	-153.38	5.88	1109.61	284.51	1471.86
38	67	-0.02	153.38	-5.88	-1109.09	-284.51	-1472.26
38	68	-239.48	-52.44	28.17	879.59	-21.15	2275.44
39	68	239.48	52.44	-28.25	-880.41	21.15	-2275.12
39	69	-244.48	2.77	28.11	977.78	131.41	2370.63
40	69	244.51	-2.77	-27.83	-975.03	-131.41	-2371.76
40	70	-249.51	57.18	27.73	813.07	214.34	2238.77
41	70	249.49	-57.18	-27.83	-813.96	-214.34	-2238.45
41	71	0.03	154.09	0.62	704.79	8.61	1424.73
42	71	-0.03	-154.09	-0.62	-704.22	-8.61	-1425.01
42	72	0.03	227.66	-0.48	985.74	23.68	470.63
43	72	-0.03	-227.66	0.48	-985.57	-23.68	-471.01
43	73	0.03	290.15	-1.38	1096.87	33.74	-823.85
44	73	-0.03	-290.15	1.38	-1096.89	-33.74	823.83
44	74	0.03	352.72	-2.28	1208.75	39.31	-2431.03
45	74	-0.03	-352.72	2.27	-1209.68	-39.31	2430.57
45	77	0.03	415.29	-3.18	1321.51	40.38	-4350.63
46	77	-0.02	378.84	-4.52	-1807.27	-235.15	2263.48
46	84	0.02	-321.16	3.72	1609.02	270.44	-513.49
47	84	-0.02	321.16	-3.72	-1609.03	-270.44	513.45
47	85	0.03	-291.29	7.74	1416.24	156.24	-805.28
48	85	-0.03	291.29	-7.75	-1416.55	-156.24	804.74
48	86	0.03	-228.13	6.85	1230.54	207.42	493.79
49	86	-0.03	228.13	-6.85	-1230.35	-207.42	-494.26
49	87	0.03	-154.12	5.75	1009.67	253.59	1449.61
50	87	-0.03	154.12	-5.75	-1009.64	-253.59	-1449.64
50	88	-299.47	-52.38	26.90	864.04	-2.70	2266.46
51	88	299.48	52.38	-26.79	-863.18	2.70	-2266.78
51	89	-304.48	2.72	26.68	965.88	79.77	2331.81
52	89	304.48	-2.72	-26.68	-965.88	-79.77	-2331.81
52	90	-309.48	57.11	26.54	811.07	224.66	2231.96
53	90	309.49	-57.11	-26.41	-810.18	-224.66	-2232.28
53	91	-314.48	113.44	21.71	693.26	48.80	-763.05
54	91	314.48	-113.44	-21.59	-693.55	-48.80	762.79
54	92	0.04	226.66	-0.94	954.10	-14.05	473.24
55	92	-0.04	-226.66	0.94	-953.91	14.05	-473.62
55	93	0.04	289.10	-1.84	1072.81	-6.32	-816.11
56	93	-0.04	-289.10	1.84	-1072.79	6.32	816.13
56	94	0.04	351.63	-2.74	1193.47	-3.09	-2417.96
57	94	-0.04	-351.63	2.74	-1193.52	3.09	2417.93
57	97	0.05	375.05	-7.08	1324.38	-169.50	-2230.06

58	97	0.05	377.24	-9.42	-1628.09	-164.08	2236.92
58	104	-0.05	-319.71	8.62	1441.40	194.48	-494.54
59	104	0.05	319.71	-8.62	-1441.39	-194.48	494.57
59	105	-0.05	-262.19	7.82	1254.78	220.88	960.18
60	105	0.05	290.26	-11.04	-1255.00	-76.37	797.92
60	106	-0.05	-227.27	10.14	1082.12	114.62	495.89
61	106	0.05	227.27	-10.14	-1082.13	-114.62	-495.87
61	107	-0.05	-153.45	9.04	878.75	162.58	1447.37
62	107	0.05	153.44	-9.04	-878.17	-162.58	-1447.72
62	108	-250.54	-54.04	28.83	823.81	-60.50	2273.17
63	108	250.55	54.04	-28.74	-822.94	60.51	-2273.48
63	109	-250.55	0.73	28.62	940.25	22.65	2348.14
64	109	250.53	-0.73	-28.71	-941.14	-22.65	-2347.78
64	110	-250.53	55.13	28.57	800.20	165.95	2247.14
65	110	250.56	-55.13	-28.38	-798.45	-165.95	-2247.77
65	111	-250.54	111.47	24.16	690.49	25.43	-748.27
66	111	250.55	-111.47	-24.06	-690.78	-25.43	748.00
66	112	-0.03	204.52	-2.31	1013.09	-204.49	2111.00
67	112	0.03	-204.52	2.31	-1013.04	204.49	-2111.03
67	113	-0.03	261.52	-3.11	1166.99	-218.03	945.60
68	113	0.03	-261.52	3.11	-1166.64	218.03	-946.05
68	114	-0.03	318.62	-3.91	1323.61	-235.56	-504.30
69	114	0.03	-318.62	3.91	-1323.61	235.56	504.30
69	117	-0.03	375.74	-4.71	1480.63	-257.09	-2240.23
70	117	0.04	415.56	-12.65	-1393.90	107.16	4333.10
70	124	-0.04	-352.80	11.75	1243.91	-46.17	-2412.21
71	124	0.04	352.80	-11.75	-1242.94	46.17	2412.71
71	125	-0.04	-290.05	10.85	1093.02	10.34	-805.58
72	125	0.04	290.05	-10.85	-1093.34	-10.34	805.14
72	126	-0.04	-227.33	9.95	943.49	62.34	488.32
73	126	0.04	227.33	-9.95	-943.30	-62.34	-488.69
73	127	-0.04	-153.78	8.85	768.07	109.35	1441.20
74	127	0.05	153.78	-8.85	-767.52	-109.35	-1441.49
74	128	349.48	-54.21	28.68	776.68	-70.29	2251.77
75	128	-349.48	54.21	-28.68	-776.68	70.29	-2251.77
75	129	349.48	0.22	28.40	916.57	6.70	2353.18
76	129	-349.47	-0.22	-28.53	-915.67	-6.70	-2353.53
76	130	349.47	54.86	28.39	796.31	149.10	2254.82
77	130	-349.46	-54.86	-28.53	-795.41	-149.10	-2255.14
77	131	-0.02	137.21	-5.24	811.87	-413.64	2963.76
78	131	0.02	-137.21	5.24	-813.00	413.63	-2963.46
78	132	-0.02	205.56	-6.24	1219.58	-442.34	2106.51
79	132	0.02	-205.56	6.24	-1217.14	442.34	-2107.92
79	133	-0.02	262.85	-7.04	1393.89	-475.54	936.56
80	133	0.02	-262.85	7.04	-1394.25	475.54	-936.03
80	134	-0.02	320.26	-7.84	1573.75	-512.74	-521.76
81	134	0.01	-320.26	7.84	-1573.95	512.74	521.16
81	137	-0.01	377.70	-8.64	1753.59	-553.93	-2266.05
82	137	-375.02	413.10	-13.51	-1280.88	220.39	4311.51
82	144	375.02	-350.54	12.61	1153.31	-155.08	-2402.41
83	144	-375.01	350.54	-12.90	-1155.19	155.08	2401.51
83	145	375.01	-287.99	12.00	1027.66	-92.81	-805.16
84	145	-375.01	287.99	-12.01	-1027.67	92.81	805.14
84	146	375.01	-225.45	11.11	900.19	-35.00	478.48
85	146	-375.01	225.46	-11.10	-900.20	35.00	-478.46
85	147	375.01	-152.08	10.01	749.76	17.77	1422.02
86	147	-375.00	152.08	-10.30	-748.65	-17.77	-1422.60
86	148	349.48	-55.19	28.83	776.76	-149.01	2249.51
87	148	-349.48	55.19	-28.83	-776.71	149.01	-2249.53
87	149	349.48	-0.83	29.98	938.57	-53.01	2381.61
88	149	-349.47	0.83	-30.11	-937.71	53.01	-2381.94
88	150	349.47	54.15	29.97	835.50	97.27	2287.63
89	150	-349.47	-54.15	-29.97	-835.46	-97.27	-2287.64
89	151	375.01	141.39	11.65	984.17	-91.68	2878.42
90	151	-375.01	-141.39	-11.80	-983.02	91.68	-2878.81
90	152	375.01	210.06	10.80	1425.93	-35.19	2000.19
91	152	-375.01	-210.06	-10.79	-1425.97	35.19	-2000.16
91	153	375.01	267.66	9.99	1617.05	16.77	805.52
92	153	-375.00	-267.66	-10.14	-1616.73	-16.77	-806.17
92	154	375.00	325.36	9.34	1808.46	65.48	-676.40
93	154	-375.00	-325.36	-9.48	-1808.71	-65.48	675.71
93	157	375.00	383.07	8.68	2000.49	110.90	-2446.76
94	157	-375.01	417.43	-14.94	-1365.32	111.36	4381.54
94	163	375.01	-354.92	14.04	1244.39	-38.92	-2450.65
95	163	-375.01	354.92	-14.18	-1245.32	38.91	2450.18
95	164	375.01	-292.42	13.28	1124.35	29.74	-831.83
96	164	-375.00	292.42	-13.42	-1124.67	-29.74	831.40
96	165	375.00	-229.90	12.52	1003.67	94.60	474.40
97	165	-375.00	229.90	-12.53	-1003.66	-94.60	-474.42
97	166	375.00	-156.54	11.43	856.85	154.51	1440.25
98	166	-375.00	156.54	-11.58	-856.30	-154.51	-1440.57
98	167	349.47	-55.41	23.73	748.95	27.38	2239.67
99	167	-349.46	55.41	-23.86	-748.10	-27.38	-2239.96
99	168	349.47	-0.71	23.58	908.48	106.45	2373.49
100	168	-349.46	0.71	-23.59	-908.43	-106.45	-2373.51
100	169	349.46	54.30	23.45	804.01	224.16	2278.52
101	169	-349.46	-54.30	-23.58	-803.14	-224.16	-2278.83
101	170	375.01	153.52	-10.03	966.45	-183.79	2536.15
102	170	-375.01	-153.52	10.03	-966.45	183.79	-2536.15
102	171	375.01	222.14	-11.03	1394.30	-236.43	1597.01
103	171	-375.02	-222.14	10.74	-1393.05	236.43	-1598.09
103	172	375.02	279.64	-11.54	1574.39	-292.12	343.34
104	172	-375.02	-279.64	11.54	-1574.39	292.12	-343.34
104	173	375.02	337.20	-12.34	1752.39	-351.80	-1198.76
105	173	-375.02	-337.20	12.33	-1752.42	351.80	1198.72
105	176	375.02	394.74	-13.13	1930.34	-415.44	-3028.60
106	176	-375.00	421.09	-4.26	-1388.89	0.38	4132.35
106	182	375.00	-358.46	3.36	1248.11	18.68	-2183.47
107	182	-375.00	358.46	-3.51	-1248.98	-18.68	2182.97
107	183	375.00	-290.45	2.51	1090.99	33.85	-554.17
108	183	-375.00	290.45	-2.52	-1091.00	-33.85	554.15
108	184	375.00	-216.76	1.42	709.40	43.71	713.87
109	184	-375.00	216.76	-1.56	-709.14	-43.71	-714.13
109	185	375.02	-85.20	10.51	433.94	-264.12	-1008.29
110	185	-375.02	85.20	-10.52	-433.96	264.12	1008.28
110	186	349.49	-2.00	14.54	567.62	-294.97	1600.08
111	186	-349.48	2.00	-14.81	-566.37	294.97	-1600.52
111	187	375.01	57.84	6.85	862.03	-82.86	2975.28
112	187	-375.01	-57.84	-6.85	-862.03	82.86	-2975.27
112	188	375.01	126.26	5.85	1215.97	-51.11	2515.00
113	188	-375.00	-126.26	-5.99	-1215.01	51.11	-2515.46
113	189	375.00	189.01	5.10	1374.42	-23.51	1720.15
114	189	-375.00	-189.01	-5.10	-1374.38	23.51	-1720.17
114	192	375.00	246.29	4.30	1515.41	0.00	631.94
134	6	0.96	-58.46	0.00	0.00	0.00	1.62
134	3	-0.96	58.46	0.00	0.00	0.00	-250.07
135	3	0.00	-222.76	0.00	-0.01	0.00	-946.73
135	1	0.00	222.76	0.00	0.01	0.00	0.00
136	22	-16.28	265.59	0.00	-0.01	0.00	-27.44
136	18	16.28	-265.59	0.00	0.01	0.00	492.28
137	18	-0.01	-476.88	0.00	-0.01	0.00	-834.45
137	16	0.01	476.88	0.00	0.01	0.00	0.00
138	43	-28.43	292.46	0.00	-0.02	0.00	-47.86
138	37	28.43	-292.46	0.00	0.02	0.00	559.84
139	37	0.03	-462.87	0.00	-0.02	0.00	-809.94
139	35	-0.03	462.87	0.00	0.02	0.00	-0.01
140	63	-10.69	265.80	0.00	-0.02	0.00	-18.13
140	57	10.69	-265.80	0.00	0.02	0.00	483.42

141	57	-0.02	-481.61	0.00	-0.02	0.01	-842.53
141	55	0.02	481.61	0.00	0.02	0.01	0.00
142	83	-14.88	294.19	0.00	-0.02	-0.01	-24.99
142	77	14.88	-294.19	0.00	0.02	0.00	540.11
143	77	0.01	-464.56	0.00	-0.02	0.00	-812.50
143	75	-0.01	464.56	0.00	0.02	0.00	0.00
144	103	-5.03	275.69	0.00	-0.02	0.00	-8.38
144	97	5.03	-275.69	0.00	0.02	0.00	491.35
145	97	-0.01	-444.48	0.00	-0.02	0.00	-776.99
145	95	0.01	444.48	0.00	0.02	0.00	-0.01
146	123	-9.29	308.10	0.00	-0.02	0.00	-15.58
146	117	9.29	-308.10	0.00	0.02	0.00	555.08
147	117	-0.06	-391.85	0.00	-0.02	0.00	-685.32
147	115	0.06	391.85	0.00	0.02	0.00	0.00
148	143	-21.92	540.78	0.00	-0.02	0.00	-36.93
148	137	21.92	-540.78	0.00	0.02	0.00	983.61
149	137	-0.05	-326.54	0.00	-0.02	0.00	-571.24
149	135	0.05	326.54	0.00	0.02	0.00	0.00
150	162	-32.45	573.09	0.01	-0.02	0.01	-54.65
150	157	32.45	-573.09	-0.01	0.02	0.00	1057.79
151	157	-0.01	-329.87	0.00	-0.02	0.00	-577.13
151	156	0.01	329.87	0.00	0.02	0.00	-0.01
152	181	-8.26	382.13	0.00	-0.01	0.00	-13.89
152	176	8.26	-382.13	0.00	0.01	0.00	682.78
153	176	-0.01	-325.93	0.00	-0.01	0.00	-570.21
153	174	0.01	325.93	0.00	0.01	0.00	-0.01
154	195	-0.64	197.32	356.25	-600.64	0.00	-1.08
154	192	0.64	-197.32	-356.25	600.64	-1514.07	839.71
155	192	0.00	-170.56	356.25	-600.63	-1514.08	-724.90
155	190	0.00	170.56	-356.25	600.63	0.00	0.00
156	7	-0.01	-181.38	0.00	0.00	0.00	0.00
156	4	0.01	181.38	0.00	0.00	0.00	-770.88
157	4	0.00	181.84	0.00	0.00	0.00	772.84
157	2	0.00	-181.84	0.00	0.00	0.00	0.00
158	23	0.02	-645.12	0.00	0.00	0.00	0.00
158	19	-0.02	645.12	0.00	0.00	0.00	-1129.07
159	19	0.00	645.60	0.00	0.00	0.00	1129.66
159	17	0.00	-645.60	0.00	0.00	0.00	0.00
160	42	-0.01	-672.82	0.00	0.00	0.00	0.00
160	38	0.01	672.82	0.00	0.00	0.00	-1177.80
161	38	0.00	673.18	0.00	0.00	0.00	1177.96
161	36	0.00	-673.18	0.00	0.00	0.00	0.00
162	62	0.00	-663.97	0.00	0.00	0.00	0.00
162	58	0.00	663.97	0.00	0.00	0.00	-1162.30
163	58	0.00	664.26	0.00	0.00	0.00	1162.07
163	56	0.00	-664.26	0.00	0.00	0.00	0.00
164	82	-0.01	-666.34	0.00	0.00	0.00	0.00
164	78	0.01	666.34	0.00	0.00	0.00	-1166.77
165	78	0.00	666.77	0.00	0.00	0.00	1166.14
165	76	0.00	-666.77	0.00	0.00	0.00	0.00
166	102	0.02	-665.34	0.00	0.00	0.00	0.00
166	98	-0.02	665.34	0.00	0.00	0.00	-1165.63
167	98	0.00	666.09	0.00	0.00	0.00	1164.42
167	96	0.00	-666.09	0.00	0.00	0.00	0.00
168	122	0.00	-666.39	0.00	0.00	0.00	0.00
168	118	0.00	666.39	0.00	0.00	0.00	-1166.89
169	118	0.00	666.83	0.00	0.00	0.00	1166.24
169	116	0.00	-666.83	0.00	0.00	0.00	0.00
170	142	-0.01	-663.72	0.00	0.00	0.00	0.00
170	138	0.01	663.72	0.00	0.00	0.00	-1161.91
171	138	0.00	664.18	0.00	0.00	0.00	1161.90
171	136	0.00	-664.18	0.00	0.00	0.00	0.00
172	161	-0.01	-673.08	0.00	0.00	0.00	0.00
172	158	0.01	673.08	0.00	0.00	0.00	-1178.19
173	158	0.00	673.49	0.00	0.00	0.00	1178.30
173	155	0.00	-673.49	0.00	0.00	0.00	0.00
174	180	0.02	-644.87	0.00	0.00	0.00	0.00
174	177	-0.02	644.87	0.00	0.00	0.00	-1128.78
175	177	0.00	645.28	0.00	0.00	0.00	1128.92
175	175	0.00	-645.28	0.00	0.00	0.00	0.00
176	196	-0.01	-181.49	0.00	0.00	0.00	0.00
176	193	0.01	181.49	0.00	0.00	0.00	-771.35
177	193	0.00	181.96	0.00	0.00	0.00	773.34
177	191	0.00	-181.96	0.00	0.00	0.00	0.00
182	7	181.38	0.00	0.01	0.00	0.00	0.00
182	6	-181.38	0.00	-0.01	0.00	-0.02	0.00
183	2	181.84	0.00	0.00	0.00	0.00	0.00
183	1	-181.84	0.00	0.00	0.00	0.00	0.00
184	23	645.12	0.00	-0.02	0.00	0.00	0.00
184	22	-645.12	0.00	0.02	0.00	0.04	0.00
185	17	645.60	0.00	0.00	0.00	0.00	0.00
185	16	-645.60	0.00	0.00	0.00	0.00	0.00
186	42	672.82	0.00	0.01	0.00	0.00	0.00
186	43	-672.82	0.00	-0.01	0.00	-0.02	0.00
187	36	673.18	0.00	0.00	0.00	0.00	0.00
187	35	-673.18	0.00	0.00	0.00	0.00	0.00
188	62	663.97	0.00	0.00	0.00	0.00	0.00
188	63	-663.97	0.00	0.00	0.00	0.00	0.00
189	56	664.26	0.00	0.00	0.00	0.00	0.00
189	55	-664.26	0.00	0.00	0.00	0.00	0.00
190	82	666.34	0.00	0.01	0.00	0.00	0.00
190	83	-666.34	0.00	-0.01	0.00	-0.01	0.00
191	76	666.78	0.00	0.00	0.00	0.00	0.00
191	75	-666.78	0.00	0.00	0.00	0.00	0.00
192	102	665.34	0.00	-0.02	0.00	0.00	0.00
192	103	-665.34	0.00	0.02	0.00	0.03	0.00
193	96	666.10	0.00	0.00	0.00	0.00	0.00
193	95	-666.10	0.00	0.00	0.00	0.00	0.00
194	122	666.40	0.00	0.00	0.00	0.00	0.00
194	123	-666.40	0.00	0.00	0.00	0.00	0.00
195	116	666.83	0.00	0.00	0.00	0.00	0.00
195	115	-666.83	0.00	0.00	0.00	0.00	0.00
196	142	663.73	0.00	0.01	0.00	0.00	0.00
196	143	-663.73	0.00	-0.01	0.00	-0.02	0.00
197	136	664.17	0.00	0.00	0.00	0.00	0.00
197	135	-664.17	0.00	0.00	0.00	0.00	0.00
198	161	673.08	0.00	0.01	0.00	0.00	0.00
198	162	-673.08	0.00	-0.01	0.00	-0.01	0.00
199	155	673.49	0.00	0.00	0.00	0.00	0.00
199	156	-673.49	0.00	0.00	0.00	0.00	0.00
200	180	644.87	0.00	-0.02	0.00	0.00	0.00
200	181	-644.87	0.00	0.02	0.00	0.04	0.00
201	175	645.28	0.00	0.00	0.00	0.00	0.00
201	174	-645.28	0.00	0.00	0.00	0.00	0.00
202	196	181.49	0.00	0.01	0.00	0.00	0.00
202	195	-181.49	0.00	-0.01	0.00	-0.02	0.01
203	191	181.96	0.00	0.00	0.00	0.00	0.00
203	190	-181.96	0.00	0.00	0.00	0.00	0.00
206	21	692.89	0.00	33.73	0.00	526.62	-0.03
206	20	-692.89	0.00	-33.73	0.00	-600.83	0.03
207	20	692.89	0.00	33.73	0.00	600.83	-0.03
207	19	-692.89	0.00	-33.73	0.00	-735.75	0.03
208	40	703.75	0.00	45.66	-0.01	501.61	-0.18
208	39	-703.75	0.00	-45.66	0.01	-529.01	0.18
209	39	703.75	0.00	45.66	-0.01	529.01	-0.18
209	41	-703.75	0.00	-45.66	0.01	-757.33	0.18
210	41	703.75	0.00	45.66	-0.01	757.33	-0.18
210	38	-703.75	0.00	-45.66	0.01	-939.98	0.18

211	60	1328.23	0.00	0.00	0.00	-0.23	0.00
211	59	-1328.23	0.00	0.00	0.00	0.23	0.00
212	59	1328.23	0.00	0.00	0.00	-0.23	0.00
212	61	-1328.23	0.00	0.00	0.00	0.23	0.00
213	61	1328.23	0.00	0.00	0.00	-0.23	0.00
213	58	-1328.23	0.00	0.00	0.00	0.23	0.00
214	80	1333.12	0.00	0.01	0.00	-0.74	0.03
214	79	-1333.12	0.00	-0.01	0.00	0.71	-0.03
215	79	1333.12	0.00	0.01	0.00	-0.71	0.03
215	81	-1333.12	0.00	-0.01	0.00	0.67	-0.03
216	81	1333.12	0.00	0.01	0.00	-0.67	0.03
216	78	-1333.12	0.00	-0.01	0.00	0.64	-0.03
217	100	1117.93	0.00	-49.96	-0.01	389.67	-0.03
217	99	-1117.93	0.00	49.96	0.01	-224.81	0.03
218	99	1117.93	0.00	-49.96	-0.01	224.81	-0.03
218	101	-1117.93	0.00	49.96	0.01	24.98	0.03
219	101	1117.93	0.00	-49.96	-0.01	-24.98	-0.03
219	98	-1117.93	0.00	49.96	0.01	224.81	0.03
220	120	572.80	0.00	44.43	-0.01	385.32	-0.11
220	119	-572.80	0.00	-44.43	0.01	-531.94	0.11
221	119	572.80	0.00	44.43	-0.01	531.94	-0.11
221	121	-572.80	0.00	-44.43	0.01	-754.09	0.11
222	121	572.80	0.00	44.43	-0.01	754.09	-0.11
222	118	-572.80	0.00	-44.43	0.01	-931.81	0.11
223	140	572.47	0.00	42.25	0.00	264.24	-0.04
223	139	-572.47	0.00	-42.25	0.00	-403.65	0.04
224	139	572.47	0.00	42.25	0.00	403.65	-0.04
224	141	-572.47	0.00	-42.25	0.00	-614.89	0.04
225	141	572.47	0.00	42.25	0.00	614.89	-0.04
225	138	-572.47	0.00	-42.25	0.00	-783.88	0.04
226	160	71.06	0.00	28.27	0.00	-700.97	0.01
226	159	-71.06	0.00	-28.27	0.00	579.42	-0.01
227	159	71.06	0.00	28.27	0.00	-579.42	0.01
227	158	-71.06	0.00	-28.27	0.00	466.35	-0.01
228	179	1290.14	0.00	-0.02	0.00	0.30	0.00
228	178	-1290.14	0.00	0.02	0.00	-0.22	0.00
229	178	1290.14	0.00	-0.02	0.00	0.22	0.00
229	177	-1290.14	0.00	0.02	0.00	-0.14	0.00
230	5	53.86	0.00	18.06	0.00	-516.55	0.02
230	4	-53.86	0.00	-18.06	0.00	498.49	-0.02
231	194	363.46	0.00	0.01	0.00	1.98	0.00
231	193	-363.46	0.00	-0.01	0.00	-1.99	0.00

proc Viaducto Papiol

HIPOTESIS 129

MOME Y MAX envolvente sobrecarga

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
1	3	0.00	82.34	-14.90	-520.85	0.00	-0.08
1	8	3.25	-60.34	-14.55	-510.79	-103.88	301.34
2	8	-3.25	60.34	14.55	510.79	103.88	-301.34
2	9	6.50	-57.64	-14.55	-494.56	-207.76	589.31
3	9	-6.51	57.64	14.54	495.02	207.76	-588.93
3	10	9.76	-54.95	-14.54	-478.75	-311.61	863.42
4	10	-9.76	54.95	14.54	478.42	311.61	-863.60
4	11	13.01	-0.14	-14.68	-309.41	-415.73	1033.35
5	11	-13.01	0.14	14.68	309.80	415.73	-1033.23
5	12	16.26	77.31	-14.88	-81.97	-520.78	833.34
6	12	-16.27	-77.31	14.87	82.62	520.78	-833.28
6	13	-79.47	160.02	-19.85	145.60	-627.08	300.17
7	13	79.47	-160.02	19.82	-145.71	627.08	-300.12
7	14	-84.47	237.45	-20.02	373.58	-714.91	-682.86
8	14	84.46	-237.45	20.08	-374.11	714.92	682.57
8	15	-89.46	314.86	-20.28	601.99	-804.08	-2052.62
9	15	89.46	-314.86	20.28	-601.94	804.08	2052.63
9	18	-94.46	339.77	-20.92	683.36	-898.90	-3717.86
10	18	94.45	383.54	-30.26	-33.91	898.91	3717.78
10	24	-99.45	-250.37	20.66	-374.45	-779.80	-1066.44
11	24	99.46	250.37	-20.62	374.04	779.80	1066.58
11	25	-104.46	-172.99	20.42	-163.10	-688.95	2.56
12	25	104.48	172.99	-20.34	163.10	688.95	-2.43
12	26	-109.48	-95.62	20.14	47.84	-599.51	684.71
13	26	109.47	95.62	-20.18	-48.12	599.51	-684.69
13	27	-15.46	-54.59	1.06	172.89	-549.92	1255.73
14	27	15.46	54.59	-1.06	-172.42	549.92	-1255.80
14	28	-20.46	22.76	0.86	383.35	-533.39	1346.10
15	28	20.46	-22.76	-0.84	-382.30	533.39	-1346.40
15	29	-25.46	77.59	0.70	530.06	-517.89	1066.89
16	29	25.46	-77.59	-0.71	-530.47	517.89	-1066.69
16	30	-30.46	36.70	-10.72	224.26	-558.41	2643.49
17	30	30.46	-36.70	10.73	-223.20	558.41	-2643.58
17	31	-35.46	62.73	-25.01	2.44	-624.14	1571.65
18	31	35.45	-62.73	25.02	-1.84	624.14	-1571.65
18	32	-40.45	140.02	-25.22	199.16	-738.01	1075.49
19	32	40.45	-140.02	25.22	-199.16	738.01	-1075.49
19	33	-144.47	216.93	-21.62	386.97	-855.62	193.71
20	33	144.46	-216.93	21.67	-386.90	855.62	-193.86
20	34	-149.46	294.20	-21.87	584.15	-976.24	-1073.25
21	34	149.45	-294.20	21.93	-584.58	976.24	1073.02
21	37	-154.45	318.96	-21.99	652.60	-1097.91	-2634.61
22	37	154.44	278.20	-29.96	277.57	1097.93	2634.56
22	44	-159.44	-253.60	29.90	-210.48	-959.93	-1255.34
23	44	159.45	253.60	-29.83	209.97	959.93	1255.43
23	45	-65.43	-176.50	24.78	-22.92	-823.41	-174.91
24	45	65.44	176.50	-24.75	22.85	823.41	174.92
24	46	-70.44	-135.40	10.56	75.07	-712.27	623.73
25	46	70.44	135.40	-10.56	-75.07	712.27	-623.73
25	47	-75.44	-58.20	10.36	261.83	-648.20	1118.46
26	47	75.44	58.20	-10.33	-261.40	648.20	-1118.56
26	48	80.56	14.82	10.05	446.48	-585.55	1230.70
27	48	-80.56	-14.82	-10.05	-446.46	585.55	-1230.71
27	49	85.55	-14.66	-9.28	97.12	-560.04	3199.43
28	49	-85.55	14.66	9.25	-95.90	560.04	-3199.47
28	50	90.55	9.67	-9.31	158.88	-594.59	3240.20
29	50	-90.55	-9.67	9.28	-157.58	594.60	-3240.27
29	51	95.55	58.45	-20.31	31.96	-656.69	1560.77
30	51	-95.56	-58.45	20.27	-31.36	656.69	-1560.78
30	52	-100.44	139.21	-20.59	208.57	-746.86	1065.16
31	52	100.44	-139.21	20.59	-208.57	746.86	-1065.16
31	53	-105.44	216.08	-22.34	362.01	-846.11	187.54
32	53	105.43	-216.08	22.38	-361.94	846.11	-187.69
32	54	-110.43	293.01	-22.58	540.08	-946.76	-1074.32
33	54	110.43	-293.01	22.58	-540.06	946.76	1074.33
33	57	-214.44	317.18	-22.77	599.85	-1048.63	-2629.78
34	57	214.44	277.20	-24.80	233.46	1048.63	2629.64
34	64	-120.43	-253.30	24.62	-175.41	-913.05	-1252.08
35	64	120.43	253.30	-24.62	175.43	913.05	1252.08
35	65	224.56	-216.65	11.92	-88.78	-785.22	-247.01
36	65	-224.55	216.65	-12.10	88.59	785.22	247.08
36	66	229.55	-139.56	11.90	87.36	-713.49	632.71
37	66	-229.55	139.56	-11.90	-87.35	713.49	-632.72
37	67	234.55	-62.46	11.70	263.27	-642.74	1127.04
38	67	-234.54	62.46	-11.79	-262.87	642.74	-1127.13
38	68	239.54	-10.93	6.20	328.93	-574.86	1561.40
39	68	-239.54	10.93	-6.12	-329.49	574.86	-1561.28
39	69	244.54	-14.45	-5.46	94.70	-576.17	3213.47
40	69	-244.54	14.45	5.17	-90.98	576.17	-3213.57
40	70	249.54	9.98	-5.23	152.94	-590.34	3253.02
41	70	-249.54	-9.98	5.33	-154.23	590.34	-3252.95
41	71	254.54	60.52	-17.80	16.52	-649.09	1581.52
42	71	-254.55	-60.52	17.70	-15.89	649.09	-1581.53
42	72	259.55	135.52	-18.98	174.40	-731.46	1069.74
43	72	-259.56	-135.52	18.88	-173.99	731.46	-1069.80
43	73	-165.43	216.79	-19.50	351.41	-815.71	192.33
44	73	165.43	-216.79	19.50	-351.41	815.71	-192.33
44	74	-269.44	293.83	-19.81	527.33	-902.52	-1073.36
45	74	269.44	-293.83	19.92	-527.74	902.52	1073.16
45	77	-274.44	318.40	-19.98	590.30	-990.60	-2632.38
46	77	274.44	277.70	-23.74	258.24	990.61	2632.37
46	84	-279.44	-289.52	14.91	-536.58	-899.19	-1075.48
47	84	279.44	289.52	-14.91	536.56	899.19	1075.49
47	85	-284.44	-212.46	14.71	-357.76	-813.41	190.21
48	85	284.44	212.46	-14.60	357.83	813.40	-190.08
48	86	289.56	-140.06	13.89	-180.36	-731.45	1071.18
49	86	-289.55	140.06	-14.00	180.77	731.46	-1071.12
49	87	294.55	-63.01	13.80	-2.07	-650.18	1568.07
50	87	-294.55	63.01	-13.81	2.10	650.18	-1568.07
50	88	299.55	-14.32	0.48	-173.18	-581.79	3253.39
51	88	-299.55	14.32	-0.60	174.42	581.79	-3253.33
51	89	304.55	10.23	0.54	-110.75	-567.32	3213.46
52	89	-304.55	-10.23	-0.54	110.75	567.32	-3213.47
52	90	309.50	-18.38	-12.67	-178.25	-560.89	1684.36
53	90	-309.51	18.38	12.54	178.92	560.89	-1684.28
53	91	314.51	58.16	-14.60	-30.54	-643.38	1568.80
54	91	-314.51	-58.16	14.48	31.14	643.38	-1568.79
54	92	319.51	135.19	-14.68	153.97	-728.02	1074.70
55	92	-319.52	-135.19	14.55	-153.54	728.02	-1074.76
55	93	-324.48	216.88	-15.45	339.87	-814.21	181.74
56	93	324.48	-216.88	15.44	-339.87	814.20	-181.73
56	94	-329.48	257.70	-25.95	175.55	-921.02	-1265.50
57	94	329.48	-257.70	25.96	-175.58	921.02	1265.50
57	97	-334.48	282.23	-26.02	241.30	-1062.83	-2644.00

58	97	334.48	315.78	-19.34	658.92	1062.82	2644.15
58	104	-339.48	-291.40	19.28	-593.08	-977.94	-1076.47
59	104	339.48	291.40	-19.28	593.10	977.94	1076.46
59	105	245.51	-215.40	18.40	-398.63	-893.79	183.59
60	105	-245.50	215.40	-18.50	398.70	893.79	-183.42
60	106	349.51	-138.38	18.23	-203.83	-813.67	1057.22
61	106	-349.51	138.38	-18.22	203.81	813.67	-1057.23
61	107	349.51	-61.35	18.02	-9.00	-723.05	1556.54
62	107	-349.51	61.35	-18.16	9.62	723.05	-1556.54
62	108	349.51	-12.30	3.72	-200.73	-658.04	3239.62
63	108	-349.51	12.30	-3.85	201.96	658.04	-3239.54
63	109	349.51	12.24	3.79	-132.99	-639.05	3200.31
64	109	-349.51	-12.24	-3.66	131.77	639.05	-3200.37
64	110	349.50	8.54	-9.98	-416.27	-635.78	1547.09
65	110	-349.51	-8.54	9.71	417.48	635.79	-1546.76
65	111	349.51	60.04	-15.54	-316.11	-706.37	1113.68
66	111	-349.51	-60.04	15.40	316.53	706.37	-1113.56
66	112	349.51	137.11	-15.60	-108.48	-783.88	620.67
67	112	-349.51	-137.11	15.60	108.49	783.88	-620.67
67	113	250.50	214.21	-15.88	99.55	-862.47	-258.09
68	113	-250.51	-214.21	15.78	-99.65	862.47	258.06
68	114	-349.42	256.29	-30.10	230.48	-998.00	-1271.24
69	114	349.42	-256.29	30.10	-230.48	998.00	1271.24
69	117	-349.42	280.91	-30.16	303.88	-1148.78	-2653.62
70	117	349.42	317.84	-20.12	741.79	1148.79	2653.92
70	124	-349.42	-293.35	20.06	-667.97	-1048.26	-1086.92
71	124	349.41	293.35	-20.20	668.40	1048.26	1086.66
71	125	349.59	-215.60	18.95	-443.77	-948.37	196.63
72	125	-349.58	215.60	-19.09	443.85	948.36	-196.45
72	126	349.58	-138.42	18.89	-220.46	-853.43	1081.51
73	126	-349.58	138.42	-19.03	220.89	853.43	-1081.42
73	127	349.58	-60.76	16.77	-27.11	-762.86	1577.09
74	127	-349.57	60.76	-16.90	27.71	762.86	-1577.08
74	128	349.57	-11.56	1.91	-198.09	-730.24	3257.14
75	128	-349.57	11.56	-1.91	198.09	730.24	-3257.14
75	129	349.57	13.20	1.85	-119.60	-720.96	3213.66
76	129	-349.57	-13.20	-1.98	120.82	720.96	-3213.62
76	130	349.57	9.68	-14.11	-433.58	-756.21	1555.89
77	130	-349.57	-9.68	13.97	434.20	756.21	-1555.72
77	131	349.57	61.63	-19.48	-294.85	-839.36	1117.85
78	131	-349.57	-61.63	19.61	294.42	839.36	-1117.96
78	132	349.57	138.97	-19.81	-55.79	-937.90	616.47
79	132	-349.59	-138.97	19.40	56.50	937.90	-616.40
79	133	349.59	216.35	-19.60	182.26	-1035.41	-271.90
80	133	-349.58	-216.35	19.74	-182.16	1035.41	271.97
80	134	-349.42	257.12	-31.30	354.71	-1167.98	-1269.76
81	134	349.41	-257.12	31.43	-355.20	1167.98	1269.63
81	137	-349.41	282.06	-31.49	438.58	-1325.38	-2656.94
82	137	349.40	318.91	-28.85	787.07	1325.38	2656.74
82	144	349.60	-295.56	27.84	-700.88	-1181.29	-1097.90
83	144	-349.58	295.56	-28.12	700.02	1181.29	1098.45
83	145	349.58	-218.05	27.92	-449.03	-1041.20	185.59
84	145	-349.58	218.05	-27.92	449.04	1041.20	-185.58
84	146	349.58	-140.52	27.72	-197.91	-902.08	1082.03
85	146	-349.58	140.52	-27.72	197.88	902.08	-1082.04
85	147	349.58	-62.48	26.63	28.50	-764.24	1587.07
86	147	-349.56	62.48	-26.90	-27.26	764.24	-1587.09
86	148	349.56	-12.65	12.91	-142.17	-652.06	3272.38
87	148	-349.56	12.65	-12.92	142.23	652.06	-3272.38
87	149	349.56	12.46	12.86	-55.06	-587.72	3233.50
88	149	-349.56	-12.45	-12.99	56.22	587.72	-3233.48
88	150	349.55	-16.12	-10.11	-487.19	-559.93	1270.46
89	150	-349.55	16.12	10.11	487.22	559.93	-1270.45
89	151	349.55	61.53	-10.31	-228.90	-610.96	1156.94
90	151	-349.56	-61.53	10.17	229.37	610.96	-1156.85
90	152	-349.44	178.99	-14.56	-10.99	-666.24	-225.52
91	152	349.44	-178.99	14.55	10.99	666.24	225.52
91	153	-349.44	182.24	-22.52	225.70	-765.75	-205.80
92	153	349.43	-182.24	22.66	-225.79	765.75	205.71
92	154	-349.43	259.94	-22.86	484.36	-879.55	-1311.18
93	154	349.43	-259.94	22.99	-484.86	879.55	1310.99
93	157	-349.42	541.62	-29.56	32.14	-1016.02	-4428.91
94	157	349.42	377.07	-24.66	780.29	1016.03	4428.93
94	163	-349.42	-345.75	24.50	-706.95	-893.03	-2582.86
95	163	349.43	345.75	-24.37	705.96	893.03	2583.13
95	164	-349.43	-219.85	21.15	-468.29	-780.89	169.74
96	164	349.44	219.85	-21.01	468.35	780.89	-169.56
96	165	-349.44	-141.65	20.01	-242.87	-679.27	1090.35
97	165	349.44	141.65	-20.00	242.89	679.27	-1090.34
97	166	349.56	-83.67	5.23	-383.82	-590.04	2973.34
98	166	-349.56	83.67	-5.36	384.95	590.04	-2973.20
98	167	349.56	-31.60	3.61	-168.22	-564.94	2632.65
99	167	-349.56	31.60	-3.75	169.22	564.94	-2632.58
99	168	349.56	-6.42	3.69	-81.76	-546.47	2688.24
100	168	-349.56	6.42	-3.69	81.82	546.47	-2688.24
100	169	349.56	-17.00	-8.34	-371.70	-574.84	1300.07
101	169	-349.56	17.00	8.21	372.20	574.84	-1299.93
101	170	349.56	60.65	-8.41	-125.28	-616.38	1190.81
102	170	-349.56	-60.65	8.41	125.28	616.38	-1190.81
102	171	349.56	138.26	-8.61	121.56	-658.92	693.52
103	171	-349.57	-138.26	8.34	-121.02	658.92	-693.62
103	172	349.57	179.00	-17.08	318.59	-733.23	-83.78
104	172	-349.57	-179.00	17.08	-318.59	733.23	83.78
104	173	-349.43	251.11	-17.93	562.88	-822.36	-940.67
105	173	349.43	-251.11	17.94	-562.90	822.36	940.66
105	176	-349.43	276.15	-18.00	645.29	-912.32	-2298.21
106	176	349.43	290.38	-21.29	473.73	912.32	2298.07
106	182	-349.43	-265.53	21.23	-393.03	-805.93	-869.27
107	182	349.44	265.53	-21.09	392.68	805.93	869.43
107	183	349.56	-220.01	20.28	-165.36	-701.85	324.82
108	183	-349.56	220.01	-20.29	165.37	701.85	-324.82
108	184	349.56	-142.58	20.09	58.08	-600.90	1231.32
109	184	-349.56	142.58	-20.22	-57.63	600.90	-1231.34
109	185	349.56	-65.19	20.02	280.95	-500.32	1750.78
110	185	-349.56	65.19	-20.02	-280.91	500.32	-1750.79
110	186	349.56	12.15	19.82	504.07	-400.71	1883.41
111	186	-349.54	-12.15	-20.09	-502.60	400.71	-1883.80
111	187	349.54	66.95	19.95	653.85	-300.69	1646.68
112	187	-349.54	-66.95	-19.96	-653.85	300.69	-1646.68
112	188	349.54	69.37	19.96	669.35	-200.92	1305.90
113	188	-349.53	-69.37	-20.09	-668.85	200.92	-1306.15
113	189	349.53	71.71	20.09	684.09	-100.47	953.43
114	189	-349.53	-71.72	-20.09	-684.07	100.48	-953.44
114	192	374.96	164.67	7.12	1049.37	0.00	631.96
134	6	-7.91	204.23	0.00	0.00	0.02	-13.34
134	3	-0.61	-125.37	0.01	0.00	-0.02	531.80
135	3	0.00	-136.19	0.00	0.00	0.02	-578.83
135	1	0.00	150.01	0.01	0.00	-0.02	0.00
136	22	0.33	645.62	-0.01	0.00	0.04	0.55
136	18	-4.74	-467.58	0.00	0.00	-0.05	810.34
137	18	0.00	-468.49	0.02	0.00	0.04	-819.75
137	16	0.01	557.93	-0.01	0.00	-0.05	0.00
138	43	-0.99	484.55	-0.03	0.00	0.03	-1.67
138	37	8.17	-581.20	-0.03	0.00	-0.04	1031.17
139	37	0.00	-672.62	-0.02	0.00	0.03	-1176.98
139	35	0.03	413.92	0.00	-0.01	-0.02	0.00
140	63	-7.48	250.20	0.01	-0.01	0.03	-12.62
140	57	-1.08	-664.53	0.00	0.00	-0.04	1161.44

141	57	0.00	136.31	0.00	0.00	0.03	238.43
141	55	-0.01	465.70	0.00	0.00	-0.02	0.01
142	83	1.29	480.06	0.00	0.00	0.04	2.18
142	77	5.27	112.09	0.00	0.00	-0.02	-187.44
143	77	0.00	-463.27	0.01	0.01	0.02	-810.25
143	75	0.00	479.15	-0.01	0.00	-0.04	0.00
144	103	5.08	830.59	0.00	0.00	0.02	8.49
144	97	0.34	128.94	0.01	0.00	-0.02	-225.26
145	97	-0.07	-563.45	0.01	-0.01	0.02	-984.97
145	95	0.00	-127.52	-0.01	0.00	-0.02	-0.01
146	123	-4.40	325.78	0.01	-0.01	0.02	-7.43
146	117	0.38	-598.02	-0.01	0.00	-0.02	1047.87
147	117	0.00	38.14	0.00	0.00	0.02	66.69
147	115	-0.08	401.21	0.00	-0.01	-0.02	0.00
148	143	-16.03	403.39	-0.01	0.01	0.02	-26.97
148	137	-1.80	-480.84	-0.02	0.00	-0.02	838.71
149	137	0.00	-480.12	0.00	0.00	0.03	-839.91
149	135	0.00	664.39	0.00	0.00	-0.03	0.00
150	162	2.55	482.66	-0.02	0.00	0.01	4.30
150	157	12.11	-450.39	0.00	0.01	-0.01	808.80
151	157	-0.03	-330.98	0.01	0.01	0.01	-579.06
151	156	-0.02	325.81	-0.01	-0.01	-0.01	0.00
152	181	-7.98	301.40	0.00	0.01	0.01	-13.42
152	176	14.35	-409.57	0.00	-0.01	-0.01	741.10
153	176	0.00	-282.48	0.00	-0.01	0.01	-494.19
153	174	0.02	212.00	0.00	0.00	-0.01	0.00
154	195	-9.45	216.20	0.00	-0.01	0.01	-15.93
154	192	0.64	-197.32	-356.25	600.64	-1514.07	839.71
155	192	0.00	-198.69	-356.25	600.64	1514.07	-844.43
155	190	0.00	238.92	0.00	0.00	-0.01	0.00
156	7	-0.01	-181.38	0.00	0.00	0.00	0.00
156	4	18.06	85.57	0.00	0.00	0.00	-363.69
157	4	0.00	181.84	0.00	0.00	0.00	772.84
157	2	0.00	-181.84	0.00	0.00	0.00	0.00
158	23	0.02	-645.12	0.00	0.00	0.00	0.00
158	19	33.73	136.19	0.00	0.00	0.00	-238.36
159	19	0.00	645.60	0.00	0.00	0.00	1129.66
159	17	0.00	-645.60	0.00	0.00	0.00	0.00
160	42	-0.01	-672.82	0.00	0.00	0.00	0.00
160	38	45.68	83.26	-0.01	0.00	-0.01	-145.77
161	38	0.00	673.18	0.00	0.00	0.00	1177.96
161	36	0.00	-673.18	0.00	0.00	0.00	0.00
162	62	0.00	-663.97	0.00	0.00	0.00	0.00
162	58	0.00	663.97	0.00	0.00	0.00	-1162.30
163	58	0.00	664.26	0.00	0.00	0.00	1162.07
163	56	0.00	-664.26	0.00	0.00	0.00	0.00
164	82	-0.01	-666.34	0.00	0.00	0.00	0.00
164	78	0.01	666.34	0.00	0.00	0.00	-1166.77
165	78	0.00	666.77	0.00	0.00	0.00	1166.14
165	76	0.00	-666.77	0.00	0.00	0.00	0.00
166	102	0.02	-665.34	0.00	0.00	0.00	0.00
166	98	-50.07	622.59	0.00	0.00	-0.01	-1090.71
167	98	0.00	666.09	0.00	0.00	0.00	1164.42
167	96	0.00	-666.09	0.00	0.00	0.00	0.00
168	122	0.00	-666.39	0.00	0.00	0.00	0.00
168	118	44.43	19.99	0.00	0.00	-0.01	-35.01
169	118	0.00	666.83	0.00	0.00	0.00	1166.24
169	116	0.00	-666.83	0.00	0.00	0.00	0.00
170	142	-0.01	-663.72	0.00	0.00	0.00	0.00
170	138	42.24	62.17	0.00	0.00	0.00	-108.83
171	138	0.00	664.18	0.00	0.00	0.00	1161.90
171	136	0.00	-664.18	0.00	0.00	0.00	0.00
172	161	-0.01	-673.08	0.00	0.00	0.00	0.00
172	158	28.26	168.76	0.00	0.00	0.00	-295.41
173	158	0.00	673.49	0.00	0.00	0.00	1178.30
173	155	0.00	-673.49	0.00	0.00	0.00	0.00
174	180	0.02	-644.87	0.00	0.00	0.00	0.00
174	177	-0.02	644.87	0.00	0.00	0.00	-1128.78
175	177	0.00	645.28	0.00	0.00	0.00	1128.92
175	175	0.00	-645.28	0.00	0.00	0.00	0.00
176	196	-0.01	-181.49	0.00	0.00	0.00	0.00
176	193	-2.67	160.33	-356.25	0.00	-1514.08	-681.42
177	193	0.00	170.56	-356.25	0.00	1514.08	724.90
177	191	0.00	-181.96	0.00	0.00	0.00	0.00
182	7	181.38	0.00	0.01	0.00	0.00	0.00
182	6	-97.76	0.00	-24.53	0.00	-41.35	0.00
183	2	181.84	0.00	0.00	0.00	0.00	0.00
183	1	-181.84	0.00	0.00	0.00	0.00	0.00
184	23	645.12	0.00	-0.02	0.00	0.00	0.00
184	22	-160.08	0.00	-40.15	0.00	-67.70	0.00
185	17	645.60	0.00	0.00	0.00	0.00	0.00
185	16	-835.23	0.00	0.00	0.00	0.00	0.00
186	42	672.82	0.00	0.01	0.00	0.00	0.00
186	43	-62.10	0.00	-50.10	0.00	-84.49	0.00
187	36	673.18	0.00	0.00	0.00	0.00	0.00
187	35	-935.76	0.00	0.00	0.00	-0.01	0.00
188	62	663.97	0.00	0.00	0.00	0.00	0.00
188	63	61.66	0.00	-54.88	0.00	-92.52	0.00
189	56	664.26	0.00	0.00	0.00	0.00	0.00
189	55	-950.16	0.00	0.00	0.00	-0.01	0.00
190	82	666.34	0.00	0.01	0.00	0.00	0.00
190	83	60.00	0.00	-50.16	0.00	-84.54	0.00
191	76	666.78	0.00	0.00	0.00	0.00	0.00
191	75	-966.02	0.00	0.00	0.00	-0.01	0.00
192	102	665.34	0.00	-0.02	0.00	0.00	0.00
192	103	37.92	0.00	-52.12	0.00	-87.88	0.00
193	96	666.10	0.00	0.00	0.00	0.00	0.00
193	95	-830.25	0.00	0.00	0.00	-0.01	0.00
194	122	666.40	0.00	0.00	0.00	0.00	0.00
194	123	-0.15	0.00	-50.57	0.00	-85.27	0.00
195	116	666.83	0.00	0.00	0.00	0.00	0.00
195	115	-815.33	0.00	0.00	0.00	-0.01	0.00
196	142	663.73	0.00	0.01	0.00	0.00	0.00
196	143	-43.31	0.00	-47.85	0.00	-80.67	0.00
197	136	664.17	0.00	0.00	0.00	0.00	0.00
197	135	-800.06	0.00	0.00	0.00	-0.01	0.00
198	161	673.08	0.00	0.01	0.00	0.00	0.00
198	162	-235.73	0.00	-44.93	0.00	-75.76	0.00
199	155	673.49	0.00	0.00	0.00	0.00	0.00
199	156	-849.36	0.00	0.00	0.00	-0.01	0.00
200	180	644.87	0.00	-0.02	0.00	0.00	0.00
200	181	-195.55	0.00	-43.27	0.00	-72.95	0.00
201	175	645.28	0.00	0.00	0.00	0.00	0.00
201	174	-697.00	0.00	0.00	0.00	0.00	0.00
202	196	181.49	0.00	0.01	0.00	0.00	0.00
202	195	-123.23	174.76	-20.16	0.00	-33.99	-294.65
203	191	181.96	0.00	0.00	0.00	0.00	0.00
203	190	-181.96	0.00	0.00	0.00	0.00	0.00
206	21	671.52	0.00	-21.42	0.00	1872.20	-0.10
206	20	-671.52	0.00	21.42	0.00	-1825.07	0.10
207	20	671.52	0.00	-21.42	0.00	1825.07	-0.10
207	19	-783.35	0.00	7.06	0.00	-1747.38	0.10
208	40	703.70	0.00	-11.22	0.00	1979.71	-0.36
208	39	-703.70	0.00	11.22	0.00	-1972.98	0.36
209	39	703.70	0.00	-11.22	0.00	1972.98	-0.36
209	41	-843.39	0.00	-13.01	0.00	-1969.97	0.39
210	41	843.39	0.00	13.01	0.00	1969.97	-0.39
210	38	-843.39	0.00	-13.01	0.00	-2022.01	0.39

211	60	696.22	0.00	0.31	0.00	1849.90	-0.02
211	59	-696.22	0.00	-0.31	0.00	-1850.91	0.02
212	59	696.22	0.00	0.31	0.00	1850.91	-0.02
212	61	-853.87	0.00	-28.04	0.00	-1946.72	0.02
213	61	853.87	0.00	28.04	0.00	1946.72	-0.02
213	58	-853.95	0.00	-28.66	0.00	-2059.17	0.02
214	80	699.17	0.00	-15.07	0.00	2116.90	0.06
214	79	-699.17	0.00	15.07	0.00	-2067.16	-0.06
215	79	699.17	0.00	-15.07	0.00	2067.16	0.06
215	81	-859.49	0.00	-14.20	0.00	-2054.73	-0.07
216	81	859.49	0.00	14.20	0.00	2054.74	0.07
216	78	-859.17	0.00	-14.81	0.00	-2112.77	-0.07
217	100	698.61	0.00	-13.51	0.00	2131.21	0.10
217	99	-698.61	0.00	13.51	0.00	-2086.61	-0.10
218	99	698.61	0.00	-13.51	0.00	2086.61	0.10
218	101	-693.82	0.00	11.97	0.00	-2019.70	-0.10
219	101	693.82	0.00	-11.97	0.00	2019.70	0.10
219	98	-857.67	0.00	-16.90	0.00	-2038.37	-0.10
220	120	693.50	0.00	-15.19	0.00	2085.23	-0.22
220	119	-693.50	0.00	15.19	0.00	-2035.10	0.22
221	119	693.50	0.00	-15.19	0.00	2035.10	-0.22
221	121	-693.50	0.00	15.19	0.00	-1959.15	0.22
222	121	693.50	0.00	-15.19	0.00	1959.15	-0.22
222	118	-693.50	0.00	15.19	0.00	-1898.39	0.22
223	140	687.93	0.00	10.97	0.00	1701.15	-0.10
223	139	-687.93	0.00	-10.97	0.00	-1737.36	0.10
224	139	687.93	0.00	10.97	0.00	1737.36	-0.10
224	141	-687.93	0.00	-10.97	0.00	-1792.23	0.10
225	141	687.93	0.00	10.97	0.00	1792.23	-0.10
225	138	-689.46	0.00	-12.95	0.00	-1838.25	0.10
226	160	701.09	0.00	-41.12	0.00	2352.45	0.00
226	159	-701.09	0.00	41.12	0.00	-2175.62	0.00
227	159	701.09	0.00	-41.12	0.00	2175.62	0.00
227	158	-701.09	0.00	41.12	0.00	-2011.13	0.00
228	179	650.15	0.00	10.49	0.00	1424.42	0.02
228	178	-650.12	0.00	-10.81	0.00	-1464.25	-0.02
229	178	650.12	0.00	10.81	0.00	1464.25	0.02
229	177	-650.12	0.00	-10.81	0.00	-1507.49	-0.02
230	5	262.87	0.00	-4.31	0.00	1511.40	-0.08
230	4	-262.87	0.00	4.31	0.00	-1507.09	0.08
231	194	281.42	375.00	-14.41	0.00	1751.98	375.01
231	193	-281.42	-375.00	14.41	0.00	-1737.57	-0.01

proc Viaducto Papiol

HIPOTESIS 130

MOME Y MIN envolvente sobrecarga

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
1	3	0.00	82.43	17.54	527.95	0.00	0.09
1	8	-3.25	-58.13	11.88	506.09	90.54	303.22
2	8	3.25	58.13	-11.88	-506.09	-90.54	-303.22
2	9	-6.50	-55.88	11.88	491.54	181.08	595.21
3	9	6.51	55.88	-11.87	-491.08	-181.08	-595.59
3	10	-9.76	-53.60	11.87	476.45	271.59	876.25
4	10	9.76	53.60	-11.88	-476.79	-271.59	-876.07
4	11	-13.01	0.84	11.74	331.93	361.88	1053.94
5	11	13.01	-0.84	-11.73	-331.53	-361.88	-1054.06
5	12	-16.26	77.96	11.53	121.71	451.19	864.02
6	12	16.27	-77.96	-11.52	-121.03	-451.19	-864.11
6	13	79.47	149.83	16.10	-89.28	539.76	234.42
7	13	-79.48	-149.83	-16.07	89.19	-539.76	-234.45
7	14	84.48	227.00	15.87	-299.19	607.85	-718.36
8	14	-84.47	-227.00	-15.94	298.63	-607.85	718.59
8	15	89.47	304.19	15.74	-508.73	675.28	-2057.29
9	15	-89.47	-304.19	-15.73	508.77	-675.28	2057.28
9	18	94.47	328.92	16.26	-588.58	746.86	-3690.12
10	18	-94.46	387.71	23.02	-156.81	-746.87	3690.25
10	24	99.46	-254.55	-15.79	521.27	645.95	-1045.29
11	24	-99.47	254.55	15.75	-521.67	-645.95	1045.09
11	25	104.47	-177.27	-15.95	294.31	578.43	23.74
12	25	-104.48	177.27	15.87	-294.29	-578.43	-23.97
12	26	109.48	-99.97	-16.07	66.82	510.32	706.35
13	26	-109.47	99.97	16.11	-67.10	-510.32	-706.32
13	27	15.46	-59.97	-1.59	-92.77	461.61	1247.74
14	27	-15.46	59.97	1.58	93.24	-461.61	-1247.70
14	28	20.46	17.39	-1.78	-320.94	441.44	1343.42
15	28	-20.47	-17.39	1.77	321.99	-441.44	-1343.17
15	29	25.46	6.77	11.74	-36.58	453.71	2717.64
16	29	-25.46	-6.77	-11.73	35.55	-453.71	-2717.66
16	30	30.46	31.53	11.67	-116.14	500.58	2650.16
17	30	-30.46	-31.53	-11.69	117.20	-500.58	-2650.12
17	31	35.46	58.73	27.56	93.83	582.03	1554.76
18	31	-35.45	-58.73	-27.58	-93.24	-582.03	-1554.80
18	32	40.45	136.19	27.38	-148.44	707.67	1056.75
19	32	-40.45	-136.19	-27.38	148.44	-707.67	-1056.75
19	33	144.47	214.05	23.37	-380.72	835.05	170.53
20	33	-144.46	-214.05	-23.43	380.79	-835.05	-170.38
20	34	149.46	291.56	23.23	-622.66	963.45	-1104.37
21	34	-149.45	-291.56	-23.29	622.21	-963.45	1104.62
21	37	154.45	316.59	23.23	-706.71	1091.39	-2675.11
22	37	-154.44	286.14	25.25	-594.52	-1091.40	2675.16
22	44	159.44	-261.25	-25.31	509.89	976.84	-1278.42
23	44	-159.45	261.25	25.25	-510.40	-976.84	1278.21
23	45	65.43	-183.54	-20.59	257.85	862.23	-171.50
24	45	-65.43	183.54	20.57	-257.91	-862.23	171.40
24	46	70.44	-142.04	-11.74	62.12	766.26	639.45
25	46	-70.44	142.04	11.74	-62.12	-766.26	-639.45
25	47	75.44	-64.44	-11.94	-190.36	695.32	1144.91
26	47	-75.44	64.44	11.91	190.79	-695.32	-1144.84
26	48	-80.56	17.35	-12.02	-441.71	623.80	1258.88
27	48	80.56	-17.35	12.02	441.73	-623.81	-1258.87
27	49	-85.55	-10.53	10.90	-13.06	639.45	3215.34
28	49	85.55	10.53	-10.87	14.29	-639.45	-3215.33
28	50	-90.55	14.46	10.81	-101.69	682.01	3255.24
29	50	90.56	-14.46	-10.77	102.99	-682.01	-3255.20
29	51	-95.56	64.35	27.21	70.21	773.73	1570.03
30	51	95.57	-64.36	-27.17	-69.61	-773.73	-1570.06
30	52	100.44	137.83	27.09	-191.48	897.41	1066.05
31	52	-100.43	-137.83	-27.09	191.48	-897.41	-1066.05
31	53	105.43	215.57	28.44	-426.17	1028.16	171.93
32	53	-105.42	-215.57	-28.48	426.24	-1028.16	-171.76
32	54	110.42	293.25	28.28	-685.77	1158.31	-1111.03
33	54	-110.42	-293.25	-28.28	685.79	-1158.31	1111.02
33	57	214.44	318.29	28.36	-776.04	1288.18	-2688.64
34	57	-214.43	286.89	25.81	-572.99	-1288.18	2688.78
34	64	120.42	-261.89	-25.75	484.25	1147.47	-1290.14
35	64	-120.42	261.89	25.75	-484.23	-1147.47	1290.15
35	65	-224.57	-216.03	-17.31	272.82	1022.58	-266.60
36	65	224.55	216.03	17.48	-273.02	-1022.58	266.38
36	66	-229.55	-138.33	-17.68	9.93	922.92	630.22
37	66	229.55	138.33	17.69	-9.92	-922.92	-630.22
37	67	-234.55	-60.62	-17.89	-253.19	822.23	1138.31
38	67	234.55	60.62	17.97	253.60	-822.24	-1138.22
38	68	-239.55	-7.49	-13.56	-433.96	735.28	1570.18
39	68	239.55	7.49	13.48	433.40	-735.28	-1570.33
39	69	-244.55	-10.31	4.43	-67.82	742.15	3224.70
40	69	244.55	10.31	-4.15	71.55	-742.15	-3224.63
40	70	-249.55	14.75	4.09	-161.13	751.12	3263.24
41	70	249.55	-14.75	-4.19	159.83	-751.12	-3263.30
41	71	-254.55	62.93	22.71	48.05	810.53	1563.63
42	71	254.56	-62.93	-22.61	-47.43	-810.53	-1563.65
42	72	-259.56	142.72	23.49	-198.57	916.45	1071.23
43	72	259.57	-142.72	-23.39	198.98	-916.45	-1071.16
43	73	165.42	216.22	23.61	-463.91	1022.24	170.54
44	73	-165.42	-216.22	-23.61	463.91	-1022.24	-170.53
44	74	269.43	293.95	23.52	-727.35	1128.59	-1115.76
45	74	-269.42	-293.95	-23.62	726.92	-1128.59	1116.04
45	77	274.42	319.14	23.56	-816.48	1234.70	-2698.87
46	77	-274.43	287.06	25.99	-516.57	-1234.71	2698.87
46	84	279.43	-262.03	-26.04	427.70	1092.99	-1297.86
47	84	-279.43	262.03	26.04	-427.73	-1092.99	1297.85
47	85	284.43	-220.49	-18.82	436.26	980.62	167.43
48	85	-284.44	220.49	18.71	-436.19	-980.62	-167.60
48	86	-289.57	-138.16	-18.41	177.66	877.10	1064.42
49	86	289.56	138.17	18.52	-177.26	-877.11	-1064.48
49	87	-294.56	-60.39	-17.04	-299.16	775.73	1129.95
50	87	294.56	60.39	17.04	299.18	-775.73	-1129.94
50	88	-299.56	-35.45	5.04	-20.61	703.79	3132.59
51	88	299.56	35.45	-4.93	21.80	-703.79	-3132.58
51	89	-304.56	-10.31	4.87	-109.79	716.43	3218.34
52	89	304.56	10.31	-4.87	109.79	-716.43	-3218.34
52	90	-309.51	14.67	0.39	-191.26	729.46	3257.15
53	90	309.51	-14.67	-0.26	192.56	-729.46	-3257.07
53	91	-314.51	64.77	18.68	42.42	801.67	1573.94
54	91	314.52	-64.77	-18.56	-41.82	-801.67	-1573.95
54	92	-319.52	142.37	18.36	-211.07	905.74	1066.81
55	92	319.53	-142.37	-18.24	211.50	-905.74	-1066.72
55	93	324.47	215.30	18.73	-465.63	1009.37	185.38
56	93	-324.47	-215.30	-18.73	465.63	-1009.37	-185.39
56	94	329.47	292.87	18.53	-718.40	1114.26	-1095.75
57	94	-329.47	-292.87	-18.53	718.38	-1114.26	1095.77
57	97	334.47	317.93	18.47	-803.65	1218.42	-2672.89

58	97	-334.48	283.90	29.85	-437.00	-1218.42	2673.03
58	104	339.48	-259.02	-29.90	352.78	1080.90	-1287.45
59	104	-339.48	259.02	29.91	-352.76	-1080.90	1287.46
59	105	-245.51	-216.57	-20.49	407.09	964.64	179.24
60	105	245.50	216.57	20.60	-407.01	-964.64	-179.41
60	106	-349.51	-139.07	-20.72	164.55	873.06	1079.14
61	106	349.52	139.07	20.72	-164.57	-873.06	-1079.13
61	107	-349.51	-61.50	-19.57	-310.40	773.79	1138.14
62	107	349.51	61.50	19.71	310.85	-773.78	-1138.01
62	108	-349.51	-37.10	1.45	-39.64	685.76	3140.48
63	108	349.51	37.10	-1.31	40.84	-685.76	-3140.46
63	109	-349.51	-12.17	1.25	-122.16	692.08	3224.26
64	109	349.50	12.17	-1.39	120.94	-692.08	-3224.30
64	110	-349.50	12.59	1.33	-201.08	698.97	3262.26
65	110	349.51	-12.59	-1.06	203.63	-698.97	-3262.10
65	111	-349.51	62.40	17.83	17.79	753.82	1579.12
66	111	349.52	-62.40	-17.70	-17.19	-753.82	-1579.13
66	112	-349.52	139.76	17.50	-211.44	841.83	1073.72
67	112	349.52	-139.76	-17.49	211.47	-841.83	-1073.71
67	113	-250.50	217.08	17.37	-439.97	928.91	182.10
68	113	250.51	-217.08	-17.28	440.04	-928.91	-181.93
68	114	349.42	293.36	19.29	-666.08	1021.99	-1087.13
69	114	-349.42	-293.36	-19.29	666.08	-1021.99	1087.13
69	117	349.42	318.15	19.23	-742.57	1118.20	-2655.28
70	117	-349.43	281.26	30.57	-370.19	-1118.20	2655.28
70	124	349.42	-292.61	-18.59	578.75	981.38	-1089.96
71	124	-349.41	292.61	18.73	-578.31	-981.38	1090.19
71	125	-349.59	-215.95	-17.88	363.77	887.82	170.32
72	125	349.58	215.95	18.02	-363.71	-887.82	-170.47
72	126	-349.58	-138.73	-18.22	150.55	797.22	1057.17
73	126	349.57	138.73	18.36	-150.13	-797.22	-1057.23
73	127	-349.57	-61.98	-16.50	-33.25	708.98	1561.26
74	127	349.57	61.98	16.64	33.85	-708.98	-1561.24
74	128	-349.57	-12.76	-2.10	109.33	639.36	3247.81
75	128	349.56	12.76	2.10	-109.33	-639.36	-3247.81
75	129	-349.56	11.91	-2.16	37.78	628.58	3210.53
76	129	349.56	-11.91	2.30	-36.56	-628.58	-3210.55
76	130	-349.56	36.41	-2.36	-33.82	617.05	3128.74
77	130	349.56	-36.41	2.50	35.07	-617.05	-3128.73
77	131	-349.57	60.67	15.46	212.16	679.90	1133.99
78	131	349.56	-60.67	-15.59	-212.59	-679.90	-1133.91
78	132	-349.56	137.79	15.39	14.30	757.37	637.74
79	132	349.58	-137.79	-14.99	-13.56	-757.37	-637.75
79	133	-349.58	214.90	14.79	-184.68	831.81	-243.97
80	133	349.57	-214.90	-14.92	184.78	-831.81	243.90
80	134	349.43	256.57	24.71	-309.32	948.96	-1267.37
81	134	-349.42	-256.57	-24.85	308.84	-948.96	1267.49
81	137	349.42	281.15	24.79	-376.01	1072.93	-2651.14
82	137	-349.41	316.71	22.26	-576.30	-1072.94	2651.30
82	144	-349.59	-290.84	-21.37	507.57	961.72	-1077.10
83	144	349.57	290.84	21.64	-508.41	-961.72	1076.71
83	145	-349.57	-213.79	-21.84	321.98	853.01	184.87
84	145	349.57	213.79	21.85	-321.98	-853.01	-184.88
84	146	-349.57	-136.75	-22.05	135.59	743.27	1061.24
85	146	349.57	136.75	22.04	-135.61	-743.27	-1061.23
85	147	-349.57	-60.21	-21.36	-25.87	632.80	1556.13
86	147	349.55	60.21	21.63	27.08	-632.80	-1556.11
86	148	-349.55	-10.88	-10.37	96.74	529.33	3231.98
87	148	349.55	10.88	10.37	-96.68	-529.34	-3231.98
87	149	-349.55	-11.47	-6.08	101.63	477.55	2742.35
88	149	349.55	11.47	6.21	-100.64	-477.55	-2742.39
88	150	-349.55	-15.69	8.43	387.11	458.97	1216.43
89	150	349.55	15.69	-8.42	-387.09	-458.97	-1216.43
89	151	-349.55	61.31	8.22	207.37	500.58	1102.37
90	151	349.55	-61.31	-8.08	-206.93	-500.58	-1102.46
90	152	349.45	100.78	21.81	121.32	558.03	551.48
91	152	-349.45	-100.78	-21.80	-121.33	-558.03	-551.47
91	153	349.45	177.78	21.60	-58.39	666.55	-144.95
92	153	-349.44	-177.78	-21.74	58.33	-666.55	144.97
92	154	349.44	254.78	21.54	-238.06	774.76	-1226.37
93	154	-349.43	-254.78	-21.68	237.60	-774.76	1226.46
93	157	349.43	279.27	21.62	-300.45	882.88	-2600.94
94	157	-349.43	312.73	17.14	-607.85	-882.88	2601.00
94	163	349.43	-288.38	-17.20	545.26	797.14	-1059.21
95	163	-349.44	288.38	17.07	-545.66	-797.14	1059.01
95	164	349.43	-236.96	-15.76	427.02	712.96	-757.43
96	164	-349.44	236.96	15.63	-427.30	-712.96	757.27
96	165	349.44	-160.44	-15.02	278.87	637.26	219.21
97	165	-349.44	160.44	15.02	-278.86	-637.26	-219.22
97	166	-349.56	-114.04	-3.59	404.69	584.93	2281.48
98	166	349.56	114.04	3.73	-403.83	-584.93	-2281.64
98	167	-349.56	-37.01	-3.93	223.04	565.80	2659.25
99	167	349.56	37.01	4.06	-222.03	-565.80	-2659.34
99	168	-349.56	-78.01	6.43	503.92	554.11	1094.23
100	168	349.56	78.01	-6.43	-503.90	-554.11	-1094.24
100	169	-349.56	-23.62	6.29	370.54	585.99	1387.33
101	169	349.56	23.62	-6.15	-370.01	-585.99	-1387.47
101	170	-349.56	53.43	5.95	178.56	616.26	1312.96
102	170	349.56	-53.43	-5.95	-178.56	-616.26	-1312.96
102	171	-349.56	130.48	5.75	-12.90	645.52	853.18
103	171	349.56	-130.48	-5.48	13.57	-645.52	-853.17
103	172	-349.57	170.74	16.74	-122.71	729.70	116.28
104	172	349.57	-170.74	-16.74	122.71	-729.70	-116.28
104	173	349.43	253.27	17.20	-311.84	816.16	-1162.09
105	173	-349.43	-253.27	-17.21	311.82	-816.16	1162.09
105	176	349.43	277.87	17.15	-380.86	901.95	-2529.31
106	176	-349.43	320.92	19.77	-513.08	-901.95	2529.38
106	182	349.43	-296.45	-19.83	443.21	803.06	-946.94
107	182	-349.44	296.45	19.69	-443.59	-803.06	946.77
107	183	-349.56	-187.35	-19.28	225.40	704.97	282.30
108	183	349.56	187.35	19.29	-225.39	-704.97	-282.31
108	184	-349.56	-110.17	-19.49	10.84	608.02	1026.10
109	184	349.56	110.17	19.62	-10.47	-608.02	-1026.10
109	185	-349.56	-32.94	-19.82	-204.21	509.44	1383.89
110	185	349.56	32.94	19.82	204.24	-509.44	-1383.89
110	186	-349.56	44.33	-20.02	-419.09	409.83	1355.43
111	186	349.54	-44.33	20.30	420.15	-409.83	-1355.10
111	187	-349.54	99.15	-20.44	-584.08	307.90	957.04
112	187	349.54	-99.15	20.44	584.08	-307.90	-957.04
112	188	-375.01	215.16	-19.08	-267.52	208.30	2646.13
113	188	375.00	-215.16	19.23	268.53	-208.30	-2646.03
113	189	-375.00	327.80	-20.83	-313.63	108.17	1288.62
114	189	375.00	-327.80	20.83	313.65	-108.17	-1288.62
114	192	0.00	185.22	-15.47	-1141.34	0.00	0.23
134	6	-0.56	126.29	-0.01	0.00	-0.03	-0.94
134	3	8.41	-152.33	0.00	0.00	0.02	661.58
135	3	0.00	-125.92	-0.01	0.00	-0.02	-535.17
135	1	0.00	-17.10	0.00	0.00	0.03	0.00
136	22	5.89	462.94	-0.01	0.00	-0.05	9.94
136	18	-0.33	-645.62	0.01	0.00	0.03	1129.40
137	18	0.00	-558.77	-0.04	0.00	-0.03	-977.73
137	16	0.00	469.10	-0.01	0.00	0.06	0.00
138	43	-1.02	483.46	-0.01	0.00	-0.03	-1.72
138	37	-0.85	-673.34	0.02	0.00	0.04	1177.30
139	37	-0.02	-592.81	0.04	0.00	-0.04	-1037.34
139	35	-0.01	480.18	-0.01	0.01	0.02	0.01
140	63	1.08	664.53	0.00	0.00	-0.04	1.82
140	57	-1.13	-479.29	0.02	0.00	0.03	837.10

141	57	0.00	-663.85	0.00	0.00	-0.02	-1161.35
141	55	0.07	464.18	-0.01	0.00	0.02	0.00
142	83	-16.73	-154.87	0.00	0.00	-0.02	-28.20
142	77	-2.09	-482.15	0.01	0.00	0.04	840.73
143	77	0.11	-820.74	0.02	0.00	-0.02	-1435.46
143	75	0.08	409.75	-0.01	0.01	0.02	-0.01
144	103	-8.08	214.23	0.00	0.00	-0.02	-13.63
144	97	-5.08	-830.59	0.00	0.00	0.02	1446.65
145	97	0.03	-612.36	0.00	0.00	-0.01	-1070.46
145	95	0.00	483.58	0.02	0.00	0.02	0.00
146	123	3.74	480.29	0.01	0.00	-0.03	6.31
146	117	-37.35	-130.86	0.01	-0.01	0.02	166.17
147	117	0.03	53.17	0.01	0.00	-0.02	92.98
147	115	0.00	479.47	0.01	0.00	0.03	0.00
148	143	-15.73	401.37	0.01	0.01	-0.02	-26.68
148	137	-1.85	-478.97	0.01	0.00	0.02	835.37
149	137	0.00	-664.39	0.00	0.00	-0.02	-1162.27
149	135	0.00	480.12	0.00	0.00	0.02	0.00
150	162	-13.41	442.53	0.00	-0.01	-0.01	-22.68
150	157	-2.44	-483.23	-0.02	0.00	0.01	841.75
151	157	-0.01	-328.95	0.00	0.01	-0.01	-575.51
151	156	0.02	-140.47	0.01	0.00	0.01	0.00
152	181	-3.21	286.35	0.01	0.01	-0.01	-5.43
152	176	3.81	-273.93	0.00	-0.01	0.01	485.97
153	176	0.00	-282.59	0.00	-0.01	-0.01	-494.39
153	174	0.00	282.72	0.00	0.01	0.01	0.00
154	195	-6.52	172.77	0.00	0.00	-0.01	-10.99
154	192	2.67	-160.33	356.25	-600.64	1514.08	685.92
155	192	0.00	-170.56	356.25	-600.63	-1514.08	-724.90
155	190	0.00	238.93	0.00	0.00	0.01	0.00
156	7	-0.01	-181.38	0.00	0.00	0.00	0.00
156	4	-15.57	-31.41	0.00	0.00	0.00	133.51
157	4	0.00	181.84	0.00	0.00	0.00	772.84
157	2	0.00	-181.84	0.00	0.00	0.00	0.00
158	23	0.02	-645.12	0.00	0.00	0.00	0.00
158	19	-52.27	622.62	0.00	0.00	0.01	-1089.70
159	19	0.00	645.60	0.00	0.00	0.00	1129.66
159	17	0.00	-645.60	0.00	0.00	0.00	0.00
160	42	-0.01	-672.82	0.00	0.00	0.00	0.00
160	38	-54.58	605.79	0.01	0.00	0.02	-1060.47
161	38	0.00	673.18	0.00	0.00	0.00	1177.96
161	36	0.00	-673.18	0.00	0.00	0.00	0.00
162	62	0.00	-663.97	0.00	0.00	0.00	0.00
162	58	0.00	663.97	0.00	0.00	0.00	-1162.30
163	58	0.00	664.26	0.00	0.00	0.00	1162.07
163	56	0.00	-664.26	0.00	0.00	0.00	0.00
164	82	-0.01	-666.34	0.00	0.00	0.00	0.00
164	78	0.01	666.34	0.00	0.00	0.00	-1166.77
165	78	0.00	666.77	0.00	0.00	0.00	1166.14
165	76	0.00	-666.77	0.00	0.00	0.00	0.00
166	102	0.02	-665.34	0.00	0.00	0.00	0.00
166	98	45.36	-15.97	0.00	0.00	0.01	27.98
167	98	0.00	666.09	0.00	0.00	0.00	1164.42
167	96	0.00	-666.09	0.00	0.00	0.00	0.00
168	122	0.00	-666.39	0.00	0.00	0.00	0.00
168	118	-51.73	709.18	0.01	0.00	0.01	-1241.81
169	118	0.00	666.83	0.00	0.00	0.00	1166.24
169	116	0.00	-666.83	0.00	0.00	0.00	0.00
170	142	-0.01	-663.72	0.00	0.00	0.00	0.00
170	138	-55.29	579.23	0.00	0.00	0.00	-1013.99
171	138	0.00	664.18	0.00	0.00	0.00	1161.90
171	136	0.00	-664.18	0.00	0.00	0.00	0.00
172	161	-0.01	-673.08	0.00	0.00	0.00	0.00
172	158	-51.88	835.72	0.00	0.00	0.00	-1462.87
173	158	0.00	673.49	0.00	0.00	0.00	1178.30
173	155	0.00	-673.49	0.00	0.00	0.00	0.00
174	180	0.02	-644.87	0.00	0.00	0.00	0.00
174	177	-0.02	644.87	0.00	0.00	0.00	-1128.78
175	177	0.00	645.28	0.00	0.00	0.00	1128.92
175	175	0.00	-645.28	0.00	0.00	0.00	0.00
176	196	-0.01	-181.49	0.00	0.00	0.00	0.00
176	193	-0.64	197.32	356.25	0.00	1514.07	-838.63
177	193	0.00	198.69	356.25	0.00	-1514.07	844.43
177	191	0.00	-181.96	0.00	0.00	0.00	0.00
182	7	181.38	0.00	0.01	0.00	0.00	0.00
182	6	34.81	0.00	21.86	0.00	36.85	0.00
183	2	181.84	0.00	0.00	0.00	0.00	0.00
183	1	-181.84	0.00	0.00	0.00	0.00	0.00
184	23	645.12	0.00	-0.02	0.00	0.00	0.00
184	22	-625.93	0.00	56.09	0.00	94.57	0.00
185	17	645.60	0.00	0.00	0.00	0.00	0.00
185	16	116.21	0.00	0.00	0.00	0.00	0.00
186	42	672.82	0.00	0.01	0.00	0.00	0.00
186	43	-653.24	0.00	59.31	0.00	99.99	0.00
187	36	673.18	0.00	0.00	0.00	0.00	0.00
187	35	135.98	0.00	0.00	0.00	0.01	0.00
188	62	663.97	0.00	0.00	0.00	0.00	0.00
188	63	-607.30	0.00	51.98	0.00	87.65	0.00
189	56	664.26	0.00	0.00	0.00	0.00	0.00
189	55	136.30	0.00	0.00	0.00	0.01	0.00
190	82	666.34	0.00	0.01	0.00	0.00	0.00
190	83	-615.27	0.00	55.48	0.00	93.57	0.00
191	76	666.78	0.00	0.00	0.00	0.00	0.00
191	75	154.92	0.00	0.00	0.00	0.01	0.00
192	102	665.34	0.00	-0.02	0.00	0.00	0.00
192	103	-666.00	0.00	56.02	0.00	94.47	0.00
193	96	666.10	0.00	0.00	0.00	0.00	0.00
193	95	162.49	0.00	0.00	0.00	0.01	0.00
194	122	666.40	0.00	0.00	0.00	0.00	0.00
194	123	-752.53	0.00	56.99	0.00	96.15	0.00
195	116	666.83	0.00	0.00	0.00	0.00	0.00
195	115	148.82	0.00	0.00	0.00	0.01	0.00
196	142	663.73	0.00	0.01	0.00	0.00	0.00
196	143	-814.51	0.00	63.87	0.00	107.71	0.00
197	136	664.17	0.00	0.00	0.00	0.00	0.00
197	135	137.07	0.00	0.00	0.00	0.01	0.00
198	161	673.08	0.00	0.01	0.00	0.00	0.00
198	162	-849.82	0.00	56.45	0.00	95.21	0.00
199	155	673.49	0.00	0.00	0.00	0.00	0.00
199	156	176.22	0.00	0.00	0.00	0.01	0.00
200	180	644.87	0.00	-0.02	0.00	0.00	0.00
200	181	-768.10	0.00	47.39	0.00	79.89	0.00
201	175	645.28	0.00	0.00	0.00	0.00	0.00
201	174	174.76	0.00	0.00	0.00	0.00	0.00
202	196	181.49	0.00	0.01	0.00	0.00	0.00
202	195	-173.57	-187.50	22.51	0.00	37.95	316.13
203	191	181.96	0.00	0.00	0.00	0.00	0.00
203	190	-181.96	0.00	0.00	0.00	0.00	0.00
206	21	673.52	0.00	10.58	0.00	-1754.84	0.13
206	20	-673.52	0.00	-10.58	0.00	1731.56	-0.13
207	20	673.52	0.00	10.58	0.00	-1731.56	0.13
207	19	-673.52	0.00	-10.58	0.00	1689.25	-0.13
208	40	699.65	0.00	0.30	0.00	-1815.08	0.34
208	39	-699.65	0.00	-0.30	0.00	1814.90	-0.34
209	39	699.65	0.00	0.30	0.00	-1814.90	0.34
209	41	-699.65	0.00	-0.30	0.00	1813.40	-0.34
210	41	699.65	0.00	0.30	0.00	-1813.40	0.34
210	38	-699.65	0.00	-0.30	0.00	1812.20	-0.34

211	60	686.78	0.00	-9.06	0.00	-1672.22	0.02
211	59	-686.78	0.00	9.06	0.00	1702.12	-0.02
212	59	686.78	0.00	-9.06	0.00	-1702.12	0.02
212	61	-686.78	0.00	9.06	0.00	1747.42	-0.02
213	61	686.78	0.00	-9.06	0.00	-1747.42	0.02
213	58	-686.78	0.00	9.06	0.00	1783.67	-0.02
214	80	691.21	0.00	4.77	0.00	-1924.10	-0.02
214	79	-691.21	0.00	-4.77	0.00	1908.35	0.02
215	79	691.21	0.00	4.77	0.00	-1908.35	-0.02
215	81	-691.21	0.00	-4.77	0.00	1884.50	0.02
216	81	691.21	0.00	4.77	0.00	-1884.50	-0.02
216	78	-691.21	0.00	-4.77	0.00	1865.42	0.02
217	100	692.39	0.00	5.31	0.00	-1961.13	-0.12
217	99	-692.39	0.00	-5.31	0.00	1943.61	0.12
218	99	692.39	0.00	5.31	0.00	-1943.61	-0.12
218	101	-692.39	0.00	-5.31	0.00	1917.06	0.12
219	101	692.39	0.00	5.31	0.00	-1917.06	-0.12
219	98	-690.00	0.00	-0.57	0.00	1898.92	0.12
220	120	692.70	0.00	6.75	0.00	-1925.56	0.20
220	119	-692.70	0.00	-6.75	0.00	1903.28	-0.20
221	119	692.70	0.00	6.75	0.00	-1903.28	0.20
221	121	-692.70	0.00	-6.75	0.00	1869.53	-0.20
222	121	692.70	0.00	6.75	0.00	-1869.53	0.20
222	118	-692.70	0.00	-6.75	0.00	1842.52	-0.20
223	140	694.08	0.00	-19.62	0.00	-1561.68	0.09
223	139	-694.08	0.00	19.62	0.00	1626.44	-0.09
224	139	694.08	0.00	-19.62	0.00	-1626.44	0.09
224	141	-694.08	0.00	19.62	0.00	1724.56	-0.09
225	141	694.08	0.00	-19.62	0.00	-1724.56	0.09
225	138	-850.89	0.00	51.51	0.00	1865.84	-0.09
226	160	702.47	0.00	28.40	0.00	-2209.40	0.07
226	159	-841.99	0.00	9.94	0.00	2097.25	-0.08
227	159	841.99	0.00	-9.94	0.00	-2097.25	0.08
227	158	-841.99	0.00	9.94	0.00	2137.02	-0.08
228	179	511.74	0.00	-24.65	0.00	-1368.93	-0.02
228	178	-511.77	0.00	24.97	0.00	1461.16	0.02
229	178	511.77	0.00	-24.97	0.00	-1461.16	-0.02
229	177	-806.11	0.00	38.66	0.00	1580.20	0.02
230	5	264.49	0.00	0.93	0.00	-1617.52	0.07
230	4	-264.49	0.00	-0.93	0.00	1616.60	-0.07
231	194	246.29	-375.00	4.38	0.00	-1527.04	-375.01
231	193	-246.29	375.00	-4.38	0.00	1522.67	0.01

proc Viaducto Papiol

HIPOTESIS 131

MOME Z MAX envolvente sobrecarga

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
1	3	0.00	264.11	-1.19	1609.39	0.00	0.26
1	8	3.25	115.10	-6.01	28.58	1.08	-582.46
2	8	-3.25	-115.10	6.01	-28.58	-1.08	582.46
2	9	6.50	115.10	-6.01	28.58	2.16	-1164.94
3	9	-6.50	-115.10	-3.97	-24.51	22.63	1164.92
3	10	9.76	115.10	-6.01	29.49	3.27	-1747.38
4	10	-9.75	-115.10	6.01	-28.83	-3.27	1747.39
4	11	13.00	115.10	-6.01	28.83	4.35	-2329.86
5	11	-13.01	-115.10	6.01	-29.71	-4.35	2329.85
5	12	16.26	115.10	-6.01	29.71	5.46	-2912.32
6	12	-16.26	-115.10	6.00	-31.98	-5.46	2912.29
6	13	19.51	115.10	-6.00	31.98	6.64	-3494.76
7	13	-19.51	-115.10	6.00	-30.66	-6.64	3494.77
7	14	43.75	157.32	-4.18	73.06	-122.29	-4064.80
8	14	-43.76	-157.32	4.15	-76.23	122.29	4064.74
8	15	50.01	186.94	-4.39	81.76	-145.25	-4867.99
9	15	-50.01	-186.94	4.39	-81.66	145.25	4867.99
9	18	56.26	697.05	-11.18	123.90	-180.60	-8032.99
10	18	-56.26	866.12	-12.31	-227.91	180.61	8033.04
10	24	62.51	-657.21	8.09	200.84	-107.56	-4306.84
11	24	-62.51	657.21	-8.12	-202.48	107.57	4306.77
11	25	-104.50	-56.95	2.90	3.19	-23.75	-2192.64
12	25	104.50	56.95	-2.82	-4.95	23.75	2192.64
12	26	-74.99	-4.11	3.91	120.32	-161.71	-1996.62
13	26	74.99	4.11	-3.94	-119.52	161.71	1996.67
13	27	-81.24	6.89	3.74	116.87	-142.50	-2017.03
14	27	81.24	-6.89	-3.71	-117.64	142.50	2016.98
14	28	-87.49	17.89	3.51	114.99	-124.43	-2092.34
15	28	87.50	-17.89	-3.44	-116.62	124.44	2092.25
15	29	-93.74	50.08	4.41	155.46	-133.40	-2270.39
16	29	93.74	-50.08	-4.45	-154.60	133.41	2270.45
16	30	-99.99	61.08	4.25	151.95	-111.66	-2561.76
17	30	99.99	-61.08	-4.21	-152.98	111.66	2561.70
17	31	-106.24	72.08	4.01	150.33	-91.12	-2908.01
18	31	106.24	-72.08	-3.97	-151.43	91.12	2907.95
18	32	40.52	98.73	0.94	82.26	1.36	-3322.22
19	32	-40.52	-98.73	-0.94	-82.25	-1.36	3322.22
19	33	144.50	101.51	5.68	81.17	18.45	-3832.93
20	33	-144.49	-101.51	-5.73	-82.63	-18.45	3832.90
20	34	-125.00	666.08	-3.29	5.10	40.35	-5589.75
21	34	125.00	-666.08	3.34	-7.33	-40.35	5589.75
21	37	-131.25	780.87	-4.94	-19.71	19.66	-9220.58
22	37	131.25	896.55	-12.14	-426.56	-19.65	9220.58
22	44	-137.50	-690.20	7.83	320.44	93.01	-5485.97
23	44	137.50	690.20	-7.78	-322.63	-93.01	5485.84
23	45	164.49	-102.30	0.32	-30.55	63.11	-3743.38
24	45	-164.49	102.30	-0.38	29.12	-63.11	3743.39
24	46	-70.48	-92.96	-3.90	-24.45	50.85	-3256.24
25	46	70.48	92.96	3.90	24.46	-50.85	3256.24
25	47	156.25	-23.78	3.18	79.15	-6.76	-3015.38
26	47	-156.25	23.78	-3.24	-80.29	6.76	3015.35
26	48	162.50	-12.78	3.04	74.64	8.95	-2910.57
27	48	-162.50	12.78	-3.05	-74.70	-8.95	2910.57
27	49	168.76	21.85	6.72	138.12	-0.35	-2864.81
28	49	-168.75	-21.85	-6.79	-139.21	0.35	2864.76
28	50	175.00	32.86	6.59	133.56	33.09	-2988.14
29	50	-175.00	-32.86	-6.66	-134.75	-33.09	2988.08
29	51	181.25	43.85	6.46	129.10	65.88	-3166.46
30	51	-181.25	-43.85	-6.53	-130.31	-65.88	3166.40
30	52	187.50	54.85	6.33	124.66	98.02	-3399.77
31	52	-187.50	-54.85	-6.33	-124.66	-98.02	3399.78
31	53	-204.49	104.25	3.24	106.05	120.85	-3826.95
32	53	204.49	-104.25	-3.16	-107.59	-120.85	3826.91
32	54	199.99	685.78	0.99	-146.39	343.34	-5697.15
33	54	-199.99	-685.78	-0.98	146.50	-343.34	5697.15
33	57	206.24	799.99	-0.62	-209.01	344.26	-9398.20
34	57	-206.24	894.42	-4.89	-430.35	-344.26	9398.21
34	64	212.49	-688.83	1.03	282.65	364.78	-5653.42
35	64	-212.49	688.83	-1.03	-282.54	-364.78	5653.42
35	65	-224.50	-99.69	-6.97	-75.67	144.69	-3809.29
36	65	224.49	99.69	7.15	72.70	-144.69	3809.35
36	66	-225.00	-44.72	-2.90	-7.48	140.49	-3326.18
37	66	225.00	44.72	2.90	7.42	-140.49	3326.18
37	67	-231.25	-33.72	-3.10	-14.07	125.49	-3143.47
38	67	231.25	33.72	3.18	12.94	-125.49	3143.47
38	68	-237.50	-22.72	-3.38	-19.59	109.08	-3015.76
39	68	237.50	22.72	3.30	20.67	-109.07	3015.76
39	69	-243.75	12.09	0.99	51.75	70.60	-2943.40
40	69	243.75	-0.13	13.37	201.58	-137.03	2943.35
40	70	-250.00	23.09	0.51	48.52	73.66	-3044.71
41	70	250.00	-23.09	-0.61	-47.30	-73.66	3044.73
41	71	-256.25	34.10	0.41	40.65	76.21	-3201.11
42	71	256.25	-34.10	-0.31	-41.93	-76.21	3201.09
42	72	-262.50	45.10	0.11	35.28	77.26	-3412.47
43	72	262.50	-45.10	-0.01	-36.58	-77.26	3412.45
43	73	264.51	100.08	2.04	87.96	104.32	-3825.83
44	73	-264.51	-100.09	-2.04	-88.04	-104.32	3825.83
44	74	-275.01	689.98	-3.80	-248.39	296.28	-5760.30
45	74	275.01	-689.98	3.90	246.20	-296.28	5760.40
45	77	-281.26	804.74	-5.50	-314.90	272.76	-9510.64
46	77	281.26	902.50	-6.49	-317.25	-272.76	9510.65
46	84	-287.51	-696.40	3.17	175.24	283.52	-5754.36
47	84	287.51	696.40	-3.17	-175.36	-283.52	5754.36
47	85	284.52	-104.56	-7.24	-97.40	111.74	-3826.87
48	85	-284.52	104.56	7.13	95.95	-111.73	3826.90
48	86	300.00	-41.96	-4.07	-95.39	90.26	-3406.44
49	86	-300.00	41.96	3.95	94.09	-90.26	3406.48
49	87	306.25	-30.96	-4.15	-99.74	70.00	-3210.79
50	87	-306.25	30.96	4.15	99.68	-70.00	3210.79
50	88	312.50	-19.96	-4.35	-105.33	48.76	-3070.10
51	88	-312.50	19.96	4.23	104.16	-48.76	3070.14
51	89	318.75	-8.96	-4.43	-109.81	27.12	-2984.44
52	89	-318.75	8.96	4.43	109.81	-27.12	2984.44
52	90	325.00	25.88	-1.33	-53.82	16.54	-3072.64
53	90	-325.00	-25.88	1.20	52.59	-16.54	3072.66
53	91	331.25	36.88	-1.40	-58.24	10.05	-3216.14
54	91	-331.26	-36.88	1.27	57.02	-10.05	3216.16
54	92	337.51	47.88	-1.47	-62.67	3.19	-3414.64
55	92	-337.50	-47.88	1.34	61.30	-3.18	3414.67
55	93	-225.47	104.33	0.03	47.54	67.42	-3824.59
56	93	225.47	-104.33	-0.03	-47.47	-67.43	3824.59
56	94	349.99	695.65	-3.48	-281.40	207.93	-5761.81
57	94	-349.99	-695.65	3.47	281.28	-207.94	5761.81
57	97	356.24	810.24	-5.07	-340.48	186.58	-9513.19

58	97	-356.24	897.43	-6.73	-114.83	-186.58	9513.26
58	104	362.49	-691.51	3.97	15.44	183.59	-5755.07
59	104	-362.49	691.51	-3.97	-15.32	-183.59	5755.07
59	105	245.54	-102.68	-4.62	-87.50	101.66	-3831.19
60	105	-245.54	102.68	4.51	85.89	-101.66	3831.23
60	106	-375.00	-45.93	-4.26	-139.33	51.84	-3430.77
61	106	375.00	45.93	4.25	139.40	-51.84	3430.77
61	107	-375.00	-34.93	-4.45	-142.15	30.10	-3228.62
62	107	375.00	34.93	4.60	140.86	-30.10	3228.67
62	108	-375.00	-23.93	-4.80	-143.61	6.62	-3081.52
63	108	375.00	23.93	4.94	142.44	-6.62	3081.57
63	109	-375.00	-12.93	-5.14	-145.19	-18.58	-2989.41
64	109	375.00	12.93	5.00	146.32	18.58	2989.36
64	110	-375.00	21.89	-4.31	-133.06	-39.05	-3070.85
65	110	374.99	-21.89	4.60	130.66	39.06	3070.96
65	111	-374.99	32.89	-4.80	-133.41	-62.56	-3207.91
66	111	374.99	-32.89	4.95	132.19	62.56	3207.96
66	112	-374.99	43.89	-5.15	-134.94	-87.79	-3399.93
67	112	374.99	-43.89	5.15	134.88	87.78	3399.93
67	113	-349.47	102.52	-1.59	-19.93	-8.43	-3817.50
68	113	349.47	-102.52	1.72	18.48	8.43	3817.51
68	114	375.00	692.55	-6.02	-202.06	39.62	-5741.42
69	114	-375.00	-692.55	6.02	202.05	-39.62	5741.42
69	117	375.00	806.95	-7.62	-231.26	5.51	-9490.20
70	117	-375.00	896.42	-8.42	137.06	-5.51	9490.31
70	124	375.00	-690.66	6.03	-148.59	5.59	-5750.26
71	124	-375.01	690.66	-5.88	150.89	-5.59	5750.20
71	125	-349.47	-102.29	-0.65	-45.46	12.99	-3822.31
72	125	349.47	102.29	0.79	43.93	-12.99	3822.32
72	126	375.01	-47.54	-3.80	-120.86	-34.73	-3409.07
73	126	-375.01	47.54	3.65	119.50	34.73	3409.12
73	127	375.01	-36.54	-3.85	-118.20	-53.48	-3198.93
74	127	-375.01	36.54	3.71	116.98	53.49	3198.97
74	128	375.01	-25.54	-3.91	-115.68	-72.52	-3043.78
75	128	-375.01	25.54	3.91	115.68	72.52	3043.78
75	129	375.01	-14.54	-4.11	-114.38	-92.56	-2943.59
76	129	-375.01	14.54	3.97	113.26	92.56	2943.63
76	130	375.01	20.25	-6.62	-139.97	-139.84	-3016.52
77	130	-375.01	-20.25	6.47	138.77	139.84	3016.57
77	131	375.01	31.25	-6.67	-137.47	-172.68	-3145.31
78	131	-375.01	-31.25	6.81	138.66	172.68	3145.25
78	132	375.01	42.25	-7.01	-137.36	-207.23	-3328.99
79	132	-375.02	-42.25	6.58	133.50	207.23	3329.15
79	133	349.54	102.05	-3.41	-57.35	-132.18	-3813.54
80	133	-349.54	-102.05	3.54	58.79	132.18	3813.51
80	134	375.01	689.99	-9.32	-23.70	-171.28	-5652.92
81	134	-375.01	-689.99	9.18	21.56	171.29	5652.93
81	137	375.01	895.75	-13.21	44.30	-245.03	-9389.30
82	137	-375.02	798.12	-11.27	273.99	245.04	9389.23
82	144	375.02	-683.59	9.67	-229.53	-192.71	-5684.97
83	144	-375.01	683.59	-9.96	225.09	192.71	5685.15
83	145	349.53	-102.50	2.27	26.77	-70.93	-3819.26
84	145	-349.53	102.50	-2.28	-26.85	70.93	3819.26
84	146	-374.99	-51.07	2.81	-24.95	-131.41	-3392.48
85	146	374.99	51.07	-2.81	25.02	131.41	3392.48
85	147	-374.99	-40.07	2.61	-20.62	-117.84	-3164.64
86	147	374.99	40.07	-2.32	18.15	117.84	3164.66
86	148	-374.99	-29.07	2.12	-13.75	-106.74	-2991.82
87	148	374.99	29.07	-2.11	13.69	106.74	2991.82
87	149	-374.99	-18.07	1.91	-9.29	-96.67	-2873.99
88	149	374.99	18.07	-1.78	8.26	96.67	2873.99
88	150	-374.99	16.55	-2.18	-60.06	-106.53	-2925.41
89	150	374.99	-16.55	2.19	60.01	106.53	2925.42
89	151	-374.99	27.55	-2.39	-55.61	-117.95	-3035.65
90	151	374.99	-27.55	2.54	54.39	117.95	3035.68
90	152	-349.53	96.13	-2.43	-47.01	-61.54	-3278.72
91	152	349.53	-96.13	2.42	47.08	61.54	3278.72
91	153	-349.53	100.88	-2.45	-47.96	-74.71	-3770.33
92	153	349.53	-100.88	2.59	46.45	74.71	3770.35
92	154	-374.99	688.13	-9.07	173.30	-186.52	-5524.08
93	154	374.98	-688.13	9.22	-175.39	186.52	5524.01
93	157	-374.99	894.25	-12.34	295.89	-229.86	-9259.63
94	157	374.98	786.44	-13.35	193.94	229.86	9259.69
94	163	-374.98	-671.73	11.75	-154.15	-167.13	-5614.25
95	163	374.99	671.73	-11.60	152.02	167.13	5614.30
95	164	-349.53	-106.13	2.63	62.42	-27.40	-3839.04
96	164	349.53	106.13	-2.50	-63.88	27.40	3839.02
96	165	349.53	-98.43	1.75	65.35	-12.94	-3328.66
97	165	-349.53	98.43	-1.76	-65.42	12.94	3328.66
97	166	375.01	-71.94	5.15	79.34	-63.52	-2930.36
98	166	-375.01	71.94	-5.29	-80.46	63.52	2930.33
98	167	375.01	-60.94	5.09	84.21	-37.58	-2598.14
99	167	-375.01	60.94	-5.23	-85.19	37.58	2598.10
99	168	375.01	-49.94	5.03	88.94	-11.93	-2320.91
100	168	-375.01	49.94	-5.04	-88.99	11.93	2320.90
100	169	375.01	-17.77	3.37	51.42	0.72	-2157.00
101	169	-375.00	17.77	-3.51	-52.24	-0.72	2156.99
101	170	375.00	-6.77	3.31	55.99	17.76	-2095.63
102	170	-375.00	6.77	-3.31	-55.99	-17.76	2095.64
102	171	375.00	4.23	3.11	59.74	33.80	-2089.29
103	171	-375.00	-4.23	-3.40	-61.37	-33.80	2089.24
103	172	349.53	61.42	0.02	0.81	-12.62	-2283.12
104	172	-349.53	-61.43	-0.02	-0.81	12.62	2283.12
104	173	375.01	662.40	-6.97	210.73	-43.90	-4422.60
105	173	-375.01	-662.40	6.96	-210.82	43.90	4422.59
105	176	375.01	871.18	-9.57	283.09	-63.70	-8159.51
106	176	-375.01	711.33	-8.22	-89.37	63.70	8159.42
106	182	375.01	-201.29	3.26	77.86	-116.01	-4912.46
107	182	-375.01	201.29	-3.41	-79.82	116.01	4912.43
107	183	-374.99	-137.28	3.81	76.34	-96.86	-4089.61
108	183	374.99	137.28	-3.80	-76.42	96.86	4089.61
108	184	-349.53	-99.41	1.82	66.47	-43.75	-3571.59
109	184	349.53	99.41	-1.69	-67.76	43.75	3571.57
109	185	-349.53	-99.41	1.69	67.76	-35.29	-3074.53
110	185	349.53	99.41	-1.68	-67.82	35.29	3074.53
110	186	-349.53	-99.41	1.68	67.82	-26.87	-2577.50
111	186	349.53	99.41	-1.41	-69.83	26.87	2577.45
111	187	-349.53	-99.41	1.41	69.83	-19.81	-2080.43
112	187	349.53	99.41	-1.41	-69.83	19.81	2080.43
112	188	-349.53	-99.41	1.41	69.83	-12.75	-1583.40
113	188	349.53	99.41	-1.28	-70.43	12.75	1583.37
113	189	-349.53	-99.41	1.28	70.43	-6.36	-1086.34
114	189	349.53	99.41	-1.27	-70.45	6.36	1086.34
114	192	-712.50	403.62	0.25	101.76	0.00	-1201.30
134	6	24.53	97.76	0.00	0.00	-0.01	41.35
134	3	-4.81	73.38	0.00	0.00	0.00	-319.97
135	3	0.00	66.85	0.00	0.00	0.00	284.11
135	1	0.00	181.84	0.00	0.00	0.00	0.00
136	22	40.15	160.08	0.01	0.01	-0.01	67.69
136	18	18.93	234.50	-0.01	0.00	0.01	-378.47
137	18	0.01	204.11	-0.01	0.00	0.00	357.15
137	16	0.02	415.75	0.00	0.01	0.00	-0.01
138	43	50.09	62.09	-0.01	0.02	0.01	84.49
138	37	-3.05	279.42	0.00	0.00	-0.01	-494.25
139	37	0.01	181.51	0.00	0.00	0.00	317.64
139	35	0.01	520.99	0.00	0.01	0.00	-0.02
140	63	54.81	-61.66	0.01	0.00	0.00	92.52
140	57	-13.51	291.94	-0.01	0.01	0.00	-533.71

141	57	0.00	166.12	0.00	0.00	0.03	290.59
141	55	-0.08	992.95	0.00	0.00	0.00	-0.03
142	83	50.12	-60.00	0.00	0.00	0.00	84.56
142	77	-1.19	309.74	-0.01	0.00	-0.01	-544.41
143	77	0.06	187.19	0.01	0.00	0.00	327.43
143	75	0.07	370.60	0.00	0.00	0.00	-0.04
144	103	52.08	-37.91	-0.01	-0.01	0.01	87.89
144	97	-4.23	299.63	-0.01	0.01	0.00	-532.13
145	97	0.03	198.03	0.01	0.00	-0.01	346.16
145	95	-0.01	565.49	0.01	0.00	0.00	-0.02
146	123	50.59	0.16	0.00	0.01	-0.01	85.27
146	117	-1.50	246.87	0.01	0.00	0.00	-434.71
147	117	-0.01	219.87	0.00	-0.01	0.00	384.49
147	115	0.06	268.06	0.00	0.01	0.00	-0.02
148	143	47.86	43.32	0.00	0.01	0.00	80.68
148	137	-14.86	189.27	-0.01	0.00	0.00	-356.36
149	137	0.01	249.24	0.00	0.00	-0.01	436.01
149	135	-0.03	273.65	0.01	0.00	0.00	-0.02
150	162	44.91	235.74	0.00	0.00	0.00	75.76
150	157	38.43	226.75	-0.01	0.00	-0.01	-332.19
151	157	-0.06	309.69	0.01	0.01	0.00	541.85
151	156	-0.01	678.82	0.00	0.00	0.00	-0.01
152	181	43.26	195.55	0.00	0.00	0.00	72.95
152	176	-18.06	177.66	0.00	0.00	0.00	-341.42
153	176	-0.01	209.57	0.00	0.01	0.00	366.64
153	174	0.01	265.00	0.00	0.00	0.01	-0.01
154	195	20.16	123.23	-174.76	294.65	0.00	33.99
154	192	7.80	83.57	187.50	-316.13	796.88	-342.02
155	192	0.00	93.36	187.50	-316.13	-796.88	396.80
155	190	0.00	198.69	356.25	-600.64	0.00	0.00
156	7	-0.01	-181.38	0.00	0.00	0.00	0.00
156	4	-1.00	347.06	0.00	0.00	0.00	-1475.03
157	4	0.00	326.28	0.00	0.00	0.00	1386.69
157	2	0.00	-181.84	0.00	0.00	0.00	0.00
158	23	27.11	-690.59	0.00	0.00	0.00	0.00
158	19	-16.35	846.46	0.00	0.00	0.00	0.01
159	19	0.01	890.98	0.00	0.00	0.00	-1481.47
159	17	0.00	-394.47	0.00	0.00	0.00	1559.02
160	42	8.28	-280.82	0.00	0.00	0.00	-0.01
160	38	0.30	867.49	0.00	0.00	0.00	0.01
161	38	0.01	1015.49	0.00	0.00	0.00	-1518.53
161	36	0.03	-427.01	0.00	0.00	0.00	1776.94
162	62	30.42	-629.62	0.00	0.00	0.00	-0.01
162	58	-9.03	852.90	0.00	0.00	0.00	0.02
163	58	-0.03	1068.19	0.00	0.00	0.00	-1493.05
163	56	-0.03	-477.14	0.00	0.00	0.00	1868.73
164	82	-11.18	-284.39	0.00	0.00	0.00	-0.02
164	78	4.74	878.40	0.00	0.00	0.00	0.02
165	78	0.02	1077.37	0.00	0.00	0.00	-1538.05
165	76	-0.05	-782.50	0.00	0.00	0.00	1884.21
166	102	-11.71	-301.50	0.00	0.00	0.00	-0.03
166	98	3.52	888.11	0.00	0.00	0.00	0.02
167	98	0.04	1024.02	0.00	0.00	0.00	-1555.88
167	96	0.04	-831.92	0.00	0.00	0.00	1790.10
168	122	4.45	-339.85	0.00	0.00	0.00	-0.02
168	118	-27.91	913.82	0.00	0.00	0.01	0.02
169	118	-0.03	946.24	0.00	0.00	0.00	-1600.16
169	116	-0.04	-811.26	0.00	0.00	0.00	1654.96
170	142	14.92	-391.52	0.00	0.00	0.00	-0.03
170	138	-25.82	959.30	0.00	0.00	0.00	0.02
171	138	0.01	876.97	0.00	0.00	0.00	-1679.35
171	136	-0.01	-348.98	0.00	0.00	0.00	1534.16
172	161	-10.94	-493.77	0.00	0.00	0.00	-0.02
172	158	-12.62	1033.70	0.00	0.00	0.00	0.01
173	158	-0.02	925.24	0.00	0.00	0.00	-1809.42
173	155	-0.04	-683.13	0.00	0.00	0.00	1618.76
174	180	15.17	-404.56	0.00	0.00	0.00	-0.01
174	177	-20.54	873.15	0.00	0.00	0.00	0.01
175	177	0.00	795.84	0.00	0.00	0.00	-1528.36
175	175	-0.02	-465.06	0.00	0.00	0.00	1392.34
176	196	-0.01	-181.49	0.00	0.00	0.00	-0.01
176	193	-4.62	325.80	187.50	0.00	796.87	0.00
177	193	0.00	368.87	187.50	0.00	-796.87	-1384.64
177	191	0.00	-181.96	0.00	0.00	0.00	1567.71
182	7	181.38	0.00	0.01	0.00	0.00	0.00
182	6	-267.77	0.00	3.56	0.00	6.00	0.00
183	2	181.84	0.00	0.00	0.00	0.00	-0.01
183	1	-243.88	0.00	0.00	0.00	0.00	0.00
184	23	645.12	0.00	-0.02	0.00	0.00	-0.01
184	22	-401.32	0.00	5.05	0.00	8.52	0.00
185	17	645.60	0.00	0.00	0.00	0.00	-0.01
185	16	-466.71	0.00	0.00	0.00	0.00	0.00
186	42	672.82	0.00	0.01	0.00	0.00	-0.01
186	43	-292.45	0.00	10.73	0.00	18.11	0.00
187	36	673.18	0.00	0.00	0.00	0.00	-0.01
187	35	-560.42	0.00	0.00	0.00	0.00	0.00
188	62	663.97	0.00	0.00	0.00	0.00	-0.01
188	63	-255.30	0.00	4.74	0.00	7.98	0.00
189	56	664.26	0.00	0.00	0.00	0.00	-0.01
189	55	-556.95	0.00	0.00	0.00	0.00	0.00
190	82	666.34	0.00	0.01	0.00	0.00	-0.01
190	83	-267.15	0.00	11.58	0.00	19.57	0.00
191	76	666.78	0.00	0.00	0.00	0.00	-0.01
191	75	-539.72	0.00	0.00	0.00	0.00	0.00
192	102	665.34	0.00	-0.02	0.00	0.00	-0.01
192	103	-325.65	0.00	13.73	0.00	23.14	0.00
193	96	666.10	0.00	0.00	0.00	0.00	-0.01
193	95	-477.72	0.00	0.00	0.00	0.00	0.00
194	122	666.40	0.00	0.00	0.00	0.00	-0.01
194	123	-416.23	0.00	16.01	0.00	26.96	0.00
195	116	666.83	0.00	0.00	0.00	0.00	-0.01
195	115	-385.51	0.00	0.00	0.00	0.00	0.00
196	142	663.73	0.00	0.01	0.00	0.00	-0.01
196	143	-484.35	0.00	20.36	0.00	34.31	0.00
197	136	664.17	0.00	0.00	0.00	0.00	-0.01
197	135	-306.35	0.00	0.00	0.00	0.00	0.00
198	161	673.08	0.00	0.01	0.00	0.00	-0.01
198	162	-483.81	0.00	14.32	0.00	24.15	0.00
199	155	673.49	0.00	0.00	0.00	0.00	-0.01
199	156	-285.49	0.00	0.00	0.00	0.00	0.00
200	180	644.87	0.00	-0.02	0.00	0.00	-0.01
200	181	-316.67	0.00	4.31	0.00	7.26	0.00
201	175	645.28	0.00	0.00	0.00	0.00	-0.01
201	174	-329.17	0.00	0.00	0.00	0.00	0.00
202	196	181.49	0.00	0.01	0.00	0.00	-0.01
202	195	-160.33	356.26	2.67	0.00	4.51	0.00
203	191	181.96	0.00	0.00	0.00	0.00	-600.64
203	190	-170.56	356.25	0.00	0.00	0.00	0.00
206	21	675.20	0.00	9.44	0.00	-1725.58	-600.63
206	20	-675.20	0.00	-9.44	0.00	1704.82	0.13
207	20	675.20	0.00	9.44	0.00	-1704.82	-0.13
207	19	-675.20	0.00	-9.44	0.00	1667.08	0.13
208	40	701.27	0.00	-0.12	0.00	-1805.38	-0.13
208	39	-701.27	0.00	0.12	0.00	1805.45	0.33
209	39	701.27	0.00	-0.12	0.00	-1805.45	-0.33
209	41	-701.27	0.00	0.12	0.00	1806.05	0.33
210	41	701.27	0.00	-0.12	0.00	-1806.05	-0.33
210	38	-701.27	0.00	0.12	0.00	1806.53	-0.33

211	60	664.18	0.00	-8.63	0.00	-1533.62	0.02
211	59	-664.18	0.00	8.63	0.00	1562.09	-0.02
212	59	664.18	0.00	-8.63	0.00	-1562.09	0.02
212	61	-664.18	0.00	8.63	0.00	1605.23	-0.02
213	61	664.18	0.00	-8.63	0.00	-1605.23	0.02
213	58	-664.18	0.00	8.63	0.00	1639.74	-0.02
214	80	863.23	0.00	17.28	0.00	1862.76	0.07
214	79	-863.23	0.00	-17.28	0.00	-1919.79	-0.07
215	79	863.23	0.00	17.28	0.00	1919.79	0.07
215	81	-863.23	0.00	-17.28	0.00	-2006.19	-0.07
216	81	863.23	0.00	17.28	0.00	2006.19	0.07
216	78	-863.23	0.00	-17.28	0.00	-2075.30	-0.07
217	100	861.57	0.00	17.10	0.00	1788.36	0.10
217	99	-861.57	0.00	-17.10	0.00	-1844.77	-0.10
218	99	861.57	0.00	17.10	0.00	1844.77	0.10
218	101	-861.57	0.00	-17.10	0.00	-1930.25	-0.10
219	101	861.57	0.00	17.10	0.00	1930.25	0.10
219	98	-861.57	0.00	-17.10	0.00	-1998.64	-0.10
220	120	691.69	0.00	6.98	0.00	-1917.93	0.20
220	119	-691.69	0.00	-6.98	0.00	1894.89	-0.20
221	119	691.69	0.00	6.98	0.00	-1894.89	0.20
221	121	-691.69	0.00	-6.98	0.00	1859.99	-0.20
222	121	691.69	0.00	6.98	0.00	-1859.99	0.20
222	118	-691.69	0.00	-6.98	0.00	1832.06	-0.20
223	140	854.75	0.00	-52.62	0.00	-1187.24	0.09
223	139	-854.75	0.00	52.62	0.00	1360.88	-0.09
224	139	854.75	0.00	-52.62	0.00	-1360.88	0.09
224	141	-854.75	0.00	52.62	0.00	1623.98	-0.09
225	141	854.75	0.00	-52.62	0.00	-1623.98	0.09
225	138	-854.75	0.00	52.62	0.00	1834.46	-0.09
226	160	1661.84	0.00	-25.39	0.00	-400.01	0.09
226	159	-1661.84	0.00	25.39	0.00	509.17	-0.09
227	159	1661.84	0.00	-25.39	0.00	-509.17	0.09
227	158	-1661.84	0.00	25.39	0.00	610.72	-0.09
228	179	665.16	0.00	19.28	0.00	1195.05	0.02
228	178	-665.16	0.00	-19.28	0.00	-1266.39	-0.02
229	178	665.16	0.00	19.28	0.00	1266.39	0.02
229	177	-665.16	0.00	-19.28	0.00	-1343.52	-0.02
230	5	266.21	0.00	-1.15	0.00	-1588.91	0.07
230	4	-266.21	0.00	1.15	0.00	1590.06	-0.07
231	194	396.01	712.50	-0.64	0.00	6.44	712.50
231	193	-255.82	0.00	13.42	0.00	-1631.49	-0.01

proc Viaducto Papiol

HIPOTESIS 132

MOME Z MIN envolvente sobrecarga

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
1	3	0.00	262.39	-2.31	-1493.38	0.00	-0.23
1	8	-6.25	-421.67	2.03	-47.90	15.17	2437.20
2	8	6.25	421.67	-2.03	47.90	-15.17	-2437.20
2	9	-12.50	-284.72	0.03	-20.72	20.33	4189.79
3	9	12.50	284.72	-0.02	23.99	-20.33	-4189.78
3	10	-18.75	-157.04	-2.00	-15.59	12.80	5270.36
4	10	18.75	157.04	1.99	13.59	-12.80	-5270.37
4	11	-25.00	-20.48	-3.99	20.06	-2.17	5700.77
5	11	25.00	20.48	4.00	-17.89	2.17	-5700.78
5	12	-31.25	116.08	-6.00	51.49	-27.18	5448.38
6	12	31.25	-116.08	6.03	-47.24	27.18	-5448.42
6	13	-37.50	252.66	-8.03	80.76	-62.32	4513.16
7	13	37.50	-252.67	8.01	-82.47	62.32	-4513.12
7	14	-43.75	377.46	-9.51	66.01	-96.45	2933.58
8	14	43.74	-377.46	9.54	-63.72	96.45	-2933.63
8	15	-9.50	-29.21	1.84	17.45	-136.35	1188.93
9	15	9.50	29.21	-1.84	-17.48	136.35	-1188.93
9	18	94.51	-34.49	-2.74	17.18	-137.10	1349.48
10	18	-94.51	-101.51	-0.66	-82.30	137.10	-1349.48
10	24	99.51	101.51	0.66	82.30	-122.06	831.21
11	24	-99.51	-101.51	-0.70	-81.98	122.06	-831.24
11	25	104.50	-519.27	0.95	119.00	-6.34	1559.18
12	25	-104.50	519.27	-1.03	-117.75	6.34	-1559.28
12	26	-10.51	-365.38	5.28	101.19	9.71	3768.69
13	26	10.51	365.38	-5.29	-102.70	-9.71	-3768.65
13	27	81.26	-299.84	5.39	254.02	12.70	5295.39
14	27	-81.25	299.84	-5.42	-252.01	-12.69	-5295.49
14	28	87.50	-163.13	3.42	184.45	34.80	6466.31
15	28	-87.50	163.14	-3.49	-179.40	-34.80	-6466.45
15	29	93.75	-26.42	1.49	111.72	47.25	6953.73
16	29	-93.75	26.42	-1.45	-114.36	-47.25	-6953.68
16	30	100.00	110.31	-0.55	46.55	49.51	6757.34
17	30	-100.00	-110.31	0.51	-43.85	-49.51	-6757.36
17	31	106.25	247.06	-2.51	-24.08	41.98	5877.33
18	31	-106.25	-247.06	2.47	26.32	-41.98	-5877.32
18	32	112.50	353.98	-4.31	-9.67	6.71	4426.77
19	32	-112.50	-353.98	4.31	9.67	-6.71	-4426.77
19	33	118.75	488.50	-6.27	-56.38	-19.72	2333.49
20	33	-118.75	-488.50	6.22	57.27	19.71	-2333.47
20	34	-149.49	-26.88	-4.77	40.97	-156.54	1132.73
21	34	149.48	26.88	4.83	-40.52	156.54	-1132.75
21	37	-154.49	-26.88	-4.83	40.52	-168.92	1277.85
22	37	154.48	-104.25	-3.66	-103.48	168.92	-1277.86
22	44	-159.48	104.25	3.66	103.48	-138.87	767.36
23	44	159.49	-104.25	-3.60	-103.17	138.87	-767.40
23	45	143.75	-519.39	9.15	334.77	89.88	1876.90
24	45	-143.75	519.39	-9.20	-334.06	-89.88	-1877.03
24	46	-150.00	-393.00	7.27	270.36	130.72	4158.99
25	46	150.00	393.00	-7.27	-270.36	-130.72	-4158.99
25	47	-156.25	-286.46	7.43	386.40	199.84	5804.04
26	47	156.26	286.46	-7.37	-384.19	-199.84	-5804.18
26	48	-162.51	-149.65	5.37	251.06	231.69	6881.06
27	48	162.51	149.65	-5.37	-250.92	-231.70	-6881.07
27	49	-168.76	-12.85	3.37	117.68	253.53	7273.92
28	49	168.76	12.85	-3.30	-114.91	-253.53	-7273.97
28	50	-175.01	123.77	1.30	-19.77	265.04	6983.25
29	50	175.01	-123.77	-1.23	22.56	-265.04	-6983.24
29	51	-181.26	260.02	-0.77	-160.05	266.20	6010.38
30	51	181.26	-260.02	0.84	162.33	-266.20	-6010.31
30	52	-187.51	366.06	-2.66	-122.26	201.72	4469.01
31	52	187.51	-366.06	2.66	122.26	-201.72	-4469.00
31	53	-193.76	498.43	-4.64	-201.01	183.37	2293.41
32	53	193.75	-498.43	4.72	201.93	-183.37	-2293.33
32	54	209.49	-31.88	1.63	34.66	-94.43	1136.76
33	54	-209.49	31.88	-1.63	-34.68	94.43	-1136.76
33	57	214.49	-31.88	1.63	34.68	-98.04	1285.45
34	57	-214.49	-100.08	-6.30	-82.13	98.04	-1285.48
34	64	219.49	27.31	2.46	-11.18	-25.82	1116.94
35	64	-219.49	-27.31	-2.46	11.16	25.82	-1116.94
35	65	-218.75	-516.43	6.22	329.91	229.88	2203.57
36	65	218.76	516.43	-6.04	-328.19	-229.88	-2203.82
36	66	224.99	-379.32	3.66	241.37	252.43	4444.47
37	66	-224.99	379.32	-3.66	-241.29	-252.43	-4444.47
37	67	231.24	-272.79	3.17	344.82	321.71	6047.99
38	67	-231.24	272.79	-3.25	-342.64	-321.71	-6048.12
38	68	237.49	-135.99	1.25	192.32	332.97	7083.46
39	68	-237.49	136.00	-1.17	-194.87	-332.97	-7083.39
39	69	243.74	0.80	-0.83	44.51	333.80	7434.78
40	69	-243.74	-0.80	0.55	-35.89	-333.80	-7434.82
40	70	249.99	137.59	-2.55	-114.49	326.04	7102.24
41	70	-249.99	-137.59	2.65	111.65	-326.04	-7102.29
41	71	256.24	274.38	-4.65	-262.04	307.78	6085.71
42	71	-256.24	-274.38	4.55	264.48	-307.78	-6085.61
42	72	262.49	380.93	-5.54	-211.54	223.12	4497.95
43	72	-262.49	-380.93	5.44	213.25	-223.12	-4497.87
43	73	268.74	513.01	-7.68	-299.52	189.36	2275.24
44	73	-268.75	-513.01	7.67	299.57	-189.36	-2275.23
44	74	-269.52	-27.59	1.31	15.39	-51.76	1136.36
45	74	269.52	27.59	-1.21	-14.95	51.76	-1136.36
45	77	-274.52	-27.59	1.21	14.95	-57.46	1285.05
46	77	274.52	-104.34	-5.05	-38.14	57.46	-1285.07
46	84	-279.52	31.96	3.70	-34.19	-89.97	1133.14
47	84	279.52	-31.96	-3.69	34.22	89.97	-1133.14
47	85	293.75	-509.44	6.98	231.71	150.87	2245.33
48	85	-293.75	509.44	-7.09	-230.86	-150.87	-2245.42
48	86	-300.01	-383.33	5.50	153.11	184.29	4478.60
49	86	300.01	383.33	-5.38	-151.40	-184.29	-4478.66
49	87	-306.26	-276.88	4.78	205.85	241.65	6075.74
50	87	306.26	276.88	-4.77	-205.73	-241.64	-6075.74
50	88	-312.51	-140.18	2.77	86.26	260.51	7105.00
51	88	312.51	140.18	-2.65	-83.56	-260.51	-7105.03
51	89	-318.76	-3.49	0.65	-35.93	268.78	7450.80
52	89	318.76	3.49	-0.65	35.93	-268.78	-7450.80
52	90	-325.01	133.18	-1.35	-155.44	267.04	7113.18
53	90	325.01	-133.18	1.48	158.29	-267.04	-7113.11
53	91	-331.26	269.84	-3.48	-277.82	254.66	6092.17
54	91	331.26	-269.84	3.60	280.13	-254.66	-6092.06
54	92	-337.51	376.24	-4.65	-243.40	194.34	4500.64
55	92	337.50	-376.24	4.79	245.20	-194.35	-4500.54
55	93	-343.75	507.88	-6.94	-311.23	165.31	2275.62
56	93	343.76	-507.88	6.93	311.18	-165.32	-2275.62
56	94	230.46	-32.24	2.56	-13.73	15.52	1143.46
57	94	-230.46	32.24	-2.57	13.75	-15.52	-1143.46
57	97	235.46	-68.45	-7.75	-363.05	-52.33	1294.01

58	97	-235.46	-65.40	-8.84	-275.99	50.72	-1293.97
58	104	339.48	29.19	1.68	-39.24	-121.62	1137.07
59	104	-339.48	-29.19	-1.68	39.22	121.62	-1137.07
59	105	368.75	-509.84	7.29	75.42	80.15	2276.89
60	105	-368.75	509.84	-7.45	-74.46	-80.16	-2276.92
60	106	375.00	-378.02	5.43	25.50	113.16	4511.14
61	106	-375.00	378.03	-5.43	-25.59	-113.16	-4511.14
61	107	375.00	-271.78	4.38	-6.68	135.76	6095.78
62	107	-375.00	271.78	-4.53	9.12	-135.76	-6095.78
62	108	375.00	-135.29	2.53	-50.19	153.43	7113.46
63	108	-375.00	135.29	-2.67	52.89	-153.42	-7113.44
63	109	375.00	1.18	0.67	-93.89	161.80	7448.72
64	109	-374.99	-1.18	-0.53	91.06	-161.81	-7448.76
64	110	374.99	137.64	-1.47	-131.97	159.47	7101.72
65	110	-375.00	-137.64	1.17	137.51	-159.47	-7101.61
65	111	375.00	274.07	-3.17	-178.32	148.60	6072.36
66	111	-375.00	-274.07	3.03	180.63	-148.60	-6072.29
66	112	375.00	380.26	-4.07	-183.86	128.68	4473.39
67	112	-375.00	-380.26	4.06	183.95	-128.68	-4473.39
67	113	375.00	511.73	-6.20	-208.17	102.52	2242.20
68	113	-375.00	-511.73	6.05	209.03	-102.51	-2242.12
68	114	349.47	-30.30	1.77	-29.13	67.87	1137.74
69	114	-349.47	30.29	-1.77	29.13	-67.87	-1137.74
69	117	349.48	-102.69	-2.43	-80.62	-87.85	1292.42
70	117	-349.48	-30.03	-0.56	32.81	87.85	-1292.38
70	124	349.48	30.03	0.56	-32.81	-85.04	1142.23
71	124	-349.48	-30.03	-0.42	32.35	85.04	-1142.25
71	125	-374.99	-509.16	7.97	-107.95	-28.05	2275.77
72	125	374.99	509.16	-7.82	108.86	28.05	-2275.73
72	126	-374.99	-377.47	5.96	-105.08	6.42	4493.48
73	126	375.00	377.47	-5.81	106.88	-6.42	-4493.44
73	127	-375.00	-271.32	4.09	-228.01	-15.34	6075.77
74	127	375.00	271.32	-3.95	230.32	15.34	-6075.68
74	128	-375.00	-134.90	1.95	-166.01	-0.62	7091.24
75	128	375.00	134.90	-1.94	166.01	0.62	-7091.24
75	129	-375.00	1.53	-0.06	-101.54	4.10	7424.69
76	129	375.00	-1.53	0.20	104.36	-4.11	-7424.65
76	130	-375.00	137.97	-2.20	-39.71	-1.89	7075.92
77	130	375.00	-137.97	2.35	42.54	1.89	-7075.90
77	131	-375.00	274.42	-4.35	22.27	-18.63	6044.96
78	131	375.00	-274.42	4.21	-24.57	18.63	-6044.95
78	132	-375.00	380.65	-5.19	-30.59	8.51	4444.09
79	132	374.99	-380.65	5.62	35.75	-8.51	-4444.06
79	133	-374.99	512.34	-7.73	-5.70	-24.89	2210.44
80	133	375.00	-512.34	7.58	4.86	24.89	-2210.44
80	134	-349.53	-29.59	-0.18	-18.90	32.88	1125.70
81	134	349.53	29.59	0.31	19.33	-32.88	-1125.69
81	137	-349.53	-102.29	-1.70	-35.99	-42.74	1292.12
82	137	349.53	-30.34	-0.80	16.57	42.74	-1292.12
82	144	-349.53	30.34	0.80	-16.57	-38.75	1140.43
83	144	349.53	-30.34	-0.52	17.46	38.75	-1140.42
83	145	-374.99	-500.68	8.78	-222.08	-118.71	2295.99
84	145	374.99	500.68	-8.77	222.13	118.72	-2295.99
84	146	375.01	-369.77	6.44	-167.30	-84.28	4475.96
85	146	-375.01	369.77	-6.43	167.21	84.28	-4475.96
85	147	375.01	-263.41	5.98	-312.95	-121.88	6019.34
86	147	-375.01	263.41	-6.28	317.65	121.88	-6019.10
86	148	375.01	-126.81	4.28	-181.72	-95.50	6994.67
87	148	-375.01	126.81	-4.28	181.86	95.50	-6994.67
87	149	375.01	9.80	2.28	-45.78	-79.07	7287.18
88	149	-375.01	-9.80	-2.42	48.40	79.07	-7287.16
88	150	375.01	146.44	0.42	87.82	-71.97	6896.55
89	150	-375.01	-146.44	-0.43	-87.68	71.97	-6896.56
89	151	375.01	283.09	-1.57	224.02	-74.84	5822.75
90	151	-375.01	-283.09	1.42	-221.69	74.84	-5822.84
90	152	375.01	389.52	-4.10	129.00	-50.19	4177.99
91	152	-375.01	-389.52	4.11	-129.09	50.19	-4177.99
91	153	375.01	521.46	-6.08	193.20	-74.66	1899.61
92	153	-375.01	-521.46	5.93	-192.44	74.66	-1899.69
92	154	349.53	-102.50	2.96	29.85	47.12	793.50
93	154	-349.53	102.50	-3.09	-29.55	-47.12	-793.51
93	157	349.53	-102.50	3.09	29.55	62.57	1306.03
94	157	-349.53	-31.44	1.49	-11.66	-62.57	-1306.03
94	163	349.53	31.44	-1.49	11.66	55.12	1148.81
95	163	-349.53	-31.44	1.36	-11.22	-55.12	-1148.82
95	164	375.01	-483.20	7.91	-183.20	-41.23	2333.88
96	164	-375.01	483.20	-8.05	184.08	41.23	-2333.81
96	165	-374.99	-354.54	6.86	-125.19	-8.98	4430.50
97	165	374.99	354.54	-6.86	125.28	8.98	-4430.50
97	166	-374.99	-247.69	4.96	-196.03	-6.33	5894.80
98	166	375.00	247.69	-4.82	198.27	6.33	-5894.72
98	167	-375.00	-110.97	2.82	-91.82	12.78	6791.36
99	167	375.00	110.97	-2.68	94.41	-12.78	-6791.32
99	168	-375.00	25.75	0.68	11.99	21.17	7004.37
100	168	375.00	-25.75	-0.67	-11.85	-21.17	-7004.37
100	169	-375.00	162.45	-1.33	118.19	19.53	6533.88
101	169	375.00	-162.45	1.47	-115.71	-19.53	-6533.92
101	170	-375.00	299.14	-3.47	221.98	7.17	5379.96
102	170	375.00	-299.14	3.47	-221.98	-7.17	-5379.96
102	171	-349.53	364.63	-0.60	171.47	-49.77	3852.36
103	171	349.53	-364.62	0.87	-168.46	49.78	-3852.49
103	172	-349.53	514.30	-1.17	226.00	-53.15	1657.42
104	172	349.53	-514.31	1.17	-226.00	53.15	-1657.42
104	173	-349.53	-106.13	1.81	66.44	70.48	937.17
105	173	349.53	106.13	-1.80	-66.42	-70.48	-937.17
105	176	-349.53	-106.13	1.80	66.42	79.51	1467.85
106	176	349.53	-45.72	1.40	-21.25	-79.51	-1467.87
106	182	-349.53	45.72	-1.40	21.25	72.52	1239.28
107	182	349.53	-45.72	1.54	-20.75	-72.52	-1239.29
107	183	375.00	-397.38	3.46	25.17	103.23	2971.11
108	183	-375.00	397.38	-3.46	-25.11	-103.23	-2971.11
108	184	375.00	-272.53	0.98	73.31	136.89	4635.29
109	184	-375.00	272.53	-1.11	-71.65	-136.89	-4635.32
109	185	375.00	-135.92	-0.89	28.88	137.44	5656.45
110	185	-375.00	135.92	0.88	-28.77	-137.44	-5656.45
110	186	375.00	0.70	-2.88	-14.33	128.04	5994.50
111	186	-375.00	-0.70	2.59	19.01	-128.04	-5994.49
111	187	375.00	137.31	-4.59	-62.46	110.10	5649.47
112	187	-375.00	-137.31	4.59	62.46	-110.10	-5649.47
112	188	375.00	265.00	-5.67	-49.68	75.21	4652.29
113	188	-375.00	-265.00	5.52	51.45	-75.21	-4652.27
113	189	375.00	402.00	-7.52	-87.35	42.59	2984.77
114	189	-375.00	-402.00	7.52	87.41	-42.59	-2984.77
114	192	712.50	339.00	-3.91	-136.12	0.00	1201.30
134	6	-21.86	-34.81	0.00	0.00	0.01	-36.85
134	3	1.02	-347.06	0.00	-0.01	0.00	1476.75
135	3	0.00	-326.28	0.00	-0.01	0.00	-1386.69
135	1	0.00	181.84	0.00	0.00	0.00	0.00
136	22	-56.06	625.93	0.01	0.00	0.01	-94.57
136	18	16.33	-846.46	0.01	0.00	-0.02	1509.01
137	18	0.00	-890.98	0.02	0.00	0.00	-1559.02
137	16	0.02	795.16	0.01	0.00	0.00	0.01
138	43	-59.24	653.24	0.02	-0.01	0.00	-99.99
138	37	30.27	-855.31	-0.01	0.01	0.01	1548.31
139	37	0.01	-1015.48	0.00	0.00	0.00	-1776.95
139	35	-0.05	545.45	0.00	0.00	0.00	0.02
140	63	-51.95	607.30	0.00	0.00	-0.01	-87.65
140	57	9.70	-852.60	0.01	0.00	0.00	1508.71

141	57	-0.04	-1068.20	0.00	0.00	-0.01	-1868.72
141	55	0.01	943.28	0.00	0.00	0.00	0.03
142	83	-55.56	615.27	0.00	0.00	0.01	-93.53
142	77	-2.69	-877.41	0.01	0.00	0.01	1531.64
143	77	-0.09	-1077.37	-0.01	0.00	-0.01	-1884.27
143	75	0.04	456.77	0.01	0.00	0.00	0.03
144	103	-56.01	666.01	-0.01	0.01	0.01	-94.47
144	97	29.92	-872.43	0.01	0.00	0.00	1578.96
145	97	-0.10	-1024.02	-0.02	0.00	-0.01	-1790.09
145	95	0.11	830.26	0.02	0.00	-0.02	0.03
146	123	-56.98	752.52	0.00	-0.01	-0.01	-96.13
146	117	30.05	-913.13	-0.01	0.01	-0.01	1649.63
147	117	-0.09	-946.24	0.00	0.00	0.00	-1654.88
147	115	0.15	857.35	0.00	0.00	0.00	0.03
148	143	-63.88	814.51	0.00	-0.01	0.00	-107.71
148	137	51.53	-958.38	0.01	0.00	-0.01	1764.57
149	137	-0.01	-876.97	0.00	0.00	0.01	-1534.18
149	135	0.00	344.72	0.00	-0.01	0.00	0.02
150	162	-56.47	849.82	0.01	-0.01	0.00	-95.18
150	157	12.61	-1033.70	0.00	0.00	0.00	1830.70
151	157	0.02	-925.24	0.01	0.00	0.00	-1618.80
151	156	0.00	253.49	0.00	-0.01	0.00	0.02
152	181	-47.36	768.11	0.00	0.00	0.00	-79.90
152	176	20.53	-873.15	0.00	0.00	0.00	1563.01
153	176	0.01	-795.84	0.00	0.00	0.00	-1392.34
153	174	0.02	417.17	0.00	0.00	0.00	0.01
154	195	-22.51	173.57	187.50	-316.13	0.00	-37.95
154	192	4.62	-325.80	-187.50	316.13	-796.87	1392.42
155	192	0.00	-368.87	-187.50	316.13	796.87	-1567.71
155	190	0.00	165.24	-356.25	600.63	0.00	0.00
156	7	-0.01	-181.38	0.00	0.00	0.00	0.00
156	4	4.79	-73.38	0.00	0.00	0.00	311.88
157	4	0.00	-66.85	0.00	0.00	0.00	-284.11
157	2	0.00	-181.84	0.00	0.00	0.00	0.00
158	23	19.04	-152.12	0.00	0.00	0.00	-0.01
158	19	-18.93	-234.50	0.00	0.00	0.00	410.42
159	19	0.00	-204.11	0.00	0.00	0.00	-357.14
159	17	0.00	-728.53	0.00	0.00	0.00	0.01
160	42	31.32	-553.42	-0.01	0.00	0.00	-0.01
160	38	1.64	-280.39	0.00	0.00	0.00	490.81
161	38	0.02	-181.52	0.00	0.00	0.00	-317.62
161	36	0.00	-520.15	0.00	0.00	0.00	0.02
162	62	12.46	-369.79	0.00	0.00	0.00	-0.02
162	58	13.52	-291.94	0.00	0.00	0.00	511.07
163	58	0.04	-166.12	0.00	0.00	0.00	-290.63
163	56	-0.01	-664.25	0.00	0.00	0.00	0.02
164	82	-12.38	-261.60	0.00	0.00	0.00	-0.02
164	78	0.10	-310.57	0.00	0.00	0.00	543.80
165	78	-0.05	-187.18	0.00	0.00	0.00	-327.35
165	76	0.01	-926.52	0.00	0.00	0.00	0.03
166	102	9.88	-200.57	0.00	0.00	0.00	-0.02
166	98	1.33	-300.56	0.00	0.00	0.00	526.58
167	98	0.01	-198.03	0.00	0.00	0.00	-346.13
167	96	0.01	-876.13	0.00	0.00	0.00	0.03
168	122	12.40	-427.28	0.00	0.00	0.00	-0.02
168	118	-0.68	-247.56	0.00	0.00	0.00	433.50
169	118	0.04	-219.87	0.00	0.00	0.00	-384.56
169	116	0.02	-307.07	0.00	0.00	0.00	0.02
170	142	15.87	-726.63	0.00	0.00	0.00	-0.02
170	138	13.82	-189.35	0.00	0.00	0.00	331.49
171	138	-0.05	-249.24	0.00	0.00	0.00	-436.01
171	136	0.01	-714.46	0.00	0.00	0.00	0.02
172	161	24.53	-931.15	0.00	0.00	0.00	-0.01
172	158	-38.41	-226.74	0.00	0.00	0.00	396.91
173	158	-0.03	-309.69	0.00	0.00	0.00	-541.83
173	155	-0.05	-403.14	0.00	0.00	0.00	0.02
174	180	23.01	-414.90	0.00	0.00	0.00	0.00
174	177	18.04	-177.66	0.00	0.00	0.00	310.98
175	177	0.01	-209.57	0.00	0.00	0.00	-366.65
175	175	0.01	-516.63	0.00	0.00	0.00	0.01
176	196	-0.01	-181.49	0.00	0.00	0.00	0.00
176	193	-7.80	-83.57	-187.50	0.00	-796.88	355.16
177	193	0.00	-93.36	-187.50	0.00	796.88	-396.80
177	191	0.00	-181.96	0.00	0.00	0.00	0.00
182	7	181.38	0.00	0.01	0.00	0.00	0.00
182	6	58.46	0.00	-0.96	0.00	-1.62	0.00
183	2	181.84	0.00	0.00	0.00	0.00	0.00
183	1	52.59	0.00	0.00	0.00	0.00	0.00
184	23	645.12	0.00	-0.02	0.00	0.00	0.00
184	22	-309.88	0.00	17.65	0.00	29.76	0.01
185	17	645.60	0.00	0.00	0.00	0.00	0.00
185	16	-336.20	0.00	0.00	0.00	0.00	0.01
186	42	672.82	0.00	0.01	0.00	0.00	0.00
186	43	-286.44	0.00	13.22	0.00	22.31	0.01
187	36	673.18	0.00	0.00	0.00	0.00	0.00
187	35	-482.53	0.00	0.00	0.00	0.00	0.01
188	62	663.97	0.00	0.00	0.00	0.00	0.00
188	63	-250.22	0.00	5.36	0.00	9.05	0.01
189	56	664.26	0.00	0.00	0.00	0.00	0.00
189	55	-540.69	0.00	0.00	0.00	0.00	0.01
190	82	666.34	0.00	0.01	0.00	0.00	0.00
190	83	-244.43	0.00	8.21	0.00	13.82	0.01
191	76	666.78	0.00	0.00	0.00	0.00	0.00
191	75	-557.31	0.00	0.00	0.00	0.00	0.01
192	102	665.34	0.00	-0.02	0.00	0.00	0.00
192	103	-280.04	0.00	6.33	0.00	10.67	0.01
193	96	666.10	0.00	0.00	0.00	0.00	0.00
193	95	-523.32	0.00	0.00	0.00	0.00	0.01
194	122	666.40	0.00	0.00	0.00	0.00	0.00
194	123	-361.73	0.00	7.58	0.00	12.76	0.01
195	116	666.83	0.00	0.00	0.00	0.00	0.00
195	115	-445.21	0.00	0.00	0.00	0.00	0.01
196	142	663.73	0.00	0.01	0.00	0.00	0.00
196	143	-459.90	0.00	14.20	0.00	23.90	0.01
197	136	664.17	0.00	0.00	0.00	0.00	0.00
197	135	-352.12	0.00	0.00	0.00	0.00	0.01
198	161	673.08	0.00	0.01	0.00	0.00	0.00
198	162	-547.26	0.00	14.96	0.00	25.21	0.01
199	155	673.49	0.00	0.00	0.00	0.00	0.00
199	156	-305.86	0.00	0.00	0.00	0.00	0.01
200	180	644.87	0.00	-0.02	0.00	0.00	0.00
200	181	-499.06	0.00	3.07	0.00	5.17	0.01
201	175	645.28	0.00	0.00	0.00	0.00	0.00
201	174	-368.78	0.00	0.00	0.00	0.00	0.01
202	196	181.49	0.00	0.01	0.00	0.00	0.00
202	195	-197.32	-356.25	0.64	0.00	1.07	600.64
203	191	181.96	0.00	0.00	0.00	0.00	0.00
203	190	-198.69	-356.25	0.00	0.00	0.00	600.64
206	21	488.36	0.00	-19.22	0.00	1786.47	-0.10
206	20	-488.36	0.00	19.22	0.00	-1744.19	0.10
207	20	488.36	0.00	-19.22	0.00	1744.19	-0.10
207	19	-488.36	0.00	19.22	0.00	-1667.32	0.10
208	40	844.82	0.00	13.81	0.00	1882.96	-0.39
208	39	-844.82	0.00	-13.81	0.00	-1891.25	0.39
209	39	844.82	0.00	13.81	0.00	1891.25	-0.39
209	41	-844.82	0.00	-13.81	0.00	-1960.31	0.39
210	41	844.82	0.00	13.81	0.00	1960.31	-0.39
210	38	-844.82	0.00	-13.81	0.00	-2015.55	0.39

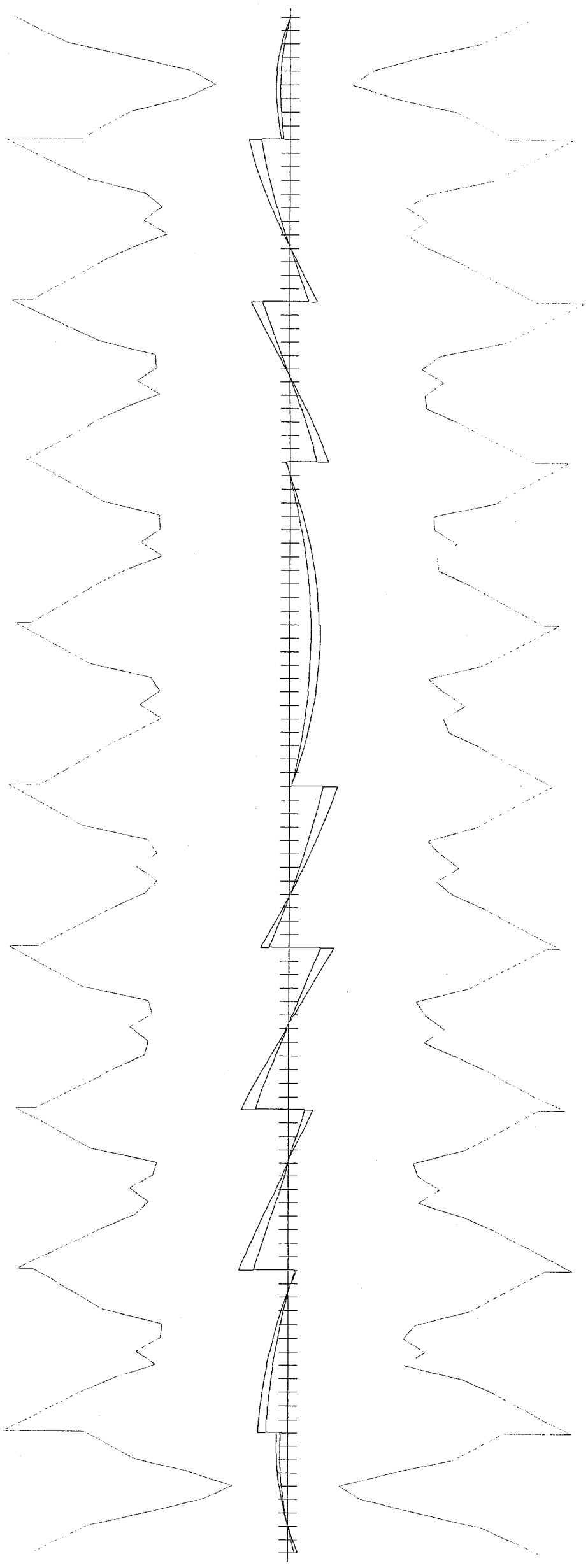
211	60	821.78	0.00	27.61	0.00	1547.43	-0.02
211	59	-821.78	0.00	-27.61	0.00	-1638.54	0.02
212	59	821.78	0.00	27.61	0.00	1638.54	-0.02
212	61	-821.78	0.00	-27.61	0.00	-1776.58	0.02
213	61	821.78	0.00	27.61	0.00	1776.58	-0.02
213	58	-821.78	0.00	-27.61	0.00	-1887.01	0.02
214	80	694.23	0.00	2.98	0.00	-1870.15	-0.02
214	79	-694.23	0.00	-2.98	0.00	1860.32	0.02
215	79	694.23	0.00	2.98	0.00	-1860.32	-0.02
215	81	-694.23	0.00	-2.98	0.00	1845.42	0.02
216	81	694.23	0.00	2.98	0.00	-1845.42	-0.02
216	78	-694.23	0.00	-2.98	0.00	1833.49	0.02
217	100	691.01	0.00	-2.35	0.00	-1833.28	-0.12
217	99	-691.01	0.00	2.35	0.00	1841.04	0.12
218	99	691.01	0.00	-2.35	0.00	-1841.04	-0.12
218	101	-691.01	0.00	2.35	0.00	1852.80	0.12
219	101	691.01	0.00	-2.35	0.00	-1852.81	-0.12
219	98	-691.01	0.00	2.35	0.00	1862.21	0.12
220	120	692.53	0.00	-15.46	0.00	2077.53	-0.22
220	119	-692.53	0.00	15.46	0.00	-2026.53	0.22
221	119	692.53	0.00	-15.46	0.00	2026.53	-0.22
221	121	-692.53	0.00	15.46	0.00	-1949.25	0.22
222	121	692.53	0.00	-15.46	0.00	1949.25	-0.22
222	118	-692.53	0.00	15.46	0.00	-1887.42	0.22
223	140	692.95	0.00	14.07	0.00	1635.14	-0.10
223	139	-692.95	0.00	-14.07	0.00	-1681.56	0.10
224	139	692.95	0.00	14.07	0.00	1681.56	-0.10
224	141	-692.95	0.00	-14.07	0.00	-1751.89	0.10
225	141	692.95	0.00	14.07	0.00	1751.90	-0.10
225	138	-692.95	0.00	-14.07	0.00	-1808.16	0.10
226	160	-61.49	0.00	-19.63	0.00	344.07	-0.01
226	159	61.49	0.00	19.63	0.00	-259.64	0.01
227	159	-61.49	0.00	-19.63	0.00	259.64	-0.01
227	158	61.49	0.00	19.63	0.00	-181.11	0.01
228	179	480.70	0.00	-24.78	0.00	-1303.64	-0.02
228	178	-480.70	0.00	24.78	0.00	1395.31	0.02
229	178	480.70	0.00	-24.78	0.00	-1395.31	-0.02
229	177	-480.70	0.00	24.78	0.00	1494.41	0.02
230	5	264.54	0.00	-2.37	0.00	1483.08	-0.08
230	4	-264.54	0.00	2.37	0.00	-1480.71	0.08
231	194	330.90	-712.51	-2.67	0.00	46.15	-712.50
231	193	-255.93	0.00	-3.34	0.00	1411.97	0.01

2. CÁLCULO DEL TABLERO

LEYES GRÁFICAS DE ESFUERZOS

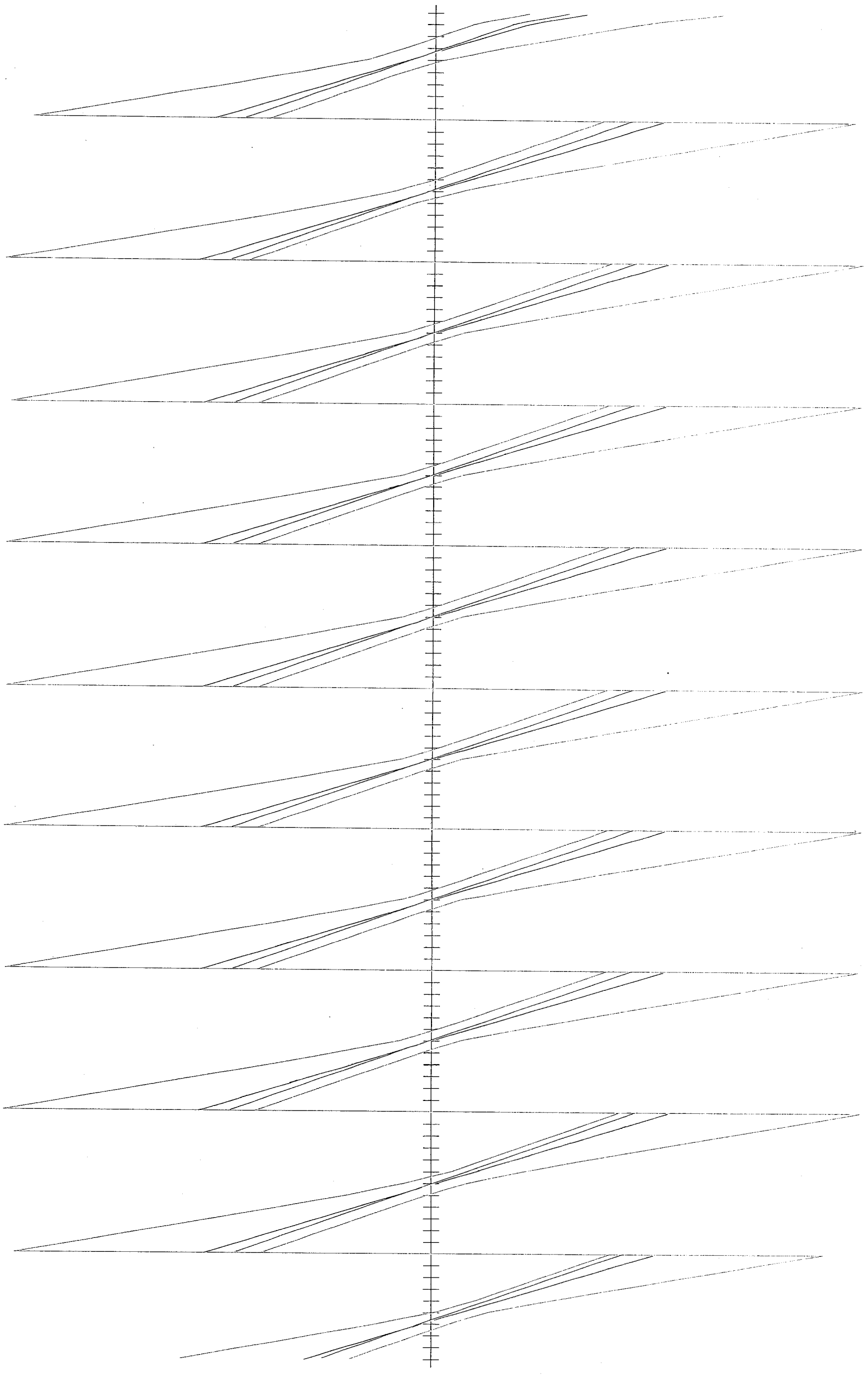
proc Viaducto Papiol

carga permanente (t=0)(sup)	M. X	300.0
carga permanente (t=0)(inf)	M. X	300.0
MOME X MAX envolvente (ELS)	M. X	300.0
MONE X MIN envolvente (ELS)	M. X	300.0



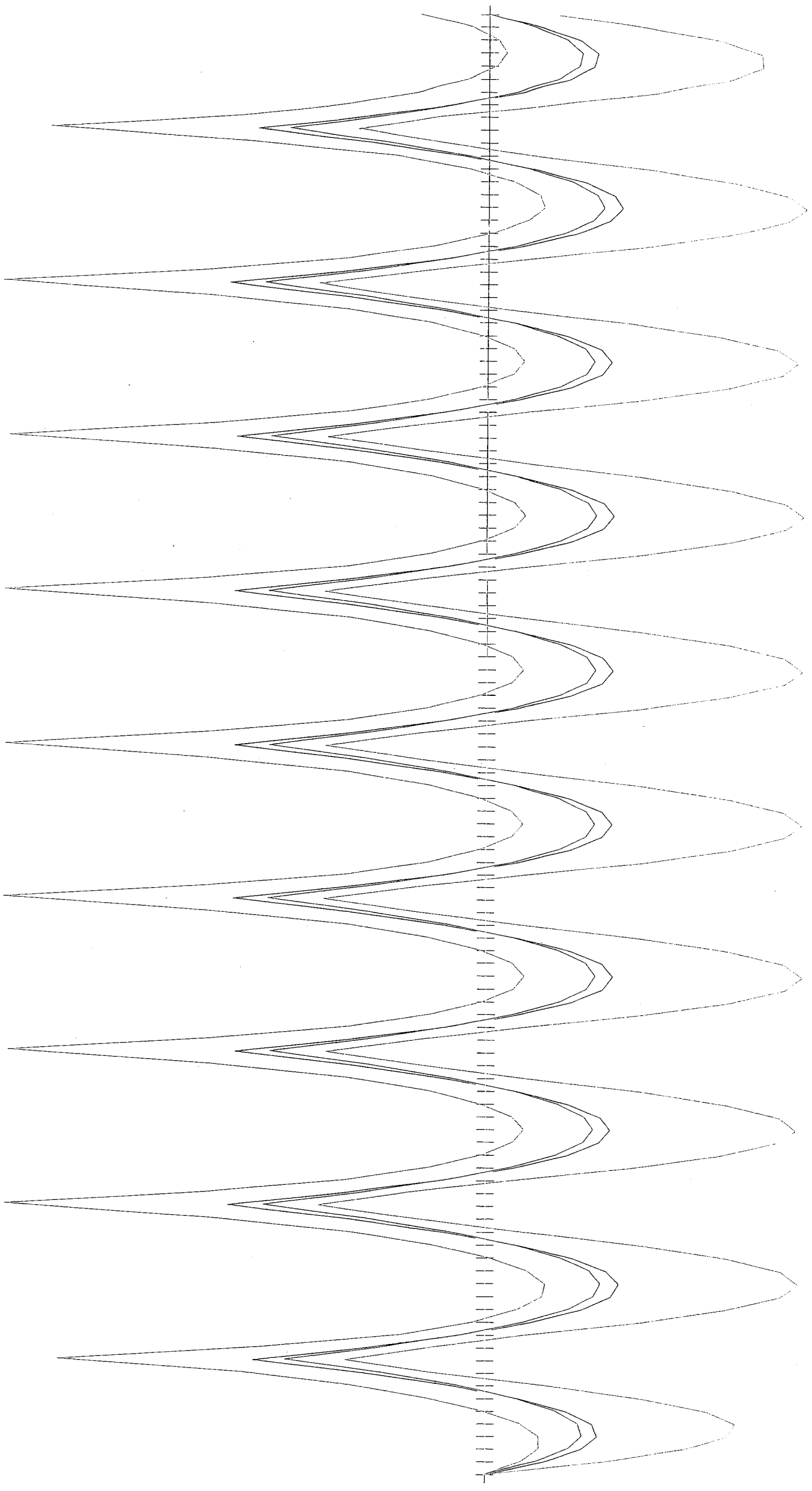
proc Viaducto Papiol
carga permanente (t=0)(sup)
carga permanente (t=0)(inf)
FUER Y MAX envolvente (ELS)
FUER Y MIN envolvente (ELS)

F. Y 200.0
F. Y 200.0
F. Y 200.0
F. Y 200.0



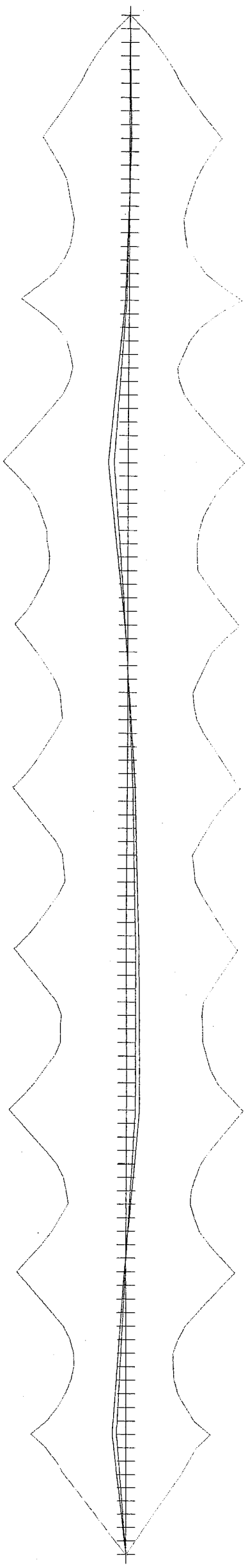
proc Viaducto Papiol
carga permanente (t=0)(sup)
carga permanente (t=0)(inf)
MOME Z MAX envolvente (ELS)
MOME Z MIN envolvente (ELS)

M. Z 2000.0
M. Z 2000.0
M. Z 2000.0
M. Z 2000.0



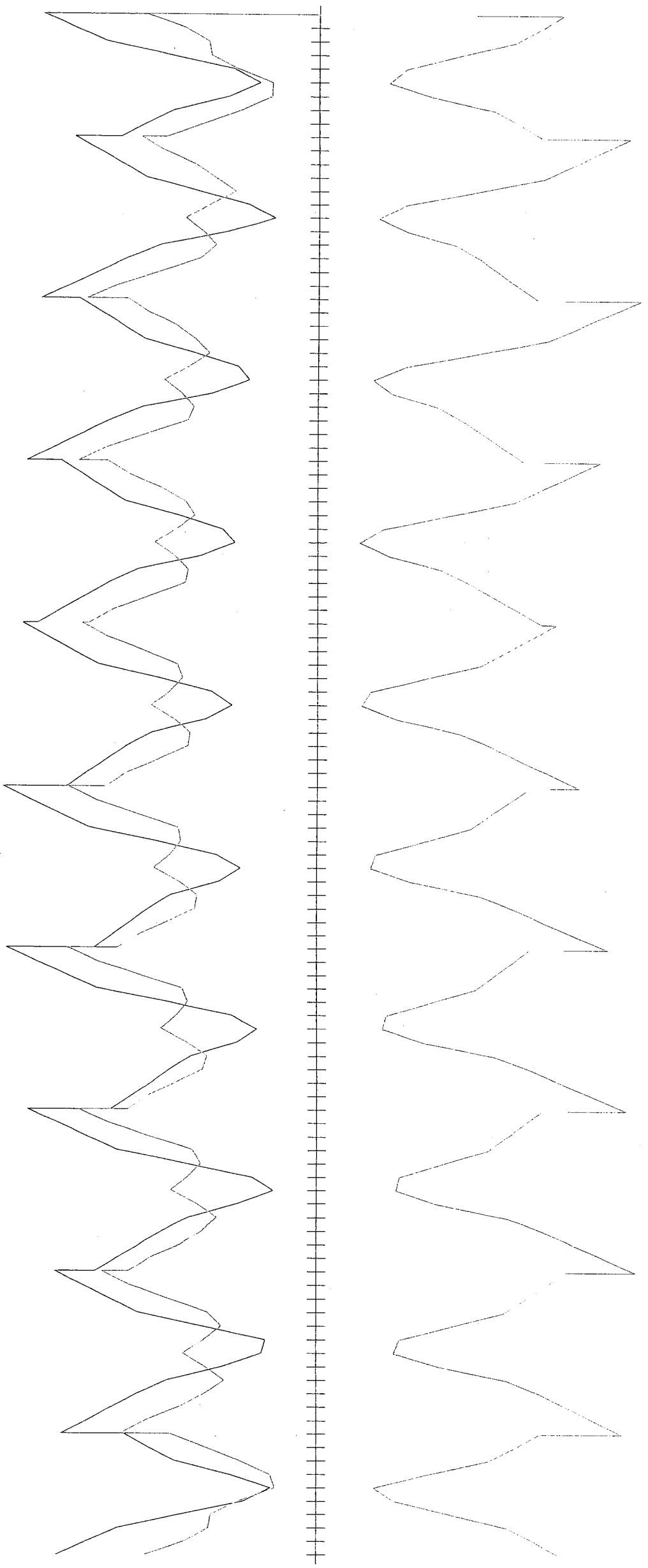
proc Viaducto Papiol
carga permanente (t=0)(sup)
carga permanente (t=0)(inf)
MOME Y MAX envolvente (ELS)
MOME Y MIN envolvente (ELS)

M. Y 500.0
M. Y 500.0
M. Y 500.0
M. Y 500.0



proc Viaducto Papiol
MOME X MAX sobrecarga + fr. + fc (ipf-75)
MOME X MIN sobrecarga + fr. + fc (ipf-75)
MOME X MAX sobrecarga + fr. + fc (ec-1)

M. X 300.0
M. X 300.0
M. X 300.0



proc Viaducto Papiol

MOME Z MAX sobrecarga + fr. + fc (ipf-75)

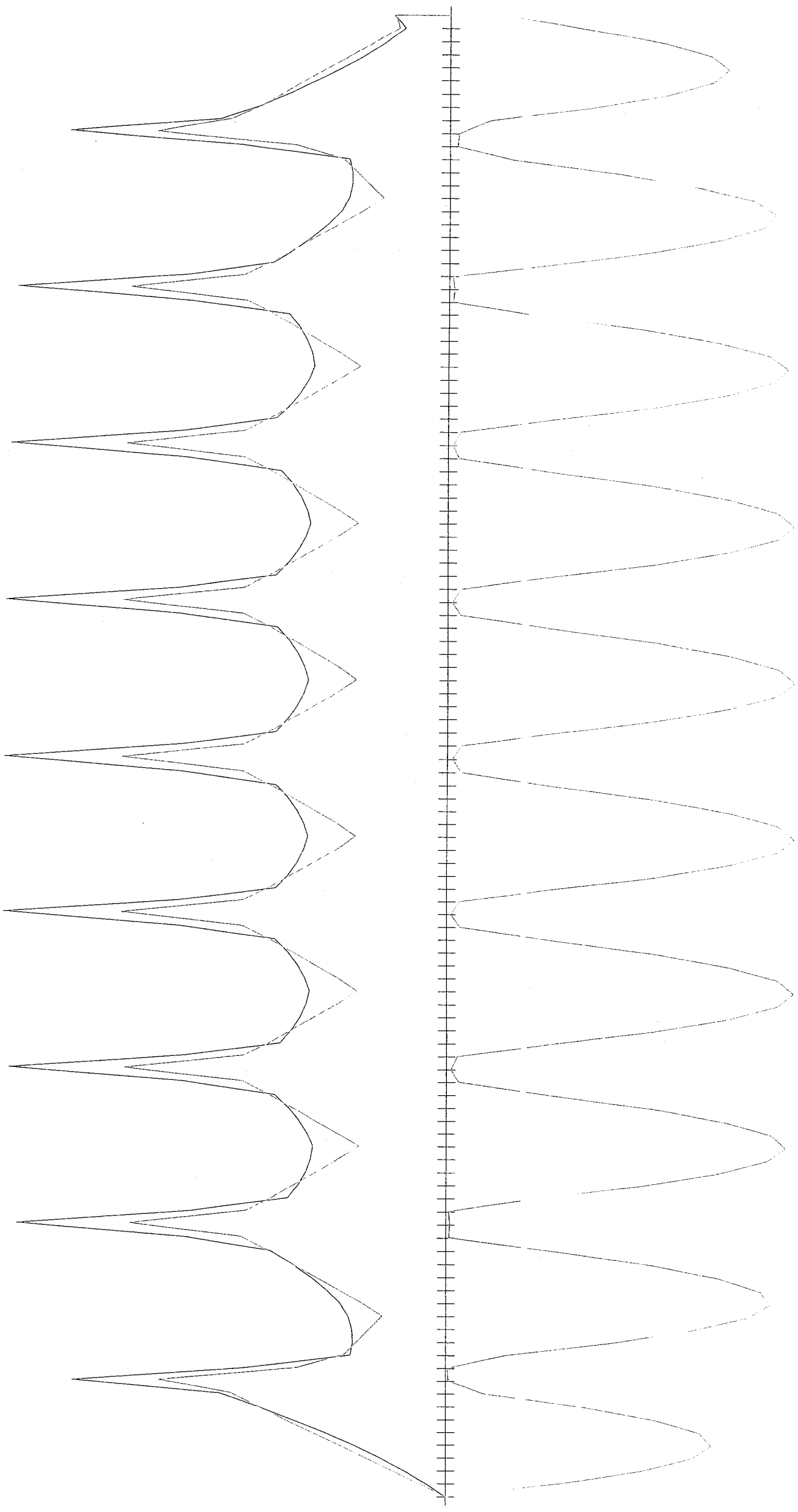
MOME Z MIN sobrecarga + fr + fc (ipf-75)

MOME Z MAX sobrecarga + fr. + fc (ec-1)

M. Z 1000.0

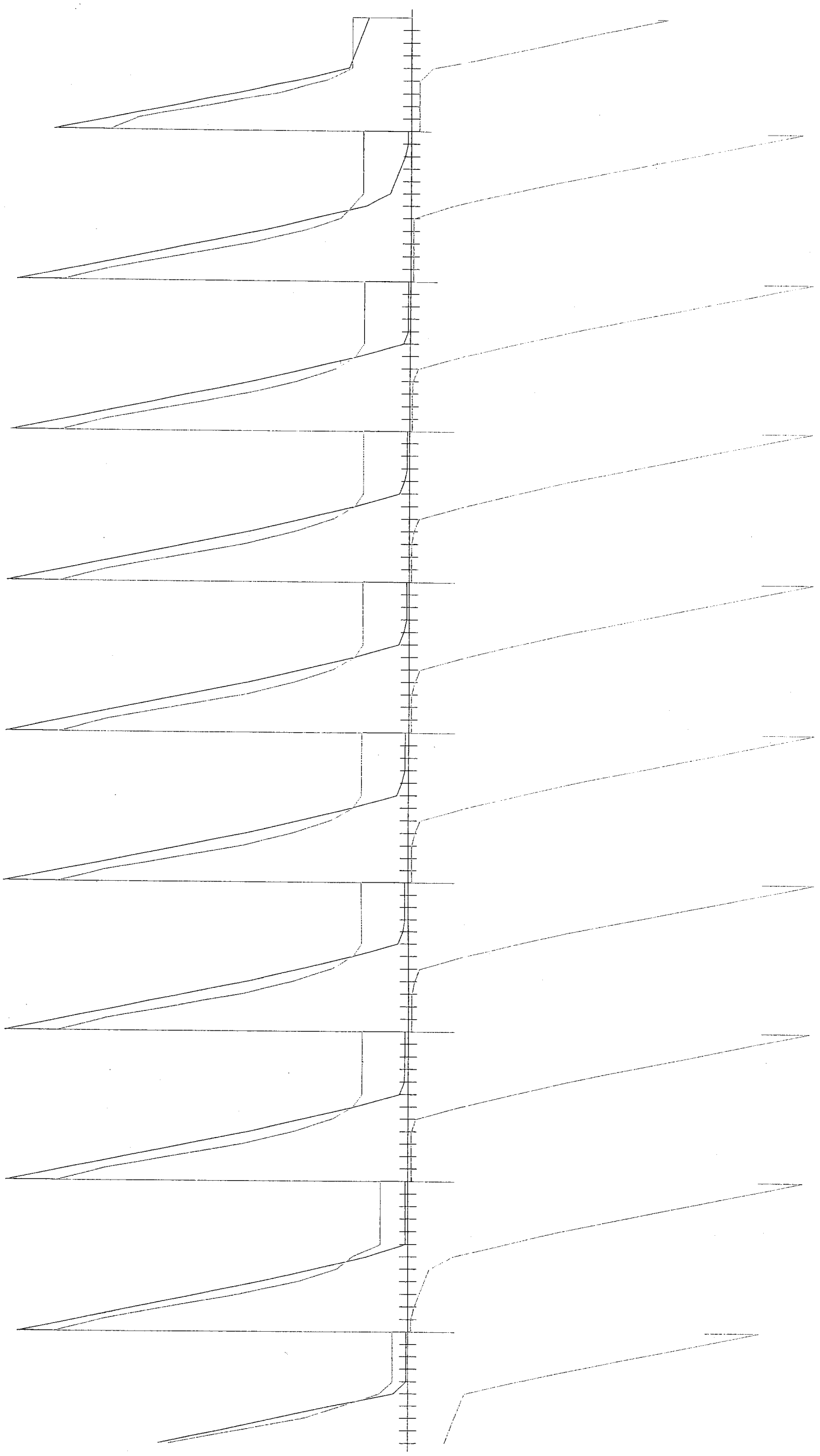
M Z 1000.0

M. Z 1000.0



proc Viaducto Papiol
FUER Y MAX sobrecarga + fr. + fc (ipf-75)
FUER Y MIN sobrecarga + fr + fc (ipf-75)
FUER Y MAX sobrecarga + fr. + fc (ec-1)

F. Y 100.0
F. Y 100.0
F. Y 100.0



proc Viaducto Papiol

MOME Y MAX sobrecarga + fr. + fc (ipf-75)

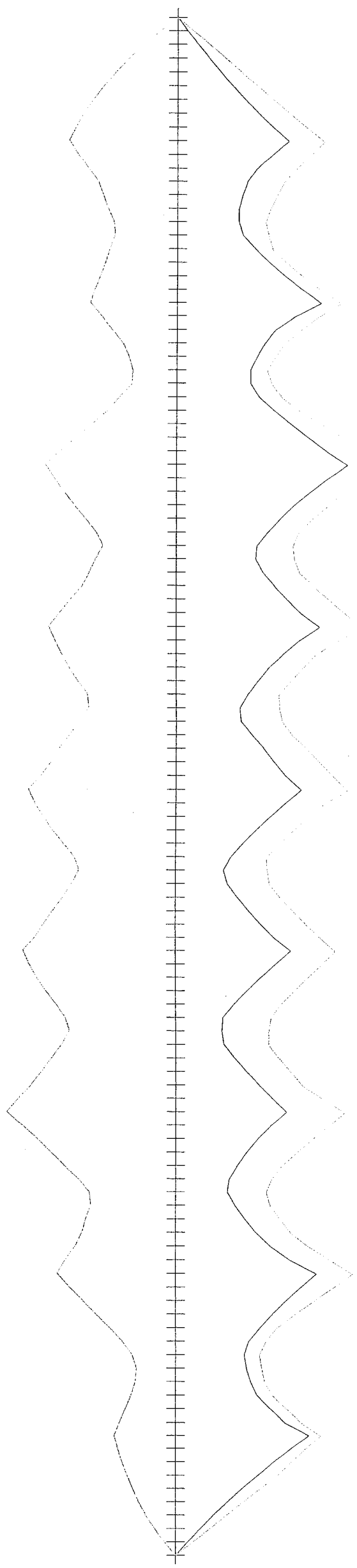
MOME Y MIN sobrecarga + fr. + fc (ipf-75)

MOME Y MAX sobrecarga + fr. + fc (ec-1)

M. Y 300.0

M. Y 300.0

M. Y 300.0



CÁLCULO DE LA ARMADURA ACTIVA

CABLES DE PRETENSADO DE PROCESO

CARLOS FERNANDEZ CASADO, S.L.
OFICINA DE PROYECTOS

HOJA ____ DE ____

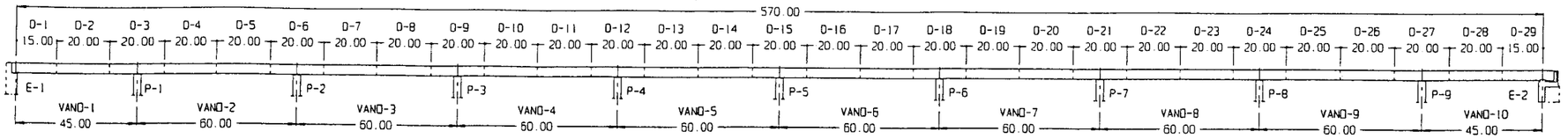
PROYECTO RAPIOL

FECHA _____

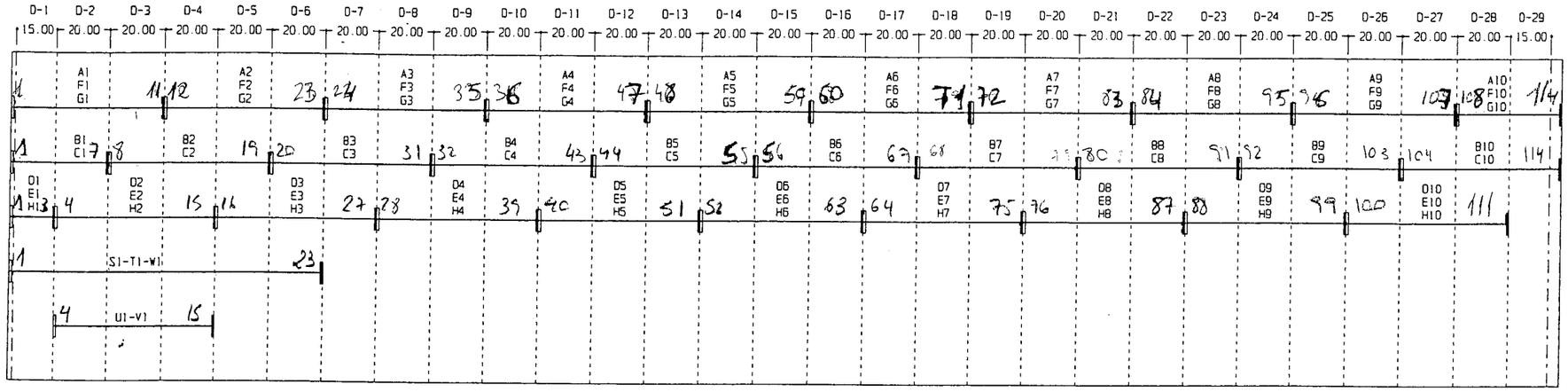
PRETENSADO DE PROCESO: CABLES

NOMBRE	ETIQUETA	Nº CABLES	COTA	FUERZA	Nº
A	10x	2	0'33 (0'333)	486	10
B + C	20x	4	0'313 (0'315)	385	10
D	30x	2	0'29 (0'29)	243	10
E	40x	2	0'285 (0'28)	304	10
F	50x	2	0'22 (0'26)	243	10
G	60x	2	0'27 (0'27)	182	10
H	70x	2	0'20 (0'24)	182	10
STW	80x	6	0'22 (0'25)	182	1
UV	90x	4	0'225 (0'21)	182	1
J. LP	100x	6	3'45 (=)	182	10
J. M. R	110x	6	3'45 (=)	182	10
K. N	120x	4	3'45 (=)	182	10
Y	130x	2	3'45 (=)	182	2

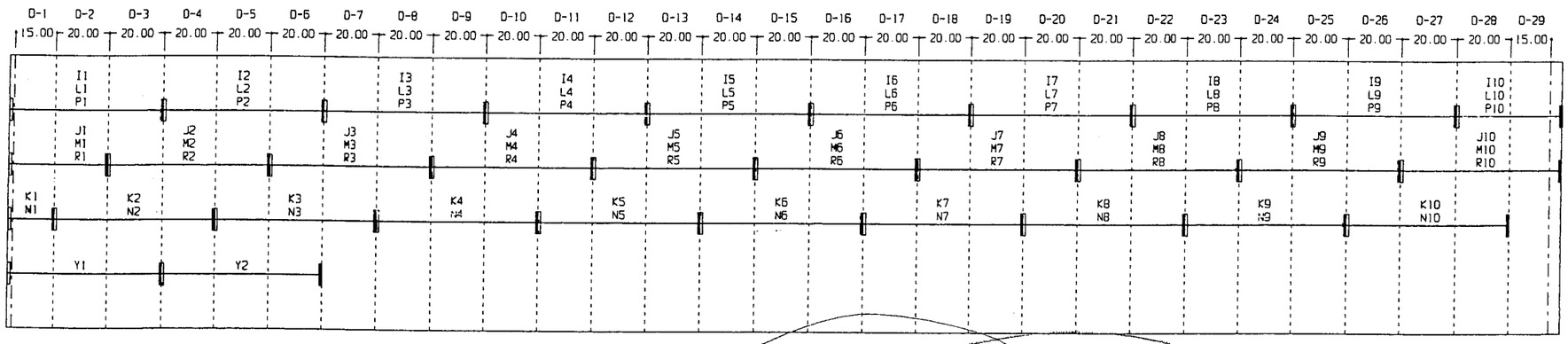
Real (planos) — Data programa



ALZADO ESQUEMATICO



PRETENSADO LONGITUDINAL HORIZONTAL SUPERIOR



PRETENSADO LONGITUDINAL HORIZONTAL INFERIOR

CABLES Nº	Unds.	∅ VAINA	TESADOS 75%	ANCLADOS 75%
A	24 ∅ 0.6"	110 mm.	486 Tn.	486 Tn.
B-C	19 ∅ 0.6"	100 mm.	385 Tn.	385 Tn.
E	15 ∅ 0.6"	90 mm.	304 Tn.	304 Tn.
D-F	12 ∅ 0.6"	75 mm.	243 Tn.	243 Tn.
G-H-I-J-K-L-M-N-P-R-S-T-U-V-W-Y	9 ∅ 0.6"	63 mm.	182 Tn.	182 Tn.

EL CORDON SERA: Y 1860 S7 (UNE 36094 : 1997)

CUADRO DE ALARGAMIENTOS

CABLE	LONGITUD (M.)	ALARGAMIENTO (M.)
A1	56.000	0.374
A2-A9	60.000	0.400
A10	39.000	0.236
B-C1	36.000	0.244
B-C2-9	60.000	0.400
B-C10	59.000	0.366
D1	16.000	0.109
D2-D10	60.000	0.400
E1	16.000	0.110
E2-E10	60.000	0.400
F1	56.000	0.374
F2-F9	60.000	0.400
F10	39.000	0.236
G-I1	56.000	0.374
G-I2-9	60.000	0.399
G-I10	39.000	0.235

CABLE	LONGITUD (M.)	ALARGAMIENTO (M.)
H-K1	16.000	0.109
H-K2-10	60.000	0.399
S-T-W	116.000	0.745
U-V	60.000	0.399
L-P1	56.000	0.374
L-P2-9	60.000	0.399
L-P10	39.000	0.235
J-M-R1	36.000	0.244
J-M-R2-9	60.000	0.400
J-M-R10	59.000	0.366
N1	16.000	0.109
N2-10	60.000	0.399
Y1	56.000	0.374
Y2	60.000	0.399

ANCLAJE ACTIVO

ANCLAJE DE CONTINUIDAD

ANCLAJE CIEGO

VIADUCTOS DE PAPIOL

prpro-01

GIF Gestor de Infraestructuras Ferroviarias

TITULO
PROYECTO DE CONSTRUCCION DE PLATAFORMA
L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA
TRAMO: SANT VICENT DELS HORTS-SANTA COLOMA DE CERVELLO

UTE PAPIOL
SGS TECNOS
INFRAES
CFC

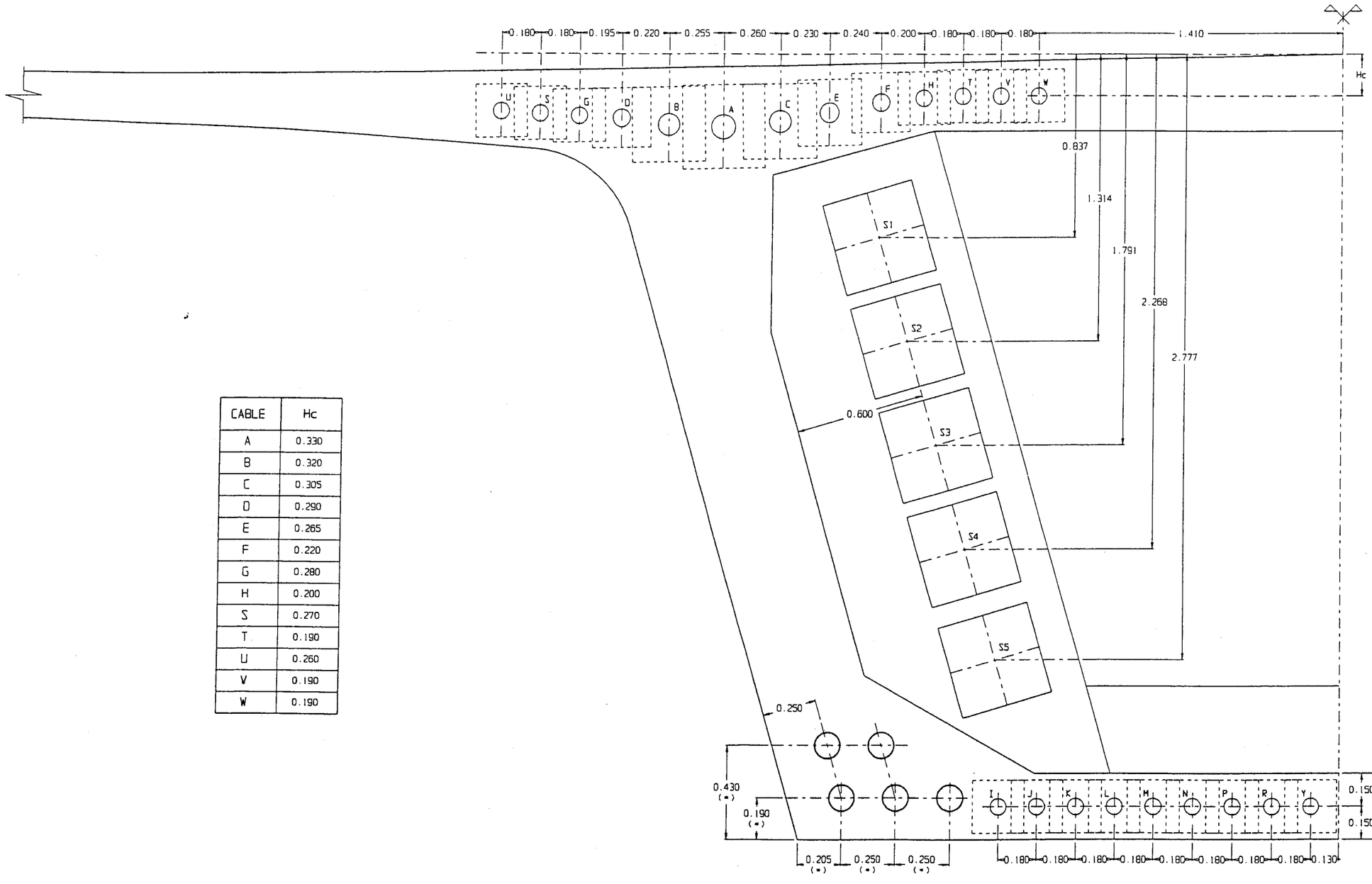
AUTORES
J.M. ARIAS I.C.C.P.
J. MANTEROLA I.C.C.P.
A. MARTINEZ CUTILLAS

ESCALA NORMAL
1:2000
0 20 40m.
Numérica Gráfica

FECHA
FEBRERO 2002

TITULO DEL PLANO
TABLERO
PRETENSADO LONGITUDINAL DE PROCESO.
ESQUEMA GENERAL

Nº DE PLANO
2.10.1.
Hoja 00 de 00



SEMISECCION TRANSVERSAL

ESCALA 1:20

(*) COTAS EN CENTRO DE VANO

CABLE	Hc
A	0.330
B	0.320
C	0.305
D	0.290
E	0.265
F	0.220
G	0.280
H	0.200
S	0.270
T	0.190
U	0.260
V	0.190
W	0.190

VIADUCTOS DE PAPIOL

prpro-02

GIF Gestor de Infraestructuras Ferroviarias

TITULO
PROYECTO DE CONSTRUCCION DE PLATAFORMA
L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA
TRAMO: SANT VICENT DELS HORTS-SANTA COLOMA DE CERVELLO

UTE PAPIOL
SGS TECNOS
INFRAES
CFC

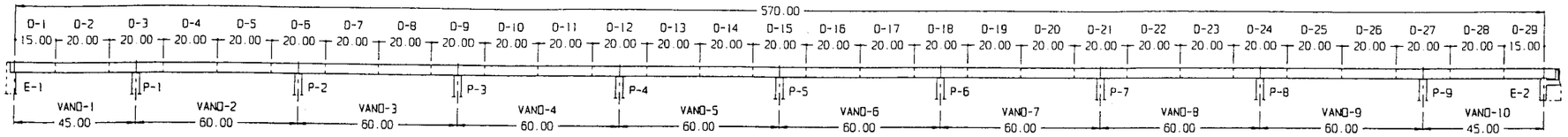
AUTORES
J.MANTEROLA I.C.C.P.
J.M.ARIAS I.C.C.P.
A.MARTINEZ CUTILLAS

ESCALA NORMAL
1:20
Numérica
Gráfica
0 0.2 0.4m.

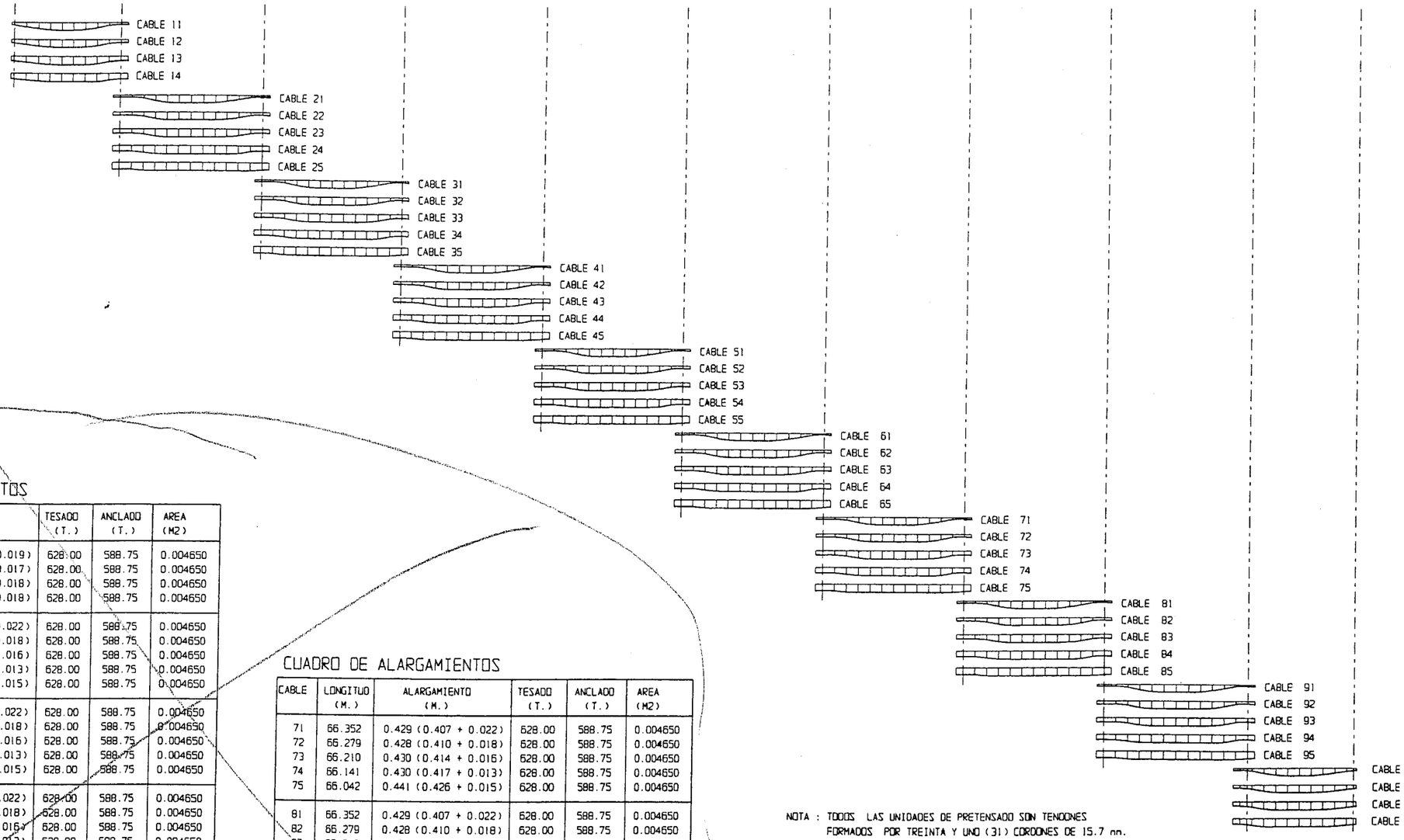
FECHA
FEBRERO 2002

TITULO DEL PLANO
TABLERO
PRETENSADO LONGITUDINAL
POSICION DE CABLES EN SECCION TRANSVERSAL

N° DE PLANO
2.10.1.
Hoja 00 de 00



ALZADO ESQUEMATICO



CUADRO DE ALARGAMIENTOS

CABLE	LONGITUD (M.)	ALARGAMIENTO (M.)	TESADO (T.)	ANCLADO (T.)	AREA (M2)
11	49.658	0.330 (0.312 + 0.019)	628.00	588.75	0.004650
12	49.568	0.330 (0.313 + 0.017)	628.00	588.75	0.004650
13	49.524	0.332 (0.314 + 0.018)	628.00	588.75	0.004650
14	49.455	0.330 (0.312 + 0.018)	628.00	588.75	0.004650
21	66.352	0.429 (0.407 + 0.022)	628.00	588.75	0.004650
22	66.280	0.428 (0.410 + 0.018)	628.00	588.75	0.004650
23	66.211	0.430 (0.414 + 0.016)	628.00	588.75	0.004650
24	66.141	0.430 (0.417 + 0.013)	628.00	588.75	0.004650
25	66.042	0.441 (0.426 + 0.015)	628.00	588.75	0.004650
31	66.352	0.429 (0.407 + 0.022)	628.00	588.75	0.004650
32	66.279	0.428 (0.410 + 0.018)	628.00	588.75	0.004650
33	66.211	0.430 (0.414 + 0.016)	628.00	588.75	0.004650
34	66.141	0.430 (0.417 + 0.013)	628.00	588.75	0.004650
35	66.042	0.441 (0.426 + 0.015)	628.00	588.75	0.004650
41	66.352	0.429 (0.407 + 0.022)	628.00	588.75	0.004650
42	66.279	0.428 (0.410 + 0.018)	628.00	588.75	0.004650
43	66.210	0.430 (0.414 + 0.016)	628.00	588.75	0.004650
44	66.141	0.430 (0.417 + 0.013)	628.00	588.75	0.004650
45	66.042	0.441 (0.426 + 0.015)	628.00	588.75	0.004650
51	66.352	0.429 (0.407 + 0.022)	628.00	588.75	0.004650
52	66.279	0.428 (0.410 + 0.018)	628.00	588.75	0.004650
53	66.210	0.430 (0.414 + 0.016)	628.00	588.75	0.004650
54	66.141	0.430 (0.417 + 0.013)	628.00	588.75	0.004650
55	66.042	0.441 (0.426 + 0.015)	628.00	588.75	0.004650
61	66.352	0.429 (0.407 + 0.022)	628.00	588.75	0.004650
62	66.279	0.428 (0.410 + 0.018)	628.00	588.75	0.004650
63	66.210	0.430 (0.414 + 0.016)	628.00	588.75	0.004650
64	66.141	0.430 (0.417 + 0.013)	628.00	588.75	0.004650
65	66.042	0.441 (0.426 + 0.015)	628.00	588.75	0.004650

CUADRO DE ALARGAMIENTOS

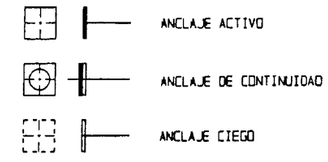
CABLE	LONGITUD (M.)	ALARGAMIENTO (M.)	TESADO (T.)	ANCLADO (T.)	AREA (M2)
71	66.352	0.429 (0.407 + 0.022)	628.00	588.75	0.004650
72	66.279	0.428 (0.410 + 0.018)	628.00	588.75	0.004650
73	66.210	0.430 (0.414 + 0.016)	628.00	588.75	0.004650
74	66.141	0.430 (0.417 + 0.013)	628.00	588.75	0.004650
75	66.042	0.441 (0.426 + 0.015)	628.00	588.75	0.004650
81	66.352	0.429 (0.407 + 0.022)	628.00	588.75	0.004650
82	66.279	0.428 (0.410 + 0.018)	628.00	588.75	0.004650
83	66.210	0.430 (0.414 + 0.016)	628.00	588.75	0.004650
84	66.141	0.430 (0.417 + 0.013)	628.00	588.75	0.004650
85	66.042	0.441 (0.426 + 0.015)	628.00	588.75	0.004650
91	66.352	0.429 (0.407 + 0.022)	628.00	588.75	0.004650
92	66.279	0.428 (0.410 + 0.018)	628.00	588.75	0.004650
93	66.210	0.430 (0.414 + 0.016)	628.00	588.75	0.004650
94	66.141	0.430 (0.417 + 0.013)	628.00	588.75	0.004650
95	66.042	0.441 (0.426 + 0.015)	628.00	588.75	0.004650
101	52.465	0.319 (0.307 + 0.012)	628.00	588.75	0.004650
102	52.395	0.319 (0.309 + 0.010)	628.00	588.75	0.004650
103	52.338	0.319 (0.310 + 0.009)	628.00	588.75	0.004650
104	52.276	0.318 (0.310 + 0.008)	628.00	588.75	0.004650

NOTA : TODOS LAS UNIDADES DE PRETENSADO SON TENDONES FORMADOS POR TREINTA Y UNO (31) CORDONES DE 15.7 mm. (0.6") DE DIAMETRO NOMINAL. PARA ESTAS UNIDADES SE HA CONSIDERADO UN DIAMETRO DE VAINA DE 120 mm.

EL CORDON SERA: Y 1860 S7 (UNE 36094 : 1997)

TODOS LOS TENDONES SE TESARAN AL 80% DE LA CARGA DE ROTURA (670 Tn). Y SE ANCLARAN AL 75% DE LA MISMA (628 Tn.)

NOTA : LAS LONGITUDES ESTAN MEDIDAS ENTRE PLACAS DE ANCLAJE. LOS VALORES ESTAN DADOS EN METROS. LOS ALARGAMIENTOS ESTAN CALCULADOS CON UN AREA DE 0.0000465 m2, POR TENDON, Y CON UN MODULO DE ELASTICIDAD DEL ACERO DE 19500000. Tn/m2.



VIADUCTOS DE PAPIOL

pret-gen

GIF Gestor de Infraestructuras Ferroviarias

TITULO
PROYECTO DE CONSTRUCCION DE PLATAFORMA
L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA
TRAMO: SANT VICENT DELS HORTS-SANTA COLOMA DE CERVELLO

UTE PAPIOL
SGS TECNOS
INFRAES
CFC

AUTORES
J.MATEROLA I.C.C.P.
J.M.ARIAS I.C.C.P.
A.MARTINEZ CUTILLAS

ESCALA NORMAL
1:2000
0 20 40m.
Numérica Gráfica

FECHA
FEBRERO 2002

TITULO DEL PLANO
TABLERO
PRETENSADO LONGITUDINAL DE SERVICIO.
ESQUEMA GENERAL

N° DE PLANO
2.10.1.
Hoja 00 de 00

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fichero de datos para cálculo de pretensado

Viaducto de Papiol - servicio
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0.2222 0.1562 0.0660 0.0379 1.0436 0.4536
0.1946 0.1396 0.0550 0.0311 0.7569 0.3116
0.1776 0.1226 0.0550 0.0251 0.6992 0.2274
0.1343 0.0793 0.0550 0.0198 0.5412 0.1470
0.1108 0.0668 0.0440 0.0149 0.4337 0.0850
0.0981 0.0541 0.0440 0.0109 0.3902 0.0512
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100. 100. 100. 100. 100. 100.
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3870000. 1610000. 2.5
3360000. 1400000. 2.5
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fuer y line -2.825 -2.586
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Pretensado de proceso

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1 a 114
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1.36 1.36 1.36 1.36 1.36 1.36 1.36 1.36 1.36 1.36
1.36 1.36 1.36 1.36  1.36
101 1 11 3  -1.0 0.0 0 0.35 0.21 0.00360 486.0
  0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333
102 12 23 3  0.0 0.0 0 0.35 0.21 0.00360 486.0
 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333
103 24 35 3  0.0 0.0 0 0.35 0.21 0.00360 486.0
  0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333
104 36 47 3  0.0 0.0 0 0.35 0.21 0.00360 486.0
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105 48 59 3  0.0 0.0 0 0.35 0.21 0.00360 486.0
 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333
106 60 71 3  0.0 0.0 0 0.35 0.21 0.00360 486.0
 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333
107 72 83 3  0.0 0.0 0 0.35 0.21 0.00360 486.0
  0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333
108 84 95 3  0.0 0.0 0 0.35 0.21 0.00360 486.0
  0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333 0.333
109 96 107 3  0.0 0.0 0 0.35 0.21 0.00360 486.0
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203 20 31 3  0.0 0.0 0 0.35 0.21 0.00285 385.0
 0.315 0.315 0.315 0.315 0.315 0.315 0.315 0.315 0.315 0.315 0.315 0.315 0.315 0.315
204 32 43 3  0.0 0.0 0 0.35 0.21 0.00285 385.0
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205 44 55 3  0.0 0.0 0 0.35 0.21 0.00285 385.0
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206 56 67 3  0.0 0.0 0 0.35 0.21 0.00285 385.0
 0.315 0.315 0.315 0.315 0.315 0.315 0.315 0.315 0.315 0.315 0.315 0.315 0.315 0.315
207 68 79 3  0.0 0.0 0 0.35 0.21 0.00285 385.0
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208 80 91 3  0.0 0.0 0 0.35 0.21 0.00285 385.0
  0.315 0.315 0.315 0.315 0.315 0.315 0.315 0.315 0.315 0.315 0.315 0.315 0.315 0.315
209 92 103 3  0.0 0.0 0 0.35 0.21 0.00285 385.0
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210 104 114 3  0.0 -4.0 0 0.35 0.21 0.00285 385.0
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301 1 3 3  -1.0 0.0 0 0.35 0.21 0.00180 243.0
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302 4 15 3  0.0 0.0 0 0.35 0.21 0.00180 243.0
 0.290 0.290 0.290 0.290 0.290 0.290 0.290 0.290 0.290 0.290 0.290 0.290 0.290 0.290
303 16 27 3  0.0 0.0 0 0.35 0.21 0.00180 243.0
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  0.290 0.290 0.290 0.290 0.290 0.290 0.290 0.290 0.290 0.290 0.290 0.290 0.290
305 40 51 3  0.0 0.0 0 0.35 0.21 0.00180 243.0
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306 52 63 3  0.0 0.0 0 0.35 0.21 0.00180 243.0
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307 64 75 3  0.0 0.0 0 0.35 0.21 0.00180 243.0
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308 76 87 3  0.0 0.0 0 0.35 0.21 0.00180 243.0
  0.290 0.290 0.290 0.290 0.290 0.290 0.290 0.290 0.290 0.290 0.290 0.290 0.290
309 88 99 3  0.0 0.0 0 0.35 0.21 0.00180 243.0
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310 100 111 3  0.0 0.0 0 0.35 0.21 0.00180 243.0
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401 1 3 3  -1.0 0.0 0 0.35 0.21 0.00225 304.0
 0.280 0.280 0.280 0.280 0.280
402 4 15 3  0.0 0.0 0 0.35 0.21 0.00225 304.0
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403 16 27 3  0.0 0.0 0 0.35 0.21 0.00225 304.0
 0.280 0.280 0.280 0.280 0.280 0.280 0.280 0.280 0.280 0.280 0.280 0.280 0.280
404 28 39 3  0.0 0.0 0 0.35 0.21 0.00225 304.0
  0.280 0.280 0.280 0.280 0.280 0.280 0.280 0.280 0.280 0.280 0.280 0.280 0.280
405 40 51 3  0.0 0.0 0 0.35 0.21 0.00225 304.0
  0.280 0.280 0.280 0.280 0.280 0.280 0.280 0.280 0.280 0.280 0.280 0.280 0.280
406 52 63 3  0.0 0.0 0 0.35 0.21 0.00225 304.0
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407 64 75 3  0.0 0.0 0 0.35 0.21 0.00225 304.0
 0.280 0.280 0.280 0.280 0.280 0.280 0.280 0.280 0.280 0.280 0.280 0.280 0.280
408 76 87 3  0.0 0.0 0 0.35 0.21 0.00225 304.0
 0.280 0.280 0.280 0.280 0.280 0.280 0.280 0.280 0.280 0.280 0.280 0.280 0.280
409 88 99 3  0.0 0.0 0 0.35 0.21 0.00225 304.0
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410 100 111 3  0.0 0.0 0 0.35 0.21 0.00225 304.0
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501 1 11 3  -1.0 0.0 0 0.35 0.21 0.00180 243.0
  0.260 0.260 0.260 0.260 0.260 0.260 0.260 0.260 0.260 0.260 0.260 0.260 0.260
502 12 23 3  0.0 0.0 0 0.35 0.21 0.00180 243.0
  0.260 0.260 0.260 0.260 0.260 0.260 0.260 0.260 0.260 0.260 0.260 0.260 0.260
503 24 35 3  0.0 0.0 0 0.35 0.21 0.00180 243.0
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504 36 47 3  0.0 0.0 0 0.35 0.21 0.00180 243.0
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505 48 59 3  0.0 0.0 0 0.35 0.21 0.00180 243.0
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506 60 71 3  0.0 0.0 0 0.35 0.21 0.00180 243.0
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507 72 83 3  0.0 0.0 0 0.35 0.21 0.00180 243.0
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508 84 95 3  0.0 0.0 0 0.35 0.21 0.00180 243.0
  0.260 0.260 0.260 0.260 0.260 0.260 0.260 0.260 0.260 0.260 0.260 0.260 0.260
509 96 107 3  0.0 0.0 0 0.35 0.21 0.00180 243.0
  0.260 0.260 0.260 0.260 0.260 0.260 0.260 0.260 0.260 0.260 0.260 0.260 0.260
510 108 114 3  0.0 -4.0 0 0.35 0.21 0.00180 243.0
  0.260 0.260 0.260 0.260 0.260 0.260 0.260 0.260 0.260
601 1 11 3  -1.0 0.0 0 0.35 0.21 0.00135 182.0
  0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270
602 12 23 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
  0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270
603 24 35 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
  0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270
604 36 47 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
  0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270
605 48 59 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
```

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  0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270
606 60 71 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
  0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270
607 72 83 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
  0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270
608 84 95 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
  0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270
609 96 107 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
  0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270
610 108 114 3  0.0 -4.0 0 0.35 0.21 0.00135 182.0
  0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270 0.270
701 1 3 3  -1.0 0.0 0 0.35 0.21 0.00135 182.0
  0.240 0.240 0.240 0.240 0.240
702 4 15 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
  0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240
703 16 27 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
  0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240
704 28 39 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
  0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240
705 40 51 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
  0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240
706 52 63 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
  0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240
707 64 75 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
  0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240
708 76 87 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
  0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240
709 88 99 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
  0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240
710 100 111 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
  0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240 0.240
801 1 23 3  -1.0 0.0 0 0.35 0.21 0.00135 182.0
  0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25
  0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25 0.25
  0.25 0.25 0.25 0.25 0.25
901 4 15 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
 0.210 0.210 0.210 0.210 0.210 0.210 0.210 0.210 0.210 0.210 0.210 0.210 0.210
1001 1 11 3  -1.0 0.0 0 0.35 0.21 0.00135 182.0
 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450
1002 12 23 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450
1003 24 35 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450
1004 36 47 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450
1005 48 59 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450
1006 60 71 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450
1007 72 83 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450
1008 84 95 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
  3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450
1009 96 107 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
  3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450
1010 108 114 3  0.0 -4.0 0 0.35 0.21 0.00135 182.0
  3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450
1101 1 7 3  -1.0 0.0 0 0.35 0.21 0.00135 182.0
  3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450
1102 8 19 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450
1103 20 31 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
  3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450
1104 32 43 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
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 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450
1105 44 55 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
  3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450
1106 56 67 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
  3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450
1107 68 79 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
  3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450
1108 80 91 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450
1109 92 103 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
  3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450
1110 104 114 3  0.0 -4.0 0 0.35 0.21 0.00135 182.0
 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450
1201 1 3 3  -1.0 0.0 0 0.35 0.21 0.00135 182.0
 3.450 3.450 3.450 3.450 3.450
1202 4 15 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450
1203 16 27 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450
1204 28 39 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450
1205 40 51 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450
1206 52 63 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450
1207 64 75 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450
1208 76 87 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450
1209 88 99 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450
1210 100 111 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450
1301 1 11 3  -1.0 0.0 0 0.35 0.21 0.00135 182.0
 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450
1302 12 23 3  0.0 0.0 0 0.35 0.21 0.00135 182.0
 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450 3.450
Pretensado de proceso
82 0 104
101 2 102 2 103 2 104 2 105 2 106 2 107 2 108 2 109 2 110 2
201 4 202 4 203 4 204 4 205 4 206 4 207 4 208 4 209 4 210 4
301 2 302 2 303 2 304 2 305 2 306 2 307 2 308 2 309 2 310 2
401 2 402 2 403 2 404 2 405 2 406 2 407 2 408 2 409 2 410 2
501 2 502 2 503 2 504 2 505 2 506 2 507 2 508 2 509 2 510 2
601 2 602 2 603 2 604 2 605 2 606 2 607 2 608 2 609 2 610 2
701 2 702 2 703 2 704 2 705 2 706 2 707 2 708 2 709 2 710 2
801 6
901 4
1001 6 1002 6 1003 6 1004 6 1005 6 1006 6 1007 6 1008 6 1009 6 1010 6
1101 6 1102 6 1103 6 1104 6 1105 6 1106 6 1107 6 1108 6 1109 6 1110 6
1201 4 1202 4 1203 4 1204 4 1205 4 1206 4 1207 4 1208 4 1209 4 1210 4
1301 2 1302 2
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CABLES DE PRETENSADO DE SERVICIO

Pretensado de servicio

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1 48 1 0 1
100. 100. 4.5 1. 1 114 a0
0.35 0.21 0.00465 628. 0.9375 0.006 19500000. 1.
114 1
1 a 114
1.36 1.36 1.36 1.36 1.36 1.36 1.36 1.36 1.36 1.36
1.36 1.36 1.36 1.36 1.36 1.36 1.36 1.36 1.36 1.36
1.36 1.36 1.36 1.36 1.36 1.36 1.36 1.36 1.36 1.36
1.36 1.36 1.36 1.36 1.36 1.36 1.36 1.36 1.36 1.36
1.36 1.36 1.36 1.36 1.36 1.36 1.36 1.36 1.36 1.36
1.36 1.36 1.36 1.36 1.36 1.36 1.36 1.36 1.36 1.36
1.36 1.36 1.36 1.36 1.36 1.36 1.36 1.36 1.36 1.36
1.36 1.36 1.36 1.36 1.36 1.36 1.36 1.36 1.36 1.36
1.36 1.36 1.36 1.36 1.36 1.36 1.36 1.36 1.36 1.36
1.36 1.36 1.36 1.36 1.36 1.36 1.36 1.36 1.36 1.36
1.36 1.36 1.36 1.36 1.36
11 1   10  2 -1.35  2.
0.856 1.100 1.870 2.460 2.964 3.169 3.169 2.792 2.118
1.146 0.837 0.837
12 1   10  2 -1.35  2.
1.317 1.520 2.150 2.700 3.100 3.169 3.169 3.059 2.549
1.672 1.314 1.314
13 1   10  2 -1.35  2.
1.778 1.930 2.470 2.950 3.320 3.409 3.409 3.412 3.026
2.213 1.791 1.791
14 1   10  2 -1.35  2.
2.240 2.380 2.790 3.150 3.380 3.409 3.409 3.409 3.375
2.753 2.268 2.268
21 9   22  2  2.  2.
0.837 0.650 0.780 1.665 2.404 3.020 3.169 3.169 3.169
2.969 2.219 1.231 0.837 0.837 0.837
22 9   22  2  2.  2.
1.314 1.119 1.250 2.191 2.905 3.169 3.169 3.169 3.169
3.169 2.670 1.749 1.339 1.314 1.314
23 9   22  2  2.  2.
1.791 1.596 1.837 2.712 3.219 3.409 3.409 3.409 3.409
3.409 2.990 2.213 1.820 1.791 1.791
24 9   22  2  2.  2.
2.268 2.073 2.332 3.201 3.409 3.409 3.409 3.409 3.409
3.409 3.304 2.834 2.333 2.268 2.268
25 9   22  2  2.  2.
2.777 2.977 3.310 3.409 3.409 3.409 3.409 3.409 3.409
3.409 3.409 3.330 2.865 2.777 2.777
31 21 34 2 2. 2.
0.837 0.650 0.780 1.665 2.404 3.020 3.169 3.169 3.169
2.969 2.219 1.231 0.837 0.837 0.837
32 21 34 2 2. 2.
1.314 1.119 1.250 2.191 2.905 3.169 3.169 3.169 3.169
3.169 2.670 1.749 1.339 1.314 1.314
33 21 34 2 2. 2.
1.791 1.596 1.837 2.712 3.219 3.409 3.409 3.409 3.409
3.409 2.990 2.213 1.820 1.791 1.791
34 21 34 2 2. 2.
2.268 2.073 2.332 3.201 3.409 3.409 3.409 3.409 3.409
3.409 3.304 2.834 2.333 2.268 2.268
35 21 34 2 2. 2.
2.777 2.977 3.310 3.409 3.409 3.409 3.409 3.409 3.409
3.409 3.409 3.330 2.865 2.777 2.777
41 33 46 2 2. 2.
0.837 0.650 0.780 1.665 2.404 3.020 3.169 3.169 3.169
2.969 2.219 1.231 0.837 0.837 0.837
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42 33 46 2 2. 2.
1.314 1.119 1.250 2.191 2.905 3.169 3.169 3.169 3.169
3.169 2.670 1.749 1.339 1.314 1.314
43 33 46 2 2. 2.
1.791 1.596 1.837 2.712 3.219 3.409 3.409 3.409 3.409
3.409 2.990 2.213 1.820 1.791 1.791
44 33 46 2 2. 2.
2.268 2.073 2.332 3.201 3.409 3.409 3.409 3.409 3.409
3.409 3.304 2.834 2.333 2.268 2.268
45 33 46 2 2. 2.
2.777 2.977 3.310 3.409 3.409 3.409 3.409 3.409 3.409
3.409 3.409 3.330 2.865 2.777 2.777
51 45 58 2 2. 2.
0.837 0.650 0.780 1.665 2.404 3.020 3.169 3.169 3.169
2.969 2.219 1.231 0.837 0.837 0.837
52 45 58 2 2. 2.
1.314 1.119 1.250 2.191 2.905 3.169 3.169 3.169 3.169
3.169 2.670 1.749 1.339 1.314 1.314
53 45 58 2 2. 2.
1.791 1.596 1.837 2.712 3.219 3.409 3.409 3.409 3.409
3.409 2.990 2.213 1.820 1.791 1.791
54 45 58 2 2. 2.
2.268 2.073 2.332 3.201 3.409 3.409 3.409 3.409 3.409
3.409 3.304 2.834 2.333 2.268 2.268
55 45 58 2 2. 2.
2.777 2.977 3.310 3.409 3.409 3.409 3.409 3.409 3.409
3.409 3.409 3.330 2.865 2.777 2.777
61 57 70 2 2. 2.
0.837 0.650 0.780 1.665 2.404 3.020 3.169 3.169 3.169
2.969 2.219 1.231 0.837 0.837 0.837
62 57 70 2 2. 2.
1.314 1.119 1.250 2.191 2.905 3.169 3.169 3.169 3.169
3.169 2.670 1.749 1.339 1.314 1.314
63 57 70 2 2. 2.
1.791 1.596 1.837 2.712 3.219 3.409 3.409 3.409 3.409
3.409 2.990 2.213 1.820 1.791 1.791
64 57 70 2 2. 2.
2.268 2.073 2.332 3.201 3.409 3.409 3.409 3.409 3.409
3.409 3.304 2.834 2.333 2.268 2.268
65 57 70 2 2. 2.
2.777 2.977 3.310 3.409 3.409 3.409 3.409 3.409 3.409
3.409 3.409 3.330 2.865 2.777 2.777
71 69 82 2 2. 2.
0.837 0.650 0.780 1.665 2.404 3.020 3.169 3.169 3.169
2.969 2.219 1.231 0.837 0.837 0.837
72 69 82 2 2. 2.
1.314 1.119 1.250 2.191 2.905 3.169 3.169 3.169 3.169
3.169 2.670 1.749 1.339 1.314 1.314
73 69 82 2 2. 2.
1.791 1.596 1.837 2.712 3.219 3.409 3.409 3.409 3.409
3.409 2.990 2.213 1.820 1.791 1.791
74 69 82 2 2. 2.
2.268 2.073 2.332 3.201 3.409 3.409 3.409 3.409 3.409
3.409 3.304 2.834 2.333 2.268 2.268
75 69 82 2 2. 2.
2.777 2.977 3.310 3.409 3.409 3.409 3.409 3.409 3.409
3.409 3.409 3.330 2.865 2.777 2.777
81 81 94 2 2. 2.
0.837 0.650 0.780 1.665 2.404 3.020 3.169 3.169 3.169
2.969 2.219 1.231 0.837 0.837 0.837
82 81 94 2 2. 2.
1.314 1.119 1.250 2.191 2.905 3.169 3.169 3.169 3.169
3.169 2.670 1.749 1.339 1.314 1.314
83 81 94 2 2. 2.
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1.791 1.596 1.837 2.712 3.219 3.409 3.409 3.409 3.409
3.409 2.990 2.213 1.820 1.791 1.791
84 81 94 2 2. 2.
2.268 2.073 2.332 3.201 3.409 3.409 3.409 3.409 3.409
3.409 3.304 2.834 2.333 2.268 2.268
85 81 94 2 2. 2.
2.777 2.977 3.310 3.409 3.409 3.409 3.409 3.409 3.409
3.409 3.409 3.330 2.865 2.777 2.777
91 93 106 2 2. 2.
0.837 0.650 0.780 1.665 2.404 3.020 3.169 3.169 3.169
2.969 2.219 1.231 0.837 0.837 0.837
92 93 106 2 2. 2.
1.314 1.119 1.250 2.191 2.905 3.169 3.169 3.169 3.169
3.169 2.670 1.749 1.339 1.314 1.314
93 93 106 2 2. 2.
1.791 1.596 1.837 2.712 3.219 3.409 3.409 3.409 3.409
3.409 2.990 2.213 1.820 1.791 1.791
94 93 106 2 2. 2.
2.268 2.073 2.332 3.201 3.409 3.409 3.409 3.409 3.409
3.409 3.304 2.834 2.333 2.268 2.268
95 93 106 2 2. 2.
2.777 2.977 3.310 3.409 3.409 3.409 3.409 3.409 3.409
3.409 3.409 3.330 2.865 2.777 2.777
101 105 114 2  2. -4.15
0.837 0.650 0.780 1.630 2.460 3.020 3.169 3.096 2.640
1.970 1.320 0.856
102 105 114 2  2. -4.15
1.314 1.120 1.250 2.190 2.905 3.169 3.169 3.169 2.940
2.480 1.880 1.382
103 105 114 2  2. -4.15
1.791 1.595 1.835 2.710 3.220 3.409 3.409 3.409 3.280
2.950 2.400 1.922
104 105 114 2  2. -4.15
2.268 2.070 2.330 3.200 3.409 3.409 3.409 3.409 3.400
3.250 2.980 2.540
Pretensado de servicio (t=0)
81 0 48
11 2 12 2 13 2 14 2
21 2 22 2 23 2 24 2 25 2
31 2 32 2 33 2 34 2 35 2
41 2 42 2 43 2 44 2 45 2
51 2 52 2 53 2 54 2 55 2
61 2 62 2 63 2 64 2 65 2
71 2 72 2 73 2 74 2 75 2
81 2 82 2 83 2 84 2 85 2
91 2 92 2 93 2 94 2 95 2
101 2 102 2 103 2 104 2
```

hipo 81 Pretensado de servicio (t=0)
pretensado plano x y

* cable	11 unidades	2					
1	1117.63	1135.35	0.000	0.000	0.2600	-0.5100	-0.1532
2	1135.35	1147.10	0.000	0.000	-0.5100	-1.1000	-0.8166
3	1147.10	1164.26	0.000	0.000	-1.1000	-1.6040	-1.3772
4	1164.26	1181.69	0.000	0.000	-1.6040	-1.8090	-1.7384
5	1181.69	1159.89	0.000	0.000	-1.8090	-1.8090	-1.8453
6	1159.89	1159.54	0.000	0.000	-1.8090	-1.4320	-1.6616
7	1159.54	1178.81	0.000	0.000	-1.4320	-0.7580	-1.1471
8	1178.81	1161.10	0.000	0.000	-0.7580	0.2140	-0.2457
9	1161.10	1121.85	0.000	0.000	0.2140	0.5230	0.4523
10	1121.85	1114.27	0.000	3.000	0.5230	0.5230	0.5282
* cable	12 unidades	2					
1	1118.16	1132.49	0.000	0.000	-0.1600	-0.7900	-0.4940
2	1132.49	1142.77	0.000	0.000	-0.7900	-1.3400	-1.0728
3	1142.77	1164.13	0.000	0.000	-1.3400	-1.7400	-1.5762
4	1164.13	1182.65	0.000	0.000	-1.7400	-1.8090	-1.8024
5	1182.65	1175.18	0.000	0.000	-1.8090	-1.8090	-1.8112
6	1175.18	1158.85	0.000	0.000	-1.8090	-1.6990	-1.7845
7	1158.85	1173.69	0.000	0.000	-1.6990	-1.1890	-1.5112
8	1173.69	1161.67	0.000	0.000	-1.1890	-0.3120	-0.7390
9	1161.67	1124.56	0.000	0.000	-0.3120	0.0460	-0.0549
10	1124.56	1114.49	0.000	3.000	0.0460	0.0460	0.0552
* cable	13 unidades	2					
1	1124.58	1134.15	0.000	0.000	-0.5700	-1.1100	-0.8461
2	1134.15	1144.34	0.000	0.000	-1.1100	-1.5900	-1.3575
3	1144.34	1162.39	0.000	0.000	-1.5900	-1.9600	-1.8026
4	1162.39	1181.24	0.000	0.000	-1.9600	-2.0490	-2.0333
5	1181.24	1184.25	0.000	0.000	-2.0490	-2.0490	-2.0450
6	1184.25	1168.97	0.000	0.000	-2.0490	-2.0520	-2.0701
7	1168.97	1181.25	0.000	0.000	-2.0520	-1.6660	-1.9294
8	1181.25	1171.80	0.000	0.000	-1.6660	-0.8530	-1.2641
9	1171.80	1135.36	0.000	0.000	-0.8530	-0.4310	-0.5665
10	1135.36	1122.45	0.000	3.000	-0.4310	-0.4310	-0.4175
* cable	14 unidades	2					
1	1124.99	1138.07	0.000	0.000	-1.0200	-1.4300	-1.2401
2	1138.07	1147.97	0.000	0.000	-1.4300	-1.7900	-1.6167
3	1147.97	1165.35	0.000	0.000	-1.7900	-2.0200	-1.9307
4	1165.35	1178.70	0.000	0.000	-2.0200	-2.0490	-2.0493
5	1178.70	1186.72	0.000	0.000	-2.0490	-2.0490	-2.0504
6	1186.72	1175.42	0.000	0.000	-2.0490	-2.0490	-2.0396
7	1175.42	1176.61	0.000	0.000	-2.0490	-2.0150	-2.0809
8	1176.61	1170.92	0.000	0.000	-2.0150	-1.3930	-1.7509
9	1170.92	1137.55	0.000	0.000	-1.3930	-0.9080	-1.0831
10	1137.55	1121.36	0.000	3.000	-0.9080	-0.9080	-0.8893
* cable	21 unidades	2					
9	1057.34	1067.69	2.000	0.000	0.5230	0.7100	0.6270
10	1067.69	1111.58	0.000	0.000	0.7100	0.5800	0.7462
11	1111.58	1132.98	0.000	0.000	0.5800	-0.3050	0.1757
12	1132.98	1149.94	0.000	0.000	-0.3050	-1.0440	-0.7001
13	1149.94	1133.48	0.000	0.000	-1.0440	-1.6600	-1.3888
14	1133.48	1108.09	0.000	0.000	-1.6600	-1.8090	-1.7829
15	1108.09	1104.62	0.000	0.000	-1.8090	-1.8090	-1.8094
16	1104.62	1113.86	0.000	0.000	-1.8090	-1.8090	-1.8147
17	1113.86	1140.64	0.000	0.000	-1.8090	-1.6090	-1.7608
18	1140.64	1130.99	0.000	0.000	-1.6090	-0.8590	-1.3025
19	1130.99	1112.57	0.000	0.000	-0.8590	0.1290	-0.3347
20	1112.57	1076.10	0.000	0.000	0.1290	0.5230	0.4068
21	1076.10	1063.08	0.000	0.000	0.5230	0.5230	0.5401
22	1063.08	1057.34	0.000	3.000	0.5230	0.5230	0.5202
* cable	22 unidades	2					
9	1051.83	1062.15	2.000	0.000	0.0460	0.2410	0.1541
10	1062.15	1107.70	0.000	0.000	0.2410	0.1100	0.2818

11	1107.70	1131.03	0.000	0.000	0.1100	-0.8310	-0.3168
12	1131.03	1136.94	0.000	0.000	-0.8310	-1.5450	-1.2504
13	1136.94	1111.63	0.000	0.000	-1.5450	-1.8090	-1.7251
14	1111.63	1109.09	0.000	0.000	-1.8090	-1.8090	-1.8221
15	1109.09	1116.84	0.000	0.000	-1.8090	-1.8090	-1.8074
16	1116.84	1126.52	0.000	0.000	-1.8090	-1.8090	-1.8024
17	1126.52	1144.48	0.000	0.000	-1.8090	-1.8090	-1.8370
18	1144.48	1116.18	0.000	0.000	-1.8090	-1.3100	-1.6412
19	1116.18	1105.44	0.000	0.000	-1.3100	-0.3890	-0.8399
20	1105.44	1070.65	0.000	0.000	-0.3890	0.0210	-0.1073
21	1070.65	1056.86	0.000	0.000	0.0210	0.0460	0.0530
22	1056.86	1051.83	0.000	3.000	0.0460	0.0460	0.0443
* cable 23 unidades 2							
9	1051.70	1065.98	2.000	0.000	-0.4310	-0.2360	-0.3162
10	1065.98	1111.85	0.000	0.000	-0.2360	-0.4770	-0.2497
11	1111.85	1124.00	0.000	0.000	-0.4770	-1.3520	-0.9012
12	1124.00	1144.62	0.000	0.000	-1.3520	-1.8590	-1.6656
13	1144.62	1125.97	0.000	0.000	-1.8590	-2.0490	-1.9838
14	1125.97	1122.68	0.000	0.000	-2.0490	-2.0490	-2.0597
15	1122.68	1130.39	0.000	0.000	-2.0490	-2.0490	-2.0477
16	1130.39	1139.81	0.000	0.000	-2.0490	-2.0490	-2.0434
17	1139.81	1142.35	0.000	0.000	-2.0490	-2.0490	-2.0727
18	1142.35	1109.68	0.000	0.000	-2.0490	-1.6300	-1.9073
19	1109.68	1101.27	0.000	0.000	-1.6300	-0.8530	-1.2381
20	1101.27	1071.10	0.000	0.000	-0.8530	-0.4600	-0.5925
21	1071.10	1056.75	0.000	0.000	-0.4600	-0.4310	-0.4244
22	1056.75	1051.70	0.000	3.000	-0.4310	-0.4310	-0.4327
* cable 24 unidades 2							
9	1053.20	1067.57	2.000	0.000	-0.9080	-0.7130	-0.7931
10	1067.57	1115.74	0.000	0.000	-0.7130	-0.9720	-0.7296
11	1115.74	1128.03	0.000	0.000	-0.9720	-1.8410	-1.4200
12	1128.03	1135.15	0.000	0.000	-1.8410	-2.0490	-2.0231
13	1135.15	1128.98	0.000	0.000	-2.0490	-2.0490	-2.0490
14	1128.98	1136.25	0.000	0.000	-2.0490	-2.0490	-2.0490
15	1136.25	1143.60	0.000	0.000	-2.0490	-2.0490	-2.0491
16	1143.60	1149.18	0.000	0.000	-2.0490	-2.0490	-2.0486
17	1149.18	1141.30	0.000	0.000	-2.0490	-2.0490	-2.0504
18	1141.30	1121.06	0.000	0.000	-2.0490	-1.9440	-2.0307
19	1121.06	1099.80	0.000	0.000	-1.9440	-1.4740	-1.7471
20	1099.80	1078.96	0.000	0.000	-1.4740	-0.9730	-1.1854
21	1078.96	1058.56	0.000	0.000	-0.9730	-0.9080	-0.9027
22	1058.56	1053.20	0.000	3.000	-0.9080	-0.9080	-0.9102
* cable 25 unidades 2							
9	1126.74	1132.70	2.000	0.000	-1.4170	-1.6170	-1.5145
10	1132.70	1146.00	0.000	0.000	-1.6170	-1.9500	-1.7992
11	1146.00	1163.73	0.000	0.000	-1.9500	-2.0490	-2.0261
12	1163.73	1172.32	0.000	0.000	-2.0490	-2.0490	-2.0518
13	1172.32	1180.16	0.000	0.000	-2.0490	-2.0490	-2.0482
14	1180.16	1187.83	0.000	0.000	-2.0490	-2.0490	-2.0492
15	1187.83	1183.78	0.000	0.000	-2.0490	-2.0490	-2.0490
16	1183.78	1176.10	0.000	0.000	-2.0490	-2.0490	-2.0487
17	1176.10	1180.73	0.000	0.000	-2.0490	-2.0490	-2.0501
18	1180.73	1189.32	0.000	0.000	-2.0490	-2.0490	-2.0450
19	1189.32	1164.24	0.000	0.000	-2.0490	-1.9700	-2.0539
20	1164.24	1156.48	0.000	0.000	-1.9700	-1.5050	-1.7383
21	1156.48	1132.23	0.000	0.000	-1.5050	-1.4170	-1.4170
22	1132.23	1126.74	0.000	3.000	-1.4170	-1.4170	-1.4188
* cable 31 unidades 2							
21	1057.34	1067.69	2.000	0.000	0.5230	0.7100	0.6270
22	1067.69	1111.58	0.000	0.000	0.7100	0.5800	0.7462
23	1111.58	1132.98	0.000	0.000	0.5800	-0.3050	0.1757
24	1132.98	1149.94	0.000	0.000	-0.3050	-1.0440	-0.7001
25	1149.94	1133.48	0.000	0.000	-1.0440	-1.6600	-1.3888
26	1133.48	1108.09	0.000	0.000	-1.6600	-1.8090	-1.7829

27	1108.09	1104.62	0.000	0.000	-1.8090	-1.8090	-1.8094
28	1104.62	1113.86	0.000	0.000	-1.8090	-1.8090	-1.8147
29	1113.86	1140.64	0.000	0.000	-1.8090	-1.6090	-1.7608
30	1140.64	1130.99	0.000	0.000	-1.6090	-0.8590	-1.3025
31	1130.99	1112.57	0.000	0.000	-0.8590	0.1290	-0.3347
32	1112.57	1076.10	0.000	0.000	0.1290	0.5230	0.4068
33	1076.10	1063.08	0.000	0.000	0.5230	0.5230	0.5401
34	1063.08	1057.34	0.000	3.000	0.5230	0.5230	0.5202
* cable	32 unidades	2					
21	1051.83	1062.15	2.000	0.000	0.0460	0.2410	0.1541
22	1062.15	1107.70	0.000	0.000	0.2410	0.1100	0.2818
23	1107.70	1131.03	0.000	0.000	0.1100	-0.8310	-0.3168
24	1131.03	1136.94	0.000	0.000	-0.8310	-1.5450	-1.2504
25	1136.94	1111.63	0.000	0.000	-1.5450	-1.8090	-1.7251
26	1111.63	1109.09	0.000	0.000	-1.8090	-1.8090	-1.8221
27	1109.09	1116.84	0.000	0.000	-1.8090	-1.8090	-1.8074
28	1116.84	1126.52	0.000	0.000	-1.8090	-1.8090	-1.8024
29	1126.52	1144.48	0.000	0.000	-1.8090	-1.8090	-1.8370
30	1144.48	1116.18	0.000	0.000	-1.8090	-1.3100	-1.6412
31	1116.18	1105.44	0.000	0.000	-1.3100	-0.3890	-0.8399
32	1105.44	1070.65	0.000	0.000	-0.3890	0.0210	-0.1073
33	1070.65	1056.87	0.000	0.000	0.0210	0.0460	0.0530
34	1056.87	1051.83	0.000	3.000	0.0460	0.0460	0.0443
* cable	33 unidades	2					
21	1051.70	1065.98	2.000	0.000	-0.4310	-0.2360	-0.3162
22	1065.98	1111.85	0.000	0.000	-0.2360	-0.4770	-0.2497
23	1111.85	1124.00	0.000	0.000	-0.4770	-1.3520	-0.9012
24	1124.00	1144.62	0.000	0.000	-1.3520	-1.8590	-1.6656
25	1144.62	1125.97	0.000	0.000	-1.8590	-2.0490	-1.9838
26	1125.97	1122.68	0.000	0.000	-2.0490	-2.0490	-2.0597
27	1122.68	1130.39	0.000	0.000	-2.0490	-2.0490	-2.0477
28	1130.39	1139.81	0.000	0.000	-2.0490	-2.0490	-2.0434
29	1139.81	1142.35	0.000	0.000	-2.0490	-2.0490	-2.0727
30	1142.35	1109.68	0.000	0.000	-2.0490	-1.6300	-1.9072
31	1109.68	1101.27	0.000	0.000	-1.6300	-0.8530	-1.2381
32	1101.27	1071.10	0.000	0.000	-0.8530	-0.4600	-0.5925
33	1071.10	1056.75	0.000	0.000	-0.4600	-0.4310	-0.4244
34	1056.75	1051.70	0.000	3.000	-0.4310	-0.4310	-0.4327
* cable	34 unidades	2					
21	1053.20	1067.57	2.000	0.000	-0.9080	-0.7130	-0.7931
22	1067.57	1115.74	0.000	0.000	-0.7130	-0.9720	-0.7296
23	1115.74	1128.03	0.000	0.000	-0.9720	-1.8410	-1.4200
24	1128.03	1135.15	0.000	0.000	-1.8410	-2.0490	-2.0231
25	1135.15	1128.98	0.000	0.000	-2.0490	-2.0490	-2.0490
26	1128.98	1136.25	0.000	0.000	-2.0490	-2.0490	-2.0490
27	1136.25	1143.60	0.000	0.000	-2.0490	-2.0490	-2.0491
28	1143.60	1149.18	0.000	0.000	-2.0490	-2.0490	-2.0486
29	1149.18	1141.30	0.000	0.000	-2.0490	-2.0490	-2.0504
30	1141.30	1121.06	0.000	0.000	-2.0490	-1.9440	-2.0307
31	1121.06	1099.80	0.000	0.000	-1.9440	-1.4740	-1.7471
32	1099.80	1078.96	0.000	0.000	-1.4740	-0.9730	-1.1854
33	1078.96	1058.56	0.000	0.000	-0.9730	-0.9080	-0.9027
34	1058.56	1053.20	0.000	3.000	-0.9080	-0.9080	-0.9102
* cable	35 unidades	2					
21	1126.74	1132.70	2.000	0.000	-1.4170	-1.6170	-1.5145
22	1132.70	1146.00	0.000	0.000	-1.6170	-1.9500	-1.7992
23	1146.00	1163.72	0.000	0.000	-1.9500	-2.0490	-2.0261
24	1163.72	1172.32	0.000	0.000	-2.0490	-2.0490	-2.0518
25	1172.32	1180.16	0.000	0.000	-2.0490	-2.0490	-2.0482
26	1180.16	1187.83	0.000	0.000	-2.0490	-2.0490	-2.0492
27	1187.83	1183.78	0.000	0.000	-2.0490	-2.0490	-2.0490
28	1183.78	1176.10	0.000	0.000	-2.0490	-2.0490	-2.0487
29	1176.10	1180.73	0.000	0.000	-2.0490	-2.0490	-2.0501
30	1180.73	1189.32	0.000	0.000	-2.0490	-2.0490	-2.0450

31	1189.32	1164.24	0.000	0.000	-2.0490	-1.9700	-2.0539
32	1164.24	1156.48	0.000	0.000	-1.9700	-1.5050	-1.7383
33	1156.48	1132.23	0.000	0.000	-1.5050	-1.4170	-1.4170
34	1132.23	1126.74	0.000	3.000	-1.4170	-1.4170	-1.4188
* cable 41 unidades 2							
33	1057.34	1067.69	2.000	0.000	0.5230	0.7100	0.6270
34	1067.69	1111.58	0.000	0.000	0.7100	0.5800	0.7462
35	1111.58	1132.98	0.000	0.000	0.5800	-0.3050	0.1757
36	1132.98	1149.94	0.000	0.000	-0.3050	-1.0440	-0.7001
37	1149.94	1133.48	0.000	0.000	-1.0440	-1.6600	-1.3888
38	1133.48	1108.09	0.000	0.000	-1.6600	-1.8090	-1.7829
39	1108.09	1104.62	0.000	0.000	-1.8090	-1.8090	-1.8094
40	1104.62	1113.86	0.000	0.000	-1.8090	-1.8090	-1.8147
41	1113.86	1140.64	0.000	0.000	-1.8090	-1.6090	-1.7608
42	1140.64	1130.99	0.000	0.000	-1.6090	-0.8590	-1.3025
43	1130.99	1112.57	0.000	0.000	-0.8590	0.1290	-0.3347
44	1112.57	1076.10	0.000	0.000	0.1290	0.5230	0.4068
45	1076.10	1063.08	0.000	0.000	0.5230	0.5230	0.5401
46	1063.08	1057.34	0.000	3.000	0.5230	0.5230	0.5202
* cable 42 unidades 2							
33	1051.83	1062.15	2.000	0.000	0.0460	0.2410	0.1541
34	1062.15	1107.70	0.000	0.000	0.2410	0.1100	0.2818
35	1107.70	1131.03	0.000	0.000	0.1100	-0.8310	-0.3168
36	1131.03	1136.94	0.000	0.000	-0.8310	-1.5450	-1.2504
37	1136.94	1111.63	0.000	0.000	-1.5450	-1.8090	-1.7251
38	1111.63	1109.09	0.000	0.000	-1.8090	-1.8090	-1.8221
39	1109.09	1116.84	0.000	0.000	-1.8090	-1.8090	-1.8074
40	1116.84	1126.52	0.000	0.000	-1.8090	-1.8090	-1.8024
41	1126.52	1144.48	0.000	0.000	-1.8090	-1.8090	-1.8370
42	1144.48	1116.18	0.000	0.000	-1.8090	-1.3100	-1.6412
43	1116.18	1105.44	0.000	0.000	-1.3100	-0.3890	-0.8399
44	1105.44	1070.65	0.000	0.000	-0.3890	0.0210	-0.1073
45	1070.65	1056.86	0.000	0.000	0.0210	0.0460	0.0530
46	1056.86	1051.83	0.000	3.000	0.0460	0.0460	0.0443
* cable 43 unidades 2							
33	1051.70	1065.98	2.000	0.000	-0.4310	-0.2360	-0.3162
34	1065.98	1111.85	0.000	0.000	-0.2360	-0.4770	-0.2497
35	1111.85	1124.00	0.000	0.000	-0.4770	-1.3520	-0.9012
36	1124.00	1144.62	0.000	0.000	-1.3520	-1.8590	-1.6656
37	1144.62	1125.97	0.000	0.000	-1.8590	-2.0490	-1.9838
38	1125.97	1122.68	0.000	0.000	-2.0490	-2.0490	-2.0597
39	1122.68	1130.39	0.000	0.000	-2.0490	-2.0490	-2.0477
40	1130.39	1139.81	0.000	0.000	-2.0490	-2.0490	-2.0434
41	1139.81	1142.35	0.000	0.000	-2.0490	-2.0490	-2.0728
42	1142.35	1109.68	0.000	0.000	-2.0490	-1.6300	-1.9072
43	1109.68	1101.27	0.000	0.000	-1.6300	-0.8530	-1.2381
44	1101.27	1071.10	0.000	0.000	-0.8530	-0.4600	-0.5925
45	1071.10	1056.75	0.000	0.000	-0.4600	-0.4310	-0.4244
46	1056.75	1051.70	0.000	3.000	-0.4310	-0.4310	-0.4327
* cable 44 unidades 2							
33	1053.20	1067.57	2.000	0.000	-0.9080	-0.7130	-0.7931
34	1067.57	1115.74	0.000	0.000	-0.7130	-0.9720	-0.7296
35	1115.74	1128.03	0.000	0.000	-0.9720	-1.8410	-1.4200
36	1128.03	1135.15	0.000	0.000	-1.8410	-2.0490	-2.0231
37	1135.15	1128.98	0.000	0.000	-2.0490	-2.0490	-2.0490
38	1128.98	1136.25	0.000	0.000	-2.0490	-2.0490	-2.0490
39	1136.25	1143.60	0.000	0.000	-2.0490	-2.0490	-2.0491
40	1143.60	1149.18	0.000	0.000	-2.0490	-2.0490	-2.0486
41	1149.18	1141.30	0.000	0.000	-2.0490	-2.0490	-2.0504
42	1141.30	1121.06	0.000	0.000	-2.0490	-1.9440	-2.0307
43	1121.06	1099.80	0.000	0.000	-1.9440	-1.4740	-1.7471
44	1099.80	1078.96	0.000	0.000	-1.4740	-0.9730	-1.1854
45	1078.96	1058.56	0.000	0.000	-0.9730	-0.9080	-0.9027
46	1058.56	1053.20	0.000	3.000	-0.9080	-0.9080	-0.9102

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 * cable  45 unidades  2
    33    1126.74    1132.70      2.000      0.000    -1.4170    -1.6170    -1.5145
    34    1132.70    1146.00      0.000      0.000    -1.6170    -1.9500    -1.7992
    35    1146.00    1163.72      0.000      0.000    -1.9500    -2.0490    -2.0261
    36    1163.72    1172.32      0.000      0.000    -2.0490    -2.0490    -2.0518
    37    1172.32    1180.16      0.000      0.000    -2.0490    -2.0490    -2.0482
    38    1180.16    1187.83      0.000      0.000    -2.0490    -2.0490    -2.0492
    39    1187.83    1183.78      0.000      0.000    -2.0490    -2.0490    -2.0490
    40    1183.78    1176.10      0.000      0.000    -2.0490    -2.0490    -2.0487
    41    1176.10    1180.73      0.000      0.000    -2.0490    -2.0490    -2.0501
    42    1180.73    1189.32      0.000      0.000    -2.0490    -2.0490    -2.0450
    43    1189.32    1164.24      0.000      0.000    -2.0490    -1.9700    -2.0539
    44    1164.24    1156.48      0.000      0.000    -1.9700    -1.5050    -1.7383
    45    1156.48    1132.23      0.000      0.000    -1.5050    -1.4170    -1.4170
    46    1132.23    1126.74      0.000      3.000    -1.4170    -1.4170    -1.4188
 * cable  51 unidades  2
    45    1057.34    1067.69      2.000      0.000     0.5230     0.7100     0.6270
    46    1067.69    1111.58      0.000      0.000     0.7100     0.5800     0.7462
    47    1111.58    1132.98      0.000      0.000     0.5800    -0.3050     0.1757
    48    1132.98    1149.94      0.000      0.000    -0.3050    -1.0440    -0.7001
    49    1149.94    1133.48      0.000      0.000    -1.0440    -1.6600    -1.3888
    50    1133.48    1108.09      0.000      0.000    -1.6600    -1.8090    -1.7829
    51    1108.09    1104.62      0.000      0.000    -1.8090    -1.8090    -1.8094
    52    1104.62    1113.86      0.000      0.000    -1.8090    -1.8090    -1.8147
    53    1113.86    1140.64      0.000      0.000    -1.8090    -1.6090    -1.7608
    54    1140.64    1130.99      0.000      0.000    -1.6090    -0.8590    -1.3025
    55    1130.99    1112.57      0.000      0.000    -0.8590     0.1290    -0.3347
    56    1112.57    1076.10      0.000      0.000     0.1290     0.5230     0.4068
    57    1076.10    1063.08      0.000      0.000     0.5230     0.5230     0.5401
    58    1063.08    1057.34      0.000      3.000     0.5230     0.5230     0.5202
 * cable  52 unidades  2
    45    1051.83    1062.15      2.000      0.000     0.0460     0.2410     0.1541
    46    1062.15    1107.70      0.000      0.000     0.2410     0.1100     0.2818
    47    1107.70    1131.03      0.000      0.000     0.1100    -0.8310    -0.3168
    48    1131.03    1136.94      0.000      0.000    -0.8310    -1.5450    -1.2504
    49    1136.94    1111.63      0.000      0.000    -1.5450    -1.8090    -1.7251
    50    1111.63    1109.09      0.000      0.000    -1.8090    -1.8090    -1.8221
    51    1109.09    1116.84      0.000      0.000    -1.8090    -1.8090    -1.8074
    52    1116.84    1126.52      0.000      0.000    -1.8090    -1.8090    -1.8024
    53    1126.52    1144.48      0.000      0.000    -1.8090    -1.8090    -1.8370
    54    1144.48    1116.18      0.000      0.000    -1.8090    -1.3100    -1.6412
    55    1116.18    1105.44      0.000      0.000    -1.3100    -0.3890    -0.8399
    56    1105.44    1070.65      0.000      0.000    -0.3890     0.0210    -0.1073
    57    1070.65    1056.87      0.000      0.000     0.0210     0.0460     0.0530
    58    1056.87    1051.83      0.000      3.000     0.0460     0.0460     0.0443
 * cable  53 unidades  2
    45    1051.70    1065.99      2.000      0.000    -0.4310    -0.2360    -0.3162
    46    1065.99    1111.85      0.000      0.000    -0.2360    -0.4770    -0.2497
    47    1111.85    1124.00      0.000      0.000    -0.4770    -1.3520    -0.9012
    48    1124.00    1144.62      0.000      0.000    -1.3520    -1.8590    -1.6656
    49    1144.62    1125.97      0.000      0.000    -1.8590    -2.0490    -1.9838
    50    1125.97    1122.68      0.000      0.000    -2.0490    -2.0490    -2.0597
    51    1122.68    1130.39      0.000      0.000    -2.0490    -2.0490    -2.0477
    52    1130.39    1139.81      0.000      0.000    -2.0490    -2.0490    -2.0434
    53    1139.81    1142.35      0.000      0.000    -2.0490    -2.0490    -2.0727
    54    1142.35    1109.68      0.000      0.000    -2.0490    -1.6300    -1.9072
    55    1109.68    1101.27      0.000      0.000    -1.6300    -0.8530    -1.2381
    56    1101.27    1071.10      0.000      0.000    -0.8530    -0.4600    -0.5925
    57    1071.10    1056.75      0.000      0.000    -0.4600    -0.4310    -0.4244
    58    1056.75    1051.70      0.000      3.000    -0.4310    -0.4310    -0.4327
 * cable  54 unidades  2
    45    1053.20    1067.57      2.000      0.000    -0.9080    -0.7130    -0.7931
    46    1067.57    1115.74      0.000      0.000    -0.7130    -0.9720    -0.7296
    47    1115.74    1128.03      0.000      0.000    -0.9720    -1.8410    -1.4200
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48	1128.03	1135.15	0.000	0.000	-1.8410	-2.0490	-2.0231
49	1135.15	1128.98	0.000	0.000	-2.0490	-2.0490	-2.0490
50	1128.98	1136.25	0.000	0.000	-2.0490	-2.0490	-2.0490
51	1136.25	1143.60	0.000	0.000	-2.0490	-2.0490	-2.0491
52	1143.60	1149.18	0.000	0.000	-2.0490	-2.0490	-2.0486
53	1149.18	1141.30	0.000	0.000	-2.0490	-2.0490	-2.0504
54	1141.30	1121.06	0.000	0.000	-2.0490	-1.9440	-2.0307
55	1121.06	1099.80	0.000	0.000	-1.9440	-1.4740	-1.7471
56	1099.80	1078.96	0.000	0.000	-1.4740	-0.9730	-1.1855
57	1078.96	1058.56	0.000	0.000	-0.9730	-0.9080	-0.9027
58	1058.56	1053.20	0.000	3.000	-0.9080	-0.9080	-0.9102
* cable 55 unidades 2							
45	1126.74	1132.70	2.000	0.000	-1.4170	-1.6170	-1.5145
46	1132.70	1146.00	0.000	0.000	-1.6170	-1.9500	-1.7992
47	1146.00	1163.73	0.000	0.000	-1.9500	-2.0490	-2.0261
48	1163.73	1172.32	0.000	0.000	-2.0490	-2.0490	-2.0518
49	1172.32	1180.16	0.000	0.000	-2.0490	-2.0490	-2.0482
50	1180.16	1187.83	0.000	0.000	-2.0490	-2.0490	-2.0492
51	1187.83	1183.78	0.000	0.000	-2.0490	-2.0490	-2.0490
52	1183.78	1176.10	0.000	0.000	-2.0490	-2.0490	-2.0487
53	1176.10	1180.73	0.000	0.000	-2.0490	-2.0490	-2.0501
54	1180.73	1189.32	0.000	0.000	-2.0490	-2.0490	-2.0450
55	1189.32	1164.24	0.000	0.000	-2.0490	-1.9700	-2.0539
56	1164.24	1156.48	0.000	0.000	-1.9700	-1.5050	-1.7383
57	1156.48	1132.23	0.000	0.000	-1.5050	-1.4170	-1.4170
58	1132.23	1126.74	0.000	3.000	-1.4170	-1.4170	-1.4188
* cable 61 unidades 2							
57	1057.34	1067.69	2.000	0.000	0.5230	0.7100	0.6270
58	1067.69	1111.58	0.000	0.000	0.7100	0.5800	0.7462
59	1111.58	1132.98	0.000	0.000	0.5800	-0.3050	0.1757
60	1132.98	1149.94	0.000	0.000	-0.3050	-1.0440	-0.7001
61	1149.94	1133.48	0.000	0.000	-1.0440	-1.6600	-1.3888
62	1133.48	1108.09	0.000	0.000	-1.6600	-1.8090	-1.7829
63	1108.09	1104.62	0.000	0.000	-1.8090	-1.8090	-1.8094
64	1104.62	1113.86	0.000	0.000	-1.8090	-1.8090	-1.8147
65	1113.86	1140.64	0.000	0.000	-1.8090	-1.6090	-1.7608
66	1140.64	1130.99	0.000	0.000	-1.6090	-0.8590	-1.3025
67	1130.99	1112.57	0.000	0.000	-0.8590	0.1290	-0.3347
68	1112.57	1076.10	0.000	0.000	0.1290	0.5230	0.4068
69	1076.10	1063.08	0.000	0.000	0.5230	0.5230	0.5401
70	1063.08	1057.34	0.000	3.000	0.5230	0.5230	0.5202
* cable 62 unidades 2							
57	1051.83	1062.15	2.000	0.000	0.0460	0.2410	0.1541
58	1062.15	1107.70	0.000	0.000	0.2410	0.1100	0.2818
59	1107.70	1131.03	0.000	0.000	0.1100	-0.8310	-0.3168
60	1131.03	1136.94	0.000	0.000	-0.8310	-1.5450	-1.2504
61	1136.94	1111.63	0.000	0.000	-1.5450	-1.8090	-1.7251
62	1111.63	1109.09	0.000	0.000	-1.8090	-1.8090	-1.8221
63	1109.09	1116.84	0.000	0.000	-1.8090	-1.8090	-1.8074
64	1116.84	1126.52	0.000	0.000	-1.8090	-1.8090	-1.8024
65	1126.52	1144.48	0.000	0.000	-1.8090	-1.8090	-1.8370
66	1144.48	1116.18	0.000	0.000	-1.8090	-1.3100	-1.6412
67	1116.18	1105.45	0.000	0.000	-1.3100	-0.3890	-0.8399
68	1105.45	1070.65	0.000	0.000	-0.3890	0.0210	-0.1073
69	1070.65	1056.87	0.000	0.000	0.0210	0.0460	0.0530
70	1056.87	1051.83	0.000	3.000	0.0460	0.0460	0.0443
* cable 63 unidades 2							
57	1051.70	1065.99	2.000	0.000	-0.4310	-0.2360	-0.3162
58	1065.99	1111.85	0.000	0.000	-0.2360	-0.4770	-0.2497
59	1111.85	1124.00	0.000	0.000	-0.4770	-1.3520	-0.9012
60	1124.00	1144.62	0.000	0.000	-1.3520	-1.8590	-1.6656
61	1144.62	1125.97	0.000	0.000	-1.8590	-2.0490	-1.9838
62	1125.97	1122.68	0.000	0.000	-2.0490	-2.0490	-2.0597
63	1122.68	1130.39	0.000	0.000	-2.0490	-2.0490	-2.0477

64	1130.39	1139.81	0.000	0.000	-2.0490	-2.0490	-2.0434
65	1139.81	1142.35	0.000	0.000	-2.0490	-2.0490	-2.0727
66	1142.35	1109.68	0.000	0.000	-2.0490	-1.6300	-1.9073
67	1109.68	1101.28	0.000	0.000	-1.6300	-0.8530	-1.2381
68	1101.28	1071.10	0.000	0.000	-0.8530	-0.4600	-0.5925
69	1071.10	1056.75	0.000	0.000	-0.4600	-0.4310	-0.4244
70	1056.75	1051.70	0.000	3.000	-0.4310	-0.4310	-0.4327
* cable 64 unidades 2							
57	1053.20	1067.57	2.000	0.000	-0.9080	-0.7130	-0.7931
58	1067.57	1115.74	0.000	0.000	-0.7130	-0.9720	-0.7296
59	1115.74	1128.03	0.000	0.000	-0.9720	-1.8410	-1.4200
60	1128.03	1135.15	0.000	0.000	-1.8410	-2.0490	-2.0231
61	1135.15	1128.98	0.000	0.000	-2.0490	-2.0490	-2.0490
62	1128.98	1136.25	0.000	0.000	-2.0490	-2.0490	-2.0490
63	1136.25	1143.60	0.000	0.000	-2.0490	-2.0490	-2.0491
64	1143.60	1149.18	0.000	0.000	-2.0490	-2.0490	-2.0486
65	1149.18	1141.30	0.000	0.000	-2.0490	-2.0490	-2.0504
66	1141.30	1121.06	0.000	0.000	-2.0490	-1.9440	-2.0307
67	1121.06	1099.81	0.000	0.000	-1.9440	-1.4740	-1.7471
68	1099.81	1078.96	0.000	0.000	-1.4740	-0.9730	-1.1854
69	1078.96	1058.56	0.000	0.000	-0.9730	-0.9080	-0.9027
70	1058.56	1053.20	0.000	3.000	-0.9080	-0.9080	-0.9102
* cable 65 unidades 2							
57	1126.74	1132.70	2.000	0.000	-1.4170	-1.6170	-1.5145
58	1132.70	1146.00	0.000	0.000	-1.6170	-1.9500	-1.7992
59	1146.00	1163.73	0.000	0.000	-1.9500	-2.0490	-2.0261
60	1163.73	1172.32	0.000	0.000	-2.0490	-2.0490	-2.0518
61	1172.32	1180.16	0.000	0.000	-2.0490	-2.0490	-2.0482
62	1180.16	1187.83	0.000	0.000	-2.0490	-2.0490	-2.0492
63	1187.83	1183.78	0.000	0.000	-2.0490	-2.0490	-2.0490
64	1183.78	1176.10	0.000	0.000	-2.0490	-2.0490	-2.0487
65	1176.10	1180.73	0.000	0.000	-2.0490	-2.0490	-2.0501
66	1180.73	1189.32	0.000	0.000	-2.0490	-2.0490	-2.0450
67	1189.32	1164.24	0.000	0.000	-2.0490	-1.9700	-2.0539
68	1164.24	1156.48	0.000	0.000	-1.9700	-1.5050	-1.7383
69	1156.48	1132.23	0.000	0.000	-1.5050	-1.4170	-1.4170
70	1132.23	1126.74	0.000	3.000	-1.4170	-1.4170	-1.4188
* cable 71 unidades 2							
69	1057.34	1067.69	2.000	0.000	0.5230	0.7100	0.6270
70	1067.69	1111.58	0.000	0.000	0.7100	0.5800	0.7462
71	1111.58	1132.98	0.000	0.000	0.5800	-0.3050	0.1757
72	1132.98	1149.94	0.000	0.000	-0.3050	-1.0440	-0.7001
73	1149.94	1133.48	0.000	0.000	-1.0440	-1.6600	-1.3888
74	1133.48	1108.09	0.000	0.000	-1.6600	-1.8090	-1.7829
75	1108.09	1104.62	0.000	0.000	-1.8090	-1.8090	-1.8094
76	1104.62	1113.86	0.000	0.000	-1.8090	-1.8090	-1.8147
77	1113.86	1140.64	0.000	0.000	-1.8090	-1.6090	-1.7608
78	1140.64	1130.99	0.000	0.000	-1.6090	-0.8590	-1.3025
79	1130.99	1112.57	0.000	0.000	-0.8590	0.1290	-0.3347
80	1112.57	1076.10	0.000	0.000	0.1290	0.5230	0.4068
81	1076.10	1063.08	0.000	0.000	0.5230	0.5230	0.5401
82	1063.08	1057.34	0.000	3.000	0.5230	0.5230	0.5202
* cable 72 unidades 2							
69	1051.83	1062.15	2.000	0.000	0.0460	0.2410	0.1541
70	1062.15	1107.70	0.000	0.000	0.2410	0.1100	0.2818
71	1107.70	1131.03	0.000	0.000	0.1100	-0.8310	-0.3168
72	1131.03	1136.94	0.000	0.000	-0.8310	-1.5450	-1.2504
73	1136.94	1111.63	0.000	0.000	-1.5450	-1.8090	-1.7251
74	1111.63	1109.09	0.000	0.000	-1.8090	-1.8090	-1.8221
75	1109.09	1116.84	0.000	0.000	-1.8090	-1.8090	-1.8074
76	1116.84	1126.52	0.000	0.000	-1.8090	-1.8090	-1.8024
77	1126.52	1144.48	0.000	0.000	-1.8090	-1.8090	-1.8370
78	1144.48	1116.18	0.000	0.000	-1.8090	-1.3100	-1.6412
79	1116.18	1105.44	0.000	0.000	-1.3100	-0.3890	-0.8399

80	1105.44	1070.65	0.000	0.000	-0.3890	0.0210	-0.1073
81	1070.65	1056.86	0.000	0.000	0.0210	0.0460	0.0530
82	1056.86	1051.83	0.000	3.000	0.0460	0.0460	0.0443
* cable 73 unidades 2							
69	1051.70	1065.98	2.000	0.000	-0.4310	-0.2360	-0.3162
70	1065.98	1111.85	0.000	0.000	-0.2360	-0.4770	-0.2497
71	1111.85	1124.00	0.000	0.000	-0.4770	-1.3520	-0.9012
72	1124.00	1144.62	0.000	0.000	-1.3520	-1.8590	-1.6656
73	1144.62	1125.97	0.000	0.000	-1.8590	-2.0490	-1.9838
74	1125.97	1122.68	0.000	0.000	-2.0490	-2.0490	-2.0597
75	1122.68	1130.39	0.000	0.000	-2.0490	-2.0490	-2.0477
76	1130.39	1139.81	0.000	0.000	-2.0490	-2.0490	-2.0434
77	1139.81	1142.35	0.000	0.000	-2.0490	-2.0490	-2.0727
78	1142.35	1109.68	0.000	0.000	-2.0490	-1.6300	-1.9072
79	1109.68	1101.27	0.000	0.000	-1.6300	-0.8530	-1.2381
80	1101.27	1071.10	0.000	0.000	-0.8530	-0.4600	-0.5925
81	1071.10	1056.75	0.000	0.000	-0.4600	-0.4310	-0.4244
82	1056.75	1051.70	0.000	3.000	-0.4310	-0.4310	-0.4327
* cable 74 unidades 2							
69	1053.20	1067.57	2.000	0.000	-0.9080	-0.7130	-0.7931
70	1067.57	1115.74	0.000	0.000	-0.7130	-0.9720	-0.7296
71	1115.74	1128.03	0.000	0.000	-0.9720	-1.8410	-1.4200
72	1128.03	1135.15	0.000	0.000	-1.8410	-2.0490	-2.0231
73	1135.15	1128.98	0.000	0.000	-2.0490	-2.0490	-2.0490
74	1128.98	1136.25	0.000	0.000	-2.0490	-2.0490	-2.0490
75	1136.25	1143.60	0.000	0.000	-2.0490	-2.0490	-2.0491
76	1143.60	1149.18	0.000	0.000	-2.0490	-2.0490	-2.0486
77	1149.18	1141.30	0.000	0.000	-2.0490	-2.0490	-2.0504
78	1141.30	1121.06	0.000	0.000	-2.0490	-1.9440	-2.0307
79	1121.06	1099.80	0.000	0.000	-1.9440	-1.4740	-1.7471
80	1099.80	1078.96	0.000	0.000	-1.4740	-0.9730	-1.1854
81	1078.96	1058.56	0.000	0.000	-0.9730	-0.9080	-0.9027
82	1058.56	1053.20	0.000	3.000	-0.9080	-0.9080	-0.9102
* cable 75 unidades 2							
69	1126.74	1132.70	2.000	0.000	-1.4170	-1.6170	-1.5145
70	1132.70	1146.00	0.000	0.000	-1.6170	-1.9500	-1.7992
71	1146.00	1163.73	0.000	0.000	-1.9500	-2.0490	-2.0261
72	1163.73	1172.32	0.000	0.000	-2.0490	-2.0490	-2.0518
73	1172.32	1180.16	0.000	0.000	-2.0490	-2.0490	-2.0482
74	1180.16	1187.83	0.000	0.000	-2.0490	-2.0490	-2.0492
75	1187.83	1183.78	0.000	0.000	-2.0490	-2.0490	-2.0490
76	1183.78	1176.10	0.000	0.000	-2.0490	-2.0490	-2.0487
77	1176.10	1180.73	0.000	0.000	-2.0490	-2.0490	-2.0501
78	1180.73	1189.32	0.000	0.000	-2.0490	-2.0490	-2.0450
79	1189.32	1164.24	0.000	0.000	-2.0490	-1.9700	-2.0539
80	1164.24	1156.48	0.000	0.000	-1.9700	-1.5050	-1.7383
81	1156.48	1132.23	0.000	0.000	-1.5050	-1.4170	-1.4170
82	1132.23	1126.74	0.000	3.000	-1.4170	-1.4170	-1.4188
* cable 81 unidades 2							
81	1057.34	1067.69	2.000	0.000	0.5230	0.7100	0.6270
82	1067.69	1111.58	0.000	0.000	0.7100	0.5800	0.7462
83	1111.58	1132.98	0.000	0.000	0.5800	-0.3050	0.1757
84	1132.98	1149.94	0.000	0.000	-0.3050	-1.0440	-0.7001
85	1149.94	1133.48	0.000	0.000	-1.0440	-1.6600	-1.3888
86	1133.48	1108.09	0.000	0.000	-1.6600	-1.8090	-1.7829
87	1108.09	1104.62	0.000	0.000	-1.8090	-1.8090	-1.8094
88	1104.62	1113.86	0.000	0.000	-1.8090	-1.8090	-1.8147
89	1113.86	1140.64	0.000	0.000	-1.8090	-1.6090	-1.7608
90	1140.64	1130.99	0.000	0.000	-1.6090	-0.8590	-1.3025
91	1130.99	1112.57	0.000	0.000	-0.8590	0.1290	-0.3347
92	1112.57	1076.10	0.000	0.000	0.1290	0.5230	0.4068
93	1076.10	1063.08	0.000	0.000	0.5230	0.5230	0.5401
94	1063.08	1057.34	0.000	3.000	0.5230	0.5230	0.5202
* cable 82 unidades 2							

81	1051.83	1062.15	2.000	0.000	0.0460	0.2410	0.1541
82	1062.15	1107.70	0.000	0.000	0.2410	0.1100	0.2818
83	1107.70	1131.02	0.000	0.000	0.1100	-0.8310	-0.3168
84	1131.02	1136.94	0.000	0.000	-0.8310	-1.5450	-1.2504
85	1136.94	1111.63	0.000	0.000	-1.5450	-1.8090	-1.7251
86	1111.63	1109.09	0.000	0.000	-1.8090	-1.8090	-1.8221
87	1109.09	1116.84	0.000	0.000	-1.8090	-1.8090	-1.8074
88	1116.84	1126.52	0.000	0.000	-1.8090	-1.8090	-1.8024
89	1126.52	1144.48	0.000	0.000	-1.8090	-1.8090	-1.8370
90	1144.48	1116.18	0.000	0.000	-1.8090	-1.3100	-1.6412
91	1116.18	1105.44	0.000	0.000	-1.3100	-0.3890	-0.8399
92	1105.44	1070.65	0.000	0.000	-0.3890	0.0210	-0.1073
93	1070.65	1056.86	0.000	0.000	0.0210	0.0460	0.0530
94	1056.86	1051.83	0.000	3.000	0.0460	0.0460	0.0443
* cable 83 unidades 2							
81	1051.70	1065.98	2.000	0.000	-0.4310	-0.2360	-0.3162
82	1065.98	1111.85	0.000	0.000	-0.2360	-0.4770	-0.2497
83	1111.85	1124.00	0.000	0.000	-0.4770	-1.3520	-0.9012
84	1124.00	1144.62	0.000	0.000	-1.3520	-1.8590	-1.6656
85	1144.62	1125.97	0.000	0.000	-1.8590	-2.0490	-1.9838
86	1125.97	1122.68	0.000	0.000	-2.0490	-2.0490	-2.0597
87	1122.68	1130.39	0.000	0.000	-2.0490	-2.0490	-2.0477
88	1130.39	1139.81	0.000	0.000	-2.0490	-2.0490	-2.0434
89	1139.81	1142.35	0.000	0.000	-2.0490	-2.0490	-2.0728
90	1142.35	1109.68	0.000	0.000	-2.0490	-1.6300	-1.9072
91	1109.68	1101.27	0.000	0.000	-1.6300	-0.8530	-1.2381
92	1101.27	1071.10	0.000	0.000	-0.8530	-0.4600	-0.5925
93	1071.10	1056.74	0.000	0.000	-0.4600	-0.4310	-0.4244
94	1056.74	1051.70	0.000	3.000	-0.4310	-0.4310	-0.4327
* cable 84 unidades 2							
81	1053.20	1067.57	2.000	0.000	-0.9080	-0.7130	-0.7931
82	1067.57	1115.74	0.000	0.000	-0.7130	-0.9720	-0.7296
83	1115.74	1128.03	0.000	0.000	-0.9720	-1.8410	-1.4200
84	1128.03	1135.15	0.000	0.000	-1.8410	-2.0490	-2.0231
85	1135.15	1128.98	0.000	0.000	-2.0490	-2.0490	-2.0490
86	1128.98	1136.26	0.000	0.000	-2.0490	-2.0490	-2.0490
87	1136.26	1143.60	0.000	0.000	-2.0490	-2.0490	-2.0491
88	1143.60	1149.17	0.000	0.000	-2.0490	-2.0490	-2.0486
89	1149.17	1141.29	0.000	0.000	-2.0490	-2.0490	-2.0504
90	1141.29	1121.06	0.000	0.000	-2.0490	-1.9440	-2.0307
91	1121.06	1099.80	0.000	0.000	-1.9440	-1.4740	-1.7471
92	1099.80	1078.96	0.000	0.000	-1.4740	-0.9730	-1.1855
93	1078.96	1058.56	0.000	0.000	-0.9730	-0.9080	-0.9027
94	1058.56	1053.20	0.000	3.000	-0.9080	-0.9080	-0.9102
* cable 85 unidades 2							
81	1126.74	1132.70	2.000	0.000	-1.4170	-1.6170	-1.5145
82	1132.70	1146.00	0.000	0.000	-1.6170	-1.9500	-1.7992
83	1146.00	1163.72	0.000	0.000	-1.9500	-2.0490	-2.0261
84	1163.72	1172.32	0.000	0.000	-2.0490	-2.0490	-2.0518
85	1172.32	1180.16	0.000	0.000	-2.0490	-2.0490	-2.0482
86	1180.16	1187.83	0.000	0.000	-2.0490	-2.0490	-2.0492
87	1187.83	1183.78	0.000	0.000	-2.0490	-2.0490	-2.0490
88	1183.78	1176.10	0.000	0.000	-2.0490	-2.0490	-2.0487
89	1176.10	1180.73	0.000	0.000	-2.0490	-2.0490	-2.0501
90	1180.73	1189.32	0.000	0.000	-2.0490	-2.0490	-2.0450
91	1189.32	1164.24	0.000	0.000	-2.0490	-1.9700	-2.0539
92	1164.24	1156.48	0.000	0.000	-1.9700	-1.5050	-1.7383
93	1156.48	1132.23	0.000	0.000	-1.5050	-1.4170	-1.4170
94	1132.23	1126.74	0.000	3.000	-1.4170	-1.4170	-1.4188
* cable 91 unidades 2							
93	1057.34	1067.69	2.000	0.000	0.5230	0.7100	0.6270
94	1067.69	1111.58	0.000	0.000	0.7100	0.5800	0.7462
95	1111.58	1132.98	0.000	0.000	0.5800	-0.3050	0.1757
96	1132.98	1149.94	0.000	0.000	-0.3050	-1.0440	-0.7001

97	1149.94	1133.48	0.000	0.000	-1.0440	-1.6600	-1.3888
98	1133.48	1108.09	0.000	0.000	-1.6600	-1.8090	-1.7829
99	1108.09	1104.62	0.000	0.000	-1.8090	-1.8090	-1.8094
100	1104.62	1113.86	0.000	0.000	-1.8090	-1.8090	-1.8147
101	1113.86	1140.64	0.000	0.000	-1.8090	-1.6090	-1.7608
102	1140.64	1130.98	0.000	0.000	-1.6090	-0.8590	-1.3025
103	1130.98	1112.57	0.000	0.000	-0.8590	0.1290	-0.3347
104	1112.57	1076.10	0.000	0.000	0.1290	0.5230	0.4068
105	1076.10	1063.08	0.000	0.000	0.5230	0.5230	0.5401
106	1063.08	1057.34	0.000	3.000	0.5230	0.5230	0.5202
* cable 92 unidades 2							
93	1051.83	1062.15	2.000	0.000	0.0460	0.2410	0.1541
94	1062.15	1107.70	0.000	0.000	0.2410	0.1100	0.2818
95	1107.70	1131.02	0.000	0.000	0.1100	-0.8310	-0.3168
96	1131.02	1136.94	0.000	0.000	-0.8310	-1.5450	-1.2504
97	1136.94	1111.63	0.000	0.000	-1.5450	-1.8090	-1.7251
98	1111.63	1109.09	0.000	0.000	-1.8090	-1.8090	-1.8221
99	1109.09	1116.84	0.000	0.000	-1.8090	-1.8090	-1.8074
100	1116.84	1126.52	0.000	0.000	-1.8090	-1.8090	-1.8024
101	1126.52	1144.48	0.000	0.000	-1.8090	-1.8090	-1.8370
102	1144.48	1116.18	0.000	0.000	-1.8090	-1.3100	-1.6412
103	1116.18	1105.44	0.000	0.000	-1.3100	-0.3890	-0.8399
104	1105.44	1070.65	0.000	0.000	-0.3890	0.0210	-0.1073
105	1070.65	1056.86	0.000	0.000	0.0210	0.0460	0.0530
106	1056.86	1051.83	0.000	3.000	0.0460	0.0460	0.0443
* cable 93 unidades 2							
93	1051.70	1065.98	2.000	0.000	-0.4310	-0.2360	-0.3162
94	1065.98	1111.85	0.000	0.000	-0.2360	-0.4770	-0.2497
95	1111.85	1124.00	0.000	0.000	-0.4770	-1.3520	-0.9012
96	1124.00	1144.62	0.000	0.000	-1.3520	-1.8590	-1.6656
97	1144.62	1125.97	0.000	0.000	-1.8590	-2.0490	-1.9838
98	1125.97	1122.68	0.000	0.000	-2.0490	-2.0490	-2.0597
99	1122.68	1130.39	0.000	0.000	-2.0490	-2.0490	-2.0477
100	1130.39	1139.81	0.000	0.000	-2.0490	-2.0490	-2.0434
101	1139.81	1142.35	0.000	0.000	-2.0490	-2.0490	-2.0727
102	1142.35	1109.68	0.000	0.000	-2.0490	-1.6300	-1.9073
103	1109.68	1101.27	0.000	0.000	-1.6300	-0.8530	-1.2381
104	1101.27	1071.10	0.000	0.000	-0.8530	-0.4600	-0.5925
105	1071.10	1056.74	0.000	0.000	-0.4600	-0.4310	-0.4244
106	1056.74	1051.70	0.000	3.000	-0.4310	-0.4310	-0.4327
* cable 94 unidades 2							
93	1053.20	1067.57	2.000	0.000	-0.9080	-0.7130	-0.7931
94	1067.57	1115.74	0.000	0.000	-0.7130	-0.9720	-0.7296
95	1115.74	1128.03	0.000	0.000	-0.9720	-1.8410	-1.4200
96	1128.03	1135.15	0.000	0.000	-1.8410	-2.0490	-2.0231
97	1135.15	1128.98	0.000	0.000	-2.0490	-2.0490	-2.0490
98	1128.98	1136.25	0.000	0.000	-2.0490	-2.0490	-2.0490
99	1136.25	1143.60	0.000	0.000	-2.0490	-2.0490	-2.0491
100	1143.60	1149.18	0.000	0.000	-2.0490	-2.0490	-2.0486
101	1149.18	1141.30	0.000	0.000	-2.0490	-2.0490	-2.0504
102	1141.30	1121.06	0.000	0.000	-2.0490	-1.9440	-2.0307
103	1121.06	1099.80	0.000	0.000	-1.9440	-1.4740	-1.7471
104	1099.80	1078.96	0.000	0.000	-1.4740	-0.9730	-1.1854
105	1078.96	1058.56	0.000	0.000	-0.9730	-0.9080	-0.9027
106	1058.56	1053.20	0.000	3.000	-0.9080	-0.9080	-0.9102
* cable 95 unidades 2							
93	1126.74	1132.70	2.000	0.000	-1.4170	-1.6170	-1.5145
94	1132.70	1146.00	0.000	0.000	-1.6170	-1.9500	-1.7992
95	1146.00	1163.72	0.000	0.000	-1.9500	-2.0490	-2.0261
96	1163.72	1172.32	0.000	0.000	-2.0490	-2.0490	-2.0518
97	1172.32	1180.16	0.000	0.000	-2.0490	-2.0490	-2.0482
98	1180.16	1187.83	0.000	0.000	-2.0490	-2.0490	-2.0492
99	1187.83	1183.78	0.000	0.000	-2.0490	-2.0490	-2.0490
100	1183.78	1176.10	0.000	0.000	-2.0490	-2.0490	-2.0487

101	1176.10	1180.73	0.000	0.000	-2.0490	-2.0490	-2.0501
102	1180.73	1189.32	0.000	0.000	-2.0490	-2.0490	-2.0450
103	1189.32	1164.24	0.000	0.000	-2.0490	-1.9700	-2.0539
104	1164.24	1156.48	0.000	0.000	-1.9700	-1.5050	-1.7383
105	1156.48	1132.23	0.000	0.000	-1.5050	-1.4170	-1.4170
106	1132.23	1126.74	0.000	3.000	-1.4170	-1.4170	-1.4188
* cable 101 unidades 2							
105	1065.90	1076.93	2.000	0.000	0.5230	0.7100	0.6280
106	1076.93	1118.95	0.000	0.000	0.7100	0.5800	0.7401
107	1118.95	1144.43	0.000	0.000	0.5800	-0.2700	0.2037
108	1144.43	1151.82	0.000	0.000	-0.2700	-1.1000	-0.7125
109	1151.82	1151.56	0.000	0.000	-1.1000	-1.6600	-1.4273
110	1151.56	1140.31	0.000	0.000	-1.6600	-1.8090	-1.7730
111	1140.31	1119.42	0.000	0.000	-1.8090	-1.7360	-1.8085
112	1119.42	1095.86	0.000	0.000	-1.7360	-1.2800	-1.5525
113	1095.86	1085.22	0.000	0.000	-1.2800	-0.6100	-0.9549
114	1085.22	1074.14	0.000	0.000	-0.6100	0.0400	-0.2735
* cable 102 unidades 2							
105	1061.86	1072.21	2.000	0.000	0.0460	0.2400	0.1535
106	1072.21	1118.09	0.000	0.000	0.2400	0.1100	0.2810
107	1118.09	1141.70	0.000	0.000	0.1100	-0.8300	-0.3161
108	1141.70	1147.81	0.000	0.000	-0.8300	-1.5450	-1.2496
109	1147.81	1135.71	0.000	0.000	-1.5450	-1.8090	-1.7260
110	1135.71	1124.70	0.000	0.000	-1.8090	-1.8090	-1.8189
111	1124.70	1113.62	0.000	0.000	-1.8090	-1.8090	-1.8194
112	1113.62	1093.79	0.000	0.000	-1.8090	-1.5800	-1.7290
113	1093.79	1078.01	0.000	0.000	-1.5800	-1.1200	-1.3743
114	1078.01	1068.40	0.000	0.000	-1.1200	-0.5200	-0.8275
* cable 103 unidades 2							
105	1064.93	1079.41	2.000	0.000	-0.4310	-0.2350	-0.3157
106	1079.41	1125.87	0.000	0.000	-0.2350	-0.4750	-0.2481
107	1125.87	1138.32	0.000	0.000	-0.4750	-1.3500	-0.8989
108	1138.32	1156.02	0.000	0.000	-1.3500	-1.8600	-1.6651
109	1156.02	1136.92	0.000	0.000	-1.8600	-2.0490	-1.9850
110	1136.92	1126.23	0.000	0.000	-2.0490	-2.0490	-2.0580
111	1126.23	1117.44	0.000	0.000	-2.0490	-2.0490	-2.0532
112	1117.44	1101.97	0.000	0.000	-2.0490	-1.9200	-2.0069
113	1101.97	1084.02	0.000	0.000	-1.9200	-1.5900	-1.7849
114	1084.02	1071.35	0.000	0.000	-1.5900	-1.0400	-1.3310
* cable 104 unidades 2							
105	1063.78	1078.46	2.000	0.000	-0.9080	-0.7100	-0.7914
106	1078.46	1127.33	0.000	0.000	-0.7100	-0.9700	-0.7265
107	1127.33	1139.79	0.000	0.000	-0.9700	-1.8400	-1.4186
108	1139.79	1140.75	0.000	0.000	-1.8400	-2.0490	-2.0227
109	1140.75	1133.42	0.000	0.000	-2.0490	-2.0490	-2.0489
110	1133.42	1125.98	0.000	0.000	-2.0490	-2.0490	-2.0495
111	1125.98	1118.03	0.000	0.000	-2.0490	-2.0490	-2.0470
112	1118.03	1106.84	0.000	0.000	-2.0490	-2.0400	-2.0553
113	1106.84	1094.29	0.000	0.000	-2.0400	-1.8900	-1.9799
114	1094.29	1077.29	0.000	0.000	-1.8900	-1.6200	-1.7826

COMPROBACIONES EN E.L.S.

COMPROBACIÓN DE TENSIONES

COMPROBACIÓN DE TENSIONES

- Compresiones máximas admisibles

Sobrecarga $\sigma_{máx} < 0'60\ f_{ckj} = 300 kg/cm^2$

c permanente $\sigma_{máx} < 0'40\ f_{ckj} = 200 kg/cm^2$

- Tracciones admisibles

Sc frecuente $\sigma_{tracc} < f_{ctm}$

$$f_{ctm} = 0'30 \sqrt[3]{f_{ck}^2} = 40'7 kg/cm^2$$

—•—

-Resultados

1.- $\sigma_{máx}$ compr con sc = 320'89 kg/cm2 valle en una sola sección, en ppp. y con pretensado mayorado en el resto σ = secciones

2.- $\sigma_{máx}$ compr cpp = 213'15 kg/cm2

3.- $\sigma_{máx}$ tracc frec = −33'89 kg/cm2

kg/cm²

HIPÓTESIS		σ compr máx	σ tracc máx
91	pp + pret proc (t=0)	145'64	-3'32
92	pp + pret total (t=0)	182'01	62'35
93	cp + pret total (t=0)	213'15	62'35
94	cp + pret total (t=∞)	189'09	36'97
95	máx mz + pret (t=0) min	299'47	-24'75
96	min mz + pret (t=0) min	239'1	-39'44
97	máx mz + pret (t=∞) min	279'71	-58'11
98	min mz + pret (t=∞) min	210'65	-76'18
113	máx mz + pret (t=0) may	320'89	7'49
114	min mz + pret (t=0) may	266'58	-3'93
115	máx mz + pret (t=∞) may	294'24	-33'29
116	min mz + pret (t=∞) may	231'81	-48'84
117	máx mz + pret (t=0) frec	263'4	5'6
118	min mz + pret (t=0) frec	216'1	2'84
119	máx mz + pret (t=∞) frec	242'57	-27'74
120	mín mz + pret (t=∞) frec	187'65	-33'89

"armaten-ten" Fichero de datos para cálculo de tensiones.

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dato 114 2 1.15 1.50 1.00 0 0
 1 a  8 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
        9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
      9 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
        15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
        2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
        1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
     10 15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
        2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
        1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
        9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
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        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
11 a 20 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
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        9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
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        15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
        2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
        1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
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        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
23 a 32 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
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        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
        9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
     33 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
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        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
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        2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
        1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
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        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
35 a 44 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
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        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
        9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
     45 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
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          1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
          1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
          15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
          2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
          1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
       46 15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
          2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
          1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
          9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
          1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
          1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
47 a 56   9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
          1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
          1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
          9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
          1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
          1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
       57 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
          1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
          1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
          15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
          2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
          1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
       58 15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
          2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
          1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
          9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
          1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
          1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
59 a 68   9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
          1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
          1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
          9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
          1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
          1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
       69 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
          1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
          1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
          15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
          2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
          1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
       70 15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
          2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
          1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
          9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
          1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
          1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
71 a 80   9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
          1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
          1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
          9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
          1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
          1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
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          1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
          15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
          2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
          1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
       82 15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
          2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
          1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
          9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
          1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
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        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
83 a 92 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
        9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
     93 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
        15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
        2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
        1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
     94 15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
        2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
        1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
        9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
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        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
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        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
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    105 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
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        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
        15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
        2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
        1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
    106 15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
        2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
        1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
        9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
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        9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
secc 9 21 33 45 57 69 81 93 105 114
tens 10.
hipo 91 a 98 113 a 120
barr 1 a 114
fin
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proc Viaducto Papiol

HIPOTESIS 91

pp + pret proc

ESFUERZOS EN BARRAS

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	MOM. Y	MOM. Z
1	3	8570.924	379.261	-0.552	-7.696	0.000	575.809
1	8	-8599.672	-260.885	0.552	1.346	2.759	1020.110
2	8	8599.651	260.885	-0.552	-1.346	-2.759	-1020.109
2	9	-8619.985	-142.508	0.552	-3.629	5.518	2026.486
3	9	8619.983	142.508	-0.552	5.663	-5.518	-2026.482
3	10	-8616.802	-24.134	0.552	-9.463	8.277	2446.919
4	10	9295.653	24.134	-0.552	8.314	-8.277	-3222.042
4	11	-9323.095	94.241	0.552	-11.189	11.036	3056.319
5	11	9323.101	-94.240	-0.552	12.273	-11.036	-3056.314
5	12	-9350.925	212.615	0.552	-14.098	13.795	2298.721
6	12	9350.945	-212.616	-0.552	15.723	-13.795	-2298.708
6	13	-9368.174	330.990	0.552	-16.548	16.554	953.082
7	13	9368.197	-330.990	-0.552	16.273	-16.554	-953.089
7	14	-9356.143	449.367	0.552	-16.148	19.313	-974.456
8	14	9333.137	-449.367	-0.552	15.191	-19.313	968.720
8	15	-9352.873	567.741	0.552	-14.141	22.072	-3496.115
9	15	9352.870	-567.741	-0.552	14.217	-22.072	3496.115
9	18	-9372.991	686.115	0.552	-12.292	24.831	-6615.366
10	18	9373.025	715.282	0.627	50.977	-24.830	6615.402
10	24	-9383.777	-596.905	-0.627	-48.252	21.695	-3322.461
11	24	9383.760	596.905	0.627	46.875	-21.695	3322.480
11	25	-9368.518	-478.530	-0.627	-43.400	18.559	-629.644
12	25	9339.962	478.530	0.627	42.652	-18.559	620.067
12	26	-9364.220	-360.154	-0.627	-38.452	15.424	1467.616
13	26	9364.207	360.154	0.627	37.987	-15.424	-1467.632
13	27	-9388.850	-241.779	-0.627	-33.112	12.288	2963.424
14	27	9388.897	241.779	0.627	34.125	-12.288	-2963.412
14	28	-9405.157	-123.404	-0.627	-28.625	9.153	3869.721
15	28	9405.136	123.404	0.627	31.417	-9.153	-3869.701
15	29	-9397.913	-5.030	-0.627	-25.317	6.017	4190.116
16	29	8698.541	5.031	0.627	23.837	-6.017	-3407.140
16	30	-8722.139	113.345	-0.627	-17.187	2.882	3141.454
17	30	8722.132	-113.346	0.627	18.638	-2.882	-3141.447
17	31	-8746.089	231.721	-0.627	-11.463	-0.254	2283.859
18	31	8746.067	-231.721	0.627	12.516	0.254	-2283.855
18	32	-8755.724	350.098	-0.627	-4.841	-3.389	834.086
19	32	8755.719	-350.097	0.627	4.840	3.389	-834.086
19	33	-8726.205	468.471	-0.627	3.285	-6.525	-1208.504
20	33	8703.250	-468.472	0.627	-3.564	6.525	1202.754
20	34	-8705.502	586.847	-0.627	12.089	-9.660	-3845.277
21	34	8705.521	-586.846	0.627	-13.439	9.660	3845.272
21	37	-8708.133	705.223	-0.627	22.339	-12.796	-7079.740
22	37	8708.116	718.854	0.135	65.395	12.796	7079.722
22	44	-8703.784	-600.480	-0.135	-56.145	-13.469	-3785.813
23	44	8703.786	600.480	0.135	54.823	13.469	3785.835

TENSIONES

SIGMA 1	SIGMA2	SIGMA3	SIGMA4
84.67	84.67	97.38	97.38
98.29	98.33	75.79	75.81
98.29	98.33	75.79	75.81
106.89	106.98	62.20	62.23
106.89	106.98	62.20	62.23
110.35	110.48	56.40	56.44
123.91	124.04	52.86	52.90
122.79	122.97	55.41	55.47
122.79	122.97	55.41	55.47
116.73	116.95	66.08	66.15
116.73	116.95	66.08	66.15
105.65	105.90	84.70	84.79
105.65	105.90	84.70	84.79
89.39	89.69	110.99	111.09
89.20	89.50	110.67	110.78
68.26	68.60	145.52	145.64
68.26	68.60	145.52	145.64
12.01	12.32	118.34	118.45
12.01	12.32	118.34	118.45
70.04	70.38	143.46	143.58
70.04	70.38	143.46	143.58
92.41	92.70	106.40	106.49
92.19	92.48	105.97	106.06
109.91	110.15	77.61	77.69
109.91	110.15	77.61	77.69
122.69	122.89	57.37	57.43
122.69	122.89	57.37	57.43
130.46	130.61	45.12	45.17
130.46	130.60	45.12	45.17
133.09	133.18	40.66	40.69
119.24	119.34	44.09	44.12
117.29	117.34	47.99	48.00
117.29	117.34	47.99	48.00
110.40	110.40	60.00	60.00
110.40	110.40	60.00	60.00
98.41	98.36	79.99	79.97
98.41	98.36	79.99	79.97
81.06	80.96	107.69	107.66
80.87	80.77	107.37	107.34
58.83	58.68	143.63	143.58
58.83	58.68	143.63	143.58
4.72	4.56	118.35	118.30
4.72	4.56	118.35	118.30
59.34	59.13	142.81	142.74
59.34	59.13	142.81	142.74

23	45	-8680.005	-482.106	-0.135	-45.248	-14.142	-1084.449	81.67	81.45	105.53	105.45
24	45	7293.979	482.105	0.135	45.020	14.142	1503.269	63.70	63.48	96.80	96.72
24	46	-7314.025	-363.729	-0.135	-35.145	-14.815	604.743	81.53	81.30	68.11	68.03
25	46	7314.028	363.729	0.135	35.144	14.815	-604.743	81.53	81.30	68.11	68.03
25	47	-7334.375	-245.354	-0.135	-24.995	-15.488	2120.805	94.42	94.18	47.54	47.46
26	47	7334.376	245.355	0.135	26.151	15.488	-2120.796	94.42	94.18	47.54	47.46
26	48	-7346.257	-126.979	-0.135	-15.751	-16.161	3047.327	102.29	102.04	34.97	34.88
27	48	7346.246	126.979	0.135	15.830	16.161	-3047.325	102.29	102.04	34.97	34.88
27	49	-7334.558	-8.603	-0.135	-5.205	-16.834	3387.919	105.02	104.76	30.18	30.09
28	49	7315.476	8.603	0.135	6.844	16.834	-3387.302	104.82	104.55	29.98	29.90
28	50	-7330.175	109.774	-0.135	1.206	-17.507	3136.716	102.88	102.61	33.58	33.48
29	50	7330.172	-109.773	0.135	0.414	17.507	-3136.717	102.88	102.61	33.58	33.48
29	51	-7345.172	228.146	-0.135	2.361	-18.180	2294.236	96.00	95.72	45.28	45.19
30	51	7345.200	-228.146	0.135	-1.139	18.180	-2294.236	96.00	95.72	45.28	45.19
30	52	-7350.749	346.521	-0.135	4.064	-18.853	861.087	84.09	83.80	64.99	64.89
31	52	7350.766	-346.521	0.135	-4.064	18.853	-861.088	84.09	83.80	64.99	64.89
31	53	-7330.235	464.896	-0.135	12.564	-19.526	-1160.839	66.98	66.68	92.50	92.39
32	53	7307.222	-464.896	0.135	-12.666	19.526	1155.086	66.79	66.49	92.18	92.08
32	54	-7318.399	583.272	-0.135	21.166	-20.199	-3776.994	45.00	44.69	128.24	128.13
33	54	7318.422	-583.272	0.135	-21.108	20.199	3776.995	45.00	44.69	128.24	128.14
33	57	-7329.901	701.648	-0.135	24.008	-20.872	-6990.807	-3.32	-3.59	108.85	108.76
34	57	7329.922	708.070	0.298	59.787	20.872	6990.813	-3.32	-3.59	108.85	108.76
34	64	-7334.401	-589.695	-0.298	-56.837	-22.361	-3748.077	45.43	45.08	128.02	127.90
35	64	7334.350	589.695	0.298	56.894	22.361	3748.076	45.43	45.08	128.02	127.90
35	65	-7319.324	-471.320	-0.298	-48.194	-23.849	-1097.886	67.43	67.06	91.53	91.41
36	65	7293.959	471.320	0.298	48.046	23.849	1094.924	67.19	66.82	91.23	91.10
36	66	-7314.006	-352.944	-0.298	-36.396	-25.338	959.144	84.58	84.18	63.28	63.15
37	66	7313.985	352.944	0.298	36.433	25.338	-959.144	84.57	84.18	63.28	63.15
37	67	-7334.333	-234.569	-0.298	-24.783	-26.826	2421.292	97.02	96.60	43.45	43.31
38	67	7334.364	234.569	0.298	25.985	26.826	-2421.285	97.02	96.60	43.45	43.31
38	68	-7346.245	-116.196	-0.298	-14.335	-28.314	3293.882	104.45	104.01	31.62	31.47
39	68	7346.222	116.195	0.298	12.820	28.314	-3293.889	104.45	104.01	31.62	31.47
39	69	-7334.534	2.183	-0.298	-1.195	-29.803	3580.559	106.73	106.27	27.57	27.41
40	69	7315.473	-2.182	0.298	6.414	29.803	-3579.942	106.53	106.06	27.38	27.22
40	70	-7330.171	120.555	-0.298	5.161	-31.291	3275.448	104.15	103.66	31.71	31.54
41	70	7330.168	-120.555	0.298	-6.836	31.291	-3275.446	104.15	103.66	31.71	31.54
41	71	-7345.168	238.933	-0.298	18.361	-32.780	2379.010	96.82	96.31	44.16	43.99
42	71	7345.166	-238.932	0.298	-17.044	32.780	-2379.019	96.82	96.31	44.16	43.99
42	72	-7350.715	357.307	-0.298	28.494	-34.268	891.948	84.47	83.93	64.61	64.43
43	72	7350.724	-357.307	0.298	-27.807	34.268	-891.959	84.47	83.93	64.61	64.43
43	73	-7330.194	475.682	-0.298	39.157	-35.756	-1183.902	66.92	66.36	92.86	92.67
44	73	7307.222	-475.682	0.298	-39.163	35.756	1178.153	66.72	66.17	92.54	92.35
44	74	-7318.400	594.058	-0.298	50.388	-37.245	-3853.986	44.49	43.91	129.34	129.15
45	74	7318.425	-594.058	0.298	-51.510	37.245	3853.965	44.49	43.91	129.34	129.14
45	77	-7329.903	712.433	-0.298	62.585	-38.733	-7121.715	-4.14	-4.64	110.05	109.88
46	77	7329.900	710.896	-0.320	35.844	38.733	7121.753	-4.14	-4.64	110.05	109.88
46	84	-7334.380	-592.522	0.320	-24.994	-37.132	-3864.913	44.57	43.99	129.66	129.46
47	84	7334.377	592.522	-0.320	24.933	37.132	3864.914	44.57	43.99	129.66	129.46
47	85	-7319.351	-474.145	0.320	-14.358	-35.532	-1200.559	66.66	66.11	92.97	92.78
48	85	7293.954	474.144	-0.320	14.247	35.532	1197.564	66.42	65.87	92.67	92.48
48	86	-7314.000	-355.771	0.320	-3.972	-33.931	870.595	83.90	83.37	64.52	64.34
49	86	7313.998	355.771	-0.320	4.650	33.931	-870.593	83.90	83.37	64.52	64.34
49	87	-7334.345	-237.396	0.320	5.250	-32.331	2346.880	96.44	95.94	44.49	44.31
50	87	7334.369	237.396	-0.320	-5.185	32.331	-2346.881	96.44	95.94	44.49	44.31
50	88	-7346.250	-119.020	0.320	14.685	-30.730	3233.621	103.96	103.48	32.45	32.29
51	88	7346.227	119.020	-0.320	-13.104	30.730	-3233.624	103.96	103.48	32.45	32.29
51	89	-7334.540	-0.644	0.320	22.204	-29.129	3534.426	106.34	105.89	28.20	28.04
52	89	7315.495	0.644	-0.320	-22.205	29.129	-3533.810	106.14	105.68	28.01	27.85
52	90	-7330.194	117.731	0.320	30.880	-27.529	3243.441	103.85	103.42	32.14	31.99
53	90	7330.187	-117.731	-0.320	-29.214	27.529	-3243.455	103.85	103.42	32.14	31.99
53	91	-7345.187	236.107	0.320	37.414	-25.928	2361.159	96.62	96.22	44.39	44.25
54	91	7345.196	-236.107	-0.320	-36.169	25.928	-2361.177	96.62	96.22	44.39	44.25

54	92	-7350.745	354.482	0.320	43.869	-24.327	888.231	84.36	83.98	64.63	64.50
55	92	7350.735	-354.482	-0.320	-43.148	24.328	-888.249	84.36	83.98	64.63	64.50
55	93	-7330.205	472.856	0.320	50.348	-22.727	-1173.476	66.90	66.55	92.68	92.56
56	93	7307.235	-472.855	-0.320	-50.342	22.727	1167.729	66.71	66.36	92.36	92.24
56	94	-7318.413	591.230	0.320	57.017	-21.126	-3829.388	44.57	44.24	128.96	128.85
57	94	7318.416	-591.230	-0.320	-57.077	21.126	3829.388	44.57	44.24	128.96	128.85
57	97	-7329.895	709.606	0.320	63.202	-19.526	-7083.021	-3.99	-4.24	109.67	109.58
58	97	7329.895	709.745	-0.458	-12.118	19.526	7082.968	-3.99	-4.24	109.66	109.58
58	104	-7334.373	-591.370	0.458	17.693	-17.234	-3831.841	44.69	44.42	129.15	129.06
59	104	7334.387	591.370	-0.458	-17.634	17.234	3831.841	44.69	44.42	129.15	129.06
59	105	-7319.361	-472.995	0.458	22.634	-14.943	-1173.284	66.73	66.50	92.54	92.46
60	105	7293.967	472.995	-0.458	-22.745	14.943	1170.275	66.49	66.26	92.24	92.16
60	106	-7314.013	-354.621	0.458	27.145	-12.652	892.148	83.92	83.72	64.17	64.10
61	106	7314.018	354.621	-0.458	-27.181	12.652	-892.148	83.92	83.72	64.17	64.10
61	107	-7334.366	-236.246	0.458	31.006	-10.360	2362.676	96.40	96.24	44.21	44.16
62	107	7334.357	236.245	-0.458	-29.694	10.360	-2362.688	96.40	96.24	44.21	44.16
62	108	-7346.237	-117.871	0.458	32.919	-8.069	3243.667	103.87	103.74	32.25	32.21
63	108	7346.223	117.872	-0.458	-31.334	8.069	-3243.680	103.87	103.74	32.25	32.21
63	109	-7334.535	0.504	0.458	33.934	-5.778	3538.732	106.19	106.10	28.08	28.05
64	109	7315.489	-0.504	-0.458	-35.629	5.778	-3538.106	105.99	105.90	27.89	27.86
64	110	-7330.188	118.880	0.458	37.629	-3.486	3241.988	103.65	103.60	32.10	32.08
65	110	7330.200	-118.880	-0.458	-34.384	3.486	-3242.015	103.65	103.60	32.09	32.08
65	111	-7345.200	237.253	0.458	35.784	-1.195	2354.005	96.37	96.35	44.42	44.41
66	111	7345.179	-237.253	-0.458	-34.539	1.195	-2354.019	96.37	96.35	44.42	44.41
66	112	-7350.727	355.630	0.458	35.339	1.097	875.317	84.05	84.07	64.74	64.75
67	112	7350.742	-355.629	-0.458	-35.304	-1.097	-875.317	84.05	84.07	64.74	64.75
67	113	-7330.211	474.003	0.458	35.479	3.388	-1192.135	66.54	66.60	92.87	92.88
68	113	7307.246	-474.003	-0.458	-35.588	-3.388	1186.375	66.35	66.40	92.55	92.57
68	114	-7318.422	592.377	0.458	35.138	5.680	-3853.766	44.16	44.25	129.23	129.26
69	114	7318.409	-592.377	-0.458	-35.138	-5.680	3853.767	44.16	44.25	129.23	129.26
69	117	-7329.889	710.753	0.458	34.063	7.971	-7113.122	-4.38	-4.28	109.87	109.91
70	117	7329.897	711.664	-0.589	-47.227	-7.972	7113.067	-4.38	-4.28	109.87	109.91
70	124	-7334.376	-593.290	0.589	45.527	10.915	-3852.376	44.30	44.47	129.36	129.42
71	124	7334.388	593.290	-0.589	-44.349	-10.915	3852.394	44.30	44.47	129.36	129.42
71	125	-7319.362	-474.915	0.589	42.049	13.859	-1184.228	66.41	66.63	92.62	92.69
72	125	7293.973	474.914	-0.589	-42.159	-13.859	1181.210	66.17	66.39	92.31	92.38
72	126	-7314.020	-356.539	0.589	39.259	16.802	890.822	83.68	83.94	64.11	64.19
73	126	7314.000	356.540	-0.589	-38.538	-16.802	-890.837	83.68	83.94	64.10	64.19
73	127	-7334.348	-238.166	0.589	35.063	19.746	2370.954	96.24	96.54	44.02	44.12
74	127	7334.354	238.165	-0.589	-33.813	-19.746	-2370.967	96.24	96.54	44.02	44.12
74	128	-7346.234	-119.792	0.589	29.788	22.690	3261.545	103.78	104.13	31.92	32.05
75	128	7346.227	119.792	-0.589	-29.787	-22.690	-3261.547	103.78	104.13	31.92	32.05
75	129	-7334.540	-1.416	0.589	25.187	25.633	3566.198	106.18	106.58	27.62	27.75
76	129	7315.489	1.416	-0.589	-23.482	-25.633	-3565.595	105.98	106.37	27.43	27.56
76	130	-7330.188	116.959	0.589	18.332	28.577	3279.076	103.71	104.16	31.50	31.65
77	130	7330.176	-116.959	-0.589	-16.654	-28.577	-3279.085	103.71	104.16	31.50	31.65
77	131	-7345.176	235.332	0.589	11.004	31.521	2400.675	96.50	97.00	43.69	43.86
78	131	7345.192	-235.332	-0.589	-12.264	-31.521	-2400.670	96.51	97.00	43.69	43.86
78	132	-7350.740	353.707	0.589	6.139	34.464	931.590	84.26	84.80	63.88	64.07
79	132	7350.741	-353.708	-0.589	-3.998	-34.464	-931.595	84.26	84.80	63.88	64.07
79	133	-7330.210	472.082	0.589	-2.577	37.408	-1126.263	66.83	67.41	91.87	92.07
80	133	7307.245	-472.082	-0.589	2.660	-37.408	1120.516	66.64	67.22	91.55	91.75
80	134	-7318.422	590.458	0.589	-9.635	40.352	-3778.363	44.52	45.15	128.10	128.32
81	134	7318.411	-590.458	-0.589	8.543	-40.351	3778.367	44.52	45.15	128.10	128.32
81	137	-7329.890	708.833	0.589	-15.893	43.295	-7028.074	-4.00	-3.45	109.04	109.23
82	137	7329.893	705.407	0.713	-50.073	-43.295	7028.076	-4.00	-3.45	109.04	109.23
82	144	-7334.371	-587.033	-0.713	42.398	39.728	-3798.686	44.52	45.14	128.55	128.76
83	144	7334.374	587.033	0.713	-44.655	-39.728	3798.652	44.52	45.14	128.55	128.76
83	145	-7319.349	-468.658	-0.713	36.730	36.162	-1161.771	66.43	66.99	92.25	92.44
84	145	7293.972	468.658	0.713	-36.735	-36.162	1158.769	66.19	66.75	91.94	92.14
84	146	-7314.019	-350.282	-0.713	28.560	32.595	881.986	83.48	83.99	64.18	64.36

85	146	7314.019	350.282	0.713	-28.596	-32.595	-881.987	83.48	83.99	64.18	64.36
85	147	-7334.366	-231.909	-0.713	20.197	29.028	2330.801	95.83	96.28	44.54	44.70
86	147	7334.355	231.909	0.713	-17.661	-29.028	-2330.813	95.83	96.28	44.54	44.70
86	148	-7346.235	-113.532	-0.713	9.086	25.461	3190.130	103.16	103.56	32.90	33.03
87	148	7346.234	113.531	0.713	-9.004	-25.461	-3190.132	103.16	103.56	32.90	33.03
87	149	-7334.546	4.843	-0.713	0.279	21.894	3463.480	105.35	105.69	29.04	29.15
88	149	7315.492	-4.843	0.713	1.299	-21.894	-3462.869	105.15	105.49	28.85	28.96
88	150	-7330.190	123.217	-0.713	-10.149	18.328	3145.067	102.67	102.96	33.37	33.46
89	150	7330.195	-123.217	0.713	10.231	-18.328	-3145.067	102.67	102.96	33.37	33.46
89	151	-7345.196	241.591	-0.713	-19.155	14.761	2235.364	95.25	95.48	46.00	46.08
90	151	7345.194	-241.591	0.713	20.417	-14.761	-2235.354	95.25	95.48	46.00	46.08
90	152	-7350.742	359.965	-0.713	-29.391	11.194	735.004	82.80	82.98	66.64	66.70
91	152	7350.745	-359.965	0.713	29.359	-11.194	-735.005	82.80	82.98	66.64	66.70
91	153	-7330.214	478.341	-0.713	-38.359	7.627	-1354.183	65.16	65.27	95.08	95.12
92	153	7307.241	-478.341	0.713	38.180	-7.627	1348.450	64.96	65.08	94.76	94.80
92	154	-7318.418	596.717	-0.713	-47.180	4.060	-4037.576	42.64	42.70	131.75	131.77
93	154	7318.417	-596.717	0.713	45.989	-4.060	4037.594	42.64	42.70	131.75	131.77
93	157	-7329.896	715.090	-0.713	-54.964	0.494	-7318.563	-5.80	-5.79	111.72	111.73
94	157	7329.897	727.855	0.213	-34.224	-0.494	7318.645	-5.80	-5.79	111.72	111.73
94	163	-7334.376	-609.480	-0.213	25.324	-0.570	-3976.966	43.34	43.34	131.10	131.10
95	163	7334.373	609.480	0.213	-26.491	0.570	3976.957	43.34	43.34	131.10	131.10
95	164	-7319.347	-491.104	-0.213	17.691	-1.634	-1227.853	66.17	66.14	93.26	93.25
96	164	7293.968	491.104	0.213	-17.812	1.634	1224.846	65.93	65.90	92.95	92.94
96	165	-7314.015	-372.729	-0.213	9.187	-2.698	928.138	84.14	84.10	63.65	63.63
97	165	7314.008	372.730	0.213	-9.150	2.698	-928.140	84.14	84.10	63.65	63.63
97	166	-7334.355	-254.355	-0.213	0.750	-3.762	2489.211	97.41	97.35	42.46	42.44
98	166	7334.358	254.354	0.213	0.545	3.762	-2489.212	97.41	97.35	42.46	42.44
98	167	-7346.238	-135.980	-0.213	-8.645	-4.826	3460.741	105.66	105.58	29.27	29.24
99	167	7346.238	135.980	0.213	10.310	4.826	-3460.740	105.66	105.58	29.27	29.24
99	168	-7334.550	-17.605	-0.213	-18.010	-5.890	3846.331	108.77	108.67	23.86	23.83
100	168	7315.491	17.605	0.213	18.106	5.890	-3845.720	108.56	108.47	23.67	23.64
100	169	-7330.189	100.772	-0.213	-25.306	-6.954	3640.141	107.01	106.90	26.65	26.61
101	169	7330.188	-100.771	0.213	27.038	6.954	-3640.136	107.01	106.90	26.65	26.61
101	170	-7345.188	219.145	-0.213	-33.638	-8.018	2842.656	100.51	100.38	37.74	37.70
102	170	7345.187	-219.144	0.213	33.639	8.018	-2842.655	100.51	100.38	37.74	37.70
102	171	-7350.735	337.521	-0.213	-39.564	-9.082	1454.495	88.97	88.83	56.83	56.78
103	171	7350.738	-337.522	0.213	41.411	9.082	-1454.463	88.97	88.83	56.83	56.78
103	172	-7330.208	455.895	-0.213	-46.561	-10.146	-522.454	72.24	72.09	83.72	83.67
104	172	7310.371	-455.896	0.213	46.561	10.146	517.507	72.08	71.92	83.45	83.39
104	173	-7321.568	574.269	-0.213	-50.836	-11.210	-3094.358	50.67	50.50	118.89	118.83
105	173	7321.566	-574.269	0.213	50.792	11.210	3094.359	50.67	50.50	118.89	118.83
105	176	-7333.065	692.645	-0.213	-54.117	-12.274	-6263.183	1.83	1.68	102.36	102.30
106	176	7333.063	646.638	-0.273	14.809	12.274	6263.198	1.83	1.68	102.36	102.30
106	182	-7337.563	-528.262	0.273	-17.109	-10.910	-3327.610	48.89	48.72	122.26	122.20
107	182	7337.562	528.263	-0.273	16.141	10.910	3327.616	48.88	48.72	122.26	122.20
107	183	-7322.556	-409.889	0.273	-17.316	-9.546	-984.630	68.30	68.15	89.98	89.93
108	183	7370.839	409.889	-0.273	17.314	9.546	990.545	68.75	68.60	90.56	90.51
108	184	-7391.380	-291.513	0.273	-17.314	-8.182	756.307	83.55	83.43	66.82	66.78
109	184	7391.380	291.513	-0.273	17.919	8.182	-756.302	83.55	83.43	66.82	66.78
109	185	-7392.889	-173.138	0.273	-16.694	-6.819	1915.011	93.24	93.14	50.95	50.91
110	185	7392.886	173.138	-0.273	16.750	6.819	-1915.013	93.24	93.14	50.95	50.91
110	186	-7345.619	-54.762	0.273	-14.275	-5.455	2490.678	97.55	97.46	42.56	42.53
111	186	7345.621	54.762	-0.273	16.935	5.455	-2490.667	97.55	97.46	42.56	42.53
111	187	-7298.657	63.611	0.273	-13.185	-4.091	2474.418	96.91	96.85	42.29	42.27
112	187	5255.743	-63.611	-0.273	13.185	4.091	-2415.646	75.09	75.03	21.77	21.75
112	188	-5222.140	181.986	0.273	-8.335	-2.727	1807.864	69.65	69.61	29.74	29.73
113	188	5222.141	-181.986	-0.273	9.389	2.727	-1807.861	69.65	69.61	29.74	29.73
113	189	-5188.753	300.361	0.273	-3.264	-1.364	608.164	59.27	59.25	45.84	45.83
114	189	5188.753	-300.361	-0.273	3.295	1.364	-608.164	59.27	59.25	45.84	45.83
114	192	-5155.578	526.297	0.273	3.980	0.000	-953.265	45.86	45.86	66.90	66.90

proc Viaducto Papiol

HIPOTESIS 92

pp + pret total(t=0)

ESFUERZOS EN BARRAS

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	MOM. Y	MOM. Z
1	3	13015.172	-18.884	-0.415	-15.282	0.000	2245.608
1	8	-13113.564	23.821	0.415	8.932	2.076	-2352.227
2	8	13113.533	-23.821	-0.415	-8.932	-2.076	2352.227
2	9	-13181.963	86.143	0.415	3.957	4.152	-2681.837
3	9	13181.964	-86.143	-0.415	-0.416	-4.152	2681.836
3	10	-13267.177	-0.442	0.415	-3.384	6.228	-3171.076
4	10	13946.028	0.443	-0.415	1.133	-6.228	2395.956
4	11	-14047.110	-73.880	0.415	-4.008	8.304	-2192.637
5	11	14047.123	73.880	-0.415	6.561	-8.304	2192.640
5	12	-14056.178	-22.419	0.415	-8.386	10.380	-1953.144
6	12	14056.177	22.418	-0.415	13.777	-10.380	1953.152
6	13	-14022.911	-55.066	0.415	-14.602	12.455	-1676.516
7	13	14022.937	55.067	-0.415	12.129	-12.455	1676.509
7	14	-14018.472	-382.364	0.415	-12.004	14.531	-785.905
8	14	13995.476	382.363	-0.415	16.318	-14.531	780.168
8	15	-13971.582	-284.455	0.415	-15.268	16.607	1512.935
9	15	13971.560	284.456	-0.415	15.189	-16.607	-1512.935
9	18	-19280.982	310.907	0.415	-13.264	18.683	-632.498
10	18	19281.020	883.993	0.613	32.740	-18.683	632.534
10	24	-14937.323	48.158	-0.613	-30.015	15.615	2233.172
11	24	14937.296	-48.158	0.613	31.915	-15.615	-2233.160
11	25	-14987.362	269.172	-0.613	-28.440	12.549	719.888
12	25	14958.838	-269.172	0.613	34.541	-12.548	-729.475
12	26	-15085.182	-13.402	-0.613	-30.341	9.481	169.630
13	26	15085.161	13.403	0.613	26.475	-9.481	-169.643
13	27	-15065.237	-103.574	-0.613	-21.600	6.414	463.994
14	27	15065.271	103.573	0.613	25.817	-6.414	-463.986
14	28	-15069.081	-115.696	-0.613	-20.317	3.347	1154.930
15	28	15069.068	115.696	0.613	29.628	-3.347	-1154.911
15	29	-15077.139	6.840	-0.613	-23.528	0.280	1378.312
16	29	14377.759	-6.839	0.613	18.902	-0.280	-595.334
16	30	-14427.483	138.358	-0.613	-12.252	-2.787	213.924
17	30	14427.499	-138.359	0.613	16.991	2.787	-213.919
17	31	-14489.710	63.523	-0.613	-9.816	-5.854	-552.095
18	31	14489.662	-63.525	0.613	13.973	5.854	552.101
18	32	-14373.514	-251.263	-0.613	-6.298	-8.921	126.308
19	32	14373.515	251.264	0.613	6.292	8.921	-126.309
19	33	-14264.900	-200.395	-0.613	1.832	-11.988	1703.336
20	33	14241.967	200.395	0.613	0.941	11.988	-1709.085
20	34	-14153.282	374.439	-0.613	7.584	-15.055	1420.872
21	34	14153.306	-374.439	0.613	-5.748	15.055	-1420.875
21	37	-19465.445	649.834	-0.613	14.648	-18.122	-3430.678
22	37	19465.395	791.066	-0.005	51.131	18.122	3430.659
22	44	-14257.327	27.765	0.005	-41.881	-18.098	1053.418
23	44	14257.314	-27.765	-0.005	43.724	18.098	-1053.402

TENSIONES

SIGMA 1	SIGMA2	SIGMA3	SIGMA4
117.12	117.12	166.67	166.67
117.24	117.27	169.16	169.17
117.24	117.27	169.16	169.17
115.18	115.25	174.38	174.40
115.18	115.25	174.38	174.40
111.97	112.07	181.97	182.01
125.53	125.63	178.44	178.47
128.27	128.40	176.70	176.74
128.27	128.40	176.70	176.74
130.35	130.51	173.50	173.56
130.35	130.51	173.50	173.56
132.30	132.49	169.36	169.42
132.30	132.49	169.36	169.42
139.68	139.91	157.10	157.17
139.49	139.71	156.78	156.86
158.39	158.64	125.09	125.17
158.39	158.64	125.09	125.17
117.52	117.75	127.75	127.83
117.52	117.75	127.75	127.83
174.50	174.74	125.30	125.38
174.49	174.74	125.30	125.38
162.40	162.59	146.57	146.64
162.18	162.37	146.15	146.21
158.84	158.99	155.15	155.20
158.84	158.99	155.15	155.20
161.12	161.22	150.91	150.95
161.12	161.22	150.91	150.95
166.96	167.01	141.49	141.51
166.96	167.01	141.49	141.51
168.93	168.93	138.52	138.52
155.09	155.09	141.95	141.95
152.44	152.40	147.71	147.69
152.44	152.40	147.71	147.69
146.71	146.62	158.87	158.83
146.71	146.62	158.87	158.83
151.19	151.05	148.36	148.31
151.19	151.05	148.36	148.31
163.26	163.08	125.61	125.55
163.07	162.88	125.30	125.23
159.76	159.53	128.33	128.25
159.76	159.53	128.33	128.25
98.95	98.72	153.96	153.88
98.95	98.72	153.96	153.88
157.80	157.52	134.46	134.37
157.80	157.52	134.46	134.37

23	45	-14298.842	248.780	0.005	-34.149	-18.074	-367.209	146.36	146.08	154.37	154.27
24	45	12912.814	-248.779	-0.005	36.938	18.074	786.025	128.39	128.11	145.64	145.55
24	46	-13034.948	-33.802	0.005	-27.063	-18.050	-1241.428	125.86	125.58	153.16	153.06
25	46	13034.982	33.802	-0.005	27.058	18.050	1241.430	125.86	125.58	153.16	153.06
25	47	-13010.762	-123.969	0.005	-16.908	-18.027	-842.698	128.94	128.66	147.44	147.34
26	47	13010.772	123.969	-0.005	21.093	18.027	842.707	128.94	128.66	147.44	147.35
26	48	-13010.202	-136.093	0.005	-10.693	-18.003	-47.429	135.58	135.30	136.53	136.44
27	48	13010.147	136.093	-0.005	10.933	18.003	47.429	135.58	135.30	136.53	136.44
27	49	-13013.753	-13.554	0.005	-0.308	-17.979	280.258	138.35	138.07	132.08	131.98
28	49	12994.706	13.554	-0.005	4.986	17.979	-279.643	138.15	137.87	131.89	131.79
28	50	-13035.530	117.966	0.005	3.064	-17.956	-2.559	136.22	135.94	136.18	136.09
29	50	13035.552	-117.967	-0.005	1.757	17.956	2.557	136.22	135.94	136.18	136.09
29	51	-13088.808	43.123	0.005	1.018	-17.932	-669.358	131.20	130.92	145.88	145.78
30	51	13088.813	-43.122	-0.005	3.259	17.932	669.360	131.20	130.92	145.88	145.78
30	52	-12968.556	-271.664	0.005	-0.334	-17.908	109.786	136.46	136.18	133.94	133.85
31	52	12968.560	271.664	-0.005	0.333	17.908	-109.787	136.46	136.18	133.94	133.85
31	53	-12868.927	-220.788	0.005	8.167	-17.885	1791.581	149.47	149.19	109.85	109.75
32	53	12845.936	220.788	-0.005	-5.039	17.884	-1797.333	149.28	149.00	109.53	109.43
32	54	-12766.177	354.047	0.005	13.539	-17.861	1613.844	146.91	146.63	111.21	111.11
33	54	12766.179	-354.047	-0.005	-13.644	17.861	-1613.843	146.91	146.63	111.21	111.11
33	57	-18087.184	629.432	0.005	16.544	-17.837	-3132.945	92.34	92.11	142.57	142.49
34	57	18087.211	775.917	0.380	47.529	17.837	3132.952	92.34	92.11	142.57	142.49
34	64	-12887.954	42.918	-0.380	-44.579	-19.739	1278.106	145.39	145.09	117.09	116.98
35	64	12887.909	-42.918	0.380	44.473	19.739	-1278.107	145.39	145.08	117.09	116.98
35	65	-12938.192	263.934	-0.380	-35.773	-21.641	-215.549	133.45	133.11	138.10	137.98
36	65	12912.824	-263.934	0.380	41.939	21.641	212.580	133.21	132.87	137.79	137.67
36	66	-13034.958	-18.645	-0.380	-30.289	-23.543	-743.774	130.06	129.69	146.35	146.23
37	66	13034.948	18.644	0.380	30.488	23.543	743.774	130.06	129.69	146.35	146.23
37	67	-13010.729	-108.817	-0.380	-18.838	-25.444	-420.801	132.52	132.13	141.68	141.54
38	67	13010.761	108.818	0.380	22.947	25.444	420.808	132.52	132.13	141.68	141.54
38	68	-13010.190	-120.939	-0.380	-11.298	-27.346	298.688	138.54	138.12	131.81	131.67
39	68	13010.140	120.938	0.380	6.880	27.346	-298.693	138.54	138.12	131.81	131.67
39	69	-13013.746	1.601	-0.380	4.745	-29.248	550.608	140.70	140.25	128.40	128.24
40	69	12994.696	-1.599	0.380	9.834	29.248	-549.990	140.50	140.04	128.21	128.05
40	70	-13035.519	133.118	-0.380	1.741	-31.150	192.043	137.95	137.46	133.55	133.38
41	70	13035.526	-133.120	0.380	-6.638	31.149	-192.041	137.95	137.46	133.55	133.38
41	71	-13088.782	58.276	-0.380	18.163	-33.051	-550.563	132.31	131.80	144.29	144.11
42	71	13088.780	-58.275	0.380	-13.623	33.051	550.556	132.31	131.80	144.29	144.11
42	72	-12968.521	-256.507	-0.380	25.073	-34.953	152.821	136.95	136.40	133.40	133.21
43	72	12968.510	256.507	0.380	-21.323	34.953	-152.828	136.95	136.40	133.40	133.21
43	73	-12868.877	-205.632	-0.380	32.673	-36.855	1758.845	149.34	148.77	110.34	110.15
44	73	12845.912	205.631	0.380	-32.516	36.855	-1764.593	149.15	148.58	110.03	109.83
44	74	-12766.154	369.200	-0.380	43.741	-38.756	1505.331	146.17	145.56	112.75	112.55
45	74	12766.191	-369.200	0.380	-41.803	38.756	-1505.349	146.17	145.57	112.75	112.55
45	77	-18087.197	644.592	-0.380	52.878	-40.658	-3317.223	91.17	90.65	144.27	144.09
46	77	18087.180	779.828	-0.319	25.648	40.658	3317.260	91.17	90.65	144.27	144.09
46	84	-12887.924	38.988	0.319	-14.798	-39.062	1113.357	144.17	143.56	119.40	119.19
47	84	12887.939	-38.989	-0.319	14.902	39.062	-1113.358	144.17	143.56	119.40	119.19
47	85	-12938.223	260.012	0.319	-4.327	-37.466	-360.679	132.36	131.78	140.13	139.93
48	85	12912.806	-260.012	-0.319	7.270	37.467	357.682	132.12	131.54	139.82	139.62
48	86	-13034.938	-22.553	0.319	3.004	-35.871	-869.333	129.11	128.55	148.11	147.91
49	86	13034.952	22.553	-0.319	0.736	35.871	869.332	129.11	128.55	148.11	147.92
49	87	-13010.729	-112.737	0.319	9.164	-34.275	-526.764	131.70	131.17	143.15	142.97
50	87	13010.746	112.737	-0.319	-8.938	34.275	526.764	131.70	131.17	143.15	142.97
50	88	-13010.176	-124.854	0.319	18.438	-32.679	212.328	137.86	137.35	133.01	132.84
51	88	13010.175	124.854	-0.319	-13.795	32.679	-212.330	137.86	137.35	133.01	132.84
51	89	-13013.780	-2.317	0.319	22.896	-31.084	483.834	140.16	139.67	129.32	129.16
52	89	12994.712	2.318	-0.319	-22.900	31.084	-483.216	139.95	139.47	129.13	128.97
52	90	-13035.538	129.202	0.319	31.575	-29.488	144.847	137.54	137.08	134.19	134.03
53	90	13035.554	-129.203	-0.319	-26.685	29.488	-144.856	137.54	137.08	134.19	134.03
53	91	-13088.810	54.361	0.319	34.885	-27.892	-578.151	132.04	131.61	144.66	144.51
54	91	13088.803	-54.360	-0.319	-30.579	27.892	578.138	132.04	131.61	144.66	144.51

54	92	-12968.548	-260.424	0.319	38.279	-26.296	144.812	136.81	136.40	133.48	133.34
55	92	12968.536	260.424	-0.319	-34.336	26.296	-144.826	136.81	136.40	133.48	133.34
55	93	-12868.904	-209.553	0.319	41.536	-24.701	1770.434	149.35	148.96	110.15	110.02
56	93	12845.953	209.553	-0.319	-41.692	24.701	-1776.179	149.15	148.77	109.83	109.70
56	94	-12766.195	365.277	0.319	48.367	-23.105	1536.545	146.31	145.95	112.28	112.16
57	94	12766.194	-365.277	-0.319	-48.263	23.105	-1536.545	146.31	145.95	112.28	112.16
57	97	-18087.201	640.672	0.319	54.388	-21.509	-3266.455	91.41	91.14	143.77	143.68
58	97	18087.180	778.534	-0.449	-21.064	21.509	3266.401	91.41	91.14	143.77	143.68
58	104	-12887.919	40.297	0.449	26.639	-19.263	1157.773	144.38	144.08	118.74	118.63
59	104	12887.952	-40.297	-0.449	-26.742	19.263	-1157.771	144.38	144.08	118.74	118.63
59	105	-12938.237	261.317	0.449	31.742	-17.016	-322.790	132.52	132.25	139.55	139.46
60	105	12912.847	-261.317	-0.449	-28.468	17.016	319.778	132.28	132.01	139.25	139.16
60	106	-13034.978	-21.263	0.449	32.868	-14.770	-837.889	129.21	128.98	147.62	147.54
61	106	13034.969	21.263	-0.449	-33.065	14.770	837.886	129.21	128.98	147.62	147.54
61	107	-13010.747	-111.439	0.449	36.890	-12.523	-501.807	131.74	131.55	142.75	142.69
62	107	13010.733	111.438	-0.449	-32.355	12.523	501.794	131.74	131.55	142.75	142.69
62	108	-13010.163	-123.560	0.449	35.580	-10.277	230.808	137.84	137.68	132.70	132.64
63	108	13010.148	123.561	-0.449	-30.930	10.277	-230.820	137.84	137.68	132.70	132.64
63	109	-13013.754	-1.023	0.449	33.530	-8.030	495.845	140.08	139.95	129.09	129.05
64	109	12994.711	1.023	-0.449	-38.288	8.030	-495.219	139.87	139.75	128.90	128.86
64	110	-13035.539	130.495	0.449	40.288	-5.784	150.362	137.40	137.31	134.05	134.02
65	110	13035.565	-130.495	-0.449	-30.758	5.784	-150.388	137.40	137.31	134.05	134.02
65	111	-13088.820	55.658	0.449	32.158	-3.537	-579.059	131.84	131.79	144.60	144.58
66	111	13088.787	-55.658	-0.449	-27.846	3.537	579.049	131.84	131.79	144.60	144.58
66	112	-12968.531	-259.132	0.449	28.646	-1.290	137.415	136.56	136.54	133.52	133.51
67	112	12968.539	259.132	-0.449	-28.452	1.290	-137.416	136.56	136.54	133.52	133.51
67	113	-12868.908	-208.265	0.449	28.627	0.956	1756.569	149.03	149.05	110.28	110.28
68	113	12845.959	208.265	-0.449	-25.671	-0.956	-1762.326	148.84	148.85	109.96	109.96
68	114	-12766.200	366.569	0.449	25.221	3.203	1516.237	145.93	145.98	112.49	112.51
69	114	12766.168	-366.568	-0.449	-25.220	-3.203	-1516.236	145.93	145.98	112.49	112.51
69	117	-18087.172	641.966	0.449	24.145	5.450	-3293.213	91.05	91.12	143.95	143.97
70	117	18087.186	779.964	-0.677	-53.810	-5.450	3293.156	91.05	91.12	143.95	143.97
70	124	-12887.925	38.862	0.677	52.110	8.835	1138.147	144.00	144.14	118.93	118.98
71	124	12887.958	-38.862	-0.677	-54.155	-8.835	-1138.126	144.00	144.14	118.93	118.98
71	125	-12938.241	259.879	0.677	51.855	12.220	-335.263	132.19	132.38	139.65	139.71
72	125	12912.835	-259.879	-0.677	-48.742	-12.220	332.241	131.95	132.14	139.34	139.41
72	126	-13034.969	-22.695	0.677	45.842	15.605	-843.187	128.93	129.17	147.61	147.69
73	126	13034.966	22.696	-0.677	-41.899	-15.605	843.169	128.93	129.17	147.61	147.69
73	127	-13010.747	-112.871	0.677	38.424	18.990	-499.943	131.51	131.81	142.64	142.74
74	127	13010.738	112.869	-0.677	-34.114	-18.990	499.932	131.51	131.81	142.64	142.74
74	128	-13010.167	-124.993	0.677	30.089	22.375	239.837	137.66	138.01	132.49	132.61
75	128	13010.163	124.994	-0.677	-30.086	-22.375	-239.837	137.66	138.01	132.49	132.61
75	129	-13013.770	-2.456	0.677	25.486	25.760	512.023	139.95	140.35	128.78	128.92
76	129	12994.713	2.456	-0.677	-20.722	-25.760	-511.421	139.75	140.15	128.59	128.73
76	130	-13035.537	129.063	0.677	15.572	29.145	173.731	137.32	137.78	133.64	133.79
77	130	13035.531	-129.063	-0.677	-10.677	-29.145	-173.741	137.32	137.78	133.64	133.79
77	131	-13088.786	54.222	0.677	5.027	32.530	-548.546	131.82	132.32	144.09	144.26
78	131	13088.796	-54.221	-0.677	-9.342	-32.530	548.549	131.82	132.32	144.09	144.26
78	132	-12968.534	-260.566	0.677	3.217	35.915	175.111	136.58	137.14	132.90	133.09
79	132	12968.547	260.564	-0.677	8.253	-35.915	-175.106	136.58	137.14	132.90	133.09
79	133	-12868.915	-209.689	0.677	-14.828	39.300	1801.415	149.11	149.72	109.56	109.77
80	133	12845.949	209.690	-0.677	11.857	-39.300	-1807.165	148.92	149.53	109.24	109.45
80	134	-12766.189	365.147	0.677	-18.832	42.685	1568.176	146.06	146.72	111.67	111.90
81	134	12766.176	-365.147	-0.677	20.793	-42.685	-1568.170	146.06	146.72	111.67	111.90
81	137	-18087.178	640.528	0.677	-28.143	46.070	-3234.071	91.21	91.80	143.34	143.54
82	137	18087.178	775.874	0.886	-60.731	-46.070	3234.076	91.21	91.80	143.34	143.54
82	144	-12887.923	42.957	-0.886	53.056	41.641	1176.737	144.07	144.72	118.31	118.54
83	144	12887.932	-42.957	0.886	-49.036	-41.641	-1176.777	144.07	144.72	118.31	118.54
83	145	-12938.216	263.971	-0.886	41.111	37.212	-317.080	132.14	132.72	139.33	139.53
84	145	12912.827	-263.971	0.886	-40.955	-37.212	314.078	131.90	132.48	139.02	139.22
84	146	-13034.963	-18.601	-0.886	32.780	32.783	-845.487	128.77	129.28	147.60	147.77

85	146	13034.966	18.601	0.886	-32.979	-32.783	845.486	128.77	129.28	147.60	147.77
85	147	-13010.749	-108.773	-0.886	24.579	28.353	-522.752	131.25	131.69	142.93	143.08
86	147	13010.747	108.772	0.886	-15.745	-28.353	522.738	131.25	131.69	142.93	143.08
86	148	-13010.177	-120.897	-0.886	7.170	23.924	196.580	137.29	137.66	133.08	133.20
87	148	13010.170	120.897	0.886	-6.929	-23.924	-196.582	137.29	137.66	133.08	133.20
87	149	-13013.777	1.640	-0.886	-1.796	19.495	448.274	139.47	139.77	129.67	129.78
88	149	12994.720	-1.641	0.886	6.287	-19.495	-447.661	139.26	139.57	129.48	129.59
88	150	-13035.540	133.161	-0.886	-15.137	15.066	89.509	136.73	136.96	134.83	134.91
89	150	13035.550	-133.160	0.886	15.380	-15.066	-89.507	136.73	136.96	134.83	134.91
89	151	-13088.804	58.309	-0.886	-24.305	10.636	-653.258	131.11	131.28	145.58	145.64
90	151	13088.794	-58.309	0.886	28.808	-10.636	653.271	131.11	131.28	145.58	145.64
90	152	-12968.532	-256.463	-0.886	-37.783	6.207	49.928	135.77	135.86	134.70	134.73
91	152	12968.540	256.463	0.886	37.589	-6.207	-49.931	135.77	135.86	134.70	134.73
91	153	-12868.909	-205.584	-0.886	-46.589	1.778	1655.715	148.18	148.21	111.66	111.66
92	153	12845.929	205.584	0.886	49.660	-1.778	-1661.445	147.99	148.02	111.34	111.35
92	154	-12766.171	369.239	-0.886	-58.660	-2.651	1401.989	145.02	144.98	114.07	114.06
93	154	12766.179	-369.239	0.886	60.558	2.651	-1401.966	145.02	144.98	114.07	114.06
93	157	-18087.178	644.618	-0.886	-69.533	-7.081	-3420.724	90.22	90.13	145.12	145.09
94	157	18087.172	789.842	0.105	-43.193	7.080	3420.805	90.22	90.13	145.12	145.09
94	163	-12887.923	28.999	-0.105	34.293	-7.603	1059.865	143.47	143.36	120.05	120.01
95	163	12887.923	-28.999	0.104	-32.380	7.603	-1059.879	143.47	143.36	120.05	120.01
95	164	-12938.206	250.015	-0.104	23.580	-8.126	-364.180	132.10	131.98	140.10	140.05
96	164	12912.833	-250.015	0.105	-20.633	8.126	361.171	131.86	131.74	139.79	139.75
96	165	-13034.969	-32.564	-0.105	12.008	-8.648	-822.777	129.28	129.15	147.40	147.35
97	165	13034.957	32.564	0.105	-11.811	8.648	822.777	129.28	129.15	147.40	147.35
97	166	-13010.738	-122.738	-0.105	3.411	-9.171	-430.208	132.32	132.17	141.76	141.71
98	166	13010.742	122.737	0.104	0.926	9.171	430.207	132.32	132.17	141.76	141.71
98	167	-13010.172	-134.858	-0.104	-9.026	-9.693	358.892	138.91	138.76	130.94	130.89
99	167	13010.169	134.858	0.105	13.721	9.693	-358.893	138.91	138.76	130.94	130.89
99	168	-13013.775	-12.322	-0.105	-21.421	-10.216	680.400	141.64	141.48	126.57	126.52
100	168	12994.721	12.322	0.105	21.676	10.216	-679.792	141.43	141.27	126.38	126.33
100	169	-13035.545	119.198	-0.105	-28.877	-10.738	391.423	139.45	139.29	130.76	130.70
101	169	13035.540	-119.198	0.105	33.611	10.738	-391.418	139.45	139.29	130.76	130.70
101	170	-13088.793	44.361	-0.105	-40.211	-11.261	-281.549	134.39	134.21	140.54	140.48
102	170	13088.791	-44.360	0.105	40.212	11.261	281.550	134.39	134.21	140.54	140.48
102	171	-12968.533	-270.428	-0.105	-46.138	-11.784	491.404	139.60	139.41	128.69	128.63
103	171	12968.537	270.428	0.105	54.096	11.784	-491.365	139.60	139.41	128.69	128.63
103	172	-12868.906	-219.562	-0.105	-59.246	-12.306	2166.992	152.56	152.37	104.68	104.62
104	172	12849.067	219.561	0.105	59.246	12.306	-2171.941	152.40	152.21	104.41	104.34
104	173	-12769.329	355.271	-0.105	-63.521	-12.829	1982.333	149.99	149.79	106.18	106.11
105	173	12769.332	-355.271	0.105	63.633	12.829	-1982.332	149.99	149.79	106.18	106.11
105	176	-17004.150	549.713	-0.105	-66.958	-13.351	-942.320	101.08	100.91	116.16	116.10
106	176	17004.146	624.437	-0.297	14.486	13.351	942.339	101.08	100.91	116.16	116.10
106	182	-11790.321	219.454	0.297	-16.786	-11.868	2703.280	145.78	145.60	86.07	86.01
107	182	11790.321	-219.453	-0.297	18.567	11.868	-2703.273	145.78	145.60	86.07	86.01
107	183	-11823.385	510.318	0.297	-19.742	-10.384	198.664	125.18	125.02	120.75	120.69
108	183	11871.670	-510.318	-0.297	19.861	10.384	-192.749	125.64	125.48	121.33	121.28
108	184	-11968.668	224.341	0.297	-19.861	-8.901	-1590.001	111.74	111.60	146.78	146.73
109	184	11968.666	-224.341	-0.297	22.322	8.901	1590.007	111.74	111.60	146.78	146.73
109	185	-11947.559	110.780	0.297	-21.097	-7.417	-2400.833	104.73	104.62	157.67	157.63
110	185	11947.554	-110.780	-0.297	21.240	7.417	2400.831	104.73	104.62	157.67	157.63
110	186	-11862.812	122.965	0.297	-18.765	-5.934	-2783.667	100.64	100.55	162.03	162.00
111	186	11862.814	-122.965	-0.297	24.105	5.934	2783.682	100.64	100.55	162.03	162.00
111	187	-11765.544	154.376	0.297	-20.355	-4.450	-3482.714	93.77	93.70	170.60	170.57
112	187	9722.631	-154.376	-0.297	20.356	4.450	3541.487	71.95	71.88	150.07	150.05
112	188	-9608.574	78.480	0.297	-15.506	-2.967	-3960.836	67.24	67.20	154.63	154.61
113	188	9608.576	-78.479	-0.297	17.213	2.967	3960.846	67.24	67.20	154.63	154.61
113	189	-9508.281	64.617	0.297	-11.088	-1.483	-4171.285	64.42	64.40	156.46	156.45
114	189	9508.279	-64.617	-0.297	11.136	1.483	4171.285	64.42	64.40	156.46	156.45
114	192	-9420.296	227.388	0.297	-3.861	0.000	-4307.911	62.35	62.35	157.41	157.41

proc Viaducto Papiol

HIPOTESIS 93

cp + pret total (t=0)

ESFUERZOS EN BARRAS

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	MOM. Y	MOM. Z
1	3	13015.173	193.327	-2.897	-67.733	0.000	2245.598
1	8	-13113.565	-123.539	2.897	37.283	14.487	-1453.281
2	8	13113.533	123.539	-2.897	-37.283	-14.487	1453.280
2	9	-13181.963	3.633	2.897	11.507	28.975	-1208.212
3	9	13181.966	-3.634	-2.897	-6.818	-28.975	1208.206
3	10	-13267.179	-18.102	2.897	-14.607	43.462	-1447.027
4	10	13946.030	18.102	-2.897	11.701	-43.462	671.902
4	11	-14047.112	-26.689	2.897	-29.176	57.949	-542.409
5	11	14047.126	26.690	-2.897	32.357	-57.949	542.424
5	12	-14056.181	89.622	2.897	-45.782	72.436	-701.003
6	12	14056.182	-89.623	-2.897	52.150	-72.436	701.042
6	13	-14022.916	121.824	2.897	-61.675	86.923	-1146.728
7	13	14022.939	-121.823	-2.897	59.000	-86.923	1146.702
7	14	-14018.475	-140.623	2.897	-64.825	101.411	-1302.691
8	14	13995.481	140.622	-2.897	68.736	-101.411	1296.994
8	15	-13971.588	22.135	2.897	-70.986	115.898	-374.710
9	15	13971.564	-22.135	-2.897	70.945	-115.898	374.709
9	18	-19280.986	682.347	2.897	-69.695	130.385	-4215.206
10	18	19281.025	1266.643	2.117	167.422	-130.385	4215.254
10	24	-14937.329	-269.640	-2.117	-162.797	119.798	401.603
11	24	14937.302	269.641	2.117	164.001	-119.798	-401.540
11	25	-14987.368	16.224	-2.117	-156.176	109.212	315.144
12	25	14958.842	-16.225	2.117	161.953	-109.212	-324.628
12	26	-15085.186	-201.499	-2.117	-151.028	98.626	867.408
13	26	15085.166	201.500	2.117	146.884	-98.626	-867.468
13	27	-15065.242	-226.821	-2.117	-133.034	88.040	1940.178
14	27	15065.275	226.820	2.117	137.811	-88.040	-1940.128
14	28	-15069.085	-174.093	-2.117	-121.186	77.454	3085.183
15	28	15069.071	174.093	2.117	132.003	-77.454	-3085.087
15	29	-15077.142	13.293	-2.117	-112.678	66.868	3438.352
16	29	14377.763	-13.291	2.117	107.271	-66.868	-2655.407
16	30	-14427.487	209.660	-2.117	-85.420	56.282	2079.611
17	30	14427.503	-209.661	2.117	90.905	-56.282	-2079.578
17	31	-14489.714	199.675	-2.117	-66.630	45.696	794.927
18	31	14489.665	-199.677	2.117	71.300	-45.696	-794.898
18	32	-14373.517	-50.259	-2.117	-44.700	35.110	630.407
19	32	14373.518	50.261	2.117	44.693	-35.110	-630.407
19	33	-14264.903	65.458	-2.117	-15.919	24.523	1040.305
20	33	14241.969	-65.458	2.117	18.440	-24.523	-1046.048
20	34	-14153.284	705.142	-2.117	12.410	13.938	-733.554
21	34	14153.307	-705.142	2.117	-11.436	-13.937	733.547
21	37	-19465.447	1045.387	-2.117	44.262	3.352	-7400.766
22	37	19465.395	1181.889	2.278	292.459	-3.353	7400.730
22	44	-14257.328	-298.208	-2.278	-257.784	-8.036	-1124.671
23	44	14257.314	298.208	2.278	258.755	8.036	1124.773

TENSIONES

SIGMA 1	SIGMA2	SIGMA3	SIGMA4
117.12	117.12	166.67	166.67
124.66	124.88	156.80	156.88
124.66	124.88	156.80	156.88
127.31	127.76	154.11	154.27
127.31	127.76	154.11	154.27
126.09	126.76	158.24	158.47
139.65	140.33	154.70	154.93
141.68	142.58	153.94	154.25
141.68	142.58	153.94	154.25
140.33	141.46	156.17	156.56
140.33	141.46	156.17	156.56
136.15	137.50	161.90	162.36
136.15	137.50	161.90	162.36
134.69	136.26	163.95	164.49
134.49	136.07	163.63	164.17
141.84	143.64	150.70	151.32
141.84	143.64	150.70	151.32
91.24	92.89	159.47	160.03
91.24	92.89	159.47	160.03
158.38	160.24	150.13	150.77
158.38	160.24	150.13	150.77
158.26	159.96	151.87	152.45
158.04	159.74	151.44	152.02
163.98	165.51	145.34	145.87
163.98	165.51	145.34	145.87
172.82	174.19	130.46	130.93
172.82	174.19	130.46	130.93
182.51	183.71	114.83	115.24
182.51	183.71	114.83	115.24
185.63	186.67	110.10	110.45
171.78	172.82	113.53	113.89
167.57	168.45	121.97	122.27
167.57	168.45	121.97	122.27
157.57	158.28	140.26	140.50
157.57	158.28	140.26	140.50
155.06	155.61	141.33	141.52
155.06	155.61	141.33	141.52
157.44	157.82	134.61	134.74
157.25	157.63	134.29	134.42
141.53	141.75	157.79	157.86
141.53	141.75	157.79	157.86
70.48	70.52	189.33	189.35
70.48	70.52	189.33	189.34
139.52	139.39	164.29	164.25
139.52	139.39	164.30	164.25

23	45	-14298.842	-12.344	-2.278	-222.355	-19.425	-1077.646	140.43	140.13	164.11	164.01
24	45	12912.814	12.344	2.278	224.874	19.425	1496.535	122.46	122.16	155.39	155.28
24	46	-13034.948	-230.075	-2.278	-186.898	-30.814	-808.433	129.58	129.10	147.26	147.09
25	46	13034.981	230.075	2.278	186.894	30.814	808.434	129.58	129.10	147.26	147.09
25	47	-13010.761	-255.392	-2.278	-147.419	-42.203	409.531	139.59	138.93	130.34	130.11
26	47	13010.771	255.392	2.278	152.080	42.203	-409.473	139.59	138.93	130.34	130.11
26	48	-13010.200	-202.666	-2.278	-111.180	-53.592	1699.741	150.46	149.62	112.67	112.39
27	48	13010.146	202.666	2.278	111.455	53.592	-1699.740	150.45	149.62	112.67	112.39
27	49	-13013.751	-15.276	-2.278	-69.279	-64.981	2198.166	154.75	153.74	105.91	105.56
28	49	12994.704	15.276	2.278	74.687	64.981	-2197.525	154.54	153.53	105.72	105.37
28	50	-13035.528	181.095	-2.278	-34.837	-76.370	1761.806	151.42	150.23	112.15	111.74
29	50	13035.549	-181.095	2.278	40.363	76.370	-1761.793	151.42	150.23	112.15	111.74
29	51	-13088.805	171.101	-2.278	-6.438	-87.759	617.232	142.50	141.13	128.43	127.96
30	51	13088.810	-171.100	2.278	11.204	87.759	-617.228	142.50	141.13	128.43	127.96
30	52	-12968.552	-78.836	-2.278	23.646	-99.147	594.360	141.14	139.60	127.52	126.99
31	52	12968.556	78.837	2.278	-23.647	99.148	-594.361	141.14	139.60	127.52	126.99
31	53	-12868.923	36.889	-2.278	66.371	-110.536	1149.900	144.83	143.11	118.89	118.30
32	53	12845.931	-36.889	2.278	-63.500	110.537	-1155.676	144.64	142.92	118.57	117.98
32	54	-12766.172	676.575	-2.278	106.826	-121.925	-478.339	130.24	128.34	140.17	139.52
33	54	12766.175	-676.575	2.278	-106.888	121.925	478.342	130.24	128.34	140.17	139.52
33	57	-18087.178	1016.810	-2.278	143.564	-133.314	-6999.902	65.47	63.78	177.32	176.74
34	57	18087.205	1164.528	0.068	277.763	133.315	6999.908	65.47	63.78	177.32	176.74
34	64	-12887.949	-280.844	-0.068	-240.538	-133.654	-807.916	128.85	126.77	145.99	145.28
35	64	12887.904	280.844	0.068	240.474	133.654	807.911	128.85	126.77	145.99	145.28
35	65	-12938.188	5.022	-0.068	-195.499	-133.992	-844.880	129.06	126.98	147.02	146.31
36	65	12912.818	-5.023	0.068	201.173	133.993	842.035	128.82	126.74	146.72	146.00
36	66	-13034.952	-212.707	-0.068	-152.123	-134.331	-240.797	135.12	133.04	139.75	139.04
37	66	13034.943	212.706	0.068	152.332	134.331	240.799	135.12	133.04	139.75	139.04
37	67	-13010.725	-238.027	-0.068	-103.032	-134.670	890.357	144.33	142.23	123.99	123.27
38	67	13010.755	238.029	0.068	107.613	134.670	-890.321	144.33	142.23	123.99	123.28
38	68	-13010.185	-185.301	-0.068	-58.164	-135.008	2093.742	154.38	152.28	107.49	106.77
39	68	13010.135	185.299	0.068	53.102	135.008	-2093.765	154.38	152.28	107.49	106.77
39	69	-13013.741	2.091	-0.068	-3.575	-135.347	2505.363	157.86	155.76	101.88	101.16
40	69	12994.691	-2.089	0.068	20.420	135.347	-2504.733	157.66	155.55	101.69	100.97
40	70	-13035.514	198.457	-0.068	29.104	-135.686	1982.220	153.72	151.61	109.28	108.56
41	70	13035.521	-198.458	0.068	-34.715	135.685	-1982.206	153.72	151.61	109.29	108.56
41	71	-13088.777	188.466	-0.068	84.066	-136.024	750.768	143.99	141.87	126.72	126.00
42	71	13088.775	-188.465	0.068	-79.006	136.024	-750.803	143.99	141.87	126.72	126.00
42	72	-12968.517	-61.467	-0.068	128.081	-136.362	641.106	141.82	139.70	126.97	126.25
43	72	12968.506	61.467	0.068	-124.146	136.362	-641.153	141.82	139.70	126.97	126.25
43	73	-12868.873	54.258	-0.068	172.921	-136.700	1109.851	144.70	142.57	119.51	118.78
44	73	12845.907	-54.258	0.068	-172.776	136.701	-1115.602	144.50	142.38	119.19	118.46
44	74	-12766.149	693.940	-0.068	221.127	-137.039	-605.245	129.29	127.16	141.95	141.22
45	74	12766.187	-693.940	0.068	-219.991	137.039	605.160	129.30	127.16	141.95	141.22
45	77	-18087.193	1034.182	-0.068	267.766	-137.377	-7213.569	63.97	62.23	179.23	178.64
46	77	18087.176	1169.080	-0.861	165.915	137.378	7213.629	63.97	62.23	179.23	178.64
46	84	-12887.920	-285.414	0.861	-118.891	-133.071	-998.891	127.24	125.18	148.61	147.90
47	84	12887.936	285.413	-0.861	118.952	133.071	998.892	127.24	125.18	148.61	147.90
47	85	-12938.219	0.461	0.861	-72.776	-128.764	-1013.022	127.62	125.62	149.31	148.63
48	85	12912.802	-0.461	-0.861	75.472	128.764	1010.051	127.38	125.38	149.01	148.32
48	86	-13034.935	-217.256	0.861	-30.273	-124.457	-386.085	133.83	131.90	141.72	141.05
49	86	13034.949	217.255	-0.861	34.196	124.458	386.097	133.83	131.90	141.72	141.05
49	87	-13010.727	-242.589	0.861	9.829	-120.151	767.858	143.19	141.32	125.63	124.99
50	87	13010.743	242.588	-0.861	-9.577	120.151	-767.859	143.19	141.32	125.63	124.99
50	88	-13010.173	-189.856	0.861	52.327	-115.844	1994.086	153.40	151.60	108.80	108.19
51	88	13010.171	189.856	-0.861	-47.006	115.845	-1994.102	153.40	151.60	108.80	108.19
51	89	-13013.776	-2.468	0.861	88.407	-111.537	2428.488	157.03	155.30	102.88	102.28
52	89	12994.708	2.468	-0.861	-88.411	111.537	-2427.869	156.83	155.09	102.68	102.09
52	90	-13035.534	193.902	0.861	128.386	-107.231	1928.130	153.05	151.38	109.95	109.38
53	90	13035.550	-193.902	-0.862	-122.783	107.231	-1928.178	153.05	151.38	109.95	109.38
53	91	-13088.806	183.910	0.862	161.183	-102.924	719.548	143.47	141.87	127.06	126.52
54	91	13088.800	-183.909	-0.861	-156.384	102.924	-719.607	143.47	141.87	127.06	126.52

54	92	-12968.545	-66.025	0.861	193.059	-98.617	632.687	141.45	139.92	126.99	126.46
55	92	12968.533	66.025	-0.861	-188.921	98.617	-632.761	141.45	139.92	126.99	126.46
55	93	-12868.901	49.696	0.861	223.821	-94.311	1124.256	144.49	143.02	119.20	118.69
56	93	12845.950	-49.696	-0.861	-223.964	94.311	-1129.998	144.30	142.83	118.88	118.38
56	94	-12766.192	689.376	0.861	256.989	-90.003	-567.996	129.24	127.84	141.31	140.83
57	94	12766.191	-689.376	-0.861	-256.927	90.004	567.992	129.24	127.84	141.31	140.83
57	97	-18087.199	1029.622	0.861	287.978	-85.697	-7153.635	64.07	62.99	178.59	178.22
58	97	18087.176	1167.447	-1.814	-20.483	85.697	7153.477	64.08	62.99	178.59	178.21
58	104	-12887.917	-283.766	1.814	49.458	-76.626	-946.851	127.24	126.05	147.74	147.33
59	104	12887.950	283.765	-1.814	-49.519	76.626	946.853	127.24	126.05	147.74	147.33
59	105	-12938.235	2.104	1.814	76.294	-67.556	-969.224	127.51	126.46	148.55	148.19
60	105	12912.846	-2.104	-1.814	-73.292	67.556	966.193	127.27	126.22	148.24	147.88
60	106	-13034.977	-215.626	1.814	97.767	-58.485	-350.371	133.62	132.71	141.05	140.74
61	106	13034.967	215.626	-1.814	-97.973	58.485	350.370	133.62	132.71	141.05	140.74
61	107	-13010.745	-240.952	1.814	120.148	-49.415	795.403	142.87	142.10	125.07	124.80
62	107	13010.732	240.952	-1.814	-115.094	49.414	-795.448	142.87	142.10	125.07	124.80
62	108	-13010.162	-188.224	1.814	134.844	-40.344	2013.489	152.97	152.35	108.34	108.12
63	108	13010.148	188.225	-1.814	-129.516	40.344	-2013.539	152.97	152.35	108.34	108.12
63	109	-13013.754	-0.837	1.814	146.717	-31.274	2439.759	156.50	156.02	102.51	102.34
64	109	12994.709	0.837	-1.814	-152.213	31.274	-2439.087	156.30	155.81	102.32	102.15
64	110	-13035.537	195.532	1.814	166.863	-22.203	1931.174	152.41	152.06	109.68	109.56
65	110	13035.565	-195.532	-1.814	-155.944	22.203	-1931.297	152.41	152.07	109.68	109.56
65	111	-13088.820	185.543	1.814	167.919	-13.132	714.553	142.73	142.52	126.89	126.82
66	111	13088.788	-185.544	-1.814	-163.115	13.132	-714.614	142.73	142.52	126.89	126.82
66	112	-12968.532	-64.395	1.814	172.365	-4.062	619.513	140.61	140.54	126.92	126.90
67	112	12968.540	64.395	-1.814	-172.162	4.061	-619.516	140.61	140.54	126.92	126.90
67	113	-12868.909	51.321	1.814	178.637	5.009	1102.876	143.54	143.61	119.23	119.25
68	113	12845.960	-51.321	-1.814	-175.930	-5.009	-1108.690	143.35	143.42	118.91	118.93
68	114	-12766.201	691.004	1.814	179.605	14.080	-597.440	128.18	128.40	141.44	141.51
69	114	12766.168	-691.004	-1.814	-179.604	-14.080	597.441	128.18	128.40	141.44	141.51
69	117	-18087.174	1031.252	1.814	180.454	23.151	-7191.207	63.12	63.41	178.69	178.79
70	117	18087.189	1169.594	-3.016	-188.599	-23.153	7191.029	63.12	63.41	178.69	178.79
70	124	-12887.927	-285.919	3.016	186.574	38.234	-973.705	126.12	126.72	147.80	148.01
71	124	12887.959	285.919	-3.016	-187.774	-38.234	973.779	126.12	126.72	147.81	148.01
71	125	-12938.242	-0.052	3.016	182.899	53.315	-985.384	126.43	127.26	148.45	148.73
72	125	12912.837	0.052	-3.016	-180.047	-53.315	982.309	126.19	127.02	148.14	148.43
72	126	-13034.971	-217.776	3.016	172.347	68.396	-355.728	132.59	133.65	140.79	141.15
73	126	13034.969	217.777	-3.016	-168.209	-68.396	355.660	132.59	133.65	140.79	141.15
73	127	-13010.750	-243.102	3.016	157.684	83.476	800.843	141.88	143.18	124.64	125.08
74	127	13010.743	243.101	-3.016	-152.880	-83.476	-800.899	141.88	143.18	124.64	125.08
74	128	-13010.172	-190.375	3.016	139.580	98.557	2029.692	152.03	153.56	107.75	108.27
75	128	13010.167	190.376	-3.016	-139.576	-98.557	-2029.693	152.03	153.56	107.75	108.27
75	129	-13013.773	-2.987	3.016	123.526	113.638	2466.665	155.60	157.37	101.75	102.36
76	129	12994.718	2.987	-3.016	-118.020	-113.638	-2466.099	155.40	157.17	101.56	102.17
76	130	-13035.542	193.381	3.016	99.245	128.719	1968.942	151.55	153.55	108.76	109.45
77	130	13035.537	-193.382	-3.016	-93.631	-128.719	-1968.984	151.55	153.55	108.76	109.45
77	131	-13088.792	183.389	3.016	72.282	143.800	762.990	141.91	144.15	125.81	126.58
78	131	13088.802	-183.389	-3.016	-77.095	-143.800	-762.961	141.91	144.15	125.81	126.58
78	132	-12968.540	-66.548	3.016	53.270	158.881	678.654	139.84	142.31	125.67	126.52
79	132	12968.555	66.547	-3.016	-41.216	-158.880	-678.707	139.84	142.31	125.67	126.52
79	133	-12868.923	49.178	3.016	14.941	173.961	1172.810	142.81	145.51	117.82	118.74
80	133	12845.956	-49.178	-3.016	-17.673	-173.961	-1178.548	142.62	145.32	117.50	118.43
80	134	-12766.196	688.865	3.016	-10.902	189.042	-516.922	127.50	130.44	139.87	140.88
81	134	12766.184	-688.865	-3.016	12.071	-189.042	516.925	127.50	130.44	139.87	140.88
81	137	-18087.186	1029.096	3.016	-42.796	204.123	-7099.870	62.62	65.21	177.48	178.37
82	137	18087.188	1163.120	2.946	-250.140	-204.124	7099.903	62.62	65.21	177.48	178.37
82	144	-12887.932	-279.440	-2.946	217.415	189.394	-915.000	125.44	128.38	146.60	147.61
83	144	12887.938	279.440	2.946	-215.027	-189.394	914.831	125.44	128.39	146.60	147.60
83	145	-12938.223	6.425	-2.946	180.452	174.664	-958.825	125.71	128.43	147.76	148.69
84	145	12912.834	-6.424	2.946	-180.309	-174.665	955.820	125.47	128.19	147.46	148.39
84	146	-13034.970	-211.297	-2.946	143.983	159.934	-361.619	131.83	134.31	140.62	141.48

85	146	13034.973	211.297	2.946	-144.192	-159.935	361.620	131.83	134.31	140.62	141.48
85	147	-13010.756	-236.620	-2.946	106.318	145.205	762.457	141.08	143.34	125.00	125.77
86	147	13010.753	236.620	2.946	-96.481	-145.205	-762.534	141.08	143.34	125.00	125.77
86	148	-13010.183	-183.893	-2.946	57.230	130.475	1958.970	151.19	153.22	108.63	109.33
87	148	13010.175	183.893	2.946	-56.954	-130.475	-1958.970	151.19	153.22	108.63	109.33
87	149	-13013.782	3.494	-2.946	16.454	115.745	2363.520	154.72	156.52	103.16	103.78
88	149	12994.725	-3.494	2.946	-11.274	-115.745	-2362.910	154.52	156.32	102.97	103.59
88	150	-13035.545	199.865	-2.946	-30.301	101.016	1833.368	150.63	152.21	110.70	111.23
89	150	13035.555	-199.864	2.946	30.579	-101.016	-1833.365	150.63	152.21	110.70	111.23
89	151	-13088.809	189.862	-2.946	-73.053	86.286	594.966	140.96	142.30	128.27	128.73
90	151	13088.798	-189.862	2.946	78.056	-86.286	-594.933	140.96	142.30	128.27	128.73
90	152	-12968.536	-60.061	-2.946	-121.205	71.557	478.252	138.84	139.95	128.65	129.03
91	152	12968.544	60.061	2.946	121.003	-71.556	-478.256	138.84	139.95	128.65	129.03
91	153	-12868.913	55.669	-2.946	-164.604	56.827	939.889	141.77	142.66	121.32	121.63
92	153	12845.933	-55.669	2.946	167.388	-56.827	-945.573	141.58	142.46	121.00	121.31
92	154	-12766.175	695.342	-2.946	-211.263	42.097	-782.284	126.42	127.08	143.90	144.12
93	154	12766.182	-695.342	2.946	212.331	-42.097	782.365	126.42	127.08	143.90	144.12
93	157	-18087.180	1035.571	-2.946	-256.231	27.367	-7397.668	61.62	61.96	180.52	180.64
94	157	18087.174	1185.612	0.851	-183.344	-27.367	7397.800	61.61	61.96	180.52	180.64
94	163	-12887.925	-301.921	-0.851	139.618	23.112	-1100.392	125.18	125.54	149.58	149.70
95	163	12887.925	301.921	0.851	-138.526	-23.112	1100.337	125.18	125.54	149.58	149.70
95	164	-12938.208	-16.055	-0.851	95.226	18.858	-1031.922	126.31	126.61	149.18	149.28
96	164	12912.835	16.055	0.851	-92.533	-18.858	1028.887	126.07	126.37	148.87	148.97
96	165	-13034.971	-233.784	-0.851	49.983	14.603	-322.268	133.29	133.51	140.47	140.55
97	165	13034.959	233.784	0.851	-49.776	-14.603	322.266	133.29	133.51	140.47	140.55
97	166	-13010.740	-259.108	-0.851	8.226	10.348	914.276	143.40	143.56	123.28	123.33
98	166	13010.744	259.107	0.851	-3.378	-10.348	-914.279	143.40	143.56	123.28	123.33
98	167	-13010.174	-206.379	-0.851	-36.822	6.093	2223.102	154.36	154.46	105.34	105.37
99	167	13010.170	206.379	0.851	42.225	-6.093	-2223.093	154.36	154.46	105.34	105.37
99	168	-13013.776	-18.993	-0.851	-80.725	1.839	2740.076	158.76	158.78	98.30	98.31
100	168	12994.722	18.992	0.851	81.022	-1.839	-2739.468	158.55	158.58	98.11	98.12
100	169	-13035.546	177.379	-0.851	-117.498	-2.416	2322.319	155.52	155.49	104.27	104.25
101	169	13035.541	-177.378	0.851	122.966	2.416	-2322.281	155.52	155.49	104.27	104.26
101	170	-13088.794	167.390	-0.851	-157.016	-6.671	1196.293	146.70	146.60	120.27	120.24
102	170	13088.792	-167.390	0.851	157.017	6.671	-1196.292	146.70	146.60	120.27	120.24
102	171	-12968.534	-82.547	-0.851	-188.242	-10.926	1191.958	145.45	145.28	119.09	119.03
103	171	12968.537	82.547	0.851	196.747	10.926	-1191.809	145.44	145.27	119.09	119.03
103	172	-12868.906	33.169	-0.851	-224.747	-15.181	1765.922	149.23	149.00	110.19	110.11
104	172	12849.068	-33.169	0.851	224.747	15.181	-1770.871	149.07	148.83	109.91	109.83
104	173	-12769.330	672.851	-0.851	-249.147	-19.435	155.504	134.77	134.47	131.24	131.14
105	173	12769.332	-672.851	0.851	249.222	19.435	-155.500	134.77	134.47	131.24	131.14
105	176	-17004.150	932.143	-0.851	-269.647	-23.690	-4519.193	75.62	75.32	148.09	147.99
106	176	17004.146	995.752	-0.526	53.389	23.691	4519.271	75.62	75.32	148.09	147.99
106	182	-11790.321	-87.011	0.526	-69.439	-21.058	820.810	130.12	129.79	111.90	111.79
107	182	11790.321	87.011	-0.526	70.468	21.058	-820.781	130.12	129.79	111.90	111.79
107	183	-11823.385	268.702	0.526	-81.718	-18.426	-313.647	120.97	120.68	127.79	127.69
108	183	11871.670	-268.702	-0.526	81.827	18.426	319.564	121.42	121.13	128.38	128.28
108	184	-11968.668	47.576	0.526	-87.877	-15.794	-1056.358	116.26	116.01	139.48	139.40
109	184	11968.666	-47.576	-0.526	90.529	15.794	1056.388	116.25	116.01	139.48	139.40
109	185	-11947.559	-1.135	0.526	-91.004	-13.161	-1145.511	115.27	115.06	140.48	140.41
110	185	11947.554	1.135	-0.526	91.172	13.161	1145.511	115.27	115.06	140.48	140.41
110	186	-11862.812	75.901	0.526	-85.672	-10.529	-1130.899	114.49	114.32	139.39	139.33
111	186	11862.814	-75.901	-0.526	92.302	10.529	1130.967	114.49	114.32	139.39	139.33
111	187	-11765.544	172.161	0.526	-80.502	-7.897	-1756.801	108.22	108.10	146.94	146.90
112	187	9722.631	-172.161	-0.526	80.502	7.897	1815.573	86.40	86.28	126.42	126.38
112	188	-9608.574	161.115	0.526	-62.327	-5.264	-2485.973	79.59	79.50	134.41	134.39
113	188	9608.577	-161.114	-0.526	64.595	5.264	2486.000	79.59	79.50	134.41	134.39
113	189	-9508.282	212.102	0.526	-39.395	-2.632	-3271.739	71.95	71.91	144.13	144.12
114	189	9508.280	-212.102	-0.526	39.461	2.632	3271.740	71.95	71.91	144.13	144.12
114	192	-9420.297	439.723	0.526	-7.061	0.000	-4307.917	62.35	62.35	157.41	157.41

proc Viaducto Papiol

HIPOTESIS 94

cp + pret total (t=inf)

ESFUERZOS EN BARRAS

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	MOM. Y	MOM. Z
1	3	10021.683	286.763	-2.950	-65.998	0.000	1729.107
1	8	-10097.445	-190.884	2.950	35.547	14.748	-534.865
2	8	10097.420	190.884	-2.950	-35.547	-14.748	534.864
2	9	-10150.111	-50.819	2.950	9.772	29.496	27.282
3	9	10150.114	50.819	-2.950	-5.414	-29.496	-27.287
3	10	-10215.729	-25.414	2.950	-16.010	44.244	6.125
4	10	10738.443	25.414	-2.950	13.347	-44.244	-602.973
4	11	-10816.276	10.116	2.950	-30.822	58.992	654.706
5	11	10816.287	-10.115	-2.950	33.680	-58.992	-654.691
5	12	-10823.260	141.817	2.950	-47.105	73.739	273.899
6	12	10823.261	-141.818	-2.950	52.642	-73.739	-273.859
6	13	-10797.646	208.754	2.950	-62.167	88.487	-538.709
7	13	10797.664	-208.753	-2.950	59.977	-88.487	538.684
7	14	-10794.227	48.812	2.950	-65.802	103.235	-1338.908
8	14	10776.521	-48.813	-2.950	68.552	-103.235	1334.534
8	15	-10758.124	216.278	2.950	-70.802	117.983	-1515.183
9	15	10758.105	-216.277	-2.950	70.795	-117.983	1515.182
9	18	-14846.359	766.782	2.950	-69.545	132.731	-5573.876
10	18	14846.390	1223.968	2.105	171.762	-132.730	5573.924
10	24	-11501.745	-414.133	-2.105	-167.137	122.207	-881.017
11	24	11501.724	414.134	2.105	167.612	-122.206	881.081
11	25	-11540.274	-151.876	-2.105	-159.787	111.683	-20.402
12	25	11518.309	151.875	2.105	164.025	-111.683	13.131
12	26	-11615.594	-277.381	-2.105	-153.100	101.159	1121.303
13	26	11615.578	277.381	2.105	149.727	-101.159	-1121.364
13	27	-11600.236	-254.737	-2.105	-135.877	90.636	2453.125
14	27	11600.263	254.736	2.105	139.920	-90.636	-2453.075
14	28	-11603.196	-171.995	-2.105	-123.295	80.112	3629.836
15	28	11603.186	171.994	2.105	132.602	-80.112	-3629.738
15	29	-11609.399	14.434	-2.105	-113.278	69.588	3986.112
16	29	11070.878	-14.432	2.105	108.606	-69.589	-3383.255
16	30	-11109.166	207.779	-2.105	-86.756	59.065	2813.545
17	30	11109.178	-207.780	2.105	91.463	-59.065	-2813.511
17	31	-11157.080	242.232	-2.105	-67.188	48.541	1487.272
18	31	11157.043	-242.234	2.105	71.118	-48.541	-1487.244
18	32	-11067.608	91.925	-2.105	-44.517	38.017	812.811
19	32	11067.608	-91.924	2.105	44.512	-38.018	-812.811
19	33	-10983.976	223.168	-2.105	-15.737	27.494	369.962
20	33	10966.316	-223.168	2.105	17.515	-27.494	-374.383
20	34	-10898.029	757.867	-2.105	13.335	16.970	-1965.094
21	34	10898.046	-757.867	2.105	-13.146	-16.970	1965.087
21	37	-14988.394	1061.998	-2.105	45.972	6.447	-8278.756
22	37	14988.354	1164.026	2.336	296.011	-6.448	8278.721
22	44	-10978.143	-441.451	-2.336	-261.336	-5.233	-2281.655
23	44	10978.133	441.451	2.336	261.517	5.233	2281.759

TENSIONES

SIGMA 1	SIGMA2	SIGMA3	SIGMA4
90.18	90.18	128.34	128.34
100.84	101.07	112.72	112.80
100.84	101.07	112.72	112.79
105.97	106.43	105.52	105.68
105.97	106.43	105.52	105.68
106.37	107.05	106.46	106.69
116.81	117.50	103.73	103.97
117.94	118.86	103.80	104.11
117.94	118.86	103.80	104.11
114.72	115.86	109.05	109.44
114.72	115.86	109.05	109.44
107.54	108.92	119.88	120.35
107.54	108.92	119.88	120.35
100.71	102.31	130.78	131.33
100.56	102.16	130.53	131.08
98.74	100.58	132.78	133.41
98.74	100.58	132.78	133.41
53.43	55.12	143.49	144.07
53.43	55.12	143.49	144.07
111.77	113.67	131.84	132.49
111.77	113.67	131.84	132.49
119.45	121.19	120.47	121.06
119.28	121.02	120.14	120.74
129.86	131.43	105.63	106.17
129.86	131.43	105.63	106.17
140.91	142.32	87.24	87.72
140.91	142.32	87.24	87.72
150.86	152.10	71.17	71.59
150.85	152.10	71.17	71.60
153.98	155.06	66.38	66.75
143.32	144.40	69.02	69.39
139.04	139.96	77.26	77.57
139.04	139.96	77.26	77.57
128.54	129.29	95.97	96.23
128.54	129.29	95.97	96.23
122.05	122.64	104.31	104.51
122.05	122.64	104.31	104.51
117.56	117.98	109.53	109.68
117.41	117.84	109.29	109.44
97.23	97.49	140.68	140.77
97.23	97.49	140.68	140.77
35.83	35.91	168.79	168.82
35.83	35.91	168.79	168.82
95.59	95.51	145.91	145.88
95.59	95.51	145.91	145.89

23	45	-11010.108	-179.194	-2.336	-225.117	-16.914	-1291.675	104.29	104.03	132.71	132.62
24	45	9942.866	179.194	2.336	226.881	16.914	1614.240	90.45	90.19	125.98	125.89
24	46	-10036.909	-304.704	-2.336	-188.905	-28.595	-341.304	102.16	101.72	109.55	109.39
25	46	10036.935	304.704	2.336	188.902	28.595	341.305	102.16	101.72	109.55	109.39
25	47	-10018.286	-282.057	-2.336	-149.427	-40.276	1128.904	114.34	113.72	89.23	89.01
26	47	10018.293	282.057	2.336	153.325	40.276	-1128.846	114.34	113.72	89.23	89.01
26	48	-10017.854	-199.316	-2.336	-112.425	-51.957	2444.023	125.42	124.61	71.22	70.95
27	48	10017.812	199.316	2.336	112.659	51.957	-2444.021	125.42	124.61	71.22	70.95
27	49	-10020.588	-12.884	-2.336	-70.484	-63.638	2938.771	129.67	128.68	64.50	64.16
28	49	10005.921	12.883	2.336	75.122	63.638	-2938.271	129.52	128.53	64.36	64.02
28	50	-10037.356	180.465	-2.336	-35.271	-75.319	2503.015	126.30	125.13	70.68	70.28
29	50	10037.371	-180.465	2.336	39.984	75.319	-2503.002	126.30	125.13	70.68	70.28
29	51	-10078.379	214.910	-2.336	-6.060	-87.000	1311.235	116.86	115.51	87.48	87.02
30	51	10078.382	-214.909	2.336	10.047	87.000	-1311.231	116.86	115.51	87.48	87.02
30	52	-9985.784	64.600	-2.336	24.803	-98.681	772.455	111.48	109.95	93.93	93.40
31	52	9985.786	-64.600	2.336	-24.803	98.681	-772.457	111.48	109.95	93.93	93.40
31	53	-9909.069	195.850	-2.336	67.528	-110.362	468.353	108.23	106.51	97.33	96.74
32	53	9891.365	-195.851	2.336	-65.484	110.362	-472.806	108.08	106.36	97.08	96.50
32	54	-9829.951	730.551	-2.336	108.809	-122.042	-1727.978	89.14	87.24	126.65	125.99
33	54	9829.953	-730.551	2.336	-108.830	122.043	1727.981	89.14	87.24	126.65	126.00
33	57	-13927.128	1034.673	-2.336	145.505	-133.723	-7902.881	32.68	30.98	159.02	158.44
34	57	13927.146	1149.213	0.042	280.973	133.724	7902.887	32.68	30.98	159.02	158.44
34	64	-9923.719	-426.635	-0.042	-243.748	-133.932	-1977.771	88.12	86.04	131.08	130.37
35	64	9923.686	426.635	0.042	243.726	133.933	1977.767	88.12	86.04	131.08	130.37
35	65	-9962.403	-164.376	-0.042	-198.751	-134.140	-1059.660	96.20	94.11	118.90	118.18
36	65	9942.868	164.376	0.041	202.801	134.140	1057.507	96.02	93.93	118.66	117.95
36	66	-10036.911	-289.885	-0.041	-153.751	-134.348	141.309	107.02	104.93	103.21	102.50
37	66	10036.904	289.884	0.042	153.918	134.348	-141.307	107.02	104.93	103.21	102.50
37	67	-10018.256	-267.240	-0.042	-104.618	-134.556	1537.449	118.49	116.40	83.88	83.16
38	67	10018.278	267.241	0.042	108.452	134.556	-1537.413	118.49	116.40	83.88	83.16
38	68	-10017.841	-184.500	-0.042	-59.003	-134.764	2778.487	128.86	126.76	66.86	66.14
39	68	10017.803	184.499	0.041	54.686	134.764	-2778.510	128.86	126.76	66.86	66.14
39	69	-10020.579	1.935	-0.041	-5.160	-134.972	3199.177	132.41	130.31	61.12	60.40
40	69	10005.910	-1.933	0.042	19.602	134.972	-3198.688	132.25	130.15	60.98	60.26
40	70	-10037.344	195.277	-0.042	29.922	-135.180	2689.379	128.32	126.22	68.29	67.57
41	70	10037.350	-195.278	0.042	-34.706	135.180	-2689.365	128.32	126.22	68.29	67.57
41	71	-10078.357	229.727	-0.042	84.058	-135.388	1423.466	118.17	116.07	86.07	85.35
42	71	10078.355	-229.726	0.042	-79.824	135.388	-1423.501	118.17	116.07	86.07	85.35
42	72	-9985.756	79.420	-0.042	128.899	-135.595	810.639	112.09	109.98	93.50	92.78
43	72	9985.748	-79.420	0.042	-125.748	135.596	-810.688	112.09	109.98	93.50	92.78
43	73	-9909.031	210.670	-0.042	174.523	-135.803	432.484	108.13	106.01	97.89	97.17
44	73	9891.347	-210.670	0.042	-174.420	135.804	-436.914	107.98	105.87	97.64	96.92
44	74	-9829.934	745.368	-0.042	222.771	-136.011	-1837.959	88.33	86.21	128.19	127.47
45	74	9829.962	-745.368	0.041	-222.417	136.011	1837.873	88.33	86.21	128.19	127.46
45	77	-13927.138	1049.496	-0.041	270.192	-136.219	-8086.878	31.38	29.65	160.67	160.08
46	77	13927.123	1153.147	-0.860	168.515	136.219	8086.938	31.38	29.65	160.67	160.08
46	84	-9923.696	-430.582	0.860	-121.490	-131.919	-2142.176	86.73	84.68	133.33	132.63
47	84	9923.709	430.582	-0.860	121.509	131.918	2142.177	86.73	84.68	133.33	132.63
47	85	-9962.428	-168.316	0.860	-75.334	-127.618	-1204.328	94.94	92.96	120.86	120.18
48	85	9942.855	168.317	-0.860	77.248	127.618	1202.049	94.76	92.77	120.63	119.95
48	86	-10036.898	-293.817	0.860	-32.049	-123.318	16.399	105.89	103.97	104.89	104.24
49	86	10036.909	293.817	-0.860	35.190	123.318	-16.386	105.89	103.97	104.90	104.24
49	87	-10018.258	-271.182	0.860	8.836	-119.018	1432.230	117.49	115.64	85.28	84.64
50	87	10018.271	271.181	-0.860	-8.625	119.018	-1432.231	117.49	115.64	85.28	84.64
50	88	-10017.831	-188.435	0.860	51.375	-114.717	2693.014	127.99	126.21	67.98	67.37
51	88	10017.829	188.436	-0.860	-46.838	114.717	-2693.030	127.99	126.21	67.98	67.37
51	89	-10020.606	-2.004	0.860	88.238	-110.416	3133.386	131.66	129.95	61.96	61.37
52	89	10005.924	2.004	-0.860	-88.242	110.416	-3132.909	131.51	129.79	61.81	61.22
52	90	-10037.359	191.342	0.860	128.217	-106.116	2643.277	127.71	126.06	68.84	68.28
53	90	10037.372	-191.342	-0.860	-123.439	106.116	-2643.327	127.71	126.06	68.84	68.28
53	91	-10078.380	225.790	0.860	161.839	-101.815	1397.137	117.69	116.11	86.34	85.80
54	91	10078.375	-225.790	-0.860	-157.824	101.815	-1397.197	117.69	116.11	86.34	85.80

54	92	-9985.779	75.482	0.860	194.499	-97.515	804.017	111.73	110.22	93.49	92.98
55	92	9985.770	-75.482	-0.860	-191.185	97.515	-804.092	111.74	110.22	93.49	92.97
55	93	-9909.053	206.729	0.860	226.085	-93.214	445.589	107.91	106.46	97.60	97.10
56	93	9891.381	-206.729	-0.860	-226.187	93.214	-450.009	107.76	106.31	97.35	96.85
56	94	-9829.967	741.424	0.860	259.212	-88.913	-1805.107	88.24	86.85	127.61	127.14
57	94	9829.967	-741.424	-0.860	-259.192	88.914	1805.104	88.24	86.85	127.61	127.14
57	97	-13927.143	1045.555	0.860	290.243	-84.613	-8034.440	31.43	30.35	160.09	159.72
58	97	13927.124	1151.662	-1.822	-18.160	84.613	8034.281	31.43	30.36	160.09	159.72
58	104	-9923.694	-429.085	1.822	47.135	-75.500	-2096.890	86.67	85.50	132.56	132.16
59	104	9923.722	429.085	-1.823	-47.155	75.500	2096.891	86.67	85.50	132.56	132.16
59	105	-9962.440	-166.823	1.823	73.930	-66.387	-1166.543	94.78	93.75	120.18	119.83
60	105	9942.891	166.824	-1.823	-71.795	66.387	1164.203	94.60	93.56	119.95	119.59
60	106	-10036.931	-292.335	1.823	96.269	-57.275	46.840	105.63	104.74	104.30	104.00
61	106	10036.923	292.334	-1.822	-96.435	57.275	-46.841	105.63	104.74	104.30	104.00
61	107	-10018.272	-269.694	1.822	118.610	-48.162	1455.244	117.13	116.38	84.77	84.52
62	107	10018.264	269.693	-1.823	-114.381	48.162	-1455.289	117.13	116.38	84.77	84.52
62	108	-10017.824	-186.952	1.823	134.131	-39.050	2708.626	127.53	126.92	67.56	67.35
63	108	10017.813	186.952	-1.823	-129.588	39.049	-2708.676	127.53	126.92	67.56	67.35
63	109	-10020.590	-0.522	1.823	146.788	-29.937	3141.608	131.11	130.64	61.63	61.47
64	109	10005.926	0.522	-1.822	-151.501	29.937	-3141.077	130.95	130.48	61.49	61.33
64	110	-10037.363	192.824	1.822	166.151	-20.824	2644.015	127.05	126.73	68.60	68.49
65	110	10037.385	-192.824	-1.823	-156.841	20.824	-2644.138	127.05	126.73	68.60	68.49
65	111	-10078.392	227.274	1.823	168.816	-11.711	1390.575	116.94	116.75	86.19	86.13
66	111	10078.366	-227.274	-1.823	-164.797	11.711	-1390.637	116.94	116.75	86.19	86.13
66	112	-9985.770	76.964	1.823	174.047	-2.599	790.017	110.88	110.84	93.43	93.42
67	112	9985.776	-76.964	-1.823	-173.884	2.598	-790.020	110.88	110.84	93.43	93.42
67	113	-9909.060	208.206	1.823	180.359	6.514	424.123	106.95	107.05	97.62	97.66
68	113	9891.389	-208.206	-1.823	-178.436	-6.514	-428.615	106.80	106.90	97.38	97.41
68	114	-9829.975	742.904	1.823	182.111	15.627	-1833.896	87.18	87.43	127.73	127.81
69	114	9829.949	-742.903	-1.823	-182.111	-15.627	1833.897	87.18	87.43	127.73	127.81
69	117	-13927.123	1047.037	1.823	182.961	24.740	-8070.616	30.48	30.79	160.17	160.28
70	117	13927.136	1153.815	-2.990	-186.930	-24.742	8070.439	30.48	30.79	160.17	160.28
70	124	-9923.704	-431.243	2.990	184.905	39.695	-2122.323	85.56	86.18	132.60	132.81
71	124	9923.729	431.243	-2.990	-185.281	-39.695	2122.397	85.56	86.18	132.60	132.81
71	125	-9962.446	-168.984	2.990	180.406	54.647	-1181.256	93.72	94.57	120.06	120.35
72	125	9942.885	168.983	-2.990	-178.378	-54.647	1178.872	93.53	94.38	119.83	120.12
72	126	-10036.928	-294.489	2.990	170.678	69.600	42.958	104.61	105.69	104.02	104.39
73	126	10036.926	294.490	-2.990	-167.365	-69.600	-43.026	104.61	105.69	104.02	104.39
73	127	-10018.277	-271.849	2.990	156.840	84.552	1462.186	116.16	117.47	84.33	84.78
74	127	10018.273	271.848	-2.990	-152.820	-84.552	-1462.242	116.16	117.47	84.33	84.78
74	128	-10017.834	-189.108	2.990	139.520	99.504	2726.357	126.60	128.15	66.95	67.48
75	128	10017.830	189.109	-2.990	-139.517	-99.504	-2726.358	126.60	128.15	66.95	67.48
75	129	-10020.607	-2.677	2.990	123.466	114.457	3170.068	130.22	132.00	60.86	61.47
76	129	10005.935	2.678	-2.991	-118.744	-114.456	-3169.643	130.07	131.85	60.71	61.32
76	130	-10037.368	190.668	2.991	99.969	129.409	2683.362	126.21	128.23	67.66	68.35
77	130	10037.365	-190.669	-2.991	-95.180	-129.409	-2683.403	126.21	128.23	67.66	68.35
77	131	-10078.371	225.116	2.991	73.831	144.361	1440.617	116.14	118.39	85.09	85.86
78	131	10078.378	-225.115	-2.990	-77.861	-144.361	-1440.588	116.14	118.39	85.09	85.86
78	132	-9985.778	74.805	2.990	54.036	159.314	850.786	110.13	112.61	92.17	93.02
79	132	9985.790	-74.807	-2.990	-44.373	-159.313	-850.841	110.13	112.61	92.17	93.02
79	133	-9909.073	206.056	2.990	18.098	174.265	495.713	106.24	108.95	96.20	97.12
80	133	9891.388	-206.056	-2.990	-20.047	-174.266	-500.129	106.10	108.81	95.95	96.88
80	134	-9829.974	740.758	2.990	-8.528	189.218	-1751.696	86.52	89.46	126.14	127.15
81	134	9829.963	-740.758	-2.990	8.914	-189.218	1751.699	86.52	89.46	126.14	127.15
81	137	-13927.135	1044.877	2.990	-39.639	204.170	-7977.570	30.00	32.59	158.95	159.84
82	137	13927.137	1147.169	2.902	-247.407	-204.171	7977.602	30.00	32.59	158.95	159.84
82	144	-9923.711	-424.594	-2.902	214.683	189.662	-2062.755	84.90	87.85	131.38	132.39
83	144	9923.714	424.594	2.902	-213.903	-189.662	2062.588	84.90	87.85	131.38	132.39
83	145	-9962.434	-162.337	-2.902	179.328	175.154	-1154.686	93.00	95.73	119.38	120.31
84	145	9942.884	162.337	2.902	-179.226	-175.154	1152.371	92.82	95.54	119.14	120.07
84	146	-10036.929	-287.840	-2.902	142.901	160.644	36.230	103.84	106.34	103.87	104.72

85	146	10036.931	287.841	2.902	-143.068	-160.645	-36.230	103.84	106.34	103.87	104.72
85	147	-10018.284	-265.199	-2.902	105.194	146.136	1422.116	115.34	117.62	84.71	85.49
86	147	10018.282	265.198	2.902	-96.968	-146.136	-1422.192	115.35	117.62	84.71	85.49
86	148	-10017.843	-182.456	-2.902	57.717	131.627	2653.103	125.74	127.79	67.87	68.57
87	148	10017.836	182.456	2.902	-57.482	-131.627	-2653.103	125.74	127.79	67.87	68.57
87	149	-10020.613	3.974	-2.902	16.982	117.118	3063.543	129.31	131.13	62.31	62.93
88	149	10005.938	-3.974	2.902	-12.546	-117.118	-3063.075	129.15	130.98	62.16	62.79
88	150	-10037.371	197.321	-2.902	-29.029	102.609	2543.558	125.25	126.85	69.65	70.20
89	150	10037.378	-197.320	2.902	29.266	-102.609	-2543.556	125.25	126.85	69.65	70.20
89	151	-10078.383	231.760	-2.902	-71.740	88.100	1267.516	115.13	116.50	87.61	88.08
90	151	10078.375	-231.760	2.902	75.916	-88.100	-1267.483	115.13	116.50	87.61	88.08
90	152	-9985.774	81.461	-2.902	-119.066	73.592	644.460	109.07	110.22	95.23	95.62
91	152	9985.780	-81.461	2.902	118.905	-73.592	-644.464	109.07	110.22	95.23	95.62
91	153	-9909.063	212.715	-2.902	-162.505	59.083	256.019	105.14	106.06	99.79	100.10
92	153	9891.369	-212.715	2.902	164.461	-59.083	-260.381	104.99	105.91	99.54	99.86
92	154	-9829.955	747.405	-2.902	-208.337	44.574	-2024.678	85.36	86.06	130.27	130.51
93	154	9829.960	-747.405	2.902	208.619	-44.574	2024.758	85.36	86.06	130.27	130.51
93	157	-13927.130	1051.522	-2.902	-252.518	30.065	-8283.836	28.92	29.30	162.06	162.19
94	157	13927.124	1170.363	0.879	-181.008	-30.065	8283.967	28.92	29.30	162.07	162.20
94	163	-9923.702	-447.779	-0.879	137.283	25.670	-2253.101	84.58	84.98	134.43	134.57
95	163	9923.702	447.779	0.879	-136.976	-25.670	2253.048	84.58	84.98	134.43	134.57
95	164	-9962.420	-185.521	-0.879	93.676	21.276	-1229.224	93.58	93.91	120.81	120.92
96	164	9942.883	185.521	0.879	-91.768	-21.276	1226.879	93.39	93.72	120.57	120.69
96	165	-10036.928	-311.030	-0.879	49.218	16.881	77.654	105.31	105.57	103.68	103.77
97	165	10036.919	311.030	0.879	-49.052	-16.881	-77.656	105.31	105.57	103.68	103.77
97	166	-10018.270	-288.388	-0.879	7.502	12.486	1579.521	117.70	117.89	82.91	82.98
98	166	10018.273	288.387	0.879	-3.436	-12.486	-1579.523	117.70	117.89	82.91	82.98
98	167	-10017.834	-205.645	-0.879	-36.764	8.091	2926.335	128.98	129.11	64.45	64.50
99	167	10017.831	205.645	0.879	41.386	-8.091	-2926.326	128.98	129.11	64.45	64.50
99	168	-10020.608	-19.216	-0.879	-79.886	3.697	3452.712	133.45	133.50	57.28	57.30
100	168	10005.936	19.215	0.879	80.141	-3.697	-3452.244	133.29	133.35	57.13	57.15
100	169	-10037.370	174.133	-0.879	-116.617	-0.698	3048.639	130.28	130.27	63.00	63.00
101	169	10037.366	-174.132	0.879	121.306	0.698	-3048.600	130.28	130.27	63.00	63.00
101	170	-10078.371	208.583	-0.879	-155.356	-5.093	1888.484	121.05	120.97	79.35	79.32
102	170	10078.370	-208.583	0.879	155.357	5.093	-1888.483	121.05	120.97	79.35	79.32
102	171	-9985.771	58.273	-0.879	-186.582	-9.488	1381.322	115.87	115.73	85.35	85.30
103	171	9985.773	-58.273	0.879	193.493	9.488	-1381.175	115.87	115.73	85.35	85.30
103	172	-9909.057	189.516	-0.879	-221.492	-13.883	1108.723	112.83	112.61	88.29	88.22
104	172	9893.783	-189.516	0.879	221.492	13.883	-1112.534	112.70	112.49	88.08	88.01
104	173	-9832.385	724.213	-0.879	-245.892	-18.277	-1056.521	93.97	93.68	117.19	117.09
105	173	9832.386	-724.212	0.879	245.927	18.277	1056.525	93.97	93.68	117.19	117.09
105	176	-13093.195	966.010	-0.879	-266.352	-22.672	-5791.991	41.75	41.47	134.67	134.57
106	176	13093.190	1006.574	-0.504	53.468	22.672	5792.069	41.75	41.47	134.67	134.57
106	182	-9078.547	-264.701	0.504	-69.518	-20.153	-586.329	90.04	89.73	102.88	102.77
107	182	9078.547	264.701	-0.504	69.823	20.153	586.356	90.04	89.73	102.88	102.77
107	183	-9104.006	51.339	0.504	-81.073	-17.634	-576.718	90.37	90.09	103.00	102.91
108	183	9141.186	-51.339	-0.504	81.150	17.634	581.274	90.72	90.44	103.46	103.36
108	184	-9215.874	-76.786	0.504	-87.200	-15.115	-476.148	92.36	92.12	102.79	102.71
109	184	9215.873	76.786	-0.504	89.364	15.115	476.178	92.36	92.12	102.79	102.71
109	185	-9199.620	-72.151	0.504	-89.839	-12.596	-83.058	95.45	95.26	97.22	97.15
110	185	9199.616	72.151	-0.504	89.984	12.596	83.057	95.45	95.26	97.22	97.15
110	186	-9134.365	29.308	0.504	-84.484	-10.076	179.228	96.94	96.79	92.94	92.88
111	186	9134.367	-29.308	-0.504	90.408	10.076	-179.162	96.94	96.79	92.94	92.89
111	187	-9059.469	145.569	0.504	-78.608	-7.557	-262.405	92.45	92.33	98.20	98.16
112	187	7486.426	-145.569	-0.504	78.608	7.557	307.660	75.65	75.53	82.40	82.36
112	188	-7398.603	179.206	0.504	-60.433	-5.038	-994.250	68.98	68.90	90.89	90.86
113	188	7398.604	-179.205	-0.504	62.529	5.038	994.275	68.98	68.90	90.89	90.86
113	189	-7321.377	260.607	0.504	-37.329	-2.519	-1980.385	59.91	59.87	103.60	103.58
114	189	7321.375	-260.608	-0.504	37.391	2.519	1980.385	59.91	59.87	103.60	103.58
114	192	-7253.628	502.756	0.504	-4.991	0.000	-3317.100	48.01	48.01	121.21	121.21

proc Viaducto Papiol

HIPOTESIS 95

max mz + pret (t=0)(min)

ESFUERZOS EN BARRAS

TENSIONES

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	MOM. Y	MOM. Z	SIGMA 1	SIGMA2	SIGMA3	SIGMA4
1	3	11748.430	426.132	-3.042	1562.993	3.110	2079.539	105.31	105.26	151.18	151.16
1	8	-11833.705	24.617	-4.054	53.635	7.772	-2069.372	106.20	106.32	151.90	151.94
2	8	11833.676	-24.617	4.054	-53.635	-7.772	2069.372	106.20	106.32	151.90	151.94
2	9	-11892.013	132.195	-4.054	35.860	18.654	-2517.609	102.98	103.27	158.62	158.72
3	9	11892.025	-132.194	-5.905	-27.769	6.141	2517.583	103.17	103.07	158.69	158.66
3	10	-11965.458	105.755	-4.076	18.155	29.427	-3366.923	96.56	97.02	171.01	171.16
4	10	12576.418	-105.756	4.066	-19.985	-29.427	2669.322	108.77	109.23	167.82	167.98
4	11	-12594.650	97.822	-4.033	7.542	46.984	-3169.761	104.64	105.37	174.83	175.08
5	11	12594.658	-97.821	4.015	-5.699	-46.984	3169.760	104.64	105.37	174.83	175.08
5	12	-12599.558	195.624	-4.015	-3.151	58.060	-3911.476	98.41	99.31	185.02	185.33
6	12	12599.553	-195.625	3.975	6.323	-58.060	3911.478	98.41	99.31	185.02	185.33
6	13	-12566.364	217.728	-3.975	-12.348	69.334	-4877.194	89.90	90.98	197.88	198.25
7	13	12566.391	-217.727	3.996	11.400	-69.334	4877.188	89.90	90.98	197.88	198.25
7	14	-12538.126	110.808	-1.227	7.570	-16.325	-5736.177	83.10	82.84	209.59	209.50
8	14	12517.428	-110.808	1.166	-7.608	16.325	5730.996	82.92	82.67	209.30	209.21
8	15	-12489.674	305.229	-1.409	10.891	-24.364	-6150.238	79.19	78.81	214.78	214.65
9	15	12489.646	-305.228	1.410	-10.811	24.365	6150.237	79.19	78.81	214.78	214.65
9	18	-17261.877	1427.858	-8.197	54.300	-44.801	-13309.334	14.65	14.09	228.19	227.99
10	18	17443.455	2130.253	-10.183	-59.882	47.648	13313.469	15.79	15.19	229.38	229.17
10	24	-13527.919	-1005.713	5.753	38.017	8.446	-4857.130	100.58	100.71	207.81	207.85
11	24	13527.821	1005.713	-5.721	-38.915	-8.445	4857.117	100.58	100.71	207.80	207.85
11	25	-13739.887	-129.858	0.509	-152.544	80.288	-2337.401	123.29	124.54	175.28	175.71
12	25	13714.212	129.857	-0.308	155.646	-80.288	2328.875	123.10	124.35	174.90	175.33
12	26	-13798.408	-176.246	1.952	15.681	-104.703	-1534.516	132.05	130.43	165.38	164.82
13	26	13798.470	176.247	-2.041	-18.484	104.703	1534.519	132.05	130.43	165.38	164.82
13	27	-13786.788	-194.912	1.841	26.535	-95.001	-618.310	139.51	138.04	152.67	152.17
14	27	13786.768	194.912	-1.754	-23.135	95.001	618.298	139.51	138.04	152.67	152.17
14	28	-13796.446	-135.098	1.543	33.121	-86.753	334.335	147.51	146.16	139.69	139.23
15	28	13796.460	135.098	-1.360	-25.291	86.754	-334.357	147.51	146.16	139.69	139.23
15	29	-13516.386	65.308	2.958	75.511	-100.136	471.299	145.84	144.28	134.92	134.39
16	29	12886.907	-65.307	-2.937	-79.383	100.137	233.417	133.38	131.82	138.01	137.48
16	30	-12937.909	246.162	2.737	93.083	-85.949	-1042.072	127.04	125.70	149.59	149.14
17	30	12937.935	-246.163	-2.756	-89.312	85.948	1042.033	127.04	125.70	149.59	149.14
17	31	-13000.174	249.901	2.548	104.651	-72.707	-2529.559	115.16	114.03	170.60	170.21
18	31	13000.173	-249.902	-2.564	-101.683	72.706	2529.521	115.16	114.03	170.60	170.21
18	32	-12748.878	44.732	-0.461	52.155	12.756	-3065.197	107.39	107.59	175.09	175.16
19	32	12748.825	-44.731	0.461	-52.159	-12.755	3065.198	107.39	107.59	175.09	175.16
19	33	-12547.094	251.577	3.719	64.292	37.826	-3411.765	102.19	102.78	177.67	177.87
20	33	12526.538	-251.576	-3.829	-63.677	-37.826	3406.566	102.02	102.61	177.39	177.59
20	34	-12716.220	1410.191	-5.193	16.994	50.196	-7266.650	71.65	72.43	232.25	232.52
21	34	12716.230	-1410.191	5.185	-18.764	-50.194	7266.640	71.65	72.43	232.25	232.52
21	37	-17503.406	1849.523	-6.785	24.544	20.272	-17491.191	-14.07	-13.82	266.88	266.97
22	37	17913.492	2086.985	-10.164	-133.469	-9.819	17491.648	-11.41	-11.29	269.50	269.55
22	44	-13232.481	-1067.007	5.856	62.027	73.284	-7520.704	74.74	75.88	241.06	241.45
23	44	13232.485	1067.007	-5.695	-63.758	-73.285	7520.677	74.74	75.88	241.06	241.45

23	45	-12967.869	-203.502	-1.767	-253.024	32.976	-5239.531	91.35	91.86	207.14	207.31
24	45	11720.420	203.502	1.804	253.666	-32.976	5616.550	75.18	75.69	199.28	199.46
24	46	-12065.311	-290.321	-5.176	-149.373	13.982	-4287.495	90.03	90.25	184.71	184.79
25	46	12065.362	290.321	5.176	149.370	-13.981	4287.497	90.03	90.25	184.71	184.79
25	47	-11816.826	-250.800	1.913	-17.244	-49.991	-2981.802	98.85	98.07	164.39	164.12
26	47	11816.820	250.800	-1.871	20.164	49.991	2981.811	98.84	98.07	164.39	164.12
26	48	-11810.057	-191.256	1.659	3.605	-41.166	-1726.810	109.19	108.55	147.09	146.87
27	48	11809.989	191.256	-1.657	-3.423	41.166	1726.809	109.19	108.55	147.09	146.87
27	49	-11807.031	5.147	5.116	98.237	-46.160	-1234.867	113.31	112.59	140.32	140.08
28	49	11789.879	-5.147	-5.299	-93.545	57.415	1235.387	113.22	112.32	140.18	139.88
28	50	-11293.559	192.499	5.520	112.122	-19.665	-1750.311	103.44	103.13	141.96	141.85
29	50	11293.581	-192.499	-5.695	-108.480	19.665	1750.264	103.44	103.13	141.96	141.85
29	51	-11335.262	195.652	5.484	124.155	8.282	-2949.434	93.63	93.76	158.76	158.80
30	51	11335.268	-195.650	-5.653	-121.199	-8.282	2949.384	93.63	93.76	158.76	158.80
30	52	-11220.785	-25.170	5.453	137.524	36.051	-3175.177	90.34	90.90	160.59	160.78
31	52	11220.787	25.169	-5.453	-137.524	-36.050	3175.177	90.34	90.90	160.59	160.78
31	53	-11523.107	226.564	1.451	170.708	18.257	-3300.550	92.58	92.87	165.51	165.61
32	53	11502.418	-226.565	-1.475	-169.860	-18.257	3295.307	92.41	92.70	165.22	165.32
32	54	-11026.154	1402.141	-0.700	-40.787	232.314	-7127.562	53.75	57.36	212.22	213.45
33	54	11026.153	-1402.141	0.710	40.865	-232.314	7127.562	53.75	57.36	212.22	213.45
33	57	-15808.807	1840.883	-2.310	-66.696	224.766	-17281.025	-24.60	-21.75	253.83	254.80
34	57	16450.803	2068.618	-4.928	-153.387	-217.887	17280.244	-20.49	-17.73	257.90	258.85
34	64	-11765.223	-1049.396	1.074	42.913	238.623	-7377.845	59.32	63.04	223.35	224.62
35	64	11765.183	1049.396	-1.077	-42.836	-238.626	7377.845	59.32	63.04	223.35	224.62
35	65	-12247.422	-184.648	-6.925	-270.397	18.788	-5073.780	85.32	85.62	197.38	197.48
36	65	12224.582	184.649	7.396	272.139	-18.787	5071.292	85.11	85.40	197.11	197.21
36	66	-12335.018	-226.706	-3.304	-112.061	56.332	-3854.902	96.13	97.01	181.48	181.78
37	66	12335.010	226.705	3.316	112.177	-56.329	3854.901	96.13	97.01	181.48	181.78
37	67	-12319.463	-245.372	-3.516	-83.751	39.249	-2684.220	105.89	106.50	165.32	165.53
38	67	12319.491	245.373	3.735	86.621	-39.249	2684.250	105.89	106.50	165.32	165.53
38	68	-12325.228	-185.849	-3.948	-58.158	20.033	-1483.653	116.13	116.44	148.97	149.08
39	68	12325.182	185.848	3.726	54.812	-20.032	1483.631	116.13	116.44	148.97	149.08
39	69	-11577.563	17.153	0.991	48.008	-27.724	-1041.987	112.38	111.95	135.24	135.09
40	69	11560.414	-5.190	12.934	220.077	-38.703	1042.499	111.68	112.29	134.89	135.09
40	70	-11603.408	198.004	0.947	65.193	-22.491	-1612.813	107.84	107.49	143.32	143.20
41	70	11603.413	-198.006	-0.895	-68.887	22.491	1612.840	107.84	107.49	143.32	143.20
41	71	-11657.593	201.088	0.683	97.223	-18.536	-2866.929	97.90	97.61	161.07	160.97
42	71	11657.592	-201.088	-0.732	-94.086	18.538	2866.887	97.90	97.61	161.06	160.97
42	72	-11555.609	-19.729	0.532	122.285	-15.375	-3146.663	94.47	94.23	163.83	163.75
43	72	11555.599	19.729	-0.577	-120.159	15.374	3146.616	94.47	94.23	163.83	163.74
43	73	-10938.911	238.678	2.758	259.230	-22.896	-3337.473	86.50	86.14	160.02	159.90
44	73	10918.244	-238.679	-2.772	-259.187	22.898	3332.294	86.32	85.97	159.74	159.62
44	74	-11385.989	1422.615	-3.070	-28.889	172.709	-7310.149	56.44	59.13	218.63	219.55
45	74	11386.022	-1422.615	3.029	27.341	-172.711	7310.158	56.44	59.13	218.63	219.55
45	77	-16181.178	1861.913	-4.629	-48.268	153.565	-17594.195	-24.03	-22.08	259.13	259.80
46	77	17053.824	2081.058	-7.639	-152.121	-139.990	17595.496	-18.42	-16.65	264.70	265.31
46	84	-12380.744	-1061.329	4.322	57.139	156.510	-7659.834	64.03	66.47	233.86	234.69
47	84	12380.760	1061.329	-4.307	-57.222	-156.510	7659.832	64.03	66.47	233.86	234.69
47	85	-11853.987	-193.885	-6.100	-169.363	-9.574	-5250.555	79.96	79.81	195.77	195.72
48	85	11831.107	193.885	6.179	170.143	9.574	5247.919	79.74	79.59	195.49	195.44
48	86	-11925.548	-228.049	-3.306	-111.456	6.713	-4064.845	90.49	90.59	180.22	180.25
49	86	11925.559	228.050	3.378	113.574	-6.712	4064.888	90.49	90.59	180.22	180.25
49	87	-11897.509	-246.728	-3.578	-88.149	-10.680	-2860.639	100.39	100.23	163.46	163.41
50	87	11897.523	246.727	3.583	88.305	10.683	2860.642	100.39	100.23	163.46	163.41
50	88	-11890.760	-187.200	-3.795	-63.917	-29.139	-1626.513	110.78	110.33	146.52	146.37
51	88	11890.760	187.200	3.865	67.404	29.139	1626.543	110.78	110.33	146.52	146.37
51	89	-10899.537	-7.898	-3.446	-48.124	-58.867	-1151.864	104.63	103.71	129.75	129.43
52	89	10882.375	7.898	3.446	48.122	58.866	1152.421	104.45	103.53	129.57	129.26
52	90	-10912.868	196.792	-0.347	35.923	-64.532	-1689.605	100.32	99.32	137.27	136.93
53	90	10912.882	-196.791	0.019	-32.251	64.532	1689.594	100.32	99.32	137.27	136.93
53	91	-10954.562	199.867	-0.231	53.421	-65.150	-2910.832	90.55	89.54	154.45	154.10
54	91	10954.556	-199.867	-0.082	-50.454	65.148	2910.813	90.55	89.54	154.45	154.10

54	92	-10840.076	-20.951	-0.118	70.404	-65.237	-3157.689	87.30	86.28	156.64	156.29
55	92	10840.069	20.951	-0.216	-68.170	65.239	3157.662	87.30	86.28	156.64	156.29
55	93	-11313.370	238.706	1.764	270.363	-19.676	-3324.032	90.49	90.19	163.74	163.64
56	93	11292.712	-238.706	-1.759	-270.405	19.674	3318.868	90.32	90.01	163.45	163.35
56	94	-10645.471	1424.063	-1.750	-25.440	129.470	-7278.315	49.31	51.33	210.58	211.27
57	94	10645.472	-1424.062	1.733	25.358	-129.471	7278.315	49.31	51.33	210.58	211.27
57	97	-15428.129	1863.191	-3.334	-53.501	116.798	-17542.438	-28.20	-26.72	253.98	254.49
58	97	16531.732	2074.236	-9.108	-135.602	-99.705	17538.863	-21.07	-19.81	260.98	261.41
58	104	-11846.147	-1054.678	6.351	65.186	108.595	-7609.998	59.24	60.93	227.72	228.30
59	104	11846.177	1054.678	-6.356	-65.104	-108.598	7610.000	59.24	60.93	227.72	228.30
59	105	-12008.392	-190.241	-2.228	-10.939	38.607	-5213.163	81.51	82.11	196.74	196.95
60	105	11985.539	190.242	2.381	11.818	-38.608	5210.468	81.29	81.89	196.47	196.67
60	106	-12715.994	-230.413	-2.635	-64.893	16.369	-4057.781	98.73	98.98	188.35	188.44
61	106	12715.986	230.414	2.615	64.782	-16.369	4057.775	98.72	98.98	188.35	188.44
61	107	-12694.187	-249.085	-2.815	-52.507	2.798	-2855.142	108.65	108.70	171.67	171.68
62	107	12694.172	249.084	3.208	55.627	-2.796	2855.162	108.65	108.70	171.67	171.68
62	108	-12693.658	-189.560	-3.420	-45.140	-13.781	-1622.667	119.08	118.86	154.81	154.74
63	108	12693.644	189.562	3.796	48.629	13.783	1622.687	119.08	118.86	154.81	154.74
63	109	-12696.889	-16.791	-3.996	-39.879	-33.256	-1148.597	123.22	122.71	148.40	148.22
64	109	12679.753	16.790	3.621	36.202	33.256	1149.134	123.04	122.52	148.23	148.05
64	110	-11497.489	194.054	-3.136	-15.746	-70.427	-1680.886	106.54	105.45	143.27	142.90
65	110	11497.486	-194.053	2.883	23.256	61.281	1680.905	106.47	105.52	143.25	142.92
65	111	-11545.390	197.131	-3.166	-17.933	-85.715	-2901.817	96.96	95.62	160.55	160.09
66	111	11545.377	-197.132	3.078	20.908	85.713	2901.825	96.96	95.62	160.55	160.09
66	112	-11437.146	-23.690	-3.278	-17.808	-101.599	-3148.442	93.89	92.31	162.84	162.30
67	112	11437.190	23.690	3.272	17.918	101.596	3148.441	93.89	92.31	162.84	162.30
67	113	-11322.001	238.272	0.792	158.407	-12.005	-3331.608	90.46	90.27	163.91	163.85
68	113	11301.324	-238.272	-0.890	-157.614	12.003	3326.376	90.29	90.10	163.63	163.56
68	114	-10505.068	1422.337	-3.407	-22.284	49.123	-7279.421	48.46	49.23	209.34	209.61
69	114	10505.055	-1422.336	3.406	22.283	-49.123	7279.422	48.46	49.23	209.34	209.61
69	117	-15293.959	1861.288	-5.006	-50.636	28.094	-17547.838	-28.52	-28.17	253.37	253.49
70	117	16628.531	2076.059	-12.388	-49.868	-8.855	17561.473	-20.04	-19.93	261.99	262.03
70	124	-11949.192	-1056.670	9.999	36.317	28.775	-7636.615	60.71	61.16	229.37	229.53
71	124	11949.211	1056.670	-10.140	-34.695	-28.776	7636.627	60.72	61.16	229.37	229.53
71	125	-12718.943	-192.698	3.612	135.248	57.462	-5221.564	88.71	89.60	204.22	204.53
72	125	12696.102	192.698	-3.182	-134.414	-57.464	5218.807	88.50	89.39	203.95	204.25
72	126	-12081.545	-234.614	-0.736	1.702	10.119	-4039.008	92.31	92.46	181.48	181.54
73	126	12081.525	234.616	0.878	0.535	-10.118	4039.009	92.31	92.46	181.48	181.54
73	127	-12059.729	-253.286	-1.078	-7.260	5.231	-2815.382	102.34	102.42	164.49	164.52
74	127	12059.764	253.284	1.210	10.240	-5.230	2815.387	102.34	102.42	164.49	164.52
74	128	-12059.250	-193.756	-1.422	-18.948	-1.363	-1561.963	112.86	112.84	147.32	147.32
75	128	12059.220	193.757	1.424	18.950	1.361	1561.960	112.86	112.84	147.32	147.32
75	129	-10612.299	-13.423	-2.312	-28.163	-34.068	-1086.340	101.99	101.46	125.78	125.60
76	129	10595.159	13.424	1.894	31.862	34.068	1086.903	101.80	101.27	125.61	125.43
76	130	-10631.900	191.216	-4.546	-72.323	-70.987	-1609.053	98.11	97.00	133.25	132.87
77	130	10631.880	-191.217	4.106	76.024	70.987	1609.079	98.11	97.00	133.25	132.87
77	131	-10679.810	194.294	-4.318	-90.305	-92.040	-2815.871	88.69	87.26	150.35	149.86
78	131	10679.832	-194.294	4.736	87.303	92.040	2815.837	88.69	87.26	150.35	149.86
78	132	-10571.589	-26.527	-4.973	-103.006	-106.966	-3048.235	85.73	84.07	152.45	151.88
79	132	10571.586	26.526	3.660	109.832	116.218	3048.360	85.80	84.00	152.47	151.86
79	133	-10507.401	236.344	0.400	-40.379	24.408	-3282.677	82.08	82.46	154.64	154.77
80	133	10486.741	-236.344	0.044	39.345	-33.477	3277.491	81.84	82.36	154.33	154.51
80	134	-10389.482	1418.319	-5.822	-32.831	11.878	-7138.793	48.72	48.91	206.31	206.37
81	134	10389.470	-1418.319	5.406	31.348	-11.876	7138.807	48.72	48.91	206.31	206.37
81	137	-15178.371	1948.613	-9.431	3.779	-42.995	-17387.410	-27.66	-28.20	251.36	251.18
82	137	16743.627	1968.423	-9.744	28.060	52.352	17333.996	-17.30	-17.97	260.82	260.59
82	144	-12064.298	-1040.260	8.144	-16.322	-7.641	-7491.675	63.41	63.29	228.69	228.64
83	144	12064.313	1040.260	-7.780	13.269	7.639	7491.687	63.41	63.29	228.69	228.64
83	145	-12135.048	-183.569	0.094	204.024	103.252	-5185.351	82.56	84.17	197.51	198.06
84	145	12112.198	183.570	-0.084	-203.982	-103.252	5182.646	82.35	83.95	197.23	197.78
84	146	-12946.640	-229.943	1.377	72.835	-16.688	-4033.968	101.59	101.33	190.52	190.43

85	146	12946.641	229.943	-1.401	-72.948	16.690	4033.969	101.59	101.33	190.52	190.43
85	147	-12924.846	-248.611	1.201	50.674	-10.184	-2833.724	111.34	111.18	173.82	173.76
86	147	12924.847	248.610	-0.253	-44.567	10.186	2833.692	111.34	111.18	173.82	173.76
86	148	-12924.334	-189.008	0.043	21.342	-9.439	-1604.466	121.60	121.46	156.96	156.91
87	148	12924.324	189.009	-0.018	-21.161	9.440	1604.464	121.60	121.46	156.96	156.91
87	149	-12927.571	-16.237	-0.182	-2.814	-9.848	-1133.158	125.58	125.43	150.53	150.48
88	149	12910.421	16.236	0.619	6.303	9.847	1133.709	125.39	125.24	150.36	150.31
88	150	-12947.158	188.233	-4.575	-87.160	-31.690	-1637.952	121.73	121.24	157.72	157.55
89	150	12947.168	-188.232	4.599	87.345	31.689	1637.958	121.73	121.24	157.72	157.55
89	151	-12995.097	191.322	-4.811	-112.631	-55.217	-2830.379	112.45	111.59	174.63	174.33
90	151	12995.086	-191.322	5.298	115.787	55.216	2830.427	112.45	111.59	174.63	174.33
90	152	-12861.393	28.097	-5.187	-138.435	-21.267	-3125.787	108.32	107.99	177.19	177.08
91	152	12861.386	-28.098	5.164	138.323	21.267	3125.781	108.32	107.99	177.19	177.08
91	153	-12771.720	236.851	-5.965	-214.257	-26.661	-3405.251	105.09	104.68	180.10	179.96
92	153	12751.036	-236.851	6.441	215.062	26.661	3400.160	104.92	104.51	179.81	179.67
92	154	-12704.725	1418.130	-12.930	-39.244	-149.115	-7184.122	73.77	71.45	231.53	230.74
93	154	12704.726	-1418.130	13.391	37.744	149.114	7184.139	73.77	71.45	231.53	230.74
93	157	-17493.625	1948.784	-16.511	38.855	-213.335	-17440.295	-12.29	-14.99	266.87	265.94
94	157	17610.359	1990.020	-14.443	14.577	233.787	17636.146	-12.82	-15.78	269.40	268.39
94	163	-12931.047	-1061.656	12.837	-18.325	-174.234	-7686.212	72.13	69.42	240.85	239.92
95	163	12931.039	1061.656	-12.336	16.953	165.575	7686.217	72.06	69.49	240.82	239.94
95	164	-12950.845	-220.465	3.357	154.377	-30.859	-5304.174	91.13	90.65	208.01	207.85
96	164	12927.994	220.465	-2.860	-153.617	30.859	5301.417	90.91	90.43	207.74	207.57
96	165	-12338.855	-308.706	2.399	97.514	-24.047	-3905.335	96.38	96.00	182.43	182.30
97	165	12338.839	308.706	-2.387	-97.399	24.046	3905.333	96.38	96.00	182.43	182.30
97	166	-10377.725	-288.337	3.374	87.862	-66.939	-2443.183	88.45	87.41	142.02	141.67
98	166	10377.751	288.337	-3.879	-84.740	66.940	2443.147	88.45	87.41	142.02	141.67
98	167	-10377.237	-228.157	3.670	60.550	-48.068	-1022.517	100.17	99.43	122.49	122.23
99	167	10377.237	228.157	-4.176	-56.836	48.068	1022.487	100.17	99.43	122.49	122.23
99	168	-10380.483	-55.387	3.976	33.911	-27.688	-355.430	105.62	105.19	113.32	113.18
100	168	10363.313	55.386	-4.003	-33.700	27.687	355.975	105.44	105.01	113.15	113.01
100	169	-10400.055	146.639	2.331	-29.092	-20.208	-608.546	103.65	103.34	116.98	116.87
101	169	10400.067	-146.639	-2.837	32.988	20.208	608.553	103.65	103.34	116.98	116.87
101	170	-10447.995	150.011	2.627	-52.753	-6.557	-1600.325	95.76	95.66	131.04	131.01
102	170	10447.988	-150.011	-2.627	52.754	6.558	1600.329	95.76	95.66	131.04	131.01
102	171	-10339.757	-70.810	2.427	-70.454	6.077	-1611.333	94.44	94.53	130.03	130.06
103	171	10339.770	70.810	-3.466	76.015	-6.078	1611.390	94.44	94.53	130.03	130.06
103	172	-10275.574	187.164	-0.209	-219.203	-40.523	-1439.267	95.57	94.94	127.12	126.91
104	172	10257.705	-187.165	0.209	219.203	40.524	1434.812	95.42	94.79	126.87	126.66
104	173	-10160.463	1382.177	-7.198	-33.688	-72.928	-5553.360	60.24	59.11	182.41	182.02
105	173	10160.471	-1382.177	7.171	33.642	72.930	5553.361	60.24	59.11	182.41	182.02
105	176	-13971.809	1842.638	-9.771	18.206	-93.756	-14114.369	-11.62	-12.81	214.63	214.22
106	176	13860.181	1767.284	-7.539	-40.680	83.854	13927.270	-11.06	-12.12	212.23	211.87
106	182	-9167.735	-421.045	2.575	13.120	-139.568	-5121.170	54.01	51.83	166.30	165.55
107	182	9167.729	421.045	-3.153	-14.537	139.568	5121.167	54.01	51.83	166.30	165.55
107	183	-12084.582	75.588	5.507	-10.937	-122.779	-4966.142	85.62	83.71	194.58	193.93
108	183	12128.042	-75.588	-5.478	10.941	122.779	4971.466	86.03	84.12	195.11	194.45
108	184	-12189.876	1.459	3.423	-0.960	-59.002	-5224.911	84.06	83.15	199.06	198.74
109	184	12189.870	-1.459	-2.912	1.809	59.002	5224.909	84.06	83.15	199.06	198.74
109	185	-12170.874	-49.259	2.912	-1.434	-44.442	-5081.126	84.95	84.26	196.85	196.61
110	185	12170.874	49.258	-2.884	1.504	44.442	5081.124	84.95	84.26	196.85	196.61
110	186	-12094.606	13.196	2.884	3.046	-30.022	-4809.591	86.32	85.85	192.29	192.13
111	186	12094.610	-13.196	-1.778	-0.037	30.023	4809.589	86.32	85.85	192.29	192.13
111	187	-12007.066	92.952	1.778	8.962	-21.134	-5080.075	83.07	82.74	195.06	194.95
112	187	10168.441	-92.953	-1.778	-8.961	21.135	5132.973	63.43	63.10	176.59	176.48
112	188	-10065.793	76.135	1.578	22.472	-10.254	-5409.172	59.97	59.81	179.28	179.22
113	188	10065.798	-76.133	-1.239	-21.351	12.246	5409.167	59.98	59.79	179.28	179.22
113	189	-9975.530	115.144	1.040	39.637	-5.056	-5754.790	56.10	56.02	183.06	183.03
114	189	9975.528	-115.144	-1.011	-39.633	5.056	5754.789	56.10	56.02	183.06	183.03
114	192	-10259.314	925.027	0.043	91.524	0.000	-6880.399	49.61	49.61	201.44	201.44

proc Viaducto Papiol

HIPOTESIS 96

min mz + pret (t=0)(min)

ESFUERZOS EN BARRAS

TENSIONES

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	MOM. Y	MOM. Z	SIGMA 1	SIGMA2	SIGMA3	SIGMA4
1	3	11678.907	507.418	-5.227	-1560.772	-3.109	1962.558	105.51	105.56	148.83	148.85
1	8	-11773.711	-597.680	4.956	-10.938	32.889	1557.423	135.68	136.20	101.49	101.66
2	8	11773.683	597.680	-4.956	10.938	-32.889	-1557.425	135.68	136.20	101.49	101.66
2	9	-11841.521	-327.951	2.956	-9.536	52.668	3808.898	155.05	155.87	71.27	71.56
3	9	11841.518	327.950	-2.973	17.574	-52.667	-3808.889	155.05	155.87	71.27	71.56
3	10	-11924.459	-201.510	0.949	-30.602	59.881	4861.230	164.66	165.59	57.69	58.01
4	10	12535.431	201.510	-0.943	25.646	-59.881	-5558.850	176.87	177.80	54.51	54.83
4	11	-12702.148	-61.033	-1.090	-8.805	52.858	6217.854	184.17	184.99	47.23	47.52
5	11	12702.158	61.033	1.113	14.218	-52.857	-6217.844	184.17	184.99	47.23	47.52
5	12	-12716.558	198.538	-3.113	5.957	42.293	5859.563	181.41	182.06	52.32	52.55
6	12	12716.558	-198.537	3.165	4.836	-42.293	-5859.560	181.41	182.06	52.32	52.55
6	13	-12692.869	382.422	-5.165	19.156	21.470	4468.409	169.70	170.03	71.20	71.32
7	13	12692.891	-382.422	5.137	-23.650	-21.470	-4468.402	169.70	170.03	71.21	71.32
7	14	-12695.121	195.396	-7.580	21.444	-31.522	2802.900	156.21	155.72	94.20	94.03
8	14	12674.420	-195.397	7.641	-14.825	31.522	-2808.088	156.04	155.55	93.92	93.75
8	15	-12618.678	-71.667	3.736	-32.219	-61.921	2188.127	150.51	149.55	101.91	101.58
9	15	12618.664	71.668	-3.737	32.131	61.920	-2188.128	150.51	149.55	101.91	101.58
9	18	-17293.135	510.365	-0.843	-30.676	-53.174	-778.694	104.33	103.66	116.62	116.39
10	18	17111.621	978.765	0.875	37.041	50.331	774.710	103.19	102.56	115.42	115.21
10	24	-13197.294	-88.340	-0.875	-32.891	-42.954	2580.845	159.69	159.02	102.52	102.29
11	24	13197.267	88.340	0.781	34.818	42.954	-2580.833	159.69	159.02	102.52	102.29
11	25	-13237.331	-458.712	-0.527	8.627	65.378	2984.061	162.63	163.65	97.12	97.47
12	25	13211.658	458.712	0.326	-1.266	-65.378	-2992.716	162.44	163.46	96.74	97.08
12	26	-13440.384	-586.051	3.371	-51.697	109.096	5759.947	187.61	189.31	61.07	61.65
13	26	13440.364	586.052	-3.316	45.973	-109.095	-5759.965	187.61	189.31	61.07	61.65
13	27	-13330.665	-524.975	3.421	119.196	102.235	8402.952	208.61	210.20	23.71	24.25
14	27	13330.696	524.974	-3.508	-112.365	-102.235	-8402.997	208.61	210.20	23.71	24.25
14	28	-13327.875	-330.733	1.519	61.466	114.797	10671.645	227.44	229.22	-7.46	-6.84
15	28	13327.872	330.734	-1.701	-45.573	-114.798	-10671.688	227.44	229.23	-7.46	-6.85
15	29	-13622.473	-13.495	-0.928	0.412	112.297	11487.238	237.35	239.10	-15.56	-14.96
16	29	12993.035	13.495	0.908	-8.463	-112.298	-10782.551	224.89	226.64	-12.47	-11.87
16	30	-13031.537	318.292	-2.908	-37.498	102.758	10017.382	218.97	220.57	-1.55	-1.00
17	30	13031.550	-318.293	2.926	45.690	-102.757	-10017.363	218.97	220.57	-1.55	-1.00
17	31	-13081.289	455.771	-4.918	-89.282	83.166	7859.217	201.61	202.90	28.61	29.05
18	31	13081.246	-455.771	4.934	96.205	-83.166	-7859.177	201.61	202.90	28.61	29.05
18	32	-12970.462	356.075	-6.774	-52.957	35.550	6069.756	185.87	186.42	52.11	52.30
19	32	12970.459	-356.073	6.774	52.948	-35.552	-6069.754	185.87	186.42	52.11	52.30
19	33	-12866.455	506.260	-8.176	-62.930	-18.207	4328.740	170.65	170.37	75.04	74.94
20	33	12845.810	-506.260	8.187	66.490	18.206	-4333.890	170.48	170.19	74.75	74.65
20	34	-13034.236	559.721	-6.733	54.380	-164.862	1754.462	152.03	149.46	112.47	111.59
21	34	13034.259	-559.721	6.851	-52.537	164.863	-1754.484	152.03	149.47	112.47	111.59
21	37	-17820.184	859.064	-6.851	76.512	-187.369	-3843.554	86.65	84.28	147.59	146.77
22	37	17409.926	902.487	-2.171	99.251	176.922	3843.025	83.99	81.75	144.96	144.19
22	44	-12727.663	-114.052	2.171	-74.002	-154.316	1027.286	142.67	140.27	119.21	118.39
23	44	12727.651	114.052	-2.213	75.692	154.316	-1027.258	142.67	140.27	119.21	118.39

23	45	-12461.789	-487.284	7.763	182.334	67.515	1945.922	145.85	146.90	103.25	103.61
24	45	11214.368	487.284	-7.917	-178.958	-67.515	-1569.069	129.67	130.72	95.39	95.75
24	46	-11618.039	-645.209	5.078	81.112	97.749	4453.514	157.76	159.28	59.98	60.50
25	46	11618.076	645.208	-5.079	-81.118	-97.749	-4453.510	157.76	159.28	59.98	60.51
25	47	-11602.529	-543.131	5.235	236.631	155.904	7374.627	181.55	183.98	19.62	20.45
26	47	11602.537	543.131	-5.276	-229.771	-155.904	-7374.712	181.55	183.98	19.62	20.45
26	48	-11608.274	-348.518	3.288	137.592	177.311	9715.199	201.01	203.76	-12.46	-11.52
27	48	11608.226	348.516	-3.290	-137.181	-177.313	-9715.207	201.01	203.76	-12.46	-11.52
27	49	-11617.720	-24.737	1.290	46.113	188.760	10593.158	208.35	211.29	-24.43	-23.43
28	49	11600.579	24.739	-1.326	-37.971	-188.762	-10592.625	208.17	211.11	-24.60	-23.60
28	50	-12170.382	300.445	-1.096	-53.437	178.634	9886.055	208.29	211.07	-8.94	-7.99
29	50	12170.414	-300.444	1.490	60.680	-188.793	-9886.031	208.21	211.15	-8.97	-7.96
29	51	-12224.644	437.989	-3.260	-165.237	167.306	7793.424	191.46	194.06	20.34	21.24
30	51	12224.623	-437.989	3.429	172.280	-167.307	-7793.355	191.46	194.06	20.34	21.24
30	52	-12122.639	337.410	-5.250	-97.354	89.857	6065.753	176.56	177.96	43.17	43.65
31	52	12122.664	-337.410	5.250	97.354	-89.856	-6065.748	176.56	177.96	43.17	43.65
31	53	-12039.246	487.191	-6.318	-155.620	94.796	4393.546	161.68	163.15	65.21	65.72
32	53	12018.558	-487.191	6.501	159.548	-94.795	-4398.657	161.50	162.98	64.93	65.43
32	54	-11543.528	525.718	-0.148	106.968	-191.896	2010.863	138.82	135.83	93.46	92.44
33	54	11543.507	-525.718	0.147	-107.074	191.896	-2010.861	138.82	135.83	93.46	92.44
33	57	-16327.410	825.052	-0.147	130.149	-204.383	-3436.073	80.21	77.62	134.53	133.65
34	57	15685.436	890.237	-5.923	109.770	197.504	3436.848	76.09	73.59	130.46	129.60
34	64	-11001.108	-174.568	2.085	-179.656	-127.152	1695.830	130.02	128.04	91.95	91.27
35	64	11001.127	174.568	-2.073	179.549	127.153	-1695.833	130.02	128.04	91.95	91.27
35	65	-11484.625	-467.912	5.833	192.527	126.628	2511.995	139.91	141.88	85.13	85.81
36	65	11461.771	467.911	-5.957	-184.866	-126.628	-2514.843	139.70	141.67	84.85	85.53
36	66	-11127.939	-614.245	3.736	87.156	105.776	5303.286	159.68	161.32	43.20	43.76
37	66	11127.931	614.242	-3.748	-86.859	-105.777	-5303.289	159.68	161.32	43.20	43.76
37	67	-11099.887	-512.176	3.253	239.694	175.474	8096.471	182.19	184.91	4.42	5.36
38	67	11099.835	512.176	-3.471	-232.946	-175.475	-8096.562	182.19	184.92	4.42	5.36
38	68	-11093.072	-317.553	1.483	132.134	187.869	10309.513	200.51	203.43	-26.02	-25.02
39	68	11093.088	317.554	-1.262	-139.718	-187.870	-10309.464	200.51	203.43	-26.02	-25.02
39	69	-11847.196	-0.191	-1.163	43.692	196.326	11059.560	214.59	217.64	-28.45	-27.41
40	69	11830.037	0.192	1.320	-18.323	-196.328	-11059.034	214.40	217.46	-28.62	-27.58
40	70	-11860.526	331.651	-3.320	-82.530	184.732	10224.766	207.84	210.71	-16.84	-15.85
41	70	11860.539	-331.651	3.267	74.109	-184.733	-10224.796	207.84	210.71	-16.84	-15.85
41	71	-11902.219	469.820	-5.255	-175.084	163.412	8002.003	189.87	192.41	14.13	15.00
42	71	11902.260	-469.820	5.304	182.566	-163.415	-8001.941	189.87	192.41	14.13	15.00
42	72	-11787.774	369.750	-6.295	-80.552	74.971	6140.654	173.80	174.97	38.69	39.09
43	72	11787.721	-369.751	6.339	86.208	-74.970	-6140.624	173.80	174.97	38.69	39.09
43	73	-11691.803	518.163	-8.731	-176.796	74.142	4337.341	157.74	158.89	62.41	62.80
44	73	11671.139	-518.163	8.734	176.993	-74.142	-4342.512	157.57	158.72	62.12	62.52
44	74	-12137.609	546.396	0.303	171.769	-164.598	1890.476	143.80	141.24	101.24	100.37
45	74	12137.604	-546.396	-0.002	-170.310	172.290	-1890.543	143.86	141.18	101.26	100.35
45	77	-16931.547	845.736	0.057	203.721	-176.063	-3638.352	82.41	80.18	140.10	139.34
46	77	16058.870	890.220	-5.434	76.412	162.488	3637.159	76.81	74.75	134.53	133.83
46	84	-11384.537	-174.172	4.080	-115.419	-193.082	1533.303	133.18	130.17	98.35	97.33
47	84	11384.550	174.172	-4.085	115.524	193.083	-1533.302	133.18	130.17	98.36	97.33
47	85	-10856.542	-465.167	7.396	182.911	41.965	2396.279	133.05	133.70	80.39	80.61
48	85	10833.631	465.167	-7.695	-179.229	-41.967	-2399.045	132.83	133.48	80.11	80.33
48	86	-11537.301	-622.731	6.289	120.499	45.389	5193.527	163.50	164.21	49.14	49.38
49	86	11537.383	622.730	-6.362	-114.860	-45.390	-5193.571	163.51	164.21	49.14	49.38
49	87	-11521.835	-520.760	5.760	213.333	107.653	8002.769	186.34	188.01	10.30	10.87
50	87	11521.809	520.758	-5.764	-212.959	-107.653	-8002.772	186.34	188.01	10.29	10.87
50	88	-11527.545	-326.221	3.776	136.306	131.514	10232.134	204.84	206.89	-20.27	-19.57
51	88	11527.587	326.224	-3.846	-128.309	-131.516	-10232.178	204.84	206.89	-20.27	-19.57
51	89	-12525.297	-9.092	1.227	54.384	155.639	10999.971	221.49	223.91	-20.45	-19.62
52	89	12508.143	9.090	-1.226	-54.391	-155.641	-10999.413	221.30	223.72	-20.62	-19.79
52	90	-12551.136	322.635	-0.774	-25.144	156.769	10183.118	214.92	217.36	-8.98	-8.15
53	90	12551.067	-322.634	1.102	33.567	-156.770	-10183.104	214.92	217.36	-8.98	-8.15
53	91	-12605.247	460.674	-3.090	-114.643	146.284	7979.036	197.15	199.42	21.83	22.61
54	91	12605.236	-460.675	3.402	121.748	-146.285	-7978.989	197.15	199.42	21.83	22.61

54	92	-12503.255	360.456	-4.455	-48.335	86.961	6136.937	181.15	182.50	46.18	46.64
55	92	12503.322	-360.456	4.786	54.286	-86.962	-6136.914	181.15	182.50	46.18	46.64
55	93	-12419.905	508.644	-7.117	-154.491	84.379	4353.330	165.40	166.71	69.77	70.21
56	93	12399.236	-508.644	7.101	154.295	-84.382	-4358.506	165.22	166.53	69.48	69.93
56	94	-11753.237	537.358	2.390	166.060	-66.276	1935.163	139.40	138.37	96.36	96.00
57	94	11753.237	-537.358	-2.385	-165.955	66.277	-1935.166	139.40	138.37	96.36	96.00
57	97	-16537.141	800.491	-7.928	-161.895	-135.031	-3569.954	80.14	78.43	136.91	136.32
58	97	15433.471	927.770	-9.522	-296.510	116.336	3573.351	73.01	71.53	129.90	129.40
58	104	-10650.116	-175.543	2.367	1.234	-183.820	1585.239	125.87	123.01	89.95	88.97
59	104	10650.138	175.543	-2.348	-1.338	183.821	-1585.237	125.87	123.01	89.95	88.97
59	105	-10666.124	-464.168	7.960	134.346	21.298	2468.835	131.83	132.16	77.46	77.57
60	105	10643.313	464.168	-8.371	-130.241	-21.301	-2471.593	131.61	131.94	77.18	77.30
60	106	-10746.980	-615.904	6.872	122.084	42.017	5261.834	155.85	156.50	39.96	40.18
61	106	10746.957	615.904	-6.853	-122.381	-42.017	-5261.839	155.85	156.50	39.96	40.18
61	107	-10725.157	-514.132	5.879	111.937	79.834	8050.944	178.64	179.88	1.39	1.82
62	107	10725.159	514.131	-6.202	-104.805	-71.740	-8050.989	178.70	179.82	1.41	1.79
62	108	-10724.634	-319.812	4.285	83.197	106.237	10261.133	196.90	198.55	-28.99	-28.42
63	108	10724.622	319.813	-4.658	-75.190	-106.234	-10261.162	196.90	198.55	-28.99	-28.42
63	109	-10727.867	3.632	2.658	51.390	124.533	11009.826	203.04	204.98	-39.26	-38.60
64	109	10710.727	-3.632	-2.285	-59.686	-124.534	-11009.253	202.86	204.80	-39.44	-38.77
64	110	-11966.505	328.977	0.418	36.259	145.394	10169.102	208.79	211.05	-14.86	-14.09
65	110	11966.529	-328.978	-0.235	-19.859	-145.392	-10169.121	208.79	211.05	-14.86	-14.09
65	111	-12014.458	466.802	-1.752	-8.925	141.591	7947.349	190.75	192.95	16.11	16.86
66	111	12014.428	-466.802	1.841	16.027	-141.590	-7947.341	190.75	192.95	16.11	16.86
66	112	-11906.197	366.372	-2.876	-10.010	127.626	6088.347	174.19	176.18	40.50	41.18
67	112	11906.201	-366.372	2.880	10.302	-127.626	-6088.345	174.19	176.18	40.50	41.18
67	113	-11816.533	514.231	-5.521	-85.531	106.507	4292.008	158.41	160.07	64.25	64.81
68	113	11795.878	-514.231	5.610	89.222	-106.505	-4297.148	158.24	159.89	63.96	64.53
68	114	-11749.627	541.048	2.211	92.599	74.080	1892.858	137.92	139.07	96.53	96.92
69	114	11749.597	-541.047	-2.211	-92.598	-74.081	-1892.857	137.91	139.07	96.53	96.92
69	117	-16538.494	767.999	-1.984	41.033	-79.424	-3616.853	79.46	78.46	137.21	136.87
70	117	15203.910	964.599	-1.745	-105.750	60.189	3603.059	70.99	70.22	128.59	128.33
70	124	-10524.574	-176.169	1.745	103.650	-51.466	1569.550	123.40	122.60	88.50	88.23
71	124	10524.606	176.170	-1.315	-105.708	51.465	-1569.509	123.40	122.60	88.50	88.23
71	125	-11294.329	-464.957	8.864	26.033	9.996	2454.142	138.35	138.51	84.25	84.30
72	125	11271.463	464.957	-9.004	-22.129	-9.999	-2456.855	138.13	138.29	83.97	84.03
72	126	-11381.384	-617.057	8.044	67.935	69.848	5237.837	162.06	163.14	46.83	47.21
73	126	11381.387	617.058	-8.185	-61.988	-69.848	-5237.863	162.06	163.14	46.83	47.21
73	127	-11359.587	-515.381	6.467	-69.668	59.981	8033.167	185.27	186.20	8.31	8.63
74	127	11359.584	515.377	-6.599	76.770	-59.981	-8033.133	185.27	186.20	8.31	8.63
74	128	-11359.070	-321.136	4.612	-25.701	88.010	10249.770	203.57	204.94	-22.16	-21.69
75	128	11359.063	321.138	-4.611	25.707	-88.009	-10249.773	203.57	204.94	-22.16	-21.69
75	129	-12812.478	-5.295	3.300	21.354	131.156	11024.605	224.88	226.92	-17.72	-17.02
76	129	12795.326	5.296	-2.881	-13.054	-131.159	-11024.066	224.70	226.74	-17.89	-17.19
76	130	-12832.068	326.199	0.881	58.931	140.564	10202.745	218.14	220.33	-6.27	-5.52
77	130	12832.063	-326.198	-0.442	-50.508	-140.565	-10202.775	218.14	220.33	-6.27	-5.53
77	131	-12879.993	464.032	-1.546	94.026	137.798	7994.908	200.22	202.36	24.50	25.24
78	131	12880.003	-464.033	1.129	-101.134	-137.799	-7994.871	200.22	202.36	24.50	25.24
78	132	-12771.771	363.641	-2.109	22.144	180.322	6149.510	183.33	186.14	48.56	49.52
79	132	12771.775	-363.643	3.385	-4.871	-180.320	-6149.525	183.33	186.14	48.56	49.52
79	133	-12682.104	512.017	-6.387	-3.552	107.094	4356.579	167.98	169.65	72.40	72.97
80	133	12661.439	-512.016	5.969	-0.161	-107.094	-4361.747	167.81	169.48	72.11	72.68
80	134	-12564.190	538.933	1.435	-34.352	172.940	1991.196	146.47	149.16	103.42	104.34
81	134	12564.176	-538.932	-1.026	36.337	-172.940	-1991.185	146.47	149.16	103.42	104.34
81	137	-17353.074	765.559	-0.359	-74.925	104.013	-3492.543	84.35	85.67	140.86	141.32
82	137	15787.815	960.459	2.778	-163.716	-113.369	3545.952	73.99	75.43	131.40	131.90
82	144	-11108.485	-172.024	-2.778	140.466	99.482	1605.915	128.63	130.17	93.70	94.23
83	144	11108.492	172.024	2.395	-136.422	-99.482	-1606.023	128.63	130.17	93.70	94.23
83	145	-11179.211	-452.640	5.858	-92.674	4.921	2493.520	137.52	137.59	82.52	82.55
84	145	11156.359	452.640	-5.867	92.869	-4.919	-2496.220	137.30	137.38	82.24	82.27
84	146	-10516.283	-604.372	2.773	-20.671	73.326	5218.193	152.83	153.97	38.06	38.45

85	146	10516.286	604.371	-2.748	20.371	-73.327	-5218.200	152.83	153.97	38.06	38.45
85	147	-10494.487	-502.486	2.299	-203.986	17.296	7949.613	175.87	176.14	0.54	0.63
86	147	10494.488	502.486	-3.248	218.508	-17.297	-7949.450	175.87	176.14	0.54	0.63
86	148	-10493.975	-308.133	1.258	-121.785	28.555	10102.112	193.76	194.21	-29.01	-28.85
87	148	10493.970	308.134	-1.281	122.198	-28.553	-10102.108	193.76	194.21	-29.01	-28.85
87	149	-10497.217	15.454	-0.719	-26.619	29.967	10791.997	199.55	200.02	-38.43	-38.27
88	149	10480.064	-15.455	0.281	34.399	-29.963	-10791.429	199.37	199.83	-38.61	-38.45
88	150	-10516.803	347.144	-2.281	60.248	23.560	9865.902	192.07	192.43	-25.52	-25.39
89	150	10516.811	-347.145	2.256	-59.833	-23.559	-9865.904	192.07	192.43	-25.52	-25.39
89	151	-10564.739	485.145	-4.244	153.764	7.309	7553.375	173.37	173.48	6.73	6.77
90	151	10564.730	-485.145	3.758	-146.455	-7.308	-7553.429	173.37	173.48	6.73	6.77
90	152	-10456.496	384.970	-6.435	10.614	20.274	5601.868	155.83	156.14	32.32	32.43
91	152	10456.502	-384.969	6.459	-10.899	-20.273	-5601.869	155.83	156.14	32.32	32.43
91	153	-10366.833	532.659	-7.658	76.120	-37.446	3736.037	139.75	139.17	57.12	56.92
92	153	10346.150	-532.658	7.172	-72.459	37.446	-3741.242	139.58	138.99	56.83	56.63
92	154	-10299.849	477.524	1.716	-120.631	78.123	1291.686	117.72	118.94	89.62	90.04
93	154	10299.857	-477.524	-2.168	122.351	-78.123	-1291.639	117.72	118.94	89.62	90.04
93	157	-15088.757	776.853	2.168	-152.851	88.961	-3903.532	67.17	68.29	130.22	130.61
94	157	14972.011	972.232	4.016	-143.609	-109.414	3707.987	67.69	69.08	127.69	128.17
94	163	-10292.687	-183.787	-4.016	113.259	89.336	1502.777	119.33	120.71	86.62	87.10
95	163	10292.686	183.787	3.519	-111.328	-89.336	-1502.821	119.33	120.72	86.62	87.10
95	164	-10312.459	-448.031	5.746	-113.139	-17.822	2484.162	128.57	128.29	73.66	73.56
96	164	10289.625	448.030	-6.252	116.859	17.822	-2486.818	128.35	128.07	73.38	73.29
96	165	-11149.549	-603.891	4.784	-72.472	14.891	5192.379	159.68	159.92	45.18	45.26
97	165	11149.539	603.891	-4.796	72.768	-14.892	-5192.378	159.68	159.92	45.18	45.26
97	166	-13041.578	-525.052	5.300	-190.434	2.677	7984.067	202.86	202.90	26.70	26.71
98	166	13041.585	525.052	-4.793	197.518	-2.679	-7983.993	202.86	202.90	26.70	26.71
98	167	-13041.072	-331.156	2.803	-131.205	21.673	10256.311	221.70	222.04	-4.51	-4.39
99	167	13041.068	331.155	-2.297	139.205	-21.674	-10256.264	221.70	222.03	-4.51	-4.39
99	168	-13044.314	-7.473	0.297	-71.306	28.160	11061.032	228.41	228.84	-15.52	-15.37
100	168	13027.166	7.473	-0.270	71.745	-28.160	-11060.486	228.22	228.66	-15.70	-15.55
100	169	-13063.908	324.288	-1.730	-1.884	24.513	10249.382	221.86	222.24	-4.18	-4.05
101	169	13063.902	-324.287	2.235	9.906	-24.514	-10249.384	221.86	222.24	-4.18	-4.05
101	170	-13111.830	462.071	-4.225	62.354	8.372	8058.326	204.17	204.30	26.40	26.44
102	170	13111.826	-462.071	4.225	-62.352	-8.372	-8058.326	204.17	204.30	26.40	26.44
102	171	-12978.126	320.936	-1.352	-19.380	-52.342	6419.611	189.55	188.74	47.63	47.35
103	171	12978.128	-320.936	2.370	31.205	52.342	-6419.595	189.55	188.74	47.63	47.35
103	172	-12888.461	489.569	-2.380	61.807	-62.719	4714.036	174.45	173.47	70.10	69.77
104	172	12870.607	-489.570	2.380	-61.807	62.719	-4718.490	174.30	173.32	69.86	69.52
104	173	-12798.850	437.966	0.602	-114.325	54.868	2834.536	156.89	157.74	94.62	94.91
105	173	12798.850	-437.966	-0.576	114.446	-54.868	-2834.534	156.89	157.74	94.62	94.91
105	176	-16610.188	664.451	0.576	-128.197	57.747	-517.488	101.17	101.90	109.72	109.97
106	176	16721.811	736.848	-0.434	22.751	-47.845	704.612	100.60	101.21	112.12	112.32
106	182	-12029.369	74.141	0.434	-33.401	50.013	3322.005	152.97	153.74	79.92	80.18
107	182	12029.369	-74.141	0.133	35.360	-50.013	-3321.991	152.97	153.74	79.92	80.18
107	183	-9197.499	-149.852	2.905	-27.430	88.841	3824.595	127.30	128.68	43.36	43.83
108	183	9240.956	149.852	-2.934	27.610	-88.841	-3819.271	127.71	129.09	43.88	44.36
108	184	-9328.256	-299.584	0.523	-8.931	117.595	5016.419	138.40	140.23	28.31	28.93
109	184	9328.254	299.584	-1.042	13.467	-117.595	-5016.416	138.40	140.23	28.31	28.93
109	185	-9309.258	-188.488	-0.958	-56.707	117.807	6260.888	148.60	150.43	11.05	11.68
110	185	9309.252	188.487	0.929	57.004	-117.807	-6260.888	148.60	150.43	11.05	11.67
110	186	-9232.984	35.783	-2.929	-94.602	108.162	6824.029	152.58	154.27	2.56	3.13
111	186	9232.985	-35.783	1.803	106.684	-108.163	-6823.952	152.58	154.27	2.56	3.13
111	187	-9145.441	277.354	-3.803	-138.341	94.148	6036.007	145.19	146.66	12.48	12.98
112	187	7306.820	-277.353	3.803	138.342	-94.148	-5983.111	125.56	127.02	-5.99	-5.49
112	188	-7204.169	413.427	-4.882	-107.383	63.187	4411.279	111.59	112.57	14.57	14.91
113	188	7204.169	-413.426	4.333	111.950	-63.188	-4411.235	111.59	112.57	14.57	14.91
113	189	-7113.903	614.630	-6.333	-122.655	36.522	1973.665	90.48	91.05	47.12	47.31
114	189	7113.902	-614.630	6.304	122.813	-36.522	-1973.663	90.48	91.05	47.12	47.31
114	192	-6697.215	690.949	-2.560	-137.248	0.000	-873.856	62.62	62.62	81.90	81.90

proc Viaducto Papiol

HIPOTESIS 97

max mz + pret (t=inf) (min)

ESFUERZOS EN BARRAS

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	MOM. Y	MOM. Z
1	3	9054.289	510.225	-3.089	1564.555	3.110	1614.697
1	8	-9119.195	-35.994	-4.007	52.073	8.006	-1242.797
2	8	9119.174	35.993	4.007	-52.073	-8.007	1242.797
2	9	-9163.346	83.188	-4.007	34.298	19.123	-1405.663
3	9	9163.358	-83.187	-5.952	-26.506	5.672	1405.640
3	10	-9219.152	99.175	-4.029	16.891	30.130	-2059.086
4	10	9689.590	-99.175	4.019	-18.504	-30.130	1521.934
4	11	-9686.897	130.946	-3.986	6.060	47.922	-2092.357
5	11	9686.903	-130.946	3.968	-4.509	-47.922	2092.357
5	12	-9689.929	242.600	-3.968	-4.341	59.233	-3034.064
6	12	9689.924	-242.600	3.928	6.766	-59.232	3034.067
6	13	-9663.621	295.965	-3.928	-12.791	70.742	-4329.978
7	13	9663.643	-295.965	3.949	12.280	-70.742	4329.972
7	14	-9636.303	281.299	-1.180	6.691	-14.683	-5768.773
8	14	9620.364	-281.300	1.119	-7.774	14.683	5764.782
8	15	-9597.557	479.957	-1.362	11.057	-22.488	-7176.663
9	15	9597.533	-479.957	1.364	-10.947	22.489	7176.662
9	18	-13270.712	1503.850	-8.150	54.436	-42.690	-14532.138
10	18	13452.282	2091.845	-10.194	-55.976	45.537	14536.271
10	24	-10435.894	-1135.757	5.765	34.111	10.614	-6011.487
11	24	10435.801	1135.757	-5.733	-35.665	-10.613	6011.477
11	25	-10637.502	-281.148	0.520	-155.794	82.511	-2639.392
12	25	10617.731	281.147	-0.319	157.510	-82.511	2632.858
12	26	-10675.775	-244.540	1.963	13.817	-102.424	-1306.010
13	26	10675.841	244.540	-2.052	-15.925	102.424	1306.013
13	27	-10668.283	-220.037	1.852	23.976	-92.665	-156.657
14	27	10668.256	220.037	-1.765	-21.236	92.665	156.646
14	28	-10677.146	-133.209	1.554	31.223	-84.361	824.522
15	28	10677.163	133.209	-1.372	-24.752	84.362	-824.543
15	29	-10395.418	66.335	2.969	74.972	-97.688	964.283
16	29	9910.711	-66.334	-2.949	-78.181	97.689	-421.646
16	30	-9951.421	244.469	2.749	91.881	-83.445	-381.531
17	30	9951.441	-244.469	-2.767	-88.809	83.444	381.493
17	31	-10000.804	288.202	2.559	104.149	-70.146	-1906.447
18	31	10000.813	-288.203	-2.575	-101.848	70.145	1906.410
18	32	-9773.561	172.698	-0.449	52.320	15.373	-2901.033
19	32	9773.507	-172.697	0.449	-52.322	-15.372	2901.034
19	33	-9594.259	393.516	3.730	64.455	40.499	-4015.074
20	33	9578.451	-393.516	-3.840	-64.510	-40.499	4011.064
20	34	-9786.490	1457.643	-5.182	17.827	52.925	-8375.036
21	34	9786.496	-1457.643	5.173	-20.302	-52.923	8375.026
21	37	-13474.059	1864.473	-6.773	26.082	23.058	-18281.383
22	37	13884.153	2070.909	-10.112	-130.273	-12.604	18281.840
22	44	-10281.215	-1195.926	5.803	58.831	75.807	-8561.988
23	44	10281.222	1195.925	-5.642	-61.272	-75.808	8561.964

TENSIONES

SIGMA 1	SIGMA2	SIGMA3	SIGMA4
81.06	81.01	116.68	116.66
84.76	84.89	112.23	112.27
84.76	84.89	112.23	112.27
83.78	84.07	114.89	114.99
83.97	83.88	114.96	114.93
78.81	79.28	124.40	124.56
88.21	88.68	121.95	122.11
83.28	84.02	129.69	129.95
83.28	84.02	129.69	129.95
75.35	76.27	142.61	142.92
75.35	76.27	142.61	142.92
64.16	65.26	160.07	160.44
64.16	65.26	160.07	160.44
52.51	52.29	179.73	179.66
52.38	52.15	179.51	179.43
40.40	40.06	198.65	198.53
40.40	40.05	198.65	198.53
-19.37	-19.91	213.80	213.62
-18.23	-18.81	215.00	214.80
58.64	58.80	191.34	191.40
58.64	58.80	191.34	191.40
88.36	89.65	147.03	147.47
88.21	89.49	146.73	147.17
101.34	99.75	129.64	129.09
101.34	99.75	129.64	129.09
110.79	109.35	113.78	113.28
110.79	109.35	113.78	113.28
119.02	117.71	100.40	99.95
119.02	117.71	100.40	99.95
117.35	115.83	95.57	95.05
107.76	106.24	97.95	97.43
101.36	100.06	109.35	108.91
101.36	100.06	109.35	108.91
89.03	87.94	130.74	130.36
89.03	87.94	130.74	130.36
77.68	77.92	141.77	141.85
77.68	77.92	141.77	141.85
66.30	66.93	155.11	155.32
66.17	66.80	154.89	155.10
31.78	32.60	216.85	217.13
31.78	32.60	216.85	217.13
-45.26	-44.96	248.40	248.50
-42.59	-42.43	251.02	251.08
35.20	36.38	224.52	224.92
35.20	36.38	224.52	224.92

23	45	-10008.010	-353.666	-1.819	-255.510	35.236	-5432.157	58.82	59.37	178.87	179.05
24	45	9047.467	353.667	1.856	255.472	-35.236	5722.485	46.37	46.91	172.82	173.01
24	46	-9367.075	-357.488	-5.229	-151.179	15.979	-3867.078	65.36	65.61	150.77	150.86
25	46	9367.121	357.487	5.229	151.177	-15.978	3867.080	65.36	65.61	150.77	150.86
25	47	-9123.599	-274.799	1.860	-19.051	-48.257	-2334.367	76.12	75.37	127.39	127.13
26	47	9123.590	274.799	-1.819	21.284	48.257	2334.375	76.12	75.37	127.39	127.13
26	48	-9116.944	-188.241	1.606	2.484	-39.694	-1056.957	86.66	86.04	109.78	109.57
27	48	9116.889	188.241	-1.605	-2.338	39.695	1056.956	86.66	86.04	109.78	109.57
27	49	-9113.185	7.300	5.063	97.153	-44.951	-568.323	90.75	90.05	103.06	102.82
28	49	9099.974	-7.300	-5.246	-93.154	56.206	568.716	90.69	89.82	102.96	102.66
28	50	-8595.204	191.931	5.468	111.731	-18.719	-1083.223	80.83	80.54	104.64	104.54
29	50	8595.222	-191.932	-5.642	-108.821	18.719	1083.177	80.83	80.54	104.64	104.54
29	51	-8625.878	235.080	5.432	124.495	8.965	-2324.832	70.56	70.70	121.91	121.96
30	51	8625.883	-235.079	-5.601	-122.240	-8.965	2324.781	70.56	70.70	121.91	121.95
30	52	-8536.295	103.923	5.401	138.565	36.471	-3014.890	63.65	64.21	130.36	130.55
31	52	8536.295	-103.924	-5.401	-138.565	-36.471	3014.890	63.65	64.21	130.36	130.55
31	53	-8859.240	369.629	1.399	171.748	18.414	-3913.943	59.64	59.93	146.10	146.20
32	53	8843.309	-369.630	-1.423	-171.645	-18.415	3909.889	59.51	59.80	145.88	145.98
32	54	-8383.556	1450.719	-0.753	-39.001	232.209	-8252.236	16.76	20.37	200.04	201.28
33	54	8383.554	-1450.719	0.762	39.118	-232.209	8252.236	16.76	20.37	200.04	201.28
33	57	-12064.761	1856.960	-2.362	-64.948	224.398	-18093.707	-54.12	-51.28	237.36	238.33
34	57	12706.749	2054.835	-4.951	-150.498	-217.519	18092.926	-50.00	-47.25	241.43	242.38
34	64	-9097.415	-1180.608	1.098	40.024	238.372	-8430.715	22.67	26.38	209.93	211.20
35	64	9097.386	1180.608	-1.101	-39.909	-238.376	8430.715	22.67	26.38	209.93	211.20
35	65	-9569.216	-337.107	-6.901	-273.324	18.655	-5267.082	55.75	56.04	172.07	172.17
36	65	9551.627	337.107	7.372	273.603	-18.654	5265.217	55.58	55.87	171.86	171.96
36	66	-9636.780	-296.167	-3.280	-113.526	56.316	-3511.007	70.83	71.71	148.60	148.90
37	66	9636.774	296.166	3.293	113.604	-56.314	3511.006	70.83	71.71	148.60	148.90
37	67	-9626.241	-271.664	-3.493	-85.179	39.351	-2101.837	82.63	83.24	129.21	129.42
38	67	9626.262	271.665	3.712	87.376	-39.351	2101.867	82.63	83.24	129.21	129.42
38	68	-9632.118	-185.128	-3.924	-58.913	20.253	-867.382	93.16	93.47	112.40	112.51
39	68	9632.083	185.127	3.702	56.238	-20.251	867.360	93.16	93.47	112.40	112.51
39	69	-8883.717	17.012	1.014	46.582	-27.387	-417.554	89.47	89.05	98.55	98.40
40	69	8870.511	-5.050	12.911	219.341	-39.040	417.939	88.82	89.42	98.24	98.45
40	70	-8905.056	195.143	0.971	65.929	-22.036	-976.370	84.99	84.64	106.42	106.30
41	70	8905.059	-195.145	-0.918	-68.880	22.036	976.397	84.99	84.64	106.42	106.30
41	71	-8948.215	238.223	0.706	97.216	-17.963	-2261.502	74.67	74.39	124.48	124.38
42	71	8948.214	-238.223	-0.755	-94.821	17.965	2261.459	74.67	74.39	124.48	124.38
42	72	-8871.125	107.070	0.555	123.021	-14.685	-2994.083	67.71	67.48	133.71	133.63
43	72	8871.117	-107.069	-0.600	-121.601	14.684	2994.035	67.71	67.48	133.71	133.63
43	73	-8275.054	379.449	2.782	260.671	-22.089	-3947.103	53.58	53.24	140.57	140.45
44	73	8259.140	-379.450	-2.796	-260.667	22.090	3943.113	53.45	53.11	140.35	140.23
44	74	-8743.396	1468.899	-3.046	-27.410	173.634	-8419.592	19.57	22.28	206.25	207.18
45	74	8743.421	-1468.899	3.005	25.157	-173.637	8419.600	19.57	22.28	206.25	207.18
45	77	-12437.129	1875.695	-4.605	-46.085	154.608	-18380.174	-53.36	-51.40	242.42	243.09
46	77	13309.777	2066.718	-7.637	-149.781	-141.032	18381.473	-47.76	-45.97	247.99	248.60
46	84	-9712.943	-1191.981	4.321	54.799	157.547	-8688.791	27.57	30.02	220.11	220.95
47	84	9712.956	1191.981	-4.306	-54.921	-157.547	8688.789	27.57	30.02	220.11	220.95
47	85	-9175.776	-345.785	-6.101	-171.665	-8.542	-5422.731	50.55	50.42	170.17	170.12
48	85	9158.156	345.785	6.180	171.742	8.543	5420.717	50.38	50.25	169.95	169.91
48	86	-9227.315	-296.955	-3.307	-113.055	7.739	-3702.610	65.34	65.46	147.08	147.12
49	86	9227.323	296.955	3.379	114.468	-7.737	3702.653	65.34	65.46	147.08	147.12
49	87	-9204.287	-272.461	-3.579	-89.043	-9.660	-2262.704	77.26	77.11	127.14	127.09
50	87	9204.298	272.461	3.584	89.162	9.663	2262.707	77.26	77.11	127.14	127.09
50	88	-9197.652	-185.921	-3.796	-64.774	-28.124	-997.478	87.91	87.47	109.78	109.63
51	88	9197.652	185.922	3.866	67.556	28.124	997.508	87.91	87.47	109.78	109.63
51	89	-8205.685	-7.481	-3.447	-48.276	-57.858	-517.456	81.80	80.90	92.92	92.61
52	89	8192.470	7.480	3.447	48.274	57.857	517.885	81.66	80.76	92.79	92.48
52	90	-8214.512	194.488	-0.348	35.771	-63.528	-1045.973	77.52	76.53	100.27	99.93
53	90	8214.521	-194.487	0.020	-32.841	63.529	1045.960	77.52	76.53	100.27	99.93
53	91	-8245.179	237.559	-0.232	54.012	-64.152	-2301.002	67.35	66.36	117.80	117.46
54	91	8245.174	-237.559	-0.081	-51.750	64.150	2300.981	67.35	66.36	117.80	117.46

54	92	-8155.588	106.405	-0.119	71.700	-64.244	-3003.492	60.55	59.55	126.50	126.15
55	92	8155.583	-106.405	-0.215	-70.208	64.246	3003.464	60.55	59.55	126.50	126.15
55	93	-8649.506	380.036	1.763	272.401	-18.689	-3934.833	57.57	57.28	144.30	144.20
56	93	8633.600	-380.036	-1.758	-272.405	18.687	3930.858	57.44	57.15	144.08	143.98
56	94	-8002.869	1470.906	-1.751	-23.439	130.451	-8391.715	12.41	14.44	198.25	198.95
57	94	8002.870	-1470.905	1.735	23.319	-130.452	8391.715	12.41	14.44	198.25	198.95
57	97	-11684.078	1877.531	-3.335	-51.462	117.774	-18335.160	-57.58	-56.09	237.33	237.84
58	97	12787.685	2060.030	-9.116	-133.512	-100.681	18331.588	-50.45	-49.18	244.33	244.76
58	104	-9178.347	-1185.466	6.359	63.095	109.608	-8645.033	22.73	24.43	214.05	214.64
59	104	9178.371	1185.466	-6.363	-62.977	-109.612	8645.034	22.73	24.43	214.05	214.64
59	105	-9330.177	-342.276	-2.221	-13.067	39.658	-5390.750	52.05	52.67	171.21	171.42
60	105	9312.580	342.277	2.373	13.166	-39.659	5388.677	51.89	52.50	171.00	171.21
60	106	-10017.753	-299.451	-2.628	-66.241	17.458	-3700.291	73.53	73.80	155.27	155.37
61	106	10017.747	299.451	2.607	66.167	-17.458	3700.286	73.53	73.80	155.27	155.37
61	107	-10000.961	-274.952	-2.807	-53.892	3.926	-2261.285	85.49	85.55	135.41	135.43
62	107	10000.949	274.951	3.200	56.269	-3.924	2261.306	85.49	85.55	135.41	135.43
62	108	-10000.554	-188.415	-3.412	-45.782	-12.616	-997.043	96.18	95.98	118.11	118.05
63	108	10000.543	188.417	3.788	48.564	12.618	997.063	96.18	95.98	118.11	118.05
63	109	-10003.041	-16.507	-3.988	-39.814	-32.053	-516.934	100.37	99.87	111.61	111.44
64	109	9989.849	16.506	3.614	36.843	32.053	517.343	100.23	99.73	111.48	111.31
64	110	-8799.134	191.617	-3.128	-16.387	-69.186	-1039.329	83.72	82.64	106.30	105.93
65	110	8799.124	-191.617	2.876	22.449	60.040	1039.348	83.65	82.72	106.28	105.96
65	111	-8836.004	234.689	-3.158	-17.126	-84.437	-2293.397	73.74	72.43	123.92	123.47
66	111	8835.997	-234.689	3.070	19.394	84.434	2293.405	73.74	72.43	123.92	123.47
66	112	-8752.660	103.533	-3.270	-16.294	-100.282	-2994.988	67.13	65.57	132.71	132.18
67	112	8752.703	-103.533	3.264	16.368	100.279	2994.987	67.13	65.57	132.71	132.18
67	113	-8658.137	379.469	0.799	159.957	-10.650	-3942.485	57.53	57.37	144.47	144.42
68	113	8642.209	-379.470	-0.898	-159.870	10.649	3938.443	57.40	57.23	144.25	144.20
68	114	-7862.465	1469.047	-3.399	-20.028	50.516	-8392.231	11.56	12.35	197.01	197.28
69	114	7862.458	-1469.046	3.399	20.027	-50.515	8392.233	11.56	12.35	197.01	197.28
69	117	-11549.914	1875.495	-4.999	-48.379	29.525	-18339.305	-57.90	-57.53	236.71	236.84
70	117	12884.482	2061.857	-12.365	-48.366	-10.286	18352.941	-49.42	-49.29	245.33	245.37
70	124	-9281.393	-1187.461	9.976	34.816	30.090	-8670.371	24.21	24.68	215.69	215.85
71	124	9281.403	1187.462	-10.117	-32.450	-30.091	8670.383	24.21	24.68	215.69	215.85
71	125	-10040.727	-344.737	3.589	133.004	58.662	-5397.849	59.27	60.18	178.68	178.99
72	125	10023.146	344.736	-3.159	-132.912	-58.663	5395.713	59.10	60.01	178.46	178.78
72	126	-9383.307	-303.656	-0.759	0.200	11.202	-3680.190	67.13	67.30	148.39	148.45
73	126	9383.287	303.658	0.901	1.294	-11.202	3680.193	67.13	67.30	148.39	148.45
73	127	-9366.504	-279.158	-1.101	-8.019	6.199	-2220.173	79.19	79.29	128.21	128.25
74	127	9366.541	279.156	1.233	10.294	-6.198	2220.178	79.19	79.29	128.21	128.25
74	128	-9366.146	-192.616	-1.445	-19.002	-0.510	-934.964	89.98	89.97	110.61	110.60
75	128	9366.117	192.616	1.447	19.003	0.509	934.962	89.98	89.97	110.61	110.60
75	129	-7918.449	-13.144	-2.335	-28.216	-33.331	-453.277	79.14	78.63	88.98	88.80
76	129	7905.255	13.145	1.917	31.210	33.331	453.714	79.00	78.48	88.84	88.67
76	130	-7933.543	188.774	-4.569	-71.671	-70.366	-966.076	75.30	74.21	96.26	95.89
77	130	7933.525	-188.776	4.129	74.630	70.366	966.102	75.30	74.21	96.26	95.89
77	131	-7970.431	231.848	-4.341	-88.911	-91.534	-2206.006	65.49	64.07	113.70	113.22
78	131	7970.452	-231.847	4.759	86.614	91.535	2205.973	65.49	64.07	113.70	113.21
78	132	-7887.104	100.691	-4.996	-102.317	-106.576	-2893.316	59.00	57.34	122.30	121.73
79	132	7887.098	-100.692	3.683	106.991	115.828	2893.438	59.07	57.27	122.32	121.70
79	133	-7843.537	377.535	0.377	-37.537	24.683	-3892.064	49.17	49.56	135.18	135.31
80	133	7827.630	-377.534	0.067	37.208	-33.752	3888.069	48.97	49.50	134.94	135.12
80	134	-7746.881	1465.022	-5.845	-30.694	12.036	-8250.090	11.84	12.03	193.95	194.02
81	134	7746.872	-1465.023	5.429	28.507	-12.034	8250.104	11.84	12.03	193.95	194.02
81	137	-11434.325	1962.815	-9.454	6.621	-42.952	-18177.340	-57.02	-57.56	234.69	234.50
82	137	12999.582	1954.068	-9.784	30.519	52.309	18123.926	-46.66	-47.32	244.15	243.92
82	144	-9396.499	-1170.899	8.184	-18.781	-7.400	-8524.654	26.92	26.81	214.99	214.95
83	144	9396.510	1170.899	-7.820	14.280	7.398	8524.668	26.92	26.81	214.99	214.95
83	145	-9456.837	-335.455	0.134	203.013	103.693	-5361.625	53.12	54.74	171.96	172.52
84	145	9439.243	335.455	-0.124	-203.008	-103.693	5359.542	52.96	54.57	171.75	172.30
84	146	-10248.402	-298.832	1.416	71.861	-16.049	-3675.903	76.41	76.16	157.44	157.35

85	146	10248.404	298.832	-1.441	-71.937	16.051	3675.904	76.41	76.16	157.44	157.35
85	147	-10231.621	-274.332	1.241	49.662	-9.346	-2240.031	88.18	88.03	137.56	137.51
86	147	10231.623	274.331	-0.293	-45.005	9.348	2239.999	88.18	88.03	137.56	137.51
86	148	-10231.228	-187.714	0.083	21.781	-8.403	-979.746	98.70	98.57	120.27	120.23
87	148	10231.220	187.715	-0.058	-21.636	8.404	979.744	98.70	98.57	120.27	120.23
87	149	-10233.720	-15.805	-0.142	-2.339	-8.612	-503.137	102.71	102.57	113.77	113.72
88	149	10220.514	15.805	0.579	5.158	8.612	503.561	102.57	102.43	113.63	113.59
88	150	-10248.803	185.944	-4.535	-86.016	-30.256	-998.781	98.89	98.42	120.78	120.62
89	150	10248.810	-185.942	4.559	86.163	30.254	998.786	98.89	98.42	120.78	120.62
89	151	-10285.714	229.030	-4.772	-111.449	-53.584	-2225.084	89.21	88.38	138.04	137.75
90	151	10285.706	-229.031	5.258	113.861	53.583	2225.132	89.21	88.38	138.04	137.75
90	152	-10176.907	155.467	-5.148	-136.509	-19.436	-2976.199	81.53	81.23	147.11	147.00
91	152	10176.898	-155.467	5.124	136.434	19.436	2976.194	81.53	81.23	147.11	147.00
91	153	-10107.855	378.193	-5.925	-212.368	-24.630	-4020.734	72.12	71.74	160.72	160.59
92	153	10091.929	-378.193	6.401	212.429	24.631	4016.833	71.99	71.61	160.50	160.37
92	154	-10062.127	1464.987	-12.890	-36.610	-146.886	-8302.277	36.82	34.53	219.26	218.48
93	154	10062.126	-1464.987	13.351	34.403	146.884	8302.293	36.82	34.53	219.27	218.48
93	157	-13749.579	1963.140	-16.471	42.196	-210.907	-18237.846	-41.72	-44.39	250.26	249.35
94	157	13866.314	1976.296	-14.417	16.679	231.359	18433.697	-42.25	-45.18	252.79	251.79
94	163	-10263.247	-1192.929	12.812	-20.426	-171.932	-8723.650	35.59	32.92	227.21	226.29
95	163	10263.239	1192.929	-12.311	18.348	163.273	8723.656	35.52	32.98	227.19	226.32
95	164	-10272.636	-372.984	3.332	152.983	-28.683	-5481.745	61.67	61.22	182.48	182.33
96	164	10255.037	372.984	-2.835	-152.928	28.683	5479.610	61.50	61.05	182.27	182.11
96	165	-9640.617	-378.227	2.374	96.825	-21.997	-3545.405	71.20	70.85	149.32	149.20
97	165	9640.603	378.228	-2.362	-96.747	21.996	3545.403	71.20	70.85	149.32	149.20
97	166	-7684.501	-314.689	3.349	87.210	-65.015	-1844.463	65.32	64.31	105.69	105.34
98	166	7684.527	314.689	-3.854	-84.793	65.016	1844.428	65.32	64.31	105.69	105.34
98	167	-7684.132	-227.496	3.644	60.603	-46.270	-389.607	77.33	76.61	85.69	85.44
99	167	7684.132	227.496	-4.151	-57.592	46.270	389.578	77.33	76.61	85.69	85.44
99	168	-7686.632	-55.588	3.951	34.667	-26.016	285.943	82.84	82.44	76.40	76.26
100	168	7673.406	55.587	-3.978	-34.493	26.015	-285.524	82.70	82.30	76.27	76.13
100	169	-7701.696	143.718	2.306	-28.299	-18.662	45.141	80.93	80.64	79.84	79.74
101	169	7701.710	-143.718	-2.812	31.495	18.662	-45.135	80.93	80.64	79.84	79.74
101	170	-7738.615	187.084	2.602	-51.260	-5.137	-977.353	72.67	72.59	94.21	94.18
102	170	7738.609	-187.084	-2.602	51.260	5.138	977.358	72.67	72.59	94.21	94.18
102	171	-7655.270	55.928	2.402	-68.960	7.372	-1440.906	67.83	67.94	99.66	99.70
103	171	7655.283	-55.928	-3.441	73.086	-7.372	1440.960	67.83	67.94	99.66	99.70
103	172	-7611.709	327.877	-0.234	-216.274	-39.355	-2030.746	62.81	62.19	107.42	107.21
104	172	7597.948	-327.878	0.234	216.274	39.355	2027.315	62.69	62.08	107.23	107.02
104	173	-7517.213	1428.402	-7.223	-30.759	-71.886	-6644.183	23.52	22.40	169.76	169.38
105	173	7517.219	-1428.402	7.196	30.676	71.888	6644.184	23.52	22.40	169.76	169.38
105	176	-10451.948	1873.118	-9.797	21.172	-92.839	-15259.887	-42.10	-43.28	202.55	202.15
106	176	10340.321	1777.023	-7.519	-40.609	82.938	15072.788	-41.54	-42.59	200.15	199.79
106	182	-6727.139	-580.966	2.555	13.049	-138.753	-6387.595	17.93	15.78	158.17	157.44
107	182	6727.133	580.966	-3.132	-15.118	138.754	6387.591	17.93	15.78	158.17	157.44
107	183	-9637.142	-120.039	5.487	-10.357	-122.067	-5202.905	58.09	56.19	172.27	171.62
108	183	9670.605	120.039	-5.458	10.332	122.067	5207.005	58.40	56.50	172.68	172.03
108	184	-9712.361	-110.467	3.402	-0.351	-58.391	-4702.722	62.56	61.65	166.03	165.72
109	184	9712.356	110.467	-2.892	0.760	58.391	4702.721	62.56	61.65	166.03	165.72
109	185	-9697.729	-113.174	2.892	-0.385	-43.933	-4124.917	67.12	66.44	157.92	157.68
110	185	9697.730	113.173	-2.864	0.435	43.933	4124.916	67.12	66.44	157.92	157.68
110	186	-9639.005	-28.737	2.864	4.115	-29.615	-3630.476	70.53	70.07	150.49	150.33
111	186	9639.008	28.738	-1.757	-1.741	29.615	3630.474	70.53	70.07	150.49	150.33
111	187	-9571.599	69.020	1.757	10.666	-20.829	-3735.120	68.88	68.56	151.19	151.08
112	187	8155.857	-69.021	-1.757	-10.666	20.829	3775.851	53.76	53.44	136.97	136.86
112	188	-8076.818	92.416	1.558	24.177	-10.051	-4066.622	50.42	50.26	140.10	140.05
113	188	8076.822	-92.415	-1.218	-23.210	12.042	4066.614	50.44	50.25	140.11	140.05
113	189	-8007.316	158.799	1.019	41.496	-4.954	-4592.570	45.26	45.18	146.58	146.55
114	189	8007.314	-158.799	-0.991	-41.496	4.954	4592.570	45.26	45.18	146.58	146.55
114	192	-8309.313	981.757	0.022	93.388	0.000	-5988.664	36.71	36.71	168.86	168.86

proc Viaducto Papiol

HIPOTESIS 98

min mz + pret (t=inf)(min)

ESFUERZOS EN BARRAS

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	MOM. Y	MOM. Z
1	3	8984.767	591.510	-5.274	-1559.211	-3.109	1497.716
1	8	-9059.202	-658.291	5.003	-12.500	33.123	2383.998
2	8	9059.181	658.291	-5.003	12.500	-33.123	-2383.999
2	9	-9112.854	-376.958	3.003	-11.098	53.137	4920.844
3	9	9112.851	376.957	-3.020	18.837	-53.136	-4920.832
3	10	-9178.153	-208.091	0.996	-31.866	60.584	6169.067
4	10	9648.603	208.091	-0.990	27.127	-60.584	-6706.237
4	11	-9794.396	-27.908	-1.043	-10.286	53.796	7295.258
5	11	9794.403	27.908	1.066	15.408	-53.796	-7295.247
5	12	-9806.929	245.514	-3.066	4.767	43.466	6736.975
6	12	9806.929	-245.513	3.118	5.280	-43.466	-6736.971
6	13	-9790.126	460.659	-5.118	18.713	22.878	5015.625
7	13	9790.143	-460.659	5.090	-22.771	-22.877	-5015.619
7	14	-9793.298	365.888	-7.533	20.565	-29.880	2770.304
8	14	9777.356	-365.889	7.594	-14.991	29.880	-2774.302
8	15	-9726.561	103.061	3.783	-32.053	-60.044	1161.702
9	15	9726.551	-103.061	-3.784	31.996	60.044	-1161.703
9	18	-13301.970	586.357	-0.796	-30.540	-51.063	-2001.497
10	18	13120.448	940.357	0.863	40.947	48.220	1997.513
10	24	-10105.269	-218.384	-0.863	-36.797	-40.786	1426.488
11	24	10105.246	218.384	0.770	38.067	40.787	-1426.474
11	25	-10134.946	-610.002	-0.516	5.377	67.602	2682.070
12	25	10115.178	610.002	0.314	0.598	-67.601	-2688.733
12	26	-10317.751	-654.344	3.382	-53.561	111.375	5988.453
13	26	10317.735	654.345	-3.328	48.532	-111.375	-5988.472
13	27	-10212.160	-550.100	3.432	116.637	104.571	8864.605
14	27	10212.185	550.098	-3.519	-110.467	-104.570	-8864.648
14	28	-10208.575	-328.845	1.530	59.568	117.189	11161.831
15	28	10208.575	328.845	-1.712	-45.033	-117.190	-11161.875
15	29	-10501.505	-12.468	-0.916	-0.128	114.745	11980.223
16	29	10016.839	12.468	0.896	-7.261	-114.746	-11437.614
16	30	-10045.049	316.599	-2.896	-38.700	105.263	10677.922
17	30	10045.057	-316.600	2.915	46.193	-105.262	-10677.902
17	31	-10081.919	494.073	-4.907	-89.785	85.727	8482.328
18	31	10081.887	-494.072	4.923	96.040	-85.727	-8482.287
18	32	-9995.145	484.041	-6.763	-52.792	38.167	6233.919
19	32	9995.141	-484.039	6.762	52.785	-38.169	-6233.918
19	33	-9913.620	648.199	-8.165	-62.767	-15.534	3725.431
20	33	9897.723	-648.200	8.176	65.657	15.533	-3729.391
20	34	-10104.507	607.174	-6.721	55.213	-162.133	646.076
21	34	10104.524	-607.174	6.840	-54.076	162.133	-646.098
21	37	-13790.837	874.014	-6.840	78.051	-184.583	-4633.745
22	37	13380.587	886.411	-2.119	102.448	174.137	4633.216
22	44	-9776.396	-242.970	2.119	-77.198	-151.793	-13.999
23	44	9776.388	242.970	-2.161	78.177	151.793	14.029

TENSIONES

SIGMA 1	SIGMA2	SIGMA3	SIGMA4
81.27	81.31	114.33	114.35
114.25	114.76	61.81	61.99
114.25	114.76	61.81	61.99
135.85	136.68	27.54	27.82
135.85	136.68	27.54	27.82
146.91	147.85	11.09	11.41
156.31	157.25	8.64	8.96
162.81	163.64	2.10	2.39
162.81	163.64	2.10	2.39
158.35	159.03	9.91	10.15
158.35	159.03	9.91	10.15
143.95	144.31	33.39	33.51
143.95	144.31	33.39	33.51
125.63	125.17	64.35	64.19
125.50	125.03	64.13	63.97
111.73	110.79	85.78	85.46
111.73	110.79	85.78	85.46
70.31	69.66	102.24	102.01
69.17	68.56	101.04	100.83
117.74	117.11	86.06	85.84
117.74	117.11	86.06	85.84
127.70	128.75	68.87	69.23
127.55	128.60	68.57	68.93
156.90	158.63	25.33	25.92
156.90	158.63	25.33	25.92
179.89	181.51	-15.19	-14.63
179.89	181.51	-15.19	-14.63
198.95	200.77	-46.75	-46.13
198.95	200.77	-46.75	-46.13
208.87	210.65	-54.91	-54.29
199.27	201.06	-52.53	-51.92
193.29	194.93	-41.79	-41.23
193.29	194.93	-41.79	-41.23
175.48	176.81	-11.25	-10.80
175.48	176.81	-11.25	-10.80
156.15	156.75	18.79	18.99
156.15	156.75	18.79	18.99
134.76	134.52	52.47	52.39
134.62	134.38	52.25	52.17
112.16	109.64	97.07	96.21
112.16	109.64	97.07	96.21
55.47	53.13	129.10	128.30
52.81	50.60	126.48	125.72
103.13	100.77	102.67	101.86
103.13	100.77	102.67	101.86

23	45	-9501.930	-637.449	7.710	179.848	69.775	1753.295	113.32	114.40	74.98	75.36
24	45	8541.415	637.449	-7.865	-177.152	-69.775	-1463.134	100.86	101.95	68.93	69.30
24	46	-8919.804	-712.375	5.026	79.306	99.746	4873.930	133.08	134.63	26.04	26.58
25	46	8919.835	712.375	-5.026	-79.311	-99.746	-4873.927	133.08	134.63	26.04	26.58
25	47	-8909.302	-567.129	5.183	234.825	157.638	8022.063	158.83	161.28	-17.38	-16.54
26	47	8909.307	567.130	-5.223	-228.650	-157.638	-8022.147	158.83	161.28	-17.38	-16.54
26	48	-8915.162	-345.503	3.235	136.472	178.782	10385.053	178.48	181.26	-49.77	-48.82
27	48	8915.125	345.501	-3.237	-136.097	-178.785	-10385.061	178.48	181.26	-49.77	-48.82
27	49	-8923.873	-22.584	1.237	45.029	189.969	11259.703	185.79	188.74	-61.70	-60.69
28	49	8910.674	22.585	-1.273	-37.579	-189.971	-11259.296	185.65	188.60	-61.83	-60.82
28	50	-9472.027	299.877	-1.148	-53.828	179.579	10553.143	185.69	188.48	-46.26	-45.31
29	50	9472.055	-299.877	1.543	60.339	-189.739	-10553.118	185.61	188.56	-46.29	-45.28
29	51	-9515.260	477.417	-3.313	-164.897	167.989	8418.026	168.39	171.00	-16.51	-15.61
30	51	9515.238	-477.417	3.482	171.239	-167.990	-8417.958	168.39	171.00	-16.51	-15.61
30	52	-9438.148	466.503	-5.303	-96.313	90.277	6226.040	149.87	151.27	12.94	13.43
31	52	9438.172	-466.503	5.303	96.313	-90.276	-6226.034	149.87	151.27	12.94	13.43
31	53	-9375.379	630.256	-6.371	-154.579	94.953	3780.153	128.74	130.21	45.81	46.31
32	53	9359.448	-630.256	6.554	157.763	-94.952	-3784.074	128.60	130.08	45.59	46.09
32	54	-8900.930	574.296	-0.201	108.754	-192.002	886.189	101.83	98.84	81.29	80.27
33	54	8900.907	-574.296	0.200	-108.822	192.002	-886.187	101.83	98.84	81.29	80.27
33	57	-12583.364	841.129	-0.200	131.897	-204.751	-4248.754	50.69	48.10	118.06	117.18
34	57	11941.383	876.453	-5.947	112.659	197.873	4249.528	46.58	44.07	113.99	113.13
34	64	-8333.301	-305.780	2.109	-182.545	-127.403	642.959	93.37	91.39	78.53	77.85
35	64	8333.330	305.780	-2.097	182.476	127.403	-642.963	93.37	91.39	78.53	77.85
35	65	-8806.419	-620.370	5.857	189.600	126.495	2318.693	110.34	112.30	59.82	60.49
36	65	8788.816	620.370	-5.981	-183.401	-126.495	-2320.918	110.17	112.14	59.61	60.28
36	66	-8429.702	-683.705	3.759	85.691	105.761	5647.181	134.38	136.03	10.31	10.87
37	66	8429.695	683.703	-3.772	-85.431	-105.761	-5647.185	134.38	136.03	10.31	10.87
37	67	-8406.665	-538.468	3.276	238.267	175.577	8678.854	158.93	161.66	-31.68	-30.74
38	67	8406.605	538.468	-3.494	-232.191	-175.577	-8678.945	158.93	161.66	-31.68	-30.75
38	68	-8399.963	-316.832	1.507	131.379	188.089	10925.783	177.54	180.47	-62.59	-61.58
39	68	8399.989	316.833	-1.286	-138.292	-188.090	-10925.734	177.54	180.47	-62.59	-61.58
39	69	-9153.351	-0.331	-1.139	42.266	196.663	11683.992	191.68	194.74	-65.14	-64.09
40	69	9140.134	0.332	1.296	-19.059	-196.665	-11683.594	191.54	194.60	-65.27	-64.22
40	70	-9162.174	328.789	-3.296	-81.794	185.187	10861.209	184.98	187.86	-53.74	-52.75
41	70	9162.185	-328.790	3.244	74.117	-185.188	-10861.238	184.98	187.86	-53.74	-52.75
41	71	-9192.841	506.955	-5.232	-175.092	163.985	8607.431	166.63	169.18	-22.46	-21.59
42	71	9192.882	-506.955	5.281	181.831	-163.987	-8607.369	166.63	169.18	-22.46	-21.59
42	72	-9103.290	496.548	-6.271	-79.816	75.661	6293.234	147.05	148.22	8.57	8.97
43	72	9103.239	-496.549	6.316	84.766	-75.660	-6293.205	147.05	148.22	8.57	8.97
43	73	-9027.945	658.934	-8.708	-175.354	74.949	3727.711	124.83	125.99	42.95	43.35
44	73	9012.034	-658.934	8.710	175.513	-74.949	-3731.692	124.69	125.86	42.73	43.13
44	74	-9495.016	592.680	0.327	173.248	-163.673	781.033	106.93	104.39	88.86	87.99
45	74	9495.003	-592.681	-0.026	-172.494	171.365	-781.101	106.99	104.33	88.88	87.97
45	77	-13187.498	859.518	0.081	205.905	-175.020	-4424.330	53.08	50.86	123.39	122.63
46	77	12314.823	875.880	-5.433	78.752	161.445	4423.137	47.47	45.43	117.82	117.12
46	84	-8716.736	-304.824	4.079	-117.759	-192.045	504.346	96.72	93.73	84.61	83.58
47	84	8716.746	304.824	-4.084	117.826	192.046	-504.345	96.72	93.73	84.61	83.58
47	85	-8178.331	-617.067	7.394	180.609	42.997	2224.103	103.64	104.31	54.78	55.01
48	85	8160.680	617.067	-7.694	-177.630	-42.999	-2226.248	103.47	104.14	54.57	54.80
48	86	-8839.068	-691.636	6.288	118.901	46.415	5555.763	138.35	139.07	16.00	16.24
49	86	8839.147	691.635	-6.361	-113.967	-46.415	-5555.806	138.35	139.08	16.00	16.24
49	87	-8828.613	-546.494	5.759	212.439	108.673	8600.703	163.21	164.90	-26.02	-25.44
50	87	8828.583	546.491	-5.763	-212.102	-108.673	-8600.707	163.21	164.90	-26.02	-25.45
50	88	-8834.438	-324.943	3.775	135.450	132.528	10861.168	181.97	184.03	-57.02	-56.31
51	88	8834.479	324.945	-3.844	-128.158	-132.531	-10861.213	181.97	184.03	-57.02	-56.31
51	89	-9831.444	-8.675	1.225	54.232	156.648	11634.379	198.65	201.09	-57.27	-56.44
52	89	9818.237	8.672	-1.225	-54.238	-156.650	-11633.949	198.51	200.95	-57.40	-56.57
52	90	-9852.779	320.331	-0.775	-25.296	157.772	10826.751	192.12	194.57	-45.98	-45.14
53	90	9852.707	-320.330	1.103	32.977	-157.774	-10826.738	192.12	194.57	-45.98	-45.14
53	91	-9895.864	498.366	-3.091	-114.053	147.282	8588.866	173.95	176.24	-14.82	-14.04
54	91	9895.854	-498.367	3.403	120.453	-147.283	-8588.820	173.95	176.24	-14.82	-14.04

54	92	-9818.767	487.812	-4.456	-47.039	87.953	6291.134	154.40	155.77	16.03	16.50
55	92	9818.836	-487.812	4.787	52.248	-87.955	-6291.111	154.40	155.77	16.03	16.50
55	93	-9756.041	649.973	-7.119	-152.453	85.366	3742.529	132.47	133.80	50.32	50.78
56	93	9740.124	-649.973	7.102	152.295	-85.369	-3746.515	132.34	133.67	50.10	50.56
56	94	-9110.635	584.201	2.389	168.061	-65.295	821.763	102.50	101.48	84.03	83.68
57	94	9110.636	-584.201	-2.384	-167.993	65.296	-821.765	102.50	101.48	84.03	83.68
57	97	-12793.090	814.831	-7.929	-159.857	-134.056	-4362.678	50.76	49.06	120.26	119.67
58	97	11689.424	913.564	-9.529	-294.420	115.360	4366.076	43.63	42.16	113.25	112.75
58	104	-7982.315	-306.331	2.374	-0.857	-182.807	550.204	89.36	86.52	76.28	75.31
59	104	7982.332	306.331	-2.355	0.790	182.807	-550.203	89.36	86.52	76.28	75.31
59	105	-7987.909	-616.203	7.968	132.218	22.349	2291.248	102.37	102.72	51.93	52.05
60	105	7970.354	616.203	-8.378	-128.893	-22.352	-2293.384	102.21	102.55	51.71	51.83
60	106	-8048.740	-684.942	6.880	120.737	43.107	5619.324	130.66	131.33	6.88	7.11
61	106	8048.718	684.942	-6.860	-120.996	-43.106	-5619.329	130.66	131.33	6.88	7.11
61	107	-8031.931	-539.999	5.886	110.553	80.961	8644.801	155.47	156.73	-34.87	-34.44
62	107	8031.937	539.999	-6.210	-104.163	-72.868	-8644.846	155.54	156.67	-34.85	-34.46
62	108	-8031.529	-318.667	4.293	82.556	107.402	10886.756	174.00	175.67	-65.68	-65.11
63	108	8031.521	318.668	-4.666	-75.254	-107.399	-10886.786	174.00	175.67	-65.68	-65.11
63	109	-8034.019	3.916	2.666	51.454	125.736	11641.490	180.19	182.14	-76.05	-75.38
64	109	8020.822	-3.916	-2.293	-59.045	-125.738	-11641.044	180.05	182.00	-76.18	-75.51
64	110	-9268.149	326.540	0.426	35.618	146.635	10810.658	185.97	188.25	-51.83	-51.05
65	110	9268.167	-326.541	-0.243	-20.666	-146.633	-10810.679	185.97	188.25	-51.83	-51.05
65	111	-9305.072	504.360	-1.745	-8.118	142.870	8555.769	167.54	169.76	-20.52	-19.76
66	111	9305.048	-504.359	1.834	14.513	-142.869	-8555.762	167.54	169.76	-20.52	-19.76
66	112	-9221.711	493.595	-2.868	-8.497	128.942	6241.802	147.44	149.44	10.37	11.05
67	112	9221.714	-493.595	2.873	8.752	-128.943	-6241.798	147.44	149.44	10.37	11.05
67	113	-9152.669	655.428	-5.513	-83.981	107.862	3681.131	125.48	127.16	44.81	45.38
68	113	9136.764	-655.428	5.602	86.966	-107.860	-3685.081	125.35	127.03	44.59	45.16
68	114	-9107.023	587.758	2.218	94.855	75.473	780.047	101.01	102.19	84.19	84.59
69	114	9107.000	-587.757	-2.218	-94.854	-75.473	-780.046	101.01	102.19	84.19	84.59
69	117	-12794.449	782.206	-1.976	43.289	-77.994	-4408.321	50.09	49.10	120.55	120.21
70	117	11459.861	950.398	-1.722	-104.248	58.759	4394.528	41.61	40.86	111.93	111.68
70	124	-7856.774	-306.961	1.722	102.148	-50.151	535.794	86.90	86.12	74.82	74.55
71	124	7856.799	306.961	-1.292	-103.464	50.150	-535.753	86.90	86.12	74.82	74.55
71	125	-8616.112	-616.995	8.841	23.788	11.195	2277.857	108.91	109.08	58.70	58.76
72	125	8598.507	616.995	-8.981	-20.627	-11.198	-2279.949	108.74	108.91	58.49	58.55
72	126	-8683.146	-686.099	8.021	66.434	70.932	5596.655	136.88	137.98	13.74	14.12
73	126	8683.148	686.100	-8.162	-61.229	-70.932	-5596.680	136.88	137.98	13.74	14.12
73	127	-8666.362	-541.253	6.444	-70.427	60.949	8628.375	162.11	163.06	-27.97	-27.65
74	127	8666.361	541.250	-6.576	76.824	-60.949	-8628.341	162.11	163.06	-27.97	-27.64
74	128	-8665.966	-319.996	4.588	-25.755	88.862	10876.769	180.68	182.06	-58.87	-58.40
75	128	8665.961	319.997	-4.588	25.760	-88.862	-10876.771	180.68	182.06	-58.87	-58.40
75	129	-10118.628	-5.016	3.277	21.301	131.892	11657.668	202.04	204.09	-54.53	-53.82
76	129	10105.422	5.017	-2.858	-13.706	-131.895	-11657.256	201.90	203.95	-54.66	-53.96
76	130	-10133.711	323.757	0.858	59.583	141.185	10845.723	195.34	197.54	-43.26	-42.51
77	130	10133.709	-323.756	-0.418	-51.902	-141.186	-10845.752	195.34	197.54	-43.26	-42.51
77	131	-10170.614	501.586	-1.569	95.420	138.303	8604.772	177.02	179.17	-12.15	-11.41
78	131	10170.622	-501.586	1.152	-101.823	-138.304	-8604.735	177.02	179.17	-12.15	-11.41
78	132	-10087.285	490.859	-2.132	22.833	180.711	6304.428	156.60	159.41	18.41	19.37
79	132	10087.287	-490.861	3.408	-7.713	-180.710	-6304.447	156.60	159.41	18.41	19.37
79	133	-10018.238	653.207	-6.410	-0.710	107.368	3747.192	135.08	136.75	52.94	53.51
80	133	10002.328	-653.206	5.992	-2.297	-107.368	-3751.169	134.94	136.61	52.72	53.29
80	134	-9921.590	585.636	1.412	-32.215	173.098	879.900	109.59	112.29	91.06	91.99
81	134	9921.578	-585.636	-1.003	33.496	-173.099	-879.889	109.59	112.29	91.06	91.99
81	137	-13609.029	779.761	-0.382	-72.083	104.056	-4282.473	54.99	56.31	124.19	124.64
82	137	12043.770	946.104	2.738	-161.257	-113.412	4335.881	44.64	46.07	114.73	115.23
82	144	-8440.687	-302.663	-2.738	138.007	99.724	572.935	92.14	93.69	80.01	80.54
83	144	8440.689	302.663	2.355	-135.411	-99.723	-573.042	92.14	93.69	80.00	80.54
83	145	-8501.000	-604.525	5.898	-93.685	5.361	2317.246	108.08	108.16	56.97	57.00
84	145	8483.404	604.525	-5.907	93.843	-5.360	-2319.324	107.91	108.00	56.76	56.79
84	146	-7818.046	-673.261	2.813	-21.644	73.965	5576.258	127.65	128.80	4.98	5.37

85	146	7818.049	673.261	-2.788	21.383	-73.966	-5576.265	127.65	128.80	4.98	5.37
85	147	-7801.262	-528.207	2.339	-204.998	18.134	8543.307	152.70	152.99	-35.72	-35.63
86	147	7801.264	528.206	-3.287	218.069	-18.135	-8543.143	152.70	152.98	-35.72	-35.62
86	148	-7800.869	-306.839	1.297	-121.346	29.592	10726.832	170.86	171.32	-65.69	-65.53
87	148	7800.866	306.840	-1.321	121.723	-29.590	-10726.828	170.86	171.32	-65.69	-65.53
87	149	-7803.366	15.886	-0.679	-26.144	31.202	11422.018	176.68	177.17	-75.20	-75.03
88	149	7790.157	-15.886	0.241	33.254	-31.199	-11421.577	176.54	177.02	-75.33	-75.17
88	150	-7818.447	344.855	-2.241	61.393	24.995	10505.073	169.22	169.61	-62.46	-62.32
89	150	7818.452	-344.856	2.217	-61.015	-24.993	-10505.076	169.22	169.61	-62.46	-62.32
89	151	-7855.356	522.853	-4.204	154.946	8.942	8158.670	150.13	150.26	-29.86	-29.81
90	151	7855.351	-522.853	3.718	-148.380	-8.941	-8158.725	150.13	150.27	-29.86	-29.81
90	152	-7772.011	512.339	-6.395	12.540	22.106	5751.455	129.04	129.38	2.24	2.35
91	152	7772.015	-512.339	6.420	-12.788	-22.105	-5751.456	129.04	129.38	2.24	2.35
91	153	-7702.969	674.000	-7.619	78.009	-35.416	3120.554	106.78	106.23	37.74	37.55
92	153	7687.043	-674.000	7.132	-75.093	35.416	-3124.570	106.64	106.09	37.52	37.33
92	154	-7657.251	524.381	1.756	-117.998	80.352	173.531	80.77	82.02	77.35	77.78
93	154	7657.257	-524.381	-2.207	119.010	-80.353	-173.486	80.77	82.02	77.35	77.78
93	157	-11344.711	791.209	2.207	-149.510	91.389	-4701.083	37.74	38.90	113.61	114.01
94	157	11227.966	958.508	4.041	-141.507	-111.842	4505.538	38.27	39.68	111.08	111.57
94	163	-7624.887	-315.060	-4.041	111.157	91.638	465.339	82.78	84.21	72.98	73.47
95	163	7624.886	315.060	3.544	-109.933	-91.638	-465.382	82.78	84.21	72.98	73.47
95	164	-7634.250	-600.549	5.720	-114.534	-15.646	2306.591	99.10	98.86	48.13	48.04
96	164	7616.668	600.549	-6.227	117.548	15.646	-2308.625	98.94	98.69	47.91	47.83
96	165	-8451.311	-673.413	4.759	-73.160	16.942	5552.309	134.50	134.77	12.07	12.16
97	165	8451.303	673.413	-4.771	73.420	-16.942	-5552.309	134.50	134.77	12.07	12.16
97	166	-10348.354	-551.404	5.275	-191.086	4.601	8582.787	179.73	179.80	-9.63	-9.61
98	166	10348.361	551.404	-4.768	197.465	-4.603	-8582.713	179.73	179.80	-9.63	-9.61
98	167	-10347.967	-330.496	2.778	-131.153	23.471	10889.221	198.86	199.22	-41.31	-41.18
99	167	10347.963	330.494	-2.272	138.450	-23.472	-10889.173	198.86	199.22	-41.31	-41.18
99	168	-10350.463	-7.674	0.272	-70.550	29.832	11702.405	205.63	206.09	-52.45	-52.29
100	168	10337.259	7.674	-0.245	70.953	-29.832	-11701.984	205.49	205.95	-52.58	-52.42
100	169	-10365.550	321.366	-1.755	-1.092	26.059	10903.069	199.13	199.54	-41.32	-41.18
101	169	10365.546	-321.366	2.260	8.412	-26.060	-10903.071	199.13	199.54	-41.32	-41.18
101	170	-10402.450	499.144	-4.250	63.847	9.792	8681.298	181.08	181.23	-10.43	-10.38
102	170	10402.447	-499.144	4.250	-63.845	-9.792	-8681.298	181.08	181.23	-10.43	-10.38
102	171	-10293.639	447.674	-1.377	-17.887	-51.047	6590.039	162.94	162.15	17.26	16.99
103	171	10293.642	-447.674	2.396	28.276	51.048	-6590.024	162.94	162.15	17.26	16.99
103	172	-10224.596	630.281	-2.406	64.736	-61.551	4122.557	141.68	140.72	50.40	50.07
104	172	10210.851	-630.282	2.406	-64.736	61.551	-4125.987	141.57	140.61	50.21	49.88
104	173	-10155.600	484.191	0.577	-111.395	55.910	1743.714	120.17	121.04	81.98	82.27
105	173	10155.598	-484.191	-0.551	111.480	-55.910	-1743.712	120.17	121.04	81.98	82.27
105	176	-13090.326	694.931	0.551	-125.231	58.663	-1663.006	70.69	71.43	97.64	97.89
106	176	13201.951	746.588	-0.413	22.821	-48.761	1850.130	70.12	70.74	100.04	100.25
106	182	-9588.772	-85.780	0.413	-33.471	50.827	2055.580	116.90	117.69	71.80	72.07
107	182	9588.771	85.780	0.154	34.779	-50.827	-2055.567	116.90	117.69	71.80	72.07
107	183	-6750.059	-345.479	2.884	-26.849	89.554	3587.831	99.76	101.15	21.05	21.53
108	183	6783.520	345.479	-2.913	27.001	-89.554	-3583.732	100.08	101.47	21.45	21.93
108	184	-6850.741	-411.510	0.502	-8.322	118.206	5538.608	116.89	118.73	-4.72	-4.09
109	184	6850.740	411.510	-1.022	12.418	-118.206	-5538.604	116.89	118.73	-4.72	-4.09
109	185	-6836.113	-252.403	-0.978	-55.658	118.316	7217.096	130.77	132.61	-27.88	-27.25
110	185	6836.108	252.402	0.949	55.934	-118.316	-7217.096	130.77	132.61	-27.88	-27.25
110	186	-6777.383	-6.151	-2.949	-93.532	108.569	8003.144	136.80	138.49	-39.25	-38.67
111	186	6777.383	6.151	1.823	104.980	-108.570	-8003.067	136.80	138.48	-39.25	-38.67
111	187	-6709.974	253.421	-3.823	-136.637	94.453	7380.962	131.00	132.47	-31.38	-30.88
112	187	5294.236	-253.421	3.823	136.638	-94.453	-7340.233	115.88	117.35	-45.61	-45.10
112	188	-5215.195	429.709	-4.902	-105.678	63.391	5753.830	102.04	103.03	-24.60	-24.26
113	188	5215.193	-429.708	4.354	110.091	-63.391	-5753.788	102.04	103.03	-24.60	-24.26
113	189	-5145.689	658.285	-6.354	-120.796	36.623	3135.884	79.65	80.21	10.64	10.83
114	189	5145.688	-658.285	6.325	120.950	-36.624	-3135.882	79.65	80.21	10.64	10.83
114	192	-4747.214	747.679	-2.580	-135.385	0.000	17.880	49.71	49.71	49.32	49.32

proc Viaducto Papiol

HIPOTESIS 113

max mz + pret (t=0)(max)

ESFUERZOS EN BARRAS

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	MOM. Y	MOM. Z
1	3	14351.465	344.883	-2.997	1561.484	3.110	2528.662
1	8	-14456.418	83.178	-4.099	55.144	7.545	-2867.995
2	8	14456.383	-83.178	4.099	-55.144	-7.546	2867.995
2	9	-14528.405	179.545	-4.099	37.369	18.201	-3591.951
3	9	14528.418	-179.544	-5.860	-28.989	6.594	3591.926
3	10	-14618.894	112.114	-4.121	19.375	28.747	-4630.534
4	10	15365.625	-112.114	4.111	-21.417	-28.747	3777.909
4	11	-15404.072	65.818	-4.078	8.973	46.078	-4210.730
5	11	15404.084	-65.817	4.060	-6.849	-46.078	4210.729
5	12	-15410.794	150.237	-4.060	-2.001	56.927	-4759.217
6	12	15410.789	-150.238	4.020	5.895	-56.927	4759.218
6	13	-15370.946	142.137	-4.020	-11.920	67.975	-5405.906
7	13	15370.979	-142.136	4.041	10.551	-67.974	5405.899
7	14	-15341.821	-53.919	-1.273	8.419	-17.911	-5704.683
8	14	15316.523	53.918	1.211	-7.447	17.911	5698.352
8	15	-15283.990	136.410	-1.454	10.730	-26.177	-5158.523
9	15	15283.959	-136.409	1.456	-10.681	26.178	5158.522
9	18	-21118.072	1354.436	-8.242	54.169	-46.840	-12127.881
10	18	21299.658	2167.361	-10.172	-63.656	49.688	12132.017
10	24	-16515.383	-880.067	5.743	41.791	6.352	-3741.809
11	24	16515.281	880.067	-5.711	-42.055	-6.351	3741.795
11	25	-16737.359	16.316	0.498	-149.404	78.140	-2045.622
12	25	16705.979	-16.317	-0.297	153.844	-78.139	2035.172
12	26	-16815.445	-110.263	1.941	17.483	-106.906	-1755.294
13	26	16815.502	110.263	-2.030	-20.957	106.906	1755.298
13	27	-16799.836	-170.638	1.830	29.008	-97.258	-1064.351
14	27	16799.824	170.638	-1.743	-24.969	97.258	1064.339
14	28	-16810.264	-136.923	1.532	34.955	-89.064	-139.276
15	28	16810.273	136.923	-1.350	-25.813	89.065	139.253
15	29	-16531.814	64.315	2.947	76.033	-102.502	-5.014
16	29	15762.460	-64.314	-2.927	-80.544	102.503	866.329
16	30	-15823.407	247.798	2.727	94.244	-88.369	-1680.275
17	30	15823.435	-247.799	-2.745	-89.798	88.368	1680.236
17	31	-15898.117	212.895	2.537	105.137	-75.181	-3131.598
18	31	15898.106	-212.897	-2.553	-101.525	75.180	3131.561
18	32	-15623.581	-78.907	-0.472	51.997	10.227	-3223.809
19	32	15623.528	78.908	0.472	-52.001	-10.227	3223.810
19	33	-15400.074	114.437	3.708	64.134	35.243	-2828.858
20	33	15374.933	-114.437	-3.818	-62.873	-35.243	2822.509
20	34	-15546.876	1364.343	-5.204	16.190	47.559	-6195.745
21	34	15546.893	-1364.343	5.195	-17.277	-47.557	6195.736
21	37	-21396.496	1835.079	-6.796	23.057	17.581	-16727.723
22	37	21806.570	2102.517	-10.215	-136.557	-7.128	16728.178
22	44	-16083.948	-942.448	5.906	65.115	70.847	-6514.630
23	44	16083.948	942.448	-5.745	-66.159	-70.848	6514.603

TENSIONES

SIGMA 1	SIGMA2	SIGMA3	SIGMA4
128.73	128.68	184.51	184.50
126.91	127.02	190.23	190.27
126.91	127.02	190.23	190.27
121.53	121.81	200.88	200.98
121.72	121.62	200.95	200.91
113.71	114.16	216.04	216.19
128.63	129.08	212.14	212.30
125.28	126.00	218.43	218.68
125.28	126.00	218.43	218.68
120.68	121.57	225.99	226.30
120.68	121.57	225.99	226.30
114.78	115.83	234.41	234.77
114.78	115.83	234.41	234.77
112.64	112.37	238.43	238.34
112.43	112.15	238.08	237.99
116.67	116.26	230.36	230.22
116.67	116.26	230.36	230.22
47.53	46.94	242.08	241.88
48.67	48.04	243.27	243.06
141.11	141.21	223.71	223.75
141.11	141.21	223.71	223.74
157.05	158.26	202.58	203.00
156.81	158.02	202.11	202.53
161.73	160.06	199.91	199.34
161.73	160.06	199.91	199.34
167.26	165.75	190.25	189.73
167.26	165.75	190.25	189.73
175.04	173.65	177.66	177.18
175.04	173.65	177.66	177.18
173.36	171.76	172.94	172.40
158.13	156.53	176.72	176.17
151.85	150.48	188.48	188.01
151.85	150.48	188.48	188.01
140.40	139.23	209.12	208.72
140.40	139.23	209.12	208.72
136.10	136.26	207.29	207.34
136.10	136.26	207.29	207.34
136.87	137.42	199.47	199.66
136.66	137.21	199.12	199.31
110.17	110.91	247.13	247.39
110.17	110.91	247.13	247.39
16.06	16.28	284.74	284.81
18.72	18.81	287.36	287.39
112.93	114.04	257.05	257.43
112.93	114.04	257.05	257.43

23	45	-15827.639	-58.415	-1.716	-250.623	30.793	-5053.419	122.78	123.26	234.45	234.61
24	45	14302.984	58.415	1.753	251.921	-30.792	5514.198	103.01	103.49	224.85	225.01
24	46	-14672.301	-225.426	-5.125	-147.628	12.052	-4693.694	113.87	114.06	217.50	217.57
25	46	14672.360	225.426	5.126	147.625	-12.051	4693.696	113.87	114.06	217.50	217.57
25	47	-14418.979	-227.614	1.963	-15.498	-51.667	-3607.344	120.80	119.99	200.13	199.86
26	47	14418.975	227.613	-1.922	19.081	51.667	3607.352	120.80	119.99	200.13	199.86
26	48	-14412.098	-194.169	1.710	4.687	-42.587	-2374.012	130.96	130.30	183.13	182.90
27	48	14412.019	194.169	-1.708	-4.470	42.588	2374.010	130.96	130.30	183.13	182.90
27	49	-14409.783	3.066	5.166	99.285	-47.327	-1878.872	135.11	134.38	176.33	176.08
28	49	14388.820	-3.067	-5.349	-93.923	58.583	1879.514	134.98	134.07	176.15	175.84
28	50	-13900.666	193.047	5.571	112.500	-20.579	-2394.841	125.28	124.96	178.02	177.91
29	50	13900.692	-193.047	-5.746	-108.151	20.579	2394.793	125.28	124.96	178.02	177.91
29	51	-13953.023	157.557	5.535	123.826	7.622	-3552.915	115.93	116.05	194.37	194.41
30	51	13953.031	-157.555	-5.704	-120.193	-7.622	3552.866	115.93	116.05	194.37	194.41
30	52	-13814.498	-149.897	5.504	136.518	35.645	-3330.043	116.13	116.68	189.79	189.98
31	52	13814.500	149.897	-5.504	-136.519	-35.644	3330.043	116.13	116.68	189.79	189.98
31	53	-14096.895	88.336	1.502	169.702	18.105	-2707.900	124.41	124.69	184.26	184.35
32	53	14071.605	-88.338	-1.526	-168.135	-18.105	2701.507	124.20	124.48	183.90	184.00
32	54	-13579.391	1355.206	-0.649	-42.512	232.416	-6040.919	89.49	93.10	223.98	225.21
33	54	13579.390	-1355.206	0.659	42.554	-232.416	6040.919	89.49	93.10	223.98	225.21
33	57	-19426.244	1825.350	-2.259	-68.384	225.122	-16495.828	3.91	6.77	269.74	270.71
34	57	20068.244	2081.936	-4.905	-156.178	-218.243	16495.047	8.03	10.80	273.81	274.76
34	64	-14342.814	-922.621	1.051	45.705	238.865	-6360.578	94.74	98.45	236.31	237.58
35	64	14342.765	922.621	-1.054	-45.664	-238.868	6360.579	94.74	98.45	236.31	237.58
35	65	-14835.061	-37.345	-6.947	-267.569	18.916	-4887.015	113.90	114.19	221.83	221.94
36	65	14807.148	37.346	7.418	270.723	-18.916	4883.925	113.63	113.93	221.50	221.60
36	66	-14942.010	-159.594	-3.326	-110.646	56.347	-4187.168	120.57	121.45	213.26	213.56
37	66	14942.000	159.593	3.339	110.797	-56.344	4187.167	120.57	121.45	213.26	213.56
37	67	-14921.609	-219.969	-3.539	-82.372	39.150	-3246.909	128.35	128.96	200.20	200.41
38	67	14921.644	219.971	3.758	85.891	-39.150	3246.939	128.35	128.96	200.20	200.41
38	68	-14927.267	-186.545	-3.970	-57.429	19.821	-2079.083	138.32	138.63	184.30	184.41
39	68	14927.211	186.544	3.749	53.435	-19.819	2079.062	138.32	138.63	184.30	184.40
39	69	-14180.313	17.288	0.968	49.385	-28.050	-1645.302	134.52	134.08	170.68	170.53
40	69	14159.354	-5.326	12.957	220.788	-38.377	1645.937	133.78	134.38	170.29	170.50
40	70	-14210.514	200.769	0.925	64.482	-22.930	-2227.735	129.93	129.57	178.97	178.85
41	70	14210.519	-200.771	-0.872	-68.895	22.930	2227.762	129.93	129.57	178.97	178.85
41	71	-14275.351	165.209	0.660	97.231	-19.089	-3451.884	120.34	120.05	196.42	196.32
42	71	14275.350	-165.208	-0.709	-93.375	19.091	3451.841	120.35	120.05	196.42	196.31
42	72	-14149.314	-142.240	0.509	121.575	-16.041	-3294.084	120.32	120.07	192.93	192.84
43	72	14149.302	142.240	-0.554	-118.766	16.041	3294.038	120.32	120.07	192.93	192.84
43	73	-13512.688	102.667	2.736	257.836	-23.677	-2748.458	118.30	117.93	178.82	178.70
44	73	13487.428	-102.668	-2.750	-257.758	23.678	2742.130	118.09	117.72	178.47	178.35
44	74	-13939.222	1377.895	-3.092	-30.319	171.815	-6238.224	92.07	94.74	230.60	231.51
45	74	13939.263	-1377.895	3.051	29.451	-171.818	6238.233	92.07	94.74	230.60	231.51
45	77	-19798.619	1848.597	-4.651	-50.378	152.558	-16834.797	4.31	6.25	275.28	275.94
46	77	20671.262	2094.912	-7.640	-154.381	-138.982	16836.096	9.92	11.68	280.85	281.45
46	84	-14958.330	-935.096	4.323	59.399	155.508	-6665.673	99.26	101.68	247.14	247.97
47	84	14958.350	935.096	-4.308	-59.446	-155.508	6665.671	99.26	101.68	247.14	247.97
47	85	-14441.634	-47.122	-6.099	-167.139	-10.570	-5084.201	108.37	108.21	220.51	220.45
48	85	14413.670	47.122	6.178	168.598	10.571	5080.965	108.11	107.94	220.17	220.12
48	86	-14532.536	-161.474	-3.305	-109.911	5.722	-4414.831	114.79	114.88	212.24	212.27
49	86	14532.551	161.475	3.376	112.711	-5.720	4414.874	114.79	114.88	212.24	212.27
49	87	-14499.655	-221.864	-3.576	-87.286	-11.666	-3438.354	122.74	122.56	198.55	198.49
50	87	14499.674	221.864	3.582	87.477	11.669	3438.356	122.74	122.56	198.55	198.49
50	88	-14492.797	-188.435	-3.794	-63.089	-30.119	-2234.277	132.88	132.41	182.02	181.86
51	88	14492.795	188.435	3.864	67.257	30.119	2234.307	132.88	132.41	182.02	181.86
51	89	-13502.295	-8.301	-3.445	-47.978	-59.842	-1764.819	126.69	125.76	165.33	165.01
52	89	13481.318	8.301	3.445	47.974	59.841	1765.499	126.46	125.53	165.12	164.80
52	90	-13519.978	199.018	-0.346	36.070	-65.501	-2311.473	122.35	121.33	173.02	172.67
53	90	13519.993	-199.017	0.018	-31.681	65.502	2311.462	122.35	121.33	173.02	172.67
53	91	-13572.325	163.449	-0.230	52.851	-66.114	-3500.040	112.97	111.94	189.86	189.51
54	91	13572.317	-163.449	-0.083	-49.203	66.112	3500.021	112.97	111.94	189.86	189.51

54	92	-13433.787	-144.001	-0.117	69.153	-66.195	-3306.672	113.14	112.11	185.77	185.41
55	92	13433.778	144.001	-0.217	-66.201	66.197	3306.646	113.14	112.11	185.76	185.41
55	93	-13887.151	102.156	1.765	268.394	-20.629	-2733.886	122.30	121.98	182.52	182.42
56	93	13861.903	-102.156	-1.760	-268.472	20.628	2727.573	122.09	121.77	182.17	182.06
56	94	-13198.711	1378.804	-1.749	-27.373	128.522	-6202.566	84.97	86.97	222.49	223.18
57	94	13198.712	-1378.803	1.732	27.327	-128.523	6202.566	84.97	86.97	222.49	223.18
57	97	-19045.570	1849.335	-3.332	-55.470	115.856	-16776.520	0.19	1.66	270.07	270.57
58	97	20149.170	2087.963	-9.101	-137.622	-98.762	16772.945	7.32	8.57	277.06	277.49
58	104	-14423.731	-928.314	6.344	67.205	107.616	-6609.964	94.52	96.19	240.92	241.50
59	104	14423.769	928.313	-6.348	-67.160	-107.619	6609.965	94.52	96.19	240.92	241.50
59	105	-14596.040	-43.348	-2.236	-8.883	37.591	-5041.581	109.97	110.55	221.41	221.61
60	105	14568.109	43.348	2.388	10.516	-37.592	5038.286	109.70	110.29	221.07	221.27
60	106	-15322.990	-163.710	-2.642	-63.591	15.316	-4403.182	123.07	123.30	220.31	220.39
61	106	15322.980	163.711	2.622	63.444	-15.316	4403.176	123.07	123.30	220.31	220.39
61	107	-15296.337	-224.092	-2.822	-51.169	1.709	-3428.917	131.03	131.06	206.71	206.72
62	107	15296.318	224.091	3.215	55.007	-1.707	3428.937	131.03	131.06	206.71	206.72
62	108	-15295.691	-190.667	-3.427	-44.520	-14.907	-2227.134	141.20	140.97	190.27	190.19
63	108	15295.675	190.669	3.803	48.691	14.909	2227.155	141.20	140.97	190.27	190.19
63	109	-15299.641	-17.065	-4.003	-39.941	-34.419	-1758.901	145.31	144.77	183.94	183.76
64	109	15278.696	17.064	3.629	35.583	34.418	1759.560	145.08	144.55	183.73	183.55
64	110	-14104.599	196.408	-3.143	-15.126	-71.626	-2300.748	128.59	127.48	178.99	178.61
65	110	14104.600	-196.408	2.890	24.036	62.480	2300.767	128.52	127.55	178.97	178.64
65	111	-14163.155	160.844	-3.173	-18.713	-86.951	-3489.662	119.39	118.03	195.94	195.48
66	111	14163.135	-160.844	3.085	22.371	86.949	3489.672	119.39	118.03	195.94	195.48
66	112	-14030.854	-146.611	-3.285	-19.271	-102.871	-3296.707	119.74	118.14	191.96	191.41
67	112	14030.899	146.611	3.279	19.416	102.868	3296.706	119.74	118.14	191.96	191.41
67	113	-13895.784	101.850	0.784	156.909	-13.314	-2741.387	122.27	122.07	182.70	182.63
68	113	13870.516	-101.850	-0.883	-155.434	13.312	2735.007	122.06	121.86	182.35	182.28
68	114	-13058.309	1377.207	-3.414	-24.463	47.778	-6204.241	84.12	84.86	221.27	221.52
69	114	13058.289	-1377.206	3.414	24.463	-47.777	6204.243	84.12	84.86	221.27	221.52
69	117	-18911.393	1847.563	-5.014	-52.816	26.712	-16783.133	-0.14	0.20	269.47	269.59
70	117	20245.969	2089.780	-12.411	-51.319	-7.473	16796.770	8.34	8.43	278.09	278.12
70	124	-14526.778	-930.301	10.022	37.768	27.505	-6637.816	95.98	96.41	242.60	242.74
71	124	14526.803	930.301	-10.162	-36.863	-27.506	6637.830	95.98	96.41	242.60	242.74
71	125	-15306.592	-45.801	3.634	137.416	56.304	-5051.241	117.16	118.04	228.91	229.21
72	125	15278.670	45.801	-3.204	-135.865	-56.305	5047.882	116.90	117.77	228.57	228.87
72	126	-14688.539	-167.907	-0.714	3.152	9.072	-4385.691	116.64	116.78	213.46	213.51
73	126	14688.520	167.908	0.856	-0.199	-9.071	4385.692	116.64	116.78	213.46	213.51
73	127	-14661.879	-228.289	-1.056	-6.526	4.296	-3390.462	124.71	124.78	199.55	199.57
74	127	14661.912	228.286	1.188	10.188	-4.295	3390.468	124.71	124.78	199.55	199.57
74	128	-14661.283	-194.858	-1.400	-18.896	-2.186	-2167.758	134.97	134.94	182.80	182.79
75	128	14661.253	194.859	1.401	18.898	2.185	2167.756	134.97	134.94	182.80	182.78
75	129	-13215.053	-13.692	-2.290	-28.111	-34.780	-1697.995	124.05	123.51	161.34	161.16
76	129	13194.103	13.694	1.872	32.492	34.780	1698.680	123.83	123.29	161.13	160.95
76	130	-13239.008	193.575	-4.523	-72.953	-71.587	-2230.288	120.14	119.03	168.99	168.61
77	130	13238.987	-193.576	4.083	77.370	71.587	2230.314	120.14	119.03	168.99	168.61
77	131	-13297.567	158.011	-4.296	-91.652	-92.528	-3405.112	111.10	109.66	185.76	185.27
78	131	13297.592	-158.010	4.714	87.969	92.529	3405.078	111.10	109.66	185.76	185.27
78	132	-13165.296	-149.443	-4.951	-103.671	-107.342	-3197.915	111.56	109.89	181.58	181.01
79	132	13165.295	149.442	3.638	112.578	116.595	3198.042	111.63	109.82	181.61	180.99
79	133	-13081.185	99.928	0.423	-43.124	24.144	-2693.898	113.88	114.25	173.44	173.57
80	133	13055.931	-99.928	0.022	41.409	-33.213	2687.562	113.59	114.11	173.07	173.24
80	134	-12942.721	1373.195	-5.800	-34.896	11.725	-6065.076	84.35	84.54	218.25	218.31
81	134	12942.706	-1373.195	5.384	34.094	-11.723	6065.090	84.35	84.54	218.25	218.31
81	137	-18795.809	1934.890	-9.409	1.034	-43.036	-16624.191	0.70	0.16	267.47	267.28
82	137	20361.064	1982.293	-9.705	25.684	52.393	16570.781	11.06	10.40	276.93	276.70
82	144	-14641.882	-914.039	8.105	-13.946	-7.875	-6493.627	98.66	98.54	241.91	241.87
83	144	14641.898	914.038	-7.741	12.292	7.873	6493.637	98.67	98.54	241.91	241.87
83	145	-14722.690	-36.820	0.056	205.001	102.827	-5015.037	111.00	112.60	222.19	222.74
84	145	14694.765	36.821	-0.046	-204.923	-102.827	5011.733	110.74	112.34	221.86	222.40
84	146	-15553.632	-163.383	1.338	73.776	-17.305	-4379.924	125.92	125.65	222.48	222.39

85	146	15553.635	163.383	-1.363	-73.925	17.307	4379.925	125.92	125.65	222.48	222.39
85	147	-15526.996	-223.761	1.163	51.651	-10.994	-3407.341	133.72	133.55	208.85	208.79
86	147	15526.997	223.760	-0.215	-44.143	10.995	3407.308	133.72	133.55	208.85	208.79
86	148	-15526.369	-190.257	0.004	20.919	-10.441	-2208.060	143.73	143.57	192.40	192.35
87	148	15526.359	190.258	0.020	-20.702	10.442	2208.058	143.73	143.57	192.40	192.35
87	149	-15530.327	-16.654	-0.220	-3.273	-11.041	-1741.874	147.68	147.50	186.06	186.00
88	149	15509.366	16.654	0.657	7.408	11.041	1742.548	147.45	147.28	185.85	185.79
88	150	-15554.268	190.445	-4.613	-88.266	-33.076	-2255.510	143.80	143.29	193.41	193.23
89	150	15554.279	-190.444	4.638	88.486	33.074	2255.515	143.80	143.29	193.41	193.23
89	151	-15612.858	154.889	-4.850	-113.773	-56.794	-3415.205	134.91	134.03	209.98	209.68
90	151	15612.846	-154.889	5.336	117.648	56.794	3415.254	134.91	134.02	209.98	209.68
90	152	-15455.100	-94.965	-5.226	-140.295	-23.037	-3270.315	134.21	133.85	206.26	206.13
91	152	15455.095	94.964	5.202	140.148	23.037	3270.310	134.21	133.85	206.26	206.13
91	153	-15345.503	100.290	-6.003	-216.082	-28.623	-2810.581	136.95	136.51	198.82	198.67
92	153	15320.222	-100.290	6.479	217.607	28.623	2804.342	136.74	136.29	198.47	198.32
92	154	-15257.959	1372.858	-12.969	-41.788	-151.269	-6103.779	109.47	107.12	243.38	242.58
93	154	15257.962	-1372.858	13.430	40.972	151.267	6103.797	109.47	107.12	243.38	242.58
93	157	-21111.063	1934.913	-16.549	35.627	-215.681	-16669.715	16.14	13.41	282.92	281.98
94	157	21227.793	2003.280	-14.467	12.547	236.133	16865.566	15.61	12.62	285.45	284.42
94	163	-15508.633	-934.823	12.861	-16.294	-176.458	-6683.855	107.44	104.69	254.02	253.08
95	163	15508.625	934.823	-12.361	15.606	167.799	6683.860	107.37	104.76	254.00	253.10
95	164	-15538.487	-73.104	3.381	155.725	-32.961	-5132.607	119.59	119.08	232.68	232.51
96	164	15510.561	73.104	-2.885	-154.282	32.962	5129.251	119.33	118.82	232.35	232.17
96	165	-14945.850	-241.535	2.423	98.179	-26.027	-4253.093	120.70	120.30	214.42	214.28
97	165	14945.831	241.536	-2.411	-98.029	26.027	4253.092	120.70	120.30	214.42	214.28
97	166	-12979.873	-262.876	3.398	88.491	-68.798	-3021.656	110.80	109.73	177.13	176.76
98	166	12979.899	262.876	-3.904	-84.690	68.799	3021.621	110.80	109.73	177.13	176.76
98	167	-12979.272	-228.795	3.694	60.500	-49.805	-1634.023	122.24	121.47	158.05	157.78
99	167	12979.272	228.795	-4.200	-56.106	49.805	1633.994	122.24	121.47	158.04	157.78
99	168	-12983.239	-55.193	4.000	33.181	-29.304	-975.114	127.63	127.18	149.00	148.84
100	168	12962.259	55.192	-4.027	-32.934	29.302	975.781	127.41	126.95	148.79	148.63
100	169	-13007.164	149.462	2.356	-29.858	-21.702	-1240.128	125.61	125.27	152.86	152.75
101	169	13007.177	-149.462	-2.862	34.432	21.702	1240.135	125.61	125.27	152.86	152.75
101	170	-13065.755	114.191	2.652	-54.197	-7.930	-2202.230	118.07	117.95	166.63	166.58
102	170	13065.748	-114.191	-2.651	54.198	7.930	2202.235	118.07	117.95	166.63	166.58
102	171	-12933.464	-193.263	2.451	-71.898	4.827	-1775.998	120.15	120.23	159.37	159.39
103	171	12933.479	193.263	-3.490	78.845	-4.828	1776.056	120.15	120.23	159.37	159.39
103	172	-12849.355	51.210	-0.185	-222.033	-41.652	-867.790	127.23	126.58	146.16	145.94
104	172	12827.520	-51.211	0.185	222.033	41.652	862.345	127.04	126.40	145.86	145.64
104	173	-12714.330	1337.515	-7.173	-36.518	-73.935	-4499.426	95.72	94.57	194.63	194.23
105	173	12714.338	-1337.515	7.146	36.507	73.937	4499.425	95.72	94.57	194.63	194.23
105	176	-17372.641	1813.189	-9.747	15.340	-94.641	-13007.588	17.83	16.63	226.30	225.89
106	176	17261.012	1757.873	-7.559	-40.748	84.740	12820.490	18.39	17.32	223.91	223.54
106	182	-11525.800	-266.531	2.595	13.188	-140.355	-3897.572	88.86	86.67	174.14	173.40
107	182	11525.794	266.532	-3.172	-13.976	140.355	3897.568	88.86	86.67	174.14	173.40
107	183	-14449.260	264.600	5.527	-11.498	-123.468	-4737.385	112.23	110.31	216.13	215.48
108	183	14502.376	-264.599	-5.498	11.530	123.468	4743.892	112.73	110.81	216.78	216.12
108	184	-14583.610	109.600	3.442	-1.549	-59.592	-5729.441	104.84	103.92	230.97	230.65
109	184	14583.604	-109.600	-2.932	2.822	59.592	5729.439	104.84	103.92	230.97	230.65
109	185	-14560.386	12.495	2.932	-2.447	-44.933	-6004.999	102.19	101.49	234.46	234.22
110	185	14560.386	-12.496	-2.904	2.537	44.933	6004.997	102.19	101.49	234.46	234.22
110	186	-14467.169	53.712	2.904	2.013	-30.416	-5948.832	101.57	101.10	232.68	232.52
111	186	14467.173	-53.712	-1.797	1.610	30.416	5948.832	101.57	101.10	232.68	232.52
111	187	-14360.176	116.076	1.797	7.315	-21.429	-6379.550	96.78	96.45	237.45	237.33
112	187	12112.969	-116.076	-1.797	-7.314	21.430	6444.202	72.78	72.45	214.87	214.76
112	188	-11987.508	60.403	1.598	20.825	-10.451	-6706.323	69.19	69.03	217.12	217.07
113	188	11987.513	-60.402	-1.258	-19.554	12.443	6706.319	69.21	69.02	217.13	217.06
113	189	-11877.187	72.965	1.059	37.840	-5.154	-6877.707	66.57	66.49	218.31	218.28
114	189	11877.185	-72.966	-1.031	-37.832	5.154	6877.706	66.57	66.49	218.31	218.28
114	192	-12143.375	870.215	0.062	89.724	0.000	-7741.979	62.09	62.09	232.92	232.92

proc Viaducto Papiol

HIPOTESIS 114

min mz + pret (t=0)(max)

		ESFUERZOS EN BARRAS						TENSIONES			
BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	MOM. Y	MOM. Z	SIGMA 1	SIGMA2	SIGMA3	SIGMA4
1	3	14281.942	426.169	-5.182	-1562.281	-3.109	2411.681	128.93	128.98	182.17	182.18
1	8	-14396.424	-539.119	4.910	-9.429	32.662	758.800	156.39	156.90	139.82	139.99
2	8	14396.390	539.119	-4.910	9.429	-32.662	-758.802	156.39	156.90	139.82	139.99
2	9	-14477.913	-280.600	2.910	-8.027	52.214	2734.556	173.60	174.42	113.53	113.81
3	9	14477.910	280.600	-2.928	16.354	-52.214	-2734.546	173.60	174.42	113.53	113.81
3	10	-14577.895	-195.152	0.904	-29.382	59.201	3597.620	181.81	182.73	102.72	103.04
4	10	15324.638	195.152	-0.898	24.214	-59.201	-4450.263	196.73	197.65	98.83	99.15
4	11	-15511.570	-93.037	-1.136	-7.374	51.951	5176.884	204.81	205.62	90.84	91.12
5	11	15511.584	93.037	1.158	13.068	-51.951	-5176.875	204.81	205.62	90.84	91.12
5	12	-15527.794	153.151	-3.158	7.107	41.160	5011.822	203.68	204.32	93.30	93.52
6	12	15527.794	-153.150	3.210	4.408	-41.160	-5011.820	203.68	204.32	93.30	93.52
6	13	-15497.451	306.831	-5.210	19.584	20.111	3939.697	194.57	194.88	107.74	107.85
7	13	15497.479	-306.830	5.182	-24.500	-20.110	-3939.691	194.57	194.88	107.74	107.85
7	14	-15498.816	30.670	-7.625	22.293	-33.108	2834.394	185.76	185.25	123.05	122.87
8	14	15473.516	-30.671	7.686	-14.664	33.108	-2840.732	185.55	185.03	122.70	122.52
8	15	-15412.994	-240.486	3.691	-32.379	-63.734	3179.842	187.99	187.00	117.50	117.16
9	15	15412.977	240.487	-3.692	32.262	63.733	-3179.843	187.99	187.00	117.50	117.16
9	18	-21149.330	436.943	-0.889	-30.806	-55.214	402.759	137.21	136.51	130.51	130.27
10	18	20967.824	1015.873	0.885	33.267	52.371	-406.742	136.07	135.40	129.32	129.09
10	24	-16184.759	37.306	-0.885	-29.117	-45.048	3696.167	200.22	199.52	118.43	118.19
11	24	16184.727	-37.306	0.792	31.678	45.048	-3696.155	200.22	199.52	118.43	118.19
11	25	-16234.804	-312.538	-0.538	11.767	63.230	3275.840	196.38	197.37	124.42	124.76
12	25	16203.426	312.538	0.337	-3.068	-63.229	-3286.419	196.15	197.13	123.95	124.29
12	26	-16457.420	-520.067	3.360	-49.895	106.893	5539.168	217.28	218.95	95.60	96.17
13	26	16457.396	520.068	-3.305	43.501	-106.892	-5539.186	217.28	218.95	95.60	96.17
13	27	-16343.713	-500.701	3.410	121.668	99.978	7956.911	236.36	237.91	61.29	61.82
14	27	16343.752	500.699	-3.497	-114.199	-99.978	-7956.956	236.36	237.91	61.29	61.82
14	28	-16341.691	-332.558	1.508	63.300	112.486	10198.033	254.97	256.72	30.51	31.11
15	28	16341.686	332.559	-1.690	-46.094	-112.487	-10198.079	254.97	256.72	30.51	31.11
15	29	-16637.902	-14.487	-0.939	0.933	109.931	11010.925	264.87	266.58	22.46	23.05
16	29	15868.588	14.487	0.918	-9.624	-109.932	-10149.639	249.64	251.35	26.24	26.82
16	30	-15917.035	319.928	-2.918	-36.337	100.338	9379.178	243.78	245.34	37.33	37.87
17	30	15917.050	-319.930	2.937	45.205	-100.337	-9379.160	243.78	245.34	37.33	37.87
17	31	-15979.232	418.766	-4.929	-88.797	80.692	7257.178	226.85	228.11	67.13	67.56
18	31	15979.180	-418.766	4.945	96.363	-80.692	-7257.137	226.85	228.11	67.13	67.56
18	32	-15845.165	232.436	-6.785	-53.115	33.022	5911.144	214.57	215.09	84.31	84.48
19	32	15845.162	-232.435	6.784	53.105	-33.023	-5911.142	214.57	215.09	84.31	84.48
19	33	-15719.436	369.120	-8.187	-63.088	-20.790	4911.647	205.33	205.00	96.84	96.73
20	33	15694.204	-369.120	8.198	67.295	20.789	-4917.946	205.12	204.79	96.49	96.38
20	34	-15864.893	513.873	-6.743	53.576	-167.499	2825.368	190.55	187.95	127.35	126.46
21	34	15864.921	-513.873	6.862	-51.050	167.500	-2825.388	190.55	187.95	127.35	126.46
21	37	-21713.273	844.620	-6.862	75.026	-190.060	-3080.084	116.78	114.37	165.45	164.62
22	37	21303.004	918.020	-2.222	96.163	179.614	3079.555	114.12	111.84	162.82	162.04
22	44	-15579.130	10.507	2.222	-70.913	-156.753	2033.360	180.87	178.43	135.20	134.36
23	44	15579.114	-10.507	-2.264	73.290	156.753	-2033.332	180.87	178.43	135.20	134.36

23	45	-15321.559	-342.197	7.813	184.735	65.332	2132.034	177.28	178.29	130.56	130.91
24	45	13796.933	342.197	-7.968	-180.703	-65.331	-1671.421	157.51	158.52	120.96	121.31
24	46	-14225.029	-580.314	5.129	82.857	95.820	4047.314	181.60	183.09	92.78	93.29
25	46	14225.074	580.313	-5.129	-82.864	-95.820	-4047.311	181.60	183.09	92.78	93.29
25	47	-14204.682	-519.944	5.286	238.377	154.228	6749.086	203.51	205.91	55.37	56.19
26	47	14204.691	519.944	-5.326	-230.853	-154.228	-6749.171	203.51	205.91	55.37	56.19
26	48	-14210.315	-351.431	3.339	138.675	175.889	9067.998	222.78	225.51	23.58	24.52
27	48	14210.255	351.429	-3.341	-138.229	-175.891	-9068.006	222.78	225.51	23.58	24.52
27	49	-14220.472	-26.817	1.341	47.160	187.593	9949.154	230.15	233.07	11.57	12.57
28	49	14199.521	26.819	-1.377	-38.349	-187.594	-9948.498	229.93	232.85	11.36	12.36
28	50	-14777.489	300.993	-1.045	-53.059	177.720	9241.524	230.13	232.90	27.12	28.06
29	50	14777.525	-300.992	1.440	61.009	-187.879	-9241.502	230.05	232.98	27.09	28.09
29	51	-14842.405	399.894	-3.209	-165.566	166.646	7189.943	213.75	216.34	55.95	56.84
30	51	14842.387	-399.894	3.379	173.286	-166.647	-7189.874	213.75	216.34	55.95	56.84
30	52	-14716.352	212.683	-5.199	-98.360	89.451	5910.888	202.35	203.74	72.37	72.85
31	52	14716.377	-212.682	5.200	98.360	-89.450	-5910.881	202.35	203.74	72.37	72.85
31	53	-14613.033	348.964	-6.267	-156.626	94.644	4986.197	193.50	194.97	83.96	84.46
32	53	14587.745	-348.964	6.450	161.273	-94.643	-4992.457	193.29	194.76	83.61	84.11
32	54	-14096.765	478.783	-0.098	105.243	-191.794	3097.506	174.56	171.57	105.22	104.20
33	54	14096.743	-478.783	0.096	-105.386	191.795	-3097.504	174.56	171.57	105.22	104.20
33	57	-19944.848	809.518	-0.096	128.461	-204.027	-2650.875	108.73	106.14	150.44	149.56
34	57	19302.877	903.554	-5.901	106.979	197.149	2651.649	104.61	102.11	146.37	145.51
34	64	-13578.700	-47.793	2.062	-176.864	-126.910	2713.096	165.43	163.46	104.91	104.24
35	64	13578.709	47.794	-2.050	176.721	126.910	-2713.099	165.43	163.46	104.91	104.24
35	65	-14072.264	-320.609	5.810	195.355	126.757	2698.760	168.49	170.46	109.59	110.26
36	65	14044.338	320.609	-5.935	-186.281	-126.756	-2702.209	168.23	170.20	109.25	109.92
36	66	-13734.932	-547.133	3.713	88.571	105.791	4971.020	184.12	185.77	74.97	75.53
37	66	13734.921	547.130	-3.725	-88.238	-105.791	-4971.023	184.12	185.77	74.97	75.53
37	67	-13702.033	-486.774	3.230	241.074	175.376	7533.781	204.65	207.38	39.31	40.24
38	67	13701.987	486.774	-3.448	-233.675	-175.376	-7533.873	204.65	207.38	39.31	40.24
38	68	-13695.111	-318.249	1.461	132.864	187.657	9714.082	222.70	225.62	9.31	10.31
39	68	13695.117	318.250	-1.239	-141.096	-187.658	-9714.032	222.70	225.62	9.31	10.31
39	69	-14449.946	-0.055	-1.186	45.069	196.000	10456.244	236.72	239.77	7.00	8.04
40	69	14428.977	0.056	1.343	-17.612	-196.002	-10455.596	236.50	239.55	6.79	7.83
40	70	-14467.632	334.416	-3.343	-83.241	184.293	9609.844	229.93	232.79	18.81	19.80
41	70	14467.645	-334.416	3.290	74.102	-184.294	-9609.874	229.93	232.79	18.81	19.80
41	71	-14519.977	433.941	-5.278	-175.077	162.859	7417.049	212.31	214.85	49.48	50.35
42	71	14520.018	-433.941	5.327	183.277	-162.862	-7416.986	212.31	214.85	49.48	50.35
42	72	-14381.479	247.239	-6.317	-81.262	74.304	5993.233	199.66	200.81	67.79	68.19
43	72	14381.424	-247.240	6.362	87.601	-74.304	-5993.203	199.66	200.81	67.79	68.19
43	73	-14265.580	382.153	-8.754	-178.189	73.361	4926.356	189.54	190.68	81.21	81.60
44	73	14240.322	-382.152	8.756	178.422	-73.362	-4932.676	189.33	190.47	80.86	81.25
44	74	-14690.842	501.677	0.281	170.339	-165.492	2962.401	179.42	176.85	113.21	112.33
45	74	14690.845	-501.677	0.021	-168.200	173.184	-2962.468	179.48	176.79	113.23	112.31
45	77	-20548.988	832.420	0.034	201.611	-177.070	-2878.953	110.76	108.51	156.25	155.48
46	77	19676.309	904.075	-5.436	74.152	163.495	2877.759	105.15	103.08	150.68	149.97
46	84	-13962.123	-47.938	4.081	-113.159	-194.084	2527.464	168.40	165.39	111.64	110.61
47	84	13962.140	47.938	-4.086	113.300	194.085	-2527.463	168.40	165.39	111.64	110.61
47	85	-13444.188	-318.404	7.397	185.135	40.969	2562.633	161.46	162.10	105.12	105.34
48	85	13416.193	318.404	-7.696	-180.774	-40.971	-2566.000	161.20	161.84	104.79	105.00
48	86	-14144.289	-556.156	6.290	122.044	44.398	4843.541	187.81	188.50	81.15	81.39
49	86	14144.375	556.155	-6.364	-115.724	-44.398	-4843.585	187.81	188.50	81.15	81.39
49	87	-14123.981	-495.897	5.761	214.196	106.667	7425.054	208.68	210.34	45.39	45.95
50	87	14123.959	495.894	-5.765	-213.787	-106.667	-7425.058	208.68	210.34	45.39	45.95
50	88	-14129.582	-327.456	3.777	137.134	130.533	9624.370	226.94	228.97	15.23	15.92
51	88	14129.622	327.459	-3.847	-128.456	-130.536	-9624.414	226.94	228.97	15.23	15.92
51	89	-15128.055	-9.495	1.228	54.530	154.664	10387.016	243.55	245.95	15.13	15.96
52	89	15107.086	9.493	-1.227	-54.538	-154.666	-10386.335	243.32	245.73	14.92	15.75
52	90	-15158.245	324.861	-0.773	-24.997	155.799	9561.251	236.95	239.37	26.77	27.60
53	90	15158.179	-324.860	1.101	34.137	-155.801	-9561.235	236.95	239.37	26.77	27.60
53	91	-15223.011	424.256	-3.088	-115.213	145.320	7389.829	219.56	221.82	57.24	58.01
54	91	15222.998	-424.257	3.401	123.000	-145.321	-7389.781	219.56	221.82	57.24	58.01

54	92	-15096.966	237.406	-4.453	-49.586	86.002	5987.955	206.99	208.33	75.30	75.76
55	92	15097.031	-237.406	4.785	56.255	-86.004	-5987.930	206.99	208.33	75.30	75.76
55	93	-14993.687	372.093	-7.116	-156.460	83.426	4943.476	197.21	198.50	88.55	88.99
56	93	14968.428	-372.094	7.100	156.228	-83.429	-4949.801	197.00	198.29	88.20	88.64
56	94	-14306.478	492.099	2.391	164.127	-67.224	3010.912	175.05	174.01	108.27	107.91
57	94	14306.478	-492.099	-2.386	-163.985	67.225	-3010.915	175.05	174.01	108.27	107.91
57	97	-20154.582	786.635	-7.927	-163.865	-135.974	-2804.037	108.53	106.81	152.99	152.40
58	97	19050.908	941.497	-9.515	-298.530	117.279	2807.434	101.40	99.91	145.99	145.48
58	104	-13227.700	-49.179	2.360	3.254	-184.800	2585.273	161.15	158.27	103.15	102.17
59	104	13227.729	49.179	-2.340	-3.394	184.800	-2585.271	161.15	158.27	103.16	102.17
59	105	-13253.772	-317.275	7.953	136.402	20.282	2640.417	160.29	160.60	102.12	102.23
60	105	13225.884	317.275	-8.364	-131.543	-20.285	-2643.776	160.02	160.34	101.79	101.90
60	106	-13353.977	-549.201	6.865	123.386	40.965	4916.433	180.19	180.83	71.91	72.13
61	106	13353.951	549.201	-6.846	-123.719	-40.964	-4916.439	180.19	180.83	71.91	72.13
61	107	-13327.308	-489.139	5.871	113.275	78.745	7477.169	201.02	202.24	36.43	36.85
62	107	13327.306	489.139	-6.195	-105.425	-70.651	-7477.215	201.08	202.18	36.45	36.83
62	108	-13326.667	-320.918	4.278	83.818	105.111	9656.665	219.02	220.65	6.47	7.03
63	108	13326.653	320.920	-4.651	-75.127	-105.108	-9656.694	219.02	220.65	6.47	7.03
63	109	-13330.619	3.358	2.651	51.327	123.370	10399.522	225.13	227.05	-3.72	-3.06
64	109	13309.670	-3.358	-2.278	-60.305	-123.372	-10398.827	224.90	226.82	-3.93	-3.27
64	110	-14573.614	331.331	0.411	36.879	144.195	9549.240	230.84	233.08	20.86	21.63
65	110	14573.643	-331.333	-0.228	-19.079	-144.193	-9549.260	230.84	233.08	20.86	21.63
65	111	-14632.224	430.515	-1.760	-9.704	140.355	7359.504	213.18	215.36	51.50	52.25
66	111	14632.186	-430.514	1.848	17.490	-140.355	-7359.495	213.18	215.36	51.50	52.25
66	112	-14499.904	243.451	-2.883	-11.473	126.353	5940.083	200.05	202.01	69.62	70.29
67	112	14499.910	-243.451	2.888	11.800	-126.354	-5940.080	200.05	202.01	69.62	70.29
67	113	-14390.316	377.808	-5.528	-87.029	105.198	4882.229	190.23	191.86	83.03	83.59
68	113	14365.069	-377.809	5.617	91.401	-105.196	-4888.517	190.01	191.65	82.68	83.24
68	114	-14302.867	495.917	2.203	90.419	72.735	2968.038	173.57	174.70	108.45	108.83
69	114	14302.831	-495.917	-2.203	-90.418	-72.735	-2968.037	173.57	174.70	108.45	108.83
69	117	-20155.930	754.273	-1.991	38.853	-80.806	-2852.149	107.85	106.82	153.31	152.96
70	117	18821.348	978.321	-1.767	-107.201	61.571	2838.354	99.37	98.59	144.69	144.42
70	124	-13102.160	-49.800	1.767	105.101	-52.736	2568.349	158.67	157.85	101.72	101.44
71	124	13102.198	49.801	-1.337	-107.877	52.736	-2568.307	158.67	157.85	101.73	101.44
71	125	-13881.978	-318.060	8.887	28.201	8.837	2624.465	166.80	166.94	108.93	108.98
72	125	13854.031	318.060	-9.027	-23.580	-8.840	-2627.780	166.54	166.67	108.60	108.64
72	126	-13988.378	-550.349	8.067	69.386	68.801	4891.154	186.39	187.46	78.81	79.18
73	126	13988.381	550.351	-8.207	-62.722	-68.801	-4891.181	186.39	187.46	78.81	79.18
73	127	-13961.737	-490.383	6.489	-68.934	59.046	7458.086	207.64	208.55	43.37	43.68
74	127	13961.732	490.379	-6.622	76.718	-59.045	-7458.052	207.64	208.55	43.37	43.68
74	128	-13961.104	-322.238	4.634	-25.649	87.186	9643.975	225.68	227.03	13.32	13.78
75	128	13961.097	322.240	-4.634	25.655	-87.186	-9643.977	225.68	227.03	13.32	13.78
75	129	-15415.231	-5.564	3.322	21.406	130.444	10412.951	246.95	248.98	17.84	18.54
76	129	15394.270	5.565	-2.903	-12.424	-130.447	-10412.289	246.72	248.75	17.63	18.33
76	130	-15439.176	328.558	0.903	58.302	139.964	9581.510	240.18	242.35	29.46	30.21
77	130	15439.171	-328.557	-0.464	-49.161	-139.965	-9581.540	240.18	242.35	29.46	30.21
77	131	-15497.751	427.748	-1.524	92.680	137.309	7405.667	222.63	224.76	59.91	60.64
78	131	15497.763	-427.749	1.106	-100.469	-137.311	-7405.630	222.63	224.76	59.91	60.64
78	132	-15365.478	240.725	-2.087	21.479	179.945	5999.830	209.16	211.96	77.69	78.65
79	132	15365.484	-240.727	3.362	-2.126	-179.944	-5999.843	209.17	211.96	77.69	78.65
79	133	-15255.887	375.601	-6.365	-6.297	106.829	4945.358	199.78	201.44	91.20	91.77
80	133	15230.629	-375.600	5.947	1.904	-106.830	-4951.676	199.57	201.23	90.85	91.42
80	134	-15117.429	493.809	1.457	-36.417	172.787	3064.913	182.10	184.79	115.36	116.28
81	134	15117.412	-493.809	-1.049	39.083	-172.787	-3064.902	182.10	184.79	115.36	116.28
81	137	-20970.512	751.836	-0.336	-77.670	103.972	-2729.326	112.71	114.03	156.97	157.42
82	137	19405.252	974.329	2.816	-166.092	-113.328	2782.735	102.36	103.79	147.51	148.01
82	144	-13686.069	-45.803	-2.816	142.842	99.249	2603.963	163.88	165.42	106.93	107.46
83	144	13686.078	45.803	2.433	-137.399	-99.248	-2604.073	163.88	165.42	106.93	107.45
83	145	-13766.854	-305.890	5.819	-91.697	4.496	2663.833	165.96	166.03	107.20	107.23
84	145	13738.926	305.891	-5.829	91.928	-4.494	-2667.133	165.70	165.77	106.87	106.89
84	146	-13123.275	-537.812	2.735	-19.730	72.708	4872.237	177.17	178.30	70.03	70.41

85	146	13123.280	537.812	-2.710	19.394	-72.709	-4872.244	177.17	178.30	70.03	70.41
85	147	-13096.638	-477.636	2.261	-203.009	16.487	7375.996	198.25	198.50	35.57	35.66
86	147	13096.639	477.635	-3.209	218.931	-16.487	-7375.834	198.25	198.50	35.57	35.66
86	148	-13096.010	-309.382	1.219	-122.208	27.554	9498.519	215.89	216.32	6.44	6.58
87	148	13096.005	309.384	-1.243	122.658	-27.552	-9498.515	215.89	216.32	6.44	6.58
87	149	-13099.973	15.037	-0.757	-27.078	28.773	10183.281	221.65	222.10	-2.91	-2.76
88	149	13079.010	-15.038	0.319	35.505	-28.770	-10182.590	221.42	221.87	-3.12	-2.97
88	150	-13123.912	349.357	-2.319	59.142	22.175	9248.345	214.14	214.48	10.17	10.29
89	150	13123.922	-349.357	2.295	-58.692	-22.173	-9248.347	214.14	214.48	10.17	10.29
89	151	-13182.501	448.712	-4.282	152.622	5.731	6968.550	195.82	195.91	42.08	42.11
90	151	13182.490	-448.712	3.796	-144.594	-5.730	-6968.603	195.82	195.91	42.08	42.11
90	152	-13050.203	261.907	-6.473	8.753	18.504	5457.339	181.71	182.00	61.39	61.48
91	152	13050.211	-261.907	6.498	-9.074	-18.503	-5457.340	181.71	182.00	61.39	61.48
91	153	-12940.616	396.097	-7.697	74.295	-39.408	4330.707	171.61	170.99	75.84	75.63
92	153	12915.336	-396.097	7.210	-69.915	39.408	-4337.060	171.39	170.78	75.49	75.28
92	154	-12853.083	432.252	1.677	-123.176	75.969	2372.029	153.43	154.61	101.47	101.88
93	154	12853.094	-432.252	-2.129	125.579	-75.969	-2371.981	153.43	154.61	101.47	101.88
93	157	-18706.193	762.982	2.129	-156.079	86.615	-3132.952	95.60	96.70	146.27	146.64
94	157	18589.445	985.492	3.991	-145.639	-107.068	2937.407	96.12	97.48	143.74	144.20
94	163	-12870.272	-56.954	-3.991	115.289	87.112	2505.134	154.63	155.99	99.80	100.26
95	163	12870.271	56.954	3.495	-112.676	-87.112	-2505.178	154.63	155.99	99.80	100.26
95	164	-12900.102	-300.669	5.770	-111.791	-19.924	2655.728	157.03	156.72	98.33	98.22
96	164	12872.191	300.669	-6.277	116.194	19.924	-2658.985	156.77	156.46	97.99	97.89
96	165	-13756.543	-536.721	4.809	-71.806	12.911	4844.620	184.01	184.21	77.18	77.24
97	165	13756.531	536.721	-4.820	72.139	-12.912	-4844.620	184.01	184.21	77.18	77.24
97	166	-15643.727	-499.591	5.324	-189.805	0.818	7405.593	225.21	225.22	61.80	61.81
98	166	15643.733	499.591	-4.818	197.569	-0.820	-7405.520	225.21	225.22	61.80	61.81
98	167	-15643.107	-331.795	2.828	-131.256	19.935	9644.804	243.77	244.08	31.05	31.15
99	167	15643.104	331.793	-2.322	139.935	-19.936	-9644.757	243.77	244.08	31.05	31.15
99	168	-15647.070	-7.279	0.322	-72.036	26.544	10441.348	250.41	250.83	20.15	20.29
100	168	15626.111	7.279	-0.295	72.511	-26.545	-10440.680	250.19	250.60	19.94	20.08
100	169	-15671.018	327.111	-1.706	-2.650	23.019	9617.800	243.81	244.17	31.70	31.82
101	169	15671.012	-327.110	2.211	11.349	-23.020	-9617.802	243.81	244.17	31.70	31.82
101	170	-15729.590	426.251	-4.201	60.911	7.000	7456.421	226.48	226.59	61.98	62.02
102	170	15729.586	-426.252	4.201	-60.908	-7.000	-7456.421	226.48	226.59	61.98	62.02
102	171	-15571.833	198.484	-1.327	-20.824	-53.592	6254.946	215.27	214.43	76.97	76.69
103	171	15571.837	-198.483	2.346	34.035	53.592	-6254.929	215.27	214.43	76.97	76.69
103	172	-15462.242	353.614	-2.356	58.977	-63.848	5285.513	206.10	205.11	89.14	88.80
104	172	15440.422	-353.616	2.356	-58.977	63.848	-5290.957	205.92	204.93	88.84	88.50
104	173	-15352.717	393.304	0.626	-117.155	53.861	3888.471	192.37	193.21	106.84	107.13
105	173	15352.717	-393.303	-0.600	117.312	-53.861	-3888.470	192.37	193.21	106.84	107.13
105	176	-20011.018	635.002	0.600	-131.062	56.861	589.293	130.62	131.34	121.39	121.64
106	176	20122.643	727.438	-0.453	22.682	-46.960	-402.168	130.05	130.65	123.79	123.99
106	182	-14387.434	228.655	0.453	-33.332	49.226	4545.604	187.82	188.58	87.76	88.03
107	182	14387.434	-228.655	0.114	35.921	-49.226	-4545.589	187.82	188.58	87.77	88.03
107	183	-11562.177	39.160	2.924	-27.991	88.153	4053.352	153.90	155.27	64.91	65.38
108	183	11615.290	-39.159	-2.953	28.199	-88.153	-4046.845	154.40	155.77	65.56	66.03
108	184	-11721.990	-191.443	0.542	-9.520	117.005	4511.889	159.18	161.00	60.22	60.84
109	184	11721.988	191.443	-1.062	14.480	-117.005	-4511.886	159.18	161.00	60.22	60.84
109	185	-11698.770	-126.735	-0.938	-57.721	117.315	5337.015	165.83	167.65	48.66	49.29
110	185	11698.764	126.734	0.909	58.037	-117.315	-5337.015	165.83	167.65	48.66	49.29
110	186	-11605.547	76.298	-2.909	-95.635	107.769	5684.788	167.84	169.51	42.95	43.52
111	186	11605.548	-76.298	1.783	108.331	-107.769	-5684.710	167.84	169.51	42.95	43.52
111	187	-11498.551	300.477	-3.783	-139.988	93.852	4736.532	158.90	160.36	54.87	55.37
112	187	9251.348	-300.476	3.783	139.989	-93.853	-4671.882	134.90	136.36	32.29	32.79
112	188	-9125.885	397.696	-4.862	-109.030	62.991	3114.128	120.81	121.79	52.42	52.75
113	188	9125.884	-397.695	4.313	113.747	-62.991	-3114.083	120.81	121.79	52.42	52.76
113	189	-9015.560	572.451	-6.314	-124.452	36.423	850.748	100.95	101.52	82.37	82.56
114	189	9015.558	-572.452	6.285	124.614	-36.423	-850.746	100.95	101.52	82.37	82.56
114	192	-8581.275	636.138	-2.540	-139.049	0.000	-1735.436	75.09	75.09	113.39	113.39

proc Viaducto Papiol

HIPOTESIS 115

max mz + pret (t=inf)(max)

ESFUERZOS EN BARRAS

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	MOM. Y	MOM. Z
1	3	11058.625	447.663	-3.054	1563.393	3.110	1960.521
1	8	-11138.686	9.098	-4.042	53.235	7.832	-1857.736
2	8	11138.658	-9.099	4.042	-53.235	-7.832	1857.737
2	9	-11193.369	119.647	-4.042	35.460	18.774	-2232.907
3	9	11193.382	-119.647	-5.917	-27.446	6.020	2232.884
3	10	-11262.299	104.070	-4.064	17.831	29.607	-3032.067
4	10	11837.279	-104.071	4.054	-19.606	-29.607	2375.546
4	11	-11850.153	106.303	-4.021	7.163	47.224	-2893.904
5	11	11850.161	-106.302	4.003	-5.394	-47.224	2893.903
5	12	-11854.581	207.652	-4.003	-3.456	58.360	-3686.825
6	12	11854.576	-207.652	3.963	6.437	-58.360	3686.827
6	13	-11823.150	237.760	-3.963	-12.462	69.695	-4737.086
7	13	11823.176	-237.759	3.984	11.625	-69.694	4737.080
7	14	-11795.148	154.460	-1.215	7.345	-15.904	-5744.523
8	14	11775.667	-154.461	1.154	-7.650	15.904	5739.646
8	15	-11749.180	349.966	-1.397	10.933	-23.884	-6413.042
9	15	11749.154	-349.966	1.398	-10.846	23.885	6413.042
9	18	-16239.983	1447.315	-8.185	54.335	-44.260	-13622.419
10	18	16421.561	2120.419	-10.186	-58.882	47.107	13626.553
10	24	-12736.241	-1039.009	5.756	37.017	9.001	-5152.690
11	24	12736.145	1039.009	-5.724	-38.083	-9.000	5152.678
11	25	-12945.557	-168.594	0.512	-153.376	80.857	-2414.722
12	25	12921.394	168.593	-0.311	156.123	-80.857	2406.706
12	26	-12998.895	-193.732	1.955	15.204	-104.120	-1476.010
13	26	12998.956	193.732	-2.044	-17.829	104.120	1476.013
13	27	-12988.330	-201.345	1.844	25.880	-94.403	-500.109
14	27	12988.309	201.345	-1.757	-22.648	94.403	500.098
14	28	-12997.785	-134.614	1.546	32.635	-86.140	459.842
15	28	12997.800	134.614	-1.363	-25.153	86.141	-459.863
15	29	-12717.297	65.571	2.960	75.373	-99.510	597.522
16	29	12124.887	-65.570	-2.940	-79.075	99.510	65.696
16	30	-12173.253	245.729	2.740	92.775	-85.308	-872.948
17	30	12173.277	-245.729	-2.759	-89.183	85.307	872.909
17	31	-12232.220	259.707	2.551	104.523	-72.051	-2370.018
18	31	12232.222	-259.709	-2.567	-101.725	72.050	2369.980
18	32	-11987.082	77.496	-0.458	52.197	13.426	-3023.164
19	32	11987.028	-77.495	0.458	-52.200	-13.425	3023.166
19	33	-11791.054	287.919	3.721	64.334	38.510	-3566.235
20	33	11771.715	-287.919	-3.832	-63.890	-38.510	3561.341
20	34	-11966.096	1422.340	-5.190	17.207	50.895	-7550.439
21	34	11966.105	-1422.340	5.182	-19.158	-50.893	7550.430
21	37	-16471.738	1853.351	-6.782	24.938	20.986	-17693.512
22	37	16881.826	2082.869	-10.151	-132.651	-10.532	17693.967
22	44	-12476.844	-1100.015	5.842	61.209	73.930	-7787.313
23	44	12476.849	1100.015	-5.681	-63.121	-73.931	7787.287

TENSIONES

BARRA	NUDO	SIGMA 1	SIGMA2	SIGMA3	SIGMA4
1	3	99.10	99.05	142.34	142.33
1	8	100.71	100.83	141.74	141.78
2	8	100.71	100.83	141.74	141.78
2	9	98.06	98.35	147.43	147.53
3	9	98.25	98.16	147.49	147.46
3	10	92.02	92.48	159.07	159.23
4	10	103.51	103.97	156.08	156.23
4	11	99.17	99.91	163.27	163.52
5	11	99.17	99.91	163.27	163.52
5	12	92.50	93.41	174.16	174.47
6	12	92.50	93.41	174.16	174.47
6	13	83.31	84.40	188.20	188.57
7	13	83.31	84.40	188.20	188.57
7	14	75.27	75.02	201.94	201.86
8	14	75.10	74.86	201.67	201.59
8	15	69.26	68.89	210.65	210.52
9	15	69.26	68.89	210.65	210.52
9	18	5.94	5.38	224.50	224.31
10	18	7.08	6.49	225.70	225.49
10	24	89.84	89.98	203.59	203.64
11	24	89.84	89.98	203.59	203.64
11	25	114.35	115.61	168.05	168.48
12	25	114.17	115.42	167.69	168.12
12	26	124.19	122.57	156.23	155.67
13	26	124.19	122.57	156.23	155.67
13	27	132.16	130.69	142.71	142.21
14	27	132.16	130.69	142.71	142.21
14	28	140.22	138.88	129.63	129.17
15	28	140.22	138.88	129.63	129.17
15	29	138.54	137.00	124.85	124.32
16	29	126.82	125.27	127.76	127.23
16	30	120.46	119.14	139.29	138.84
17	30	120.46	119.14	139.29	138.84
17	31	108.47	107.35	160.39	160.01
18	31	108.47	107.35	160.39	160.01
18	32	99.78	99.99	166.56	166.63
19	32	99.78	99.99	166.56	166.63
19	33	93.00	93.60	171.89	172.10
20	33	92.84	93.44	171.62	171.83
20	34	61.44	62.23	228.31	228.58
21	34	61.44	62.23	228.31	228.58
21	37	-22.06	-21.79	262.15	262.24
22	37	-19.40	-19.26	264.77	264.82
22	44	64.61	65.76	236.83	237.22
23	44	64.61	65.76	236.83	237.22

23	45	-12210.031	-241.950	-1.780	-253.660	33.555	-5288.851	83.02	83.54	199.90	200.08
24	45	11036.041	241.950	1.817	254.128	-33.554	5643.674	67.80	68.32	192.50	192.68
24	46	-11374.458	-307.519	-5.190	-149.835	14.493	-4179.852	83.71	83.94	176.02	176.10
25	46	11374.508	307.518	5.190	149.833	-14.492	4179.854	83.71	83.94	176.02	176.10
25	47	-11127.257	-256.945	1.899	-17.706	-49.547	-2816.034	93.03	92.26	154.91	154.65
26	47	11127.250	256.945	-1.858	20.451	49.547	2816.042	93.03	92.26	154.91	154.65
26	48	-11120.517	-190.484	1.645	3.318	-40.789	-1555.302	103.42	102.79	137.54	137.32
27	48	11120.451	190.484	-1.644	-3.145	40.790	1555.300	103.42	102.79	137.53	137.32
27	49	-11117.304	5.698	5.102	97.960	-45.850	-1064.207	107.53	106.82	130.78	130.54
28	49	11101.159	-5.698	-5.285	-93.445	57.105	1064.693	107.45	106.56	130.65	130.35
28	50	-10602.677	192.354	5.507	112.022	-19.423	-1579.510	97.65	97.35	132.40	132.30
29	50	10602.696	-192.354	-5.682	-108.568	19.423	1579.464	97.65	97.35	132.40	132.30
29	51	-10641.556	205.747	5.471	124.242	8.457	-2789.512	87.73	87.86	149.32	149.37
30	51	10641.561	-205.746	-5.640	-121.465	-8.457	2789.462	87.73	87.86	149.32	149.37
30	52	-10533.453	7.883	5.440	137.790	36.158	-3134.137	83.50	84.07	152.85	153.04
31	52	10533.453	-7.884	-5.440	-137.791	-36.158	3134.137	83.50	84.07	152.85	153.04
31	53	-10841.055	263.194	1.438	170.974	18.297	-3457.603	84.15	84.43	160.54	160.64
32	53	10821.584	-263.195	-1.462	-170.317	-18.297	3452.664	83.99	84.27	160.27	160.37
32	54	-10349.548	1414.579	-0.714	-40.329	232.287	-7415.521	44.28	47.89	209.10	210.34
33	54	10349.546	-1414.579	0.723	40.418	-232.287	7415.522	44.28	47.89	209.10	210.34
33	57	-14850.188	1844.999	-2.323	-66.248	224.672	-17489.104	-32.16	-29.31	249.61	250.58
34	57	15492.181	2065.089	-4.934	-152.647	-217.793	17488.322	-28.04	-25.28	253.68	254.63
34	64	-11082.161	-1082.991	1.080	42.174	238.559	-7647.420	49.94	53.65	219.91	221.18
35	64	11082.124	1082.991	-1.083	-42.087	-238.562	7647.420	49.94	53.65	219.91	221.18
35	65	-11561.698	-223.683	-6.919	-271.147	18.754	-5123.272	77.75	78.04	190.90	191.00
36	65	11540.203	223.684	7.390	272.514	-18.753	5120.944	77.55	77.84	190.64	190.74
36	66	-11644.165	-244.490	-3.298	-112.436	56.328	-3766.852	89.65	90.53	173.06	173.36
37	66	11644.157	244.490	3.310	112.542	-56.325	3766.851	89.65	90.53	173.06	173.36
37	67	-11629.894	-252.104	-3.510	-84.117	39.275	-2535.107	99.93	100.54	156.07	156.28
38	67	11629.920	252.105	3.729	86.814	-39.275	2535.137	99.93	100.54	156.07	156.28
38	68	-11635.688	-185.664	-3.942	-58.352	20.090	-1325.864	110.25	110.56	139.61	139.71
39	68	11635.646	185.663	3.720	55.177	-20.088	1325.842	110.25	110.56	139.61	139.71
39	69	-10887.834	17.117	0.997	47.643	-27.638	-882.108	106.52	106.09	125.84	125.69
40	69	10871.694	-5.154	12.928	219.889	-38.789	882.587	105.83	106.43	125.50	125.71
40	70	-10912.526	197.272	0.953	65.381	-22.375	-1449.859	101.99	101.64	133.87	133.75
41	70	10912.529	-197.274	-0.901	-68.885	22.374	1449.886	101.99	101.64	133.87	133.75
41	71	-10963.889	210.596	0.689	97.221	-18.389	-2711.917	91.95	91.66	151.70	151.60
42	71	10963.888	-210.596	-0.738	-94.274	18.391	2711.874	91.95	91.66	151.70	151.60
42	72	-10868.277	12.736	0.538	122.474	-15.198	-3107.597	87.62	87.38	156.11	156.03
43	72	10868.268	-12.736	-0.583	-120.528	15.198	3107.549	87.62	87.38	156.11	156.03
43	73	-10256.862	274.721	2.764	259.599	-22.690	-3493.562	78.07	77.72	155.04	154.92
44	73	10237.411	-274.722	-2.778	-259.566	22.691	3488.687	77.91	77.55	154.77	154.65
44	74	-10709.384	1434.465	-3.064	-28.510	172.946	-7594.209	47.00	49.69	215.46	216.38
45	74	10709.415	-1434.465	3.023	26.782	-172.948	7594.218	47.00	49.69	215.46	216.39
45	77	-15222.559	1865.442	-4.623	-47.709	153.832	-17795.438	-31.54	-29.59	254.85	255.52
46	77	16095.203	2077.386	-7.638	-151.522	-140.257	17796.736	-25.93	-24.16	260.42	261.03
46	84	-11697.684	-1094.781	4.322	56.540	156.776	-7923.287	54.70	57.14	230.34	231.17
47	84	11697.700	1094.781	-4.307	-56.633	-156.775	7923.285	54.70	57.14	230.34	231.17
47	85	-11168.263	-232.777	-6.100	-169.953	-9.310	-5294.639	72.43	72.28	189.21	189.16
48	85	11146.729	232.778	6.179	170.552	9.310	5292.162	72.23	72.08	188.96	188.91
48	86	-11234.696	-245.692	-3.306	-111.865	6.976	-3972.099	84.05	84.16	171.73	171.77
49	86	11234.706	245.692	3.378	113.803	-6.974	3972.142	84.05	84.16	171.73	171.77
49	87	-11207.939	-253.316	-3.578	-88.378	-10.419	-2707.544	94.47	94.31	154.16	154.11
50	87	11207.954	253.316	3.583	88.524	10.422	2707.547	94.47	94.31	154.16	154.11
50	88	-11201.221	-186.872	-3.796	-64.136	-28.879	-1465.456	104.93	104.48	137.11	136.96
51	88	11201.219	186.873	3.865	67.443	28.879	1465.486	104.93	104.48	137.12	136.96
51	89	-10209.808	-7.792	-3.446	-48.163	-58.609	-989.431	98.78	97.87	120.32	120.00
52	89	10193.655	7.791	3.446	48.160	58.607	989.955	98.61	97.70	120.16	119.84
52	90	-10221.984	196.202	-0.348	35.884	-64.275	-1524.811	94.48	93.48	127.80	127.46
53	90	10221.998	-196.201	0.019	-32.402	64.275	1524.799	94.48	93.48	127.80	127.46
53	91	-10260.856	209.517	-0.232	53.573	-64.894	-2754.692	84.61	83.60	145.07	144.72
54	91	10260.850	-209.518	-0.082	-50.786	64.893	2754.672	84.61	83.60	145.07	144.72

54	92	-10152.744	11.657	-0.118	70.736	-64.983	-3118.209	80.45	79.44	148.92	148.58
55	92	10152.737	-11.657	-0.216	-68.692	64.985	3118.182	80.45	79.44	148.92	148.58
55	93	-10631.318	274.892	1.764	270.885	-19.423	-3480.421	82.06	81.76	158.76	158.66
56	93	10611.877	-274.892	-1.759	-270.917	19.422	3475.561	81.90	81.60	158.49	158.39
56	94	-9968.863	1436.056	-1.750	-24.928	129.721	-7563.388	39.87	41.88	207.42	208.12
57	94	9968.864	-1436.056	1.734	24.836	-129.722	7563.388	39.87	41.88	207.42	208.12
57	97	-14469.508	1866.862	-3.334	-52.979	117.048	-17745.404	-35.72	-34.24	249.72	250.23
58	97	15573.110	2070.599	-9.110	-135.067	-99.955	17741.832	-28.59	-27.33	256.71	257.15
58	104	-11163.087	-1088.165	6.353	64.650	108.854	-7875.007	49.89	51.59	224.22	224.80
59	104	11163.117	1088.165	-6.358	-64.560	-108.858	7875.008	49.89	51.59	224.22	224.80
59	105	-11322.665	-229.168	-2.226	-11.484	38.876	-5258.632	73.97	74.57	190.20	190.41
60	105	11301.158	229.169	2.379	12.163	-38.877	5256.097	73.76	74.37	189.95	190.15
60	106	-12025.140	-248.090	-2.633	-65.238	16.648	-3966.250	92.27	92.53	179.88	179.97
61	106	12025.132	248.090	2.613	65.136	-16.648	3966.245	92.27	92.53	179.88	179.97
61	107	-12004.617	-255.708	-2.813	-52.861	3.087	-2703.092	102.72	102.77	162.38	162.40
62	107	12004.604	255.707	3.206	55.792	-3.085	2703.112	102.72	102.77	162.38	162.40
62	108	-12004.120	-189.267	-3.418	-45.304	-13.483	-1462.483	113.21	113.00	145.42	145.34
63	108	12004.105	189.269	3.794	48.612	13.485	1462.503	113.21	113.00	145.42	145.34
63	109	-12007.160	-16.718	-3.994	-39.862	-32.948	-986.867	117.37	116.86	138.98	138.80
64	109	11991.034	16.717	3.619	36.366	32.948	987.371	117.20	116.69	138.82	138.64
64	110	-10806.606	193.430	-3.134	-15.910	-70.109	-1516.622	100.70	99.61	133.81	133.43
65	110	10806.601	-193.429	2.881	23.050	60.963	1516.642	100.63	99.68	133.78	133.46
65	111	-10851.684	206.748	-3.164	-17.727	-85.388	-2746.038	91.01	89.69	151.17	150.72
66	111	10851.671	-206.748	3.076	20.521	85.386	2746.046	91.01	89.69	151.17	150.72
66	112	-10749.814	8.884	-3.276	-17.420	-101.262	-3109.152	87.04	85.46	155.13	154.59
67	112	10749.859	-8.884	3.270	17.521	101.259	3109.151	87.04	85.46	155.13	154.59
67	113	-10639.949	274.424	0.794	158.804	-11.658	-3488.016	82.03	81.85	158.94	158.87
68	113	10620.486	-274.424	-0.892	-158.191	11.656	3483.089	81.87	81.69	158.67	158.60
68	114	-9828.459	1434.297	-3.405	-21.706	49.480	-7564.343	39.02	39.79	206.19	206.45
69	114	9828.448	-1434.296	3.405	21.705	-49.479	7564.345	39.02	39.79	206.19	206.45
69	117	-14335.340	1864.926	-5.005	-50.058	28.461	-17750.484	-36.04	-35.68	249.11	249.23
70	117	15669.910	2072.423	-12.383	-49.483	-9.222	17764.119	-27.57	-27.45	257.72	257.76
70	124	-11266.133	-1090.157	9.993	35.933	29.112	-7901.296	51.37	51.82	225.87	226.02
71	124	11266.149	1090.158	-10.134	-34.120	-29.113	7901.309	51.37	51.82	225.87	226.02
71	125	-12033.217	-231.626	3.606	134.673	57.770	-5266.700	81.17	82.07	197.68	197.99
72	125	12011.722	231.626	-3.176	-134.029	-57.771	5264.102	80.97	81.87	197.42	197.73
72	126	-11390.691	-252.292	-0.742	1.317	10.396	-3947.137	85.86	86.02	173.01	173.07
73	126	11390.672	252.293	0.884	0.729	-10.396	3947.138	85.86	86.02	173.01	173.07
73	127	-11370.158	-259.910	-1.084	-7.454	5.479	-2662.985	96.41	96.50	155.20	155.23
74	127	11370.195	259.908	1.216	10.254	-5.478	2662.991	96.41	96.50	155.20	155.23
74	128	-11369.712	-193.464	-1.428	-18.962	-1.145	-1401.427	107.00	106.99	137.92	137.92
75	128	11369.682	193.465	1.429	18.964	1.143	1401.425	107.00	106.99	137.92	137.92
75	129	-9922.570	-13.352	-2.318	-28.177	-33.880	-924.251	96.14	95.61	116.36	116.18
76	129	9906.440	13.353	1.900	31.695	33.879	924.782	95.96	95.44	116.20	116.02
76	130	-9941.016	190.591	-4.552	-72.156	-70.828	-1444.426	92.27	91.17	123.78	123.40
77	130	9940.998	-190.592	4.112	75.667	70.828	1444.452	92.27	91.17	123.78	123.40
77	131	-9986.104	203.909	-4.324	-89.948	-91.910	-2659.722	82.75	81.32	140.97	140.48
78	131	9986.125	-203.909	4.742	87.127	91.911	2659.688	82.75	81.32	140.97	140.48
78	132	-9884.258	6.046	-4.979	-102.829	-106.866	-3008.569	78.89	77.22	144.73	144.16
79	132	9884.254	-6.047	3.666	109.105	116.118	3008.694	78.96	77.15	144.75	144.14
79	133	-9825.350	272.495	0.395	-39.651	24.479	-3438.704	73.66	74.04	149.66	149.79
80	133	9805.905	-272.494	0.050	38.798	-33.548	3433.823	73.42	73.94	149.37	149.54
80	134	-9712.875	1430.277	-5.828	-32.284	11.918	-7423.328	39.28	39.47	203.15	203.21
81	134	9712.862	-1430.277	5.412	30.621	-11.916	7423.341	39.28	39.47	203.15	203.21
81	137	-14219.751	1952.249	-9.437	4.507	-42.984	-17589.662	-35.18	-35.72	247.09	246.91
82	137	15785.008	1964.748	-9.754	28.689	52.341	17536.250	-24.82	-25.48	256.55	256.33
82	144	-11381.239	-1073.709	8.154	-16.952	-7.579	-7756.157	54.07	53.95	225.18	225.14
83	144	11381.252	1073.708	-7.790	13.528	7.577	7756.169	54.07	53.95	225.18	225.14
83	145	-11449.323	-222.458	0.105	203.766	103.365	-5230.483	75.02	76.63	190.97	191.52
84	145	11427.819	222.458	-0.094	-203.732	-103.365	5227.938	74.82	76.43	190.71	191.26
84	146	-12255.787	-247.581	1.387	72.586	-16.524	-3942.290	95.14	94.88	182.05	181.96

85	146	12255.789	247.581	-1.412	-72.689	16.526	3942.291	95.14	94.88	182.05	181.96
85	147	-12235.277	-255.197	1.212	50.415	-9.969	-2681.716	105.41	105.26	164.53	164.48
86	147	12235.279	255.196	-0.263	-44.679	9.971	2681.684	105.41	105.26	164.53	164.48
86	148	-12234.796	-188.676	0.053	21.455	-9.174	-1444.514	115.74	115.60	147.57	147.52
87	148	12234.786	188.677	-0.029	-21.283	9.175	1444.511	115.74	115.60	147.57	147.52
87	149	-12237.841	-16.127	-0.171	-2.692	-9.531	-971.848	119.72	119.57	141.12	141.07
88	149	12221.701	16.126	0.608	6.009	9.531	972.367	119.55	119.40	140.96	140.91
88	150	-12256.275	187.647	-4.564	-86.867	-31.323	-1474.300	115.89	115.40	148.26	148.09
89	150	12256.284	-187.646	4.589	87.042	31.321	1474.305	115.89	115.40	148.26	148.09
89	151	-12301.390	200.976	-4.801	-112.329	-54.799	-2675.400	106.50	105.65	165.26	164.97
90	151	12301.380	-200.977	5.288	115.294	54.798	2675.448	106.50	105.65	165.26	164.97
90	152	-12174.062	60.709	-5.177	-137.941	-20.798	-3087.486	101.46	101.14	169.49	169.38
91	152	12174.055	-60.710	5.154	137.840	20.799	3087.481	101.46	101.14	169.49	169.38
91	153	-12089.668	273.040	-5.955	-213.774	-26.141	-3562.838	96.65	96.25	175.14	175.00
92	153	12070.202	-273.040	6.430	214.388	26.141	3558.052	96.49	96.08	174.87	174.73
92	154	-12028.117	1430.128	-12.920	-38.570	-148.544	-7470.413	64.31	62.00	228.39	227.60
93	154	12028.118	-1430.128	13.381	36.889	148.543	7470.429	64.31	62.00	228.39	227.60
93	157	-16535.006	1952.460	-16.501	39.710	-212.714	-17644.500	-19.82	-22.52	262.62	261.69
94	157	16651.740	1986.506	-14.436	15.115	233.166	17840.350	-20.35	-23.31	265.15	264.14
94	163	-12247.987	-1095.267	12.831	-18.863	-173.645	-7951.836	62.77	60.07	237.35	236.43
95	163	12247.979	1095.267	-12.330	17.310	164.986	7951.842	62.71	60.14	237.33	236.45
95	164	-12265.120	-259.515	3.351	154.020	-30.302	-5349.639	83.58	83.11	201.48	201.31
96	164	12243.613	259.515	-2.854	-153.441	30.302	5347.042	83.38	82.91	201.22	201.05
96	165	-11648.002	-326.506	2.392	97.337	-23.522	-3813.179	89.93	89.56	173.95	173.83
97	165	11647.987	326.506	-2.380	-97.232	23.522	3813.177	89.93	89.56	173.95	173.83
97	166	-9688.155	-295.084	3.367	87.695	-66.447	-2289.887	82.53	81.50	132.72	132.37
98	166	9688.182	295.084	-3.873	-84.754	66.447	2289.852	82.53	81.50	132.72	132.37
98	167	-9687.698	-227.988	3.663	60.564	-47.608	-860.467	94.32	93.58	113.07	112.81
99	167	9687.699	227.988	-4.169	-57.030	47.607	860.438	94.33	93.58	113.07	112.81
99	168	-9690.754	-55.438	3.969	34.105	-27.260	-191.214	99.79	99.37	103.87	103.73
100	168	9674.594	55.438	-3.996	-33.903	27.259	191.726	99.62	99.19	103.71	103.56
100	169	-9709.171	145.891	2.325	-28.889	-19.812	-441.177	97.84	97.53	107.47	107.37
101	169	9709.184	-145.891	-2.831	32.606	19.812	441.183	97.84	97.53	107.47	107.37
101	170	-9754.289	159.503	2.621	-52.371	-6.194	-1440.820	89.85	89.75	121.61	121.58
102	170	9754.283	-159.503	-2.621	52.372	6.194	1440.824	89.85	89.75	121.61	121.58
102	171	-9652.424	-38.360	2.421	-70.072	6.409	-1567.697	87.63	87.73	122.25	122.29
103	171	9652.438	38.361	-3.459	75.265	-6.409	1567.753	87.63	87.73	122.25	122.29
103	172	-9593.521	223.192	-0.215	-218.453	-40.224	-1590.708	87.18	86.56	122.08	121.86
104	172	9576.705	-223.193	0.215	218.453	40.224	1586.516	87.04	86.42	121.84	121.63
104	173	-9483.689	1394.013	-7.204	-32.938	-72.662	-5832.653	50.84	49.71	179.17	178.78
105	173	9483.697	-1394.012	7.177	32.882	72.663	5832.653	50.84	49.71	179.17	178.78
105	176	-13070.589	1850.442	-9.778	18.965	-93.521	-14407.666	-19.43	-20.61	211.54	211.13
106	176	12958.960	1769.777	-7.534	-40.662	83.620	14220.566	-18.86	-19.92	209.14	208.78
106	182	-8542.849	-461.991	2.570	13.102	-139.359	-5445.424	44.77	42.60	164.22	163.47
107	182	8542.842	461.991	-3.147	-14.686	139.360	5445.420	44.77	42.60	164.22	163.47
107	183	-11457.942	25.500	5.502	-10.789	-122.597	-5026.762	78.57	76.67	188.87	188.22
108	183	11498.844	-25.500	-5.473	10.785	122.597	5031.773	78.96	77.05	189.36	188.71
108	184	-11555.537	-27.199	3.417	-0.804	-58.846	-5091.210	78.56	77.64	190.60	190.29
109	184	11555.532	27.198	-2.907	1.540	58.846	5091.209	78.56	77.64	190.60	190.29
109	185	-11537.653	-65.623	2.907	-1.165	-44.311	-4836.299	80.39	79.70	186.88	186.64
110	185	11537.654	65.623	-2.879	1.230	44.311	4836.298	80.39	79.70	186.88	186.64
110	186	-11465.878	2.460	2.879	3.320	-29.918	-4507.692	82.27	81.81	181.59	181.43
111	186	11465.881	-2.460	-1.773	-0.473	29.918	4507.690	82.27	81.81	181.59	181.43
111	187	-11383.493	86.825	1.773	9.398	-21.056	-4735.715	79.44	79.11	183.83	183.72
112	187	9653.143	-86.825	-1.772	-9.398	21.056	4785.497	60.96	60.63	166.45	166.33
112	188	-9556.539	80.303	1.573	22.909	-10.202	-5065.427	57.52	57.37	169.25	169.19
113	188	9556.543	-80.302	-1.234	-21.827	12.194	5065.422	57.54	57.35	169.25	169.19
113	189	-9471.592	126.321	1.034	40.113	-5.030	-5457.216	53.32	53.24	173.72	173.69
114	189	9471.590	-126.322	-1.006	-40.110	5.030	5457.216	53.32	53.24	173.72	173.69
114	192	-9760.039	939.552	0.037	92.001	0.000	-6652.080	46.31	46.31	193.10	193.10

proc Viaducto Papiol

HIPOTESIS 116

min mz + pret (t=inf)(max)

ESFUERZOS EN BARRAS

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	MOM. Y	MOM. Z
1	3	10989.103	528.949	-5.239	-1560.372	-3.109	1843.541
1	8	-11078.692	-613.199	4.968	-11.338	32.949	1769.058
2	8	11078.665	613.199	-4.968	11.338	-32.949	-1769.060
2	9	-11142.877	-340.498	2.968	-9.936	52.788	4093.600
3	9	11142.874	340.498	-2.985	17.898	-52.788	-4093.588
3	10	-11221.300	-203.195	0.961	-30.926	60.061	5196.086
4	10	11796.292	203.195	-0.955	26.025	-60.061	-5852.625
4	11	-11957.651	-52.552	-1.078	-9.184	53.098	6493.711
5	11	11957.661	52.552	1.101	14.523	-53.098	-6493.701
5	12	-11971.581	210.566	-3.101	5.652	42.593	6084.214
6	12	11971.581	-210.565	3.153	4.950	-42.593	-6084.211
6	13	-11949.655	402.454	-5.153	19.042	21.831	4608.518
7	13	11949.676	-402.454	5.125	-23.425	-21.830	-4608.511
7	14	-11952.144	239.049	-7.568	21.219	-31.101	2794.554
8	14	11932.659	-239.050	7.629	-14.867	31.101	-2799.438
8	15	-11878.184	-26.930	3.748	-32.176	-61.440	1925.323
9	15	11878.172	26.930	-3.749	32.096	61.440	-1925.324
9	18	-16271.241	529.822	-0.831	-30.641	-52.634	-1091.778
10	18	16089.726	968.931	0.872	38.041	49.790	1087.794
10	24	-12405.616	-121.636	-0.872	-33.891	-42.399	2285.285
11	24	12405.590	121.637	0.778	35.650	42.399	-2285.272
11	25	-12443.001	-497.448	-0.524	7.795	65.947	2906.740
12	25	12418.840	497.448	0.323	-0.789	-65.947	-2914.885
12	26	-12640.870	-603.536	3.374	-52.174	109.679	5818.453
13	26	12640.851	603.538	-3.319	46.628	-109.679	-5818.472
13	27	-12532.207	-531.408	3.424	118.540	102.833	8521.153
14	27	12532.237	531.406	-3.510	-111.879	-102.833	-8521.197
14	28	-12529.214	-330.250	1.521	60.980	115.409	10797.150
15	28	12529.212	330.250	-1.704	-45.435	-115.410	-10797.195
15	29	-12823.384	-13.232	-0.925	0.273	112.924	11613.461
16	29	12231.015	13.232	0.905	-8.155	-112.925	-10950.272
16	30	-12266.881	317.859	-2.905	-37.806	103.399	10186.506
17	30	12266.893	-317.860	2.923	45.819	-103.399	-10186.486
17	31	-12313.335	465.578	-4.915	-89.411	83.822	8018.758
18	31	12313.295	-465.578	4.931	96.162	-83.822	-8018.717
18	32	-12208.666	388.839	-6.771	-52.915	36.221	6111.788
19	32	12208.662	-388.838	6.771	52.906	-36.222	-6111.787
19	33	-12110.415	542.602	-8.173	-62.889	-17.523	4174.270
20	33	12090.986	-542.602	8.184	66.277	17.522	-4179.115
20	34	-12284.112	571.871	-6.730	54.594	-164.163	1470.673
21	34	12284.134	-571.871	6.848	-52.931	164.164	-1470.694
21	37	-16788.516	862.892	-6.848	76.906	-186.656	-4045.874
22	37	16378.259	898.371	-2.158	100.070	176.209	4045.344
22	44	-11972.025	-147.060	2.158	-74.820	-153.670	760.677
23	44	11972.015	147.060	-2.200	76.328	153.670	-760.648

TENSIONES

SIGMA 1	SIGMA2	SIGMA3	SIGMA4
99.30	99.35	140.00	140.01
130.20	130.71	91.33	91.50
130.20	130.71	91.33	91.50
150.14	150.96	60.08	60.36
150.14	150.96	60.08	60.36
160.11	161.05	45.76	46.08
171.60	172.54	42.76	43.08
178.70	179.52	35.68	35.96
178.70	179.52	35.68	35.96
175.50	176.17	41.47	41.69
175.50	176.17	41.47	41.69
163.10	163.44	61.52	61.64
163.10	163.44	61.52	61.64
148.38	147.90	86.56	86.39
148.22	147.74	86.29	86.12
140.58	139.63	97.78	97.46
140.58	139.63	97.78	97.46
95.62	94.96	112.93	112.71
94.48	93.85	111.74	111.53
148.95	148.29	98.31	98.08
148.95	148.29	98.30	98.08
153.69	154.72	89.89	90.24
153.51	154.53	89.52	89.87
179.75	181.45	51.92	52.50
179.75	181.45	51.92	52.50
201.25	202.85	13.75	14.30
201.25	202.85	13.75	14.30
220.14	221.94	-17.52	-16.90
220.15	221.94	-17.52	-16.90
230.06	231.81	-25.63	-25.03
218.33	220.09	-22.72	-22.12
212.40	214.00	-11.85	-11.30
212.40	214.00	-11.85	-11.30
194.92	196.22	18.40	18.85
194.92	196.22	18.40	18.85
178.26	178.82	43.58	43.77
178.26	178.82	43.58	43.77
161.46	161.19	69.26	69.17
161.30	161.02	68.99	68.90
141.82	139.27	108.53	107.65
141.82	139.27	108.53	107.65
78.67	76.30	142.86	142.05
76.00	73.77	140.23	139.46
132.55	130.16	114.98	114.16
132.55	130.16	114.98	114.16

23	45	-11703.951	-525.732	7.749	181.697	68.094	1896.602	137.52	138.58	96.01	96.38
24	45	10529.989	525.732	-7.904	-178.496	-68.093	-1541.945	122.30	123.35	88.62	88.98
24	46	-10927.187	-662.406	5.065	80.650	98.261	4561.156	151.44	152.97	51.29	51.82
25	46	10927.222	662.405	-5.065	-80.656	-98.261	-4561.153	151.44	152.97	51.29	51.82
25	47	-10912.960	-549.276	5.222	236.169	156.348	7540.396	175.74	178.17	10.15	10.98
26	47	10912.967	549.276	-5.262	-229.484	-156.348	-7540.480	175.74	178.17	10.15	10.98
26	48	-10918.734	-347.746	3.274	137.305	177.688	9886.707	195.24	198.00	-22.02	-21.07
27	48	10918.688	347.744	-3.277	-136.904	-177.690	-9886.716	195.24	198.00	-22.02	-21.07
27	49	-10927.992	-24.186	1.277	45.835	189.070	10763.819	202.58	205.52	-33.97	-32.97
28	49	10911.859	24.187	-1.313	-37.870	-189.072	-10763.318	202.40	205.34	-34.14	-33.13
28	50	-11479.500	300.299	-1.109	-53.537	178.876	10056.854	202.51	205.29	-18.50	-17.54
29	50	11479.529	-300.299	1.504	60.592	-189.035	-10056.831	202.43	205.37	-18.52	-17.52
29	51	-11530.938	448.084	-3.274	-165.150	167.481	7953.347	185.55	188.16	10.91	11.80
30	51	11530.916	-448.084	3.443	172.014	-167.482	-7953.277	185.55	188.16	10.91	11.80
30	52	-11435.307	370.463	-5.264	-97.088	89.965	6106.793	169.73	171.12	35.43	35.91
31	52	11435.330	-370.463	5.264	97.088	-89.964	-6106.787	169.73	171.12	35.43	35.91
31	53	-11357.193	523.821	-6.331	-155.354	94.836	4236.494	153.24	154.72	60.24	60.75
32	53	11337.724	-523.821	6.515	159.091	-94.835	-4241.300	153.08	154.55	59.97	60.48
32	54	-10866.922	538.156	-0.162	107.426	-191.923	1722.904	129.35	126.36	90.35	89.33
33	54	10866.899	-538.156	0.161	-107.522	191.923	-1722.901	129.35	126.36	90.35	89.33
33	57	-15368.792	829.168	-0.161	130.597	-204.477	-3644.151	72.65	70.06	130.32	129.43
34	57	14726.814	886.707	-5.929	110.510	197.599	3644.926	68.54	66.03	126.24	125.38
34	64	-10318.047	-208.163	2.091	-180.395	-127.216	1426.254	120.63	118.66	88.51	87.83
35	64	10318.068	208.164	-2.079	180.299	127.217	-1426.258	120.64	118.66	88.51	87.83
35	65	-10798.901	-506.947	5.839	191.778	126.594	2462.502	132.34	134.31	78.65	79.32
36	65	10777.393	506.947	-5.963	-184.491	-126.594	-2465.190	132.14	134.11	78.39	79.06
36	66	-10437.087	-632.029	3.742	86.781	105.772	5391.336	153.20	154.85	34.78	35.34
37	66	10437.078	632.027	-3.754	-86.493	-105.773	-5391.340	153.20	154.85	34.78	35.34
37	67	-10410.317	-518.908	3.259	239.329	175.501	8245.583	176.23	178.96	-4.82	-3.88
38	67	10410.264	518.908	-3.477	-232.753	-175.501	-8245.675	176.23	178.96	-4.82	-3.89
38	68	-10403.533	-317.368	1.489	131.941	187.925	10467.302	194.63	197.55	-35.38	-34.38
39	68	10403.552	317.369	-1.268	-139.353	-187.927	-10467.253	194.63	197.55	-35.38	-34.38
39	69	-11157.468	-0.227	-1.157	43.327	196.413	11219.438	208.72	211.78	-37.84	-36.80
40	69	11141.317	0.228	1.314	-18.511	-196.414	-11218.945	208.55	211.60	-38.01	-36.96
40	70	-11169.645	330.918	-3.314	-82.342	184.849	10387.719	201.99	204.86	-26.28	-25.30
41	70	11169.655	-330.919	3.261	74.111	-184.850	-10387.750	201.99	204.86	-26.28	-25.30
41	71	-11208.515	479.328	-5.249	-175.086	163.559	8157.017	183.92	186.46	4.76	5.63
42	71	11208.556	-479.328	5.298	182.378	-163.561	-8156.954	183.92	186.46	4.76	5.63
42	72	-11100.442	402.215	-6.289	-80.363	75.148	6179.721	166.95	168.12	30.97	31.38
43	72	11100.390	-402.216	6.333	85.839	-75.147	-6179.691	166.95	168.12	30.97	31.38
43	73	-11009.754	554.206	-8.725	-176.427	74.348	4181.253	149.31	150.47	57.43	57.82
44	73	10990.306	-554.206	8.728	176.614	-74.349	-4186.118	149.15	150.31	57.16	57.55
44	74	-11461.004	558.247	0.309	172.148	-164.361	1606.415	134.36	131.81	98.07	97.20
45	74	11460.997	-558.247	-0.008	-170.869	172.053	-1606.483	134.42	131.75	98.09	97.18
45	77	-15972.928	849.265	0.063	204.280	-175.796	-3839.593	74.90	72.67	135.82	135.06
46	77	15100.249	886.548	-5.434	77.011	162.221	3838.399	69.30	67.24	130.26	129.55
46	84	-10701.477	-207.624	4.080	-116.018	-192.817	1269.850	123.84	120.84	94.83	93.81
47	84	10701.490	207.624	-4.085	116.113	192.818	-1269.849	123.84	120.84	94.83	93.81
47	85	-10170.817	-504.059	7.395	182.321	42.229	2352.196	125.52	126.17	73.83	74.05
48	85	10149.252	504.059	-7.695	-178.820	-42.231	-2354.803	125.31	125.97	73.57	73.79
48	86	-10846.449	-640.373	6.289	120.090	45.652	5286.273	157.06	157.77	40.65	40.89
49	86	10846.530	640.373	-6.362	-114.632	-45.652	-5286.317	157.07	157.78	40.65	40.89
49	87	-10832.266	-527.349	5.759	213.104	107.914	8155.862	180.41	182.09	1.00	1.57
50	87	10832.239	527.347	-5.763	-212.740	-107.914	-8155.866	180.41	182.09	1.00	1.57
50	88	-10838.006	-325.894	3.776	136.087	131.773	10393.190	198.98	201.03	-29.68	-28.98
51	88	10838.046	325.896	-3.845	-128.270	-131.776	-10393.235	198.99	201.03	-29.68	-28.98
51	89	-11835.567	-8.985	1.226	54.345	155.898	11162.403	215.64	218.07	-29.87	-29.04
52	89	11819.423	8.983	-1.226	-54.352	-155.899	-11161.879	215.47	217.89	-30.04	-29.21
52	90	-11860.252	322.045	-0.774	-25.183	157.025	10347.913	209.08	211.53	-18.45	-17.62
53	90	11860.184	-322.044	1.102	33.416	-157.027	-10347.898	209.08	211.52	-18.45	-17.62
53	91	-11911.542	470.324	-3.090	-114.492	146.539	8135.176	191.21	193.49	12.45	13.23
54	91	11911.530	-470.325	3.403	121.417	-146.541	-8135.130	191.21	193.49	12.45	13.23

54	92	-11815.923	393.064	-4.455	-48.003	87.215	6176.417	174.30	175.66	38.46	38.92
55	92	11815.990	-393.064	4.787	53.764	-87.216	-6176.394	174.30	175.66	38.46	38.92
55	93	-11737.854	544.829	-7.118	-153.969	84.632	4196.941	156.97	158.28	64.79	65.24
56	93	11718.401	-544.830	7.101	153.783	-84.635	-4201.813	156.80	158.12	64.52	64.97
56	94	-11076.629	549.352	2.390	166.572	-66.025	1650.090	129.95	128.92	93.20	92.85
57	94	11076.630	-549.352	-2.384	-166.477	66.026	-1650.092	129.95	128.92	93.20	92.85
57	97	-15578.520	804.162	-7.929	-161.373	-134.782	-3772.922	72.62	70.91	132.64	132.06
58	97	14474.850	924.133	-9.524	-295.975	116.086	3776.319	65.49	64.01	125.64	125.14
58	104	-9967.056	-209.030	2.369	0.699	-183.561	1320.230	116.52	113.67	86.45	85.47
59	104	9967.078	209.030	-2.350	-0.793	183.561	-1320.229	116.52	113.67	86.45	85.47
59	105	-9980.397	-503.095	7.962	133.801	21.567	2423.366	124.29	124.62	70.92	71.04
60	105	9958.933	503.095	-8.373	-129.895	-21.570	-2425.965	124.08	124.42	70.66	70.78
60	106	-10056.127	-633.581	6.874	121.739	42.296	5353.365	149.40	150.06	31.49	31.71
61	106	10056.103	633.581	-6.855	-122.026	-42.296	-5353.370	149.40	150.06	31.49	31.71
61	107	-10035.588	-520.755	5.880	111.583	80.122	8202.994	172.71	173.95	-7.89	-7.47
62	107	10035.591	520.754	-6.204	-104.640	-72.029	-8203.039	172.77	173.89	-7.87	-7.49
62	108	-10035.096	-319.519	4.287	83.033	106.535	10421.316	191.03	192.69	-38.38	-37.81
63	108	10035.084	319.520	-4.660	-75.206	-106.532	-10421.346	191.03	192.69	-38.38	-37.81
63	109	-10038.139	3.705	2.660	51.406	124.841	11171.557	197.19	199.13	-48.68	-48.02
64	109	10022.008	-3.705	-2.287	-59.522	-124.842	-11171.016	197.02	198.96	-48.84	-48.18
64	110	-11275.622	328.353	0.420	36.095	145.711	10333.365	202.95	205.21	-24.33	-23.55
65	110	11275.644	-328.354	-0.237	-20.065	-145.710	-10333.385	202.95	205.21	-24.33	-23.55
65	111	-11320.752	476.419	-1.750	-8.718	141.918	8103.128	184.81	187.02	6.73	7.48
66	111	11320.722	-476.418	1.839	15.640	-141.918	-8103.120	184.81	187.02	6.73	7.48
66	112	-11218.865	398.946	-2.874	-9.623	127.963	6127.638	167.34	169.33	32.78	33.47
67	112	11218.870	-398.946	2.878	9.905	-127.963	-6127.635	167.34	169.33	32.78	33.47
67	113	-11134.481	550.383	-5.519	-85.135	106.854	4135.600	149.98	151.64	59.27	59.84
68	113	11115.041	-550.383	5.608	88.644	-106.852	-4140.436	149.82	151.48	59.00	59.57
68	114	-11073.018	553.007	2.213	93.176	74.437	1607.936	128.47	129.63	93.37	93.76
69	114	11072.990	-553.007	-2.213	-93.175	-74.437	-1607.935	128.47	129.62	93.37	93.76
69	117	-15579.875	771.637	-1.982	41.610	-79.058	-3819.499	71.94	70.94	132.95	132.60
70	117	14245.289	960.963	-1.739	-105.365	59.823	3805.706	63.46	62.71	124.33	124.07
70	124	-9841.514	-209.657	1.739	103.265	-51.129	1304.869	114.05	113.26	85.00	84.73
71	124	9841.545	209.657	-1.309	-105.134	51.129	-1304.828	114.05	113.26	85.00	84.73
71	125	-10608.603	-503.885	8.858	25.458	10.303	2409.006	130.81	130.97	77.71	77.76
72	125	10587.083	503.884	-8.998	-21.744	-10.306	-2411.561	130.61	130.77	77.45	77.50
72	126	-10690.530	-634.734	8.038	67.551	70.125	5329.708	155.61	156.70	38.36	38.74
73	126	10690.533	634.735	-8.179	-61.794	-70.126	-5329.734	155.61	156.70	38.36	38.73
73	127	-10670.017	-522.005	6.461	-69.862	60.229	8185.563	179.34	180.28	-0.98	-0.66
74	127	10670.016	522.001	-6.593	76.784	-60.229	-8185.528	179.34	180.27	-0.98	-0.66
74	128	-10669.532	-320.844	4.606	-25.714	88.228	10410.306	197.71	199.08	-31.56	-31.09
75	128	10669.525	320.846	-4.605	25.720	-88.227	-10410.309	197.71	199.08	-31.56	-31.09
75	129	-12122.749	-5.224	3.294	21.340	131.344	11186.694	219.03	221.08	-27.14	-26.44
76	129	12106.607	5.224	-2.875	-13.221	-131.347	-11186.188	218.86	220.90	-27.31	-26.61
76	130	-12141.184	325.574	0.875	59.098	140.723	10367.372	212.31	214.49	-15.74	-14.99
77	130	12141.182	-325.573	-0.436	-50.865	-140.724	-10367.402	212.31	214.49	-15.74	-14.99
77	131	-12186.288	473.647	-1.552	94.383	137.927	8151.057	194.28	196.42	15.12	15.85
78	131	12186.296	-473.648	1.135	-101.311	-137.928	-8151.020	194.28	196.42	15.12	15.85
78	132	-12084.439	396.214	-2.115	22.321	180.421	6189.175	176.49	179.29	40.84	41.80
79	132	12084.443	-396.216	3.390	-5.599	-180.420	-6189.191	176.49	179.29	40.84	41.80
79	133	-12000.051	548.167	-6.393	-2.824	107.164	4200.552	159.56	161.22	67.42	67.99
80	133	11980.604	-548.166	5.975	-0.708	-107.165	-4205.415	159.40	161.06	67.15	67.72
80	134	-11887.584	550.890	1.429	-33.805	172.980	1706.662	137.03	139.72	100.26	101.18
81	134	11887.568	-550.890	-1.020	35.610	-172.981	-1706.651	137.03	139.72	100.26	101.18
81	137	-16394.455	769.195	-0.365	-74.197	104.024	-3694.796	76.83	78.15	136.60	137.05
82	137	14829.195	956.783	2.767	-163.087	-113.380	3748.204	66.48	67.91	127.14	127.63
82	144	-10425.427	-205.473	-2.767	139.837	99.544	1341.433	119.28	120.83	90.19	90.72
83	144	10425.432	205.473	2.385	-136.163	-99.544	-1341.540	119.28	120.83	90.19	90.72
83	145	-10493.486	-491.528	5.868	-92.933	5.034	2448.387	129.98	130.06	75.98	76.01
84	145	10471.980	491.529	-5.878	93.119	-5.032	-2450.928	129.78	129.85	75.72	75.75
84	146	-9825.432	-622.010	2.783	-20.920	73.490	5309.872	146.39	147.53	29.59	29.98

85	146	9825.434	622.010	-2.759	20.630	-73.490	-5309.878	146.39	147.53	29.59	29.98
85	147	-9804.919	-509.072	2.310	-204.245	17.511	8101.621	169.94	170.21	-8.75	-8.65
86	147	9804.920	509.071	-3.258	218.395	-17.511	-8101.458	169.94	170.21	-8.74	-8.65
86	148	-9804.438	-307.801	1.268	-121.672	28.821	10262.064	187.90	188.35	-38.40	-38.25
87	148	9804.432	307.803	-1.292	122.077	-28.819	-10262.061	187.90	188.35	-38.40	-38.25
87	149	-9807.486	15.565	-0.708	-26.497	30.283	10953.307	193.70	194.17	-47.85	-47.69
88	149	9791.345	-15.565	0.271	34.106	-30.280	-10952.771	193.52	193.99	-48.01	-47.85
88	150	-9825.920	346.558	-2.271	60.541	23.928	10029.555	186.22	186.59	-34.97	-34.85
89	150	9825.927	-346.559	2.246	-60.136	-23.926	-10029.557	186.22	186.59	-34.97	-34.85
89	151	-9871.032	494.800	-4.234	154.067	7.727	7708.354	167.42	167.54	-2.64	-2.60
90	151	9871.024	-494.800	3.748	-146.948	-7.726	-7708.408	167.42	167.54	-2.64	-2.60
90	152	-9769.165	417.581	-6.425	11.107	20.743	5640.168	148.97	149.29	24.62	24.73
91	152	9769.172	-417.581	6.449	-11.382	-20.742	-5640.168	148.97	149.29	24.62	24.73
91	153	-9684.781	568.848	-7.648	76.604	-36.926	3578.449	131.31	130.73	52.15	51.96
92	153	9665.316	-568.847	7.162	-73.134	36.926	-3583.350	131.14	130.57	51.88	51.69
92	154	-9623.241	489.521	1.726	-119.957	78.694	1005.396	108.26	109.49	86.48	86.90
93	154	9623.250	-489.521	-2.178	121.496	-78.694	-1005.349	108.26	109.49	86.48	86.90
93	157	-14130.137	780.528	2.178	-151.995	89.583	-4107.736	59.63	60.77	125.97	126.36
94	157	14013.392	968.718	4.022	-143.071	-110.036	3912.190	60.16	61.55	123.44	123.92
94	163	-9609.627	-217.398	-4.022	112.721	89.925	1237.153	109.97	111.37	83.13	83.61
95	163	9609.626	217.398	3.526	-110.971	-89.925	-1237.196	109.97	111.37	83.13	83.61
95	164	-9626.734	-487.081	5.739	-113.496	-17.265	2438.697	121.02	120.75	67.12	67.03
96	164	9605.244	487.081	-6.246	117.035	17.264	-2441.194	120.82	120.55	66.86	66.77
96	165	-10458.695	-621.691	4.778	-72.648	15.416	5284.535	153.24	153.48	36.71	36.79
97	165	10458.688	621.692	-4.789	72.935	-15.417	-5284.534	153.24	153.48	36.71	36.79
97	166	-12352.009	-531.799	5.294	-190.601	3.170	8137.362	196.94	196.99	17.40	17.41
98	166	12352.016	531.799	-4.787	197.504	-3.172	-8137.288	196.94	196.99	17.40	17.41
98	167	-12351.533	-330.987	2.797	-131.192	22.133	10418.359	215.85	216.19	-13.93	-13.81
99	167	12351.529	330.986	-2.291	139.012	-22.134	-10418.313	215.85	216.19	-13.93	-13.81
99	168	-12354.584	-7.524	0.291	-71.112	28.588	11225.248	222.57	223.02	-24.98	-24.83
100	168	12338.446	7.524	-0.264	71.543	-28.589	-11224.734	222.40	222.85	-25.14	-24.99
100	169	-12373.024	323.540	-1.736	-1.681	24.909	10416.751	216.04	216.43	-13.69	-13.56
101	169	12373.019	-323.539	2.242	9.523	-24.910	-10416.754	216.04	216.43	-13.69	-13.56
101	170	-12418.124	471.563	-4.231	62.736	8.736	8217.831	198.26	198.40	16.97	17.01
102	170	12418.121	-471.563	4.232	-62.734	-8.736	-8217.831	198.26	198.40	16.97	17.01
102	171	-12290.793	353.386	-1.358	-18.998	-52.010	6463.247	182.74	181.93	39.85	39.58
103	171	12290.796	-353.386	2.377	30.455	52.011	-6463.231	182.74	181.93	39.85	39.58
103	172	-12206.408	525.596	-2.387	62.557	-62.420	4562.594	166.06	165.09	65.06	64.73
104	172	12189.608	-525.597	2.387	-62.557	62.420	-4566.787	165.92	164.95	64.83	64.49
104	173	-12122.076	449.801	0.596	-113.575	55.135	2555.244	147.49	148.34	91.38	91.68
105	173	12122.076	-449.801	-0.569	113.687	-55.135	-2555.242	147.49	148.34	91.38	91.68
105	176	-15708.967	672.255	0.569	-127.437	57.981	-810.785	93.36	94.10	106.63	106.88
106	176	15820.590	739.342	-0.428	22.769	-48.079	997.909	92.80	93.41	109.02	109.23
106	182	-11404.482	33.195	0.428	-33.419	50.221	2997.751	143.73	144.51	77.84	78.11
107	182	11404.481	-33.195	0.139	35.211	-50.221	-2997.738	143.73	144.51	77.84	78.11
107	183	-8570.859	-199.940	2.900	-27.281	89.024	3763.974	120.25	121.63	37.65	38.12
108	183	8611.758	199.940	-2.928	27.454	-89.024	-3758.964	120.63	122.02	38.14	38.62
108	184	-8693.917	-328.241	0.517	-8.775	117.751	5150.120	132.89	134.72	19.85	20.48
109	184	8693.916	328.241	-1.037	13.198	-117.752	-5150.116	132.89	134.72	19.85	20.48
109	185	-8676.037	-204.853	-0.963	-56.438	117.937	6505.714	144.03	145.87	1.08	1.71
110	185	8676.032	204.852	0.934	56.730	-117.937	-6505.714	144.03	145.87	1.08	1.71
110	186	-8604.256	25.046	-2.934	-94.328	108.266	7125.928	148.54	150.23	-8.15	-7.57
111	186	8604.256	-25.046	1.808	106.248	-108.267	-7125.851	148.54	150.23	-8.15	-7.57
111	187	-8521.868	271.226	-3.808	-137.905	94.226	6380.368	141.56	143.03	1.25	1.75
112	187	6791.521	-271.226	3.808	137.906	-94.226	-6330.587	123.08	124.54	-16.13	-15.63
112	188	-6694.916	417.596	-4.887	-106.947	63.240	4755.024	109.14	110.13	4.54	4.88
113	188	6694.914	-417.595	4.338	111.474	-63.240	-4754.980	109.14	110.13	4.54	4.88
113	189	-6609.964	625.807	-6.338	-122.179	36.548	2271.238	87.71	88.28	37.78	37.97
114	189	6609.963	-625.808	6.310	122.336	-36.548	-2271.236	87.71	88.28	37.78	37.97
114	192	-6197.940	705.474	-2.565	-136.771	0.000	-645.537	59.32	59.32	73.56	73.56

proc Viaducto Papiol

HIPOTESIS 117

max mz + pret(t=0)(frecuente)

		ESFUERZOS EN BARRAS						TENSIONES			
BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	MOM. Y	MOM. Z	SIGMA 1	SIGMA2	SIGMA3	SIGMA4
1	3	14351.438	321.701	-3.590	896.777	3.111	2528.556	128.73	128.68	184.51	184.49
1	8	-14457.719	-20.124	-0.744	55.444	11.861	-2285.689	131.75	131.94	182.25	182.31
2	8	14457.684	20.123	0.744	-55.444	-11.862	2285.689	131.75	131.94	182.25	182.31
2	9	-14531.006	101.443	-0.744	29.669	26.833	-2553.343	130.17	130.58	186.65	186.79
3	9	14531.018	-101.443	-5.221	-22.474	-11.957	2553.323	130.28	130.47	186.69	186.75
3	10	-14622.797	59.212	-0.768	4.040	41.686	-3261.636	125.09	125.74	197.27	197.50
4	10	15369.527	-59.212	0.757	-6.602	-41.686	2409.006	140.01	140.66	193.38	193.60
4	11	-15409.274	38.116	-0.724	-11.542	63.330	-2637.527	138.35	139.33	196.87	197.21
5	11	15409.288	-38.115	0.707	14.265	-63.330	2637.535	138.35	139.33	196.87	197.21
5	12	-15417.298	147.736	-0.707	-27.690	78.483	-3107.723	134.38	135.61	203.36	203.78
6	12	15417.295	-147.736	0.673	32.871	-78.483	3107.746	134.38	135.61	203.36	203.78
6	13	-15378.753	164.835	-0.673	-42.396	93.809	-3802.135	128.06	129.52	212.44	212.94
7	13	15378.782	-164.834	0.690	40.419	-93.809	3802.116	128.06	129.52	212.44	212.94
7	14	-12555.628	47.880	0.446	-21.653	32.593	-4110.256	96.49	96.99	187.35	187.52
8	14	12534.932	-47.880	-0.494	22.883	-32.593	4105.099	96.31	96.82	187.06	187.24
8	15	-12509.678	230.455	0.348	-21.813	33.736	-4203.040	95.22	95.75	188.14	188.32
9	15	12509.649	-230.454	-0.347	21.853	-33.736	4203.040	95.22	95.75	188.14	188.32
9	18	-17284.381	1149.037	-3.725	4.740	27.440	-10096.141	37.27	37.62	199.51	199.63
10	18	17465.959	1783.804	-5.258	31.280	-24.594	10100.250	38.41	38.72	200.70	200.81
10	24	-13552.884	-742.830	2.726	-42.893	57.775	-3134.393	114.86	115.76	184.32	184.62
11	24	13552.865	742.830	-2.685	42.649	-57.775	3134.410	114.86	115.76	184.32	184.62
11	25	-13698.129	-107.077	-0.442	-154.395	97.140	-1460.345	130.06	131.57	162.78	163.30
12	25	13672.456	107.076	0.610	158.199	-97.140	1451.820	129.86	131.37	162.39	162.91
12	26	-16785.496	-181.711	0.031	-76.334	0.596	-685.499	169.52	169.53	184.65	184.65
13	26	16785.475	181.711	-0.108	72.431	-0.596	685.467	169.52	169.53	184.65	184.65
13	27	-16767.342	-221.287	-0.222	-59.598	-8.616	316.085	177.77	177.64	170.75	170.70
14	27	16767.350	221.287	0.087	64.735	-0.834	-316.065	177.70	177.71	170.73	170.73
14	28	-16775.268	-166.771	-0.427	-49.165	-10.421	1447.730	187.32	187.16	155.32	155.27
15	28	16775.270	166.771	0.373	60.119	-0.077	-1447.690	187.24	187.24	155.30	155.30
15	29	-16494.316	46.791	0.627	-20.112	-23.044	1703.647	186.63	186.27	148.92	148.79
16	29	15724.965	-46.789	-0.593	14.952	23.044	-842.369	171.40	171.04	152.69	152.57
16	30	-15783.412	251.073	0.473	5.308	-20.380	69.410	165.53	165.21	163.89	163.78
17	30	15783.439	-251.074	-0.507	-0.162	20.380	-69.414	165.53	165.21	163.89	163.78
17	31	-15855.622	236.969	0.379	22.787	-18.181	-1444.960	153.61	153.33	185.40	185.30
18	31	15855.610	-236.972	-0.411	-18.532	18.181	1444.956	153.61	153.33	185.40	185.30
18	32	-15639.789	-40.292	-1.404	3.625	27.460	-1699.037	148.88	149.30	186.51	186.65
19	32	15639.736	40.293	1.404	-3.631	-27.460	1699.038	148.88	149.30	186.51	186.65
19	33	-12604.893	210.974	1.447	31.824	30.445	-1878.591	115.67	116.14	157.28	157.44
20	33	12584.336	-210.974	-1.535	-30.625	-30.445	1873.405	115.50	115.97	156.99	157.15
20	34	-12666.219	1143.758	-3.878	14.956	34.057	-5030.750	89.94	90.47	201.12	201.30
21	34	12666.231	-1143.758	3.849	-15.830	-34.055	5030.742	89.94	90.47	201.12	201.30
21	37	-17450.908	1537.175	-4.809	32.428	12.409	-13802.957	11.97	12.12	233.66	233.72
22	37	17860.992	1728.366	-5.307	37.153	-1.958	13803.417	14.63	14.65	236.29	236.30
22	44	-13177.482	-790.925	2.722	-66.148	36.081	-5326.316	92.79	93.35	210.51	210.70
23	44	13177.485	790.925	-2.583	65.296	-36.082	5326.342	92.79	93.35	210.51	210.70

23	45	-13033.665	-162.582	-1.893	-240.805	7.730	-3742.180	104.75	104.87	187.36	187.40
24	45	11786.215	162.583	1.956	242.016	-7.730	4119.195	88.57	88.69	179.51	179.55
24	46	-14644.108	-264.512	-4.479	-199.580	-12.555	-3222.948	126.06	125.86	197.11	197.04
25	46	14644.167	264.512	4.479	199.577	12.555	3222.950	126.06	125.86	197.11	197.04
25	47	-14481.494	-269.173	-0.445	-96.893	-44.352	-1914.595	135.54	134.85	177.56	177.33
26	47	14481.475	269.173	0.290	102.168	57.803	1914.635	135.64	134.75	177.60	177.29
26	48	-14477.131	-214.929	-0.642	-63.667	-47.232	-530.857	147.08	146.35	158.55	158.30
27	48	14477.070	214.929	0.645	63.921	47.233	530.857	147.08	146.35	158.55	158.30
27	49	-14477.285	-6.345	1.561	16.304	-65.180	12.325	151.76	150.75	151.16	150.81
28	49	14456.335	6.344	-1.499	-11.271	65.180	-11.654	151.54	150.52	150.95	150.60
28	50	-13970.667	204.437	2.020	43.260	-56.384	-513.979	142.01	141.13	153.06	152.76
29	50	13970.691	-204.437	-2.167	-38.161	56.384	513.959	142.01	141.13	153.06	152.76
29	51	-14025.522	189.746	2.037	68.645	-45.874	-1786.385	131.86	131.15	171.05	170.80
30	51	14025.529	-189.744	-2.178	-64.341	45.874	1786.358	131.86	131.15	171.05	170.80
30	52	-13889.496	-96.908	2.058	95.801	-35.281	-1781.840	130.40	129.85	169.54	169.35
31	52	13889.498	96.908	-2.058	-95.801	35.282	1781.839	130.40	129.85	169.54	169.35
31	53	-11441.311	184.865	0.154	128.287	-30.083	-1769.768	104.90	104.43	143.80	143.64
32	53	11420.621	-184.866	-0.210	-126.826	30.083	1764.543	104.73	104.26	143.51	143.35
32	54	-11106.149	1127.828	-1.095	17.768	94.977	-4848.701	74.70	76.17	182.17	182.68
33	54	11106.148	-1127.828	1.103	-17.735	-94.977	4848.702	74.70	76.17	182.17	182.68
33	57	-15891.302	1520.887	-2.063	16.907	87.063	-13521.748	3.62	4.72	221.11	221.49
34	57	16533.297	1710.851	-2.974	18.754	-80.184	13520.963	7.74	8.75	225.19	225.53
34	64	-11850.218	-773.862	0.662	-70.148	92.711	-5116.478	80.24	81.69	193.62	194.11
35	64	11850.179	773.862	-0.666	70.179	-92.713	5116.477	80.24	81.69	193.62	194.11
35	65	-12157.624	-144.773	-4.135	-240.129	-39.089	-3550.065	97.57	96.96	175.71	175.50
36	65	12134.786	144.773	4.535	243.060	39.090	3547.553	97.35	96.74	175.43	175.23
36	66	-14852.007	-217.115	-2.009	-153.543	-42.903	-2661.251	133.16	132.49	191.66	191.43
37	66	14851.997	217.114	2.019	153.724	42.905	2661.252	133.16	132.49	191.66	191.43
37	67	-14829.106	-256.691	-2.139	-108.414	-53.302	-1480.026	142.87	142.04	175.26	174.97
38	67	14829.141	256.692	2.325	112.569	53.301	1480.063	142.87	142.04	175.26	174.97
38	68	-14832.264	-202.467	-2.458	-67.172	-65.267	-175.245	153.90	152.89	157.43	157.09
39	68	14832.208	202.466	2.270	62.494	65.268	175.219	153.90	152.89	157.43	157.09
39	69	-14082.811	12.641	0.730	25.681	-96.953	291.649	150.22	148.72	143.29	142.78
40	69	14061.854	-5.463	7.450	144.039	57.097	-290.988	149.69	148.80	142.98	142.67
40	70	-14110.512	216.922	0.879	55.542	-92.259	-314.212	145.41	143.98	151.88	151.38
41	70	14110.518	-216.923	-0.787	-60.719	92.259	314.237	145.41	143.98	151.88	151.38
41	71	-14172.850	202.161	0.655	106.015	-88.642	-1665.763	134.74	133.36	171.05	170.57
42	71	14172.848	-202.160	-0.745	-101.446	88.644	1665.716	134.74	133.36	171.04	170.57
42	72	-14044.313	-84.488	0.625	146.530	-85.215	-1739.361	132.76	131.43	170.70	170.25
43	72	14044.300	84.488	-0.710	-143.131	85.215	1739.305	132.76	131.43	170.70	170.25
43	73	-11044.717	198.644	1.944	224.046	-64.626	-1807.141	100.71	99.71	140.26	139.92
44	73	11024.051	-198.645	-1.956	-223.972	64.627	1801.963	100.54	99.54	139.97	139.63
44	74	-11275.984	1146.621	-1.550	70.467	54.199	-5006.028	75.47	76.31	186.21	186.50
45	74	11276.018	-1146.621	1.467	-71.139	-54.200	5006.000	75.47	76.32	186.21	186.50
45	77	-16068.673	1540.016	-2.427	77.693	44.462	-13789.941	3.10	3.66	224.72	224.91
46	77	16941.320	1720.057	-5.043	-25.222	-30.886	13791.235	8.71	9.10	230.29	230.42
46	84	-12265.740	-782.771	3.054	-12.957	43.101	-5358.090	82.95	83.62	201.40	201.63
47	84	12265.756	782.771	-3.041	12.921	-43.100	5358.089	82.95	83.62	201.40	201.63
47	85	-11967.794	-152.060	-3.204	-130.402	-54.268	-3719.807	94.29	93.44	176.09	175.80
48	85	11944.915	152.061	3.326	131.762	54.268	3717.158	94.07	93.23	175.82	175.53
48	86	-14652.535	-220.350	-1.490	-84.762	-63.445	-2864.475	129.54	128.55	192.42	192.08
49	86	14652.551	220.350	1.608	88.151	63.446	2864.508	129.54	128.55	192.42	192.08
49	87	-14622.155	-259.939	-1.728	-47.516	-71.791	-1650.968	139.43	138.31	175.49	175.11
50	87	14622.174	259.939	1.736	47.743	71.792	1650.969	139.43	138.31	175.49	175.11
50	88	-14617.797	-205.710	-1.868	-8.445	-80.811	-313.873	150.62	149.37	157.14	156.71
51	88	14617.795	205.710	1.985	13.344	80.811	313.881	150.62	149.37	157.14	156.71
51	89	-13629.795	-4.776	-1.486	20.496	-100.938	184.623	144.63	143.06	140.04	139.50
52	89	13608.818	4.776	1.486	-20.500	100.937	-183.943	144.41	142.84	139.83	139.29
52	90	-13649.978	213.809	0.373	94.072	-101.429	-389.456	140.05	138.47	148.12	147.58
53	90	13649.993	-213.809	-0.650	-88.913	101.428	389.422	140.05	138.47	148.12	147.58
53	91	-13704.825	199.041	0.517	123.869	-98.504	-1709.314	129.57	128.04	166.78	166.26
54	91	13704.818	-199.040	-0.780	-119.540	98.503	1709.269	129.57	128.04	166.78	166.26

54	92	-13568.788	-87.610	0.660	152.825	-94.901	-1751.235	127.77	126.29	165.93	165.42
55	92	13568.779	87.609	-0.939	-149.251	94.902	1751.177	127.77	126.29	165.93	165.42
55	93	-11223.185	196.973	1.753	251.345	-46.645	-1794.195	102.55	101.82	141.90	141.65
56	93	11202.526	-196.973	-1.746	-251.418	46.644	1789.030	102.37	101.65	141.61	141.36
56	94	-10785.469	1145.801	-0.359	87.121	46.296	-4973.592	70.68	71.40	180.67	180.91
57	94	10785.469	-1145.801	0.345	-87.156	-46.296	4973.591	70.68	71.40	180.67	180.91
57	97	-15570.625	1539.095	-1.305	82.691	42.167	-13737.160	0.34	0.87	221.10	221.28
58	97	16674.229	1715.264	-6.416	-89.671	-25.074	13733.559	7.46	7.78	228.10	228.20
58	104	-11991.145	-778.075	4.761	59.011	35.160	-5307.971	80.56	81.11	197.87	198.06
59	104	11991.175	778.074	-4.769	-58.976	-35.162	5307.973	80.56	81.11	197.87	198.06
59	105	-12106.605	-149.170	-0.381	24.060	-2.056	-3680.688	95.66	95.63	176.87	176.85
60	105	12083.754	149.171	0.575	-22.537	2.055	3677.978	95.44	95.41	176.59	176.58
60	106	-15172.990	-220.866	-0.432	16.165	-22.411	-2841.429	134.84	134.50	197.43	197.31
61	106	15172.979	220.865	0.415	-16.343	22.411	2841.425	134.84	134.50	197.43	197.31
61	107	-15146.336	-260.447	-0.535	36.868	-24.784	-1633.388	144.68	144.29	180.60	180.46
62	107	15146.319	260.446	0.868	-32.312	24.785	1633.374	144.68	144.29	180.60	180.46
62	108	-15145.692	-206.222	-1.001	50.349	-29.465	-301.797	155.84	155.38	162.35	162.19
63	108	15145.677	206.223	1.319	-45.446	29.466	301.780	155.84	155.38	162.35	162.19
63	109	-15149.643	-11.819	-1.439	60.996	-36.356	192.248	160.06	159.50	155.63	155.44
64	109	15128.696	11.819	1.121	-66.095	36.356	-191.549	159.84	159.27	155.42	155.23
64	110	-13954.574	212.924	-0.841	85.871	-53.685	-380.399	142.93	142.10	151.05	150.77
65	110	13954.602	-212.924	0.542	-75.813	53.686	380.340	142.93	142.10	151.05	150.77
65	111	-14013.183	198.159	-0.674	86.087	-56.714	-1703.813	132.51	131.63	169.82	169.51
66	111	14013.146	-198.159	0.528	-81.750	56.713	1703.782	132.51	131.63	169.81	169.51
66	112	-13880.865	-88.496	-0.648	89.350	-59.653	-1749.396	130.77	129.84	169.07	168.75
67	112	13880.876	88.495	0.640	-89.174	59.651	1749.394	130.77	129.84	169.07	168.75
67	113	-11182.186	197.264	1.499	166.031	1.571	-1804.606	101.66	101.68	141.48	141.49
68	113	11161.532	-197.264	-1.651	-164.657	-1.572	1799.371	101.48	101.51	141.20	141.21
68	114	-10655.065	1145.318	-0.927	58.189	43.830	-4982.853	69.26	69.95	179.44	179.67
69	114	10655.035	-1145.318	0.927	-58.189	-43.830	4982.854	69.26	69.94	179.44	179.67
69	117	-15443.939	1538.507	-1.887	41.517	36.796	-13751.756	-0.54	-0.07	220.44	220.60
70	117	16778.553	1717.491	-8.983	-104.915	-17.559	13765.349	7.94	8.17	229.06	229.13
70	124	-12099.215	-780.406	7.550	95.975	37.263	-5336.509	81.44	82.02	199.38	199.58
71	124	12099.240	780.406	-7.750	-95.272	-37.264	5336.546	81.44	82.02	199.38	199.58
71	125	-12579.182	-151.782	3.833	153.654	62.807	-3692.642	99.99	100.96	181.79	182.13
72	125	12556.320	151.782	-3.459	-152.208	-62.808	3689.877	99.77	100.75	181.51	181.85
72	126	-14838.549	-224.698	1.670	99.715	52.719	-2832.635	130.84	131.66	193.62	193.90
73	126	14838.545	224.699	-1.469	-96.140	-52.719	2832.597	130.84	131.66	193.62	193.90
73	127	-14811.904	-264.279	1.349	86.395	59.767	-1605.414	140.76	141.69	176.50	176.81
74	127	14811.895	264.278	-1.160	-82.055	-59.767	1605.385	140.76	141.69	176.49	176.81
74	128	-14811.266	-210.050	1.028	69.477	65.225	-254.723	152.00	153.02	157.96	158.30
75	128	14811.262	210.050	-1.027	-69.474	-65.226	254.721	152.00	153.02	157.96	158.30
75	129	-13365.062	-8.084	0.218	55.566	44.971	238.998	141.19	141.89	136.14	136.38
76	129	13344.101	8.085	-0.580	-50.450	-44.971	-238.344	140.96	141.66	135.93	136.17
76	130	-13389.006	210.470	-1.012	15.648	31.399	-326.077	136.82	137.31	144.18	144.34
77	130	13388.999	-210.471	0.632	-10.470	-31.398	326.069	136.82	137.31	144.18	144.34
77	131	-13447.579	195.705	-0.764	-10.157	27.916	-1637.336	126.50	126.93	162.77	162.92
78	131	13447.591	-195.704	1.125	5.803	-27.915	1637.333	126.50	126.93	162.77	162.92
78	132	-13315.303	-90.949	-1.245	-28.848	21.992	-1670.644	124.89	125.23	161.86	161.98
79	132	13315.316	90.948	0.143	39.303	-21.992	1670.685	124.89	125.23	161.87	161.98
79	133	-10647.227	195.524	1.728	-17.218	86.350	-1757.262	95.81	97.15	135.02	135.48
80	133	10626.556	-195.523	-1.374	15.828	-86.350	1752.086	95.63	96.98	134.74	135.20
80	134	-10539.486	1142.325	-2.093	-23.349	80.391	-4877.627	68.65	69.90	176.69	177.12
81	134	10539.475	-1142.325	1.733	22.726	-80.390	4877.636	68.65	69.90	176.69	177.12
81	137	-15328.377	1590.313	-4.148	-13.939	55.019	-13631.688	-0.53	0.17	218.60	218.83
82	137	16893.637	1649.174	-5.237	-81.537	-45.662	13578.305	9.83	10.41	228.06	228.25
82	144	-12214.306	-766.822	4.277	75.490	69.444	-5217.686	83.38	84.46	198.87	199.24
83	144	12214.317	766.822	-3.797	-76.769	-69.445	5217.626	83.38	84.46	198.87	199.24
83	145	-12274.860	-142.568	-0.815	193.315	131.623	-3657.646	96.57	98.61	177.95	178.65
84	145	12252.011	142.568	0.828	-193.242	-131.624	3654.941	96.35	98.40	177.67	178.38
84	146	-15403.639	-217.836	-0.554	126.706	83.669	-2834.902	136.48	137.78	199.47	199.91

85	146	15403.643	217.837	0.533	-126.887	-83.668	2834.903	136.48	137.78	199.47	199.91
85	147	-15377.004	-257.414	-0.653	91.652	80.703	-1642.062	146.19	147.45	182.84	183.27
86	147	15377.004	257.413	1.484	-82.767	-80.702	1641.998	146.20	147.45	182.84	183.27
86	148	-15376.375	-203.111	-1.614	46.108	72.962	-326.481	157.24	158.38	164.82	165.21
87	148	15376.365	203.111	1.635	-45.853	-72.961	326.481	157.24	158.38	164.82	165.21
87	149	-15380.333	-8.707	-1.755	7.993	64.485	151.970	161.35	162.35	158.32	158.67
88	149	15359.371	8.707	2.139	-3.176	-64.485	-151.297	161.12	162.13	158.12	158.46
88	150	-15404.273	209.746	-4.512	-69.483	42.541	-407.695	157.09	157.75	166.31	166.53
89	150	15404.285	-209.746	4.534	69.740	-42.542	407.701	157.09	157.75	166.31	166.53
89	151	-15462.864	194.990	-4.666	-109.637	19.542	-1715.893	146.95	147.25	184.91	185.02
90	151	15462.851	-194.991	5.092	114.191	-19.543	1715.942	146.95	147.25	184.91	185.02
90	152	-15315.285	-57.097	-5.027	-152.915	35.533	-1792.382	144.65	145.20	184.38	184.57
91	152	15315.295	57.097	5.006	152.739	-35.533	1792.377	144.65	145.20	184.38	184.57
91	153	-12631.918	196.500	-4.988	-195.125	11.864	-1897.117	115.94	116.12	157.86	157.92
92	153	12611.234	-196.500	5.408	196.533	-11.864	1892.019	115.77	115.95	157.58	157.64
92	154	-12554.729	1142.879	-9.301	-108.562	-74.507	-4974.492	90.09	88.93	199.47	199.08
93	154	12554.732	-1142.879	9.705	107.902	74.506	4974.534	90.09	88.93	199.48	199.08
93	157	-17343.631	1591.083	-11.577	-79.502	-121.390	-13736.445	12.61	11.07	232.68	232.15
94	157	17460.365	1675.443	-9.104	-62.998	141.842	13932.271	12.08	10.28	235.21	234.59
94	163	-12781.041	-792.967	8.144	43.145	-98.722	-5440.513	88.74	87.21	208.29	207.76
95	163	12781.043	792.966	-7.695	-43.853	98.721	5440.495	88.74	87.21	208.29	207.76
95	164	-12811.021	-178.011	2.311	129.218	-11.214	-3768.557	102.35	102.17	185.45	185.39
96	164	12788.188	178.011	-1.867	-127.874	11.214	3765.809	102.13	101.96	185.17	185.11
96	165	-15085.669	-280.356	1.442	86.770	-2.672	-2727.133	134.73	134.69	194.90	194.88
97	165	15085.655	280.356	-1.427	-86.589	2.672	2727.130	134.73	134.69	194.90	194.88
97	166	-13129.890	-287.092	1.060	58.756	-26.611	-1327.057	126.20	125.79	155.35	155.21
98	166	13129.894	287.092	-1.509	-54.311	26.612	1327.034	126.20	125.79	155.35	155.21
98	167	-13129.267	-232.212	1.379	16.296	-19.393	129.645	138.31	138.01	135.35	135.25
99	167	13129.266	232.212	-1.828	-11.232	19.393	-129.658	138.31	138.01	135.35	135.25
99	168	-13133.232	-37.809	1.708	-25.018	-10.552	753.618	143.50	143.33	126.82	126.76
100	168	13112.271	37.808	-1.732	25.299	10.551	-752.950	143.27	143.11	126.61	126.55
100	169	-13157.177	179.179	0.729	-84.315	-9.412	373.000	140.56	140.41	132.28	132.23
101	169	13157.173	-179.178	-1.178	89.502	9.411	-372.973	140.56	140.41	132.28	132.23
101	170	-13215.751	164.707	1.048	-121.341	-3.856	-789.702	131.41	131.35	148.82	148.80
102	170	13215.750	-164.707	-1.048	121.343	3.857	789.705	131.41	131.35	148.82	148.80
102	171	-13083.466	-121.946	0.928	-150.318	1.083	-668.055	131.01	131.02	145.75	145.76
103	171	13083.472	121.947	-1.850	158.130	-1.084	668.173	131.01	131.02	145.76	145.76
103	172	-10415.379	162.594	-0.210	-219.718	-26.565	-526.019	104.55	104.14	116.02	115.88
104	172	10397.522	-162.595	0.210	219.718	26.566	521.565	104.40	103.99	115.78	115.64
104	173	-10310.472	1117.217	-4.403	-118.168	-46.432	-3784.322	76.38	75.66	159.65	159.40
105	173	10310.476	-1117.216	4.379	118.157	46.433	3784.324	76.38	75.66	159.65	159.40
105	176	-14121.813	1494.168	-5.940	-95.219	-59.313	-10850.564	12.40	11.65	186.39	186.13
106	176	14010.180	1482.750	-4.052	-5.218	49.412	10663.500	12.97	12.34	183.99	183.78
106	182	-9317.736	-340.531	1.074	-17.738	-85.196	-3156.187	71.57	70.24	140.78	140.33
107	182	9317.736	340.531	-1.591	17.107	85.196	3156.195	71.57	70.24	140.78	140.33
107	183	-11934.588	130.500	3.786	-41.186	-77.063	-3330.297	97.37	96.17	170.47	170.06
108	183	11978.044	-130.499	-3.760	41.223	77.063	3335.623	97.78	96.58	170.99	170.58
108	184	-14443.798	80.673	2.592	-53.828	-38.376	-4093.436	116.89	116.30	207.02	206.82
109	184	14443.797	-80.673	-2.131	55.691	38.376	4093.453	116.89	116.30	207.02	206.82
109	185	-14420.578	8.768	2.131	-56.166	-27.719	-4287.380	114.95	114.51	209.41	209.26
110	185	14420.573	-8.769	-2.106	56.290	27.719	4287.379	114.95	114.51	209.41	209.26
110	186	-14327.356	75.185	2.106	-50.790	-17.190	-4275.583	113.99	113.72	208.25	208.16
111	186	14327.360	-75.185	-1.109	55.718	17.190	4275.624	113.99	113.72	208.25	208.16
111	187	-14220.363	162.749	1.109	-43.918	-11.646	-4876.708	107.81	107.62	215.36	215.29
112	187	11973.158	-162.749	-1.109	43.918	11.646	4941.359	83.80	83.62	192.78	192.72
112	188	-11847.695	132.277	1.109	-25.743	-6.102	-5499.849	77.78	77.69	199.11	199.08
113	188	11847.699	-132.275	-0.623	27.187	6.102	5499.862	77.78	77.69	199.11	199.08
113	189	-11737.375	170.039	0.623	-1.987	-2.987	-6093.617	71.65	71.60	206.09	206.08
114	189	11737.373	-170.039	-0.597	2.010	2.987	6093.617	71.65	71.60	206.09	206.08
114	192	-11858.375	708.766	-0.036	49.018	0.000	-7261.458	63.13	63.13	223.36	223.36

proc Viaducto Papiol

HIPOTESIS 118

min mz + pret(t=0)(frecuente)

ESFUERZOS EN BARRAS

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	MOM. Y	MOM. Z
1	3	11678.908	402.462	-4.301	-963.422	-3.110	1962.652
1	8	-11771.212	-429.012	4.142	8.222	26.822	582.544
2	8	11771.183	429.012	-4.142	-8.222	-26.822	-582.545
2	9	-11836.520	-214.063	2.942	-1.247	44.534	2132.980
3	9	11836.518	214.062	-2.964	7.979	-44.534	-2132.977
3	10	-11916.959	-138.694	1.749	-24.366	54.761	2753.087
4	10	12527.931	138.695	-1.740	20.210	-54.761	-3450.704
4	11	-12692.148	-52.839	0.507	-16.828	53.725	3937.545
5	11	12692.159	52.840	-0.488	21.374	-53.725	-3937.533
5	12	-12704.059	152.104	-0.712	-14.639	53.166	3680.211
6	12	12704.059	-152.104	0.754	23.732	-53.166	-3680.194
6	13	-12677.870	281.356	-1.954	-13.147	46.398	2663.146
7	13	12677.891	-281.356	1.932	9.338	-46.398	-2663.153
7	14	-15481.317	-26.374	-2.873	-24.190	38.712	1460.141
8	14	15456.021	26.374	2.921	30.747	-38.712	-1466.444
8	15	-15409.194	-109.664	3.906	-60.758	28.793	1970.750
9	15	15409.177	109.664	-3.906	60.665	-28.793	-1970.751
9	18	-21187.135	595.078	1.158	-59.592	42.362	-1529.237
10	18	21005.629	1205.169	1.704	115.872	-45.205	1525.259
10	24	-16224.563	-126.789	-1.704	-111.247	43.737	2651.950
11	24	16224.531	126.790	1.625	113.411	-43.737	-2651.907
11	25	-16276.605	-203.125	-1.473	-83.374	102.954	2494.884
12	25	16245.228	203.124	1.305	91.448	-102.953	-2505.386
12	26	-13436.178	-439.899	1.258	-92.174	105.211	4252.471
13	26	13436.160	439.900	-1.202	87.054	-105.211	-4252.507
13	27	-13363.167	-405.041	1.265	17.587	97.157	6284.796
14	27	13363.196	405.039	-1.339	-11.562	-97.157	-6284.803
14	28	-13362.875	-265.480	0.150	-12.312	100.877	8085.121
15	28	13362.871	265.480	-0.306	26.188	-100.877	-8085.107
15	29	-13659.972	-2.927	-1.523	-44.276	93.398	8705.749
16	29	13030.535	2.928	1.489	37.281	-93.399	-8001.078
16	30	-13071.537	274.167	-2.689	-56.117	82.952	7314.444
17	30	13071.550	-274.168	2.724	63.229	-82.952	-7314.420
17	31	-13123.789	356.948	-3.915	-79.650	66.373	5508.284
18	31	13123.746	-356.948	3.947	85.677	-66.373	-5508.249
18	32	-13015.463	214.482	-5.052	-49.088	32.868	4299.048
19	32	13015.460	-214.481	5.051	49.081	-32.869	-4299.047
19	33	-15766.938	277.028	-6.235	-48.403	2.100	3720.597
20	33	15741.707	-277.028	6.264	52.156	-2.100	-3726.902
20	34	-15805.099	653.131	-5.392	37.641	-92.653	1535.083
21	34	15805.127	-653.131	5.486	-35.632	92.654	-1535.099
21	37	-21651.482	1009.079	-5.486	68.457	-113.035	-5133.966
22	37	21241.209	1111.588	0.157	229.608	102.587	5133.432
22	44	-15515.337	-157.861	-0.157	-194.933	-96.322	880.029
23	44	15515.320	157.861	0.090	196.848	96.322	-879.952

TENSIONES

BARRA	NUDO	SIGMA 1	SIGMA2	SIGMA3	SIGMA4
1	3	105.51	105.56	148.83	148.85
1	8	127.56	127.98	114.84	114.98
2	8	127.56	127.97	114.84	114.98
2	9	141.06	141.75	94.22	94.46
3	9	141.06	141.75	94.22	94.46
3	10	147.00	147.85	86.53	86.82
4	10	159.21	160.06	83.35	83.64
4	11	165.00	165.84	78.39	78.68
5	11	165.00	165.84	78.39	78.68
5	12	162.98	163.81	82.04	82.33
6	12	162.98	163.81	82.04	82.33
6	13	154.26	154.98	95.73	95.98
7	13	154.26	154.98	95.73	95.98
7	14	173.54	174.14	141.51	141.72
8	14	173.32	173.93	141.16	141.37
8	15	177.13	177.57	133.79	133.94
9	15	177.13	177.57	133.79	133.94
9	18	123.04	123.58	147.77	147.96
10	18	121.90	122.47	146.58	146.78
10	24	191.22	191.90	132.92	133.15
11	24	191.22	191.90	132.92	133.15
11	25	189.99	191.59	135.46	136.01
12	25	189.75	191.35	134.99	135.54
12	26	175.00	176.64	81.70	82.26
13	26	175.00	176.64	81.70	82.26
13	27	191.28	192.80	53.10	53.62
14	27	191.29	192.80	53.10	53.62
14	28	206.30	207.87	28.41	28.94
15	28	206.30	207.87	28.41	28.94
15	29	214.64	216.10	23.02	23.52
16	29	202.18	203.64	26.11	26.61
16	30	196.96	198.25	35.98	36.42
17	30	196.96	198.25	35.98	36.42
17	31	182.54	183.57	61.33	61.68
18	31	182.54	183.57	61.33	61.68
18	32	171.56	172.07	76.86	77.04
19	32	171.56	172.07	76.86	77.04
19	33	195.69	195.72	113.60	113.61
20	33	195.48	195.51	113.25	113.26
20	34	178.56	177.12	144.22	143.72
21	34	178.56	177.12	144.22	143.72
21	37	101.24	99.81	183.21	182.72
22	37	98.58	97.28	180.58	180.14
22	44	170.09	168.59	150.18	149.67
23	44	170.09	168.59	150.18	149.67

23	45	-15379.059	-235.913	3.240	-21.488	29.689	1105.200	169.57	170.03	145.34	145.49
24	45	13854.432	235.913	-3.373	25.130	-29.689	-644.508	149.80	150.27	135.73	135.89
24	46	-11558.038	-488.009	2.169	-27.032	45.463	2789.917	143.63	144.34	82.30	82.55
25	46	11558.074	488.008	-2.169	27.027	-45.463	-2789.914	143.63	144.34	82.30	82.55
25	47	-11540.027	-428.548	2.263	82.071	75.967	5053.012	162.12	163.30	51.01	51.41
26	47	11540.034	428.548	-2.328	-76.094	-75.966	-5053.040	162.12	163.30	51.01	51.41
26	48	-11543.271	-288.657	1.140	37.170	84.634	6962.774	178.05	179.36	24.84	25.29
27	48	11543.223	288.656	-1.143	-36.814	-84.635	-6962.777	178.05	179.36	24.84	25.29
27	49	-11550.217	-19.599	-0.057	-0.957	87.350	7683.590	184.12	185.48	15.02	15.49
28	49	11533.076	19.599	-0.005	7.993	-87.351	-7683.038	183.94	185.30	14.85	15.32
28	50	-12100.393	250.935	-1.836	-44.481	82.775	7092.754	184.96	186.25	28.88	29.32
29	50	12100.410	-250.935	1.983	51.655	-82.776	-7092.735	184.96	186.25	28.88	29.32
29	51	-12152.091	333.983	-3.173	-100.171	69.885	5389.273	171.37	172.46	52.81	53.18
30	51	12152.096	-333.982	3.314	106.299	-69.886	-5389.231	171.37	172.46	52.81	53.18
30	52	-12047.612	190.987	-4.407	-47.404	17.133	4278.150	161.40	161.67	67.09	67.18
31	52	12047.616	-190.987	4.407	47.404	-17.132	-4278.147	161.40	161.67	67.09	67.18
31	53	-14535.528	249.722	-5.325	-53.901	-14.996	3819.476	183.79	183.56	99.44	99.36
32	53	14510.188	-249.722	5.696	57.034	8.131	-3825.776	183.53	183.40	99.07	99.02
32	54	-14180.560	616.867	-1.665	127.198	-194.891	1829.797	164.86	161.83	123.49	122.45
33	54	14180.538	-616.866	1.662	-127.315	194.891	-1829.794	164.86	161.83	123.49	122.45
33	57	-20030.643	972.802	-1.662	163.990	-210.253	-4667.718	94.92	92.25	168.99	168.08
34	57	19388.672	1094.597	-3.541	227.794	203.375	4668.504	90.80	88.22	164.92	164.04
34	64	-13666.493	-184.529	1.238	-246.555	-161.230	1455.709	156.11	153.60	123.16	122.30
35	64	13666.503	184.529	-1.228	246.438	161.231	-1455.713	156.11	153.60	123.16	122.30
35	65	-13984.760	-214.646	3.484	3.183	-9.043	1572.777	159.22	159.08	124.47	124.42
36	65	13956.832	214.646	-3.676	5.012	9.044	-1576.075	158.96	158.82	124.13	124.09
36	66	-11217.936	-462.516	2.272	-9.393	4.804	3525.499	146.55	146.62	68.78	68.80
37	66	11217.928	462.514	-2.282	9.655	-4.804	-3525.500	146.55	146.62	68.78	68.80
37	67	-11192.382	-403.061	1.985	101.766	46.791	5677.275	163.94	164.66	38.90	39.15
38	67	11192.330	403.062	-2.171	-95.888	-46.791	-5677.314	163.94	164.66	38.90	39.15
38	68	-11188.066	-263.155	0.983	55.206	54.683	7476.129	178.86	179.71	14.17	14.46
39	68	11188.070	263.156	-0.851	-61.282	-60.729	-7476.107	178.81	179.76	14.16	14.48
39	69	-11944.679	-0.512	-0.774	25.399	69.127	8085.646	191.74	192.82	13.68	14.04
40	69	11927.533	0.513	1.099	-3.968	-62.809	-8085.105	191.61	192.58	13.52	13.86
40	70	-11960.522	276.613	-2.244	-37.224	60.910	7383.869	186.11	187.05	23.48	23.81
41	70	11960.533	-276.614	2.152	29.938	-60.910	-7383.881	186.11	187.05	23.48	23.81
41	71	-12004.713	360.067	-3.340	-70.756	47.168	5567.719	171.50	172.23	48.88	49.13
42	71	12004.710	-360.066	3.430	77.265	-47.170	-5567.695	171.50	172.23	48.88	49.13
42	72	-11892.726	217.377	-4.024	3.573	-7.133	4341.475	160.50	160.39	64.67	64.63
43	72	11892.716	-217.378	4.109	1.399	7.134	-4341.477	160.50	160.39	64.67	64.63
43	73	-14373.072	277.938	-5.469	-5.699	-32.439	3764.062	181.77	181.27	98.55	98.37
44	73	14347.809	-277.938	5.474	5.909	32.439	-3770.385	181.56	181.06	98.20	98.02
44	74	-14583.032	638.904	-0.085	231.411	-181.466	1687.704	167.77	164.95	129.60	128.63
45	74	14583.072	-638.904	0.290	-229.267	181.466	-1687.793	167.77	164.95	129.60	128.63
45	77	-20439.180	994.847	-0.290	277.042	-189.965	-4907.058	95.67	93.26	173.67	172.85
46	77	19566.498	1097.068	-3.602	142.976	176.390	4905.881	90.06	87.83	168.10	167.34
46	84	-13850.315	-186.783	2.790	-139.350	-193.039	1253.402	156.58	153.58	127.94	126.91
47	84	13850.332	186.782	-2.797	139.466	193.039	-1253.401	156.58	153.58	127.94	126.91
47	85	-13561.685	-215.486	4.770	66.269	-45.630	1410.999	153.74	153.03	122.37	122.13
48	85	13533.729	215.486	-5.025	-62.345	45.629	-1414.321	153.47	152.76	122.03	121.79
48	86	-11417.338	-469.400	4.069	59.429	-20.679	3402.086	147.80	147.47	72.62	72.51
49	86	11417.352	469.399	-4.189	-54.471	20.678	-3402.107	147.80	147.47	72.62	72.51
49	87	-11399.303	-410.008	3.827	131.165	18.534	5572.473	165.44	165.73	42.57	42.67
50	87	11399.316	410.006	-3.833	-130.840	-18.534	-5572.476	165.44	165.73	42.57	42.67
50	88	-11402.553	-270.150	2.645	101.973	34.743	7390.135	180.54	181.08	17.64	17.83
51	88	11402.552	270.152	-2.762	-95.057	-34.745	-7390.167	180.54	181.08	17.64	17.83
51	89	-12397.762	-7.695	0.943	68.930	55.455	8019.649	196.03	196.89	19.35	19.64
52	89	12380.603	7.694	-0.943	-68.936	-55.456	-8019.092	195.84	196.71	19.18	19.47
52	90	-12421.096	269.362	-0.257	37.205	57.171	7337.848	190.56	191.45	28.93	29.24
53	90	12421.110	-269.362	0.533	-29.921	-57.172	-7337.858	190.56	191.45	28.93	29.24
53	91	-12472.790	352.740	-1.720	-3.343	51.532	5542.169	176.14	176.94	54.11	54.38
54	91	12472.783	-352.740	1.983	9.522	-51.533	-5542.164	176.14	176.94	54.11	54.38

54	92	-12368.303	209.961	-2.614	49.196	16.229	4336.682	165.25	165.50	69.64	69.72
55	92	12368.287	-209.961	2.893	-43.965	-16.230	-4336.697	165.25	165.50	69.64	69.72
55	93	-14856.150	269.682	-4.176	37.358	-2.293	3782.128	186.73	186.70	103.26	103.25
56	93	14830.907	-269.682	4.162	-37.566	2.291	-3788.448	186.52	186.49	102.91	102.90
56	94	-14398.644	630.935	1.532	249.065	-92.193	1735.726	165.55	164.12	126.78	126.29
57	94	14398.643	-630.935	-1.525	-248.949	92.194	-1735.729	165.55	164.12	126.78	126.29
57	97	-20248.750	965.156	-4.662	70.419	-132.973	-4832.156	94.64	92.95	171.67	171.10
58	97	19145.105	1118.784	-6.557	-186.520	114.919	4835.501	87.51	86.05	164.67	164.17
58	104	-13363.505	-186.782	2.264	26.359	-151.190	1312.607	151.67	149.32	121.93	121.13
59	104	13363.542	186.782	-2.248	-26.473	151.190	-1312.606	151.67	149.32	121.93	121.13
59	105	-13401.293	-214.066	5.615	122.028	-23.924	1478.464	152.46	152.09	119.71	119.58
60	105	13373.367	214.066	-5.964	-117.657	23.922	-1481.815	152.20	151.82	119.37	119.25
60	106	-10896.965	-464.694	4.769	111.535	4.493	3457.378	142.63	142.70	66.36	66.38
61	106	10896.956	464.694	-4.752	-111.796	-4.493	-3457.383	142.63	142.70	66.36	66.38
61	107	-10875.156	-405.419	4.125	114.610	25.530	5612.633	160.25	160.65	36.53	36.67
62	107	10875.146	405.419	-4.460	-108.103	-25.530	-5612.678	160.25	160.65	36.53	36.66
62	108	-10874.633	-265.695	3.272	103.273	44.866	7415.750	175.16	175.86	11.75	11.99
63	108	10874.620	265.696	-3.589	-96.347	-44.865	-7415.788	175.16	175.86	11.75	11.99
63	109	-10877.865	3.160	2.389	88.947	59.811	8030.337	180.21	181.14	3.32	3.64
64	109	10860.724	-3.160	-2.072	-96.111	-59.812	-8029.750	180.03	180.96	3.15	3.47
64	110	-12116.502	273.923	1.005	89.049	81.604	7328.415	187.11	188.38	25.82	26.25
65	110	12116.528	-273.924	-0.705	-74.863	-81.604	-7328.476	187.11	188.38	25.82	26.25
65	111	-12164.457	357.173	-0.482	62.403	82.151	5518.406	172.48	173.76	51.13	51.57
66	111	12164.427	-357.173	0.629	-56.225	-82.150	-5518.426	172.48	173.76	51.13	51.57
66	112	-12056.196	214.266	-1.249	63.535	76.153	4298.990	161.21	162.39	66.73	67.14
67	112	12056.201	-214.266	1.257	-63.279	-76.153	-4298.990	161.21	162.39	66.73	67.14
67	113	-14540.316	273.990	-2.542	53.804	64.985	3731.333	182.49	183.50	100.48	100.83
68	113	14515.070	-273.991	2.688	-49.869	-64.984	-3737.675	182.28	183.29	100.13	100.48
68	114	-14442.655	634.107	2.004	161.482	48.920	1691.593	164.55	165.31	127.47	127.73
69	114	14442.619	-634.107	-2.004	-161.481	-48.920	-1691.592	164.55	165.31	127.47	127.73
69	117	-20295.719	946.621	-0.512	131.437	-39.793	-4883.831	93.97	93.47	172.23	172.06
70	117	18961.139	1141.739	-2.444	-170.921	20.556	4869.974	85.50	85.24	163.61	163.52
70	124	-13241.950	-188.018	2.444	168.896	-8.336	1290.817	149.11	148.98	120.58	120.54
71	124	13241.989	188.019	-2.070	-171.161	8.336	-1290.749	149.11	148.98	120.58	120.54
71	125	-13731.980	-215.402	6.600	120.925	34.948	1461.530	155.31	155.86	123.24	123.43
72	125	13704.033	215.401	-6.800	-116.769	-34.949	-1464.881	155.05	155.59	122.90	123.09
72	126	-11231.386	-466.068	5.662	109.969	67.279	3440.443	145.49	146.54	69.92	70.28
73	126	11231.388	466.069	-5.863	-104.741	-67.279	-3440.486	145.49	146.54	69.92	70.27
73	127	-11209.589	-406.851	4.832	21.537	66.116	5602.860	163.34	164.37	40.05	40.40
74	127	11209.585	406.848	-5.021	-15.359	-66.116	-5602.861	163.34	164.37	40.05	40.40
74	128	-11209.071	-267.175	3.833	40.703	88.258	7413.275	178.29	179.67	15.16	15.63
75	128	11209.064	267.176	-3.833	-40.698	-88.257	-7413.277	178.29	179.67	15.16	15.63
75	129	-12662.479	-5.906	3.322	61.970	129.515	8054.730	198.51	200.52	21.43	22.12
76	129	12645.327	5.906	-2.960	-54.798	-129.516	-8054.205	198.33	200.34	21.26	21.95
76	130	-12682.069	271.013	1.760	74.814	141.319	7372.379	192.92	195.12	30.96	31.71
77	130	12682.065	-271.012	-1.381	-67.523	-141.319	-7372.413	192.92	195.12	30.96	31.71
77	131	-12729.995	354.265	0.193	85.116	145.248	5576.925	178.38	180.64	56.07	56.84
78	131	12730.005	-354.265	-0.554	-91.306	-145.249	-5576.892	178.38	180.64	56.07	56.84
78	132	-12621.771	211.382	-0.034	34.382	176.918	4371.873	166.94	169.69	71.37	72.31
79	132	12621.778	-211.384	1.136	-19.171	-176.917	-4371.903	166.94	169.69	71.37	72.31
79	133	-15105.893	271.258	-2.373	8.259	167.736	3816.921	188.31	190.92	104.94	105.83
80	133	15080.633	-271.258	2.012	-12.224	-167.737	-3823.234	188.10	190.71	104.59	105.48
80	134	-14977.619	631.436	2.430	-24.774	215.092	1804.393	169.78	173.13	131.07	132.21
81	134	14977.603	-631.436	-2.075	26.961	-215.092	-1804.385	169.78	173.13	131.07	132.21
81	137	-20830.703	943.746	1.244	-67.684	181.033	-4748.377	96.93	99.22	173.93	174.72
82	137	19265.445	1136.943	3.905	-245.282	-190.390	4801.794	86.57	88.99	164.47	165.30
82	144	-13546.262	-183.217	-3.905	212.557	170.864	1334.969	151.26	153.92	122.67	123.58
83	144	13546.269	183.217	3.413	-208.103	-170.864	-1335.134	151.26	153.92	122.67	123.58
83	145	-13616.859	-205.699	1.538	50.756	104.245	1496.066	153.86	155.48	121.38	121.94
84	145	13588.932	205.699	-1.551	-50.548	-104.244	-1499.369	153.60	155.22	121.04	121.60
84	146	-10666.287	-456.464	0.196	46.249	107.039	3427.811	139.18	140.84	64.08	64.65

85	146	10666.290	456.464	-0.175	-46.513	-107.039	-3427.814	139.18	140.84	64.08	64.65
85	147	-10644.492	-397.121	-0.095	-78.806	66.050	5541.878	156.93	157.96	34.98	35.33
86	147	10644.491	397.120	-0.737	91.448	-66.050	-5541.812	156.93	157.96	34.98	35.34
86	148	-10643.979	-257.408	-0.453	-49.095	66.754	7304.243	171.65	172.69	10.82	11.17
87	148	10643.973	257.409	0.432	49.454	-66.753	-7304.241	171.65	172.69	10.81	11.17
87	149	-10647.221	11.533	-1.632	-8.306	61.595	7877.125	176.51	177.47	3.01	3.34
88	149	10630.067	-11.533	1.249	15.037	-61.593	-7876.564	176.33	177.29	2.84	3.17
88	150	-10666.806	288.569	-2.449	25.121	52.349	7107.280	170.36	171.17	13.79	14.07
89	150	10666.813	-288.569	2.427	-24.762	-52.349	-7107.280	170.36	171.17	13.79	14.07
89	151	-10714.742	371.910	-3.615	64.155	37.243	5224.275	155.24	155.82	40.15	40.35
90	151	10714.734	-371.910	3.189	-57.777	-37.242	-5224.295	155.24	155.82	40.15	40.35
90	152	-10606.499	229.161	-4.795	-40.987	40.351	3930.670	143.27	143.90	56.74	56.96
91	152	10606.505	-229.161	4.816	40.736	-40.351	-3930.672	143.27	143.90	56.74	56.96
91	153	-13090.620	289.034	-6.035	-47.607	11.909	3292.704	164.10	164.28	91.50	91.56
92	153	13065.341	-289.034	5.608	51.572	-11.909	-3299.009	163.89	164.07	91.15	91.21
92	154	-12992.896	599.974	-0.276	-193.002	74.724	1205.848	145.15	146.31	118.92	119.32
93	154	12992.905	-599.974	-0.123	194.962	-74.724	-1205.774	145.15	146.31	118.92	119.32
93	157	-18846.006	955.904	0.123	-238.862	75.339	-5200.756	81.80	82.75	165.62	165.95
94	157	18729.256	1151.861	3.681	-195.130	-95.792	5005.230	82.32	83.54	163.10	163.51
94	163	-13010.083	-198.123	-3.681	151.404	77.386	1206.160	145.31	146.51	119.09	119.50
95	163	13010.083	198.123	3.238	-149.284	-77.386	-1206.219	145.31	146.51	119.09	119.50
95	164	-13050.106	-210.781	2.321	-10.666	7.460	1462.702	148.42	148.53	116.18	116.22
96	164	13022.195	210.780	-2.771	14.615	-7.460	-1465.997	148.15	148.27	115.84	115.88
96	165	-10999.551	-462.074	2.038	-22.395	18.484	3420.179	143.28	143.57	67.90	68.00
97	165	10999.541	462.074	-2.053	22.657	-18.485	-3420.180	143.28	143.57	67.90	68.00
97	166	-12891.581	-425.978	3.314	-112.021	5.210	5626.148	181.57	181.65	57.45	57.48
98	166	12891.588	425.978	-2.865	118.209	-5.211	-5626.104	181.57	181.65	57.45	57.48
98	167	-12891.074	-286.770	1.675	-94.476	16.563	7539.766	197.47	197.73	31.18	31.27
99	167	12891.069	286.769	-1.226	101.443	-16.563	-7539.734	197.47	197.73	31.18	31.27
99	168	-12894.315	-17.771	0.026	-76.103	19.692	8259.283	203.49	203.80	21.34	21.45
100	168	12877.167	17.771	-0.002	76.487	-19.693	-8258.736	203.31	203.62	21.17	21.28
100	169	-12913.909	259.308	-1.198	-49.161	16.703	7635.830	198.51	198.77	30.10	30.19
101	169	12913.904	-259.307	1.647	56.189	-16.704	-7635.814	198.51	198.77	30.10	30.19
101	170	-12961.832	342.415	-2.837	-26.437	5.505	5906.343	184.64	184.73	54.34	54.37
102	170	12961.828	-342.416	2.837	26.439	-5.505	-5906.343	184.64	184.73	54.34	54.37
102	171	-12838.315	175.086	-1.113	-87.968	-32.432	4878.667	175.06	174.56	67.24	67.07
103	171	12838.317	-175.086	2.022	98.591	32.432	-4878.597	175.06	174.56	67.24	67.07
103	172	-15322.432	246.101	-2.173	-94.818	-43.119	4466.694	197.64	196.97	98.85	98.62
104	172	15300.611	-246.102	2.173	94.818	43.119	-4472.138	197.46	196.79	98.55	98.32
104	173	-15212.904	559.166	-0.384	-214.952	23.708	2803.718	182.08	182.45	120.33	120.46
105	173	15212.904	-559.165	0.407	215.088	-23.707	-2803.715	182.08	182.45	120.33	120.46
105	176	-19871.205	826.064	-0.407	-235.513	21.671	-1387.780	115.85	116.12	138.22	138.31
106	176	19982.828	890.013	-1.088	45.528	-11.769	1574.935	115.28	115.43	140.62	140.67
106	182	-14247.620	91.280	1.088	-61.578	17.207	3318.382	176.35	176.62	103.21	103.31
107	182	14247.620	-91.280	-0.577	63.676	-17.207	-3318.357	176.35	176.62	103.22	103.31
107	183	-11712.177	104.222	1.618	-61.538	44.227	2665.828	144.22	144.90	85.62	85.85
108	183	11765.291	-104.222	-1.643	61.718	-44.227	-2659.321	144.72	145.40	86.26	86.50
108	184	-9478.255	-190.571	0.132	-38.257	62.840	3162.302	124.90	125.87	55.44	55.77
109	184	9478.253	190.571	-0.598	42.125	-62.841	-3162.289	124.90	125.87	55.44	55.77
109	185	-9459.257	-134.121	-0.602	-68.259	62.829	3998.308	131.68	132.66	43.78	44.11
110	185	9459.252	134.120	0.576	68.511	-62.829	-3998.308	131.68	132.66	43.78	44.11
110	186	-9382.984	35.504	-1.776	-88.869	56.946	4426.228	134.51	135.40	37.13	37.43
111	186	9382.985	-35.504	0.768	99.082	-56.947	-4426.156	134.51	135.40	37.13	37.44
111	187	-9295.441	222.429	-1.968	-113.356	50.108	3776.217	128.22	129.00	45.15	45.41
112	187	7456.820	-222.428	1.968	113.357	-50.109	-3723.322	108.58	109.36	26.68	26.94
112	188	-7354.169	307.426	-2.615	-87.512	33.103	2550.363	97.84	98.35	41.73	41.91
113	188	7354.171	-307.424	2.123	91.372	-33.104	-2550.326	97.84	98.35	41.73	41.91
113	189	-7263.905	453.831	-3.323	-87.714	19.487	779.758	82.20	82.51	65.10	65.20
114	189	7263.903	-453.832	3.297	87.849	-19.487	-779.756	82.20	82.51	65.10	65.20
114	192	-6982.217	637.860	-1.120	-84.624	0.000	-1354.377	61.58	61.58	91.47	91.47

proc Viaducto Papiol

HIPOTESIS 119

max mz + pret(t=inf)(frecuente)

ESFUERZOS EN BARRAS

TENSIONES

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	MOM. Y	MOM. Z	SIGMA 1	SIGMA2	SIGMA3	SIGMA4
1	3	11058.598	424.481	-3.647	898.686	3.111	1960.415	99.10	99.05	142.34	142.33
1	8	-11139.987	-94.203	-0.686	53.535	12.148	-1275.431	105.56	105.74	133.76	133.83
2	8	11139.959	94.203	0.686	-53.535	-12.148	1275.431	105.55	105.74	133.76	133.83
2	9	-11195.970	41.546	-0.686	27.760	27.407	-1194.299	106.70	107.13	133.19	133.34
3	9	11195.980	-41.545	-5.278	-20.930	-12.530	1194.281	106.81	107.01	133.23	133.30
3	10	-11266.201	51.169	-0.710	2.496	42.546	-1663.169	103.40	104.06	140.31	140.54
4	10	11841.182	-51.169	0.699	-4.791	-42.546	1006.644	114.89	115.55	137.32	137.54
4	11	-11855.355	78.601	-0.666	-13.352	64.477	-1320.701	112.24	113.24	141.71	142.05
5	11	11855.365	-78.601	0.650	15.719	-64.477	1320.709	112.24	113.24	141.71	142.05
5	12	-11861.085	205.150	-0.650	-29.144	79.916	-2035.331	106.21	107.45	151.53	151.95
6	12	11861.082	-205.151	0.615	33.413	-79.916	2035.355	106.21	107.45	151.53	151.95
6	13	-11830.957	260.458	-0.615	-42.938	95.529	-3133.315	96.59	98.08	166.22	166.73
7	13	11830.979	-260.458	0.633	41.493	-95.529	3133.297	96.60	98.08	166.22	166.73
7	14	-9653.805	218.372	0.493	-22.533	34.235	-4142.852	65.90	66.44	157.50	157.68
8	14	9637.868	-218.372	-0.541	22.717	-34.235	4138.885	65.77	66.30	157.28	157.46
8	15	-9617.561	405.183	0.395	-21.647	35.613	-5229.465	56.43	56.99	172.01	172.20
9	15	9617.536	-405.182	-0.394	21.718	-35.612	5229.465	56.43	56.99	172.01	172.20
9	18	-13293.215	1225.029	-3.678	4.875	29.551	-11318.943	3.25	3.62	185.13	185.25
10	18	13474.787	1745.396	-5.270	35.186	-26.705	11323.053	4.39	4.72	186.32	186.43
10	24	-10460.858	-872.874	2.738	-46.799	59.943	-4288.750	72.91	73.84	167.85	168.17
11	24	10460.845	872.874	-2.696	45.899	-59.942	4288.769	72.91	73.84	167.85	168.17
11	25	-10595.744	-258.367	-0.431	-157.645	99.364	-1762.336	95.13	96.67	134.52	135.05
12	25	10575.976	258.366	0.599	160.063	-99.364	1755.803	94.97	96.52	134.23	134.76
12	26	-12968.945	-265.181	0.045	-78.613	3.382	-406.214	131.98	132.04	140.96	140.98
13	26	12968.928	265.181	-0.122	75.559	-3.382	406.182	131.98	132.04	140.96	140.98
13	27	-12955.836	-251.994	-0.208	-62.725	-5.761	880.327	142.67	142.58	123.21	123.18
14	27	12955.835	251.994	0.073	67.055	-3.689	-880.306	142.59	142.65	123.19	123.21
14	28	-12962.790	-164.463	-0.414	-51.485	-7.497	2046.847	152.50	152.39	107.30	107.26
15	28	12962.795	164.463	0.359	60.778	-3.001	-2046.807	152.42	152.47	107.27	107.29
15	29	-12679.800	48.046	0.641	-20.771	-20.051	2306.183	151.81	151.50	100.82	100.71
16	29	12087.392	-48.045	-0.606	16.421	20.052	-1643.002	140.09	139.77	103.73	103.62
16	30	-12133.258	249.004	0.486	3.839	-17.319	876.737	134.14	133.87	114.71	114.61
17	30	12133.282	-249.004	-0.521	0.452	17.319	-876.741	134.14	133.87	114.71	114.61
17	31	-12189.725	283.782	0.393	22.172	-15.052	-683.380	121.67	121.44	136.68	136.60
18	31	12189.726	-283.784	-0.425	-18.733	15.051	683.375	121.67	121.44	136.68	136.60
18	32	-12003.290	116.111	-1.390	3.826	30.659	-1498.393	112.56	113.04	145.78	145.95
19	32	12003.236	-116.110	1.390	-3.830	-30.659	1498.393	112.56	113.04	145.78	145.94
19	33	-9652.058	352.914	1.458	31.987	33.118	-2481.900	79.77	80.29	134.71	134.89
20	33	9636.250	-352.914	-1.547	-31.458	-33.118	2477.904	79.64	80.16	134.49	134.67
20	34	-9736.489	1191.210	-3.867	15.788	36.786	-6139.136	50.06	50.64	185.72	185.92
21	34	9736.497	-1191.210	3.838	-17.368	-36.784	6139.128	50.07	50.64	185.72	185.92
21	37	-13421.560	1552.125	-4.798	33.967	15.195	-14593.148	-19.22	-19.02	215.18	215.24
22	37	13831.655	1712.290	-5.255	40.349	-4.743	14593.608	-16.56	-16.50	217.80	217.82
22	44	-10226.216	-919.844	2.670	-69.345	38.604	-6367.602	53.25	53.85	193.96	194.17
23	44	10226.222	919.844	-2.531	67.781	-38.604	6367.628	53.25	53.85	193.96	194.17

23	45	-10073.806	-312.747	-1.946	-243.290	9.990	-3934.806	72.22	72.37	159.09	159.15
24	45	9113.262	312.747	2.008	243.822	-9.990	4225.130	59.76	59.92	153.05	153.10
24	46	-11346.266	-346.604	-4.543	-201.788	-10.114	-2709.106	95.90	95.74	155.63	155.57
25	46	11346.314	346.604	4.543	201.785	10.114	2709.107	95.90	95.74	155.63	155.58
25	47	-11189.772	-298.504	-0.509	-99.102	-42.233	-1123.285	107.77	107.11	132.34	132.11
26	47	11189.750	298.504	0.355	103.537	55.684	1123.325	107.87	107.01	132.38	132.08
26	48	-11185.551	-211.244	-0.706	-65.036	-45.434	287.853	119.54	118.84	112.96	112.72
27	48	11185.504	211.244	0.710	65.246	45.435	-287.852	119.54	118.84	112.96	112.72
27	49	-11184.806	-3.713	1.497	14.979	-63.703	826.991	124.18	123.19	105.61	105.27
28	49	11168.674	3.712	-1.435	-10.792	63.703	-826.475	124.01	123.02	105.45	105.11
28	50	-10672.678	203.743	1.956	42.782	-55.228	301.351	114.38	113.52	107.44	107.15
29	50	10672.695	-203.743	-2.103	-38.577	55.228	-301.370	114.38	113.52	107.44	107.15
29	51	-10714.055	237.936	1.972	69.061	-45.039	-1022.981	103.66	102.96	126.01	125.77
30	51	10714.059	-237.935	-2.114	-65.613	45.039	1022.954	103.66	102.96	126.01	125.77
30	52	-10608.451	60.872	1.994	97.073	-34.767	-1585.934	97.78	97.23	132.59	132.41
31	52	10608.452	-60.872	-1.994	-97.073	34.768	1585.933	97.78	97.23	132.59	132.41
31	53	-8777.443	327.930	0.101	129.327	-29.926	-2383.161	71.96	71.49	124.39	124.23
32	53	8761.512	-327.931	-0.158	-128.611	29.926	2379.125	71.83	71.36	124.17	124.01
32	54	-8463.551	1176.406	-1.147	19.554	94.872	-5973.375	37.71	39.18	170.00	170.51
33	54	8463.549	-1176.406	1.155	-19.483	-94.871	5973.377	37.71	39.18	170.00	170.51
33	57	-12147.256	1536.964	-2.115	18.655	86.695	-14334.428	-25.90	-24.80	204.64	205.02
34	57	12789.245	1697.068	-2.997	21.643	-79.816	14333.643	-21.78	-20.77	208.72	209.06
34	64	-9182.410	-905.074	0.685	-73.037	92.460	-6169.348	43.59	45.03	180.20	180.69
35	64	9182.382	905.074	-0.690	73.106	-92.462	6169.347	43.59	45.03	180.20	180.69
35	65	-9479.418	-297.231	-4.111	-243.056	-39.222	-3743.367	67.99	67.38	150.39	150.19
36	65	9461.831	297.231	4.512	244.525	39.223	3741.478	67.83	67.22	150.18	149.98
36	66	-11554.162	-302.012	-1.980	-155.333	-42.922	-2240.935	102.24	101.57	151.47	151.24
37	66	11554.154	302.011	1.991	155.469	42.924	2240.936	102.24	101.57	151.47	151.24
37	67	-11537.391	-288.825	-2.111	-110.159	-53.177	-768.224	114.45	113.62	131.13	130.85
38	67	11537.417	288.826	2.297	113.492	53.176	768.262	114.45	113.62	131.13	130.85
38	68	-11540.686	-201.586	-2.429	-68.095	-64.999	577.975	125.83	124.82	112.74	112.39
39	68	11540.643	201.585	2.241	64.237	65.000	-578.001	125.83	124.82	112.74	112.39
39	69	-10790.332	12.469	0.759	23.939	-96.541	1054.844	122.22	120.72	98.45	97.94
40	69	10774.194	-5.291	7.421	143.140	56.685	-1054.337	121.74	120.86	98.19	97.88
40	70	-10812.524	213.424	0.908	56.442	-91.703	463.663	117.48	116.05	106.78	106.29
41	70	10812.527	-213.425	-0.816	-60.710	91.703	-463.638	117.48	116.05	106.78	106.29
41	71	-10861.388	247.548	0.684	106.006	-87.942	-925.796	106.35	104.98	126.33	125.86
42	71	10861.385	-247.548	-0.774	-102.345	87.944	925.749	106.35	104.98	126.32	125.86
42	72	-10763.275	70.488	0.654	147.430	-84.371	-1552.874	100.05	98.74	133.89	133.44
43	72	10763.266	-70.488	-0.738	-144.893	84.372	1552.817	100.05	98.74	133.89	133.44
43	73	-8380.859	339.415	1.968	225.487	-63.818	-2416.771	67.80	66.81	120.80	120.46
44	73	8364.946	-339.416	-1.979	-225.452	63.819	2412.782	67.67	66.68	120.58	120.24
44	74	-8633.391	1192.905	-1.526	71.946	55.124	-6115.471	38.60	39.46	173.83	174.12
45	74	8633.416	-1192.905	1.444	-73.323	-55.125	6115.441	38.60	39.46	173.83	174.12
45	77	-12324.624	1553.798	-2.404	79.877	45.504	-14575.919	-26.23	-25.66	208.01	208.21
46	77	13197.273	1705.717	-5.042	-22.883	-31.929	14577.214	-20.63	-20.23	213.58	213.72
46	84	-9597.939	-913.423	3.053	-15.297	44.138	-6387.047	46.49	47.18	187.65	187.89
47	84	9597.952	913.423	-3.040	15.222	-44.137	6387.046	46.49	47.18	187.65	187.89
47	85	-9289.583	-303.960	-3.205	-132.703	-53.236	-3891.983	64.88	64.05	150.49	150.20
48	85	9271.964	303.960	3.327	133.361	53.237	3889.955	64.71	63.88	150.28	149.99
48	86	-11354.695	-304.568	-1.492	-86.716	-62.192	-2421.743	98.80	97.83	151.92	151.58
49	86	11354.706	304.568	1.610	89.243	62.193	2421.776	98.80	97.83	151.92	151.59
49	87	-11330.439	-291.392	-1.730	-48.608	-70.544	-920.158	111.16	110.06	131.10	130.72
50	87	11330.454	291.391	1.737	48.790	70.545	920.159	111.16	110.06	131.10	130.72
50	88	-11326.221	-204.147	-1.869	-9.492	-79.571	454.948	122.67	121.44	112.23	111.80
51	88	11326.219	204.148	1.986	13.529	79.571	-454.940	122.67	121.44	112.23	111.80
51	89	-10337.308	-4.266	-1.487	20.310	-99.705	960.011	116.73	115.17	95.03	94.50
52	89	10321.154	4.266	1.487	-20.314	99.704	-959.487	116.55	115.00	94.87	94.34
52	90	-10351.984	210.993	0.372	93.886	-100.202	397.207	112.18	110.62	102.90	102.37
53	90	10351.998	-210.993	-0.648	-89.634	100.202	-397.242	112.18	110.62	102.90	102.37
53	91	-10393.356	245.109	0.516	124.590	-97.284	-963.966	101.21	99.70	121.99	121.47
54	91	10393.351	-245.109	-0.779	-121.123	97.283	963.921	101.21	99.70	121.99	121.47

54	92	-10287.745	68.048	0.659	154.408	-93.688	-1562.772	95.08	93.62	129.08	128.59
55	92	10287.738	-68.048	-0.938	-151.742	93.689	1562.713	95.08	93.62	129.08	128.58
55	93	-8559.320	338.303	1.752	253.383	-45.658	-2404.996	69.62	68.91	122.46	122.21
56	93	8543.414	-338.303	-1.745	-253.419	45.658	2401.021	69.49	68.78	122.24	121.99
56	94	-8142.866	1192.644	-0.360	89.122	47.277	-6086.992	33.78	34.52	168.34	168.59
57	94	8142.867	-1192.644	0.346	-89.195	-47.277	6086.991	33.78	34.52	168.34	168.59
57	97	-11826.574	1553.435	-1.306	84.729	43.142	-14529.885	-29.05	-28.50	204.45	204.64
58	97	12930.182	1701.057	-6.423	-87.580	-26.049	14526.283	-21.92	-21.59	211.45	211.56
58	104	-9323.344	-908.862	4.769	56.920	36.174	-6343.006	44.05	44.62	184.20	184.40
59	104	9323.369	908.862	-4.776	-56.848	-36.176	6343.007	44.05	44.62	184.20	184.40
59	105	-9428.391	-301.205	-0.374	21.932	-1.004	-3858.275	66.20	66.19	151.34	151.33
60	105	9410.795	301.206	0.568	-21.190	1.004	3856.187	66.04	66.02	151.12	151.12
60	106	-11875.140	-305.245	-0.423	14.518	-21.079	-2404.497	104.05	103.73	157.00	156.89
61	106	11875.131	305.245	0.406	-14.650	21.080	2404.494	104.05	103.73	157.00	156.89
61	107	-11854.616	-292.063	-0.526	35.175	-23.406	-907.563	116.37	116.00	136.27	136.15
62	107	11854.604	292.062	0.859	-31.527	23.407	907.550	116.37	116.00	136.27	136.15
62	108	-11854.121	-204.823	-0.991	49.565	-28.041	462.854	127.85	127.41	117.49	117.34
63	108	11854.107	204.824	1.309	-45.525	28.042	-462.872	127.85	127.41	117.49	117.34
63	109	-11857.162	-11.472	-1.429	61.075	-34.886	964.282	132.13	131.58	110.67	110.48
64	109	11841.034	11.473	1.112	-65.312	34.886	-963.738	131.95	131.41	110.51	110.32
64	110	-10656.582	209.945	-0.832	85.087	-52.168	403.727	115.04	114.23	105.87	105.59
65	110	10656.603	-209.945	0.532	-76.800	52.170	-403.785	115.04	114.23	105.86	105.59
65	111	-10701.711	244.063	-0.665	87.073	-55.151	-960.189	104.14	103.28	125.04	124.75
66	111	10701.683	-244.063	0.519	-83.600	55.150	960.157	104.14	103.28	125.04	124.75
66	112	-10599.826	66.999	-0.639	91.200	-58.044	-1561.842	98.07	97.17	132.23	131.93
67	112	10599.836	-66.999	0.631	-91.069	58.042	1561.839	98.07	97.17	132.24	131.93
67	113	-8518.321	338.461	1.506	167.581	2.926	-2415.483	68.73	68.77	122.04	122.06
68	113	8502.418	-338.462	-1.658	-166.913	-2.927	2411.438	68.60	68.64	121.82	121.84
68	114	-8012.462	1192.028	-0.920	60.445	45.223	-6095.664	32.36	33.07	167.10	167.34
69	114	8012.438	-1192.028	0.920	-60.445	-45.223	6095.665	32.36	33.07	167.10	167.34
69	117	-11699.895	1552.714	-1.880	43.774	38.226	-14543.225	-29.91	-29.43	203.78	203.94
70	117	13034.505	1703.290	-8.960	-103.413	-18.990	14556.818	-21.43	-21.19	212.39	212.48
70	124	-9431.415	-911.198	7.527	94.473	38.578	-6370.265	44.93	45.53	185.70	185.90
71	124	9431.433	911.198	-7.727	-93.027	-38.579	6370.302	44.93	45.53	185.70	185.91
71	125	-9900.965	-303.821	3.810	151.409	64.007	-3868.926	70.54	71.54	156.24	156.58
72	125	9883.364	303.820	-3.436	-150.707	-64.008	3866.784	70.38	71.37	156.03	156.37
72	126	-11540.701	-309.083	1.642	97.880	54.043	-2394.081	100.06	100.91	153.17	153.46
73	126	11540.697	309.084	-1.441	-95.212	-54.043	2394.044	100.06	100.91	153.17	153.46
73	127	-11520.184	-295.901	1.321	85.467	60.950	-877.937	112.47	113.41	132.15	132.48
74	127	11520.178	295.900	-1.132	-81.989	-60.950	877.908	112.47	113.41	132.15	132.48
74	128	-11519.693	-208.656	0.999	69.412	66.267	511.608	124.03	125.06	113.08	113.44
75	128	11519.691	208.656	-0.999	-69.409	-66.267	-511.610	124.03	125.06	113.08	113.44
75	129	-10072.579	-7.743	0.190	55.501	45.871	1012.741	113.27	113.98	91.16	91.40
76	129	10056.438	7.744	-0.551	-51.246	-45.871	-1012.242	113.10	113.81	91.00	91.24
76	130	-10091.015	207.486	-1.040	16.445	32.158	459.785	108.95	109.45	98.97	99.14
77	130	10091.010	-207.487	0.660	-12.173	-32.157	-459.793	108.95	109.45	98.97	99.14
77	131	-10136.116	241.603	-0.792	-8.453	28.533	-891.946	98.15	98.60	117.98	118.13
78	131	10136.124	-241.603	1.153	4.961	-28.533	891.943	98.15	98.60	117.98	118.13
78	132	-10034.265	64.540	-1.273	-28.006	22.468	-1481.298	92.21	92.56	125.01	125.13
79	132	10034.275	-64.541	0.171	35.830	-22.468	1481.337	92.21	92.56	125.01	125.13
79	133	-7983.362	336.714	1.705	-14.377	86.624	-2366.649	62.90	64.25	115.57	116.03
80	133	7967.444	-336.714	-1.350	13.691	-86.624	2362.663	62.77	64.11	115.34	115.81
80	134	-7896.886	1189.028	-2.116	-21.213	80.550	-5988.923	31.77	33.03	164.34	164.77
81	134	7896.877	-1189.028	1.757	19.884	-80.549	5988.932	31.77	33.03	164.34	164.77
81	137	-11584.331	1604.516	-4.171	-11.098	55.062	-14421.617	-29.88	-29.19	201.92	202.16
82	137	13149.590	1634.818	-5.277	-79.078	-45.705	14368.232	-19.53	-18.95	211.38	211.58
82	144	-9546.507	-897.461	4.317	73.031	69.685	-6250.666	46.89	47.98	185.18	185.55
83	144	9546.515	897.461	-3.836	-75.758	-69.686	6250.607	46.89	47.98	185.18	185.55
83	145	-9596.649	-294.453	-0.775	192.304	132.064	-3833.920	67.13	69.18	152.40	153.11
84	145	9579.056	294.453	0.788	-192.268	-132.064	3831.836	66.96	69.02	152.19	152.89
84	146	-12105.795	-302.034	-0.506	125.516	84.450	-2397.267	105.70	107.01	159.03	159.48

85	146	12105.796	302.035	0.484	-125.650	-84.449	2397.268	105.70	107.01	159.03	159.48
85	147	-12085.285	-288.850	-0.604	90.416	81.727	-916.437	117.88	119.15	138.52	138.96
86	147	12085.285	288.849	1.436	-83.303	-81.726	916.373	117.88	119.16	138.52	138.96
86	148	-12084.803	-201.530	-1.566	46.643	74.229	437.065	129.25	130.40	119.98	120.38
87	148	12084.792	201.530	1.587	-46.434	-74.228	-437.065	129.25	130.40	119.98	120.38
87	149	-12087.847	-8.179	-1.707	8.574	65.995	921.996	133.40	134.42	113.39	113.74
88	149	12071.706	8.179	2.090	-4.575	-65.995	-921.478	133.22	134.25	113.23	113.58
88	150	-12106.281	206.948	-4.464	-68.084	44.294	373.514	129.17	129.86	121.16	121.39
89	150	12106.290	-206.947	4.485	68.296	-44.295	-373.510	129.17	129.86	121.16	121.39
89	151	-12151.396	241.078	-4.617	-108.192	21.538	-976.089	118.54	118.88	140.19	140.31
90	151	12151.385	-241.078	5.044	111.837	-21.538	976.137	118.54	118.88	140.19	140.31
90	152	-12034.247	98.577	-4.978	-150.561	37.772	-1609.553	111.90	112.49	147.61	147.81
91	152	12034.255	-98.577	4.957	150.430	-37.771	1609.548	111.90	112.49	147.61	147.81
91	153	-9968.054	337.842	-4.948	-193.236	13.895	-2512.600	82.97	83.18	138.48	138.56
92	153	9952.127	-337.842	5.368	193.900	-13.895	2508.691	82.83	83.05	138.26	138.34
92	154	-9912.132	1189.736	-9.261	-105.929	-72.278	-6092.647	53.14	52.01	187.21	186.82
93	154	9912.133	-1189.736	9.665	104.561	72.276	6092.688	53.14	52.01	187.21	186.82
93	157	-13599.586	1605.439	-11.537	-76.161	-118.962	-14533.996	-16.82	-18.32	216.07	215.55
94	157	13716.320	1661.719	-9.079	-60.896	139.414	14729.822	-17.34	-19.11	218.60	218.00
94	163	-10113.241	-924.239	8.119	41.044	-96.420	-6477.951	52.20	50.70	194.65	194.14
95	163	10113.243	924.239	-7.670	-42.458	96.419	6477.935	52.20	50.70	194.65	194.14
95	164	-10132.813	-330.530	2.286	127.823	-9.038	-3946.128	72.89	72.75	159.92	159.87
96	164	10115.231	330.530	-1.842	-127.185	9.038	3944.002	72.72	72.58	159.70	159.65
96	165	-11787.821	-365.327	1.411	85.928	-0.167	-2287.219	103.96	103.96	154.43	154.43
97	165	11787.812	365.327	-1.396	-85.792	0.166	2287.216	103.96	103.96	154.43	154.43
97	166	-9838.172	-319.300	1.029	57.960	-24.260	-595.288	97.93	97.55	110.94	110.81
98	166	9838.176	319.300	-1.478	-54.375	24.260	595.266	97.93	97.55	110.94	110.81
98	167	-9837.692	-231.404	1.348	16.360	-17.195	903.201	110.39	110.13	90.37	90.28
99	167	9837.691	231.404	-1.797	-12.155	17.195	-903.214	110.39	110.13	90.37	90.28
99	168	-9840.746	-38.055	1.677	-24.095	-8.508	1537.518	115.66	115.53	81.69	81.64
100	168	9824.606	38.054	-1.701	24.330	8.507	-1537.005	115.49	115.35	81.53	81.48
100	169	-9859.184	175.608	0.698	-83.346	-7.522	1171.951	112.79	112.67	86.89	86.85
101	169	9859.180	-175.607	-1.148	87.676	7.522	-1171.925	112.79	112.67	86.89	86.85
101	170	-9904.285	210.019	1.017	-119.516	-2.121	-28.292	103.19	103.15	103.80	103.79
102	170	9904.285	-210.019	-1.017	119.517	2.121	28.295	103.19	103.15	103.80	103.79
102	171	-9802.426	32.956	0.897	-148.492	2.665	-459.755	98.48	98.52	108.64	108.65
103	171	9802.431	-32.956	-1.819	154.550	-2.665	459.870	98.48	98.52	108.64	108.65
103	172	-7751.513	303.307	-0.235	-216.789	-25.397	-1117.498	71.79	71.39	96.32	96.18
104	172	7737.766	-303.307	0.235	216.788	25.397	1114.068	71.67	71.28	96.13	95.99
104	173	-7667.222	1163.442	-4.428	-115.239	-45.390	-4875.145	39.66	38.96	147.01	146.76
105	173	7667.224	-1163.442	4.405	115.192	45.390	4875.146	39.66	38.96	147.01	146.76
105	176	-10601.953	1524.648	-5.965	-92.253	-58.397	-11996.082	-18.08	-18.82	174.31	174.05
106	176	10490.320	1492.490	-4.032	-5.147	48.495	11809.019	-17.51	-18.13	171.91	171.70
106	182	-6877.139	-500.452	1.053	-17.809	-84.381	-4422.611	35.50	34.19	132.66	132.21
107	182	6877.139	500.452	-1.571	16.526	84.382	4422.619	35.50	34.19	132.66	132.21
107	183	-9487.147	-65.127	3.766	-40.605	-76.350	-3567.061	69.84	68.65	148.16	147.75
108	183	9520.607	65.128	-3.740	40.614	76.350	3571.161	70.15	68.96	148.56	148.16
108	184	-11415.725	-56.125	2.567	-53.084	-37.630	-3455.206	90.60	90.02	166.66	166.46
109	184	11415.725	56.125	-2.107	54.409	37.630	3455.223	90.60	90.02	166.66	166.46
109	185	-11397.846	-69.350	2.107	-54.884	-27.097	-3118.681	93.15	92.73	161.83	161.68
110	185	11397.842	69.349	-2.081	54.983	27.097	3118.680	93.15	92.73	161.83	161.68
110	186	-11326.065	23.933	2.081	-49.483	-16.692	-2834.444	94.69	94.43	157.15	157.06
111	186	11326.068	-23.933	-1.084	53.635	16.692	2834.482	94.69	94.43	157.15	157.07
111	187	-11243.682	133.498	1.084	-41.835	-11.273	-3232.873	90.46	90.29	161.74	161.68
112	187	9513.333	-133.499	-1.084	41.835	11.273	3282.654	71.98	71.80	144.36	144.30
112	188	-9416.728	152.177	1.084	-23.660	-5.854	-3858.953	66.11	66.02	151.24	151.20
113	188	9416.729	-152.175	-0.598	24.914	5.853	3858.965	66.11	66.02	151.24	151.20
113	189	-9331.779	223.395	0.598	0.286	-2.863	-4673.127	58.40	58.35	161.50	161.49
114	189	9331.777	-223.395	-0.573	-0.268	2.862	4673.127	58.40	58.35	161.50	161.49
114	192	-9475.039	778.103	-0.061	51.296	0.000	-6171.559	47.35	47.35	183.53	183.53

proc Viaducto Papiol

HIPOTESIS 120

min mz + pret(t=inf) (frecuente)

ESFUERZOS EN BARRAS

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	MOM. Y	MOM. Z
1	3	8984.768	486.555	-4.348	-961.860	-3.110	1497.810
1	8	-9056.703	-489.623	4.189	6.660	27.057	1409.118
2	8	9056.681	489.622	-4.189	-6.660	-27.057	-1409.119
2	9	-9107.853	-263.070	2.989	-2.809	45.003	3244.926
3	9	9107.851	263.070	-3.010	9.242	-45.003	-3244.921
3	10	-9170.653	-145.275	1.796	-25.629	55.465	4060.924
4	10	9641.103	145.275	-1.787	21.691	-55.465	-4598.091
4	11	-9784.396	-19.715	0.554	-18.309	54.663	5014.949
5	11	9784.404	19.715	-0.535	22.564	-54.663	-5014.936
5	12	-9794.430	199.080	-0.665	-15.829	54.339	4557.623
6	12	9794.430	-199.079	0.707	24.175	-54.339	-4557.604
6	13	-9775.127	359.593	-1.907	-13.590	47.805	3210.363
7	13	9775.143	-359.593	1.885	10.217	-47.805	-3210.369
7	14	-11934.645	182.004	-2.816	-25.264	40.718	1420.302
8	14	11915.165	-182.005	2.863	30.544	-40.718	-1425.149
8	15	-11874.384	103.893	3.963	-60.555	31.086	716.230
9	15	11874.372	-103.892	-3.964	60.500	-31.086	-716.231
9	18	-16309.045	687.957	1.216	-59.426	44.942	-3023.775
10	18	16127.530	1158.227	1.690	120.646	-47.786	3019.796
10	24	-12445.421	-285.732	-1.690	-116.021	46.386	1241.069
11	24	12445.395	285.732	1.611	117.383	-46.386	-1241.024
11	25	-12484.803	-388.035	-1.459	-87.346	105.671	2125.783
12	25	12460.642	388.034	1.291	93.727	-105.671	-2133.852
12	26	-10313.545	-508.192	1.270	-94.039	107.491	4480.977
13	26	10313.531	508.193	-1.213	89.613	-107.491	-4481.013
13	27	-10244.662	-430.165	1.276	15.028	99.493	6746.448
14	27	10244.685	430.164	-1.350	-9.664	-99.493	-6746.455
14	28	-10243.575	-263.591	0.161	-14.211	103.269	8575.308
15	28	10243.574	263.591	-0.317	26.727	-103.270	-8575.294
15	29	-10539.004	-1.900	-1.512	-44.816	95.847	9198.733
16	29	10054.339	1.901	1.478	38.483	-95.847	-8656.141
16	30	-10085.049	272.473	-2.678	-57.319	85.457	7974.985
17	30	10085.057	-272.474	2.712	63.732	-85.457	-7974.960
17	31	-10124.419	395.249	-3.904	-80.153	68.934	6131.396
18	31	10124.387	-395.249	3.936	85.513	-68.934	-6131.360
18	32	-10040.146	342.448	-5.040	-48.924	35.485	4463.211
19	32	10040.142	-342.447	5.040	48.917	-35.486	-4463.211
19	33	-12157.917	450.509	-6.222	-48.204	5.367	2983.220
20	33	12138.489	-450.509	6.250	51.139	-5.367	-2988.071
20	34	-12224.318	711.129	-5.378	38.659	-89.318	180.388
21	34	12224.340	-711.129	5.473	-37.513	89.318	-180.405
21	37	-16726.723	1027.351	-5.473	70.338	-109.631	-6099.756
22	37	16316.466	1091.939	0.221	233.514	99.182	6099.222
22	44	-11908.232	-315.428	-0.221	-198.840	-93.239	-392.654
23	44	11908.220	315.428	0.154	199.886	93.239	392.732

TENSIONES

SIGMA 1	SIGMA2	SIGMA3	SIGMA4
81.27	81.31	114.33	114.35
106.12	106.54	75.17	75.31
106.12	106.54	75.17	75.31
121.86	122.56	50.49	50.73
121.86	122.56	50.49	50.73
129.25	130.11	39.93	40.22
138.65	139.52	37.47	37.77
143.64	144.49	33.26	33.55
143.64	144.49	33.26	33.55
139.92	140.77	39.63	39.92
139.92	140.77	39.63	39.92
128.51	129.26	57.92	58.17
128.52	129.26	57.92	58.17
136.16	136.79	105.02	105.24
135.99	136.63	104.76	104.97
129.72	130.20	114.07	114.24
129.72	130.20	114.07	114.24
81.46	82.02	130.20	130.39
80.32	80.92	129.01	129.21
139.95	140.67	112.80	113.05
139.95	140.67	112.80	113.05
147.29	148.94	100.92	101.49
147.11	148.75	100.56	101.12
144.29	145.96	45.96	46.53
144.29	145.96	45.96	46.53
162.57	164.11	14.21	14.74
162.57	164.11	14.21	14.74
177.81	179.41	-10.89	-10.34
177.81	179.41	-10.89	-10.34
186.16	187.65	-16.33	-15.82
176.57	178.06	-13.95	-13.44
171.27	172.60	-4.27	-3.81
171.27	172.60	-4.27	-3.81
156.41	157.48	21.46	21.83
156.41	157.48	21.46	21.83
141.85	142.40	43.54	43.73
141.85	142.40	43.54	43.73
151.82	151.91	86.02	86.05
151.66	151.75	85.75	85.78
129.83	128.44	125.39	124.92
129.83	128.44	125.39	124.92
63.13	61.74	160.62	160.14
60.47	59.21	157.99	157.56
121.77	120.32	129.96	129.46
121.77	120.32	129.96	129.46

23	45	-11761.451	-419.447	3.176	-24.526	32.451	869.768	129.81	130.32	110.79	110.96
24	45	10587.488	419.447	-3.309	27.337	-32.451	-515.032	114.59	115.10	103.39	103.57
24	46	-8859.803	-555.175	2.117	-28.838	47.460	3210.333	118.96	119.70	48.36	48.62
25	46	8859.833	555.175	-2.117	28.833	-47.460	-3210.330	118.96	119.70	48.36	48.62
25	47	-8846.800	-452.546	2.211	80.264	77.701	5700.447	139.40	140.61	14.01	14.42
26	47	8846.804	452.546	-2.275	-74.974	-77.701	-5700.476	139.40	140.61	14.01	14.42
26	48	-8850.158	-285.642	1.087	36.049	86.105	7632.627	155.52	156.86	-12.47	-12.01
27	48	8850.122	285.641	-1.091	-35.730	-86.106	-7632.630	155.52	156.85	-12.47	-12.01
27	49	-8856.370	-17.445	-0.109	-2.041	88.558	8350.135	161.56	162.94	-22.25	-21.77
28	49	8843.171	17.446	0.048	8.384	-88.559	-8349.709	161.42	162.79	-22.38	-21.91
28	50	-9402.038	250.368	-1.889	-44.872	83.721	7759.842	162.36	163.66	-8.44	-8.00
29	50	9402.051	-250.367	2.036	51.314	-83.722	-7759.823	162.36	163.66	-8.44	-8.00
29	51	-9442.707	373.411	-3.225	-99.830	70.568	6013.876	148.30	149.39	15.95	16.33
30	51	9442.711	-373.411	3.367	105.258	-70.569	-6013.834	148.30	149.39	15.95	16.33
30	52	-9363.122	320.080	-4.459	-46.363	17.553	4438.437	134.71	134.98	36.86	36.96
31	52	9363.124	-320.079	4.460	46.363	-17.552	-4438.434	134.71	134.98	36.86	36.96
31	53	-11279.688	424.579	-5.389	-52.629	-14.803	3069.773	143.54	143.31	75.72	75.64
32	53	11260.167	-424.580	5.760	54.852	7.938	-3074.620	143.32	143.20	75.43	75.39
32	54	-10950.717	676.240	-1.729	129.381	-195.020	455.195	119.65	116.62	108.61	107.57
33	54	10950.694	-676.240	1.726	-129.451	195.020	-455.192	119.65	116.62	108.61	107.57
33	57	-15454.587	992.452	-1.726	166.126	-210.703	-5660.994	58.84	56.17	148.87	147.95
34	57	14812.608	1077.751	-3.569	231.325	203.825	5661.779	54.72	52.14	144.79	143.91
34	64	-10405.840	-344.899	1.267	-250.087	-161.536	168.867	111.31	108.80	106.76	105.90
35	64	10405.862	344.899	-1.256	250.015	161.537	-168.872	111.31	108.80	106.76	105.90
35	65	-10711.398	-400.985	3.512	-0.394	-9.206	1336.518	123.07	122.93	93.54	93.49
36	65	10689.887	400.984	-3.705	6.803	9.206	-1339.056	122.87	122.73	93.28	93.23
36	66	-8519.698	-531.976	2.295	-10.858	4.789	3869.394	121.25	121.32	35.89	35.92
37	66	8519.692	531.975	-2.306	11.083	-4.789	-3869.395	121.25	121.32	35.89	35.92
37	67	-8499.160	-429.353	2.009	100.338	46.893	6259.658	140.68	141.41	2.80	3.05
38	67	8499.101	429.353	-2.194	-95.133	-46.893	-6259.697	140.68	141.41	2.79	3.04
38	68	-8494.957	-262.434	1.006	54.451	54.903	8092.399	155.89	156.75	-22.40	-22.10
39	68	8494.972	262.435	-0.874	-59.856	-60.948	-8092.379	155.85	156.79	-22.41	-22.09
39	69	-9250.833	-0.653	-0.751	23.973	69.464	8710.078	168.83	169.91	-23.01	-22.64
40	69	9237.630	0.654	1.075	-4.704	-63.146	-8709.664	168.74	169.72	-23.13	-22.79
40	70	-9262.170	273.752	-2.221	-36.488	61.365	8020.312	163.25	164.20	-13.41	-13.09
41	70	9262.179	-273.752	2.129	29.945	-61.365	-8020.324	163.25	164.20	-13.41	-13.09
41	71	-9295.335	397.202	-3.317	-70.764	47.741	6173.146	148.27	149.01	12.29	12.55
42	71	9295.332	-397.201	3.406	76.530	-47.742	-6173.123	148.27	149.01	12.29	12.55
42	72	-9208.241	344.176	-4.001	4.309	-6.444	4494.056	133.75	133.65	34.55	34.51
43	72	9208.234	-344.177	4.085	-0.042	6.444	-4494.058	133.75	133.65	34.55	34.51
43	73	-11117.246	449.991	-5.441	-3.937	-31.452	3018.959	141.54	141.06	74.77	74.60
44	73	11097.791	-449.991	5.445	4.101	31.452	-3023.827	141.38	140.89	74.50	74.33
44	74	-11353.194	695.474	-0.056	233.220	-180.335	331.719	122.71	119.90	114.47	113.51
45	74	11353.225	-695.474	0.261	-231.936	180.336	-331.809	122.71	119.90	114.47	113.51
45	77	-15863.119	1011.692	-0.261	279.712	-188.691	-5867.697	59.81	57.42	153.25	152.43
46	77	14990.439	1079.542	-3.601	145.836	175.116	5866.522	54.21	51.99	147.68	146.92
46	84	-10589.669	-346.468	2.788	-142.210	-191.771	-4.211	112.02	109.04	111.13	110.11
47	84	10589.683	346.468	-2.795	142.279	191.771	4.213	112.02	109.04	111.13	110.11
47	85	-10288.313	-401.141	4.769	63.456	-44.369	1200.561	117.79	117.10	91.08	90.84
48	85	10266.787	401.142	-5.024	-60.391	44.368	-1203.123	117.59	116.90	90.82	90.58
48	86	-8719.105	-538.305	4.068	57.830	-19.653	3764.321	122.64	122.34	39.48	39.37
49	86	8719.116	538.304	-4.187	-53.577	19.653	-3764.342	122.64	122.34	39.48	39.37
49	87	-8706.081	-435.742	3.826	130.271	19.555	6170.407	142.31	142.61	6.25	6.36
50	87	8706.092	435.740	-3.832	-129.983	-19.555	-6170.411	142.31	142.61	6.25	6.36
50	88	-8709.445	-268.871	2.644	101.117	35.758	8019.170	157.67	158.22	-19.10	-18.91
51	88	8709.444	268.873	-2.761	-94.905	-35.759	-8019.202	157.67	158.23	-19.10	-18.91
51	89	-9703.909	-7.278	0.942	68.779	56.464	8654.059	173.20	174.07	-17.48	-17.18
52	89	9690.697	7.277	-0.942	-68.784	-56.465	-8653.628	173.05	173.93	-17.61	-17.31
52	90	-9722.739	267.059	-0.258	37.053	58.174	7981.480	167.76	168.66	-8.06	-7.76
53	90	9722.750	-267.058	0.534	-30.511	-58.175	-7981.492	167.76	168.66	-8.06	-7.76
53	91	-9763.407	390.432	-1.721	-2.753	52.530	6151.999	152.94	153.76	17.46	17.74
54	91	9763.401	-390.432	1.984	8.227	-52.530	-6151.995	152.94	153.76	17.46	17.74

54	92	-9683.814	337.318	-2.616	50.491	17.222	4490.878	138.50	138.77	39.49	39.58
55	92	9683.801	-337.318	2.894	-46.003	-17.222	-4490.896	138.50	138.77	39.49	39.58
55	93	-11600.317	442.418	-4.177	39.849	-1.087	3035.594	146.49	146.47	79.50	79.50
56	93	11580.881	-442.418	4.163	-40.012	1.085	-3040.460	146.33	146.31	79.23	79.23
56	94	-11168.795	688.188	1.531	251.510	-90.993	374.903	120.45	119.03	111.71	111.23
57	94	11168.795	-688.188	-1.524	-251.440	90.994	-374.906	120.45	119.03	111.71	111.23
57	97	-15672.687	982.683	-4.664	72.910	-131.781	-5801.041	58.72	57.05	151.33	150.75
58	97	14569.047	1101.420	-6.566	-183.964	113.726	5804.387	51.59	50.15	144.32	143.83
58	104	-10102.860	-346.634	2.273	23.804	-149.951	47.564	107.04	104.71	105.23	104.43
59	104	10102.891	346.633	-2.257	-23.872	149.951	-47.563	107.04	104.71	105.23	104.43
59	105	-10127.918	-399.887	5.624	119.427	-22.639	1261.412	116.46	116.11	88.51	88.39
60	105	10106.416	399.887	-5.973	-116.010	22.637	-1264.005	116.26	115.90	88.25	88.13
60	106	-8198.724	-533.732	4.776	110.188	5.582	3814.869	117.44	117.52	33.29	33.31
61	106	8198.717	533.732	-4.760	-110.412	-5.582	-3814.873	117.44	117.52	33.29	33.31
61	107	-8181.930	-431.287	4.133	113.225	26.657	6206.490	137.08	137.50	0.27	0.41
62	107	8181.924	431.286	-4.467	-107.461	-26.657	-6206.535	137.08	137.50	0.27	0.41
62	108	-8181.528	-264.549	3.280	102.631	46.031	8041.373	152.26	152.98	-24.94	-24.70
63	108	8181.520	264.551	-3.596	-96.412	-46.030	-8041.411	152.26	152.98	-24.95	-24.70
63	109	-8184.018	3.444	2.396	89.012	61.014	8662.001	157.36	158.31	-33.47	-33.14
64	109	8170.819	-3.444	-2.080	-95.470	-61.015	-8661.541	157.22	158.17	-33.60	-33.27
64	110	-9418.146	271.486	1.013	88.408	82.845	7969.972	164.29	165.58	-11.15	-10.71
65	110	9418.166	-271.487	-0.713	-75.670	-82.844	-7970.033	164.29	165.58	-11.15	-10.71
65	111	-9455.071	394.731	-0.475	63.210	83.430	6126.826	149.27	150.57	14.50	14.94
66	111	9455.047	-394.730	0.621	-57.739	-83.429	-6126.847	149.27	150.57	14.50	14.94
66	112	-9371.710	341.489	-1.242	65.049	77.469	4452.444	134.45	135.66	36.60	37.01
67	112	9371.714	-341.489	1.249	-64.829	-77.470	-4452.444	134.45	135.66	36.60	37.01
67	113	-11284.481	446.565	-2.532	55.699	66.641	2984.705	142.24	143.28	76.72	77.08
68	113	11265.042	-446.565	2.679	-52.627	-66.640	-2989.593	142.08	143.12	76.45	76.81
68	114	-11212.806	691.197	2.014	164.239	50.622	331.491	119.44	120.23	112.39	112.66
69	114	11212.778	-691.197	-2.014	-164.238	-50.622	-331.490	119.44	120.23	112.39	112.66
69	117	-15719.665	963.984	-0.503	134.194	-38.045	-5851.181	58.07	57.59	151.87	151.70
70	117	14385.080	1124.381	-2.416	-169.085	18.808	5837.325	49.59	49.35	143.25	143.16
70	124	-9981.305	-347.875	2.416	167.060	-6.729	27.337	104.49	104.39	103.85	103.82
71	124	9981.336	347.875	-2.042	-168.418	6.729	-27.270	104.49	104.39	103.86	103.82
71	125	-10458.605	-401.226	6.572	118.182	36.414	1246.071	119.32	119.89	92.01	92.21
72	125	10437.085	401.226	-6.772	-114.934	-36.415	-1248.662	119.12	119.69	91.75	91.95
72	126	-8533.147	-535.110	5.639	108.468	68.363	3799.260	120.31	121.37	36.82	37.19
73	126	8533.149	535.111	-5.839	-103.982	-68.363	-3799.303	120.31	121.37	36.82	37.19
73	127	-8516.364	-432.723	4.808	20.778	67.084	6198.068	140.19	141.23	3.77	4.12
74	127	8516.362	432.721	-4.998	-15.305	-67.084	-6198.070	140.19	141.23	3.77	4.12
74	128	-8515.967	-266.034	3.810	40.649	89.110	8040.274	155.41	156.80	-21.55	-21.08
75	128	8515.962	266.036	-3.810	-40.645	-89.110	-8040.276	155.41	156.80	-21.55	-21.08
75	129	-9968.629	-5.627	3.299	61.916	130.251	8687.793	175.67	177.69	-15.37	-14.68
76	129	9955.423	5.627	-2.937	-55.449	-130.253	-8687.395	175.53	177.55	-15.51	-14.81
76	130	-9983.713	268.571	1.737	75.466	141.940	8015.357	170.12	172.32	-6.03	-5.27
77	130	9983.711	-268.570	-1.358	-68.916	-141.940	-8015.391	170.12	172.32	-6.03	-5.27
77	131	-10020.616	391.819	0.170	86.510	145.754	6186.790	155.19	157.46	19.42	20.19
78	131	10020.624	-391.819	-0.531	-91.995	-145.754	-6186.756	155.19	157.46	19.42	20.19
78	132	-9937.285	338.600	-0.058	35.071	177.307	4526.792	140.20	142.96	41.22	42.16
79	132	9937.290	-338.602	1.159	-22.012	-177.306	-4526.824	140.20	142.96	41.22	42.16
79	133	-11850.058	443.825	-2.401	11.732	168.071	3072.114	148.09	150.70	81.16	82.05
80	133	11830.607	-443.824	2.040	-14.836	-168.072	-3076.973	147.93	150.54	80.89	81.78
80	134	-11747.774	688.518	2.402	-22.162	215.286	446.141	124.71	128.06	115.96	117.11
81	134	11747.759	-688.518	-2.047	23.488	-215.286	-446.134	124.71	128.06	115.96	117.11
81	137	-16254.646	961.105	1.216	-64.211	181.085	-5713.847	61.05	63.34	153.56	154.34
82	137	14689.389	1119.397	3.857	-242.276	-190.442	5767.263	50.69	53.11	144.10	144.92
82	144	-10285.619	-342.887	-3.857	209.551	171.159	72.439	106.66	109.32	105.94	106.85
83	144	10285.622	342.887	3.365	-206.868	-171.159	-72.601	106.66	109.33	105.94	106.85
83	145	-10343.492	-391.336	1.587	49.520	104.783	1280.620	117.88	119.51	90.16	90.71
84	145	10321.986	391.337	-1.599	-49.357	-104.782	-1283.163	117.68	119.31	89.90	90.46
84	146	-7968.050	-525.354	0.236	45.276	107.678	3785.875	113.99	115.67	31.00	31.58

85	146	7968.053	525.354	-0.215	-45.501	-107.678	-3785.879	113.99	115.67	31.00	31.58
85	147	-7951.268	-422.841	-0.055	-79.817	66.888	6135.571	133.77	134.81	-1.28	-0.92
86	147	7951.268	422.841	-0.776	91.010	-66.888	-6135.505	133.77	134.81	-1.28	-0.92
86	148	-7950.873	-256.115	-0.414	-48.657	67.791	7928.963	148.75	149.80	-25.87	-25.51
87	148	7950.869	256.115	0.393	48.979	-67.789	-7928.961	148.75	149.80	-25.87	-25.51
87	149	-7953.369	11.965	-1.593	-7.831	62.830	8507.146	153.64	154.62	-33.76	-33.42
88	149	7940.161	-11.965	1.209	13.892	-62.828	-8506.713	153.50	154.48	-33.89	-33.55
88	150	-7968.451	286.279	-2.409	26.266	53.784	7746.452	147.51	148.35	-23.15	-22.86
89	150	7968.456	-286.280	2.388	-25.943	-53.783	-7746.452	147.51	148.35	-23.15	-22.86
89	151	-8005.360	409.618	-3.575	65.337	38.876	5829.570	132.00	132.60	3.56	3.76
90	151	8005.354	-409.618	3.149	-59.703	-38.875	-5829.590	132.00	132.60	3.56	3.76
90	152	-7922.014	356.531	-4.755	-39.061	42.183	4080.258	116.48	117.14	26.66	26.89
91	152	7922.018	-356.530	4.777	38.847	-42.182	-4080.259	116.48	117.14	26.66	26.89
91	153	-9834.785	461.784	-5.986	-45.298	14.391	2540.446	123.80	124.02	67.81	67.89
92	153	9815.321	-461.784	5.560	48.354	-14.391	-2545.298	123.64	123.86	67.54	67.62
92	154	-9763.055	657.243	-0.227	-189.783	77.448	-160.785	99.99	101.19	103.93	104.34
93	154	9763.062	-657.243	-0.172	190.879	-77.449	160.859	99.99	101.19	103.93	104.34
93	157	-14269.948	973.450	0.172	-234.778	78.306	-6175.540	45.83	46.82	145.32	145.66
94	157	14153.202	1135.088	3.712	-192.561	-98.759	5980.014	46.36	47.61	142.80	143.22
94	163	-9749.438	-358.567	-3.712	148.836	80.199	-61.820	100.65	101.90	102.42	102.85
95	163	9749.438	358.567	3.269	-147.580	-80.199	61.763	100.65	101.90	102.42	102.85
95	164	-9776.739	-397.193	2.290	-12.371	10.119	1245.670	112.41	112.56	84.97	85.02
96	164	9755.248	397.192	-2.740	15.457	-10.119	-1248.206	112.20	112.36	84.71	84.77
96	165	-8301.313	-531.595	2.013	-23.084	20.534	3780.109	118.10	118.42	34.79	34.90
97	165	8301.305	531.596	-2.028	23.308	-20.535	-3780.110	118.10	118.42	34.79	34.90
97	166	-10198.357	-452.330	3.289	-112.673	7.134	6224.868	158.44	158.55	21.12	21.16
98	166	10198.363	452.330	-2.840	118.157	-7.135	-6224.824	158.44	158.55	21.12	21.16
98	167	-10197.969	-286.109	1.650	-94.423	18.361	8172.676	174.63	174.91	-5.62	-5.52
99	167	10197.965	286.108	-1.201	100.688	-18.361	-8172.644	174.63	174.91	-5.62	-5.52
99	168	-10200.465	-17.972	0.001	-75.348	21.364	8900.656	180.71	181.05	-15.58	-15.47
100	168	10187.260	17.972	0.023	75.694	-21.365	-8900.234	180.57	180.90	-15.71	-15.60
100	169	-10215.551	256.387	-1.223	-48.368	18.249	8289.517	175.79	176.07	-7.04	-6.94
101	169	10215.548	-256.386	1.672	54.695	-18.250	-8289.502	175.79	176.07	-7.04	-6.94
101	170	-10252.452	379.489	-2.862	-24.943	6.925	6529.314	161.55	161.66	17.51	17.55
102	170	10252.449	-379.489	2.862	24.945	-6.925	-6529.314	161.55	161.66	17.51	17.55
102	171	-10153.828	301.824	-1.138	-86.474	-31.138	5049.094	148.45	147.96	36.87	36.71
103	171	10153.831	-301.825	2.048	95.662	31.138	-5049.026	148.45	147.96	36.88	36.71
103	172	-12066.598	418.083	-2.204	-91.238	-41.691	3743.775	157.59	156.94	74.77	74.55
104	172	12049.799	-418.084	2.204	91.238	41.691	-3747.968	157.45	156.80	74.54	74.31
104	173	-11982.264	615.663	-0.415	-211.372	24.981	1470.491	137.20	137.58	104.88	105.01
105	173	11982.264	-615.663	0.438	211.463	-24.981	-1470.487	137.20	137.58	104.88	105.01
105	176	-15569.154	863.318	-0.438	-231.888	22.791	-2787.858	78.59	78.88	123.45	123.55
106	176	15680.776	901.917	-1.063	45.615	-12.889	2975.013	78.03	78.19	125.85	125.91
106	182	-11264.670	-104.180	1.063	-61.665	18.203	1770.530	132.26	132.55	93.29	93.39
107	182	11264.668	104.180	-0.552	62.966	-18.203	-1770.506	132.26	132.55	93.29	93.39
107	183	-8720.859	-134.877	1.593	-60.829	45.098	2376.450	110.56	111.26	58.35	58.59
108	183	8761.758	134.877	-1.619	60.974	-45.098	-2371.440	110.94	111.65	58.85	59.09
108	184	-7000.740	-302.497	0.112	-37.648	63.451	3684.491	103.39	104.38	22.41	22.75
109	184	7000.739	302.497	-0.577	41.076	-63.451	-3684.478	103.39	104.38	22.41	22.75
109	185	-6986.112	-198.036	-0.623	-67.210	63.338	4954.516	113.85	114.84	4.85	5.18
110	185	6986.108	198.035	0.597	67.441	-63.338	-4954.516	113.85	114.84	4.85	5.18
110	186	-6927.383	-6.430	-1.797	-87.800	57.354	5605.342	118.72	119.61	-4.67	-4.37
111	186	6927.383	6.430	0.788	97.377	-57.354	-5605.271	118.72	119.61	-4.67	-4.37
111	187	-6859.975	198.496	-1.988	-111.652	50.414	5121.172	114.03	114.81	1.28	1.55
112	187	5444.236	-198.496	1.988	111.652	-50.414	-5080.444	98.91	99.69	-12.94	-12.67
112	188	-5365.195	323.707	-2.635	-85.807	33.307	3892.914	88.29	88.81	2.56	2.74
113	188	5365.194	-323.706	2.144	89.512	-33.307	-3892.879	88.29	88.81	2.56	2.74
113	189	-5295.690	497.486	-3.344	-85.855	19.589	1941.977	71.37	71.67	28.61	28.72
114	189	5295.689	-497.486	3.318	85.985	-19.589	-1941.975	71.37	71.67	28.61	28.72
114	192	-5032.216	694.590	-1.140	-82.760	0.000	-462.642	48.67	48.67	58.88	58.88

COMPROBACIÓN DE GIROS Y DESPLAZAMIENTOS

COMPROBACIÓN DE GIROS Y DESPLAZAMIENTOS

a) Desplazamientos máximos (EC-1)

1 vía cargada (derecha) $\delta_{máx} = 0'012$ m
$\theta_x = 0'0015$ rad

$d = 2'35 + 0'65 = 3$m (excentricidad máxima

$\delta_{vía} = 0'0134 + 0'0009 \times 3 = 0'0161$

$$\frac{\delta}{L} = \frac{1}{3727} \leq \frac{1}{2400} \times 1'1 = \frac{1}{2182}$$ VALE

b) Giro vertical máximo (bandera la envolvente, cumple por 6 g. no necesita detallar

$\theta_{z\,máx} = 0'0012$ rad (E-2) $\leq \theta_{máx} \leq 3'5 \cdot 10^{-3}$ rad

VALE

c) Alabeo

$M_T = 1552$ mT $\quad \Delta x = 3$m $\quad J = 1'5$m

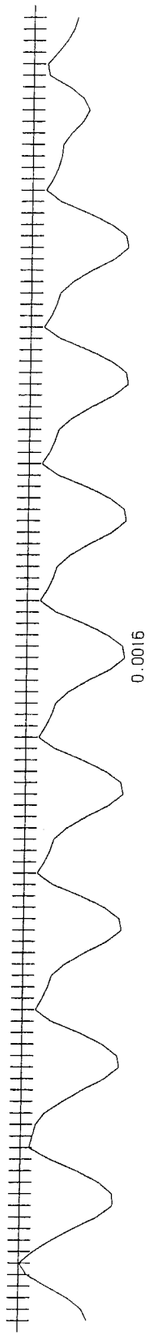
$$\beta = \frac{\Delta\theta_x}{\Delta L} = \frac{M_T}{GJ} = \frac{\delta}{J\Delta x}$$

$$\delta = \frac{M_T}{GJ} \times J\,\Delta x = \frac{1552}{1'61 \cdot 10^6 \times 27'692} \times 1'5 \times 3 =$$

$\delta = 0'000157$ m $= 0'2$mm $\leq 1'5$mm VALE

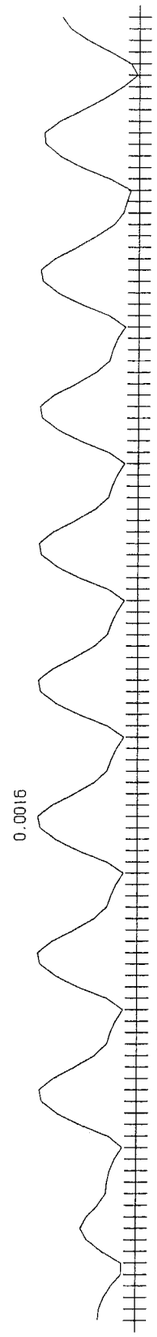
proc Vioducto Papiol
MOME Z MIN sobrecargo + fr. + fc (ec-1)

M. Z 10.0 -4



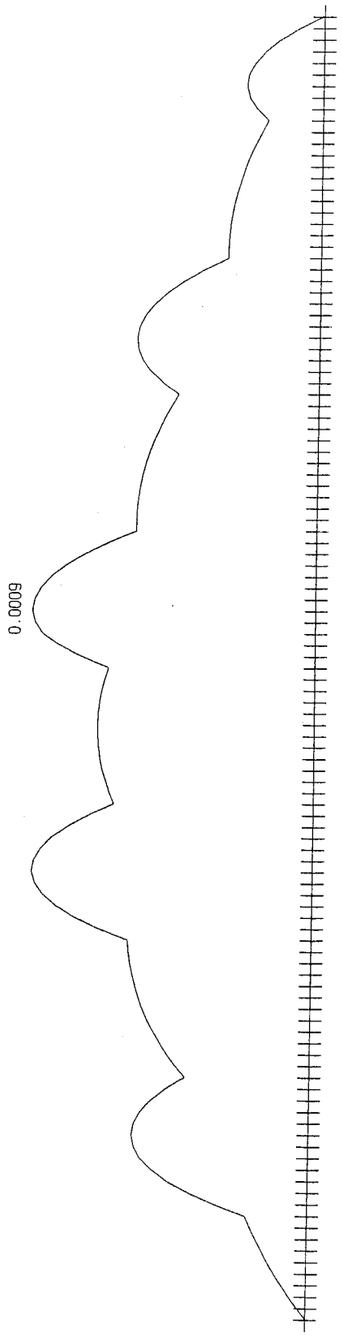
proc Vioducto Papiol
MOME Z MAX sobrecargo + fr. + fc (ec-1)

M. Z 10.0 -4



proc Vioducto Papiol
hipo 173 sob. v-16 dcha ec-1 (LM-71)

M. X 2.0 -4



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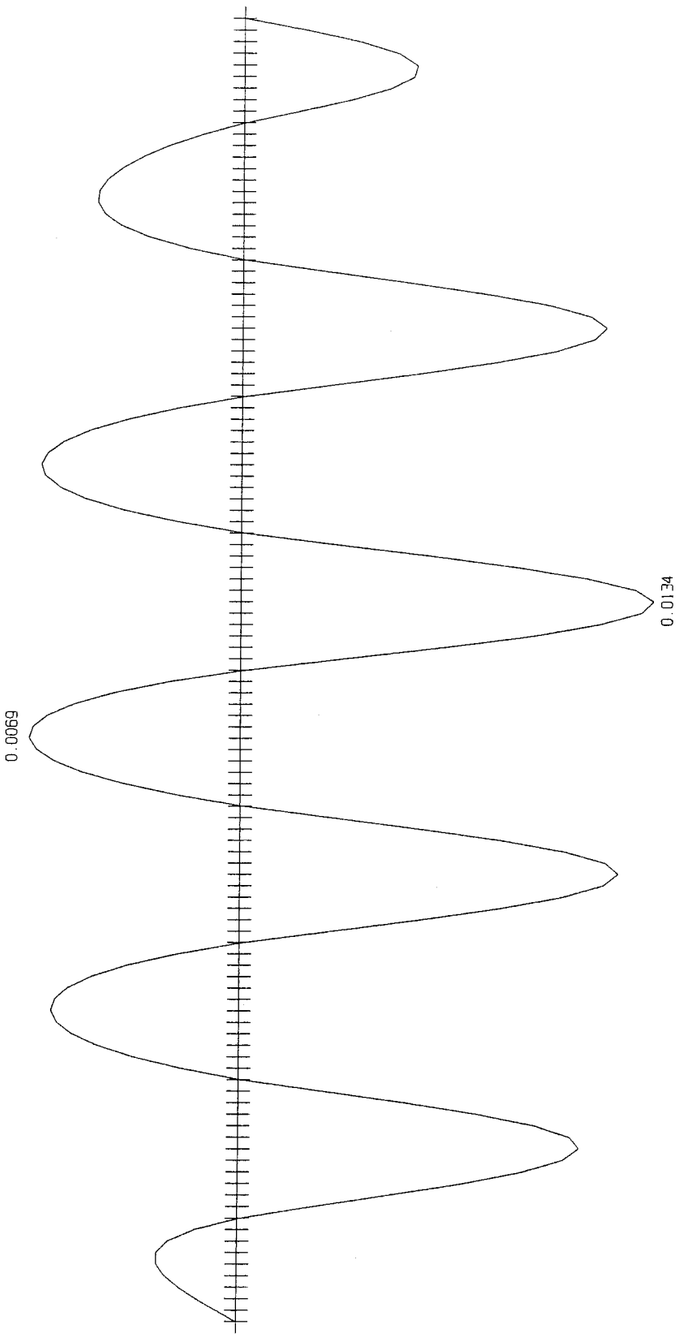
hipo 173 sob. v-16 dcha ec-1 (LM-71)

F. Y 2.0 -3



proc Viaducto Papiol

HIPOTESIS 173

hipo 173 sob. v-16 dcha ec-1 (LM-71)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
1	3	0.00	-12.16	2.44	-246.16	0.00	-0.04
1	8	0.00	18.41	-2.54	229.86	-12.47	-76.39
2	8	0.00	-18.41	2.54	-229.86	12.47	76.39
2	9	0.00	24.66	-2.64	213.56	-25.44	-184.08
3	9	0.00	-24.66	2.64	-213.70	25.44	183.91
3	10	0.00	30.91	-2.74	197.40	-38.91	-322.84
4	10	0.00	-30.91	2.74	-197.28	38.91	322.92
4	11	0.00	37.16	-2.84	180.98	-52.88	-493.10
5	11	0.00	-37.16	2.84	-181.17	52.88	493.03
5	12	0.00	43.41	-2.94	164.87	-67.36	-694.47
6	12	0.00	-43.41	2.94	-165.41	67.36	694.34
6	13	0.00	49.66	-3.04	149.11	-82.33	-927.02
7	13	0.00	-49.66	3.04	-148.76	82.33	927.08
7	14	0.00	55.91	-3.14	132.46	-97.80	-1191.02
8	14	-0.01	-55.91	3.14	-133.39	97.80	1190.91
8	15	0.01	62.16	-3.24	117.09	-113.77	-1486.09
9	15	-0.01	-62.16	3.24	-117.06	113.77	1486.10
9	18	0.01	68.41	-3.34	100.76	-130.24	-1812.53
10	18	-0.01	248.93	-5.71	-871.65	130.24	1812.64
10	24	0.01	-208.93	5.01	752.25	-103.43	-667.98
11	24	-0.01	208.93	-5.01	-752.50	103.43	667.69
11	25	0.01	-168.93	4.31	633.10	-80.13	276.96
12	25	0.00	168.93	-4.31	-632.88	80.13	-277.46
12	26	0.00	-128.93	3.61	513.48	-60.33	1022.11
13	26	0.00	128.93	-3.61	-513.89	60.33	-1021.90
13	27	0.00	-88.93	2.91	394.49	-44.02	1566.54
14	27	0.00	88.93	-2.91	-393.89	44.02	-1566.69
14	28	0.00	-48.93	2.21	274.49	-31.22	1911.32
15	28	0.00	48.93	-2.21	-273.00	31.22	-1911.54
15	29	0.00	-8.93	1.51	153.60	-21.92	2056.17
16	29	0.00	8.93	-1.51	-154.38	21.91	-2056.12
16	30	0.00	31.07	0.81	34.98	-16.11	2000.75
17	30	0.00	-31.07	-0.81	-34.18	16.11	-2000.77
17	31	0.00	71.07	0.11	-85.22	-13.81	1745.41
18	31	0.00	-71.07	-0.11	85.88	13.81	-1745.37
18	32	0.00	111.07	-0.59	-205.28	-15.00	1290.00
19	32	0.00	-111.07	0.59	205.28	15.00	-1290.00
19	33	0.00	151.07	-1.29	-324.68	-19.70	634.64
20	33	0.00	-151.07	1.29	324.92	19.70	-634.52
20	34	0.00	191.07	-1.99	-444.32	-27.89	-220.84
21	34	0.00	-191.07	1.99	444.23	27.90	221.02
21	37	0.00	231.07	-2.69	-563.64	-39.59	-1276.40
22	37	0.00	34.91	-4.10	-236.74	39.59	1276.41
22	44	0.00	-28.66	4.00	216.39	-19.35	-1117.49
23	44	0.00	28.66	-4.00	-216.83	19.35	1117.40
23	45	0.00	-22.41	3.90	196.48	0.39	-989.72
24	45	0.00	22.41	-3.90	-196.86	-0.39	989.65
24	46	0.00	-16.16	3.80	176.51	19.63	-893.22
25	46	0.00	16.16	-3.80	-176.51	-19.63	893.22
25	47	0.00	-9.91	3.70	156.16	38.37	-828.05
26	47	0.00	9.91	-3.70	-156.47	-38.37	827.99
26	48	0.00	-3.66	3.60	136.12	56.61	-794.06
27	48	0.00	3.66	-3.60	-136.14	-56.61	794.06
27	49	0.00	2.59	3.50	115.79	74.35	-791.38
28	49	0.00	-2.59	-3.50	-116.09	-74.35	791.34
28	50	0.00	8.84	3.40	95.74	91.59	-819.91
29	50	0.00	-8.84	-3.40	-96.07	-91.59	819.87
29	51	0.00	15.09	3.30	75.72	108.33	-879.70
30	51	0.00	-15.09	-3.30	-76.05	-108.33	879.67
30	52	0.00	21.34	3.20	55.70	124.58	-970.74
31	52	0.00	-21.34	-3.20	-55.70	-124.57	970.74
31	53	0.00	27.59	3.10	35.35	140.32	-1093.07
32	53	0.01	-27.59	-3.10	-35.79	-140.32	1093.05
32	54	-0.01	33.84	3.00	15.44	155.56	-1246.63
33	54	0.01	-33.84	-3.00	-15.41	-155.56	1246.63
33	57	-0.01	40.09	2.90	-4.94	170.30	-1431.46
34	57	0.01	241.73	-1.70	-854.45	-170.30	1431.35
34	64	-0.01	-201.73	1.00	720.50	177.04	-322.72
35	64	0.01	201.73	-1.00	-720.49	-177.04	322.73
35	65	-0.01	-161.72	0.30	586.54	180.28	585.90
36	65	0.01	161.73	-0.30	-586.08	-180.28	-586.35
36	66	-0.01	-121.73	-0.40	452.13	180.02	1294.98
37	66	0.01	121.73	0.40	-452.11	-180.02	-1294.99
37	67	-0.01	-81.73	-1.10	318.16	176.27	1803.61
38	67	0.01	81.72	1.10	-317.51	-176.26	-1803.73
38	68	-0.01	-41.72	-1.80	183.56	169.01	2112.35
39	68	0.01	41.73	1.80	-184.32	-169.01	-2112.28
39	69	-0.01	-1.72	-2.50	50.36	158.25	2220.91
40	69	0.00	1.72	2.50	-47.79	-158.25	-2220.97
40	70	0.00	38.27	-3.20	-86.16	143.99	2129.59
41	70	0.01	-38.27	3.20	85.31	-143.99	-2129.62
41	71	-0.01	78.27	-3.90	-219.26	126.23	1838.24
42	71	0.00	-78.28	3.90	219.99	-126.23	-1838.15
42	72	0.00	118.28	-4.60	-353.94	104.97	1346.78
43	72	0.00	-118.28	4.60	354.46	-104.97	-1346.64
43	73	0.00	158.28	-5.30	-488.41	80.21	655.26
44	73	0.00	-158.28	5.30	488.42	-80.21	-655.25
44	74	0.00	198.28	-6.00	-622.37	51.95	-236.13
45	74	0.00	-198.28	6.00	622.28	-51.95	236.37
45	77	0.00	238.28	-6.70	-756.23	20.19	-1327.75
46	77	0.00	32.83	-1.03	-124.37	-20.19	1327.83
46	84	0.00	-26.58	0.93	103.97	25.09	-1179.29
47	84	0.00	26.58	-0.93	-103.99	-25.09	1179.28
47	85	0.00	-20.33	0.83	83.59	29.49	-1061.98
48	85	0.00	20.33	-0.83	-84.00	-29.49	1061.95
48	86	0.00	-14.08	0.73	63.60	33.39	-975.91
49	86	0.00	14.08	-0.73	-63.97	-33.39	975.89
49	87	0.00	-7.83	0.63	43.57	36.79	-921.09
50	87	0.00	7.83	-0.63	-43.59	-36.79	921.09
50	88	0.00	-1.58	0.53	23.19	39.69	-897.54
51	88	0.00	1.58	-0.53	-23.53	-39.69	897.53
51	89	0.00	4.67	0.43	3.13	42.09	-905.24
52	89	0.00	-4.67	-0.43	-3.13	-42.08	905.24
52	90	0.00	10.92	0.33	-17.27	43.99	-944.19
53	90	0.00	-10.92	-0.33	16.90	-43.99	944.20
53	91	0.00	17.17	0.23	-37.30	45.38	-1014.41
54	91	0.00	-17.17	-0.23	36.91	-45.38	1014.42
54	92	0.00	23.42	0.13	-57.31	46.28	-1115.88
55	92	0.00	-23.42	-0.13	56.86	-46.28	1115.90
55	93	0.00	29.67	0.03	-77.26	46.68	-1248.61
56	93	0.00	-29.67	-0.03	77.29	-46.68	1248.61
56	94	0.00	35.92	-0.07	-97.69	46.58	-1412.56
57	94	0.00	-35.92	0.07	97.66	-46.58	1412.56
57	97	0.00	42.17	-0.17	-118.06	45.98	-1607.77

58	97	0.00	277.93	-4.66	-796.83	-45.98	1607.52
58	104	0.00	-237.93	3.96	671.03	67.52	-317.86
59	104	0.00	237.93	-3.96	-671.03	-67.52	317.87
59	105	0.00	-197.93	3.26	545.23	85.56	771.78
60	105	0.00	197.93	-3.26	-544.90	-85.56	-772.01
60	106	0.00	-133.53	2.15	344.70	99.45	1622.62
61	106	0.00	133.53	-2.15	-344.73	-99.44	-1622.61
61	107	0.00	-69.21	1.04	146.41	107.03	2107.30
62	107	0.00	69.21	-1.04	-145.56	-107.03	-2107.36
62	108	0.00	-29.21	0.34	27.72	110.45	2353.41
63	108	0.00	29.21	-0.34	-26.82	-110.45	-2353.42
63	109	0.00	10.79	-0.36	-91.03	110.38	2399.47
64	109	0.00	-10.79	0.36	90.12	-110.38	-2399.51
64	110	0.00	50.79	-1.06	-207.97	106.81	2245.56
65	110	0.00	-50.79	1.06	209.72	-106.81	-2245.40
65	111	0.00	90.79	-1.76	-327.57	99.74	1891.45
66	111	0.00	-90.79	1.76	328.29	-99.74	-1891.33
66	112	0.00	130.79	-2.46	-446.14	89.17	1337.38
67	112	0.00	-130.79	2.46	446.17	-89.17	-1337.37
67	113	0.00	170.79	-3.16	-564.01	75.10	583.43
68	113	0.00	-170.79	3.16	564.24	-75.10	-583.22
68	114	0.00	210.79	-3.86	-682.08	57.52	-370.72
69	114	0.00	-210.79	3.86	682.08	-57.52	370.72
69	117	0.00	250.79	-4.56	-799.94	36.45	-1524.68
70	117	0.00	41.04	-1.46	-0.52	-36.45	1524.87
70	124	0.00	-34.79	1.36	-15.93	43.49	-1335.31
71	124	0.00	34.79	-1.36	16.46	-43.49	1335.30
71	125	0.00	-28.54	1.26	-32.91	50.02	-1176.99
72	125	0.00	28.54	-1.26	32.44	-50.02	1177.00
72	126	0.00	-22.29	1.16	-48.89	56.06	-1049.94
73	126	0.00	22.29	-1.16	48.47	-56.06	1049.96
73	127	0.00	-16.04	1.06	-64.92	61.60	-954.15
74	127	0.00	16.04	-1.06	64.56	-61.60	954.17
74	128	0.00	-9.79	0.96	-81.01	66.64	-889.61
75	128	0.00	9.79	-0.96	81.01	-66.64	889.61
75	129	0.00	-3.54	0.86	-97.46	71.17	-856.30
76	129	0.00	3.54	-0.86	97.13	-71.17	856.33
76	130	0.00	2.71	0.76	-113.58	75.21	-854.27
77	130	0.00	-2.71	-0.76	113.24	-75.21	854.32
77	131	0.00	8.96	0.66	-129.69	78.75	-883.50
78	131	0.00	-8.96	-0.66	130.03	-78.75	883.45
78	132	0.00	15.21	0.56	-146.48	81.79	-943.89
79	132	0.00	-15.21	-0.56	145.38	-81.79	944.06
79	133	0.00	21.46	0.46	-161.83	84.32	-1035.75
80	133	0.00	-21.46	-0.46	162.22	-84.33	1035.69
80	134	0.00	27.71	0.36	-178.67	86.36	-1158.63
81	134	0.00	-27.71	-0.36	178.23	-86.36	1158.69
81	137	0.00	33.96	0.26	-194.68	87.90	-1312.88
82	137	0.00	235.80	0.84	-464.88	-87.90	1312.99
82	144	0.00	-195.80	-1.54	370.98	81.93	-233.98
83	144	0.00	195.80	1.54	-371.16	-81.93	233.69
83	145	0.00	-155.80	-2.24	277.26	72.47	645.32
84	145	0.00	155.80	2.24	-277.25	-72.47	-645.33
84	146	0.00	-115.80	-2.94	183.35	59.50	1324.35
85	146	0.00	115.80	2.94	-183.38	-59.50	-1324.34
85	147	0.00	-75.80	-3.64	89.48	43.04	1803.35
86	147	0.00	75.80	3.64	-88.07	-43.04	-1803.42
86	148	0.00	-35.80	-4.34	-5.83	23.07	2082.44
87	148	0.00	35.80	4.34	5.87	-23.07	-2082.44
87	149	0.00	4.20	-5.04	-99.77	-0.39	2161.45
88	149	0.00	-4.20	5.04	100.55	0.39	-2161.42
88	150	0.00	44.20	-5.74	-194.45	-27.36	2040.43
89	150	0.00	-44.20	5.74	194.49	27.36	-2040.43
89	151	0.00	84.20	-6.44	-288.39	-57.82	1719.45
90	151	-0.01	-84.20	6.44	289.08	57.82	-1719.33
90	152	0.01	124.20	-7.14	-382.98	-91.79	1198.36
91	152	-0.01	-124.20	7.14	382.95	91.79	-1198.37
91	153	0.01	164.20	-7.84	-476.86	-129.26	477.38
92	153	-0.01	-164.20	7.84	477.05	129.26	-477.19
92	154	0.01	204.20	-8.54	-570.95	-170.22	-443.80
93	154	-0.01	-204.20	8.54	570.78	170.22	444.02
93	157	0.01	244.20	-9.24	-664.68	-214.69	-1564.98
94	157	-0.01	51.23	-6.22	-1.87	214.69	1565.02
94	163	0.01	-44.98	6.12	-13.18	-183.86	-1324.50
95	163	-0.01	44.98	-6.12	12.68	183.86	1324.51
95	164	0.01	-38.73	6.02	-27.73	-153.53	-1115.24
96	164	-0.01	38.73	-6.02	27.31	153.53	1115.25
96	165	0.01	-32.48	5.92	-42.36	-123.70	-937.24
97	165	-0.01	32.48	-5.92	42.34	123.70	937.24
97	166	0.01	-26.23	5.82	-57.39	-94.37	-790.47
98	166	-0.01	26.23	-5.82	57.09	94.37	790.49
98	167	0.01	-19.98	5.72	-72.14	-65.54	-674.98
99	167	0.00	19.98	-5.72	71.88	65.54	675.01
99	168	0.00	-13.73	5.62	-86.93	-37.21	-590.74
100	168	0.00	13.73	-5.62	86.92	37.21	590.74
100	169	0.00	-7.48	5.52	-101.97	-9.38	-537.73
101	169	0.00	7.48	-5.52	101.76	9.38	537.77
101	170	0.00	-1.23	5.42	-116.81	17.95	-516.00
102	170	0.00	1.23	-5.42	116.81	-17.95	516.00
102	171	0.00	5.02	5.32	-131.86	44.78	-525.49
103	171	0.00	-5.02	-5.32	131.45	-44.78	525.59
103	172	0.00	11.27	5.22	-146.50	71.11	-566.32
104	172	0.00	-11.27	-5.22	146.50	-71.11	566.32
104	173	0.00	17.52	5.12	-161.55	96.94	-638.31
105	173	0.00	-17.52	-5.12	161.54	-96.94	638.31
105	176	0.00	23.77	5.02	-176.59	122.27	-741.55
106	176	0.00	196.49	-0.43	-364.20	-122.27	741.57
106	182	0.00	-156.49	-0.27	248.95	122.68	140.87
107	182	0.00	156.49	0.27	-248.89	-122.68	-140.97
107	183	0.00	-116.49	-0.97	133.64	119.60	823.40
108	183	0.00	116.49	0.97	-133.63	-119.60	-823.40
108	184	0.00	-76.49	-1.67	18.38	113.01	1305.84
109	184	0.00	76.49	1.67	-17.91	-113.01	-1305.85
109	185	0.00	-36.49	-2.37	-97.34	102.93	1588.29
110	185	0.00	36.49	2.37	97.37	-102.93	-1588.29
110	186	0.00	3.51	-3.07	-212.63	89.34	1670.72
111	186	0.00	-3.51	3.07	213.93	-89.34	-1670.56
111	187	0.00	43.51	-3.77	-329.18	72.26	1553.00
112	187	0.00	-43.51	3.77	329.18	-72.26	-1553.00
112	188	0.00	83.51	-4.47	-444.43	51.67	1235.44
113	188	0.00	-83.51	4.47	444.90	-51.67	-1235.27
113	189	0.00	123.51	-5.17	-560.15	27.59	717.71
114	189	0.00	-123.51	5.17	560.16	-27.59	-717.69
114	192	0.00	163.51	-5.87	-675.41	0.00	0.13

proc Viaducto Papiol

HIPOTESIS 61

MOME Z MAX sobrecarga + fr. + fc (ec-1)

DESPLAZAMIENTOS DE NUDOS

NUDO	DESP. X	DESP. Y	DESP. Z	GIRO X	GIRO Y	GIRO Z
1	-0.004461	0.000006	-0.000137	-0.000017	-0.000002	0.000597
2	0.000000	-0.000035	0.000001	0.000009	0.000000	0.000000
3	-0.004452	0.000012	-0.000136	-0.000018	-0.000005	0.000597
4	0.000000	-0.000001	0.000000	0.000000	0.000000	0.000000
6	-0.004442	0.000007	-0.000136	-0.000019	-0.000002	0.000597
7	0.000000	-0.000015	0.000000	-0.000004	0.000000	0.000000
8	-0.004451	0.003053	-0.000112	-0.000014	-0.000005	0.000574
9	-0.004449	0.005864	-0.000087	-0.000008	-0.000005	0.000505
10	-0.004446	0.008215	-0.000063	-0.000001	-0.000005	0.000390
11	-0.004440	0.009876	-0.000038	0.000007	-0.000005	0.000229
12	-0.004433	-0.014763	-0.000064	-0.000023	-0.000002	0.000235
13	-0.002888	-0.013120	-0.000082	-0.000038	0.000000	0.000545
14	-0.002889	-0.009529	-0.000089	-0.000040	0.000001	0.000783
15	-0.002891	-0.004927	-0.000098	-0.000038	0.000001	0.000884
16	-0.002891	-0.000138	-0.000107	-0.000030	0.000001	0.000788
17	-0.000038	-0.000662	0.001371	0.000319	0.000000	0.000009
18	-0.002892	-0.000154	-0.000107	-0.000028	0.000001	0.000788
19	-0.000038	-0.000097	0.001371	0.000317	0.000000	0.000009
20	-0.000007	-0.000045	0.000263	0.000234	0.000000	0.000007
22	-0.002893	-0.000159	-0.000107	-0.000027	0.000001	0.000788
23	-0.000038	0.000459	0.001371	0.000317	0.000000	0.000009
24	-0.002435	0.003229	0.000192	0.000027	-0.000010	0.000609
25	-0.002436	0.005913	0.000249	0.000043	-0.000012	0.000483
26	-0.002890	0.006895	0.000257	0.000040	-0.000014	0.000467
27	-0.002890	0.009218	0.000333	0.000051	-0.000016	0.000424
28	-0.004316	0.010856	0.000376	0.000063	-0.000016	0.000343
29	-0.004306	0.011708	0.000642	0.000130	-0.000019	0.000225
30	-0.004286	-0.032747	0.000336	0.000101	-0.000005	0.000460
31	-0.004272	-0.029846	0.000340	0.000088	-0.000004	0.000911
32	-0.004251	-0.024089	0.000361	0.000075	-0.000003	0.001287
33	-0.004235	-0.016632	0.000375	0.000060	-0.000002	0.001526
34	-0.004215	-0.008320	0.000384	0.000045	-0.000001	0.001564
35	-0.004194	-0.000416	0.000388	0.000028	0.000000	0.001342
36	-0.000111	-0.001436	0.004447	0.000716	0.000000	0.000018
37	-0.004194	-0.000312	0.000388	0.000030	0.000000	0.001342
38	-0.000111	-0.000176	0.004447	0.000713	0.000000	0.000018
39	0.000000	-0.000012	0.000019	0.000061	0.000000	0.000002
41	-0.000044	-0.000122	0.001767	0.000625	0.000000	0.000016
42	-0.000111	0.001075	0.004447	0.000714	0.000000	0.000018
43	-0.004195	-0.000194	0.000388	0.000032	0.000000	0.001342
44	-0.004173	0.005415	0.000385	0.000036	0.000001	0.000991
45	-0.004151	0.009479	0.000377	0.000040	0.000002	0.000677
46	-0.004778	0.008871	0.002415	0.000323	-0.000002	0.000481
47	-0.004103	0.009594	0.000839	0.000097	-0.000024	0.000427
48	-0.002818	0.011012	0.001012	0.000113	-0.000025	0.000341
49	-0.002816	0.011757	0.001491	0.000199	-0.000027	0.000222
50	-0.002809	-0.033640	0.001544	0.000288	-0.000007	0.000489
51	-0.002799	-0.030604	0.001526	0.000269	-0.000004	0.000946
52	-0.002783	-0.024680	0.001542	0.000246	-0.000002	0.001325
53	-0.002769	-0.017046	0.001544	0.000217	0.000001	0.001562
54	-0.002755	-0.008567	0.001534	0.000183	0.000003	0.001598
55	-0.002728	-0.000711	0.001511	0.000142	0.000006	0.001370
56	-0.000163	-0.001945	0.007398	0.000975	0.000000	0.000021
57	-0.002739	-0.000414	0.001511	0.000145	0.000006	0.001370
58	-0.000163	-0.000232	0.007398	0.000972	0.000000	0.000021
59	-0.000013	-0.000071	0.000575	0.000349	0.000000	0.000008
61	-0.000081	-0.000178	0.003682	0.000886	0.000000	0.000019
62	-0.000163	0.001473	0.007398	0.000973	0.000000	0.000021
63	-0.002749	-0.000102	0.001510	0.000146	0.000006	0.001370
64	-0.002722	0.005422	0.001470	0.000143	0.000008	0.001012
65	-0.002704	0.009566	0.001418	0.000141	0.000010	0.000693
66	-0.002468	0.009033	0.003888	0.000441	0.000020	0.000489
67	-0.003204	0.009623	0.000983	0.000101	-0.000019	0.000427
68	-0.003179	0.010999	0.001028	0.000107	-0.000020	0.000340
69	-0.003162	0.011719	0.001567	0.000198	-0.000020	0.000221
70	-0.003156	-0.033820	0.002147	0.000360	0.000000	0.000494
71	-0.003663	-0.030743	0.002074	0.000337	0.000003	0.000952
72	-0.003637	-0.024786	0.002049	0.000311	0.000006	0.001332
73	0.002474	-0.017123	0.002215	0.000284	0.000008	0.001570
74	0.002452	-0.008605	0.002164	0.000243	0.000011	0.001605
75	0.002956	-0.000800	0.002120	0.000197	0.000013	0.001375
76	-0.000157	-0.002120	0.008245	0.001075	0.000000	0.000020
77	0.002933	-0.000415	0.002120	0.000199	0.000013	0.001375
78	-0.000157	-0.000232	0.008245	0.001072	0.000000	0.000020
79	-0.000013	-0.000071	0.000666	0.000398	0.000000	0.000008
81	-0.000079	-0.000179	0.004133	0.000981	0.000000	0.000019
82	-0.000157	0.001648	0.008245	0.001073	0.000000	0.000020
83	0.002911	-0.000016	0.002119	0.000200	0.000013	0.001375
84	0.002903	0.005446	0.002045	0.000194	0.000015	0.001016
85	0.002873	0.009608	0.001962	0.000189	0.000016	0.000695
86	0.001502	0.010991	0.002499	0.000257	0.000006	0.000493
87	0.002817	0.009656	0.000725	0.000060	-0.000011	0.000425
88	0.002782	0.011052	0.000818	0.000073	-0.000009	0.000338
89	0.002742	0.011741	0.001245	0.000150	-0.000011	0.000219
90	-0.002769	-0.033863	0.001890	0.000311	0.000002	0.000492
91	-0.002729	-0.030748	0.001838	0.000290	0.000005	0.000950
92	-0.002656	-0.024792	0.001808	0.000266	0.000007	0.001330
93	-0.002618	-0.017120	0.001767	0.000236	0.000009	0.001569
94	-0.002150	-0.008604	0.001733	0.000201	0.000011	0.001604
95	-0.002096	-0.000730	0.001673	0.000161	0.000012	0.001376
96	-0.000133	-0.002133	0.008308	0.001085	0.000000	0.000017
97	-0.002117	-0.000414	0.001673	0.000163	0.000012	0.001376
98	-0.000133	-0.000230	0.008308	0.001082	0.000000	0.000017
99	-0.000011	-0.000071	0.000659	0.000395	0.000000	0.000006
101	-0.000067	-0.000177	0.004162	0.000989	0.000000	0.000016
102	-0.000133	0.001668	0.008308	0.001082	0.000000	0.000017
103	-0.002139	-0.000084	0.001673	0.000165	0.000012	0.001376
104	-0.002084	0.005453	0.001604	0.000158	0.000014	0.001017
105	-0.002049	0.009622	0.001527	0.000153	0.000016	0.000696
106	-0.001979	0.011018	0.001693	0.000175	0.000017	0.000492
107	-0.002298	0.009673	-0.000169	-0.000025	0.000005	0.000424
108	0.002458	0.010973	0.000034	-0.000010	0.000007	0.000336
109	0.002413	0.011720	0.000350	0.000053	0.000005	0.000218
110	0.002250	-0.033835	0.001104	0.000153	0.000005	0.000489
111	0.002198	-0.030720	0.001060	0.000136	0.000006	0.000947
112	0.002157	-0.024757	0.001023	0.000120	0.000007	0.001326
113	0.002042	-0.017096	0.000979	0.000103	0.000008	0.001564
114	0.001653	-0.008590	0.000918	0.000086	0.000009	0.001599
115	0.001636	-0.000563	0.000868	0.000069	0.000010	0.001370
116	-0.000105	-0.002084	0.008093	0.001056	0.000000	0.000014
117	0.001619	-0.000414	0.000868	0.000071	0.000010	0.001370
118	-0.000105	-0.000231	0.008093	0.001053	0.000000	0.000014
119	-0.000008	-0.000071	0.000633	0.000379	0.000000	0.000005
121	-0.000053	-0.000178	0.004057	0.000963	0.000000	0.000013

122	-0.000105	0.001615	0.008093	0.001053	0.000000	0.000014
123	0.001603	-0.000252	0.000868	0.000073	0.000010	0.001370
124	0.001586	0.005433	0.000819	0.000070	0.000010	0.001011
125	0.001552	0.009582	0.000768	0.000069	0.000010	0.000691
126	-0.003724	0.010861	0.000628	0.000063	0.000021	0.000481
127	-0.002553	0.009585	-0.000801	-0.000084	0.000014	0.000422
128	-0.002504	0.010952	-0.000893	-0.000093	0.000014	0.000335
129	-0.002156	0.011821	-0.000569	-0.000031	0.000013	0.000216
130	-0.001725	-0.033750	-0.000542	-0.000103	0.000003	0.000485
131	-0.001639	-0.030662	-0.000530	-0.000108	0.000002	0.000942
132	0.002090	-0.024735	-0.000383	-0.000100	0.000002	0.001321
133	0.002042	-0.017082	-0.000394	-0.000096	0.000001	0.001559
134	0.001995	-0.008584	-0.000401	-0.000084	0.000000	0.001595
135	0.001945	-0.000318	-0.000402	-0.000067	-0.000001	0.001368
136	-0.000069	-0.001833	0.006873	0.000914	0.000000	0.000009
137	0.001947	-0.000414	-0.000402	-0.000065	-0.000001	0.001368
138	-0.000069	-0.000229	0.006873	0.000911	0.000000	0.000009
139	-0.000005	-0.000070	0.000521	0.000319	0.000000	0.000003
141	-0.000034	-0.000176	0.003400	0.000827	0.000000	0.000008
142	-0.000069	0.001369	0.006873	0.000911	0.000000	0.000009
143	0.001948	-0.000496	-0.000402	-0.000063	-0.000001	0.001368
144	0.001899	0.005435	-0.000394	-0.000059	-0.000002	0.001010
145	0.001851	0.009589	-0.000379	-0.000054	-0.000003	0.000690
146	0.002461	0.008963	0.002217	0.000263	0.000058	0.000473
147	0.002645	0.009526	-0.000415	-0.000057	0.000008	0.000420
148	0.002595	0.010892	-0.000449	-0.000062	0.000008	0.000334
149	0.002542	0.011803	-0.000224	-0.000008	0.000010	0.000216
150	0.001293	-0.033543	-0.001036	-0.000248	-0.000006	0.000488
151	-0.001787	-0.030576	-0.001081	-0.000251	-0.000008	0.000944
152	-0.001739	-0.024609	-0.001036	-0.000238	-0.000009	0.001323
153	-0.001692	-0.016941	-0.000988	-0.000214	-0.000010	0.001561
154	-0.001645	-0.008436	-0.000937	-0.000179	-0.000010	0.001595
155	-0.000025	-0.001289	0.003613	0.000648	0.000000	0.000005
156	-0.001617	-0.000046	-0.000882	-0.000135	-0.000011	0.001366
157	-0.001598	-0.000268	-0.000882	-0.000133	-0.000011	0.001366
158	-0.000025	-0.000148	0.003613	0.000645	0.000000	0.000005
159	-0.000008	-0.000094	0.001214	0.000549	0.000000	0.000004
161	-0.000025	0.000983	0.003613	0.000646	0.000000	0.000005
162	-0.001579	-0.000476	-0.000882	-0.000131	-0.000011	0.001366
163	-0.001550	0.005564	-0.000826	-0.000123	-0.000011	0.001006
164	-0.001503	0.009691	-0.000767	-0.000113	-0.000012	0.000684
165	-0.001456	0.012309	-0.000706	-0.000104	-0.000012	0.000402
166	-0.002988	0.005954	-0.000084	-0.000011	0.000000	0.000256
167	-0.002929	0.006522	-0.000064	-0.000007	0.000000	0.000202
168	-0.002323	-0.005947	0.001425	0.000413	0.000018	0.000136
169	-0.000015	-0.032470	-0.000686	-0.000200	-0.000004	0.000491
170	0.001884	-0.029797	-0.000604	-0.000186	-0.000005	0.000936
171	0.001836	-0.023903	-0.000580	-0.000170	-0.000005	0.001302
172	0.001789	-0.016380	-0.000552	-0.000147	-0.000006	0.001524
173	0.001741	-0.008100	-0.000521	-0.000117	-0.000007	0.001541
174	0.001679	-0.000111	-0.000486	-0.000081	-0.000008	0.001293
175	-0.000006	-0.000676	0.001608	0.000319	0.000000	0.000001
176	0.001693	-0.000247	-0.000486	-0.000080	-0.000008	0.001293
177	-0.000006	-0.000113	0.001608	0.000316	0.000000	0.000001
178	-0.000002	-0.000067	0.000466	0.000257	0.000000	0.000001
180	-0.000006	0.000442	0.001608	0.000317	0.000000	0.000001
181	0.001707	-0.000370	-0.000486	-0.000078	-0.000008	0.001293
182	0.001645	0.005163	-0.000443	-0.000071	-0.000009	0.000912
183	0.001597	0.008770	-0.000396	-0.000061	-0.000010	0.000571
184	0.001549	0.010770	-0.000346	-0.000052	-0.000010	0.000269
185	0.000254	-0.001815	-0.000069	-0.000015	-0.000005	0.000032
186	-0.001103	-0.012384	0.000085	0.000019	0.000001	0.000141
187	-0.002321	-0.015091	-0.000008	0.000014	-0.000001	0.000479
188	-0.002273	-0.011657	-0.000002	0.000014	-0.000001	0.000841
189	-0.002226	-0.006459	0.000003	0.000009	-0.000001	0.001122
190	-0.002166	-0.000033	0.000008	-0.000008	0.000003	0.001268
191	-0.000047	-0.000013	0.000000	0.000003	-0.000010	0.000001
192	-0.002178	-0.000054	0.000008	-0.000001	-0.000001	0.001260
193	-0.000006	-0.000001	0.000000	0.000000	-0.000001	0.000001
195	-0.002158	-0.000028	0.000008	0.000004	-0.000005	0.001268
196	-0.000039	-0.000013	0.000000	-0.000003	0.000008	0.000001

HIPOTESIS 62

MOME Z MIN sobrecarga + fr. + fc (ec-1)

DESPLAZAMIENTOS DE NUDOS

NUDO	DESP. X	DESP. Y	DESP. Z	GIRO X	GIRO Y	GIRO Z
1	0.004454	-0.000027	0.000143	0.000027	0.000000	-0.001136
2	0.000000	-0.000015	0.000000	0.000004	0.000000	0.000000
3	0.004455	-0.000055	0.000143	0.000033	0.000003	-0.001136
4	0.000000	-0.000001	0.000000	0.000000	0.000000	0.000000
6	0.004457	-0.000035	0.000143	0.000040	0.000000	-0.001135
7	0.000000	-0.000039	-0.000002	-0.000009	0.000000	0.000000
8	0.004455	-0.005961	0.000131	0.000015	0.000003	-0.001041
9	0.004453	-0.010860	0.000118	-0.000003	0.000003	-0.000798
10	0.004448	-0.014161	0.000105	-0.000017	0.000002	-0.000466
11	0.004904	-0.013382	0.000214	0.000001	-0.000003	-0.000133
12	0.004441	-0.002727	0.000124	0.000009	-0.000002	-0.000006
13	0.002889	0.010207	0.000165	0.000024	-0.000004	-0.000232
14	0.002891	0.008418	0.000190	0.000036	-0.000005	-0.000530
15	0.002891	0.005025	0.000219	0.000049	-0.000006	-0.000873
16	0.002883	-0.000237	0.000251	0.000062	-0.000006	-0.001260
17	0.000036	0.000427	-0.001282	-0.000299	0.000000	-0.000008
18	0.002894	-0.000195	0.000252	0.000064	-0.000006	-0.001260
19	0.000036	-0.000098	-0.001282	-0.000298	0.000000	-0.000008
20	0.000007	-0.000046	-0.000244	-0.000219	0.000000	-0.000006
22	0.002905	-0.000139	0.000252	0.000065	-0.000006	-0.001260
23	0.000036	-0.000631	-0.001282	-0.000301	0.000000	-0.000008
24	0.002890	-0.007915	0.000288	0.000087	-0.000007	-0.001518
25	0.002889	-0.016108	0.000327	0.000102	-0.000007	-0.001509
26	0.002887	-0.023581	0.000365	0.000110	-0.000007	-0.001294
27	0.002884	-0.029458	0.000403	0.000111	-0.000007	-0.000933
28	0.004310	-0.032793	0.000478	0.000109	-0.000007	-0.000490
29	0.003596	-0.005573	-0.001360	-0.000454	0.000027	-0.000142
30	0.004282	0.006267	0.000074	0.000000	-0.000001	-0.000195
31	0.004264	0.005754	0.000095	0.000004	-0.000002	-0.000247
32	0.004233	0.012104	0.000962	0.000122	-0.000019	-0.000389
33	0.004211	0.009541	0.001055	0.000139	-0.000019	-0.000671
34	0.004188	0.005467	0.001148	0.000158	-0.000018	-0.000993
35	0.004133	-0.000561	0.001236	0.000176	-0.000018	-0.001355
36	0.000102	0.000983	-0.004087	-0.000661	0.000000	-0.000017
37	0.004164	-0.000317	0.001237	0.000178	-0.000018	-0.001355
38	0.000102	-0.000175	-0.004087	-0.000660	0.000000	-0.000017
39	0.000000	-0.000012	-0.000017	-0.000055	0.000000	-0.000001
41	0.000040	-0.000121	-0.001614	-0.000576	0.000000	-0.000014
42	0.000102	-0.001342	-0.004087	-0.000663	0.000000	-0.000017
43	0.004195	-0.000059	0.001238	0.000180	-0.000018	-0.001355
44	0.004144	-0.008451	0.001325	0.000228	-0.000017	-0.001586
45	0.004120	-0.016932	0.001408	0.000263	-0.000016	-0.001553
46	0.004095	-0.024583	0.001484	0.000286	-0.000014	-0.001316
47	0.004070	-0.030541	0.001552	0.000297	-0.000013	-0.000938
48	0.002776	-0.033664	0.001563	0.000296	-0.000010	-0.000481
49	0.002791	0.011697	0.000184	-0.000011	0.000006	-0.000214
50	0.002773	0.010866	0.000379	0.000039	0.000007	-0.000331
51	0.002761	0.009485	0.000465	0.000051	0.000005	-0.000416
52	0.002057	0.008939	-0.001195	-0.000157	0.000041	-0.000472
53	0.002714	0.009590	0.001786	0.000201	-0.000021	-0.000686
54	0.002697	0.005438	0.001893	0.000221	-0.000019	-0.001007
55	0.002643	-0.000778	0.001988	0.000240	-0.000017	-0.001366
56	0.000148	0.001335	-0.006732	-0.000892	0.000000	-0.000020
57	0.002672	-0.000415	0.001988	0.000242	-0.000017	-0.001366
58	0.000148	-0.000228	-0.006732	-0.000891	0.000000	-0.000020
59	0.000011	-0.000070	-0.000513	-0.000314	0.000000	-0.000007
61	0.000073	-0.000175	-0.003332	-0.000810	0.000000	-0.000018
62	0.000148	-0.001800	-0.006732	-0.000894	0.000000	-0.000020
63	0.002702	-0.000038	0.001989	0.000244	-0.000017	-0.001366
64	0.002652	-0.008599	0.002070	0.000299	-0.000014	-0.001594
65	0.002634	-0.017116	0.002138	0.000340	-0.000012	-0.001558
66	0.002615	-0.024790	0.002193	0.000365	-0.000009	-0.001319
67	0.003154	-0.030756	0.002254	0.000379	-0.000006	-0.000938
68	0.003129	-0.033857	0.002333	0.000384	-0.000003	-0.000479
69	0.003134	0.011846	0.000892	0.000058	0.000017	-0.000215
70	0.003101	0.011016	0.001102	0.000109	0.000020	-0.000334
71	0.003610	0.009603	0.001139	0.000116	0.000018	-0.000421
72	0.003779	0.009070	-0.000724	-0.000113	0.000055	-0.000480
73	-0.002533	0.009597	0.001529	0.000181	-0.000014	-0.000687
74	-0.002512	0.005441	0.001600	0.000197	-0.000012	-0.001008
75	-0.002993	-0.000734	0.001643	0.000211	-0.000010	-0.001367
76	0.000144	0.001505	-0.007561	-0.000991	0.000000	-0.000019
77	-0.002974	-0.000415	0.001644	0.000213	-0.000010	-0.001367
78	0.000144	-0.000230	-0.007561	-0.000990	0.000000	-0.000019
79	0.000011	-0.000070	-0.000592	-0.000357	0.000000	-0.000007
81	0.000072	-0.000176	-0.003771	-0.000903	0.000000	-0.000017
82	0.000144	-0.001976	-0.007561	-0.000993	0.000000	-0.000019
83	-0.002956	-0.000082	0.001644	0.000214	-0.000010	-0.001367
84	-0.002927	-0.008600	0.001694	0.000262	-0.000008	-0.001594
85	-0.002896	-0.017116	0.001733	0.000296	-0.000006	-0.001558
86	-0.002864	-0.024783	0.001761	0.000316	-0.000004	-0.001320
87	-0.002831	-0.030749	0.001777	0.000325	-0.000002	-0.000939
88	-0.002815	-0.033830	0.001804	0.000323	0.000001	-0.000481
89	-0.002795	0.011895	0.000863	0.000072	0.000023	-0.000215
90	0.002725	0.011092	0.001256	0.000130	0.000025	-0.000335
91	0.002681	0.009653	0.001242	0.000132	0.000023	-0.000423
92	0.001301	0.010996	0.002112	0.000234	0.000013	-0.000485
93	0.002601	0.009605	0.000890	0.000100	-0.000006	-0.000691
94	0.002133	0.005445	0.000902	0.000109	-0.000005	-0.001011
95	0.002095	-0.000579	0.000926	0.000118	-0.000004	-0.001370
96	0.000124	0.001547	-0.007747	-0.001014	0.000000	-0.000016
97	0.002101	-0.000415	0.000926	0.000120	-0.000004	-0.001370
98	0.000124	-0.000227	-0.007747	-0.001013	0.000000	-0.000016
99	0.000010	-0.000070	-0.000598	-0.000360	0.000000	-0.000006
101	0.000062	-0.000175	-0.003869	-0.000925	0.000000	-0.000015
102	0.000124	-0.002014	-0.007747	-0.001016	0.000000	-0.000016
103	0.002108	-0.000237	0.000926	0.000122	-0.000004	-0.001370
104	0.002068	-0.008601	0.000943	0.000147	-0.000003	-0.001598
105	0.002035	-0.017116	0.000954	0.000164	-0.000002	-0.001561
106	0.002404	-0.024783	0.000975	0.000172	-0.000001	-0.001322
107	0.002363	-0.030734	0.000976	0.000172	0.000000	-0.000941
108	-0.002394	-0.033712	0.000813	0.000157	0.000002	-0.000483
109	-0.002332	0.011950	0.000612	0.000048	0.000018	-0.000217
110	-0.002293	0.011038	0.000889	0.000105	0.000018	-0.000337
111	-0.002203	0.009652	0.000811	0.000097	0.000017	-0.000424
112	-0.001729	0.010982	0.001038	0.000123	0.000017	-0.000488
113	-0.002049	0.009595	-0.000444	-0.000036	0.000003	-0.000692
114	-0.001659	0.005438	-0.000445	-0.000033	0.000003	-0.001012
115	-0.001619	-0.000323	-0.000459	-0.000032	0.000003	-0.001369
116	0.000099	0.001506	-0.007579	-0.000991	0.000000	-0.000013
117	-0.001625	-0.000413	-0.000459	-0.000030	0.000003	-0.001369
118	0.000099	-0.000229	-0.007579	-0.000990	0.000000	-0.000013
119	0.000008	-0.000071	-0.000585	-0.000352	0.000000	-0.000005
121	0.000049	-0.000176	-0.003787	-0.000904	0.000000	-0.000012

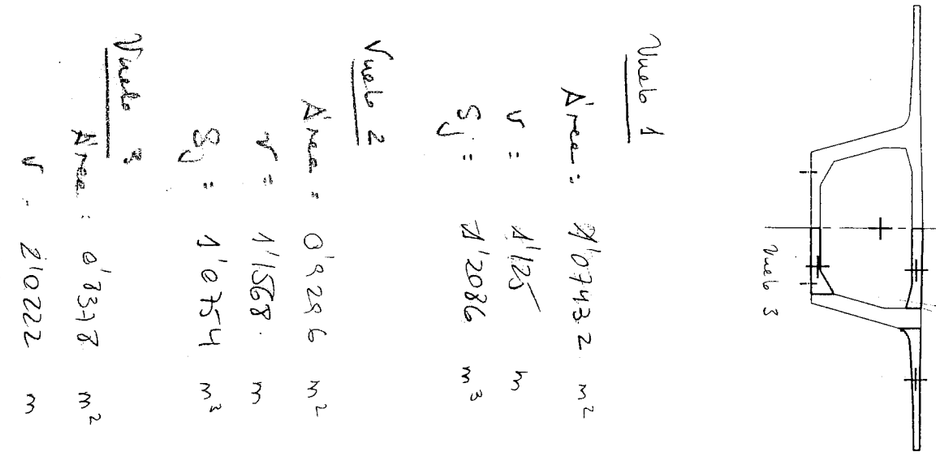
122	0.000099	-0.001975	-0.007579	-0.000993	0.000000	-0.000013
123	-0.001630	-0.000490	-0.000459	-0.000028	0.000003	-0.001369
124	-0.001590	-0.008583	-0.000473	-0.000037	0.000003	-0.001597
125	-0.001556	-0.017079	-0.000487	-0.000048	0.000003	-0.001561
126	0.002376	-0.024724	-0.000338	-0.000049	0.000003	-0.001323
127	0.002328	-0.030669	-0.000353	-0.000061	0.000003	-0.000944
128	0.002280	-0.033774	-0.000348	-0.000071	0.000003	-0.000486
129	0.001845	0.011810	0.000171	-0.000011	0.000008	-0.000217
130	0.001800	0.010968	0.000506	0.000053	0.000009	-0.000336
131	0.001639	0.009597	0.000434	0.000047	0.000009	-0.000423
132	-0.003408	0.010782	0.000103	0.000016	0.000014	-0.000482
133	-0.002263	0.009564	-0.001194	-0.000120	0.000007	-0.000690
134	-0.002214	0.005422	-0.001227	-0.000123	0.000005	-0.001009
135	-0.002161	-0.000164	-0.001250	-0.000127	0.000003	-0.001368
136	0.000064	0.001265	-0.006395	-0.000856	0.000000	-0.000009
137	-0.002167	-0.000414	-0.001250	-0.000126	0.000003	-0.001368
138	0.000064	-0.000233	-0.006395	-0.000855	0.000000	-0.000009
139	0.000005	-0.000071	-0.000474	-0.000293	0.000000	-0.000003
141	0.000031	-0.000179	-0.003143	-0.000774	0.000000	-0.000008
142	0.000064	-0.001741	-0.006395	-0.000858	0.000000	-0.000009
143	-0.002172	-0.000650	-0.001250	-0.000124	0.000003	-0.001368
144	-0.002119	-0.008573	-0.001257	-0.000161	0.000001	-0.001596
145	-0.002071	-0.017061	-0.001254	-0.000191	-0.000001	-0.001560
146	-0.002024	-0.024704	-0.001242	-0.000216	-0.000003	-0.001322
147	-0.001976	-0.030634	-0.001224	-0.000234	-0.000004	-0.000942
148	-0.001926	-0.033731	-0.001208	-0.000247	-0.000006	-0.000484
149	-0.001566	0.011654	-0.000690	-0.000108	-0.000009	-0.000219
150	-0.001515	0.010900	-0.000344	-0.000036	-0.000007	-0.000337
151	0.001564	0.009648	-0.000229	-0.000027	-0.000006	-0.000424
152	0.001516	0.007298	-0.000198	-0.000023	-0.000006	-0.000476
153	0.002361	0.009576	-0.000637	-0.000085	0.000005	-0.000679
154	0.002314	0.005493	-0.000660	-0.000088	0.000004	-0.000995
155	0.000024	0.000925	-0.003403	-0.000612	0.000000	-0.000004
156	0.002270	-0.000084	-0.000677	-0.000092	0.000002	-0.001349
157	0.002266	-0.000265	-0.000677	-0.000091	0.000002	-0.001349
158	0.000024	-0.000148	-0.003403	-0.000611	0.000000	-0.000004
159	0.000008	-0.000093	-0.001136	-0.000518	0.000000	-0.000004
161	0.000024	-0.001230	-0.003403	-0.000614	0.000000	-0.000004
162	0.002262	-0.000433	-0.000677	-0.000089	0.000002	-0.001349
163	0.002218	-0.008322	-0.000683	-0.000128	0.000001	-0.001574
164	0.002171	-0.016693	-0.000683	-0.000158	0.000000	-0.001536
165	0.002123	-0.024218	-0.000679	-0.000180	-0.000001	-0.001299
166	0.002075	-0.030036	-0.000671	-0.000194	-0.000002	-0.000921
167	0.002016	-0.033023	-0.000679	-0.000202	-0.000003	-0.000468
168	0.000728	0.012091	-0.000458	-0.000070	-0.000012	-0.000228
169	0.000680	0.010555	-0.000400	-0.000061	-0.000011	-0.000343
170	-0.001219	0.009562	-0.000401	-0.000058	-0.000011	-0.000427
171	-0.001171	0.007206	-0.000345	-0.000050	-0.000011	-0.000476
172	-0.002467	0.006119	-0.000070	-0.000013	-0.000006	-0.000498
173	-0.002420	0.003333	-0.000042	-0.000006	-0.000005	-0.000632
174	-0.002609	-0.000185	-0.000052	-0.000005	-0.000001	-0.000821
175	0.000006	0.000424	-0.001608	-0.000317	0.000000	-0.000001
176	-0.002607	-0.000203	-0.000052	-0.000004	-0.000001	-0.000821
177	0.000006	-0.000130	-0.001608	-0.000316	0.000000	-0.000001
178	0.000002	-0.000077	-0.000466	-0.000257	0.000000	-0.000001
180	0.000006	-0.000693	-0.001608	-0.000319	0.000000	-0.000001
181	-0.002605	-0.000209	-0.000052	-0.000002	-0.000001	-0.000821
182	-0.002559	-0.005170	-0.000044	-0.000005	-0.000001	-0.000924
183	-0.002512	-0.009984	-0.000036	-0.000004	-0.000001	-0.000823
184	-0.002464	-0.013780	-0.000029	0.000000	-0.000001	-0.000582
185	-0.002370	-0.015534	-0.000033	0.000003	-0.000002	-0.000261
186	0.000536	0.008809	-0.000257	-0.000036	-0.000012	-0.000234
187	0.001406	0.009089	-0.000179	-0.000026	-0.000011	-0.000400
188	0.001358	0.006623	-0.000120	-0.000017	-0.000012	-0.000545
189	0.001310	0.003531	-0.000061	-0.000008	-0.000012	-0.000651
190	0.001196	0.000008	-0.000001	0.000002	-0.000016	-0.000725
191	0.000047	-0.000017	0.000000	0.000004	0.000010	-0.000001
192	0.001262	0.000010	-0.000001	0.000001	-0.000012	-0.000717
193	0.000006	-0.000001	0.000000	0.000000	0.000001	-0.000001
195	0.001297	0.000004	-0.000001	0.000000	-0.000008	-0.000725
196	0.000039	-0.000016	0.000000	-0.000004	-0.000009	-0.000001

CÁLCULO DE ARMADURA PASIVA

CÁLCULO DE ARMADURA DE CORTANTE, TORSIÓN, COSIDO DE VUELO Y VOLUMEN DE TRACCIÓN

ARMADURA POR VOLUMEN DE TRACCIONES

seccion	hipo	tens sup	tens inf	hs	Area	tens cdg	Vol	Us	b	Us T/m	cm2 armadura	armadura necesaria
Apoyo	97	-58.11	261.44	-0.65	4.78	36.44	174.18	2612.75	14.65	178.345	40.21	25 a 0.10
cdv	98	182	-76.18	2.54	2.62	51.39	134.64	2019.63	5	403.925	91.08	2 capas 25 a 0.10
a 5 m de cdv	98	175.67	-65.68	2.62	2.53	44.04	111.42	1671.32	5	334.264	75.37	25 a 0.10 + 25 a 0.20
a 10m de cdv	98	156.67	-34.85	2.94	2.18	21.87	47.68	715.15	5	143.030	32.25	25 a 0.20 + 25 a 0.40
a 15m de cdv	98	131.33	6.88	3.80	0	0	0.00	0.00	5	0.000	0.00	---



Vuelo 1

Área: 2'07432 m²

r = 4'125 m

Sj = 7'2086 m³

Vuelo 2

Área = 0'9296 m²

r = 1'1568 m

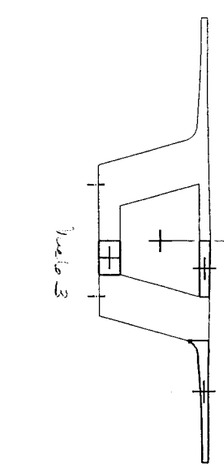
Sj = 1'0754 m³

Vuelo 3

Área = 0'8378 m²

r = 2'0222 m

Sj = 1'6942 m³



Vuelo 1

Área = 1'07743 m²

r = 1'3767 m

Sj = 1'4790 m³

Vuelo 2

Área = 0'62025 m²

r = 1'4306 m

Sj = 0'8873 m³

Vuelo 3

Área = 0'825 m²

r = 1'6348 m

Sj = 1'3054 m³

"armaten-arm" fichero de datos para cálculo de armadura

```
dato 114 2 1.15 1.50 1.00 0 0
 1 a  8 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
        9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
      9 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
        15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
        2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
        1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
     10 15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
        2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
        1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
        9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
11 a 20 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
        9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
     21 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
        15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
        2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
        1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
     22 15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
        2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
        1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
        9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
23 a 32 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
        9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
     33 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
        15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
        2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
        1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
     34 15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
        2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
        1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
        9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
35 a 44 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
        9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
     45 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
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          1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
          1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
          15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
          2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
          1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
       46 15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
          2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
          1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
          9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
          1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
          1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
 47 a 56  9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
          1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
          1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
          9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
          1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
          1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
       57 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
          1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
          1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
          15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
          2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
          1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
       58 15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
          2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
          1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
          9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
          1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
          1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
 59 a 68  9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
          1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
          1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
          9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
          1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
          1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
       69 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
          1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
          1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
          15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
          2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
          1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
       70 15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
          2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
          1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
          9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
          1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
          1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
 71 a 80  9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
          1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
          1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
          9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
          1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
          1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
       81 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
          1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
          1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
          15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
          2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
          1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
       82 15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
          2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
          1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
          9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
          1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
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        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
83 a 92 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
        9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
     93 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
        15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
        2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
        1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
     94 15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
        2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
        1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
        9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
95 a 104 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
        9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
    105 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
        15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
        2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
        1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
    106 15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
        2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
        1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
        9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
107 a 114 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
        9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
secc 9 21 33 45 57 69 81 93 105 114
arma 500. 5100.
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barr 1 a 114
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proc Viaducto Papiol

ARMADURA

BARR	SECC	VOL T	CORTANTE TRANS	CORTANTE LONG	TORSION TRANS	TORSION LONG	VUE 1	VUE 2	VUE 3	VUE 4	RELACION		TOTAL TRANS
1	3	0.00	30.27	219.38	0.09	1.57	13.40	24.78	56.32	0.00	0.49	0.00	30.45
		0.00	16.67C	12.06	0.31	5.55	6.71	1.44	1.09	0.00	0.03	0.01	0.62
		0.00	16.67C	117.42	8.78	156.23	5.69	10.52	23.92	0.00	0.21	0.21	17.56
		0.00	16.67C	181.95	8.15	144.99	8.17	15.10	34.32	0.00	0.31	0.22	16.30
2	8	0.00	16.67C	209.76	0.09	1.59	78.29	16.78	12.74	0.00	0.36	0.00	0.18
		0.00	16.67C	22.12	0.24	4.24	10.15	2.18	1.65	0.00	0.05	0.01	0.48
		0.00	16.67C	84.19	7.83	139.26	33.09	7.09	5.38	0.00	0.15	0.19	15.66
		0.00	16.67C	132.40	7.24	128.73	47.94	10.27	7.80	0.00	0.23	0.19	14.47
3	9	0.00	16.67C	125.35	0.25	4.37	47.72	10.23	7.76	0.00	0.22	0.01	0.49
		0.00	16.67C	45.11	0.17	2.96	18.03	3.86	2.93	0.00	0.09	0.00	0.33
		0.00	16.67C	56.93	6.82	121.39	23.17	4.97	3.77	0.00	0.11	0.17	13.65
		0.00	16.67C	65.62	6.23	110.83	25.06	5.37	4.08	0.00	0.12	0.17	12.46
4	10	0.00	16.67C	67.15	0.08	1.34	26.26	5.63	4.27	0.00	0.12	0.00	0.15
		0.00	16.67C	34.53	0.12	2.16	14.40	3.09	2.34	0.00	0.07	0.00	0.24
		0.00	16.67C	23.22	4.63	82.45	10.81	2.32	1.76	0.00	0.05	0.12	9.27
		0.00	16.67C	29.95	4.31	76.62	12.83	2.75	2.09	0.00	0.07	0.11	8.61
5	11	0.00	16.67C	34.45	0.07	1.23	14.38	3.08	2.34	0.00	0.07	0.00	0.14
		0.00	16.67C	49.67	0.19	3.34	20.15	4.32	10.65	0.00	0.09	0.00	0.38
		0.00	16.67C	-1.21	2.79	49.63	2.15	0.46	0.35	0.00	0.01	0.07	5.58
		0.00	16.67C	-6.62	2.45	43.50	0.31	0.07	0.05	0.00	0.00	0.07	4.89
6	12	0.00	16.67C	3.75	0.04	0.69	3.86	0.83	0.63	0.00	0.02	0.00	0.08
		0.00	16.67C	129.79	0.06	1.00	48.49	10.39	7.89	0.00	0.23	0.00	0.11
		0.00	16.67C	64.74	1.82	32.43	25.47	5.46	13.47	0.00	0.12	0.05	3.65
		0.00	16.67C	20.66	1.73	30.75	9.65	2.07	1.57	0.00	0.05	0.05	3.46
7	13	0.00	16.67C	2.17	0.05	0.84	3.32	0.71	0.54	0.00	0.02	0.00	0.09
		0.00	16.67C	201.84	0.14	2.48	74.07	17.23	39.17	0.00	0.35	0.00	0.28
		0.00	16.67C	142.23	3.19	56.81	52.95	12.32	28.00	0.00	0.25	0.08	6.39
		0.00	16.67C	65.26	3.47	61.65	24.93	5.34	4.06	0.00	0.13	0.09	6.93
8	14	0.00	16.67C	67.03	0.08	1.45	25.54	5.47	4.16	0.00	0.13	0.00	0.16
		0.00	16.67C	225.40	0.15	2.62	10.38	19.19	43.62	0.00	0.38	0.00	0.29
		0.00	16.67C	99.90	4.91	87.36	4.63	8.56	19.46	0.00	0.19	0.13	9.82
		0.00	16.67C	73.83	5.56	98.85	3.59	6.64	15.10	0.00	0.13	0.14	11.11
9	15	0.00	16.67C	36.01	0.08	1.49	1.88	3.47	7.89	0.00	0.08	0.00	0.17
		0.00	33.71	240.75	0.17	3.07	14.63	27.04	61.45	0.00	0.54	0.00	34.06
		0.00	16.67C	174.09	5.77	102.67	7.83	14.48	32.90	0.00	0.31	0.15	11.54
		0.00	16.67C	127.52	6.44	114.62	5.97	11.04	25.10	0.00	0.22	0.16	12.89
9	18	0.00	41.00C	81.17	0.09	1.44	4.30	7.94	18.05	0.00	0.07	0.00	0.18
		0.00	41.00C	481.48	0.25	4.05	22.59	41.77	94.93	0.00	0.34	0.00	0.49
		0.00	41.00C	347.66	7.41	121.96	15.79	29.19	66.33	0.00	0.25	0.08	14.83

proc Viaducto Papiol

ARMADURA

BARR	SECC	VOL T	CORTANTE TRANS	CORTANTE LONG	TORSION TRANS	TORSION LONG	VUE 1	VUE 2	VUE 3	VUE 4	RELACION		TOTAL TRANS
		0.00	41.00C	249.00	8.33	137.01	12.00	22.18	50.41	0.00	0.18	0.08	16.66
10	18	0.00	41.00C	652.53	0.45	7.38	28.93	53.49	121.56	0.00	0.47	0.00	0.90
		0.00	41.00C	172.87	0.02	0.33	8.64	15.97	36.29	0.00	0.13	0.00	0.04
		0.00	41.00C	451.64	10.87	178.73	21.32	39.41	89.58	0.00	0.32	0.11	21.73
		0.00	41.00C	363.57	10.78	177.40	16.47	30.45	69.21	0.00	0.27	0.12	21.57
11	24	0.00	44.32	295.80	0.31	5.49	18.03	33.33	75.74	0.00	0.68	0.01	44.93
		0.00	16.67C	1.67	0.04	0.62	0.40	0.73	1.66	0.00	0.02	0.00	0.07
		0.00	20.46	218.55	8.39	149.22	11.97	22.13	50.30	0.00	0.45	0.22	37.24
		0.00	16.67C	136.39	8.65	153.87	6.20	11.47	26.07	0.00	0.27	0.23	17.30
12	25	0.00	22.55	236.04	0.23	4.08	12.86	23.78	54.04	0.00	0.49	0.01	23.01
		0.00	16.67C	60.45	0.03	0.55	23.28	4.99	3.79	0.00	0.12	0.00	0.06
		0.00	16.67C	167.59	7.52	133.80	7.66	14.17	32.20	0.00	0.29	0.20	15.04
		0.00	16.67C	65.12	7.76	137.98	24.88	5.33	4.05	0.00	0.14	0.21	15.51
13	26	0.00	16.67C	258.39	0.19	3.37	91.10	19.52	14.82	0.00	0.43	0.01	0.38
		0.00	16.67C	5.67	0.08	1.37	4.52	0.97	0.74	0.00	0.02	0.00	0.15
		0.00	16.67C	166.63	6.59	117.25	60.40	12.94	31.94	0.00	0.29	0.17	13.18
		0.00	16.67C	96.42	6.92	123.02	35.61	7.63	5.79	0.00	0.20	0.18	13.83
14	27	0.00	16.67C	192.59	0.12	2.19	68.56	14.69	11.15	0.00	0.33	0.00	0.25
		0.00	16.67C	-5.72	0.10	1.74	0.61	0.13	0.10	0.00	0.00	0.00	0.20
		0.00	16.67C	123.27	5.59	99.36	45.39	9.73	7.38	0.00	0.21	0.15	11.17
		0.00	16.67C	85.94	5.85	104.15	32.02	6.86	5.21	0.00	0.18	0.16	11.71
15	28	0.00	16.67C	119.02	0.11	1.90	43.35	9.29	7.05	0.00	0.24	0.00	0.21
		0.00	16.67C	0.95	0.11	1.94	2.90	0.68	1.54	0.00	0.01	0.00	0.22
		0.00	16.67C	57.90	4.23	75.23	22.41	4.80	3.65	0.00	0.12	0.11	8.46
		0.00	16.67C	47.33	3.92	69.66	18.79	4.03	3.06	0.00	0.10	0.10	7.83
16	29	0.00	16.67C	37.20	0.39	7.02	15.32	3.28	2.49	0.00	0.08	0.01	0.79
		0.00	16.67C	46.36	0.64	11.39	18.88	4.04	3.07	0.00	0.09	0.02	1.28
		0.00	16.67C	2.50	5.00	89.02	3.46	0.74	0.56	0.00	0.02	0.13	10.01
		0.00	16.67C	-7.23	4.61	82.00	0.10	0.02	0.02	0.00	0.00	0.12	9.22
17	30	0.00	16.67C	6.96	0.19	3.38	4.99	1.07	2.64	0.00	0.02	0.00	0.38
		0.00	16.67C	133.86	0.14	2.41	48.43	10.38	7.88	0.00	0.25	0.00	0.27
		0.00	16.67C	79.53	4.08	72.57	29.82	6.39	4.85	0.00	0.15	0.11	8.16
		0.00	16.67C	49.19	3.86	68.72	19.53	4.19	3.18	0.00	0.09	0.10	7.73
18	31	0.00	16.67C	-0.45	0.14	2.48	2.42	0.52	0.39	0.00	0.01	0.00	0.28
		0.00	16.67C	189.60	0.16	2.77	69.49	14.89	11.31	0.00	0.32	0.00	0.31
		0.00	16.67C	124.57	4.06	72.28	45.25	9.70	7.36	0.00	0.23	0.11	8.13
		0.00	16.67C	86.94	4.24	75.41	32.54	6.97	5.29	0.00	0.15	0.11	8.48
19	32	0.00	16.67C	47.46	0.07	1.26	18.83	4.04	3.06	0.00	0.10	0.00	0.14
		0.00	16.67C	214.91	0.03	0.56	78.68	18.31	41.60	0.00	0.37	0.00	0.06

proc Viaducto Papiol

ARMADURA

BARR	SECC	VOL T	CORTANTE TRANS	CORTANTE LONG	TORSION TRANS	TORSION LONG	VUE 1	VUE 2	VUE 3	VUE 4	RELACION		TOTAL TRANS
		0.00	16.67C	107.69	6.00	106.79	39.47	8.46	6.42	0.00	0.20	0.16	12.01
		0.00	16.67C	72.22	6.03	107.26	27.53	6.41	14.56	0.00	0.13	0.16	12.06
20	33	0.00	16.67C	27.05	0.01	0.13	1.49	2.76	6.26	0.00	0.06	0.00	0.01
		0.00	30.25	230.83	0.09	1.54	13.80	25.51	57.97	0.00	0.51	0.00	30.42
		0.00	16.67C	169.43	6.77	120.39	7.63	14.10	32.06	0.00	0.31	0.18	13.53
		0.00	16.67C	116.69	6.80	120.91	5.41	10.01	22.75	0.00	0.20	0.18	13.59
21	34	0.00	16.67C	96.48	0.06	1.16	4.48	8.29	18.84	0.00	0.18	0.00	0.13
		0.00	64.68	316.89	0.18	3.21	21.61	39.96	90.81	0.00	0.80	0.00	65.04
		0.00	16.67C	243.81	7.55	134.31	10.84	20.03	45.53	0.00	0.43	0.20	15.10
		0.00	36.72	263.75	7.59	135.04	15.84	29.28	66.54	0.00	0.59	0.20	51.90
21	37	0.00	41.00C	156.55	0.17	2.76	7.55	13.95	31.71	0.00	0.12	0.00	0.34
		0.00	48.06	479.17	0.32	5.24	27.19	50.26	114.23	0.00	0.41	0.00	48.69
		0.00	41.00C	325.20	9.47	155.86	14.82	27.40	62.26	0.00	0.23	0.10	18.95
		0.00	41.00C	438.57	9.71	159.73	20.33	37.59	85.43	0.00	0.31	0.10	19.42
22	37	0.00	41.00C	644.08	0.96	15.82	28.57	52.81	120.03	0.00	0.47	0.01	1.92
		0.00	41.00C	161.62	0.22	3.55	8.09	14.95	33.98	0.00	0.12	0.00	0.43
		0.00	41.00C	435.81	10.29	169.35	20.66	38.20	86.82	0.00	0.31	0.10	20.59
		0.00	41.00C	342.57	10.94	179.91	15.57	28.78	65.41	0.00	0.25	0.12	21.87
23	44	0.00	48.15	301.11	0.68	12.07	18.75	34.66	78.78	0.00	0.71	0.02	49.51
		0.00	16.67C	-5.53	0.09	1.52	0.09	0.16	0.36	0.00	0.00	0.00	0.17
		0.00	23.23	209.20	8.04	143.10	12.06	22.30	50.69	0.00	0.44	0.20	39.32
		0.00	16.67C	143.53	8.75	155.72	6.51	12.04	27.36	0.00	0.28	0.23	17.51
24	45	0.00	29.57	227.40	0.53	9.44	13.58	25.11	57.07	0.00	0.50	0.01	30.63
		0.00	16.67C	53.25	0.00	0.07	2.62	4.84	11.01	0.00	0.10	0.00	0.01
		0.00	16.67C	165.41	7.38	131.37	8.06	14.89	33.85	0.00	0.29	0.17	14.77
		0.00	16.67C	65.28	7.84	139.47	24.94	5.34	4.06	0.00	0.12	0.21	15.68
25	46	0.00	23.14	213.17	0.37	6.54	96.81	20.75	15.75	0.00	0.45	0.01	23.87
		0.00	16.67C	-1.53	0.09	1.64	2.05	0.44	0.33	0.00	0.01	0.00	0.18
		0.00	16.67C	160.84	6.38	113.48	62.13	13.31	32.85	0.00	0.28	0.15	12.76
		0.00	16.67C	100.58	6.94	123.50	37.04	7.94	6.03	0.00	0.18	0.19	13.88
26	47	0.00	16.67C	201.78	0.19	3.38	74.26	15.91	12.08	0.00	0.35	0.00	0.38
		0.00	16.67C	-2.11	0.18	3.15	1.85	0.40	0.30	0.00	0.01	0.00	0.35
		0.00	16.67C	117.54	5.29	94.17	46.14	9.89	7.51	0.00	0.21	0.12	10.59
		0.00	16.67C	92.57	5.83	103.73	34.29	7.35	5.58	0.00	0.17	0.16	11.66
27	48	0.00	16.67C	136.83	0.03	0.58	49.45	10.60	8.05	0.00	0.25	0.00	0.07
		0.00	16.67C	-5.61	0.29	5.12	0.53	0.12	0.28	0.00	0.00	0.01	0.58
		0.00	16.67C	61.24	4.82	85.73	25.30	5.42	4.12	0.00	0.12	0.11	9.64
		0.00	16.67C	55.15	4.36	77.58	21.47	4.60	3.49	0.00	0.11	0.12	8.72
28	49	0.00	16.67C	43.64	0.69	12.28	17.53	3.76	2.85	0.00	0.08	0.02	1.38

proc Viaducto Papiol

ARMADURA

BARR	SECC	VOL T	CORTANTE TRANS	CORTANTE LONG	TORSION TRANS	TORSION LONG	VUE 1	VUE 2	VUE 3	VUE 4	RELACION		TOTAL TRANS
		0.00	16.67C	34.82	0.84	14.87	15.25	3.27	2.48	0.00	0.07	0.02	1.67
		0.00	16.67C	-6.36	5.52	98.21	0.21	0.05	0.03	0.00	0.00	0.13	11.04
		0.00	16.67C	-0.26	4.99	88.85	2.49	0.53	0.40	0.00	0.01	0.13	9.99
29	50	0.00	16.67C	-2.27	0.23	4.07	1.75	0.38	0.93	0.00	0.01	0.01	0.46
		0.00	16.67C	129.95	0.31	5.43	47.10	10.09	7.66	0.00	0.22	0.01	0.61
		0.00	16.67C	60.42	4.74	84.35	24.99	5.36	4.07	0.00	0.11	0.11	9.48
		0.00	16.67C	46.19	4.23	75.31	18.40	3.94	2.99	0.00	0.09	0.11	8.47
30	51	0.00	16.67C	5.39	0.16	2.78	4.42	0.95	0.72	0.00	0.02	0.00	0.31
		0.00	16.67C	177.39	0.10	1.85	68.27	14.63	11.11	0.00	0.31	0.00	0.21
		0.00	16.67C	113.45	4.62	82.22	44.59	9.56	7.25	0.00	0.20	0.11	9.24
		0.00	16.67C	76.52	4.17	74.16	29.67	6.36	4.83	0.00	0.14	0.11	8.34
31	52	0.00	16.67C	67.44	0.08	1.42	25.68	5.50	4.18	0.00	0.12	0.00	0.16
		0.00	16.67C	201.27	0.18	3.20	77.40	18.01	40.93	0.00	0.35	0.00	0.36
		0.00	16.67C	36.05	6.42	114.25	14.93	3.20	2.43	0.00	0.07	0.17	12.84
		0.00	16.67C	91.77	5.67	100.92	34.02	7.29	5.53	0.00	0.17	0.15	11.35
32	53	0.00	16.67C	47.02	0.01	0.18	18.69	4.00	3.04	0.00	0.09	0.00	0.02
		0.00	34.20	210.70	0.41	7.34	13.63	25.20	57.28	0.00	0.49	0.01	35.02
		0.00	16.67C	75.00	7.30	129.80	3.56	6.58	14.95	0.00	0.13	0.19	14.59
		0.00	16.67C	184.78	6.71	119.43	8.61	15.91	36.16	0.00	0.32	0.17	13.43
33	54	0.00	16.67C	76.51	0.11	2.04	3.62	6.70	15.22	0.00	0.14	0.00	0.23
		0.00	70.32	292.70	0.64	11.43	21.45	39.65	90.11	0.00	0.77	0.01	71.61
		0.00	16.67C	237.64	8.16	145.24	10.57	19.54	44.41	0.00	0.40	0.22	16.33
		0.00	36.83	245.26	7.55	134.28	15.22	28.14	63.95	0.00	0.56	0.19	51.93
33	57	0.00	41.00C	136.57	0.22	3.63	6.69	12.36	28.09	0.00	0.10	0.00	0.44
		0.00	54.33	448.68	1.04	17.12	27.01	49.94	113.50	0.00	0.40	0.01	56.41
		0.00	41.00C	319.07	10.25	168.60	14.55	26.91	61.15	0.00	0.22	0.11	20.50
		0.00	41.00C	416.41	9.53	156.70	19.71	36.43	82.80	0.00	0.29	0.10	19.05
34	57	0.00	41.00C	640.46	1.07	17.63	28.41	52.52	119.37	0.00	0.45	0.01	2.14
		0.00	41.00C	153.51	0.27	4.49	7.95	14.69	33.39	0.00	0.12	0.00	0.55
		0.00	41.00C	420.33	9.86	162.14	20.46	37.83	85.99	0.00	0.30	0.09	19.71
		0.00	41.00C	336.23	10.64	174.95	15.29	28.27	64.26	0.00	0.24	0.12	21.27
35	64	0.00	50.66	287.38	0.68	12.07	18.63	34.44	78.27	0.00	0.69	0.02	52.02
		0.00	16.67C	-1.72	0.13	2.35	0.25	0.46	1.05	0.00	0.01	0.00	0.26
		0.00	26.13	195.40	7.78	138.48	11.99	22.17	50.39	0.00	0.43	0.18	41.70
		0.00	16.67C	134.12	8.44	150.10	6.11	11.29	25.66	0.00	0.24	0.22	16.87
36	65	0.00	28.18	229.72	0.44	7.79	13.46	24.89	56.56	0.00	0.50	0.01	29.05
		0.00	16.67C	57.06	0.05	0.88	22.12	5.15	11.70	0.00	0.11	0.00	0.10
		0.00	16.67C	170.12	6.84	121.71	8.26	15.27	34.70	0.00	0.30	0.16	13.68
		0.00	16.67C	58.93	7.48	133.01	22.76	4.88	3.70	0.00	0.11	0.20	14.95
37	66	0.00	21.81	215.34	0.23	4.04	95.86	20.54	15.60	0.00	0.45	0.01	22.27

proc Viaducto Papiol

ARMADURA

BARR	SECC	VOL T	CORTANTE TRANS	CORTANTE LONG	TORSION TRANS	TORSION LONG	VUE 1	VUE 2	VUE 3	VUE 4	RELACION		TOTAL TRANS
		0.00	16.67C	2.28	0.07	1.27	3.36	0.72	0.55	0.00	0.02	0.00	0.14
		0.00	16.67C	163.92	5.94	105.65	63.11	14.68	33.37	0.00	0.29	0.14	11.88
		0.00	16.67C	101.33	6.61	117.64	37.29	7.99	6.07	0.00	0.18	0.18	13.23
38	67	0.00	16.67C	200.93	0.00	0.02	73.30	15.71	11.93	0.00	0.34	0.00	0.00
		0.00	16.67C	-5.92	0.18	3.17	0.55	0.12	0.09	0.00	0.00	0.00	0.36
		0.00	16.67C	119.24	4.96	88.15	46.64	9.99	7.59	0.00	0.21	0.12	9.91
		0.00	16.67C	91.35	5.54	98.60	33.87	7.26	5.51	0.00	0.17	0.15	11.08
39	68	0.00	16.67C	133.54	0.19	3.30	48.33	10.36	7.86	0.00	0.24	0.00	0.37
		0.00	16.67C	-2.54	0.33	5.95	1.64	0.38	0.87	0.00	0.01	0.01	0.67
		0.00	16.67C	58.52	4.90	87.13	24.50	5.25	3.99	0.00	0.11	0.11	9.80
		0.00	16.67C	50.02	4.49	79.85	19.71	4.22	3.21	0.00	0.10	0.12	8.98
40	69	0.00	16.67C	37.27	1.00	17.75	15.96	3.42	2.60	0.00	0.07	0.02	2.00
		0.00	16.67C	40.21	1.06	18.86	16.35	3.50	2.66	0.00	0.08	0.03	2.12
		0.00	16.67C	-3.96	5.16	91.79	1.22	0.26	0.20	0.00	0.01	0.14	10.32
		0.00	16.67C	-4.96	5.19	92.32	0.83	0.18	0.13	0.00	0.00	0.13	10.38
41	70	0.00	16.67C	-5.03	0.31	5.52	0.77	0.18	0.41	0.00	0.00	0.01	0.62
		0.00	16.67C	137.15	0.28	5.00	49.56	10.62	8.06	0.00	0.24	0.01	0.56
		0.00	16.67C	54.09	4.46	79.31	21.11	4.52	3.43	0.00	0.10	0.12	8.92
		0.00	16.67C	64.07	4.54	80.83	25.09	5.38	4.08	0.00	0.12	0.12	9.09
42	71	0.00	16.67C	1.95	0.19	3.41	3.24	0.69	0.53	0.00	0.02	0.01	0.38
		0.00	16.67C	181.85	0.05	0.91	70.61	15.13	11.49	0.00	0.32	0.00	0.10
		0.00	16.67C	76.92	4.67	83.00	28.93	6.20	4.71	0.00	0.14	0.12	9.33
		0.00	16.67C	119.87	4.22	75.15	45.19	9.68	7.35	0.00	0.21	0.11	8.45
43	72	0.00	16.67C	63.99	0.08	1.49	24.50	5.25	3.99	0.00	0.12	0.00	0.17
		0.00	18.27	170.51	0.19	3.35	79.80	18.57	42.20	0.00	0.36	0.00	18.65
		0.00	16.67C	39.89	6.85	121.88	16.24	3.48	2.64	0.00	0.08	0.18	13.70
		0.00	16.67C	124.72	6.00	106.66	47.05	10.95	24.88	0.00	0.22	0.15	11.99
44	73	0.00	16.67C	43.57	0.04	0.64	2.20	4.07	9.26	0.00	0.08	0.00	0.07
		0.00	36.60	210.29	0.42	7.39	13.94	25.77	58.56	0.00	0.50	0.01	37.43
		0.00	16.67C	81.65	7.71	137.20	3.84	7.11	16.15	0.00	0.15	0.21	15.42
		0.00	16.67C	186.73	6.86	122.07	8.73	16.14	36.69	0.00	0.32	0.17	13.72
45	74	0.00	16.67C	79.95	0.15	2.64	3.77	6.97	15.85	0.00	0.14	0.00	0.30
		0.00	73.12	291.46	0.63	11.26	21.75	40.22	91.40	0.00	0.78	0.01	74.39
		0.00	16.67C	238.55	8.57	152.55	10.61	19.61	44.58	0.00	0.40	0.23	17.15
		0.00	38.96	247.25	7.73	137.57	15.59	28.82	65.49	0.00	0.57	0.19	54.42
45	77	0.00	41.00C	140.02	0.30	4.96	6.83	12.63	28.72	0.00	0.11	0.00	0.60
		0.00	57.27	446.30	0.97	16.01	27.33	50.52	114.82	0.00	0.40	0.01	59.22
		0.00	41.00C	319.98	10.68	175.70	14.59	26.98	61.32	0.00	0.22	0.12	21.36
		0.00	41.00C	423.02	9.81	161.34	20.08	37.12	84.37	0.00	0.30	0.10	19.62
46	77	0.00	41.00C	642.64	0.99	16.32	28.51	52.70	119.77	0.00	0.45	0.01	1.98

proc Viaducto Papiol

ARMADURA

BARR	SECC	VOL T	CORTANTE TRANS	CORTANTE LONG	TORSION TRANS	TORSION LONG	VUE 1	VUE 2	VUE 3	VUE 4	RELACION		TOTAL TRANS
		0.00	41.00C	154.63	0.22	3.63	7.98	14.76	33.55	0.00	0.12	0.00	0.44
		0.00	41.00C	431.61	9.90	162.91	21.08	38.96	88.55	0.00	0.31	0.09	19.81
		0.00	41.00C	337.46	10.26	168.73	15.35	28.37	64.48	0.00	0.24	0.11	20.51
47	84	0.00	49.95	292.49	0.70	12.43	18.71	34.59	78.60	0.00	0.70	0.02	51.35
		0.00	16.67C	-2.72	0.06	0.99	0.21	0.38	0.87	0.00	0.01	0.00	0.11
		0.00	29.05	198.96	7.86	139.79	12.52	23.14	52.58	0.00	0.45	0.18	44.76
		0.00	16.67C	135.35	8.14	144.87	6.16	11.39	25.88	0.00	0.24	0.22	16.29
48	85	0.00	27.66	234.27	0.50	8.95	13.54	25.03	56.89	0.00	0.51	0.01	28.67
		0.00	16.67C	56.06	0.05	0.84	2.74	5.07	11.52	0.00	0.10	0.00	0.09
		0.00	16.67C	170.22	6.98	124.10	8.31	15.36	34.91	0.00	0.30	0.16	13.95
		0.00	16.67C	69.18	7.24	128.81	3.31	6.11	13.89	0.00	0.13	0.19	14.48
49	86	0.00	21.36	219.78	0.29	5.17	96.49	20.68	15.70	0.00	0.45	0.01	21.94
		0.00	16.67C	1.28	0.15	2.58	3.01	0.65	0.49	0.00	0.01	0.00	0.29
		0.00	16.67C	161.59	6.09	108.39	62.60	14.56	33.10	0.00	0.28	0.14	12.19
		0.00	16.67C	105.37	6.36	113.22	38.67	8.29	6.29	0.00	0.19	0.17	12.73
50	87	0.00	16.67C	204.58	0.09	1.55	73.95	15.85	12.03	0.00	0.35	0.00	0.17
		0.00	16.67C	-4.92	0.25	4.49	0.89	0.19	0.14	0.00	0.00	0.01	0.50
		0.00	16.67C	92.67	5.10	90.72	37.02	7.93	6.02	0.00	0.17	0.12	10.20
		0.00	16.67C	118.01	5.33	94.75	43.01	9.22	7.00	0.00	0.21	0.14	10.65
51	88	0.00	16.67C	135.59	0.09	1.60	49.03	10.51	7.98	0.00	0.25	0.00	0.18
		0.00	16.67C	-3.36	0.36	6.47	1.35	0.31	0.71	0.00	0.01	0.01	0.73
		0.00	16.67C	39.80	4.81	85.50	17.63	3.78	2.87	0.00	0.08	0.11	9.61
		0.00	16.67C	72.27	4.74	84.31	27.33	5.86	4.45	0.00	0.14	0.13	9.48
52	89	0.00	16.67C	40.24	1.14	20.25	16.36	3.51	2.66	0.00	0.08	0.03	2.28
		0.00	16.67C	36.71	0.79	14.04	16.00	3.43	2.60	0.00	0.07	0.02	1.58
		0.00	16.67C	-3.75	5.60	99.67	1.15	0.25	0.19	0.00	0.01	0.13	11.21
		0.00	16.67C	-3.08	5.47	97.31	1.52	0.33	0.25	0.00	0.01	0.15	10.94
53	90	0.00	16.67C	-3.97	0.21	3.82	1.15	0.25	0.19	0.00	0.01	0.01	0.43
		0.00	16.67C	136.28	0.34	6.08	49.26	10.56	8.02	0.00	0.23	0.01	0.68
		0.00	16.67C	52.92	4.46	79.39	20.71	4.44	3.37	0.00	0.10	0.12	8.93
		0.00	16.67C	63.19	4.91	87.32	24.60	5.27	4.00	0.00	0.12	0.13	9.82
54	91	0.00	16.67C	3.19	0.13	2.29	3.67	0.79	0.60	0.00	0.02	0.00	0.26
		0.00	16.67C	179.28	0.06	1.11	70.34	15.07	11.44	0.00	0.32	0.00	0.12
		0.00	16.67C	75.59	4.83	85.87	28.47	6.10	4.63	0.00	0.14	0.13	9.65
		0.00	16.67C	107.86	4.45	79.15	40.11	8.60	6.53	0.00	0.19	0.12	8.90
55	92	0.00	16.67C	65.23	0.06	0.98	24.92	5.34	4.06	0.00	0.12	0.00	0.11
		0.00	18.95	166.91	0.14	2.45	79.52	18.50	42.05	0.00	0.36	0.00	19.22
		0.00	16.67C	38.52	6.96	123.81	15.77	3.38	2.57	0.00	0.08	0.19	13.92
		0.00	16.67C	124.13	6.11	108.67	46.60	10.84	24.64	0.00	0.22	0.15	12.22
56	93	0.00	16.67C	44.82	0.03	0.53	17.93	3.84	2.92	0.00	0.09	0.00	0.06

proc Viaducto Papiol

ARMADURA

BARR	SECC	VOL T	CORTANTE TRANS	CORTANTE LONG	TORSION TRANS	TORSION LONG	VUE 1	VUE 2	VUE 3	VUE 4	RELACION		TOTAL TRANS
		0.00	37.46	206.25	0.33	5.93	13.90	25.70	58.40	0.00	0.49	0.01	38.13
		0.00	16.67C	80.24	7.81	138.95	3.78	7.00	15.90	0.00	0.14	0.21	15.62
		0.00	16.67C	186.47	6.94	123.53	8.68	16.04	36.45	0.00	0.32	0.17	13.89
57	94	0.00	16.67C	78.71	0.11	1.94	3.72	6.87	15.62	0.00	0.14	0.00	0.22
		0.00	74.36	286.52	0.54	9.59	21.71	40.14	91.23	0.00	0.77	0.01	75.44
		0.00	16.67C	240.14	8.66	154.06	10.68	19.74	44.86	0.00	0.40	0.23	17.32
		0.00	37.61	247.52	7.78	138.35	15.41	28.49	64.74	0.00	0.57	0.19	53.17
57	97	0.00	41.00C	138.77	0.21	3.43	6.78	12.54	28.49	0.00	0.10	0.00	0.42
		0.00	58.59	440.12	0.85	13.92	27.29	50.44	114.64	0.00	0.40	0.01	60.29
		0.00	41.00C	321.53	10.77	177.12	14.66	27.10	61.60	0.00	0.23	0.12	21.53
		0.00	41.00C	408.18	9.89	162.74	19.33	35.74	81.22	0.00	0.29	0.10	19.79
58	97	0.00	41.00C	640.77	0.78	12.89	28.42	52.55	119.43	0.00	0.46	0.01	1.57
		0.00	41.00C	154.69	0.05	0.77	8.00	14.79	33.61	0.00	0.12	0.00	0.09
		0.00	41.00C	347.60	10.00	164.53	17.20	31.79	72.26	0.00	0.25	0.09	20.00
		0.00	41.00C	413.98	9.74	160.20	18.65	34.47	78.35	0.00	0.29	0.11	19.48
59	104	0.00	48.59	295.82	0.58	10.26	18.63	34.44	78.28	0.00	0.70	0.02	49.74
		0.00	16.67C	-3.03	0.04	0.69	0.19	0.36	0.81	0.00	0.01	0.00	0.08
		0.00	16.67C	163.28	8.05	143.20	8.04	14.86	33.76	0.00	0.29	0.19	16.10
		0.00	16.67C	237.78	7.76	138.05	10.58	19.55	44.44	0.00	0.42	0.21	15.52
60	105	0.00	26.51	237.11	0.45	7.94	13.47	24.90	56.58	0.00	0.51	0.01	27.40
		0.00	16.67C	55.75	0.09	1.58	21.68	5.04	11.46	0.00	0.10	0.00	0.18
		0.00	16.67C	95.17	7.26	129.23	4.82	8.90	20.23	0.00	0.17	0.17	14.53
		0.00	16.67C	148.99	6.90	122.77	6.75	12.47	28.35	0.00	0.27	0.18	13.80
61	106	0.00	20.28	222.51	0.31	5.47	95.93	20.56	15.61	0.00	0.45	0.01	20.90
		0.00	16.67C	0.97	0.15	2.63	2.91	0.62	0.47	0.00	0.01	0.00	0.30
		0.00	16.67C	107.28	6.46	114.94	42.66	9.93	22.56	0.00	0.19	0.15	12.92
		0.00	16.67C	162.32	6.11	108.77	58.18	12.47	9.47	0.00	0.29	0.16	12.23
62	107	0.00	16.67C	204.77	0.14	2.42	73.41	15.73	11.94	0.00	0.35	0.00	0.27
		0.00	16.67C	-4.61	0.18	3.26	0.99	0.21	0.16	0.00	0.00	0.00	0.37
		0.00	16.67C	81.33	5.55	98.75	32.99	7.07	5.37	0.00	0.15	0.13	11.10
		0.00	16.67C	132.27	5.13	91.30	47.89	10.26	7.79	0.00	0.24	0.14	10.26
63	108	0.00	16.67C	134.05	0.07	1.16	48.50	10.39	7.89	0.00	0.25	0.00	0.13
		0.00	16.67C	-3.67	0.23	4.08	1.23	0.29	0.65	0.00	0.01	0.01	0.46
		0.00	16.67C	43.29	4.32	76.92	17.40	3.73	2.83	0.00	0.08	0.12	8.65
		0.00	16.67C	70.91	4.99	88.86	27.25	5.84	4.43	0.00	0.13	0.13	9.99
64	109	0.00	16.67C	39.16	0.53	9.43	15.99	3.43	2.60	0.00	0.08	0.01	1.06
		0.00	16.67C	36.35	0.10	1.77	15.91	3.41	2.59	0.00	0.07	0.00	0.20
		0.00	16.67C	-2.58	5.55	98.81	1.60	0.34	0.26	0.00	0.01	0.13	11.11
		0.00	16.67C	-2.60	5.64	100.26	1.69	0.36	0.27	0.00	0.01	0.15	11.27
65	110	0.00	16.67C	-4.95	0.05	0.90	0.80	0.19	0.42	0.00	0.00	0.00	0.10

proc Viaducto Papiol

ARMADURA

BARR	SECC	VOL T	CORTANTE TRANS	CORTANTE LONG	TORSION TRANS	TORSION LONG	VUE 1	VUE 2	VUE 3	VUE 4	RELACION		TOTAL TRANS
		0.00	16.67C	135.70	0.29	5.16	49.14	10.53	8.00	0.00	0.23	0.01	0.58
		0.00	16.67C	52.91	4.41	78.47	20.70	4.44	3.37	0.00	0.10	0.12	8.82
		0.00	16.67C	64.42	4.99	88.86	24.98	5.35	4.06	0.00	0.12	0.13	9.99
66	111	0.00	16.67C	2.14	0.04	0.72	3.31	0.71	0.54	0.00	0.02	0.00	0.08
		0.00	16.67C	177.30	0.02	0.41	70.18	15.04	11.42	0.00	0.31	0.00	0.05
		0.00	16.67C	75.97	4.73	84.13	28.60	6.13	4.65	0.00	0.14	0.13	9.46
		0.00	16.67C	107.88	4.46	79.33	40.05	8.58	6.52	0.00	0.19	0.12	8.92
67	112	0.00	16.67C	64.18	0.02	0.37	24.56	5.26	4.00	0.00	0.12	0.00	0.04
		0.00	19.51	164.13	0.06	1.09	79.33	18.46	41.95	0.00	0.35	0.00	19.64
		0.00	16.67C	38.91	6.70	119.14	15.91	3.41	2.59	0.00	0.08	0.18	13.39
		0.00	16.67C	117.90	6.31	112.21	44.17	9.47	7.19	0.00	0.21	0.16	12.61
68	113	0.00	16.67C	43.77	0.02	0.32	2.21	4.09	9.29	0.00	0.09	0.00	0.04
		0.00	38.14	203.22	0.16	2.89	13.87	25.65	58.29	0.00	0.49	0.00	38.46
		0.00	16.67C	77.74	7.53	133.88	3.68	6.80	15.45	0.00	0.14	0.20	15.05
		0.00	16.67C	178.91	7.18	127.77	8.29	15.33	34.85	0.00	0.31	0.18	14.36
69	114	0.00	16.67C	79.75	0.01	0.20	3.76	6.96	15.81	0.00	0.14	0.00	0.02
		0.00	75.28	282.97	0.27	4.89	21.68	40.09	91.11	0.00	0.77	0.01	75.83
		0.00	16.67C	237.55	8.34	148.32	10.57	19.53	44.40	0.00	0.40	0.22	16.67
		0.00	35.06	244.60	8.06	143.46	14.95	27.64	62.81	0.00	0.55	0.20	51.18
69	117	0.00	41.00C	139.82	0.01	0.21	6.83	12.62	28.68	0.00	0.11	0.00	0.03
		0.00	59.51	435.87	0.45	7.38	27.25	50.38	114.51	0.00	0.39	0.00	60.40
		0.00	41.00C	318.85	10.36	170.46	14.54	26.89	61.11	0.00	0.22	0.11	20.73
		0.00	41.00C	410.43	10.23	168.22	19.36	35.79	81.35	0.00	0.29	0.10	20.45
70	117	0.00	41.00C	641.03	0.17	2.87	28.44	52.57	119.48	0.00	0.46	0.00	0.35
		0.00	41.00C	150.21	0.22	3.65	8.02	14.82	33.68	0.00	0.12	0.00	0.44
		0.00	41.00C	334.13	10.18	167.38	15.85	29.31	66.61	0.00	0.24	0.10	20.35
		0.00	41.00C	471.61	9.24	152.01	21.13	39.07	88.79	0.00	0.32	0.10	18.48
71	124	0.00	47.99	298.72	0.14	2.45	18.64	34.47	78.34	0.00	0.70	0.00	48.26
		0.00	16.67C	-3.39	0.18	3.29	0.18	0.33	0.74	0.00	0.01	0.00	0.37
		0.00	16.67C	179.72	8.05	143.25	8.28	15.31	34.79	0.00	0.31	0.21	16.10
		0.00	16.67C	244.94	7.37	131.12	10.88	20.12	45.73	0.00	0.41	0.20	14.74
72	125	0.00	26.07	239.56	0.12	2.20	13.48	24.93	56.65	0.00	0.51	0.00	26.32
		0.00	16.67C	54.84	0.16	2.82	2.71	5.01	11.39	0.00	0.10	0.00	0.32
		0.00	16.67C	104.45	7.28	129.46	4.94	9.14	20.77	0.00	0.18	0.19	14.55
		0.00	16.67C	147.49	6.56	116.62	6.68	12.36	28.08	0.00	0.25	0.17	13.11
73	126	0.00	19.91	224.77	0.08	1.51	96.07	20.59	15.63	0.00	0.46	0.00	20.08
		0.00	16.67C	0.58	0.12	2.18	2.77	0.65	1.47	0.00	0.01	0.00	0.25
		0.00	16.67C	117.20	6.50	115.63	43.64	10.15	23.07	0.00	0.20	0.17	13.00
		0.00	16.67C	160.99	5.72	101.73	57.73	12.37	9.39	0.00	0.27	0.15	11.44
74	127	0.00	16.67C	206.25	0.03	0.46	73.55	15.76	11.97	0.00	0.35	0.00	0.05

proc Viaducto Papiol

ARMADURA

BARR	SECC	VOL T	CORTANTE TRANS	CORTANTE LONG	TORSION TRANS	TORSION LONG	VUE 1	VUE 2	VUE 3	VUE 4	RELACION		TOTAL TRANS
		0.00	16.67C	-4.19	0.08	1.42	1.13	0.24	0.18	0.00	0.01	0.00	0.16
		0.00	16.67C	89.47	5.58	99.26	33.94	7.27	5.52	0.00	0.16	0.14	11.16
		0.00	16.67C	131.38	4.73	84.17	47.59	10.20	7.74	0.00	0.23	0.13	9.46
75	128	0.00	16.67C	134.51	0.11	1.96	48.66	10.43	7.92	0.00	0.26	0.00	0.22
		0.00	16.67C	-3.86	0.05	0.87	1.09	0.25	0.58	0.00	0.00	0.00	0.10
		0.00	16.67C	44.86	4.32	76.79	18.03	3.86	2.93	0.00	0.09	0.11	8.63
		0.00	16.67C	70.91	4.75	84.43	27.02	5.79	4.40	0.00	0.13	0.13	9.49
76	129	0.00	16.67C	39.96	0.04	0.78	16.26	3.49	2.65	0.00	0.09	0.00	0.09
		0.00	16.67C	34.38	0.34	6.02	15.78	3.38	2.57	0.00	0.07	0.01	0.68
		0.00	16.67C	-5.69	5.00	88.97	0.63	0.13	0.10	0.00	0.00	0.13	10.00
		0.00	16.67C	-3.80	6.00	106.67	1.11	0.24	0.18	0.00	0.00	0.13	11.99
77	130	0.00	16.67C	-4.59	0.00	0.05	0.99	0.21	0.16	0.00	0.00	0.00	0.01
		0.00	16.67C	133.62	0.06	1.01	48.66	10.43	7.92	0.00	0.23	0.00	0.11
		0.00	16.67C	47.68	4.35	77.33	18.91	4.05	3.08	0.00	0.10	0.12	8.69
		0.00	16.67C	61.99	5.16	91.88	26.36	5.65	4.29	0.00	0.12	0.12	10.33
78	131	0.00	16.67C	2.71	0.04	0.71	3.50	0.75	0.57	0.00	0.02	0.00	0.08
		0.00	16.67C	174.95	0.06	0.99	69.70	14.94	11.34	0.00	0.31	0.00	0.11
		0.00	16.67C	76.72	4.33	77.12	28.86	6.18	4.70	0.00	0.15	0.12	8.67
		0.00	16.67C	105.45	5.06	90.00	42.15	9.03	6.86	0.00	0.19	0.12	10.12
79	132	0.00	16.67C	64.75	0.15	2.58	24.76	5.31	4.03	0.00	0.13	0.00	0.29
		0.00	19.74	161.66	0.05	0.81	78.86	18.35	41.70	0.00	0.35	0.00	19.83
		0.00	16.67C	33.15	6.15	109.34	13.93	2.99	2.27	0.00	0.07	0.16	12.29
		0.00	16.67C	114.58	7.24	128.73	45.73	10.64	24.18	0.00	0.21	0.17	14.47
80	133	0.00	16.67C	44.34	0.20	3.53	17.76	3.81	2.89	0.00	0.09	0.01	0.40
		0.00	38.49	200.51	0.00	0.00	13.81	25.54	58.04	0.00	0.49	0.00	38.49
		0.00	16.67C	77.39	6.91	122.87	3.66	6.77	4.73	0.00	0.15	0.18	13.81
		0.00	16.67C	169.22	8.15	145.05	8.37	15.48	35.19	0.00	0.30	0.19	16.31
81	134	0.00	16.67C	79.19	0.28	4.96	3.74	6.91	15.71	0.00	0.15	0.01	0.56
		0.00	75.87	279.77	0.05	0.84	21.63	39.98	90.87	0.00	0.76	0.00	75.96
		0.00	19.44	250.55	7.68	136.57	13.12	24.25	55.11	0.00	0.52	0.20	34.79
		0.00	42.72	221.29	9.06	161.26	15.15	28.01	63.65	0.00	0.54	0.21	60.85
81	137	0.00	41.00C	139.25	0.40	6.61	6.80	12.57	28.58	0.00	0.11	0.00	0.80
		0.00	60.15	431.97	0.08	1.27	27.20	50.28	114.28	0.00	0.39	0.00	60.30
		0.00	41.00C	436.34	9.61	158.14	19.61	36.25	82.40	0.00	0.31	0.10	19.23
		0.00	41.00C	286.36	11.24	184.94	14.36	26.56	60.35	0.00	0.21	0.11	22.49
82	137	0.00	41.00C	635.68	0.55	8.97	28.20	52.14	118.51	0.00	0.44	0.01	1.09
		0.00	41.00C	153.60	0.45	7.46	8.00	14.80	33.63	0.00	0.12	0.00	0.91
		0.00	41.00C	340.48	10.27	168.88	15.88	29.35	66.71	0.00	0.24	0.11	20.53
		0.00	41.00C	461.95	8.99	147.87	20.90	38.63	87.80	0.00	0.32	0.10	17.98
83	144	0.00	50.75	280.93	0.37	6.65	18.41	34.04	77.35	0.00	0.68	0.01	51.50

proc Viaducto Papiol

ARMADURA

BARR	SECC	VOL T	CORTANTE TRANS	CORTANTE LONG	TORSION TRANS	TORSION LONG	VUE 1	VUE 2	VUE 3	VUE 4	RELACION		TOTAL TRANS
		0.00	16.67C	-3.15	0.28	4.96	0.19	0.35	0.79	0.00	0.01	0.01	0.56
		0.00	16.67C	178.92	8.03	142.94	8.06	14.90	33.86	0.00	0.30	0.21	16.07
		0.00	16.67C	240.97	7.17	127.57	10.89	20.13	45.74	0.00	0.41	0.19	14.34
84	145	0.00	28.10	223.66	0.27	4.83	13.25	24.49	55.65	0.00	0.49	0.01	28.64
		0.00	16.67C	55.63	0.19	3.43	21.63	5.03	11.44	0.00	0.10	0.01	0.39
		0.00	16.67C	104.41	7.22	128.48	4.83	8.94	20.31	0.00	0.18	0.19	14.44
		0.00	16.67C	142.74	6.32	112.49	6.58	12.16	27.63	0.00	0.25	0.16	12.65
85	146	0.00	21.72	209.33	0.18	3.12	94.17	21.91	49.79	0.00	0.44	0.00	22.07
		0.00	16.67C	0.85	0.10	1.86	2.87	0.61	0.47	0.00	0.01	0.00	0.21
		0.00	16.67C	117.27	6.40	113.94	42.75	9.16	6.96	0.00	0.20	0.17	12.81
		0.00	16.67C	156.56	5.45	96.99	56.84	12.18	9.25	0.00	0.27	0.14	10.90
86	147	0.00	16.67C	194.28	0.13	2.36	71.64	15.35	11.66	0.00	0.33	0.00	0.26
		0.00	16.67C	-4.49	0.02	0.39	1.04	0.22	0.17	0.00	0.00	0.00	0.04
		0.00	16.67C	82.14	5.45	96.97	30.72	6.58	5.00	0.00	0.16	0.15	10.90
		0.00	16.67C	120.07	4.95	88.05	49.05	10.51	7.98	0.00	0.22	0.11	9.90
87	148	0.00	16.67C	128.91	0.01	0.23	46.74	10.02	7.60	0.00	0.23	0.00	0.03
		0.00	16.67C	-3.70	0.13	2.24	1.20	0.28	0.64	0.00	0.01	0.00	0.25
		0.00	16.67C	42.99	4.29	76.24	17.30	3.71	2.82	0.00	0.09	0.11	8.57
		0.00	16.67C	61.85	4.90	87.14	26.48	5.67	4.31	0.00	0.12	0.11	9.80
88	149	0.00	16.67C	37.62	0.74	13.24	15.46	3.31	2.52	0.00	0.08	0.02	1.49
		0.00	16.67C	36.93	0.80	14.17	16.28	3.49	2.65	0.00	0.07	0.02	1.59
		0.00	16.67C	-2.76	4.98	88.66	1.63	0.35	0.27	0.00	0.01	0.13	9.97
		0.00	16.67C	-4.24	5.61	99.88	0.94	0.20	0.15	0.00	0.00	0.12	11.23
89	150	0.00	16.67C	-6.52	0.06	1.10	0.26	0.06	0.14	0.00	0.00	0.00	0.12
		0.00	16.67C	135.06	0.18	3.16	48.85	10.47	7.95	0.00	0.23	0.00	0.36
		0.00	16.67C	74.97	4.32	76.93	28.26	6.06	4.60	0.00	0.15	0.12	8.65
		0.00	16.67C	40.51	4.84	86.08	18.22	3.90	2.96	0.00	0.08	0.11	9.68
90	151	0.00	16.67C	0.61	0.06	1.13	2.78	0.60	0.45	0.00	0.01	0.00	0.13
		0.00	16.67C	182.30	0.14	2.48	69.95	14.99	11.38	0.00	0.32	0.00	0.28
		0.00	16.67C	112.75	4.37	77.67	41.20	8.83	6.70	0.00	0.22	0.12	8.73
		0.00	16.67C	72.16	5.57	99.18	30.44	6.52	4.95	0.00	0.14	0.12	11.15
91	152	0.00	16.67C	62.65	0.17	2.98	24.04	5.15	3.91	0.00	0.12	0.00	0.34
		0.00	16.87	173.62	0.00	0.03	79.13	18.41	41.84	0.00	0.36	0.00	16.88
		0.00	16.67C	93.85	6.17	109.73	34.73	7.44	5.65	0.00	0.18	0.16	12.34
		0.00	16.67C	57.44	8.10	144.02	24.84	5.78	13.13	0.00	0.11	0.18	16.19
92	153	0.00	16.67C	42.23	0.28	5.06	2.14	3.97	9.01	0.00	0.08	0.01	0.57
		0.00	34.92	214.04	0.13	2.34	13.85	25.61	58.20	0.00	0.50	0.00	35.19
		0.00	16.67C	153.65	7.10	126.36	55.22	11.83	8.98	0.00	0.29	0.19	14.21
		0.00	16.67C	95.43	9.13	162.43	5.00	9.24	21.00	0.00	0.18	0.20	18.26
93	154	0.00	16.67C	81.29	0.40	7.08	3.83	7.08	16.09	0.00	0.15	0.01	0.80

proc Viaducto Papiol

ARMADURA

BARR	SECC	VOL T	CORTANTE TRANS	CORTANTE LONG	TORSION TRANS	TORSION LONG	VUE 1	VUE 2	VUE 3	VUE 4	RELACION		TOTAL TRANS
		0.00	70.91	296.45	0.28	4.97	21.67	40.06	91.03	0.00	0.78	0.01	71.46
		0.00	23.66	270.82	8.03	142.82	14.49	26.79	60.89	0.00	0.60	0.21	39.71
		0.00	25.46	167.98	10.17	180.97	10.91	20.17	45.83	0.00	0.38	0.22	45.81
93	157	0.00	41.00C	141.36	0.57	9.38	6.89	12.74	28.96	0.00	0.11	0.01	1.14
		0.00	54.86	453.09	0.47	7.71	27.24	50.36	114.45	0.00	0.40	0.00	55.79
		0.00	41.00C	428.08	10.13	166.66	19.25	35.60	80.90	0.00	0.31	0.11	20.26
		0.00	41.00C	282.77	12.47	205.11	14.46	26.74	60.76	0.00	0.21	0.11	24.94
94	157	0.00	41.00C	642.81	0.71	11.76	28.51	52.71	119.80	0.00	0.47	0.01	1.43
		0.00	41.00C	161.88	0.57	9.39	8.65	15.98	36.33	0.00	0.12	0.01	1.14
		0.00	41.00C	353.54	9.92	163.15	16.40	30.31	68.90	0.00	0.25	0.10	19.84
		0.00	41.00C	466.71	9.17	150.83	21.18	39.15	88.98	0.00	0.32	0.10	18.34
95	163	0.00	47.27	303.76	0.52	9.17	18.72	34.61	78.66	0.00	0.71	0.01	48.30
		0.00	16.67C	2.81	0.35	6.24	0.45	0.83	1.88	0.00	0.02	0.01	0.70
		0.00	16.67C	191.25	7.73	137.58	8.57	15.84	36.01	0.00	0.32	0.21	15.47
		0.00	17.56	207.22	7.32	130.26	11.18	20.66	46.96	0.00	0.42	0.19	32.21
96	164	0.00	25.52	243.96	0.40	7.20	13.56	25.06	56.95	0.00	0.51	0.01	26.33
		0.00	16.67C	40.08	0.23	4.14	2.09	3.86	8.77	0.00	0.08	0.01	0.47
		0.00	16.67C	116.33	6.91	122.96	5.34	9.87	22.44	0.00	0.20	0.18	13.82
		0.00	16.67C	148.58	6.45	114.82	6.87	12.69	28.85	0.00	0.26	0.17	12.91
97	165	0.00	19.44	228.32	0.29	5.13	96.61	20.70	15.72	0.00	0.46	0.01	20.02
		0.00	16.67C	-1.11	0.13	2.26	2.19	0.51	1.16	0.00	0.01	0.00	0.25
		0.00	16.67C	128.93	6.08	108.24	46.75	10.02	7.61	0.00	0.22	0.16	12.17
		0.00	16.67C	162.45	5.58	99.28	59.18	12.68	9.63	0.00	0.28	0.14	11.16
98	166	0.00	16.67C	208.65	0.19	3.37	74.06	15.87	12.05	0.00	0.35	0.01	0.38
		0.00	16.67C	10.10	0.01	0.16	6.09	1.31	0.99	0.00	0.03	0.00	0.02
		0.00	16.67C	93.74	5.10	90.66	34.69	7.43	5.64	0.00	0.19	0.14	10.19
		0.00	16.67C	125.21	5.12	91.10	51.35	11.00	8.36	0.00	0.23	0.11	10.24
99	167	0.00	16.67C	136.01	0.18	3.15	49.17	10.54	8.00	0.00	0.26	0.00	0.35
		0.00	16.67C	3.43	0.11	2.04	3.91	0.91	2.07	0.00	0.02	0.00	0.23
		0.00	16.67C	76.34	3.95	70.32	28.73	6.16	4.67	0.00	0.15	0.11	7.91
		0.00	16.67C	45.56	4.33	77.04	20.30	4.35	3.30	0.00	0.09	0.09	8.66
100	168	0.00	16.67C	51.52	0.82	14.55	20.23	4.33	3.29	0.00	0.10	0.02	1.64
		0.00	16.67C	37.96	0.68	12.08	15.80	3.39	2.57	0.00	0.07	0.02	1.36
		0.00	16.67C	1.02	4.71	83.77	2.92	0.63	0.48	0.00	0.02	0.13	9.42
		0.00	16.67C	-2.75	5.18	92.11	1.50	0.32	0.24	0.00	0.01	0.11	10.35
101	169	0.00	16.67C	3.18	0.03	0.49	3.66	0.79	0.60	0.00	0.02	0.00	0.06
		0.00	16.67C	120.15	0.28	4.94	44.44	9.52	7.23	0.00	0.21	0.01	0.56
		0.00	16.67C	61.43	4.11	73.15	23.62	5.06	3.84	0.00	0.13	0.11	8.22
		0.00	16.67C	39.03	4.43	78.81	17.74	3.80	2.89	0.00	0.08	0.10	8.86
102	170	0.00	16.67C	10.38	0.06	1.08	6.13	1.31	1.00	0.00	0.03	0.00	0.12

proc Viaducto Papiol

ARMADURA

BARR	SECC	VOL T	CORTANTE TRANS	CORTANTE LONG	TORSION TRANS	TORSION LONG	VUE 1	VUE 2	VUE 3	VUE 4	RELACION		TOTAL TRANS
		0.00	16.67C	162.71	0.05	0.94	65.81	14.10	10.71	0.00	0.29	0.00	0.11
		0.00	16.67C	106.91	4.62	82.16	39.20	8.40	6.38	0.00	0.21	0.12	9.24
		0.00	16.67C	70.45	5.30	94.37	29.95	6.42	4.87	0.00	0.13	0.12	10.61
103	171	0.00	16.67C	72.42	0.17	3.00	27.39	5.87	4.46	0.00	0.15	0.00	0.34
		0.00	18.43	152.98	0.02	0.38	74.99	17.45	39.65	0.00	0.33	0.00	18.48
		0.00	16.67C	81.15	6.49	115.43	30.38	6.51	4.94	0.00	0.16	0.17	12.98
		0.00	16.67C	61.85	7.75	137.91	26.70	6.21	14.12	0.00	0.12	0.17	15.50
104	172	0.00	16.67C	52.01	0.24	4.19	20.39	4.37	3.32	0.00	0.11	0.01	0.47
		0.00	37.43	191.40	0.06	1.13	13.33	24.64	56.01	0.00	0.47	0.00	37.55
		0.00	16.67C	140.98	7.39	131.45	50.88	10.90	8.28	0.00	0.27	0.20	14.78
		0.00	16.67C	99.55	8.79	156.34	5.23	9.67	21.98	0.00	0.18	0.19	17.58
105	173	0.00	16.67C	71.52	0.29	5.22	3.41	5.80	4.41	0.00	0.14	0.01	0.59
		0.00	75.30	269.66	0.17	2.99	21.14	39.09	88.84	0.00	0.74	0.00	75.64
		0.00	21.57	266.99	8.29	147.52	14.08	26.03	59.15	0.00	0.59	0.22	38.15
		0.00	26.57	167.25	9.81	174.52	11.02	20.38	46.32	0.00	0.39	0.21	46.19
105	176	0.00	41.00C	113.33	0.39	6.36	5.68	10.51	23.88	0.00	0.09	0.00	0.77
		0.00	61.83	396.81	0.33	5.49	26.11	48.27	109.71	0.00	0.37	0.00	62.50
		0.00	41.00C	400.26	10.39	170.85	18.05	33.38	75.86	0.00	0.28	0.11	20.77
		0.00	41.00C	264.88	12.32	202.73	13.97	25.82	58.69	0.00	0.20	0.11	24.65
106	176	0.00	60.69	389.45	0.00	0.02	25.69	47.49	107.93	0.00	0.36	0.00	60.70
		0.00	41.00C	134.74	0.05	0.89	6.61	12.21	27.76	0.00	0.10	0.00	0.11
		0.00	41.00C	394.44	7.88	129.61	18.49	34.18	77.68	0.00	0.28	0.08	15.76
		0.00	41.00C	308.14	8.43	138.71	14.65	27.08	61.56	0.00	0.22	0.09	16.86
107	182	0.00	54.21	203.23	0.07	1.28	15.86	29.32	66.63	0.00	0.55	0.00	54.36
		0.00	16.67C	38.48	0.09	1.68	1.98	3.38	2.56	0.00	0.08	0.00	0.19
		0.00	16.67C	172.02	5.94	105.64	7.74	14.31	32.52	0.00	0.31	0.16	11.88
		0.00	16.67C	132.56	7.60	135.18	7.14	13.20	29.99	0.00	0.25	0.15	15.20
108	183	0.00	25.48	148.64	0.13	2.35	10.17	18.80	42.73	0.00	0.35	0.00	25.75
		0.00	16.67C	113.01	0.12	2.14	41.29	8.85	6.72	0.00	0.21	0.00	0.24
		0.00	16.67C	54.23	5.10	90.78	2.66	4.53	3.44	0.00	0.11	0.14	10.21
		0.00	16.67C	58.43	6.57	116.81	3.32	6.14	13.95	0.00	0.11	0.13	13.13
109	184	0.00	18.38	136.11	0.18	3.14	69.92	16.27	36.97	0.00	0.30	0.00	18.73
		0.00	16.67C	57.47	0.14	2.56	22.26	4.77	3.62	0.00	0.11	0.00	0.29
		0.00	16.67C	63.04	3.38	60.11	24.17	5.18	3.93	0.00	0.12	0.09	6.76
		0.00	16.67C	68.13	4.16	73.94	30.23	7.03	15.99	0.00	0.13	0.09	8.31
110	185	0.00	16.67C	114.62	0.25	4.50	49.14	10.53	8.00	0.00	0.21	0.01	0.51
		0.00	16.67C	40.80	0.14	2.55	16.55	3.55	2.69	0.00	0.08	0.00	0.29
		0.00	16.67C	20.39	2.38	42.36	9.56	2.05	1.56	0.00	0.05	0.06	4.76
		0.00	16.67C	34.46	2.46	43.69	16.58	3.86	8.76	0.00	0.07	0.05	4.91
111	186	0.00	16.67C	50.46	0.09	1.57	23.14	5.38	12.23	0.00	0.10	0.00	0.18

proc Viaducto Papiol

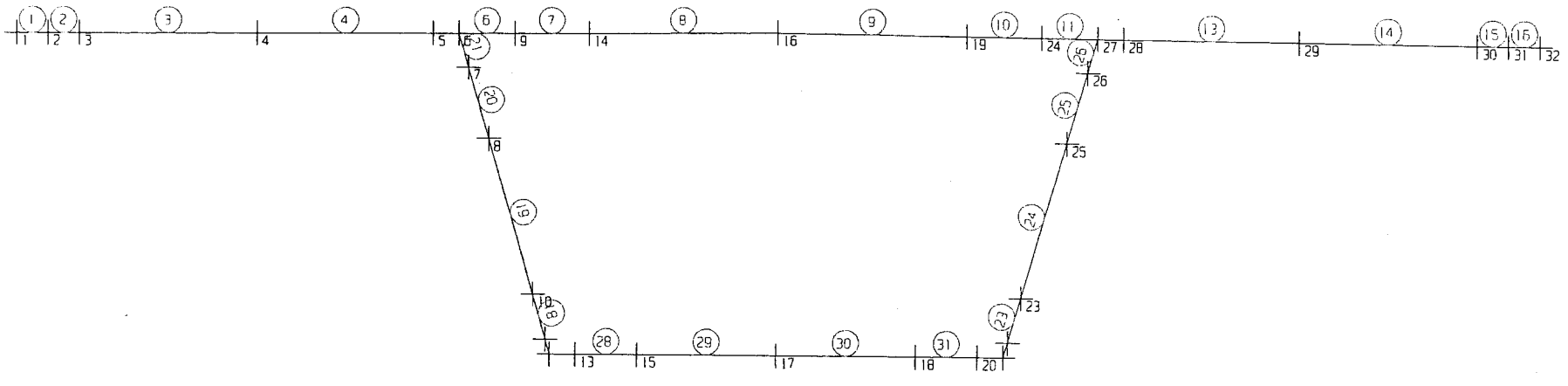
ARMADURA

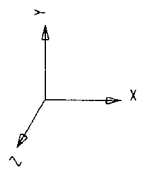
BARR	SECC	VOL T	CORTANTE TRANS	CORTANTE LONG	TORSION TRANS	TORSION LONG	VUE 1	VUE 2	VUE 3	VUE 4	RELACION		TOTAL TRANS
		0.00	16.67C	62.71	0.12	2.06	24.06	5.16	3.91	0.00	0.12	0.00	0.23
		0.00	16.67C	13.20	3.22	57.28	7.10	1.52	1.15	0.00	0.04	0.09	6.44
		0.00	16.67C	-1.39	3.27	58.22	2.01	0.43	0.33	0.00	0.01	0.07	6.55
112	187	0.00	16.67C	17.74	0.27	4.82	10.39	2.42	5.50	0.00	0.04	0.00	0.54
		0.00	16.67C	121.08	0.32	5.70	44.06	9.44	7.17	0.00	0.21	0.01	0.64
		0.00	16.67C	88.97	5.21	92.77	33.06	7.08	5.38	0.00	0.16	0.14	10.43
		0.00	16.67C	21.25	5.59	99.37	11.96	2.56	1.95	0.00	0.05	0.10	11.17
113	188	0.00	16.67C	21.51	0.28	5.03	11.14	2.39	1.81	0.00	0.05	0.01	0.57
		0.00	16.67C	165.75	0.97	17.17	64.07	13.73	10.42	0.00	0.29	0.02	1.93
		0.00	16.67C	123.79	7.24	128.77	45.10	9.66	7.34	0.00	0.21	0.19	14.48
		0.00	16.67C	40.48	8.05	143.19	20.54	4.40	3.34	0.00	0.09	0.15	16.10
114	189	0.00	16.67C	16.43	0.36	6.35	9.15	1.96	1.49	0.00	0.04	0.01	0.71
		0.00	23.44	187.32	0.72	12.84	90.11	19.31	14.66	0.00	0.41	0.02	24.89
		0.00	16.67C	170.38	8.20	145.90	61.30	13.14	9.97	0.00	0.29	0.22	16.40
		0.00	16.67C	66.36	9.25	164.50	32.15	6.89	5.23	0.00	0.13	0.17	18.49
114	192	0.00	16.67C	9.75	0.45	8.03	6.49	1.39	1.06	0.00	0.03	0.01	0.90
		0.00	48.10	243.36	0.77	13.62	16.68	30.84	70.09	0.00	0.60	0.02	49.63
		0.00	16.67C	207.03	9.08	161.48	9.33	17.25	39.20	0.00	0.35	0.24	18.15
		0.00	27.69	117.50	10.35	184.17	72.62	16.90	38.40	0.00	0.30	0.18	48.40

CÁLCULO DE FLEXIÓN TRANSVERSAL

DEFINICIÓN DE MODELO Y CARGAS

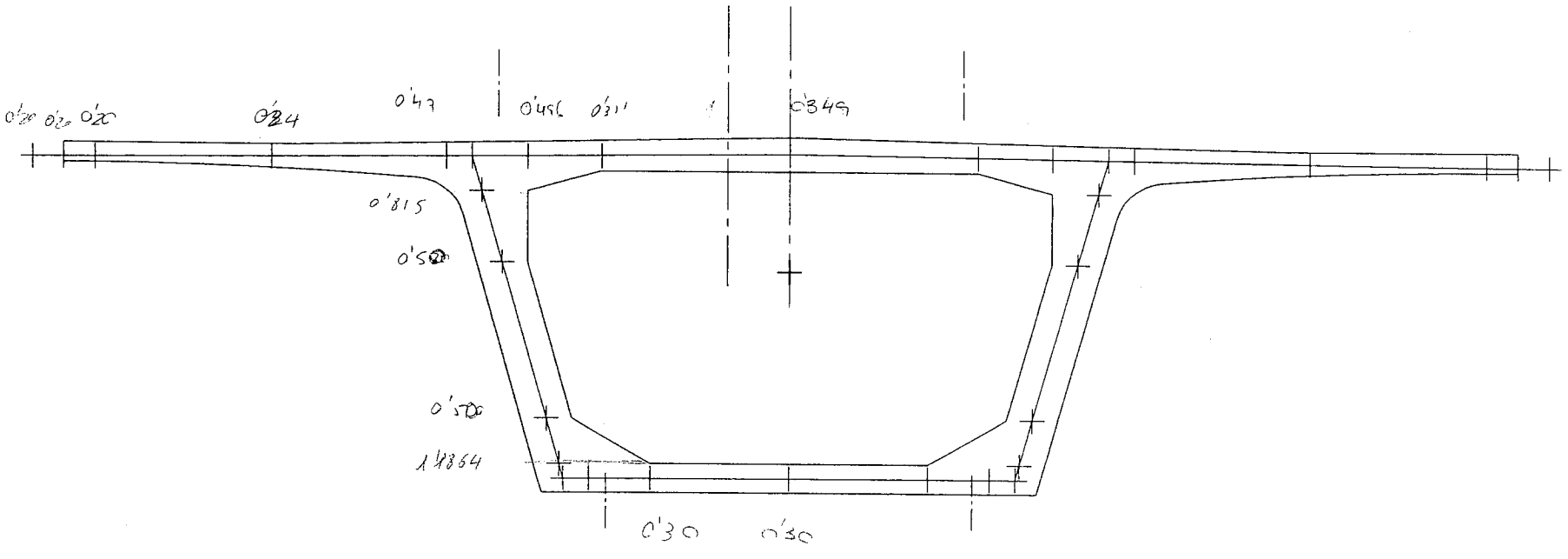
estr Papiol - flexion transversal \





Dp de cambio → excentricidad máxima nueva: 0'568 m < 0'625 por lo que
(Δ de un vano lo cálculo valen

excentricidad máxima = 0'625 m (viaducto 1)



estr Papiol - flexion transversal

BARRA	NUDO1	NUDO2	LONGITUD	LONG. X	LONG. Y	LONG. Z
1	1	2	0.3125	0.3125	0.0031	0.0000
2	2	3	0.3125	0.3125	0.0031	0.0000
3	3	4	1.7620	1.7619	0.0176	0.0000
4	4	5	1.7617	1.7616	0.0177	0.0000
5	5	6	0.2595	0.2595	0.0026	0.0000
6	6	9	0.5670	0.5670	0.0056	0.0000
7	9	14	0.7500	0.7500	0.0075	0.0000
8	14	16	1.9001	1.9000	0.0190	0.0000
9	16	19	1.9001	1.9000	-0.0190	0.0000
10	19	24	0.7500	0.7500	-0.0075	0.0000
11	24	27	0.5670	0.5670	-0.0056	0.0000
12	27	28	0.2595	0.2595	-0.0026	0.0000
13	28	29	1.7617	1.7616	-0.0177	0.0000
14	29	30	1.7620	1.7619	-0.0176	0.0000
15	30	31	0.3125	0.3125	-0.0031	0.0000
16	31	32	0.3125	0.3125	-0.0031	0.0000
17	12	11	0.1561	-0.0433	0.1500	0.0000
18	11	10	0.4683	-0.1296	0.4500	0.0000
19	10	8	1.6412	-0.4543	1.5771	0.0000
20	8	7	0.7523	-0.2082	0.7229	0.0000
21	7	6	0.3563	-0.0986	0.3424	0.0000
22	21	22	0.1561	0.0433	0.1500	0.0000
23	22	23	0.4683	0.1296	0.4500	0.0000
24	23	25	1.6412	0.4543	1.5771	0.0000
25	25	26	0.7523	0.2082	0.7229	0.0000
26	26	27	0.3563	0.0986	0.3424	0.0000
27	12	13	0.2601	0.2601	0.0000	0.0000
28	13	15	0.6229	0.6229	0.0000	0.0000
29	15	17	1.4000	1.4000	0.0000	0.0000
30	17	18	1.4000	1.4000	0.0000	0.0000
31	18	20	0.6229	0.6229	0.0000	0.0000
32	20	21	0.2601	0.2601	0.0000	0.0000

CARACTERÍSTICAS DE LAS BARRAS.

Barras: 1, 2, 15, 16 (variable). → pueden existir o no

$b = 1'00$ m $h = 0'20$ m $A_x = 0'20$ m² $A_y = 0'17$ m² $I_z = 0'00667$ m⁴

Barras: 3 y 14

$b = 1'00$ m $h = 0'21$ m $A_x = 0'21$ m² $A_y = 0'18$ m² $I_z = 0'00777$ m⁴

Barras 4 y 13

$b = 1'00$ m $h = 0'43$ m $A_x = 0'43$ m² $A_y = 0'36$ m² $I_z = 0'0064$ m⁴

Barras 5, 6, 11, 12, 21, 26, 17, 27, 22, 32

$b = 1'00$ m $h = ?$ $A_x = 50$ $A_y = 50$ $I_z = 0'5$ m⁴

Barras 7 y 10

$b = 1'00$ m $h = 0'40$ m $A_x = 0'40$ m² $A_y = 0'34$ m² $I_z = 0'0055$ m⁴

Barras 8 y 9

$b = 1'00$ m $h = 0'349$ $A_x = 0'35$ m² $A_y = 0'30$ $I_z = 0'0035$ m⁴

Barras 20 y 25

$b = 1'00$ m $h = 0'80$ m $A_x = 0'80$ m² $A_y = 0'68$ m² $I_z = 0'0427$ m⁴

Barras 19 y 24

$b = 1'00$ m $h = 0'539$ m $A_x = 0'54$ m² $A_y = 0'46$ m² $I_z = 0'01305$ m⁴

CARLOS FERNANDEZ CASADO, S.L.
OFICINA DE PROYECTOS

PROYECTO

HOJA ____ DE ____
FECHA

Barras 18 y 23

$b = 1'00$ m $h = 1'22$ m $A_x = 1'22$ m² $A_y = 1'04$ m² $I_z = 0'1513$ m⁴

Barras 28 y 31.

$b = 1'00$ m $h = 0'48$ m $A_x = 0'48$ m² $A_y = 0'41$ m² $I_z = 0'0092$ m⁴

Barras 29 y 30

$b = 1'00$ m $h = 0'30$ m $A_x = 0'30$ m² $A_y = 0'25$ m² $I_z = 0'00234$ m⁴

HIPÓTESIS DE CARGA

Peso propio

- Gravedad: * 1 0. -1
  * 2 0. -1
  3 a 4. 0. -1
  7 a 10 0. -1
  13 a 14 0. -1
  * 15 0. -1
  * 16 0. -1
  18 a 20 0. -1.
  23 a 25 0. -1
  28 a 31 0. -1

- Carga en barra. * [Pre excentricidad] * 1 global pret y -0'50 0'25 0'5
  * 15 global pret y -0'5e 0'as 0'75

5	global pret y unif.	-1'18
6	"	-1'21
11	"	-1'21
12	"	-1'18.
21 a 26	"	-2
17 a 22	"	-0.60
27 a 32	"	-0'75

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OFICINA DE PROYECTOS

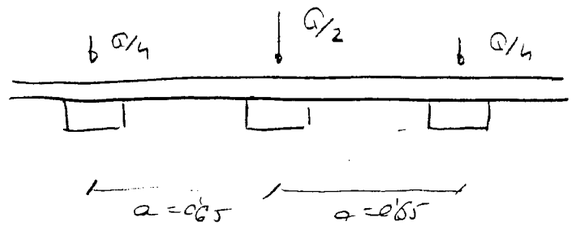
PROYECTO

HOJA ____ DE ____
FECHA

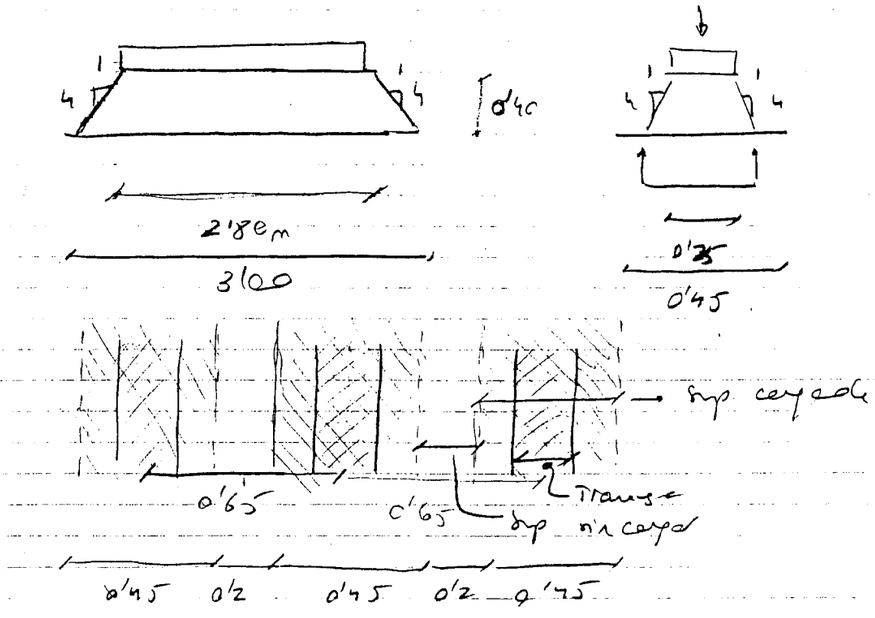
CARGAS CONCENTRADAS EQUIVALENTES.

Reparto de cargas según "IPF" y EC.1

Reparto longitudinal del carril a la traviesa.



Reparto longitudinal y transversal de Traviesa a tablero



Las cargas concentradas por Francia son la siguiente

MODELO	Carga puntual	Correspº a 1 Franja	Peq (t/m)
IPF-75	30T	15T	23 T/m
EC-1	25T	12'5T	19'2 T/m.

Supone repartida uniformemente en el ancho correspondiente a 1 Franja.

Por tanto los modelos de carga concentrada son mi desfavorable en lo que respecta a efectos locales que la carga repartida:

IPF-75 12T/m

EC-1 (UW2) 15T/m.

Excentricidades

- Ripado de h/2 0'30m.
- $e = \frac{r}{18} = 0'08m$ (reacción carga de la 2ª pª 1'25)
- Excentricidad x peralte si $h_{adj} = 1'80m$.

Excentricidad

→ 0'30 (ripado)

→ 0'08 (excentricidad de carga entre)

→ Ex. ha-tables · de 0 a ±1'10m.

L.A.V. PAPIOL-SANTA COLOMA

punt 1 VIADUCTO 1 - PAPIOL - PUNTOS CADA 5.00 m.

EJE DE VIAS VIADUCTO 1 EL PAPIOL (INTEREJE UIC)

PUNTO		ESTACO	DIST	COOR X	COOR Y	AZIMUT	RADIO	PARAM	COTA	PERAL	PEND
E-1	1	600215.000	-0.581	416761.703	4586926.893	193.665	0.00	0.00	36.855	0.0000	-0.0010
	2	600219.999	-0.518	416762.137	4586921.912	193.665	0.00	0.00	36.850	0.0000	-0.0010
	3	600224.999	-0.457	416762.573	4586916.931	193.665	0.00	0.00	36.845	0.0000	-0.0010
	4	600229.999	-0.398	416763.011	4586911.950	193.665	0.00	0.00	36.840	0.0000	-0.0010
	5	600234.999	-0.340	416763.450	4586906.969	193.665	0.00	0.00	36.835	0.0000	-0.0010
	6	600239.998	-0.285	416763.892	4586901.989	193.665	0.00	0.00	36.830	0.0000	-0.0010
	7	600244.998	-0.230	416764.334	4586897.008	193.665	0.00	0.00	36.825	0.0000	-0.0010
	8	600249.998	-0.178	416764.779	4586892.028	193.665	0.00	0.00	36.820	0.0000	-0.0010
	9	600254.998	-0.127	416765.225	4586887.048	193.665	0.00	0.00	36.815	0.0000	-0.0010
P-1	10	600259.998	-0.078	416765.673	4586882.068	193.665	0.00	0.00	36.810	0.0000	-0.0010
	11	600264.997	-0.030	416766.122	4586877.088	193.665	0.00	0.00	36.805	0.0000	-0.0010
	12	600269.997	0.016	416766.573	4586872.109	193.665	0.00	0.00	36.800	0.0000	-0.0010
	13	600274.997	0.060	416767.026	4586867.129	193.665	0.00	0.00	36.795	0.0000	-0.0010
	14	600279.997	0.103	416767.480	4586862.150	193.665	0.00	0.00	36.790	0.0000	-0.0010
	15	600284.996	0.144	416767.936	4586857.171	193.665	0.00	0.00	36.785	0.0000	-0.0010
	16	600289.996	0.183	416768.394	4586852.192	193.665	0.00	0.00	36.780	0.0000	-0.0010
	17	600294.996	0.221	416768.853	4586847.213	193.665	0.00	0.00	36.775	0.0000	-0.0010
	18	600299.996	0.257	416769.314	4586842.234	193.665	0.00	0.00	36.770	0.0000	-0.0010
	19	600304.996	0.290	416769.777	4586837.256	193.665	0.00	0.00	36.765	0.0000	-0.0010
	20	600309.996	0.323	416770.241	4586832.277	193.665	0.00	0.00	36.760	0.0000	-0.0010
	21	600314.996	0.354	416770.707	4586827.299	193.665	0.00	0.00	36.755	0.0000	-0.0010
P-2	22	600319.996	0.383	416771.175	4586822.321	193.665	0.00	0.00	36.750	0.0000	-0.0010
	23	600324.996	0.411	416771.644	4586817.343	193.665	0.00	0.00	36.745	0.0000	-0.0010
	24	600329.996	0.437	416772.115	4586812.365	193.665	0.00	0.00	36.740	0.0000	-0.0010
	25	600334.995	0.461	416772.588	4586807.388	193.665	0.00	0.00	36.735	0.0000	-0.0010
	26	600339.996	0.483	416773.062	4586802.410	193.665	0.00	0.00	36.730	0.0000	-0.0010
	27	600344.995	0.504	416773.538	4586797.433	193.665	0.00	0.00	36.725	0.0000	-0.0010
	28	600349.995	0.523	416774.016	4586792.456	193.665	0.00	0.00	36.720	0.0000	-0.0010
	29	600354.995	0.541	416774.495	4586787.479	193.665	0.00	0.00	36.715	0.0000	-0.0010
	30	600359.995	0.557	416774.976	4586782.502	193.665	0.00	0.00	36.710	0.0000	-0.0010
	31	600364.995	0.572	416775.458	4586777.525	193.665	0.00	0.00	36.705	0.0000	-0.0010
	32	600369.995	0.583	416775.943	4586772.549	193.665	0.00	0.00	36.700	0.0000	-0.0010
	33	600374.995	0.594	416776.429	4586767.573	193.665	0.00	0.00	36.695	0.0000	-0.0010
P-3	34	600379.995	0.604	416776.916	4586762.596	193.665	0.00	0.00	36.690	0.0000	-0.0010
	35	600384.995	0.612	416777.405	4586757.620	193.665	0.00	0.00	36.685	0.0000	-0.0010
	36	600389.995	0.617	416777.896	4586752.645	193.665	0.00	0.00	36.680	0.0000	-0.0010
	37	600394.995	0.621	416778.389	4586747.669	193.665	0.00	0.00	36.675	0.0000	-0.0010
	38	600399.995	0.624	416778.883	4586742.693	193.665	0.00	0.00	36.670	0.0000	-0.0010
	39	600404.995	0.625	416779.379	4586737.718	193.665	0.00	0.00	36.665	0.0000	-0.0010
	40	600409.995	0.624	416779.876	4586732.743	193.665	0.00	0.00	36.660	0.0000	-0.0010
	41	600414.995	0.621	416780.376	4586727.768	193.665	0.00	0.00	36.655	0.0000	-0.0010
	42	600419.995	0.618	416780.876	4586722.793	193.665	0.00	0.00	36.650	0.0000	-0.0010
	43	600424.995	0.612	416781.379	4586717.818	193.665	0.00	0.00	36.645	0.0000	-0.0010
	44	600429.995	0.604	416781.883	4586712.844	193.665	0.00	0.00	36.640	0.0000	-0.0010
	45	600434.995	0.595	416782.389	4586707.869	193.665	0.00	0.00	36.635	0.0000	-0.0010
P-4	46	600439.995	0.585	416782.896	4586702.895	193.665	0.00	0.00	36.630	0.0000	-0.0010
	47	600444.995	0.572	416783.405	4586697.921	193.665	0.00	0.00	36.625	0.0000	-0.0010
	48	600449.995	0.558	416783.916	4586692.947	193.665	0.00	0.00	36.620	0.0000	-0.0010
	49	600454.995	0.542	416784.429	4586687.974	193.665	0.00	0.00	36.615	0.0000	-0.0010
	50	600459.995	0.524	416784.943	4586683.000	193.665	0.00	0.00	36.610	0.0000	-0.0010
	51	600464.995	0.505	416785.459	4586678.027	193.665	-2685848.94	935.41	36.605	0.0000	-0.0010
	52	600469.995	0.485	416785.976	4586673.054	193.664	-164302.78	935.41	36.600	0.0000	-0.0010
	53	600474.994	0.462	416786.495	4586668.081	193.661	-84741.88	935.41	36.595	0.0000	-0.0010
	54	600479.995	0.438	416787.016	4586663.108	193.656	-57094.01	935.41	36.590	0.0000	-0.0010
	55	600484.995	0.414	416787.538	4586658.135	193.650	-43048.70	935.41	36.585	0.0000	-0.0010
	56	600489.994	0.388	416788.062	4586653.163	193.642	-34550.52	935.41	36.580	0.0000	-0.0010
	57	600494.994	0.361	416788.588	4586648.191	193.631	-28854.23	935.41	36.575	0.0000	-0.0010
P-5	58	600499.995	0.334	416789.115	4586643.218	193.620	-24769.61	935.41	36.570	0.0000	-0.0010
	59	600504.994	0.305	416789.644	4586638.246	193.606	-21698.45	935.41	36.565	0.0000	-0.0010
	60	600509.994	0.276	416790.175	4586633.275	193.590	-19305.19	935.41	36.560	0.0000	-0.0010
	61	600514.994	0.247	416790.707	4586628.303	193.573	-17387.05	935.41	36.555	0.0000	-0.0010
	62	600519.993	0.218	416791.241	4586623.332	193.554	-15815.85	935.41	36.550	0.0000	-0.0010
	63	600524.994	0.188	416791.777	4586618.360	193.533	-14504.79	935.41	36.545	0.0000	-0.0010
	64	600529.994	0.158	416792.314	4586613.389	193.510	-13394.63	935.41	36.540	0.0000	-0.0010
	65	600534.993	0.129	416792.853	4586608.419	193.485	-12442.47	935.41	36.535	0.0000	-0.0010
	66	600539.993	0.100	416793.394	4586603.448	193.459	-11616.50	935.41	36.530	0.0000	-0.0010
	67	600544.993	0.072	416793.936	4586598.477	193.430	-10893.35	935.41	36.525	0.0000	-0.0010
	68	600549.993	0.044	416794.480	4586593.507	193.400	-10255.05	935.41	36.520	0.0000	-0.0010
	69	600554.993	0.016	416795.026	4586588.537	193.368	-9687.39	935.41	36.515	0.0000	-0.0010
P-6	70	600559.993	-0.010	416795.573	4586583.567	193.334	-9179.26	935.41	36.510	0.0000	-0.0010
	71	600564.993	-0.035	416796.122	4586578.597	193.299	-8721.76	935.41	36.505	0.0000	-0.0010
	72	600569.992	-0.058	416796.672	4586573.628	193.261	-8307.77	935.41	36.500	0.0000	-0.0010
	73	600574.993	-0.081	416797.224	4586568.658	193.222	-7931.21	935.41	36.495	0.0000	-0.0010
	74	600579.992	-0.102	416797.778	4586563.689	193.181	-7587.36	935.41	36.490	0.0000	-0.0010
	75	600584.992	-0.122	416798.334	4586558.720	193.138	-7272.06	935.41	36.485	0.0000	-0.0010
	76	600589.993	-0.139	416798.891	4586553.751	193.094	-6981.92	935.41	36.480	0.0000	-0.0010

	77	600594.993	-0.155	416799.450	4586548.782	193.047	-6714.03	935.41	36.475	0.0000	-0.0010
	78	600599.993	-0.168	416800.010	4586543.814	192.999	-6465.98	935.41	36.470	0.0000	-0.0010
	79	600604.993	-0.181	416800.573	4586538.846	192.949	-6235.59	935.41	36.465	0.0000	-0.0010
	80	600609.994	-0.189	416801.136	4586533.877	192.897	-6021.01	935.41	36.460	0.0000	-0.0010
	81	600614.993	-0.196	416801.702	4586528.910	192.843	-5820.77	935.41	36.455	0.0000	-0.0010
P-7	82	600619.993	-0.200	416802.269	4586523.942	192.787	-5633.38	935.41	36.450	0.0000	-0.0010
	83	600624.994	-0.202	416802.838	4586518.974	192.730	-5457.67	935.41	36.445	0.0000	-0.0010
	84	600629.994	-0.200	416803.408	4586514.007	192.671	-5292.62	935.41	36.440	0.0000	-0.0010
	85	600634.994	-0.195	416803.980	4586509.040	192.610	-5137.25	935.41	36.435	0.0000	-0.0010
	86	600639.994	-0.187	416804.554	4586504.073	192.547	-4990.73	935.41	36.430	0.0000	-0.0010
	87	600644.994	-0.176	416805.129	4586499.106	192.482	-4852.34	935.41	36.425	0.0000	-0.0010
	88	600649.995	-0.161	416805.706	4586494.139	192.415	-4721.41	935.41	36.420	0.0000	-0.0010
	89	600654.995	-0.143	416806.285	4586489.173	192.347	-4597.38	935.41	36.415	0.0000	-0.0010
	90	600659.994	-0.120	416806.865	4586484.207	192.277	-4479.70	935.41	36.410	0.0000	-0.0010
	91	600664.994	-0.094	416807.447	4586479.241	192.205	-4367.89	935.41	36.405	0.0000	-0.0010
	92	600669.995	-0.065	416808.031	4586474.275	192.131	-4261.52	935.41	36.400	0.0000	-0.0010
	93	600674.995	-0.030	416808.616	4586469.309	192.056	-4160.21	935.41	36.395	0.0000	-0.0010
P-8	94	600679.994	0.009	416809.203	4586464.344	191.978	-4063.62	935.41	36.390	0.0000	-0.0010
	95	600684.994	0.051	416809.792	4586459.379	191.899	-3971.41	935.41	36.385	0.0000	-0.0010
	96	600689.994	0.099	416810.382	4586454.414	191.818	-3883.29	935.41	36.380	0.0000	-0.0010
	97	600694.993	0.152	416810.974	4586449.449	191.735	-3798.99	935.41	36.375	0.0000	-0.0010
	98	600699.993	0.209	416811.568	4586444.484	191.650	-3718.27	935.41	36.370	0.0000	-0.0010
	99	600704.992	0.272	416812.163	4586439.520	191.564	-3640.93	935.41	36.365	0.0000	-0.0010
	100	600709.991	0.339	416812.760	4586434.556	191.476	-3566.74	935.41	36.360	0.0000	-0.0010
	101	600714.991	0.412	416813.359	4586429.591	191.385	-3495.50	935.41	36.355	0.0000	-0.0010
	102	600719.989	0.491	416813.959	4586424.628	191.293	-3427.08	935.41	36.350	0.0000	-0.0010
E-2	103	600724.988	0.575	416814.561	4586419.664	191.200	-3361.27	935.41	36.345	0.0000	-0.0010

L.A.V. PAPIOL-SANTA COLOMA

punt 2 VIADUCTO 2 - PAPIOL - PUNTOS CADA 5.00 m.

EJE DE VIAS VIADUCTO 2 PAPIOL (INTEREJE VIA MIXTA)

PUNTO		ESTACION	DIST	COOR X	COOR Y	AZIMUT	RADIO	PARAM	COTA	PERAL	PEND
E-1	1	600236.282	-0.680	416778.815	4586908.502	193.665	0.00	0.00	36.834	0.0000	-0.0010
	2	600241.282	-0.625	416779.257	4586903.522	193.665	0.00	0.00	36.829	0.0000	-0.0010
	3	600246.281	-0.573	416779.701	4586898.542	193.665	0.00	0.00	36.824	0.0000	-0.0010
	4	600251.282	-0.521	416780.147	4586893.561	193.665	0.00	0.00	36.819	0.0000	-0.0010
	5	600256.281	-0.473	416780.595	4586888.582	193.665	0.00	0.00	36.814	0.0000	-0.0010
	6	600261.281	-0.425	416781.044	4586883.602	193.665	0.00	0.00	36.809	0.0000	-0.0010
	7	600266.281	-0.379	416781.495	4586878.622	193.665	0.00	0.00	36.804	0.0000	-0.0010
	8	600271.280	-0.334	416781.947	4586873.643	193.665	0.00	0.00	36.799	0.0000	-0.0010
	9	600276.280	-0.291	416782.401	4586868.663	193.665	0.00	0.00	36.794	0.0000	-0.0010
P-1	10	600281.280	-0.250	416782.857	4586863.684	193.665	0.00	0.00	36.789	0.0000	-0.0010
	11	600286.280	-0.211	416783.315	4586858.705	193.665	0.00	0.00	36.784	0.0000	-0.0010
	12	600291.280	-0.173	416783.774	4586853.726	193.665	0.00	0.00	36.779	0.0000	-0.0010
	13	600296.280	-0.136	416784.234	4586848.747	193.665	0.00	0.00	36.774	0.0000	-0.0010
	14	600301.279	-0.102	416784.697	4586843.769	193.665	0.00	0.00	36.769	0.0000	-0.0010
	15	600306.280	-0.069	416785.161	4586838.790	193.665	0.00	0.00	36.764	0.0000	-0.0010
	16	600311.280	-0.038	416785.627	4586833.812	193.665	0.00	0.00	36.759	0.0000	-0.0010
	17	600316.279	-0.009	416786.094	4586828.834	193.665	0.00	0.00	36.754	0.0000	-0.0010
	18	600321.279	0.019	416786.563	4586823.856	193.665	0.00	0.00	36.749	0.0000	-0.0010
	19	600326.279	0.045	416787.034	4586818.878	193.665	0.00	0.00	36.744	0.0000	-0.0010
	20	600331.279	0.070	416787.506	4586813.901	193.665	0.00	0.00	36.739	0.0000	-0.0010
	21	600336.279	0.093	416787.980	4586808.923	193.665	0.00	0.00	36.734	0.0000	-0.0010
P-2	22	600341.279	0.114	416788.456	4586803.946	193.665	0.00	0.00	36.729	0.0000	-0.0010
	23	600346.279	0.132	416788.934	4586798.969	193.665	0.00	0.00	36.724	0.0000	-0.0010
	24	600351.279	0.150	416789.413	4586793.992	193.665	0.00	0.00	36.719	0.0000	-0.0010
	25	600356.279	0.167	416789.893	4586789.015	193.665	0.00	0.00	36.714	0.0000	-0.0010
	26	600361.279	0.181	416790.376	4586784.038	193.665	0.00	0.00	36.709	0.0000	-0.0010
	27	600366.279	0.194	416790.860	4586779.062	193.665	0.00	0.00	36.704	0.0000	-0.0010
	28	600371.279	0.205	416791.345	4586774.085	193.665	0.00	0.00	36.699	0.0000	-0.0010
	29	600376.279	0.214	416791.833	4586769.109	193.665	0.00	0.00	36.694	0.0000	-0.0010
	30	600381.279	0.222	416792.322	4586764.133	193.665	0.00	0.00	36.689	0.0000	-0.0010
	31	600386.279	0.229	416792.812	4586759.157	193.665	0.00	0.00	36.684	0.0000	-0.0010
	32	600391.278	0.232	416793.305	4586754.182	193.665	0.00	0.00	36.679	0.0000	-0.0010
	33	600396.279	0.235	416793.799	4586749.206	193.665	0.00	0.00	36.674	0.0000	-0.0010
P-3	34	600401.278	0.237	416794.294	4586744.231	193.665	0.00	0.00	36.669	0.0000	-0.0010

	35	600406.279	0.237	416794.791	4586739.255	193.665	0.00	0.00	36.664	0.0000 -0.0010
	36	600411.279	0.235	416795.290	4586734.280	193.665	0.00	0.00	36.659	0.0000 -0.0010
	37	600416.278	0.230	416795.791	4586729.306	193.665	0.00	0.00	36.654	0.0000 -0.0010
	38	600421.279	0.225	416796.293	4586724.331	193.665	0.00	0.00	36.649	0.0000 -0.0010
	39	600426.279	0.218	416796.797	4586719.356	193.665	0.00	0.00	36.644	0.0000 -0.0010
	40	600431.279	0.208	416797.303	4586714.382	193.665	0.00	0.00	36.639	0.0000 -0.0010
	41	600436.278	0.198	416797.810	4586709.408	193.665	0.00	0.00	36.634	0.0000 -0.0010
	42	600441.278	0.186	416798.319	4586704.434	193.665	0.00	0.00	36.629	0.0000 -0.0010
	43	600446.278	0.172	416798.829	4586699.460	193.665	0.00	0.00	36.624	0.0000 -0.0010
	44	600451.279	0.156	416799.342	4586694.486	193.665	0.00	0.00	36.619	0.0000 -0.0010
	45	600456.278	0.140	416799.855	4586689.513	193.665	0.00	0.00	36.614	0.0000 -0.0010
P-4	46	600461.279	0.120	416800.371	4586684.539	193.665	0.00	0.00	36.609	0.0000 -0.0010
	47	600466.279	0.100	416800.888	4586679.566	193.665	0.00	0.00	36.604	0.0000 -0.0010
	48	600471.279	0.078	416801.407	4586674.593	193.664	-180697.47	931.17	36.599	0.0000 -0.0010
	49	600476.279	0.054	416801.927	4586669.620	193.661	-88490.74	931.17	36.594	0.0000 -0.0010
	50	600481.278	0.028	416802.450	4586664.648	193.657	-58594.94	931.17	36.589	0.0000 -0.0010
	51	600486.278	0.003	416802.973	4586659.675	193.651	-43795.92	931.17	36.584	0.0000 -0.0010
	52	600491.278	-0.025	416803.499	4586654.703	193.642	-34965.97	931.17	36.579	0.0000 -0.0010
	53	600496.278	-0.054	416804.026	4586649.731	193.632	-29099.02	931.17	36.574	0.0000 -0.0010
	54	600501.278	-0.083	416804.555	4586644.759	193.620	-24917.87	931.17	36.569	0.0000 -0.0010
	55	600506.278	-0.112	416805.085	4586639.787	193.607	-21787.25	931.17	36.564	0.0000 -0.0010
	56	600511.278	-0.143	416805.617	4586634.815	193.591	-19355.38	931.17	36.559	0.0000 -0.0010
	57	600516.278	-0.174	416806.151	4586629.844	193.574	-17412.16	931.17	36.554	0.0000 -0.0010
P-5	58	600521.277	-0.204	416806.686	4586624.873	193.555	-15823.49	931.17	36.549	0.0000 -0.0010
	59	600526.277	-0.236	416807.224	4586619.902	193.534	-14500.40	931.17	36.544	0.0000 -0.0010
	60	600531.277	-0.267	416807.762	4586614.931	193.511	-13381.49	931.17	36.539	0.0000 -0.0010
	61	600536.278	-0.298	416808.303	4586609.960	193.486	-12422.83	931.17	36.534	0.0000 -0.0010
	62	600541.278	-0.328	416808.845	4586604.989	193.460	-11592.32	931.17	36.529	0.0000 -0.0010
	63	600546.278	-0.358	416809.388	4586600.019	193.431	-10866.02	931.17	36.524	0.0000 -0.0010
	64	600551.278	-0.388	416809.934	4586595.049	193.401	-10225.32	931.17	36.519	0.0000 -0.0010
	65	600556.278	-0.416	416810.481	4586590.079	193.369	-9655.96	931.17	36.514	0.0000 -0.0010
	66	600561.278	-0.443	416811.029	4586585.109	193.335	-9146.64	931.17	36.509	0.0000 -0.0010
	67	600566.279	-0.470	416811.580	4586580.139	193.299	-8688.33	931.17	36.504	0.0000 -0.0010
	68	600571.279	-0.496	416812.132	4586575.170	193.262	-8273.82	931.17	36.499	0.0000 -0.0010
	69	600576.279	-0.519	416812.685	4586570.201	193.222	-7897.05	931.17	36.494	0.0000 -0.0010
P-6	70	600581.279	-0.543	416813.241	4586565.232	193.181	-7553.08	931.17	36.489	0.0000 -0.0010
	71	600586.279	-0.563	416813.798	4586560.263	193.138	-7237.81	931.17	36.484	0.0000 -0.0010
	72	600591.280	-0.582	416814.356	4586555.294	193.093	-6947.80	931.17	36.479	0.0000 -0.0010
	73	600596.280	-0.599	416814.916	4586550.326	193.046	-6680.17	931.17	36.474	0.0000 -0.0010
	74	600601.281	-0.614	416815.478	4586545.357	192.998	-6432.34	931.17	36.469	0.0000 -0.0010
	75	600606.281	-0.627	416816.042	4586540.389	192.947	-6202.27	931.17	36.464	0.0000 -0.0010
	76	600611.282	-0.637	416816.607	4586535.421	192.895	-5988.08	931.17	36.459	0.0000 -0.0010
	77	600616.283	-0.646	416817.174	4586530.453	192.841	-5788.19	931.17	36.454	0.0000 -0.0010
	78	600621.283	-0.651	416817.743	4586525.486	192.785	-5601.23	931.17	36.449	0.0000 -0.0010
	79	600626.284	-0.654	416818.313	4586520.518	192.727	-5425.94	931.17	36.444	0.0000 -0.0010
	80	600631.284	-0.653	416818.885	4586515.551	192.668	-5261.30	931.17	36.439	0.0000 -0.0010
	81	600636.285	-0.649	416819.458	4586510.584	192.606	-5106.36	931.17	36.434	0.0000 -0.0010
P-7	82	600641.286	-0.643	416820.033	4586505.617	192.543	-4960.28	931.17	36.429	0.0000 -0.0010
	83	600646.286	-0.633	416820.610	4586500.651	192.478	-4822.35	931.17	36.424	0.0000 -0.0010
	84	600651.287	-0.620	416821.189	4586495.684	192.411	-4691.84	931.17	36.419	0.0000 -0.0010
	85	600656.287	-0.602	416821.769	4586490.718	192.342	-4568.24	931.17	36.414	0.0000 -0.0010
	86	600661.288	-0.580	416822.350	4586485.752	192.272	-4450.98	931.17	36.409	0.0000 -0.0010
	87	600666.289	-0.556	416822.934	4586480.786	192.199	-4339.58	931.17	36.404	0.0000 -0.0010
	88	600671.289	-0.527	416823.519	4586475.821	192.125	-4233.64	931.17	36.399	0.0000 -0.0010
	89	600676.290	-0.493	416824.106	4586470.855	192.049	-4132.72	931.17	36.394	0.0000 -0.0010
	90	600681.290	-0.455	416824.694	4586465.890	191.971	-4036.53	931.17	36.389	0.0000 -0.0010
	91	600686.290	-0.413	416825.284	4586460.925	191.891	-3944.70	931.17	36.384	0.0000 -0.0010
	92	600691.291	-0.366	416825.876	4586455.960	191.810	-3856.96	931.17	36.379	0.0000 -0.0010
	93	600696.291	-0.314	416826.469	4586450.995	191.726	-3773.04	931.17	36.374	0.0000 -0.0010
P-8	94	600701.291	-0.257	416827.064	4586446.031	191.641	-3692.70	931.17	36.369	0.0000 -0.0010
	95	600706.290	-0.196	416827.661	4586441.067	191.554	-3615.71	931.17	36.364	0.0000 -0.0010
	96	600711.290	-0.129	416828.259	4586436.103	191.465	-3541.87	931.17	36.359	0.0000 -0.0010
	97	600716.290	-0.056	416828.859	4586431.139	191.374	-3470.98	931.17	36.354	0.0000 -0.0010
	98	600721.290	0.022	416829.461	4586426.175	191.281	-3402.88	931.17	36.349	0.0000 -0.0010
	99	600726.288	0.105	416830.064	4586421.212	191.187	-3337.41	931.17	36.344	0.0000 -0.0010
	100	600731.288	0.195	416830.669	4586416.248	191.091	-3274.40	931.17	36.339	0.0000 -0.0010
	101	600736.287	0.290	416831.276	4586411.285	190.993	-3213.73	931.17	36.334	0.0000 -0.0010
	102	600741.285	0.392	416831.884	4586406.322	190.893	-3155.27	931.17	36.329	0.0000 -0.0010
E-2	103	600746.283	0.500	416832.494	4586401.360	190.791	-3098.92	931.17	36.324	0.0000 -0.0010

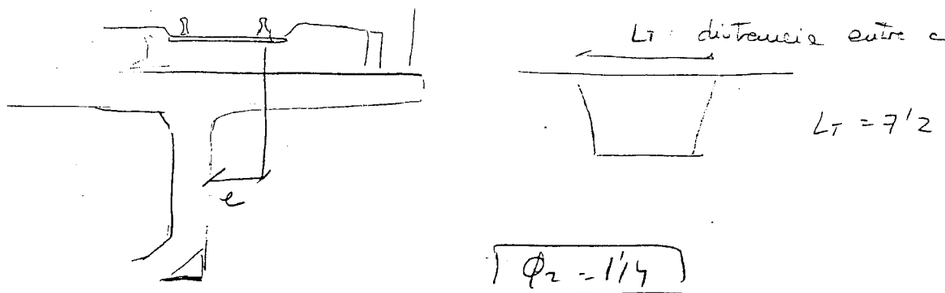
CÁLCULO DE LOS COEFICIENTES DE IMPACTO.

EC-1

Mantenimiento bueno

$$\phi_2 = \frac{1'44}{\sqrt{L_\phi - d^2}} + 0'82 = \frac{1'44}{\sqrt{21'6 - 0^2}} + 0'82 = \boxed{1'14}$$

si $e < 0'50m \Rightarrow L_\phi = 3 L_T = 3 \times 7'2 = 21'6$



$\boxed{\phi_2 = 1'14}$

~~IPF~~-75.

$L \leq 6'0$

$V = 200 km/h$

$I = 33 \cdot L_0^{-2} V = 66$

$\boxed{i = 1'66}$

SOBRECARGAS DE USO

a) Cargas verticales

$$q = 1 \frac{P/2}{0'65 \times 2'80}$$

Modelo de carga	P	1	q (T/m²)
Renfe tipo A	30	1'66	13'68 T/m²
EE 1-	25	1'14	7'82 T/m²

Excentricidad 0'38m + excentr. platefema variable (0, ±1'10m)

Sobrecarga en paseos.

IPF-75	0'40 T/m²
EC-1	0'50 T/m²

CARGAS HORIZONTALES

Fuerza centrífuga.

JPF-75 $v = 200$ km/h $R = 15000$ m $F_c = Q\frac{v^2}{127R}$

$f = 0'0021 \times \frac{12'77}{1'66} = 0'01615$ T/m.

EC-1 $v = 350$ km/h. $R = 15200$ m

$f = 0'0064 \times \frac{7'30}{1'14} = 0'0411$ T/m.

JPF-75 $f = 0'01615$ T/m.

EC-1 $f = 0'041$ T/m.

Efecto tarro. Una única fuerza.

JPF-75 $F_{tarro} = Q_2 = 5$T $q_L = \frac{5}{3'00} = 1'66$

(locomotora 30m)

$\frac{1'66}{30} = 0'056$ T/m²

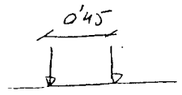
EC-1 $F_{tarro} = 10$T $q_L = \frac{10}{3'00} = 3'33$

$\frac{3'33}{64} = 0'052$ T/m²

SOBRECARGAS DE DESCARRILAMIENTO

- Hipótesis de Cálculo I $q_{cal} = 5$T/m
- Hipótesis de Cálculo II $q_{cal} = 8$T/m

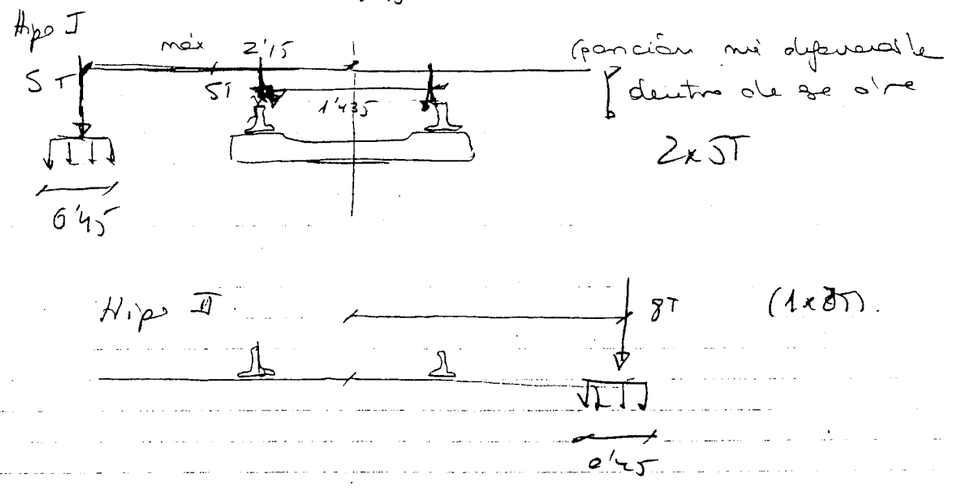
Hipótesis I



$q = \frac{5}{0'45} = 11'11$ T/m

Hipótesis II

$q = \frac{8}{0'45} = 17'78$ T/m



CARGAS VERTICALES. DATOS PARA SAP.
EXCENTRICIDAD = 0.

BALASTO. Carga en barra global pues y uniforme.

	BARRA	CARGA INICIAL	CARGA FINAL
BALASTO	4 a 13	Trapecio	
VÍAS y TRAV.	4	-0'27	-0'001
	5 a 7		
	8	0	0'95
	9	-0'95	-0'001
	10 a 12		
	13	0	0'27
SC-TREN	4	-0'65 (con impacto) -0'001	(sin impacto) -0'35 -0'001
1-1 (con impacto) (1-2 sin impacto)	5 a 7		
	8	0'57	0 0'87
2-1 (con impacto) (1-2 sin impacto)	9	-1'33 -0'001	-1'03 -0'001
	10-11		
	12	0 0'15	(13) 0 0'15
ACERAS	2	—	
	3	0 0'74	
	14	-0'74 -0'001	
	15	—	
CABLES	3	0'34 0'74	
	14	1'02 1'42	

BARANDILLA	2	0'05	0'15.
	15	0'16	0'26
PASEO	2 a 3	—	
	14 a 15	—	
	DESCARRILAMIENTO.		
1-1 :	4	0'57	0'96
	5	0'18	-0'001
	6	0'1	0'37
1-2	8	0'04	0'49
	8	-0'478	-0'001
	9	0	0'03.
1-3 (1-4	11	-0'37	-0'001
	12	0	0'08
	13.	0'80	1'25
1-4) (1-3)	8	-0'03	-0'001
	9.	0	0'42
	9	-0'49	-0'04
2-1	4	0'51	0'96.
2-2	8	-0'42	-0'001
	9	0	0'03.
2-3.	13	0'80	1'25
2-4	8	-0'03	-0'001
	9.	0	0'42.

EXCENTRICIDAD = -0'3125

BALASTO	3	-0'32	-0'001
	4 a 12		
	13	0	1'46
VIAS Y RESV	4	-0'59	-0'001
	5 a 7		
	8	0	0'64
	9	-0'64	-0'01
	10 all	—	
	12	0	0'22
SC-TREN	4	0'8e	-0'001
	5-7		
	8	0	0'26
	9	0'2575	-0'001
	10	—	
	11	0	0'41
ACERA	1	-0'16	-0'001
	2	—	
	3.	0	0'58.
	14	-0'89	-0'001
	15	0	0'16
CABLEADO	3	0'10	0'58
	14	0'87	1'27

BARANDILLA	1	d'21	d'31
	15	0	d'10
SC PASEO	1	-d'16	-d001
	2		
	3	0	1'44
	13	-d'30	-d001
	14		
	15	0	d'16.
DESCARGA MURO			
1-1	4	d'20	d'65.
	4	-d'13	-d001
	5		
	6	0	d06
1-2	7	-d'27	-d001
	8	0	d'18.
	8	1'17	1'62.
1-3/4	10	-d'12	-d001
	11	0	d'33
	13.	0'49	0'94.
1-4/3	8	-d'34	-d001
	9	0	d'11
	9	1'10	1'55.
2-1	4	d'20	d'65
2-2	8	1'17	1'62
2-3	13	0'49	0'94

EXCENTRICIDAD = -0'625 m.

BARANDILLA	3	-0'64	-d00 1
	4 a 12		
	13	0 0	1'15
LUCES Y PASO	4	-d90	-d001
	5 a 7		
	8	0	d'33
	9	-1'58	-d001
	10		
	11	0'01	0'47
SC-TREN	4	-1'28	-d001
	5 a 6		
	7	-0	d'70.
	8	-d06	-d001
	9 a 10		
	11	0	d08
MUROS	1 a 2		
	3	0	0'43
	14	-1'05	-d001
CABLEADO	3	0	0'4
	14	0'71	0'11
BARANDILLA	1	d'05	d'15
	14	-d'15	-d005

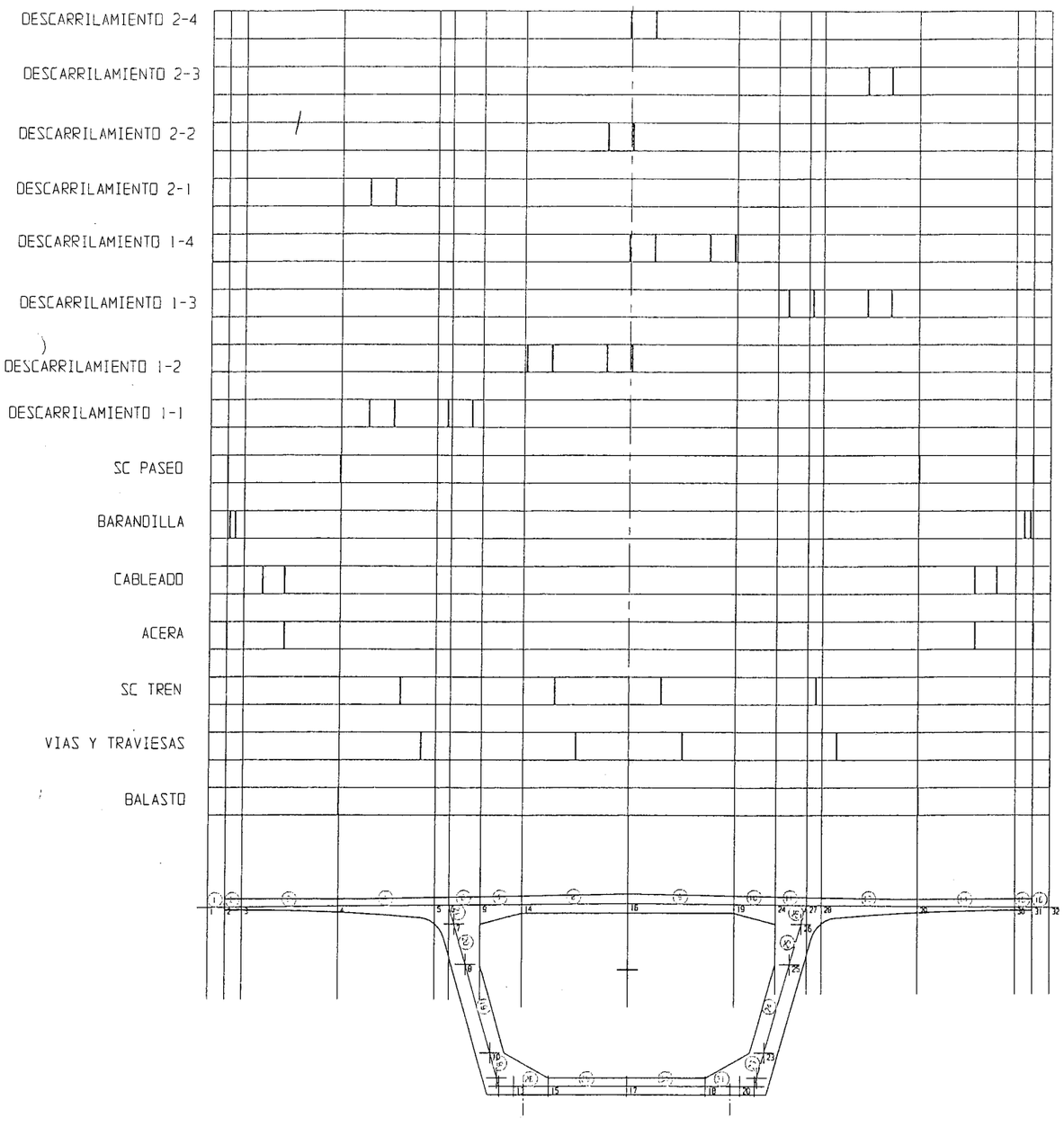
CARLOS FERNANDEZ CASADO, S.L.
OFICINA DE PROYECTOS

HOJA ____ DE ____

PROYECTO _____ FECHA _____

SC-PASEO	1 a 2	—	
	3	0	1'12.
	13	-0'61	-0001
	14	—	
DESCARRILAMIENTO.			
1-1.	3	-0'11	-0'001
	4	0	0'34
	4	-0'45	-0001
1-2	7	0'17	0'62.
	8	0'85	1'30.
1-3/4	10	-0'43	-0001
	11	0	0'02.
	13.	0'18	0'63.
1-4/3.	8	1'25	1'70
	9	0'78	1'23
2-1.	3	-0'11	-0'001
	4	0	0'34
2-2	8.	0'85	1'30
2-3.	13	0'18	0'63.
2-4	8.	1'25	1'70

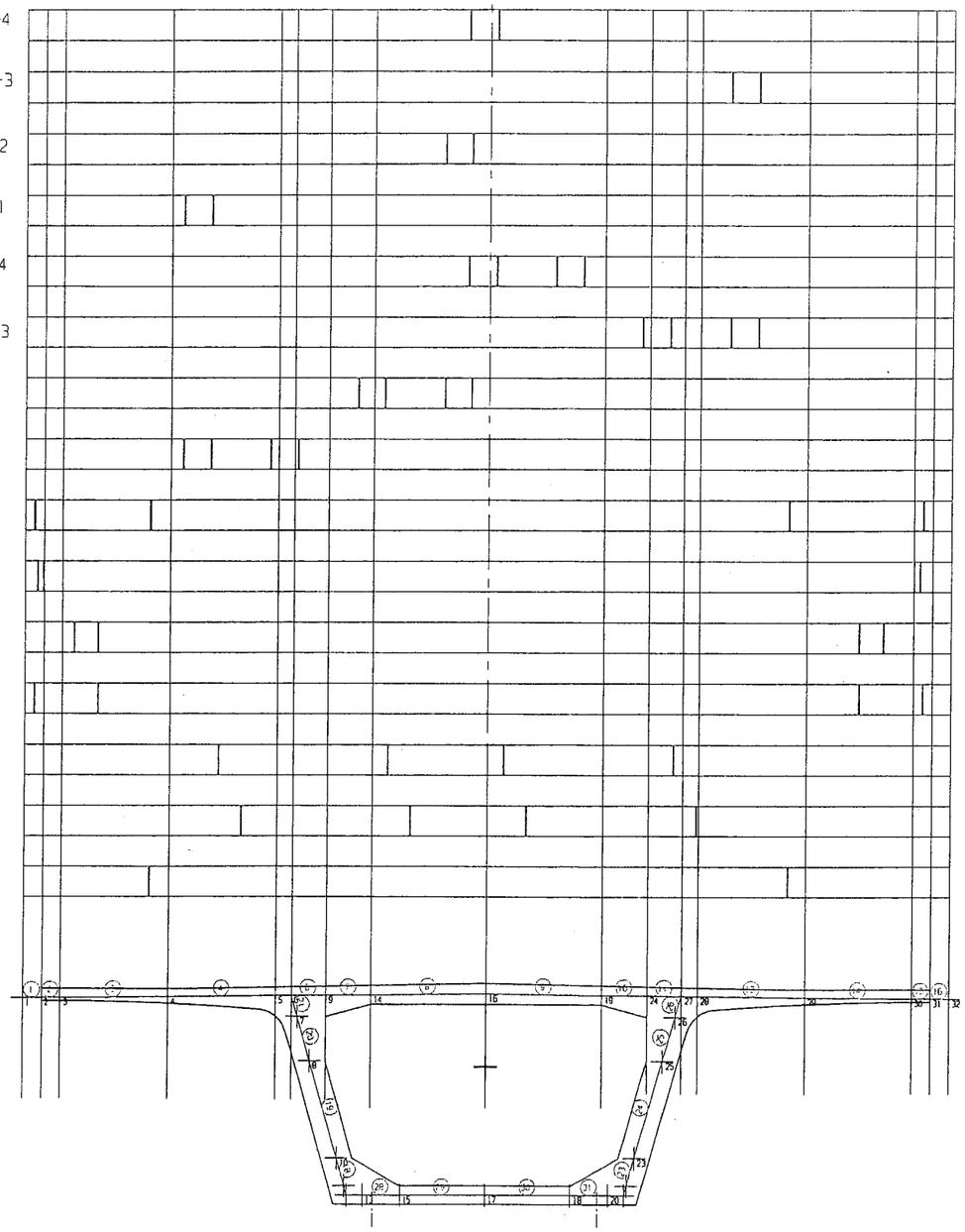
ESQUEMA DE CARGAS PARA EXCENTRICIDAD=0



estr Pupiol - flexion transversal

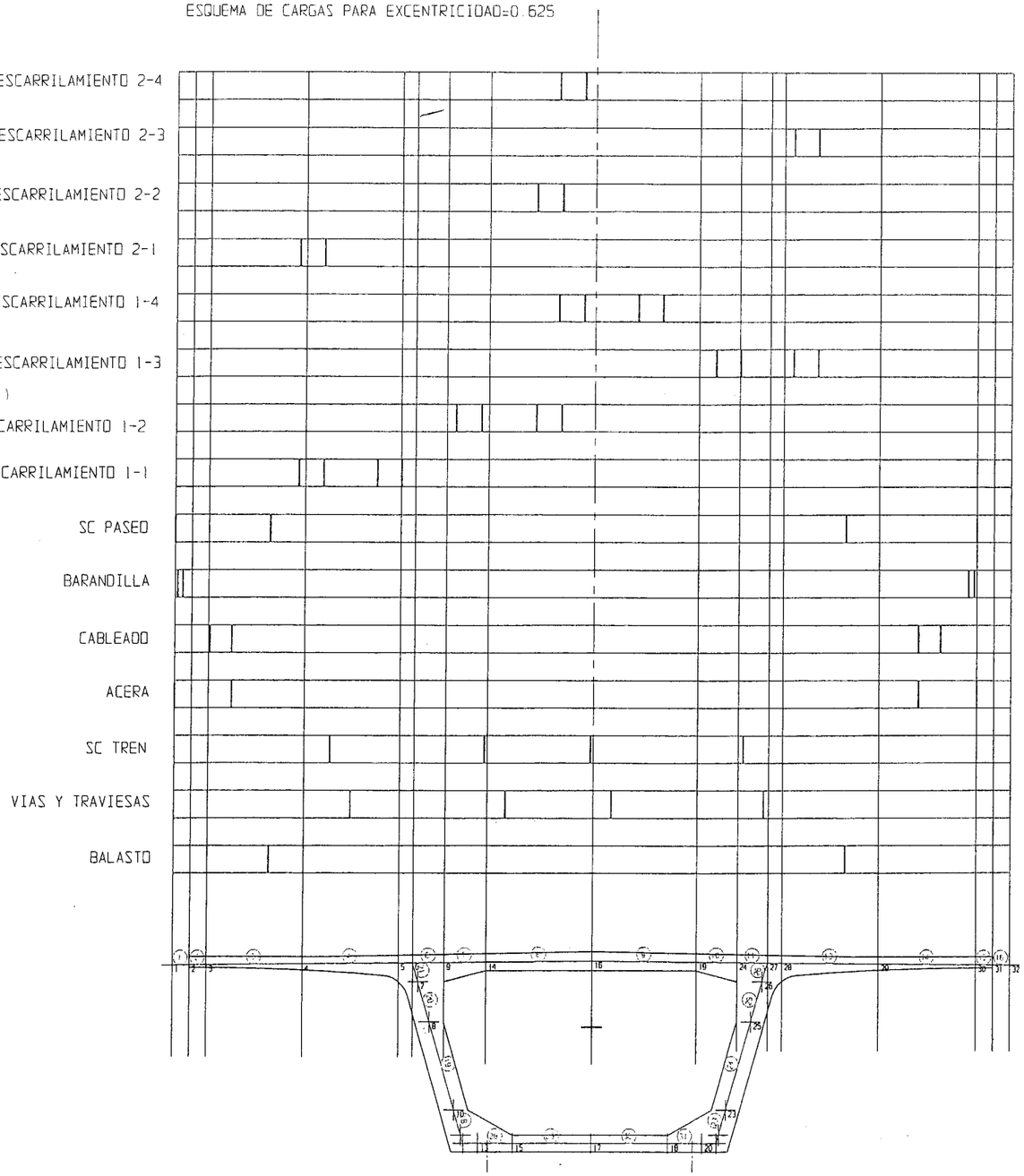
ESQUEMA DE CARGAS PARA EXCENTRICIDAD=0.3125

DESCARRILAMIENTO 2-4
DESCARRILAMIENTO 2-3
DESCARRILAMIENTO 2-2
DESCARRILAMIENTO 2-1
DESCARRILAMIENTO 1-4
DESCARRILAMIENTO 1-3
DESCARRILAMIENTO 1-2
DESCARRILAMIENTO 1-1
SC PASEO
BARANDILLA
CABLEADO
ACERA
SC TREN
VIAS Y TRAVIESAS
BALASTO



ESQUEMA DE CARGAS PARA EXCENTRICIDAD=0.625

DESCARRILAMIENTO 2-4
DESCARRILAMIENTO 2-3
DESCARRILAMIENTO 2-2
DESCARRILAMIENTO 2-1
DESCARRILAMIENTO 1-4
DESCARRILAMIENTO 1-3
DESCARRILAMIENTO 1-2
DESCARRILAMIENTO 1-1
SC PASEO
BARANDILLA
CABLEADO
ACERA
SC TREN
VIAS Y TRAVIESAS
BALASTO



Papiol - seccion transversal

COORDENADAS DE BARRAS Y CARGAS

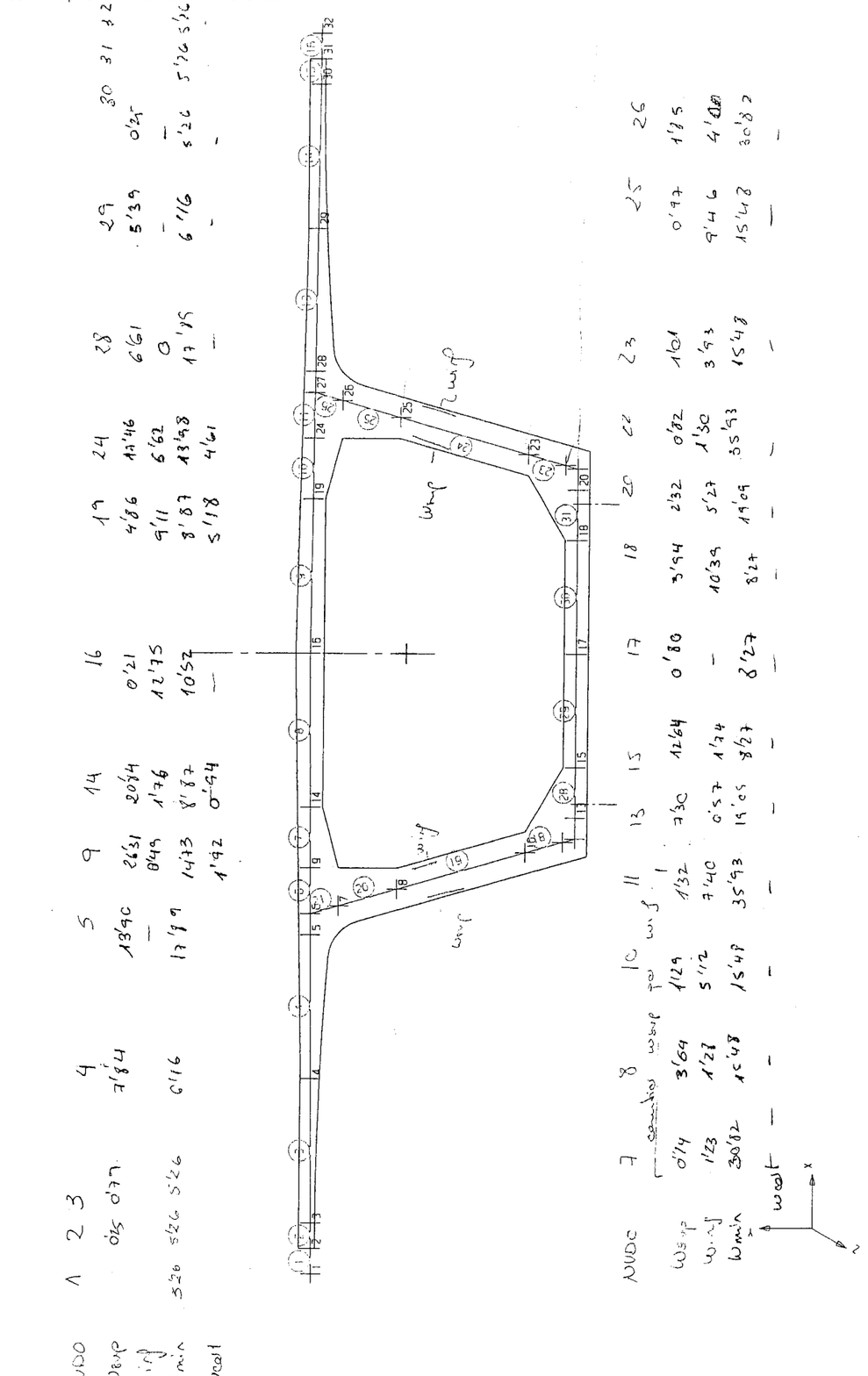
Ancho 1/2seccion 7.625

BARRA	NUDO1	NUDO2	LONG. X		s1	s2
1	0	0.3125	0.3125		-7.625	-7.3125
2	0.3125	0.625	0.3125		-7.3125	-7
3	0.625	2.3869	1.7619		-7	-5.2381
4	2.3869	4.1485	1.7616		-5.2381	-3.4765
5	4.1485	4.408	0.2595		-3.4765	-3.217
6	4.408	4.975	0.567		-3.217	-2.65
7	4.975	5.725	0.75		-2.65	-1.9
8	5.725	7.625	1.9		-1.9	0
9	7.625	9.525	1.9		0	1.9
10	9.525	10.275	0.75		1.9	2.65
11	10.275	10.842	0.567		2.65	3.217
12	10.842	11.1015	0.2595		3.217	3.4765
13	11.1015	12.8631	1.7616		3.4765	5.2381
14	12.8631	14.625	1.7619		5.2381	7
15	14.625	14.9375	0.3125		7	7.3125
16	14.9375	15.25	0.3125		7.3125	7.625

excentricidad		0		0.625		0.3125	
Cargas (T/m)		s1	s2	s1	s2	s1	s2
balasto							
	1.84	-5.25	5.25	-5.875	4.625	-5.5625	4.9375
	2.69	-5.25	5.25	-5.875	4.625	-5.5625	4.9375
	1.29	-5.25	5.25	-5.875	4.625	-5.5625	4.9375
Vias y traviesas							
	0.23	-3.75	-0.95	-4.375	-1.575	-4.0625	-1.2625
	0.23	0.95	3.75	0.325	3.125	0.6375	3.4375
resto cm (varia con e/2)							
acera	0.35	-7.3125	-6.2625	-7.625	-6.575	-7.46875	-6.41875
	0.35	6.2625	7.3125	5.95	7	6.10625	7.15625
cableado	0.75	-6.6625	-6.2625	-6.975	-6.575	-6.81875	-6.41875
	0.75	6.2625	6.6625	5.95	6.35	6.10625	6.50625
barandilla	3.4	-7.2625	-7.1625	-7.575	-7.475	-7.41875	-7.31875
	3.4	7.1625	7.2625	6.85	6.95	7.00625	7.10625
sc de tren							
13.68 ipf - 7.82 ec-1		-4.13	1.33	-4.755	0.705	-4.4425	1.0175
13.68 ipf - 7.82 ec-1		0.57	3.37	-0.055	2.745	0.2575	3.0575
sc paseo							
	0.5	-7.3125	-5.2525	-7.625	-5.8775	-7.46875	-5.565
	0.5	5.2525	7.3125	4.94	6.6875	5.09625	7
Descarrilamiento							
hipo 1-1							
	11.11	-4.7275	-4.2775	-5.3525	-4.9025	-5.04	-4.59
	11.11	-3.2925	-2.8425	-3.9175	-3.4675	-3.605	-3.155
hipo 1-2							
	11.11	-1.8575	-1.4075	-2.4825	-2.0325	-2.17	-1.72
	11.11	-0.4225	0.0275	-1.0475	-0.5975	-0.735	-0.285
hipo 1-3							
	11.11	-0.0275	0.4225	-0.6525	-0.2025	-0.34	0.11
	11.11	1.4075	1.8575	0.7825	1.2325	1.095	1.545
hipo 1-4							
	11.11	2.8425	3.2925	2.2175	2.6675	2.53	2.98
	11.11	4.2775	4.7275	3.6525	4.1025	3.965	4.415
hipo 2-1							
	17.78	-4.7275	-4.2775	-5.3525	-4.9025	-5.04	-4.59
hipo 2-2							
	17.78	-0.4225	0.0275	-1.0475	-0.5975	-0.735	-0.285
hipo 2-3							
	17.78	4.7275	4.2775	4.1025	3.6525	4.415	3.965
hipo 2-4							
	17.78	0.4225	-0.0275	-0.2025	-0.6525	0.11	-0.34

RESUMEN ARMADURA NECESARIA PARA FLEX TRANSVERSAL

estr Papiol - flexion transversal



LISTADO DE DATOS

```
estr Papiol - flexion transversal  excentricidad=0 m
nume de nudo   32
nume de barr   32
nume de hipo 33
nume de apoy    3
tipo port plano
list nada
coor de nudo
    1     -7.6250          1.1119 desp x
    2     -7.3125          1.1150
    3     -7.0000          1.1181
    4     -5.2381          1.1357
    5     -3.4765          1.1534
    6     -3.2170          1.1560
    7     -3.1184          0.8136
    8     -2.9102          0.0907
    9     -2.6500          1.1616
   10     -2.4559         -1.4864
   11     -2.3263         -1.9364
   12     -2.2830         -2.0864 desp y
   13     -2.0229         -2.0864
   14     -1.9000          1.1691
   15     -1.4000         -2.0864
   16      0.0000          1.1881
   17      0.0000         -2.0864
   18      1.4000         -2.0864
   19      1.9000          1.1691
   20      2.0229         -2.0864
   21      2.2830         -2.0864 desp y
   22      2.3263         -1.9364
   23      2.4559         -1.4864
   24      2.6500          1.1616
   25      2.9102          0.0907
   26      3.1184          0.8136
   27      3.2170          1.1560
   28      3.4765          1.1534
   29      5.2381          1.1357
   30      7.0000          1.1181
   31      7.3125          1.1150
   32      7.6250          1.1119
inci de barr
    1    1    2
    2    2    3
    3    3    4
    4    4    5
    5    5    6
    6    6    9
    7    9   14
    8   14   16
    9   16   19
   10   19   24
   11   24   27
   12   27   28
   13   28   29
   14   29   30
   15   30   31
   16   31   32
   17   12   11
   18   11   10
   19   10    8
   20    8    7
   21    7    6
   22   21   22
   23   22   23
   24   23   25
   25   25   26
   26   26   27
   27   12   13
   28   13   15
   29   15   17
   30   17   18
   31   18   20
   32   20   21
mate de barr
    1 a   32    1
prop de barr pris
    1 a    2 0.20 0.17 0.00067
    3        0.21 0.18 0.00077
    4        0.43 0.36 0.00640
    5 a    6 50.00 50.00 0.50000
    7        0.40  0.34 0.00550
    8 a    9  0.35  0.30 0.00350
   10        0.40  0.34 0.00550
   11 a   12 50.00 50.00 0.50000
   13        0.43  0.36 0.00640
   14        0.21  0.18 0.00077
   15 a   16  0.20  0.17 0.00067
   17       50.00 50.00 0.50000
   18        1.22  1.04 0.15130
   19        0.54  0.46 0.01305
   20        0.80  0.68 0.04270
   21 a   22 50.00 50.00 0.50000
   23        1.22  1.04 0.15130
   24        0.54  0.46 0.01305
   25        0.80  0.68 0.04270
   26 a   27 50.00 50.00 0.50000
   28        0.48  0.41 0.00920
   29 a   30  0.30  0.25 0.00230
   31        0.48  0.41 0.00920
   32       50.00 50.00 0.50000
cons de mate
    1 3870000. 1612500. 2.5
hipo 1 peso propio
gravedad
* excentricidad = 0.625m
*  1       0.  -1.
   2       0.  -1.
   3 a  4  0.  -1.
   7 a 10  0.  -1.
  13 a 14  0.  -1.
  15       0.  -1.
* excentricidad =-0.625m
*  16      0.  -1.
  18 a 20  0.  -1.
  23 a 25  0.  -1.
  28 a 31  0.  -1.
carga en barra
* excentricidad=0.3125m
*    1 global fuer y unif -0.50  0.1563 0.3125
*   15 global fuer y unif -0.50  0.00  0.1563
   5  global fuer y unif -1.18
   6  global fuer y unif -1.21
  11  global fuer y unif -1.21
  12  global fuer y unif -1.18
  21  global fuer y unif -2.00
  26  global fuer y unif -2.00
  17  global fuer y unif -0.60
  22  global fuer y unif -0.60
```

```
 27  global fuer y unif -0.75
 32  global fuer y unif -0.75
hipo  2 Carga Muerta minima
* excentricidad =0
carg en barr
* balasto x 0.70
4 a 13  global fuer y unif  -0.644
* traviesas + carriles
4       global fuer y unif  -0.23 -0.27 -0.001
5 a 7   global fuer y unif  -0.23
8       global fuer y unif  -0.23  0.00  0.95
9       global fuer y unif  -0.23 -0.95 -0.001
10 a 12 global fuer y unif  -0.23
13      global fuer y unif  -0.23  0.00  0.27
* paseos
2       global fuer y unif  -0.35
3       global fuer y unif  -0.35  0.0   0.74
14      global fuer y unif  -0.35 -0.74 -0.001
15      global fuer y unif  -0.35
* cableados
3       global fuer y unif  -0.75  0.34  0.74
14      global fuer y unif  -0.75  1.02  1.04
* impostas y barandillas
2       global fuer y unif  -3.4   0.05  0.15
15      global fuer y unif  -3.4   0.16  0.26
hipo  3 Carga Muerta maxima
* excentricidad =0
carg en barr
* balasto x 1.30
4 a 13  global fuer y unif  -1.196
* traviesas + carriles
4       global fuer y unif  -0.23 -0.27 -0.001
5 a 7   global fuer y unif  -0.23
8       global fuer y unif  -0.23  0.00  0.95
9       global fuer y unif  -0.23 -0.95 -0.001
10 a 12 global fuer y unif  -0.23
13      global fuer y unif  -0.23  0.00  0.27
* paseos
2       global fuer y unif  -0.35
3       global fuer y unif  -0.35  0.0   0.74
14      global fuer y unif  -0.35 -0.74 -0.001
15      global fuer y unif  -0.35
* cableados
3       global fuer y unif  -0.75  0.34  0.74
14      global fuer y unif  -0.75  1.02  1.04
* impostas y barandillas
2       global fuer y unif  -3.4   0.05  0.15
15      global fuer y unif  -3.4   0.16  0.26
hipo  4 Desbalastado-1
carg en barr
4 a 8   global fuer y unif   0.92
hipo  5 Desbalastado-2
carg en barr
9 a 13  global fuer y unif   0.92
hipo 11 sob-1.1 (ipf-75)
carg en barra
4       global fuer y unif -13.68 -0.35 -0.01
5 a 7   global fuer y unif -13.68
8       global fuer y unif -13.68  0.00  0.87
hipo 12 sob-1.2 (ipf-75)
carg en barra
4       global fuer y unif -13.68 -0.65 -0.001
5 a 7   global fuer y unif -13.68
8       global fuer y unif -13.68  0.00  0.57
hipo 13 sob-2.1 (ipf-75)
carg en barra
9       global fuer y unif -13.68 -1.03 -0.001
10 a 12 global fuer y unif -13.68
13      global fuer y unif -13.68  0.00  0.19
hipo 14 sob-2.2 (ipf-75)
carg en barra
9       global fuer y unif -13.68 -1.33 -0.001
10 a 11 global fuer y unif -13.68
12      global fuer y unif -13.68  0.00  0.15
hipo 15 sob-1.1 (ec-1)
carg en barra
4       global fuer y unif  -7.82 -0.35 -0.01
5 a 7   global fuer y unif  -7.82
8       global fuer y unif  -7.82  0.00  0.87
hipo 16 sob-1.2 (ec-1)
carg en barra
4       global fuer y unif  -7.82 -0.65 -0.001
5 a 7   global fuer y unif  -7.82
8       global fuer y unif  -7.82  0.00  0.57
hipo 17 sob-2.1 (ec-1)
carg en barra
9       global fuer y unif  -7.82 -1.03 -0.001
10 a 12 global fuer y unif  -7.82
13      global fuer y unif  -7.82  0.00  0.19
hipo 18 sob-2.2 (ec-1)
carg en barra
9       global fuer y unif  -7.82 -1.33 -0.001
10 a 11 global fuer y unif  -7.82
12      global fuer y unif  -7.82  0.00  0.15
hipo 19 f.cent (ipf-75) (izda)
carg en barra
4       global fuer x unif  -0.016 -0.35 -0.01
5 a 7   global fuer x unif  -0.016
8       global fuer x unif  -0.016  0.00  0.87
hipo 20 f.cent (ipf-75) (dcha)
carg en barra
9       global fuer x unif  -0.016 -1.03 -0.001
10 a 12 global fuer x unif  -0.016
13      global fuer x unif  -0.016  0.00  0.19
hipo 21 f.cent (ec-1) (izda)
carg en barra
4       global fuer x unif  -0.041 -0.35 -0.01
5 a 7   global fuer x unif  -0.041
8       global fuer x unif  -0.041  0.00  0.87
hipo 22 f.cent (ec-1) (dcha)
carg en barra
9       global fuer x unif  -0.041 -1.03 -0.001
10 a 12 global fuer x unif  -0.041
13      global fuer x unif  -0.041  0.00  0.19
hipo 23 f.lazo (ipf-75) (izda)
carg en barra
4       global fuer x unif  -0.056 -0.35 -0.01
5 a 7   global fuer x unif  -0.056
8       global fuer x unif  -0.056  0.00  0.87
hipo 24 f.lazo (ipf-75) (dcha)
carg en barra
9       global fuer x unif  -0.056 -1.03 -0.001
10 a 12 global fuer x unif  -0.056
13      global fuer x unif  -0.056  0.00  0.19
hipo 25 f.lazo (ec-1) (izda)
carg en barra
4       global fuer x unif  -0.052 -0.35 -0.01
5 a 7   global fuer x unif  -0.052
```

```
8      global fuer x unif  -0.052  0.00  0.87
hipo 26 f.lazo (ec-1) (dcha)
carg en barra
9      global fuer x unif  -0.052 -1.03 -0.001
10 a 12 global fuer x unif  -0.052
13     global fuer x unif  -0.052  0.00  0.19
hipo 27 descarr-1.1
carg en barra
4      global fuer y unif -11.11  0.51   0.96
5      global fuer y unif -11.11  0.18  -0.001
6      global fuer y unif -11.11  0.00   0.37
hipo 28 descarr-1.2
carg en barra
8      global fuer y unif -11.11  0.04    0.49
8      global fuer y unif -11.11 -0.42   -0.001
9      global fuer y unif -11.11  0.     0.03
hipo 29 descarr-1.3
carg en barra
8      global fuer y unif -11.11 -0.03  -0.001
9      global fuer y unif -11.11  0.00   0.42
9      global fuer y unif -11.11 -0.49  -0.04
hipo 30 descarr-1.4
carg en barra
11     global fuer y unif -11.11 -0.37  -0.001
12     global fuer y unif -11.11  0.000  0.08
13     global fuer y unif -11.11  0.80   1.25
hipo 31 descarr-2.1
carg en barra
4      global fuer y unif -17.78  0.51  0.96
hipo 32 descarr-2.2
carg en barra
8      global fuer y unif -17.78 -0.42 -0.001
9      global fuer y unif -17.78  0.00  0.03
hipo 37 descarr-2.3
carg en barra
13     global fuer y unif -17.78  0.80  1.25
hipo 38 descarr-2.4
carg en barra
8      global fuer y unif -17.78 -0.03 -0.001
9      global fuer y unif -17.78  0.00  0.42
hipo 33 sc paseo izqda (ipf-75)
carg en barra
2      global fuer y unif  -0.5
3      global fuer y unif  -0.5
hipo 34 sc paseo dcha  (ipf-75)
carg en barra
14     global fuer y unif  -0.5
15     global fuer y unif  -0.5
hipo 35 sc paseo izqda (ec-1)
carg en barra
2      global fuer y unif  -0.5
3      global fuer y unif  -0.5
hipo 36 sc paseo dcha  (ec-1)
carg en barra
14     global fuer y unif  -0.5
15     global fuer y unif  -0.5
calc y alma
2 2 2
```

```
estr Papiol - flexion transversal (excentricidad = 0.3125 m)
nume de nudo   32
nume de barr   32
nume de hipo 33
nume de apoy    3
tipo port plano
list nada
coor de nudo
    1     -7.6250          1.1119 desp x
    2     -7.3125          1.1150
    3     -7.0000          1.1181
    4     -5.2381          1.1357
    5     -3.4765          1.1534
    6     -3.2170          1.1560
    7     -3.1184          0.8136
    8     -2.9102          0.0907
    9     -2.6500          1.1616
   10     -2.4559         -1.4864
   11     -2.3263         -1.9364
   12     -2.2830         -2.0864 desp y
   13     -2.0229         -2.0864
   14     -1.9000          1.1691
   15     -1.4000         -2.0864
   16      0.0000          1.1881
   17      0.0000         -2.0864
   18      1.4000         -2.0864
   19      1.9000          1.1691
   20      2.0229         -2.0864
   21      2.2830         -2.0864 desp y
   22      2.3263         -1.9364
   23      2.4559         -1.4864
   24      2.6500          1.1616
   25      2.9102          0.0907
   26      3.1184          0.8136
   27      3.2170          1.1560
   28      3.4765          1.1534
   29      5.2381          1.1357
   30      7.0000          1.1181
   31      7.3125          1.1150
   32      7.6250          1.1119
inci de barr
    1    1    2
    2    2    3
    3    3    4
    4    4    5
    5    5    6
    6    6    9
    7    9   14
    8   14   16
    9   16   19
   10   19   24
   11   24   27
   12   27   28
   13   28   29
   14   29   30
   15   30   31
   16   31   32
   17   12   11
   18   11   10
   19   10    8
   20    8    7
   21    7    6
   22   21   22
   23   22   23
   24   23   25
   25   25   26
   26   26   27
   27   12   13
   28   13   15
   29   15   17
   30   17   18
   31   18   20
   32   20   21
mate de barr
    1 a   32    1
prop de barr pris
    1 a    2 0.20 0.17 0.00067
    3        0.21 0.18 0.00077
    4        0.43 0.36 0.00640
    5 a    6 50.00 50.00 0.50000
    7        0.40  0.34 0.00550
    8 a    9  0.35  0.30 0.00350
   10        0.40  0.34 0.00550
   11 a   12 50.00 50.00 0.50000
   13        0.43  0.36 0.00640
   14        0.21  0.18 0.00077
   15 a   16  0.20  0.17 0.00067
   17       50.00 50.00 0.50000
   18        1.22  1.04 0.15130
   19        0.54  0.46 0.01305
   20        0.80  0.68 0.04270
   21 a   22 50.00 50.00 0.50000
   23        1.22  1.04 0.15130
   24        0.54  0.46 0.01305
   25        0.80  0.68 0.04270
   26 a   27 50.00 50.00 0.50000
   28        0.48  0.41 0.00920
   29 a   30  0.30  0.25 0.00230
   31        0.48  0.41 0.00920
   32       50.00 50.00 0.50000
cons de mate
    1 3870000. 1612500. 2.5
hipo 201 peso propio (exc=-0.3125)
gravedad
* excentricidad = 0.625m
*  1       0.  -1.
   2       0.  -1.
   3 a  4  0.  -1.
   7 a 10  0.  -1.
  13 a 14  0.  -1.
* 15       0.  -1.
* excentricidad =-0.625m
* 16       0.  -1.
  18 a 20  0.  -1.
  23 a 25  0.  -1.
  28 a 31  0.  -1.
carga en barra
* excentricidad=0.3125m
    1 global fuer y unif -0.50  0.1563 0.3125
   15 global fuer y unif -0.50  0.00  0.1563
  5  global fuer y unif -1.18
  6  global fuer y unif -1.21
 11  global fuer y unif -1.21
 12  global fuer y unif -1.18
 21  global fuer y unif -2.00
 26  global fuer y unif -2.00
 17  global fuer y unif -0.60
 22  global fuer y unif -0.60
```

```
 27  global fuer y unif -0.75
 32  global fuer y unif -0.75
hipo  202 Carga Muerta minima
* excentricidad =0.3125
carg en barr
* balasto x 0.70
3       global fuer y unif  -0.644 -0.32 -0.001
4 a 12  global fuer y unif  -0.644
13      global fuer y unif  -0.644  0.00  1.46
* traviesas + carriles
4       global fuer y unif  -0.23 -0.59 -0.001
5 a 7   global fuer y unif  -0.23
8       global fuer y unif  -0.23  0.00  0.64
9       global fuer y unif  -0.23 -0.64 -0.001
10 a 11 global fuer y unif  -0.23
12      global fuer y unif  -0.23  0.00  0.22
* paseos
1       global fuer y unif  -0.35 -0.16 -0.001
2       global fuer y unif  -0.35
3       global fuer y unif  -0.35  0.0   0.58
14      global fuer y unif  -0.35 -0.89 -0.001
15      global fuer y unif  -0.35  0.00 -0.16
* cableados
3       global fuer y unif  -0.75  0.18  0.58
14      global fuer y unif  -0.75  0.87  1.27
* impostas y barandillas
1       global fuer y unif  -3.4   0.21  0.31
15      global fuer y unif  -3.4   0.00  0.10
hipo  203 Carga Muerta maxima
* excentricidad =0.3125
carg en barr
* balasto x 1.30
3       global fuer y unif  -1.196 -0.32 -0.001
4 a 12  global fuer y unif  -0.644
13      global fuer y unif  -0.644  0.00  1.46
* traviesas + carriles
4       global fuer y unif  -0.23 -0.59 -0.001
5 a 7   global fuer y unif  -0.23
8       global fuer y unif  -0.23  0.00  0.64
9       global fuer y unif  -0.23 -0.64 -0.001
10 a 11 global fuer y unif  -0.23
12      global fuer y unif  -0.23  0.00  0.22
* paseos
1       global fuer y unif  -0.35 -0.16 -0.001
2       global fuer y unif  -0.35
3       global fuer y unif  -0.35  0.0   0.58
14      global fuer y unif  -0.35 -0.89 -0.001
15      global fuer y unif  -0.35  0.00 -0.16
* cableados
3       global fuer y unif  -0.75  0.18  0.58
14      global fuer y unif  -0.75  0.87  1.27
* impostas y barandillas
1       global fuer y unif  -3.4   0.21  0.31
15      global fuer y unif  -3.4   0.00  0.10
hipo  204 Desbalastado-1
carg en barr
4       global fuer y unif   0.92 -0.32 -0.001
4 a 7   global fuer y unif   0.92
8       global fuer y unif   0.92  0.00 -0.32
hipo  205 Desbalastado-2
carg en barr
8       global fuer y unif   0.92 -0.32 -0.001
9 a 12  global fuer y unif   0.92
13      global fuer y unif   0.92  0.00  1.46
```

```
hipo 211 sob-1.1 (ipf-75)
carg en barra
4       global fuer y unif -13.68  1.10 -0.001
5 a 7   global fuer y unif -13.68
8       global fuer y unif -13.68  0.00  0.56
hipo 212 sob-1.2 (ipf-75)
carg en barra
4       global fuer y unif -13.68  0.80 -0.001
5 a 7   global fuer y unif -13.68
8       global fuer y unif -13.68  0.00  0.26
hipo 213 sob-2.1 (ipf-75)
carg en barra
9       global fuer y unif -13.68  0.56 -0.001
10 a 11 global fuer y unif -13.68
12      global fuer y unif -13.68  0.00  0.14
hipo 214 sob-2.2 (ipf-75)
carg en barra
9       global fuer y unif -13.68  0.26 -0.001
10      global fuer y unif -13.68
11      global fuer y unif -13.68  0.00  0.41
hipo 215 sob-1.1 (ec-1)
carg en barra
4       global fuer y unif  -7.82  1.10 -0.001
5 a 7   global fuer y unif  -7.82
8       global fuer y unif  -7.82  0.00  0.56
hipo 216 sob-1.2 (ec-1)
carg en barra
4       global fuer y unif  -7.82  0.80 -0.001
5 a 7   global fuer y unif  -7.82
8       global fuer y unif  -7.82  0.00  0.26
hipo 217 sob-2.1 (ec-1)
carg en barra
9       global fuer y unif  -7.82  0.56 -0.001
10 a 11 global fuer y unif  -7.82
12      global fuer y unif  -7.82  0.00  0.14
hipo 218 sob-2.2 (ec-1)
carg en barra
9       global fuer y unif  -7.82  0.26 -0.001
10      global fuer y unif  -7.82
11      global fuer y unif  -7.82  0.00  0.41
hipo 219 f.cent (ipf-75) (izda)
carg en barra
4       global fuer x unif -0.016  1.10 -0.001
5 a 7   global fuer x unif -0.016
8       global fuer x unif -0.016  0.00  0.56
hipo 220 f.cent (ipf-75) (dcha)
carg en barra
9       global fuer x unif -0.016  0.56 -0.001
10 a 11 global fuer x unif -0.016
12      global fuer x unif -0.016  0.00  0.14
hipo 221 f.cent (ec-1) (izda)
carg en barra
4       global fuer x unif -0.041  1.10 -0.001
5 a 7   global fuer x unif -0.041
8       global fuer x unif -0.041  0.00  0.56
hipo 222 f.cent (ec-1) (dcha)
carg en barra
9       global fuer x unif -0.041  0.56 -0.001
10 a 11 global fuer x unif -0.041
12      global fuer x unif -0.041  0.00  0.14
hipo 223 f.lazo (ipf-75) (izda)
carg en barra
4       global fuer x unif -0.056  1.10 -0.001
5 a 7   global fuer x unif -0.056
```

```
8       global fuer x unif -0.056  0.00  0.56
hipo 224 f.lazo (ipf-75) (dcha)
carg en barra
9       global fuer x unif -0.056  0.56 -0.001
10 a 11 global fuer x unif -0.056
12      global fuer x unif -0.056  0.00  0.14
hipo 225 f.lazo (ec-1) (izda)
carg en barra
4       global fuer x unif -0.052  1.10 -0.001
5 a 7   global fuer x unif -0.052
8       global fuer x unif -0.052  0.00  0.56
hipo 226 f.lazo (ec-1) (dcha)
carg en barra
9       global fuer x unif -0.052  0.56 -0.001
10 a 11 global fuer x unif -0.052
12      global fuer x unif -0.052  0.00  0.14
hipo 227 descarr-1.1
carg en barra
4       global fuer y unif -11.11  0.20   0.65
4       global fuer y unif -11.11 -0.13  -0.001
5       global fuer y unif -11.11
6       global fuer y unif -11.11  0.00   0.06
hipo 228 descarr-1.2
carg en barra
7       global fuer y unif -11.11 -0.27   -0.001
8       global fuer y unif -11.11  0.0     0.18
8       global fuer y unif -11.11  1.17    1.62
hipo 229 descarr-1.3
carg en barra
8       global fuer y unif -11.11 -0.34  -0.001
9       global fuer y unif -11.11  0.00   0.11
9       global fuer y unif -11.11  1.10   1.55
hipo 230 descarr-1.4
carg en barra
10      global fuer y unif -11.11 -0.12  -0.001
11      global fuer y unif -11.11  0.00   0.33
13      global fuer y unif -11.11  0.49   0.94
hipo 231 descarr-2.1
carg en barra
4       global fuer y unif -17.78  0.20  0.65
hipo 232 descarr-2.2
carg en barra
8       global fuer y unif -17.78  1.17  1.62
hipo 237 descarr-2.3
carg en barra
13      global fuer y unif -17.78  0.49  0.94
hipo 238 descarr-2.4
carg en barra
8       global fuer y unif -17.78 -0.34 -0.001
9       global fuer y unif -17.78  0.00  0.11
hipo 233 sc paseo izqda (ipf-75)
carg en barra
1       global fuer y unif  -0.5  -0.16 -0.001
2       global fuer y unif  -0.5
3       global fuer y unif  -0.5   0.00  1.44
hipo 234 sc paseo dcha  (ipf-75)
carg en barra
13      global fuer y unif  -0.5  -0.30 -0.001
14      global fuer y unif  -0.5
15      global fuer y unif  -0.5   0.0   0.16
hipo 235 sc paseo izqda (ec-1)
carg en barra
1       global fuer y unif  -0.5  -0.16 -0.001
2       global fuer y unif  -0.5
3       global fuer y unif  -0.5   0.00  1.44
hipo 236 sc paseo dcha  (ec-1)
carg en barra
13      global fuer y unif  -0.5  -0.30 -0.001
14      global fuer y unif  -0.5
15      global fuer y unif  -0.5   0.0   0.16
calc y alma
2 2 2
```

```
estr Papiol - flexion transversal (excentricidad = 0.625 m)
nume de nudo   32
nume de barr   32
nume de hipo 33
nume de apoy    3
tipo port plano
list nada
coor de nudo
    1     -7.6250          1.1119 desp x
    2     -7.3125          1.1150
    3     -7.0000          1.1181
    4     -5.2381          1.1357
    5     -3.4765          1.1534
    6     -3.2170          1.1560
    7     -3.1184          0.8136
    8     -2.9102          0.0907
    9     -2.6500          1.1616
   10     -2.4559         -1.4864
   11     -2.3263         -1.9364
   12     -2.2830         -2.0864 desp y
   13     -2.0229         -2.0864
   14     -1.9000          1.1691
   15     -1.4000         -2.0864
   16      0.0000          1.1881
   17      0.0000         -2.0864
   18      1.4000         -2.0864
   19      1.9000          1.1691
   20      2.0229         -2.0864
   21      2.2830         -2.0864 desp y
   22      2.3263         -1.9364
   23      2.4559         -1.4864
   24      2.6500          1.1616
   25      2.9102          0.0907
   26      3.1184          0.8136
   27      3.2170          1.1560
   28      3.4765          1.1534
   29      5.2381          1.1357
   30      7.0000          1.1181
   31      7.3125          1.1150
   32      7.6250          1.1119
inci de barr
    1    1    2
    2    2    3
    3    3    4
    4    4    5
    5    5    6
    6    6    9
    7    9   14
    8   14   16
    9   16   19
   10   19   24
   11   24   27
   12   27   28
   13   28   29
   14   29   30
   15   30   31
   16   31   32
   17   12   11
   18   11   10
   19   10    8
   20    8    7
   21    7    6
   22   21   22
   23   22   23
   24   23   25
   25   25   26
   26   26   27
   27   12   13
   28   13   15
   29   15   17
   30   17   18
   31   18   20
   32   20   21
mate de barr
    1 a   32    1
prop de barr pris
    1 a    2 0.20 0.17 0.00067
    3        0.21 0.18 0.00077
    4        0.43 0.36 0.00640
    5 a    6 50.00 50.00 0.50000
    7        0.40  0.34 0.00550
    8 a    9  0.35  0.30 0.00350
   10        0.40  0.34 0.00550
   11 a   12 50.00 50.00 0.50000
   13        0.43  0.36 0.00640
   14        0.21  0.18 0.00077
   15 a   16  0.20  0.17 0.00067
   17       50.00 50.00 0.50000
   18        1.22  1.04 0.15130
   19        0.54  0.46 0.01305
   20        0.80  0.68 0.04270
   21 a   22 50.00 50.00 0.50000
   23        1.22  1.04 0.15130
   24        0.54  0.46 0.01305
   25        0.80  0.68 0.04270
   26 a   27 50.00 50.00 0.50000
   28        0.48  0.41 0.00920
   29 a   30  0.30  0.25 0.00230
   31        0.48  0.41 0.00920
   32       50.00 50.00 0.50000
cons de mate
    1 3870000. 1612500. 2.5
hipo 401 peso propio
gravedad
* excentricidad = 0.625m
    1       0.  -1.
    2       0.  -1.
    3 a  4  0.  -1.
    7 a 10  0.  -1.
   13 a 14  0.  -1.
* 15        0.  -1.
* excentricidad =-0.625m
* 16        0.  -1.
   18 a 20  0.  -1.
   23 a 25  0.  -1.
   28 a 31  0.  -1.
carga en barra
* excentricidad=0.3125m
*    1 global fuer y unif -0.50  0.1563 0.3125
*   15 global fuer y unif -0.50  0.00   0.1563
   5  global fuer y unif -1.18
   6  global fuer y unif -1.21
  11  global fuer y unif -1.21
  12  global fuer y unif -1.18
  21  global fuer y unif -2.00
  26  global fuer y unif -2.00
  17  global fuer y unif -0.60
  22  global fuer y unif -0.60
```

```
 27  global fuer y unif -0.75
 32  global fuer y unif -0.75
hipo  402 Carga Muerta minima
* excentricidad =0.625
carg en barr
* balasto x 0.70
3       global fuer y unif  -0.644 -0.64 -0.001
4 a 12  global fuer y unif  -0.644
13      global fuer y unif  -0.644  0.00  1.15
* traviesas + carriles
4       global fuer y unif  -0.23 -0.90 -0.001
5 a 7   global fuer y unif  -0.23
8       global fuer y unif  -0.23  0.00  0.33
9       global fuer y unif  -0.23 -1.58 -0.001
10      global fuer y unif  -0.23
11      global fuer y unif  -0.23  0.00  0.47
* paseos
1 a 2   global fuer y unif  -0.35
3       global fuer y unif  -0.35  0.0   0.43
14      global fuer y unif  -0.35 -1.05 -0.001
* cableados
3       global fuer y unif  -0.75  0.00  0.43
14      global fuer y unif  -0.75  0.71  0.11
* impostas y barandillas
1       global fuer y unif  -3.4   0.05  0.15
14      global fuer y unif  -3.4  -0.15 -0.05
hipo  403 Carga Muerta maxima
* excentricidad =0.625
carg en barr
* balasto x 1.30
3       global fuer y unif  -1.196 -0.64 -0.001
4 a 12  global fuer y unif  -1.196
13      global fuer y unif  -1.196  0.00  1.15
* traviesas + carriles
4       global fuer y unif  -0.23 -0.90 -0.001
5 a 7   global fuer y unif  -0.23
8       global fuer y unif  -0.23  0.00  0.33
9       global fuer y unif  -0.23 -1.58 -0.001
10      global fuer y unif  -0.23
11      global fuer y unif  -0.23  0.00  0.47
* paseos
1 a 2   global fuer y unif  -0.35
3       global fuer y unif  -0.35  0.0   0.43
14      global fuer y unif  -0.35 -1.05 -0.001
* cableados
3       global fuer y unif  -0.75  0.00  0.43
14      global fuer y unif  -0.75  0.71  0.11
* impostas y barandillas
1       global fuer y unif  -3.4   0.05  0.15
14      global fuer y unif  -3.4  -0.15 -0.05
hipo  404 Desbalastado-1
carg en barr
3       global fuer y unif   0.92 -0.64 -0.001
4 a 7   global fuer y unif   0.92
8       global fuer y unif   0.92  0.00  0.525
hipo  405 Desbalastado-2
carg en barr
8       global fuer y unif   0.92  0.525 -0.001
9 a 12  global fuer y unif   0.92
13      global fuer y unif   0.92  0.00  1.15
hipo 411 sob-1.1 (ipf-75)
carg en barra
4      global fuer y unif -13.68 -0.98 -0.001
5 a 6  global fuer y unif -13.68
7      global fuer y unif -13.68  0.00  0.49
hipo 412 sob-1.2 (ipf-75)
carg en barra
4      global fuer y unif -13.68 -1.28 -0.001
5 a 7  global fuer y unif -13.68
8      global fuer y unif -13.68  0.00  0.04
hipo 413 sob-2.1 (ipf-75)
carg en barra
9      global fuer y unif -13.68  0.24 -0.001
10      global fuer y unif -13.68
11     global fuer y unif -13.68  0.00  0.39
hipo 414 sob-2.2 (ipf-75)
carg en barra
8      global fuer y unif -13.68 -0.06 -0.001
9 a 10 global fuer y unif -13.68
11     global fuer y unif -13.68  0.00  0.09
hipo 415 sob-1.1 (ec-1)
carg en barra
4      global fuer y unif  -7.82 -0.98 -0.001
5 a 6  global fuer y unif  -7.82
7      global fuer y unif  -7.82  0.00  0.49
hipo 416 sob-1.2 (ec-1)
carg en barra
4      global fuer y unif  -7.82 -1.28 -0.001
5 a 7  global fuer y unif  -7.82
8      global fuer y unif  -7.82  0.00  0.04
hipo 417 sob-2.1 (ec-1)
carg en barra
9      global fuer y unif  -7.82  0.24 -0.001
10      global fuer y unif  -7.82
11     global fuer y unif  -7.82  0.00  0.39
hipo 418 sob-2.2 (ec-1)
carg en barra
8      global fuer y unif  -7.82 -0.06 -0.001
9 a 10 global fuer y unif  -7.82
11     global fuer y unif  -7.82  0.00  0.09
hipo 419 f.cent (ipf-75) (izda)
carg en barra
4      global fuer x unif -0.016 -0.98 -0.001
5 a 6  global fuer x unif -0.016
7      global fuer x unif -0.016  0.00  0.49
hipo 420 f.cent (ipf-75) (dcha)
carg en barra
9      global fuer x unif -0.016  0.24 -0.001
10     global fuer x unif -0.016
11     global fuer x unif -0.016  0.00  0.39
hipo 421 f.cent (ec-1) (izda)
carg en barra
4      global fuer x unif -0.041 -0.98 -0.001
5 a 6  global fuer x unif -0.041
7      global fuer x unif -0.041  0.00  0.49
hipo 422 f.cent (ec-1) (dcha)
carg en barra
9      global fuer x unif -0.041  0.24 -0.001
10     global fuer x unif -0.041
11     global fuer x unif -0.041  0.00  0.39
hipo 423 f.lazo (ipf-75) (izda)
carg en barra
4      global fuer x unif -0.056 -0.98 -0.001
5 a 6  global fuer x unif -0.056
7      global fuer x unif -0.056  0.00  0.49
hipo 424 f.lazo (ipf-75) (dcha)
carg en barra
9      global fuer x unif -0.056  0.24 -0.001
```

```
10      global fuer x unif -0.056
11      global fuer x unif -0.056  0.00  0.39
hipo 425 f.lazo (ec-1) (izda)
carg en barra
4       global fuer x unif -0.052 -0.98 -0.001
5 a 6   global fuer x unif -0.052
7       global fuer x unif -0.052  0.00  0.49
hipo 426 f.lazo (ec-1) (dcha)
carg en barra
9       global fuer x unif -0.052  0.24 -0.001
10      global fuer x unif -0.052
11      global fuer x unif -0.052  0.00  0.39
hipo 427 descarr-1.1
carg en barra
3       global fuer y unif -11.11 -0.11  -0.001
4       global fuer y unif -11.11  0.00   0.34
4       global fuer y unif -11.11 -0.45  -0.001
hipo 428 descarr-1.2
carg en barra
7       global fuer y unif -11.11  0.17    0.62
8       global fuer y unif -11.11  0.85    1.30
hipo 429 descarr-1.3
carg en barra
8       global fuer y unif -11.11  1.25   1.70
9       global fuer y unif -11.11  0.85   1.30
hipo 430 descarr-1.4
carg en barra
10      global fuer y unif -11.11 -0.43  -0.001
11      global fuer y unif -11.11  0.00   0.02
13      global fuer y unif -11.11  0.18   0.63
hipo 431 descarr-2.1
carg en barra
3       global fuer y unif -17.78 -0.11 -0.001
4       global fuer y unif -17.78  0.00  0.34
hipo 432 descarr-2.2
carg en barra
8       global fuer y unif -17.78 -0.85  1.30
hipo 437 descarr-2.3
carg en barra
13      global fuer y unif -17.78  0.18  0.63
hipo 438 descarr-2.4
carg en barra
8       global fuer y unif -17.78  1.25  1.70
hipo 433 sc paseo izqda (ipf-75)
carg en barra
1 a 2   global fuer y unif  -0.5
3       global fuer y unif  -0.5   0.00 1.12
hipo 434 sc paseo dcha  (ipf-75)
carg en barra
13      global fuer y unif  -0.5  -0.61 -0.001
14      global fuer y unif  -0.5
hipo 435 sc paseo izqda (ec-1)
carg en barra
1 a 2   global fuer y unif  -0.5
3       global fuer y unif  -0.5   0.00 1.12
hipo 436 sc paseo dcha  (ec-1)
carg en barra
13      global fuer y unif  -0.5  -0.61 -0.001
14      global fuer y unif  -0.5
calc y alma
2 2 2
```

COMBINACIONES DE HIPÓTESIS

263 FUER Y MAX envolvente (ELU) (ec-1) (ex=0.3125)
264 FUER Y MIN envolvente (ELU) (ec-1) (ex=0.3125)
265 MOME Z MAX envolvente (ELU) (ec-1) (ex=0.3125)
266 MOME Z MIN envolvente (ELU) (ec-1) (ex=0.3125)
271 FUER X MAX envolvente (ELU) (paseo ipf-75) (ex=0.3125)
272 FUER X MIN envolvente (ELU) (paseo ipf-75) (ex=0.3125)
273 FUER Y MAX envolvente (ELU) (paseo ipf-75) (ex=0.3125)
274 FUER Y MIN envolvente (ELU) (paseo ipf-75) (ex=0.3125)
275 MOME Z MAX envolvente (ELU) (paseo ipf-75) (ex=0.3125)
276 MOME Z MIN envolvente (ELU) (paseo ipf-75) (ex=0.3125)
281 FUER X MAX envolvente (ELU) (paseo ec-1) (ex=0.3125)
282 FUER X MIN envolvente (ELU) (paseo ec-1) (ex=0.3125)
283 FUER Y MAX envolvente (ELU) (paseo ec-1) (ex=0.3125)
284 FUER Y MIN envolvente (ELU) (paseo ec-1) (ex=0.3125)
285 MOME Z MAX envolvente (ELU) (paseo ec-1) (ex=0.3125)
286 MOME Z MIN envolvente (ELU) (paseo ec-1) (ex=0.3125)
291 FUER X MAX envolvente (ELU) accidental (ec-1) (ex=0.3125)
292 FUER X MIN envolvente (ELU) accidental (ec-1) (ex=0.3125)
293 FUER Y MAX envolvente (ELU) accidental (ec-1) (ex=0.3125)
294 FUER Y MIN envolvente (ELU) accidental (ec-1) (ex=0.3125)
295 MOME Z MAX envolvente (ELU) accidental (ec-1) (ex=0.3125)
296 MOME Z MIN envolvente (ELU) accidental (ec-1) (ex=0.3125)
301 FUER X MAX envolvente (ELU) (total) (ex=0.3125)
302 FUER X MIN envolvente (ELU) (total) (ex=0.3125)
303 FUER Y MAX envolvente (ELU) (total) (ex=0.3125)
304 FUER Y MIN envolvente (ELU) (total) (ex=0.3125)
305 MOME Z MAX envolvente (ELU) (total) (ex=0.3125)
306 MOME Z MIN envolvente (ELU) (total) (ex=0.3125)
401 hipo 401 peso propio
402 hipo 402 Carga Muerta minima
403 hipo 403 Carga Muerta maxima
404 hipo 404 Desbalastado-1
405 hipo 405 Desbalastado-2
411 hipo 411 sob-1.1 (ipf-75)
412 hipo 412 sob-1.2 (ipf-75)
413 hipo 413 sob-2.1 (ipf-75)
414 hipo 414 sob-2.2 (ipf-75)
415 hipo 415 sob-1.1 (ec-1)
416 hipo 416 sob-1.2 (ec-1)
417 hipo 417 sob-2.1 (ec-1)
418 hipo 418 sob-2.2 (ec-1)
419 hipo 419 f.cent (ipf-75) (izda)
420 hipo 420 f.cent (ipf-75) (dcha)
421 hipo 421 f.cent (ec-1) (izda)
422 hipo 422 f.cent (ec-1) (dcha)
423 hipo 423 f.lazo (ipf-75) (izda)
424 hipo 424 f.lazo (ipf-75) (dcha)
425 hipo 425 f.lazo (ec-1) (izda)
426 hipo 426 f.lazo (ec-1) (dcha)
427 hipo 427 descarr-1.1
428 hipo 428 descarr-1.2
429 hipo 429 descarr-1.3
430 hipo 430 descarr-1.4
431 hipo 431 descarr-2.1
432 hipo 432 descarr-2.2
433 hipo 433 sc paseo izqda (ipf-75)
434 hipo 434 sc paseo dcha (ipf-75)
435 hipo 435 sc paseo izqda (ec-1)
436 hipo 436 sc paseo dcha (ec-1)
437 hipo 437 descarr-2.3
438 hipo 438 descarr-2.4
441 FUER X MAX carga permanente (ex=0.625)
442 FUER X MIN carga permanente (ex=0.625)
443 FUER Y MAX carga permanente (ex=0.625)
444 FUER Y MIN carga permanente (ex=0.625)
445 MOME Z MAX carga permanente (ex=0.625)
446 MOME Z MIN carga permanente (ex=0.625)
451 FUER X MAX envolvente (ELU) (ipf-75) (ex=0.625)
452 FUER X MIN envolvente (ELU) (ipf-75) (ex=0.625)
453 FUER Y MAX envolvente (ELU) (ipf-75) (ex=0.625)
454 FUER Y MIN envolvente (ELU) (ipf-75) (ex=0.625)
455 MOME Z MAX envolvente (ELU) (ipf-75) (ex=0.625)
456 MOME Z MIN envolvente (ELU) (ipf-75) (ex=0.625)
461 FUER X MAX envolvente (ELU) (ec-1) (ex=0.625)
462 FUER X MIN envolvente (ELU) (ec-1) (ex=0.625)
463 FUER Y MAX envolvente (ELU) (ec-1) (ex=0.625)
464 FUER Y MIN envolvente (ELU) (ec-1) (ex=0.625)
465 MOME Z MAX envolvente (ELU) (ec-1) (ex=0.625)
466 MOME Z MIN envolvente (ELU) (ec-1) (ex=0.625)
471 FUER X MAX envolvente (ELU) (paseo ipf-75) (ex=0.625)
472 FUER X MIN envolvente (ELU) (paseo ipf-75) (ex=0.625)
473 FUER Y MAX envolvente (ELU) (paseo ipf-75) (ex=0.625)
474 FUER Y MIN envolvente (ELU) (paseo ipf-75) (ex=0.625)
475 MOME Z MAX envolvente (ELU) (paseo ipf-75) (ex=0.625)
476 MOME Z MIN envolvente (ELU) (paseo ipf-75) (ex=0.625)
481 FUER X MAX envolvente (ELU) (paseo ec-1) (ex=0.625)
482 FUER X MIN envolvente (ELU) (paseo ec-1) (ex=0.625)
483 FUER Y MAX envolvente (ELU) (paseo ec-1) (ex=0.625)
484 FUER Y MIN envolvente (ELU) (paseo ec-1) (ex=0.625)
485 MOME Z MAX envolvente (ELU) (paseo ec-1) (ex=0.625)
486 MOME Z MIN envolvente (ELU) (paseo ec-1) (ex=0.625)
491 FUER X MAX envolvente (ELU) accidental (ec-1) (ex=0.625)
492 FUER X MIN envolvente (ELU) accidental (ec-1) (ex=0.625)
493 FUER Y MAX envolvente (ELU) accidental (ec-1) (ex=0.625)
494 FUER Y MIN envolvente (ELU) accidental (ec-1) (ex=0.625)
495 MOME Z MAX envolvente (ELU) accidental (ec-1) (ex=0.625)
496 MOME Z MIN envolvente (ELU) accidental (ec-1) (ex=0.625)
501 FUER X MAX envolvente (ELU) (total) (ex=0.625)
502 FUER X MIN envolvente (ELU) (total) (ex=0.625)
503 FUER Y MAX envolvente (ELU) (total) (ex=0.625)
504 FUER Y MIN envolvente (ELU) (total) (ex=0.625)
505 MOME Z MAX envolvente (ELU) (total) (ex=0.625)
506 MOME Z MIN envolvente (ELU) (total) (ex=0.625)
511 FUER X MAX envolvente (ELU) (total)
512 FUER X MIN envolvente (ELU) (total)
513 FUER Y MAX envolvente (ELU) (total)
514 FUER Y MIN envolvente (ELU) (total)
515 MOME Z MAX envolvente (ELU) (total)
516 MOME Z MIN envolvente (ELU) (total)

"mamin" envolvente excentricidad = 0 m

```
impr
hipo 41 a 46 carga permanente (ex=0)
fija 1
eleg 2 a  3
maxi tota

hipo 51 a 56 envolvente (ELU) (ipf-75) (ex=0)
fija 41 hasta 46 1.35
comp 19 a 20 1.5 23 a 24 1.50 33 a 34 0.75
inco serie 1 11 a 12 1.50
inco serie 2 13 a 14 1.50
maxi tota

hipo 61 a 66 envolvente (ELU) (ec-1) (ex=0)
fija 41 hasta 46 1.35
comp 21 a 22 1.5 25 a 26 1.50 35 a 36 0.75
inco serie 1 15 a 16 1.50
inco serie 2 17 a 18 1.50
maxi tota

hipo 71 a 76 envolvente (ELU) (paseo ipf-75) (ex=0)
fija 41 hasta 46 1.35
comp 33 a 34 1.5
maxi tota

hipo 81 a 86 envolvente (ELU) (paseo ec-1) (ex=0)
fija 41 hasta 46 1.35
comp 35 a 36 1.5
maxi tota

hipo 91 a 96 envolvente (ELU) accidental (ec-1) (ex=0)
fija 41 hasta 46
inco 27 a 32 37 38
maxi tota

hipo 101 a 106 envolvente (ELU)(total) (ex=0)
eleg 51 a 56 61 a 66 71 a 76 81 a 86 91 a 96
maxi tota
```

"mamin" envolvente excentricidad = 0.3125 m

```
impr
hipo 241 a 246 carga permanente (ex=0.3125)
fija 201
eleg 202 a  203
maxi tota

hipo 251 a 256 envolvente (ELU) (ipf-75) (ex=0.3125)
fija 241 hasta 246 1.35
comp 219 a 220 1.5 223 a 224 1.50 233 a 234 0.75
inco serie 1 211 a 212 1.50
inco serie 2 213 a 214 1.50
maxi tota

hipo 261 a 266 envolvente (ELU) (ec-1) (ex=0.3125)
fija 241 hasta 246 1.35
comp 221 a 222 1.5 225 a 226 1.50 235 a 236 0.75
inco serie 1 215 a 216 1.50
inco serie 2 217 a 218 1.50
maxi tota

hipo 271 a 276 envolvente (ELU) (paseo ipf-75) (ex=0.3125)
fija 241 hasta 246 1.35
comp 233 a 234 1.5
maxi tota

hipo 281 a 286 envolvente (ELU) (paseo ec-1) (ex=0.3125)
fija 241 hasta 246 1.35
comp 235 a 236 1.5
maxi tota

hipo 291 a 296 envolvente (ELU) accidental (ec-1) (ex=0.3125)
fija 241 hasta 246
inco 227 a 232 237 238
maxi tota

hipo 301 a 306 envolvente (ELU)(total) (ex=0.3125)
eleg 251 a 256 261 a 266 271 a 276 281 a 286 291 a 296
maxi tota
```

"mamin" envolvente excentricidad = 0.625 m

```
impr
hipo 441 a 446 carga permanente (ex=0.625)
fija 401
eleg 402 a  403
maxi tota

hipo 451 a 456 envolvente (ELU) (ipf-75) (ex=0.625)
fija 441 hasta 446 1.35
comp 419 a 420 1.5 423 a 424 1.50 433 a 434 0.75
inco serie 1 411 a 412 1.50
inco serie 2 413 a 414 1.50
maxi tota

hipo 461 a 466 envolvente (ELU) (ec-1) (ex=0.625)
fija 441 hasta 446 1.35
comp 421 a 422 1.5 425 a 426 1.50 435 a 436 0.75
inco serie 1 415 a 416 1.50
inco serie 2 417 a 418 1.50
maxi tota

hipo 471 a 476 envolvente (ELU) (paseo ipf-75) (ex=0.625)
fija 441 hasta 446 1.35
comp 433 a 434 1.5
maxi tota

hipo 481 a 486 envolvente (ELU) (paseo ec-1) (ex=0.625)
fija 441 hasta 446 1.35
comp 435 a 436 1.5
maxi tota

hipo 491 a 496 envolvente (ELU) accidental (ec-1) (ex=0.625)
fija 441 hasta 446
inco 427 a 432 437 438
maxi tota

hipo 501 a 506 envolvente (ELU)(total) (ex=0.625)
eleg 451 a 456 461 a 466 471 a 476 481 a 486 491 a 496
maxi tota
```

"mamin" envolvente total

```
impr
hipo 511 a 516 envolvente (ELU)(total)
eleg 101 a 106 301 a 306 501 a 506
maxi tota
```

proc Papiol - flexion transversal

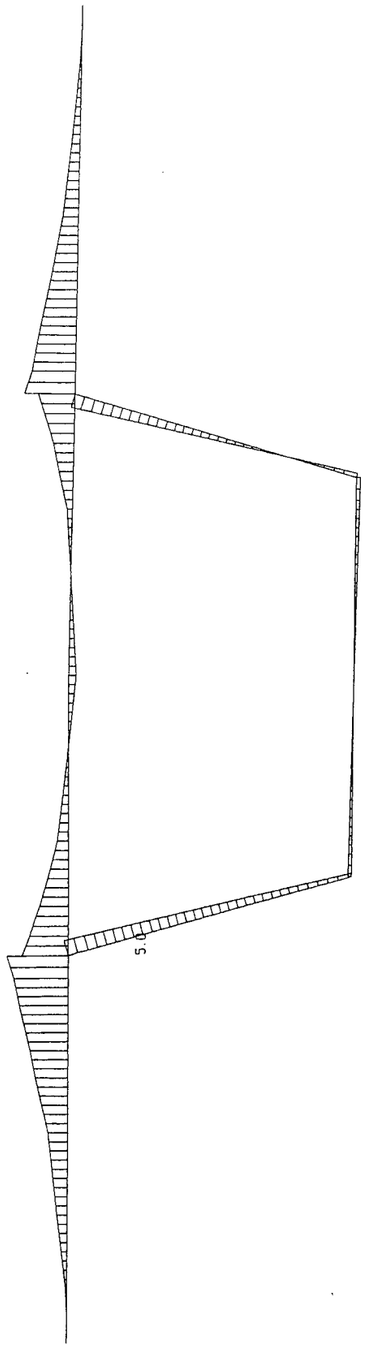
numero total de hipotesis previstas: 600

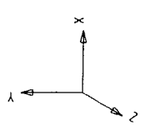
==========

1 hipo 1 peso propio
2 hipo 2 Carga Muerta minima
3 hipo 3 Carga Muerta maxima
4 hipo 4 Desbalastado-1
5 hipo 5 Desbalastado-2
11 hipo 11 sob-1.1 (ipf-75)
12 hipo 12 sob-1.2 (ipf-75)
13 hipo 13 sob-2.1 (ipf-75)
14 hipo 14 sob-2.2 (ipf-75)
15 hipo 15 sob-1.1 (ec-1)
16 hipo 16 sob-1.2 (ec-1)
17 hipo 17 sob-2.1 (ec-1)
18 hipo 18 sob-2.2 (ec-1)
19 hipo 19 f.cent (ipf-75) (izda)
20 hipo 20 f.cent (ipf-75) (dcha)
21 hipo 21 f.cent (ec-1) (izda)
22 hipo 22 f.cent (ec-1) (dcha)
23 hipo 23 f.lazo (ipf-75) (izda)
24 hipo 24 f.lazo (ipf-75) (dcha)
25 hipo 25 f.lazo (ec-1) (izda)
26 hipo 26 f.lazo (ec-1) (dcha)
27 hipo 27 descarr-1.1
28 hipo 28 descarr-1.2
29 hipo 29 descarr-1.3
30 hipo 30 descarr-1.4
31 hipo 31 descarr-2.1
32 hipo 32 descarr-2.2
33 hipo 33 sc paseo izqda (ipf-75)
34 hipo 34 sc paseo dcha (ipf-75)
35 hipo 35 sc paseo izqda (ec-1)
36 hipo 36 sc paseo dcha (ec-1)
37 hipo 37 descarr-2.3
38 hipo 38 descarr-2.4
41 FUER X MAX carga permanente (ex=0)
42 FUER X MIN carga permanente (ex=0)
43 FUER Y MAX carga permanente (ex=0)
44 FUER Y MIN carga permanente (ex=0)
45 MOME Z MAX carga permanente (ex=0)
46 MOME Z MIN carga permanente (ex=0)
51 FUER X MAX envolvente (ELU) (ipf-75) (ex=0)
52 FUER X MIN envolvente (ELU) (ipf-75) (ex=0)
53 FUER Y MAX envolvente (ELU) (ipf-75) (ex=0)
54 FUER Y MIN envolvente (ELU) (ipf-75) (ex=0)
55 MOME Z MAX envolvente (ELU) (ipf-75) (ex=0)
56 MOME Z MIN envolvente (ELU) (ipf-75) (ex=0)
61 FUER X MAX envolvente (ELU) (ec-1) (ex=0)
62 FUER X MIN envolvente (ELU) (ec-1) (ex=0)
63 FUER Y MAX envolvente (ELU) (ec-1) (ex=0)
64 FUER Y MIN envolvente (ELU) (ec-1) (ex=0)
65 MOME Z MAX envolvente (ELU) (ec-1) (ex=0)
66 MOME Z MIN envolvente (ELU) (ec-1) (ex=0)
71 FUER X MAX envolvente (ELU) (paseo ipf-75) (ex=0)
72 FUER X MIN envolvente (ELU) (paseo ipf-75) (ex=0)
73 FUER Y MAX envolvente (ELU) (paseo ipf-75) (ex=0)
74 FUER Y MIN envolvente (ELU) (paseo ipf-75) (ex=0)
75 MOME Z MAX envolvente (ELU) (paseo ipf-75) (ex=0)
76 MOME Z MIN envolvente (ELU) (paseo ipf-75) (ex=0)
81 FUER X MAX envolvente (ELU) (paseo ec-1) (ex=0)
82 FUER X MIN envolvente (ELU) (paseo ec-1) (ex=0)
83 FUER Y MAX envolvente (ELU) (paseo ec-1) (ex=0)
84 FUER Y MIN envolvente (ELU) (paseo ec-1) (ex=0)
85 MOME Z MAX envolvente (ELU) (paseo ec-1) (ex=0)
86 MOME Z MIN envolvente (ELU) (paseo ec-1) (ex=0)
91 FUER X MAX envolvente (ELU) accidental (ec-1) (ex=0)
92 FUER X MIN envolvente (ELU) accidental (ec-1) (ex=0)
93 FUER Y MAX envolvente (ELU) accidental (ec-1) (ex=0)
94 FUER Y MIN envolvente (ELU) accidental (ec-1) (ex=0)
95 MOME Z MAX envolvente (ELU) accidental (ec-1) (ex=0)
96 MOME Z MIN envolvente (ELU) accidental (ec-1) (ex=0)
101 FUER X MAX envolvente (ELU) (total) (ex=0)
102 FUER X MIN envolvente (ELU) (total) (ex=0)
103 FUER Y MAX envolvente (ELU) (total) (ex=0)
104 FUER Y MIN envolvente (ELU) (total) (ex=0)
105 MOME Z MAX envolvente (ELU) (total) (ex=0)
106 MOME Z MIN envolvente (ELU) (total) (ex=0)
201 hipo 201 peso propio (exc=-0.3125)
202 hipo 202 Carga Muerta minima
203 hipo 203 Carga Muerta maxima
204 hipo 204 Desbalastado-1
205 hipo 205 Desbalastado-2
211 hipo 211 sob-1.1 (ipf-75)
212 hipo 212 sob-1.2 (ipf-75)
213 hipo 213 sob-2.1 (ipf-75)
214 hipo 214 sob-2.2 (ipf-75)
215 hipo 215 sob-1.1 (ec-1)
216 hipo 216 sob-1.2 (ec-1)
217 hipo 217 sob-2.1 (ec-1)
218 hipo 218 sob-2.2 (ec-1)
219 hipo 219 f.cent (ipf-75) (izda)
220 hipo 220 f.cent (ipf-75) (dcha)
221 hipo 221 f.cent (ec-1) (izda)
222 hipo 222 f.cent (ec-1) (dcha)
223 hipo 223 f.lazo (ipf-75) (izda)
224 hipo 224 f.lazo (ipf-75) (dcha)
225 hipo 225 f.lazo (ec-1) (izda)
226 hipo 226 f.lazo (ec-1) (dcha)
227 hipo 227 descarr-1.1
228 hipo 228 descarr-1.2
229 hipo 229 descarr-1.3
230 hipo 230 descarr-1.4
231 hipo 231 descarr-2.1
232 hipo 232 descarr-2.2
233 hipo 233 sc paseo izqda (ipf-75)
234 hipo 234 sc paseo dcha (ipf-75)
235 hipo 235 sc paseo izqda (ec-1)
236 hipo 236 sc paseo dcha (ec-1)
237 hipo 237 descarr-2.3
238 hipo 238 descarr-2.4
241 FUER X MAX carga permanente (ex=0.3125)
242 FUER X MIN carga permanente (ex=0.3125)
243 FUER Y MAX carga permanente (ex=0.3125)
244 FUER Y MIN carga permanente (ex=0.3125)
245 MOME Z MAX carga permanente (ex=0.3125)
246 MOME Z MIN carga permanente (ex=0.3125)
251 FUER X MAX envolvente (ELU) (ipf-75) (ex=0.3125)
252 FUER X MIN envolvente (ELU) (ipf-75) (ex=0.3125)
253 FUER Y MAX envolvente (ELU) (ipf-75) (ex=0.3125)
254 FUER Y MIN envolvente (ELU) (ipf-75) (ex=0.3125)
255 MOME Z MAX envolvente (ELU) (ipf-75) (ex=0.3125)
256 MOME Z MIN envolvente (ELU) (ipf-75) (ex=0.3125)
261 FUER X MAX envolvente (ELU) (ec-1) (ex=0.3125)
262 FUER X MIN envolvente (ELU) (ec-1) (ex=0.3125)

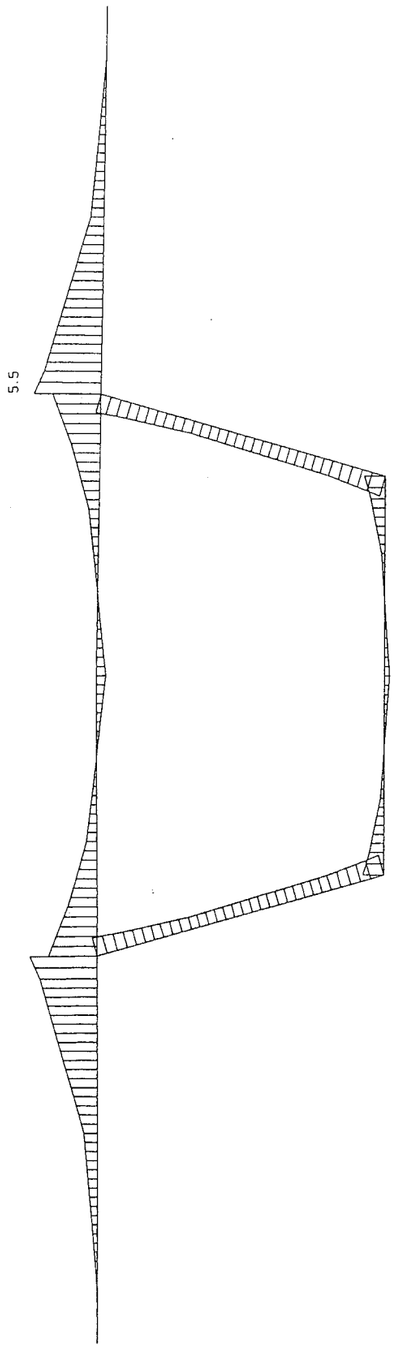
LEYES GRÁFICAS DE ESFUERZOS

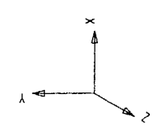
proc Papiol - flexion transversal
hipo 2 Carga Muerta minima nz 5.0





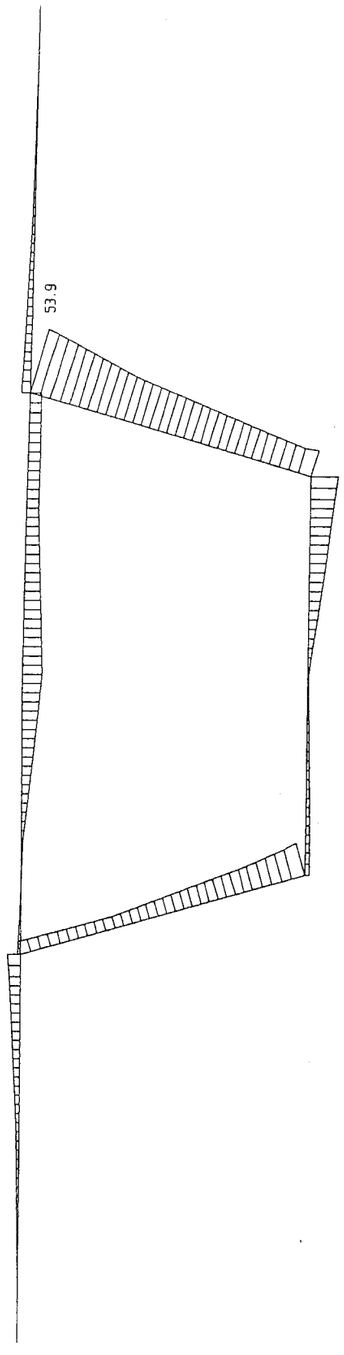
proc Papiol - flexion transversal
hipo 1 peso propio nz 5.0

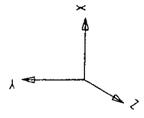




proc Papiol - flexion transversal
MOME Z MIN envolvente (ELU)(total)

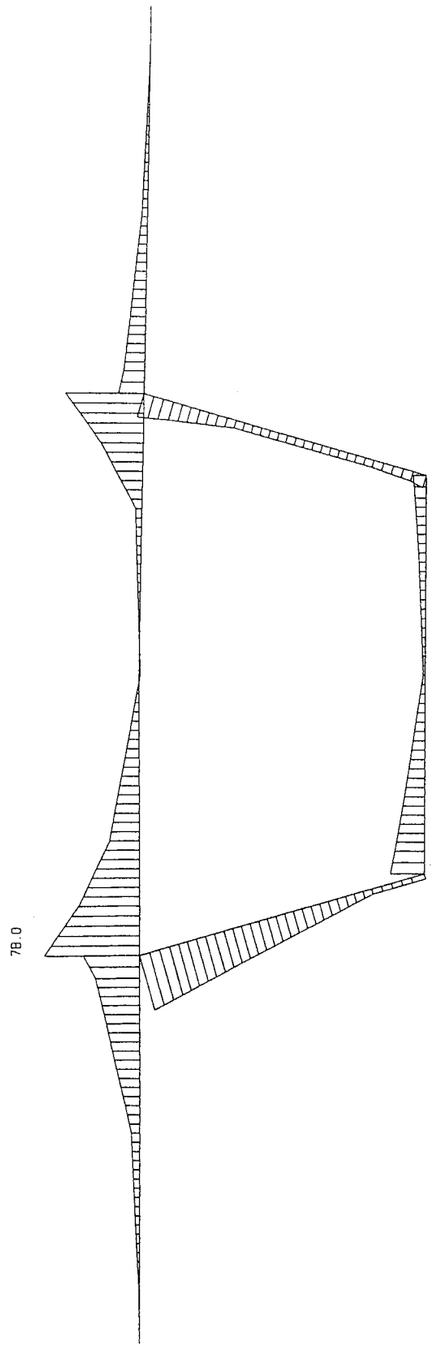
nz 50.0

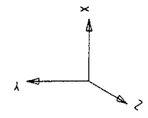




proc Papiol - flexion transversal
MOME Z MAX envolvente (ELU)(total)

nz 50.0





LISTADO DE RESULTADOS

proc Papiol - flexion transversal

HIPOTESIS 45

MOME Z MAX carga permanente (ex=0)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	FLECTOR Z
1	1	0.000	0.000	0.000
1	2	0.000	0.000	0.000
2	2	0.000	0.000	0.000
2	3	0.006	0.606	-0.114
3	3	-0.006	-0.606	0.114
3	4	0.021	2.090	-2.723
4	4	-0.021	-2.090	2.723
4	5	0.062	6.152	-9.936
5	5	-0.062	-6.152	9.936
5	6	0.069	6.828	-11.620
6	6	-4.691	7.635	9.935
6	9	4.706	-6.140	-6.029
7	9	-4.705	6.141	6.029
7	14	4.723	-4.321	-2.105
8	14	-4.723	4.321	2.105
8	16	4.295	-0.163	1.438
9	16	-4.298	0.078	-1.438
9	19	4.726	4.080	-1.648
10	19	-4.726	-4.080	1.648
10	24	4.707	5.900	-5.390
11	24	-4.708	-5.899	5.390
11	27	4.693	7.394	-9.159
12	27	-0.066	6.543	10.691
12	28	0.059	-5.867	-9.081
13	28	-0.059	5.867	9.081
13	29	0.018	-1.804	-2.370
14	29	-0.018	1.804	2.370
14	30	0.006	-0.606	-0.113
15	30	-0.006	0.606	0.113
15	31	0.000	0.000	0.000
16	31	0.000	0.000	0.000
16	32	0.000	0.000	0.000
17	12	17.426	-0.557	-1.960
17	11	-20.309	0.902	1.872
18	11	20.309	-0.889	-1.872
18	10	-18.937	0.494	1.548
19	10	18.937	-0.495	-1.548
19	8	-16.808	-0.118	1.239
20	8	16.808	0.119	-1.239
20	7	-15.362	-0.536	1.485
21	7	15.362	0.536	-1.485
21	6	-15.173	-0.591	1.686
22	21	19.828	0.763	1.368
22	22	-16.895	-0.405	-1.251
23	22	16.895	0.394	1.251
23	23	-15.523	0.001	-1.159
24	23	15.523	0.000	1.159
24	25	-13.394	0.613	-1.662
25	25	13.394	-0.614	1.662
25	26	-11.948	1.030	-2.281
26	26	11.948	-1.031	2.281
26	27	-11.758	1.085	-2.658
27	12	4.766	2.134	2.013
27	13	-4.766	-1.939	-1.483
28	13	4.766	1.939	1.483
28	15	-4.766	-1.191	-0.509
29	15	4.766	1.191	0.509
29	17	-4.766	-0.141	0.424
30	17	4.766	0.141	-0.424
30	18	-4.766	0.909	-0.113
31	18	4.766	-0.909	0.113
31	20	-4.766	1.656	-0.912
32	20	4.767	-1.656	0.912
32	21	-4.767	1.851	-1.368

proc Papiol - flexion transversal

HIPOTESIS 46

MOME Z MIN carga permanente (ex=0)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	FLECTOR Z
1	1	0.000	0.000	0.000
1	2	0.000	0.000	0.000
2	2	0.000	0.000	0.000
2	3	0.006	0.606	-0.114
3	3	-0.006	-0.606	0.114
3	4	0.021	2.090	-2.723
4	4	-0.021	-2.090	2.723
4	5	0.052	5.180	-9.080
5	5	-0.052	-5.179	9.080
5	6	0.057	5.712	-10.493
6	6	-4.239	5.855	7.682
6	9	4.251	-4.673	-4.697
7	9	-4.250	4.673	4.697
7	14	4.264	-3.268	-1.719
8	14	-4.264	3.268	1.719
8	16	4.765	-0.168	2.056
9	16	-4.767	0.073	-2.056
9	19	4.267	3.027	-1.261
10	19	-4.267	-3.027	1.261
10	24	4.253	4.432	-4.058
11	24	-4.253	-4.432	4.058
11	27	4.241	5.613	-6.906
12	27	-0.055	5.428	9.564
12	28	0.049	-4.895	-8.224
13	28	-0.049	4.894	8.224
13	29	0.018	-1.804	-2.370
14	29	-0.018	1.804	2.370
14	30	0.006	-0.606	-0.113
15	30	-0.006	0.606	0.113
15	31	0.000	0.000	0.000
16	31	0.000	0.000	0.000
16	32	0.000	0.000	0.000
17	12	20.334	-0.909	-2.013
17	11	-17.401	0.550	1.873
18	11	17.401	-0.540	-1.873
18	10	-16.029	0.145	1.713
19	10	16.029	-0.146	-1.713
19	8	-13.899	-0.468	1.977
20	8	13.899	0.468	-1.977
20	7	-12.454	-0.885	2.486
21	7	12.453	0.885	-2.486
21	6	-12.264	-0.940	2.811
22	21	16.920	0.412	1.315
22	22	-19.803	-0.756	-1.249
23	22	19.804	0.744	1.249
23	23	-18.431	-0.348	-0.994
24	23	18.431	0.349	0.994
24	25	-16.302	0.264	-0.924
25	25	16.302	-0.265	0.924
25	26	-14.856	0.681	-1.280
26	26	14.856	-0.682	1.280
26	27	-14.667	0.736	-1.532
27	12	4.297	2.134	1.960
27	13	-4.297	-1.939	-1.430
28	13	4.297	1.939	1.430
28	15	-4.297	-1.191	-0.456
29	15	4.297	1.191	0.456
29	17	-4.297	-0.141	0.477
30	17	4.297	0.141	-0.477
30	18	-4.297	0.909	-0.060
31	18	4.297	-0.909	0.060
31	20	-4.297	1.656	-0.859
32	20	4.297	-1.656	0.859
32	21	-4.297	1.851	-1.315

HIPOTESIS 105

MOME Z MAX envolvente (ELU)(total) (ex=0)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	FLECTOR Z
1	1	0.004	0.000	0.000
1	2	-0.004	0.000	0.000
2	2	0.005	0.000	0.000
2	3	0.011	1.052	-0.190
3	3	-0.011	-1.052	0.190
3	4	0.044	4.377	-5.289
4	4	-0.044	-4.377	5.289
4	5	0.225	22.399	-19.925
5	5	-0.224	-22.391	19.926
5	6	0.287	28.629	-26.548
6	6	-7.054	59.469	66.824
6	9	7.188	-45.817	-36.974
7	9	-7.183	45.818	36.974
7	14	9.725	-24.197	-10.786
8	14	-9.725	24.197	10.786
8	16	6.972	-1.870	1.192
9	16	-7.008	1.730	-1.192
9	19	7.401	5.785	-5.133
10	19	-7.401	-5.785	5.133
10	24	7.171	46.982	-32.547
11	24	-7.177	-46.981	32.547
11	27	7.042	60.633	-63.055
12	27	-0.146	14.546	20.968
12	28	0.139	-13.869	-17.281
13	28	-0.139	13.867	17.281
13	29	0.040	-3.991	-4.813
14	29	-0.040	3.991	4.813
14	30	0.011	-1.052	-0.189
15	30	-0.010	1.052	0.189
15	31	0.000	0.000	0.000
16	31	0.000	0.000	0.000
16	32	0.000	0.000	0.000
17	12	26.646	-0.312	4.098
17	11	-30.538	0.777	-4.149
18	11	30.542	-0.753	4.148
18	10	-28.690	0.220	-4.376
19	10	28.690	-0.221	4.376
19	8	-81.647	16.058	-28.932
20	8	81.648	-16.053	28.932
20	7	-79.696	15.491	-40.798
21	7	79.697	-15.488	40.798
21	6	-79.441	15.414	-46.303
22	21	80.217	15.118	10.515
22	22	-76.258	-14.635	-8.160
23	22	76.270	14.582	8.159
23	23	-25.568	-0.091	-5.958
24	23	25.568	0.092	5.958
24	25	-23.439	0.521	-6.309
25	25	23.439	-0.522	6.309
25	26	-18.145	2.768	-7.055
26	26	18.146	-2.768	7.055
26	27	-17.606	6.390	-8.997
27	12	11.130	8.367	15.765
27	13	-11.130	-8.104	-13.622
28	13	11.177	8.103	13.622
28	15	-11.177	-7.094	-8.889
29	15	11.177	7.094	8.889
29	17	-7.170	-1.949	-1.554
30	17	7.170	1.949	1.554
30	18	-7.729	4.602	-5.840
31	18	7.729	-4.602	5.840
31	20	-7.729	5.611	-9.021
32	20	7.728	-5.611	9.022
32	21	-7.728	5.875	-10.516

proc Papiol - flexion transversal

HIPOTESIS 106

MOME Z MIN envolvente (ELU)(total) (ex=0)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	FLECTOR Z
1	1	0.004	0.000	0.000
1	2	-0.004	0.000	0.000
2	2	0.005	0.000	0.000
2	3	0.006	0.606	-0.114
3	3	-0.006	-0.606	0.114
3	4	0.021	2.090	-2.723
4	4	-0.021	-2.090	2.723
4	5	0.052	5.180	-9.080
5	5	-0.052	-5.179	9.080
5	6	0.057	5.712	-10.493
6	6	-6.948	4.203	2.615
6	9	6.959	-3.021	-0.567
7	9	-6.959	3.022	0.567
7	14	6.973	-1.617	1.173
8	14	-6.973	1.617	-1.173
8	16	7.129	-4.199	12.287
9	16	-7.211	4.055	-12.287
9	19	6.977	1.374	1.633
10	19	-6.977	-1.374	-1.633
10	24	6.963	2.780	0.075
11	24	-6.964	-2.779	-0.076
11	27	6.952	3.961	-1.835
12	27	-0.054	5.425	9.563
12	28	0.049	-4.895	-8.224
13	28	-0.049	4.894	8.224
13	29	0.018	-1.804	-2.370
14	29	-0.018	1.804	2.370
14	30	0.006	-0.606	-0.113
15	30	-0.006	0.606	0.113
15	31	0.000	0.000	0.000
16	31	0.000	0.000	0.000
16	32	0.000	0.000	0.000
17	12	85.389	-13.039	-15.764
17	11	-81.430	12.555	13.735
18	11	81.427	-12.479	-13.736
18	10	-79.574	11.946	8.017
19	10	79.573	-11.950	-8.017
19	8	-23.947	-0.377	6.631
20	8	23.947	0.378	-6.631
20	7	-18.828	-2.571	7.333
21	7	18.829	2.571	-7.333
21	6	-18.573	-2.645	8.262
22	21	23.408	-4.195	-10.227
22	22	-27.300	3.731	9.570
23	22	27.294	-3.770	-9.570
23	23	-74.617	-11.118	11.713
24	23	74.616	11.122	-11.713
24	25	-73.533	-13.720	32.535
25	25	73.533	13.716	-32.535
25	26	-71.581	-13.154	42.642
26	26	71.576	13.151	-42.642
26	27	-71.320	-13.077	47.316
27	12	7.097	-0.495	-4.098
27	13	-7.097	0.758	3.935
28	13	7.095	-0.758	-3.935
28	15	-7.095	1.767	3.149
29	15	7.095	-1.767	-3.149
29	17	-7.681	-0.191	0.822
30	17	7.681	0.191	-0.822
30	18	-10.543	-4.259	7.077
31	18	10.543	4.259	-7.077
31	20	-10.543	-3.250	9.416
32	20	10.577	3.250	-9.416
32	21	-10.577	-2.987	10.227

proc Papiol - flexion transversal

HIPOTESIS 245

MOME Z MAX carga permanente (ex=0.3125)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	FLECTOR Z
1	1	0.000	0.000	0.000
1	2	0.005	0.474	-0.028
2	2	-0.005	-0.474	0.028
2	3	0.007	0.739	-0.218
3	3	-0.007	-0.739	0.218
3	4	0.025	2.549	-3.110
4	4	-0.026	-2.549	3.110
4	5	0.057	5.712	-10.308
5	5	-0.058	-5.713	10.308
5	6	0.063	6.246	-11.859
6	6	-4.537	5.970	8.199
6	9	4.548	-4.789	-5.149
7	9	-4.548	4.789	5.149
7	14	4.562	-3.384	-2.084
8	14	-4.562	3.384	2.084
8	16	4.592	-0.350	1.371
9	16	-4.598	0.258	-1.371
9	19	4.484	2.828	-1.019
10	19	-4.484	-2.828	1.019
10	24	4.470	4.233	-3.667
11	24	-4.471	-4.233	3.667
11	27	4.459	5.414	-6.402
12	27	-0.054	5.365	9.618
12	28	0.048	-4.841	-8.295
13	28	-0.049	4.841	8.294
13	29	0.020	-2.008	-2.403
14	29	-0.020	2.008	2.403
14	30	0.005	-0.471	-0.027
15	30	-0.005	0.471	0.027
15	31	0.000	0.000	0.000
16	31	0.000	0.000	0.000
16	32	0.000	0.000	0.000
17	12	17.884	-0.467	-2.299
17	11	-17.859	0.459	2.226
18	11	17.860	-0.448	-2.226
18	10	-16.487	0.052	2.109
19	10	16.487	-0.053	-2.109
19	8	-14.358	-0.560	2.525
20	8	14.358	0.561	-2.525
20	7	-12.912	-0.977	3.103
21	7	12.913	0.978	-3.103
21	6	-12.723	-1.032	3.461
22	21	16.727	0.131	0.928
22	22	-16.702	-0.124	-0.908
23	22	16.702	0.114	0.908
23	23	-15.329	0.281	-0.947
24	23	15.329	-0.280	0.947
24	25	-13.172	0.988	-1.966
25	25	13.171	-0.989	1.966
25	26	-11.726	1.405	-2.867
26	26	11.726	-1.406	2.867
26	27	-11.536	1.460	-3.378
27	12	4.596	2.359	2.443
27	13	-4.596	-2.164	-1.854
28	13	4.596	2.164	1.854
28	15	-4.596	-1.416	-0.739
29	15	4.596	1.416	0.739
29	17	-4.512	-0.300	0.502
30	17	4.512	0.300	-0.502
30	18	-4.512	0.750	0.187
31	18	4.512	-0.750	-0.187
31	20	-4.512	1.497	-0.513
32	20	4.511	-1.497	0.513
32	21	-4.511	1.692	-0.928

proc Papiol - flexion transversal

HIPOTESIS 246

MOME Z MIN carga permanente (ex=0.3125)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	FLECTOR Z
1	1	0.000	0.000	0.000
1	2	0.005	0.474	-0.028
2	2	-0.005	-0.474	0.028
2	3	0.007	0.739	-0.218
3	3	-0.007	-0.739	0.218
3	4	0.024	2.373	-3.082
4	4	-0.024	-2.373	3.082
4	5	0.056	5.536	-9.969
5	5	-0.056	-5.536	9.969
5	6	0.061	6.069	-11.475
6	6	-4.454	5.915	8.014
6	9	4.466	-4.734	-4.994
7	9	-4.465	4.734	4.994
7	14	4.479	-3.329	-1.971
8	14	-4.479	3.329	1.971
8	16	4.510	-0.296	1.380
9	16	-4.515	0.205	-1.380
9	19	4.568	2.775	-0.927
10	19	-4.568	-2.775	0.927
10	24	4.554	4.180	-3.536
11	24	-4.555	-4.180	3.536
11	27	4.543	5.361	-6.240
12	27	-0.053	5.365	9.618
12	28	0.049	-4.841	-8.294
13	28	-0.049	4.841	8.294
13	29	0.020	-2.008	-2.403
14	29	-0.020	2.008	2.403
14	30	0.005	-0.471	-0.027
15	30	-0.005	0.471	0.027
15	31	0.000	0.000	0.000
16	31	0.000	0.000	0.000
16	32	0.000	0.000	0.000
17	12	18.129	-0.448	-2.443
17	11	-18.104	0.441	2.373
18	11	18.104	-0.432	-2.373
18	10	-16.731	0.036	2.263
19	10	16.731	-0.037	-2.263
19	8	-14.602	-0.576	2.706
20	8	14.602	0.577	-2.706
20	7	-13.157	-0.993	3.296
21	7	13.157	0.994	-3.296
21	6	-12.967	-1.048	3.660
22	21	16.699	0.035	0.769
22	22	-16.674	-0.028	-0.764
23	22	16.673	0.019	0.764
23	23	-15.301	0.376	-0.848
24	23	15.301	-0.375	0.848
24	25	-13.200	0.893	-1.910
25	25	13.200	-0.894	1.910
25	26	-11.755	1.311	-2.739
26	26	11.754	-1.311	2.739
26	27	-11.565	1.366	-3.216
27	12	4.513	2.293	2.299
27	13	-4.513	-2.098	-1.728
28	13	4.512	2.098	1.728
28	15	-4.512	-1.350	-0.654
29	15	4.512	1.350	0.654
29	17	-4.596	-0.366	0.509
30	17	4.596	0.366	-0.509
30	18	-4.596	0.684	0.287
31	18	4.596	-0.684	-0.287
31	20	-4.596	1.431	-0.372
32	20	4.595	-1.431	0.372
32	21	-4.595	1.626	-0.769

proc Papiol - flexion transversal

HIPOTESIS 305

MOME Z MAX envolvente (ELU)(total) (ex=0.3125)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	FLECTOR Z
1	1	0.005	0.000	0.000
1	2	0.008	0.759	-0.048
2	2	-0.008	-0.759	0.048
2	3	0.013	1.352	-0.378
3	3	-0.014	-1.352	0.378
3	4	0.049	4.874	-6.030
4	4	-0.049	-4.874	6.030
4	5	0.283	28.140	-25.582
5	5	-0.285	-28.135	25.582
5	6	0.345	34.179	-33.668
6	6	-7.383	56.292	67.477
6	9	7.514	-43.063	-39.308
7	9	-7.509	43.061	39.309
7	14	10.142	-21.805	-16.119
8	14	-10.142	21.805	16.119
8	16	7.641	-2.328	1.064
9	16	-7.686	2.175	-1.064
9	19	6.788	4.261	-3.928
10	19	-6.788	-4.261	3.928
10	24	3.020	46.182	-31.631
11	24	-3.026	-46.182	31.631
11	27	2.927	56.189	-61.314
12	27	-0.090	8.909	17.702
12	28	0.082	-8.201	-15.483
13	28	-0.082	8.202	15.483
13	29	0.042	-4.152	-4.630
14	29	-0.041	4.152	4.630
14	30	0.008	-0.756	-0.046
15	30	-0.008	0.757	0.046
15	31	0.000	0.000	0.000
16	31	0.000	0.000	0.000
16	32	0.000	0.000	0.000
17	12	17.172	2.163	2.253
17	11	-17.147	-2.170	-1.917
18	11	17.146	2.169	1.917
18	10	-27.446	2.397	-2.484
19	10	27.445	-2.399	2.484
19	8	-83.918	16.506	-24.109
20	8	83.919	-16.502	24.109
20	7	-81.967	15.940	-36.312
21	7	81.972	-15.936	36.312
21	6	-81.716	15.863	-41.977
22	21	72.876	15.529	7.594
22	22	-72.842	-15.519	-5.170
23	22	72.851	15.474	5.171
23	23	-25.014	-0.097	-4.985
24	23	25.014	0.098	4.985
24	25	-19.914	2.664	-5.559
25	25	19.914	-2.665	5.559
25	26	-16.164	9.829	-12.507
26	26	16.164	-9.830	12.507
26	27	-15.908	9.904	-16.023
27	12	13.469	10.331	19.816
27	13	-13.469	-10.068	-17.163
28	13	13.444	10.067	17.163
28	15	-10.359	-8.055	-11.312
29	15	10.359	8.055	11.312
29	17	-7.368	-4.579	-1.389
30	17	7.368	4.579	1.389
30	18	-5.292	3.250	-4.113
31	18	5.292	-3.250	4.113
31	20	-5.292	4.259	-6.452
32	20	5.296	-4.260	6.452
32	21	-5.296	4.523	-7.594

proc Papiol - flexion transversal

HIPOTESIS 306

MOME Z MIN envolvente (ELU)(total) (ex=0.3125)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	FLECTOR Z
1	1	0.005	0.000	0.000
1	2	0.005	0.474	-0.028
2	2	-0.005	-0.474	0.028
2	3	0.007	0.739	-0.218
3	3	-0.007	-0.739	0.218
3	4	0.024	2.373	-3.082
4	4	-0.024	-2.373	3.082
4	5	0.056	5.536	-9.969
5	5	-0.056	-5.534	9.969
5	6	0.061	6.067	-11.475
6	6	-6.785	4.527	3.735
6	9	6.797	-3.346	-1.503
7	9	-6.797	3.347	1.503
7	14	6.811	-1.941	0.481
8	14	-6.811	1.941	-0.481
8	16	7.270	-9.805	12.918
9	16	-7.465	9.657	-12.918
9	19	13.437	0.798	5.050
10	19	-13.437	-0.798	-5.050
10	24	13.418	2.695	3.740
11	24	-13.418	-2.693	-3.740
11	27	13.402	4.288	1.762
12	27	-0.053	5.365	9.618
12	28	0.049	-4.841	-8.294
13	28	-0.049	4.841	8.294
13	29	0.020	-2.008	-2.403
14	29	-0.020	2.008	2.403
14	30	0.005	-0.471	-0.027
15	30	-0.005	0.471	0.027
15	31	0.000	0.000	0.000
16	31	0.000	0.000	0.000
16	32	0.000	0.000	0.000
17	12	85.201	-10.547	-19.812
17	11	-85.168	10.537	18.163
18	11	85.191	-10.544	-18.161
18	10	-83.338	10.011	13.348
19	10	83.337	-10.016	-13.348
19	8	-25.011	-0.771	8.589
20	8	25.011	0.773	-8.589
20	7	-23.565	-1.189	9.327
21	7	23.565	1.190	-9.327
21	6	-23.375	-1.244	9.761
22	21	21.652	-7.731	-15.069
22	22	-21.619	7.741	13.859
23	22	21.610	-7.767	-13.861
23	23	-65.600	-8.112	16.552
24	23	65.599	8.116	-16.552
24	25	-64.338	-10.866	32.239
25	25	64.339	10.863	-32.239
25	26	-61.711	-14.644	42.045
26	26	61.712	14.642	-42.045
26	27	-61.456	-14.568	47.249
27	12	6.832	0.359	-2.254
27	13	-6.832	-0.164	2.322
28	13	6.830	0.165	-2.322
28	15	-6.830	0.583	2.192
29	15	6.830	-0.583	-2.192
29	17	-8.072	-0.465	0.863
30	17	8.072	0.465	-0.863
30	18	-13.444	-6.223	10.186
31	18	13.444	6.223	-10.186
31	20	-13.444	-5.214	13.748
32	20	13.459	5.214	-13.748
32	21	-13.459	-4.950	15.070

proc Papiol - flexion transversal

HIPOTESIS 405

hipo 405 Desbalastado-2

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	FLECTOR Z
1	1	0.000	0.000	0.000
1	2	0.000	0.000	0.000
2	2	0.000	0.000	0.000
2	3	0.000	0.000	0.000
3	3	0.000	0.000	0.000
3	4	0.000	0.000	0.000
4	4	0.000	0.000	0.000
4	5	0.000	0.000	0.000
5	5	0.000	0.000	0.000
5	6	0.000	0.000	0.000
6	6	-0.023	-1.145	-1.798
6	9	0.023	1.145	1.149
7	9	-0.023	-1.145	-1.149
7	14	0.023	1.145	0.290
8	14	-0.023	-1.145	-0.290
8	16	0.010	-0.119	-1.016
9	16	-0.013	0.119	1.016
9	19	0.030	-1.867	0.871
10	19	-0.030	1.867	-0.871
10	24	0.037	-2.557	2.530
11	24	-0.037	2.557	-2.530
11	27	0.042	-3.078	4.127
12	27	0.013	-1.296	-0.914
12	28	-0.011	1.058	0.608
13	28	0.011	-1.058	-0.608
13	29	0.000	0.000	0.000
14	29	0.000	0.000	0.000
14	30	0.000	0.000	0.000
15	30	0.000	0.000	0.000
15	31	0.000	0.000	0.000
16	31	0.000	0.000	0.000
16	32	0.000	0.000	0.000
17	12	-1.097	0.331	-0.692
17	11	1.097	-0.331	0.743
18	11	-1.097	0.328	-0.743
18	10	1.097	-0.328	0.896
19	10	-1.097	0.328	-0.896
19	8	1.097	-0.328	1.435
20	8	-1.097	0.328	-1.435
20	7	1.097	-0.328	1.681
21	7	-1.098	0.328	-1.681
21	6	1.098	-0.328	1.798
22	21	-4.200	-1.224	-0.910
22	22	4.200	1.224	0.719
23	22	-4.201	-1.222	-0.719
23	23	4.201	1.222	0.147
24	23	-4.201	-1.222	-0.147
24	25	4.201	1.222	-1.859
25	25	-4.201	-1.222	1.859
25	26	4.201	1.222	-2.778
26	26	-4.201	-1.222	2.778
26	27	4.201	1.222	-3.213
27	12	0.011	0.351	0.691
27	13	-0.011	-0.351	-0.600
28	13	0.011	0.351	0.600
28	15	-0.011	-0.351	-0.382
29	15	0.011	0.351	0.382
29	17	-0.011	-0.351	0.109
30	17	0.011	0.351	-0.109
30	18	-0.011	-0.351	0.600
31	18	0.011	0.351	-0.600
31	20	-0.011	-0.351	0.819
32	20	0.014	0.351	-0.819
32	21	-0.014	-0.351	0.910

proc Papiol - flexion transversal

HIPOTESIS 505

MOME Z MAX envolvente (ELU)(total) (ex=0.625)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	FLECTOR Z
1	1	0.004	0.000	0.000
1	2	0.010	1.052	-0.190
2	2	-0.010	-1.052	0.190
2	3	0.016	1.645	-0.612
3	3	-0.016	-1.645	0.612
3	4	0.054	5.404	-6.938
4	4	-0.054	-5.404	6.938
4	5	0.368	36.671	-36.005
5	5	-0.367	-36.662	36.004
5	6	0.429	42.900	-46.334
6	6	-10.779	56.449	78.047
6	9	10.914	-42.797	-49.910
7	9	-10.909	42.797	49.908
7	14	11.088	-24.952	-24.501
8	14	-11.088	24.952	24.501
8	16	7.554	-3.143	1.112
9	16	-7.616	2.991	-1.112
9	19	1.689	32.704	-3.541
10	19	-1.689	-32.704	3.541
10	24	1.510	50.549	-34.762
11	24	-1.517	-50.550	34.762
11	27	1.479	54.384	-64.958
12	27	-0.086	8.619	14.643
12	28	0.078	-7.787	-12.515
13	28	-0.078	7.787	12.515
13	29	0.029	-2.917	-3.391
14	29	-0.029	2.917	3.391
14	30	0.000	0.000	0.000
15	30	0.000	0.000	0.000
15	31	0.000	0.000	0.000
16	31	0.000	0.000	0.000
16	32	0.000	0.000	0.000
17	12	18.095	1.109	0.092
17	11	-18.070	-1.116	0.082
18	11	18.078	1.134	-0.082
18	10	-30.946	5.915	-0.349
19	10	30.946	-5.917	0.349
19	8	-86.440	15.620	-14.436
20	8	86.440	-15.616	14.436
20	7	-97.731	16.810	-27.031
21	7	97.722	-16.806	27.031
21	6	-97.466	16.733	-33.005
22	21	67.403	16.458	3.856
22	22	-24.487	-0.720	-3.090
23	22	24.495	0.714	3.091
23	23	-23.122	-0.319	-2.849
24	23	23.122	0.320	2.849
24	25	-14.969	12.208	-5.771
25	25	14.968	-12.209	5.771
25	26	-13.017	12.771	-15.167
26	26	13.017	-12.771	15.167
26	27	-12.762	12.845	-19.730
27	12	11.292	12.947	27.353
27	13	-11.292	-12.684	-24.018
28	13	11.337	12.684	24.018
28	15	-11.337	-11.675	-16.431
29	15	11.336	11.675	16.431
29	17	-1.540	-1.255	-1.160
30	17	1.540	1.255	1.160
30	18	-2.881	1.483	-1.936
31	18	2.880	-1.483	1.936
31	20	-2.880	2.492	-3.174
32	20	2.890	-2.492	3.174
32	21	-2.890	2.756	-3.857

proc Papiol - flexion transversal

HIPOTESIS 506

MOME Z MIN envolvente (ELU)(total) (ex=0.625)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	FLECTOR Z
1	1	0.004	0.000	0.000
1	2	0.006	0.606	-0.114
2	2	-0.006	-0.606	0.114
2	3	0.009	0.871	-0.345
3	3	-0.009	-0.871	0.345
3	4	0.027	2.681	-3.558
4	4	-0.027	-2.681	3.558
4	5	0.059	5.916	-11.041
5	5	-0.060	-5.915	11.041
5	6	0.065	6.448	-12.646
6	6	-6.040	5.324	6.238
6	9	6.052	-4.142	-3.554
7	9	-6.052	4.143	3.554
7	14	6.066	-2.738	-0.973
8	14	-6.066	2.738	0.973
8	16	10.722	-17.206	16.162
9	16	-11.064	16.988	-16.162
9	19	15.416	-1.594	9.349
10	19	-15.416	1.594	-9.349
10	24	15.397	0.304	9.833
11	24	-15.397	-0.303	-9.833
11	27	15.381	1.868	9.213
12	27	-0.042	4.284	6.877
12	28	0.038	-3.816	-5.826
13	28	-0.038	3.816	5.826
13	29	0.012	-1.182	-1.649
14	29	-0.012	1.182	1.649
14	30	0.000	0.000	0.000
15	30	0.000	0.000	0.000
15	31	0.000	0.000	0.000
16	31	0.000	0.000	0.000
16	32	0.000	0.000	0.000
17	12	105.459	-18.584	-27.349
17	11	-95.021	10.632	24.740
18	11	95.037	-10.631	-24.742
18	10	-93.184	10.097	19.888
19	10	93.184	-10.103	-19.888
19	8	-25.882	-0.438	9.743
20	8	25.882	0.439	-9.743
20	7	-24.437	-0.856	10.231
21	7	24.438	0.856	-10.231
21	6	-24.248	-0.911	10.546
22	21	21.701	-10.461	-21.993
22	22	-63.811	-6.633	20.520
23	22	63.807	6.580	-20.519
23	23	-61.954	-6.046	23.475
24	23	61.954	6.049	-23.475
24	25	-61.150	-16.012	36.536
25	25	61.151	16.009	-36.536
25	26	-59.199	-15.447	48.367
26	26	59.200	15.445	-48.367
26	27	-58.944	-15.372	53.858
27	12	6.096	1.270	-0.092
27	13	-6.096	-1.075	0.397
28	13	6.093	1.075	-0.397
28	15	-6.093	-0.328	0.834
29	15	6.093	0.328	-0.834
29	17	-7.439	-1.201	0.803
30	17	7.439	1.201	-0.803
30	18	-16.086	-9.183	14.495
31	18	16.086	9.183	-14.495
31	20	-16.086	-8.174	19.901
32	20	16.062	8.175	-19.901
32	21	-16.062	-7.911	21.994

proc Papiol - flexion transversal

HIPOTESIS 515

MOME Z MAX envolvente (ELU) (total)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	FLECTOR Z
1	1	0.007	0.000	0.000
1	2	0.010	1.052	-0.190
2	2	-0.010	-1.052	0.190
2	3	0.016	1.645	-0.612
3	3	-0.016	-1.645	0.612
3	4	0.054	5.404	-6.938
4	4	-0.054	-5.404	6.938
4	5	0.368	36.671	-36.005
5	5	-0.367	-36.662	36.004
5	6	0.429	42.900	-46.334
6	6	-10.779	56.449	78.047
6	9	10.914	-42.797	-49.910
7	9	-10.909	42.797	49.908
7	14	11.088	-24.952	-24.501
8	14	-11.088	24.952	24.501
8	16	7.641	-2.328	1.064
9	16	-7.686	2.175	-1.064
9	19	7.401	5.785	-5.133
10	19	-7.401	-5.785	5.133
10	24	1.510	50.549	-34.762
11	24	-1.517	-50.550	34.762
11	27	1.479	54.384	-64.958
12	27	-0.146	14.546	20.968
12	28	0.139	-13.869	-17.281
13	28	-0.139	13.867	17.281
13	29	0.040	-3.991	-4.813
14	29	-0.040	3.991	4.813
14	30	0.011	-1.052	-0.189
15	30	-0.010	1.052	0.189
15	31	0.000	0.000	0.000
16	31	0.000	0.000	0.000
16	32	0.000	0.000	0.000
17	12	26.646	-0.312	4.098
17	11	-30.538	0.777	-4.149
18	11	30.542	-0.753	4.148
18	10	-28.690	0.220	-4.376
19	10	28.690	-0.221	4.376
19	8	-81.647	16.058	-28.932
20	8	81.648	-16.053	28.932
20	7	-79.696	15.491	-40.798
21	7	79.697	-15.488	40.798
21	6	-79.441	15.414	-46.303
22	21	80.217	15.118	10.515
22	22	-76.258	-14.635	-8.160
23	22	76.270	14.582	8.159
23	23	-25.568	-0.091	-5.958
24	23	25.568	0.092	5.958
24	25	-23.439	0.521	-6.309
25	25	23.439	-0.522	6.309
25	26	-13.017	12.771	-15.167
26	26	13.017	-12.771	15.167
26	27	-12.762	12.845	-19.730
27	12	11.292	12.947	27.353
27	13	-11.292	-12.684	-24.018
28	13	11.337	12.684	24.018
28	15	-11.337	-11.675	-16.431
29	15	11.336	11.675	16.431
29	17	-7.170	-1.949	-1.554
30	17	7.170	1.949	1.554
30	18	-7.729	4.602	-5.840
31	18	7.729	-4.602	5.840
31	20	-7.729	5.611	-9.021
32	20	7.728	-5.611	9.022
32	21	-7.728	5.875	-10.516

proc Papiol - flexion transversal

HIPOTESIS 516

MOME Z MIN envolvente (ELU) (total)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	FLECTOR Z
1	1	0.007	0.000	0.000
1	2	-0.007	0.000	0.000
2	2	0.008	0.000	0.000
2	3	0.006	0.606	-0.114
3	3	-0.006	-0.606	0.114
3	4	0.021	2.090	-2.723
4	4	-0.021	-2.090	2.723
4	5	0.052	5.180	-9.080
5	5	-0.052	-5.179	9.080
5	6	0.057	5.712	-10.493
6	6	-6.948	4.203	2.615
6	9	6.959	-3.021	-0.567
7	9	-6.959	3.022	0.567
7	14	6.973	-1.617	1.173
8	14	-6.973	1.617	-1.173
8	16	10.722	-17.206	16.162
9	16	-11.064	16.988	-16.162
9	19	15.416	-1.594	9.349
10	19	-15.416	1.594	-9.349
10	24	15.397	0.304	9.833
11	24	-15.397	-0.303	-9.833
11	27	15.381	1.868	9.213
12	27	-0.042	4.284	6.877
12	28	0.038	-3.816	-5.826
13	28	-0.038	3.816	5.826
13	29	0.012	-1.182	-1.649
14	29	-0.012	1.182	1.649
14	30	0.005	-0.471	-0.027
15	30	-0.005	0.471	0.027
15	31	0.000	0.000	0.000
16	31	0.000	0.000	0.000
16	32	0.000	0.000	0.000
17	12	105.459	-18.584	-27.349
17	11	-95.021	10.632	24.740
18	11	95.037	-10.631	-24.742
18	10	-93.184	10.097	19.888
19	10	93.184	-10.103	-19.888
19	8	-25.882	-0.438	9.743
20	8	25.882	0.439	-9.743
20	7	-24.437	-0.856	10.231
21	7	24.438	0.856	-10.231
21	6	-24.248	-0.911	10.546
22	21	21.701	-10.461	-21.993
22	22	-63.811	-6.633	20.520
23	22	63.807	6.580	-20.519
23	23	-61.954	-6.046	23.475
24	23	61.954	6.049	-23.475
24	25	-61.150	-16.012	36.536
25	25	61.151	16.009	-36.536
25	26	-59.199	-15.447	48.367
26	26	59.200	15.445	-48.367
26	27	-58.944	-15.372	53.858
27	12	7.097	-0.495	-4.098
27	13	-7.097	0.758	3.935
28	13	7.095	-0.758	-3.935
28	15	-7.095	1.767	3.149
29	15	7.095	-1.767	-3.149
29	17	-8.072	-0.465	0.863
30	17	8.072	0.465	-0.863
30	18	-16.086	-9.183	14.495
31	18	16.086	9.183	-14.495
31	20	-16.086	-8.174	19.901
32	20	16.062	8.175	-19.901
32	21	-16.062	-7.911	21.994

CÁLCULO DE LA ARMADURA

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5000. 51000. 1.00 1.50 1.15 1 1 3
barr
 1 0.025 1.00 0.20 0. 0. 1.00 0.20
 2 0.025 1.00 0.20 0. 0. 1.00 0.20
 3 0.025 1.00 0.20 0. 0. 1.00 0.23
 4 0.025 1.00 0.23 0. 0. 1.00 0.62
 7 0.025 1.00 0.49 0. 0. 1.00 0.32
 8 0.025 1.00 0.32 0. 0. 1.00 0.35
 9 0.025 1.00 0.35 0. 0. 1.00 0.32
10 0.025 1.00 0.32 0. 0. 1.00 0.49
13 0.025 1.00 0.62 0. 0. 1.00 0.23
14 0.025 1.00 0.23 0. 0. 1.00 0.20
15 0.025 1.00 0.20 0. 0. 1.00 0.20
16 0.025 1.00 0.20 0. 0. 1.00 0.20
18 0.025 1.00 1.22 0. 0. 1.00 0.54
19 0.025 1.00 0.54 0. 0. 1.00 0.54
20 0.025 1.00 0.54 0. 0. 1.00 1.05
23 0.025 1.00 1.22 0. 0. 1.00 0.54
24 0.025 1.00 0.54 0. 0. 1.00 0.54
25 0.025 1.00 0.54 0. 0. 1.00 1.05
28 0.025 1.00 0.66 0. 0. 1.00 0.30
29 0.025 1.00 0.30 0. 0. 1.00 0.30
30 0.025 1.00 0.30 0. 0. 1.00 0.30
31 0.025 1.00 0.30 0. 0. 1.00 0.66
hipo
511 a 516
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proc Papiol - flexion transversal

BARRA 1 NUDO 1

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	0.20	0.03	0.00	0.00	0.01	0.00	0.00	0.00	5.26	0.00	0.00	15.87	0.00	0.00	0.00	0.00
512	1.00	0.20	0.03	0.00	0.00	0.00	0.00	0.00	0.00	5.26	0.00	0.00	15.87	0.00	0.00	0.00	0.00
513	1.00	0.20	0.03	0.00	0.00	0.01	0.00	0.00	0.00	5.26	0.00	0.00	15.87	0.00	0.00	0.00	0.00
514	1.00	0.20	0.03	0.00	0.00	0.01	0.00	0.00	0.00	5.26	0.00	0.00	15.87	0.00	0.00	0.00	0.00
515	1.00	0.20	0.03	0.00	0.00	0.01	0.00	0.00	0.00	5.26	0.00	0.00	15.87	0.00	0.00	0.00	0.00
516	1.00	0.20	0.03	0.00	0.00	0.01	0.00	0.00	0.00	5.26	0.00	0.00	15.87	0.00	0.00	0.00	0.00

proc Papiol - flexion transversal

BARRA 1 NUDO 2

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	0.20	0.03	0.00	0.00	0.01	0.00	0.00	0.00	5.26	0.00	0.00	15.87	0.00	0.00	0.00	0.00
512	1.00	0.20	0.03	0.00	0.00	-0.01	-0.19	0.25	0.00	5.26	1.05	0.00	15.87	0.00	0.00	0.00	0.01
513	1.00	0.20	0.03	0.00	0.00	0.01	0.00	0.00	0.00	5.26	0.00	0.00	15.87	0.00	0.00	0.00	0.00
514	1.00	0.20	0.03	0.00	0.00	-0.01	-0.19	0.25	0.00	5.26	1.05	0.00	15.87	0.00	0.00	0.00	0.01
515	1.00	0.20	0.03	0.00	0.00	-0.01	-0.19	0.25	0.00	5.26	1.05	0.00	15.87	0.00	0.00	0.00	0.01
516	1.00	0.20	0.03	0.00	0.00	0.01	0.00	0.00	0.00	5.26	0.00	0.00	15.87	0.00	0.00	0.00	0.00

proc Papiol - flexion transversal

BARRA 2 NUDO 2

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	0.20	0.03	0.00	0.00	0.01	0.00	0.00	0.00	5.26	0.00	0.00	15.87	0.00	0.00	0.00	0.00
512	1.00	0.20	0.03	0.00	0.00	-0.01	-0.19	0.25	0.00	5.26	-1.05	0.00	15.87	0.00	0.00	0.00	0.01
513	1.00	0.20	0.03	0.00	0.00	0.01	0.00	0.00	0.00	5.26	0.00	0.00	15.87	0.00	0.00	0.00	0.00
514	1.00	0.20	0.03	0.00	0.00	-0.01	-0.19	0.25	0.00	5.26	-1.05	0.00	15.87	0.00	0.00	0.00	0.01
515	1.00	0.20	0.03	0.00	0.00	-0.01	-0.19	0.25	0.00	5.26	-1.05	0.00	15.87	0.00	0.00	0.00	0.01
516	1.00	0.20	0.03	0.00	0.00	0.01	0.00	0.00	0.00	5.26	0.00	0.00	15.87	0.00	0.00	0.00	0.00

proc Papiol - flexion transversal

BARRA 2 NUDO 3

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	0.20	0.03	0.00	0.00	0.00	-0.29	0.38	0.00	5.26	1.00	0.00	15.87	0.00	0.00	0.00	0.01
512	1.00	0.20	0.03	0.00	0.00	-0.02	-0.61	0.79	0.00	5.26	1.64	0.00	15.87	0.00	0.00	0.00	0.01
513	1.00	0.20	0.03	0.00	0.00	-0.01	-0.11	0.15	0.00	5.26	0.61	0.00	15.87	0.00	0.00	0.00	0.00
514	1.00	0.20	0.03	0.00	0.00	-0.02	-0.61	0.79	0.00	5.26	1.64	0.00	15.87	0.00	0.00	0.00	0.01
515	1.00	0.20	0.03	0.00	0.00	-0.02	-0.61	0.79	0.00	5.26	1.64	0.00	15.87	0.00	0.00	0.00	0.01
516	1.00	0.20	0.03	0.00	0.00	-0.01	-0.11	0.15	0.00	5.26	0.61	0.00	15.87	0.00	0.00	0.00	0.00

proc Papiol - flexion transversal

BARRA 3 NUDO 3

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	0.20	0.03	0.00	0.00	0.00	-0.29	0.38	0.00	5.26	-1.00	0.00	15.87	0.00	0.00	0.00	0.01
512	1.00	0.20	0.03	0.00	0.00	-0.02	-0.61	0.79	0.00	5.26	-1.64	0.00	15.87	0.00	0.00	0.00	0.01
513	1.00	0.20	0.03	0.00	0.00	-0.01	-0.11	0.15	0.00	5.26	-0.61	0.00	15.87	0.00	0.00	0.00	0.00
514	1.00	0.20	0.03	0.00	0.00	-0.02	-0.61	0.79	0.00	5.26	-1.64	0.00	15.87	0.00	0.00	0.00	0.01
515	1.00	0.20	0.03	0.00	0.00	-0.02	-0.61	0.79	0.00	5.26	-1.64	0.00	15.87	0.00	0.00	0.00	0.01
516	1.00	0.20	0.03	0.00	0.00	-0.01	-0.11	0.15	0.00	5.26	-0.61	0.00	15.87	0.00	0.00	0.00	0.00

proc Papiol - flexion transversal

BARRA 3 NUDO 4

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	0.23	0.03	0.00	0.00	-0.02	-3.68	4.10	0.00	6.16	2.82	0.00	15.87	0.00	0.00	0.00	0.01
512	1.00	0.23	0.03	0.00	0.00	-0.05	-6.94	7.84	0.00	6.16	5.40	0.00	15.87	0.00	0.00	0.00	0.03
513	1.00	0.23	0.03	0.00	0.00	-0.02	-2.72	3.03	0.00	6.16	2.09	0.00	15.87	0.00	0.00	0.00	0.01
514	1.00	0.23	0.03	0.00	0.00	-0.05	-6.94	7.84	0.00	6.16	5.40	0.00	15.87	0.00	0.00	0.00	0.03
515	1.00	0.23	0.03	0.00	0.00	-0.05	-6.94	7.84	0.00	6.16	5.40	0.00	15.87	0.00	0.00	0.00	0.03
516	1.00	0.23	0.03	0.00	0.00	-0.02	-2.72	3.03	0.00	6.16	2.09	0.00	15.87	0.00	0.00	0.00	0.01

proc Papiol - flexion transversal

BARRA 4 NUDO 4

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	0.23	0.03	0.00	0.00	-0.02	-3.68	4.10	0.00	6.16	-2.82	0.00	15.87	0.00	0.00	0.00	0.01
512	1.00	0.23	0.03	0.00	0.00	-0.05	-6.94	7.84	0.00	6.16	-5.40	0.00	15.87	0.00	0.00	0.00	0.03
513	1.00	0.23	0.03	0.00	0.00	-0.02	-2.72	3.03	0.00	6.16	-2.09	0.00	15.87	0.00	0.00	0.00	0.01
514	1.00	0.23	0.03	0.00	0.00	-0.05	-6.94	7.84	0.00	6.16	-5.40	0.00	15.87	0.00	0.00	0.00	0.03
515	1.00	0.23	0.03	0.00	0.00	-0.05	-6.94	7.84	0.00	6.16	-5.40	0.00	15.87	0.00	0.00	0.00	0.03
516	1.00	0.23	0.03	0.00	0.00	-0.02	-2.72	3.03	0.00	6.16	-2.09	0.00	15.87	0.00	0.00	0.00	0.01

proc Papiol - flexion transversal

BARRA 4 NUDO 5

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	0.62	0.03	0.00	0.00	-0.05	-9.08	3.46	0.00	17.89	5.18	0.00	15.87	0.00	0.00	0.00	0.01
512	1.00	0.62	0.03	0.00	0.00	-0.37	-36.00	13.90	0.00	17.89	36.67	0.00	15.87	0.00	0.00	0.00	0.06
513	1.00	0.62	0.03	0.00	0.00	-0.05	-9.08	3.46	0.00	17.89	5.18	0.00	15.87	0.00	0.00	0.00	0.01
514	1.00	0.62	0.03	0.00	0.00	-0.37	-36.00	13.90	0.00	17.89	36.67	0.00	15.87	0.00	0.00	0.00	0.06
515	1.00	0.62	0.03	0.00	0.00	-0.37	-36.00	13.90	0.00	17.89	36.67	0.00	15.87	0.00	0.00	0.00	0.06
516	1.00	0.62	0.03	0.00	0.00	-0.05	-9.08	3.46	0.00	17.89	5.18	0.00	15.87	0.00	0.00	0.00	0.01

proc Papiol - flexion transversal

BARRA 7 NUDO 9

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	0.49	0.03	0.00	0.00	-0.66	-27.61	13.73	0.01	13.98	19.26	0.00	15.87	0.00	0.00	0.00	0.04
512	1.00	0.49	0.03	0.00	0.00	-16.26	-30.19	16.82	0.20	13.98	30.34	0.00	15.87	0.00	0.00	0.00	0.07
513	1.00	0.49	0.03	0.00	0.00	-7.18	-36.97	19.23	0.09	13.98	45.82	1.92	15.87	0.00	0.00	0.00	0.10
514	1.00	0.49	0.03	0.00	0.00	-6.96	-0.57	1.08	0.49	14.73	3.02	0.00	15.87	0.00	0.00	0.00	0.01
515	1.00	0.49	0.03	0.00	0.00	-10.91	-49.91	26.31	0.14	13.98	42.80	0.20	15.87	0.00	0.00	0.00	0.09
516	1.00	0.49	0.03	0.00	0.00	-6.96	-0.57	1.08	0.49	14.73	3.02	0.00	15.87	0.00	0.00	0.00	0.01

proc Papiol - flexion transversal

BARRA 7 NUDO 14

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	0.32	0.03	0.00	0.00	-0.68	-13.88	10.95	0.01	8.87	-17.36	0.00	15.87	0.00	0.00	0.00	0.06
512	1.00	0.32	0.03	0.00	0.00	-16.44	-14.12	13.01	0.21	8.87	-12.49	0.00	15.87	0.00	0.00	0.00	0.04
513	1.00	0.32	0.03	0.00	0.00	-7.36	-9.30	8.11	0.09	8.87	-27.97	0.94	15.87	0.00	0.00	0.00	0.09
514	1.00	0.32	0.03	0.00	0.00	-6.97	1.17	0.09	1.76	8.87	-1.62	0.00	15.87	0.00	0.00	0.00	0.01
515	1.00	0.32	0.03	0.00	0.00	-11.09	-24.50	20.84	0.14	8.87	-24.95	0.00	15.87	0.00	0.00	0.00	0.08
516	1.00	0.32	0.03	0.00	0.00	-6.97	1.17	0.09	1.76	8.87	-1.62	0.00	15.87	0.00	0.00	0.00	0.01

proc Papiol - flexion transversal

BARRA 8 NUDO 14

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	0.32	0.03	0.00	0.00	-0.68	-13.88	10.95	0.01	8.87	17.36	0.00	15.87	0.00	0.00	0.00	0.06
512	1.00	0.32	0.03	0.00	0.00	-16.44	-14.12	13.01	0.21	8.87	12.49	0.00	15.87	0.00	0.00	0.00	0.04
513	1.00	0.32	0.03	0.00	0.00	-7.36	-9.30	8.11	0.09	8.87	27.97	0.94	15.87	0.00	0.00	0.00	0.09
514	1.00	0.32	0.03	0.00	0.00	-6.97	1.17	0.09	1.76	8.87	1.62	0.00	15.87	0.00	0.00	0.00	0.01
515	1.00	0.32	0.03	0.00	0.00	-11.09	-24.50	20.84	0.14	8.87	24.95	0.00	15.87	0.00	0.00	0.00	0.08
516	1.00	0.32	0.03	0.00	0.00	-6.97	1.17	0.09	1.76	8.87	1.62	0.00	15.87	0.00	0.00	0.00	0.01

proc Papiol - flexion transversal

BARRA 8 NUDO 16

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	0.35	0.03	0.00	0.00	-0.73	15.20	0.01	10.87	9.77	-12.15	0.00	15.87	0.00	0.00	0.00	0.04
512	1.00	0.35	0.03	0.00	0.00	-16.50	2.85	0.21	3.99	9.77	-6.26	0.00	15.87	0.00	0.00	0.00	0.02
513	1.00	0.35	0.03	0.00	0.00	-11.16	16.11	0.14	12.75	9.77	-17.51	0.00	15.87	0.00	0.00	0.00	0.05
514	1.00	0.35	0.03	0.00	0.00	-3.06	5.95	0.04	4.53	9.77	2.93	0.00	15.87	0.00	0.00	0.00	0.01
515	1.00	0.35	0.03	0.00	0.00	-7.64	1.06	0.06	1.66	10.52	-2.33	0.00	15.87	0.00	0.00	0.00	0.01
516	1.00	0.35	0.03	0.00	0.00	-10.72	16.16	0.13	12.74	9.77	-17.21	0.00	15.87	0.00	0.00	0.00	0.05

proc Papiol - flexion transversal

BARRA 9 NUDO 16

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	0.35	0.03	0.00	0.00	-0.97	15.20	0.01	10.90	9.77	12.14	0.00	15.87	0.00	0.00	0.00	0.04
512	1.00	0.35	0.03	0.00	0.00	-16.62	2.85	0.21	4.01	9.77	5.93	0.00	15.87	0.00	0.00	0.00	0.02
513	1.00	0.35	0.03	0.00	0.00	-11.51	16.11	0.14	12.79	9.77	17.28	0.00	15.87	0.00	0.00	0.00	0.05
514	1.00	0.35	0.03	0.00	0.00	-3.47	6.57	0.04	5.02	9.77	-3.00	0.00	15.87	0.00	0.00	0.00	0.01
515	1.00	0.35	0.03	0.00	0.00	-7.69	1.06	0.07	1.67	10.52	2.17	0.00	15.87	0.00	0.00	0.00	0.01
516	1.00	0.35	0.03	0.00	0.00	-11.06	16.16	0.14	12.78	9.77	16.99	0.00	15.87	0.00	0.00	0.00	0.05

proc Papiol - flexion transversal

BARRA 9 NUDO 19

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	0.32	0.03	0.00	0.00	-0.54	-2.87	2.27	0.01	8.87	31.24	3.86	15.87	0.00	0.00	0.00	0.11
512	1.00	0.32	0.03	0.00	0.00	-16.56	8.67	0.21	8.72	8.87	-0.12	0.00	15.87	0.00	0.00	0.00	0.00
513	1.00	0.32	0.03	0.00	0.00	-15.42	9.35	0.19	9.11	8.87	-1.59	0.00	15.87	0.00	0.00	0.00	0.01
514	1.00	0.32	0.03	0.00	0.00	-1.69	-3.54	2.93	0.02	8.87	32.70	5.18	15.87	0.00	0.00	0.00	0.11
515	1.00	0.32	0.03	0.00	0.00	-7.40	-5.13	4.86	0.09	8.87	5.79	0.00	15.87	0.00	0.00	0.00	0.02
516	1.00	0.32	0.03	0.00	0.00	-15.42	9.35	0.19	9.11	8.87	-1.59	0.00	15.87	0.00	0.00	0.00	0.01

proc Papiol - flexion transversal

BARRA 10 NUDO 19

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	0.32	0.03	0.00	0.00	-0.54	-2.87	2.27	0.01	8.87	-31.24	3.86	15.87	0.00	0.00	0.00	0.11
512	1.00	0.32	0.03	0.00	0.00	-16.56	8.67	0.21	8.72	8.87	0.12	0.00	15.87	0.00	0.00	0.00	0.00
513	1.00	0.32	0.03	0.00	0.00	-15.42	9.35	0.19	9.11	8.87	1.59	0.00	15.87	0.00	0.00	0.00	0.01
514	1.00	0.32	0.03	0.00	0.00	-1.69	-3.54	2.93	0.02	8.87	-32.70	5.18	15.87	0.00	0.00	0.00	0.11
515	1.00	0.32	0.03	0.00	0.00	-7.40	-5.13	4.86	0.09	8.87	-5.79	0.00	15.87	0.00	0.00	0.00	0.02
516	1.00	0.32	0.03	0.00	0.00	-15.42	9.35	0.19	9.11	8.87	1.59	0.00	15.87	0.00	0.00	0.00	0.01

proc Papiol - flexion transversal

BARRA 10 NUDO 24

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	0.49	0.03	0.00	0.00	-0.37	-32.78	16.31	0.00	13.98	48.52	3.46	15.87	0.00	0.00	0.00	0.10
512	1.00	0.49	0.03	0.00	0.00	-16.54	7.85	0.21	5.78	13.98	2.33	0.00	15.87	0.00	0.00	0.00	0.01
513	1.00	0.49	0.03	0.00	0.00	-15.40	9.83	0.19	6.62	13.98	0.30	0.00	15.87	0.00	0.00	0.00	0.00
514	1.00	0.49	0.03	0.00	0.00	-1.51	-34.76	17.46	0.02	13.98	50.55	4.61	15.87	0.00	0.00	0.00	0.11
515	1.00	0.49	0.03	0.00	0.00	-1.51	-34.76	17.46	0.02	13.98	50.55	4.61	15.87	0.00	0.00	0.00	0.11
516	1.00	0.49	0.03	0.00	0.00	-15.40	9.83	0.19	6.62	13.98	0.30	0.00	15.87	0.00	0.00	0.00	0.00

proc Papiol - flexion transversal

BARRA 13 NUDO 28

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	0.62	0.03	0.00	0.00	-0.04	-5.83	2.22	0.00	17.89	3.82	0.00	15.87	0.00	0.00	0.00	0.01
512	1.00	0.62	0.03	0.00	0.00	-0.14	-17.28	6.61	0.00	17.89	13.87	0.00	15.87	0.00	0.00	0.00	0.02
513	1.00	0.62	0.03	0.00	0.00	-0.14	-17.28	6.61	0.00	17.89	13.87	0.00	15.87	0.00	0.00	0.00	0.02
514	1.00	0.62	0.03	0.00	0.00	-0.04	-5.83	2.22	0.00	17.89	3.82	0.00	15.87	0.00	0.00	0.00	0.01
515	1.00	0.62	0.03	0.00	0.00	-0.14	-17.28	6.61	0.00	17.89	13.87	0.00	15.87	0.00	0.00	0.00	0.02
516	1.00	0.62	0.03	0.00	0.00	-0.04	-5.83	2.22	0.00	17.89	3.82	0.00	15.87	0.00	0.00	0.00	0.01

proc Papiol - flexion transversal

BARRA 13 NUDO 29

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	0.23	0.03	0.00	0.00	-0.01	-1.65	1.83	0.00	6.16	-1.18	0.00	15.87	0.00	0.00	0.00	0.01
512	1.00	0.23	0.03	0.00	0.00	-0.04	-4.63	5.18	0.00	6.16	-4.15	0.00	15.87	0.00	0.00	0.00	0.02
513	1.00	0.23	0.03	0.00	0.00	-0.04	-4.63	5.18	0.00	6.16	-4.15	0.00	15.87	0.00	0.00	0.00	0.02
514	1.00	0.23	0.03	0.00	0.00	-0.01	-1.65	1.83	0.00	6.16	-1.18	0.00	15.87	0.00	0.00	0.00	0.01
515	1.00	0.23	0.03	0.00	0.00	-0.04	-4.81	5.39	0.00	6.16	-3.99	0.00	15.87	0.00	0.00	0.00	0.02
516	1.00	0.23	0.03	0.00	0.00	-0.01	-1.65	1.83	0.00	6.16	-1.18	0.00	15.87	0.00	0.00	0.00	0.01

proc Papiol - flexion transversal

BARRA 14 NUDO 29

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	0.23	0.03	0.00	0.00	-0.01	-1.65	1.83	0.00	6.16	1.18	0.00	15.87	0.00	0.00	0.00	0.01
512	1.00	0.23	0.03	0.00	0.00	-0.04	-4.63	5.18	0.00	6.16	4.15	0.00	15.87	0.00	0.00	0.00	0.02
513	1.00	0.23	0.03	0.00	0.00	-0.04	-4.63	5.18	0.00	6.16	4.15	0.00	15.87	0.00	0.00	0.00	0.02
514	1.00	0.23	0.03	0.00	0.00	-0.01	-1.65	1.83	0.00	6.16	1.18	0.00	15.87	0.00	0.00	0.00	0.01
515	1.00	0.23	0.03	0.00	0.00	-0.04	-4.81	5.39	0.00	6.16	3.99	0.00	15.87	0.00	0.00	0.00	0.02
516	1.00	0.23	0.03	0.00	0.00	-0.01	-1.65	1.83	0.00	6.16	1.18	0.00	15.87	0.00	0.00	0.00	0.01

proc Papiol - flexion transversal

BARRA 14 NUDO 30

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	0.20	0.03	0.00	0.00	0.00	-0.03	0.04	0.00	5.26	-0.47	0.00	15.87	0.00	0.00	0.00	0.00
512	1.00	0.20	0.03	0.00	0.00	-0.01	-0.19	0.25	0.00	5.26	-1.05	0.00	15.87	0.00	0.00	0.00	0.01
513	1.00	0.20	0.03	0.00	0.00	-0.01	-0.19	0.25	0.00	5.26	-1.05	0.00	15.87	0.00	0.00	0.00	0.01
514	1.00	0.20	0.03	0.00	0.00	0.00	-0.03	0.04	0.00	5.26	-0.47	0.00	15.87	0.00	0.00	0.00	0.00
515	1.00	0.20	0.03	0.00	0.00	-0.01	-0.19	0.25	0.00	5.26	-1.05	0.00	15.87	0.00	0.00	0.00	0.01
516	1.00	0.20	0.03	0.00	0.00	0.00	-0.03	0.04	0.00	5.26	-0.47	0.00	15.87	0.00	0.00	0.00	0.00

proc Papiol - flexion transversal

BARRA 15 NUDO 30

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	0.20	0.03	0.00	0.00	0.00	-0.03	0.04	0.00	5.26	0.47	0.00	15.87	0.00	0.00	0.00	0.00
512	1.00	0.20	0.03	0.00	0.00	-0.01	-0.19	0.25	0.00	5.26	1.05	0.00	15.87	0.00	0.00	0.00	0.01
513	1.00	0.20	0.03	0.00	0.00	-0.01	-0.19	0.25	0.00	5.26	1.05	0.00	15.87	0.00	0.00	0.00	0.01
514	1.00	0.20	0.03	0.00	0.00	0.00	-0.03	0.04	0.00	5.26	0.47	0.00	15.87	0.00	0.00	0.00	0.00
515	1.00	0.20	0.03	0.00	0.00	-0.01	-0.19	0.25	0.00	5.26	1.05	0.00	15.87	0.00	0.00	0.00	0.01
516	1.00	0.20	0.03	0.00	0.00	0.00	-0.03	0.04	0.00	5.26	0.47	0.00	15.87	0.00	0.00	0.00	0.00

proc Papiol - flexion transversal

BARRA 15 NUDO 31

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	0.20	0.03	0.00	0.00	0.00	0.00	0.00	0.00	5.26	0.00	0.00	15.87	0.00	0.00	0.00	0.00
512	1.00	0.20	0.03	0.00	0.00	0.00	0.00	0.00	0.00	5.26	0.00	0.00	15.87	0.00	0.00	0.00	0.00
513	1.00	0.20	0.03	0.00	0.00	0.00	0.00	0.00	0.00	5.26	0.00	0.00	15.87	0.00	0.00	0.00	0.00
514	1.00	0.20	0.03	0.00	0.00	0.00	0.00	0.00	0.00	5.26	0.00	0.00	15.87	0.00	0.00	0.00	0.00
515	1.00	0.20	0.03	0.00	0.00	0.00	0.00	0.00	0.00	5.26	0.00	0.00	15.87	0.00	0.00	0.00	0.00
516	1.00	0.20	0.03	0.00	0.00	0.00	0.00	0.00	0.00	5.26	0.00	0.00	15.87	0.00	0.00	0.00	0.00

proc Papiol - flexion transversal

BARRA 16 NUDO 31

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	0.20	0.03	0.00	0.00	0.00	0.00	0.00	0.00	5.26	0.00	0.00	15.87	0.00	0.00	0.00	0.00
512	1.00	0.20	0.03	0.00	0.00	0.00	0.00	0.00	0.00	5.26	0.00	0.00	15.87	0.00	0.00	0.00	0.00
513	1.00	0.20	0.03	0.00	0.00	0.00	0.00	0.00	0.00	5.26	0.00	0.00	15.87	0.00	0.00	0.00	0.00
514	1.00	0.20	0.03	0.00	0.00	0.00	0.00	0.00	0.00	5.26	0.00	0.00	15.87	0.00	0.00	0.00	0.00
515	1.00	0.20	0.03	0.00	0.00	0.00	0.00	0.00	0.00	5.26	0.00	0.00	15.87	0.00	0.00	0.00	0.00
516	1.00	0.20	0.03	0.00	0.00	0.00	0.00	0.00	0.00	5.26	0.00	0.00	15.87	0.00	0.00	0.00	0.00

proc Papiol - flexion transversal

BARRA 16 NUDO 32

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	0.20	0.03	0.00	0.00	0.00	0.00	0.00	0.00	5.26	0.00	0.00	15.87	0.00	0.00	0.00	0.00
512	1.00	0.20	0.03	0.00	0.00	0.00	0.00	0.00	0.00	5.26	0.00	0.00	15.87	0.00	0.00	0.00	0.00
513	1.00	0.20	0.03	0.00	0.00	0.00	0.00	0.00	0.00	5.26	0.00	0.00	15.87	0.00	0.00	0.00	0.00
514	1.00	0.20	0.03	0.00	0.00	0.00	0.00	0.00	0.00	5.26	0.00	0.00	15.87	0.00	0.00	0.00	0.00
515	1.00	0.20	0.03	0.00	0.00	0.00	0.00	0.00	0.00	5.26	0.00	0.00	15.87	0.00	0.00	0.00	0.00
516	1.00	0.20	0.03	0.00	0.00	0.00	0.00	0.00	0.00	5.26	0.00	0.00	15.87	0.00	0.00	0.00	0.00

proc Papiol - flexion transversal

BARRA 18 NUDO 11

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	1.22	0.03	0.00	0.00	105.45	24.44	1.32	-7.37	35.93	-18.57	0.00	15.87	0.00	0.00	0.00	0.02
512	1.00	1.22	0.03	0.00	0.00	16.53	-2.88	-1.35	0.21	35.93	2.51	0.00	15.87	0.00	0.00	0.00	0.00
513	1.00	1.22	0.03	0.00	0.00	16.53	-2.88	-1.35	0.21	35.93	2.51	0.00	15.87	0.00	0.00	0.00	0.00
514	1.00	1.22	0.03	0.00	0.00	104.41	23.67	1.31	-7.40	35.93	-18.73	0.00	15.87	0.00	0.00	0.00	0.02
515	1.00	1.22	0.03	0.00	0.00	30.54	-4.15	-2.72	0.38	35.93	-0.75	0.00	15.87	0.00	0.00	0.00	0.00
516	1.00	1.22	0.03	0.00	0.00	95.04	24.74	1.19	-6.14	35.93	-10.63	0.00	15.87	0.00	0.00	0.00	0.01

proc Papiol - flexion transversal

BARRA 18 NUDO 10

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	0.54	0.03	0.00	0.00	103.59	15.87	1.29	-4.85	15.48	18.04	0.00	15.87	0.00	0.00	0.00	0.04
512	1.00	0.54	0.03	0.00	0.00	15.16	-1.61	-1.07	0.19	15.48	-2.91	0.00	15.87	0.00	0.00	0.00	0.01
513	1.00	0.54	0.03	0.00	0.00	15.16	-1.61	-1.07	0.19	15.48	-2.91	0.00	15.87	0.00	0.00	0.00	0.01
514	1.00	0.54	0.03	0.00	0.00	102.56	15.03	1.28	-5.12	15.48	18.20	0.00	15.87	0.00	0.00	0.00	0.04
515	1.00	0.54	0.03	0.00	0.00	28.69	-4.38	-1.43	0.36	15.48	0.22	0.00	15.87	0.00	0.00	0.00	0.00
516	1.00	0.54	0.03	0.00	0.00	93.18	19.89	1.16	-1.83	15.48	10.10	0.00	15.87	0.00	0.00	0.00	0.02

proc Papiol - flexion transversal

BARRA 19 NUDO 10

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	0.54	0.03	0.00	0.00	103.59	15.87	1.29	-4.85	15.48	-18.04	0.00	15.87	0.00	0.00	0.00	0.04
512	1.00	0.54	0.03	0.00	0.00	15.16	-1.61	-1.07	0.19	15.48	2.91	0.00	15.87	0.00	0.00	0.00	0.01
513	1.00	0.54	0.03	0.00	0.00	15.16	-1.61	-1.07	0.19	15.48	2.91	0.00	15.87	0.00	0.00	0.00	0.01
514	1.00	0.54	0.03	0.00	0.00	102.56	15.03	1.28	-5.12	15.48	-18.21	0.00	15.87	0.00	0.00	0.00	0.04
515	1.00	0.54	0.03	0.00	0.00	28.69	-4.38	-1.43	0.36	15.48	-0.22	0.00	15.87	0.00	0.00	0.00	0.00
516	1.00	0.54	0.03	0.00	0.00	93.18	19.89	1.16	-1.83	15.48	-10.10	0.00	15.87	0.00	0.00	0.00	0.02

proc Papiol - flexion transversal

BARRA 19 NUDO 8

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	0.54	0.03	0.00	0.00	100.72	-13.06	-5.81	1.26	15.48	17.22	0.00	15.87	0.00	0.00	0.00	0.03
512	1.00	0.54	0.03	0.00	0.00	13.03	3.66	0.16	0.08	15.48	-3.52	0.00	15.87	0.00	0.00	0.00	0.01
513	1.00	0.54	0.03	0.00	0.00	13.03	3.66	0.16	0.08	15.48	-3.52	0.00	15.87	0.00	0.00	0.00	0.01
514	1.00	0.54	0.03	0.00	0.00	99.68	-14.17	-5.19	1.25	15.48	17.38	0.00	15.87	0.00	0.00	0.00	0.03
515	1.00	0.54	0.03	0.00	0.00	81.65	-28.93	3.64	1.02	15.48	16.06	0.00	15.87	0.00	0.00	0.00	0.03
516	1.00	0.54	0.03	0.00	0.00	25.88	9.74	0.32	1.28	15.48	-0.44	0.00	15.87	0.00	0.00	0.00	0.00

proc Papiol - flexion transversal

BARRA 20 NUDO 8

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	0.54	0.03	0.00	0.00	100.72	-13.06	-5.81	1.26	15.48	-17.21	0.00	15.87	0.00	0.00	0.00	0.03
512	1.00	0.54	0.03	0.00	0.00	13.03	3.66	0.16	0.08	15.48	3.52	0.00	15.87	0.00	0.00	0.00	0.01
513	1.00	0.54	0.03	0.00	0.00	13.03	3.66	0.16	0.08	15.48	3.52	0.00	15.87	0.00	0.00	0.00	0.01
514	1.00	0.54	0.03	0.00	0.00	99.68	-14.17	-5.19	1.25	15.48	-17.37	0.00	15.87	0.00	0.00	0.00	0.03
515	1.00	0.54	0.03	0.00	0.00	81.65	-28.93	3.64	1.02	15.48	-16.05	0.00	15.87	0.00	0.00	0.00	0.03
516	1.00	0.54	0.03	0.00	0.00	25.88	9.74	0.32	1.28	15.48	0.44	0.00	15.87	0.00	0.00	0.00	0.00

proc Papiol - flexion transversal

BARRA 20 NUDO 7

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	1.05	0.03	0.00	0.00	98.77	-25.80	-5.55	1.23	30.82	16.65	0.00	15.87	0.00	0.00	0.00	0.02
512	1.00	1.05	0.03	0.00	0.00	11.59	6.47	0.14	0.09	30.82	-3.94	0.00	15.87	0.00	0.00	0.00	0.00
513	1.00	1.05	0.03	0.00	0.00	11.59	6.47	0.14	0.09	30.82	-3.94	0.00	15.87	0.00	0.00	0.00	0.00
514	1.00	1.05	0.03	0.00	0.00	97.73	-27.03	-5.15	1.22	30.82	16.81	0.00	15.87	0.00	0.00	0.00	0.02
515	1.00	1.05	0.03	0.00	0.00	79.70	-40.80	-0.02	1.00	30.82	15.49	0.00	15.87	0.00	0.00	0.00	0.02
516	1.00	1.05	0.03	0.00	0.00	24.44	10.23	0.31	-0.55	30.82	-0.86	0.00	15.87	0.00	0.00	0.00	0.00

proc Papiol - flexion transversal

BARRA 23 NUDO 22

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	1.22	0.03	0.00	0.00	82.55	-0.88	-9.28	1.03	35.93	13.71	0.00	15.87	0.00	0.00	0.00	0.01
512	1.00	1.22	0.03	0.00	0.00	14.00	6.46	0.17	-0.39	35.93	-3.86	0.00	15.87	0.00	0.00	0.00	0.00
513	1.00	1.22	0.03	0.00	0.00	65.88	1.57	0.82	-7.25	35.93	17.37	0.00	15.87	0.00	0.00	0.00	0.01
514	1.00	1.22	0.03	0.00	0.00	19.70	18.79	0.25	1.30	35.93	-10.85	0.00	15.87	0.00	0.00	0.00	0.01
515	1.00	1.22	0.03	0.00	0.00	76.27	-8.16	-7.17	0.95	35.93	14.58	0.00	15.87	0.00	0.00	0.00	0.01
516	1.00	1.22	0.03	0.00	0.00	63.81	20.52	0.80	-3.40	35.93	6.58	0.00	15.87	0.00	0.00	0.00	0.01

proc Papiol - flexion transversal

BARRA 23 NUDO 23

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	0.54	0.03	0.00	0.00	80.69	5.41	1.01	-6.99	15.48	-13.17	0.00	15.87	0.00	0.00	0.00	0.03
512	1.00	0.54	0.03	0.00	0.00	12.63	4.56	0.16	0.52	15.48	4.26	0.00	15.87	0.00	0.00	0.00	0.01
513	1.00	0.54	0.03	0.00	0.00	64.03	9.58	0.80	-3.20	15.48	-16.84	0.00	15.87	0.00	0.00	0.00	0.03
514	1.00	0.54	0.03	0.00	0.00	17.84	13.59	0.22	3.93	15.48	11.38	0.00	15.87	0.00	0.00	0.00	0.02
515	1.00	0.54	0.03	0.00	0.00	25.57	-5.96	-0.37	0.32	15.48	-0.09	0.00	15.87	0.00	0.00	0.00	0.00
516	1.00	0.54	0.03	0.00	0.00	61.95	23.48	0.77	3.34	15.48	-6.05	0.00	15.87	0.00	0.00	0.00	0.01

proc Papiol - flexion transversal

BARRA 24 NUDO 23

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	0.54	0.03	0.00	0.00	80.69	5.41	1.01	-6.99	15.48	13.18	0.00	15.87	0.00	0.00	0.00	0.03
512	1.00	0.54	0.03	0.00	0.00	12.63	4.56	0.16	0.52	15.48	-4.26	0.00	15.87	0.00	0.00	0.00	0.01
513	1.00	0.54	0.03	0.00	0.00	64.02	9.58	0.80	-3.20	15.48	16.84	0.00	15.87	0.00	0.00	0.00	0.03
514	1.00	0.54	0.03	0.00	0.00	17.84	13.59	0.22	3.93	15.48	-11.38	0.00	15.87	0.00	0.00	0.00	0.02
515	1.00	0.54	0.03	0.00	0.00	25.57	-5.96	-0.37	0.32	15.48	0.09	0.00	15.87	0.00	0.00	0.00	0.00
516	1.00	0.54	0.03	0.00	0.00	61.95	23.48	0.77	3.34	15.48	6.05	0.00	15.87	0.00	0.00	0.00	0.01

proc Papiol - flexion transversal

BARRA 24 NUDO 25

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	0.54	0.03	0.00	0.00	77.82	26.36	0.97	2.88	15.48	-12.35	0.00	15.87	0.00	0.00	0.00	0.02
512	1.00	0.54	0.03	0.00	0.00	10.50	-2.93	0.06	0.13	15.48	4.87	0.00	15.87	0.00	0.00	0.00	0.01
513	1.00	0.54	0.03	0.00	0.00	61.15	36.54	0.76	9.46	15.48	-16.01	0.00	15.87	0.00	0.00	0.00	0.03
514	1.00	0.54	0.03	0.00	0.00	14.97	-5.77	0.79	0.19	15.48	12.21	0.00	15.87	0.00	0.00	0.00	0.02
515	1.00	0.54	0.03	0.00	0.00	23.44	-6.31	0.04	0.29	15.48	0.52	0.00	15.87	0.00	0.00	0.00	0.00
516	1.00	0.54	0.03	0.00	0.00	61.15	36.54	0.76	9.46	15.48	-16.01	0.00	15.87	0.00	0.00	0.00	0.03

proc Papiol - flexion transversal

BARRA 25 NUDO 25

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	0.54	0.03	0.00	0.00	77.82	26.36	0.97	2.88	15.48	12.34	0.00	15.87	0.00	0.00	0.00	0.02
512	1.00	0.54	0.03	0.00	0.00	10.50	-2.93	0.06	0.13	15.48	-4.87	0.00	15.87	0.00	0.00	0.00	0.01
513	1.00	0.54	0.03	0.00	0.00	61.15	36.54	0.76	9.46	15.48	16.01	0.00	15.87	0.00	0.00	0.00	0.03
514	1.00	0.54	0.03	0.00	0.00	14.97	-5.77	0.79	0.19	15.48	-12.21	0.00	15.87	0.00	0.00	0.00	0.02
515	1.00	0.54	0.03	0.00	0.00	23.44	-6.31	0.04	0.29	15.48	-0.52	0.00	15.87	0.00	0.00	0.00	0.00
516	1.00	0.54	0.03	0.00	0.00	61.15	36.54	0.76	9.46	15.48	16.01	0.00	15.87	0.00	0.00	0.00	0.03

proc Papiol - flexion transversal

BARRA 25 NUDO 26

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	1.05	0.03	0.00	0.00	75.87	35.43	0.95	-0.79	30.82	-11.78	0.00	15.87	0.00	0.00	0.00	0.01
512	1.00	1.05	0.03	0.00	0.00	9.05	-6.75	0.45	0.11	30.82	5.29	0.00	15.87	0.00	0.00	0.00	0.01
513	1.00	1.05	0.03	0.00	0.00	59.20	48.37	0.74	4.00	30.82	-15.45	0.00	15.87	0.00	0.00	0.00	0.02
514	1.00	1.05	0.03	0.00	0.00	13.02	-15.17	1.85	0.16	30.82	12.77	0.00	15.87	0.00	0.00	0.00	0.01
515	1.00	1.05	0.03	0.00	0.00	13.02	-15.17	1.85	0.16	30.82	12.77	0.00	15.87	0.00	0.00	0.00	0.01
516	1.00	1.05	0.03	0.00	0.00	59.20	48.37	0.74	4.00	30.82	-15.45	0.00	15.87	0.00	0.00	0.00	0.02

proc Papiol - flexion transversal

BARRA 28 NUDO 13

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	0.66	0.03	0.00	0.00	16.56	-22.19	6.04	0.21	19.09	12.65	0.00	15.87	0.00	0.00	0.00	0.02
512	1.00	0.66	0.03	0.00	0.00	0.85	-5.14	1.73	0.01	19.09	3.35	0.00	15.87	0.00	0.00	0.00	0.01
513	1.00	0.66	0.03	0.00	0.00	16.09	-22.99	6.39	0.20	19.09	13.03	0.00	15.87	0.00	0.00	0.00	0.02
514	1.00	0.66	0.03	0.00	0.00	7.09	3.94	0.09	0.57	19.09	-0.76	0.00	15.87	0.00	0.00	0.00	0.00
515	1.00	0.66	0.03	0.00	0.00	11.34	-24.02	7.30	0.14	19.09	12.68	0.00	15.87	0.00	0.00	0.00	0.02
516	1.00	0.66	0.03	0.00	0.00	7.09	3.94	0.09	0.57	19.09	-0.76	0.00	15.87	0.00	0.00	0.00	0.00

proc Papiol - flexion transversal

BARRA 28 NUDO 15

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	0.30	0.03	0.00	0.00	16.56	-14.62	10.44	0.21	8.27	-11.64	0.00	15.87	0.00	0.00	0.00	0.04
512	1.00	0.30	0.03	0.00	0.00	0.85	-3.37	2.68	0.01	8.27	-2.34	0.00	15.87	0.00	0.00	0.00	0.01
513	1.00	0.30	0.03	0.00	0.00	16.09	-15.19	11.00	0.20	8.27	-12.02	0.00	15.87	0.00	0.00	0.00	0.04
514	1.00	0.30	0.03	0.00	0.00	7.09	3.15	0.09	1.74	8.27	1.77	0.00	15.87	0.00	0.00	0.00	0.01
515	1.00	0.30	0.03	0.00	0.00	11.34	-16.43	12.64	0.14	8.27	-11.68	0.00	15.87	0.00	0.00	0.00	0.04
516	1.00	0.30	0.03	0.00	0.00	7.09	3.15	0.09	1.74	8.27	1.77	0.00	15.87	0.00	0.00	0.00	0.01

proc Papiol - flexion transversal

BARRA 29 NUDO 15

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	0.30	0.03	0.00	0.00	16.56	-14.62	10.44	0.21	8.27	11.64	0.00	15.87	0.00	0.00	0.00	0.04
512	1.00	0.30	0.03	0.00	0.00	0.85	-3.37	2.68	0.01	8.27	2.34	0.00	15.87	0.00	0.00	0.00	0.01
513	1.00	0.30	0.03	0.00	0.00	16.09	-15.19	11.00	0.20	8.27	12.02	0.00	15.87	0.00	0.00	0.00	0.04
514	1.00	0.30	0.03	0.00	0.00	7.09	3.15	0.09	1.74	8.27	-1.77	0.00	15.87	0.00	0.00	0.00	0.01
515	1.00	0.30	0.03	0.00	0.00	11.34	-16.43	12.64	0.14	8.27	11.68	0.00	15.87	0.00	0.00	0.00	0.04
516	1.00	0.30	0.03	0.00	0.00	7.09	3.15	0.09	1.74	8.27	-1.77	0.00	15.87	0.00	0.00	0.00	0.01

proc Papiol - flexion transversal

BARRA 29 NUDO 17

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	0.30	0.03	0.00	0.00	16.56	0.69	0.21	-1.44	8.27	-10.23	0.00	15.87	0.00	0.00	0.00	0.04
512	1.00	0.30	0.03	0.00	0.00	0.85	-1.09	0.80	0.01	8.27	-0.92	0.00	15.87	0.00	0.00	0.00	0.00
513	1.00	0.30	0.03	0.00	0.00	16.09	0.65	0.20	-1.42	8.27	-10.60	0.00	15.87	0.00	0.00	0.00	0.04
514	1.00	0.30	0.03	0.00	0.00	7.09	-0.32	-0.60	0.09	8.27	3.18	0.00	15.87	0.00	0.00	0.00	0.01
515	1.00	0.30	0.03	0.00	0.00	7.17	-1.55	0.41	0.09	8.27	-1.95	0.00	15.87	0.00	0.00	0.00	0.01
516	1.00	0.30	0.03	0.00	0.00	8.07	0.86	0.10	-0.27	8.27	-0.46	0.00	15.87	0.00	0.00	0.00	0.00

proc Papiol - flexion transversal

BARRA 30 NUDO 17

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	0.30	0.03	0.00	0.00	16.56	0.69	0.21	-1.44	8.27	10.23	0.00	15.87	0.00	0.00	0.00	0.04
512	1.00	0.30	0.03	0.00	0.00	0.85	-1.09	0.80	0.01	8.27	0.92	0.00	15.87	0.00	0.00	0.00	0.00
513	1.00	0.30	0.03	0.00	0.00	16.09	0.65	0.20	-1.42	8.27	10.60	0.00	15.87	0.00	0.00	0.00	0.04
514	1.00	0.30	0.03	0.00	0.00	7.09	-0.32	-0.60	0.09	8.27	-3.18	0.00	15.87	0.00	0.00	0.00	0.01
515	1.00	0.30	0.03	0.00	0.00	7.17	-1.55	0.41	0.09	8.27	1.95	0.00	15.87	0.00	0.00	0.00	0.01
516	1.00	0.30	0.03	0.00	0.00	8.07	0.86	0.10	-0.27	8.27	0.46	0.00	15.87	0.00	0.00	0.00	0.00

proc Papiol - flexion transversal

BARRA 30 NUDO 18

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	0.30	0.03	0.00	0.00	16.56	14.01	0.21	9.91	8.27	-8.81	0.00	15.87	0.00	0.00	0.00	0.03
512	1.00	0.30	0.03	0.00	0.00	0.85	-0.80	0.55	0.01	8.27	0.50	0.00	15.87	0.00	0.00	0.00	0.00
513	1.00	0.30	0.03	0.00	0.00	16.09	14.50	0.20	10.39	8.27	-9.18	0.00	15.87	0.00	0.00	0.00	0.03
514	1.00	0.30	0.03	0.00	0.00	7.09	-5.77	3.94	0.09	8.27	4.60	0.00	15.87	0.00	0.00	0.00	0.02
515	1.00	0.30	0.03	0.00	0.00	7.73	-5.84	3.92	0.10	8.27	4.60	0.00	15.87	0.00	0.00	0.00	0.02
516	1.00	0.30	0.03	0.00	0.00	16.09	14.50	0.20	10.39	8.27	-9.18	0.00	15.87	0.00	0.00	0.00	0.03

proc Papiol - flexion transversal

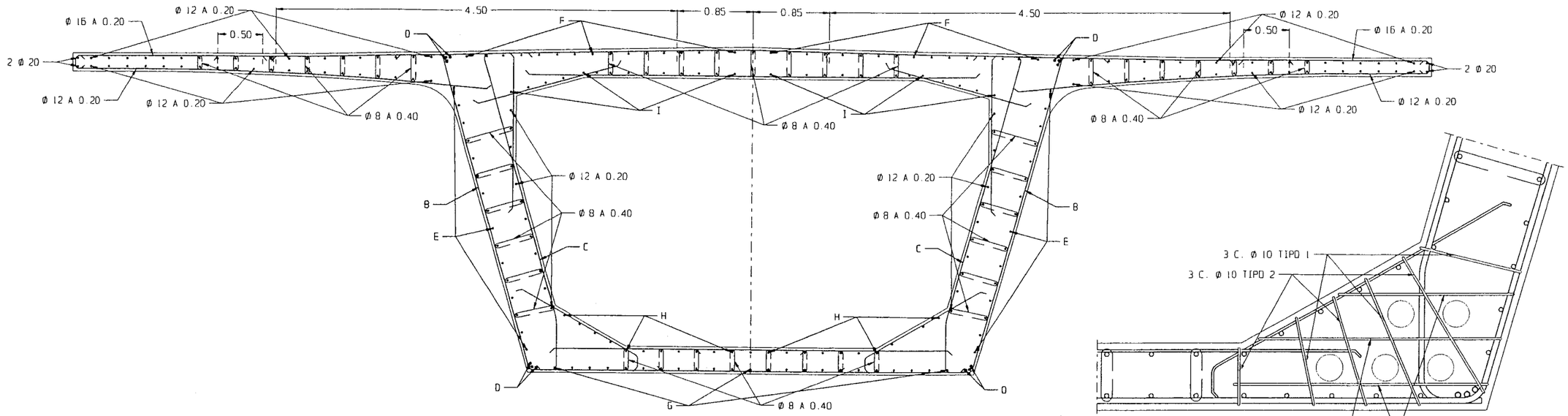
BARRA 31 NUDO 18

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	0.30	0.03	0.00	0.00	16.56	14.01	0.21	9.91	8.27	8.81	0.00	15.87	0.00	0.00	0.00	0.03
512	1.00	0.30	0.03	0.00	0.00	0.85	-0.80	0.55	0.01	8.27	-0.50	0.00	15.87	0.00	0.00	0.00	0.00
513	1.00	0.30	0.03	0.00	0.00	16.09	14.50	0.20	10.39	8.27	9.18	0.00	15.87	0.00	0.00	0.00	0.03
514	1.00	0.30	0.03	0.00	0.00	7.73	-5.84	3.92	0.10	8.27	-4.60	0.00	15.87	0.00	0.00	0.00	0.02
515	1.00	0.30	0.03	0.00	0.00	7.73	-5.84	3.92	0.10	8.27	-4.60	0.00	15.87	0.00	0.00	0.00	0.02
516	1.00	0.30	0.03	0.00	0.00	16.09	14.50	0.20	10.39	8.27	9.18	0.00	15.87	0.00	0.00	0.00	0.03

proc Papiol - flexion transversal

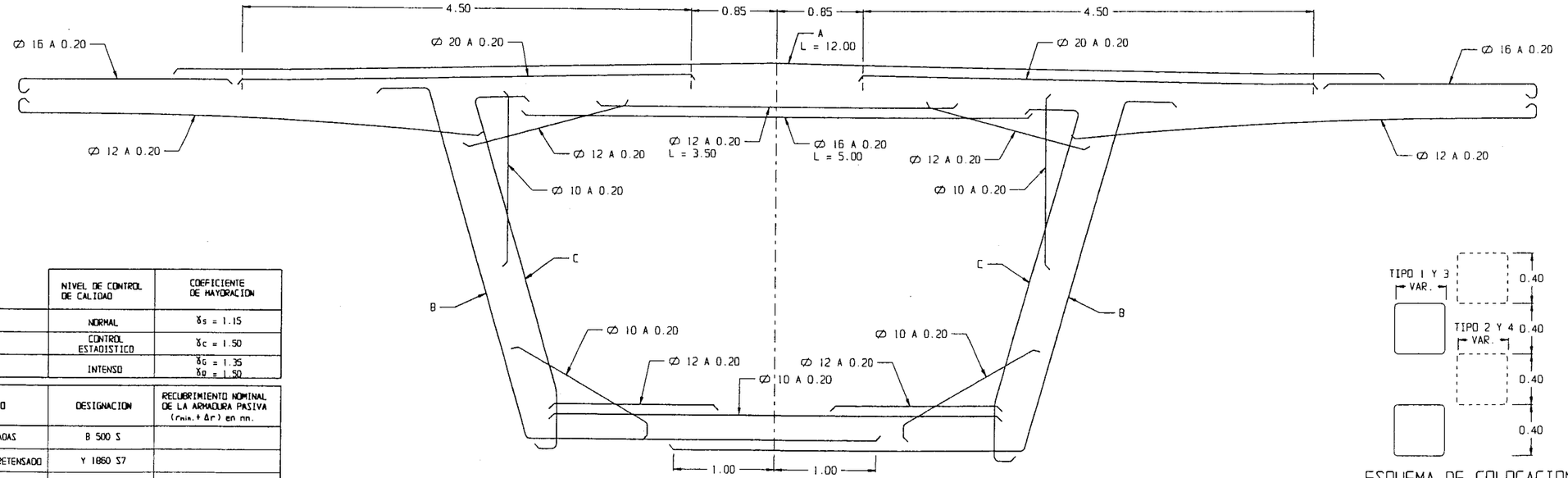
BARRA 31 NUDO 20

HIPO	B	H	R	BW	HF	AXIL	MOME	W S/M	W I/M	W M/M	CORT	W	W MIN	TORS	WT	WL	REL
511	1.00	0.66	0.03	0.00	0.00	16.56	19.19	0.21	4.96	19.09	-7.80	0.00	15.87	0.00	0.00	0.00	0.01
512	1.00	0.66	0.03	0.00	0.00	0.85	-1.42	0.41	0.01	19.09	1.51	0.00	15.87	0.00	0.00	0.00	0.00
513	1.00	0.66	0.03	0.00	0.00	16.09	19.90	0.20	5.27	19.09	-8.17	0.00	15.87	0.00	0.00	0.00	0.01
514	1.00	0.66	0.03	0.00	0.00	7.73	-9.02	2.32	0.10	19.09	5.61	0.00	15.87	0.00	0.00	0.00	0.01
515	1.00	0.66	0.03	0.00	0.00	7.73	-9.02	2.32	0.10	19.09	5.61	0.00	15.87	0.00	0.00	0.00	0.01
516	1.00	0.66	0.03	0.00	0.00	16.09	19.90	0.20	5.27	19.09	-8.17	0.00	15.87	0.00	0.00	0.00	0.01



SECCION TRANSVERSAL TIPO
ESCALA 1:50

DETALLE DE REFUERZO EN CENTRO DE VANO
ESCALA 1:20



DESPIECE DE ARMADURA TRANSVERSAL
ESCALA 1:50

	NIVEL DE CONTROL DE CALIDAD	COEFICIENTE DE MAYORACION
ACERO	NORMAL	$\gamma_s = 1.15$
HORMIGON	CONTROL ESTADISTICO	$\gamma_c = 1.50$
EJECUCION	INTENSO	$\gamma_G = 1.35$ $\gamma_Q = 1.50$

ELEMENTO	DESIGNACION	RECUBRIMIENTO NOMINAL DE LA ARMADURA PASIVA ($r_{min} + \Delta r$) en mm.
BARRAS CORRUGADAS	B 500 S	
CORDONES DE PRETENSADO	Y 1860 S7	
HORMIGON EN TABLERO	HP-50/B/20/IIa	25 + 5

LAS LONGITUDES, NO ACOTADAS, DE ANCLAJES Y SOLAPOS DE LAS BARRAS CORRUGADAS SE REALIZARAN DE ACUERDO A LAS PRESCRIPCIONES DE LA NORMA EHE

ESQUEMA DE COLOCACION LONGITUDINAL DE CERCOS DE REFUERZO

VIADUCTOS DE EL PAPIOL

DIBUJADO	REVISADO	FECHA	Nº REVIS.
E. SANCHEZ	-	-	1
-	-	-	-
-	-	-	-
-	-	-	-

GIF Gestor de Infraestructuras Ferroviarias

TÍTULO: PROYECTO DE CONSTRUCCION DE PLATAFORMA
L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA
TRAMO: PAPIOL - SANT VICENT DELS HORTS

UTE PAPIOL
SGS TECNOS
INFRAES
CFC

AUTORES: J. MANTEROLA I.C.C.P. · L. ALBERTO ODI I.C.C.P. · A. MARTINEZ CUTILLAS · S. FUENTE GARCIA

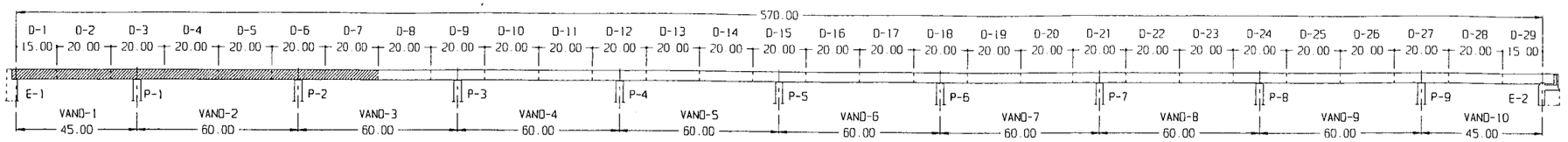
ESCALA NORMAL 1:50 — Numérica | Gráfica — 0 0.5 1m.

FECHA: MAYO 2002

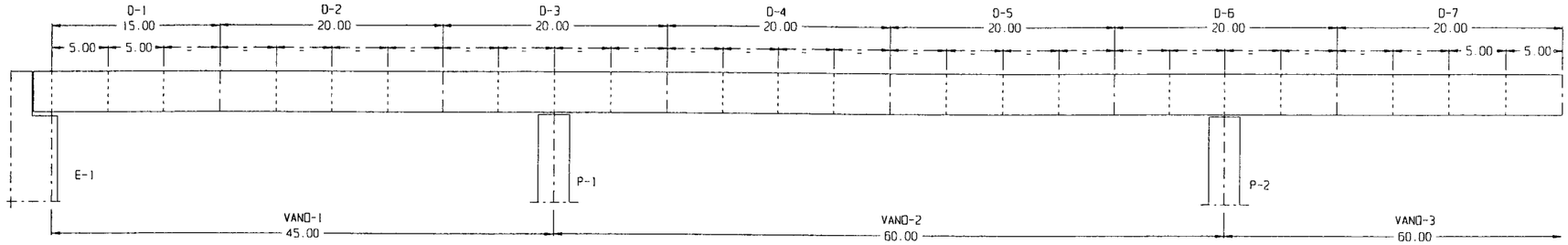
TÍTULO DEL PLANO: TABLERO
ARMADURA COMPLEMENTARIA (I)

Nº DE PLANO: 2.10.1.2
Hoja 00 de 00

tarm-01



ALZADO ESQUEMATICO



ALZADO DE DOVELAS 1 A 7

ESCALA 1:500

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B	Ø 20 A 0.20 + Ø 16 A 0.40	Ø 20 A 0.20	Ø 20 A 0.20 + Ø 16 A 0.40	Ø 25 A 0.20	Ø 20 A 0.20 + Ø 16 A 0.40	Ø 20 A 0.20	Ø 20 A 0.20 + Ø 16 A 0.40	Ø 25 A 0.20	Ø 20 A 0.20 + Ø 16 A 0.40	Ø 20 A 0.20	B
C	Ø 20 A 0.20	Ø 12 A 0.20	Ø 20 A 0.20	Ø 20 A 0.20 + Ø 16 A 0.40	Ø 20 A 0.20	Ø 12 A 0.20	Ø 20 A 0.20	Ø 20 A 0.20 + Ø 16 A 0.40	Ø 20 A 0.20	Ø 12 A 0.20	C
D	3 Ø 25	3 Ø 20		3 Ø 25	3 Ø 20			3 Ø 25	3 Ø 20		D
E	Ø 16 A 0.20	Ø 16 A 0.40 + Ø 12 A 0.40		Ø 16 A 0.20	Ø 16 A 0.40 + Ø 12 A 0.40			Ø 16 A 0.20	Ø 16 A 0.40 + Ø 12 A 0.40		E
F	Ø 16 A 0.20	Ø 16 A 0.40 + Ø 12 A 0.40	Ø 20 A 0.20	Ø 25 A 0.10	Ø 20 A 0.20	Ø 16 A 0.40 + Ø 12 A 0.40	Ø 20 A 0.20	Ø 25 A 0.10	Ø 20 A 0.20	Ø 16 A 0.40 + Ø 12 A 0.40	F
G	Ø 16 A 0.20	Ø 25 A 0.10	Ø 25 A 0.20	Ø 16 A 0.20	Ø 25 A 0.20	Ø 25 A 0.10	Ø 25 A 0.20	Ø 16 A 0.20	Ø 25 A 0.20	Ø 25 A 0.10	G
H	Ø 12 A 0.20	Ø 25 A 0.10	Ø 25 A 0.20	Ø 12 A 0.20	Ø 25 A 0.20	Ø 25 A 0.10	Ø 25 A 0.20	Ø 12 A 0.20	Ø 25 A 0.20	Ø 25 A 0.10	H
I	Ø 12 A 0.20			Ø 20 A 0.20	Ø 12 A 0.20			Ø 20 A 0.20	Ø 12 A 0.20		I

ARMADURA COMPLEMENTARIA DEL TABLERO

ESCALA 1:500

NOTA : LA LONGITUD DE SOLAPOS DE LAS ARMADURAS LONGITUDINALES SERA:

Ø	POSICION I Ls	POSICION II Ls
12	0.60	0.90
16	0.80	1.20
20	1.00	1.50
25	1.40	2.00

- LA CLASIFICACION DE POSICION I y II SE REALIZARA DE ACUERDO A LA INSTRUCION EHE
- EN UNA SECCION NO SE SOLAPAN MAS DEL 50 % DE LAS BARRAS DEL MISMO TIPO
- LA SEPARACION MINIMA ENTRE SOLAPES SERA DE 3.00 m.

	NIVEL DE CONTROL DE CALIDAD	COEFICIENTE DE MAYORACION
ACERO	NORMAL	γ_s = 1.15
HORMIGON	CONTROL ESTADISTICO	γ_c = 1.50
EJECUCION	INTENSO	γ_G = 1.35 γ_Q = 1.50

ELEMENTO	DESIGNACION	RECUBRIMIENTO NOMINAL DE LA ARMADURA PASIVA (rmin. + Δr) en mm.
BARRAS CORRUGADAS	B 500 S	
CORDONES DE PRETENSADO	Y 1860 S7	
HORMIGON EN TABLERO	HP-50/B/20/IIa	25 + 5

LAS LONGITUDES, NO ACOTADAS, DE ANCLAJES Y SOLAPOS DE LAS BARRAS CORRUGADAS SE REALIZARAN DE ACUERDO A LAS PRESCRIPCIONES DE LA NORMA EHE

VIADUCTOS DE EL PAPIOL

N°	REVIS.	FECHA	REVISADO	DIBUJADO
1		-	-	E. SANCHEZ
"		"	"	"
"		"	"	"
"		"	"	"

GIF Gestor de Infraestructuras Ferroviarias

TITULO: PROYECTO DE CONSTRUCCION DE PLATAFORMA L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA TRAMO: PAPIOL - SANT VICENT DELS HORTS

UTE PAPIOL SGS TECNOS INFRAES CFC — AUTORES: J. MANTEROLA I.C.C.P., A. MARTINEZ CUTILLAS I.C.C.P., S. FUENTE GARCIA, L. ALBERTO DOU I.C.C.P.

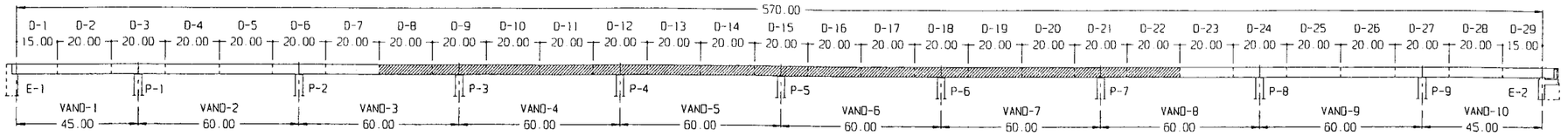
ESCALA NORMAL 1:500 — Numérica — Gráfica — 0 5 10m

FECHA: MAYO 2002

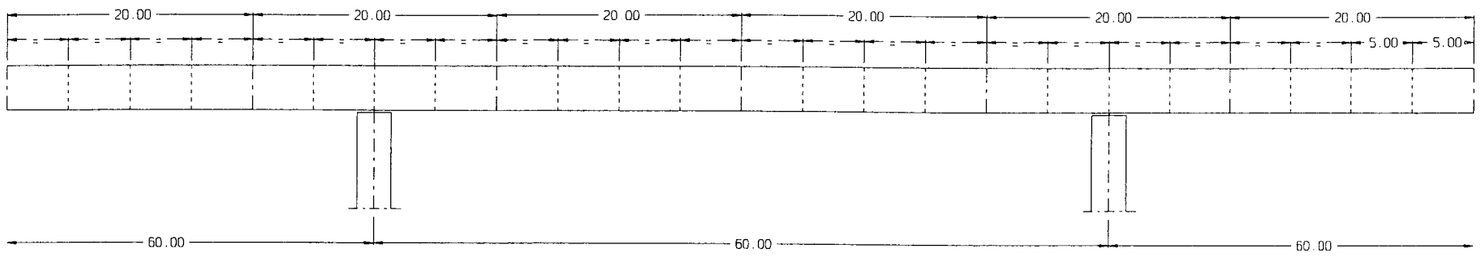
TITULO DEL PLANO: TABLERO — ARMADURA COMPLEMENTARIA (2)

N° DE PLANO: 2.10.1.2 — Hoja 00 de 00

form-02



ALZADO ESQUEMATICO



ALZADO DE DOVELAS 8 A 22

ESCALA 1:500

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B	Ø 20 A 0.20	Ø 20 A 0.20 + Ø 16 A 0.40	Ø 25 A 0.20	Ø 20 A 0.20 + Ø 16 A 0.40	Ø 20 A 0.20	Ø 20 A 0.20 + Ø 16 A 0.40	Ø 25 A 0.20	Ø 20 A 0.20 + Ø 16 A 0.40	Ø 20 A 0.20	B
C	Ø 12 A 0.20	Ø 20 A 0.20	Ø 20 A 0.20 + Ø 16 A 0.40	Ø 20 A 0.20	Ø 12 A 0.20	Ø 20 A 0.20	Ø 20 A 0.20 + Ø 16 A 0.40	Ø 20 A 0.20	Ø 12 A 0.20	C
D	3 Ø 20		3 Ø 25	3 Ø 20			3 Ø 25	3 Ø 20		D
E	Ø 16 A 0.40 + Ø 12 A 0.40		Ø 16 A 0.20	Ø 16 A 0.40 + Ø 12 A 0.40			Ø 16 A 0.20	Ø 16 A 0.40 + Ø 12 A 0.40		E
F	Ø 16 A 0.40 + Ø 12 A 0.40	Ø 20 A 0.20	Ø 25 A 0.10	Ø 20 A 0.20	Ø 16 A 0.40 + Ø 12 A 0.40	Ø 20 A 0.20	Ø 25 A 0.10	Ø 20 A 0.20	Ø 16 A 0.40 + Ø 12 A 0.40	F
G	Ø 25 A 0.10	Ø 25 A 0.20	Ø 16 A 0.20	Ø 25 A 0.20	Ø 25 A 0.10	Ø 25 A 0.20	Ø 16 A 0.20	Ø 25 A 0.20	Ø 25 A 0.10	G
H	Ø 25 A 0.10	Ø 25 A 0.20	Ø 12 A 0.20	Ø 25 A 0.20	Ø 25 A 0.10	Ø 25 A 0.20	Ø 12 A 0.20	Ø 25 A 0.20	Ø 25 A 0.10	H
I	Ø 12 A 0.20		Ø 20 A 0.20	Ø 12 A 0.20			Ø 20 A 0.20	Ø 12 A 0.20		I

ARMADURA COMPLEMENTARIA DEL TABLERO

ESCALA 1:500

NOTA : LA LONGITUD DE SOLAPOS DE LAS ARMADURAS LONGITUDINALES SERA:

Ø	POSICION I Ls	POSICION II Ls
12	0.60	0.90
16	0.80	1.20
20	1.00	1.50
25	1.40	2.00

- LA CLASIFICACION DE POSICION I y II SE REALIZARA DE ACUERDO A LA INSTRUCION EHE
- EN UNA SECCION NO SE SOLAPAN MAS DEL 50 % DE LAS BARRAS DEL MISMO TIPO
- LA SEPARACION MINIMA ENTRE SOLAPES SERA DE 3.00 m.

	NIVEL DE CONTROL DE CALIDAD	COEFICIENTE DE MAYORACION
ACERO	NORMAL	γ_s = 1.15
HORMIGON	CONTROL ESTADISTICO	γ_c = 1.50
EJECUCION	INTENSO	γ_G = 1.35 γ_Q = 1.50

ELEMENTO	DESIGNACION	RECUBRIMIENTO NOMINAL DE LA ARMADURA PASIVA ($r_{min}+\Delta r$) en mm.
BARRAS CORRUGADAS	B 500 S	
CORDONES DE PRETENSADO	Y 1860 S7	
HORMIGON EN TABLERO	HP-50/B/20/IIa	25 + 5

LAS LONGITUDES,NO ACOTADAS,DE ANCLAJES Y SOLAPOS DE LAS BARRAS CORRUGADAS SE REALIZARAN DE ACUERDO A LAS PRESCRIPCIONES DE LA NORMA EHE

VIADUCTOS DE EL PAPIOL

N°	REVIS.	FECHA	DIBUJADO	REVISADO
1		-	E. SANCHEZ	-
-		-	-	-
-		-	-	-
-		-	-	-

GIF Gestor de Infraestructuras Ferroviarias

TITULO: PROYECTO DE CONSTRUCCION DE PLATAFORMA L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA TRAMO: PAPIOL - SANT VICENT DELS HORTS

UTE PAPIOL SGS TECNOS INFRAES CFC

AUTORES: J. MANTEROLA I.C.C.P. L. ALBERTO ODD I.C.C.P. A. MARTINEZ CUTILLAS S. FUENTE GARCIA

ESCALA NORMAL 1:500 (0 5 10m.) Numérica Gráfica

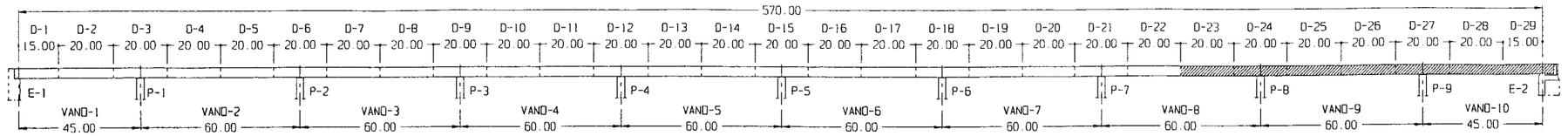
FECHA: MAYO 2002

TITULO DEL PLANO: TABLERO ARMADURA COMPLEMENTARIA (3)

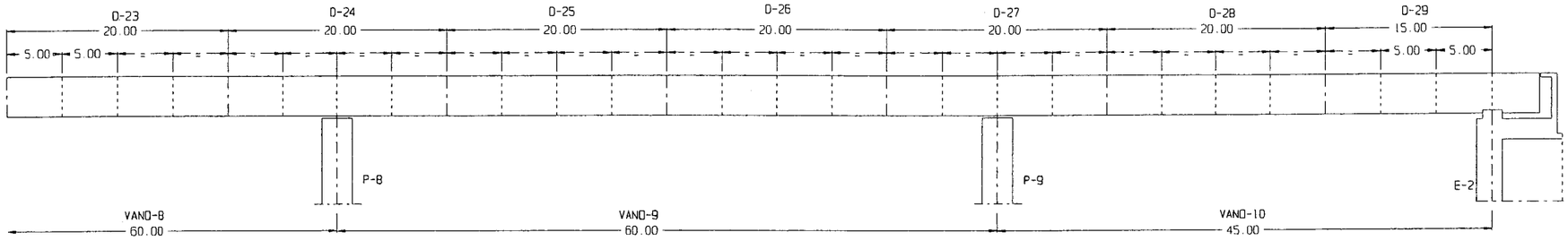
N° DE PLANO: 2.10.1.2

Hoja 00 de 00

form-03



ALZADO ESQUEMATICO



ALZADO DE DOVELAS 23 A 29

ESCALA 1:500

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B	Ø 20 A 0.20	Ø 20 A 0.20 + Ø 16 A 0.40	Ø 25 A 0.20	Ø 20 A 0.20 + Ø 16 A 0.40	Ø 20 A 0.20	Ø 20 A 0.20 + Ø 16 A 0.40	Ø 25 A 0.20	Ø 20 A 0.20 + Ø 16 A 0.40	Ø 25 A 0.20	B
C	Ø 12 A 0.20	Ø 20 A 0.20	Ø 20 A 0.20 + Ø 16 A 0.40	Ø 20 A 0.20	Ø 12 A 0.20	Ø 20 A 0.20	Ø 20 A 0.20 + Ø 16 A 0.40	Ø 20 A 0.20	Ø 12 A 0.20	Ø 20 A 0.20	C
D	3 Ø 20		3 Ø 25	3 Ø 20			3 Ø 25	3 Ø 20		3 Ø 25	D
E	Ø 16 A 0.40 + Ø 12 A 0.40	Ø 16 A 0.20	Ø 16 A 0.40 + Ø 12 A 0.40	Ø 16 A 0.20	Ø 16 A 0.40 + Ø 12 A 0.40	Ø 16 A 0.20					E
F	Ø 16 A 0.40 + Ø 12 A 0.40	Ø 20 A 0.20	Ø 25 A 0.10	Ø 20 A 0.20	Ø 16 A 0.40 + Ø 12 A 0.40	Ø 20 A 0.20	Ø 25 A 0.10	Ø 20 A 0.20	Ø 16 A 0.40 + Ø 12 A 0.40	Ø 16 A 0.20	F
G	Ø 25 A 0.10	Ø 25 A 0.20	Ø 16 A 0.20	Ø 25 A 0.20	Ø 25 A 0.10	Ø 25 A 0.20	Ø 16 A 0.20	Ø 25 A 0.20	Ø 25 A 0.10	Ø 16 A 0.20	G
H	Ø 25 A 0.10	Ø 25 A 0.20	Ø 12 A 0.20	Ø 25 A 0.20	Ø 25 A 0.10	Ø 25 A 0.20	Ø 12 A 0.20	Ø 25 A 0.20	Ø 25 A 0.10	Ø 12 A 0.20	H
I	Ø 12 A 0.20		Ø 20 A 0.20	Ø 12 A 0.20			Ø 20 A 0.20	Ø 12 A 0.20			I

ARMADURA COMPLEMENTARIA DEL TABLERO

ESCALA 1:500

NOTA : LA LONGITUD DE SOLAPOS DE LAS ARMADURAS LONGITUDINALES SERA:

Ø	POSICION I Ls	POSICION II Ls
12	0.60	0.90
16	0.80	1.20
20	1.00	1.50
25	1.40	2.00

- LA CLASIFICACION DE POSICION I y II SE REALIZARA DE ACUERDO A LA INSTRUCION EHE
- EN UNA SECCION NO SE SOLAPAN MAS DEL 50 % DE LAS BARRAS DEL MISMO TIPO
- LA SEPARACION MINIMA ENTRE SOLAPES SERA DE 3.00 m.

	NIVEL DE CONTROL DE CALIDAD	COEFICIENTE DE MAYORACION
ACERO	NORMAL	$\gamma_s = 1.15$
HORMIGON	CONTROL ESTADISTICO	$\gamma_c = 1.50$
EJECUCION	INTENSO	$\gamma_G = 1.35$ $\gamma_Q = 1.50$

ELEMENTO	DESIGNACION	RECUBRIMIENTO NOMINAL DE LA ARMADURA PASIVA (rmin.+ Δr) en mm.
BARRAS CORRUGADAS	B 500 S	
CORDONES DE PRETENSADO	Y 1860 S7	
HORMIGON EN TABLERO	HP-50/B/20/IIa	25 + 5

LAS LONGITUDES,NO ACOTADAS,DE ANCLAJES Y SOLAPOS DE LAS BARRAS CORRUGADAS SE REALIZARAN DE ACUERDO A LAS PRESCRIPCIONES DE LA NORMA EHE

VIADUCTOS DE EL PAPIOL

Nº	REVIS.	FECHA	REVISADO	DIBUJADO
1				E. SANCHEZ

GIF Gestor de Infraestructuras Ferroviarias

TÍTULO: PROYECTO DE CONSTRUCCION DE PLATAFORMA L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA TRAMO: PAPIOL - SANT VICENT DELS HORTS

UTE PAPIOL SGS TECNOS INFRAES CFC

AUTORES: J.MANTEROLA I.C.C.P., A.MARTINEZ CUTILLAS S.FUENTE GARCIA, L. ALBERTO DOU I.C.C.P.

ESCALA NORMAL 1:500 (Numérica / Gráfico) 0 5 10m.

FECHA: MAYO 2002

TÍTULO DEL PLANO: TABLERO ARMADURA COMPLEMENTARIA (4)

Nº DE PLANO: 2.10.1.2 Hoja 00 de 00

form-04

COMPROBACIÓN A ROTURA

Viaductos de El Papiol. Rotura seccion transversal tablero. Apoyo secc horm

COEFICIENTES

MINORACION HORMIGON	1.500
MINORACION ARMADURA	1.150
MINORACION PRETENSADO	1.150
MINORACION ACERO EST.	1.100

CARACTERISTICAS DE LA SECCION 1 A 0.000

AREA	12.660919	
CANTO	3.5990	15.2000
C.G.	2.0663	0.0000
V	1.5327	7.6000
VP	2.0663	7.6000
I	19.97406006	112.94425201
R.G.	1.2560	2.9868

CONDICIONES DE AGOTAMIENTO DE LA SECCION

RESISTENCIA DEL HORMIGON 1	5000.
LIMITE ELASTICO DEL ACERO DE ARMAR	50000.
LIMITE ELASTICO DEL ACERO DE PRETENSAR	153100.

ANGULO DE LA FIBRA NEUTRA		0.00 GRADOS
POSICION DE LA FIBRA NEUTRA (X,Y)	0.000	2.734
CURVATURA	0.0012801	
DEF. SUP. HOR.	0.0011	
DEF. INF. HOR.	-0.0035	
DEF. SUP. ACE.EST.	0.0000	
DEF. INF. ACE.EST.	0.0000	
AXIL	-0.2	
MOMENTO EJE X	24934.2	
MOMENTO EJE Y	-0.3	

ANGULO DE LA FIBRA NEUTRA		180.00 GRADOS
POSICION DE LA FIBRA NEUTRA (X,Y)	0.000	2.440
CURVATURA	0.0030211	
DEF. SUP. HOR.	-0.0035	
DEF. INF. HOR.	0.0074	
DEF. SUP. ACE.EST.	0.0000	
DEF. INF. ACE.EST.	0.0000	
AXIL	-0.3	
MOMENTO EJE X	-29158.4	
MOMENTO EJE Y	0.7	

Viaductos de El Papiol. Rotura seccion transversal tablero. Centro de vano secc horm

COEFICIENTES

MINORACION HORMIGON	1.500
MINORACION ARMADURA	1.150
MINORACION PRETENSADO	1.150
MINORACION ACERO EST.	1.100

CARACTERISTICAS DE LA SECCION 1 A 0.000

AREA	9.595578	
CANTO	3.5990	15.2000
C.G.	2.2509	0.0000
V	1.3481	7.6000
VP	2.2509	7.6000
I	16.50507355	100.37900543
R.G.	1.3115	3.2343

CONDICIONES DE AGOTAMIENTO DE LA SECCION

RESISTENCIA DEL HORMIGON 1	5000.
LIMITE ELASTICO DEL ACERO DE ARMAR	50000.
LIMITE ELASTICO DEL ACERO DE PRETENSAR	153100.

ANGULO DE LA FIBRA NEUTRA		0.00 GRADOS
POSICION DE LA FIBRA NEUTRA (X,Y)	0.000	2.139
CURVATURA	0.0016364	
DEF. SUP. HOR.	0.0024	
DEF. INF. HOR.	-0.0035	
DEF. SUP. ACE.EST.	0.0000	
DEF. INF. ACE.EST.	0.0000	
AXIL	-0.3	
MOMENTO EJE X	16611.0	
MOMENTO EJE Y	-0.1	

ANGULO DE LA FIBRA NEUTRA		180.00 GRADOS
POSICION DE LA FIBRA NEUTRA (X,Y)	0.000	2.794
CURVATURA	0.0035796	
DEF. SUP. HOR.	-0.0029	
DEF. INF. HOR.	0.0100	
DEF. SUP. ACE.EST.	0.0000	
DEF. INF. ACE.EST.	0.0000	
AXIL	-0.2	
MOMENTO EJE X	-36019.1	
MOMENTO EJE Y	0.1	

Viaductos de El Papiol. Rotura seccion transversal tablero. Seccion a 5 m de cdvano
secc horm

COEFICIENTES
MINORACION HORMIGON 1.500
MINORACION ARMADURA 1.150
MINORACION PRETENSADO 1.150
MINORACION ACERO EST. 1.100

CARACTERISTICAS DE LA SECCION 1 A 0.000

AREA	9.595578	
CANTO	3.5990	15.2000
C.G.	2.2509	0.0000
V	1.3481	7.6000
VP	2.2509	7.6000
I	16.50507355	100.37900543
R.G.	1.3115	3.2343

CONDICIONES DE AGOTAMIENTO DE LA SECCION

RESISTENCIA DEL HORMIGON 1 5000.
LIMITE ELASTICO DEL ACERO DE ARMAR 50000.
LIMITE ELASTICO DEL ACERO DE PRETENSAR 153100.

ANGULO DE LA FIBRA NEUTRA 0.00 GRADOS
POSICION DE LA FIBRA NEUTRA (X,Y) 0.000 2.262
CURVATURA 0.0015475
DEF. SUP. HOR. 0.0021
DEF. INF. HOR. -0.0035
DEF. SUP. ACE.EST. 0.0000
DEF. INF. ACE.EST. 0.0000

AXIL -0.5
MOMENTO EJE X 15568.6
MOMENTO EJE Y -0.1

ANGULO DE LA FIBRA NEUTRA 180.00 GRADOS
POSICION DE LA FIBRA NEUTRA (X,Y) 0.000 2.842
CURVATURA 0.0035182
DEF. SUP. HOR. -0.0027
DEF. INF. HOR. 0.0100
DEF. SUP. ACE.EST. 0.0000
DEF. INF. ACE.EST. 0.0000

AXIL 0.2
MOMENTO EJE X -34391.4
MOMENTO EJE Y 0.1

Viaductos de El Papiol. Rotura seccion transversal tablero. Seccion a 10 m de cdvano
secc horm

COEFICIENTES
MINORACION HORMIGON 1.500
MINORACION ARMADURA 1.150
MINORACION PRETENSADO 1.150
MINORACION ACERO EST. 1.100

CARACTERISTICAS DE LA SECCION 1 A 0.000

AREA	9.595578	
CANTO	3.5990	15.2000
C.G.	2.2509	0.0000
V	1.3481	7.6000
VP	2.2509	7.6000
I	16.50507355	100.37900543
R.G.	1.3115	3.2343

CONDICIONES DE AGOTAMIENTO DE LA SECCION

RESISTENCIA DEL HORMIGON 1 5000.
LIMITE ELASTICO DEL ACERO DE ARMAR 50000.
LIMITE ELASTICO DEL ACERO DE PRETENSAR 153100.

ANGULO DE LA FIBRA NEUTRA 0.00 GRADOS
POSICION DE LA FIBRA NEUTRA (X,Y) 0.000 2.422
CURVATURA 0.0014452
DEF. SUP. HOR. 0.0017
DEF. INF. HOR. -0.0035
DEF. SUP. ACE.EST. 0.0000
DEF. INF. ACE.EST. 0.0000

AXIL -0.5
MOMENTO EJE X 13929.3
MOMENTO EJE Y -0.1

ANGULO DE LA FIBRA NEUTRA 180.00 GRADOS
POSICION DE LA FIBRA NEUTRA (X,Y) 0.000 2.895
CURVATURA 0.0034547
DEF. SUP. HOR. -0.0024
DEF. INF. HOR. 0.0100
DEF. SUP. ACE.EST. 0.0000
DEF. INF. ACE.EST. 0.0000

AXIL 0.6
MOMENTO EJE X -32008.2
MOMENTO EJE Y 0.1

Viaductos de El Papiol. Rotura seccion transversal tablero. Seccion a 15 m de cdvano
secc horm

COEFICIENTES
   MINORACION HORMIGON   1.500
   MINORACION ARMADURA   1.150
   MINORACION PRETENSADO 1.150
   MINORACION ACERO EST. 1.100

CARACTERISTICAS DE LA SECCION   1   A   0.000
==

AREA	9.595578	
CANTO	3.5990	15.2000
C.G.	2.2509	0.0000
V	1.3481	7.6000
VP	2.2509	7.6000
I	16.50507355	100.37900543
R.G.	1.3115	3.2343

CONDICIONES DE AGOTAMIENTO DE LA SECCION

RESISTENCIA DEL HORMIGON   1   5000.
LIMITE ELASTICO DEL ACERO DE ARMAR   50000.
LIMITE ELASTICO DEL ACERO DE PRETENSAR   153100.

ANGULO DE LA FIBRA NEUTRA   0.00 GRADOS
POSICION DE LA FIBRA NEUTRA (X,Y)   0.000   2.518
CURVATURA   0.0013902
DEF. SUP. HOR.   0.0015
DEF. INF. HOR.   -0.0035
DEF. SUP. ACE.EST.   0.0000
DEF. INF. ACE.EST.   0.0000

AXIL   0.6
MOMENTO EJE X   12974.6
MOMENTO EJE Y   -0.1

ANGULO DE LA FIBRA NEUTRA   180.00 GRADOS
POSICION DE LA FIBRA NEUTRA (X,Y)   0.000   2.920
CURVATURA   0.0034251
DEF. SUP. HOR.   -0.0023
DEF. INF. HOR.   0.0100
DEF. SUP. ACE.EST.   0.0000
DEF. INF. ACE.EST.   0.0000

AXIL   0.4
MOMENTO EJE X   -30625.5
MOMENTO EJE Y   0.1

Viaductos de El Papiol. Rotura seccion transversal tablero. Apoyo

secc horm punt		
1	-2.5000	0.0000
2	2.5000	0.0000
3	-3.3088	2.8077
4	-3.3718	2.9444
5	-3.4726	3.0562
6	-3.6021	3.1330
7	-3.7486	3.1676
8	-4.1543	3.1986
9	-4.5603	3.2255
10	-4.9665	3.2483
11	-5.3730	3.2669
12	-5.7796	3.2814
13	-6.1863	3.2917
14	-6.5931	3.2979
15	-7.0000	3.3000
16	-7.6000	3.3000
17	-7.6000	3.5000
18	-4.9500	3.5000
19	0.0000	3.5990
20	4.9500	3.5000
21	7.6000	3.5000
22	7.6000	3.3000
23	7.0000	3.3000
24	6.5931	3.2979
25	6.1863	3.2917
26	5.7796	3.2814
27	5.3730	3.2669
28	4.9665	3.2483
29	4.5603	3.2255
30	4.1543	3.1986
31	3.7486	3.1676
32	3.6021	3.1330
33	3.4726	3.0562
34	3.3718	2.9444
35	3.3088	2.8077
36	-1.6034	0.5000
37	1.6034	0.5000
38	-2.3602	3.1273
39	-1.9000	3.2500
40	1.9000	3.2500
41	2.3602	3.1273
42	1.9000	3.2500
43	2.6500	3.0500
44	2.6500	2.3270
45	2.1957	0.7500
46	-7.5500	3.4500
47	-3.4504	3.4800
48	3.4504	3.4800
49	7.5500	3.4500
50	-7.5500	3.3500
51	-3.4130	3.3500
52	3.4130	3.3500
53	7.5500	3.3500
54	-2.6629	3.0983
55	-1.9129	3.2983
56	-1.9000	3.3000
57	1.9000	3.3000
58	1.9129	3.2983
59	2.6629	3.0983
60	-2.7000	3.0500
61	-2.7000	2.3270
62	2.7000	3.0500
63	2.7000	2.3270
64	-2.6980	2.3132
65	-2.2438	0.7362
66	2.6980	2.3132
67	2.2438	0.7362
68	-2.4624	0.0500
69	2.4624	0.0500
70	0.0010	3.5490
71	-2.2203	0.7065
72	-1.4246	0.2565
73	-1.4000	0.2500
74	1.4000	0.2500
75	1.4246	0.2565
76	2.2203	0.7065
77	-2.8800	3.2690
78	2.8800	3.2690
79	-3.1350	3.2790
80	-2.6200	3.2990
81	3.1350	3.2790
82	2.6200	3.2990
83	-2.3900	3.3340
84	2.3900	3.3340
85	-3.3550	3.3090
86	-2.1500	3.3790
87	3.3550	3.3090
88	2.1500	3.3790
89	-3.5500	3.3190
90	-1.9500	3.3990
91	1.9500	3.3990
92	3.5500	3.3190
93	-1.5700	0.1500
94	-1.3900	0.1500
95	-1.2100	0.1500
96	-1.0300	0.1500
97	-0.8500	0.1500
98	-0.6700	0.1500
99	-0.4900	0.1500
100	-0.3100	0.1500
101	1.5700	0.1500
102	1.3900	0.1500
103	1.2100	0.1500
104	1.0300	0.1500
105	0.8500	0.1500
106	0.6700	0.1500
107	0.4900	0.1500
108	0.3100	0.1500
109	-3.9100	3.3390
110	-3.7300	3.3290
111	-1.7700	3.4090
112	-1.5900	3.4090
113	-1.4100	3.4090
114	3.9100	3.3390
115	3.7300	3.3290
116	1.7700	3.4090
117	1.5900	3.4090
118	1.4100	3.4090
119	-0.1300	0.1500
120	0.1300	0.1500
121	-3.0093	2.8555
122	-2.8731	2.3825
123	-2.7357	1.9055
124	-2.5982	1.4285
125	-1.3947	0.7220

```
  126       3.0093       2.8555
  127       2.8731       2.3825
  128       2.7357       1.9055
  129       2.5982       1.4285
  130       1.3947       0.7220
horm        7.00    5000.00
   2   1   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21
22  23  24  25  26  27  28  29  30  31  32  33  34  35
hp   37  36  38  39  40  41
arma     50000.
  36  38  15   0.000113
  37  41  15   0.000113
  38  39   4   0.000314
  40  41   4   0.000314
  39  40  19   0.000314
  36  37  19   0.000113
  46  47  22   0.000314
  48  49  22   0.000314
  50  51  21   0.000314
  52  53  21   0.000314
  47   0.001473
  48   0.001473
  68   0.001473
  69   0.001473
  51  68  17   0.000201
  52  69  17   0.000201
  47  70  16   0.000982
  70  48  16   0.000982
  68  69  23   0.000201
  71  72   6   0.000113
  73  74  15   0.000113
  75  76   6   0.000113
pret   153100.   135000.
  77   0.00360
  78   0.00360
  79   0.00285
  80   0.00285
  81   0.00285
  82   0.00285
  83   0.00225
  84   0.00225
  85   0.00180
  86   0.00180
  87   0.00180
  88   0.00180
  89   0.00135
  90   0.00135
  91   0.00135
  92   0.00135
  93   0.00135
  94   0.00135
  95   0.00135
  96   0.00135
  97   0.00135
  98   0.00135
  99   0.00135
 100   0.00135
 101   0.00135
 102   0.00135
 103   0.00135
 104   0.00135
 105   0.00135
 106   0.00135
 107   0.00135
 108   0.00135
 109   0.00000
 110   0.00000
 111   0.00000
 112   0.00000
 113   0.00000
 114   0.00000
 115   0.00000
 116   0.00000
 117   0.00000
 118   0.00000
 119   0.00000
 120   0.00000
 121   0.00930
 122   0.00930
 123   0.00930
 124   0.00930
 125   0.00930
 126   0.00930
 127   0.00930
 128   0.00930
 129   0.00930
 130   0.00930
calc
1 0. dibu a4 1 0.
```

Viaductos de El Papiol. Rotura seccion transversal tablero. Centro de vano

secc horm punt		
1	-2.5000	0.0000
2	2.5000	0.0000
3	-3.3088	2.8077
4	-3.3718	2.9444
5	-3.4726	3.0562
6	-3.6021	3.1330
7	-3.7486	3.1676
8	-4.1543	3.1986
9	-4.5603	3.2255
10	-4.9665	3.2483
11	-5.3730	3.2669
12	-5.7796	3.2814
13	-6.1863	3.2917
14	-6.5931	3.2979
15	-7.0000	3.3000
16	-7.6000	3.3000
17	-7.6000	3.5000
18	-4.9500	3.5000
19	0.0000	3.5990
20	4.9500	3.5000
21	7.6000	3.5000
22	7.6000	3.3000
23	7.0000	3.3000
24	6.5931	3.2979
25	6.1863	3.2917
26	5.7796	3.2814
27	5.3730	3.2669
28	4.9665	3.2483
29	4.5603	3.2255
30	4.1543	3.1986
31	3.7486	3.1676
32	3.6021	3.1330
33	3.4726	3.0562
34	3.3718	2.9444
35	3.3088	2.8077
36	-1.4000	0.3000
37	1.4000	0.3000
38	-2.1957	0.7500
39	-2.6500	2.3270
40	-2.6500	3.0500
41	-1.9000	3.2500
42	1.9000	3.2500
43	2.6500	3.0500
44	2.6500	2.3270
45	2.1957	0.7500
46	-7.5500	3.4500
47	-3.4504	3.4800
48	3.4504	3.4800
49	7.5500	3.4500
50	-7.5500	3.3500
51	-3.4130	3.3500
52	3.4130	3.3500
53	7.5500	3.3500
54	-2.6629	3.0983
55	-1.9129	3.2983
56	-1.9000	3.3000
57	1.9000	3.3000
58	1.9129	3.2983
59	2.6629	3.0983
60	-2.7000	3.0500
61	-2.7000	2.3270
62	2.7000	3.0500
63	2.7000	2.3270
64	-2.6980	2.3132
65	-2.2438	0.7362
66	2.6980	2.3132
67	2.2438	0.7362
68	-2.4624	0.0500
69	2.4624	0.0500
70	0.0010	3.5490
71	-2.2203	0.7065
72	-1.4246	0.2565
73	-1.4000	0.2500
74	1.4000	0.2500
75	1.4246	0.2565
76	2.2203	0.7065
77	-2.8800	3.2690
78	2.8800	3.2690
79	-3.1350	3.2790
80	-2.6200	3.2990
81	3.1350	3.2790
82	2.6200	3.2990
83	-2.3900	3.3340
84	2.3900	3.3340
85	-3.3550	3.3090
86	-2.1500	3.3790
87	3.3550	3.3090
88	2.1500	3.3790
89	-3.5500	3.3190
90	-1.9500	3.3990
91	1.9500	3.3990
92	3.5500	3.3190
93	-1.5700	0.1500
94	-1.3900	0.1500
95	-1.2100	0.1500
96	-1.0300	0.1500
97	-0.8500	0.1500
98	-0.6700	0.1500
99	-0.4900	0.1500
100	-0.3100	0.1500
101	1.5700	0.1500
102	1.3900	0.1500
103	1.2100	0.1500
104	1.0300	0.1500
105	0.8500	0.1500
106	0.6700	0.1500
107	0.4900	0.1500
108	0.3100	0.1500
109	-3.9100	3.3390
110	-3.7300	3.3290
111	-1.7700	3.4090
112	-1.5900	3.4090
113	-1.4100	3.4090
114	3.9100	3.3390
115	3.7300	3.3290
116	1.7700	3.4090
117	1.5900	3.4090
118	1.4100	3.4090
119	-0.1300	0.1500
120	0.1300	0.1500
121	-2.3637	0.4300
122	-2.1137	0.4300
123	-2.2946	0.1900
124	-2.0446	0.1900
125	-1.7946	0.1900

```
  126       2.3637       0.4300
  127       2.1137       0.4300
  128       2.2946       0.1900
  129       2.0446       0.1900
  130       1.7946       0.1900
horm       7.00    5000.00
   2   1   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21
22  23  24  25  26  27  28  29  30  31  32  33  34  35
hp   37  36  38  39  40  41  42  43  44  45
arma     50000.
  46  47  22    0.000314
  48  49  22    0.000314
  50  51  21    0.000314
  52  53  21    0.000314
  54  55   5    0.000113
  56  57  19    0.000113
  58  59   5    0.000113
  60  61   4    0.000113
  62  63   4    0.000113
  64  65   9    0.000113
  66  67   9    0.000113
  47   0.000942
  48   0.000942
  68   0.000942
  69   0.000942
  51  68  17    0.000157
  52  69  17    0.000157
  47  70  16    0.000157
  70  48  16    0.000157
  68  69  23    0.000982
  71  72   6    0.000982
  73  74  15    0.000982
  75  76   6    0.000982
pret   153100.    135000.
  77   0.00360
  78   0.00360
  79   0.00285
  80   0.00285
  81   0.00285
  82   0.00285
  83   0.00225
  84   0.00225
  85   0.00180
  86   0.00180
  87   0.00180
  88   0.00180
  89   0.00135
  90   0.00135
  91   0.00135
  92   0.00135
  93   0.00135
  94   0.00135
  95   0.00135
  96   0.00135
  97   0.00135
  98   0.00135
  99   0.00135
 100   0.00135
 101   0.00135
 102   0.00135
 103   0.00135
 104   0.00135
 105   0.00135
 106   0.00135
 107   0.00135
 108   0.00135
 109   0.00000
 110   0.00000
 111   0.00000
 112   0.00000
 113   0.00000
 114   0.00000
 115   0.00000
 116   0.00000
 117   0.00000
 118   0.00000
 119   0.00000
 120   0.00000
 121   0.00465
 122   0.00465
 123   0.00465
 124   0.00465
 125   0.00465
 126   0.00465
 127   0.00465
 128   0.00465
 129   0.00465
 130   0.00465
calc
1 0. dibu a4 1 0.
```

Viaductos de El Papiol. Rotura seccion transversal tablero. A 5 m del cdvano

secc horm punt		
1	-2.5000	0.0000
2	2.5000	0.0000
3	-3.3088	2.8077
4	-3.3718	2.9444
5	-3.4726	3.0562
6	-3.6021	3.1330
7	-3.7486	3.1676
8	-4.1543	3.1986
9	-4.5603	3.2255
10	-4.9665	3.2483
11	-5.3730	3.2669
12	-5.7796	3.2814
13	-6.1863	3.2917
14	-6.5931	3.2979
15	-7.0000	3.3000
16	-7.6000	3.3000
17	-7.6000	3.5000
18	-4.9500	3.5000
19	0.0000	3.5990
20	4.9500	3.5000
21	7.6000	3.5000
22	7.6000	3.3000
23	7.0000	3.3000
24	6.5931	3.2979
25	6.1863	3.2917
26	5.7796	3.2814
27	5.3730	3.2669
28	4.9665	3.2483
29	4.5603	3.2255
30	4.1543	3.1986
31	3.7486	3.1676
32	3.6021	3.1330
33	3.4726	3.0562
34	3.3718	2.9444
35	3.3088	2.8077
36	-1.4000	0.3000
37	1.4000	0.3000
38	-2.1957	0.7500
39	-2.6500	2.3270
40	-2.6500	3.0500
41	-1.9000	3.2500
42	1.9000	3.2500
43	2.6500	3.0500
44	2.6500	2.3270
45	2.1957	0.7500
46	-7.5500	3.4500
47	-3.4504	3.4800
48	3.4504	3.4800
49	7.5500	3.4500
50	-7.5500	3.3500
51	-3.4130	3.3500
52	3.4130	3.3500
53	7.5500	3.3500
54	-2.6629	3.0983
55	-1.9129	3.2983
56	-1.9000	3.3000
57	1.9000	3.3000
58	1.9129	3.2983
59	2.6629	3.0983
60	-2.7000	3.0500
61	-2.7000	2.3270
62	2.7000	3.0500
63	2.7000	2.3270
64	-2.6980	2.3132
65	-2.2438	0.7362
66	2.6980	2.3132
67	2.2438	0.7362
68	-2.4624	0.0500
69	2.4624	0.0500
70	0.0010	3.5490
71	-2.2203	0.7065
72	-1.4246	0.2565
73	-1.4000	0.2500
74	1.4000	0.2500
75	1.4246	0.2565
76	2.2203	0.7065
77	-2.8800	3.2690
78	2.8800	3.2690
79	-3.1350	3.2790
80	-2.6200	3.2990
81	3.1350	3.2790
82	2.6200	3.2990
83	-2.3900	3.3340
84	2.3900	3.3340
85	-3.3550	3.3090
86	-2.1500	3.3790
87	3.3550	3.3090
88	2.1500	3.3790
89	-3.5500	3.3190
90	-1.9500	3.3990
91	1.9500	3.3990
92	3.5500	3.3190
93	-1.5700	0.1500
94	-1.3900	0.1500
95	-1.2100	0.1500
96	-1.0300	0.1500
97	-0.8500	0.1500
98	-0.6700	0.1500
99	-0.4900	0.1500
100	-0.3100	0.1500
101	1.5700	0.1500
102	1.3900	0.1500
103	1.2100	0.1500
104	1.0300	0.1500
105	0.8500	0.1500
106	0.6700	0.1500
107	0.4900	0.1500
108	0.3100	0.1500
109	-3.9100	3.3390
110	-3.7300	3.3290
111	-1.7700	3.4090
112	-1.5900	3.4090
113	-1.4100	3.4090
114	3.9100	3.3390
115	3.7300	3.3290
116	1.7700	3.4090
117	1.5900	3.4090
118	1.4100	3.4090
119	-0.1300	0.1500
120	0.1300	0.1500
121	-2.3637	0.4300
122	-2.1137	0.4300
123	-2.2946	0.1900
124	-2.0446	0.1900
125	-1.7946	0.1900

```
  126       2.3637       0.4300
  127       2.1137       0.4300
  128       2.2946       0.1900
  129       2.0446       0.1900
  130       1.7946       0.1900
horm       7.00    5000.00
   2   1   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21
22  23  24  25  26  27  28  29  30  31  32  33  34  35
hp   37  36  38  39  40  41  42  43  44  45
arma     50000.
  46  47  22    0.000314
  48  49  22    0.000314
  50  51  21    0.000314
  52  53  21    0.000314
  54  55   5    0.000113
  56  57  19    0.000113
  58  59   5    0.000113
  60  61   4    0.000113
  62  63   4    0.000113
  64  65   9    0.000113
  66  67   9    0.000113
  47   0.000942
  48   0.000942
  68   0.000942
  69   0.000942
  51  68  17    0.000157
  52  69  17    0.000157
  47  70  16    0.000157
  70  48  16    0.000157
  68  69  23    0.000982
  71  72   6    0.000491
  73  74  15    0.000491
  75  76   6    0.000491
pret   153100.   135000.
  77   0.00360
  78   0.00360
  79   0.00285
  80   0.00285
  81   0.00285
  82   0.00285
  83   0.00225
  84   0.00225
  85   0.00180
  86   0.00180
  87   0.00180
  88   0.00180
  89   0.00135
  90   0.00135
  91   0.00135
  92   0.00135
  93   0.00135
  94   0.00135
  95   0.00135
  96   0.00135
  97   0.00135
  98   0.00135
  99   0.00135
 100   0.00135
 101   0.00135
 102   0.00135
 103   0.00135
 104   0.00135
 105   0.00135
 106   0.00135
 107   0.00135
 108   0.00135
 109   0.00000
 110   0.00000
 111   0.00000
 112   0.00000
 113   0.00000
 114   0.00000
 115   0.00000
 116   0.00000
 117   0.00000
 118   0.00000
 119   0.00000
 120   0.00000
 121   0.00465
 122   0.00465
 123   0.00465
 124   0.00465
 125   0.00465
 126   0.00465
 127   0.00465
 128   0.00465
 129   0.00465
 130   0.00465
calc
1 0. dibu a4 1 0.
```

Viaductos de El Papiol. Rotura seccion transversal tablero. A 10m del cdvano

secc horm punt		
1	-2.5000	0.0000
2	2.5000	0.0000
3	-3.3088	2.8077
4	-3.3718	2.9444
5	-3.4726	3.0562
6	-3.6021	3.1330
7	-3.7486	3.1676
8	-4.1543	3.1986
9	-4.5603	3.2255
10	-4.9665	3.2483
11	-5.3730	3.2669
12	-5.7796	3.2814
13	-6.1863	3.2917
14	-6.5931	3.2979
15	-7.0000	3.3000
16	-7.6000	3.3000
17	-7.6000	3.5000
18	-4.9500	3.5000
19	0.0000	3.5990
20	4.9500	3.5000
21	7.6000	3.5000
22	7.6000	3.3000
23	7.0000	3.3000
24	6.5931	3.2979
25	6.1863	3.2917
26	5.7796	3.2814
27	5.3730	3.2669
28	4.9665	3.2483
29	4.5603	3.2255
30	4.1543	3.1986
31	3.7486	3.1676
32	3.6021	3.1330
33	3.4726	3.0562
34	3.3718	2.9444
35	3.3088	2.8077
36	-1.4000	0.3000
37	1.4000	0.3000
38	-2.1957	0.7500
39	-2.6500	2.3270
40	-2.6500	3.0500
41	-1.9000	3.2500
42	1.9000	3.2500
43	2.6500	3.0500
44	2.6500	2.3270
45	2.1957	0.7500
46	-7.5500	3.4500
47	-3.4504	3.4800
48	3.4504	3.4800
49	7.5500	3.4500
50	-7.5500	3.3500
51	-3.4130	3.3500
52	3.4130	3.3500
53	7.5500	3.3500
54	-2.6629	3.0983
55	-1.9129	3.2983
56	-1.9000	3.3000
57	1.9000	3.3000
58	1.9129	3.2983
59	2.6629	3.0983
60	-2.7000	3.0500
61	-2.7000	2.3270
62	2.7000	3.0500
63	2.7000	2.3270
64	-2.6980	2.3132
65	-2.2438	0.7362
66	2.6980	2.3132
67	2.2438	0.7362
68	-2.4624	0.0500
69	2.4624	0.0500
70	0.0010	3.5490
71	-2.2203	0.7065
72	-1.4246	0.2565
73	-1.4000	0.2500
74	1.4000	0.2500
75	1.4246	0.2565
76	2.2203	0.7065
77	-2.8800	3.2690
78	2.8800	3.2690
79	-3.1350	3.2790
80	-2.6200	3.2990
81	3.1350	3.2790
82	2.6200	3.2990
83	-2.3900	3.3340
84	2.3900	3.3340
85	-3.3550	3.3090
86	-2.1500	3.3790
87	3.3550	3.3090
88	2.1500	3.3790
89	-3.5500	3.3190
90	-1.9500	3.3990
91	1.9500	3.3990
92	3.5500	3.3190
93	-1.5700	0.1500
94	-1.3900	0.1500
95	-1.2100	0.1500
96	-1.0300	0.1500
97	-0.8500	0.1500
98	-0.6700	0.1500
99	-0.4900	0.1500
100	-0.3100	0.1500
101	1.5700	0.1500
102	1.3900	0.1500
103	1.2100	0.1500
104	1.0300	0.1500
105	0.8500	0.1500
106	0.6700	0.1500
107	0.4900	0.1500
108	0.3100	0.1500
109	-3.9100	3.3390
110	-3.7300	3.3290
111	-1.7700	3.4090
112	-1.5900	3.4090
113	-1.4100	3.4090
114	3.9100	3.3390
115	3.7300	3.3290
116	1.7700	3.4090
117	1.5900	3.4090
118	1.4100	3.4090
119	-0.1300	0.1500
120	0.1300	0.1500
121	-2.3637	0.4300
122	-2.1137	0.4300
123	-2.2946	0.1900
124	-2.0446	0.1900
125	-1.7946	0.1900

```
  126       2.3637       0.4300
  127       2.1137       0.4300
  128       2.2946       0.1900
  129       2.0446       0.1900
  130       1.7946       0.1900
horm       7.00    5000.00
   2   1   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21
22  23  24  25  26  27  28  29  30  31  32  33  34  35
hp    37  36  38  39  40  41  42  43  44  45
arma      50000.
  46  47  22    0.000314
  48  49  22    0.000314
  50  51  21    0.000314
  52  53  21    0.000314
  54  55   5    0.000113
  56  57  19    0.000113
  58  59   5    0.000113
  60  61   4    0.000113
  62  63   4    0.000113
  64  65   9    0.000113
  66  67   9    0.000113
  47   0.000942
  48   0.000942
  68   0.000942
  69   0.000942
  51  68  17    0.000157
  52  69  17    0.000157
  47  70  16    0.000157
  70  48  16    0.000157
  68  69  23    0.000491
  71  72   6    0.000246
  73  74  15    0.000246
  75  76   6    0.000246
pret    153100.    135000.
  77   0.00360
  78   0.00360
  79   0.00285
  80   0.00285
  81   0.00285
  82   0.00285
  83   0.00225
  84   0.00225
  85   0.00180
  86   0.00180
  87   0.00180
  88   0.00180
  89   0.00135
  90   0.00135
  91   0.00135
  92   0.00135
  93   0.00135
  94   0.00135
  95   0.00135
  96   0.00135
  97   0.00135
  98   0.00135
  99   0.00135
 100   0.00135
 101   0.00135
 102   0.00135
 103   0.00135
 104   0.00135
 105   0.00135
 106   0.00135
 107   0.00135
 108   0.00135
 109   0.00000
 110   0.00000
 111   0.00000
 112   0.00000
 113   0.00000
 114   0.00000
 115   0.00000
 116   0.00000
 117   0.00000
 118   0.00000
 119   0.00000
 120   0.00000
 121   0.00465
 122   0.00465
 123   0.00465
 124   0.00465
 125   0.00465
 126   0.00465
 127   0.00465
 128   0.00465
 129   0.00465
 130   0.00465
calc
1 0. dibu a4 1 0.
```

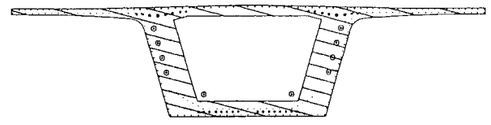
Viaductos de El Papiol. Rotura seccion transversal tablero. A 15m del cdvano

secc horm punt		
1	-2.5000	0.0000
2	2.5000	0.0000
3	-3.3088	2.8077
4	-3.3718	2.9444
5	-3.4726	3.0562
6	-3.6021	3.1330
7	-3.7486	3.1676
8	-4.1543	3.1986
9	-4.5603	3.2255
10	-4.9665	3.2483
11	-5.3730	3.2669
12	-5.7796	3.2814
13	-6.1863	3.2917
14	-6.5931	3.2979
15	-7.0000	3.3000
16	-7.6000	3.3000
17	-7.6000	3.5000
18	-4.9500	3.5000
19	0.0000	3.5990
20	4.9500	3.5000
21	7.6000	3.5000
22	7.6000	3.3000
23	7.0000	3.3000
24	6.5931	3.2979
25	6.1863	3.2917
26	5.7796	3.2814
27	5.3730	3.2669
28	4.9665	3.2483
29	4.5603	3.2255
30	4.1543	3.1986
31	3.7486	3.1676
32	3.6021	3.1330
33	3.4726	3.0562
34	3.3718	2.9444
35	3.3088	2.8077
36	-1.4000	0.3000
37	1.4000	0.3000
38	-2.1957	0.7500
39	-2.6500	2.3270
40	-2.6500	3.0500
41	-1.9000	3.2500
42	1.9000	3.2500
43	2.6500	3.0500
44	2.6500	2.3270
45	2.1957	0.7500
46	-7.5500	3.4500
47	-3.4504	3.4800
48	3.4504	3.4800
49	7.5500	3.4500
50	-7.5500	3.3500
51	-3.4130	3.3500
52	3.4130	3.3500
53	7.5500	3.3500
54	-2.6629	3.0983
55	-1.9129	3.2983
56	-1.9000	3.3000
57	1.9000	3.3000
58	1.9129	3.2983
59	2.6629	3.0983
60	-2.7000	3.0500
61	-2.7000	2.3270
62	2.7000	3.0500
63	2.7000	2.3270
64	-2.6980	2.3132
65	-2.2438	0.7362
66	2.6980	2.3132
67	2.2438	0.7362
68	-2.4624	0.0500
69	2.4624	0.0500
70	0.0010	3.5490
71	-2.2203	0.7065
72	-1.4246	0.2565
73	-1.4000	0.2500
74	1.4000	0.2500
75	1.4246	0.2565
76	2.2203	0.7065
77	-2.8800	3.2690
78	2.8800	3.2690
79	-3.1350	3.2790
80	-2.6200	3.2990
81	3.1350	3.2790
82	2.6200	3.2990
83	-2.3900	3.3340
84	2.3900	3.3340
85	-3.3550	3.3090
86	-2.1500	3.3790
87	3.3550	3.3090
88	2.1500	3.3790
89	-3.5500	3.3190
90	-1.9500	3.3990
91	1.9500	3.3990
92	3.5500	3.3190
93	-1.5700	0.1500
94	-1.3900	0.1500
95	-1.2100	0.1500
96	-1.0300	0.1500
97	-0.8500	0.1500
98	-0.6700	0.1500
99	-0.4900	0.1500
100	-0.3100	0.1500
101	1.5700	0.1500
102	1.3900	0.1500
103	1.2100	0.1500
104	1.0300	0.1500
105	0.8500	0.1500
106	0.6700	0.1500
107	0.4900	0.1500
108	0.3100	0.1500
109	-3.9100	3.3390
110	-3.7300	3.3290
111	-1.7700	3.4090
112	-1.5900	3.4090
113	-1.4100	3.4090
114	3.9100	3.3390
115	3.7300	3.3290
116	1.7700	3.4090
117	1.5900	3.4090
118	1.4100	3.4090
119	-0.1300	0.1500
120	0.1300	0.1500
121	-2.3637	0.4300
122	-2.1137	0.4300
123	-2.2946	0.1900
124	-2.0446	0.1900
125	-1.7946	0.1900

```
  126       2.3637       0.4300
  127       2.1137       0.4300
  128       2.2946       0.1900
  129       2.0446       0.1900
  130       1.7946       0.1900
horm        7.00    5000.00
   2   1   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21
22  23  24  25  26  27  28  29  30  31  32  33  34  35
hp   37  36  38  39  40  41  42  43  44  45
arma     50000.
  46  47  22    0.000314
  48  49  22    0.000314
  50  51  21    0.000314
  52  53  21    0.000314
  54  55   5    0.000113
  56  57  19    0.000113
  58  59   5    0.000113
  60  61   4    0.000113
  62  63   4    0.000113
  64  65   9    0.000113
  66  67   9    0.000113
  47   0.000942
  48   0.000942
  68   0.000942
  69   0.000942
  51  68  17    0.000157
  52  69  17    0.000157
  47  70  16    0.000157
  70  48  16    0.000157
  68  69  23    0.000201
  71  72   6    0.000113
  73  74  15    0.000113
  75  76   6    0.000113
pret    153100.    135000.
  77   0.00360
  78   0.00360
  79   0.00285
  80   0.00285
  81   0.00285
  82   0.00285
  83   0.00225
  84   0.00225
  85   0.00180
  86   0.00180
  87   0.00180
  88   0.00180
  89   0.00135
  90   0.00135
  91   0.00135
  92   0.00135
  93   0.00135
  94   0.00135
  95   0.00135
  96   0.00135
  97   0.00135
  98   0.00135
  99   0.00135
 100   0.00135
 101   0.00135
 102   0.00135
 103   0.00135
 104   0.00135
 105   0.00135
 106   0.00135
 107   0.00135
 108   0.00135
 109   0.00000
 110   0.00000
 111   0.00000
 112   0.00000
 113   0.00000
 114   0.00000
 115   0.00000
 116   0.00000
 117   0.00000
 118   0.00000
 119   0.00000
 120   0.00000
 121   0.00465
 122   0.00465
 123   0.00465
 124   0.00465
 125   0.00465
 126   0.00465
 127   0.00465
 128   0.00465
 129   0.00465
 130   0.00465
calc
1 0. dibu a4 1 0.
```

Viaductos de El Papiol. Rotura seccion transversal tablero.

ESCALA 1/200



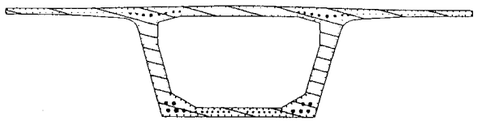
CARACTERISTICAS DE LA SECCION I A 0.000

AREA	12.660919	
CANTO	3.599000	15.200000
C.G.	2.066275	0.000000
V	1.532725	7.600000
VP	2.066275	7.599999
I	19.974060	112.944252
R.G.	1.256032	2.986754

Viaductos de El Papiol. Rotura seccion transversal tablero.

ESCALA 1/200

Sección adoptada



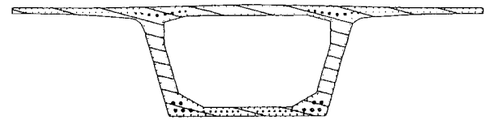
CARACTERISTICAS DE LA SECCION I A 0.000

AREA	9.595578	
CANTO	3.599000	15.200000
C.G.	2.250921	-0.000001
V	1.348078	7.600000
VP	2.250921	7.599999
I	16.505074	100.379005
R.G.	1.311515	3.234342

Viaductos de El Papiol. Rotura seccion transversal tablero.

ESCALA 1/200

Sección a 5m de cabeza

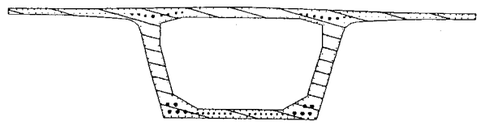


CARACTERISTICAS DE LA SECCION I A 0.000

AREA	9.595578	
CANTO	3.599000	15.200000
C.G.	2.250921	-0.000001
V	1.348078	7.600000
VP	2.250921	7.599999
I	16.505074	100.379005
R.G.	1.311515	3.234342

Vioductos de El Papiol. Rotura seccion transversal tablero.

ESCALA 1/200

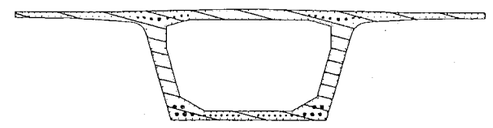


CARACTERISTICAS DE LA SECCION 1 A 0.000

AREA	9.595578	
CANTO	3.599000	15.200000
C.G.	2.250921	-0.000001
V	1.348078	7.600000
VP	2.250921	7.599999
I	16.505074	100.379005
R.G.	1.311515	3.234342

Vioductos de El Papiol. Rotura seccion transversal tablero.

ESCALA 1/200



CARACTERISTICAS DE LA SECCION 1 A 0.000

AREA	9.595578	
CANTO	3.599000	15.200000
C.G.	2.250921	-0.000001
V	1.348078	7.600000
VP	2.250921	7.599999
I	16.505074	100.379005
R.G.	1.311515	3.234342

proc Viaducto Papiol

Esfuerzos de la barra 57 extremo dorsal

coeficiente del esfuerzo FX : 1.00
coeficiente del esfuerzo FY : 1.00
coeficiente del esfuerzo FZ : 1.00
coeficiente del esfuerzo MX : 1.00
coeficiente del esfuerzo MY : 1.00
coeficiente del esfuerzo MZ : 1.00

HIP.	FX	FY	FZ	MX	MY	MZ
71 carga permanente (t=0)(sup)	12766.19	-689.38	-0.86	-256.93	90.00	567.99
72 carga permanente (t=inf.) (sup)	9829.98	-741.42	-0.88	-259.02	95.71	1805.10
73 carga permanente (t=0)(inf)	12766.19	-563.43	-0.67	-177.64	64.45	-249.81
74 carga permanente (t=inf.) (inf)	9829.99	-615.48	-0.69	-179.73	70.15	987.30
83 pret total (t=0)	12766.20	226.29	-0.01	9.85	4.74	-5378.75
84 pret total (t=inf)	9829.97	174.25	0.00	7.58	3.65	-4141.63
321 MOME Z MAX envolvente (ELU) t=inf	8637.96	-2129.50	2.84	72.27	-198.85	13132.81
322 MOME Z MIN envolvente (ELU) t=0	13087.55	-490.87	-3.34	-158.59	55.99	-3572.33
493 pret total (t=0) (isos)	12766.18	225.92	0.00	-0.11	-0.01	3588.91
494 pret total (t=inf) (isos)	9829.96	173.96	0.00	-0.09	-0.01	2763.46

proc Viaducto Papiol

Esfuerzos de la barra 58 extremo dorsal

coeficiente del esfuerzo FX : 1.00
coeficiente del esfuerzo FY : 1.00
coeficiente del esfuerzo FZ : 1.00
coeficiente del esfuerzo MX : 1.00
coeficiente del esfuerzo MY : 1.00
coeficiente del esfuerzo MZ : 1.00

HIP.	FX	FY	FZ	MX	MY	MZ
71 carga permanente (t=0)(sup)	18087.18	1167.45	-1.81	-20.48	85.70	7153.48
72 carga permanente (t=inf.) (sup)	13927.11	1151.66	-1.75	-18.51	91.30	8034.28
73 carga permanente (t=0)(inf)	18087.18	1016.32	-1.31	-21.75	61.08	5643.00
74 carga permanente (t=inf.) (inf)	13927.11	1000.53	-1.24	-19.78	66.68	6523.80
83 pret total (t=0)	18087.18	68.63	0.04	-10.10	4.71	-3829.59
84 pret total (t=inf)	13927.13	52.85	0.03	-7.78	3.63	-2948.78
321 MOME Z MAX envolvente (ELU) t=inf	14215.59	2906.26	-13.23	-196.25	-155.59	26867.75
322 MOME Z MIN envolvente (ELU) t=0	16911.14	894.25	-13.81	-435.09	134.81	1978.34
493 pret total (t=0) (isos)	18087.18	68.62	0.00	-0.11	-0.01	5140.93
494 pret total (t=inf) (isos)	13927.13	52.84	0.00	-0.09	-0.01	3958.52

proc Viaducto Papiol

Esfuerzos de la barra 59 extremo dorsal

coeficiente del esfuerzo FX : 1.00
coeficiente del esfuerzo FY : 1.00
coeficiente del esfuerzo FZ : 1.00
coeficiente del esfuerzo MX : 1.00
coeficiente del esfuerzo MY : 1.00
coeficiente del esfuerzo MZ : 1.00

HIP.	FX	FY	FZ	MX	MY	MZ
71 carga permanente (t=0)(sup)	12887.95	283.77	-1.81	-49.52	76.63	946.85
72 carga permanente (t=inf.) (sup)	9923.70	429.08	-1.75	-47.50	82.54	2096.89
73 carga permanente (t=0)(inf)	12887.95	157.84	-1.31	-41.78	54.55	129.02
74 carga permanente (t=inf.) (inf)	9923.70	303.16	-1.24	-39.76	60.46	1279.05
83 pret total (t=0)	12887.95	-631.82	0.04	-10.28	4.90	-5000.17
84 pret total (t=inf)	9923.72	-486.50	0.03	-7.92	3.77	-3850.13
321 MOME Z MAX envolvente (ELU) t=inf	10202.80	1810.67	-9.10	-86.07	-166.76	13411.11
322 MOME Z MIN envolvente (ELU) t=0	11555.88	90.08	-3.05	17.66	238.40	-3180.46
493 pret total (t=0) (isos)	12887.93	-631.92	0.00	-0.12	-0.01	3971.01
494 pret total (t=inf) (isos)	9923.71	-486.58	0.00	-0.09	-0.01	3057.68

proc Viaducto Papiol

Esfuerzos de la barra 60 extremo dorsal

coeficiente del esfuerzo FX : 1.00
coeficiente del esfuerzo FY : 1.00
coeficiente del esfuerzo FZ : 1.00
coeficiente del esfuerzo MX : 1.00
coeficiente del esfuerzo MY : 1.00
coeficiente del esfuerzo MZ : 1.00

HIP.	FX	FY	FZ	MX	MY	MZ
71 carga permanente (t=0)(sup)	12912.85	-2.10	-1.81	-73.29	67.56	966.19
72 carga permanente (t=inf.) (sup)	9942.91	166.82	-1.75	-72.14	73.78	1164.20
73 carga permanente (t=0)(inf)	12912.85	-102.83	-1.31	-57.04	48.02	715.00
74 carga permanente (t=inf.) (inf)	9942.91	66.10	-1.24	-55.90	54.24	913.01
83 pret total (t=0)	12912.85	-734.47	0.04	-6.51	5.08	-860.91
84 pret total (t=inf)	9942.89	-565.54	0.03	-5.01	3.91	-662.90
321 MOME Z MAX envolvente (ELU) t inf	10397.45	601.04	3.97	31.26	-59.60	8031.34
322 MOME Z MIN envolvente (ELU) t o	11536.88	637.96	-12.05	-167.50	-66.93	-4184.41
493 pret total (t=0) (isos)	12912.82	-734.54	0.00	-0.11	-0.01	8110.01
494 pret total (t=inf) (isos)	9942.87	-565.59	0.00	-0.09	-0.01	6244.71

proc Viaducto Papiol

Esfuerzos de la barra 61 extremo dorsal

coeficiente del esfuerzo FX : 1.00
coeficiente del esfuerzo FY : 1.00
coeficiente del esfuerzo FZ : 1.00
coeficiente del esfuerzo MX : 1.00
coeficiente del esfuerzo MY : 1.00
coeficiente del esfuerzo MZ : 1.00

HIP.	FX	FY	FZ	MX	MY	MZ
71 carga permanente (t=0)(sup)	13034.97	215.63	-1.81	-97.97	58.49	350.37
72 carga permanente (t=inf.) (sup)	10036.92	292.33	-1.75	-96.78	65.02	-46.84
73 carga permanente (t=0)(inf)	13034.97	140.10	-1.31	-73.95	41.49	539.81
74 carga permanente (t=inf.) (inf)	10036.92	216.81	-1.24	-72.76	48.02	142.60
83 pret total (t=0)	13034.97	-333.51	0.04	-6.69	5.26	1727.00
84 pret total (t=inf)	10036.93	-256.81	0.03	-5.15	4.05	1329.79
321 MOME Z MAX envolvente (ELU)	14420.31	225.08	4.63	133.35	-43.64	6068.50
322 MOME Z MIN envolvente (ELU)	8651.58	1035.39	-10.08	-166.16	-76.10	-8680.62
493 pret total (t=0) (isos)	13034.97	-333.38	0.00	-0.11	-0.01	10697.20
494 pret total (t=inf) (isos)	10036.93	-256.70	0.00	-0.09	-0.01	8236.84

Sección — 15m de cdv

tipo

322 Mz min env. ELU −8680'62 mT
494 Mz pret t=inf 8236'84 mT
16917'46 mT

Momento de [illegible] Mu = −30625 mT

Coef. de seguridad
$\gamma = \frac{30625}{16917'46} = 1'81$

proc Viaducto Papiol

Esfuerzos de la barra 62 extremo dorsal

coeficiente del esfuerzo FX : 1.00
coeficiente del esfuerzo FY : 1.00
coeficiente del esfuerzo FZ : 1.00
coeficiente del esfuerzo MX : 1.00
coeficiente del esfuerzo MY : 1.00
coeficiente del esfuerzo MZ : 1.00

HIP.	FX	FY	FZ	MX	MY	MZ
71 carga permanente (t=0)(sup)	13010.73	240.95	-1.81	-115.09	49.41	-795.45
72 carga permanente (t=inf.) (sup)	10018.28	269.69	-1.75	-114.73	56.25	-1455.29
73 carga permanente (t=0)(inf)	13010.73	190.62	-1.31	-84.12	34.96	-291.35
74 carga permanente (t=inf.) (inf)	10018.28	219.37	-1.24	-83.76	41.80	-951.20
83 pret total (t=0)	13010.73	-124.96	0.04	-3.10	5.45	2868.87
84 pret total (t=inf)	10018.26	-96.22	0.03	-2.39	4.19	2209.03
321 MOME Z MAX envolvente (ELU)	14396.08	259.11	5.48	125.25	-19.75	4853.75
322 MOME Z MIN envolvente (ELU)	8632.94	789.25	-9.07	-138.77	-119.68	-13185.78
493 pret total (t=0) (isos)	13010.74	-124.76	0.00	-0.11	-0.01	11838.90
494 pret total (t=inf) (isos)	10018.27	-96.06	0.00	-0.09	0.00	9115.95

Sección — 10 m de cdv.

Hipótesis

322 Mz mínimo (ELU) −13185'78 mT
494 Mz pret t=inf 9115'95 mT
22301'73 mT

Momento de agotamiento Mu = −31203'2 mT

Coef. de seguridad
$\gamma = \frac{31203'2}{22301'73} = 1'40$

proc Viaducto Papiol

Esfuerzos de la barra 63 extremo dorsal

coeficiente del esfuerzo FX : 1.00
coeficiente del esfuerzo FY : 1.00
coeficiente del esfuerzo FZ : 1.00
coeficiente del esfuerzo MX : 1.00
coeficiente del esfuerzo MY : 1.00
coeficiente del esfuerzo MZ : 1.00

HIP.	FX	FY	FZ	MX	MY	MZ
71 carga permanente (t=0)(sup)	13010.15	188.22	-1.81	-129.52	40.34	-2013.54
72 carga permanente (t=inf.) (sup)	10017.84	186.95	-1.75	-129.94	47.49	-2708.68
73 carga permanente (t=0)(inf)	13010.15	163.10	-1.31	-92.35	28.43	-1320.79
74 carga permanente (t=inf.) (inf)	10017.84	161.82	-1.24	-92.78	35.58	-2015.93
83 pret total (t=0)	13010.15	5.53	0.04	0.31	5.63	3022.34
84 pret total (t=inf)	10017.81	4.26	0.03	0.24	4.33	2327.20
321 MOME Z MAX envolvente (ELU)	14395.49	203.16	6.33	119.38	8.46	3545.09
322 MOME Z MIN envolvente (ELU)	8632.51	449.57	-6.61	-94.18	-157.58	-16386.63
493 pret total (t=0) (isos)	13010.17	5.59	0.00	-0.11	-0.01	11991.03
494 pret total (t=inf) (isos)	10017.83	4.31	0.00	-0.08	0.00	9233.09

Sección a 5 m del cabezo

322 Mz max env -1638663 mT
494 Mz max perm t=inf 923303 mT
2561692 mT

Momento de agotamiento Mu = -343914 mT

Coef de seguridad

C = -343914 / 2561692 = 1'342

proc Viaducto Papiol

Esfuerzos de la barra 64 extremo dorsal

coeficiente del esfuerzo FX : 1.00
coeficiente del esfuerzo FY : 1.00
coeficiente del esfuerzo FZ : 1.00
coeficiente del esfuerzo MX : 1.00
coeficiente del esfuerzo MY : 1.00
coeficiente del esfuerzo MZ : 1.00

HIP.	FX	FY	FZ	MX	MY	MZ
71 carga permanente (t=0)(sup)	12994.71	0.84	-1.81	-152.21	31.27	-2439.09
72 carga permanente (t=inf.) (sup)	10005.95	0.52	-1.75	-151.85	38.73	-3141.08
73 carga permanente (t=0)(inf)	12994.71	0.91	-1.31	-109.06	21.90	-1683.72
74 carga permanente (t=inf.) (inf)	10005.95	0.59	-1.24	-108.70	29.36	-2385.71
83 pret total (t=0)	12994.71	1.37	0.04	-3.10	5.81	3052.13
84 pret total (t=inf)	10005.93	1.06	0.03	-2.39	4.48	2350.14
321 MOME Z MAX envolvente (ELU)	14380.05	24.47	6.10	108.58	40.84	3023.01
322 MOME Z MIN envolvente (ELU)	8620.62	-5.70	-3.09	-66.05	-183.15	-17460.06
493 pret total (t=0) (isos)	12994.71	1.70	0.00	-0.11	-0.01	12020.46
494 pret total (t=inf) (isos)	10005.93	1.31	0.00	-0.09	0.00	9255.76

Sección centro de vano 6

322 Mz max env -17460
494 Mz perm t=inf 925576
26715'76

Momento de agotamiento (comp) Mu = -36019 mT

Coef de seguridad

C = 360191 / 267157 = 1'35

CÁLCULO DE RIOSTRAS DE APOYOS

RIOSTRAS DE PILAS

NUDOS A CARGAR (RIOSTRA DE PILAS)

Losa superior (27 nudos)

11 28 56 96 138 183 224 271 312 346
388 417 446 476 489 518 547 589 623 664
711 752 797 839 879 907 924

Losa inferior (19 nudos)

127 170 211 254 297 332 363 401 432 459
503 534 572 603 638 681 724 765 808

Aleta izquierda (25 nudos)

11 14 17 20 23 27 31 35 41 45
53 59 64 69 73 79 82 88 94 99
105 109 116 122 127

Aleta derecha (25 nudos)

924 921 918 915 912 908 904 900 894 890
882 876 871 866 862 856 853 847 841 836
830 826 819 813 808

* Carga en nudo 1 nº nudo Fx Fy

Muelle en los nudos de apoyo: (guía en 197)

Guiado: 110 132 155 176 197 216 238 259 282

Libre: 653 676 697 719 738 759 780 803 825

RIOSTRAS SOBRE PILAS (Hipótesis de carga)

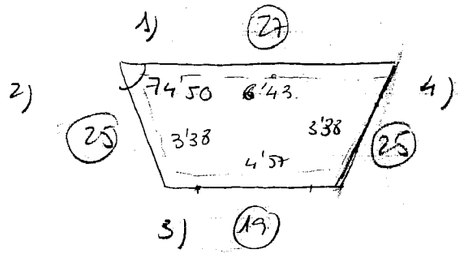
TIPO 1) Máximo flujo de tensiones en almas

coincide con AXILES MÁXIMOS (ELU) PILA 8, Barra 227, Hipo 311

$F_x = -5751'89$ T — $R_1 = 2913'96$ T

$F_z = 46'75$ T — $R_2 = 2837'93$ T

$M_y = 140'66$ Tm



$\Delta e = 17'75$

$q = \frac{M_T}{2\Delta e}$.

F_z fuera horizontal, aplicada a 3'4 m.

Se introduce un momento torsor adicional

$F_z \times d = 46'75 \times 3'4 = 158'95$ Tm.

$M^* = 140'66 + 158'95 = 299'61$ Tm.

$q = \frac{299'61}{2 \times 17'986} = 8'35$ T/m

$F_1 = q \cdot L_1 = 53'69$ — $f_1 = \frac{F_1}{27} = 1'99$

$F_2 = q \cdot L_2 = 28'22$ — $f_2 = \frac{F_2}{25} = 2'01$

$F_3 = q \cdot L_3 = 38'16$ — $f_2 = \frac{F_3}{19} = 1'13$ $\begin{cases} f_{3x} = 0'30 \\ f_{3y} = 1'09 \end{cases}$

$r_1 = r_2 = \frac{F_x}{25 \times 2} = -115'04$ — $c = \frac{F_z}{27} = 1'73$.

TIPO 2 ⇒ Máximo flujo de tensiones en las superficies coincide con: Momentos máximos (ELU) PILA 8 Barra 227 Hipo 319

$F_x = -4199'38$ T — $R_1 = 3069'77$ T

$F_z = 68'39$ T — $R_2 = 1129'61$ T

$M_y = -3589'31$ Tm

F_z fuera horizontal ⇒ M a deducir $3'4 \times 68'39 = 232'53$ Tm

Momento equivalente $M^* = 3589'3 - 232'53 = 3356'78$ mT

$q = \frac{3356'78}{2 \times 17'93} = 93'58$ T/m

$F_1 = q L_1 = 93'58 \times 6'43 = 601'72$ T — $f_1 = \frac{601'72}{27} = 22'29$ T

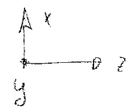
$F_2 = q L_2 = 93'58 \times 4'57 = 316'3$ T — $f_2 = \frac{316'3}{25} = 22'51$ T

$F_3 = q L_3 = 93'58 \times 8'38 = 427'17$ T — $f_3 = \frac{427'17}{19} = 12'63$ T

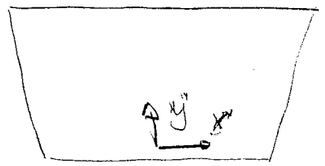
$f_{3x} = 3'38$ T ; $f_{3y} = 12'17$ T

$r_1 = r_2 = \frac{F_x}{2 \times 25} = 83'99$

$c = \frac{F_z}{27} = \frac{68'39}{27} = 1'85$

cargas en nudos.  ejes de la barra de pila.

Esquema de signos.



ejes del modelo de elef.

Hipo 1.

$F_x = -5751'89$. ↓(compr).

$F_z = 46'75$ (resta ↺ $F_x \times 3'4$ ⇒ # incremento mom. en vol abs.

$M_y = 140'66$

base sup { c ⇒ + 1'73 , 0.00
f1 ⇒ - 1'99 , 0.00

base inf { f2 ⇒ + 2'01 , 0.00

f3 ⇒ 0'30 -1'09 alma izda
0'30 +1'09 alma dcha

r = 0,0 -115'04. en la 2 alma

Hipo 2

$F_x = -4199'38$ ↓

$F_z = 68'39$ (resta

$M_y = -3589'31$ ↺ ↑ ← # mom en vector absoluto.

base sup { c ⇒ + 1'85 0.00
f1 ⇒ + 22'29 0.00

base inf { f2 ⇒ - 22'51 0.00

f3 ⇒ -3'38 12'17 alma izda
-3'38 -12'17 alma dcha

r ⇒ 0.0 -83'99 en 2 alms

RIOSTRAS SOBRE PILAS.

COMPROBACIÓN DE RESULTADOS

Hipo 1

cargas (ejes pila)	Resultante (sal-elefin) Nastran
$F_x = -5751'89$ T	$F_x = -5752'00$
$F_z = 46'75$ T	$F_z = 46'17$
$M_y = 140'66$ mT	$M_y = 143'05$
$M^* = 299'61$ T	
$R_1 = 2913'96$ T	$R_1= 2912'4$ T (Emuelle 1)
$R_2 = 2837'92$ T	$R_2 = 2840$ T (Emuelle 2)

Hipo 2

cargas (ej pila)	Resultante (sal-elefin)
$F_x = -4199'38$ T	$F_x = -4199'50$ T
$F_z = 68'39$ T	$F_z = 55'09$ T
$M_y = -3589'31$ T	$M_y = -3562'66$ mT
$M^* = 3356'78$ T	
$R_1 = 1129'61$ T	$R_1 = 1173$ T
$R_2 = 3069'77$ T	$R_2 = 3027$ T

VALE

Reacción máxima en en barras de apoyo:

Barra 199 Hipo 311 (PILA 8) F_x máx apoyo = 3157'7 > 3027 T

despreciable 3% mayor VALE.

Viaductos de El Papiol - RIOSTRAS

PILAS

	losa superior	losa inferior	almas
Longitudes (perimetro de torsion)	6.43	4.57	3.375
numero de nodos	27	19	25
2xAe			35.87

Esfuerzos de la barra 207 extremo fr ntal

HIP.	FX	FZ	MY	M*	r	c	q	f1	f2	f3	f3x	f3y
311 FUER X MAX envolvente (ELU)	-5418.07	27.67	-60.41	33.67	-108.36	1.02	0.94	0.22	0.23	0.13	0.03	0.12
312 FUER X MIN envolvente (ELU)	-1680.19	1.33	-15.96	-11.44	-33.60	0.05	-0.32	-0.08	-0.08	-0.04	-0.01	-0.04
315 FUER Z MAX envolvente (ELU)	-3854.33	-106.71	-434.72	-797.53	-77.09	-3.95	-22.23	-5.29	-5.35	-3.00	-0.80	-2.89
316 FUER Z MIN envolvente (ELU)	-3313.8	115.06	100.27	491.47	-66.28	4.26	13.70	3.26	3.30	1.85	0.49	1.78
319 MOME Y MAX envolvente (ELU)	-3067.37	6.81	-2530.89	-2507.74	-61.35	0.25	-69.91	-16.65	-16.82	-9.44	-2.52	-9.09
320 MOME Y MIN envolvente (ELU)	-4059.4	-22.83	2706.93	2629.31	-81.19	-0.85	73.30	17.46	17.63	9.90	2.65	9.54

Esfuerzos de la barra 210 extremo fr ntal

HIP.	FX	FZ	MY	M*	r	c	q	f1	f2	f3	f3x	f3y
311 FUER X MAX envolvente (ELU)	-5729.07	24.87	-254.97	-170.41	-114.58	0.92	-4.75	-1.13	-1.14	-0.64	-0.17	-0.62
312 FUER X MIN envolvente (ELU)	-1791.17	11.88	140.99	181.38	-35.82	0.44	5.06	1.20	1.22	0.68	0.18	0.66
315 FUER Z MAX envolvente (ELU)	-4000.22	-117.87	-586.34	-987.10	-80.00	-4.37	-27.52	-6.55	-6.62	-3.72	-0.99	-3.58
316 FUER Z MIN envolvente (ELU)	-4166.91	128.7	441.22	878.80	-83.34	4.77	24.50	5.83	5.89	3.31	0.88	3.19
319 MOME Y MAX envolvente (ELU)	-3273.27	-19.08	-2780.83	-2845.70	-65.47	-0.71	-79.33	-18.89	-19.08	-10.71	-2.86	-10.32
320 MOME Y MIN envolvente (ELU)	-4222.34	-1.05	3209.07	3205.50	-84.45	-0.04	89.36	21.28	21.49	12.06	3.23	11.62

Esfuerzos de la barra 213 extremo fr ntal

HIP.	FX	FZ	MY	M*	r	c	q	f1	f2	f3	f3x	f3y
311 FUER X MAX envolvente (ELU)	-5709.96	9.41	-384.98	-352.99	-114.20	0.35	-9.84	-2.34	-2.37	-1.33	-0.36	-1.28
312 FUER X MIN envolvente (ELU)	-1762.53	9.08	215.55	246.42	-35.25	0.34	6.87	1.64	1.65	0.93	0.25	0.89
315 FUER Z MAX envolvente (ELU)	-2687.38	-117.64	-1033.86	-1433.84	-53.75	-4.36	-39.97	-9.52	-9.61	-5.40	-1.44	-5.20
316 FUER Z MIN envolvente (ELU)	-4520.23	118.87	551.35	955.51	-90.40	4.40	26.64	6.34	6.41	3.60	0.96	3.47
319 MOME Y MAX envolvente (ELU)	-3256.83	-40.77	-2787.87	-2926.49	-65.14	-1.51	-81.59	-19.43	-19.62	-11.01	-2.95	-10.61
320 MOME Y MIN envolvente (ELU)	-4162.87	16.07	3277.93	3332.57	-83.26	0.60	92.91	22.13	22.35	12.54	3.36	12.09

Esfuerzos de la barra 216 extremo fr ntal
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HIP.	FX	FZ	MY	M*	r	c	q	f1	f2	f3	f3x	f3y
311 FUER X MAX envolvente (ELU)	-5740.79	20.82	-372.61	-301.82	-114.82	0.77	-8.41	-2.00	-2.02	-1.14	-0.30	-1.09
312 FUER X MIN envolvente (ELU)	-1771.01	5.37	274.02	292.28	-35.42	0.20	8.15	1.94	1.96	1.10	0.29	1.06
315 FUER Z MAX envolvente (ELU)	-2697.35	-121.49	-980.36	-1393.43	-53.95	-4.50	-38.85	-9.25	-9.34	-5.24	-1.40	-5.05
316 FUER Z MIN envolvente (ELU)	-4537.57	129.88	562.95	1004.54	-90.75	4.81	28.01	6.67	6.74	3.78	1.01	3.64
319 MOME Y MAX envolvente (ELU)	-3273.79	-19.6	-2852.71	-2919.35	-65.48	-0.73	-81.39	-19.38	-19.58	-10.99	-2.94	-10.59
320 MOME Y MIN envolvente (ELU)	-4180.36	-7.79	3421.08	3394.59	-83.61	-0.29	94.64	22.54	22.76	12.78	3.42	12.31

Esfuerzos de la barra 219 extremo fr ntal
==========

HIP.	FX	FZ	MY	M*	r	c	q	f1	f2	f3	f3x	f3y
311 FUER X MAX envolvente (ELU)	-5737.35	16.57	-303.92	-247.58	-114.75	0.61	-6.90	-1.64	-1.66	-0.93	-0.25	-0.90
312 FUER X MIN envolvente (ELU)	-1765.41	8.92	96.57	126.90	-35.31	0.33	3.54	0.84	0.85	0.48	0.13	0.46
315 FUER Z MAX envolvente (ELU)	-2689.97	-124.22	-978.09	-1400.44	-53.80	-4.60	-39.04	-9.30	-9.39	-5.27	-1.41	-5.08
316 FUER Z MIN envolvente (ELU)	-4521	130.84	556.21	1001.07	-90.42	4.85	27.91	6.65	6.71	3.77	1.01	3.63
319 MOME Y MAX envolvente (ELU)	-3268.12	-22.29	-2861.42	-2937.21	-65.36	-0.83	-81.88	-19.50	-19.70	-11.05	-2.96	-10.65
320 MOME Y MIN envolvente (ELU)	-4174.88	-1.98	3249.77	3243.04	-83.50	-0.07	90.41	21.53	21.75	12.21	3.26	11.76

Esfuerzos de la barra 222 extremo fr ntal
==========

HIP.	FX	FZ	MY	M*	r	c	q	f1	f2	f3	f3x	f3y
311 FUER X MAX envolvente (ELU)	-5736.26	29.51	-144.11	-43.78	-114.73	1.09	-1.22	-0.29	-0.29	-0.16	-0.04	-0.16
312 FUER X MIN envolvente (ELU)	-1769.24	1.57	-71.63	-66.29	-35.38	0.06	-1.85	-0.44	-0.44	-0.25	-0.07	-0.24
315 FUER Z MAX envolvente (ELU)	-2690.47	-123.45	-1038.74	-1458.47	-53.81	-4.57	-40.66	-9.68	-9.78	-5.49	-1.47	-5.29
316 FUER Z MIN envolvente (ELU)	-4529.87	133.43	568.04	1021.70	-90.60	4.94	28.48	6.78	6.85	3.85	1.03	3.71
319 MOME Y MAX envolvente (ELU)	-3026.42	26.5	-2847.06	-2756.96	-60.53	0.98	-76.86	-18.30	-18.49	-10.38	-2.78	-10.00
320 MOME Y MIN envolvente (ELU)	-4182.14	-11.6	2790.2	2750.76	-83.64	-0.43	76.69	18.26	18.45	10.35	2.77	9.98

Esfuerzos de la barra 225 extremo fr ntal
==========

HIP.	FX	FZ	MY	M*	r	c	q	f1	f2	f3	f3x	f3y
311 FUER X MAX envolvente (ELU)	-5711.71	25.91	73.6	161.69	-114.23	0.96	4.51	1.07	1.08	0.61	0.16	0.59
312 FUER X MIN envolvente (ELU)	-1757.04	2.54	-229.59	-220.95	-35.14	0.09	-6.16	-1.47	-1.48	-0.83	-0.22	-0.80
315 FUER Z MAX envolvente (ELU)	-3788.58	-115.11	-1230.99	-1622.36	-75.77	-4.26	-45.23	-10.77	-10.88	-6.11	-1.63	-5.88
316 FUER Z MIN envolvente (ELU)	-3416.38	122.65	622.66	1039.67	-68.33	4.54	28.98	6.90	6.97	3.91	1.05	3.77
319 MOME Y MAX envolvente (ELU)	-4112.74	-24.29	-3111.4	-3193.99	-82.25	-0.90	-89.04	-21.21	-21.42	-12.02	-3.22	-11.58
320 MOME Y MIN envolvente (ELU)	-3304.28	70.42	2618.05	2857.48	-66.09	2.61	79.66	18.97	19.16	10.75	2.88	10.36

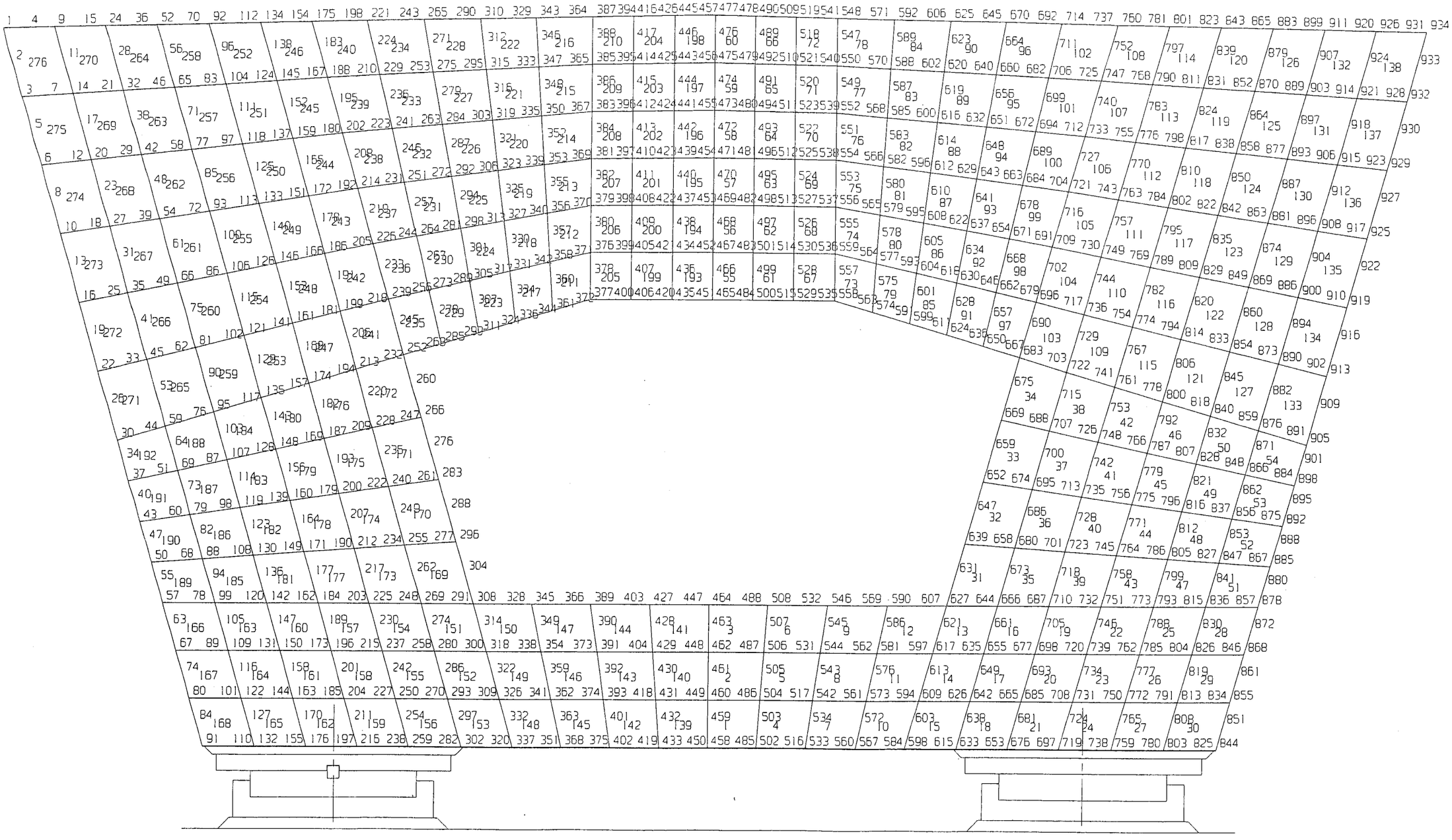
Esfuerzos de la barra 227 extremo fr ntal

HIP.	FX	FZ	MY	M*	r	c	q	f1	f2	f3	f3x	f3y
311 FUER X MAX envolvente (ELU)	-5751.89	46.75	140.66	299.61	-115.04	1.73	8.35	1.99	2.01	1.13	0.30	1.09
312 FUER X MIN envolvente (ELU)	-1774.75	-9.93	-245.22	-278.98	-35.50	-0.37	-7.78	-1.85	-1.87	-1.05	-0.28	-1.01
315 FUER Z MAX envolvente (ELU)	-2852.8	-123.4	-557.52	-977.08	-57.06	-4.57	-27.24	-6.49	-6.55	-3.68	-0.98	-3.54
316 FUER Z MIN envolvente (ELU)	-4610.5	140.97	279.38	758.68	-92.21	5.22	21.15	5.04	5.09	2.86	0.76	2.75
319 MOME Y MAX envolvente (ELU)	-4199.38	68.39	-3589.31	-3356.78	-83.99	2.53	-93.58	-22.29	-22.51	-12.63	-3.38	-12.17
320 MOME Y MIN envolvente (ELU)	-3301.78	11.94	2923.1	2963.70	-66.04	0.44	82.62	19.68	19.87	11.15	2.98	10.75

Esfuerzos de la barra 229 extremo fr ntal

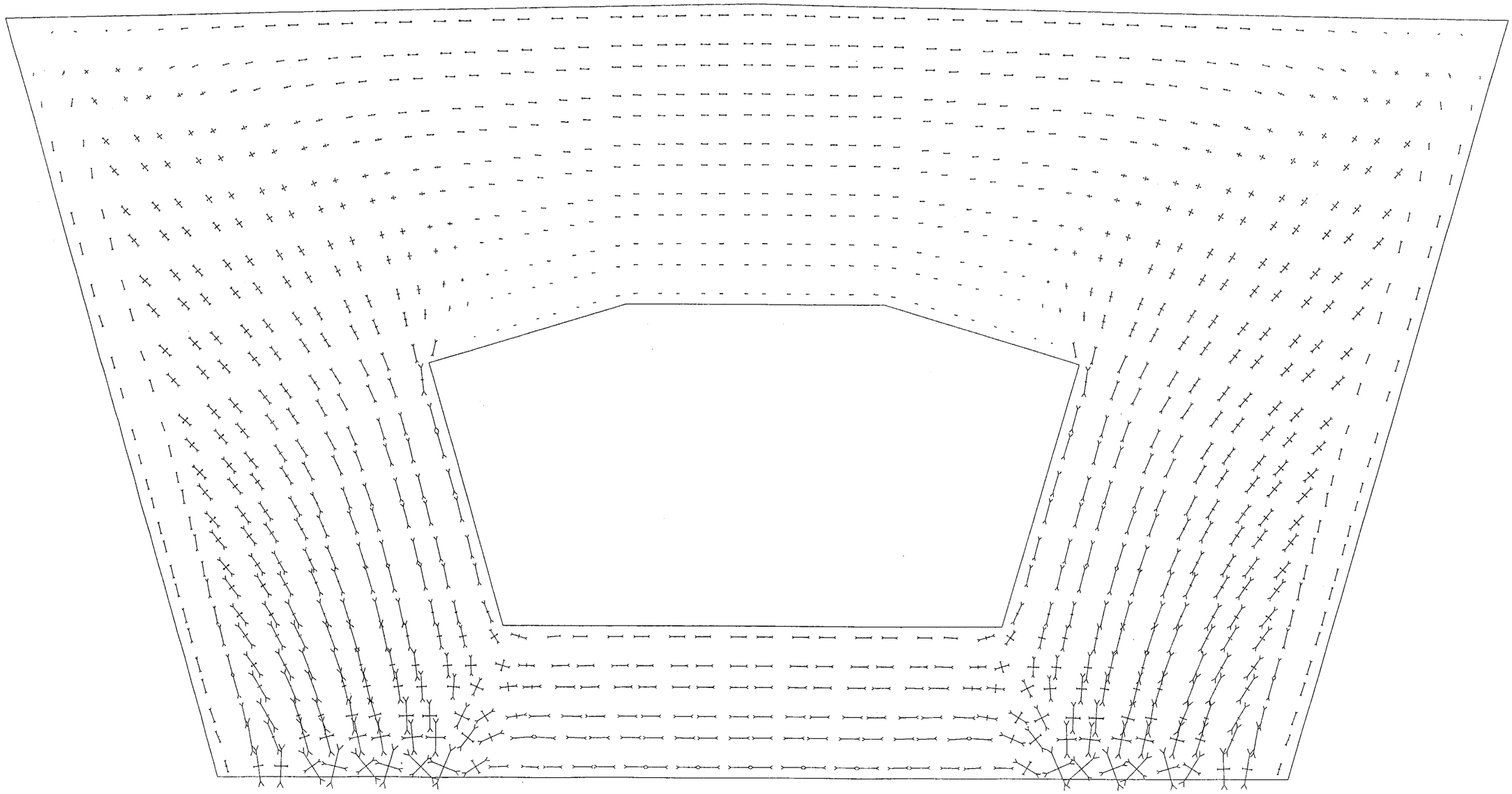
HIP.	FX	FZ	MY	M*	r	c	q	f1	f2	f3	f3x	f3y
311 FUER X MAX envolvente (ELU)	-5515.29	27.06	27.11	119.11	-110.31	1.00	3.32	0.79	0.80	0.45		
312 FUER X MIN envolvente (ELU)	-1568.89	-0.34	-67.63	-68.79	-31.38	-0.01	-1.92	-0.46	-0.46	-0.26	-0.07	-0.25
315 FUER Z MAX envolvente (ELU)	-2839.03	-94.95	-705.66	-1028.49	-56.78	-3.52	-28.67	-6.83	-6.90	-3.87	-1.04	-3.73
316 FUER Z MIN envolvente (ELU)	-4310.59	103.08	443.84	794.31	-86.21	3.82	22.14	5.27	5.33	2.99	0.80	2.88
319 MOME Y MAX envolvente (ELU)	-3854.33	-11.15	-2537.44	-2575.35	-77.09	-0.41	-71.80	-17.10	-17.27	-9.69	-2.59	-9.34
320 MOME Y MIN envolvente (ELU)	-3251.97	56.03	2237.25	2427.75	-65.04	2.08	67.68	16.12	16.28	9.14	2.44	8.80

elef malla



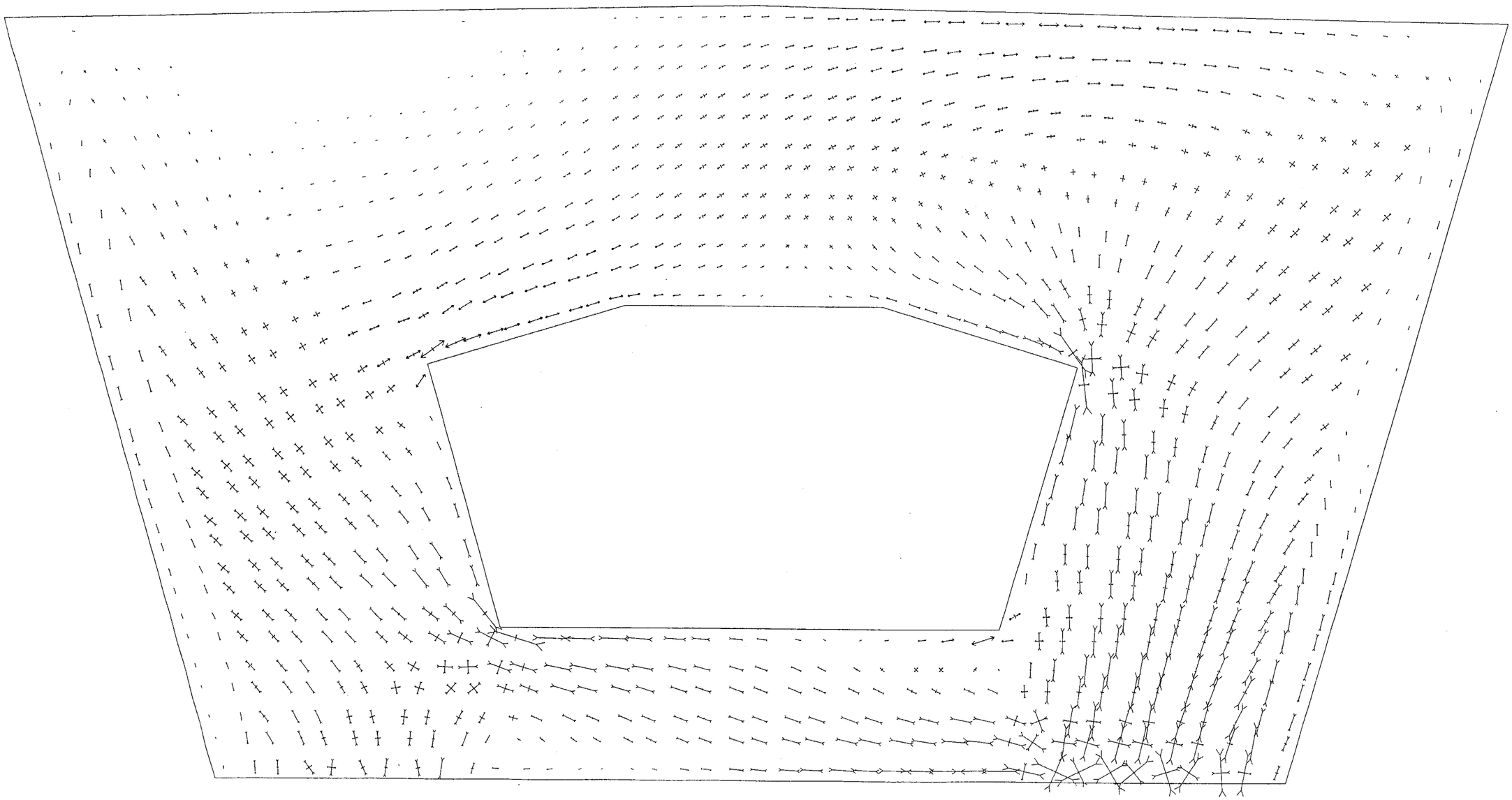
elef
hipo l axil maximo
tensiones

⟷ 5000.



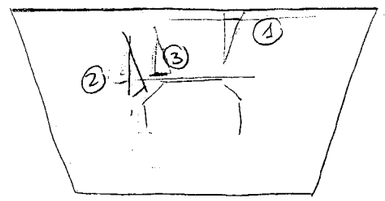
elef
hipo 2 torsor maximo
tensiones

5000.



CÁLCULO ARMADURA DE RIOSTRA DE PILAS

Volumen de tracción (integración)



① $\sigma = 0'51 \times 2500 = 1275\ T/m^2$

$y_m = \frac{4'285}{5} = 0'912\ m$

espesor $e = 1'5\ m$

U_s = Volumen de Tracción = $1275 \times 0'912 \times \frac{1'5}{2} = 872\ T$

$A_s = \frac{872}{5'1} \times 1'15 = 196'65\ cm^2 \Rightarrow 24'5\ \phi 32 \Rightarrow 26\ \phi$

② $\sigma = 0'547 \times 2500 = 1367'5\ T/m^2$

$y_m = \frac{6'41}{5} = 1'282\ m \qquad e = 1'5\ m$

$U_s = 1324'65 \times 1'1973 \times \frac{1'5}{2} = 1314'9\ T$

$A_s = \frac{U_s}{5'1} \times 1'15 = 296'50\ cm^2 \Rightarrow 36'8\ \phi 32 \Rightarrow 38\ \phi 32 \Rightarrow$

(3)

$T: 0'3515 \times 2500 = 896'25$

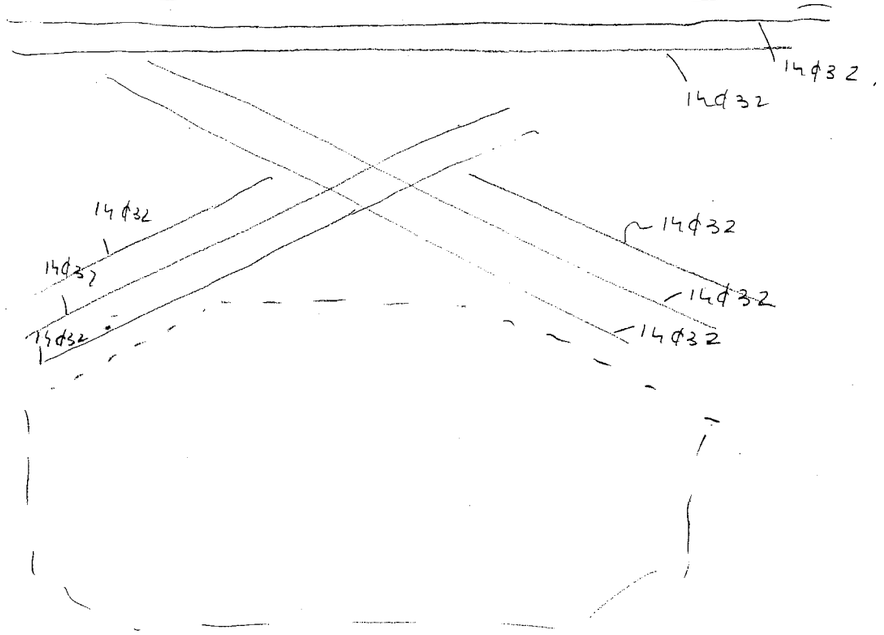
$\gamma_f = 7'76/5 = 1'552$

$e = 1'5 m$

$U_s = 856 \times 1'528 \times 1'5/2 = 1043'24\ T$

$A_s = \frac{981}{5'1} \times 1'15 = 221'21\ cm^2 \Rightarrow 27'5\ \phi 32 \Rightarrow 28\phi 32$

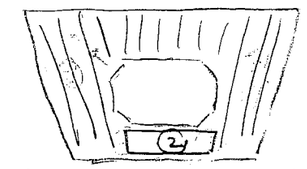
ESQUEMA ARMADURA



ARMADURA DE CORTANTE MUROS DE MUS.

$A_s f_{yd} = T_b$

(1)



ESQUEMA

ZONA 1 ⇒ $c\phi 25$ a d10 + $c\phi 20$ a d10

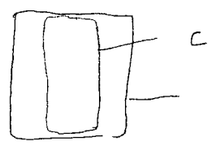
ZONA 2 ⇒ $c\phi 20$ a d20 + $c\phi 20$ a d20

(1)

$T: 0'17 \times 2500 = 425\ T/m^2$

$b = 1'5 m$

$A_s = \frac{425 \times 1'5}{5'1} \times 1'15 = 143'75\ cm^2/m \Rightarrow$?



2 ramas ⇒

$143'75/2 = 71'875$

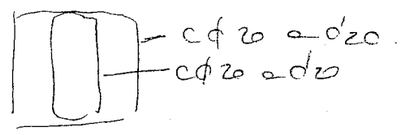
$2 \times (4'91 + 3'14) \times 10 = 161\ cm^2/m$

$c\phi 25$ a d10 + $c\phi 20$ a d10

(2) $T = 0'05 \times 2500 = 125\ T/m^2$

$b = 1'5 m$

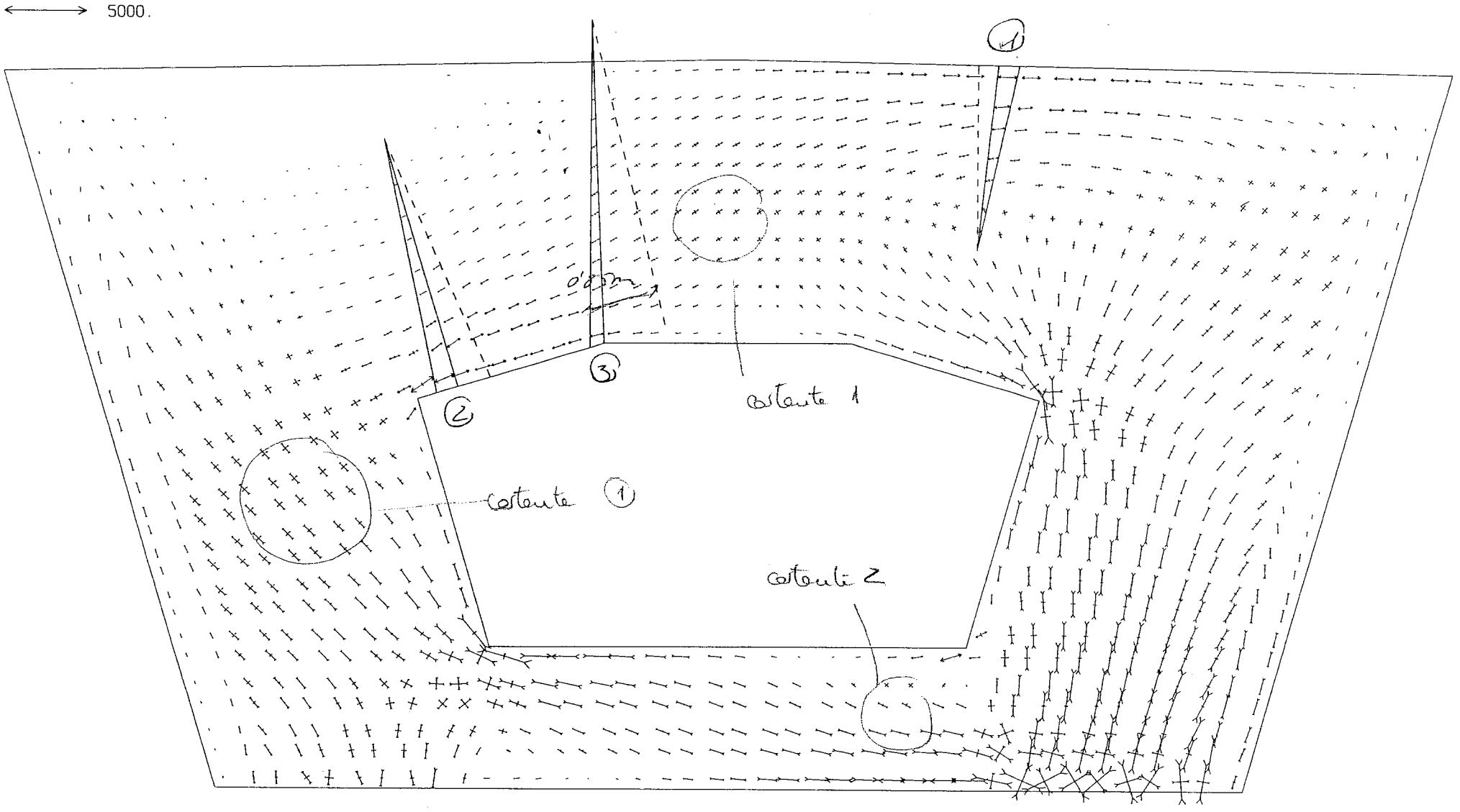
$A_s = \frac{125 \times 1'5}{5'1} \times 1'15 = 43 cm^2 \Rightarrow$ 2 cc $\phi 20$ a d20



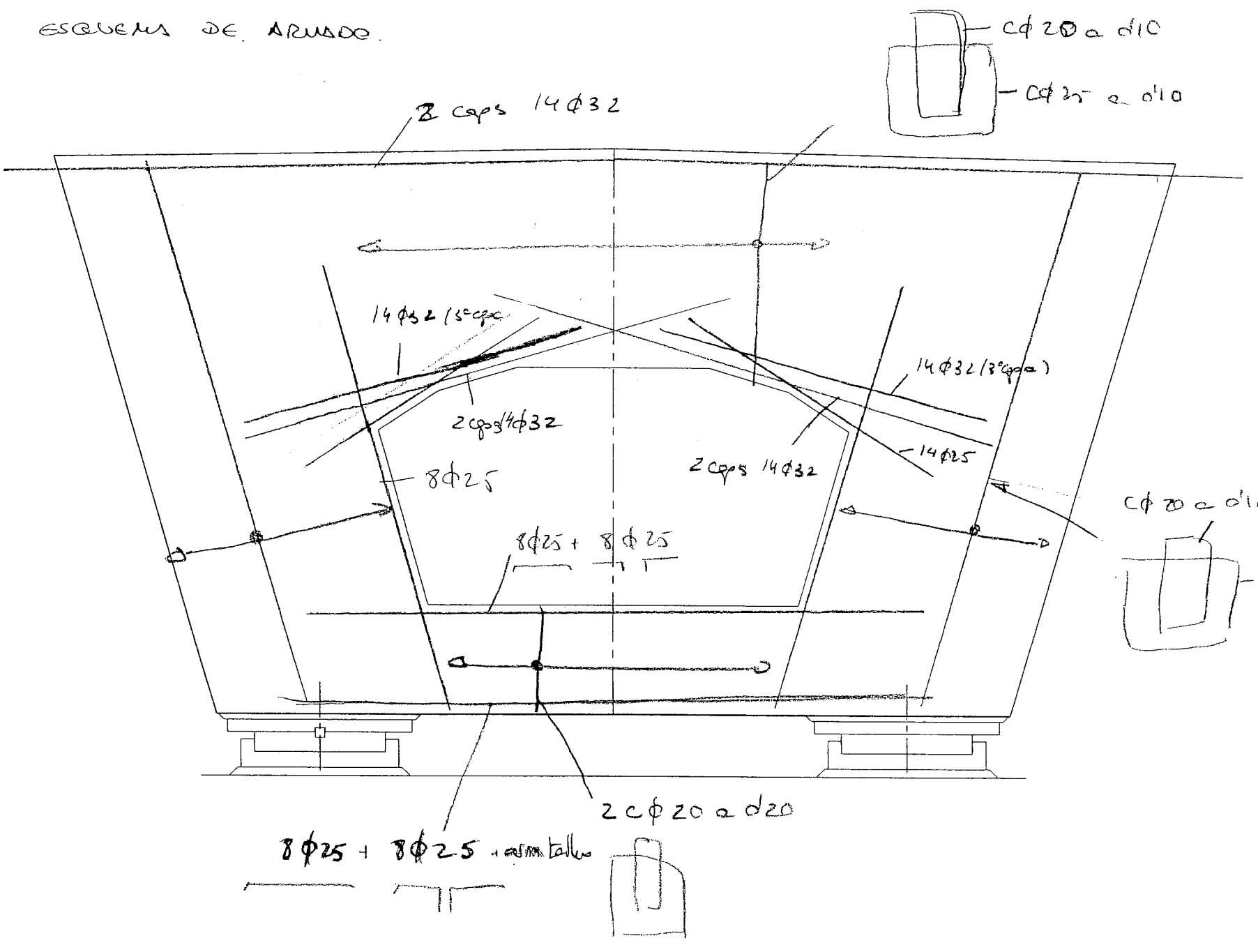
elef
hipo 2 torsor maximo
tensiones

⟷ 5000.

CÁLCULO DE ARMADURAS POR VOL. DE TRACCIÓN (MODELO PILAS)



ESQUEMA DE ARMADO



RIOSTRAS DE ESTRIBO 1

NUDOS A CARGAR (RIOSTRA DE ESTRIBO-1)

losa superior (21 nuds)

197 231 267 311 358 404 450 495 556 581
606 631 665 704 749 795 841 888 932 968
1002

losa inferior (21 nuds)

320 330 361 392 423 453 485 518 534 568
593 618 643 681 714 746 776 807 838 869
899

Alma izquierda (23 nuds)

197 200 206 210 213 219 222 226 230 236
240 245 249 255 257 263 269 273 278 283
289 294 300

Alma derecha (23 nuds)

1002 999 993 989 986 980 977 973 969 963
959 954 950 944 942 936 930 926 921 916
910 905 899

Apoyos

Guiado: 38 65 85 110 132 Guía: 85

Libre 1067 1089 1114 1134 1161

Pretensado: 3, 25, 1178, 1195,

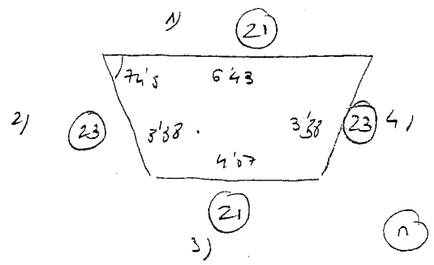
ESFUERZOS SOBRE ESTRIBO-1 (móvil)

HIPO 1. Máximo flujo de tensiones en alas coincide con AXILES MÁXIMOS (ELU)

$F_x = -1820'3$ T $R_1 = 911'61$ T

$F_z = 10'27$ T $R_2 = 908'69$ T

$M_y = 12'43$ mT



$A_c = 17'75$

$q = \frac{M_T}{2A_c}$

(n°) : nº de nodos a coger en cada lado.

F_z fuerza horizontal cogeda a 3'4m de altura sobre la losa del estribo y la q se toman sfuerzos.

Se introduce un momento torsor adicional

$F_z \cdot d = 10'27 \times 3'4 = 34'92$ T m

$M^* = 12'43 + 34'92 = 47'35$ mT

$q = \frac{47'35}{2 \times 17'75} = 1'33$ T/m

$F_1 = q L_1 = 8'576$ T $f_1 = \frac{F_1}{21} = 0'41$ T

$F_2 = q L_2 = 6'09$ T $f_2 = \frac{F_2}{21} = 0'29$ T

$F_3 = q L_3 = 4'50$ T $f_3 = \frac{F_3}{23} = 0'20$ T $\begin{cases} f_{3x} = 0'05 \text{ T} \\ f_{3y} = 0'19 \text{ T} \end{cases}$

$r_1 = r_2 = \frac{F_x}{2 \times 23} = -39'57$ T $c = \frac{F_z}{21} = 0'49$ T

ESFUERZOS E-1 (Gral)

HIPO-2: Máximo flujo de tensiones en los apoyos coincide con: Momento mínimo ELU.

$F_x = -997'66$ T $R_1 = 779'17$ T

$F_z = 0'62$ T $R_2 = 218'49$ T

$M_y = 2382'85$ mT $d = 5'9$ (dist. entre apoyos)

F_z fuerza horizontal $\Rightarrow$ Momento adicional $= 3'4 \times 0'62 = 2'108$ mT

Momento equivalente $M^* = 2382'85 + 2'108 = 2384'96$ mT

$q = \frac{M_1^*}{2A_c} = 66'49$ T/m

$F_1 = q \cdot L_1 = 427'53$ T $f_1 = \frac{F_1}{21} = 20'36$ T

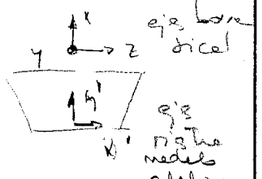
$F_2 = q \cdot L_2 = 303'86$ T $f_2 = \frac{F_2}{21} = 14'47$ T

$F_3 = f L_3 = 224'74$ T $f_3 = \frac{F_3}{21} = 9'77$ T $\begin{cases} f_{3x} = 2'61 \text{ T} \\ f_{3y} = 9'41 \text{ T} \end{cases}$

$r_1 = r_2 = \frac{997'66}{23 \times 2} = 21'68$ T $c = \frac{0'62}{21} = 0'02$ T

PIOSTRA E-1 (Cont)

Cargas en nudos y esfuerzos de viento



tipo 1 $F_x = -1820'3\,T$ ↓

$F_z = 10'27\,T$ → ⇒ restas ↻ $F_z \times 3'4$: incremento de mom. en valor absoluto

$M_y = 12'43\,mT$ ↻

losa superior { c ⇒ 0'49 ; 0'00 ; f_1 ⇒ −0'41 ; 0,00 } f_3 { 0'05 −0'19 alma izda ; 0'05 0'19 alma dcha

losa inferior f_2 ⇒ +0'29 . 0.00 $r = (0'0 \;\; -39'7)$ los 2 almas

Hipo 2

$F_x = -997'66\,T$ ↓

$F_z = 0'62\,T$ → ⇒ restas ↻ $F_z \times 3'4$ (Δ de mom en valor absoluto)

$M_y = 2382'85\,mT$ ↻

losa superior { c ⇒ 0'02 ; 0'00 alma izda $f_3 = 2'61 \;\; -9'41$; f_1 ⇒ −20'36 , 0'00 alma dcha $f_3 = 2'61 \;\; 9'41$ }

losa inferior f_2 ⇒ +14'47 ; 0'00 los 2 almas $r = 0'0 \;\; -2'68$

PIOSTRA SOBRE E-1

COMPROBACIÓN DE RESULTADOS

HIPO 1 AXIL MÁXIMO.

Esfuerzos en estudio (nodal)	Resultante sobre elemento
$F_x = -1820'3\,T$	$F_x = -1820'22\,T$
$F_z = 10'27\,T$	$F_z = 10'07\,T$
$M_y = 12'43\,T$	$M_y = 13'34\,mT$
$R_1 = 911'61\,T$	$R_1 = 911'81\,T$
$R_2 = 908'68\,T$	$R_2 = 909'10\,T$

HIPO 2 MOMENTO TORSOR MÁXIMO.

Esfuerzos en estudio	Resultante sobre elemento
$F_x = -997'66\,T$	$F_x = -997'28\,T$
$F_z = 0'62\,T$	$F_z = -3'21\,T$
$M_y = 2382'85\,mT$	$M_y = 2393'51\,mT$
$R_1 = 779'17\,T$	$R_1 = 777'24\,T$
$R_2 = 218'49\,T$	$R_2 = 220'28\,T$

R_1 y $R_2 = \frac{F_x}{2} = \frac{M_y}{5'9}$

R_1 y R_2: Esfuerzos sobre apoyos VALE

Reacción máxima barra apoyo ELU =

Barra 182, Hipo 311 $F_{z\,max\,apoyo} = 1001'28\,T \Rightarrow 911'81\,T$ 10% mayor Z

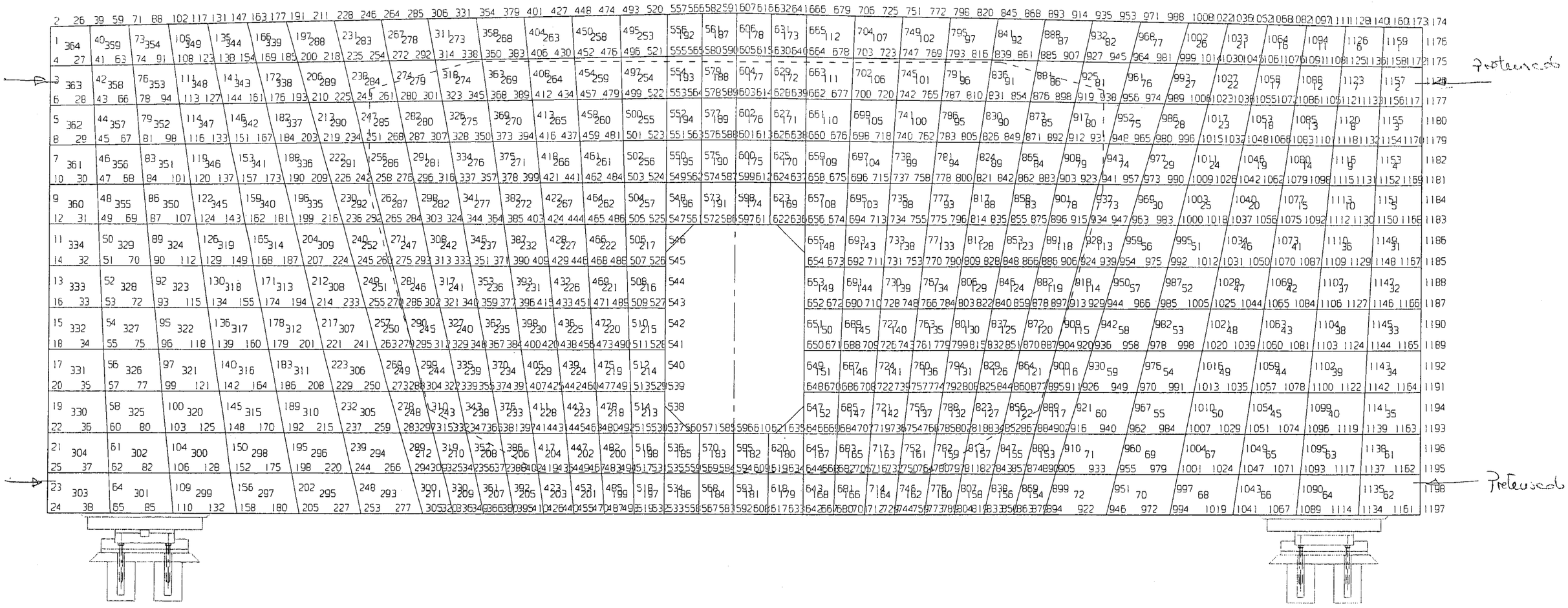
ESTRIBO 1

	losa sup	losa inf	almas
longitudes (perimetro de torsion)	6.43	4.57	3.375
numero de nodos	21	21	23
2xAe			35.87

Esfuerzos de la barra 230 extremo fro ntal

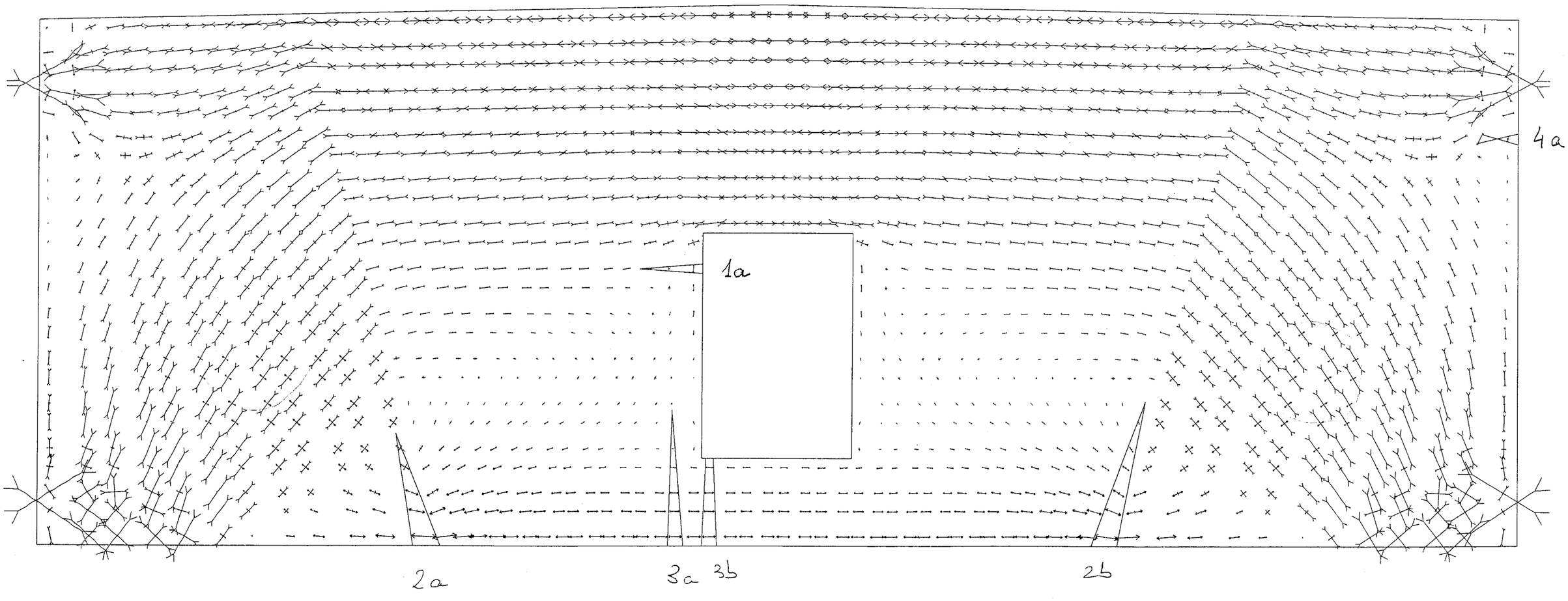
HIP.	FX	FZ	MY	M*	r	c	q	f1	f2	f3	f3x	f3y
311 FUER X MAX envolvente (ELU)	-1820.3	10.27	12.43	47.35	-39.57	0.49	1.32	0.40	0.29	0.19	0.05	0.19
312 FUER X MIN envolvente (ELU)	-414.78	0.21	-82.47	-81.76	-9.02	0.01	-2.28	-0.70	-0.50	-0.33	-0.09	-0.32
315 FUER Z MAX envolvente (ELU)	-703.13	-37.49	797.71	670.24	-15.29	-1.79	18.69	5.72	4.07	2.74	0.73	2.64
316 FUER Z MIN envolvente (ELU)	-1023.04	40.55	-916.81	-778.94	-22.24	1.93	-21.72	-6.65	-4.73	-3.19	-0.85	-3.07
319 MOME Y MAX envolvente (ELU)	-1371.19	10.72	-2350.67	-2314.22	-29.81	0.51	-64.52	-19.75	-14.04	-9.47	-2.53	-9.12
320 MOME Y MIN envolvente (ELU)	-997.66	0.62	2382.85	2384.96	-21.69	0.03	66.49	20.36	14.47	9.76	2.61	9.40

elef riostra estribo - 1 malla



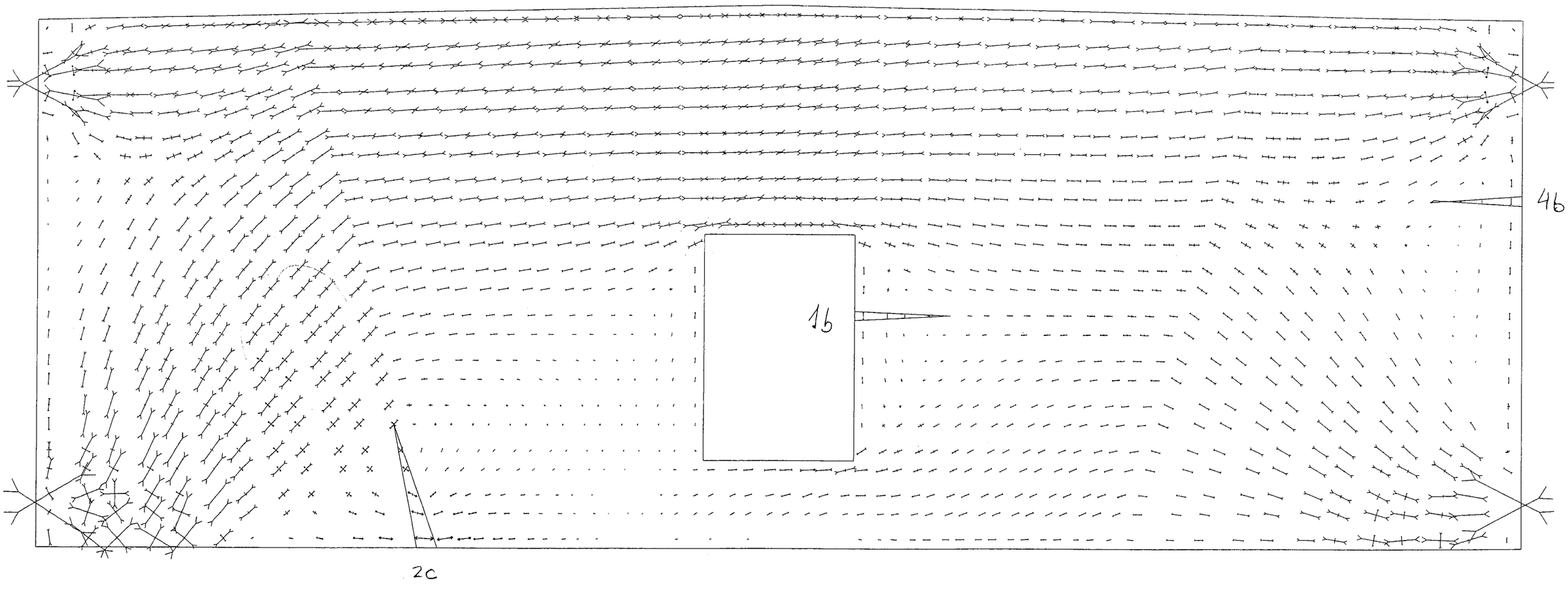
elef riostra estribo-1
hipo 1 axil maxino
tensiones

⟷ 1000.



elef riostra estribo-1
hipo 2 momento maxino
tensiones

⟷ 1000.



CÁLCULO DE ARMADURA PILASTRA ESTRIBO - 1

Armadura vertical hueco (1)

1a HIPO 1

$\sigma = 0'31 \times 500 = 155\ T/m^2$

$y_m = 2'1/5 = 0'42\ m$; $e = 1'5m$

$U_s = 48'8\ T$

$A_s = 11\ cm^2$

1b HIPO 2.

$\sigma = 0'30 \times 500 = 150\ T/m^2$

$y_m = 3'16/5 = 0'63\ m$; $e = 1'5m$

$U_s = 71'1\ T$

$A_s = 16\ cm^2$ $6\phi 20$

Armadura horizontal extremo (2)

2a HIPO 1.

$\sigma = 0'92 \times 500 = 460\ T/m^2$

$y_m = 3'73/5 = 0'75\ m$ $e = 1'5m$

$U_s = 257'4\ T$

$A_s = 58\ cm^2$

2b HIPO 1

$\sigma = 0'87 \times 500 = 435\ T/m^2$

$y_m = 4'81/5 = 0'96\ m$ $e = 1'5m$

$U_s = 313'9T$

$A_s = 71\ cm^2$

$12\phi 32$

2c HIPO 2

$\sigma = 0'69 \times 500 = 345\ T/m^2$

$y_m = 4'12/5 = 0'82\ m$ $e = 1'5m$

$U_s = 213'2T$

$A_s = 48\ cm^2$

Armadura horizontal inferior central (3)

3a) HIPO 1

$\sigma = 0'513 \times 500 = 257\ T/m^2$; $y_{fm} = 4'52/5 = 0'90\ m$; $e = 1'5m$ ⟩ $U_s = 174\ T$; $A_s = 39'2\ cm^2$

$6\phi32 \Rightarrow$ de disponen $12\phi32$

3b HIPO 1

$\sigma = 0'50 \times 500 = 250\ T/m^2$; $y_{fm} = 2'9/5 = 0'58\ m$; $e = 1'5m$ ⟩ $U_s = 109\ T$; $A_s = 24'5\ cm^2$

(rectangular ⇒)

Armadura ref pretensado vertical. (4)

4a HIPO 1

$\sigma = 0'36 \times 500 = 180\ T/m^2$; $y_{fm} = 0'70/5 = 0'14\ m$; $e = 1'5m$ ⟩ $U_s = 18'9\ T$; $A_s = 4'3\ cm^2$

4b HIPO 2

$\sigma = 0'33 \times 500 = 165\ T/m^2$; $y_{fm} = 2'52/5 = 0'50\ m$; $e = 1'5m$ ⟩ $U_s = 62'4\ T$; $A_s = 14'1\ cm^2$

$6\phi20$

Armadura de cortante 5

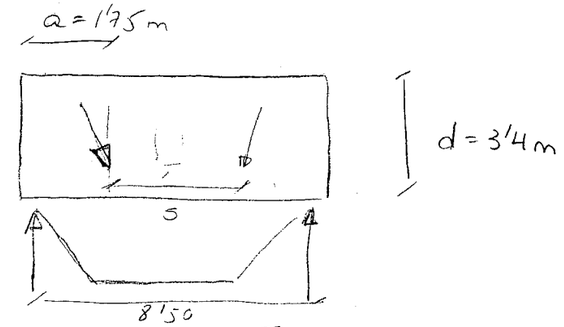
$C = d35 \times 500$, $S = 1'5\ m$ $A_s = 39'5\ cm^2 \Rightarrow \phi25\ a\ d20$
$(2c\phi20\ a\ d'20)$

Armadura de cortante 6

$C = d'12 \times 500$ $S = 1'5m$ $A_s = 20'3\ cm^2 \Rightarrow \phi20\ a\ d'20$

COMPROBACIÓN ARMADURA RIOSTRA SOBRE ESTRIBO 1

Ref. $71\ cm^2$.



$R_{máx}\ (ELU) = 1001\ T$

$M = 1001 \times 1'75 = 1752\ mT$

$A_s = \frac{M}{d \cdot 0'9} \times \frac{1'15}{5'1} = 129'2\ cm^2 = 18\ \phi32 = 1$ ...
vs $71\ cm^2$ se dispone $18\phi32$

Armadura de cortante.

$Q = 1000T$

$\frac{1000}{3'4 \times 0'9 \times 5'1/1'5} = 73'7\ cm^2$ vs $62'8\ cm^2$.
$39'5$

RIOSTRAS DE ESTRIBO 2

NUDOS A CARGAR (RIOSTRES DE ESTRIBO - 2)

Losa superior (21 nuds)

210 250 293 347 405 461 493 525 573 592
611 630 658 677 709 737 808 866 920 968
1003

Losa inferior (12 nuds)

317 346 377 404 437 452
758 776 809 836 867 896

Alma izquierda (25 nuds)

210 214 220 223 228 233 237 241 245 257
255 260 265 271 274 279 282 286 291 296
300 305 308 313 317

Alma derecha (25 nuds)

1003 999 993 990 985 980 976 972 968 962
958 953 948 942 939 934 931 927 922 917
913 908 905 900 896

Apoyo guiado 41 70 90 118 141
guía : 90

Apoyo libre : 1072 1095 1123 1143 1172.

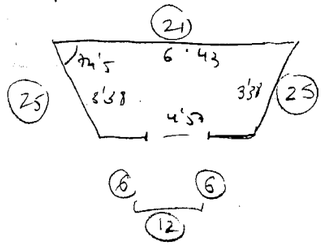
Pretensado : 6 20 1189 1203.

RIOSTRA SOBRE ESTRIBO 2. (Rijo1)

HIPO 1: Máximo flujo de tensiones en alma.
(Axil máximo ELU)

$F_x = -2055'6$ T
$F_z = 15'87$ T
$M_y = -220'79$ mT

$R_1 = 1053'78$ T
$R_2 = 1001'82$ T
$d = 5'9$ m



$\Delta e = 17'94$

$q = \frac{M_T}{2\Delta e}$

F_z ⇒ fuerza horizontal a 3'4m de altura → introduce momento.

Momento a deducir $\overline{F_z} \times 3'4 = 15'87 \times 3'4 = 53'96$ mT

Momento equivalente $M^* = -166'83$ mT ⇒ $q = \frac{-166'83}{2 \times 17'94} = -4'65$ T/m

$F_1 = q \cdot L_1 = 29'90$ T
$F_2 = q \cdot L_2 = 21'25$ T
$F_3 = q \cdot L_3 = 15'72$ T

$f_1 = \frac{F_1}{21} = 1'42$ T
$f_2 = \frac{F_2}{12} = 1'77$ T
$f_3 = \frac{F_3}{25} = 0'63$

$f_{3x} = 0'17$
$f_{3y} = 0'61$

$r_1 = r_2 = \frac{\overline{F_3}}{2 \times 25} = -41'11$

$c = \frac{\overline{F_2}}{21} = 0'96$

(Riostra E-2)

HIPO 2: Máximo flujo de tensiones en bos sup e inf
(Momento máximo ELU).

$F_x = -1329'06$ T
$F_z = 22'57$ T
$M_y = -2612'07$ mT

$R_1 = 971'83$ T
$R_2 = 357'83$ T
$d = 5'9$ m

F_z: situado a 3'4m ⇒ introduce momento

Momento a deducir ⇒ $-3'4 \times F_z = -76'53$ mT.

Momento equivalente $M^* = -2612'54 + 76'53 = -2535'54$

$q = \frac{M^*}{2\Delta e} = -70'69$ T/m flujo tesor.

$F_1 = q \cdot L_1 = 459'54$ T
$F_2 = q \cdot L_2 = 323'05$ T
$F_3 = q \cdot L_3 = 238'93$ T

$f_1 = \frac{F_1}{21} = 21'64$ T
$f_2 = \frac{F_2}{12} = 26'92$ T
$f_3 = \frac{F_3}{25} = 9'54$

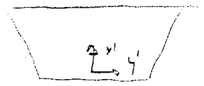
$f_{3x} = 2'55$ T
$f_{3y} = 9'19$ T

$r_1 = r_2 = \frac{\overline{F_1}}{2 \times 25} = 26'58$ T

$c = \frac{\overline{F_2}}{21} = 1'04$ T

Pista E-2.

Cargas en nudos



ges rígida para elefin

ges barra rígida (esfuerzos).

Hipo 1) ⇒

$F_x = -2055'6$ T ↓

$R_z = 15'87$ T

$M_y = -220'79$ mT

Restas ↻ → disminuye M^o en valor absoluto

Losa superior	c ⇒ +0'76	0'00	alma izda f_3 ⇒	−0'17 +0'61
	f_1 ⇒ +1'42	0'00	alma dcha f_3 ⇒	−0'17 −0'61
losa inferior	f_2 ⇒ −1'77	0'00	b. 2 alms r ⇒	0'00 −4111

hipo 2)

$F_x = -1329'06$ T ↓

$F_z = 22'51$ T

$M_y = -2612'07$ mT

Restas ↻ disminuye M^o en valor abs

losa superior	c ⇒ +1'07	0'00	alma izda f_3 ⇒	−2'55 +5'19
	f_1 ⇒ +2'64	0'00	alma dcha f_3 ⇒	−2'55 −5'19
losa inferior	f_2 ⇒ −2'92	0'00	b. 2 alms r ⇒	0'00 −26'38

RIOSTRA SOBRE E-2

COMPROBACIÓN DE RESULTADOS VALE

HIPO 1. AXIL MÁXIMO

Cargas (esf. en estribo) "real"	Resultante sal-elefin-ez
$F_x = -2055'6$ T	$F_x = -2055'50$ T
$F_z = 15'87$ T	$F_z = 16'04$ T
$M_y = -220'79$ mT	$M_y = -222'83$ mT
$R_1 = 1053'78$ T	$R_1 = 1053'62$ T
$R_2 = 1001'82$ T	$R_2 = 1002'55$ T

HIPO 2 MOMENTO TORSOR MÁXIMO

Cargas (esf. en estribo) "real"	Resultante (sal-elefin-e_z)
$F_x = -1329'06$ T	$F_x = -1328'60$ T
$F_z = 22'51$ T	$F_z = 26'37$ T
$M_y = -2612'07$ mT	$M_y = -2630'95$ mT
$R_1 = 971'83$ T	$R_1 = 970'53$
$R_2 = 357'22$ T	$R_2 = 358'68$ T

R_1 y $R_2 = \frac{F_z}{2} \pm \frac{M_y}{5'9}$

R_1 y $R_2 = \sum$ reacciones en muelles de apoyo.

* Reacción máxima ELU en barra de apoyo:

Barra 203, Hipo 311 ⇒ $F_{x\,máx\,apoyo} = 1151'71$ T > 1053'62 T

3'8% mayor VALE.

ESTRIBO 2

	losa sup	losa inf	almas
longitudes (perimetro de torsion)	6.43	4.57	3.375
numero de nodos	21	12	25
2xAe			35.87

Esfuerzos de la barra 231 extremo fro ntal

HIP.	FX	FZ	MY	M*	r	c	q	f1	f2	f3	f3x	f3y
311 FUER X MAX envolvente (ELU)	-2055.6	15.87	-220.79	-166.83	-41.11	0.76	-4.65	-1.42	-1.77	-0.63	-0.17	-0.61
312 FUER X MIN envolvente (ELU)	-453.42	-4.57	126.36	110.82	-9.07	-0.22	3.09	0.95	1.18	0.42	0.11	0.40
315 FUER Z MAX envolvente (ELU)	-1105.46	-43.06	1092.91	946.51	-22.11	-2.05	26.39	8.08	10.05	3.56	0.95	3.43
316 FUER Z MIN envolvente (ELU)	-1358.47	44.68	-682.62	-530.71	-27.17	2.13	-14.80	-4.53	-5.63	-2.00	-0.53	-1.92
319 MOME Y MAX envolvente (ELU)	-1329.06	22.51	-2612.07	-2535.54	-26.58	1.07	-70.69	-21.64	-26.92	-9.54	-2.55	-9.19
320 MOME Y MIN envolvente (ELU)	-1279.79	-8.62	2297.57	2268.26	-25.60	-0.41	63.24	19.36	24.08	8.54	2.28	8.23

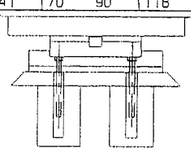
elef riostra estribo - 2 malla

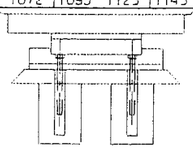
P

Retenido

P.

Retenido

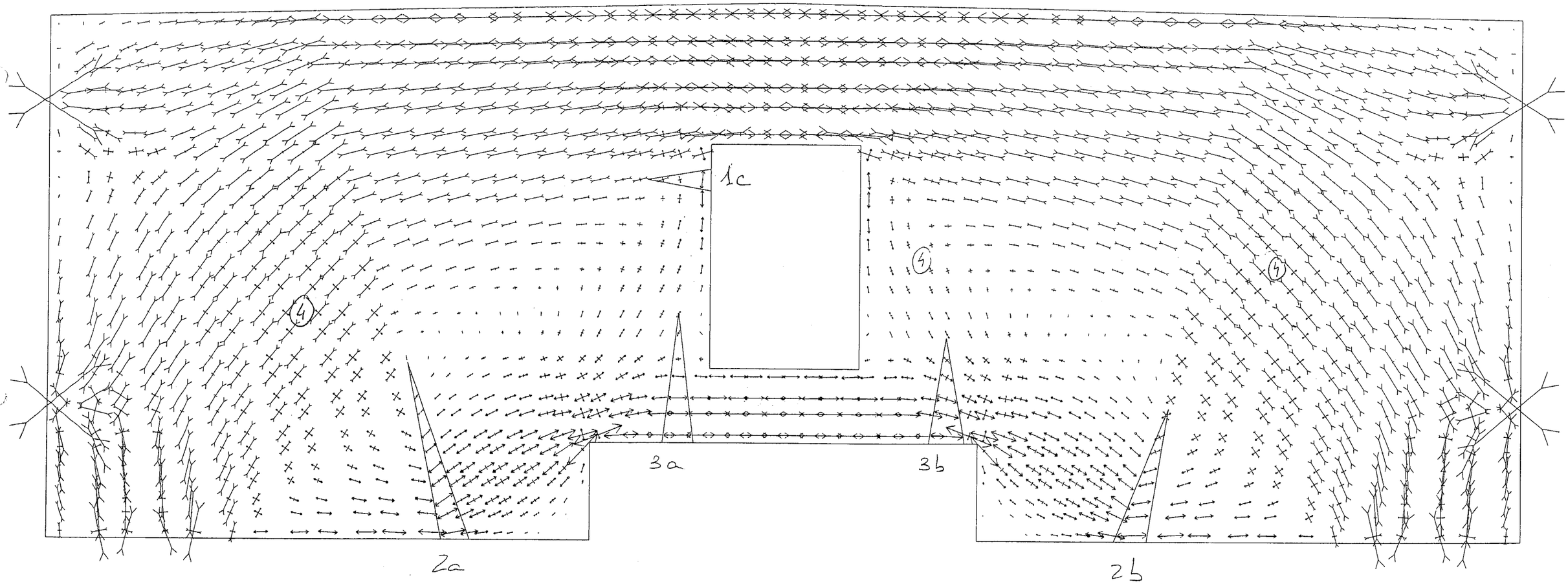




TENSIONES Y ESQUEMA PARA CÁLCULO DE ARMADURA
POR VOLUMEN DE TRACCIÓN

elef riostra estribo -2
hipo I axil maxino
tensiones

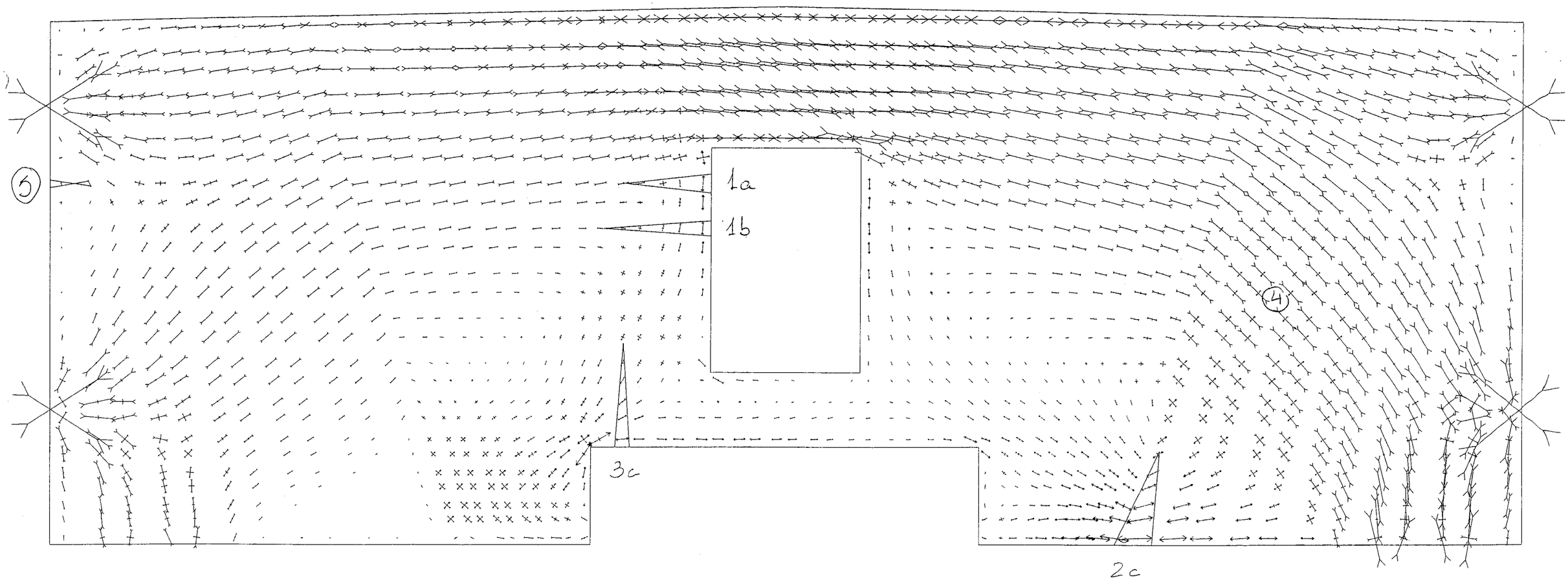
⟷ 1000.



TENSIONES Y ESQUEMA PARA CÁLCULO DE ARMADURAS
POR VOLUMEN DE TRACCIÓN.

elef riostra estribo -2
hipo 2 nomento torsor maxino
tensiones

⟷ 1000.



CÁLCULO DE ARMADURA PILASTRA ESTRIBO 2

Armadura (1) (Vertical en hueco) 10

a) Hipo 2

$\sigma = 0'69 \times 500 = 315\ T/m^2$

$y_{fm} = 2'866/5 = 0'573\ m \quad e = 1'5\ m$

$U_s = 135'41\ T$

$A_s = 30'53\ cm^2 \Rightarrow 8\phi 25$

b) Hipo 2

$\sigma = 0'50 \times 500 = 250\ T/m^2$

$y_{fm} = 3'60/5 = 0'72\ m \quad e = 1'5\ m$

$U_s = 135\ T$

$A_s = 30'5\ cm^2$

c) Hipo 1

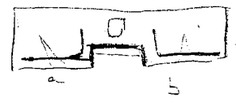
$\sigma = 0'724 \times 500 = 362\ T/m^2$

$y_{fm} = 2'1635/5 = 0'433\ m \quad e = 1'5\ m$

$U_s = 117'5\ T$

$A_s = 26'5\ cm^2$

Armadura (2) Horizontal inferior



a) Hipo 1

$\sigma = 0'9436 \times 500 = 472\ T/m^2$

$y_{fm} = 5'9136/5 = 1'18\ m \quad e = 1'5\ m$

$U_s = 418'5\ T$

$A_s = 94'4\ cm^2 \Rightarrow 12\phi 32$

b) Hipo 1

$\sigma = 1'087 \times 500 = 543'5\ T/m^2$

$y_{fm} = 4'45/5 = 0'89\ m \quad e = 1'5\ m$

$U_s = 363\ t$

$A_s = 81'8\ cm^2$

c) Hipo 2

$\sigma = 1'264 \times 500 = 632\ T/m^2$

$y_{fm} = 3'13/5 = 0'626\ m \quad e = 1'5\ m$

$U_s = 297\ T$

$A_s = 67\ cm^2$

Armadura (3) horizontal en hueco del tacón

a) TIPO 1

$\sigma = 1'055 \times 500 = 527'5\ T/m^2$ | $U_s = 345\ T$

$y_{fm} = 4'36/5 = 0'872\ m$ $e = 1'5m$ | $A_s = 77'8 cm^2 \Rightarrow 10\phi 32$

b) TIPO 1

$\sigma = 1'223 \times 500 = 611'5\ T/m^2$ | $U_s = 326\ T$

$y_{fm} = 3'55/5 = 0'71\ m$ $e = 1'5m$ | $A_s = 73'4 cm^2$

c) TIPO 2

$\sigma = 0'49 \times 500 = 245\ T/m^2$ | $U_s = 128\ T$

$y_{fm} = 3'48/5 = 0'696\ m$ $e = 1'5m$

Armadura de cortante (4)

TIPO 1 $\sigma E = 0'35 \times 500 = 175\ T/m^2$, $b = 1'5m$,

$A_s = 59'2 cm^2 \Rightarrow$ 2 cercos $\phi 25$ a 0'20

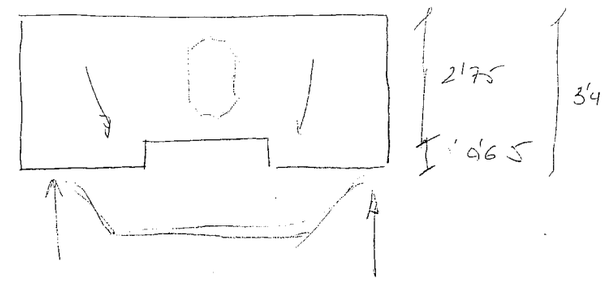
Armadura vertical entre pretensado (estribos) (5)

TIPO 2: $\sigma = 0'26 \times 500 = 130\ T/m^2$ | $U_s = 16\ T$

$y_{fm} = 0'81/5 = 0'162$ $e = 1'5m$ | $A_s = 3'6 cm^2 \Rightarrow$

COMPROBACIÓN ARMADURAS DE RIOSTRA ESTRIBO-2

Φ_{ef}: 94'4 cm²



Rmáx en ~~1150~~ T

$M = 1150 \times 1'75 = 2012'5\ mT$

$\frac{2012'5}{3'4 \times 0'9} + \frac{1'15}{5'1} = 148\ cm^2 \Rightarrow 18'4\ \phi 32$

$\frac{2012'5}{2'75 \times 0'9} \times \frac{1'15}{5'1} \quad 183'3\ cm^2 \Rightarrow 23\ \phi 32$

PROCESO DE EMPUJE

Pempu . Viaductos de El Papiol

14 132 129 114 111 110 109 108 107 1
14 131 128 113 110 109 108 107 2
14 130 127 112 109 108 107 3
14 129 114 111 108 107 4
14 128 113 110 107 5
18 128 113 110 107 106 105 104 103 6
18 127 112 109 106 105 104 103 7
18 114 111 108 105 104 103 8
18 113 110 107 104 103 9
18 112 109 106 103 10
18 133 112 109 106 103 11
22 133 112 109 106 103 102 101 100 99 12
22 132 111 108 105 102 101 100 99 13
22 131 110 107 104 101 100 99 14
22 130 109 106 103 100 99 15
22 129 108 105 102 99 16
26 129 108 105 102 99 98 97 96 95 17
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34 130 106 97 94 91 88 87 31
34 129 105 96 93 90 87 32
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98 128 104 92 80 68 56 44 35 32 29 26 25 24 23 114
98 127 103 91 79 67 55 43 34 31 28 25 24 23 115
98 114 102 90 78 66 54 42 33 30 27 24 23 116
98 113 101 89 77 65 53 41 32 29 26 23 117

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118 132 108  96  84  72  60  48  36  24  15  12   9   6   5   4   3 141
118 131 107  95  83  71  59  47  35  23  14  11   8   5   4   3 142
118 130 106  94  82  70  58  46  34  22  13  10   7   4   3 143
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121 127 103  91  79  67  55  43  31  19  10   7   4   1   0 147
121 114 102  90  78  66  54  42  30  18   9   6   3   0 148
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121 133 112 100  88  76  64  52  40  28  16   7   4   1 151
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121 128 107  95  83  71  59  47  35  23  11   2 156
121 127 106  94  82  70  58  46  34  22  10   1 157
121 114 105  93  81  69  57  45  33  21   9   0 158
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Viaducto de El Papiol  (proceso de empuje)
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0.2222 0.1562 0.0660 0.0379 1.0436 0.4536
0.1946 0.1396 0.0550 0.0311 0.7569 0.3116
0.1776 0.1226 0.0550 0.0251 0.6992 0.2274
0.1343 0.0793 0.0550 0.0198 0.5412 0.1470
0.1108 0.0668 0.0440 0.0149 0.4337 0.0850
0.0981 0.0541 0.0440 0.0109 0.3902 0.0512
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114 mome z conc -11.29 -0.001
114 fuer y conc -19.20 -0.001
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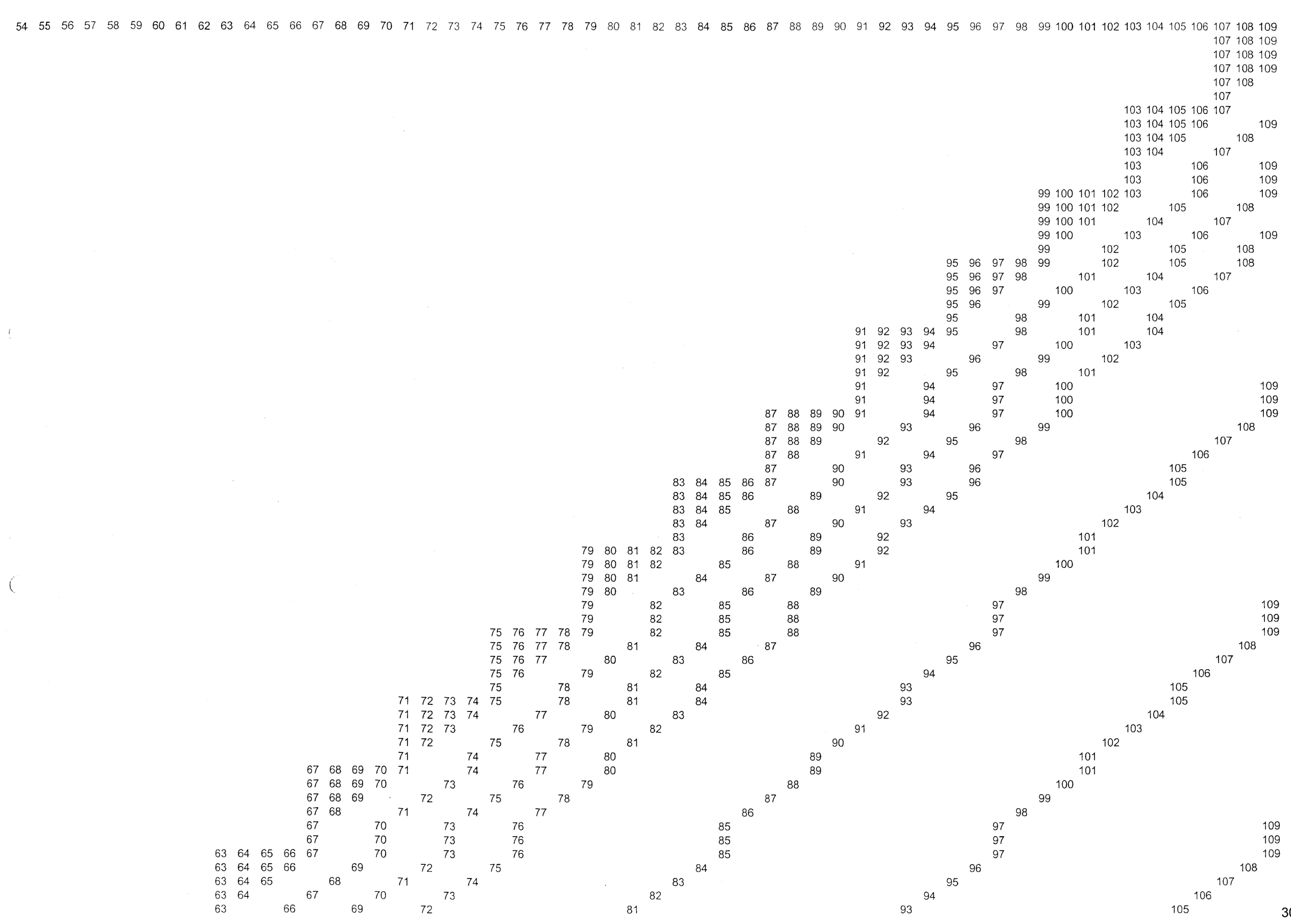

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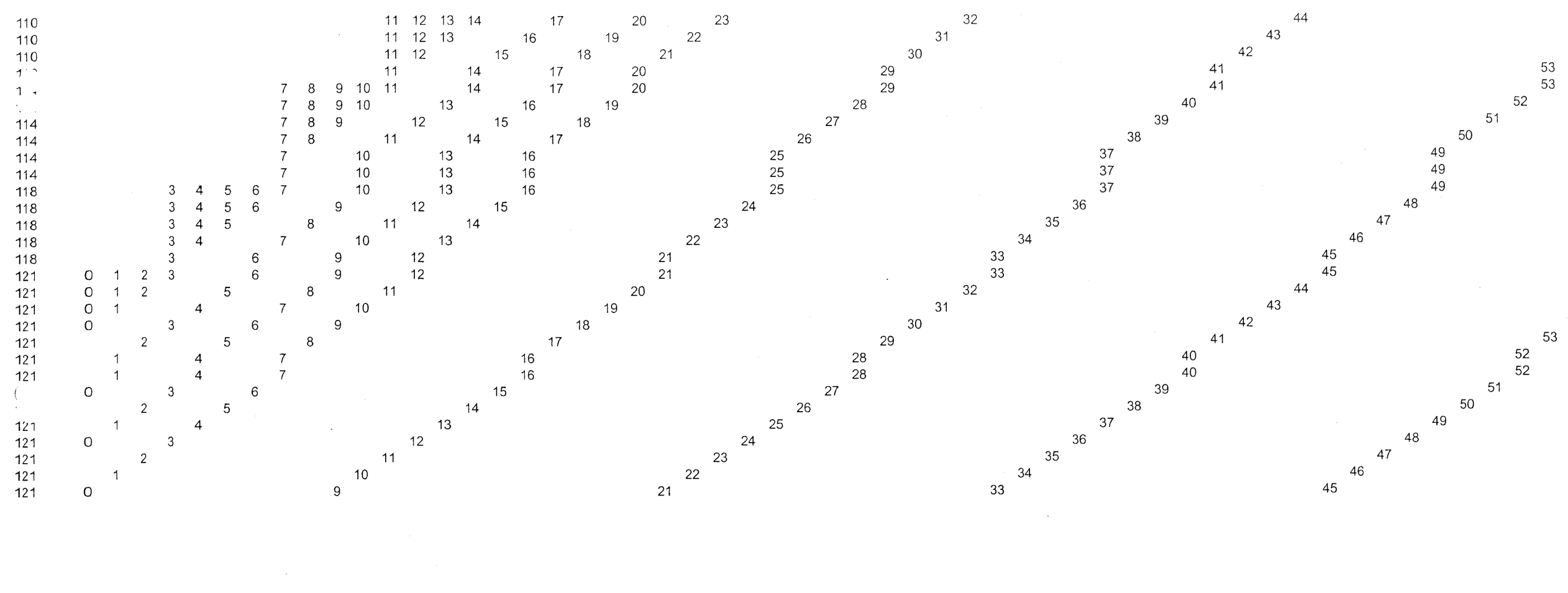

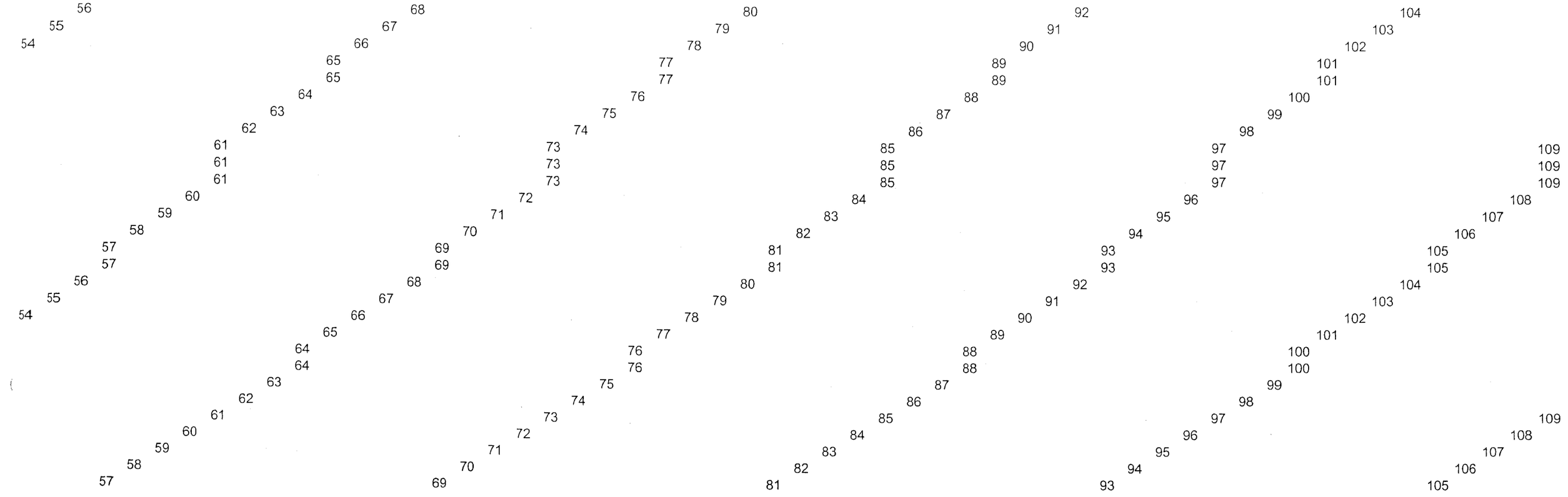

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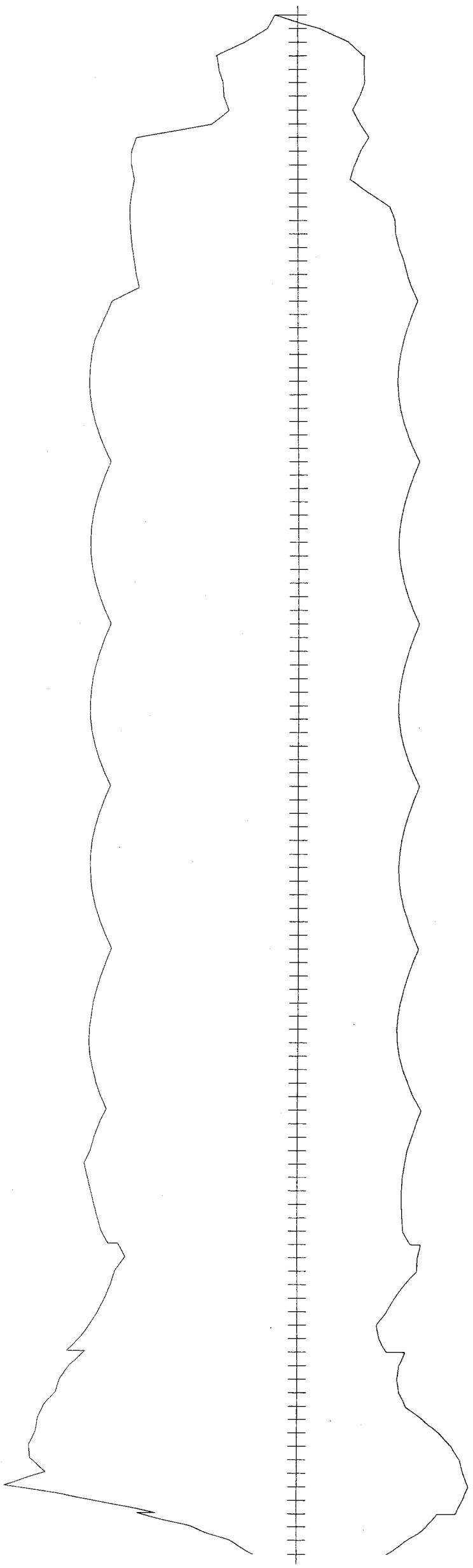
procr Viaducto de El Papiol (proces-Fase 1

MOME Z MAX (Envolv. de Proces ELS con pretensado E-2 a E-1) M. Z 2000.0

MOME Z MIN (Envolv. de Proces ELS con pretensado E-2 a E-1) M. Z 2000.0



procr Viaducto de El Papiol (proces-Fase 1
hipo 490 Pretensado de proceso M. Z 2000.0

procr Viaducto de El Papiol (proces-Fase 1

HIPOTESIS 495

MOME Z MAX (Envolv. de Proces ELS con pretensado E-2 a E-1)

ESFUERZOS EN BARRAS

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	MOM. Y	MOM. Z
1	143	8570.910	74.547	0.000	1.034	0.000	1812.376
1	141	-8599.658	-241.317	0.000	-1.034	0.000	-2803.287
2	141	8599.638	-667.273	0.000	5.784	0.000	2803.286
2	140	-8619.972	-366.317	0.000	-1.074	0.000	-4405.598
3	140	8619.978	366.317	0.000	2.431	0.000	4405.588
3	139	-8616.796	-491.317	0.000	-2.431	0.000	-6626.961
4	139	9295.671	491.317	0.000	2.477	0.000	5851.830
4	138	-9323.112	-616.307	0.000	-2.477	0.000	-8692.432
5	138	9323.139	-849.523	0.000	2.255	0.000	8692.423
5	137	-9350.963	-741.307	0.000	-9.235	0.000	-12158.067
6	137	9350.944	-933.663	0.000	-1.523	0.000	12158.068
6	136	-9368.173	-769.497	0.000	-1.587	0.000	-10436.075
7	136	9368.195	-906.593	0.000	0.869	0.000	10435.995
7	135	-9356.141	-827.077	0.000	-1.029	0.000	-11092.805
8	135	9333.141	-932.293	0.000	-1.772	0.000	11087.057
8	134	-9352.877	-864.057	0.000	3.352	0.000	-11140.365
9	134	9352.889	-945.943	0.000	-0.846	0.000	11140.365
9	132	-9373.010	-992.137	0.000	4.146	-0.001	-10864.013
10	132	9373.024	-821.791	0.000	0.789	0.000	10863.926
10	130	-9383.776	-1024.019	0.000	5.631	0.000	-10777.554
11	130	9383.781	-826.331	0.000	-0.807	0.000	10777.463
11	129	-9368.539	-1017.629	0.000	9.297	0.000	-10525.387
12	129	9339.979	-828.251	0.000	-3.455	0.001	10515.775
12	128	-9364.236	-996.499	0.000	4.995	0.000	-10017.522
13	128	9364.245	-825.391	0.000	1.170	0.000	10017.603
13	127	-9388.888	-970.329	0.000	0.430	0.000	-9841.628
14	127	9388.896	-829.941	0.000	-0.260	0.000	9841.538
14	126	-9405.155	-929.979	0.000	2.270	0.000	-9437.729
15	126	9405.117	-830.241	0.000	1.264	0.000	9437.737
15	125	-9397.895	-875.479	0.000	0.726	0.000	-8803.975
16	125	8698.536	-826.421	0.000	-0.050	0.000	9586.884
16	124	-8722.134	-849.789	0.000	2.380	0.000	-9018.104
17	124	8722.104	-805.541	0.000	0.370	0.000	9018.014
17	123	-8746.061	-819.649	0.000	0.910	0.000	-8599.517
18	123	8746.058	-808.951	0.000	1.618	0.001	8599.517
18	122	-8755.714	-799.209	0.000	0.102	0.000	-8256.521
19	122	8755.716	-814.881	0.000	0.137	0.001	8256.521
19	121	-8726.202	-787.419	0.000	1.463	0.000	-7976.818
20	121	8703.228	-823.051	0.000	0.789	0.001	7971.080
20	120	-8705.479	-782.459	0.000	0.481	-0.001	-7739.275

TENSIONES

SIGMA 1	SIGMA2	SIGMA3	SIGMA4
74.34	74.34	114.33	114.33
66.36	66.36	128.22	128.22
66.36	66.36	128.22	128.22
53.18	53.18	150.40	150.40
53.18	53.18	150.40	150.40
34.58	34.58	180.82	180.82
48.15	48.15	177.28	177.28
24.70	24.70	216.51	216.51
24.70	24.70	216.51	216.51
-3.97	-3.97	264.31	264.31
-3.97	-3.97	264.31	264.31
10.60	10.60	240.88	240.88
10.60	10.60	240.88	240.88
4.98	4.98	249.76	249.76
4.79	4.79	249.44	249.44
4.55	4.55	250.38	250.38
4.55	4.55	250.38	250.38
-18.15	-18.15	156.30	156.30
-18.15	-18.15	156.30	156.30
7.91	7.91	245.73	245.73
7.91	7.91	245.72	245.72
9.85	9.85	242.11	242.11
9.64	9.64	241.68	241.68
14.05	14.05	235.10	235.10
14.05	14.05	235.10	235.10
15.78	15.78	232.95	232.95
15.78	15.78	232.95	232.95
19.33	19.33	227.58	227.58
19.33	19.33	227.58	227.58
24.55	24.55	218.82	218.82
10.70	10.70	222.25	222.25
15.70	15.70	214.70	214.70
15.70	15.70	214.70	214.70
19.45	19.45	209.21	209.21
19.45	19.45	209.21	209.21
22.42	22.42	204.61	204.61
22.42	22.42	204.61	204.61
24.45	24.45	200.46	200.46
24.25	24.25	200.15	200.15
26.21	26.21	196.99	196.99

21	120	8705.498	-832.991	0.000	1.824	0.001	7739.205	26.22	26.22	196.99	196.99
21	118	-8708.109	-892.049	0.000	0.046	0.000	-7556.239	1.24	1.24	122.58	122.58
22	118	8708.144	-749.275	0.000	-1.287	0.001	7556.148	1.24	1.24	122.58	122.58
22	116	-8703.812	-801.885	0.000	1.777	0.000	-7136.665	31.23	31.23	188.71	188.71
23	116	8703.790	-762.655	0.000	0.593	0.001	7136.734	31.23	31.23	188.71	188.71
23	115	-8680.009	-801.355	0.000	0.797	-0.001	-7430.788	28.53	28.53	192.50	192.50
24	115	7293.945	-774.945	0.000	2.119	0.001	7849.591	10.56	10.56	183.77	183.77
24	114	-7313.992	-805.165	0.000	0.241	-0.001	-8153.065	8.23	8.23	188.14	188.14
25	114	7313.984	-788.255	0.000	0.939	0.001	8152.975	8.23	8.23	188.13	188.13
25	113	-7334.331	-800.825	0.000	1.911	-0.001	-8303.787	7.18	7.18	190.41	190.41
26	113	7334.365	-798.695	0.000	2.226	0.001	8303.777	7.18	7.18	190.41	190.41
26	112	-7346.246	-800.025	0.000	0.604	-0.001	-8447.575	6.10	6.10	192.51	192.51
27	112	7346.206	-809.665	0.000	0.942	0.001	8447.575	6.10	6.10	192.51	192.51
27	111	-7334.518	-802.795	0.000	1.838	-0.001	-8582.368	4.86	4.86	194.24	194.24
28	111	7315.473	-821.295	0.000	1.629	0.001	8583.070	4.65	4.65	194.05	194.05
28	110	-7330.172	-809.175	0.000	0.601	-0.001	-8715.651	3.70	3.70	196.02	196.02
29	110	7330.211	-833.715	0.000	-0.247	0.001	8715.751	3.70	3.70	196.02	196.02
29	109	-7345.211	-819.205	0.000	1.537	-0.001	-8848.421	2.74	2.74	197.99	197.99
30	109	7345.161	-847.035	0.000	3.252	0.001	8848.331	2.74	2.74	197.99	197.99
30	108	-7350.710	-800.175	0.000	-2.292	-0.001	-8573.332	5.10	5.10	194.28	194.28
31	108	7350.744	-852.535	0.000	1.952	0.001	8573.402	5.10	5.10	194.28	194.28
31	107	-7330.213	-795.255	0.000	0.088	-0.001	-8427.763	6.10	6.10	192.07	192.07
32	107	7307.228	-861.975	0.000	0.209	0.001	8422.105	5.91	5.91	191.75	191.75
32	106	-7318.406	-787.355	0.000	0.881	-0.001	-8205.765	7.83	7.83	188.90	188.90
33	106	7318.440	-870.895	0.000	3.260	0.001	8205.693	7.84	7.84	188.90	188.90
33	104	-7329.920	-885.085	0.000	-2.040	-0.001	-7931.909	-10.17	-10.17	117.20	117.20
34	104	7329.884	-779.573	0.000	0.001	0.001	7931.910	-10.17	-10.17	117.20	117.20
34	102	-7334.363	-868.307	0.000	2.499	-0.001	-8179.656	8.22	8.22	188.71	188.71
35	102	7334.366	-789.083	0.000	1.121	0.001	8179.736	8.22	8.22	188.71	188.71
35	101	-7319.340	-857.617	0.000	2.069	-0.001	-8377.897	6.41	6.41	191.27	191.27
36	101	7293.972	-798.643	0.000	-2.559	0.001	8374.826	6.17	6.17	190.97	190.97
36	100	-7314.019	-845.737	0.000	4.529	-0.001	-8516.353	5.19	5.19	193.12	193.12
37	100	7314.013	-807.723	0.000	3.240	0.001	8516.353	5.19	5.19	193.12	193.12
37	99	-7334.361	-835.737	0.000	-1.420	-0.001	-8630.106	4.45	4.45	194.89	194.89
38	99	7334.353	-816.633	0.000	0.080	0.001	8630.008	4.46	4.46	194.89	194.89
38	98	-7346.233	-824.657	0.000	2.600	-0.001	-8679.288	4.17	4.17	195.69	195.69
39	98	7346.261	-824.833	0.000	0.352	0.001	8679.378	4.17	4.17	195.69	195.69
39	97	-7334.573	-812.557	0.000	1.338	-0.001	-8662.173	4.19	4.19	195.33	195.33
40	97	7315.472	-832.443	0.000	2.426	0.001	8662.795	3.98	3.98	195.14	195.14
40	96	-7330.170	-799.447	0.000	-0.646	-0.001	-8586.009	4.78	4.78	194.24	194.24
41	96	7330.184	-839.603	0.000	0.545	0.001	8585.998	4.78	4.78	194.24	194.24
41	95	-7345.184	-789.847	0.000	1.235	-0.001	-8507.709	5.59	5.59	193.32	193.32
42	95	7345.168	-847.633	0.000	1.414	0.001	8507.730	5.59	5.59	193.32	193.32
42	94	-7350.717	-778.847	0.000	-0.304	-0.001	-8366.272	6.83	6.83	191.44	191.44
43	94	7350.730	-855.303	0.000	2.832	0.001	8366.372	6.83	6.83	191.44	191.44
43	93	-7330.200	-768.697	0.000	-1.362	-0.001	-8189.145	8.10	8.10	188.80	188.80
44	93	7307.229	-863.333	0.000	4.570	0.001	8183.397	7.90	7.90	188.48	188.48
44	92	-7318.407	-759.427	0.000	-1.480	-0.001	-7983.448	9.69	9.69	185.86	185.86
45	92	7318.405	-871.883	0.000	0.993	0.001	7983.417	9.69	9.69	185.86	185.86
45	90	-7329.884	-857.687	0.000	1.777	-0.001	-7749.715	-8.87	-8.87	115.57	115.57
46	90	7329.902	-772.384	0.000	1.061	0.001	7749.834	-8.87	-8.87	115.57	115.57
46	88	-7334.381	-850.986	0.000	0.869	-0.001	-8011.484	9.62	9.62	186.41	186.41
47	88	7334.386	-782.374	0.000	-0.380	0.001	8011.474	9.62	9.62	186.41	186.41
47	87	-7319.360	-842.926	0.000	2.430	-0.001	-8234.397	7.60	7.60	189.31	189.31
48	87	7293.967	-792.634	0.000	0.691	0.001	8231.368	7.37	7.37	189.00	189.00
48	86	-7314.013	-835.116	0.000	1.319	-0.001	-8415.426	6.04	6.04	191.73	191.73

49	86	7313.993	-802.814	0.000	-0.665	0.001	8415.526	6.04	6.04	191.73	191.73
49	85	-7334.341	-826.576	0.000	2.105	-0.001	-8539.503	5.21	5.21	193.65	193.65
50	85	7334.350	-812.124	0.000	-0.457	0.001	8539.453	5.21	5.21	193.65	193.65
50	84	-7346.231	-818.166	0.000	0.897	-0.001	-8613.905	4.71	4.71	194.79	194.79
51	84	7346.232	-821.044	0.000	3.927	0.001	8613.976	4.71	4.71	194.79	194.79
51	83	-7334.544	-809.926	0.000	-2.067	-0.001	-8636.902	4.40	4.40	194.98	194.98
52	83	7315.486	-829.694	0.000	0.567	0.001	8637.516	4.20	4.20	194.79	194.79
52	82	-7330.186	-801.876	0.000	2.413	-0.001	-8615.751	4.53	4.53	194.65	194.65
53	82	7330.186	-838.214	0.000	1.610	0.001	8615.731	4.53	4.53	194.65	194.65
53	81	-7345.186	-794.046	0.000	0.730	-0.001	-8551.435	5.23	5.23	193.92	193.92
54	81	7345.176	-846.724	0.000	3.236	0.001	8551.504	5.22	5.22	193.92	193.92
54	80	-7350.725	-784.266	0.000	-0.486	-0.001	-8417.209	6.40	6.40	192.14	192.14
55	80	7350.734	-854.724	0.000	2.051	0.001	8417.189	6.40	6.40	192.14	192.14
55	79	-7330.204	-775.466	0.000	0.709	-0.001	-8248.815	7.60	7.60	189.62	189.62
56	79	7307.235	-863.114	0.000	2.863	0.001	8243.147	7.41	7.41	189.30	189.30
56	78	-7318.413	-766.546	0.000	-0.673	-0.001	-8039.451	9.22	9.22	186.62	186.62
57	78	7318.400	-871.764	0.000	0.772	0.001	8039.550	9.22	9.22	186.63	186.63
57	76	-7329.879	-864.666	0.000	0.628	-0.001	-7796.020	-9.20	-9.20	115.98	115.98
58	76	7329.903	-774.341	0.000	1.594	0.001	7796.030	-9.20	-9.20	115.98	115.98
58	74	-7334.382	-855.399	0.000	-0.094	-0.001	-8054.604	9.26	9.26	187.00	187.00
59	74	7334.375	-784.201	0.000	0.785	0.001	8054.534	9.26	9.26	187.00	187.00
59	73	-7319.350	-846.659	0.000	1.955	-0.002	-8271.502	7.29	7.29	189.82	189.82
60	73	7293.971	-794.291	0.000	-0.760	0.001	8268.502	7.05	7.05	189.51	189.51
60	72	-7314.017	-837.789	0.000	2.860	-0.002	-8441.925	5.81	5.81	192.10	192.10
61	72	7313.998	-804.181	0.000	-0.388	0.001	8441.994	5.81	5.81	192.10	192.10
61	71	-7334.346	-828.869	0.000	1.528	-0.002	-8563.725	5.01	5.01	193.98	193.98
62	71	7334.348	-813.391	0.000	0.667	0.002	8563.755	5.01	5.01	193.98	193.98
62	70	-7346.228	-819.769	0.000	0.523	-0.002	-8632.101	4.56	4.56	195.04	195.04
63	70	7346.235	-822.121	0.000	2.445	0.002	8632.131	4.56	4.56	195.04	195.04
63	69	-7334.547	-810.519	0.000	-0.375	-0.002	-8645.062	4.33	4.33	195.10	195.10
64	69	7315.490	-830.501	0.000	0.898	0.002	8645.754	4.13	4.13	194.91	194.91
64	68	-7330.189	-801.159	0.000	1.772	-0.002	-8610.123	4.58	4.58	194.57	194.57
65	68	7330.188	-838.671	0.000	2.529	0.002	8610.123	4.58	4.58	194.57	194.57
65	67	-7345.188	-792.009	0.000	0.131	-0.002	-8531.881	5.39	5.39	193.65	193.65
66	67	7345.201	-846.821	0.000	1.455	0.002	8531.881	5.39	5.39	193.66	193.66
66	66	-7350.749	-782.769	0.000	0.945	-0.002	-8406.961	6.49	6.49	192.00	192.00
67	66	7350.722	-854.961	0.000	1.953	0.002	8406.961	6.49	6.49	192.00	192.00
67	65	-7330.191	-773.629	0.000	-0.243	-0.002	-8236.711	7.70	7.70	189.45	189.45
68	65	7307.249	-863.261	0.000	3.169	0.002	8231.063	7.51	7.51	189.13	189.13
68	64	-7318.426	-764.609	0.000	-1.219	-0.002	-8028.770	9.31	9.31	186.48	186.48
69	64	7318.428	-871.881	0.000	1.619	0.002	8028.770	9.31	9.31	186.48	186.48
69	62	-7329.908	-862.769	0.000	0.241	-0.001	-7788.314	-9.15	-9.15	115.91	115.91
70	62	7329.908	-773.496	0.000	-0.065	0.001	7788.333	-9.15	-9.15	115.92	115.92
70	60	-7334.387	-854.604	0.000	1.445	-0.001	-8045.914	9.34	9.34	186.88	186.88
71	60	7334.385	-783.386	0.000	0.531	0.001	8045.985	9.34	9.34	186.88	186.88
71	59	-7319.359	-846.034	0.000	1.319	-0.001	-8262.690	7.37	7.37	189.69	189.69
72	59	7293.977	-793.516	0.000	-0.364	0.001	8259.720	7.13	7.13	189.39	189.39
72	58	-7314.024	-837.434	0.000	2.454	-0.001	-8434.220	5.88	5.88	191.99	191.99
73	58	7314.010	-803.476	0.000	0.781	0.001	8434.188	5.88	5.88	191.99	191.99
73	57	-7334.358	-828.624	0.000	1.169	-0.001	-8554.827	5.08	5.08	193.86	193.86
74	57	7334.345	-812.716	0.000	2.638	0.001	8554.877	5.08	5.08	193.86	193.86
74	56	-7346.225	-819.704	0.000	0.232	-0.001	-8623.141	4.64	4.64	194.92	194.92
75	56	7346.250	-821.496	0.000	-1.972	0.001	8623.030	4.64	4.64	194.92	194.92
75	55	-7334.562	-810.714	0.000	3.812	-0.001	-8636.930	4.40	4.40	194.98	194.98
76	55	7315.485	-829.956	0.000	4.227	0.001	8637.571	4.20	4.20	194.79	194.79
76	54	-7330.185	-801.694	0.000	-2.507	-0.001	-8603.849	4.63	4.63	194.48	194.48
77	54	7330.184	-838.206	0.000	1.364	0.001	8603.787	4.63	4.63	194.48	194.48

77	53	-7345.184	-792.664	0.000	1.456	-0.001	-8524.724	5.45	5.45	193.56	193.56
78	53	7345.199	-846.386	0.000	1.525	0.001	8524.714	5.45	5.45	193.56	193.56
78	52	-7350.747	-783.504	0.000	0.615	-0.001	-8398.450	6.56	6.56	191.88	191.88
79	52	7350.732	-854.556	0.000	0.594	0.001	8398.400	6.56	6.56	191.88	191.88
79	51	-7330.202	-774.444	0.000	0.476	-0.001	-8226.948	7.78	7.78	189.32	189.32
80	51	7307.241	-862.876	0.000	3.353	0.001	8221.260	7.59	7.59	189.00	189.00
80	50	-7318.418	-765.464	0.000	-2.303	-0.001	-8016.934	9.41	9.41	186.32	186.32
81	50	7318.412	-871.506	0.000	2.435	0.001	8016.934	9.41	9.41	186.32	186.32
81	48	-7329.891	-863.604	0.000	-0.445	-0.001	-7773.945	-9.04	-9.04	115.79	115.79
82	48	7329.901	-775.041	0.000	0.832	0.001	7774.016	-9.05	-9.05	115.79	115.79
82	46	-7334.380	-853.489	0.000	1.708	-0.001	-8038.469	9.40	9.40	186.78	186.78
83	46	7334.379	-784.921	0.000	0.131	0.001	8038.458	9.40	9.40	186.78	186.78
83	45	-7319.354	-844.869	0.000	2.639	-0.001	-8261.886	7.38	7.38	189.68	189.68
84	45	7293.959	-795.041	0.000	1.009	0.001	8258.815	7.14	7.14	189.38	189.38
84	44	-7314.006	-836.209	0.000	1.531	-0.001	-8439.799	5.83	5.83	192.07	192.07
85	44	7314.015	-804.981	0.000	-0.819	0.001	8439.688	5.83	5.83	192.07	192.07
85	43	-7334.363	-827.379	0.000	2.789	0.000	-8568.010	4.97	4.97	194.04	194.04
86	43	7334.362	-814.271	0.000	0.177	0.000	8567.910	4.97	4.97	194.04	194.04
86	42	-7346.242	-818.399	0.000	0.693	0.000	-8641.976	4.48	4.48	195.18	195.18
87	42	7346.235	-822.971	0.000	1.024	0.000	8642.116	4.48	4.48	195.18	195.18
87	41	-7334.547	-809.339	0.000	-0.094	0.000	-8661.997	4.19	4.19	195.33	195.33
88	41	7315.498	-831.381	0.000	2.626	0.000	8662.631	3.99	3.99	195.14	195.14
88	40	-7330.196	-800.089	0.000	-0.806	0.000	-8628.259	4.43	4.43	194.82	194.82
89	40	7330.197	-839.061	0.000	1.553	0.000	8628.199	4.43	4.43	194.82	194.82
89	39	-7345.198	-791.079	0.000	0.847	0.000	-8560.587	5.15	5.15	194.05	194.05
90	39	7345.188	-847.661	0.000	2.836	0.000	8560.627	5.15	5.15	194.05	194.05
90	38	-7350.735	-782.019	0.000	-0.376	0.000	-8444.406	6.18	6.18	192.51	192.51
91	38	7350.741	-856.031	0.000	1.149	0.000	8444.536	6.18	6.18	192.52	192.52
91	37	-7330.210	-771.479	0.000	1.151	0.000	-8210.506	7.92	7.92	189.09	189.09
92	37	7307.235	-858.721	0.000	1.867	0.000	8204.659	7.73	7.73	188.77	188.77
92	36	-7318.413	-761.359	0.000	-0.247	0.000	-7953.875	9.94	9.94	185.45	185.45
93	36	7318.412	-863.001	0.000	2.965	0.000	7953.826	9.94	9.94	185.45	185.45
93	34	-7329.890	-859.109	0.000	-1.155	0.001	-7698.960	-8.51	-8.51	115.12	115.12
94	34	7329.891	-758.064	0.000	-1.328	-0.001	7698.960	-8.51	-8.51	115.12	115.12
94	32	-7334.370	-827.566	0.000	3.858	0.001	-6586.758	21.53	21.53	166.88	166.88
95	32	7334.371	-649.414	0.000	-1.593	-0.001	6586.797	21.53	21.53	166.88	166.88
95	31	-7319.346	-817.446	0.000	2.753	0.001	-6710.911	20.34	20.34	168.42	168.42
96	31	7293.958	-653.354	0.000	-0.500	-0.001	6707.820	20.10	20.10	168.11	168.11
96	30	-7314.005	-807.506	0.000	2.120	0.001	-6799.798	19.54	19.54	169.58	169.58
97	30	7314.008	-657.954	0.000	-1.602	-0.001	6799.758	19.54	19.54	169.58	169.58
97	29	-7334.356	-798.226	0.000	3.352	0.001	-6878.854	19.09	19.09	170.88	170.88
98	29	7334.354	-665.184	0.000	-0.513	-0.001	6878.824	19.09	19.09	170.88	170.88
98	28	-7346.234	-789.516	0.000	2.213	0.001	-6938.535	18.71	18.71	171.82	171.82
99	28	7346.234	-675.014	0.000	1.215	-0.001	6938.544	18.71	18.71	171.82	171.82
99	27	-7334.547	-781.106	0.000	1.395	0.001	-6961.602	18.40	18.40	172.02	172.02
100	27	7315.495	-685.964	0.000	-2.175	-0.001	6962.134	18.20	18.20	171.82	171.82
100	26	-7330.193	-773.426	0.000	3.905	0.002	-6974.688	18.25	18.25	172.15	172.15
101	26	7330.189	-700.864	0.000	0.559	-0.001	6974.678	18.25	18.25	172.15	172.15
101	25	-7345.190	-764.836	0.000	0.251	0.002	-6899.221	19.03	19.03	171.27	171.27
102	25	7345.188	-710.314	0.000	1.729	-0.002	6899.300	19.03	19.03	171.27	171.27
102	24	-7350.736	-756.456	0.000	0.121	0.002	-6788.484	20.02	20.02	169.81	169.81
103	24	7350.736	-721.164	0.000	-0.979	-0.002	6788.575	20.02	20.02	169.81	169.81
103	23	-7330.206	-753.766	0.000	2.069	0.002	-6900.660	18.86	18.86	171.14	171.14
104	23	7310.370	-765.614	0.000	1.461	-0.002	6895.702	18.70	18.70	170.86	170.86
104	22	-7321.567	-749.486	0.000	-1.211	0.002	-6895.678	18.82	18.82	170.98	170.98
105	22	7321.567	-801.334	0.000	2.773	-0.002	6895.678	18.82	18.82	170.98	170.98
105	20	-7333.066	-848.956	0.000	-1.103	0.002	-6695.612	-1.33	-1.33	106.19	106.19

106	20	7333.063	-740.909	0.000	0.120	-0.002	6695.431	-1.33	-1.33	106.19	106.19
106	18	-7337.562	615.909	0.000	-0.120	0.002	-3553.775	46.91	46.91	125.33	125.33
107	18	7337.564	-615.909	0.000	0.447	-0.002	3553.775	46.91	46.91	125.33	125.33
107	17	-7322.559	-527.801	0.000	1.583	0.003	-2833.890	52.77	52.77	115.30	115.30
108	17	7370.840	-390.699	0.000	0.065	-0.003	2839.836	53.22	53.22	115.89	115.89
108	16	-7391.381	-516.850	0.000	0.725	0.003	-3059.267	51.60	51.60	119.11	119.11
109	16	7391.378	-393.179	0.000	-0.857	-0.003	3059.246	51.60	51.60	119.11	119.11
109	15	-7392.887	-501.951	0.000	1.407	0.003	-3087.777	51.38	51.38	119.52	119.52
110	15	7392.888	-299.359	0.000	-0.204	-0.003	3087.806	51.38	51.38	119.52	119.52
110	14	-7345.620	-492.511	0.000	0.434	0.003	-3264.901	49.41	49.41	121.45	121.45
111	14	7345.622	-373.429	0.000	0.704	-0.003	3264.871	49.41	49.41	121.45	121.45
111	13	-7298.658	-481.661	0.000	0.216	0.003	-3344.642	48.25	48.25	122.06	122.06
112	13	5255.744	-399.349	0.000	-0.336	-0.003	3403.415	26.43	26.43	101.53	101.53
112	12	-5222.141	-75.641	0.000	-0.354	0.003	-2196.819	36.16	36.16	84.64	84.64
113	12	5222.141	-297.869	0.000	0.438	-0.003	2196.890	36.16	36.16	84.64	84.64
113	11	-5188.753	172.869	0.000	-0.438	0.003	-1262.534	43.62	43.62	71.48	71.48
114	11	5188.753	-172.869	0.000	0.441	-0.003	1262.534	43.62	43.62	71.48	71.48
114	9	-5155.578	24.869	0.000	-0.441	0.004	-953.258	45.86	45.86	66.90	66.90

procr Viaducto de El Papiol (proces-Fase 1

HIPOTESIS 496

MOME Z MIN (Envolv. de Proces ELS con pretensado E-2 a E-1)

		ESFUERZOS EN BARRAS						TENSIONES			
BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	MOM. Y	MOM. Z	SIGMA 1	SIGMA2	SIGMA3	SIGMA4
1	143	8570.910	-295.313	0.000	-1.646	0.000	-3735.414	120.70	120.70	38.28	38.28
1	141	-8599.658	128.543	0.000	1.646	0.000	4593.793	128.18	128.18	26.81	26.81
2	141	8599.638	-128.543	0.000	-1.746	0.000	-4593.784	128.17	128.17	26.81	26.81
2	140	-8619.972	123.733	0.000	1.276	0.000	5395.362	135.09	135.09	16.03	16.03
3	140	8619.978	-123.733	0.000	-3.639	0.000	-5395.352	135.09	135.09	16.03	16.03
3	139	-8616.796	132.553	0.000	2.749	0.000	5850.459	138.86	138.86	9.76	9.76
4	139	9295.671	-132.553	0.000	-2.703	0.000	-6625.581	152.42	152.42	6.22	6.22
4	138	-9323.112	7.553	0.000	2.703	0.000	6904.288	155.04	155.04	2.69	2.69
5	138	9323.139	-7.563	0.000	-8.115	0.000	-6904.277	155.04	155.04	2.69	2.69
5	137	-9350.963	31.373	0.000	-0.095	0.000	7158.942	157.46	157.46	-0.52	-0.52
6	137	9350.944	-31.373	0.000	-0.213	0.000	-7158.942	157.46	157.46	-0.52	-0.52
6	136	-9368.173	-93.627	0.000	0.213	0.000	6935.535	155.77	155.77	2.73	2.73
7	136	9368.195	93.627	0.000	-2.621	0.000	-6935.535	155.77	155.77	2.73	2.73
7	135	-9356.141	-66.667	0.000	0.801	0.000	6792.495	154.45	154.45	4.56	4.56
8	135	9333.141	66.667	0.000	-1.162	0.000	-6798.253	154.26	154.26	4.24	4.24
8	134	-9352.877	-25.557	0.000	-0.768	0.000	6446.874	151.53	151.53	9.27	9.27
9	134	9352.889	25.557	0.000	-1.826	0.000	-6446.874	151.53	151.53	9.27	9.27
9	132	-9373.010	-257.577	0.000	1.826	-0.001	5940.717	101.78	101.78	6.38	6.38
10	132	9373.024	282.539	0.000	-3.691	0.000	-5940.714	101.78	101.78	6.38	6.38
10	130	-9383.776	-227.169	0.000	1.811	0.000	5255.466	141.89	141.89	25.92	25.92
11	130	9383.781	227.179	0.000	-2.017	0.000	-5255.467	141.89	141.89	25.92	25.92
11	129	-9368.539	-69.649	0.000	-0.603	0.000	4517.723	135.57	135.57	35.88	35.88
12	129	9339.979	69.659	0.000	0.445	0.001	-4527.333	135.35	135.35	35.45	35.45
12	128	-9364.236	-49.209	0.000	-1.435	0.000	4243.278	133.23	133.23	39.60	39.60
13	128	9364.245	49.209	0.000	-1.680	0.000	-4243.277	133.23	133.23	39.60	39.60
13	127	-9388.888	-37.419	0.000	0.660	0.000	4156.332	132.76	132.76	41.04	41.04
14	127	9388.896	37.419	0.000	-0.670	0.000	-4156.333	132.76	132.76	41.04	41.04
14	126	-9405.155	-32.459	0.000	-0.290	0.000	4236.752	133.60	133.60	40.11	40.11
15	126	9405.117	32.449	0.000	-1.146	0.000	-4236.752	133.60	133.60	40.11	40.11
15	125	-9397.895	-35.029	0.000	0.196	0.000	4500.735	135.73	135.73	36.42	36.42
16	125	8698.536	35.029	0.000	-0.330	0.000	-3717.746	121.89	121.89	39.85	39.85
16	124	-8722.134	-160.029	0.000	0.330	0.000	3403.695	119.51	119.51	44.40	44.40
17	124	8722.104	160.029	0.000	-1.630	0.000	-3403.686	119.51	119.51	44.40	44.40
17	123	-8746.061	78.251	0.000	-1.150	0.000	3294.533	118.85	118.85	46.15	46.15
18	123	8746.058	-78.251	0.000	-0.052	0.001	-3294.534	118.85	118.85	46.15	46.15
18	122	-8755.714	75.391	0.000	-0.748	0.000	3720.778	122.51	122.51	40.41	40.41
19	122	8755.716	-75.391	0.000	0.677	0.001	-3720.768	122.51	122.51	40.41	40.41
19	121	-8726.202	79.941	0.000	-1.677	0.000	4046.202	124.92	124.92	35.64	35.64
20	121	8703.228	-79.941	0.000	0.319	0.001	-4051.960	124.73	124.73	35.32	35.32
20	120	-8705.479	80.241	0.000	-1.239	-0.001	4467.245	128.22	128.22	29.65	29.65
21	120	8705.498	-80.251	0.000	-0.196	0.001	-4467.245	128.22	128.22	29.65	29.65

21	118	-8708.109	-30.599	0.000	-0.824	0.000	4982.731	90.73	90.73	10.72	10.72
22	118	8708.144	19.195	0.000	-0.867	0.001	-4982.731	90.73	90.73	10.72	10.72
22	116	-8703.812	-27.015	0.000	-0.063	0.000	5008.615	132.73	132.73	22.21	22.21
23	116	8703.790	27.015	0.000	-1.487	0.001	-5008.616	132.73	132.73	22.21	22.21
23	115	-8680.009	-38.715	0.000	0.587	-0.001	5138.502	133.57	133.57	20.18	20.18
24	115	7293.945	38.715	0.000	-2.291	0.001	-4719.699	115.59	115.59	11.45	11.45
24	114	-7313.992	-19.895	0.000	1.041	-0.001	4398.755	113.12	113.12	16.06	16.06
25	114	7313.984	19.895	0.000	-0.951	0.001	-4398.745	113.12	113.12	16.06	16.06
25	113	-7334.331	-15.825	0.000	-0.219	-0.001	4366.143	113.06	113.06	16.72	16.72
26	113	7334.365	15.825	0.000	-1.304	0.001	-4366.143	113.06	113.06	16.72	16.72
26	112	-7346.246	-8.285	0.000	0.114	-0.001	4334.725	112.92	112.92	17.27	17.27
27	112	7346.206	8.285	0.000	-0.188	0.001	-4334.725	112.92	112.92	17.27	17.27
27	111	-7334.518	1.295	0.000	-0.982	-0.001	4336.932	112.82	112.82	17.12	17.12
28	111	7315.473	-1.295	0.000	-0.311	0.001	-4336.319	112.62	112.62	16.93	16.93
28	110	-7330.172	12.655	0.000	-0.889	-0.001	4381.429	113.15	113.15	16.46	16.46
29	110	7330.211	-12.655	0.000	1.133	0.001	-4381.429	113.15	113.15	16.47	16.47
29	109	-7345.211	24.955	0.000	-2.253	-0.001	4463.729	113.99	113.99	15.49	15.49
30	109	7345.161	-24.955	0.000	-0.948	0.001	-4463.729	113.99	113.99	15.49	15.49
30	108	-7350.710	38.255	0.000	-0.332	-0.001	4569.638	114.93	114.93	14.10	14.10
31	108	7350.744	-38.255	0.000	0.422	0.001	-4569.638	114.93	114.93	14.10	14.10
31	107	-7330.213	48.705	0.000	-1.552	-0.001	4745.367	116.19	116.19	11.48	11.48
32	107	7307.228	-48.705	0.000	1.829	0.001	-4751.114	116.00	116.00	11.16	11.16
32	106	-7318.406	59.665	0.000	-3.059	-0.001	4939.276	117.69	117.69	8.69	8.69
33	106	7318.440	-59.665	0.000	-0.780	0.001	-4939.276	117.69	117.69	8.69	8.69
33	104	-7329.920	-35.725	0.000	-0.400	-0.001	5150.071	83.19	83.19	0.49	0.49
34	104	7329.884	29.007	0.000	-1.899	0.001	-5150.061	83.19	83.19	0.49	0.49
34	102	-7334.363	-16.597	0.000	0.669	-0.001	4817.204	116.83	116.83	10.53	10.53
35	102	7334.366	16.597	0.000	-2.499	0.001	-4817.204	116.83	116.83	10.53	10.53
35	101	-7319.340	-7.927	0.000	1.329	-0.001	4586.032	114.74	114.74	13.55	13.55
36	101	7293.972	7.927	0.000	1.141	0.001	-4589.033	114.50	114.50	13.24	13.24
36	100	-7314.019	2.223	0.000	-2.131	-0.001	4375.117	112.92	112.92	16.38	16.38
37	100	7314.013	-2.223	0.000	-2.870	0.001	-4375.117	112.92	112.92	16.38	16.38
37	99	-7334.361	11.663	0.000	1.750	-0.001	4221.923	111.86	111.86	18.70	18.70
38	99	7334.353	-11.663	0.000	0.180	0.001	-4221.923	111.86	111.86	18.70	18.70
38	98	-7346.233	20.593	0.000	-1.220	-0.001	4134.522	111.25	111.25	20.02	20.02
39	98	7346.261	-20.593	0.000	-0.758	0.001	-4134.522	111.25	111.25	20.02	20.02
39	97	-7334.573	29.583	0.000	-0.382	-0.001	4112.688	110.95	110.95	20.19	20.19
40	97	7315.472	-29.583	0.000	-0.084	0.001	-4112.075	110.74	110.74	20.00	20.00
40	96	-7330.170	39.083	0.000	-0.996	-0.001	4153.582	111.24	111.24	19.59	19.59
41	96	7330.184	-39.083	0.000	0.625	0.001	-4153.581	111.24	111.24	19.59	19.59
41	95	-7345.184	48.643	0.000	-1.805	-0.001	4246.780	112.18	112.18	18.47	18.47
42	95	7345.168	-48.643	0.000	0.564	0.001	-4246.780	112.18	112.18	18.47	18.47
42	94	-7350.717	57.723	0.000	-1.464	-0.001	4387.718	113.41	113.41	16.59	16.59
43	94	7350.730	-57.723	0.000	0.052	0.001	-4387.728	113.41	113.41	16.59	16.59
43	93	-7330.200	66.633	0.000	-1.222	-0.001	4554.685	114.59	114.59	14.09	14.09
44	93	7307.229	-66.633	0.000	-0.580	0.001	-4560.433	114.40	114.40	13.77	13.77
44	92	-7318.407	74.833	0.000	-0.600	-0.001	4759.952	116.19	116.19	11.15	11.15
45	92	7318.405	-74.833	0.000	2.853	0.001	-4759.942	116.19	116.19	11.15	11.15
45	90	-7329.884	-24.577	0.000	-3.893	-0.001	5002.294	82.14	82.14	1.81	1.81
46	90	7329.902	26.176	0.000	-2.399	0.001	-5002.295	82.14	82.14	1.81	1.81
46	88	-7334.381	-19.026	0.000	1.139	-0.001	4762.686	116.38	116.38	11.28	11.28
47	88	7334.386	19.026	0.000	-1.120	0.001	-4762.686	116.38	116.38	11.28	11.28
47	87	-7319.360	-12.206	0.000	0.020	-0.001	4569.702	114.61	114.61	13.77	13.77
48	87	7293.967	12.206	0.000	-1.419	0.001	-4572.702	114.37	114.37	13.46	13.46
48	86	-7314.013	-3.326	0.000	0.339	-0.001	4387.354	113.03	113.03	16.21	16.21
49	86	7313.993	3.326	0.000	-0.085	0.001	-4387.354	113.03	113.03	16.21	16.21

49	85	-7334.341	4.704	0.000	-0.975	-0.001	4265.117	112.22	112.22	18.10	18.10
50	85	7334.350	-4.704	0.000	-0.637	0.001	-4265.117	112.22	112.22	18.10	18.10
50	84	-7346.231	13.254	0.000	-0.433	-0.001	4191.774	111.73	111.73	19.23	19.23
51	84	7346.232	-13.254	0.000	-2.503	0.001	-4191.775	111.73	111.73	19.23	19.23
51	83	-7334.544	22.394	0.000	1.383	-0.001	4175.617	111.47	111.47	19.33	19.33
52	83	7315.486	-22.394	0.000	0.217	0.001	-4174.995	111.27	111.27	19.14	19.14
52	82	-7330.186	32.374	0.000	-1.377	-0.001	4216.879	111.77	111.77	18.72	18.72
53	82	7330.186	-32.374	0.000	0.130	0.001	-4216.879	111.77	111.77	18.72	18.72
53	81	-7345.186	42.634	0.000	-1.340	-0.001	4306.655	112.68	112.68	17.65	17.65
54	81	7345.176	-42.644	0.000	-0.044	0.001	-4306.656	112.68	112.68	17.65	17.65
54	80	-7350.725	52.814	0.000	-1.216	-0.001	4437.881	113.83	113.83	15.91	15.91
55	80	7350.734	-52.814	0.000	1.671	0.001	-4437.871	113.83	113.83	15.91	15.91
55	79	-7330.204	62.124	0.000	-2.721	-0.001	4606.435	115.03	115.03	13.38	13.38
56	79	7307.235	-62.124	0.000	0.773	0.001	-4612.182	114.84	114.84	13.06	13.06
56	78	-7318.413	71.044	0.000	-1.743	-0.001	4808.109	116.59	116.59	10.49	10.49
57	78	7318.400	-71.044	0.000	1.862	0.001	-4808.110	116.59	116.59	10.49	10.49
57	76	-7329.879	-27.326	0.000	-2.942	-0.001	5041.610	82.42	82.42	1.46	1.46
58	76	7329.903	26.819	0.000	-3.026	0.001	-5041.620	82.42	82.42	1.46	1.46
58	74	-7334.382	-18.299	0.000	1.836	-0.001	4777.367	116.50	116.50	11.08	11.08
59	74	7334.375	18.299	0.000	-1.955	0.001	-4777.366	116.50	116.50	11.08	11.08
59	73	-7319.350	-10.099	0.000	0.715	-0.002	4559.558	114.52	114.52	13.91	13.91
60	73	7293.971	10.099	0.000	-0.240	0.001	-4562.568	114.28	114.28	13.60	13.60
60	72	-7314.017	-1.789	0.000	-0.990	-0.002	4383.936	113.00	113.00	16.26	16.26
61	72	7313.998	1.789	0.000	-0.788	0.001	-4383.945	113.00	113.00	16.26	16.26
61	71	-7334.346	6.601	0.000	-0.242	-0.002	4253.206	112.12	112.12	18.27	18.27
62	71	7334.348	-6.601	0.000	-1.003	0.002	-4253.206	112.12	112.12	18.27	18.27
62	70	-7346.228	15.251	0.000	-0.047	-0.002	4175.790	111.60	111.60	19.45	19.45
63	70	7346.235	-15.251	0.000	-1.275	0.002	-4175.789	111.60	111.60	19.45	19.45
63	69	-7334.547	24.341	0.000	0.185	-0.002	4157.738	111.32	111.32	19.58	19.58
64	69	7315.490	-24.341	0.000	-0.532	0.002	-4157.125	111.12	111.12	19.39	19.39
64	68	-7330.189	34.201	0.000	-0.638	-0.002	4198.466	111.62	111.62	18.97	18.97
65	68	7330.188	-34.211	0.000	-0.251	0.002	-4198.466	111.62	111.62	18.97	18.97
65	67	-7345.188	44.291	0.000	-0.999	-0.002	4288.679	112.53	112.53	17.89	17.89
66	67	7345.201	-44.291	0.000	1.255	0.002	-4288.669	112.53	112.53	17.89	17.89
66	66	-7350.749	54.171	0.000	-2.415	-0.002	4421.959	113.70	113.70	16.12	16.12
67	66	7350.722	-54.181	0.000	0.753	0.002	-4421.959	113.70	113.70	16.12	16.12
67	65	-7330.191	63.381	0.000	-1.793	-0.002	4589.680	114.89	114.89	13.61	13.61
68	65	7307.249	-63.381	0.000	0.399	0.002	-4595.427	114.70	114.70	13.29	13.29
68	64	-7318.426	72.121	0.000	-1.499	-0.002	4791.830	116.45	116.45	10.72	10.72
69	64	7318.428	-72.111	0.000	1.399	0.002	-4791.820	116.45	116.45	10.72	10.72
69	62	-7329.908	-26.519	0.000	-2.579	-0.001	5027.166	82.31	82.31	1.59	1.59
70	62	7329.908	26.994	0.000	-1.355	0.001	-5027.167	82.31	82.31	1.59	1.59
70	60	-7334.387	-18.824	0.000	0.365	-0.001	4771.046	116.45	116.45	11.17	11.17
71	60	7334.385	18.824	0.000	-2.539	0.001	-4771.045	116.45	116.45	11.17	11.17
71	59	-7319.359	-10.754	0.000	1.279	-0.001	4557.620	114.51	114.51	13.94	13.94
72	59	7293.977	10.764	0.000	-1.004	0.001	-4560.610	114.27	114.27	13.63	13.63
72	58	-7314.024	-2.534	0.000	-0.096	-0.001	4385.710	113.01	113.01	16.24	16.24
73	58	7314.010	2.534	0.000	-1.209	0.001	-4385.711	113.01	113.01	16.24	16.24
73	57	-7334.358	5.766	0.000	0.139	-0.001	4258.933	112.17	112.17	18.19	18.19
74	57	7334.345	-5.766	0.000	-1.502	0.001	-4258.923	112.17	112.17	18.19	18.19
74	56	-7346.225	14.386	0.000	0.372	-0.001	4184.270	111.67	111.67	19.34	19.34
75	56	7346.250	-14.386	0.000	1.308	0.001	-4184.270	111.67	111.67	19.34	19.34
75	55	-7334.562	23.496	0.000	-2.328	-0.001	4168.441	111.41	111.41	19.43	19.43
76	55	7315.485	-23.496	0.000	-2.163	0.001	-4167.829	111.21	111.21	19.24	19.24
76	54	-7330.185	33.386	0.000	1.033	-0.001	4211.002	111.72	111.72	18.80	18.80
77	54	7330.184	-33.386	0.000	0.844	0.001	-4211.002	111.72	111.72	18.80	18.80
77	53	-7345.184	43.516	0.000	-2.104	-0.001	4302.807	112.65	112.65	17.70	17.70

78	53	7345.199	-43.516	0.000	0.215	0.001	-4302.807	112.65	112.65	17.70	17.70
78	52	-7350.747	53.476	0.000	-1.355	-0.001	4437.290	113.83	113.83	15.91	15.91
79	52	7350.732	-53.476	0.000	2.334	0.001	-4437.290	113.83	113.83	15.91	15.91
79	51	-7330.202	62.716	0.000	-3.344	-0.001	4606.922	115.03	115.03	13.37	13.37
80	51	7307.241	-62.716	0.000	-0.587	0.001	-4612.680	114.84	114.84	13.05	13.05
80	50	-7318.418	71.496	0.000	-0.513	-0.001	4810.677	116.61	116.61	10.46	10.46
81	50	7318.412	-71.496	0.000	0.965	0.001	-4810.677	116.61	116.61	10.46	10.46
81	48	-7329.891	-27.074	0.000	-1.905	-0.001	5047.265	82.46	82.46	1.41	1.41
82	48	7329.901	25.629	0.000	-2.938	0.001	-5047.274	82.46	82.46	1.41	1.41
82	46	-7334.380	-17.369	0.000	1.678	-0.001	4782.392	116.54	116.54	11.01	11.01
83	46	7334.379	17.369	0.000	-0.859	0.001	-4782.393	116.54	116.54	11.01	11.01
83	45	-7319.354	-9.209	0.000	-0.381	-0.001	4560.284	114.53	114.53	13.90	13.90
84	45	7293.959	9.209	0.000	-1.421	0.001	-4563.284	114.29	114.29	13.59	13.59
84	44	-7314.006	-1.019	0.000	0.201	-0.001	4381.801	112.98	112.98	16.29	16.29
85	44	7314.015	1.019	0.000	-0.219	0.001	-4381.791	112.98	112.98	16.29	16.29
85	43	-7334.363	7.301	0.000	-0.811	0.000	4247.320	112.07	112.07	18.35	18.35
86	43	7334.362	-7.301	0.000	-0.103	0.000	-4247.320	112.07	112.07	18.35	18.35
86	42	-7346.242	15.931	0.000	-0.867	0.000	4165.364	111.51	111.51	19.59	19.59
87	42	7346.235	-15.931	0.000	-0.786	0.000	-4165.374	111.51	111.51	19.59	19.59
87	41	-7334.547	25.031	0.000	-0.204	0.000	4142.322	111.19	111.19	19.79	19.79
88	41	7315.498	-25.041	0.000	-1.064	0.000	-4141.710	110.99	110.99	19.60	19.60
88	40	-7330.196	34.921	0.000	-0.146	0.000	4177.850	111.45	111.45	19.26	19.26
89	40	7330.197	-34.921	0.000	0.083	0.000	-4177.851	111.45	111.45	19.26	19.26
89	39	-7345.198	45.041	0.000	-1.263	0.000	4262.613	112.31	112.31	18.25	18.25
90	39	7345.188	-45.041	0.000	-0.024	0.000	-4262.623	112.31	112.31	18.25	18.25
90	38	-7350.735	54.981	0.000	-1.226	0.000	4390.234	113.43	113.43	16.56	16.56
91	38	7350.741	-54.981	0.000	1.209	0.000	-4390.234	113.43	113.43	16.56	16.56
91	37	-7330.210	64.261	0.000	-2.379	0.000	4553.754	114.59	114.59	14.10	14.10
92	37	7307.235	-64.261	0.000	0.977	0.000	-4559.491	114.39	114.39	13.78	13.78
92	36	-7318.413	72.971	0.000	-2.007	0.000	4749.314	116.10	116.10	11.30	11.30
93	36	7318.412	-72.971	0.000	0.415	0.000	-4749.314	116.10	116.10	11.30	11.30
93	34	-7329.890	-25.639	0.000	-1.495	0.001	4978.459	81.97	81.97	2.02	2.02
94	34	7329.891	31.106	0.000	-1.228	-0.001	-4978.460	81.97	81.97	2.02	2.02
94	32	-7334.370	-23.426	0.000	0.068	0.001	4731.492	116.12	116.12	11.71	11.71
95	32	7334.371	23.426	0.000	-1.643	-0.001	-4731.493	116.12	116.12	11.71	11.71
95	31	-7319.346	-14.836	0.000	0.663	0.001	4544.459	114.40	114.40	14.12	14.12
96	31	7293.958	14.836	0.000	-2.050	-0.001	-4547.459	114.16	114.16	13.81	13.81
96	30	-7314.005	-6.456	0.000	0.900	0.001	4396.872	113.11	113.11	16.08	16.08
97	30	7314.008	6.456	0.000	-0.882	-0.001	-4396.872	113.11	113.11	16.08	16.08
97	29	-7334.356	-3.766	0.000	-0.198	0.001	4190.716	111.60	111.60	19.12	19.12
98	29	7334.354	3.766	0.000	-1.023	-0.001	-4190.716	111.60	111.60	19.12	19.12
98	28	-7346.234	0.514	0.000	0.093	0.001	4059.445	110.62	110.62	21.05	21.05
99	28	7346.234	-0.514	0.000	-1.335	-0.001	-4059.446	110.62	110.62	21.05	21.05
99	27	-7334.547	8.064	0.000	0.175	0.001	4036.318	110.31	110.31	21.24	21.24
100	27	7315.495	-8.064	0.000	1.345	-0.001	-4035.706	110.10	110.10	21.05	21.05
100	26	-7330.193	-116.936	0.000	-1.345	0.002	3809.232	108.36	108.36	24.31	24.31
101	26	7330.189	116.936	0.000	-1.171	-0.001	-3809.232	108.36	108.36	24.31	24.31
101	25	-7345.190	-241.936	0.000	1.171	0.002	2957.739	101.41	101.41	36.14	36.14
102	25	7345.188	241.936	0.000	-2.251	-0.002	-2957.730	101.41	101.41	36.14	36.14
102	24	-7350.736	40.184	0.000	-0.439	0.002	2160.056	94.80	94.80	47.13	47.13
103	24	7350.736	-40.184	0.000	2.071	-0.002	-2160.055	94.80	94.80	47.13	47.13
103	23	-7330.206	50.014	0.000	-2.571	0.002	2356.871	96.23	96.23	44.22	44.22
104	23	7310.370	-50.014	0.000	0.821	-0.002	-2361.818	96.06	96.06	43.95	43.95
104	22	-7321.567	60.964	0.000	-1.381	0.002	2609.601	98.25	98.25	40.67	40.67
105	22	7321.567	-60.964	0.000	0.483	-0.002	-2609.602	98.25	98.25	40.67	40.67
105	20	-7333.066	-31.156	0.000	-1.033	0.002	2965.568	67.62	67.62	20.00	20.00

106	20	7333.063	1.951	0.000	-1.000	-0.002	-2965.569	67.62	67.62	20.00	20.00
106	18	-7337.562	7.489	0.000	0.400	0.002	2591.965	98.27	98.27	41.07	41.07
107	18	7337.564	-7.489	0.000	0.047	-0.002	-2591.965	98.27	98.27	41.07	41.07
107	17	-7322.559	18.349	0.000	-0.727	0.003	2286.970	95.56	95.56	45.10	45.10
108	17	7370.840	-18.349	0.000	-1.065	-0.003	-2281.054	96.02	96.02	45.68	45.68
108	16	-7391.381	62.789	0.000	0.455	0.003	2585.803	98.78	98.78	41.72	41.72
109	16	7391.378	-62.789	0.000	0.853	-0.003	-2585.804	98.78	98.78	41.72	41.72
109	15	-7392.887	98.519	0.000	-1.583	0.003	2796.423	100.56	100.56	38.85	38.85
110	15	7392.888	-98.519	0.000	-0.814	-0.003	-2796.424	100.56	100.56	38.85	38.85
110	14	-7345.620	115.909	0.000	-0.026	0.003	2757.729	99.74	99.74	38.89	38.89
111	14	7345.622	-115.909	0.000	-0.786	-0.003	-2757.729	99.74	99.74	38.89	38.89
111	13	-7298.658	-9.091	0.000	0.786	0.003	2781.968	99.45	99.45	38.06	38.06
112	13	5255.744	9.091	0.000	0.474	-0.003	-2723.195	77.63	77.63	17.54	17.54
112	12	-5222.141	-134.091	0.000	-0.474	0.003	2122.771	72.26	72.26	25.42	25.42
113	12	5222.141	134.091	0.000	-1.652	-0.003	-2122.770	72.26	72.26	25.42	25.42
113	11	-5188.753	-259.091	0.000	1.652	0.003	897.296	61.67	61.67	41.87	41.87
114	11	5188.753	259.091	0.000	-1.649	-0.003	-897.296	61.67	61.67	41.87	41.87
114	9	-5155.578	24.869	0.000	-0.441	0.004	-953.258	45.86	45.86	66.90	66.90

procr Viaducto de El Papiol (proces-Fase 1
HIPOTESIS 491 MOME Z MAX (Envolv. de Proces ELS) (E-2 a E-1)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
1	143	0.00	82.66	0.00	0.90	0.00	1236.56
1	141	0.00	-249.43	0.00	-0.90	0.00	-2182.44
2	141	0.00	-659.16	0.00	5.65	0.00	2182.44
2	140	0.00	-374.43	0.00	-0.94	0.00	-3742.07
3	140	0.00	374.43	0.00	2.36	0.00	3742.06
3	139	0.00	-499.43	0.00	-2.36	0.00	-5926.70
4	139	0.00	499.43	0.00	2.36	0.00	5926.69
4	138	0.00	-624.42	0.00	-2.36	0.00	-8736.27
5	138	0.00	-841.41	0.00	2.20	0.00	8736.26
5	137	0.00	-749.42	0.00	-9.18	0.00	-12170.89
6	137	0.00	-925.55	0.00	-1.42	0.00	12170.89
6	136	0.00	-777.61	0.00	-1.69	0.00	-10421.71
7	136	0.00	-898.48	0.00	0.88	0.00	10421.63
7	135	0.00	-835.19	0.00	-1.04	0.00	-11061.25
8	135	0.00	-924.18	0.00	-1.54	0.00	11061.25
8	134	0.00	-872.17	0.00	3.12	0.00	-11089.35
9	134	0.00	-937.83	0.00	-0.62	0.00	11089.35
9	132	0.00	-1000.25	0.00	3.92	0.00	-10787.80
10	132	0.00	-838.64	0.00	0.71	0.00	10787.71
10	130	0.00	-1007.17	0.00	5.71	0.00	-10798.00
11	130	0.00	-843.18	0.00	-0.78	0.00	10797.91
11	129	0.00	-1000.78	0.00	9.27	0.00	-10634.31
12	129	0.00	-845.10	0.00	-3.27	0.00	10634.31
12	128	0.00	-979.65	0.00	4.81	0.00	-10211.26
13	128	0.00	-842.24	0.00	1.31	0.00	10211.34
13	127	0.00	-953.48	0.00	0.29	0.00	-10110.58
14	127	0.00	-846.79	0.00	-0.11	0.00	10110.49
14	126	0.00	-913.13	0.00	2.12	0.00	-9784.28
15	126	0.00	-847.09	0.00	1.37	0.00	9784.29
15	125	0.00	-858.63	0.00	0.62	0.00	-9234.11
16	125	0.00	-843.27	0.00	0.11	0.00	9234.03
16	124	0.00	-832.94	0.00	2.22	0.00	-8754.60
17	124	0.00	-822.39	0.00	0.44	0.00	8754.51
17	123	0.00	-802.80	0.00	0.84	0.00	-8425.34
18	123	0.00	-825.80	0.00	1.57	0.00	8425.34
18	122	0.00	-782.36	0.00	0.15	0.00	-8171.39
19	122	0.00	-831.73	0.00	0.09	0.00	8171.39
19	121	0.00	-770.57	0.00	1.51	0.00	-7979.75
20	121	0.00	-839.90	0.00	0.56	0.00	7979.76
20	120	0.00	-765.61	0.00	0.71	0.00	-7827.97
21	120	0.00	-849.84	0.00	1.37	0.00	7827.90
21	118	0.00	-875.20	0.00	0.50	0.00	-7724.93
22	118	0.00	-754.72	0.00	-0.15	0.00	7724.84
22	116	0.00	-796.44	0.00	0.64	0.00	-7328.17
23	116	0.00	-768.10	0.00	1.46	0.00	7328.24
23	115	0.00	-795.91	0.00	-0.07	0.00	-7644.45
24	115	0.00	-780.39	0.00	2.72	0.00	7644.45
24	114	0.00	-799.72	0.00	-0.36	0.00	-7968.55
25	114	0.00	-793.70	0.00	1.54	0.00	7968.46
25	113	0.00	-795.38	0.00	1.31	0.00	-8139.86
26	113	0.00	-804.14	0.00	2.54	0.00	8139.85
26	112	0.00	-794.58	0.00	0.29	0.00	-8306.57
27	112	0.00	-815.11	0.00	1.24	0.00	8306.57
27	111	0.00	-797.35	0.00	1.54	0.00	-8470.22
28	111	0.00	-826.74	0.00	1.62	0.00	8470.31
28	110	0.00	-803.73	0.00	0.61	0.00	-8632.46
29	110	0.00	-839.16	0.00	-0.59	0.00	8632.56
29	109	0.00	-813.76	0.00	1.88	0.00	-8794.76
30	109	0.00	-852.48	0.00	2.58	0.00	8794.67
30	108	0.00	-794.73	0.00	-1.62	0.00	-8550.42
31	108	0.00	-857.98	0.00	1.28	0.00	8550.49
31	107	0.00	-789.81	0.00	0.76	0.00	-8438.68
32	107	0.00	-867.42	0.00	-0.83	0.00	8438.77
32	106	0.00	-781.91	0.00	1.92	0.00	-8248.19
33	106	0.00	-876.34	0.00	2.24	0.00	8248.12
33	104	0.00	-879.64	0.00	-1.02	0.00	-8000.06
34	104	0.00	-778.31	0.00	1.28	0.00	8000.06
34	102	0.00	-869.57	0.00	1.22	0.00	-8239.81
35	102	0.00	-787.82	0.00	2.42	0.00	8239.89
35	101	0.00	-858.88	0.00	0.77	0.00	-8429.38
36	101	0.00	-797.38	0.00	-2.01	0.00	8429.31
36	100	0.00	-847.00	0.00	3.98	0.00	-8557.92
37	100	0.00	-806.46	0.00	3.77	0.00	8557.92
37	99	0.00	-837.00	0.00	-1.95	0.00	-8658.72
38	99	0.00	-815.37	0.00	0.27	0.00	8658.62
38	98	0.00	-825.92	0.00	2.41	0.00	-8697.28
39	98	0.00	-823.57	0.00	0.88	0.00	8697.37
39	97	0.00	-813.82	0.00	0.81	0.00	-8675.48
40	97	0.00	-831.18	0.00	1.87	0.00	8675.49
40	96	0.00	-800.71	0.00	-0.09	0.00	-8594.73
41	96	0.00	-838.34	0.00	0.36	0.00	8594.72
41	95	0.00	-791.11	0.00	1.42	0.00	-8512.42
42	95	0.00	-846.37	0.00	0.86	0.00	8512.44
42	94	0.00	-780.11	0.00	0.25	0.00	-8368.19
43	94	0.00	-854.04	0.00	1.93	0.00	8368.29
43	93	0.00	-769.96	0.00	-0.46	0.00	-8191.35
44	93	0.00	-862.07	0.00	3.65	0.00	8191.35
44	92	0.00	-760.69	0.00	-0.56	0.00	-7983.62
45	92	0.00	-870.62	0.00	-0.27	0.00	7983.59
45	90	0.00	-858.95	0.00	3.04	0.00	-7742.07
46	90	0.00	-772.73	0.00	2.19	0.00	7742.19
46	88	0.00	-850.64	0.00	-0.26	0.00	-8003.89
47	88	0.00	-782.72	0.00	0.73	0.00	8003.88
47	87	0.00	-842.58	0.00	1.32	0.00	-8226.18
48	87	0.00	-792.98	0.00	1.46	0.00	8226.15
48	86	0.00	-834.77	0.00	0.55	0.00	-8405.34
49	86	0.00	-803.16	0.00	-0.24	0.00	8405.44
49	85	0.00	-826.23	0.00	1.68	0.00	-8524.51
50	85	0.00	-812.47	0.00	-0.05	0.00	8524.46
50	84	0.00	-817.82	0.00	0.49	0.00	-8596.34
51	84	0.00	-821.39	0.00	3.99	0.00	8596.41
51	83	0.00	-809.58	0.00	-2.13	0.00	-8622.70
52	83	0.00	-830.04	0.00	0.63	0.00	8622.70
52	82	0.00	-801.53	0.00	2.35	0.00	-8605.01
53	82	0.00	-838.56	0.00	1.31	0.00	8604.99
53	81	0.00	-793.70	0.00	1.03	0.00	-8544.73
54	81	0.00	-847.07	0.00	2.59	0.00	8544.80
54	80	0.00	-783.92	0.00	0.16	0.00	-8415.76
55	80	0.00	-855.07	0.00	1.04	0.00	8415.74

55	79	0.00	-775.12	0.00	1.72	0.00	-8255.70	85	44	0.00	-803.85	0.00	-0.03	0.00	8437.43
56	79	0.00	-863.46	0.00	1.87	0.00	8255.78	85	43	0.00	-828.51	0.00	2.00	0.00	-8553.46
56	78	0.00	-766.20	0.00	0.32	0.00	-8052.35	86	43	0.00	-813.14	0.00	0.26	0.00	8553.36
57	78	0.00	-872.11	0.00	-0.24	0.00	8052.45	86	42	0.00	-819.53	0.00	0.61	0.00	-8617.47
57	76	0.00	-864.32	0.00	1.64	0.00	-7809.15	87	42	0.00	-821.84	0.00	1.09	0.00	8617.61
58	76	0.00	-774.18	0.00	2.63	0.00	7809.16	87	41	0.00	-810.47	0.00	-0.16	0.00	-8633.47
58	74	0.00	-855.56	0.00	-1.13	0.00	-8065.25	88	41	0.00	-830.25	0.00	2.37	0.00	8633.49
59	74	0.00	-784.04	0.00	1.84	0.00	8065.18	88	40	0.00	-801.22	0.00	-0.55	0.00	-8595.81
59	73	0.00	-846.82	0.00	0.90	0.00	-8278.99	89	40	0.00	-837.93	0.00	1.28	0.00	8595.75
60	73	0.00	-794.13	0.00	-0.09	0.00	8278.99	89	39	0.00	-792.21	0.00	1.12	0.00	-8524.79
60	72	0.00	-837.95	0.00	2.19	0.00	-8445.01	90	39	0.00	-846.53	0.00	2.21	0.00	8524.83
61	72	0.00	-804.02	0.00	0.30	0.00	8445.08	90	38	0.00	-783.15	0.00	0.25	0.00	-8406.48
61	71	0.00	-829.03	0.00	0.84	0.00	-8559.37	91	38	0.00	-854.90	0.00	0.54	0.00	8406.61
62	71	0.00	-813.23	0.00	0.99	0.00	8559.40	91	37	0.00	-772.61	0.00	1.76	0.00	-8173.53
62	70	0.00	-819.93	0.00	0.20	0.00	-8622.64	92	37	0.00	-857.59	0.00	0.91	0.00	8173.43
63	70	0.00	-821.96	0.00	2.42	0.00	8622.67	92	36	0.00	-762.49	0.00	0.71	0.00	-7915.53
63	69	0.00	-810.68	0.00	-0.35	0.00	-8636.43	93	36	0.00	-861.87	0.00	1.68	0.00	7915.48
64	69	0.00	-830.34	0.00	1.22	0.00	8636.51	93	34	0.00	-860.24	0.00	0.13	0.00	-7653.46
64	68	0.00	-801.32	0.00	1.45	0.00	-8602.42	94	34	0.00	-762.40	0.00	0.11	0.00	7653.46
65	68	0.00	-838.51	0.00	2.14	0.00	8602.42	94	32	0.00	-823.23	0.00	2.42	0.00	-6561.26
65	67	0.00	-792.17	0.00	0.52	0.00	-8525.68	95	32	0.00	-653.75	0.00	-0.49	0.00	6561.30
66	67	0.00	-846.66	0.00	0.72	0.00	8525.68	95	31	0.00	-813.11	0.00	1.65	0.00	-6704.74
66	66	0.00	-782.93	0.00	1.68	0.00	-8403.48	96	31	0.00	-657.69	0.00	0.26	0.00	6704.65
67	66	0.00	-854.80	0.00	1.20	0.00	8403.48	96	30	0.00	-803.17	0.00	1.36	0.00	-6811.71
67	65	0.00	-773.79	0.00	0.51	0.00	-8239.03	97	30	0.00	-662.29	0.00	-0.86	0.00	6811.67
68	65	0.00	-863.10	0.00	2.07	0.00	8239.13	97	29	0.00	-793.89	0.00	2.61	0.00	-6905.81
68	64	0.00	-764.77	0.00	-0.12	0.00	-8034.57	98	29	0.00	-669.52	0.00	-0.13	0.00	6905.78
69	64	0.00	-871.72	0.00	0.52	0.00	8034.57	98	28	0.00	-785.18	0.00	1.83	0.00	-6982.87
69	62	0.00	-862.93	0.00	1.34	0.00	-7791.81	99	28	0.00	-679.35	0.00	1.23	0.00	6982.88
70	62	0.00	-773.81	0.00	0.86	0.00	7791.83	99	27	0.00	-776.77	0.00	1.38	0.00	-7029.25
70	60	0.00	-854.29	0.00	0.52	0.00	-8049.30	100	27	0.00	-690.30	0.00	-2.18	0.00	7029.17
71	60	0.00	-783.70	0.00	1.82	0.00	8049.37	100	26	0.00	-769.09	0.00	3.91	0.00	-7065.75
71	59	0.00	-845.72	0.00	0.03	0.00	-8265.29	101	26	0.00	-705.20	0.00	0.17	0.00	7065.74
72	59	0.00	-793.83	0.00	0.56	0.00	8265.32	101	25	0.00	-760.50	0.00	0.64	0.00	-7014.27
72	58	0.00	-837.12	0.00	1.53	0.00	-8434.79	102	25	0.00	-714.65	0.00	1.34	0.00	7014.35
73	58	0.00	-803.79	0.00	1.34	0.00	8434.76	102	24	0.00	-752.12	0.00	0.51	0.00	-6928.74
73	57	0.00	-828.31	0.00	0.61	0.00	-8550.33	103	24	0.00	-725.50	0.00	-2.19	0.00	6928.83
74	57	0.00	-813.03	0.00	2.85	0.00	8550.38	103	23	0.00	-749.43	0.00	3.28	0.00	-7069.20
74	56	0.00	-819.39	0.00	0.02	0.00	-8615.91	104	23	0.00	-769.95	0.00	0.25	0.00	7069.19
75	56	0.00	-821.81	0.00	-1.76	0.00	8615.80	104	22	0.00	-745.15	0.00	0.00	0.00	-7089.38
75	55	0.00	-810.40	0.00	3.60	0.00	-8632.90	105	22	0.00	-805.67	0.00	1.54	0.00	7089.38
76	55	0.00	-830.27	0.00	4.09	0.00	8632.93	105	20	0.00	-844.62	0.00	0.13	0.00	-6909.49
76	54	0.00	-801.38	0.00	-2.37	0.00	-8603.12	106	20	0.00	-716.04	0.00	0.86	0.00	6909.31
77	54	0.00	-838.52	0.00	0.86	0.00	8603.06	106	18	0.00	591.04	0.00	-0.86	0.00	-3641.62
77	53	0.00	-792.35	0.00	1.96	0.00	-8527.87	107	18	0.00	-591.04	0.00	0.79	0.00	3641.62
78	53	0.00	-846.70	0.00	1.37	0.00	8527.86	107	17	0.00	-552.67	0.00	1.24	0.00	-2795.03
78	52	0.00	-783.19	0.00	0.77	0.00	-8406.69	108	17	0.00	-365.83	0.00	0.39	0.00	2795.06
79	52	0.00	-854.87	0.00	-0.63	0.00	8406.64	108	16	0.00	-541.72	0.00	0.40	0.00	-2883.48
79	51	0.00	-774.13	0.00	1.70	0.00	-8243.36	109	16	0.00	-368.31	0.00	-0.80	0.00	2883.46
80	51	0.00	-863.19	0.00	2.48	0.00	8243.42	109	15	0.00	-526.82	0.00	1.35	0.00	-2784.72
80	50	0.00	-765.15	0.00	-1.43	0.00	-8039.20	110	15	0.00	-274.49	0.00	-0.16	0.00	2784.75
81	50	0.00	-871.82	0.00	1.21	0.00	8039.20	110	14	0.00	-517.38	0.00	0.39	0.00	-2843.41
81	48	0.00	-863.29	0.00	0.78	0.00	-7796.28	111	14	0.00	-348.56	0.00	0.36	0.00	2843.38
82	48	0.00	-773.91	0.00	2.34	0.00	7796.35	111	13	0.00	-506.53	0.00	0.56	0.00	-2804.68
82	46	0.00	-854.62	0.00	0.20	0.00	-8053.47	112	13	0.00	-374.48	0.00	-0.68	0.00	2804.68
83	46	0.00	-783.79	0.00	0.92	0.00	8053.46	112	12	0.00	-100.51	0.00	-0.01	0.00	-1479.95
83	45	0.00	-846.00	0.00	1.85	0.00	-8268.88	113	12	0.00	-273.00	0.00	0.00	0.00	1480.02
84	45	0.00	-793.91	0.00	1.78	0.00	8268.81	113	11	0.00	148.00	0.00	0.00	0.00	-427.49
84	44	0.00	-837.34	0.00	0.76	0.00	-8437.54	114	11	0.00	-148.00	0.00	0.00	0.00	427.49

procr Viaducto de El Papiol (proces-Fase 1

HIPOTESIS 492 MOME Z MIN (Envolv. de Proces ELS) (E-2 a E-1)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
1	143	0.00	-287.20	0.00	-1.78	0.00	-4311.23
1	141	0.00	120.43	0.00	1.78	0.00	5214.64
2	141	0.00	-120.43	0.00	-1.88	0.00	-5214.63
2	140	0.00	115.62	0.00	1.41	0.00	6058.89
3	140	0.00	-115.62	0.00	-3.71	0.00	-6058.88
3	139	0.00	124.44	0.00	2.82	0.00	6550.72
4	139	0.00	-124.44	0.00	-2.82	0.00	-6550.72
4	138	0.00	-0.56	0.00	2.82	0.00	6860.45
5	138	0.00	0.55	0.00	-8.17	0.00	-6860.44
5	137	0.00	23.26	0.00	-0.04	0.00	7146.12
6	137	0.00	-23.26	0.00	-0.11	0.00	-7146.12
6	136	0.00	-101.74	0.00	0.11	0.00	6949.90
7	136	0.00	101.74	0.00	-2.61	0.00	-6949.90
7	135	0.00	-74.78	0.00	0.79	0.00	6824.05
8	135	0.00	74.78	0.00	-0.93	0.00	-6824.06
8	134	0.00	-33.67	0.00	-1.00	0.00	6497.89
9	134	0.00	33.67	0.00	-1.60	0.00	-6497.89
9	132	0.00	-265.69	0.00	1.60	0.00	6016.93
10	132	0.00	265.69	0.00	-3.77	0.00	-6016.93
10	130	0.00	-210.32	0.00	1.89	0.00	5235.02
11	130	0.00	210.33	0.00	-1.99	0.00	-5235.02
11	129	0.00	-52.80	0.00	-0.63	0.00	4408.80
12	129	0.00	52.81	0.00	0.63	0.00	-4408.80
12	128	0.00	-32.36	0.00	-1.62	0.00	4049.54
13	128	0.00	32.36	0.00	-1.54	0.00	-4049.54
13	127	0.00	-20.57	0.00	0.52	0.00	3887.38
14	127	0.00	20.57	0.00	-0.52	0.00	-3887.38
14	126	0.00	-15.61	0.00	-0.44	0.00	3890.20
15	126	0.00	15.60	0.00	-1.04	0.00	-3890.20
15	125	0.00	-18.18	0.00	0.09	0.00	4070.60
16	125	0.00	18.18	0.00	-0.17	0.00	-4070.60
16	124	0.00	-143.18	0.00	0.17	0.00	3667.20
17	124	0.00	143.18	0.00	-1.56	0.00	-3667.19
17	123	0.00	95.10	0.00	-1.22	0.00	3468.71
18	123	0.00	-95.10	0.00	-0.10	0.00	-3468.71
18	122	0.00	92.24	0.00	-0.70	0.00	3805.91
19	122	0.00	-92.24	0.00	0.63	0.00	-3805.90
19	121	0.00	96.79	0.00	-1.63	0.00	4043.27
20	121	0.00	-96.79	0.00	0.09	0.00	-4043.28
20	120	0.00	97.09	0.00	-1.01	0.00	4378.55
21	120	0.00	-97.10	0.00	-0.65	0.00	-4378.55
21	118	0.00	-13.75	0.00	-0.37	0.00	4814.04
22	118	0.00	13.75	0.00	0.27	0.00	-4814.04
22	116	0.00	-21.57	0.00	-1.20	0.00	4817.11
23	116	0.00	21.57	0.00	-0.62	0.00	-4817.11
23	115	0.00	-33.27	0.00	-0.28	0.00	4924.84
24	115	0.00	33.27	0.00	-1.69	0.00	-4924.84
24	114	0.00	-14.45	0.00	0.44	0.00	4583.27
25	114	0.00	14.45	0.00	-0.35	0.00	-4583.26
25	113	0.00	-10.38	0.00	-0.82	0.00	4530.07
26	113	0.00	10.38	0.00	-0.99	0.00	-4530.07
26	112	0.00	-2.84	0.00	-0.20	0.00	4475.73
27	112	0.00	2.84	0.00	0.11	0.00	-4475.73
27	111	0.00	6.74	0.00	-1.28	0.00	4449.08
28	111	0.00	-6.74	0.00	-0.32	0.00	-4449.08
28	110	0.00	18.10	0.00	-0.88	0.00	4464.62
29	110	0.00	-18.10	0.00	0.79	0.00	-4464.62
29	109	0.00	30.40	0.00	-1.91	0.00	4517.39
30	109	0.00	-30.40	0.00	-1.62	0.00	-4517.39
30	108	0.00	43.70	0.00	0.34	0.00	4592.55
31	108	0.00	-43.70	0.00	-0.25	0.00	-4592.55
31	107	0.00	54.15	0.00	-0.88	0.00	4734.45
32	107	0.00	-54.15	0.00	0.79	0.00	-4734.45
32	106	0.00	65.11	0.00	-2.02	0.00	4896.85
33	106	0.00	-65.11	0.00	-1.80	0.00	-4896.85
33	104	0.00	-30.28	0.00	0.62	0.00	5081.92
34	104	0.00	30.27	0.00	-0.62	0.00	-5081.91
34	102	0.00	-17.86	0.00	-0.61	0.00	4757.05
35	102	0.00	17.86	0.00	-1.20	0.00	-4757.05
35	101	0.00	-9.19	0.00	0.03	0.00	4534.55
36	101	0.00	9.19	0.00	1.69	0.00	-4534.55
36	100	0.00	0.96	0.00	-2.68	0.00	4333.55
37	100	0.00	-0.96	0.00	-2.34	0.00	-4333.55
37	99	0.00	10.40	0.00	1.22	0.00	4193.31
38	99	0.00	-10.40	0.00	0.37	0.00	-4193.31
38	98	0.00	19.33	0.00	-1.41	0.00	4116.53
39	98	0.00	-19.33	0.00	-0.23	0.00	-4116.53
39	97	0.00	28.32	0.00	-0.91	0.00	4099.38
40	97	0.00	-28.32	0.00	-0.64	0.00	-4099.38
40	96	0.00	37.82	0.00	-0.44	0.00	4144.86
41	96	0.00	-37.82	0.00	0.44	0.00	-4144.86
41	95	0.00	47.38	0.00	-1.62	0.00	4242.07
42	95	0.00	-47.38	0.00	0.01	0.00	-4242.07
42	94	0.00	56.46	0.00	-0.91	0.00	4385.80
43	94	0.00	-56.46	0.00	-0.85	0.00	-4385.81
43	93	0.00	65.37	0.00	-0.32	0.00	4552.48
44	93	0.00	-65.37	0.00	-1.50	0.00	-4552.48
44	92	0.00	73.57	0.00	0.32	0.00	4759.78
45	92	0.00	-73.57	0.00	1.59	0.00	-4759.77
45	90	0.00	-25.84	0.00	-2.63	0.00	5009.94
46	90	0.00	25.83	0.00	-1.27	0.00	-5009.94
46	88	0.00	-18.68	0.00	0.01	0.00	4770.28
47	88	0.00	18.68	0.00	-0.01	0.00	-4770.28
47	87	0.00	-11.86	0.00	-1.09	0.00	4577.92
48	87	0.00	11.86	0.00	-0.65	0.00	-4577.92
48	86	0.00	-2.98	0.00	-0.43	0.00	4397.44
49	86	0.00	2.98	0.00	0.34	0.00	-4397.44
49	85	0.00	5.05	0.00	-1.40	0.00	4280.11
50	85	0.00	-5.05	0.00	-0.23	0.00	-4280.11
50	84	0.00	13.60	0.00	-0.84	0.00	4209.34
51	84	0.00	-13.60	0.00	-2.44	0.00	-4209.34
51	83	0.00	22.74	0.00	1.32	0.00	4189.82
52	83	0.00	-22.74	0.00	0.28	0.00	-4189.81
52	82	0.00	32.72	0.00	-1.44	0.00	4227.62
53	82	0.00	-32.72	0.00	-0.17	0.00	-4227.62
53	81	0.00	42.98	0.00	-1.04	0.00	4313.36
54	81	0.00	-42.99	0.00	-0.69	0.00	-4313.36
54	80	0.00	53.16	0.00	-0.57	0.00	4439.33
55	80	0.00	-53.16	0.00	0.66	0.00	-4439.32
55	79	0.00	62.47	0.00	-1.71	0.00	4599.55

56	79	0.00	-62.47	0.00	-0.22	0.00	-4599.55
56	78	0.00	71.39	0.00	-0.75	0.00	4795.21
57	78	0.00	-71.39	0.00	0.85	0.00	-4795.21
57	76	0.00	-26.98	0.00	-1.93	0.00	5028.48
58	76	0.00	26.98	0.00	-1.99	0.00	-5028.49
58	74	0.00	-18.46	0.00	0.80	0.00	4766.72
59	74	0.00	18.46	0.00	-0.90	0.00	-4766.72
59	73	0.00	-10.26	0.00	-0.34	0.00	4552.07
60	73	0.00	10.26	0.00	0.43	0.00	-4552.08
60	72	0.00	-1.95	0.00	-1.66	0.00	4380.85
61	72	0.00	1.95	0.00	-0.10	0.00	-4380.86
61	71	0.00	6.44	0.00	-0.93	0.00	4257.56
62	71	0.00	-6.44	0.00	-0.68	0.00	-4257.56
62	70	0.00	15.09	0.00	-0.37	0.00	4185.25
63	70	0.00	-15.09	0.00	-1.30	0.00	-4185.25
63	69	0.00	24.18	0.00	0.21	0.00	4166.37
64	69	0.00	-24.18	0.00	-0.21	0.00	-4166.37
64	68	0.00	34.04	0.00	-0.96	0.00	4206.17
65	68	0.00	-34.05	0.00	-0.64	0.00	-4206.17
65	67	0.00	44.13	0.00	-0.61	0.00	4294.88
66	67	0.00	-44.13	0.00	0.52	0.00	-4294.87
66	66	0.00	54.01	0.00	-1.68	0.00	4425.44
67	66	0.00	-54.02	0.00	0.00	0.00	-4425.44
67	65	0.00	63.22	0.00	-1.04	0.00	4587.36
68	65	0.00	-63.22	0.00	-0.70	0.00	-4587.36
68	64	0.00	71.96	0.00	-0.40	0.00	4786.03
69	64	0.00	-71.95	0.00	0.30	0.00	-4786.02
69	62	0.00	-26.68	0.00	-1.48	0.00	5023.67
70	62	0.00	26.68	0.00	-0.43	0.00	-5023.67
70	60	0.00	-18.51	0.00	-0.56	0.00	4767.66
71	60	0.00	18.51	0.00	-1.25	0.00	-4767.66
71	59	0.00	-10.44	0.00	-0.01	0.00	4555.02
72	59	0.00	10.45	0.00	-0.08	0.00	-4555.01
72	58	0.00	-2.22	0.00	-1.02	0.00	4385.14
73	58	0.00	2.22	0.00	-0.65	0.00	-4385.14
73	57	0.00	6.08	0.00	-0.42	0.00	4263.43
74	57	0.00	-6.08	0.00	-1.29	0.00	-4263.42
74	56	0.00	14.70	0.00	0.16	0.00	4191.50
75	56	0.00	-14.70	0.00	1.52	0.00	-4191.50
75	55	0.00	23.81	0.00	-2.54	0.00	4172.47
76	55	0.00	-23.81	0.00	-2.30	0.00	-4172.47
76	54	0.00	33.70	0.00	1.17	0.00	4211.73
77	54	0.00	-33.70	0.00	0.34	0.00	-4211.73
77	53	0.00	43.83	0.00	-1.60	0.00	4299.66
78	53	0.00	-43.83	0.00	0.06	0.00	-4299.66
78	52	0.00	53.79	0.00	-1.20	0.00	4429.05
79	52	0.00	-53.79	0.00	1.11	0.00	-4429.05
79	51	0.00	63.03	0.00	-2.12	0.00	4590.51
80	51	0.00	-63.03	0.00	-1.46	0.00	-4590.52
80	50	0.00	71.81	0.00	0.36	0.00	4788.41
81	50	0.00	-71.81	0.00	-0.26	0.00	-4788.41
81	48	0.00	-26.76	0.00	-0.68	0.00	5024.93
82	48	0.00	26.76	0.00	-1.43	0.00	-5024.94
82	46	0.00	-18.50	0.00	0.17	0.00	4767.39
83	46	0.00	18.50	0.00	-0.07	0.00	-4767.39
83	45	0.00	-10.34	0.00	-1.17	0.00	4553.29
84	45	0.00	10.34	0.00	-0.65	0.00	-4553.29
84	44	0.00	-2.15	0.00	-0.57	0.00	4384.06
85	44	0.00	2.15	0.00	0.57	0.00	-4384.05
85	43	0.00	6.17	0.00	-1.60	0.00	4261.87
86	43	0.00	-6.17	0.00	-0.02	0.00	-4261.87
86	42	0.00	14.80	0.00	-0.95	0.00	4189.87
87	42	0.00	-14.80	0.00	-0.72	0.00	-4189.88
87	41	0.00	23.90	0.00	-0.27	0.00	4170.85
88	41	0.00	-23.91	0.00	-1.32	0.00	-4170.85
88	40	0.00	33.79	0.00	0.11	0.00	4210.30
89	40	0.00	-33.79	0.00	-0.19	0.00	-4210.30
89	39	0.00	43.91	0.00	-0.99	0.00	4298.41
90	39	0.00	-43.91	0.00	-0.65	0.00	-4298.42
90	38	0.00	53.85	0.00	-0.60	0.00	4428.16
91	38	0.00	-53.85	0.00	0.60	0.00	-4428.16
91	37	0.00	63.13	0.00	-1.77	0.00	4590.73
92	37	0.00	-63.13	0.00	0.02	0.00	-4590.72
92	36	0.00	71.84	0.00	-1.05	0.00	4787.66
93	36	0.00	-71.84	0.00	-0.87	0.00	-4787.66
93	34	0.00	-26.77	0.00	-0.21	0.00	5023.96
94	34	0.00	26.77	0.00	0.21	0.00	-5023.96
94	32	0.00	-19.09	0.00	-1.37	0.00	4756.99
95	32	0.00	19.09	0.00	-0.54	0.00	-4756.99
95	31	0.00	-10.50	0.00	-0.44	0.00	4550.63
96	31	0.00	10.50	0.00	-1.29	0.00	-4550.63
96	30	0.00	-2.12	0.00	0.14	0.00	4384.96
97	30	0.00	2.12	0.00	-0.14	0.00	-4384.96
97	29	0.00	0.57	0.00	-0.94	0.00	4163.76
98	29	0.00	-0.57	0.00	-0.64	0.00	-4163.76
98	28	0.00	4.85	0.00	-0.29	0.00	4015.11
99	28	0.00	-4.85	0.00	-1.32	0.00	-4015.11
99	27	0.00	12.40	0.00	0.16	0.00	3968.67
100	27	0.00	-12.40	0.00	1.34	0.00	-3968.67
100	26	0.00	-112.60	0.00	-1.34	0.00	3718.17
101	26	0.00	112.60	0.00	-1.56	0.00	-3718.17
101	25	0.00	-237.60	0.00	1.56	0.00	2842.69
102	25	0.00	237.60	0.00	-2.64	0.00	-2842.68
102	24	0.00	44.52	0.00	-0.05	0.00	2019.80
103	24	0.00	-44.52	0.00	0.86	0.00	-2019.80
103	23	0.00	54.35	0.00	-1.36	0.00	2188.33
104	23	0.00	-54.35	0.00	-0.39	0.00	-2188.33
104	22	0.00	65.30	0.00	-0.17	0.00	2415.90
105	22	0.00	-65.30	0.00	-0.75	0.00	-2415.90
105	20	0.00	-26.82	0.00	0.20	0.00	2751.69
106	20	0.00	26.82	0.00	-0.26	0.00	-2751.69
106	18	0.00	-17.38	0.00	-0.34	0.00	2504.12
107	18	0.00	17.38	0.00	0.39	0.00	-2504.12
107	17	0.00	-6.52	0.00	-1.07	0.00	2325.83
108	17	0.00	6.52	0.00	-0.74	0.00	-2325.83
108	16	0.00	37.92	0.00	0.13	0.00	2761.59
109	16	0.00	-37.92	0.00	0.91	0.00	-2761.59
109	15	0.00	73.65	0.00	-1.64	0.00	3099.48
110	15	0.00	-73.65	0.00	-0.77	0.00	-3099.48
110	14	0.00	91.04	0.00	-0.07	0.00	3179.22
111	14	0.00	-91.04	0.00	-1.13	0.00	-3179.22
111	13	0.00	-33.96	0.00	1.13	0.00	3321.93
112	13	0.00	33.96	0.00	0.13	0.00	-3321.93
112	12	0.00	-158.96	0.00	-0.13	0.00	2839.64
113	12	0.00	158.96	0.00	-2.09	0.00	-2839.64
113	11	0.00	-283.96	0.00	2.09	0.00	1732.34
114	11	0.00	283.96	0.00	-2.09	0.00	-1732.34

procr Viaducto de El Papiol (proces-Fase 1

HIPOTESIS 493 FUER Y MAX (Envolv. de Proces ELU) (E-2 a E-1)

BARRA	NUDO	ESFUERZOS EN BARRAS AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
1	143	0.00	111.59	0.00	1.21	0.00	1669.35
1	141	0.00	-336.73	0.00	-1.21	0.00	-2946.27
2	141	0.00	336.73	0.00	1.27	0.00	2946.27
2	140	0.00	-505.48	0.00	-1.27	0.00	-5051.76
3	140	0.00	505.48	0.00	3.19	0.00	5051.76
3	139	0.00	-674.23	0.00	-3.19	0.00	-8001.02
4	139	0.00	674.23	0.00	3.19	0.00	8001.03
4	138	0.00	-842.97	0.00	-3.19	0.00	-11793.94
5	138	0.00	842.97	0.00	12.39	0.00	11793.94
5	137	0.00	-1011.72	0.00	-12.39	0.00	-16430.70
6	137	0.00	881.02	0.00	2.28	0.00	9242.28
6	136	0.00	-1049.78	0.00	-2.28	0.00	-14069.31
7	136	0.00	958.76	0.00	1.40	0.00	9716.98
7	135	0.00	-1127.51	0.00	-1.40	0.00	-14932.69
8	135	0.00	1008.68	0.00	-4.21	0.00	9505.44
8	134	0.00	-1177.43	0.00	4.21	0.00	-14970.62
9	134	0.00	1037.11	0.00	-5.29	0.00	8955.93
9	132	0.00	-1350.34	0.00	5.29	0.00	-14563.53
10	132	0.00	1190.93	0.00	-7.71	0.00	8200.70
10	130	0.00	-1359.69	0.00	7.71	0.00	-14577.31
11	130	0.00	1182.31	0.00	-12.52	0.00	8022.97
11	129	0.00	-1351.06	0.00	12.52	0.00	-14356.32
12	129	0.00	1153.78	0.00	-6.49	0.00	7594.48
12	128	0.00	-1322.53	0.00	6.49	0.00	-13785.20
13	128	0.00	1118.45	0.00	-0.39	0.00	7635.10
13	127	0.00	-1287.20	0.00	0.39	0.00	-13649.29
14	127	0.00	1063.98	0.00	-2.87	0.00	7467.07
14	126	0.00	-1232.73	0.00	2.87	0.00	-13208.78
15	126	0.00	1007.56	0.00	-1.54	0.00	6881.25
15	125	0.00	-1176.31	0.00	1.54	0.00	-12341.01
16	125	0.00	955.72	0.00	-3.00	0.00	6618.27
16	124	0.00	-1124.47	0.00	3.00	0.00	-11818.71
17	124	0.00	915.04	0.00	-1.14	0.00	6377.16
17	123	0.00	-1083.79	0.00	1.14	0.00	-11374.20
18	123	0.00	887.44	0.00	-0.20	0.00	6172.29
18	122	0.00	-1056.19	0.00	0.20	0.00	-11031.37
19	122	0.00	871.52	0.00	-2.03	0.00	5993.19
19	121	0.00	-1040.27	0.00	2.03	0.00	-10772.67
20	121	0.00	864.82	0.00	-0.95	0.00	5821.79
20	120	0.00	-1033.57	0.00	0.95	0.00	-10567.75
21	120	0.00	868.29	0.00	-0.67	0.00	5665.13
21	118	0.00	-1181.52	0.00	0.67	0.00	-10428.65
22	118	0.00	906.44	0.00	-0.86	0.00	4939.01
22	116	0.00	-1075.19	0.00	0.86	0.00	-9893.03
23	116	0.00	905.73	0.00	0.09	0.00	5369.44
23	115	0.00	-1074.48	0.00	-0.09	0.00	-10320.01
24	115	0.00	910.87	0.00	0.49	0.00	5781.25
24	114	0.00	-1079.62	0.00	-0.49	0.00	-10757.54
25	114	0.00	905.01	0.00	-1.77	0.00	6041.94
25	113	0.00	-1073.76	0.00	1.77	0.00	-10988.82
26	113	0.00	903.93	0.00	-0.39	0.00	6272.40
26	112	0.00	-1072.68	0.00	0.39	0.00	-11213.87
27	112	0.00	907.67	0.00	-2.07	0.00	6474.58
27	111	0.00	-1076.42	0.00	2.07	0.00	-11434.80
28	111	0.00	916.29	0.00	-0.82	0.00	6650.50
28	110	0.00	-1085.04	0.00	0.82	0.00	-11653.82
29	110	0.00	929.82	0.00	-2.53	0.00	6801.85
29	109	0.00	-1098.57	0.00	2.53	0.00	-11872.93
30	109	0.00	904.13	0.00	2.18	0.00	6600.62
30	108	0.00	-1072.88	0.00	-2.18	0.00	-11543.07
31	108	0.00	897.49	0.00	-1.03	0.00	6482.88
31	107	0.00	-1066.24	0.00	1.03	0.00	-11392.21
32	107	0.00	886.83	0.00	-2.59	0.00	6279.01
32	106	0.00	-1055.58	0.00	2.59	0.00	-11135.06
33	106	0.00	874.29	0.00	1.37	0.00	6006.66
33	104	0.00	-1187.51	0.00	-1.37	0.00	-10800.07
34	104	0.00	1005.18	0.00	-1.65	0.00	5676.02
34	102	0.00	-1173.93	0.00	1.65	0.00	-11123.75
35	102	0.00	990.74	0.00	-1.04	0.00	6004.02
35	101	0.00	-1159.49	0.00	1.04	0.00	-11379.67
36	101	0.00	974.71	0.00	-5.37	0.00	6257.81
36	100	0.00	-1143.46	0.00	5.37	0.00	-11553.19
37	100	0.00	961.20	0.00	2.63	0.00	6461.38
37	99	0.00	-1129.95	0.00	-2.63	0.00	-11689.27
38	99	0.00	946.25	0.00	-3.26	0.00	6588.31
38	98	0.00	-1115.00	0.00	3.26	0.00	-11741.33
39	98	0.00	929.90	0.00	-1.09	0.00	6640.50
39	97	0.00	-1098.65	0.00	1.09	0.00	-11711.90
40	97	0.00	912.20	0.00	0.12	0.00	6619.96
40	96	0.00	-1080.95	0.00	-0.12	0.00	-11602.89
41	96	0.00	899.25	0.00	-1.92	0.00	6573.72
41	95	0.00	-1068.00	0.00	1.92	0.00	-11491.77
42	95	0.00	884.40	0.00	-0.33	0.00	6453.23
42	94	0.00	-1053.15	0.00	0.33	0.00	-11297.05
43	94	0.00	870.70	0.00	0.63	0.00	6282.97
43	93	0.00	-1039.45	0.00	-0.63	0.00	-11058.33
44	93	0.00	858.18	0.00	0.76	0.00	6065.11
44	92	0.00	-1026.93	0.00	-0.76	0.00	-10777.89
45	92	0.00	846.35	0.00	-4.10	0.00	5798.04
45	90	0.00	-1159.58	0.00	4.10	0.00	-10451.79
46	90	0.00	979.62	0.00	0.35	0.00	5485.23
46	88	0.00	-1148.37	0.00	-0.35	0.00	-10805.25
47	88	0.00	968.74	0.00	-1.78	0.00	5839.84
47	87	0.00	-1137.48	0.00	1.78	0.00	-11105.34
48	87	0.00	958.19	0.00	-0.75	0.00	6134.47
48	86	0.00	-1126.93	0.00	0.75	0.00	-11347.21
49	86	0.00	946.66	0.00	-2.27	0.00	6352.82
49	85	0.00	-1115.42	0.00	2.27	0.00	-11508.09
50	85	0.00	935.32	0.00	-0.66	0.00	6506.70
50	84	0.00	-1104.06	0.00	0.66	0.00	-11605.06
51	84	0.00	924.18	0.00	2.88	0.00	6597.83
51	83	0.00	-1092.93	0.00	-2.88	0.00	-11640.65
52	83	0.00	913.31	0.00	-3.17	0.00	6628.30
52	82	0.00	-1082.06	0.00	3.17	0.00	-11616.77
53	82	0.00	902.75	0.00	-1.39	0.00	6599.83
53	81	0.00	-1071.50	0.00	1.39	0.00	-11535.38
54	81	0.00	889.54	0.00	-0.22	0.00	6491.70
54	80	0.00	-1058.29	0.00	0.22	0.00	-11361.28
55	80	0.00	877.67	0.00	-2.33	0.00	6335.02
55	79	0.00	-1046.42	0.00	2.33	0.00	-11145.20

56	79	0.00	865.62	0.00	-0.43	0.00	6120.68
56	78	0.00	-1034.37	0.00	0.43	0.00	-10870.67
57	78	0.00	853.61	0.00	-2.22	0.00	5852.26
57	76	0.00	-1166.84	0.00	2.22	0.00	-10542.36
58	76	0.00	986.26	0.00	1.53	0.00	5534.84
58	74	0.00	-1155.01	0.00	-1.53	0.00	-10888.09
59	74	0.00	974.45	0.00	-1.21	0.00	5882.52
59	73	0.00	-1143.20	0.00	1.21	0.00	-11176.64
60	73	0.00	962.48	0.00	-2.96	0.00	6166.52
60	72	0.00	-1131.23	0.00	2.96	0.00	-11400.76
61	72	0.00	950.44	0.00	-1.13	0.00	6381.06
61	71	0.00	-1119.19	0.00	1.13	0.00	-11555.15
62	71	0.00	938.16	0.00	-0.27	0.00	6527.86
62	70	0.00	-1106.91	0.00	0.27	0.00	-11640.57
63	70	0.00	925.67	0.00	0.47	0.00	6608.97
63	69	0.00	-1094.42	0.00	-0.47	0.00	-11659.19
64	69	0.00	913.03	0.00	-1.96	0.00	6626.17
64	68	0.00	-1081.78	0.00	1.96	0.00	-11613.26
65	68	0.00	900.68	0.00	-0.71	0.00	6584.38
65	67	0.00	-1069.43	0.00	0.71	0.00	-11509.67
66	67	0.00	888.21	0.00	-2.27	0.00	6481.75
66	66	0.00	-1056.96	0.00	2.27	0.00	-11344.69
67	66	0.00	875.86	0.00	-0.69	0.00	6321.57
67	65	0.00	-1044.61	0.00	0.69	0.00	-11122.69
68	65	0.00	863.69	0.00	0.17	0.00	6106.25
68	64	0.00	-1032.44	0.00	-0.17	0.00	-10846.67
69	64	0.00	851.73	0.00	-1.81	0.00	5838.30
69	62	0.00	-1164.96	0.00	1.81	0.00	-10518.94
70	62	0.00	984.54	0.00	-0.70	0.00	5521.95
70	60	0.00	-1153.29	0.00	0.70	0.00	-10866.55
71	60	0.00	972.97	0.00	-0.04	0.00	5871.38
71	59	0.00	-1141.72	0.00	0.04	0.00	-11158.14
72	59	0.00	961.37	0.00	-2.06	0.00	6158.27
72	58	0.00	-1130.12	0.00	2.06	0.00	-11386.97
73	58	0.00	949.46	0.00	-0.83	0.00	6373.77
73	57	0.00	-1118.21	0.00	0.83	0.00	-11542.95
74	57	0.00	937.42	0.00	-0.03	0.00	6522.37
74	56	0.00	-1106.17	0.00	0.03	0.00	-11631.48
75	56	0.00	925.29	0.00	-4.85	0.00	6606.20
75	55	0.00	-1094.04	0.00	4.85	0.00	-11654.42
76	55	0.00	913.10	0.00	3.20	0.00	6626.68
76	54	0.00	-1081.86	0.00	-3.20	0.00	-11614.21
77	54	0.00	900.92	0.00	-2.64	0.00	6586.22
77	53	0.00	-1069.67	0.00	2.64	0.00	-11512.63
78	53	0.00	888.56	0.00	-1.04	0.00	6484.37
78	52	0.00	-1057.31	0.00	1.04	0.00	-11349.03
79	52	0.00	876.33	0.00	-2.29	0.00	6325.00
79	51	0.00	-1045.08	0.00	2.29	0.00	-11128.54
80	51	0.00	864.20	0.00	1.93	0.00	6110.05
80	50	0.00	-1032.95	0.00	-1.93	0.00	-10852.92
81	50	0.00	852.22	0.00	-1.06	0.00	5841.86
81	48	0.00	-1165.45	0.00	1.06	0.00	-10524.97
82	48	0.00	984.99	0.00	-0.27	0.00	5525.35
82	46	0.00	-1153.74	0.00	0.27	0.00	-10872.18
83	46	0.00	973.35	0.00	-2.50	0.00	5874.29
83	45	0.00	-1142.11	0.00	2.50	0.00	-11162.99
84	45	0.00	961.66	0.00	-1.02	0.00	6160.53
84	44	0.00	-1130.41	0.00	1.02	0.00	-11390.68
85	44	0.00	949.74	0.00	-2.70	0.00	6376.59
85	43	0.00	-1118.49	0.00	2.70	0.00	-11547.17
86	43	0.00	937.61	0.00	-0.83	0.00	6523.74
86	42	0.00	-1106.36	0.00	0.83	0.00	-11633.59
87	42	0.00	925.38	0.00	0.22	0.00	6606.33
87	41	0.00	-1094.13	0.00	-0.22	0.00	-11655.18
88	41	0.00	912.90	0.00	0.75	0.00	6617.94
88	40	0.00	-1081.65	0.00	-0.75	0.00	-11604.35
89	40	0.00	900.74	0.00	-1.51	0.00	6582.89
89	39	0.00	-1069.49	0.00	1.51	0.00	-11508.47
90	39	0.00	888.50	0.00	-0.34	0.00	6484.40
90	38	0.00	-1057.25	0.00	0.34	0.00	-11348.75
91	38	0.00	874.28	0.00	-2.38	0.00	6240.93
91	37	0.00	-1043.03	0.00	2.38	0.00	-11034.26
92	37	0.00	860.62	0.00	-0.96	0.00	5961.02
92	36	0.00	-1029.37	0.00	0.96	0.00	-10685.97
93	36	0.00	848.10	0.00	-0.18	0.00	5669.67
93	34	0.00	-1161.33	0.00	0.18	0.00	-10332.17
94	34	0.00	942.61	0.00	-3.26	0.00	3722.70
94	32	0.00	-1111.36	0.00	3.26	0.00	-8857.71
95	32	0.00	928.96	0.00	-2.23	0.00	3984.75
95	31	0.00	-1097.70	0.00	2.23	0.00	-9051.39
96	31	0.00	915.53	0.00	-1.83	0.00	4196.33
96	30	0.00	-1084.28	0.00	1.83	0.00	-9195.81
97	30	0.00	903.00	0.00	-3.52	0.00	4385.92
97	29	0.00	-1071.75	0.00	3.52	0.00	-9322.85
98	29	0.00	891.25	0.00	-2.47	0.00	4548.76
98	28	0.00	-1060.00	0.00	2.47	0.00	-9426.88
99	28	0.00	879.89	0.00	-1.86	0.00	4668.09
99	27	0.00	-1048.64	0.00	1.86	0.00	-9489.49
100	27	0.00	869.52	0.00	-5.28	0.00	4769.31
100	26	0.00	-1038.27	0.00	5.28	0.00	-9538.76
101	26	0.00	857.92	0.00	-0.86	0.00	4757.80
101	25	0.00	-1026.67	0.00	0.86	0.00	-9469.26
102	25	0.00	846.62	0.00	-0.68	0.00	4698.85
102	24	0.00	-1015.37	0.00	0.68	0.00	-9353.79
103	24	0.00	842.98	0.00	-4.42	0.00	4906.59
103	23	0.00	-1011.73	0.00	4.42	0.00	-9543.42
104	23	0.00	837.20	0.00	0.01	0.00	4962.75
104	22	0.00	-1005.95	0.00	-0.01	0.00	-9570.67
105	22	0.00	827.01	0.00	-0.18	0.00	4770.66
105	20	0.00	-1140.24	0.00	0.18	0.00	-9327.81
106	20	0.00	590.62	0.00	-1.55	0.00	168.75
106	18	0.00	-759.37	0.00	1.55	0.00	-3543.73
107	18	0.00	577.36	0.00	-1.68	0.00	464.64
107	17	0.00	-746.11	0.00	1.68	0.00	-3773.29
108	17	0.00	562.57	0.00	-0.54	0.00	657.93
108	16	0.00	-731.32	0.00	0.54	0.00	-3892.70
109	16	0.00	542.46	0.00	-1.82	0.00	625.23
109	15	0.00	-711.21	0.00	1.82	0.00	-3759.38
110	15	0.00	529.71	0.00	-0.53	0.00	768.18
110	14	0.00	-698.46	0.00	0.53	0.00	-3838.60
111	14	0.00	515.06	0.00	-0.75	0.00	789.14
111	13	0.00	-683.81	0.00	0.75	0.00	-3786.32
112	13	0.00	455.05	0.00	-2.25	0.00	-699.24
112	12	0.00	-623.80	0.00	2.25	0.00	-1997.87
113	12	0.00	406.82	0.00	-2.80	0.00	-1878.91
113	11	0.00	-575.57	0.00	2.80	0.00	-577.09
114	11	0.00	383.34	0.00	-2.82	0.00	-2338.66
114	9	0.00	-583.15	0.00	2.82	0.00	0.00

procr Viaducto de El Papiol (proces-Fase 1

HIPOTESIS 494 FUER Y MIN (Envolv. de Proces ELU) (E-2 a E-1)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
1	143	0.00	-931.54	0.00	9.21	0.00	1669.35
1	141	0.00	706.40	0.00	-9.21	0.00	2269.33
2	141	0.00	-911.54	0.00	8.30	0.00	2946.29
2	140	0.00	742.79	0.00	-8.30	0.00	1189.55
3	140	0.00	-967.05	0.00	6.63	0.00	5051.72
3	139	0.00	798.30	0.00	-6.63	0.00	-638.35
4	139	0.00	-1041.79	0.00	2.36	0.00	8000.95
4	138	0.00	873.04	0.00	-2.36	0.00	-3213.96
5	138	0.00	-1135.90	0.00	2.97	0.00	11793.96
5	137	0.00	967.15	0.00	-2.97	0.00	-6536.31
6	137	0.00	-1249.49	0.00	-1.92	0.00	16430.70
6	136	0.00	1080.74	0.00	1.92	0.00	-10605.11
7	136	0.00	-1212.94	0.00	1.18	0.00	14069.20
7	135	0.00	1044.19	0.00	-1.18	0.00	-8426.32
8	135	0.00	-1247.64	0.00	-2.08	0.00	14932.68
8	134	0.00	1078.89	0.00	2.08	0.00	-9116.44
9	134	0.00	-1266.07	0.00	-0.84	0.00	14970.62
9	132	0.00	952.85	0.00	0.84	0.00	-9062.22
10	132	0.00	-1132.17	0.00	0.96	0.00	14563.41
10	130	0.00	963.42	0.00	-0.96	0.00	-9324.39
11	130	0.00	-1138.30	0.00	-1.05	0.00	14577.17
11	129	0.00	969.55	0.00	1.05	0.00	-9307.60
12	129	0.00	-1140.89	0.00	-4.42	0.00	14356.32
12	128	0.00	972.14	0.00	4.42	0.00	-9073.81
13	128	0.00	-1137.03	0.00	1.78	0.00	13785.32
13	127	0.00	968.27	0.00	-1.78	0.00	-8522.00
14	127	0.00	-1143.17	0.00	-0.15	0.00	13649.16
14	126	0.00	974.42	0.00	0.15	0.00	-8355.23
15	126	0.00	-1143.58	0.00	1.85	0.00	13208.79
15	125	0.00	974.82	0.00	-1.85	0.00	-7912.71
16	125	0.00	-1138.42	0.00	0.15	0.00	12465.94
16	124	0.00	969.67	0.00	-0.15	0.00	-7195.75
17	124	0.00	-1127.86	0.00	1.67	0.00	11422.76
17	123	0.00	959.11	0.00	-1.67	0.00	-6205.33
18	123	0.00	-1136.56	0.00	2.96	0.00	11212.92
18	122	0.00	967.81	0.00	-2.96	0.00	-5951.99
19	122	0.00	-1137.48	0.00	1.22	0.00	10582.04
19	121	0.00	968.73	0.00	-1.22	0.00	-5316.55
20	121	0.00	-1142.97	0.00	1.95	0.00	10096.31
20	120	0.00	974.22	0.00	-1.95	0.00	-4803.33
21	120	0.00	-1153.15	0.00	3.03	0.00	9752.56
21	118	0.00	839.92	0.00	-3.03	0.00	-4408.82
22	118	0.00	-1021.59	0.00	1.30	0.00	9454.02
22	116	0.00	852.85	0.00	-1.30	0.00	-4767.99
23	116	0.00	-1036.93	0.00	1.96	0.00	9893.12
23	115	0.00	868.18	0.00	-1.96	0.00	-5130.32
24	115	0.00	-1053.53	0.00	3.68	0.00	10320.01
24	114	0.00	884.78	0.00	-3.68	0.00	-5474.16
25	114	0.00	-1071.50	0.00	2.08	0.00	10757.42
25	113	0.00	902.75	0.00	-2.08	0.00	-5821.86
26	113	0.00	-1085.59	0.00	3.43	0.00	10988.80
26	112	0.00	916.85	0.00	-3.43	0.00	-5982.75
27	112	0.00	-1100.40	0.00	1.68	0.00	11213.87
27	111	0.00	931.66	0.00	-1.68	0.00	-6133.76
28	111	0.00	-1116.11	0.00	2.18	0.00	11434.91
28	110	0.00	947.36	0.00	-2.18	0.00	-6276.28
29	110	0.00	-1132.87	0.00	-0.79	0.00	11653.96
29	109	0.00	964.11	0.00	0.79	0.00	-6411.41
30	109	0.00	-1150.84	0.00	3.49	0.00	11872.81
30	108	0.00	982.09	0.00	-3.49	0.00	-6540.56
31	108	0.00	-1158.28	0.00	1.73	0.00	11543.17
31	107	0.00	989.52	0.00	-1.73	0.00	-6173.65
32	107	0.00	-1171.02	0.00	-1.13	0.00	11392.33
32	106	0.00	1002.27	0.00	1.13	0.00	-5959.11
33	106	0.00	-1183.06	0.00	3.02	0.00	11134.96
33	104	0.00	869.84	0.00	-3.02	0.00	-5641.72
34	104	0.00	-1050.72	0.00	1.72	0.00	10800.08
34	102	0.00	881.98	0.00	-1.72	0.00	-5968.35
35	102	0.00	-1063.56	0.00	3.27	0.00	11123.85
35	101	0.00	894.81	0.00	-3.27	0.00	-6227.85
36	101	0.00	-1076.46	0.00	-2.71	0.00	11379.56
36	100	0.00	907.71	0.00	2.71	0.00	-6419.16
37	100	0.00	-1088.72	0.00	5.08	0.00	11553.19
37	99	0.00	919.97	0.00	-5.08	0.00	-6531.46
38	99	0.00	-1100.75	0.00	0.36	0.00	11689.14
38	98	0.00	932.00	0.00	-0.36	0.00	-6607.36
39	98	0.00	-1111.82	0.00	1.19	0.00	11741.45
39	97	0.00	943.07	0.00	-1.19	0.00	-6604.20
40	97	0.00	-1122.10	0.00	2.53	0.00	11711.91
40	96	0.00	953.35	0.00	-2.53	0.00	-6523.24
41	96	0.00	-1131.76	0.00	0.49	0.00	11602.87
41	95	0.00	963.01	0.00	-0.49	0.00	-6366.02
42	95	0.00	-1142.60	0.00	1.16	0.00	11491.79
42	94	0.00	973.85	0.00	-1.16	0.00	-6200.71
43	94	0.00	-1152.95	0.00	2.60	0.00	11297.20
43	93	0.00	984.20	0.00	-2.60	0.00	-5954.32
44	93	0.00	-1163.79	0.00	4.92	0.00	11058.32
44	92	0.00	995.04	0.00	-4.92	0.00	-5661.24
45	92	0.00	-1175.33	0.00	-0.37	0.00	10777.84
45	90	0.00	862.11	0.00	0.37	0.00	-5323.21
46	90	0.00	-1043.19	0.00	2.96	0.00	10451.96
46	88	0.00	874.44	0.00	-2.96	0.00	-5657.84
47	88	0.00	-1056.67	0.00	0.98	0.00	10805.24
47	87	0.00	887.92	0.00	-0.98	0.00	-5943.82
48	87	0.00	-1070.53	0.00	1.98	0.00	11105.31
48	86	0.00	901.78	0.00	-1.98	0.00	-6174.59
49	86	0.00	-1084.26	0.00	-0.33	0.00	11347.35
49	85	0.00	915.51	0.00	0.33	0.00	-6347.84
50	85	0.00	-1096.83	0.00	-0.07	0.00	11508.02
50	84	0.00	928.08	0.00	0.07	0.00	-6445.82
51	84	0.00	-1108.87	0.00	5.39	0.00	11605.16
51	83	0.00	940.12	0.00	-5.39	0.00	-6482.63
52	83	0.00	-1120.56	0.00	0.85	0.00	11640.65
52	82	0.00	951.81	0.00	-0.85	0.00	-6459.70
53	82	0.00	-1132.06	0.00	1.77	0.00	11616.74
53	81	0.00	963.31	0.00	-1.77	0.00	-6378.36
54	81	0.00	-1143.54	0.00	3.50	0.00	11535.49
54	80	0.00	974.79	0.00	-3.50	0.00	-6239.64
55	80	0.00	-1154.34	0.00	1.40	0.00	11361.24
55	79	0.00	985.59	0.00	-1.40	0.00	-6011.45

56	79	0.00	-1165.67	0.00	2.53	0.00	11145.30
56	78	0.00	996.92	0.00	-2.53	0.00	-5738.81
57	78	0.00	-1177.35	0.00	-0.32	0.00	10870.80
57	76	0.00	864.12	0.00	0.32	0.00	-5406.05
58	76	0.00	-1045.15	0.00	3.56	0.00	10542.36
58	74	0.00	876.40	0.00	-3.56	0.00	-5738.44
59	74	0.00	-1058.46	0.00	2.48	0.00	10887.99
59	73	0.00	889.71	0.00	-2.48	0.00	-6017.59
60	73	0.00	-1072.07	0.00	-0.12	0.00	11176.64
60	72	0.00	903.32	0.00	0.12	0.00	-6238.17
61	72	0.00	-1085.42	0.00	0.41	0.00	11400.86
61	71	0.00	916.67	0.00	-0.41	0.00	-6395.62
62	71	0.00	-1097.85	0.00	1.34	0.00	11555.19
62	70	0.00	929.10	0.00	-1.34	0.00	-6487.76
63	70	0.00	-1109.64	0.00	3.27	0.00	11640.60
63	69	0.00	940.89	0.00	-3.27	0.00	-6514.29
64	69	0.00	-1120.96	0.00	1.65	0.00	11659.29
64	68	0.00	952.21	0.00	-1.65	0.00	-6476.28
65	68	0.00	-1131.99	0.00	2.89	0.00	11613.26
65	67	0.00	963.24	0.00	-2.89	0.00	-6375.19
66	67	0.00	-1142.99	0.00	0.97	0.00	11509.67
66	66	0.00	974.24	0.00	-0.97	0.00	-6216.60
67	66	0.00	-1153.98	0.00	1.62	0.00	11344.70
67	65	0.00	985.23	0.00	-1.62	0.00	-5996.74
68	65	0.00	-1165.19	0.00	2.80	0.00	11122.83
68	64	0.00	996.43	0.00	-2.80	0.00	-5718.68
69	64	0.00	-1176.83	0.00	0.70	0.00	10846.67
69	62	0.00	863.60	0.00	-0.70	0.00	-5384.60
70	62	0.00	-1044.64	0.00	1.16	0.00	10518.98
70	60	0.00	875.89	0.00	-1.16	0.00	-5717.60
71	60	0.00	-1058.00	0.00	2.45	0.00	10866.65
71	59	0.00	889.25	0.00	-2.45	0.00	-5998.50
72	59	0.00	-1071.67	0.00	0.76	0.00	11158.18
72	58	0.00	902.92	0.00	-0.76	0.00	-6221.71
73	58	0.00	-1085.12	0.00	1.81	0.00	11386.93
73	57	0.00	916.37	0.00	-1.81	0.00	-6383.22
74	57	0.00	-1097.59	0.00	3.85	0.00	11543.01
74	56	0.00	928.84	0.00	-3.85	0.00	-6476.83
75	56	0.00	-1109.44	0.00	-2.37	0.00	11631.33
75	55	0.00	940.69	0.00	2.37	0.00	-6506.11
76	55	0.00	-1120.86	0.00	5.52	0.00	11654.46
76	54	0.00	952.10	0.00	-5.52	0.00	-6471.92
77	54	0.00	-1132.00	0.00	1.16	0.00	11614.14
77	53	0.00	963.26	0.00	-1.16	0.00	-6376.04
78	53	0.00	-1143.05	0.00	1.85	0.00	11512.61
78	52	0.00	974.30	0.00	-1.85	0.00	-6219.23
79	52	0.00	-1154.07	0.00	-0.85	0.00	11348.97
79	51	0.00	985.32	0.00	0.85	0.00	-6000.46
80	51	0.00	-1165.31	0.00	3.34	0.00	11128.62
80	50	0.00	996.56	0.00	-3.34	0.00	-5723.93
81	50	0.00	-1176.96	0.00	1.63	0.00	10852.91
81	48	0.00	863.73	0.00	-1.63	0.00	-5390.13
82	48	0.00	-1044.77	0.00	3.16	0.00	10525.08
82	46	0.00	876.02	0.00	-3.16	0.00	-5723.06
83	46	0.00	-1058.12	0.00	1.24	0.00	10872.17
83	45	0.00	889.37	0.00	-1.24	0.00	-6003.40
84	45	0.00	-1071.78	0.00	2.41	0.00	11162.89
84	44	0.00	903.03	0.00	-2.41	0.00	-6225.92
85	44	0.00	-1085.20	0.00	-0.05	0.00	11390.53
85	43	0.00	916.45	0.00	0.05	0.00	-6386.39
86	43	0.00	-1097.73	0.00	0.35	0.00	11547.03
86	42	0.00	928.99	0.00	-0.35	0.00	-6480.31
87	42	0.00	-1109.49	0.00	1.47	0.00	11633.78
87	41	0.00	940.73	0.00	-1.47	0.00	-6508.16
88	41	0.00	-1120.84	0.00	3.19	0.00	11655.21
88	40	0.00	952.09	0.00	-3.19	0.00	-6472.85
89	40	0.00	-1131.21	0.00	1.73	0.00	11604.27
89	39	0.00	962.46	0.00	-1.73	0.00	-6370.09
90	39	0.00	-1142.81	0.00	2.98	0.00	11508.52
90	38	0.00	974.06	0.00	-2.98	0.00	-6216.38
91	38	0.00	-1154.11	0.00	0.73	0.00	11348.92
91	37	0.00	985.36	0.00	-0.73	0.00	-6000.16
92	37	0.00	-1157.75	0.00	1.22	0.00	11034.12
92	36	0.00	989.00	0.00	-1.22	0.00	-5667.28
93	36	0.00	-1163.53	0.00	2.27	0.00	10685.90
93	34	0.00	850.30	0.00	-2.27	0.00	-5290.30
94	34	0.00	-1029.25	0.00	0.15	0.00	10332.17
94	32	0.00	860.49	0.00	-0.15	0.00	-5607.76
95	32	0.00	-882.57	0.00	-0.66	0.00	8857.76
95	31	0.00	713.82	0.00	0.66	0.00	-4866.80
96	31	0.00	-887.88	0.00	0.35	0.00	9051.28
96	30	0.00	719.14	0.00	-0.35	0.00	-5033.77
97	30	0.00	-894.10	0.00	-1.16	0.00	9195.76
97	29	0.00	725.34	0.00	1.16	0.00	-5147.10
98	29	0.00	-903.86	0.00	-0.17	0.00	9322.80
98	28	0.00	735.11	0.00	0.17	0.00	-5225.39
99	28	0.00	-917.12	0.00	1.65	0.00	9426.89
99	27	0.00	748.37	0.00	-1.65	0.00	-5263.12
100	27	0.00	-931.91	0.00	-2.94	0.00	9489.37
100	26	0.00	763.16	0.00	2.94	0.00	-5251.75
101	26	0.00	-952.02	0.00	0.23	0.00	9538.75
101	25	0.00	783.27	0.00	-0.23	0.00	-5200.53
102	25	0.00	-964.77	0.00	1.81	0.00	9469.37
102	24	0.00	796.02	0.00	-1.81	0.00	-5067.40
103	24	0.00	-979.42	0.00	-2.96	0.00	9353.92
103	23	0.00	810.67	0.00	2.96	0.00	-4878.65
104	23	0.00	-1039.43	0.00	0.34	0.00	9543.41
104	22	0.00	870.68	0.00	-0.34	0.00	-4768.12
105	22	0.00	-1087.66	0.00	2.08	0.00	9570.66
105	20	0.00	774.43	0.00	-2.08	0.00	-4554.30
106	20	0.00	-966.66	0.00	1.16	0.00	9327.57
106	18	0.00	797.91	0.00	-1.16	0.00	-4916.19
107	18	0.00	-797.91	0.00	1.07	0.00	4916.19
107	17	0.00	629.16	0.00	-1.07	0.00	-1348.56
108	17	0.00	-629.16	0.00	2.12	0.00	1348.56
108	16	0.00	460.41	0.00	-2.12	0.00	1375.39
109	16	0.00	-497.22	0.00	-1.08	0.00	3892.67
109	15	0.00	328.47	0.00	1.08	0.00	-1828.48
110	15	0.00	-370.56	0.00	-0.21	0.00	3759.41
110	14	0.00	201.81	0.00	0.21	0.00	-2328.50
111	14	0.00	-470.56	0.00	0.48	0.00	3838.56
111	13	0.00	301.81	0.00	-0.48	0.00	-1907.66
112	13	0.00	-505.55	0.00	-0.91	0.00	3786.32
112	12	0.00	336.80	0.00	0.91	0.00	-1680.47
113	12	0.00	-368.55	0.00	0.00	0.00	1998.01
113	11	0.00	199.80	0.00	0.00	0.00	-577.11
114	11	0.00	-199.80	0.00	0.00	0.00	577.11

COMPROBACIÓN ELU FATIGA

ESFUERZOS LONGITUDINALES

COMPROBACIÓN ELU DE FATIGA

— LONGITUDINAL

De acuerdo con la Recomendaciones del EC.-2 Parte 2. queda verificado ni bajo la actuación de sobrecarga frecuente con pretensado característico reducido 0'85. Todas las secciones se encuentran comprimidas (se verifica el estado límite de descompresión)

```
impr
hipo 133 max mz + pret(t=0)(fatiga)
fija 71 83 0.85
comp 10 7 a 9 0.60 11 a 20 0.60 43 0.60 29 a 30 61 0.60 89 1.
maxi mome z
hipo 134 min mz + pret(t=0)(fatiga)
fija 71 83 0.85
comp 10 7 a 9 0.60 11 a 20 0.60 43 0.60 29 a 30 62 0.60 89 1.
mini mome z

fin
```

```
dato 114 2 1.15 1.50 1.00 0 0
 1 a  8 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
        9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
     9 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
        15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
        2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
        1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
    10 15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
        2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
        1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
        9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
11 a 20 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
        9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
    21 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
        15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
        2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
        1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
    22 15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
        2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
        1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
        9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
23 a 32 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
        9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
    33 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
        15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
        2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
        1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
    34 15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
        2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
        1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
        9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
35 a 44 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
        9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
    45 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
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        15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
        2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
        1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
     46 15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
        2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
        1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
        9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
47 a 56 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
        9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
     57 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
        15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
        2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
        1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
     58 15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
        2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
        1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
        9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
59 a 68 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
        9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
     69 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
        15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
        2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
        1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
     70 15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
        2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
        1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
        9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
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        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
71 a 80 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
        9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
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        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
     81 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
        15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
        2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
        1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
     82 15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
        2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
        1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
        9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
83 a 92 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
        9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
     93 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
        15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
        2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
        1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
     94 15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
        2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
        1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
        9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
95 a 104 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
        9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
    105 9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
        15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
        2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
        1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
    106 15.785 115.193 22.4192 1.6000 2.0000 1.6000 2.0000 7.3 7.3 2.50 2.50
        2.46 3.40 15.86 1.23 16.45 14.00 0.30 5.00 0.60 2.
        1.479 1.377 0.092 0.827 1.43 0.092 1.31 -1.63 0.950
        9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
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        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
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        9.578 93.87 16.31 1.3630 2.236 1.3630 2.236  7.3 7.3 2.50 2.50
        1.00 3.40 17.95 0.50 17.79 15.80 0.30 5.00 0.30 2.
        1.2086 1.125 0.092 1.0754 1.157 0.220 1.6942 -2.022 0.237
secc 9 21 33 45 57 69 81 93 105 114
tens 10.
hipo 133   134
barr 1 a 114
fin
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proc Viaducto Papiol

HIPOTESIS 133

max mz + pret(t=0)(fatiga)

		ESFUERZOS EN BARRAS						TENSIONES			
BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	MOM. Y	MOM. Z	SIGMA 1	SIGMA2	SIGMA3	SIGMA4
1	3	13700.680	341.808	0.193	565.449	3.110	2416.222	122.88	122.83	176.18	176.16
1	8	-13802.041	-34.764	-0.732	55.067	11.918	-2086.033	126.58	126.76	172.67	172.73
2	8	13802.008	34.764	0.732	-55.067	-11.918	2086.034	126.58	126.76	172.67	172.73
2	9	-13871.908	89.606	-0.732	29.292	26.947	-2284.758	125.53	125.95	176.08	176.23
3	9	13871.920	-89.606	-5.232	-22.168	-12.070	2284.738	125.64	125.83	176.12	176.19
3	10	-13959.438	57.623	-0.756	3.735	41.856	-2945.734	120.80	121.45	186.02	186.24
4	10	14672.228	-57.623	0.745	-6.244	-41.856	2131.859	135.05	135.70	182.30	182.52
4	11	-14706.919	46.117	-0.712	-11.900	63.557	-2377.285	133.19	134.18	185.97	186.31
5	11	14706.933	-46.116	0.696	14.552	-63.557	2377.294	133.19	134.18	185.97	186.31
5	12	-14714.489	159.082	-0.696	-27.977	78.766	-2895.788	128.82	130.04	193.12	193.54
6	12	14714.488	-159.083	0.661	32.978	-78.766	2895.811	128.82	130.04	193.12	193.54
6	13	-14677.607	183.733	-0.661	-42.503	94.149	-3669.957	121.84	123.31	203.31	203.81
7	13	14677.636	-183.732	0.679	40.631	-94.149	3669.939	121.84	123.31	203.31	203.81
7	14	-11872.253	63.729	-0.634	-47.305	99.391	-4114.977	88.79	90.34	180.10	180.63
8	14	11852.706	-63.729	0.600	48.285	-99.390	4110.128	88.63	90.17	179.83	180.36
8	15	-11835.396	240.727	-0.625	-48.115	102.416	-4306.279	86.79	88.38	182.33	182.88
9	15	11835.370	-240.726	0.626	48.160	-102.416	4306.279	86.78	88.38	182.33	182.88
9	18	-16410.785	1136.795	1.751	-29.610	123.361	-9284.001	36.93	38.49	186.52	187.05
10	18	16592.365	1648.312	-0.470	130.134	-120.517	9288.096	38.06	39.59	187.71	188.23
10	24	-12903.219	-669.263	3.791	-70.383	65.144	-2741.833	111.30	112.31	172.13	172.48
11	24	12903.201	669.264	-3.713	70.236	-65.144	2741.860	111.30	112.31	172.13	172.48
11	25	-12948.762	-143.620	-0.440	-155.180	97.677	-1533.290	121.62	123.14	155.95	156.47
12	25	12924.515	143.619	0.607	158.649	-97.677	1525.246	121.43	122.95	155.59	156.11
12	26	-15979.936	-229.442	-3.411	-145.993	85.259	-576.893	161.36	162.68	174.52	174.98
13	26	15979.914	229.443	3.354	142.237	-85.259	576.835	161.36	162.68	174.52	174.97
13	27	-15956.027	-265.191	-3.564	-127.813	66.087	655.316	171.55	172.58	157.43	157.78
14	27	15956.033	265.191	3.407	132.877	-75.537	-655.269	171.48	172.65	157.41	157.81
14	28	-15957.011	-210.751	-3.627	-115.717	55.032	2001.109	182.90	183.75	139.02	139.31
15	28	15957.009	210.750	3.522	126.682	-65.530	-2001.018	182.81	183.83	138.99	139.34
15	29	-15668.904	76.229	-1.461	-64.953	28.883	2099.503	180.91	181.36	134.73	134.89
16	29	14934.523	-76.227	1.523	59.849	-28.883	-1277.392	166.38	166.82	138.34	138.49
16	30	-14983.734	273.254	-1.523	-37.999	28.319	377.910	159.38	159.82	151.18	151.33
17	30	14983.760	-273.255	1.457	43.036	-28.319	-377.895	159.38	159.82	151.18	151.33
17	31	-15046.082	262.211	-1.465	-18.821	28.047	-1240.364	146.51	146.94	174.02	174.17
18	31	15046.070	-262.213	1.401	22.935	-28.047	1240.374	146.51	146.94	174.02	174.17
18	32	-14921.114	-9.382	-1.401	3.665	28.092	-1659.384	141.70	142.14	178.46	178.61
19	32	14921.063	9.383	1.401	-3.670	-28.092	1659.385	141.70	142.14	178.46	178.61
19	33	-11891.648	245.259	1.449	31.863	31.091	-2024.318	107.00	107.48	151.83	151.99
20	33	11872.238	-245.259	-1.538	-30.826	-31.091	2019.419	106.84	107.32	151.56	151.72
20	34	-11793.856	830.529	1.544	62.528	31.565	-4582.733	84.59	85.08	185.88	186.05
21	34	11793.873	-830.529	-1.638	-63.286	-31.565	4582.707	84.59	85.08	185.88	186.05
21	37	-16306.190	1417.372	-3.144	36.097	4.493	-12547.059	13.73	13.79	215.22	215.24
22	37	16716.275	1582.049	-5.422	100.160	5.959	12547.520	16.39	16.31	217.85	217.82
22	44	-12286.425	-483.448	-1.725	-272.370	24.791	-4860.945	87.46	87.85	194.85	194.98
23	44	12286.426	483.448	1.792	271.633	-24.791	4861.053	87.46	87.85	194.85	194.99

23	45	-12318.724	-198.854	-1.906	-241.405	8.276	-3788.708	96.89	97.02	180.53	180.58
24	45	11140.575	198.854	1.968	242.453	-8.276	4144.783	81.61	81.74	173.11	173.16
24	46	-13992.361	-280.736	-4.491	-200.017	-12.072	-3121.398	120.10	119.91	188.91	188.85
25	46	13992.419	280.735	4.491	200.013	12.073	3121.400	120.10	119.91	188.91	188.85
25	47	-13969.999	-316.479	-4.711	-159.491	-14.027	-1617.415	132.45	132.23	168.07	167.99
26	47	13969.979	316.479	4.609	164.653	27.478	1617.479	132.55	132.12	168.10	167.96
26	48	-13972.413	-262.310	-4.841	-122.762	-31.150	-5.840	146.07	145.59	146.04	145.88
27	48	13972.355	262.310	4.847	123.015	31.150	5.842	146.07	145.59	146.04	145.88
27	49	-13979.139	-8.976	-1.626	-17.738	-64.374	766.649	152.86	151.86	135.61	135.27
28	49	13959.138	8.976	1.746	22.830	64.373	-765.997	152.64	151.64	135.41	135.07
28	50	-13478.182	244.509	0.112	24.963	-55.555	29.288	141.40	140.53	140.47	140.17
29	50	13478.203	-244.509	-0.196	-19.888	55.555	-29.299	141.40	140.53	140.47	140.17
29	51	-13537.121	232.879	0.185	53.762	-47.551	-1439.535	129.68	128.94	161.20	160.94
30	51	13537.126	-232.878	-0.264	-49.552	47.552	1439.516	129.68	128.94	161.20	160.94
30	52	-13413.856	-38.717	0.264	84.402	-39.183	-1700.305	126.14	125.53	163.46	163.25
31	52	13413.858	38.717	-0.264	-84.402	39.183	1700.304	126.14	125.53	163.46	163.25
31	53	-10797.865	219.422	0.141	128.538	-30.045	-1917.931	96.94	96.47	139.11	138.95
32	53	10778.324	-219.423	-0.198	-127.257	30.045	1912.993	96.78	96.31	138.84	138.68
32	54	-10713.529	804.316	0.312	163.404	-16.367	-4333.175	75.77	75.52	171.30	171.22
33	54	10713.529	-804.315	-0.309	-163.377	16.366	4333.178	75.77	75.52	171.30	171.22
33	57	-15239.384	1397.447	-4.311	50.942	28.222	-12232.195	9.07	9.42	205.60	205.73
34	57	15881.378	1564.923	-1.764	81.121	-21.342	12231.408	13.18	13.45	209.68	209.77
34	64	-11465.011	-466.352	-4.176	-280.207	-21.491	-4599.759	81.43	81.09	182.82	182.70
35	64	11464.974	466.352	4.166	280.232	21.490	4599.753	81.43	81.09	182.82	182.70
35	65	-11510.715	-181.598	-4.129	-240.836	-39.122	-3596.756	90.43	89.82	169.59	169.38
36	65	11489.146	181.598	4.530	243.414	39.122	3594.395	90.22	89.61	169.33	169.13
36	66	-13986.944	-266.443	-4.587	-193.261	-56.129	-2570.823	124.98	124.11	181.43	181.13
37	66	13986.935	266.442	4.593	193.434	56.130	2570.826	124.98	124.11	181.43	181.13
37	67	-13958.505	-302.191	-4.593	-144.134	-72.047	-1151.140	136.68	135.55	161.71	161.32
38	67	13958.535	302.192	4.700	148.194	72.046	1151.191	136.68	135.55	161.71	161.33
38	68	-13954.938	-248.042	-4.712	-98.807	-88.536	375.660	149.53	148.15	140.78	140.31
39	68	13954.886	248.041	4.607	94.146	88.536	-375.697	149.53	148.15	140.78	140.31
39	69	-13198.557	11.039	-1.521	6.704	-111.164	1052.831	147.46	145.73	123.66	123.07
40	69	13178.554	-11.037	0.981	9.154	111.165	-1052.185	147.25	145.52	123.46	122.87
40	70	-13218.422	259.586	1.560	76.736	-110.694	254.687	141.00	139.28	134.81	134.22
41	70	13218.424	-259.587	-1.372	-81.898	110.695	-254.655	141.00	139.28	134.81	134.22
41	71	-13271.344	247.886	1.360	131.185	-96.804	-1303.040	128.42	126.92	156.68	156.17
42	71	13271.343	-247.885	-1.549	-126.707	96.805	1302.985	128.42	126.92	156.68	156.17
42	72	-13142.070	-23.705	1.549	175.782	-82.010	-1651.684	124.05	122.77	160.07	159.64
43	72	13142.059	23.705	-1.729	-172.534	82.010	1651.617	124.05	122.77	160.07	159.64
43	73	-10401.275	232.647	1.950	224.394	-64.431	-1954.394	92.76	91.76	135.56	135.22
44	73	10381.756	-232.647	-1.961	-224.330	64.432	1949.504	92.60	91.60	135.29	134.95
44	74	-10310.962	818.191	1.925	266.777	-45.369	-4449.183	70.82	70.12	168.77	168.53
45	74	10310.994	-818.191	-2.130	-267.306	45.371	4449.080	70.83	70.12	168.77	168.53
45	77	-14830.850	1455.411	-4.433	92.030	-6.843	-12475.305	4.97	4.88	205.26	205.23
46	77	15703.497	1532.692	-2.345	59.110	20.419	12476.607	10.57	10.31	210.83	210.74
46	84	-11281.129	-473.320	-3.195	-171.273	-42.584	-4785.767	78.12	77.46	183.50	183.28
47	84	11281.144	473.320	3.201	171.245	42.584	4785.769	78.12	77.46	183.51	183.28
47	85	-11320.884	-188.751	-3.204	-130.958	-54.018	-3761.396	87.18	86.34	169.91	169.62
48	85	11299.275	188.751	3.326	132.148	54.019	3758.896	86.98	86.14	169.65	169.36
48	86	-14295.070	-268.916	-3.002	-83.704	-63.754	-2730.460	126.93	125.94	186.85	186.51
49	86	14295.085	268.916	3.233	86.939	63.755	2730.492	126.93	125.94	186.85	186.51
49	87	-14272.650	-304.677	-3.233	-42.914	-72.871	-1285.511	138.84	137.71	166.83	166.44
50	87	14272.669	304.677	3.246	43.137	72.871	1285.510	138.84	137.71	166.83	166.44
50	88	-14275.071	-250.523	-3.258	-0.449	-82.092	266.602	151.91	150.63	145.60	145.17
51	88	14275.067	250.524	3.491	5.341	82.092	-266.598	151.91	150.63	145.60	145.17
51	89	-13293.638	7.813	-0.678	65.559	-105.090	955.339	147.59	145.96	125.98	125.42
52	89	13273.612	-7.812	0.678	-65.564	105.090	-954.689	147.38	145.75	125.78	125.22
52	90	-13319.482	257.342	1.252	152.221	-91.559	196.454	141.42	139.99	136.61	136.13
53	90	13319.498	-257.343	-1.399	-147.069	91.559	-196.511	141.42	139.99	136.61	136.13
53	91	-13378.418	245.636	1.386	185.415	-77.538	-1337.105	129.11	127.90	158.22	157.80
54	91	13378.412	-245.635	-1.525	-181.171	77.538	1337.037	129.11	127.90	158.21	157.80

54	92	-13255.145	-25.957	1.525	217.846	-62.863	-1661.617	124.99	124.02	161.34	161.00
55	92	13255.135	25.957	-1.669	-214.431	62.863	1661.533	125.00	124.02	161.34	161.00
55	93	-10579.739	231.111	1.753	251.837	-46.407	-1941.731	94.59	93.87	137.20	136.96
56	93	10560.229	-231.111	-1.746	-251.901	46.406	1936.854	94.43	93.71	136.93	136.68
56	94	-10495.436	816.282	1.749	278.960	-28.022	-4415.585	72.90	72.46	170.19	170.04
57	94	10495.434	-816.281	-1.756	-278.987	28.022	4415.581	72.90	72.46	170.19	170.04
57	97	-15021.291	1453.742	-4.053	112.416	-4.163	-12421.172	6.54	6.49	205.98	205.96
58	97	16124.896	1528.359	-5.493	-40.858	21.256	12417.578	13.67	13.40	212.98	212.88
58	104	-11767.932	-469.224	-0.002	2.125	-6.519	-4733.033	83.36	83.26	187.77	187.73
59	104	11767.961	469.224	-0.014	-2.098	6.519	4733.034	83.36	83.26	187.77	187.73
59	105	-11459.694	-185.894	-0.380	23.546	-1.802	-3723.583	88.54	88.51	170.70	170.69
60	105	11438.112	185.894	0.574	-22.212	1.801	3721.023	88.34	88.31	170.44	170.43
60	106	-14145.920	-268.764	-0.579	48.341	0.784	-2701.519	125.11	125.12	184.73	184.73
61	106	14145.909	268.764	0.570	-48.511	-0.784	2701.516	125.11	125.12	184.73	184.73
61	107	-14120.477	-304.518	-0.570	70.686	-2.064	-1263.771	136.88	136.85	164.76	164.75
62	107	14120.461	304.517	0.753	-66.218	2.064	1263.744	136.88	136.85	164.76	164.75
62	108	-14119.862	-250.368	-0.765	85.906	-5.866	281.117	149.81	149.72	143.58	143.55
63	108	14119.849	250.369	0.940	-81.009	5.867	-281.148	149.81	149.72	143.58	143.55
63	109	-14123.631	-10.271	-0.395	92.921	-30.723	963.808	155.75	155.27	134.33	134.16
64	109	14103.637	4.513	-0.741	-117.859	27.493	-963.121	155.51	155.09	134.12	133.97
64	110	-12927.476	257.121	0.833	150.548	-24.254	204.776	136.87	136.49	132.23	132.10
65	110	12927.502	-257.122	-1.426	-140.505	24.253	-204.886	136.87	136.49	132.23	132.10
65	111	-12983.422	245.418	1.413	152.428	-17.145	-1334.022	124.54	124.27	153.89	153.80
66	111	12983.389	-245.418	-1.702	-148.177	17.145	1333.967	124.54	124.27	153.89	153.80
66	112	-12857.120	-26.178	1.702	157.427	-8.632	-1663.911	120.40	120.26	157.07	157.02
67	112	12857.129	26.179	-1.717	-157.260	8.633	1663.908	120.40	120.26	157.07	157.02
67	113	-10538.741	231.370	1.501	166.405	1.898	-1952.160	93.70	93.73	136.79	136.80
68	113	10519.234	-231.370	-1.652	-165.202	-1.899	1947.213	93.54	93.57	136.52	136.53
68	114	-10451.439	815.925	1.638	164.125	11.870	-4432.359	71.99	72.17	169.85	169.92
69	114	10451.411	-815.925	-1.638	-164.126	-11.870	4432.360	71.99	72.17	169.85	169.92
69	117	-14974.265	1453.433	-3.493	70.821	12.157	-12441.079	6.00	6.15	205.82	205.88
70	117	16308.877	1530.971	-8.438	-113.409	7.080	12454.660	14.48	14.39	214.44	214.41
70	124	-11889.505	-472.255	3.425	158.909	44.625	-4763.556	83.98	84.67	189.32	189.56
71	124	11889.529	472.255	-3.798	-158.356	-44.623	4763.619	83.98	84.67	189.32	189.56
71	125	-11932.271	-188.506	3.828	153.112	63.097	-3735.222	92.87	93.86	175.62	175.96
72	125	11910.680	188.506	-3.454	-151.846	-63.098	3732.608	92.67	93.65	175.36	175.69
72	126	-14562.080	-271.365	3.326	144.835	78.702	-2694.914	128.90	130.13	188.77	189.19
73	126	14562.077	271.366	-2.976	-141.419	-78.702	2694.856	128.90	130.13	188.77	189.19
73	127	-14536.647	-307.119	2.976	130.894	93.579	-1244.124	140.65	142.10	168.58	169.08
74	127	14536.639	307.117	-2.643	-126.642	-93.579	1244.079	140.65	142.10	168.58	169.08
74	128	-14536.038	-252.964	2.631	113.284	106.753	313.713	153.56	155.22	147.18	147.75
75	128	14536.036	252.966	-2.630	-113.281	-106.753	-313.713	153.56	155.22	147.18	147.75
75	129	-12729.658	-5.993	1.004	71.600	55.040	1004.782	140.87	141.73	118.98	119.28
76	129	12709.648	5.993	-1.359	-66.421	-55.040	-1004.166	140.66	141.52	118.78	119.08
76	130	-12752.516	256.088	0.596	62.545	69.650	232.877	134.55	135.63	129.77	130.14
77	130	12752.511	-256.089	-0.970	-57.385	-69.650	-232.904	134.55	135.63	129.77	130.14
77	131	-12808.428	244.383	0.957	35.978	74.473	-1300.893	122.28	123.44	151.36	151.76
78	131	12808.438	-244.382	-0.602	-40.234	-74.474	1300.908	122.28	123.44	151.36	151.76
78	132	-12682.163	-27.213	0.602	16.409	77.484	-1625.649	118.22	119.43	154.49	154.90
79	132	12682.178	27.211	-1.686	-6.464	-77.484	1625.638	118.22	119.43	154.49	154.90
79	133	-10003.781	229.628	1.723	-16.532	86.417	-1904.457	87.86	89.20	130.32	130.78
80	133	9984.259	-229.627	-1.368	15.311	-86.417	1899.568	87.70	89.04	130.05	130.51
80	134	-9916.463	814.218	1.338	-43.599	92.448	-4375.558	66.25	67.69	163.27	163.77
81	134	9916.453	-814.218	-1.693	43.098	-92.448	4375.573	66.25	67.69	163.27	163.77
81	137	-14439.303	1451.034	-2.586	-28.271	94.665	-12339.094	2.81	4.01	201.35	201.76
82	137	16004.563	1518.708	-3.954	-122.420	-85.309	12285.721	13.17	14.25	210.81	211.18
82	144	-11585.201	-463.509	-0.279	221.218	132.876	-4683.591	80.78	82.85	184.81	185.52
83	144	11585.208	463.508	0.771	-222.235	-132.876	4683.419	80.78	82.85	184.81	185.52
83	145	-11627.950	-179.255	-0.805	193.071	131.730	-3700.224	89.46	91.50	171.78	172.48
84	145	11606.370	179.255	0.818	-193.007	-131.730	3697.669	89.25	91.30	171.52	172.22
84	146	-14736.578	-261.927	-0.681	154.852	129.409	-2705.017	130.25	132.26	190.60	191.29

85	146	14736.583	261.927	0.659	-155.024	-129.409	2705.016	130.25	132.26	190.60	191.29
85	147	-14711.155	-297.678	-0.659	117.150	126.111	-1301.513	141.74	143.70	171.10	171.77
86	147	14711.154	297.677	1.479	-108.462	-126.112	1301.427	141.74	143.70	171.10	171.77
86	148	-14710.555	-243.449	-1.489	69.162	118.697	208.341	154.40	156.25	150.41	151.05
87	148	14710.546	243.449	1.509	-68.908	-118.697	-208.341	154.40	156.25	150.41	151.05
87	149	-14714.328	-5.832	-2.930	-4.969	75.982	899.284	160.55	161.73	141.10	141.50
88	149	14694.320	5.832	3.308	9.838	-75.982	-898.637	160.34	161.52	140.90	141.30
88	150	-14737.186	256.942	-4.521	-62.841	82.271	111.496	154.16	155.44	152.12	152.56
89	150	14737.196	-256.942	4.542	63.096	-82.272	-111.492	154.16	155.44	152.12	152.56
89	151	-14793.146	245.248	-4.597	-104.868	61.061	-1427.130	142.05	143.00	173.85	174.18
90	151	14793.135	-245.248	5.017	109.300	-61.061	1427.176	142.05	143.00	173.85	174.18
90	152	-14666.859	-26.331	-5.017	-152.450	35.976	-1756.250	138.17	138.73	177.11	177.30
91	152	14666.869	26.331	4.996	152.282	-35.975	1756.245	138.17	138.73	177.11	177.30
91	153	-11988.474	230.641	-4.978	-194.669	12.355	-2045.784	107.97	108.17	153.18	153.25
92	153	11968.938	-230.641	5.398	195.897	-12.355	2040.974	107.81	108.00	152.91	152.98
92	154	-11901.144	815.810	-5.364	-233.141	-15.803	-4523.672	86.57	86.33	186.31	186.23
93	154	11901.147	-815.810	5.763	232.584	15.803	4523.760	86.57	86.33	186.32	186.23
93	157	-16423.992	1452.426	-10.549	-130.026	-94.596	-12479.006	15.59	14.39	215.58	215.17
94	157	16540.727	1548.101	-7.953	-92.861	115.049	12674.822	15.06	13.60	218.11	217.61
94	163	-12121.371	-499.291	2.750	164.828	-24.138	-4971.905	85.19	84.82	194.78	194.65
95	163	12121.371	499.290	-2.307	-165.434	24.138	4971.841	85.19	84.82	194.78	194.65
95	164	-12164.112	-214.851	2.305	128.881	-10.688	-3811.448	95.23	95.07	179.28	179.22
96	164	12142.547	214.851	-1.861	-127.707	10.688	3808.851	95.03	94.86	179.02	178.96
96	165	-14433.921	-297.148	1.436	86.603	-2.177	-2640.193	128.65	128.62	186.90	186.89
97	165	14433.908	297.149	-1.421	-86.431	2.177	2640.191	128.65	128.62	186.90	186.89
97	166	-12494.642	-309.351	-0.977	50.244	9.484	-1126.134	120.97	121.11	145.86	145.92
98	166	12494.643	309.350	0.533	-45.946	-9.484	1126.115	120.97	121.11	145.86	145.92
98	167	-12494.045	-254.545	-0.543	5.681	6.789	434.790	134.03	134.13	124.47	124.50
99	167	12494.043	254.545	0.100	-0.730	-6.789	-434.798	134.03	134.13	124.47	124.50
99	168	-12497.829	-66.951	-0.100	-37.770	6.290	1189.766	140.38	140.48	114.16	114.19
100	168	12477.821	66.950	0.077	38.048	-6.289	-1189.129	140.16	140.26	113.96	113.99
100	169	-12520.686	223.001	-1.470	-114.394	-15.267	972.029	138.97	138.73	117.44	117.36
101	169	12520.682	-223.001	1.027	119.579	15.267	-971.990	138.96	138.73	117.44	117.36
101	170	-12576.598	211.591	-1.037	-153.668	-20.438	-404.245	128.09	127.77	136.90	136.79
102	170	12576.597	-211.590	1.037	153.670	20.438	404.246	128.09	127.77	136.90	136.79
102	171	-12450.325	-60.005	-1.037	-184.895	-25.623	-565.050	125.47	125.07	137.80	137.67
103	171	12450.329	60.005	0.127	192.408	25.623	565.194	125.46	125.07	137.81	137.67
103	172	-9771.934	196.583	-0.216	-219.010	-26.283	-668.888	96.64	96.23	111.26	111.12
104	172	9755.069	-196.583	0.216	219.010	26.283	664.681	96.50	96.09	111.03	110.89
104	173	-9687.289	1022.847	-3.780	-152.393	-38.017	-3365.473	73.31	72.72	147.38	147.18
105	173	9687.293	-1022.846	3.757	152.386	38.017	3365.475	73.31	72.72	147.38	147.18
105	176	-13286.890	1374.914	-1.802	-145.548	-74.805	-10008.766	13.22	12.27	173.62	173.30
106	176	13175.258	1452.514	-0.866	37.561	64.903	9821.724	13.78	12.96	171.23	170.94
106	182	-8743.508	-348.445	-0.207	-24.736	-52.436	-3315.276	63.99	63.17	136.88	136.60
107	182	8743.507	348.445	-0.304	24.005	52.436	3315.287	63.99	63.17	136.88	136.60
107	183	-11328.141	105.970	2.593	-47.012	-50.474	-3374.897	90.46	89.68	164.67	164.41
108	183	11369.183	-105.970	-2.567	47.042	50.473	3379.927	90.85	90.06	165.17	164.90
108	184	-13845.365	53.638	2.587	-53.681	-38.229	-3967.304	111.70	111.10	199.04	198.84
109	184	13845.364	-53.638	-2.127	55.437	38.229	3967.321	111.70	111.10	199.05	198.84
109	185	-13823.200	-6.670	2.127	-55.912	-27.596	-4056.412	110.64	110.21	200.01	199.86
110	185	13823.196	6.670	-2.101	56.032	27.596	4056.411	110.64	110.21	200.01	199.86
110	186	-13734.216	65.056	2.101	-50.532	-17.091	-3990.774	110.18	109.91	198.15	198.06
111	186	13734.220	-65.057	-1.104	55.306	17.092	3990.813	110.18	109.91	198.15	198.06
111	187	-13632.087	156.968	1.104	-43.506	-11.572	-4551.840	104.38	104.20	204.76	204.70
112	187	11487.027	-156.969	-1.104	43.507	11.572	4613.552	81.47	81.29	183.21	183.15
112	188	-11367.268	136.210	1.104	-25.332	-6.053	-5175.561	75.48	75.38	189.65	189.62
113	188	11367.271	-136.208	-0.618	26.738	6.053	5175.574	75.48	75.38	189.65	189.62
113	189	-11261.961	180.583	0.618	-1.538	-2.962	-5812.888	69.03	68.98	197.28	197.26
114	189	11261.959	-180.584	-0.593	1.560	2.962	5812.888	69.03	68.98	197.28	197.26
114	192	-11379.296	661.202	-0.037	49.845	0.000	-7032.464	60.04	60.04	215.22	215.22

proc Viaducto Papiol

HIPOTESIS 134

min mz + pret(t=0)(fatiga)

		ESFUERZOS EN BARRAS						TENSIONES			
BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	MOM. Y	MOM. Z	SIGMA 1	SIGMA2	SIGMA3	SIGMA4
1	3	11028.150	422.597	-6.594	-609.264	-3.110	1850.426	99.65	99.70	140.50	140.52
1	8	-11113.734	-416.174	6.247	-27.126	16.255	684.030	121.62	121.88	106.61	106.70
2	8	11113.707	416.174	-6.247	27.126	-16.255	-684.029	121.62	121.88	106.61	106.70
2	9	-11173.822	-187.623	6.007	-24.174	28.199	2151.230	134.42	134.86	87.09	87.24
3	9	11173.816	187.622	-0.042	27.647	-43.076	-2151.209	134.30	134.97	87.05	87.28
3	10	-11248.202	-85.638	5.791	-23.355	39.063	2604.796	138.90	139.51	81.62	81.83
4	10	11825.231	85.638	-5.780	19.428	-39.063	-3263.655	150.43	151.04	78.62	78.82
4	11	-11982.595	2.608	5.555	-19.755	41.959	3454.584	153.65	154.30	77.63	77.86
5	11	11982.608	-2.607	-5.539	23.948	-41.960	-3454.572	153.65	154.30	77.63	77.86
5	12	-11992.255	181.157	2.656	-15.464	47.961	3124.391	150.94	151.69	82.25	82.50
6	12	11992.257	-181.158	-2.621	23.778	-47.961	-3124.376	150.94	151.69	82.25	82.50
6	13	-11965.933	261.121	5.312	-44.218	59.408	2250.088	143.27	144.20	93.93	94.24
7	13	11965.949	-261.121	-5.330	40.721	-59.408	-2250.107	143.27	144.20	93.93	94.24
7	14	-14762.850	-6.442	5.045	-40.502	76.822	1054.098	162.34	163.54	139.48	139.89
8	14	14738.708	6.441	-5.011	46.497	-76.822	-1060.100	162.14	163.34	139.14	139.55
8	15	-14710.615	-67.459	3.917	-60.718	29.246	1722.821	167.76	168.21	129.89	130.05
9	15	14710.600	67.460	-3.918	60.632	-29.246	-1722.822	167.76	168.21	129.89	130.05
9	18	-20223.086	613.434	1.170	-59.559	42.872	-1824.600	114.82	115.37	144.30	144.49
10	18	20041.578	1195.892	1.701	116.815	-45.715	1820.622	113.68	114.26	143.11	143.31
10	24	-15477.698	-158.201	-1.701	-112.190	44.261	2373.120	181.08	181.77	128.94	129.18
11	24	15477.666	158.201	1.622	114.196	-44.260	-2373.076	181.08	181.77	128.94	129.18
11	25	-15527.238	-239.668	-1.470	-84.159	103.491	2421.939	181.55	183.16	128.63	129.19
12	25	15497.286	239.668	1.302	91.898	-103.490	-2431.960	181.32	182.93	128.18	128.74
12	26	-12681.920	-456.395	1.261	-92.625	105.762	4307.666	167.58	169.23	73.07	73.63
13	26	12681.903	456.396	-1.205	87.672	-105.762	-4307.701	167.58	169.23	73.07	73.63
13	27	-12667.968	-357.625	0.965	-83.804	104.136	6350.807	184.52	186.14	44.92	45.47
14	27	12667.993	357.624	-1.017	89.653	-104.136	-6350.775	184.52	186.14	44.92	45.47
14	28	-12674.231	-200.740	0.788	-83.047	101.595	7861.962	197.24	198.82	24.27	24.81
15	28	12674.228	200.738	-0.893	96.328	-101.595	-7861.893	197.24	198.82	24.27	24.82
15	29	-12977.676	9.407	0.192	-78.861	92.697	8243.437	203.66	205.10	22.24	22.73
16	29	12383.206	-9.405	-0.253	72.246	-92.697	-7577.930	191.89	193.34	25.15	25.65
16	30	-12428.472	233.462	0.182	-56.295	86.859	7008.342	187.65	189.00	33.45	33.91
17	30	12428.484	-233.462	-0.116	63.052	-86.859	-7008.322	187.65	189.00	33.45	33.91
17	31	-12484.363	336.703	-0.116	-65.253	79.827	5366.015	174.57	175.81	56.57	56.99
18	31	12484.325	-336.705	0.180	71.007	-79.827	-5365.987	174.57	175.81	56.57	56.99
18	32	-12388.600	244.599	-0.420	-71.020	71.277	4096.845	163.03	164.14	72.99	73.37
19	32	12388.598	-244.597	0.420	71.012	-71.278	-4096.844	163.03	164.14	72.99	73.37
19	33	-15211.645	321.002	-3.510	-68.342	58.574	3309.102	186.02	186.93	113.30	113.61
20	33	15187.561	-321.002	3.599	71.832	-58.574	-3315.110	185.82	186.73	112.96	113.28
20	34	-15097.434	664.593	-5.389	37.842	-91.994	1267.357	168.93	167.50	140.50	140.01
21	34	15097.463	-664.593	5.484	-36.004	91.995	-1267.373	168.93	167.50	140.50	140.01
21	37	-20678.211	1012.690	-5.484	68.829	-112.363	-5324.833	93.71	92.29	178.75	178.26
22	37	20267.939	1107.705	0.170	230.380	101.914	5324.299	91.05	89.76	176.12	175.68
22	44	-14802.472	-189.001	-0.170	-195.705	-95.713	628.511	160.54	159.05	146.18	145.68
23	44	14802.455	189.001	0.102	197.449	95.713	-628.434	160.54	159.05	146.19	145.68

23	45	-14849.065	-265.069	-1.216	-60.444	29.559	1034.339	163.45	163.91	140.77	140.93
24	45	13393.738	265.068	1.153	63.912	-29.559	-594.573	144.58	145.04	131.61	131.77
24	46	-10774.005	-485.669	1.130	-69.760	33.698	2802.935	135.65	136.17	73.97	74.15
25	46	10774.039	485.669	-1.129	69.755	-33.699	-2802.934	135.65	136.17	73.97	74.15
25	47	-10750.451	-386.823	0.889	-69.711	31.695	4981.375	153.62	154.12	43.87	44.03
26	47	10750.458	386.824	-1.007	75.435	-31.694	-4981.347	153.62	154.12	43.87	44.03
26	48	-10746.973	-229.608	0.779	-73.979	29.109	6633.495	167.41	167.87	21.19	21.34
27	48	10746.927	229.607	-0.785	74.317	-29.109	-6633.491	167.41	167.87	21.19	21.34
27	49	-10746.991	-12.959	0.713	-45.613	25.680	7146.762	171.73	172.13	14.16	14.30
28	49	10730.803	12.958	-0.833	52.217	-25.681	-7146.218	171.56	171.96	14.00	14.13
28	50	-11289.328	204.538	0.120	-22.555	21.142	6704.794	173.73	174.06	25.89	26.01
29	50	11289.346	-204.538	-0.037	29.332	-21.143	-6704.784	173.73	174.06	25.89	26.01
29	51	-11331.613	308.047	-0.192	-45.629	13.705	5196.966	161.63	161.85	47.03	47.10
30	51	11331.619	-308.046	0.271	51.457	-13.704	-5196.945	161.63	161.85	47.03	47.10
30	52	-11226.400	215.630	-0.511	-66.932	4.702	4057.942	151.09	151.16	61.57	61.59
31	52	11226.404	-215.628	0.511	66.931	-4.702	-4057.943	151.09	151.16	61.57	61.59
31	53	-13653.142	288.457	-0.409	-75.413	-13.137	3419.877	171.23	171.02	95.70	95.63
32	53	13628.953	-288.459	0.684	78.267	6.272	-3425.882	170.97	170.88	95.34	95.31
32	54	-13542.251	628.600	-1.678	127.630	-194.916	1558.137	155.93	152.89	120.55	119.51
33	54	13542.229	-628.600	1.675	-127.737	194.917	-1558.134	155.93	152.89	120.55	119.51
33	57	-19126.285	976.686	-1.675	164.412	-210.342	-4864.017	87.79	85.12	165.02	164.10
34	57	18484.313	1091.268	-3.546	228.492	203.464	4864.803	83.67	81.09	160.94	160.06
34	64	-13022.096	-216.223	1.244	-247.253	-161.291	1201.393	147.25	144.74	119.92	119.06
35	64	13022.107	216.223	-1.233	247.145	161.291	-1201.397	147.25	144.74	119.92	119.06
35	65	-13071.910	-248.422	1.703	-16.318	-31.006	1325.359	147.80	147.31	118.39	118.23
36	65	13045.250	248.422	-2.103	24.003	31.006	-1328.492	147.54	147.06	118.07	117.90
36	66	-10779.506	-466.063	1.921	-28.341	-26.733	3367.097	140.89	140.47	66.45	66.31
37	66	10779.497	466.063	-1.927	28.590	26.733	-3367.096	140.89	140.47	66.45	66.31
37	67	-10761.911	-367.224	1.687	-31.604	-24.750	5460.422	158.19	157.80	37.57	37.44
38	67	10761.857	367.225	-1.793	37.191	24.750	-5460.414	158.18	157.80	37.57	37.44
38	68	-10764.373	-209.994	1.565	-40.013	-23.393	7027.864	171.30	170.94	16.10	15.98
39	68	10764.380	209.993	-1.515	34.314	17.349	-7027.883	171.25	170.98	16.08	15.99
39	69	-11527.558	0.241	1.018	3.378	-9.984	7456.087	182.74	182.59	18.16	18.11
40	69	11511.365	-0.240	-0.423	16.626	16.304	-7455.558	182.62	182.36	18.02	17.93
40	70	-11549.064	224.331	0.406	15.839	-14.700	6929.395	178.60	178.37	25.62	25.54
41	70	11549.072	-224.331	-0.593	-22.701	14.699	-6929.383	178.60	178.37	25.62	25.54
41	71	-11597.340	328.245	0.365	19.623	-19.361	5335.094	165.82	165.52	47.99	47.89
42	71	11597.338	-328.245	-0.177	-13.446	19.360	-5335.103	165.82	165.52	47.99	47.89
42	72	-11498.118	236.156	-0.063	10.024	-26.126	4107.171	154.57	154.17	63.81	63.67
43	72	11498.111	-236.155	0.244	-5.325	26.126	-4107.174	154.57	154.17	63.81	63.67
43	73	-14049.594	310.869	-0.705	-1.489	-36.875	3376.324	175.19	174.61	100.50	100.30
44	73	14025.477	-310.870	0.716	1.686	36.876	-3382.359	174.99	174.41	100.16	99.97
44	74	-13944.726	650.083	-0.079	231.769	-181.243	1419.723	158.87	156.05	126.61	125.64
45	74	13944.764	-650.084	0.284	-229.795	181.243	-1419.813	158.87	156.05	126.61	125.64
45	77	-19534.820	998.176	-0.284	277.570	-189.713	-5096.907	88.58	86.18	169.64	168.81
46	77	18662.141	1093.605	-3.602	143.541	176.139	5095.731	82.98	80.74	164.07	163.30
46	84	-13205.920	-218.341	2.789	-139.916	-192.788	1004.863	147.77	144.78	124.62	123.59
47	84	13205.937	218.341	-2.796	140.022	192.788	-1004.861	147.77	144.78	124.62	123.59
47	85	-13261.740	-250.454	2.702	77.037	-39.845	1145.275	148.34	147.72	122.87	122.65
48	85	13235.056	250.454	-2.825	-73.368	39.846	-1148.450	148.09	147.47	122.54	122.33
48	86	-10471.313	-472.793	2.261	66.687	-33.214	3228.033	136.56	136.04	65.16	64.98
49	86	10471.325	472.792	-2.492	-61.999	33.216	-3228.057	136.56	136.04	65.16	64.98
49	87	-10447.736	-374.014	2.252	57.371	-28.407	5342.339	153.95	153.50	35.92	35.76
50	87	10447.749	374.014	-2.264	-57.064	28.406	-5342.342	153.95	153.50	35.92	35.76
50	88	-10444.265	-216.833	2.036	51.207	-24.692	6931.068	167.16	166.77	14.09	13.96
51	88	10444.262	216.833	-2.270	-44.693	24.693	-6931.083	167.16	166.77	14.09	13.96
51	89	-11432.544	-6.787	1.579	75.669	-10.794	7381.675	181.13	180.97	18.19	18.14
52	89	11416.337	6.787	-1.580	-75.675	10.794	-7381.149	180.96	180.79	18.03	17.97
52	90	-11448.039	217.233	1.508	101.529	-10.003	6877.415	177.08	176.92	25.27	25.21
53	90	11448.053	-217.234	-1.361	-94.669	10.001	-6877.454	177.08	176.92	25.27	25.21
53	91	-11490.320	321.073	1.133	92.456	-10.825	5306.063	164.39	164.22	47.25	47.19
54	91	11490.314	-321.072	-0.994	-86.593	10.826	-5306.097	164.39	164.22	47.25	47.19

54	92	-11385.098	228.894	0.754	82.597	-13.504	4101.371	153.25	153.04	62.68	62.60
55	92	11385.086	-228.894	-0.609	-77.654	13.504	-4101.400	153.25	153.04	62.68	62.60
55	93	-13871.180	302.790	0.286	69.367	-19.165	3395.801	173.35	173.05	98.32	98.22
56	93	13847.084	-302.789	-0.293	-69.562	19.165	-3401.834	173.15	172.85	97.99	97.88
56	94	-13760.335	642.250	1.532	249.548	-91.956	1466.789	156.64	155.21	123.80	123.31
57	94	13760.334	-642.250	-1.525	-249.441	91.957	-1466.792	156.64	155.21	123.80	123.31
57	97	-19344.391	968.620	-4.663	70.911	-132.738	-5023.635	87.54	85.86	167.65	167.08
58	97	18240.748	1115.352	-6.559	-186.015	114.683	5026.980	80.41	78.95	160.65	160.15
58	104	-12719.109	-218.373	2.266	25.854	-150.945	1062.599	142.85	140.50	118.63	117.83
59	104	12719.146	218.373	-2.249	-25.959	150.945	-1062.598	142.85	140.50	118.63	117.83
59	105	-13122.959	-249.403	2.085	147.626	-26.324	1196.997	147.22	146.81	120.67	120.53
60	105	13096.301	249.404	-2.279	-143.543	26.325	-1200.208	146.97	146.56	120.35	120.21
60	106	-10620.542	-469.184	2.044	137.812	-20.984	3269.635	138.37	138.05	66.12	66.00
61	106	10620.533	469.183	-2.035	-138.058	20.983	-3269.634	138.37	138.05	66.12	66.00
61	107	-10599.944	-370.523	1.795	131.705	-11.410	5372.580	155.66	155.48	37.05	36.98
62	107	10599.936	370.522	-1.979	-125.531	11.409	-5372.630	155.66	155.48	37.04	36.98
62	108	-10599.450	-213.473	1.751	116.861	-2.079	6950.657	168.77	168.73	15.38	15.37
63	108	10599.439	213.475	-1.925	-110.341	2.079	-6950.698	168.77	168.73	15.38	15.37
63	109	-10602.504	2.972	1.853	120.131	7.243	7390.234	172.40	172.51	9.36	9.40
64	109	10586.313	-2.973	-1.679	-126.823	-7.242	-7389.665	172.23	172.34	9.20	9.24
64	110	-11840.051	220.698	1.740	137.762	30.015	6869.722	180.79	181.26	29.36	29.52
65	110	11840.074	-220.698	-1.148	-124.405	-30.014	-6869.819	180.79	181.26	29.36	29.52
65	111	-11885.342	324.408	0.920	124.005	35.174	5287.929	168.01	168.55	51.50	51.69
66	111	11885.313	-324.408	-0.631	-118.141	-35.174	-5287.972	168.01	168.55	51.50	51.69
66	112	-11783.095	232.102	0.391	115.041	37.732	4073.285	156.77	157.36	67.08	67.28
67	112	11783.102	-232.102	-0.377	-114.799	-37.732	-4073.289	156.77	157.36	67.08	67.28
67	113	-13912.190	305.387	0.353	106.326	37.069	3361.146	173.05	173.63	99.07	99.27
68	113	13888.091	-305.387	-0.201	-102.646	-37.070	-3367.218	172.85	173.43	98.74	98.94
68	114	-13804.346	645.390	2.006	162.027	49.256	1422.798	155.63	156.40	124.49	124.75
69	114	13804.312	-645.389	-2.006	-162.026	-49.256	-1422.797	155.63	156.40	124.49	124.75
69	117	-19391.361	950.052	-0.510	131.982	-39.448	-5075.006	86.88	86.38	168.21	168.03
70	117	18056.779	1138.308	-2.439	-170.558	20.211	5061.149	78.40	78.14	159.59	159.50
70	124	-12597.555	-219.611	2.439	168.533	-8.018	1041.118	140.29	140.16	117.27	117.23
71	124	12597.592	219.611	-2.065	-170.619	8.018	-1041.050	140.29	140.16	117.28	117.23
71	125	-12650.393	-251.120	1.456	139.220	47.249	1178.362	141.56	142.29	115.80	116.05
72	125	12623.713	251.120	-1.830	-135.339	-47.249	-1181.570	141.31	142.04	115.47	115.73
72	126	-10204.365	-470.970	1.718	133.095	57.462	3254.599	133.29	134.18	61.77	62.07
73	126	10204.365	470.971	-2.068	-128.155	-57.462	-3254.652	133.29	134.19	61.77	62.07
73	127	-10183.779	-372.367	1.828	123.869	67.203	5366.648	150.65	151.70	32.57	32.93
74	127	10183.774	372.365	-2.161	-118.005	-67.202	-5366.689	150.65	151.70	32.57	32.93
74	128	-10183.289	-215.367	1.933	111.100	77.446	6954.125	163.83	165.04	10.78	11.19
75	128	10183.283	215.368	-1.933	-111.095	-77.446	-6954.125	163.83	165.04	10.78	11.19
75	129	-11996.510	-6.829	2.664	97.188	116.633	7423.482	186.38	188.19	23.17	23.79
76	129	11980.313	6.829	-2.309	-90.484	-116.632	-7422.999	186.21	188.02	23.01	23.63
76	130	-12015.014	217.052	2.238	76.831	128.125	6926.250	182.33	184.32	30.15	30.83
77	130	12015.009	-217.053	-1.864	-69.960	-128.125	-6926.278	182.33	184.32	30.15	30.83
77	131	-12060.275	320.766	1.636	72.764	136.869	5362.644	169.67	171.80	52.03	52.76
78	131	12060.284	-320.765	-1.991	-78.645	-136.870	-5362.614	169.67	171.80	52.03	52.76
78	132	-11958.063	228.483	1.751	79.026	146.227	4166.112	158.53	160.80	67.35	68.12
79	132	11958.071	-228.485	-0.667	-64.616	-146.227	-4166.194	158.53	160.80	67.34	68.12
79	133	-14447.167	302.535	0.391	59.375	148.463	3467.731	178.66	180.97	102.90	103.69
80	133	14423.055	-302.534	-0.746	-63.093	-148.462	-3473.741	178.46	180.77	102.57	103.36
80	134	-14339.311	642.717	2.425	-24.258	215.130	1535.964	160.87	164.22	128.08	129.23
81	134	14339.295	-642.717	-2.070	26.275	-215.130	-1535.956	160.87	164.22	128.08	129.23
81	137	-19926.344	947.176	1.239	-66.997	181.043	-4939.182	89.84	92.13	169.91	170.69
82	137	18361.086	1133.476	3.896	-244.688	-190.400	4992.598	79.48	81.90	160.45	161.27
82	144	-12901.866	-214.773	-3.896	211.963	170.922	1085.458	142.44	145.10	119.37	120.28
83	144	12901.872	214.773	3.404	-207.859	-170.922	-1085.622	142.45	145.10	119.36	120.28
83	145	-12954.669	-246.290	-1.656	50.561	99.671	1202.932	144.53	146.08	118.50	119.03
84	145	12928.011	246.289	1.644	-50.366	-99.672	-1206.084	144.28	145.83	118.18	118.71
84	146	-10029.859	-466.225	-2.021	54.717	89.086	3253.517	131.21	132.60	59.88	60.35

85	146	10029.862	466.225	2.042	-54.967	-89.086	-3253.516	131.21	132.60	59.88	60.35
85	147	-10009.278	-367.518	-2.282	56.036	78.278	5341.497	148.53	149.75	31.07	31.48
86	147	10009.275	367.518	1.463	-44.012	-78.278	-5341.535	148.53	149.75	31.07	31.48
86	148	-10008.790	-210.481	-1.692	43.855	70.385	6905.383	161.66	162.75	9.64	10.02
87	148	10008.786	210.481	1.671	-43.516	-70.385	-6905.382	161.66	162.75	9.64	10.02
87	149	-10011.852	6.053	-1.743	16.924	61.722	7329.726	165.30	166.26	3.88	4.21
88	149	9995.653	-6.052	1.366	-10.606	-61.722	-7329.204	165.13	166.09	3.72	4.05
88	150	-10030.351	230.051	-1.437	-16.648	54.839	6767.772	160.85	161.71	11.79	12.09
89	150	10030.357	-230.052	1.416	16.989	-54.839	-6767.772	160.85	161.71	11.79	12.09
89	151	-10075.588	333.853	-1.601	-13.010	45.659	5139.406	147.79	148.50	34.62	34.86
90	151	10075.581	-333.852	1.181	19.115	-45.660	-5139.397	147.79	148.50	34.62	34.86
90	152	-9973.358	241.701	-1.421	-15.044	39.155	3877.171	136.22	136.83	50.87	51.08
91	152	9973.363	-241.702	1.442	14.804	-39.156	-3877.174	136.22	136.83	50.87	51.08
91	153	-12462.461	315.750	-1.700	-12.345	29.986	3118.530	155.94	156.41	87.28	87.44
92	153	12438.331	-315.749	1.280	16.121	-29.986	-3124.562	155.74	156.21	86.95	87.11
92	154	-12354.588	611.292	-0.266	-192.366	75.262	935.762	136.22	137.39	115.96	116.36
93	154	12354.597	-611.292	-0.133	194.155	-75.263	-935.689	136.22	137.39	115.96	116.36
93	157	-17941.646	959.371	0.133	-238.055	75.925	-5393.400	74.69	75.65	161.61	161.94
94	157	17824.898	1148.546	3.687	-194.622	-96.378	5197.875	75.22	76.44	159.08	159.50
94	163	-12365.688	-229.831	-3.687	150.897	77.942	955.572	136.48	137.70	115.80	116.21
95	163	12365.688	229.831	3.244	-148.947	-77.942	-955.630	136.49	137.70	115.80	116.21
95	164	-12418.482	-257.891	-1.723	-24.869	-7.940	1153.229	139.36	139.23	113.87	113.83
96	164	12391.837	257.891	1.280	28.546	7.940	-1156.371	139.10	138.98	113.55	113.50
96	165	-10332.521	-478.120	-1.094	-26.315	-14.143	3263.580	135.26	135.04	63.17	63.10
97	165	10332.513	478.121	1.079	26.563	14.144	-3263.580	135.26	135.04	63.17	63.10
97	166	-12225.765	-402.877	1.078	-27.275	-24.698	5476.458	173.60	173.22	52.63	52.50
98	166	12225.770	402.876	-0.635	33.182	24.697	-5476.449	173.60	173.22	52.63	52.50
98	167	-12225.285	-246.343	0.405	-27.148	-22.096	7224.028	188.18	187.84	28.66	28.54
99	167	12225.280	246.343	0.039	33.768	22.095	-7224.022	188.18	187.84	28.66	28.54
99	168	-12228.346	-29.753	-0.111	-58.426	-22.595	7827.537	193.26	192.91	20.42	20.30
100	168	12212.150	29.752	0.134	58.789	22.595	-7827.020	193.09	192.74	20.26	20.14
100	169	-12246.852	194.288	-0.206	-82.152	-23.318	7444.478	190.26	189.90	25.87	25.74
101	169	12246.847	-194.287	0.649	88.878	23.318	-7444.448	190.26	189.90	25.87	25.74
101	170	-12292.111	297.856	-0.878	-89.606	-27.126	6002.131	178.71	178.28	46.12	45.98
102	170	12292.108	-297.856	0.879	89.607	27.126	-6002.128	178.71	178.28	46.12	45.98
102	171	-12189.890	205.699	-1.119	-87.607	-32.119	4919.833	168.63	168.13	59.91	59.74
103	171	12189.892	-205.699	2.028	97.884	32.119	-4919.764	168.63	168.13	59.91	59.74
103	172	-14678.986	280.090	-2.180	-94.111	-42.837	4323.825	189.72	189.06	94.09	93.87
104	172	14658.158	-280.090	2.179	94.111	42.837	-4329.021	189.55	188.88	93.81	93.58
104	173	-14574.438	570.331	-0.390	-214.244	23.959	2540.235	173.21	173.58	117.28	117.40
105	173	14574.438	-570.331	0.413	214.371	-23.959	-2540.232	173.21	173.58	117.28	117.40
105	176	-19020.998	833.427	-0.413	-234.796	21.892	-1664.475	108.48	108.76	135.30	135.40
106	176	19132.621	892.366	-1.083	45.545	-11.990	1851.630	107.92	108.07	137.70	137.75
106	182	-13658.104	52.651	1.083	-61.595	17.404	3012.483	167.64	167.91	101.25	101.35
107	182	13658.104	-52.651	-0.572	63.536	-17.404	-3012.458	167.64	167.91	101.25	101.35
107	183	-11136.290	80.795	-0.040	-62.239	-17.026	2199.969	134.79	134.52	86.15	86.06
108	183	11186.989	-80.794	0.015	62.404	17.026	-2193.756	135.26	135.00	86.77	86.68
108	184	-8895.104	-175.922	-0.274	-53.890	-17.109	2722.356	115.75	115.49	55.59	55.50
109	184	8895.102	175.922	-0.186	57.448	17.109	-2722.337	115.75	115.49	55.59	55.50
109	185	-8877.160	-164.578	0.533	-62.633	38.824	3439.438	121.12	121.73	45.43	45.63
110	185	8877.156	164.578	-0.558	62.864	-38.824	-3439.439	121.12	121.73	45.43	45.63
110	186	-8805.125	-19.342	0.019	-49.931	-16.658	3944.114	125.02	124.76	37.90	37.81
111	186	8805.128	19.342	-1.016	59.392	16.658	-3944.072	125.02	124.76	37.90	37.82
111	187	-8722.448	164.552	0.825	-56.293	-11.960	3611.766	121.34	121.16	41.58	41.52
112	187	6985.972	-164.553	-0.825	56.293	11.960	-3561.808	102.80	102.61	24.14	24.08
112	188	-6889.024	275.640	0.585	-64.901	-8.435	2599.695	93.72	93.59	36.31	36.26
113	188	6889.026	-275.639	-1.071	68.619	8.435	-2599.667	93.72	93.58	36.31	36.26
113	189	-6803.774	439.458	0.831	-70.512	-3.681	937.127	78.90	78.84	58.20	58.18
114	189	6803.773	-439.459	-0.856	70.643	3.681	-937.126	78.90	78.84	58.20	58.18
114	192	-6519.269	591.022	-0.828	-80.545	0.000	-1152.580	58.43	58.43	83.87	83.87

ESFUERZOS TRANSVERSALES

COMPROBACIÓN ELU FATIGA: SECCIÓN TRANSVERSAL

En el comportamiento de la sección transversal es más desfavorable la acción de carga puntual que en el caso del tren de fatiga, según el Eurocódigo es de 20T

Tren de cálculo Q=25T

Tren de fatiga Q=20T

El coeficiente de impacto a considerar será

$i = 1 + \frac{1}{2}(\varphi + \frac{1}{2}\varphi'')$ $L=6m$ $v=350 km/h$

$\varphi' = \frac{k}{1-k+k^4}$ $k = \frac{v}{160} = \frac{350}{0'6 \times 160} = 1'496$] c.imp. fatiga $L=1'67$

$\varphi'' = 0'56 \cdot e^{-\frac{L^2}{160}} = 0'39$

mientras el coef. de impacto considerado para el cálculo general es $i=1'14$

-Para fatiga se considera la sobrecarga poco frecuente sin mayorar-

Su efecto será proporcional a la sc. de cálculo según

$M_{z(fatiga)} = M_{z,SC} \left(\frac{20}{25} \times \frac{1'67}{1'14} \right) = 1'172\, M_{z,SC}$.

Esfuerzos a tener en cuenta: producidos x la acción

- Carga permanente: sin mayorar
- Sobrecarga de fatiga sin mayorar. = 0'78 x Esfuerzo

—o—

Sección voladizo (barra 4 extremo 2)

46,c Carga permanente M_z máx $M_z = -12'72$ mT
cp máx exc = 1'10

46,a Carga permanente M_z mín $M_z = -8'81$ mT
cp mín exc = 0

15 c Sobrecarga ec, 1 M_z máx $M_z = -6'01$ mT ×1'172
(sob. 1.1) sin impacto.

Se comprueba q las Tensiones por hipo 1 - hipo 2 ≃ ∇ hipo 3.

M_z máx = 19'76 mT (hipótesis 1)

M_z mín = -8'81 mT (Hipótesis 2)

ΔM_z = -10'95 mT (Hipótesis 3.)

Canto h = 0'47m.

Armadura mínima tracción ϕ20 c d'20 + ϕ16 c 0'40.

Armadura compresión ϕ16 c d'20

Al ser la sección en voladizo, no existe torsión concomitante, por lo q se considera toda la armadura dispuesta colaborante.

CARLOS FERNANDEZ CASADO, S.L.
OFICINA DE PROYECTOS

PROYECTO

HOJA ____ DE ____
FECHA ____

Sección arranque losa central (barras 6 y 10, d12)

(se ha tenido en cuenta la simétrica)

45c Carga permanente M_z máx $M_z = -8'52$ mT.
excentr = 1'1 m

46 c Carga permanente M_z mín $M_z = -5'43$ mT
excentr = 0 m.

Sobrecarga eurocódigo M_z máx

16 c Sob. 1.2 sin impacto izq $M_z = -8'74$ ×1'172
17 c Sob 2.1 con imp. izq dcha $M_z = -12'55$ ×1'172

M_z máx = -33'47 mT hipo 1

M_z mín = -5'43 mT hipo 2

ΔM_z = 28'04 hipo 3:

Canto h = 0'50m recubrimiento r = d05m

Armadura de tracción estricta = 35'77 cm².
(se considera sólo la necesaria por flexión transversal ya que la disp. incluye la necesaria por torsión

Armadura de compresión ϕ16 c d'20. m

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OFICINA DE PROYECTOS

HOJA____ DE ____

PROYECTO_____ FECHA _____

Sección centro de vano de losa (barra 8, ex F42)

45 c Carga permanente M_z máx $M_z = 2'01$ mT
excentr = 0

46 c Carga permanente M_z mín $M_z = 2'82$ mT
excentr = 1'10

Sobrecarga eurocódigo M_z mín

16 c sob 1.2 vía izq min mipsob $M_z = 0'66 \times 1'172$

17 c Sob 2.1 vía dcha min mp $M_z = 8'53 \times 1'172$

M_z máx = 2101 mT Hipo 2

M_z mín = 13'59 mT. Hipo 1

ΔM_z = 11'58 mT Hipo 3

Canto h = 0'35 m. recubrimiento r = 0'05 m

Armadura de Tracción dispuesta = 22'95 cm²

Armadura de compresión no se considera (1 cm²)
ya que es a su vez la de torsión.

proc Papiol - flexion transversal

Esfuerzos de la barra 4 extremo frontal

coeficiente del esfuerzo FX : 1.00
coeficiente del esfuerzo FY : 1.00
coeficiente del esfuerzo MZ : 1.00

HIP.	FX	FY	MZ
1 hipo 1 peso propio (sin c=0)	0.03	2.97	-4.69
2 hipo 2 Carga Muerta minima	0.02	2.20	-4.39
3 hipo 3 Carga Muerta maxima	0.03	3.18	-5.25
4 hipo 4 Desbalastado-1	-0.02	-1.62	1.43
5 hipo 5 Desbalastado-2	0.00	0.00	0.00
11 hipo 11 sob-1.1 (ipf-75)	0.05	4.65	-0.84
12 hipo 12 sob-1.2 (ipf-75)	0.09	8.88	-2.89
13 hipo 13 sob-2.1 (ipf-75)	0.00	0.00	0.00
14 hipo 14 sob-2.2 (ipf-75)	0.00	0.00	0.00
15 hipo 15 sob-1.1 (ec-1)	0.03	2.66	-0.48
16 hipo 16 sob-1.2 (ec-1)	0.05	5.07	-1.65
17 hipo 17 sob-2.1 (ec-1)	0.00	0.00	0.00
18 hipo 18 sob-2.2 (ec-1)	0.00	0.00	0.00
19 hipo 19 f.cent (ipf-75) (izda)	0.00	0.00	0.00
20 hipo 20 f.cent (ipf-75) (dcha)	0.00	0.00	0.00
21 hipo 21 f.cent (ec-1) (izda)	0.00	0.00	0.00
22 hipo 22 f.cent (ec-1) (dcha)	0.00	0.00	0.00
23 hipo 23 f.lazo (ipf-75) (izda)	0.00	0.00	0.00
24 hipo 24 f.lazo (ipf-75) (dcha)	0.00	0.00	0.00
25 hipo 25 f.lazo (ec-1) (izda)	0.00	0.00	0.00
26 hipo 26 f.lazo (ec-1) (dcha)	0.00	0.00	0.00
27 hipo 27 descarr-1.1	0.05	5.00	-5.13
28 hipo 28 descarr-1.2	0.00	0.00	0.00
29 hipo 29 descarr-1.3	0.00	0.00	0.00
30 hipo 30 descarr-1.4	0.00	0.00	0.00
31 hipo 31 descarr-2.1	0.08	8.00	-8.21
32 hipo 32 descarr-2.2	0.00	0.00	0.00
33 hipo 33 sc paseo izqda (ipf-75)	0.01	1.04	-2.90
34 hipo 34 sc paseo dcha (ipf-75)	0.00	0.00	0.00
35 hipo 35 sc paseo izqda (ec-1)	0.01	1.04	-2.90
36 hipo 36 sc paseo dcha (ec-1)	0.00	0.00	0.00
37 hipo 37 descarr-2.3	0.00	0.00	0.00
38 hipo 38 descarr-2.4	0.00	0.00	0.00
41 FUER X MAX carga permanente (ex=0	0.05	5.18	-9.08
42 FUER X MIN carga permanente (ex=0	0.06	6.15	-9.94
43 FUER Y MAX carga permanente (ex=0	0.05	5.18	-9.08
44 FUER Y MIN carga permanente (ex=0	0.06	6.15	-9.94
45 MOME Z MAX carga permanente (ex=0	0.06	6.15	-9.94
46 MOME Z MIN carga permanente (ex=0	0.05	5.18	-9.08
51 FUER X MAX envolvente (ELU) (ipf-	0.07	6.99	-12.26
52 FUER X MIN envolvente (ELU) (ipf-	0.23	22.40	-19.93
53 FUER Y MAX envolvente (ELU) (ipf-	0.07	6.99	-12.26
54 FUER Y MIN envolvente (ELU) (ipf-	0.23	22.40	-19.93
55 MOME Z MAX envolvente (ELU) (ipf-	0.23	22.40	-19.93
56 MOME Z MIN envolvente (ELU) (ipf-	0.07	6.99	-12.26
61 FUER X MAX envolvente (ELU) (ec-1	0.06	6.99	-12.26
62 FUER X MIN envolvente (ELU) (ec-1	0.17	16.69	-18.07

63	FUER Y MAX envolvente (ELU) (ec-1	0.07	6.99	-12.26
64	FUER Y MIN envolvente (ELU) (ec-1	0.17	16.69	-18.07
65	MOME Z MAX envolvente (ELU) (ec-1	0.17	16.69	-18.07
66	MOME Z MIN envolvente (ELU) (ec-1	0.07	6.99	-12.26
71	FUER X MAX envolvente (ELU) (pase	0.07	6.99	-12.26
72	FUER X MIN envolvente (ELU) (pase	0.10	9.86	-17.77
73	FUER Y MAX envolvente (ELU) (pase	0.07	6.99	-12.26
74	FUER Y MIN envolvente (ELU) (pase	0.10	9.86	-17.77
75	MOME Z MAX envolvente (ELU) (pase	0.10	9.86	-17.77
76	MOME Z MIN envolvente (ELU) (pase	0.07	6.99	-12.26
81	FUER X MAX envolvente (ELU) (pase	0.07	6.99	-12.26
82	FUER X MIN envolvente (ELU) (pase	0.10	9.86	-17.77
83	FUER Y MAX envolvente (ELU) (pase	0.07	6.99	-12.26
84	FUER Y MIN envolvente (ELU) (pase	0.10	9.86	-17.77
85	MOME Z MAX envolvente (ELU) (pase	0.10	9.86	-17.77
86	MOME Z MIN envolvente (ELU) (pase	0.07	6.99	-12.26
91	FUER X MAX envolvente (ELU) accid	0.05	5.18	-9.08
92	FUER X MIN envolvente (ELU) accid	0.14	14.15	-18.15
93	FUER Y MAX envolvente (ELU) accid	0.05	5.18	-9.08
94	FUER Y MIN envolvente (ELU) accid	0.14	14.15	-18.15
95	MOME Z MAX envolvente (ELU) accid	0.14	14.15	-18.15
96	MOME Z MIN envolvente (ELU) accid	0.05	5.18	-9.08
101	FUER X MAX envolvente (ELU)(total	0.05	5.18	-9.08
102	FUER X MIN envolvente (ELU)(total	0.23	22.40	-19.93
103	FUER Y MAX envolvente (ELU)(total	0.05	5.18	-9.08
104	FUER Y MIN envolvente (ELU)(total	0.23	22.40	-19.93
105	MOME Z MAX envolvente (ELU)(total	0.23	22.40	-19.93
106	MOME Z MIN envolvente (ELU)(total	0.05	5.18	-9.08
201	hipo 201 peso propio (exc=-0.3125	0.03	3.05	-4.99
202	hipo 202 Carga Muerta minima	0.02	2.48	-4.98
203	hipo 203 Carga Muerta maxima	0.03	2.66	-5.31
204	hipo 204 Desbalastado-1	-0.02	-1.91	1.47
205	hipo 205 Desbalastado-2	0.00	0.00	0.00
211	hipo 211 sob-1.1 (ipf-75)	0.09	9.04	-2.99
212	hipo 212 sob-1.2 (ipf-75)	0.13	13.14	-6.33
213	hipo 213 sob-2.1 (ipf-75)	0.00	0.00	0.00
214	hipo 214 sob-2.2 (ipf-75)	0.00	0.00	0.00
215	hipo 215 sob-1.1 (ec-1)	0.05	5.17	-1.71
216	hipo 216 sob-1.2 (ec-1)	0.08	7.51	-3.62
217	hipo 217 sob-2.1 (ec-1)	0.00	0.00	0.00
218	hipo 218 sob-2.2 (ec-1)	0.00	0.00	0.00
219	hipo 219 f.cent (ipf-75) (izda)	0.00	0.00	0.00
220	hipo 220 f.cent (ipf-75) (dcha)	0.00	0.00	0.00
221	hipo 221 f.cent (ec-1) (izda)	0.00	0.00	0.00
222	hipo 222 f.cent (ec-1) (dcha)	0.00	0.00	0.00
223	hipo 223 f.lazo (ipf-75) (izda)	0.00	0.00	0.00
224	hipo 224 f.lazo (ipf-75) (dcha)	0.00	0.00	0.00
225	hipo 225 f.lazo (ec-1) (izda)	0.00	0.00	0.00
226	hipo 226 f.lazo (ec-1) (dcha)	0.00	0.00	0.00
227	hipo 227 descarr-1.1	0.06	6.43	-6.78
228	hipo 228 descarr-1.2	0.00	0.00	0.00
229	hipo 229 descarr-1.3	0.00	0.00	0.00
230	hipo 230 descarr-1.4	0.00	0.00	0.00
231	hipo 231 descarr-2.1	0.08	8.00	-10.69
232	hipo 232 descarr-2.2	0.00	0.00	0.00
233	hipo 233 sc paseo izqda (ipf-75)	0.01	0.96	-2.90
234	hipo 234 sc paseo dcha (ipf-75)	0.00	0.00	0.00
235	hipo 235 sc paseo izqda (ec-1)	0.01	0.96	-2.90
236	hipo 236 sc paseo dcha (ec-1)	0.00	0.00	0.00
237	hipo 237 descarr-2.3	0.00	0.00	0.00
238	hipo 238 descarr-2.4	0.00	0.00	0.00

425	hipo 425 f.lazo (ec-1) (izda)	0.00	0.00	0.00
426	hipo 426 f.lazo (ec-1) (dcha)	0.00	0.00	0.00
427	hipo 427 descarr-1.1	0.10	9.98	-9.34
428	hipo 428 descarr-1.2	0.00	0.00	0.00
429	hipo 429 descarr-1.3	0.00	0.00	0.00
430	hipo 430 descarr-1.4	0.00	0.00	0.00
431	hipo 431 descarr-2.1	0.08	7.98	-13.14
432	hipo 432 descarr-2.2	0.00	0.00	0.00
433	hipo 433 sc paseo izqda (ipf-75)	0.01	0.87	-2.86
434	hipo 434 sc paseo dcha (ipf-75)	0.00	0.00	0.00
435	hipo 435 sc paseo izqda (ec-1)	0.01	0.87	-2.86
436	hipo 436 sc paseo dcha (ec-1)	0.00	0.00	0.00
437	hipo 437 descarr-2.3	0.00	0.00	0.00
438	hipo 438 descarr-2.4	0.00	0.00	0.00
441	FUER X MAX carga permanente (ex=0	0.06	5.92	-11.04
442	FUER X MIN carga permanente (ex=0	0.07	7.24	-12.63
443	FUER Y MAX carga permanente (ex=0	0.06	5.92	-11.04
444	FUER Y MIN carga permanente (ex=0	0.07	7.24	-12.63
445	MOME Z MAX carga permanente (ex=0	0.07	7.24	-12.63
446	MOME Z MIN carga permanente (ex=0	0.06	5.92	-11.04
451	FUER X MAX envolvente (ELU) (ipf-	0.08	7.99	-14.91
452	FUER X MIN envolvente (ELU) (ipf-	0.37	36.67	-36.00
453	FUER Y MAX envolvente (ELU) (ipf-	0.08	7.99	-14.91
454	FUER Y MIN envolvente (ELU) (ipf-	0.37	36.67	-36.00
455	MOME Z MAX envolvente (ELU) (ipf-	0.37	36.67	-36.00
456	MOME Z MIN envolvente (ELU) (ipf-	0.08	7.99	-14.91
461	FUER X MAX envolvente (ELU) (ec-1	0.08	7.99	-14.91
462	FUER X MIN envolvente (ELU) (ec-1	0.26	25.43	-28.80
463	FUER Y MAX envolvente (ELU) (ec-1	0.08	7.99	-14.91
464	FUER Y MIN envolvente (ELU) (ec-1	0.26	25.43	-28.80
465	MOME Z MAX envolvente (ELU) (ec-1	0.26	25.43	-28.80
466	MOME Z MIN envolvente (ELU) (ec-1	0.08	7.99	-14.91
471	FUER X MAX envolvente (ELU) (pase	0.08	7.99	-14.91
472	FUER X MIN envolvente (ELU) (pase	0.11	11.08	-21.34
473	FUER Y MAX envolvente (ELU) (pase	0.08	7.99	-14.91
474	FUER Y MIN envolvente (ELU) (pase	0.11	11.08	-21.34
475	MOME Z MAX envolvente (ELU) (pase	0.11	11.08	-21.34
476	MOME Z MIN envolvente (ELU) (pase	0.08	7.99	-14.91
481	FUER X MAX envolvente (ELU) (pase	0.08	7.99	-14.91
482	FUER X MIN envolvente (ELU) (pase	0.11	11.08	-21.34
483	FUER Y MAX envolvente (ELU) (pase	0.08	7.99	-14.91
484	FUER Y MIN envolvente (ELU) (pase	0.11	11.08	-21.34
485	MOME Z MAX envolvente (ELU) (pase	0.11	11.08	-21.34
486	MOME Z MIN envolvente (ELU) (pase	0.08	7.99	-14.91
491	FUER X MAX envolvente (ELU) accid	0.06	5.92	-11.04
492	FUER X MIN envolvente (ELU) accid	0.17	17.22	-21.97
493	FUER Y MAX envolvente (ELU) accid	0.06	5.92	-11.04
494	FUER Y MIN envolvente (ELU) accid	0.17	17.22	-21.97
495	MOME Z MAX envolvente (ELU) accid	0.15	15.22	-25.77
496	MOME Z MIN envolvente (ELU) accid	0.06	5.92	-11.04
501	FUER X MAX envolvente (ELU)(total	0.06	5.92	-11.04
502	FUER X MIN envolvente (ELU)(total	0.37	36.67	-36.00
503	FUER Y MAX envolvente (ELU)(total	0.06	5.92	-11.04
504	FUER Y MIN envolvente (ELU)(total	0.37	36.67	-36.00
505	MOME Z MAX envolvente (ELU)(total	0.37	36.67	-36.00
506	MOME Z MIN envolvente (ELU)(total	0.06	5.92	-11.04
511	FUER X MAX envolvente (ELU)(total	0.05	5.18	-9.08
512	FUER X MIN envolvente (ELU)(total	0.37	36.67	-36.00
513	FUER Y MAX envolvente (ELU)(total	0.05	5.18	-9.08
514	FUER Y MIN envolvente (ELU)(total	0.37	36.67	-36.00
515	MOME Z MAX envolvente (ELU)(total	0.37	36.67	-36.00

241	FUER X MAX carga permanente (ex=0	0.06	5.54	-9.97
242	FUER X MIN carga permanente (ex=0	0.06	5.71	-10.31
243	FUER Y MAX carga permanente (ex=0	0.06	5.54	-9.97
244	FUER Y MIN carga permanente (ex=0	0.06	5.71	-10.31
245	MOME Z MAX carga permanente (ex=0	0.06	5.71	-10.31
246	MOME Z MIN carga permanente (ex=0	0.06	5.54	-9.97
251	FUER X MAX envolvente (ELU) (ipf-	0.07	7.47	-13.46
252	FUER X MIN envolvente (ELU) (ipf-	0.28	28.14	-25.58
253	FUER Y MAX envolvente (ELU) (ipf-	0.08	7.47	-13.46
254	FUER Y MIN envolvente (ELU) (ipf-	0.28	28.14	-25.58
255	MOME Z MAX envolvente (ELU) (ipf-	0.28	28.14	-25.58
256	MOME Z MIN envolvente (ELU) (ipf-	0.08	7.47	-13.46
261	FUER X MAX envolvente (ELU) (ec-1	0.07	7.47	-13.46
262	FUER X MIN envolvente (ELU) (ec-1	0.20	19.70	-21.52
263	FUER Y MAX envolvente (ELU) (ec-1	0.08	7.47	-13.46
264	FUER Y MIN envolvente (ELU) (ec-1	0.20	19.70	-21.52
265	MOME Z MAX envolvente (ELU) (ec-1	0.20	19.70	-21.52
266	MOME Z MIN envolvente (ELU) (ec-1	0.08	7.47	-13.46
271	FUER X MAX envolvente (ELU) (pase	0.08	7.47	-13.46
272	FUER X MIN envolvente (ELU) (pase	0.09	9.15	-18.27
273	FUER Y MAX envolvente (ELU) (pase	0.08	7.47	-13.46
274	FUER Y MIN envolvente (ELU) (pase	0.09	9.15	-18.27
275	MOME Z MAX envolvente (ELU) (pase	0.09	9.15	-18.27
276	MOME Z MIN envolvente (ELU) (pase	0.08	7.47	-13.46
281	FUER X MAX envolvente (ELU) (pase	0.08	7.47	-13.46
282	FUER X MIN envolvente (ELU) (pase	0.09	9.15	-18.27
283	FUER Y MAX envolvente (ELU) (pase	0.08	7.47	-13.46
284	FUER Y MIN envolvente (ELU) (pase	0.09	9.15	-18.27
285	MOME Z MAX envolvente (ELU) (pase	0.09	9.15	-18.27
286	MOME Z MIN envolvente (ELU) (pase	0.08	7.47	-13.46
291	FUER X MAX envolvente (ELU) accid	0.06	5.54	-9.97
292	FUER X MIN envolvente (ELU) accid	0.14	13.71	-21.00
293	FUER Y MAX envolvente (ELU) accid	0.06	5.54	-9.97
294	FUER Y MIN envolvente (ELU) accid	0.14	13.71	-21.00
295	MOME Z MAX envolvente (ELU) accid	0.14	13.71	-21.00
296	MOME Z MIN envolvente (ELU) accid	0.06	5.54	-9.97
301	FUER X MAX envolvente (ELU)(total	0.06	5.54	-9.97
302	FUER X MIN envolvente (ELU)(total	0.28	28.14	-25.58
303	FUER Y MAX envolvente (ELU)(total	0.06	5.54	-9.97
304	FUER Y MIN envolvente (ELU)(total	0.28	28.14	-25.58
305	MOME Z MAX envolvente (ELU)(total	0.28	28.14	-25.58
306	MOME Z MIN envolvente (ELU)(total	0.06	5.54	-9.97
401	hipo 401 peso propio (ex -0625)	0.03	3.13	-5.31
402	hipo 402 Carga Muerta minima	0.03	2.78	-5.73
403	hipo 403 Carga Muerta maxima	0.04	4.11	-7.32
404	hipo 404 Desbalastado-1	-0.02	-2.21	2.65
405	hipo 405 Desbalastado-2	0.00	0.00	0.00
411	hipo 411 sob-1.1 (ipf-75)	0.13	13.39	-6.57
412	hipo 412 sob-1.2 (ipf-75)	0.18	17.49	-11.21
413	hipo 413 sob-2.1 (ipf-75)	0.00	0.00	0.00
414	hipo 414 sob-2.2 (ipf-75)	0.00	0.00	0.00
415	hipo 415 sob-1.1 (ec-1)	0.08	7.66	-3.75
416	hipo 416 sob-1.2 (ec-1)	0.10	10.00	-6.41
417	hipo 417 sob-2.1 (ec-1)	0.00	0.00	0.00
418	hipo 418 sob-2.2 (ec-1)	0.00	0.00	0.00
419	hipo 419 f.cent (ipf-75) (izda)	0.00	0.00	0.00
420	hipo 420 f.cent (ipf-75) (dcha)	0.00	0.00	0.00
421	hipo 421 f.cent (ec-1) (izda)	0.00	0.00	0.00
422	hipo 422 f.cent (ec-1) (dcha)	0.00	0.00	0.00
423	hipo 423 f.lazo (ipf-75) (izda)	0.00	0.00	0.00
424	hipo 424 f.lazo (ipf-75) (dcha)	0.00	0.00	0.00
516	MOME Z MIN envolvente (ELU)(total	0.05	5.18	-9.08

proc Papiol - flexion transversal

Esfuerzos de la barra 6 extremo frontal

coeficiente del esfuerzo FX : 1.00
coeficiente del esfuerzo FY : 1.00
coeficiente del esfuerzo MZ : 1.00

HIP.	FX	FY	MZ
1 hipo 1 peso propio	2.49	-2.44	-2.39
2 hipo 2 Carga Muerta minima	1.76	-2.24	-2.31
3 hipo 3 Carga Muerta maxima	2.22	-3.70	-3.64
4 hipo 4 Desbalastado-1	-0.37	2.28	2.29
5 hipo 5 Desbalastado-2	-0.39	0.17	-0.07
11 hipo 11 sob-1.1 (ipf-75)	1.09	-20.92	-12.53
12 hipo 12 sob-1.2 (ipf-75)	2.67	-18.40	-11.63
13 hipo 13 sob-2.1 (ipf-75)	0.53	-2.13	-2.90
14 hipo 14 sob-2.2 (ipf-75)	-0.85	-3.89	-6.10
15 hipo 15 sob-1.1 (ec-1)	0.62	-11.96	-7.16
16 hipo 16 sob-1.2 (ec-1)	1.52	-10.52	-6.65
17 hipo 17 sob-2.1 (ec-1)	0.30	-1.22	-1.66
18 hipo 18 sob-2.2 (ec-1)	-0.48	-2.22	-3.48
19 hipo 19 f.cent (ipf-75) (izda)	0.00	0.00	0.00
20 hipo 20 f.cent (ipf-75) (dcha)	0.00	0.00	0.00
21 hipo 21 f.cent (ec-1) (izda)	0.00	0.00	0.00
22 hipo 22 f.cent (ec-1) (dcha)	0.00	0.00	0.00
23 hipo 23 f.lazo (ipf-75) (izda)	0.00	0.00	0.00
24 hipo 24 f.lazo (ipf-75) (dcha)	0.00	0.00	0.00
25 hipo 25 f.lazo (ec-1) (izda)	0.00	0.00	0.00
26 hipo 26 f.lazo (ec-1) (dcha)	0.00	0.00	0.00
27 hipo 27 descarr-1.1	2.27	-1.35	-3.71
28 hipo 28 descarr-1.2	-1.23	-7.03	-6.10
29 hipo 29 descarr-1.3	-1.19	-2.94	-4.41
30 hipo 30 descarr-1.4	2.30	1.30	3.32
31 hipo 31 descarr-2.1	2.68	-1.71	-4.77
32 hipo 32 descarr-2.2	-1.31	-4.36	-5.46
33 hipo 33 sc paseo izqda (ipf-75)	0.62	-0.42	-1.20
34 hipo 34 sc paseo dcha (ipf-75)	0.63	0.41	1.01
35 hipo 35 sc paseo izqda (ec-1)	0.62	-0.42	-1.20
36 hipo 36 sc paseo dcha (ec-1)	0.63	0.41	1.01
37 hipo 37 descarr-2.3	2.71	1.65	4.13
38 hipo 38 descarr-2.4	-1.30	-3.60	-5.03
41 FUER X MAX carga permanente (ex=0	4.25	-4.67	-4.70
42 FUER X MIN carga permanente (ex=0	4.71	-6.14	-6.03
43 FUER Y MAX carga permanente (ex=0	4.71	-6.14	-6.03
44 FUER Y MIN carga permanente (ex=0	4.25	-4.67	-4.70
45 MOME Z MAX carga permanente (ex=0	4.71	-6.14	-6.03
46 MOME Z MIN carga permanente (ex=0	4.25	-4.67	-4.70
51 FUER X MAX envolvente (ELU) (ipf-	4.47	-12.15	-15.48
52 FUER X MIN envolvente (ELU) (ipf-	12.09	-39.10	-30.08
53 FUER Y MAX envolvente (ELU) (ipf-	7.19	-45.82	-36.97
54 FUER Y MIN envolvente (ELU) (ipf-	6.21	-6.00	-5.58
55 MOME Z MAX envolvente (ELU) (ipf-	7.19	-45.82	-36.97
56 MOME Z MIN envolvente (ELU) (ipf-	6.21	-6.00	-5.58
61 FUER X MAX envolvente (ELU) (ec-1	5.01	-9.64	-11.57
62 FUER X MIN envolvente (ELU) (ec-1	10.03	-25.90	-20.74
63 FUER Y MAX envolvente (ELU) (ec-1	7.03	-29.88	-25.01
64 FUER Y MIN envolvente (ELU) (ec-1	6.21	-6.00	-5.58
65 MOME Z MAX envolvente (ELU) (ec-1	7.03	-29.88	-25.01
66 MOME Z MIN envolvente (ELU) (ec-1	6.21	-6.00	-5.58
71 FUER X MAX envolvente (ELU) (pase	5.74	-6.31	-6.34
72 FUER X MIN envolvente (ELU) (pase	8.23	-8.31	-8.42
73 FUER Y MAX envolvente (ELU) (pase	7.29	-8.92	-9.93
74 FUER Y MIN envolvente (ELU) (pase	6.69	-5.69	-4.83
75 MOME Z MAX envolvente (ELU) (pase	7.29	-8.92	-9.93
76 MOME Z MIN envolvente (ELU) (pase	6.69	-5.69	-4.83
81 FUER X MAX envolvente (ELU) (pase	5.74	-6.31	-6.34
82 FUER X MIN envolvente (ELU) (pase	8.23	-8.31	-8.42
83 FUER Y MAX envolvente (ELU) (pase	7.29	-8.92	-9.93
84 FUER Y MIN envolvente (ELU) (pase	6.69	-5.69	-4.83
85 MOME Z MAX envolvente (ELU) (pase	7.29	-8.92	-9.93
86 MOME Z MIN envolvente (ELU) (pase	6.69	-5.69	-4.83
91 FUER X MAX envolvente (ELU) accid	2.95	-9.03	-10.16
92 FUER X MIN envolvente (ELU) accid	7.41	-4.49	-1.90
93 FUER Y MAX envolvente (ELU) accid	3.48	-13.17	-12.13
94 FUER Y MIN envolvente (ELU) accid	6.96	-3.02	-0.57
95 MOME Z MAX envolvente (ELU) accid	3.48	-13.17	-12.13
96 MOME Z MIN envolvente (ELU) accid	6.96	-3.02	-0.57
101 FUER X MAX envolvente (ELU)(total	2.95	-9.03	-10.16
102 FUER X MIN envolvente (ELU)(total	12.09	-39.10	-30.08
103 FUER Y MAX envolvente (ELU)(total	7.19	-45.82	-36.97
104 FUER Y MIN envolvente (ELU)(total	6.96	-3.02	-0.57
105 MOME Z MAX envolvente (ELU)(total	7.19	-45.82	-36.97
106 MOME Z MIN envolvente (ELU)(total	6.96	-3.02	-0.57
201 hipo 201 peso propio (exc=-0.3125	2.49	-2.52	-2.60
202 hipo 202 Carga Muerta minima	1.98	-2.22	-2.40
203 hipo 203 Carga Muerta maxima	2.06	-2.27	-2.55
204 hipo 204 Desbalastado-1	-0.48	2.15	2.18
205 hipo 205 Desbalastado-2	-0.22	0.40	0.32
211 hipo 211 sob-1.1 (ipf-75)	2.73	-18.32	-11.62
212 hipo 212 sob-1.2 (ipf-75)	4.37	-15.67	-11.39
213 hipo 213 sob-2.1 (ipf-75)	-0.89	-3.95	-6.20
214 hipo 214 sob-2.2 (ipf-75)	-2.11	-5.87	-9.36
215 hipo 215 sob-1.1 (ec-1)	1.56	-10.47	-6.64
216 hipo 216 sob-1.2 (ec-1)	2.50	-8.96	-6.51
217 hipo 217 sob-2.1 (ec-1)	-0.51	-2.26	-3.55
218 hipo 218 sob-2.2 (ec-1)	-1.21	-3.36	-5.35
219 hipo 219 f.cent (ipf-75) (izda)	0.00	0.00	0.00
220 hipo 220 f.cent (ipf-75) (dcha)	0.00	0.00	0.00
221 hipo 221 f.cent (ec-1) (izda)	0.00	0.00	0.00
222 hipo 222 f.cent (ec-1) (dcha)	0.00	0.00	0.00
223 hipo 223 f.lazo (ipf-75) (izda)	0.00	0.00	0.00
224 hipo 224 f.lazo (ipf-75) (dcha)	0.00	0.00	0.00
225 hipo 225 f.lazo (ec-1) (izda)	0.00	0.00	0.00
226 hipo 226 f.lazo (ec-1) (dcha)	0.00	0.00	0.00
227 hipo 227 descarr-1.1	2.73	-1.69	-4.68
228 hipo 228 descarr-1.2	-1.03	-7.66	-5.58
229 hipo 229 descarr-1.3	-1.34	-3.61	-5.10
230 hipo 230 descarr-1.4	1.82	0.97	2.51
231 hipo 231 descarr-2.1	3.05	-1.98	-5.55
232 hipo 232 descarr-2.2	-1.26	-4.96	-5.63
233 hipo 233 sc paseo izqda (ipf-75)	0.61	-0.41	-1.17
234 hipo 234 sc paseo dcha (ipf-75)	0.64	0.41	1.02
235 hipo 235 sc paseo izqda (ec-1)	0.61	-0.41	-1.17
236 hipo 236 sc paseo dcha (ec-1)	0.64	0.41	1.02
237 hipo 237 descarr-2.3	2.33	1.39	3.49
238 hipo 238 descarr-2.4	-1.31	-4.20	-5.39

241	FUER X MAX carga permanente (ex=0	4.47	-4.73	-4.99
242	FUER X MIN carga permanente (ex=0	4.55	-4.79	-5.15
243	FUER Y MAX carga permanente (ex=0	4.55	-4.79	-5.15
244	FUER Y MIN carga permanente (ex=0	4.47	-4.73	-4.99
245	MOME Z MAX carga permanente (ex=0	4.55	-4.79	-5.15
246	MOME Z MIN carga permanente (ex=0	4.47	-4.73	-4.99
251	FUER X MAX envolvente (ELU) (ipf-	2.85	-15.20	-20.79
252	FUER X MIN envolvente (ELU) (ipf-	13.62	-29.97	-24.15
253	FUER Y MAX envolvente (ELU) (ipf-	7.51	-43.06	-39.31
254	FUER Y MIN envolvente (ELU) (ipf-	6.51	-6.08	-5.98
255	MOME Z MAX envolvente (ELU) (ipf-	7.51	-43.06	-39.31
256	MOME Z MIN envolvente (ELU) (ipf-	6.51	-6.08	-5.98
261	FUER X MAX envolvente (ELU) (ec-1	4.21	-11.43	-14.77
262	FUER X MIN envolvente (ELU) (ec-1	10.82	-19.90	-16.83
263	FUER Y MAX envolvente (ELU) (ec-1	7.12	-27.52	-25.83
264	FUER Y MIN envolvente (ELU) (ec-1	6.51	-6.08	-5.98
265	MOME Z MAX envolvente (ELU) (ec-1	7.12	-27.52	-25.83
266	MOME Z MIN envolvente (ELU) (ec-1	6.51	-6.08	-5.98
271	FUER X MAX envolvente (ELU) (pase	6.03	-6.39	-6.74
272	FUER X MIN envolvente (ELU) (pase	8.01	-6.47	-7.19
273	FUER Y MAX envolvente (ELU) (pase	7.05	-7.09	-8.71
274	FUER Y MIN envolvente (ELU) (pase	6.98	-5.77	-5.22
275	MOME Z MAX envolvente (ELU) (pase	7.05	-7.09	-8.71
276	MOME Z MIN envolvente (ELU) (pase	6.98	-5.77	-5.22
281	FUER X MAX envolvente (ELU) (pase	6.03	-6.39	-6.74
282	FUER X MIN envolvente (ELU) (pase	8.01	-6.47	-7.19
283	FUER Y MAX envolvente (ELU) (pase	7.05	-7.09	-8.71
284	FUER Y MIN envolvente (ELU) (pase	6.98	-5.77	-5.22
285	MOME Z MAX envolvente (ELU) (pase	7.05	-7.09	-8.71
286	MOME Z MIN envolvente (ELU) (pase	6.98	-5.77	-5.22
291	FUER X MAX envolvente (ELU) accid	3.12	-8.34	-10.10
292	FUER X MIN envolvente (ELU) accid	7.60	-6.77	-10.70
293	FUER Y MAX envolvente (ELU) accid	3.52	-12.45	-10.73
294	FUER Y MIN envolvente (ELU) accid	6.80	-3.35	-1.50
295	MOME Z MAX envolvente (ELU) accid	3.29	-9.75	-10.78
296	MOME Z MIN envolvente (ELU) accid	6.80	-3.35	-1.50
301	FUER X MAX envolvente (ELU)(total	2.85	-15.20	-20.79
302	FUER X MIN envolvente (ELU)(total	13.62	-29.97	-24.15
303	FUER Y MAX envolvente (ELU)(total	7.51	-43.06	-39.31
304	FUER Y MIN envolvente (ELU)(total	6.80	-3.35	-1.50
305	MOME Z MAX envolvente (ELU)(total	7.51	-43.06	-39.31
306	MOME Z MIN envolvente (ELU)(total	6.80	-3.35	-1.50
401	hipo 401 peso propio	2.49	-2.60	-2.81
402	hipo 402 Carga Muerta minima	1.61	-2.67	-3.60
403	hipo 403 Carga Muerta maxima	2.10	-4.34	-5.47
404	hipo 404 Desbalastado-1	-0.84	1.64	1.97
405	hipo 405 Desbalastado-2	0.02	1.14	1.15
411	hipo 411 sob-1.1 (ipf-75)	4.83	-9.27	-8.46
412	hipo 412 sob-1.2 (ipf-75)	6.10	-13.99	-12.61
413	hipo 413 sob-2.1 (ipf-75)	-2.19	-6.01	-9.57
414	hipo 414 sob-2.2 (ipf-75)	-3.25	-8.10	-12.64
415	hipo 415 sob-1.1 (ec-1)	2.76	-5.30	-4.84
416	hipo 416 sob-1.2 (ec-1)	3.49	-8.00	-7.21
417	hipo 417 sob-2.1 (ec-1)	-1.25	-3.43	-5.47
418	hipo 418 sob-2.2 (ec-1)	-1.86	-4.63	-7.23
419	hipo 419 f.cent (ipf-75) (izda)	0.00	0.00	0.00
420	hipo 420 f.cent (ipf-75) (dcha)	0.00	0.00	0.00
421	hipo 421 f.cent (ec-1) (izda)	0.00	0.00	0.00
422	hipo 422 f.cent (ec-1) (dcha)	0.00	0.00	0.00
423	hipo 423 f.lazo (ipf-75) (izda)	0.00	0.00	0.00
424	hipo 424 f.lazo (ipf-75) (dcha)	0.00	0.00	0.00
425	hipo 425 f.lazo (ec-1) (izda)	0.00	0.00	0.00
426	hipo 426 f.lazo (ec-1) (dcha)	0.00	0.00	0.00
427	hipo 427 descarr-1.1	3.20	-2.03	-5.66
428	hipo 428 descarr-1.2	-0.77	-8.27	-4.76
429	hipo 429 descarr-1.3	-1.42	-4.24	-5.60
430	hipo 430 descarr-1.4	1.36	0.63	1.70
431	hipo 431 descarr-2.1	3.41	-2.24	-6.31
432	hipo 432 descarr-2.2	-0.66	-2.98	-3.13
433	hipo 433 sc paseo izqda (ipf-75)	0.59	-0.40	-1.14
434	hipo 434 sc paseo dcha (ipf-75)	0.64	0.41	1.01
435	hipo 435 sc paseo izqda (ec-1)	0.59	-0.40	-1.14
436	hipo 436 sc paseo dcha (ec-1)	0.64	0.41	1.01
437	hipo 437 descarr-2.3	1.95	1.12	2.85
438	hipo 438 descarr-2.4	-1.28	-4.81	-5.61
441	FUER X MAX carga permanente (ex=0	4.10	-5.27	-6.41
442	FUER X MIN carga permanente (ex=0	4.59	-6.93	-8.28
443	FUER Y MAX carga permanente (ex=0	4.59	-6.93	-8.28
444	FUER Y MIN carga permanente (ex=0	4.10	-5.27	-6.41
445	MOME Z MAX carga permanente (ex=0	4.59	-6.93	-8.28
446	MOME Z MIN carga permanente (ex=0	4.10	-5.27	-6.41
451	FUER X MAX envolvente (ELU) (ipf-	0.66	-19.26	-27.61
452	FUER X MIN envolvente (ELU) (ipf-	16.26	-30.34	-30.19
453	FUER Y MAX envolvente (ELU) (ipf-	10.91	-42.80	-49.91
454	FUER Y MIN envolvente (ELU) (ipf-	6.01	-6.80	-7.89
455	MOME Z MAX envolvente (ELU) (ipf-	10.91	-42.80	-49.91
456	MOME Z MIN envolvente (ELU) (ipf-	6.01	-6.80	-7.89
461	FUER X MAX envolvente (ELU) (ec-1	2.74	-14.06	-19.49
462	FUER X MIN envolvente (ELU) (ec-1	12.34	-21.35	-22.08
463	FUER Y MAX envolvente (ELU) (ec-1	9.08	-28.60	-33.68
464	FUER Y MIN envolvente (ELU) (ec-1	6.01	-6.80	-7.89
465	MOME Z MAX envolvente (ELU) (ec-1	9.08	-28.60	-33.68
466	MOME Z MIN envolvente (ELU) (ec-1	6.01	-6.80	-7.89
471	FUER X MAX envolvente (ELU) (pase	5.53	-7.11	-8.65
472	FUER X MIN envolvente (ELU) (pase	8.03	-9.35	-11.36
473	FUER Y MAX envolvente (ELU) (pase	7.08	-9.96	-12.88
474	FUER Y MIN envolvente (ELU) (pase	6.49	-6.49	-7.13
475	MOME Z MAX envolvente (ELU) (pase	7.08	-9.96	-12.88
476	MOME Z MIN envolvente (ELU) (pase	6.49	-6.49	-7.13
481	FUER X MAX envolvente (ELU) (pase	5.53	-7.11	-8.65
482	FUER X MIN envolvente (ELU) (pase	8.03	-9.35	-11.36
483	FUER Y MAX envolvente (ELU) (pase	7.08	-9.96	-12.88
484	FUER Y MIN envolvente (ELU) (pase	6.49	-6.49	-7.13
485	MOME Z MAX envolvente (ELU) (pase	7.08	-9.96	-12.88
486	MOME Z MIN envolvente (ELU) (pase	6.49	-6.49	-7.13
491	FUER X MAX envolvente (ELU) accid	2.68	-9.51	-12.01
492	FUER X MIN envolvente (ELU) accid	8.00	-9.18	-14.59
493	FUER Y MAX envolvente (ELU) accid	3.82	-15.20	-13.04
494	FUER Y MIN envolvente (ELU) accid	6.05	-4.14	-3.55
495	MOME Z MAX envolvente (ELU) accid	8.00	-9.18	-14.59
496	MOME Z MIN envolvente (ELU) accid	6.05	-4.14	-3.55
501	FUER X MAX envolvente (ELU)(total	0.66	-19.26	-27.61
502	FUER X MIN envolvente (ELU)(total	16.26	-30.34	-30.19
503	FUER Y MAX envolvente (ELU)(total	10.91	-42.80	-49.91
504	FUER Y MIN envolvente (ELU)(total	6.05	-4.14	-3.55
505	MOME Z MAX envolvente (ELU)(total	10.91	-42.80	-49.91
506	MOME Z MIN envolvente (ELU)(total	6.05	-4.14	-3.55
511	FUER X MAX envolvente (ELU)(total	0.66	-19.26	-27.61
512	FUER X MIN envolvente (ELU)(total	16.26	-30.34	-30.19
513	FUER Y MAX envolvente (ELU)(total	7.19	-45.82	-36.97
514	FUER Y MIN envolvente (ELU)(total	6.96	-3.02	-0.57
515	MOME Z MAX envolvente (ELU)(total	10.91	-42.80	-49.91

516	MOME Z MIN envolvente (ELU)(total	6.96	-3.02	-0.57

proc Papiol - flexion transversal

Esfuerzos de la barra 8 extremo frontal

coeficiente del esfuerzo FX : 1.00
coeficiente del esfuerzo FY : 1.00
coeficiente del esfuerzo MZ : 1.00

HIP.		FX	FY	MZ
1	hipo 1 peso propio	2.51	-0.03	0.79
2	hipo 2 Carga Muerta minima	1.79	-0.14	0.65
3	hipo 3 Carga Muerta maxima	2.25	-0.14	1.27
4	hipo 4 Desbalastado-1	-0.39	-0.16	-0.52
5	hipo 5 Desbalastado-2	-0.39	0.17	-0.52
11	hipo 11 sob-1.1 (ipf-75)	1.31	1.24	2.12
12	hipo 12 sob-1.2 (ipf-75)	2.84	-0.34	1.20
13	hipo 13 sob-2.1 (ipf-75)	0.53	-2.13	2.75
14	hipo 14 sob-2.2 (ipf-75)	-0.85	-3.89	4.22
15	hipo 15 sob-1.1 (ec-1)	0.75	0.71	1.21
16	hipo 16 sob-1.2 (ec-1)	1.63	-0.20	0.68
17	hipo 17 sob-2.1 (ec-1)	0.30	-1.22	1.57
18	hipo 18 sob-2.2 (ec-1)	-0.48	-2.22	2.41
19	hipo 19 f.cent (ipf-75) (izda)	0.00	0.00	0.00
20	hipo 20 f.cent (ipf-75) (dcha)	0.00	0.00	0.00
21	hipo 21 f.cent (ec-1) (izda)	0.00	0.00	0.00
22	hipo 22 f.cent (ec-1) (dcha)	0.00	0.00	0.00
23	hipo 23 f.lazo (ipf-75) (izda)	0.00	0.00	0.00
24	hipo 24 f.lazo (ipf-75) (dcha)	0.00	0.00	0.00
25	hipo 25 f.lazo (ec-1) (izda)	0.00	0.00	0.00
26	hipo 26 f.lazo (ec-1) (dcha)	0.00	0.00	0.00
27	hipo 27 descarr-1.1	2.27	-1.35	-0.13
28	hipo 28 descarr-1.2	-1.13	2.63	3.37
29	hipo 29 descarr-1.3	-1.19	-2.61	3.37
30	hipo 30 descarr-1.4	2.30	1.30	-0.13
31	hipo 31 descarr-2.1	2.68	-1.71	-0.25
32	hipo 32 descarr-2.2	-1.23	3.09	4.51
33	hipo 33 sc paseo izqda (ipf-75)	0.62	-0.42	-0.08
34	hipo 34 sc paseo dcha (ipf-75)	0.63	0.41	-0.08
35	hipo 35 sc paseo izqda (ec-1)	0.62	-0.42	-0.08
36	hipo 36 sc paseo dcha (ec-1)	0.63	0.41	-0.08
37	hipo 37 descarr-2.3	2.71	1.65	-0.25
38	hipo 38 descarr-2.4	-1.29	-3.09	4.51
41	FUER X MAX carga permanente (ex=0	4.30	-0.16	1.44
42	FUER X MIN carga permanente (ex=0	4.76	-0.17	2.06
43	FUER Y MAX carga permanente (ex=0	4.76	-0.17	2.06
44	FUER Y MIN carga permanente (ex=0	4.30	-0.16	1.44
45	MOME Z MAX carga permanente (ex=0	4.30	-0.16	1.44
46	MOME Z MIN carga permanente (ex=0	4.76	-0.17	2.06
51	FUER X MAX envolvente (ELU) (ipf-	4.53	-6.06	8.27
52	FUER X MIN envolvente (ELU) (ipf-	12.43	-3.95	8.58
53	FUER Y MAX envolvente (ELU) (ipf-	9.90	-6.90	10.84
54	FUER Y MIN envolvente (ELU) (ipf-	8.24	1.95	5.07
55	MOME Z MAX envolvente (ELU) (ipf-	6.74	-0.23	1.83
56	MOME Z MIN envolvente (ELU) (ipf-	7.13	-4.20	12.29
61	FUER X MAX envolvente (ELU) (ec-1	5.07	-3.56	5.56
62	FUER X MIN envolvente (ELU) (ec-1	10.26	-2.36	6.04

63	FUER Y MAX envolvente (ELU) (ec-1	8.61	-4.17	7.36
64	FUER Y MIN envolvente (ELU) (ec-1	7.40	1.15	3.71
65	MOME Z MAX envolvente (ELU) (ec-1	6.74	-0.23	1.83
66	MOME Z MIN envolvente (ELU) (ec-1	6.83	-2.50	8.21
71	FUER X MAX envolvente (ELU) (pase	5.80	-0.22	1.94
72	FUER X MIN envolvente (ELU) (pase	8.31	-0.25	2.54
73	FUER Y MAX envolvente (ELU) (pase	7.37	-0.86	2.66
74	FUER Y MIN envolvente (ELU) (pase	6.75	0.39	1.83
75	MOME Z MAX envolvente (ELU) (pase	7.68	-0.24	1.71
76	MOME Z MIN envolvente (ELU) (pase	6.43	-0.23	2.78
81	FUER X MAX envolvente (ELU) (pase	5.80	-0.22	1.94
82	FUER X MIN envolvente (ELU) (pase	8.31	-0.25	2.54
83	FUER Y MAX envolvente (ELU) (pase	7.37	-0.86	2.66
84	FUER Y MIN envolvente (ELU) (pase	6.75	0.39	1.83
85	MOME Z MAX envolvente (ELU) (pase	7.68	-0.24	1.71
86	MOME Z MIN envolvente (ELU) (pase	6.43	-0.23	2.78
91	FUER X MAX envolvente (ELU) accid	3.00	-3.25	5.95
92	FUER X MIN envolvente (ELU) accid	7.47	1.48	1.81
93	FUER Y MAX envolvente (ELU) accid	3.47	-3.25	6.57
94	FUER Y MIN envolvente (ELU) accid	3.06	2.93	5.95
95	MOME Z MAX envolvente (ELU) accid	6.97	-1.87	1.19
96	MOME Z MIN envolvente (ELU) accid	3.47	-3.25	6.57
101	FUER X MAX envolvente (ELU)(total	3.00	-3.25	5.95
102	FUER X MIN envolvente (ELU)(total	12.43	-3.95	8.58
103	FUER Y MAX envolvente (ELU)(total	9.90	-6.90	10.84
104	FUER Y MIN envolvente (ELU)(total	3.06	2.93	5.95
105	MOME Z MAX envolvente (ELU)(total	6.97	-1.87	1.19
106	MOME Z MIN envolvente (ELU)(total	7.13	-4.20	12.29
201	hipo 201 peso propio (exc=-0.3125	2.51	-0.11	0.79
202	hipo 202 Carga Muerta minima	2.00	-0.19	0.59
203	hipo 203 Carga Muerta maxima	2.08	-0.25	0.58
204	hipo 204 Desbalastado-1	-0.50	0.01	-0.34
205	hipo 205 Desbalastado-2	-0.23	0.11	-0.70
211	hipo 211 sob-1.1 (ipf-75)	2.90	-0.40	1.17
212	hipo 212 sob-1.2 (ipf-75)	4.50	-1.85	0.51
213	hipo 213 sob-2.1 (ipf-75)	-0.89	-3.95	4.27
214	hipo 214 sob-2.2 (ipf-75)	-2.12	-5.87	6.20
215	hipo 215 sob-1.1 (ec-1)	1.66	-0.23	0.67
216	hipo 216 sob-1.2 (ec-1)	2.57	-1.06	0.29
217	hipo 217 sob-2.1 (ec-1)	-0.51	-2.26	2.44
218	hipo 218 sob-2.2 (ec-1)	-1.21	-3.36	3.55
219	hipo 219 f.cent (ipf-75) (izda)	0.00	0.00	0.00
220	hipo 220 f.cent (ipf-75) (dcha)	0.00	0.00	0.00
221	hipo 221 f.cent (ec-1) (izda)	0.00	0.00	0.00
222	hipo 222 f.cent (ec-1) (dcha)	0.00	0.00	0.00
223	hipo 223 f.lazo (ipf-75) (izda)	0.00	0.00	0.00
224	hipo 224 f.lazo (ipf-75) (dcha)	0.00	0.00	0.00
225	hipo 225 f.lazo (ec-1) (izda)	0.00	0.00	0.00
226	hipo 226 f.lazo (ec-1) (dcha)	0.00	0.00	0.00
227	hipo 227 descarr-1.1	2.73	-1.69	-0.21
228	hipo 228 descarr-1.2	-0.93	2.33	2.49
229	hipo 229 descarr-1.3	-1.31	0.16	3.81
230	hipo 230 descarr-1.4	1.82	0.97	-0.05
231	hipo 231 descarr-2.1	3.05	-1.98	-0.31
232	hipo 232 descarr-2.2	-1.18	3.04	3.46
233	hipo 233 sc paseo izqda (ipf-75)	0.61	-0.41	-0.08
234	hipo 234 sc paseo dcha (ipf-75)	0.64	0.41	-0.08
235	hipo 235 sc paseo izqda (ec-1)	0.61	-0.41	-0.08
236	hipo 236 sc paseo dcha (ec-1)	0.64	0.41	-0.08
237	hipo 237 descarr-2.3	2.33	1.39	-0.18
238	hipo 238 descarr-2.4	-1.25	1.83	4.71

241	FUER X MAX carga permanente (ex=0	4.51	-0.30	1.38
242	FUER X MIN carga permanente (ex=0	4.59	-0.35	1.37
243	FUER Y MAX carga permanente (ex=0	4.59	-0.35	1.37
244	FUER Y MIN carga permanente (ex=0	4.51	-0.30	1.38
245	MOME Z MAX carga permanente (ex=0	4.59	-0.35	1.37
246	MOME Z MIN carga permanente (ex=0	4.51	-0.30	1.38
251	FUER X MAX envolvente (ELU) (ipf-	2.91	-9.21	11.17
252	FUER X MIN envolvente (ELU) (ipf-	13.89	-3.26	2.49
253	FUER Y MAX envolvente (ELU) (ipf-	10.24	-12.38	11.85
254	FUER Y MIN envolvente (ELU) (ipf-	6.57	-0.09	1.81
255	MOME Z MAX envolvente (ELU) (ipf-	7.13	-0.47	1.74
256	MOME Z MIN envolvente (ELU) (ipf-	7.27	-9.80	12.92
261	FUER X MAX envolvente (ELU) (ec-1	4.27	-5.43	7.18
262	FUER X MIN envolvente (ELU) (ec-1	10.99	-2.06	2.17
263	FUER Y MAX envolvente (ELU) (ec-1	8.70	-7.41	7.54
264	FUER Y MIN envolvente (ELU) (ec-1	6.57	-0.09	1.81
265	MOME Z MAX envolvente (ELU) (ec-1	7.13	-0.47	1.74
266	MOME Z MIN envolvente (ELU) (ec-1	6.76	-5.78	8.18
271	FUER X MAX envolvente (ELU) (pase	6.09	-0.40	1.86
272	FUER X MIN envolvente (ELU) (pase	8.07	-0.48	1.62
273	FUER Y MAX envolvente (ELU) (pase	7.11	-1.09	1.74
274	FUER Y MIN envolvente (ELU) (pase	7.04	0.22	1.75
275	MOME Z MAX envolvente (ELU) (pase	8.07	-0.48	1.62
276	MOME Z MIN envolvente (ELU) (pase	6.09	-0.40	1.86
281	FUER X MAX envolvente (ELU) (pase	6.09	-0.40	1.86
282	FUER X MIN envolvente (ELU) (pase	8.07	-0.48	1.62
283	FUER Y MAX envolvente (ELU) (pase	7.11	-1.09	1.74
284	FUER Y MIN envolvente (ELU) (pase	7.04	0.22	1.75
285	MOME Z MAX envolvente (ELU) (pase	8.07	-0.48	1.62
286	MOME Z MIN envolvente (ELU) (pase	6.09	-0.40	1.86
291	FUER X MAX envolvente (ELU) accid	3.20	-0.14	5.19
292	FUER X MIN envolvente (ELU) accid	7.64	-2.33	1.06
293	FUER Y MAX envolvente (ELU) accid	7.64	-2.33	1.06
294	FUER Y MIN envolvente (ELU) accid	3.33	2.75	4.84
295	MOME Z MAX envolvente (ELU) accid	7.64	-2.33	1.06
296	MOME Z MIN envolvente (ELU) accid	3.26	1.53	6.09
301	FUER X MAX envolvente (ELU)(total	2.91	-9.21	11.17
302	FUER X MIN envolvente (ELU)(total	13.89	-3.26	2.49
303	FUER Y MAX envolvente (ELU)(total	10.24	-12.38	11.85
304	FUER Y MIN envolvente (ELU)(total	3.33	2.75	4.84
305	MOME Z MAX envolvente (ELU)(total	7.64	-2.33	1.06
306	MOME Z MIN envolvente (ELU)(total	7.27	-9.80	12.92
401	hipo 401 peso propio	2.52	-0.19	0.79
402	hipo 402 Carga Muerta minima	1.63	-0.71	0.69
403	hipo 403 Carga Muerta maxima	2.13	-0.92	1.30
404	hipo 404 Desbalastado-1	-0.86	0.46	0.00
405	hipo 405 Desbalastado-2	0.01	-0.12	-1.02
411	hipo 411 sob-1.1 (ipf-75)	4.89	-2.57	-0.01
412	hipo 412 sob-1.2 (ipf-75)	6.20	-3.18	0.09
413	hipo 413 sob-2.1 (ipf-75)	-2.19	-6.01	6.35
414	hipo 414 sob-2.2 (ipf-75)	-3.24	-7.29	8.80
415	hipo 415 sob-1.1 (ec-1)	2.80	-1.47	-0.01
416	hipo 416 sob-1.2 (ec-1)	3.55	-1.82	0.05
417	hipo 417 sob-2.1 (ec-1)	-1.25	-3.43	3.63
418	hipo 418 sob-2.2 (ec-1)	-1.85	-4.17	5.03
419	hipo 419 f.cent (ipf-75) (izda)	0.00	0.00	0.00
420	hipo 420 f.cent (ipf-75) (dcha)	0.00	0.00	0.00
421	hipo 421 f.cent (ec-1) (izda)	0.00	0.00	0.00
422	hipo 422 f.cent (ec-1) (dcha)	0.00	0.00	0.00
423	hipo 423 f.lazo (ipf-75) (izda)	0.00	0.00	0.00
424	hipo 424 f.lazo (ipf-75) (dcha)	0.00	0.00	0.00

425 hipo 425 f.lazo (ec-1) (izda)	0.00	0.00	0.00
426 hipo 426 f.lazo (ec-1) (dcha)	0.00	0.00	0.00
427 hipo 427 descarr-1.1	3.20	-2.03	-0.28
428 hipo 428 descarr-1.2	-0.67	1.73	1.76
429 hipo 429 descarr-1.3	-1.37	0.76	3.52
430 hipo 430 descarr-1.4	1.36	0.63	0.04
431 hipo 431 descarr-2.1	3.41	-2.24	-0.37
432 hipo 432 descarr-2.2	-0.62	1.46	1.55
433 hipo 433 sc paseo izqda (ipf-75)	0.59	-0.40	-0.07
434 hipo 434 sc paseo dcha (ipf-75)	0.64	0.41	-0.07
435 hipo 435 sc paseo izqda (ec-1)	0.59	-0.40	-0.07
436 hipo 436 sc paseo dcha (ec-1)	0.64	0.41	-0.07
437 hipo 437 descarr-2.3	1.95	1.12	-0.12
438 hipo 438 descarr-2.4	-1.20	3.19	3.72
441 FUER X MAX carga permanente (ex=0	4.14	-0.90	1.48
442 FUER X MIN carga permanente (ex=0	4.65	-1.11	2.09
443 FUER Y MAX carga permanente (ex=0	4.65	-1.11	2.09
444 FUER Y MIN carga permanente (ex=0	4.14	-0.90	1.48
445 MOME Z MAX carga permanente (ex=0	4.14	-0.90	1.48
446 MOME Z MIN carga permanente (ex=0	4.65	-1.11	2.09
451 FUER X MAX envolvente (ELU) (ipf-	0.73	-12.15	15.20
452 FUER X MIN envolvente (ELU) (ipf-	16.50	-6.26	2.85
453 FUER Y MAX envolvente (ELU) (ipf-	11.16	-17.51	16.11
454 FUER Y MIN envolvente (ELU) (ipf-	6.07	-0.91	1.94
455 MOME Z MAX envolvente (ELU) (ipf-	13.85	-5.06	1.87
456 MOME Z MIN envolvente (ELU) (ipf-	10.72	-17.21	16.16
461 FUER X MAX envolvente (ELU) (ec-1	2.81	-7.47	9.54
462 FUER X MIN envolvente (ELU) (ec-1	12.51	-4.21	2.79
463 FUER Y MAX envolvente (ELU) (ec-1	9.26	-10.77	10.39
464 FUER Y MIN envolvente (ELU) (ec-1	6.07	-0.91	1.94
465 MOME Z MAX envolvente (ELU) (ec-1	10.70	-3.41	1.88
466 MOME Z MIN envolvente (ELU) (ec-1	8.82	-10.47	10.45
471 FUER X MAX envolvente (ELU) (pase	5.59	-1.21	2.00
472 FUER X MIN envolvente (ELU) (pase	8.11	-1.48	2.60
473 FUER Y MAX envolvente (ELU) (pase	7.15	-2.09	2.71
474 FUER Y MIN envolvente (ELU) (pase	6.55	-0.60	1.88
475 MOME Z MAX envolvente (ELU) (pase	7.43	-1.20	1.77
476 MOME Z MIN envolvente (ELU) (pase	6.28	-1.49	2.82
481 FUER X MAX envolvente (ELU) (pase	5.59	-1.21	2.00
482 FUER X MIN envolvente (ELU) (pase	8.11	-1.48	2.60
483 FUER Y MAX envolvente (ELU) (pase	7.15	-2.09	2.71
484 FUER Y MIN envolvente (ELU) (pase	6.55	-0.60	1.88
485 MOME Z MAX envolvente (ELU) (pase	7.43	-1.20	1.77
486 MOME Z MIN envolvente (ELU) (pase	6.28	-1.49	2.82
491 FUER X MAX envolvente (ELU) accid	2.77	-0.14	5.00
492 FUER X MIN envolvente (ELU) accid	8.06	-3.35	1.72
493 FUER Y MAX envolvente (ELU) accid	8.06	-3.35	1.72
494 FUER Y MIN envolvente (ELU) accid	2.94	2.29	5.20
495 MOME Z MAX envolvente (ELU) accid	7.55	-3.14	1.11
496 MOME Z MIN envolvente (ELU) accid	3.45	2.09	5.82
501 FUER X MAX envolvente (ELU)(total	0.73	-12.15	15.20
502 FUER X MIN envolvente (ELU)(total	16.50	-6.26	2.85
503 FUER Y MAX envolvente (ELU)(total	11.16	-17.51	16.11
504 FUER Y MIN envolvente (ELU)(total	2.94	2.29	5.20
505 MOME Z MAX envolvente (ELU)(total	7.55	-3.14	1.11
506 MOME Z MIN envolvente (ELU)(total	10.72	-17.21	16.16
511 FUER X MAX envolvente (ELU)(total	0.73	-12.15	15.20
512 FUER X MIN envolvente (ELU)(total	16.50	-6.26	2.85
513 FUER Y MAX envolvente (ELU)(total	11.16	-17.51	16.11
514 FUER Y MIN envolvente (ELU)(total	3.06	2.93	5.95
515 MOME Z MAX envolvente (ELU)(total	7.64	-2.33	1.06
516 MOME Z MIN envolvente (ELU)(total	10.72	-17.21	16.16

COMPROBACION DE FISURACION SEGUN NORMA EHE
==========

calculo de incremento de tensiones SANTA COLOMA (voladizo)
==========

Exposicion: IIa
k1 = 0.125
k2 = 0.500

fck = 50.00 MPa
fctm = 4.07 MPa
Ec = 32902. MPa

recubrimiento =0.050 m
recub. minimo =0.025 m
separacion =0.200 m
diametro = 20. mm
Es = 200000. MPa

datos de armaduras:	ordenada (m)	area (m2)
	0.050	0.000565
	0.420	0.002073

Ac,ef = 0.1175 m2
h(Ac,ef) = 0.117 m
b(Ac,ef) = 1.000 m
As = 0.002073 m2

definicion de la seccion:	y (m)	anchura (m)
	0.000	1.000
	0.470	1.000

area = 0.470 m2
inercia = 0.0086515 m4
yg = 0.235 m

HIPOTESIS 1

momento = -19.76 mT
axil = 0.00 T

momento de inercia de la seccion fisurada = 0.0016207 m4
momento de inercia equivalente = 0.0048817 m4
(calculados con axil proporcional al momento)
tension maxima en el hormigon = 10.72 MPa
deformaciones extremas (superior e inferior)
0.001380 -0.000326

deformacion media de las armaduras =0.000840
tension en las armaduras = 239.70 MPa
tension en las armaduras al fisurarse el hormigon= 185.50 MPa
separacion media de fisuras = 0.1967 m

anchura caracteristica de las fisuras = 0.281 mm
anchura admisible de las fisuras = 0.300 mm

la anchura de las fisuras es aceptable

HIPOTESIS 2

momento = -8.81 mT
axil = 0.00 T

momento de inercia de la seccion fisurada = 0.0016207 m4
momento de inercia equivalente = 0.0086515 m4
(calculados con axil proporcional al momento)
tension maxima en el hormigon = 4.78 MPa
deformaciones extremas (superior e inferior)
0.000615 -0.000145

deformacion media de las armaduras =0.000214
tension en las armaduras = 106.77 MPa
tension en las armaduras al fisurarse el hormigon= 185.50 MPa
separacion media de fisuras = 0.1967 m

anchura caracteristica de las fisuras = 0.071 mm
anchura admisible de las fisuras = 0.300 mm

la anchura de las fisuras es aceptable

HIPOTESIS 3

momento = -10.95 mT
axil = 0.00 T

momento de inercia de la seccion fisurada = 0.0016207 m4
momento de inercia equivalente = 0.0086515 m4
(calculados con axil proporcional al momento)
tension maxima en el hormigon = 5.94 MPa
deformaciones extremas (superior e inferior)
0.000764 -0.000180

deformacion media de las armaduras =0.000265
tension en las armaduras = 132.75 MPa
tension en las armaduras al fisurarse el hormigon= 185.50 MPa
separacion media de fisuras = 0.1967 m

anchura caracteristica de las fisuras = 0.089 mm
anchura admisible de las fisuras = 0.300 mm

la anchura de las fisuras es aceptable

COMPROBACION DE FISURACION SEGUN NORMA EHE
==========

calculo de incremento de tensiones SANTA COLOMA (arranque losa central)
==========

Exposicion: IIa
k1 = 0.125
k2 = 0.500

fck = 50.00 MPa
fctm = 4.07 MPa
Ec = 32902. MPa

recubrimiento =0.050 m
recub. minimo =0.025 m
separacion =0.200 m
diametro = 20. mm
Es = 200000. MPa

datos de armaduras:	ordenada (m)	area (m2)
	0.050	0.001005
	0.450	0.003577

Ac,ef = 0.1250 m2
h(Ac,ef) = 0.125 m
b(Ac,ef) = 1.000 m
As = 0.003577 m2

definicion de la seccion:	y (m)	anchura (m)
	0.000	1.000
	0.500	1.000

area = 0.500 m2
inercia = 0.0104176 m4
yg = 0.250 m

HIPOTESIS 1

momento = -33.47 mT
axil = 0.00 T

momento de inercia de la seccion fisurada = 0.0029723 m4
momento de inercia equivalente = 0.0040028 m4
(calculados con axil proporcional al momento)
tension maxima en el hormigon = 12.90 MPa
deformaciones extremas (superior e inferior)
0.001284 -0.000392

deformacion media de las armaduras =0.000967
tension en las armaduras = 223.33 MPa
tension en las armaduras al fisurarse el hormigon= 115.46 MPa
separacion media de fisuras = 0.1749 m

anchura caracteristica de las fisuras = 0.288 mm
anchura admisible de las fisuras = 0.300 mm

la anchura de las fisuras es aceptable

HIPOTESIS 2

momento = -5.43 mT
axil = 0.00 T

momento de inercia de la seccion fisurada = 0.0029723 m4
momento de inercia equivalente = 0.0104176 m4
(calculados con axil proporcional al momento)
tension maxima en el hormigon = 2.09 MPa
deformaciones extremas (superior e inferior)
0.000208 -0.000064

deformacion media de las armaduras =0.000072
tension en las armaduras = 36.15 MPa
tension en las armaduras al fisurarse el hormigon= 115.46 MPa
separacion media de fisuras = 0.1749 m

anchura caracteristica de las fisuras = 0.022 mm
anchura admisible de las fisuras = 0.300 mm

la anchura de las fisuras es aceptable

HIPOTESIS 3

momento = -28.44 mT
axil = 0.00 T

momento de inercia de la seccion fisurada = 0.0029723 m4
momento de inercia equivalente = 0.0046519 m4
(calculados con axil proporcional al momento)
tension maxima en el hormigon = 10.96 MPa
deformaciones extremas (superior e inferior)
0.001091 -0.000333

deformacion media de las armaduras =0.000773
tension en las armaduras = 189.74 MPa
tension en las armaduras al fisurarse el hormigon= 115.46 MPa
separacion media de fisuras = 0.1749 m

anchura caracteristica de las fisuras = 0.230 mm
anchura admisible de las fisuras = 0.300 mm

la anchura de las fisuras es aceptable

COMPROBACION DE FISURACION SEGUN NORMA EHE
==========

calculo de incremento de tensiones SANTA COLOMA (cdvano losa superior)
==========

Exposicion: IIa
k1 = 0.125
k2 = 0.500

fck = 50.00 MPa
fctm = 4.07 MPa
Ec = 32902. MPa

recubrimiento =0.050 m
recub. minimo =0.025 m
separacion =0.200 m
diametro = 20. mm
Es = 200000. MPa

datos de armaduras:	ordenada (m)	area (m2)
	0.050	0.002295
	0.300	0.000100

Ac,ef = 0.0875 m2
h(Ac,ef) = 0.087 m
b(Ac,ef) = 1.000 m
As = 0.002295 m2

definicion de la seccion:	y (m)	anchura (m)
	0.000	1.000
	0.350	1.000

area = 0.350 m2
inercia = 0.0035728 m4
yg = 0.175 m

HIPOTESIS 1

momento = 13.59 mT
axil = 0.00 T

momento de inercia de la seccion fisurada = 0.0008461 m4
momento de inercia equivalente = 0.0015092 m4
(calculados con axil proporcional al momento)
tension maxima en el hormigon = 12.33 MPa
deformaciones extremas (superior e inferior)
-0.000375 0.001298

deformacion media de las armaduras =0.000853
tension en las armaduras = 211.81 MPa
tension en las armaduras al fisurarse el hormigon= 132.15 MPa
separacion media de fisuras = 0.1781 m

anchura caracteristica de las fisuras = 0.258 mm
anchura admisible de las fisuras = 0.300 mm

la anchura de las fisuras es aceptable

HIPOTESIS 2

momento = 2.01 mT
axil = 0.00 T

momento de inercia de la seccion fisurada = 0.0008461 m4
momento de inercia equivalente = 0.0035728 m4
(calculados con axil proporcional al momento)
tension maxima en el hormigon = 1.82 MPa
deformaciones extremas (superior e inferior)
-0.000055 0.000191

deformacion media de las armaduras =0.000062
tension en las armaduras = 31.21 MPa
tension en las armaduras al fisurarse el hormigon= 132.15 MPa
separacion media de fisuras = 0.1781 m

anchura caracteristica de las fisuras = 0.019 mm
anchura admisible de las fisuras = 0.300 mm

la anchura de las fisuras es aceptable

HIPOTESIS 3

momento = 11.58 mT
axil = 0.00 T

momento de inercia de la seccion fisurada = 0.0008461 m4
momento de inercia equivalente = 0.0019178 m4
(calculados con axil proporcional al momento)
tension maxima en el hormigon = 10.51 MPa
deformaciones extremas (superior e inferior)
-0.000319 0.001106

deformacion media de las armaduras =0.000660
tension en las armaduras = 180.45 MPa
tension en las armaduras al fisurarse el hormigon= 132.15 MPa
separacion media de fisuras = 0.1781 m

anchura caracteristica de las fisuras = 0.200 mm
anchura admisible de las fisuras = 0.300 mm

la anchura de las fisuras es aceptable

COMPROBACIÓN A FATIGA DE SECCIÓN TRANSVERSAL (CONT)

Comprobación a fatiga del hormigón

Hormigón comprimido

$$\frac{\sigma_{c,máx}}{f_{cd}} \leq 0'5 + 0'45 \qquad \frac{\sigma_{cmín}}{f_{cd}} \leq 0'9$$

Si se cumple esta condición no será necesario estudio más detallado.

Si $\sigma_{c,mín} < 0$, entonces $\frac{\sigma_{cmáx}}{f_{cd}} \leq 0'5$ (tracción)

$$f_{cd} = \frac{500}{1'5}\ kp/cm^2 = 33'33\ kp/cm^2$$

Comprobación a fatiga del acero de armar

- Resistencia admitida si $\Delta\sigma_s < 70$ MPa (No se cumple),
- Resistencia obtenida a fatiga si se verifica

$$\gamma_F \cdot \gamma_{sd} \cdot \Delta\sigma_{s,equ} \leq \frac{\Delta\sigma_{Rsk}(N^*)}{\gamma_{s,fat}}$$

Tabla 4.117 ec-2. Curva S-N.

para barras rectas $N^* = 10^6$; $k_1 = 5$, $k_2 = 9$

$\Delta\sigma_{Rsk}(10^6) = 195\ N/mm^2$

$\Delta\sigma_{Rsk}(2\times10^6) = 180\ N/mm^2$

$\gamma_F = 1$, $\gamma_{sd} = 1$, $\gamma_{s,fat} = 1'15$

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OFICINA DE PROYECTOS

HOJA ____ DE ____

PROYECTO ____ FECHA ____

Según Anejo 10G.3 (puente de ferrocarril)

$$\Delta\sigma_{s,equ} = \lambda_s \cdot \Delta\sigma_{s,71}$$

$\Delta\sigma_{s,71}$ → Modelo de cargas considerado, bajo combinación frecuente y x coef. dinámico

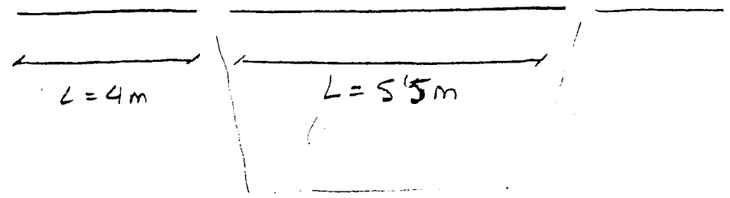
λ_s coeficiente corrector

$$\lambda_s = \lambda_{s,1} \cdot \lambda_{s,2} \cdot \lambda_{s,3} \cdot \lambda_{s,4}$$

$\lambda_{s,1}$: función de luz y comparición de tráfico

Tráfico pesado, Leiva S-N $k_1=5$, $k_2=9$, $N^*=10^6$

Luz



→ Sección voladizo, supuesta viga continua de $L^*=2L$,

$L^*=8m$, sección de apoyo intermedio.

$\lambda_{s,1}$ interpolación $\begin{bmatrix} L\leq 2m & \lambda=0'85 \\ L\geq 20m & \lambda=0'75 \end{bmatrix}$ $\lambda_{s,1}=0'82$

→ Sección arranque luz central, apoyo intermedio viga continua

$L=5'5m$.

$\lambda_{s,1}$ interpolación $\begin{matrix} L\leq 2m & \lambda=0'85 \\ L=\geq 20m & \lambda=0'75 \end{matrix}$ $\lambda_{s,1}=0'83$.

→ Sección centro luz superior, ⇒ sec. central vano intermedio de viga continua

$\lambda_{s,1}$ interpolación $\begin{bmatrix} L\leq 2m & \lambda=1'05 \\ L\geq 20m & \lambda=0'55 \end{bmatrix}$ $\lambda_{s,1}=0'95$.

$\lambda_{s,2}$, influencia del volumen anual de tráfico

$$\lambda_{s,2}=\sqrt[k_2]{\frac{Vol}{25\cdot 10^6}}=1.$$

$\lambda_{s,3}$ influencia de la vida de servicio

$$\lambda_{s,3}=\sqrt[k_2]{\frac{Naños}{100}}=1.$$

$$\lambda_{s,4}=\sqrt[k_1]{n+(1-n)\cdot S_1^{k_2}+(1-n)\cdot S_2^{k_2}}$$

Se toma

Resultados:

Voladizo: $\lambda_s = 0'82$

Hormigón: $\sigma_{c\,máx} = 10'72$ MPa

$\sigma_{c\,mín} = 4'78$ MPa.

$\frac{4'78}{50} \times 1'5 \leq 0'5 + 0'45 \frac{10'72}{50} \times 1'5 \leq 0'9 \Rightarrow 0'143 \leq 0'64 \leq 0'9$

$\frac{10'72}{50} \times 1'5 = 0'32 \leq 0'5$ VALE

Acero: $\Delta\sigma_s = 132'75$ MPa

$\Delta\sigma_{ef} = 0'82 \times 132'75 = 108'9 < \frac{195}{1'15} = 170$ MPa

Vale.

Arranque lado central $\lambda_s = 0'83$

Hormigón $\sigma_{c\,máx} = 12'90$ MPa

$\sigma_{c\,mín} = 2'09$ MPa

$\frac{2'09}{50} \times 1'5 \leq 0'5 + 0'45 \frac{12'90}{50} \times 1'5 \leq 0'9 \Rightarrow 0'06 \leq 0'67 \leq 0'9$

$\frac{12'90}{50} \times 1'5 \leq 0'5$. MALE

Acero $\Delta\sigma_s = 189'74$ MPa

$\Delta\sigma_{ef} = 0'83 \times 189'74 = 157'5 < \frac{195}{1'15} = 170$ MPa

Vale.

Cd vano losa superior. $\lambda_s = 0'95$

Hormigón $\sigma_{c\,máx} = 12'33$ MPa

$\sigma_{c\,mín} = 1'82$ MPa

$\frac{1'82}{50/1'5} \leq 0'5 + 0'45 \frac{12'33}{50/1'5} \leq 0'9$.

$0'055 \leq 0'66 \leq 0'9$; $\frac{12'33}{50/1'5} = 0'37 \leq 0'5$

Acero $\Delta\sigma_s = 180'45$ MPa

$\Delta\sigma_{ef} = 0'95 \times 180'45 = 171'42 < \frac{195}{1'15} = 170$.

INTERACCIÓN VÍA-TABLERO

3. CÁLCULO DE LOS APARATOS DE APOYO Y JUNTAS

CÁLCULO DE APARATOS DE APOYO

APOYOS VIADUCTO EL PAPIOL

	ESFUERZOS: CARGA MAXIMA (T)					DESP. MAX	
	UNIDIRECCIONAL		BIDIRECCIONAL			mm	mm
	VERTICAL		VERTICAL		HORIZONTAL	D+	D-
	MAXIMA	MINIMA	MAXIMA	MINIMA	MAXIMA		
ESTRIBO 1	697	238	702	222	27	96	-522
PILA 1	1986	719	2014	744	75	88	-481
PILA 2	2095	741	2152	793	86	78	-426
PILA 3	2107	730	2145	781	80	68	-371
PILA 4	2117	707	2178	771	87	58	-316
PILA 5	2110	728	2139	745	87	48	-261
PILA 6	2112	769	2087	744	89	38	-206
PILA 7	2116	790	2051	742	81	28	-151
PILA 8	2234	768	2100	682	94	18	-96
PILA 9	2009	750	1973	701	69	8	-41
ESTRIBO 2	811	241	767	253	30	0	0

Se disponen los dos apoyos de cada pila y de su simétrica de igual carga máxima siguiendo un criterio de prudencia ante futuros posibles cambios de trazado de vía admitidos por el viaducto, ya que la diferencia entre las cargas depende de la excentricidad de la vía.

APOYOS DISPUESTOS

	CARGA MAXIMA (T)		DESP MAX (mm)	
	VERTICAL	HORIZONTAL	D+	D-
ESTRIBO 1	900	40	100	-530
PILA 1	2200	80	90	-490
PILA 2	2400	100	80	-430
PILA 3	2400	100	70	-380
PILA 4	2400	100	60	-320
PILA 5	2400	100	50	-270
PILA 6	2400	100	40	-210
PILA 7	2400	100	30	-160
PILA 8	2400	100	20	-100
PILA 9	2200	80	10	-50
ESTRIBO 2	900	40	0	0

JUNTA E-2

Según el momento de terminación de las obras se dispondrá una junta en el estribo E-2 que permita un movimiento de :

ENERO	ABRIL	JUNIO	OCTUBRE
620 mm	530 mm	430 mm	530 mm

DESPLAZAMIENTOS MAXIMOS EN JUNTAS Y APOYOS

APOYO		NUDO	DIST. A FIJO	DESP. X TEMP.	FLU+RETR 0.000748	TOTAL ACORT.(m)	TOTAL ALARG.(m)
E	1	3	570	0.0957	0.426	0.522	0.096
P	1	18	525	0.0882	0.393	0.481	0.088
P	2	37	465	0.0781	0.348	0.426	0.078
P	3	57	405	0.0680	0.303	0.371	0.068
P	4	77	345	0.0579	0.258	0.316	0.058
P	5	97	285	0.0479	0.213	0.261	0.048
P	6	117	225	0.0378	0.168	0.206	0.038
P	7	137	165	0.0277	0.123	0.151	0.028
P	8	157	105	0.0176	0.079	0.096	0.018
P	9	176	45	0.0076	0.034	0.041	0.008
E	2	192	0	0.0000	0.000	0.000	0.000

JUNTA E-2 530 mm

- Nudos de tablero

3 18 37 57 77 97 117 137 157 176 192

Hipótesis de fluencia + retracción: $\varepsilon = 745 \cdot 10^{-6}$

Temperatura (tipo 7 y 8)

- Apoyos

Barras de apoyo

Fijo	182	184	186	188	190	192	194	196	198	200	202
Libre	183	185	187	189	191	193	195	197	199	201	203

Hipótesis envolvente ELS

$F_{x\,máx} = 201$

$F_{x\,mín} = 202$

$F_{z\,máx} = 205$

$F_{z\,mín} = 206$.

ESTRIBO 1 APOYO GUIADO

Esfuerzos de la barra 182 extremo dorsal

HIP.	FX	FY	FZ	MX	MY	MZ
201 FUER X MAX envolvente (ELS)	701.66	0.00	-3.99	0.00	0.00	0.00
202 FUER X MIN envolvente (ELS)	221.99	0.00	2.60	0.00	0.00	0.00
205 FUER Z MAX envolvente (ELS)	395.73	0.00	24.31	0.00	0.00	0.00
206 FUER Z MIN envolvente (ELS)	304.15	0.00	-27.35	0.00	0.00	0.00

ESTRIBO 1 APOYO LIBRE

Esfuerzos de la barra 183 extremo dorsal

HIP.	FX	FY	FZ	MX	MY	MZ
201 FUER X MAX envolvente (ELS)	696.50	0.00	0.00	0.00	0.00	0.00
202 FUER X MIN envolvente (ELS)	238.47	0.00	0.00	0.00	0.00	0.00
205 FUER Z MAX envolvente (ELS)	355.17	0.00	0.00	0.00	0.00	0.00
206 FUER Z MIN envolvente (ELS)	355.17	0.00	0.00	0.00	0.00	0.00

PILA 1 APOYO GUIADO

Esfuerzos de la barra 184 extremo dorsal

HIP.	FX	FY	FZ	MX	MY	MZ
201 FUER X MAX envolvente (ELS)	2014.12	0.00	-11.18	0.00	0.00	0.00
202 FUER X MIN envolvente (ELS)	744.35	0.00	-15.16	0.00	0.00	0.00
205 FUER Z MAX envolvente (ELS)	1317.49	0.00	71.68	0.00	0.00	0.00
206 FUER Z MIN envolvente (ELS)	1457.29	0.00	-75.49	0.00	0.00	0.00

PILA 1 APOYO LIBRE

Esfuerzos de la barra 185 extremo dorsal

HIP.	FX	FY	FZ	MX	MY	MZ
201 FUER X MAX envolvente (ELS)	1986.48	0.00	0.00	0.00	0.00	0.00
202 FUER X MIN envolvente (ELS)	719.22	0.00	0.00	0.00	0.00	0.00
205 FUER Z MAX envolvente (ELS)	1084.57	0.00	0.00	0.00	0.00	0.00
206 FUER Z MIN envolvente (ELS)	1084.57	0.00	0.00	0.00	0.00	0.00

PILA 2 APOYO GUIADO

Esfuerzos de la barra 186 extremo dorsal

HIP.	FX	FY	FZ	MX	MY	MZ
201 FUER X MAX envolvente (ELS)	2151.56	0.00	0.78	0.00	0.00	0.00
202 FUER X MIN envolvente (ELS)	792.96	0.00	1.31	0.00	0.00	0.00
205 FUER Z MAX envolvente (ELS)	1347.79	0.00	78.70	0.00	0.00	0.00
206 FUER Z MIN envolvente (ELS)	1581.40	0.00	-85.91	0.00	0.00	0.00

PILA 2 APOYO LIBRE

Esfuerzos de la barra 187 extremo dorsal

HIP.	FX	FY	FZ	MX	MY	MZ
201 FUER X MAX envolvente (ELS)	2094.76	0.00	0.00	0.00	0.00	0.00
202 FUER X MIN envolvente (ELS)	740.65	0.00	0.00	0.00	0.00	0.00
205 FUER Z MAX envolvente (ELS)	1063.42	0.00	0.00	0.00	0.00	0.00
206 FUER Z MIN envolvente (ELS)	1063.42	0.00	0.00	0.00	0.00	0.00

PILA 3 APOYO GUIADO

Esfuerzos de la barra 188 extremo dorsal

HIP.	FX	FY	FZ	MX	MY	MZ
201 FUER X MAX envolvente (ELS)	2144.55	0.00	-10.88	0.00	0.00	0.00
202 FUER X MIN envolvente (ELS)	781.28	0.00	11.50	0.00	0.00	0.00
205 FUER Z MAX envolvente (ELS)	1061.29	0.00	78.12	0.00	0.00	0.00
206 FUER Z MIN envolvente (ELS)	1739.03	0.00	-79.59	0.00	0.00	0.00

PILA 3 APOYO LIBRE

Esfuerzos de la barra 189 extremo dorsal

HIP.	FX	FY	FZ	MX	MY	MZ
201 FUER X MAX envolvente (ELS)	2106.97	0.00	0.00	0.00	0.00	0.00
202 FUER X MIN envolvente (ELS)	730.36	0.00	0.00	0.00	0.00	0.00
205 FUER Z MAX envolvente (ELS)	1024.95	0.00	0.00	0.00	0.00	0.00
206 FUER Z MIN envolvente (ELS)	1024.95	0.00	0.00	0.00	0.00	0.00

PILA 4 APOYO GUIADO

Esfuerzos de la barra 190 extremo dorsal

HIP.	FX	FY	FZ	MX	MY	MZ
201 FUER X MAX envolvente (ELS)	2178.12	0.00	5.20	0.00	0.00	0.00
202 FUER X MIN envolvente (ELS)	771.03	0.00	-2.02	0.00	0.00	0.00
205 FUER Z MAX envolvente (ELS)	1077.15	0.00	80.88	0.00	0.00	0.00
206 FUER Z MIN envolvente (ELS)	1747.39	0.00	-86.81	0.00	0.00	0.00

proc Viaducto Papiol

PILA 4 APOYO LIBRE

Esfuerzos de la barra 191 extremo dorsal

HIP.	FX	FY	FZ	MX	MY	MZ
201 FUER X MAX envolvente (ELS)	2116.99	0.00	0.00	0.00	0.00	0.00
202 FUER X MIN envolvente (ELS)	707.24	0.00	0.00	0.00	0.00	0.00
205 FUER Z MAX envolvente (ELS)	1025.25	0.00	0.00	0.00	0.00	0.00
206 FUER Z MIN envolvente (ELS)	1025.25	0.00	0.00	0.00	0.00	0.00

proc Viaducto Papiol

PILA 5 APOYO GUIADO

Esfuerzos de la barra 192 extremo dorsal

HIP.	FX	FY	FZ	MX	MY	MZ
201 FUER X MAX envolvente (ELS)	2139.09	0.00	4.29	0.00	0.00	0.00
202 FUER X MIN envolvente (ELS)	744.67	0.00	-1.03	0.00	0.00	0.00
205 FUER Z MAX envolvente (ELS)	1062.77	0.00	82.80	0.00	0.00	0.00
206 FUER Z MIN envolvente (ELS)	1734.90	0.00	-87.49	0.00	0.00	0.00

proc Viaducto Papiol

PILA 5 APOYO LIBRE

Esfuerzos de la barra 193 extremo dorsal

HIP.	FX	FY	FZ	MX	MY	MZ
201 FUER X MAX envolvente (ELS)	2109.54	0.00	0.00	0.00	0.00	0.00
202 FUER X MIN envolvente (ELS)	728.46	0.00	0.00	0.00	0.00	0.00
205 FUER Z MAX envolvente (ELS)	1071.25	0.00	0.00	0.00	0.00	0.00
206 FUER Z MIN envolvente (ELS)	1071.25	0.00	0.00	0.00	0.00	0.00

proc Viaducto Papiol

PILA 6 APOYO GUIADO

Esfuerzos de la barra 194 extremo dorsal

HIP.	FX	FY	FZ	MX	MY	MZ
201 FUER X MAX envolvente (ELS)	2087.14	0.00	-26.82	0.00	0.00	0.00
202 FUER X MIN envolvente (ELS)	744.22	0.00	-3.61	0.00	0.00	0.00
205 FUER Z MAX envolvente (ELS)	1033.01	0.00	82.32	0.00	0.00	0.00
206 FUER Z MIN envolvente (ELS)	1733.23	0.00	-89.28	0.00	0.00	0.00

proc Viaducto Papiol

PILA 6 APOYO LIBRE

Esfuerzos de la barra 195 extremo dorsal

HIP.	FX	FY	FZ	MX	MY	MZ
201 FUER X MAX envolvente (ELS)	2112.40	0.00	0.00	0.00	0.00	0.00
202 FUER X MIN envolvente (ELS)	769.11	0.00	0.00	0.00	0.00	0.00
205 FUER Z MAX envolvente (ELS)	1151.56	0.00	0.00	0.00	0.00	0.00
206 FUER Z MIN envolvente (ELS)	1151.56	0.00	0.00	0.00	0.00	0.00

proc Viaducto Papiol

PILA 7 APOYO GUIADO

Esfuerzos de la barra 196 extremo dorsal

HIP.	FX	FY	FZ	MX	MY	MZ
201 FUER X MAX envolvente (ELS)	2051.28	0.00	-18.15	0.00	0.00	0.00
202 FUER X MIN envolvente (ELS)	741.93	0.00	15.81	0.00	0.00	0.00
205 FUER Z MAX envolvente (ELS)	1135.83	0.00	77.53	0.00	0.00	0.00
206 FUER Z MIN envolvente (ELS)	1572.62	0.00	-80.64	0.00	0.00	0.00

proc Viaducto Papiol

PILA 7 APOYO LIBRE

Esfuerzos de la barra 197 extremo dorsal

HIP.	FX	FY	FZ	MX	MY	MZ
201 FUER X MAX envolvente (ELS)	2115.97	0.00	0.00	0.00	0.00	0.00
202 FUER X MIN envolvente (ELS)	789.92	0.00	0.00	0.00	0.00	0.00
205 FUER Z MAX envolvente (ELS)	1225.01	0.00	0.00	0.00	0.00	0.00
206 FUER Z MIN envolvente (ELS)	1225.01	0.00	0.00	0.00	0.00	0.00

PILA 8 APOYO GUIADO

Esfuerzos de la barra 198 extremo dorsal

HIP.	FX	FY	FZ	MX	MY	MZ
201 FUER X MAX envolvente (ELS)	2100.14	0.00	-17.64	0.00	0.00	0.00
202 FUER X MIN envolvente (ELS)	682.23	0.00	-73.05	0.00	0.00	0.00
205 FUER Z MAX envolvente (ELS)	1153.91	0.00	82.16	0.00	0.00	0.00
206 FUER Z MIN envolvente (ELS)	1694.86	0.00	-94.47	0.00	0.00	0.00

PILA 8 APOYO LIBRE

Esfuerzos de la barra 199 extremo dorsal

HIP.	FX	FY	FZ	MX	MY	MZ
201 FUER X MAX envolvente (ELS)	2234.04	0.00	0.00	0.00	0.00	0.00
202 FUER X MIN envolvente (ELS)	768.24	0.00	0.00	0.00	0.00	0.00
205 FUER Z MAX envolvente (ELS)	1286.52	0.00	0.00	0.00	0.00	0.00
206 FUER Z MIN envolvente (ELS)	1286.52	0.00	0.00	0.00	0.00	0.00

PILA 9 APOYO GUIADO

Esfuerzos de la barra 200 extremo dorsal

HIP.	FX	FY	FZ	MX	MY	MZ
201 FUER X MAX envolvente (ELS)	1972.73	0.00	-19.78	0.00	0.00	0.00
202 FUER X MIN envolvente (ELS)	701.15	0.00	14.66	0.00	0.00	0.00
205 FUER Z MAX envolvente (ELS)	1124.89	0.00	63.20	0.00	0.00	0.00
206 FUER Z MIN envolvente (ELS)	1623.91	0.00	-69.13	0.00	0.00	0.00

PILA 9 APOYO LIBRE

Esfuerzos de la barra 201 extremo dorsal

HIP.	FX	FY	FZ	MX	MY	MZ
201 FUER X MAX envolvente (ELS)	2009.04	0.00	0.00	0.00	0.00	0.00
202 FUER X MIN envolvente (ELS)	750.06	0.00	0.00	0.00	0.00	0.00
205 FUER Z MAX envolvente (ELS)	1173.85	0.00	0.00	0.00	0.00	0.00
206 FUER Z MIN envolvente (ELS)	1173.85	0.00	0.00	0.00	0.00	0.00

ESTRIBO 2 APOYO GUIADO

Esfuerzos de la barra 202 extremo dorsal

HIP.	FX	FY	FZ	MX	MY	MZ
201 FUER X MAX envolvente (ELS)	766.77	741.99	-4.84	0.00	0.00	0.00
202 FUER X MIN envolvente (ELS)	253.14	-741.99	-6.56	0.00	0.00	0.00
205 FUER Z MAX envolvente (ELS)	492.37	-694.30	28.86	0.00	0.00	0.00
206 FUER Z MIN envolvente (ELS)	522.30	704.49	-29.76	0.00	0.00	0.00

ESTRIBO 2 APOYO LIBRE

Esfuerzos de la barra 203 extremo dorsal

HIP.	FX	FY	FZ	MX	MY	MZ
201 FUER X MAX envolvente (ELS)	810.65	742.02	0.00	0.00	0.00	0.00
202 FUER X MIN envolvente (ELS)	241.00	-742.02	0.00	0.00	0.00	0.00
205 FUER Z MAX envolvente (ELS)	404.26	0.00	0.00	0.00	0.00	0.00
206 FUER Z MIN envolvente (ELS)	404.26	0.00	0.00	0.00	0.00	0.00

ESTUDIO DE MOVIMIENTOS EN JUNTA DE DILATACIÓN

CARLOS FERNANDEZ CASADO, S.L.
OFICINA DE PROYECTOS

PROYECTO_____

HOJA____ DE____
FECHA_____

Hipótesis de Cálculo

- Conforme a la petición de los resultados se han realizado 4 supuestos de fundaciones de las obras:
  Meses: Enero
  Abril
  Julio
  octubre
- Por sencillez en la obtención de los resultados y su interpretación se han escogido los meses de enero y julio como extremos: Enero y Julio.
- En los mismos intervalos se ha obtenido a partir de los resultados criterios
- Se han relacionado las hipótesis por la diferencia en la temperatura y los días desde la fundación a las obs. Si se denomina T_m la temperatura media del hipótesis resultó

Hipótesis	Combinación	días	ΔT
1	Enero. Enero	0	0_a
2	Enero Julio	180	$-T_m/2$
3	Abril. Enero	270	T_m
4	Abril Julio	90	$-T_m$

CARLOS FERNANDEZ CASADO, S.L.
OFICINA DE PROYECTOS

PROYECTO_____

HOJA____ DE____
FECHA_____

Hipótesis	Combinación	días	ΔT
5	Julio. Enero	180	$2 \times T_m$
6	Julio. Julio	0	0
7	Octub. Enero	90	T_m
8	Octub Julio	270	$-T_m$

A efectos de movimientos finales las hipótesis 1-6 y 3-7 4-8 coinciden.

CARLOS FERNANDEZ CASADO, S.L.
OFICINA DE PROYECTOS

PROYECTO_____ HOJA____ DE____
FECHA_____

Nº total de dovelas 29 $j_4 = 29/2 \times 7 = 102$ días.

$T^a = 16'80°C$.

i	ji	ΔSi (T/m²)
1	3	243
2	10	243
3	17	243.
4	102	570

Se considerará que la junta se instala 30 días después de la puesta en carga del pretensado de servicio.

$t_j = 135$ días

Características de la sección

Atmósfera media

Humedad relativa

Espesores ficticios (para cálculo de def fluencia y retr.)

$e = 2'500 m = 2500 mm$.

$u = 50'934 m$ $A = 10'006 m^2$

CARLOS FERNANDEZ CASADO, S.L.
OFICINA DE PROYECTOS

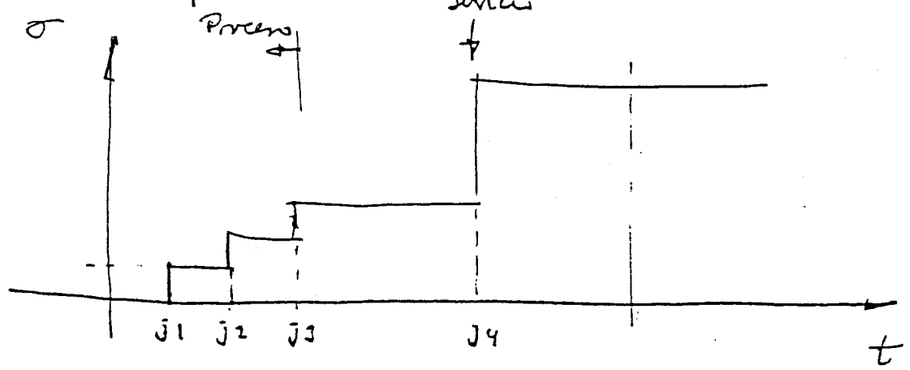
PROYECTO _____ HOJA ____ DE ____
FECHA _____

MOVIMIENTOS DIFERENCIALES EN LAS DOVELAS

ETAPAS DE PUESTA EN CARGA

Las etapas de puesta en carga a efectos a flecha diferida a fluencia significativa a las deformaciones de fluencia comprenden a la puesta en carga de los cables de pretensado:

- Cables de proceso: la puesta en carga en 3 etapas comprendiendo - edades temprana del hormigón
- Cables de Sancis: la puesta en carga en una sola etapa



- A efectos de estructura de movimiento se considera el estado tensional de la dovela media
- Se considera un ciclo de construcción de dovela de 7 días.
- Se considera que los cables de sancis se tesan una vez construida todas las dovelas.

nº total de dovelas: 29 $j4 \equiv \frac{29 \times 7}{2} \equiv 102$ días (dovela media)

Las deformaciones tenidas tienen como de fluencia y retracción serán

$\varepsilon_t = \alpha \cdot \Delta T$ - Deformación térmica.

$\Delta\varepsilon_r(t) = \varepsilon_r(t) - \varepsilon_r(t_0)$ - " retracción

$\Delta\varepsilon_f(t) = \varepsilon_f(t) - \varepsilon_f(t_0)$ - " fluencia

$$\varepsilon_f(t) = \varphi(t, j_1) \cdot \frac{\sigma_1}{E_1} + \sum_{i=2}^{4} \varphi(t, j_i) \frac{\Delta\sigma_i}{E_i}$$

$E_1 \equiv E_2 \equiv E_3 \equiv E(28) = 30500000 \text{ Tn/m}^2$

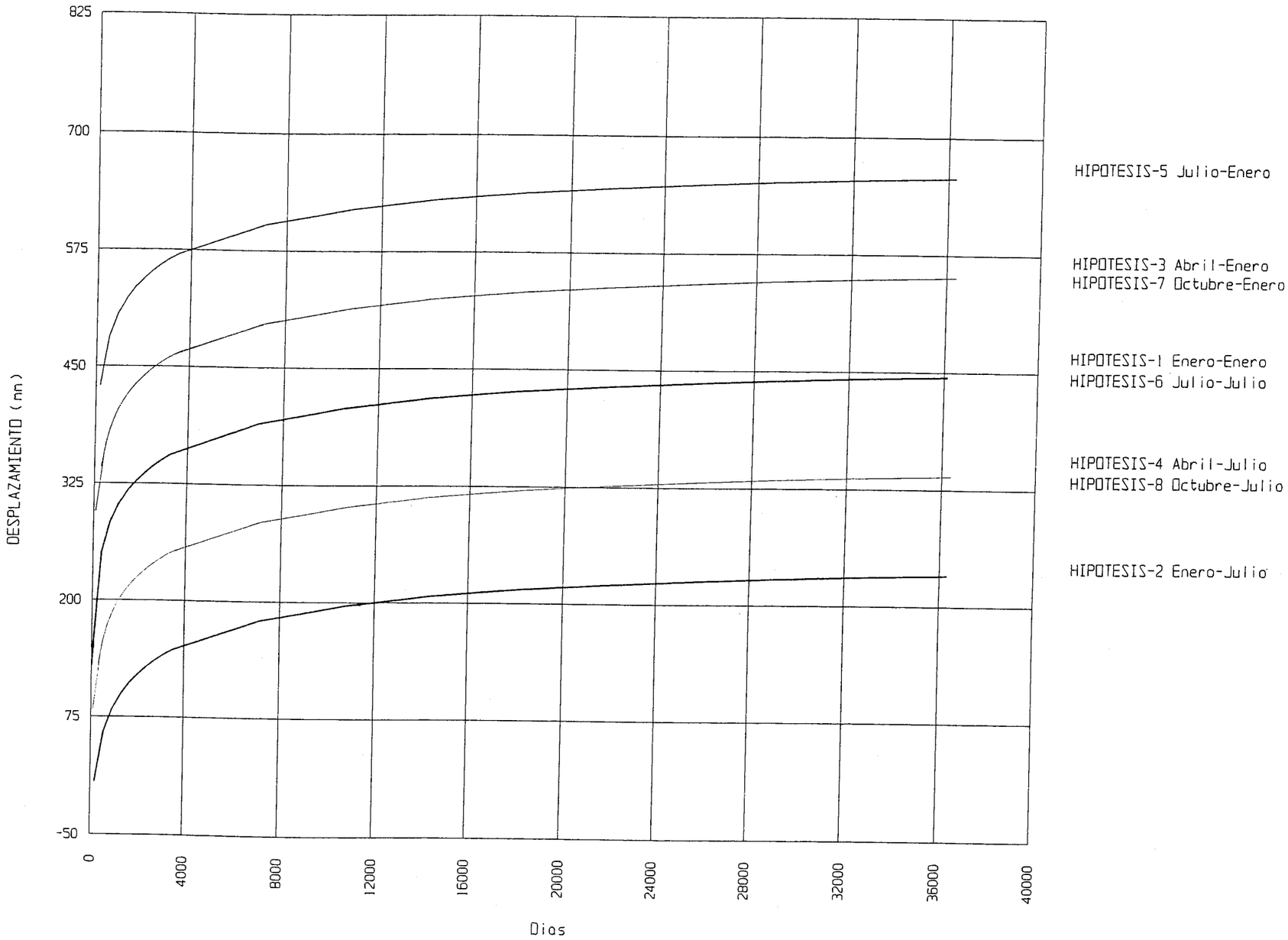
$E_4 = E(56) = 36773.70 \text{ Tn/m}^2$

```
#
# programa que evalua los movimientos longitudinales en la junta del
# estribo movil
#
BEGIN{
ivia=1
iop=1
#
fc=50.
hr=70
tf=135
if(ivia==1)
    {
     e=550.
     lt=570.
     tm=16.80
    }
for(ih=1;ih<9;ih++)
{
if(ih==1)
    {
    ept=0.
    t0=tf
    et="Enero-Enero"
    }
if(ih==2)
    {
    ept=-2*tm/100.
    t0=tf+180.
    et="Enero-Julio"
    }
if(ih==3)
    {
     ept=tm/100.
     t0=tf+270.
     et="Abril-Enero"
     }
 if(ih==4)
    {
    ept=-tm/100.
    t0=tf+90.
    et="Abril-Julio"
    }
 if(ih==5)
    {
    ept=2*tm/100.
    t0=tf+180.
    et="Julio-Enero"
    }
 if(ih==6)
    {
    ept=0.
    t0=tf
    et="Julio-Julio"
    }
if(ih==7)
    {
    ept=tm/100.
    t0=tf+90.
    et="Octubre-Enero"
    }
if(ih==8)
    {
   ept=-tm/100.
```

```
    t0=tf+270.
    et="Octubre-Julio"
    }
 if(iop==2)
    printf"dibu 1\n"
 printf"\f HIPOTESIS-%d %s\n\n",ih,et
 if(iop==1)
    {
    printf"   VIADUCTOS DE EL PAPIOL\n\n"
    printf"     Movimientos en junta E-1 (mm)\n"
    printf"       + apertura\n"
    printf"       - cierre  \n\n"
    printf" ANO     dias     Temp       Retr.       Flu.      Total\n\n"
    }
 ef2=ef(tf)*0.5
 ii=0.
 for (ia=1;ia<101;ia=ia+ii)
    {
    if(ia<100)
      ii=10
    if(ia<10)
      ii=1
    t=t0+(ia-1)*365.
    cor=er(t,tf,e,hr,fc)
    epr=-(er(t,tf,e,hr,fc))*1000.*lt
    et=ept*lt
    ef1=ef(t)
    epf=(ef1-ef2)*1000.*lt
    eto=et+epr+epf
    dl=eto
 if(iop==1)
    printf"%4d %8d %10.1f %10.1f %10.1f %10.1f\n",ia,t-tf,et,epr,epf,dl
 if(iop==2)
    {
    printf"%8d %10.1f \n",t-tf,dl
    }
    }
 }
 }
 function ef(t)
    {
    ec[1]=3050000.
    ec[2]=3050000.
    ec[3]=3050000.
    ec[4]=3677330.
    jj[1]=3.
    jj[2]=10.
    jj[3]=17.
    jj[4]=102.
    if(ivia==1)
      {
      s[1]=243.
      s[2]=243.
      s[3]=243.
      s[4]=570.
      }
      esum=0.
      for(i=1;i<5;i++)
        {
        fij=fi(t,jj[i],e,hr,fc)
        esum=esum+fij*s[i]/ec[i]
        }
     return esum
    }
```

```
#
# fluencia segun EHE
#
function fi(t,t0,e,hr,fc)
{
tt0=t-t0
if(tt0<0.)
  tt0=0.
bh=pot(0.012*hr,18.)
bh=bh*1.5*e +250.
if(bh>1500.)
  bh=1500.
x=tt0/(bh+tt0)
bc=pot(x,0.3)
bf=16.8/sqrt(fc+8.)
bt=0.1+pot(t0,0.2)
bt=1./bt
fhr=1.+(100-hr)/9.9/pot(e,1./3.)
f0=fhr*bf*bt
ft=f0*bc
return ft
}
#
#  retraccion segun EHE
#
function er(t,ts,e,hr,fc)
{
tt0=t-ts
bhr=-1.55*(1.-pot(hr/100.,3.))
den=0.035*e*e+tt0
bs=sqrt(tt0/den)
es=(570.-5.*fc)*1e-6
ecs0=es*bhr
ecs=ecs0*bs
return ecs
}
function pot(x,y)
  {
  if(x<1e-6)
     return 0.
  else
    return exp(y*log(x))
  }
```

VIADUCTOS DE EL PAPIOL. Movimientos en junta E-1



HIPOTESIS-1 Enero-Enero

VIADUCTOS DE EL PAPIOL

Movimientos en junta E-1 (mm)
+ apertura
- cierre

ANO	dias	Temp	Retr.	Flu.	Total
1	0	0.0	0.0	115.8	115.8
2	365	0.0	33.9	194.8	228.7
3	730	0.0	47.2	212.5	259.7
4	1095	0.0	56.9	220.7	277.6
5	1460	0.0	64.7	225.4	290.1
6	1825	0.0	71.2	228.5	299.7
7	2190	0.0	76.9	230.6	307.5
8	2555	0.0	81.9	232.2	314.1
9	2920	0.0	86.4	233.5	319.8
10	3285	0.0	90.4	234.5	324.9
20	6935	0.0	116.9	238.8	355.7
30	10585	0.0	131.3	240.3	371.6
40	14235	0.0	140.7	241.0	381.6
50	17885	0.0	147.2	241.4	388.6
60	21535	0.0	152.1	241.7	393.8
70	25185	0.0	155.9	241.9	397.7
80	28835	0.0	158.9	242.0	400.9
90	32485	0.0	161.3	242.2	403.5
100	36135	0.0	163.4	242.3	405.6

HIPOTESIS-2 Enero-Julio

VIADUCTOS DE EL PAPIOL

Movimientos en junta E-1 (mm)
+ apertura
- cierre

ANO	dias	Temp	Retr.	Flu.	Total
1	180	-191.5	24.0	174.0	6.5
2	545	-191.5	41.1	205.6	55.1
3	910	-191.5	52.3	217.2	77.9
4	1275	-191.5	60.9	223.3	92.7
5	1640	-191.5	68.0	227.1	103.6
6	2005	-191.5	74.1	229.6	112.2
7	2370	-191.5	79.4	231.5	119.4
8	2735	-191.5	84.2	232.9	125.5
9	3100	-191.5	88.4	234.0	130.9
10	3465	-191.5	92.2	234.9	135.6
20	7115	-191.5	117.8	238.9	165.2
30	10765	-191.5	131.9	240.3	180.7
40	14415	-191.5	141.0	241.0	190.5
50	18065	-191.5	147.5	241.4	197.4
60	21715	-191.5	152.3	241.7	202.5
70	25365	-191.5	156.0	241.9	206.4
80	29015	-191.5	159.0	242.0	209.5
90	32665	-191.5	161.4	242.2	212.1
100	36315	-191.5	163.4	242.3	214.2

HIPOTESIS-3 Abril-Enero

VIADUCTOS DE EL PAPIOL

Movimientos en junta E-1 (mm)
+ apertura
- cierre

ANO	dias	Temp	Retr.	Flu.	Total
1	270	95.8	29.3	186.0	311.1
2	635	95.8	44.2	209.3	349.3
3	1000	95.8	54.6	219.0	369.4
4	1365	95.8	62.8	224.4	382.9
5	1730	95.8	69.6	227.8	393.2
6	2095	95.8	75.5	230.1	401.4
7	2460	95.8	80.7	231.9	408.3
8	2825	95.8	85.2	233.2	414.2
9	3190	95.8	89.4	234.2	419.4
10	3555	95.8	93.1	235.1	424.0
20	7205	95.8	118.2	239.0	452.9
30	10855	95.8	132.2	240.3	468.3
40	14505	95.8	141.2	241.0	478.0
50	18155	95.8	147.6	241.4	484.8
60	21805	95.8	152.4	241.7	489.9
70	25455	95.8	156.1	241.9	493.8
80	29105	95.8	159.1	242.0	496.9
90	32755	95.8	161.5	242.2	499.4
100	36405	95.8	163.5	242.3	501.5

HIPOTESIS-4 Abril-Julio

VIADUCTOS DE EL PAPIOL

Movimientos en junta E-1 (mm)
+ apertura
- cierre

ANO	dias	Temp	Retr.	Flu.	Total
1	90	-95.8	17.1	154.8	76.1
2	455	-95.8	37.7	200.9	142.8
3	820	-95.8	49.8	215.1	169.1
4	1185	-95.8	58.9	222.1	185.3
5	1550	-95.8	66.4	226.3	196.9
6	1915	-95.8	72.7	229.1	206.0
7	2280	-95.8	78.2	231.1	213.5
8	2645	-95.8	83.0	232.6	219.9
9	3010	-95.8	87.4	233.7	225.4
10	3375	-95.8	91.3	234.7	230.2
20	7025	-95.8	117.3	238.9	260.4
30	10675	-95.8	131.6	240.3	276.1
40	14325	-95.8	140.9	241.0	286.1
50	17975	-95.8	147.4	241.4	293.0
60	21625	-95.8	152.2	241.7	298.1
70	25275	-95.8	155.9	241.9	302.1
80	28925	-95.8	158.9	242.0	305.2
90	32575	-95.8	161.4	242.2	307.8
100	36225	-95.8	163.4	242.3	309.9

HIPOTESIS-5 Julio-Enero

VIADUCTOS DE EL PAPIOL

Movimientos en junta E-1 (mm)
+ apertura
- cierre

ANO	dias	Temp	Retr.	Flu.	Total
1	180	191.5	24.0	174.0	389.5
2	545	191.5	41.1	205.6	438.2
3	910	191.5	52.3	217.2	461.0
4	1275	191.5	60.9	223.3	475.7
5	1640	191.5	68.0	227.1	486.6
6	2005	191.5	74.1	229.6	495.3
7	2370	191.5	79.4	231.5	502.5
8	2735	191.5	84.2	232.9	508.6
9	3100	191.5	88.4	234.0	513.9
10	3465	191.5	92.2	234.9	518.6
20	7115	191.5	117.8	238.9	548.2
30	10765	191.5	131.9	240.3	563.7
40	14415	191.5	141.0	241.0	573.6
50	18065	191.5	147.5	241.4	580.4
60	21715	191.5	152.3	241.7	585.5
70	25365	191.5	156.0	241.9	589.4
80	29015	191.5	159.0	242.0	592.6
90	32665	191.5	161.4	242.2	595.1
100	36315	191.5	163.4	242.3	597.2

HIPOTESIS-6 Julio-Julio

VIADUCTOS DE EL PAPIOL

Movimientos en junta E-1 (mm)
+ apertura
- cierre

ANO	dias	Temp	Retr.	Flu.	Total
1	0	0.0	0.0	115.8	115.8
2	365	0.0	33.9	194.8	228.7
3	730	0.0	47.2	212.5	259.7
4	1095	0.0	56.9	220.7	277.6
5	1460	0.0	64.7	225.4	290.1
6	1825	0.0	71.2	228.5	299.7
7	2190	0.0	76.9	230.6	307.5
8	2555	0.0	81.9	232.2	314.1
9	2920	0.0	86.4	233.5	319.8
10	3285	0.0	90.4	234.5	324.9
20	6935	0.0	116.9	238.8	355.7
30	10585	0.0	131.3	240.3	371.6
40	14235	0.0	140.7	241.0	381.6
50	17885	0.0	147.2	241.4	388.6
60	21535	0.0	152.1	241.7	393.8
70	25185	0.0	155.9	241.9	397.7
80	28835	0.0	158.9	242.0	400.9
90	32485	0.0	161.3	242.2	403.5
100	36135	0.0	163.4	242.3	405.6

HIPOTESIS-7 Octubre-Enero

VIADUCTOS DE EL PAPIOL

Movimientos en junta E-1 (mm)
+ apertura
- cierre

ANO	dias	Temp	Retr.	Flu.	Total
1	90	95.8	17.1	154.8	267.6
2	455	95.8	37.7	200.9	334.3
3	820	95.8	49.8	215.1	360.6
4	1185	95.8	58.9	222.1	376.8
5	1550	95.8	66.4	226.3	388.4
6	1915	95.8	72.7	229.1	397.5
7	2280	95.8	78.2	231.1	405.0
8	2645	95.8	83.0	232.6	411.4
9	3010	95.8	87.4	233.7	416.9
10	3375	95.8	91.3	234.7	421.8
20	7025	95.8	117.3	238.9	452.0
30	10675	95.8	131.6	240.3	467.7
40	14325	95.8	140.9	241.0	477.6
50	17975	95.8	147.4	241.4	484.5
60	21625	95.8	152.2	241.7	489.6
70	25275	95.8	155.9	241.9	493.6
80	28925	95.8	158.9	242.0	496.7
90	32575	95.8	161.4	242.2	499.3
100	36225	95.8	163.4	242.3	501.4

HIPOTESIS-8 Octubre-Julio

VIADUCTOS DE EL PAPIOL

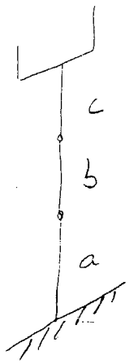
Movimientos en junta E-1 (mm)
+ apertura
- cierre

ANO	dias	Temp	Retr.	Flu.	Total
1	270	-95.8	29.3	186.0	119.5
2	635	-95.8	44.2	209.3	157.7
3	1000	-95.8	54.6	219.0	177.8
4	1365	-95.8	62.8	224.4	191.4
5	1730	-95.8	69.6	227.8	201.6
6	2095	-95.8	75.5	230.1	209.9
7	2460	-95.8	80.7	231.9	216.8
8	2825	-95.8	85.2	233.2	222.7
9	3190	-95.8	89.4	234.2	227.9
10	3555	-95.8	93.1	235.1	232.4
20	7205	-95.8	118.2	239.0	261.4
30	10855	-95.8	132.2	240.3	276.7
40	14505	-95.8	141.2	241.0	286.5
50	18155	-95.8	147.6	241.4	293.3
60	21805	-95.8	152.4	241.7	298.3
70	25455	-95.8	156.1	241.9	302.2
80	29105	-95.8	159.1	242.0	305.3
90	32755	-95.8	161.5	242.2	307.9
100	36405	-95.8	163.5	242.3	310.0

4. CÁLCULO DE LAS PILAS

ESFUERZOS EN PILAS

PILAS PAPEL



3 APOYOS

PILA	a	b	c
1	206	—	207
2	208	209	210
3	211	212	213
4	214	215	216
5	217	218	219
6	220	221	222
7	223	224	225
8	226	—	227
9	228	—	229

Hipótesis para calculo

ELS 201 a 212

ELU (311) a 322

ESFUERZOS E.L.S.

HIPOTESIS 201

FUER X MAX envolvente (ELS)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
206	21	3988.05	112.05	-17.93	6.57	138.66	694.79
206	20	-3949.16	-112.05	17.93	-6.57	-99.23	-448.28
207	20	3949.16	112.05	-17.93	6.57	99.23	448.28
207	19	-3836.16	-112.05	17.93	-6.57	-27.52	-0.09
208	40	4264.59	-116.62	-16.63	-17.84	293.62	-1119.59
208	39	-4253.99	116.62	16.63	17.84	-283.64	1049.62
209	39	4253.99	-116.62	-16.63	-17.84	283.64	-1049.62
209	41	-4165.61	116.62	16.63	17.84	-200.52	466.53
210	41	4165.61	-116.62	-16.63	-17.84	200.52	-466.53
210	38	-4052.61	116.62	16.63	17.84	-134.01	0.06
211	60	4296.63	115.14	-6.45	21.95	291.38	1416.28
211	59	-4238.31	-115.14	6.45	-21.95	-270.11	-1036.31
212	59	4238.30	115.14	-6.45	21.95	270.11	1036.31
212	61	-4149.93	-115.14	6.45	-21.95	-237.88	-460.59
213	61	4149.93	115.14	-6.45	21.95	237.88	460.59
213	58	-4036.93	-115.14	6.45	-21.95	-212.10	-0.01
214	80	4318.00	-115.55	-14.10	-22.64	376.19	-1421.18
214	79	-4259.68	115.55	14.10	22.64	-329.67	1039.86
215	79	4259.68	-115.55	-14.10	-22.64	329.67	-1039.86
215	81	-4171.30	115.55	14.10	22.64	-259.17	462.10
216	81	4171.30	-115.55	-14.10	-22.64	259.18	-462.10
216	78	-4058.30	115.55	14.10	22.64	-202.78	-0.11
217	100	4315.44	115.41	-10.96	14.71	307.74	1419.48
217	99	-4257.11	-115.41	10.96	-14.71	-271.57	-1038.63
218	99	4257.11	115.41	-10.96	14.71	271.57	1038.63
218	101	-4168.73	-115.41	10.96	-14.71	-216.77	-461.58
219	101	4168.73	115.41	-10.96	14.71	216.77	461.58
219	98	-4055.73	-115.41	10.96	-14.71	-172.93	0.05
220	120	4315.08	-115.57	-20.01	-1.03	340.66	-1421.54
220	119	-4256.75	115.57	20.01	1.03	-274.64	1040.17
221	119	4256.75	-115.57	-20.01	-1.03	274.64	-1040.17
221	121	-4168.37	115.57	20.01	1.03	-174.60	462.33
222	121	4168.37	-115.57	-20.01	-1.03	174.60	-462.33
222	118	-4055.37	115.57	20.01	1.03	-94.57	0.07
223	140	4297.98	115.10	-16.49	-12.54	179.38	1415.66
223	139	-4239.65	-115.10	16.49	12.54	-124.96	-1035.84
224	139	4239.65	115.10	-16.49	-12.54	124.96	1035.84
224	141	-4151.27	-115.10	16.49	12.54	-42.51	-460.36
225	141	4151.27	115.10	-16.49	-12.54	42.51	460.36
225	138	-4038.27	-115.10	16.49	12.54	23.46	0.02
226	160	4258.14	-116.74	-31.66	20.34	211.14	-968.73
226	159	-4182.13	116.74	31.66	-20.34	-75.00	466.75
227	159	4182.13	-116.74	-31.66	20.34	75.00	-466.75
227	158	-4069.13	116.74	31.66	-20.34	51.64	-0.21
228	179	4084.41	111.63	-17.93	-9.85	139.85	859.54
228	178	-4019.01	-111.63	17.93	9.85	-73.49	-446.52
229	178	4019.01	111.63	-17.93	-9.85	73.49	446.52
229	177	-3906.01	-111.63	17.93	9.85	-1.76	-0.01

proc Viaducto Papiol

HIPOTESIS 202

FUER X MIN envolvente (ELS)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
206	21	1921.33	-112.05	0.28	-6.57	-23.17	-694.65
206	20	-1882.45	112.05	-0.28	6.57	22.56	448.14
207	20	1882.45	-112.05	0.28	-6.57	-22.56	-448.14
207	19	-1769.45	112.05	-0.37	6.57	21.05	-0.05
208	40	2081.66	116.62	-7.83	17.85	-104.98	1119.55
208	39	-2071.06	-116.62	7.83	-17.85	109.68	-1049.58
209	39	2071.06	116.62	-7.83	17.85	-109.68	1049.58
209	41	-1982.68	-116.62	7.83	-17.85	148.84	-466.49
210	41	1982.68	116.62	-7.83	17.85	-148.84	466.49
210	38	-1869.68	-116.62	7.83	-17.85	180.18	-0.02
211	60	2101.83	-115.14	-6.55	-21.95	-165.25	-1416.26
211	59	-2043.51	115.14	6.55	21.95	186.85	1036.29
212	59	2043.51	-115.14	-6.55	-21.95	-186.85	-1036.29
212	61	-1955.13	115.14	6.55	21.95	219.59	460.57
213	61	1955.13	-115.14	-6.55	-21.95	-219.59	-460.57
213	58	-1842.13	115.14	6.55	21.95	245.78	-0.01
214	80	2109.83	115.55	-3.70	22.64	-245.01	1421.33
214	79	-2051.50	-115.55	3.70	-22.64	257.21	-1040.01
215	79	2051.50	115.55	-3.70	22.64	-257.21	1040.01
215	81	-1963.13	-115.55	3.70	-22.64	275.70	-462.25
216	81	1963.13	115.55	-3.70	22.64	-275.70	462.25
216	78	-1850.13	-115.55	3.70	-22.64	290.49	-0.04
217	100	2105.26	-115.41	-6.36	-14.71	-53.79	-1419.57
217	99	-2046.93	115.41	6.36	14.71	74.77	1038.72
218	99	2046.93	-115.41	-6.36	-14.71	-74.77	-1038.72
218	101	-1958.56	115.41	6.36	14.71	106.55	461.67
219	101	1958.56	-115.41	-6.36	-14.71	-106.55	-461.67
219	98	-1845.56	115.41	6.36	14.71	131.97	0.04
220	120	2108.67	115.57	-1.04	1.04	58.15	1421.44
220	119	-2050.35	-115.57	1.04	-1.04	-54.73	-1040.07
221	119	2050.35	115.57	-1.04	1.04	54.73	1040.07
221	121	-1961.97	-115.57	1.04	-1.04	-49.54	-462.24
222	121	1961.97	115.57	-1.04	1.04	49.54	462.24
222	118	-1848.97	-115.57	1.04	-1.04	-45.38	0.03
223	140	2097.61	-115.10	-0.58	12.55	221.56	-1415.70
223	139	-2039.28	115.10	0.58	-12.55	-219.65	1035.89
224	139	2039.28	-115.10	-0.58	12.55	219.65	-1035.89
224	141	-1950.90	115.10	0.58	-12.55	-216.76	460.41
225	141	1950.91	-115.10	-0.58	12.55	216.76	-460.41
225	138	-1837.91	115.10	0.58	-12.55	-214.44	0.02
226	160	2047.42	116.74	6.51	-20.34	205.65	969.02
226	159	-1971.42	-116.74	-6.51	20.34	-233.64	-467.05
227	159	1971.42	116.74	6.51	-20.34	233.64	467.05
227	158	-1858.42	-116.74	-6.51	20.34	-259.67	-0.09
228	179	1865.03	-111.63	-0.36	9.84	93.64	-859.52
228	178	-1799.63	111.63	0.36	-9.84	-92.30	446.50
229	178	1799.63	-111.63	-0.36	9.84	92.30	-446.50
229	177	-1686.63	111.63	0.36	-9.84	-90.85	0.00

HIPOTESIS 203

FUER Y MAX envolvente (ELS)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
206	21	2393.01	115.27	5.18	6.57	-159.55	705.83
206	20	-2354.13	-114.34	-5.18	-6.57	148.15	-453.26
207	20	2354.13	114.34	5.18	6.57	-148.15	453.26
207	19	-2241.13	-112.05	-5.20	-6.57	127.51	-0.06
208	40	2544.25	121.37	0.96	17.85	-371.11	1144.92
208	39	-2533.64	-121.12	-0.96	-17.85	370.54	-1072.17
209	39	2533.64	121.12	0.96	17.85	-370.54	1072.17
209	41	-2445.27	-119.02	-0.96	-17.85	365.73	-471.81
210	41	2445.27	119.02	0.96	17.85	-365.73	471.81
210	38	-2332.27	-116.62	-1.00	-17.85	361.99	-0.05
211	60	2562.62	121.21	-1.80	21.95	-423.39	1457.88
211	59	-2504.30	-119.83	1.80	-21.95	429.32	-1060.16
212	59	2504.29	119.83	-1.80	21.95	-429.32	1060.16
212	61	-2415.92	-117.71	1.80	-21.95	438.29	-466.30
213	61	2415.92	117.71	-1.80	21.95	-438.29	466.30
213	58	-2302.92	-115.14	1.74	-21.95	445.56	-0.01
214	80	2570.67	121.62	0.51	22.64	-466.47	1462.93
214	79	-2512.35	-120.24	-0.51	-22.64	464.80	-1063.87
215	79	2512.35	120.24	0.51	22.64	-464.80	1063.87
215	81	-2423.97	-118.12	-0.51	-22.64	462.27	-467.97
216	81	2423.97	118.12	0.51	22.64	-462.27	467.97
216	78	-2310.97	-115.55	-0.59	-22.64	460.36	-0.05
217	100	2568.05	121.48	0.78	14.71	-306.22	1461.07
217	99	-2509.72	-120.09	-0.78	-14.71	303.65	-1062.48
218	99	2509.72	120.09	0.78	14.71	-303.65	1062.48
218	101	-2421.34	-117.98	-0.78	-14.71	299.76	-467.30
219	101	2421.34	117.98	0.78	14.71	-299.76	467.30
219	98	-2308.36	-115.41	-0.88	-14.71	296.80	0.05
220	120	2570.38	121.64	1.12	1.03	-32.32	1463.04
220	119	-2512.05	-120.25	-1.12	-1.03	28.62	-1063.93
221	119	2512.05	120.25	1.12	1.03	-28.62	1063.93
221	121	-2423.68	-118.13	-1.12	-1.03	23.02	-467.95
222	121	2423.68	118.13	1.12	1.03	-23.02	467.95
222	118	-2310.63	-115.57	-1.25	-1.03	18.65	0.03
223	140	2564.21	121.17	7.68	-12.55	161.77	1457.25
223	139	-2505.88	-119.78	-7.68	12.55	-187.11	-1059.69
224	139	2505.88	119.78	7.68	-12.55	187.11	1059.69
224	141	-2417.50	-117.66	-7.68	12.55	-225.50	-466.07
225	141	2417.50	117.66	7.68	-12.55	225.50	466.07
225	138	-2304.67	-115.10	-7.80	12.55	-256.10	0.03
226	160	2513.64	120.86	1.21	-20.34	401.12	987.95
226	159	-2437.64	-119.06	-1.21	20.34	-406.31	-472.13
227	159	2437.64	119.06	1.21	-20.34	406.31	472.13
227	158	-2323.97	-116.74	-1.41	20.34	-410.82	-0.11
228	179	2466.24	115.48	0.87	-9.84	191.71	875.91
228	178	-2400.84	-113.92	-0.87	9.84	-194.94	-451.52
229	178	2400.84	113.92	0.87	-9.84	194.94	451.52
229	177	-2291.51	-111.63	-1.04	9.84	-198.32	-0.01

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HIPOTESIS 204

FUER Y MIN envolvente (ELS)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
206	21	2392.79	-115.27	5.19	-6.57	-157.18	-705.70
206	20	-2353.90	114.34	-5.19	6.57	145.76	453.13
207	20	2353.90	-114.34	5.19	-6.57	-145.76	-453.13
207	19	-2240.90	112.05	-5.18	6.57	124.91	-0.06
208	40	2544.30	-121.37	-0.02	-17.85	-358.62	-1144.82
208	39	-2533.70	121.12	0.02	17.85	358.64	1072.08
209	39	2533.70	-121.12	-0.02	-17.85	-358.64	-1072.08
209	41	-2445.32	119.02	0.02	17.85	358.75	471.72
210	41	2445.32	-119.02	-0.02	-17.85	-358.75	-471.72
210	38	-2332.32	116.62	0.06	17.85	358.75	-0.05
211	60	2562.54	-121.21	-3.36	-21.95	-401.17	-1457.86
211	59	-2504.21	119.83	3.36	21.95	412.26	1060.14
212	59	2504.21	-119.83	-3.36	-21.95	-412.26	-1060.14
212	61	-2415.84	117.71	3.36	21.95	429.06	466.28
213	61	2415.84	-117.71	-3.36	-21.95	-429.06	-466.28
213	58	-2302.84	115.14	3.41	21.95	442.41	-0.01
214	80	2570.79	-121.62	-2.13	-22.64	-430.26	-1462.84
214	79	-2512.46	120.24	2.13	22.64	437.28	1063.77
215	79	2512.46	-120.24	-2.13	-22.64	-437.28	-1063.77
215	81	-2424.09	118.12	2.13	22.64	447.92	467.87
216	81	2424.09	-118.12	-2.13	-22.64	-447.92	-467.87
216	78	-2311.09	115.55	2.21	22.64	456.31	-0.05
217	100	2567.71	-121.48	-2.77	-14.71	-257.96	-1461.18
217	99	-2509.38	120.09	2.77	14.71	267.10	1062.59
218	99	2509.38	-120.09	-2.77	-14.71	-267.10	-1062.59
218	101	-2421.00	117.98	2.77	14.71	280.93	467.40
219	101	2421.00	-117.98	-2.77	-14.71	-280.93	-467.40
219	98	-2307.99	115.41	2.87	14.71	291.85	0.05
220	120	2571.69	-121.64	-3.23	-1.03	24.59	-1463.10
220	119	-2513.36	120.25	3.23	1.03	-13.94	1063.99
221	119	2513.36	-120.25	-3.23	-1.03	13.94	-1063.99
221	121	-2424.98	118.13	3.23	1.03	2.20	468.01
222	121	2424.98	-118.13	-3.23	-1.03	-2.20	-468.01
222	118	-2312.03	115.57	3.36	1.03	15.00	0.03
223	140	2559.08	-121.17	3.64	12.55	214.62	-1457.30
223	139	-2500.75	119.78	-3.64	-12.55	-226.63	1059.74
224	139	2500.75	-119.78	3.64	12.55	226.63	-1059.74
224	141	-2412.37	117.66	-3.64	-12.55	-244.82	466.12
225	141	2412.37	-117.66	3.64	12.55	244.82	-466.12
225	138	-2299.20	115.10	-3.51	-12.55	-259.48	0.03
226	160	2533.76	-120.86	-4.77	20.34	460.55	-987.73
226	159	-2457.76	119.06	4.77	-20.34	-440.05	471.91
227	159	2457.76	-119.06	-4.77	20.34	440.05	-471.91
227	158	-2345.43	116.74	4.97	-20.34	-421.29	-0.11
228	179	2355.86	-115.48	-3.67	9.84	230.52	-875.89
228	178	-2290.46	113.92	3.67	-9.84	-216.93	451.50
229	178	2290.46	-113.92	-3.67	9.84	216.93	-451.50
229	177	-2173.80	111.63	3.84	-9.84	-202.34	-0.01

HIPOTESIS 205

FUER Z MAX envolvente (ELS)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
206	21	2945.55	112.05	72.74	6.56	-170.56	694.74
206	20	-2906.67	-112.05	-72.36	-6.56	10.95	-448.24
207	20	2906.67	112.05	72.36	6.56	-10.95	448.24
207	19	-2793.67	-112.05	-71.67	-6.56	-277.11	-0.05
208	40	3110.76	116.62	80.36	17.82	-408.77	1119.44
208	39	-3100.16	-116.62	-80.25	-17.82	360.59	-1049.47
209	39	3100.16	116.62	80.25	17.82	-360.59	1049.47
209	41	-3011.78	-116.62	-79.39	-17.82	-38.53	-466.38
210	41	3011.78	116.62	79.39	17.82	38.53	466.38
210	38	-2898.78	-116.62	-78.68	-17.82	-354.70	0.09
211	60	2718.41	115.14	80.29	21.94	-387.60	1416.27
211	59	-2660.08	-115.14	-79.72	-21.94	123.58	-1036.30
212	59	2660.08	115.14	79.72	21.94	-123.58	1036.30
212	61	-2571.71	-115.14	-78.86	-21.94	-272.88	-460.58
213	61	2571.70	115.14	78.86	21.94	272.88	460.58
213	58	-2458.70	-115.14	-78.10	-21.94	-586.84	0.00
214	80	2727.39	115.55	83.06	22.64	-462.76	1421.37
214	79	-2669.06	-115.55	-82.49	-22.64	189.59	-1040.04
215	79	2669.06	115.55	82.49	22.64	-189.59	1040.04
215	81	-2580.69	-115.55	-81.63	-22.64	-220.72	-462.28
216	81	2580.69	115.55	81.63	22.64	220.72	462.29
216	78	-2467.69	-115.55	-80.87	-22.64	-545.76	-0.08
217	100	2721.67	115.41	84.99	14.72	-448.20	1419.53
217	99	-2663.34	-115.41	-84.43	-14.72	168.65	-1038.68
218	99	2663.34	115.41	84.43	14.72	-168.65	1038.68
218	101	-2574.97	-115.41	-83.56	-14.72	-251.32	-461.63
219	101	2574.97	115.41	83.56	14.72	251.32	461.63
219	98	-2461.97	-115.41	-82.81	-14.72	-584.09	0.00
220	120	2721.52	115.57	84.50	1.02	-336.08	1421.36
220	119	-2663.19	-115.57	-83.93	-1.02	58.17	-1039.99
221	119	2663.19	115.57	83.93	1.02	-58.17	1039.99
221	121	-2574.82	-115.57	-83.07	-1.02	-359.33	-462.16
222	121	2574.82	115.57	83.07	1.02	359.33	462.16
222	118	-2461.82	-115.57	-82.31	-1.02	-690.13	0.11
223	140	3015.89	115.10	79.71	-12.55	-121.01	1415.62
223	139	-2957.56	-115.10	-79.14	12.55	-141.10	-1035.80
224	139	2957.56	115.10	79.14	-12.55	141.10	1035.80
224	141	-2869.18	-115.10	-78.28	12.55	-534.65	-460.32
225	141	2869.18	115.10	78.28	-12.55	534.65	460.32
225	138	-2756.18	-115.10	-77.52	12.55	-846.29	0.06
226	160	2764.87	116.74	83.59	-20.34	-219.92	969.06
226	159	-2688.86	-116.74	-82.85	20.34	-137.92	-467.08
227	159	2688.87	116.74	82.85	-20.34	137.92	467.08
227	158	-2575.87	-116.74	-82.16	20.34	-467.93	-0.12
228	179	2723.55	111.63	64.52	-9.84	24.08	859.54
228	178	-2658.15	-111.63	-63.89	9.84	-261.63	-446.52
229	178	2658.15	111.63	63.89	-9.84	261.63	446.52
229	177	-2545.15	-111.63	-63.20	9.84	-515.80	-0.01

HIPOTESIS 206

FUER Z MIN envolvente (ELS)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
206	21	3010.40	-112.05	-76.54	-6.56	372.59	-694.61
206	20	-2971.52	112.05	76.17	6.56	-204.61	448.11
207	20	2971.52	-112.05	-76.17	-6.56	204.61	-448.11
207	19	-2858.52	112.05	75.48	6.56	98.67	-0.08
208	40	3192.59	-116.62	-87.56	-17.82	512.75	-1119.50
208	39	-3181.99	116.62	87.46	17.82	-460.25	1049.53
209	39	3181.99	-116.62	-87.46	-17.82	460.25	-1049.53
209	41	-3093.61	116.62	86.60	17.82	-25.11	466.44
210	41	3093.61	-116.62	-86.60	-17.82	25.10	-466.44
210	38	-2980.61	116.62	85.89	17.82	319.88	-0.03
211	60	3503.47	-115.14	-81.78	-21.94	580.90	-1416.26
211	59	-3445.14	115.14	81.21	21.94	-311.98	1036.28
212	59	3445.14	-115.14	-81.21	-21.94	311.98	-1036.28
212	61	-3356.77	115.14	80.34	21.94	91.91	460.56
213	61	3356.77	-115.14	-80.34	-21.94	-91.91	-460.56
213	58	-3243.77	115.14	79.59	21.94	411.81	-0.01
214	80	3515.86	-115.55	-89.00	-22.64	660.59	-1421.22
214	79	-3457.53	115.55	88.43	22.64	-367.82	1039.89
215	79	3457.53	-115.55	-88.43	-22.64	367.82	-1039.89
215	81	-3369.16	115.55	87.57	22.64	72.19	462.13
216	81	3369.16	-115.55	-87.57	-22.64	-72.18	-462.13
216	78	-3256.16	115.55	86.81	22.64	420.99	-0.07
217	100	3504.50	-115.41	-89.70	-14.72	690.22	-1419.60
217	99	-3446.18	115.41	89.14	14.72	-395.14	1038.75
218	99	3446.18	-115.41	-89.14	-14.72	395.14	-1038.75
218	101	-3357.80	115.41	88.27	14.72	48.38	461.71
219	101	3357.80	-115.41	-88.27	-14.72	-48.38	-461.71
219	98	-3244.80	115.41	87.52	14.72	399.99	0.07
220	120	3510.82	-115.57	-91.48	-1.02	731.88	-1421.48
220	119	-3452.49	115.57	90.92	1.02	-430.92	1040.10
221	119	3452.49	-115.57	-90.92	-1.02	430.92	-1040.10
221	121	-3364.12	115.57	90.05	1.02	21.50	462.27
222	121	3364.12	-115.57	-90.05	-1.02	-21.50	-462.27
222	118	-3251.12	115.57	89.30	1.02	380.24	0.00
223	140	3203.84	-115.10	-82.84	12.55	652.04	-1415.68
223	139	-3145.51	115.10	82.27	-12.55	-379.61	1035.86
224	139	3145.51	-115.10	-82.27	12.55	379.61	-1035.86
224	141	-3057.14	115.10	81.40	-12.55	29.58	460.38
225	141	3057.14	-115.10	-81.40	12.55	-29.58	-460.38
225	138	-2944.14	115.10	80.65	-12.55	353.72	0.00
226	160	3497.21	-116.74	-95.91	20.34	645.97	-968.77
226	159	-3421.21	116.74	95.17	-20.34	-235.16	466.79
227	159	3421.21	-116.74	-95.17	20.34	235.16	-466.79
227	158	-3308.21	116.74	94.47	-20.34	144.12	-0.17
228	179	3269.50	-111.63	-70.45	9.84	261.69	-859.53
228	178	-3204.10	111.63	69.81	-9.84	-2.21	446.51
229	178	3204.10	-111.63	-69.81	9.84	2.21	-446.51
229	177	-3091.10	111.63	69.13	-9.84	275.67	0.00

HIPOTESIS 207

MOME X MAX envolvente (ELS)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
206	21	3282.99	112.05	-71.90	6.58	280.42	694.78
206	20	-3244.10	-112.05	71.52	-6.58	-122.66	-448.28
207	20	3244.10	112.05	-71.52	6.58	122.66	448.28
207	19	-3131.10	-112.05	70.83	-6.58	162.04	-0.09
208	40	3452.59	116.62	-81.82	17.88	449.60	1119.57
208	39	-3441.98	-116.62	81.71	-17.88	-400.54	-1049.60
209	39	3441.98	116.62	-81.71	17.88	400.54	1049.60
209	41	-3353.61	-116.62	80.85	-17.88	5.87	-466.51
210	41	3353.61	116.62	-80.85	17.88	-5.87	466.51
210	38	-3240.61	-116.62	80.14	-17.88	327.88	-0.03
211	60	2562.62	115.14	-1.74	21.95	-424.11	1416.28
211	59	-2504.30	-115.14	1.74	-21.95	429.87	-1036.31
212	59	2504.30	115.14	-1.74	21.95	-429.87	1036.31
212	61	-2415.92	-115.14	1.74	-21.95	438.59	-460.59
213	61	2415.92	115.14	-1.74	21.95	-438.59	460.59
213	58	-2302.92	-115.14	1.74	-21.95	445.56	-0.01
214	80	2570.67	115.55	0.59	22.64	-467.58	1421.34
214	79	-2512.34	-115.55	-0.59	-22.64	465.64	-1040.02
215	79	2512.34	115.55	0.59	22.64	-465.64	1040.02
215	81	-2423.97	-115.55	-0.59	-22.64	462.71	-462.26
216	81	2423.97	115.55	0.59	22.64	-462.71	462.26
216	78	-2310.97	-115.55	-0.59	-22.64	460.36	-0.05
217	100	3026.18	115.41	79.09	14.72	-569.48	1419.51
217	99	-2967.85	-115.41	-78.52	-14.72	309.42	-1038.66
218	99	2967.85	115.41	78.52	14.72	-309.42	1038.66
218	101	-2879.48	-115.41	-77.66	-14.72	-81.02	-461.62
219	101	2879.48	115.41	77.65	14.72	81.02	461.62
219	98	-2766.48	-115.41	-76.90	-14.72	-390.17	0.02
220	120	3465.44	115.57	-82.49	1.05	702.73	1421.46
220	119	-3407.11	-115.57	81.92	-1.05	-431.45	-1040.09
221	119	3407.11	115.57	-81.92	1.05	431.45	1040.09
221	121	-3318.74	-115.57	81.06	-1.05	-24.01	-462.26
222	121	3318.74	115.57	-81.06	1.05	24.01	462.26
222	118	-3205.74	-115.57	80.30	-1.05	298.74	0.01
223	140	3016.70	-115.10	-74.25	12.55	466.50	-1415.67
223	139	-2958.38	115.10	73.68	-12.55	-222.42	1035.86
224	139	2958.38	-115.10	-73.68	12.55	222.42	-1035.86
224	141	-2870.00	115.10	72.82	-12.55	143.83	460.38
225	141	2870.00	-115.10	-72.82	12.55	-143.83	-460.38
225	138	-2757.00	115.10	72.06	-12.55	433.62	-0.01
226	160	3443.05	-116.74	-92.18	20.34	607.77	-968.77
226	159	-3367.05	116.74	91.44	-20.34	-213.00	466.79
227	159	3367.05	-116.74	-91.44	20.34	213.00	-466.79
227	158	-3254.05	116.74	90.75	-20.34	151.37	-0.17
228	179	2352.19	-111.63	-3.84	9.84	231.90	-859.52
228	178	-2286.80	111.63	3.84	-9.84	-217.70	446.50
229	178	2286.80	-111.63	-3.84	9.84	217.70	-446.50
229	177	-2173.80	111.63	3.84	-9.84	-202.34	-0.01

HIPOTESIS 208

MOME X MIN envolvente (ELS)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
206	21	2947.10	-112.05	67.44	-6.58	-102.68	-694.64
206	20	-2908.22	112.05	-67.07	6.58	-45.28	448.14
207	20	2908.22	-112.05	67.07	-6.58	45.28	-448.14
207	19	-2795.22	112.05	-66.38	6.58	-312.17	-0.05
208	40	3107.30	-116.62	75.62	-17.87	-465.79	-1119.61
208	39	-3096.69	116.62	-75.51	17.87	420.46	1049.63
209	39	3096.69	-116.62	75.51	-17.87	-420.46	-1049.63
209	41	-3008.32	116.62	-74.65	17.87	45.04	466.54
210	41	3008.32	-116.62	74.65	-17.87	-45.04	-466.55
210	38	-2895.32	116.62	-73.94	17.87	-252.16	0.07
211	60	2562.54	-115.14	-3.41	-21.95	-400.45	-1416.26
211	59	-2504.21	115.14	3.41	21.95	411.71	1036.28
212	59	2504.21	-115.14	-3.41	-21.95	-411.71	-1036.28
212	61	-2415.84	115.14	3.41	21.95	428.76	460.57
213	61	2415.84	-115.14	-3.41	-21.95	-428.76	-460.56
213	58	-2302.84	115.14	3.41	21.95	442.41	-0.01
214	80	2570.79	-115.55	-2.21	-22.64	-429.16	-1421.24
214	79	-2512.46	115.55	2.21	22.64	436.44	1039.92
215	79	2512.46	-115.55	-2.21	-22.64	-436.44	-1039.92
215	81	-2424.09	115.55	2.21	22.64	447.48	462.16
216	81	2424.09	-115.55	-2.21	-22.64	-447.48	-462.16
216	78	-2311.09	115.55	2.21	22.64	456.31	-0.05
217	100	3462.04	-115.41	-84.78	-14.72	716.61	-1419.60
217	99	-3403.71	115.41	84.22	14.72	-437.76	1038.75
218	99	3403.71	-115.41	-84.22	-14.72	437.76	-1038.75
218	101	-3315.34	115.41	83.35	14.72	-18.83	461.70
219	101	3315.34	-115.41	-83.35	-14.72	18.83	-461.70
219	98	-3202.34	115.41	82.60	14.72	313.11	0.07
220	120	3029.96	-115.57	74.52	-1.05	-313.20	-1421.58
220	119	-2971.64	115.57	-73.96	1.05	68.21	1040.21
221	119	2971.64	-115.57	73.96	-1.05	-68.21	-1040.21
221	121	-2883.26	115.57	-73.09	1.05	-299.42	462.37
222	121	2883.26	-115.57	73.09	-1.05	299.42	-462.37
222	118	-2770.26	115.57	-72.34	1.05	-590.32	0.10
223	140	3022.35	115.10	75.13	-12.55	-155.65	1415.62
223	139	-2964.02	-115.10	-74.56	12.55	-91.35	-1035.81
224	139	2964.02	115.10	74.57	-12.55	91.35	1035.81
224	141	-2875.65	-115.10	-73.70	12.55	-462.02	-460.33
225	141	2875.65	115.10	73.70	-12.55	462.02	460.33
225	138	-2762.65	-115.10	-72.95	12.55	-755.35	0.06
226	160	2569.82	116.74	69.73	-20.34	-712.79	969.06
226	159	-2493.82	-116.74	-68.99	20.34	414.53	-467.08
227	159	2493.82	116.74	68.99	-20.34	-414.53	467.08
227	158	-2380.82	-116.74	-68.30	20.34	139.94	-0.12
228	179	2469.91	111.63	1.04	-9.84	190.33	859.54
228	178	-2404.51	-111.63	-1.04	9.84	-194.17	-446.52
229	178	2404.51	111.63	1.04	-9.84	194.17	446.52
229	177	-2291.51	-111.63	-1.04	9.84	-198.32	-0.01

HIPOTESIS 209

MOME Y MAX envolvente (ELS)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
206	21	2734.28	-112.05	-17.77	-6.56	1757.16	-694.74
206	20	-2695.40	112.05	17.64	6.56	-1718.12	448.24
207	20	2695.40	-112.05	-17.64	-6.56	1718.12	-448.24
207	19	-2694.23	112.05	3.28	6.57	-1655.57	0.04
208	40	2801.21	-116.62	-49.06	-17.83	1846.26	-1119.82
208	39	-2778.70	116.62	48.94	17.83	-1816.86	1049.85
209	39	2778.70	-116.62	-48.94	-17.83	1816.86	-1049.85
209	41	-2970.75	116.62	-12.09	17.85	-1718.38	466.83
210	41	2970.75	-116.62	12.09	-17.85	1718.38	-466.83
210	38	-2857.75	116.62	-12.70	17.85	-1768.02	0.36
211	60	2824.75	-115.14	-38.83	-21.94	1769.88	-1416.28
211	59	-2742.71	115.14	38.23	21.94	-1642.74	1036.30
212	59	2742.71	-115.14	-38.23	-21.94	1642.74	-1036.30
212	61	-2951.24	115.14	-25.68	21.95	-1651.96	460.58
213	61	2951.24	-115.14	25.68	-21.95	1651.97	-460.58
213	58	-2838.32	115.14	-26.69	21.95	-1756.50	0.01
214	80	2835.48	-115.55	-56.62	-22.64	2055.08	-1421.19
214	79	-2753.53	115.55	56.02	22.64	-1869.22	1039.87
215	79	2753.53	-115.55	-56.02	-22.64	1869.22	-1039.87
215	81	-2965.31	115.55	-12.05	22.64	-1744.94	462.09
216	81	2965.31	-115.55	12.05	-22.64	1744.94	-462.09
216	78	-2851.99	115.55	-12.67	22.64	-1794.40	-0.11
217	100	2831.90	-115.41	-55.34	-14.71	2199.00	-1419.48
217	99	-2749.96	115.41	54.74	14.71	-2017.38	1038.63
218	99	2749.96	-115.41	-54.74	-14.71	2017.38	-1038.63
218	101	-2796.52	115.41	14.40	14.71	-1831.14	461.58
219	101	2796.52	-115.41	-14.40	-14.71	1831.14	-461.58
219	98	-2847.36	115.41	-14.48	14.71	-1840.14	-0.06
220	120	2831.56	-115.57	-57.60	-1.02	2350.91	-1421.69
220	119	-2749.91	115.57	57.00	1.02	-2161.82	1040.32
221	119	2749.91	-115.57	-57.00	-1.02	2161.82	-1040.32
221	121	-2800.23	115.57	18.27	1.03	-1968.54	462.52
222	121	2800.23	-115.57	-18.27	-1.03	1968.54	-462.52
222	118	-2687.23	115.57	18.11	1.03	-1896.03	0.25
223	140	3104.14	-115.10	-21.22	12.55	2106.12	-1415.80
223	139	-3034.00	115.10	20.63	-12.55	-2037.05	1035.98
224	139	3034.00	-115.10	-20.63	12.55	2037.05	-1035.98
224	141	-3083.21	115.10	-14.57	-12.54	-2039.80	460.51
225	141	3083.21	-115.10	14.57	12.54	2039.80	-460.51
225	138	-2971.74	115.10	-16.55	-12.54	-2100.23	0.13
226	160	3082.91	-116.74	-83.57	20.34	2898.22	-968.83
226	159	-3147.13	116.74	46.09	-20.34	-2619.37	466.84
227	159	3147.13	-116.74	-46.09	20.34	2619.37	-466.84
227	158	-3034.13	116.74	46.09	-20.34	-2435.01	-0.11
228	179	2835.33	-111.63	-24.09	9.84	1691.86	-859.50
228	178	-2899.93	111.63	-6.76	-9.85	-1684.65	446.48
229	178	2899.93	-111.63	6.76	9.85	1684.65	-446.48
229	177	-2786.93	111.63	-7.05	-9.85	-1711.86	-0.03

HIPOTESIS 210

MOME Y MIN envolvente (ELS)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
206	21	2947.90	112.05	49.05	6.56	-1931.24	694.87
206	20	-3043.38	-112.05	-15.75	-6.56	1880.35	-448.38
207	20	3043.38	112.05	15.75	6.56	-1880.35	448.38
207	19	-2930.38	-112.05	-15.74	-6.56	1817.37	-0.20
208	40	3108.27	116.62	40.47	17.84	-2333.45	1119.88
208	39	-3109.57	-116.62	-40.35	-17.84	2309.20	-1049.90
209	39	3109.57	116.62	40.35	17.84	-2309.20	1049.90
209	41	-3161.12	-116.62	-1.37	-17.85	2179.87	-466.86
210	41	3161.12	116.62	1.37	17.85	-2179.87	466.86
210	38	-3048.12	-116.62	-0.76	-17.85	2175.67	-0.38
211	60	3104.51	115.14	28.03	21.95	-2329.89	1416.30
211	59	-3069.58	-115.14	-27.43	-21.95	2238.39	-1036.32
212	59	3069.58	115.14	27.43	21.95	-2238.39	1036.32
212	61	-3118.56	-115.14	10.50	-21.95	2186.33	-460.61
213	61	3118.56	115.14	-10.50	21.95	-2186.33	460.61
213	58	-3005.54	-115.14	10.89	-21.95	2229.84	-0.03
214	80	3116.46	115.55	46.70	22.64	-2660.02	1421.32
214	79	-3081.13	-115.55	-46.10	-22.64	2506.89	-1039.99
215	79	3081.13	115.55	46.10	22.64	-2506.89	1039.99
215	81	-3131.00	-115.55	-5.24	-22.64	2347.78	-462.23
216	81	3131.00	115.55	5.24	22.64	-2347.78	462.23
216	78	-3018.00	-115.55	-5.24	-22.64	2326.81	-0.02
217	100	3114.85	115.41	47.20	14.71	-2539.03	1419.38
217	99	-3079.72	-115.41	-46.60	-14.71	2384.27	-1038.53
218	99	3079.72	115.41	46.60	14.71	-2384.27	1038.53
218	101	-3129.48	-115.41	-6.17	-14.71	2217.68	-461.47
219	101	3129.48	115.41	6.17	14.71	-2217.68	461.47
219	98	-3014.09	-115.41	-1.41	-14.71	2196.20	0.17
220	120	3117.32	115.57	49.02	1.03	-2222.59	1421.62
220	119	-3082.28	-115.57	-48.42	-1.03	2061.80	-1040.25
221	119	3082.28	115.57	48.42	1.03	-2061.80	1040.25
221	121	-3132.16	-115.57	-8.00	-1.03	1893.48	-462.44
222	121	3132.16	115.57	8.00	1.03	-1893.48	462.43
222	118	-3019.16	-115.57	-7.85	-1.03	1862.04	-0.17
223	140	2822.52	115.10	24.00	-12.55	-1670.36	1415.74
223	139	-2775.69	-115.10	-23.41	12.55	1592.12	-1035.92
224	139	2775.69	115.10	23.41	-12.55	-1592.12	1035.92
224	141	-2826.13	-115.10	13.52	12.54	1567.44	-460.45
225	141	2826.13	115.10	-13.52	-12.54	-1567.44	460.45
225	138	-2869.95	-115.10	45.41	12.54	1684.32	-0.07
226	160	2785.43	116.74	70.30	-20.34	-2049.72	969.09
226	159	-2989.45	-116.74	8.07	20.33	1820.25	-467.13
227	159	2989.45	116.74	-8.07	-20.33	-1820.25	467.13
227	158	-2876.45	-116.74	8.07	20.33	1852.54	-0.18
228	179	2602.46	111.63	10.13	-9.84	-1288.83	859.51
228	178	-2639.44	-111.63	23.55	9.85	1332.65	-446.49
229	178	2639.44	111.63	-23.55	-9.85	-1332.65	446.49
229	177	-2820.45	-111.63	37.53	9.85	1446.18	0.02

HIPOTESIS 211

MOME Z MAX envolvente (ELS)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
206	21	2393.01	115.27	5.18	6.57	-159.55	705.83
206	20	-2354.13	-114.34	-5.18	-6.57	148.15	-453.26
207	20	2354.13	114.34	5.18	6.57	-148.15	453.26
207	19	-2916.21	0.00	-14.62	0.00	1793.28	-0.19
208	40	2544.25	121.37	0.53	17.85	-367.89	1144.92
208	39	-2533.64	-121.12	-0.53	-17.85	367.57	-1072.17
209	39	2533.64	121.12	0.53	17.85	-367.57	1072.17
209	41	-2445.27	-119.02	-0.53	-17.85	364.91	-471.81
210	41	2445.27	119.02	0.53	17.85	-364.91	471.81
210	38	-3033.56	0.00	0.08	0.00	2167.80	-0.38
211	60	2562.62	121.21	-1.80	21.95	-423.39	1457.88
211	59	-2504.30	-119.83	1.80	-21.95	429.32	-1060.16
212	59	2504.29	119.83	-1.80	21.95	-429.32	1060.16
212	61	-2415.92	-117.71	1.80	-21.95	438.29	-466.30
213	61	2415.92	117.71	-1.80	21.95	-438.29	466.30
213	58	-2967.06	0.00	11.21	0.00	2083.73	-0.03
214	80	2570.67	121.62	0.51	22.64	-466.47	1462.93
214	79	-2512.35	-120.24	-0.51	-22.64	464.80	-1063.87
215	79	2512.35	120.24	0.51	22.64	-464.80	1063.87
215	81	-2423.97	-118.12	-0.51	-22.64	462.27	-467.97
216	81	2423.97	118.12	0.51	22.64	-462.27	467.97
216	78	-3174.26	0.00	-16.47	0.00	-1616.97	-0.12
217	100	2265.78	121.48	1.19	14.71	-220.13	1461.08
217	99	-2207.45	-120.09	-1.19	-14.71	216.20	-1062.49
218	99	2207.45	120.09	1.19	14.71	-216.20	1062.49
218	101	-2119.08	-117.98	-1.19	-14.71	210.25	-467.31
219	101	2119.08	117.98	1.19	14.71	-210.25	467.31
219	98	-2867.47	0.00	-16.51	0.00	-1795.47	-0.06
220	120	2267.70	121.64	1.41	1.03	-25.97	1463.04
220	119	-2209.37	-120.25	-1.41	-1.03	21.33	-1063.93
221	119	2209.37	120.25	1.41	1.03	-21.33	1063.93
221	121	-2121.00	-118.13	-1.41	-1.03	14.30	-467.95
222	121	2121.00	118.13	1.41	1.03	-14.30	467.95
222	118	-2700.35	0.00	-6.21	0.00	1839.02	-0.17
223	140	2262.73	121.17	6.01	-12.55	108.18	1457.25
223	139	-2204.41	-119.78	-6.01	12.55	-128.00	-1059.70
224	139	2204.41	119.78	6.01	-12.55	128.00	1059.70
224	141	-2116.03	-117.66	-6.01	12.55	-158.03	-466.07
225	141	2116.03	117.66	6.01	-12.55	158.03	466.08
225	138	-2855.21	0.00	48.63	0.00	1650.82	-0.07
226	160	2513.64	120.86	1.21	-20.34	401.12	987.95
226	159	-2437.64	-119.06	-1.21	20.34	-406.31	-472.13
227	159	2437.64	119.06	1.21	-20.34	406.31	472.13
227	158	-3996.54	0.00	27.17	0.00	194.67	-0.20
228	179	2466.24	115.48	0.87	-9.84	191.71	875.91
228	178	-2400.84	-113.92	-0.87	9.84	-194.94	-451.52
229	178	2400.84	113.92	0.87	-9.84	194.94	451.52
229	177	-2897.81	0.00	-17.88	0.00	-1543.85	-0.03

HIPOTESIS 212

MOME Z MIN envolvente (ELS)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
206	21	2099.76	-115.27	3.78	-6.57	-117.68	-705.71
206	20	-2060.87	114.34	-3.78	6.57	109.36	453.14
207	20	2060.87	-114.34	3.78	-6.57	-109.36	-453.14
207	19	-2436.34	0.00	15.44	0.00	-1571.86	0.05
208	40	2238.73	-121.37	-0.38	-17.85	-252.87	-1144.84
208	39	-2228.12	121.12	0.38	17.85	253.10	1072.09
209	39	2228.12	-121.12	-0.38	-17.85	-253.10	-1072.09
209	41	-2139.75	119.02	0.38	17.85	255.02	471.73
210	41	2139.75	-119.02	-0.38	-17.85	-255.02	-471.73
210	38	-2871.54	0.00	-13.92	0.00	-1757.48	0.36
211	60	2261.00	-121.21	-2.01	-21.95	-280.49	-1457.86
211	59	-2202.67	119.83	2.01	21.95	287.13	1060.14
212	59	2202.67	-119.83	-2.01	-21.95	-287.13	-1060.14
212	61	-2114.30	117.71	2.01	21.95	297.19	466.28
213	61	2114.30	-117.71	-2.01	-21.95	-297.19	-466.28
213	58	-2823.12	0.00	-26.38	0.00	-1580.29	0.01
214	80	2268.14	-121.62	-2.17	-22.64	-294.70	-1462.84
214	79	-2209.81	120.24	2.17	22.64	301.88	1063.78
215	79	2209.81	-120.24	-2.17	-22.64	-301.88	-1063.78
215	81	-2121.44	118.12	2.17	22.64	312.75	467.88
216	81	2121.44	-118.12	-2.17	-22.64	-312.75	-467.88
216	78	-2702.61	0.00	-2.12	0.00	2156.86	-0.02
217	100	2567.71	-121.48	-2.77	-14.71	-257.96	-1461.18
217	99	-2509.38	120.09	2.77	14.71	267.10	1062.59
218	99	2509.38	-120.09	-2.77	-14.71	-267.10	-1062.59
218	101	-2421.00	117.98	2.77	14.71	280.93	467.40
219	101	2421.00	-117.98	-2.77	-14.71	-280.93	-467.40
219	98	-2999.18	0.00	3.35	0.00	2156.54	0.17
220	120	2571.69	-121.64	-3.23	-1.03	24.59	-1463.10
220	119	-2513.36	120.25	3.23	1.03	-13.94	1063.99
221	119	2513.36	-120.25	-3.23	-1.03	13.94	-1063.99
221	121	-2424.98	118.13	3.23	1.03	2.20	468.01
222	121	2424.98	-118.13	-3.23	-1.03	-2.20	-468.01
222	118	-3003.86	0.00	16.51	0.00	-1870.60	0.25
223	140	2559.08	-121.17	3.67	12.55	214.39	-1457.30
223	139	-2500.75	119.78	-3.67	-12.55	-226.52	1059.74
224	139	2500.75	-119.78	3.67	12.55	226.52	-1059.74
224	141	-2412.37	117.66	-3.67	-12.55	-244.89	466.12
225	141	2412.37	-117.66	3.67	12.55	244.89	-466.12
225	138	-2994.89	0.00	-19.76	0.00	-2066.17	0.13
226	160	2228.05	-120.86	-4.28	20.34	330.70	-987.74
226	159	-2152.04	119.06	4.28	-20.34	-312.31	471.92
227	159	2152.04	-119.06	-4.28	20.34	312.31	-471.92
227	158	-1979.80	0.00	61.27	0.00	-612.86	-0.09
228	179	2062.96	-115.48	-3.52	9.84	165.55	-875.89
228	178	-1997.56	113.92	3.52	-9.84	-152.53	451.50
229	178	1997.56	-113.92	-3.52	9.84	152.53	-451.50
229	177	-2420.46	0.00	26.02	0.00	1357.85	0.02

ESFUERZOS E.L.U.

HIPOTESIS 311

FUER X MAX envolvente (ELU)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
206	21	5623.12	151.26	-27.67	8.87	231.96	937.96
206	20	-5570.62	-151.26	27.67	-8.87	-171.09	-605.18
207	20	5570.62	151.26	-27.67	8.87	171.09	605.18
207	19	-5418.07	-151.26	27.67	-8.87	-60.41	-0.13
208	40	6015.25	-157.43	-24.86	-24.09	493.67	-1511.47
208	39	-6000.93	157.43	24.86	24.09	-478.75	1417.01
209	39	6000.93	-157.43	-24.86	-24.09	478.75	-1417.01
209	41	-5881.62	157.43	24.86	24.09	-354.43	629.84
210	41	5881.62	-157.43	-24.87	-24.09	354.43	-629.84
210	38	-5729.07	157.43	24.87	24.09	-254.97	0.10
211	60	6060.56	155.44	-9.41	29.63	500.69	1911.98
211	59	-5981.81	-155.44	9.41	-29.63	-469.65	-1399.01
212	59	5981.81	155.44	-9.41	29.63	469.65	1399.01
212	61	-5862.51	-155.44	9.41	-29.63	-422.61	-621.79
213	61	5862.51	155.44	-9.41	29.63	422.61	621.79
213	58	-5709.96	-155.44	9.41	-29.63	-384.98	-0.02
214	80	6091.39	-156.00	-20.82	-30.56	628.66	-1918.58
214	79	-6012.65	156.00	20.82	30.56	-559.97	1403.80
215	79	6012.65	-156.00	-20.82	-30.56	559.97	-1403.80
215	81	-5893.34	156.00	20.82	30.56	-455.88	623.82
216	81	5893.34	-156.00	-20.82	-30.56	455.89	-623.83
216	78	-5740.79	156.00	20.82	30.56	-372.61	-0.16
217	100	6087.95	155.80	-16.57	19.85	507.76	1916.30
217	99	-6009.21	-155.80	16.57	-19.85	-453.07	-1402.15
218	99	6009.21	155.80	-16.57	19.85	453.07	1402.15
218	101	-5889.90	-155.80	16.57	-19.85	-370.21	-623.14
219	101	5889.90	155.80	-16.57	19.85	370.20	623.14
219	98	-5737.35	-155.80	16.57	-19.85	-303.92	0.07
220	120	6086.85	-156.02	-29.51	-1.39	507.05	-1919.08
220	119	-6008.11	156.02	29.51	1.39	-409.67	1404.23
221	119	6008.11	-156.02	-29.51	-1.39	409.67	-1404.23
221	121	-5888.81	156.02	29.51	1.39	-262.14	624.16
222	121	5888.81	-156.01	-29.51	-1.39	262.14	-624.16
222	118	-5736.26	156.01	29.51	1.39	-144.11	0.10
223	140	6062.31	155.38	-25.91	-16.93	245.05	1911.14
223	139	-5983.57	-155.38	25.91	16.93	-159.56	-1398.39
224	139	5983.57	155.38	-25.91	-16.93	159.56	1398.39
224	141	-5864.26	-155.38	25.91	16.93	-30.03	-621.49
225	141	5864.26	155.38	-25.91	-16.93	30.03	621.49
225	138	-5711.71	-155.38	25.91	16.93	73.60	0.03
226	160	6007.04	-157.60	-46.75	27.46	247.33	-1307.77
226	159	-5904.44	157.60	46.75	-27.46	-46.33	630.10
227	159	5904.44	-157.60	-46.75	27.46	46.32	-630.10
227	158	-5751.89	157.60	46.75	-27.46	140.66	-0.29
228	179	5756.13	150.70	-27.06	-13.29	181.23	1160.37
228	178	-5667.84	-150.70	27.06	13.29	-81.11	-602.80
229	178	5667.84	150.70	-27.06	-13.29	81.12	602.80
229	177	-5515.29	-150.70	27.06	13.29	27.11	-0.01

HIPOTESIS 312

FUER X MIN envolvente (ELU)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
206	21	1832.08	-151.26	-1.42	-8.86	24.39	-937.79
206	20	-1793.19	151.26	1.42	8.86	-21.25	605.01
207	20	1793.19	-151.26	-1.42	-8.86	21.25	-605.01
207	19	-1680.19	151.26	1.33	8.86	-15.96	-0.04
208	40	2003.15	157.43	-11.88	24.10	-26.90	1511.38
208	39	-1992.55	-157.43	11.88	-24.10	34.03	-1416.92
209	39	1992.55	157.43	-11.88	24.10	-34.03	1416.92
209	41	-1904.17	-157.43	11.88	-24.10	93.45	-629.75
210	41	1904.17	157.43	-11.88	24.10	-93.45	629.75
210	38	-1791.17	-157.43	11.88	-24.10	140.99	-0.01
211	60	2022.24	-155.44	-9.08	-29.63	-103.84	-1911.96
211	59	-1963.91	155.44	9.08	29.63	133.81	1398.99
212	59	1963.91	-155.44	-9.08	-29.63	-133.81	-1398.99
212	61	-1875.53	155.44	9.08	29.63	179.22	621.77
213	61	1875.53	-155.44	-9.08	-29.63	-179.22	-621.77
213	58	-1762.53	155.44	9.08	29.63	215.55	-0.01
214	80	2030.71	156.00	-5.37	30.56	-208.02	1918.78
214	79	-1972.39	-156.00	5.37	-30.56	225.73	-1404.00
215	79	1972.39	156.00	-5.37	30.56	-225.73	1404.00
215	81	-1884.01	-156.00	5.37	-30.56	252.56	-624.02
216	81	1884.01	156.00	-5.37	30.56	-252.56	624.02
216	78	-1771.01	-156.00	5.37	-30.56	274.02	-0.04
217	100	2025.11	-155.80	-8.92	-19.86	13.10	-1916.40
217	99	-1966.78	155.80	8.92	19.86	16.32	1402.25
218	99	1966.78	-155.80	-8.92	-19.86	-16.32	-1402.25
218	101	-1878.41	155.80	8.92	19.86	60.90	623.24
219	101	1878.41	-155.80	-8.92	-19.86	-60.90	-623.24
219	98	-1765.41	155.80	8.92	19.86	96.57	0.03
220	120	2028.94	156.02	-1.57	1.40	90.98	1918.96
220	119	-1970.61	-156.02	1.57	-1.40	-85.79	-1404.11
221	119	1970.61	156.02	-1.57	1.40	85.79	1404.11
221	121	-1882.24	-156.02	1.57	-1.40	-77.92	-624.03
222	121	1882.24	156.01	-1.57	1.40	77.92	624.03
222	118	-1769.24	-156.01	1.57	-1.40	-71.63	0.03
223	140	2016.74	-155.38	-2.54	16.94	260.83	-1911.19
223	139	-1958.41	155.38	2.54	-16.94	-252.45	1398.44
224	139	1958.41	-155.38	-2.54	16.94	252.45	-1398.44
224	141	-1870.03	155.38	2.54	-16.94	-239.75	621.54
225	141	1870.04	-155.38	-2.54	16.94	239.75	-621.54
225	138	-1757.04	155.38	2.54	-16.94	-229.59	0.02
226	160	1963.75	157.60	9.93	-27.45	162.77	1308.15
226	159	-1887.75	-157.60	-9.93	27.45	-205.48	-630.48
227	159	1887.75	157.60	9.93	-27.45	205.48	630.48
227	158	-1774.75	-157.60	-9.93	27.45	-245.22	-0.08
228	179	1747.29	-150.70	0.34	13.29	64.99	-1160.36
228	178	-1681.89	150.70	-0.34	-13.29	-66.26	602.78
229	178	1681.89	-150.70	0.34	13.29	66.26	-602.78
229	177	-1568.89	150.70	-0.34	-13.29	-67.63	0.00

HIPOTESIS 313

FUER Y MAX envolvente (ELU)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
206	21	2393.05	156.09	5.18	8.86	-159.94	954.50
206	20	-2354.16	-154.71	-5.18	-8.86	148.55	-612.62
207	20	2354.16	154.71	5.18	8.86	-148.55	612.62
207	19	-2241.17	-151.26	-5.20	-8.86	127.96	-0.06
208	40	2544.24	164.57	1.13	24.10	-373.23	1549.43
208	39	-2533.63	-164.19	-1.13	-24.10	372.55	-1450.80
209	39	2533.63	164.19	1.13	24.10	-372.55	1450.80
209	41	-2445.26	-161.04	-1.13	-24.10	366.92	-637.72
210	41	2445.26	161.04	1.13	24.10	-366.92	637.72
210	38	-2332.26	-157.43	-1.19	-24.10	362.55	-0.05
211	60	2562.64	164.55	-1.53	29.63	-427.17	1974.37
211	59	-2504.31	-162.47	1.53	-29.63	432.22	-1434.79
212	59	2504.31	162.47	-1.53	29.63	-432.22	1434.79
212	61	-2415.93	-159.30	1.53	-29.63	439.87	-630.36
213	61	2415.93	159.30	-1.53	29.63	-439.87	630.36
213	58	-2302.94	-155.44	1.45	-29.63	446.12	-0.01
214	80	2570.66	165.10	0.96	30.56	-472.64	1981.18
214	79	-2512.33	-163.02	-0.96	-30.56	469.49	-1439.79
215	79	2512.33	163.02	0.96	30.56	-469.49	1439.79
215	81	-2423.95	-159.85	-0.96	-30.56	464.71	-632.60
216	81	2423.95	159.85	0.96	30.56	-464.71	632.60
216	78	-2310.95	-156.00	-1.08	-30.56	461.06	-0.05
217	100	2568.10	164.91	1.38	19.86	-314.45	1978.71
217	99	-2509.78	-162.83	-1.38	-19.86	309.89	-1437.95
218	99	2509.78	162.83	1.38	19.86	-309.89	1437.95
218	101	-2421.40	-159.65	-1.38	-19.86	302.97	-631.72
219	101	2421.40	159.65	1.38	19.86	-302.97	631.72
219	98	-2308.42	-155.80	-1.54	-19.86	297.67	0.05
220	120	2570.16	165.12	1.86	1.40	-42.02	1981.35
220	119	-2511.83	-163.04	-1.86	-1.40	35.87	-1439.89
221	119	2511.83	163.04	1.86	1.40	-35.87	1439.89
221	121	-2423.45	-159.87	-1.86	-1.40	26.56	-632.60
222	121	2423.45	159.87	1.86	1.40	-26.56	632.60
222	118	-2310.39	-156.01	-2.06	-1.40	19.29	0.03
223	140	2565.08	164.48	8.37	-16.94	152.77	1973.54
223	139	-2506.75	-162.40	-8.37	16.94	-180.38	-1434.17
224	139	2506.75	162.40	8.37	-16.94	180.38	1434.17
224	141	-2418.38	-159.23	-8.37	16.94	-222.21	-630.06
225	141	2418.38	159.23	8.37	-16.94	222.21	630.06
225	138	-2305.63	-155.38	-8.55	16.94	-255.51	0.03
226	160	2510.22	163.78	2.22	-27.45	391.02	1336.53
226	159	-2434.22	-161.07	-2.22	27.45	-400.57	-638.09
227	159	2434.22	161.07	2.22	-27.45	400.57	638.09
227	158	-2320.21	-157.60	-2.52	27.45	-408.99	-0.11
228	179	2485.01	156.47	1.64	-13.29	185.13	1184.93
228	178	-2419.61	-154.14	-1.64	13.29	-191.21	-610.30
229	178	2419.61	154.14	1.64	-13.29	191.21	610.30
229	177	-2312.11	-150.70	-1.89	13.29	-197.62	-0.01

HIPOTESIS 314

FUER Y MIN envolvente (ELU)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
206	21	2392.75	-156.09	5.19	-8.87	-156.79	-954.37
206	20	-2353.87	154.71	-5.19	8.87	145.36	612.49
207	20	2353.87	-154.71	5.19	-8.87	-145.36	-612.49
207	19	-2240.86	151.26	-5.17	8.87	124.45	-0.06
208	40	2544.31	-164.57	-0.19	-24.10	-356.51	-1549.33
208	39	-2533.71	164.19	0.19	24.10	356.62	1450.70
209	39	2533.71	-164.19	-0.19	-24.10	-356.62	-1450.70
209	41	-2445.33	161.04	0.19	24.10	357.57	637.63
210	41	2445.33	-161.04	-0.19	-24.10	-357.57	-637.63
210	38	-2332.33	157.43	0.25	24.10	358.18	-0.05
211	60	2562.53	-164.55	-3.63	-29.63	-397.39	-1974.35
211	59	-2504.20	162.47	3.63	29.63	409.36	1434.77
212	59	2504.20	-162.47	-3.63	-29.63	-409.35	-1434.77
212	61	-2415.82	159.30	3.63	29.63	427.49	630.33
213	61	2415.82	-159.30	-3.63	-29.63	-427.49	-630.33
213	58	-2302.82	155.44	3.70	29.63	441.85	-0.01
214	80	2570.81	-165.10	-2.58	-30.56	-424.09	-1981.09
214	79	-2512.48	163.02	2.58	30.56	432.59	1439.69
215	79	2512.48	-163.02	-2.58	-30.56	-432.59	-1439.69
215	81	-2424.11	159.85	2.58	30.56	445.47	632.50
216	81	2424.10	-159.85	-2.58	-30.56	-445.47	-632.50
216	78	-2311.11	156.00	2.70	30.56	455.60	-0.05
217	100	2567.65	-164.91	-3.37	-19.86	-249.73	-1978.81
217	99	-2509.32	162.83	3.37	19.86	260.86	1438.05
218	99	2509.32	-162.83	-3.37	-19.86	-260.86	-1438.05
218	101	-2420.94	159.65	3.37	19.86	277.72	631.83
219	101	2420.94	-159.65	-3.37	-19.86	-277.72	-631.83
219	98	-2307.93	155.80	3.53	19.86	290.99	0.05
220	120	2571.91	-165.12	-3.97	-1.40	34.29	-1981.41
220	119	-2513.58	163.04	3.97	1.40	-21.19	1439.95
221	119	2513.58	-163.04	-3.97	-1.40	21.19	-1439.95
221	121	-2425.21	159.87	3.97	1.40	-1.34	632.66
222	121	2425.21	-159.87	-3.97	-1.40	1.34	-632.66
222	118	-2312.27	156.01	4.17	1.40	14.36	0.03
223	140	2558.20	-164.48	2.95	16.94	223.62	-1973.59
223	139	-2499.88	162.40	-2.95	-16.94	-233.36	1434.22
224	139	2499.88	-162.40	2.95	16.94	233.36	-1434.22
224	141	-2411.50	159.23	-2.95	-16.94	-248.11	630.11
225	141	2411.50	-159.23	2.95	16.94	248.11	-630.11
225	138	-2298.25	155.38	-2.76	-16.94	-260.07	0.03
226	160	2537.18	-163.78	-5.78	27.45	470.66	-1336.31
226	159	-2461.18	161.07	5.78	-27.45	-445.79	637.87
227	159	2461.18	-161.07	-5.78	27.45	445.79	-637.87
227	158	-2349.18	157.60	6.09	-27.45	-423.12	-0.11
228	179	2337.09	-156.47	-4.45	13.29	237.11	-1184.91
228	178	-2271.69	154.14	4.45	-13.29	-220.66	610.28
229	178	2271.69	-154.14	-4.45	13.29	220.66	-610.28
229	177	-2153.20	150.70	4.69	-13.29	-203.05	-0.01

HIPOTESIS 315

FUER Z MAX envolvente (ELU)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
206	21	4059.37	151.26	108.31	8.85	-231.85	937.90
206	20	-4006.88	-151.26	-107.74	-8.85	-5.81	-605.12
207	20	4006.88	151.26	107.74	8.85	5.81	605.12
207	19	-3854.33	-151.26	-106.71	-8.85	-434.72	-0.07
208	40	4286.39	157.43	120.39	24.06	-557.44	1511.22
208	39	-4272.08	-157.43	-120.23	-24.06	485.26	-1416.76
209	39	4272.08	157.43	120.23	24.06	-485.26	1416.76
209	41	-4152.77	-157.43	-118.94	-24.06	-112.68	-629.59
210	41	4152.77	157.43	118.94	24.06	112.68	629.59
210	38	-4000.22	-157.43	-117.87	-24.06	-586.34	0.15
211	60	2947.08	155.44	120.92	29.62	-433.82	1911.96
211	59	-2888.76	-155.44	-120.07	-29.62	36.17	-1399.00
212	59	2888.76	155.44	120.07	29.62	-36.17	1399.00
212	61	-2800.38	-155.44	-118.78	-29.62	-560.96	-621.78
213	61	2800.38	155.44	118.77	29.62	560.96	621.78
213	58	-2687.38	-155.44	-117.64	-29.62	-1033.86	0.00
214	80	2957.05	156.00	124.77	30.56	-534.65	1918.83
214	79	-2898.73	-156.00	-123.92	-30.56	124.30	-1404.05
215	79	2898.73	156.00	123.92	30.56	-124.30	1404.05
215	81	-2810.35	-156.00	-122.62	-30.56	-492.07	-624.07
216	81	2810.35	156.00	122.62	30.56	492.07	624.07
216	78	-2697.35	-156.00	-121.49	-30.56	-980.36	-0.09
217	100	2949.68	155.80	127.50	19.87	-570.46	1916.38
217	99	-2891.35	-155.80	-126.65	-19.87	151.12	-1402.23
218	99	2891.35	155.80	126.65	19.87	-151.12	1402.23
218	101	-2802.97	-155.80	-125.35	-19.87	-478.89	-623.22
219	101	2802.97	155.80	125.35	19.87	478.89	623.22
219	98	-2689.97	-155.80	-124.22	-19.87	-978.09	-0.01
220	120	2950.17	156.02	126.73	1.37	-500.40	1918.84
220	119	-2891.84	-156.02	-125.88	-1.37	83.58	-1403.99
221	119	2891.84	156.02	125.88	1.37	-83.58	1403.99
221	121	-2803.47	-156.02	-124.58	-1.37	-542.60	-623.91
222	121	2803.47	156.01	124.59	1.37	542.60	623.91
222	118	-2690.47	-156.01	-123.45	-1.37	-1038.74	0.15
223	140	4139.17	155.38	118.39	-16.95	-205.50	1911.08
223	139	-4060.43	-155.38	-117.54	16.95	-183.78	-1398.33
224	139	4060.43	155.38	117.54	-16.95	183.78	1398.33
224	141	-3941.12	-155.38	-116.24	16.95	-768.23	-621.43
225	141	3941.13	155.38	116.24	-16.95	768.23	621.43
225	138	-3788.58	-155.38	-115.11	16.95	-1230.99	0.09
226	160	3041.80	157.60	125.55	-27.46	-475.64	1308.19
226	159	-2965.80	-157.60	-124.44	27.46	-61.83	-630.52
227	159	2965.80	157.60	124.44	-27.46	61.83	630.52
227	158	-2852.80	-157.60	-123.40	27.46	-557.52	-0.13
228	179	3017.42	150.70	96.94	-13.29	-33.11	1160.38
228	178	-2952.03	-150.70	-95.98	13.29	-323.79	-602.80
229	178	2952.03	150.70	95.98	-13.29	323.79	602.80
229	177	-2839.03	-150.70	-94.95	13.29	-705.66	-0.02

HIPOTESIS 316

FUER Z MIN envolvente (ELU)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
206	21	3465.69	-151.26	-116.65	-8.85	618.04	-937.74
206	20	-3426.80	151.26	116.09	8.85	-362.02	604.96
207	20	3426.80	-151.26	-116.09	-8.85	362.02	-604.96
207	19	-3313.80	151.26	115.06	8.85	100.27	-0.09
208	40	4453.08	-157.43	-131.21	-24.06	806.50	-1511.32
208	39	-4438.77	157.43	131.06	24.06	-727.82	1416.86
209	39	4438.77	-157.43	-131.06	-24.06	727.82	-1416.86
209	41	-4319.46	157.43	129.77	24.06	-75.75	629.69
210	41	4319.46	-157.43	-129.77	-24.06	75.75	-629.69
210	38	-4166.91	157.43	128.70	24.06	441.22	-0.05
211	60	4870.83	-155.44	-122.15	-29.62	931.42	-1911.95
211	59	-4792.08	155.44	121.30	29.62	-529.72	1398.98
212	59	4792.08	-155.44	-121.30	-29.62	529.72	-1398.98
212	61	-4672.78	155.44	120.00	29.62	73.55	621.76
213	61	4672.78	-155.44	-120.00	-29.62	-73.54	-621.76
213	58	-4520.23	155.44	118.87	29.62	551.35	-0.02
214	80	4888.17	-156.00	-133.16	-30.56	1055.19	-1918.64
214	79	-4809.43	156.00	132.31	30.56	-617.18	1403.85
215	79	4809.43	-156.00	-132.31	-30.56	617.18	-1403.85
215	81	-4690.12	156.00	131.01	30.56	41.12	623.88
216	81	4690.12	-156.00	-131.01	-30.56	-41.12	-623.88
216	78	-4537.57	156.00	129.88	30.56	562.95	-0.10
217	100	4871.60	-155.80	-134.12	-19.87	1073.81	-1916.47
217	99	-4792.86	155.80	133.27	19.87	-632.61	1402.32
218	99	4792.86	-155.80	-133.27	-19.87	632.61	-1402.32
218	101	-4673.55	155.80	131.97	19.87	30.52	623.31
219	101	4673.55	-155.80	-131.98	-19.87	-30.52	-623.31
219	98	-4521.00	155.80	130.84	19.87	556.21	0.10
220	120	4880.47	-156.02	-136.71	-1.37	1093.74	-1918.99
220	119	-4801.73	156.02	135.85	1.37	-644.01	1404.14
221	119	4801.73	-156.02	-135.85	-1.37	644.01	-1404.14
221	121	-4682.42	156.02	134.56	1.37	32.02	624.06
222	121	4682.42	-156.01	-134.56	-1.37	-32.02	-624.06
222	118	-4529.87	156.01	133.43	1.37	568.04	0.00
223	140	3676.08	-155.38	-125.93	16.95	906.54	-1911.16
223	139	-3617.76	155.38	125.08	-16.95	-492.39	1398.40
224	139	3617.76	-155.38	-125.08	16.95	492.39	-1398.40
224	141	-3529.38	155.38	123.78	-16.95	129.75	621.51
225	141	3529.38	-155.38	-123.78	16.95	-129.75	-621.51
225	138	-3416.38	155.38	122.65	-16.95	622.66	-0.01
226	160	4865.66	-157.60	-143.11	27.46	899.57	-1307.82
226	159	-4763.05	157.60	142.00	-27.46	-286.57	630.15
227	159	4763.05	-157.60	-142.00	27.46	286.57	-630.15
227	158	-4610.50	157.60	140.97	-27.46	279.38	-0.24
228	179	4551.42	-150.70	-105.07	13.29	357.54	-1160.36
228	178	-4463.14	150.70	104.11	-13.29	29.45	602.78
229	178	4463.14	-150.70	-104.11	13.29	-29.45	-602.78
229	177	-4310.59	150.70	103.08	-13.29	443.84	0.00

HIPOTESIS 317

MOME X MAX envolvente (ELU)

ESFUERZOS EN BARRAS

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
206	21	3728.01	151.26	-110.44	8.88	500.01	937.93
206	20	-3689.13	-151.26	109.87	-8.88	-257.67	-605.16
207	20	3689.13	151.26	-109.87	8.88	257.67	605.16
207	19	-3576.13	-151.26	108.84	-8.88	179.76	-0.10
208	40	3906.74	157.43	-123.04	24.14	857.85	1511.40
208	39	-3896.14	-157.43	122.88	-24.14	-784.07	-1416.94
209	39	3896.14	157.43	-122.88	24.14	784.07	1416.94
209	41	-3807.76	-157.43	121.59	-24.14	-172.88	-629.76
210	41	3807.76	157.43	-121.59	24.14	172.88	629.76
210	38	-3694.76	-157.43	120.52	-24.14	311.39	-0.03
211	60	2562.65	155.44	-56.48	29.63	419.37	1911.98
211	59	-2504.32	-155.44	55.63	-29.63	-234.40	-1399.01
212	59	2504.32	155.44	-55.63	29.63	234.40	1399.01
212	61	-2415.94	-155.44	54.33	-29.63	40.50	-621.79
213	61	2415.94	155.44	-54.33	29.63	-40.50	621.79
213	58	-2302.94	-155.44	53.20	-29.63	255.61	-0.01
214	80	2570.65	156.00	1.08	30.56	-474.31	1918.79
214	79	-2512.32	-156.00	-1.08	-30.56	470.75	-1404.01
215	79	2512.32	156.00	1.08	30.56	-470.75	1404.01
215	81	-2423.95	-156.00	-1.08	-30.56	465.37	-624.03
216	81	2423.95	156.00	1.08	30.56	-465.37	624.03
216	78	-2310.95	-156.00	-1.08	-30.56	461.06	-0.05
217	100	3255.30	155.80	118.85	19.87	-709.34	1916.36
217	99	-3196.97	-155.80	-118.00	-19.87	318.54	-1402.22
218	99	3196.97	155.80	118.00	19.87	-318.54	1402.22
218	101	-3108.60	-155.80	-116.70	-19.87	-268.20	-623.20
219	101	3108.60	155.80	116.70	19.87	268.20	623.20
219	98	-2995.60	-155.80	-115.57	-19.87	-732.79	0.00
220	120	3912.75	156.02	-123.55	1.42	1060.55	1918.99
220	119	-3854.42	-156.02	122.70	-1.42	-654.24	-1404.14
221	119	3854.42	156.02	-122.70	1.42	654.24	1404.14
221	121	-3766.04	-156.02	121.40	-1.42	-43.97	-624.06
222	121	3766.04	156.01	-121.40	1.42	43.98	624.06
222	118	-3653.04	-156.01	120.27	-1.42	439.43	0.00
223	140	3244.65	-155.38	-113.88	16.95	601.45	-1911.15
223	139	-3186.32	155.38	113.03	-16.95	-227.05	1398.39
224	139	3186.32	-155.38	-113.03	16.95	227.05	-1398.39
224	141	-3097.94	155.38	111.73	-16.95	334.86	621.50
225	141	3097.94	-155.38	-111.73	16.95	-334.86	-621.50
225	138	-2984.94	155.38	110.60	-16.95	779.58	-0.02
226	160	3901.11	-157.60	-136.90	27.46	691.48	-1307.87
226	159	-3825.11	157.60	135.79	-27.46	-105.21	630.20
227	159	3825.11	-157.60	-135.79	27.46	105.21	-630.20
227	158	-3712.11	157.60	134.75	-27.46	435.87	-0.19
228	179	2331.59	-150.70	-4.69	13.29	239.18	-1160.36
228	178	-2266.20	150.70	4.69	-13.29	-221.82	602.78
229	178	2266.20	-150.70	-4.69	13.29	221.82	-602.78

proc Viaducto Papiol

HIPOTESIS 318

MOME X MIN envolvente (ELU)

ESFUERZOS EN BARRAS

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
206	21	4061.74	-151.26	100.52	-8.88	-130.69	-937.77
206	20	-4009.24	151.26	-99.95	8.88	-89.82	604.99
207	20	4009.24	-151.26	99.95	-8.88	89.82	-604.99
207	19	-3856.69	151.26	-98.92	8.88	-487.55	-0.06
208	40	3388.80	-157.43	113.27	-24.13	-517.26	-1511.50
208	39	-3378.20	157.43	-113.11	24.13	449.35	1417.04
209	39	3378.20	-157.43	113.11	-24.13	-449.35	-1417.04
209	41	-3289.82	157.43	-111.83	24.13	-113.00	629.87
210	41	3289.82	-157.43	111.82	-24.13	113.00	-629.87
210	38	-3176.82	157.43	-110.76	24.13	-558.19	0.13
211	60	2562.52	-155.44	51.32	-29.63	-1243.94	-1911.95
211	59	-2504.19	155.44	-50.47	29.63	1075.98	1398.99
212	59	2504.19	-155.44	50.47	-29.63	-1075.98	-1398.99
212	61	-2415.81	155.44	-49.17	29.63	826.85	621.77
213	61	2415.81	-155.44	49.17	-29.63	-826.85	-621.76
213	58	-2302.81	155.44	-48.04	29.63	632.36	-0.01
214	80	2570.81	-156.00	-2.70	-30.56	-422.43	-1918.69
214	79	-2512.48	156.00	2.70	30.56	431.33	1403.91
215	79	2512.48	-156.00	-2.70	-30.56	-431.33	-1403.91
215	81	-2424.11	156.00	2.70	30.56	444.81	623.93
216	81	2424.11	-156.00	-2.70	-30.56	-444.81	-623.93
216	78	-2311.11	156.00	2.70	30.56	455.60	-0.05
217	100	3909.15	-155.80	-126.40	-19.87	1212.13	-1916.44
217	99	-3850.82	155.80	125.55	19.87	-796.42	1402.29
218	99	3850.82	-155.80	-125.55	-19.87	796.42	-1402.29
218	101	-3762.45	155.80	124.25	19.87	-171.92	623.28
219	101	3762.45	-155.80	-124.25	-19.87	171.92	-623.28
219	98	-3649.45	155.80	123.12	19.87	322.87	0.07
220	120	3259.32	-156.02	112.66	-1.42	-472.39	-1919.13
220	119	-3201.00	156.02	-111.81	1.42	102.02	1404.28
221	119	3201.00	-156.02	111.81	-1.42	-102.02	-1404.28
221	121	-3112.62	156.02	-110.51	1.42	-453.79	624.20
222	121	3112.62	-156.01	110.51	-1.42	453.78	-624.20
222	118	-2999.62	156.01	-109.38	1.42	-893.62	0.14
223	140	3252.30	155.38	109.55	-16.95	-323.36	1911.10
223	139	-3193.97	-155.38	-108.70	16.95	-36.75	-1398.35
224	139	3193.97	155.38	108.70	-16.95	36.75	1398.35
224	141	-3105.59	-155.38	-107.40	16.95	-576.99	-621.45
225	141	3105.59	155.38	107.40	-16.95	576.99	621.45
225	138	-2992.59	-155.38	-106.27	16.95	-1004.38	0.07
226	160	2594.49	157.60	105.01	-27.46	-1279.84	1308.19
226	159	-2518.49	-157.60	-103.90	27.46	830.69	-630.52
227	159	2518.49	157.60	103.90	-27.46	-830.69	630.52
227	158	-2405.49	-157.60	-102.86	27.46	417.16	-0.13
228	179	2490.51	150.70	1.89	-13.29	183.05	1160.37
228	178	-2425.11	-150.70	-1.89	13.29	-190.05	-602.79
229	178	2425.11	150.70	1.89	-13.29	190.05	602.79
229	177	-2312.11	-150.70	-1.89	13.29	-197.62	-0.01

HIPOTESIS 319

MOME Y MAX envolvente (ELU)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
206	21	3051.51	-151.26	-28.49	-8.86	2694.89	-937.93
206	20	-3012.62	151.26	28.34	8.86	-2632.26	605.15
207	20	3012.62	-151.26	-28.34	-8.86	2632.26	-605.15
207	19	-3067.37	151.26	6.81	8.86	-2530.89	0.09
208	40	3082.46	-157.43	-73.34	-24.07	2896.32	-1511.81
208	39	-3053.99	157.43	73.16	24.07	-2852.37	1417.35
209	39	3053.99	-157.43	-73.16	-24.07	2852.37	-1417.35
209	41	-3386.26	157.43	-18.38	24.10	-2705.85	630.29
210	41	3386.26	-157.43	18.38	-24.10	2705.85	-630.29
210	38	-3273.27	157.43	-19.08	24.10	-2780.83	0.55
211	60	3106.61	-155.44	-57.37	-29.63	2797.70	-1911.98
211	59	-3012.71	155.44	56.47	29.63	-2609.88	1399.01
212	59	3012.71	-155.44	-56.47	-29.63	2609.88	-1399.01
212	61	-3369.70	155.44	-39.39	29.63	-2628.10	621.79
213	61	3369.70	-155.44	39.39	-29.63	2628.10	-621.79
213	58	-3256.83	155.44	-40.77	29.63	-2787.87	0.02
214	80	3119.16	-156.00	-84.29	-30.56	3236.14	-1918.62
214	79	-3025.41	156.00	83.39	30.56	-2959.46	1403.83
215	79	3025.41	-156.00	-83.39	-30.56	2959.46	-1403.83
215	81	-3387.27	156.00	-18.68	30.56	-2776.11	623.83
216	81	3387.27	-156.00	18.68	-30.56	2776.12	-623.83
216	78	-3273.79	156.00	-19.60	30.56	-2852.71	-0.15
217	100	3114.57	-155.80	-82.39	-19.86	3392.29	-1916.27
217	99	-3021.33	155.80	81.49	19.86	-3121.90	1402.13
218	99	3021.33	-155.80	-81.49	-19.86	3121.90	-1402.13
218	101	-3135.35	155.80	21.03	19.86	-2845.62	623.10
219	101	3135.35	-155.80	-21.03	-19.86	2845.62	-623.10
219	98	-3268.12	155.80	-22.29	19.85	-2861.42	-0.11
220	120	3906.98	-156.02	-85.94	-1.38	3521.47	-1919.32
220	119	-3019.74	156.02	84.77	1.38	-3239.38	1404.46
221	119	3019.74	-156.02	-84.77	-1.38	3239.38	-1404.46
221	121	-3139.41	156.02	26.67	1.39	-2953.10	624.42
222	121	3139.42	-156.01	-26.67	-1.39	2953.10	-624.42
222	118	-3026.42	156.01	26.50	1.39	-2847.06	0.36
223	140	4272.38	-155.38	-32.35	16.94	3126.75	-1911.34
223	139	-4175.92	155.38	31.48	-16.94	-3021.40	1398.58
224	139	4175.92	-155.38	-31.48	16.94	3021.40	-1398.58
224	141	-4262.99	155.38	-21.33	-16.94	-3022.88	621.71
225	141	4262.99	-155.38	21.33	16.94	3022.88	-621.71
225	138	-4112.74	155.38	-24.29	-16.94	-3111.40	0.19
226	160	4244.20	-157.60	-124.62	27.46	4277.94	-1307.91
226	159	-4351.93	157.60	68.39	-27.46	-3862.87	630.24
227	159	4351.93	-157.60	-68.39	27.46	3862.86	-630.24
227	158	-4199.38	157.60	68.39	-27.46	-3589.31	-0.15
228	179	3899.66	-150.70	-35.53	13.29	2502.79	-1160.32
228	178	-4006.88	150.70	-10.74	-13.29	-2494.22	602.74
229	178	4006.88	-150.70	10.74	13.29	2494.22	-602.74
229	177	-3854.33	150.70	-11.15	-13.29	-2537.44	-0.04

HIPOTESIS 320

MOME Y MIN envolvente (ELU)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
206	21	4062.39	151.26	72.78	8.85	-2872.88	938.09
206	20	-4211.95	-151.26	-22.84	-8.86	2798.28	-605.34
207	20	4211.95	151.26	22.84	8.86	-2798.28	605.34
207	19	-4059.40	-151.26	-22.83	-8.86	2706.93	-0.28
208	40	4280.77	157.43	60.56	24.08	-3444.43	1511.88
208	39	-4284.31	-157.43	-60.38	-24.08	3408.15	-1417.42
209	39	4284.31	157.43	60.38	24.08	-3408.15	1417.42
209	41	-4374.90	-157.43	-1.90	-24.10	3214.91	-630.30
210	41	4374.90	157.43	1.90	24.10	-3214.91	630.31
210	38	-4222.34	-157.43	-1.05	-24.10	3209.07	-0.57
211	60	4272.37	155.44	42.27	29.63	-3430.88	1912.01
211	59	-4228.72	-155.44	-41.37	-29.63	3292.89	-1399.04
212	59	4228.72	155.44	41.37	29.63	-3292.89	1399.04
212	61	-4315.45	-155.44	15.53	-29.63	3213.70	-621.82
213	61	4315.45	155.44	-15.53	29.63	-3213.70	621.82
213	58	-4162.87	-155.44	16.07	-29.63	3277.93	-0.04
214	80	4288.60	156.00	69.97	30.56	-3919.89	1918.77
214	79	-4244.85	-156.00	-69.07	-30.56	3690.48	-1403.99
215	79	4244.85	156.00	69.07	30.56	-3690.48	1403.99
215	81	-4332.91	-156.00	-7.78	-30.56	3452.22	-624.01
216	81	4332.91	156.00	7.79	30.56	-3452.23	624.01
216	78	-4180.36	-156.00	-7.79	-30.56	3421.08	-0.03
217	100	4287.06	155.80	70.65	19.86	-3762.28	1916.14
217	99	-4243.23	-155.80	-69.75	-19.86	3530.63	-1401.99
218	99	4243.23	155.80	69.75	19.86	-3530.63	1401.99
218	101	-4331.02	-155.80	-9.12	-19.86	3281.47	-622.96
219	101	4331.02	155.80	9.12	19.86	-3281.47	622.96
219	98	-4174.88	-155.80	-1.98	-19.86	3249.77	0.25
220	120	4289.94	156.02	73.35	1.38	-3328.78	1919.21
220	119	-4246.62	-156.02	-72.45	-1.38	3088.22	-1404.36
221	119	4246.62	156.02	72.45	1.38	-3088.22	1404.36
221	121	-4334.69	-156.02	-11.81	-1.39	2836.68	-624.32
222	121	4334.69	156.01	11.81	1.39	-2836.68	624.32
222	118	-4182.14	-156.01	-11.60	-1.39	2790.20	-0.26
223	140	3103.29	155.38	33.67	-16.94	-2568.53	1911.27
223	139	-3062.20	-155.38	-32.79	16.94	2458.86	-1398.51
224	139	3062.20	155.38	32.79	-16.94	-2458.86	1398.51
224	141	-3182.06	-155.38	22.60	16.94	2433.46	-621.63
225	141	3182.06	155.38	-22.60	-16.94	-2433.47	621.63
225	138	-3304.28	-155.38	70.42	16.93	2618.05	-0.12
226	160	3070.76	157.60	105.62	-27.46	-3220.28	1308.24
226	159	-3414.78	-157.60	11.94	27.45	2875.34	-630.61
227	159	3414.78	157.60	-11.94	-27.45	-2875.34	630.61
227	158	-3301.78	-157.60	11.94	27.45	2923.10	-0.21
228	179	2835.79	150.70	15.35	-13.29	-2002.47	1160.34
228	178	-2923.45	-150.70	35.17	13.29	2067.63	-602.76
229	178	2923.45	150.70	-35.17	-13.29	-2067.63	602.76
229	177	-3251.97	-150.70	56.03	13.29	2237.25	0.03

HIPOTESIS 321

MOME Z MAX envolvente (ELU)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
206	21	3230.56	156.09	6.99	8.86	-215.37	954.53
206	20	-3178.07	-154.71	-6.99	-8.86	199.98	-612.64
207	20	3178.07	154.71	6.99	8.86	-199.98	612.64
207	19	-4038.17	0.00	-21.16	0.00	2670.99	-0.28
208	40	3434.73	164.57	0.71	24.10	-496.58	1549.44
208	39	-3420.42	-164.19	-0.71	-24.10	496.15	-1450.81
209	39	3420.42	164.19	0.71	24.10	-496.15	1450.81
209	41	-3301.11	-161.04	-0.71	-24.10	492.59	-637.74
210	41	3301.11	161.04	0.71	24.10	-492.60	637.74
210	38	-4200.50	0.00	0.13	0.00	3197.51	-0.57
211	60	3459.54	164.55	-2.43	29.63	-571.47	1974.38
211	59	-3380.80	-162.47	2.43	-29.63	579.50	-1434.79
212	59	3380.80	162.47	-2.43	29.63	-579.50	1434.79
212	61	-3261.49	-159.30	2.43	-29.63	591.65	-630.36
213	61	3261.49	159.30	-2.43	29.63	-591.65	630.36
213	58	-4105.22	-155.44	15.30	-29.63	3061.13	-0.04
214	80	3470.41	165.10	0.67	30.56	-629.57	1981.20
214	79	-3391.67	-163.02	-0.67	-30.56	627.36	-1439.80
215	79	3391.67	163.02	0.67	30.56	-627.36	1439.80
215	81	-3272.36	-159.85	-0.67	-30.56	623.99	-632.61
216	81	3272.36	159.85	0.67	30.56	-624.00	632.62
216	78	-4414.73	0.00	-24.83	0.00	-2494.21	-0.17
217	100	2265.84	164.91	1.79	19.86	-228.36	1978.72
217	99	-2207.51	-162.83	-1.79	-19.86	222.43	-1437.96
218	99	2207.51	162.83	1.79	19.86	-222.43	1437.96
218	101	-2119.13	-159.65	-1.79	-19.86	213.46	-631.73
219	101	2119.13	159.65	1.79	19.86	-213.46	631.73
219	98	-3298.26	0.00	-25.06	0.00	-2794.79	-0.11
220	120	2267.48	165.12	2.15	1.40	-35.67	1981.36
220	119	-2209.15	-163.04	-2.15	-1.40	28.58	-1439.89
221	119	2209.15	163.04	2.15	1.40	-28.58	1439.89
221	121	-2120.77	-159.87	-2.15	-1.40	17.84	-632.60
222	121	2120.77	159.87	2.15	1.40	-17.84	632.60
222	118	-3046.19	0.00	-9.70	0.00	2755.05	-0.27
223	140	2263.61	164.48	6.69	-16.94	99.18	1973.54
223	139	-2205.28	-162.40	-6.69	16.94	-121.27	-1434.17
224	139	2205.28	162.40	6.69	-16.94	121.27	1434.17
224	141	-2116.90	-159.23	-6.69	16.94	-154.74	-630.06
225	141	2116.90	159.23	6.69	-16.94	154.74	630.07
225	138	-3282.59	0.00	74.94	-0.01	2568.04	-0.12
226	160	3393.52	163.78	1.60	-27.45	541.81	1336.57
226	159	-3290.92	-161.07	-1.60	27.45	-548.68	-638.13
227	159	3290.92	161.07	1.60	-27.45	548.68	638.13
227	158	-5644.61	0.00	40.49	0.00	354.41	-0.29
228	179	3328.88	156.47	1.15	-13.29	259.02	1184.93
228	178	-3240.59	-154.14	-1.15	13.29	-263.29	-610.30
229	178	3240.59	154.14	1.15	-13.29	263.29	610.30
229	177	-4011.81	0.00	-27.03	0.00	-2285.73	-0.04

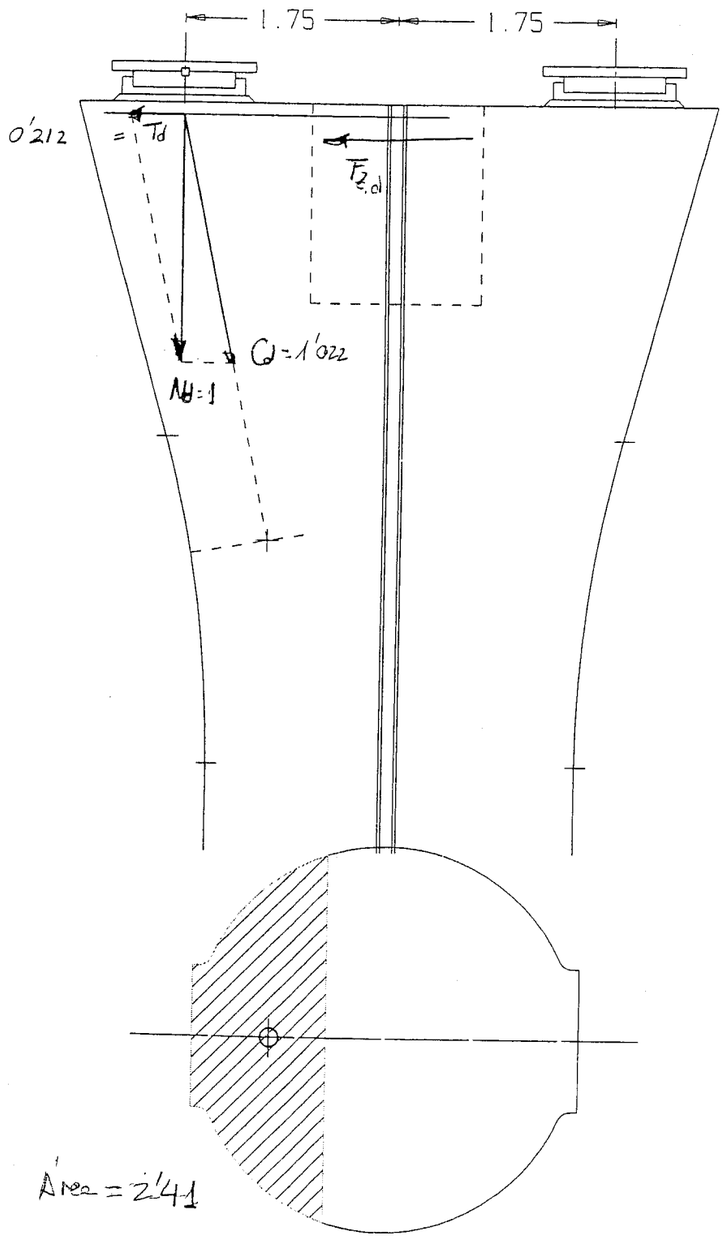
HIPOTESIS 322

MOME Z MIN envolvente (ELU)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
206	21	2099.72	-156.09	3.78	-8.87	-117.29	-954.38
206	20	-2060.83	154.71	-3.78	8.87	108.97	612.50
207	20	2060.83	-154.71	3.78	-8.87	-108.97	-612.50
207	19	-2680.52	0.00	25.05	0.00	-2405.52	0.10
208	40	2238.74	-164.57	-0.55	-24.10	-250.75	-1549.35
208	39	-2228.13	164.19	0.55	24.10	251.08	1450.72
209	39	2228.13	-164.19	-0.55	-24.10	-251.08	-1450.72
209	41	-2139.76	161.04	0.55	24.10	253.83	637.64
210	41	2139.76	-161.04	-0.55	-24.10	-253.83	-637.64
210	38	-3293.95	0.00	-20.83	0.01	-2765.26	0.55
211	60	2260.99	-164.55	-2.28	-29.63	-276.71	-1974.35
211	59	-2202.66	162.47	2.28	29.63	284.23	1434.77
212	59	2202.66	-162.47	-2.28	-29.63	-284.23	-1434.77
212	61	-2114.28	159.30	2.28	29.63	295.61	630.34
213	61	2114.28	-159.30	-2.28	-29.63	-295.61	-630.34
213	58	-3233.95	155.44	-39.06	29.63	-2525.92	0.01
214	80	2268.16	-165.10	-2.62	-30.56	-288.53	-1981.09
214	79	-2209.83	163.02	2.62	30.56	297.19	1439.69
215	79	2209.83	-163.02	-2.62	-30.56	-297.19	-1439.69
215	81	-2121.46	159.85	2.62	30.56	310.31	632.50
216	81	2121.46	-159.85	-2.62	-30.56	-310.31	-632.51
216	78	-3049.73	0.00	-3.61	0.00	3073.60	-0.01
217	100	3466.40	-164.91	-3.72	-19.86	-348.47	-1978.83
217	99	-3387.66	162.83	3.72	19.86	360.74	1438.07
218	99	3387.66	-162.83	-3.72	-19.86	-360.74	-1438.07
218	101	-3268.36	159.65	3.72	19.86	379.34	631.85
219	101	3268.36	-159.65	-3.72	-19.86	-379.34	-631.85
219	98	-4152.54	0.00	4.87	0.00	3190.66	0.24
220	120	3471.77	-165.12	-4.34	-1.40	32.94	-1981.42
220	119	-3393.03	163.04	4.34	1.40	-18.62	1439.96
221	119	3393.03	-163.04	-4.34	-1.40	18.62	-1439.96
221	121	-3273.72	159.87	4.34	1.40	3.07	632.67
222	121	3273.72	-159.87	-4.34	-1.40	-3.07	-632.67
222	118	-4159.09	0.00	24.61	0.00	-2808.42	0.37
223	140	3454.78	-164.48	4.98	16.94	289.19	-1973.60
223	139	-3376.04	162.40	-4.98	-16.94	-305.62	1434.23
224	139	3376.04	-162.40	4.98	16.94	305.62	-1434.23
224	141	-3256.73	159.23	-4.98	-16.94	-330.51	630.12
225	141	3256.73	-159.23	4.98	16.94	330.51	-630.12
225	138	-4147.04	0.00	-28.79	0.00	-3060.55	0.19
226	160	2207.07	-163.78	-5.26	27.45	341.17	-1336.33
226	159	-2131.07	161.07	5.26	-27.45	-318.54	637.88
227	159	2131.07	-161.07	-5.26	27.45	318.54	-637.88
227	158	-1930.80	0.00	91.24	-0.01	-774.76	-0.08
228	179	2044.19	-156.47	-4.29	13.29	172.13	-1184.92
228	178	-1978.80	154.14	4.29	-13.29	-156.26	610.28
229	178	1978.80	-154.14	-4.29	13.29	156.26	-610.28
229	177	-2660.81	0.00	38.41	0.00	2105.06	0.03

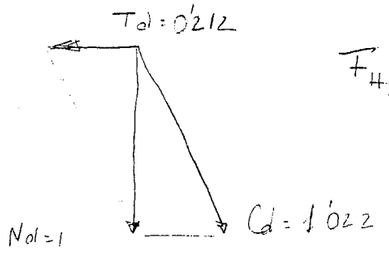
ARMADURA DE CABEZAS



$U_c = 0'85 \times 2'41 \times \frac{3000}{1'5} = 4084\ T > 3226\ T$ VALE

$Q_d = 3157 \times 1'022 = 3226\ T$

ARMADURA DE CABEZA



$F_{H,d} = Td + F_{z,d}$

PILA $F_{H,d} \simeq \frac{F_{Hd} \times 1'15}{5'1/2}$

CÁLCULOS (ver pag siguiente)

RESUMEN: Toda la cabeza de pila se armará con 38 ϕ 32

COMPROBACIÓN DE BIELAS DE COMPRESIÓN

Área excéntrica en la hela = 2'41 m²

$Q_{d,máx} = 1'0165 \times 3157 = 3226\ Tn$

$\sigma = \frac{3226}{2'41} = 1340\ Tn/m^2$

Capacidad del hormigón (HA-30)

$\sigma_d = \frac{0'85 \times 3000}{1'5} = 1700\ Tn/m^2$ VALE

APOYO	Fx,d	Fz,d	Fh,d	Fhd max	cm2 arm.	cm2/8.04	nº barras		D
PILA 1 APOYO GUIADO			*						
311 FUER X MAX envolvente (ELU)	2847.64	-17.55	621.25						
315 FUER Z MAX envolvente (ELU)	1802.72	106.72	488.90						
316 FUER Z MIN envolvente (ELU)	1685.36	-115.07	472.37	621.25	280.17	34.85	38	ϕ	32 mm
PILA 1 APOYO LIBRE			**						
311 FUER X MAX envolvente (ELU)	2816.98	0	597.20						
315 FUER Z MAX envolvente (ELU)	1084.57	0	229.93						
316 FUER Z MIN envolvente (ELU)	1084.57	0	229.93	597.20	269.33	33.50	38	ϕ	32 mm
PILA 2 APOYO GUIADO			*						
311 FUER X MAX envolvente (ELU)	3036.9	1.08	644.90						
315 FUER Z MAX envolvente (ELU)	1832.23	117.9	506.33						
316 FUER Z MIN envolvente (ELU)	2209.1	-128.74	597.07	644.90	290.84	36.17	38	ϕ	32 mm
PILA 2 APOYO LIBRE			**						
311 FUER X MAX envolvente (ELU)	2982.55	0	632.30						
315 FUER Z MAX envolvente (ELU)	1063.42	0	225.45						
316 FUER Z MIN envolvente (ELU)	1063.42	0	225.45	632.30	285.16	35.47	38	ϕ	32 mm
PILA 3 APOYO GUIADO			*						
311 FUER X MAX envolvente (ELU)	3025.07	-16.05	657.36						
315 FUER Z MAX envolvente (ELU)	1047.88	117.67	339.82						
316 FUER Z MIN envolvente (ELU)	2416.92	-118.87	631.26	657.36	296.46	36.87	38	ϕ	32 mm
PILA 3 APOYO LIBRE			**						
311 FUER X MAX envolvente (ELU)	3006.6	0	637.40						
315 FUER Z MAX envolvente (ELU)	1024.95	0	217.29						
316 FUER Z MIN envolvente (ELU)	1024.95	0	217.29	637.40	287.45	35.75	38	ϕ	32 mm
PILA 4 APOYO GUIADO			*						
311 FUER X MAX envolvente (ELU)	3074.21	7.73	659.46						
315 FUER Z MAX envolvente (ELU)	1067.72	121.5	347.86						
316 FUER Z MIN envolvente (ELU)	2428.28	-129.87	644.67	659.46	297.40	36.99	38	ϕ	32 mm
PILA 4 APOYO LIBRE			**						
311 FUER X MAX envolvente (ELU)	3021.61	0	640.58						
315 FUER Z MAX envolvente (ELU)	1025.25	0	217.35						
316 FUER Z MIN envolvente (ELU)	1025.25	0	217.35	640.58	288.89	35.93	38	ϕ	32 mm
PILA 5 APOYO GUIADO			*						
311 FUER X MAX envolvente (ELU)	3022.98	6.31	647.18						
315 FUER Z MAX envolvente (ELU)	1064.09	124.2	349.79						
316 FUER Z MIN envolvente (ELU)	2416.93	-130.81	643.20	647.18	291.87	36.30	38	ϕ	32 mm

proc Viaducto Papiol CALCULO DE ARMADURA DE CABEZA DE PILAS

APOYO	Fx,d	Fz,d	Fh,d	Fhd max	cm2 arm.	cm2/8.04	nº barras		D
PILA 5 APOYO LIBRE			**						
311 FUER X MAX envolvente (ELU)	3003.52	0	636.75						
315 FUER Z MAX envolvente (ELU)	1071.25	0	227.11						
316 FUER Z MIN envolvente (ELU)	1071.25	0	227.11	636.75	287.16	35.72	38	ϕ	32 mm
PILA 6 APOYO GUIADO			*						
311 FUER X MAX envolvente (ELU)	2956.7	-40.41	667.23						
315 FUER Z MAX envolvente (ELU)	1047.67	123.46	345.57						
316 FUER Z MIN envolvente (ELU)	2425.88	-133.4	647.69	667.23	300.91	37.43	38	ϕ	32 mm
PILA 6 APOYO LIBRE			**						
311 FUER X MAX envolvente (ELU)	2995.74	0	635.10						
315 FUER Z MAX envolvente (ELU)	1151.56	0	244.13						
316 FUER Z MIN envolvente (ELU)	1151.56	0	244.13	635.10	286.42	35.62	38	ϕ	32 mm
PILA 7 APOYO GUIADO			*						
311 FUER X MAX envolvente (ELU)	2915.1	-28.39	646.39						
315 FUER Z MAX envolvente (ELU)	1541.94	115.11	442.00						
316 FUER Z MIN envolvente (ELU)	1885.49	-122.63	522.35	646.39	291.51	36.26	38	ϕ	32 mm
PILA 7 APOYO LIBRE			**						
311 FUER X MAX envolvente (ELU)	2990.06	0	633.89						
315 FUER Z MAX envolvente (ELU)	1225.01	0	259.70						
316 FUER Z MIN envolvente (ELU)	1225.01	0	259.70	633.89	285.87	35.56	38	ϕ	32 mm
PILA 8 APOYO GUIADO			*						
311 FUER X MAX envolvente (ELU)	2992.41	-25.72	660.11						
315 FUER Z MAX envolvente (ELU)	1266.75	123.4	391.95						
316 FUER Z MIN envolvente (ELU)	2384.48	-140.96	646.47	660.11	297.70	37.03	38	ϕ	32 mm
PILA 8 APOYO LIBRE			**						
311 FUER X MAX envolvente (ELU)	3157.05	0	669.29						
315 FUER Z MAX envolvente (ELU)	1286.52	0	272.74						
316 FUER Z MIN envolvente (ELU)	1286.52	0	272.74	669.29	301.84	37.54	38	ϕ	32 mm
PILA 9 APOYO GUIADO			*						
311 FUER X MAX envolvente (ELU)	2795.78	-29.79	622.50						
315 FUER Z MAX envolvente (ELU)	1217.55	94.96	353.08						
316 FUER Z MIN envolvente (ELU)	2281.55	-103.09	586.78	622.50	280.73	34.92	38	ϕ	32 mm
PILA 9 APOYO LIBRE			**						
311 FUER X MAX envolvente (ELU)	2833.15	0	600.63						
315 FUER Z MAX envolvente (ELU)	1173.85	0	248.86						
316 FUER Z MIN envolvente (ELU)	1173.85	0	248.86	600.63	270.87	33.69	38	ϕ	32 mm

proc Viaducto Papiol

Esfuerzos de la barra 182 extremo dorsal

HIP.	FX	FZ
311 FUER X MAX envolvente (ELU)	1001.28	-5.53
315 FUER Z MAX envolvente (ELU)	443.24	37.49
316 FUER Z MIN envolvente (ELU)	405.86	-40.55

Esfuerzos de la barra 183 extremo dorsal

HIP.	FX	FZ
311 FUER X MAX envolvente (ELU)	991.22	0.00
315 FUER Z MAX envolvente (ELU)	355.17	0.00
316 FUER Z MIN envolvente (ELU)	355.17	0.00

Esfuerzos de la barra 184 extremo dorsal

HIP.	FX	FZ
311 FUER X MAX envolvente (ELU)	2847.64	-17.55
315 FUER Z MAX envolvente (ELU)	1802.72	106.72
316 FUER Z MIN envolvente (ELU)	1685.36	-115.07

Esfuerzos de la barra 185 extremo dorsal

HIP.	FX	FZ
311 FUER X MAX envolvente (ELU)	2816.98	0.00
315 FUER Z MAX envolvente (ELU)	1084.57	0.00
316 FUER Z MIN envolvente (ELU)	1084.57	0.00

Esfuerzos de la barra 186 extremo dorsal

HIP.	FX	FZ
311 FUER X MAX envolvente (ELU)	3036.90	1.08
315 FUER Z MAX envolvente (ELU)	1832.23	117.90
316 FUER Z MIN envolvente (ELU)	2209.10	-128.74

Esfuerzos de la barra 187 extremo dorsal

HIP.	FX	FZ
311 FUER X MAX envolvente (ELU)	2982.55	0.00
315 FUER Z MAX envolvente (ELU)	1063.42	0.00
316 FUER Z MIN envolvente (ELU)	1063.42	0.00

Esfuerzos de la barra 188 extremo dorsal

HIP.	FX	FZ
311 FUER X MAX envolvente (ELU)	3025.07	-16.05
315 FUER Z MAX envolvente (ELU)	1047.88	117.67
316 FUER Z MIN envolvente (ELU)	2416.92	-118.87

Esfuerzos de la barra 189 extremo dorsal

HIP.	FX	FZ
311 FUER X MAX envolvente (ELU)	3006.60	0.00
315 FUER Z MAX envolvente (ELU)	1024.95	0.00
316 FUER Z MIN envolvente (ELU)	1024.95	0.00

Esfuerzos de la barra 190 extremo dorsal

HIP.	FX	FZ
311 FUER X MAX envolvente (ELU)	3074.21	7.73
315 FUER Z MAX envolvente (ELU)	1067.72	121.50
316 FUER Z MIN envolvente (ELU)	2428.28	-129.87

Esfuerzos de la barra 191 extremo dorsal

HIP.	FX	FZ
311 FUER X MAX envolvente (ELU)	3021.61	0.00
315 FUER Z MAX envolvente (ELU)	1025.25	0.00
316 FUER Z MIN envolvente (ELU)	1025.25	0.00

Esfuerzos de la barra 192 extremo dorsal

HIP.	FX	FZ
311 FUER X MAX envolvente (ELU)	3022.98	6.31
315 FUER Z MAX envolvente (ELU)	1064.09	124.20
316 FUER Z MIN envolvente (ELU)	2416.93	-130.81

Esfuerzos de la barra 193 extremo dorsal

HIP.	FX	FZ
311 FUER X MAX envolvente (ELU)	3003.52	0.00
315 FUER Z MAX envolvente (ELU)	1071.25	0.00
316 FUER Z MIN envolvente (ELU)	1071.25	0.00

Esfuerzos de la barra 194 extremo dorsal

HIP.	FX	FZ
311 FUER X MAX envolvente (ELU)	2956.70	-40.41
315 FUER Z MAX envolvente (ELU)	1047.67	123.46
316 FUER Z MIN envolvente (ELU)	2425.88	-133.40

Esfuerzos de la barra 195 extremo dorsal

HIP.	FX	FZ
311 FUER X MAX envolvente (ELU)	2995.74	0.00
315 FUER Z MAX envolvente (ELU)	1151.56	0.00
316 FUER Z MIN envolvente (ELU)	1151.56	0.00

Esfuerzos de la barra 196 extremo dorsal

HIP.	FX	FZ
311 FUER X MAX envolvente (ELU)	2915.10	-28.39
315 FUER Z MAX envolvente (ELU)	1541.94	115.11
316 FUER Z MIN envolvente (ELU)	1885.49	-122.63

Esfuerzos de la barra 197 extremo dorsal

HIP.	FX	FZ
311 FUER X MAX envolvente (ELU)	2990.06	0.00
315 FUER Z MAX envolvente (ELU)	1225.01	0.00
316 FUER Z MIN envolvente (ELU)	1225.01	0.00

Esfuerzos de la barra 198 extremo dorsal

HIP.	FX	FZ
311 FUER X MAX envolvente (ELU)	2992.41	-25.72
315 FUER Z MAX envolvente (ELU)	1266.75	123.40
316 FUER Z MIN envolvente (ELU)	2384.48	-140.96

Esfuerzos de la barra 199 extremo dorsal

HIP.	FX	FZ
311 FUER X MAX envolvente (ELU)	3157.05	0.00
315 FUER Z MAX envolvente (ELU)	1286.52	0.00
316 FUER Z MIN envolvente (ELU)	1286.52	0.00

Esfuerzos de la barra 200 extremo dorsal

HIP.	FX	FZ
311 FUER X MAX envolvente (ELU)	2795.78	-29.79
315 FUER Z MAX envolvente (ELU)	1217.55	94.96
316 FUER Z MIN envolvente (ELU)	2281.55	-103.09

Esfuerzos de la barra 201 extremo dorsal

HIP.	FX	FZ
311 FUER X MAX envolvente (ELU)	2833.15	0.00
315 FUER Z MAX envolvente (ELU)	1173.85	0.00
316 FUER Z MIN envolvente (ELU)	1173.85	0.00

Esfuerzos de la barra 202 extremo dorsal

HIP.	FX	FZ
311 FUER X MAX envolvente (ELU)	1085.99	-7.21
315 FUER Z MAX envolvente (ELU)	681.26	43.06
316 FUER Z MIN envolvente (ELU)	598.93	-44.68

Esfuerzos de la barra 203 extremo dorsal

HIP.	FX	FZ
311 FUER X MAX envolvente (ELU)	1151.71	0.00
315 FUER Z MAX envolvente (ELU)	404.26	0.00
316 FUER Z MIN envolvente (ELU)	404.26	0.00

Esfuerzos de la barra 204 extremo dorsal

HIP.	FX	FZ
311 FUER X MAX envolvente (ELU)	0.00	0.00
315 FUER Z MAX envolvente (ELU)	0.00	0.00
316 FUER Z MIN envolvente (ELU)	0.00	0.00

Esfuerzos de la barra 205 extremo dorsal

HIP.	FX	FZ
311 FUER X MAX envolvente (ELU)	0.00	0.00
315 FUER Z MAX envolvente (ELU)	0.00	0.00
316 FUER Z MIN envolvente (ELU)	0.00	0.00

ARMADURA DE FUSTES

PAPIOL longitudes de barras de las pilas

PILA	BARRA	NUDO1	NUDO2	LONGITUD	LONG. X	LONG. Y	LONG. Z
pila 1	206	21	20	2.2000	0.0000	2.2000	0.0000
	207	20	19	4.0000	0.0000	4.0000	0.0000
pila 2	208	40	39	0.6000	0.0000	0.6000	0.0000
	209	39	41	5.0000	0.0000	5.0000	0.0000
	210	41	38	4.0000	0.0000	4.0000	0.0000
pila 3	211	60	59	3.3000	0.0000	3.3000	0.0000
	212	59	61	5.0000	0.0000	5.0000	0.0000
	213	61	58	4.0000	0.0000	4.0000	0.0000
pila 4	214	80	79	3.3000	0.0000	3.3000	0.0000
	215	79	81	5.0000	0.0000	5.0000	0.0000
	216	81	78	4.0000	0.0000	4.0000	0.0000
pila 5	217	100	99	3.3000	0.0000	3.3000	0.0000
	218	99	101	5.0000	0.0000	5.0000	0.0000
	219	101	98	4.0000	0.0000	4.0000	0.0000
pila 6	220	120	119	3.3000	0.0000	3.3000	0.0000
	221	119	121	5.0000	0.0000	5.0000	0.0000
	222	121	118	4.0000	0.0000	4.0000	0.0000
pila 7	223	140	139	3.3000	0.0000	3.3000	0.0000
	224	139	141	5.0000	0.0000	5.0000	0.0000
	225	141	138	4.0000	0.0000	4.0000	0.0000
pila 8	226	160	159	4.3000	0.0000	4.3000	0.0000
	227	159	158	4.0000	0.0000	4.0000	0.0000
pila 9	228	179	178	3.7000	0.0000	3.7000	0.0000
	229	178	177	4.0000	0.0000	4.0000	0.0000

ARMADURA DE PILAS . VIADUCTOS DE EL PAPIOL

PILA	ARMADURA GRAL DPTA	SECC.PIE DE PILA			SECC. INTERMEDIA			SECC.CUELLO (A 4M DE CABEZA)	
		REFUERZO A MY NECESARIO	COEF. SEGURIDAD*	REFUERZO DISPUESTO	DISTANCIA A BASE DE PILA	REFUERZO DISPUESTO	COEF. SEGURIDAD*	REFUERZO DISPUESTO	COEF. SEGURIDAD
1	36 ϕ 20	2 X 5 ϕ 25	1.27	2 X 5 ϕ 25	-----	-----	----	2 X 5 ϕ 25	1.33
2	36 ϕ 20	2 X 5 ϕ 25	1.09	2 X (10+5) ϕ 25	0.60	2 X 5 ϕ 25	1.11	2 X 5 ϕ 25	1.36
3	36 ϕ 20	2 X 5 ϕ 25	1.04	2 X (10+5) ϕ 25	3.30	2 X 5 ϕ 25	1.14	2 X 5 ϕ 25	1.26
4	36 ϕ 20	2 X (10+5) ϕ 25	1.05	2 X (10+5) ϕ 25	3.30	2 X (10+5) ϕ 25	1.17	2 X 5 ϕ 25	1.18
5	36 ϕ 20	2 X (10+5) ϕ 25	1.05	2 X (10+5) ϕ 25	3.30	2 X (10+5) ϕ 25	1.05	2 X 5 ϕ 25	1.24
6	36 ϕ 20	2 X 10 ϕ 25	1.05	2 X (10+5) ϕ 25	3.30	2 X (10+5) ϕ 25	1.16	2 X 5 ϕ 25	1.21
7	36 ϕ 20	2 X 5 ϕ 25	1.12	2 X (10+5) ϕ 25	3.30	2 X 5 ϕ 25	1.22	2 X 5 ϕ 25	1.33
8	36 ϕ 20	2 X (10+5) ϕ 25	1.03	2 X (10+5) ϕ 25	-----	-----	----	2 X 5 ϕ 25	1.06
9	36 ϕ 20	2 X 5 ϕ 25	1.44	2 X 5 ϕ 25	-----	-----	----	2 X 5 ϕ 25	1.57

* Coeficientes de seguridad sobre esfuerzos mayorados (ELU)

ESFUERZOS E.L.U.

proc Viaducto Papiol

PILA 1

Esfuerzos de la barra 206 extremo dorsal

HIP.	FX	MZ	MY
311 FUER X MAX envolvente (ELU)	-5623.12	937.96	231.96
312 FUER X MIN envolvente (ELU)	-1832.08	-937.79	24.39
313 FUER Y MAX envolvente (ELU)	-2393.05	954.50	-159.94
314 FUER Y MIN envolvente (ELU)	-2392.75	-954.37	-156.79
315 FUER Z MAX envolvente (ELU)	-4059.37	937.90	-231.85
316 FUER Z MIN envolvente (ELU)	-3465.69	-937.74	618.04
319 MOME Y MAX envolvente (ELU)	-3051.51	-937.93	2694.89
320 MOME Y MIN envolvente (ELU)	-4062.39	938.09	-2872.88
321 MOME Z MAX envolvente (ELU)	-3230.56	954.53	-215.37
322 MOME Z MIN envolvente (ELU)	-2099.72	-954.38	-117.29

Esfuerzos de la barra 207 extremo dorsal

HIP.	FX	MZ	MY
311 FUER X MAX envolvente (ELU)	-5570.62	605.18	171.09
312 FUER X MIN envolvente (ELU)	-1793.19	-605.01	21.25
313 FUER Y MAX envolvente (ELU)	-2354.16	612.62	-148.55
314 FUER Y MIN envolvente (ELU)	-2353.87	-612.49	-145.36
315 FUER Z MAX envolvente (ELU)	-4006.88	605.12	5.81
316 FUER Z MIN envolvente (ELU)	-3426.80	-604.96	362.02
319 MOME Y MAX envolvente (ELU)	-3012.62	-605.15	2632.26
320 MOME Y MIN envolvente (ELU)	-4211.95	605.34	-2798.28
321 MOME Z MAX envolvente (ELU)	-3178.07	612.64	-199.98
322 MOME Z MIN envolvente (ELU)	-2060.83	-612.50	-108.97

proc Viaducto Papiol

PILA 2

Esfuerzos de la barra 208 extremo dorsal

HIP.	FX	MZ	MY
311 FUER X MAX envolvente (ELU)	-6015.25	-1511.47	493.67
312 FUER X MIN envolvente (ELU)	-2003.15	1511.38	-26.90
313 FUER Y MAX envolvente (ELU)	-2544.24	1549.43	-373.23
314 FUER Y MIN envolvente (ELU)	-2544.31	-1549.33	-356.51
315 FUER Z MAX envolvente (ELU)	-4286.39	1511.22	-557.44
316 FUER Z MIN envolvente (ELU)	-4453.08	-1511.32	806.50
319 MOME Y MAX envolvente (ELU)	-3082.46	-1511.81	2896.32
320 MOME Y MIN envolvente (ELU)	-4280.77	1511.88	-3444.43
321 MOME Z MAX envolvente (ELU)	-3434.73	1549.44	-496.58
322 MOME Z MIN envolvente (ELU)	-2238.74	-1549.35	-250.75

Esfuerzos de la barra 209 extremo dorsal

HIP.	FX	MZ	MY
311 FUER X MAX envolvente (ELU)	-6000.93	-1417.01	478.75
312 FUER X MIN envolvente (ELU)	-1992.55	1416.92	-34.03
313 FUER Y MAX envolvente (ELU)	-2533.63	1450.80	-372.55
314 FUER Y MIN envolvente (ELU)	-2533.71	-1450.70	-356.62
315 FUER Z MAX envolvente (ELU)	-4272.08	1416.76	-485.26
316 FUER Z MIN envolvente (ELU)	-4438.77	-1416.86	727.82
319 MOME Y MAX envolvente (ELU)	-3053.99	-1417.35	2852.37
320 MOME Y MIN envolvente (ELU)	-4284.31	1417.42	-3408.15
321 MOME Z MAX envolvente (ELU)	-3420.42	1450.81	-496.15
322 MOME Z MIN envolvente (ELU)	-2228.13	-1450.72	-251.08

Esfuerzos de la barra 210 extremo dorsal

HIP.	FX	MZ	MY
311 FUER X MAX envolvente (ELU)	-5881.62	-629.84	354.43
312 FUER X MIN envolvente (ELU)	-1904.17	629.75	-93.45
313 FUER Y MAX envolvente (ELU)	-2445.26	637.72	-366.92
314 FUER Y MIN envolvente (ELU)	-2445.33	-637.63	-357.57
315 FUER Z MAX envolvente (ELU)	-4152.77	629.59	112.68
316 FUER Z MIN envolvente (ELU)	-4319.46	-629.69	75.75
319 MOME Y MAX envolvente (ELU)	-3386.26	-630.29	2705.85
320 MOME Y MIN envolvente (ELU)	-4374.90	630.31	-3214.91
321 MOME Z MAX envolvente (ELU)	-3301.11	637.74	-492.60
322 MOME Z MIN envolvente (ELU)	-2139.76	-637.64	-253.83

PILA 3

Esfuerzos de la barra 211 extremo dorsal

HIP.	FX	MZ	MY
311 FUER X MAX envolvente (ELU)	-6060.56	1911.98	500.69
312 FUER X MIN envolvente (ELU)	-2022.24	-1911.96	-103.84
313 FUER Y MAX envolvente (ELU)	-2562.64	1974.37	-427.17
314 FUER Y MIN envolvente (ELU)	-2562.53	-1974.35	-397.39
315 FUER Z MAX envolvente (ELU)	-2947.08	1911.96	-433.82
316 FUER Z MIN envolvente (ELU)	-4870.83	-1911.95	931.42
319 MOME Y MAX envolvente (ELU)	-3106.61	-1911.98	2797.70
320 MOME Y MIN envolvente (ELU)	-4272.37	1912.01	-3430.88
321 MOME Z MAX envolvente (ELU)	-3459.54	1974.38	-571.47
322 MOME Z MIN envolvente (ELU)	-2260.99	-1974.35	-276.71

Esfuerzos de la barra 212 extremo dorsal

HIP.	FX	MZ	MY
311 FUER X MAX envolvente (ELU)	-5981.81	1399.01	469.65
312 FUER X MIN envolvente (ELU)	-1963.91	-1398.99	-133.81
313 FUER Y MAX envolvente (ELU)	-2504.31	1434.79	-432.22
314 FUER Y MIN envolvente (ELU)	-2504.20	-1434.77	-409.35
315 FUER Z MAX envolvente (ELU)	-2888.76	1399.00	-36.17
316 FUER Z MIN envolvente (ELU)	-4792.08	-1398.98	529.72
319 MOME Y MAX envolvente (ELU)	-3012.71	-1399.01	2609.88
320 MOME Y MIN envolvente (ELU)	-4228.72	1399.04	-3292.89
321 MOME Z MAX envolvente (ELU)	-3380.80	1434.79	-579.50
322 MOME Z MIN envolvente (ELU)	-2202.66	-1434.77	-284.23

Esfuerzos de la barra 213 extremo dorsal

HIP.	FX	MZ	MY
311 FUER X MAX envolvente (ELU)	-5862.51	621.79	422.61
312 FUER X MIN envolvente (ELU)	-1875.53	-621.77	-179.22
313 FUER Y MAX envolvente (ELU)	-2415.93	630.36	-439.87
314 FUER Y MIN envolvente (ELU)	-2415.82	-630.33	-427.49
315 FUER Z MAX envolvente (ELU)	-2800.38	621.78	560.96
316 FUER Z MIN envolvente (ELU)	-4672.78	-621.76	-73.54
319 MOME Y MAX envolvente (ELU)	-3369.70	-621.79	2628.10
320 MOME Y MIN envolvente (ELU)	-4315.45	621.82	-3213.70
321 MOME Z MAX envolvente (ELU)	-3261.49	630.36	-591.65
322 MOME Z MIN envolvente (ELU)	-2114.28	-630.34	-295.61

proc Viaducto Papiol

PILA 4

Esfuerzos de la barra 214 extremo dorsal

HIP.	FX	MZ	MY
311 FUER X MAX envolvente (ELU)	-6091.39	-1918.58	628.66
312 FUER X MIN envolvente (ELU)	-2030.71	1918.78	-208.02
313 FUER Y MAX envolvente (ELU)	-2570.66	1981.18	-472.64
314 FUER Y MIN envolvente (ELU)	-2570.81	-1981.09	-424.09
315 FUER Z MAX envolvente (ELU)	-2957.05	1918.83	-534.65
316 FUER Z MIN envolvente (ELU)	-4888.17	-1918.64	1055.19
319 MOME Y MAX envolvente (ELU)	-3119.16	-1918.62	3236.14
320 MOME Y MIN envolvente (ELU)	-4288.60	1918.77	-3919.89
321 MOME Z MAX envolvente (ELU)	-3470.41	1981.20	-629.57
322 MOME Z MIN envolvente (ELU)	-2268.16	-1981.09	-288.53

Esfuerzos de la barra 215 extremo dorsal

HIP.	FX	MZ	MY
311 FUER X MAX envolvente (ELU)	-6012.65	-1403.80	559.97
312 FUER X MIN envolvente (ELU)	-1972.39	1404.00	-225.73
313 FUER Y MAX envolvente (ELU)	-2512.33	1439.79	-469.49
314 FUER Y MIN envolvente (ELU)	-2512.48	-1439.69	-432.59
315 FUER Z MAX envolvente (ELU)	-2898.73	1404.05	-124.30
316 FUER Z MIN envolvente (ELU)	-4809.43	-1403.85	617.18
319 MOME Y MAX envolvente (ELU)	-3025.41	-1403.83	2959.46
320 MOME Y MIN envolvente (ELU)	-4244.85	1403.99	-3690.48
321 MOME Z MAX envolvente (ELU)	-3391.67	1439.80	-627.36
322 MOME Z MIN envolvente (ELU)	-2209.83	-1439.69	-297.19

Esfuerzos de la barra 216 extremo dorsal

HIP.	FX	MZ	MY
311 FUER X MAX envolvente (ELU)	-5893.34	-623.83	455.89
312 FUER X MIN envolvente (ELU)	-1884.01	624.02	-252.56
313 FUER Y MAX envolvente (ELU)	-2423.95	632.60	-464.71
314 FUER Y MIN envolvente (ELU)	-2424.10	-632.50	-445.47
315 FUER Z MAX envolvente (ELU)	-2810.35	624.07	492.07
316 FUER Z MIN envolvente (ELU)	-4690.12	-623.88	-41.12
319 MOME Y MAX envolvente (ELU)	-3387.27	-623.83	2776.12
320 MOME Y MIN envolvente (ELU)	-4332.91	624.01	-3452.23
321 MOME Z MAX envolvente (ELU)	-3272.36	632.62	-624.00
322 MOME Z MIN envolvente (ELU)	-2121.46	-632.51	-310.31

proc Viaducto Papiol

PILA 5

Esfuerzos de la barra 217 extremo dorsal

HIP.	FX	MZ	MY
311 FUER X MAX envolvente (ELU)	-6087.95	1916.30	507.76
312 FUER X MIN envolvente (ELU)	-2025.11	-1916.40	13.10
313 FUER Y MAX envolvente (ELU)	-2568.10	1978.71	-314.45
314 FUER Y MIN envolvente (ELU)	-2567.65	-1978.81	-249.73
315 FUER Z MAX envolvente (ELU)	-2949.68	1916.38	-570.46
316 FUER Z MIN envolvente (ELU)	-4871.60	-1916.47	1073.81
319 MOME Y MAX envolvente (ELU)	-3114.57	-1916.27	3392.29
320 MOME Y MIN envolvente (ELU)	-4287.06	1916.14	-3762.28
321 MOME Z MAX envolvente (ELU)	-2265.84	1978.72	-228.36
322 MOME Z MIN envolvente (ELU)	-3466.40	-1978.83	-348.47

Esfuerzos de la barra 218 extremo dorsal

HIP.	FX	MZ	MY
311 FUER X MAX envolvente (ELU)	-6009.21	1402.15	453.07
312 FUER X MIN envolvente (ELU)	-1966.78	-1402.25	-16.32
313 FUER Y MAX envolvente (ELU)	-2509.78	1437.95	-309.89
314 FUER Y MIN envolvente (ELU)	-2509.32	-1438.05	-260.86
315 FUER Z MAX envolvente (ELU)	-2891.35	1402.23	-151.12
316 FUER Z MIN envolvente (ELU)	-4792.86	-1402.32	632.61
319 MOME Y MAX envolvente (ELU)	-3021.33	-1402.13	3121.90
320 MOME Y MIN envolvente (ELU)	-4243.23	1401.99	-3530.63
321 MOME Z MAX envolvente (ELU)	-2207.51	1437.96	-222.43
322 MOME Z MIN envolvente (ELU)	-3387.66	-1438.07	-360.74

Esfuerzos de la barra 219 extremo dorsal

HIP.	FX	MZ	MY
311 FUER X MAX envolvente (ELU)	-5889.90	623.14	370.20
312 FUER X MIN envolvente (ELU)	-1878.41	-623.24	-60.90
313 FUER Y MAX envolvente (ELU)	-2421.40	631.72	-302.97
314 FUER Y MIN envolvente (ELU)	-2420.94	-631.83	-277.72
315 FUER Z MAX envolvente (ELU)	-2802.97	623.22	478.89
316 FUER Z MIN envolvente (ELU)	-4673.55	-623.31	-30.52
319 MOME Y MAX envolvente (ELU)	-3135.35	-623.10	2845.62
320 MOME Y MIN envolvente (ELU)	-4331.02	622.96	-3281.47
321 MOME Z MAX envolvente (ELU)	-2119.13	631.73	-213.46
322 MOME Z MIN envolvente (ELU)	-3268.36	-631.85	-379.34

proc Viaducto Papiol

PILA 6

Esfuerzos de la barra 220 extremo dorsal

HIP.	FX	MZ	MY
311 FUER X MAX envolvente (ELU)	-6086.85	-1919.08	507.05
312 FUER X MIN envolvente (ELU)	-2028.94	1918.96	90.98
313 FUER Y MAX envolvente (ELU)	-2570.16	1981.35	-42.02
314 FUER Y MIN envolvente (ELU)	-2571.91	-1981.41	34.29
315 FUER Z MAX envolvente (ELU)	-2950.17	1918.84	-500.40
316 FUER Z MIN envolvente (ELU)	-4880.47	-1918.99	1093.74
319 MOME Y MAX envolvente (ELU)	-3906.98	-1919.32	3521.47
320 MOME Y MIN envolvente (ELU)	-4289.94	1919.21	-3328.78
321 MOME Z MAX envolvente (ELU)	-2267.48	1981.36	-35.67
322 MOME Z MIN envolvente (ELU)	-3471.77	-1981.42	32.94

Esfuerzos de la barra 221 extremo dorsal

HIP.	FX	MZ	MY
311 FUER X MAX envolvente (ELU)	-6008.11	-1404.23	409.67
312 FUER X MIN envolvente (ELU)	-1970.61	1404.11	85.79
313 FUER Y MAX envolvente (ELU)	-2511.83	1439.89	-35.87
314 FUER Y MIN envolvente (ELU)	-2513.58	-1439.95	21.19
315 FUER Z MAX envolvente (ELU)	-2891.84	1403.99	-83.58
316 FUER Z MIN envolvente (ELU)	-4801.73	-1404.14	644.01
319 MOME Y MAX envolvente (ELU)	-3019.74	-1404.46	3239.38
320 MOME Y MIN envolvente (ELU)	-4246.62	1404.36	-3088.22
321 MOME Z MAX envolvente (ELU)	-2209.15	1439.89	-28.58
322 MOME Z MIN envolvente (ELU)	-3393.03	-1439.96	18.62

Esfuerzos de la barra 222 extremo dorsal

HIP.	FX	MZ	MY
311 FUER X MAX envolvente (ELU)	-5888.81	-624.16	262.14
312 FUER X MIN envolvente (ELU)	-1882.24	624.03	77.92
313 FUER Y MAX envolvente (ELU)	-2423.45	632.60	-26.56
314 FUER Y MIN envolvente (ELU)	-2425.21	-632.66	1.34
315 FUER Z MAX envolvente (ELU)	-2803.47	623.91	542.60
316 FUER Z MIN envolvente (ELU)	-4682.42	-624.06	-32.02
319 MOME Y MAX envolvente (ELU)	-3139.42	-624.42	2953.10
320 MOME Y MIN envolvente (ELU)	-4334.69	624.32	-2836.68
321 MOME Z MAX envolvente (ELU)	-2120.77	632.60	-17.84
322 MOME Z MIN envolvente (ELU)	-3273.72	-632.67	-3.07

proc Viaducto Papiol

PILA 7

Esfuerzos de la barra 223 extremo dorsal

HIP.	FX	MZ	MY
311 FUER X MAX envolvente (ELU)	-6062.31	1911.14	245.05
312 FUER X MIN envolvente (ELU)	-2016.74	-1911.19	260.83
313 FUER Y MAX envolvente (ELU)	-2565.08	1973.54	152.77
314 FUER Y MIN envolvente (ELU)	-2558.20	-1973.59	223.62
315 FUER Z MAX envolvente (ELU)	-4139.17	1911.08	-205.50
316 FUER Z MIN envolvente (ELU)	-3676.08	-1911.16	906.54
319 MOME Y MAX envolvente (ELU)	-4272.38	-1911.34	3126.75
320 MOME Y MIN envolvente (ELU)	-3103.29	1911.27	-2568.53
321 MOME Z MAX envolvente (ELU)	-2263.61	1973.54	99.18
322 MOME Z MIN envolvente (ELU)	-3454.78	-1973.60	289.19

Esfuerzos de la barra 224 extremo dorsal

HIP.	FX	MZ	MY
311 FUER X MAX envolvente (ELU)	-5983.57	1398.39	159.56
312 FUER X MIN envolvente (ELU)	-1958.41	-1398.44	252.45
313 FUER Y MAX envolvente (ELU)	-2506.75	1434.17	180.38
314 FUER Y MIN envolvente (ELU)	-2499.88	-1434.22	233.36
315 FUER Z MAX envolvente (ELU)	-4060.43	1398.33	183.78
316 FUER Z MIN envolvente (ELU)	-3617.76	-1398.40	492.39
319 MOME Y MAX envolvente (ELU)	-4175.92	-1398.58	3021.40
320 MOME Y MIN envolvente (ELU)	-3062.20	1398.51	-2458.86
321 MOME Z MAX envolvente (ELU)	-2205.28	1434.17	121.27
322 MOME Z MIN envolvente (ELU)	-3376.04	-1434.23	305.62

Esfuerzos de la barra 225 extremo dorsal

HIP.	FX	MZ	MY
311 FUER X MAX envolvente (ELU)	-5864.26	621.49	30.03
312 FUER X MIN envolvente (ELU)	-1870.04	-621.54	239.75
313 FUER Y MAX envolvente (ELU)	-2418.38	630.06	222.21
314 FUER Y MIN envolvente (ELU)	-2411.50	-630.11	248.11
315 FUER Z MAX envolvente (ELU)	-3941.13	621.43	768.23
316 FUER Z MIN envolvente (ELU)	-3529.38	-621.51	-129.75
319 MOME Y MAX envolvente (ELU)	-4262.99	-621.71	3022.88
320 MOME Y MIN envolvente (ELU)	-3182.06	621.63	-2433.47
321 MOME Z MAX envolvente (ELU)	-2116.90	630.07	154.74
322 MOME Z MIN envolvente (ELU)	-3256.73	-630.12	330.51

proc Viaducto Papiol

PILA 8

Esfuerzos de la barra 226 extremo dorsal

HIP.	FX	MZ	MY
311 FUER X MAX envolvente (ELU)	-6007.04	-1307.77	247.33
312 FUER X MIN envolvente (ELU)	-1963.75	1308.15	162.77
313 FUER Y MAX envolvente (ELU)	-2510.22	1336.53	391.02
314 FUER Y MIN envolvente (ELU)	-2537.18	-1336.31	470.66
315 FUER Z MAX envolvente (ELU)	-3041.80	1308.19	-475.64
316 FUER Z MIN envolvente (ELU)	-4865.66	-1307.82	899.57
319 MOME Y MAX envolvente (ELU)	-4244.20	-1307.91	4277.94
320 MOME Y MIN envolvente (ELU)	-3070.76	1308.24	-3220.28
321 MOME Z MAX envolvente (ELU)	-3393.52	1336.57	541.81
322 MOME Z MIN envolvente (ELU)	-2207.07	-1336.33	341.17

Esfuerzos de la barra 227 extremo dorsal

HIP.	FX	MZ	MY
311 FUER X MAX envolvente (ELU)	-5904.44	-630.10	46.32
312 FUER X MIN envolvente (ELU)	-1887.75	630.48	205.48
313 FUER Y MAX envolvente (ELU)	-2434.22	638.09	400.57
314 FUER Y MIN envolvente (ELU)	-2461.18	-637.87	445.79
315 FUER Z MAX envolvente (ELU)	-2965.80	630.52	61.83
316 FUER Z MIN envolvente (ELU)	-4763.05	-630.15	286.57
319 MOME Y MAX envolvente (ELU)	-4351.93	-630.24	3862.86
320 MOME Y MIN envolvente (ELU)	-3414.78	630.61	-2875.34
321 MOME Z MAX envolvente (ELU)	-3290.92	638.13	548.68
322 MOME Z MIN envolvente (ELU)	-2131.07	-637.88	318.54

proc Viaducto Papiol

PILA 9

Esfuerzos de la barra 228 extremo dorsal

HIP.	FX	MZ	MY
311 FUER X MAX envolvente (ELU)	-5756.13	1160.37	181.23
312 FUER X MIN envolvente (ELU)	-1747.29	-1160.36	64.99
313 FUER Y MAX envolvente (ELU)	-2485.01	1184.93	185.13
314 FUER Y MIN envolvente (ELU)	-2337.09	-1184.91	237.11
315 FUER Z MAX envolvente (ELU)	-3017.42	1160.38	-33.11
316 FUER Z MIN envolvente (ELU)	-4551.42	-1160.36	357.54
319 MOME Y MAX envolvente (ELU)	-3899.66	-1160.32	2502.79
320 MOME Y MIN envolvente (ELU)	-2835.79	1160.34	-2002.47
321 MOME Z MAX envolvente (ELU)	-3328.88	1184.93	259.02
322 MOME Z MIN envolvente (ELU)	-2044.19	-1184.92	172.13

Esfuerzos de la barra 229 extremo dorsal

HIP.	FX	MZ	MY
311 FUER X MAX envolvente (ELU)	-5667.84	602.80	81.12
312 FUER X MIN envolvente (ELU)	-1681.89	-602.78	66.26
313 FUER Y MAX envolvente (ELU)	-2419.61	610.30	191.21
314 FUER Y MIN envolvente (ELU)	-2271.69	-610.28	220.66
315 FUER Z MAX envolvente (ELU)	-2952.03	602.80	323.79
316 FUER Z MIN envolvente (ELU)	-4463.14	-602.78	-29.45
319 MOME Y MAX envolvente (ELU)	-4006.88	-602.74	2494.22
320 MOME Y MIN envolvente (ELU)	-2923.45	602.76	-2067.63
321 MOME Z MAX envolvente (ELU)	-3240.59	610.30	263.29
322 MOME Z MIN envolvente (ELU)	-1978.80	-610.28	156.26

COMPROBACIÓN DE SECCIONES

CÁLCULO A ROTURA DE FUSTES DE PILAS

NOTA:

Los cálculos se han realizado a partir de un "cursec", con la armadura a d10 m., mientras la armadura de la sección definitiva se ha dispuesto a d20 m.

Para poder utilizar el mismo fichero de datos, se ha cambiado solamente el área de armadura a la mitad, por lo que

$\phi 20$ a d20m ⇒ d'000157 m² a d'10m

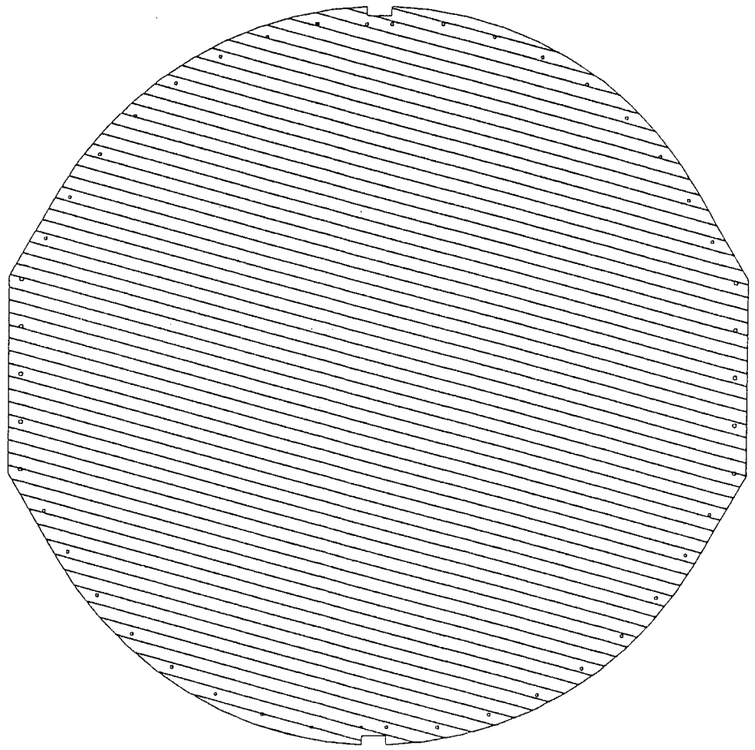
$\phi 25$ a d'20m ⇒ d'000246 m² a d'10m

$\phi 25$ a d'10m ⇒ d'000491 m² a d'10m.

SECCIONES A PIE DE PILAS

V. El Papiol .- Pilas-1 y 9 , (secc. pie de pila)

ESCALA 1/ 25

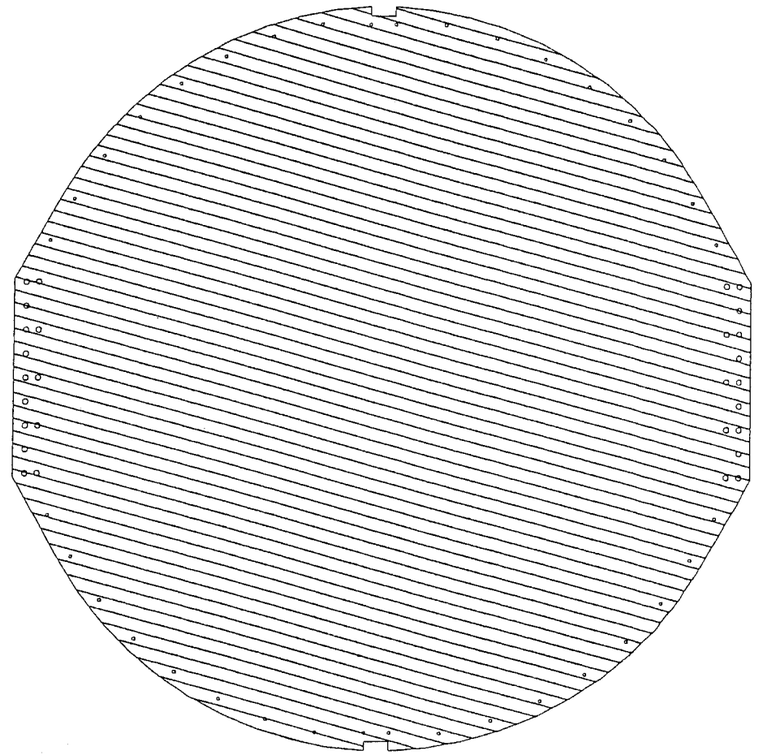


CARACTERISTICAS DE LA SECCION 1 A 0.000

AREA	7.107782	
CANTO	2.998400	3.000000
C.G.	0.000000	0.000000
V	1.499200	1.500000
VP	1.499200	1.500000
I	3.956422	4.086959
R.G.	0.746078	0.758286

V. El Papiol .- Pilas 2 a 8 , (secc. a pie de pila)

ESCALA 1/ 25



CARACTERISTICAS DE LA SECCION 1 A 0.000

AREA	7.107782	
CANTO	2.998400	3.000000
C.G.	0.000000	0.000000
V	1.499200	1.500000
VP	1.499200	1.500000
I	3.956422	4.086959
R.G.	0.746078	0.758286

V. El Papiol .- Pilas-1 y 9, (secc. a pie de pila)

secc horm punt		
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2	0.0500	1.4625
3	0.0500	1.4992
4	0.2018	1.4864
5	0.3516	1.4582
6	0.4977	1.4150
7	0.6387	1.3572
8	0.7731	1.2854
9	0.8995	1.2004
10	1.0166	1.1029
11	1.1233	0.9941
12	1.2183	0.8750
13	1.3008	0.7469
14	1.5000	0.4000
15	1.5000	0.0000
16	1.5000	-0.4000
17	1.3008	-0.7469
18	1.2183	-0.8750
19	1.1233	-0.9941
20	1.0166	-1.1029
21	0.8995	-1.2004
22	0.7731	-1.2854
23	0.6387	-1.3572
24	0.4977	-1.4150
25	0.3516	-1.4582
26	0.2018	-1.4864
27	0.0500	-1.4992
28	0.0500	-1.4625
29	0.0000	-1.4625
30	-0.0500	-1.4625
31	-0.0500	-1.4992
32	-0.2018	-1.4864
33	-0.3516	-1.4582
34	-0.4977	-1.4150
35	-0.6387	-1.3572
36	-0.7731	-1.2854
37	-0.8995	-1.2004
38	-1.0166	-1.1029
39	-1.1233	-0.9941
40	-1.2183	-0.8750
41	-1.3008	-0.7469
42	-1.5000	-0.4000
43	-1.5000	0.0000
44	-1.5000	0.4000
45	-1.3008	0.7469
46	-1.2183	0.8750
47	-1.1233	0.9941
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49	-0.8995	1.2004
50	-0.7731	1.2854
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52	-0.4977	1.4150
53	-0.3516	1.4582
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77	1.4505	0.1934
78	1.4505	0.0967
79	1.4505	0.0000
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81	1.4505	-0.1934
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83	1.4505	-0.3868
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86	1.3061	-0.6384
87	1.2579	-0.7222
88	1.2021	-0.8117
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90	1.0719	-0.9772
91	0.9982	-1.0524
92	0.9191	-1.1221
93	0.8353	-1.1859
94	0.7470	-1.2434
95	0.6547	-1.2943
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97	0.4604	-1.3755
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99	0.2561	-1.4277
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111	-0.9191	-1.1221
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113	-1.0719	-0.9772
114	-1.1401	-0.8968
115	-1.2021	-0.8117
116	-1.2579	-0.7222
117	-1.3061	-0.6384
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128	-1.4505	0.3868
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123   0.000246
124   0.000246
125   0.000246
126   0.000246
127   0.000246
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129   0.000157
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145   0.000157
146   0.000157
147   0.
148   0.
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150   0.
151   0.
152   0.
153   0.
154   0.
155   0.
156   0.
calc
1 0. dibu a4    1 inte
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V. El Papiol .- Pilas- 2 a 8 (secc. a pie de pila)

secc horm punt		
1	0.0000	1.4625
2	0.0500	1.4625
3	0.0500	1.4992
4	0.2018	1.4864
5	0.3516	1.4582
6	0.4977	1.4150
7	0.6387	1.3572
8	0.7731	1.2854
9	0.8995	1.2004
10	1.0166	1.1029
11	1.1233	0.9941
12	1.2183	0.8750
13	1.3008	0.7469
14	1.5000	0.4000
15	1.5000	0.0000
16	1.5000	-0.4000
17	1.3008	-0.7469
18	1.2183	-0.8750
19	1.1233	-0.9941
20	1.0166	-1.1029
21	0.8995	-1.2004
22	0.7731	-1.2854
23	0.6387	-1.3572
24	0.4977	-1.4150
25	0.3516	-1.4582
26	0.2018	-1.4864
27	0.0500	-1.4992
28	0.0500	-1.4625
29	0.0000	-1.4625
30	-0.0500	-1.4625
31	-0.0500	-1.4992
32	-0.2018	-1.4864
33	-0.3516	-1.4582
34	-0.4977	-1.4150
35	-0.6387	-1.3572
36	-0.7731	-1.2854
37	-0.8995	-1.2004
38	-1.0166	-1.1029
39	-1.1233	-0.9941
40	-1.2183	-0.8750
41	-1.3008	-0.7469
42	-1.5000	-0.4000
43	-1.5000	0.0000
44	-1.5000	0.4000
45	-1.3008	0.7469
46	-1.2183	0.8750
47	-1.1233	0.9941
48	-1.0166	1.1029
49	-0.8995	1.2004
50	-0.7731	1.2854
51	-0.6387	1.3572
52	-0.4977	1.4150
53	-0.3516	1.4582
54	-0.2018	1.4864
55	-0.0500	1.4992
56	-0.0500	1.4625
57	0.0513	1.4280
58	0.1539	1.4280
59	0.2561	1.4277
60	0.3593	1.4053
61	0.4604	1.3755

62	0.5591	1.3384
63	0.6547	1.2943
64	0.7470	1.2434
65	0.8353	1.1859
66	0.9191	1.1221
67	0.9982	1.0524
68	1.0719	0.9772
69	1.1401	0.8968
70	1.2021	0.8117
71	1.2579	0.7222
72	1.3061	0.6384
73	1.3542	0.5545
74	1.4024	0.4707
75	1.4505	0.3868
76	1.4505	0.2901
77	1.4505	0.1934
78	1.4505	0.0967
79	1.4505	0.0000
80	1.4505	-0.0967
81	1.4505	-0.1934
82	1.4505	-0.2901
83	1.4505	-0.3868
84	1.4024	-0.4707
85	1.3542	-0.5545
86	1.3061	-0.6384
87	1.2579	-0.7222
88	1.2021	-0.8117
89	1.1401	-0.8968
90	1.0719	-0.9772
91	0.9982	-1.0524
92	0.9191	-1.1221
93	0.8353	-1.1859
94	0.7470	-1.2434
95	0.6547	-1.2943
96	0.5591	-1.3384
97	0.4604	-1.3755
98	0.3593	-1.4053
99	0.2561	-1.4277
100	0.1539	-1.4280
101	0.0513	-1.4280
102	-0.0513	-1.4280
103	-0.1539	-1.4280
104	-0.2561	-1.4277
105	-0.3593	-1.4053
106	-0.4604	-1.3755
107	-0.5591	-1.3384
108	-0.6547	-1.2943
109	-0.7470	-1.2434
110	-0.8353	-1.1859
111	-0.9191	-1.1221
112	-0.9982	-1.0524
113	-1.0719	-0.9772
114	-1.1401	-0.8968
115	-1.2021	-0.8117
116	-1.2579	-0.7222
117	-1.3061	-0.6384
118	-1.3542	-0.5545
119	-1.4024	-0.4707
120	-1.4505	-0.3868
121	-1.4505	-0.2901
122	-1.4505	-0.1934
123	-1.4505	-0.0967
124	-1.4505	0.0000
125	-1.4505	0.0967
126	-1.4505	0.1934
127	-1.4505	0.2901
128	-1.4505	0.3868
129	-1.4024	0.4707
130	-1.3542	0.5545
131	-1.3061	0.6384
132	-1.2579	0.7222
133	-1.2021	0.8117
134	-1.1401	0.8968
135	-1.0719	0.9772
136	-0.9982	1.0524
137	-0.9191	1.1221
138	-0.8353	1.1859
139	-0.7470	1.2434
140	-0.6547	1.2943
141	-0.5591	1.3384
142	-0.4604	1.3755
143	-0.3593	1.4053
144	-0.2561	1.4277
145	-0.1539	1.4280
146	-0.0513	1.4280
147	-1.4005	-0.3868
148	-1.4005	-0.1934
149	-1.4005	0.
150	-1.4005	0.1934
151	-1.4005	0.3868
152	1.4005	0.3868
153	1.4005	0.1934
154	1.4005	0.
155	1.4005	-0.1934
156	1.4005	-0.3868

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42
43 44 45 46 47 48 49 50 51 52 53 54 55 56

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57	0.000157
58	0.000157
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62	0.000157
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64	0.000157
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67	0.000157
68	0.000157
69	0.000157
70	0.000157
71	0.000157
72	0.000157
73	0.000157
74	0.000157
75	0.000246
76	0.000246
77	0.000246
78	0.000246
79	0.000246
80	0.000246
81	0.000246
82	0.000246
83	0.000246
84	0.000157

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  85    0.000157
  86    0.000157
  87    0.000157
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  90    0.000157
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 115    0.000157
 116    0.000157
 117    0.000157
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 119    0.000157
 120    0.000246
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 122    0.000246
 123    0.000246
 124    0.000246
 125    0.000246
 126    0.000246
 127    0.000246
 128    0.000246
 129    0.000157
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 131    0.000157
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 136    0.000157
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 138    0.000157
 139    0.000157
 140    0.000157
 141    0.000157
 142    0.000157
 143    0.000157
 144    0.000157
 145    0.000157
 146    0.000157
 147    0.
 148    0.
 149    0.
 150    0.
 151    0.
 152    0.
 153    0.
 154    0.
 155    0.
 156    0.
calc
1 0. dibu a4    1 inte
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CARACTERISTICAS DE LA SECCION 1 A 0.000

AREA	7.107782	
CANTO	2.9984	3.0000
C.G.	0.0000	0.0000
V	1.4992	1.5000
VP	1.4992	1.5000
I	3.95642161	4.08695936
R.G.	0.7461	0.7583

CONDICIONES DE AGOTAMIENTO DE LA SECCION

RESISTENCIA DEL HORMIGON	1	3000.
LIMITE ELASTICO DEL ACERO DE ARMAR		50000.
LIMITE ELASTICO DEL ACERO DE PRETENSAR		0.

COMPROBACION DE AGOTAMIENTO DE LA SECCION

HIP.	N	Mx	My	Mxu	Myu	Fac.Seg.
1	-5623.	938.	232.	4031.	997.	4.30
2	-1832.	-938.	24.	-2720.	71.	2.90
3	-2393.	955.	-160.	3070.	-514.	3.22
4	-2393.	-954.	-157.	-3071.	-505.	3.22
5	-4059.	938.	-232.	3789.	-937.	4.04
6	-3466.	-938.	618.	-3117.	2054.	3.32
7	-3052.	-938.	2695.	-1187.	3411.	1.27
8	-4062.	938.	-2873.	1255.	-3842.	1.34
9	-3231.	955.	-215.	3491.	-788.	3.66
10	-2100.	-954.	-117.	-2894.	-356.	3.03

V. El Papiol .- Pila-2, (secc. a pie de pila) (barra 208)

CARACTERISTICAS DE LA SECCION 1 A 0.000

AREA	7.107782	
CANTO	2.9984	3.0000
C.G.	0.0000	0.0000
V	1.4992	1.5000
VP	1.4992	1.5000
I	3.95642161	4.08695936
R.G.	0.7461	0.7583

CONDICIONES DE AGOTAMIENTO DE LA SECCION

RESISTENCIA DEL HORMIGON	1	3000.
LIMITE ELASTICO DEL ACERO DE ARMAR		50000.
LIMITE ELASTICO DEL ACERO DE PRETENSAR		0.

COMPROBACION DE AGOTAMIENTO DE LA SECCION

HIP.	N	Mx	My	Mxu	Myu	Fac.Seg.
1	-6015.	-1511.	494.	-3944.	1288.	2.61
2	-2003.	1511.	-27.	2846.	-51.	1.88
3	-2544.	1549.	-373.	3121.	-752.	2.01
4	-2544.	-1549.	-357.	-3128.	-720.	2.02
5	-4286.	1511.	-557.	3737.	-1379.	2.47
6	-4453.	-1511.	807.	-3571.	1906.	2.36
7	-3082.	-1512.	2896.	-1676.	3211.	1.11
8	-4281.	1512.	-3444.	1649.	-3757.	1.09
9	-3435.	1549.	-497.	3505.	-1123.	2.26
10	-2239.	-1549.	-251.	-2973.	-481.	1.92

V. El Papiol .- Pila-3, (secc. a pie de pila) (barra 211)

CARACTERISTICAS DE LA SECCION 1 A 0.000

AREA	7.107782	
CANTO	2.9984	3.0000
C.G.	0.0000	0.0000
V	1.4992	1.5000
VP	1.4992	1.5000
I	3.95642161	4.08695936
R.G.	0.7461	0.7583

CONDICIONES DE AGOTAMIENTO DE LA SECCION

RESISTENCIA DEL HORMIGON	1	3000.
LIMITE ELASTICO DEL ACERO DE ARMAR		50000.
LIMITE ELASTICO DEL ACERO DE PRETENSAR		0.

COMPROBACION DE AGOTAMIENTO DE LA SECCION

HIP.	N	Mx	My	Mxu	Myu	Fac.Seg.
1	-6061.	1912.	501.	4004.	1049.	2.09
2	-2022.	-1912.	-104.	-2856.	-155.	1.49
3	-2563.	1974.	-427.	3147.	-681.	1.59
4	-2563.	-1974.	-397.	-3156.	-635.	1.60
5	-2947.	1912.	-434.	3353.	-761.	1.75
6	-4871.	-1912.	931.	-3706.	1806.	1.94
7	-3107.	-1912.	2798.	-2043.	2989.	1.07
8	-4272.	1912.	-3431.	1995.	-3579.	1.04
9	-3460.	1974.	-571.	3543.	-1025.	1.79
10	-2261.	-1974.	-277.	-2997.	-420.	1.52

V. El Papiol .- Pila-4, (secc. a pie de pila) (barra 214)

CARACTERISTICAS DE LA SECCION 1 A 0.000

AREA	7.107782	
CANTO	2.9984	3.0000
C.G.	0.0000	0.0000
V	1.4992	1.5000
VP	1.4992	1.5000
I	3.95642161	4.08695936
R.G.	0.7461	0.7583

CONDICIONES DE AGOTAMIENTO DE LA SECCION

RESISTENCIA DEL HORMIGON	1	3000.
LIMITE ELASTICO DEL ACERO DE ARMAR		50000.
LIMITE ELASTICO DEL ACERO DE PRETENSAR		0.

COMPROBACION DE AGOTAMIENTO DE LA SECCION

HIP.	N	Mx	My	Mxu	Myu	Fac.Seg.
1	-6091.	-1919.	629.	-4016.	1316.	2.09
2	-2031.	1919.	-208.	3086.	-335.	1.61
3	-2571.	1981.	-473.	3324.	-793.	1.68
4	-2571.	-1981.	-424.	-3337.	-714.	1.68
5	-2957.	1919.	-535.	3478.	-969.	1.81
6	-4888.	-1919.	1055.	-3764.	2070.	1.96
7	-3119.	-1919.	3236.	-2090.	3525.	1.09
8	-4289.	1919.	-3920.	2021.	-4129.	1.05
9	-3470.	1981.	-630.	3652.	-1160.	1.84
10	-2268.	-1981.	-289.	-3210.	-467.	1.62

V. El Papiol .- Pila-5, (secc. a pie de pila) (barra 217)

CARACTERISTICAS DE LA SECCION 1 A 0.000

AREA	7.107782	
CANTO	2.9984	3.0000
C.G.	0.0000	0.0000
V	1.4992	1.5000
VP	1.4992	1.5000
I	3.95642161	4.08695936
R.G.	0.7461	0.7583

CONDICIONES DE AGOTAMIENTO DE LA SECCION

RESISTENCIA DEL HORMIGON	1	3000.
LIMITE ELASTICO DEL ACERO DE ARMAR		50000.
LIMITE ELASTICO DEL ACERO DE PRETENSAR		0.

COMPROBACION DE AGOTAMIENTO DE LA SECCION

HIP.	N	Mx	My	Mxu	Myu	Fac.Seg.
1	-6088.	1916.	508.	4065.	1077.	2.12
2	-2025.	-1916.	13.	-3097.	21.	1.62
3	-2568.	1979.	-314.	3359.	-534.	1.70
4	-2568.	-1979.	-250.	-3370.	-425.	1.70
5	-2950.	1916.	-570.	3463.	-1031.	1.81
6	-4872.	-1916.	1074.	-3750.	2101.	1.96
7	-3115.	-1916.	3392.	-2019.	3575.	1.05
8	-4287.	1916.	-3762.	2083.	-4090.	1.09
9	-2266.	1979.	-228.	3218.	-371.	1.63
10	-3466.	-1979.	-348.	-3725.	-656.	1.88

V. El Papiol .- Pila-6, (secc. a pie de pila) (barra 220)

CARACTERISTICAS DE LA SECCION 1 A 0.000

AREA	7.107782	
CANTO	2.9984	3.0000
C.G.	0.0000	0.0000
V	1.4992	1.5000
VP	1.4992	1.5000
I	3.95642161	4.08695936
R.G.	0.7461	0.7583

CONDICIONES DE AGOTAMIENTO DE LA SECCION

RESISTENCIA DEL HORMIGON	1	3000.
LIMITE ELASTICO DEL ACERO DE ARMAR		50000.
LIMITE ELASTICO DEL ACERO DE PRETENSAR		0.

COMPROBACION DE AGOTAMIENTO DE LA SECCION

HIP.	N	Mx	My	Mxu	Myu	Fac.Seg.
1	-6087.	-1919.	507.	-4032.	1065.	2.10
2	-2029.	1919.	91.	2981.	141.	1.55
3	-2570.	1981.	-42.	3305.	-70.	1.67
4	-2572.	-1981.	34.	-3306.	57.	1.67
5	-2950.	1919.	-500.	3408.	-889.	1.78
6	-4880.	-1919.	1094.	-3670.	2092.	1.91
7	-3907.	-1919.	3521.	-2017.	3701.	1.05
8	-4290.	1919.	-3329.	2162.	-3751.	1.13
9	-2267.	1981.	-36.	3133.	-56.	1.58
10	-3472.	-1981.	33.	-3714.	62.	1.87

V. El Papiol .- Pila-7, (secc. a pie de pila) (barra 223)

CARACTERISTICAS DE LA SECCION 1 A 0.000

AREA	7.107782	
CANTO	2.9984	3.0000
C.G.	0.0000	0.0000
V	1.4992	1.5000
VP	1.4992	1.5000
I	3.95642161	4.08695936
R.G.	0.7461	0.7583

CONDICIONES DE AGOTAMIENTO DE LA SECCION

RESISTENCIA DEL HORMIGON	1	3000.
LIMITE ELASTICO DEL ACERO DE ARMAR		50000.
LIMITE ELASTICO DEL ACERO DE PRETENSAR		0.

COMPROBACION DE AGOTAMIENTO DE LA SECCION

HIP.	N	Mx	My	Mxu	Myu	Fac.Seg.
1	-6062.	1911.	245.	4096.	525.	2.14
2	-2017.	-1911.	261.	-2831.	386.	1.48
3	-2565.	1974.	153.	3207.	248.	1.62
4	-2558.	-1974.	224.	-3192.	362.	1.62
5	-4139.	1911.	-206.	3892.	-418.	2.04
6	-3676.	-1911.	907.	-3431.	1628.	1.80
7	-4272.	-1911.	3127.	-2135.	3493.	1.12
8	-3103.	1911.	-2569.	2157.	-2899.	1.13
9	-2264.	1974.	99.	3023.	152.	1.53
10	-3455.	-1974.	289.	-3633.	532.	1.84

V. El Papiol .- Pila-8, (secc. a pie de pila) (barra 226)

CARACTERISTICAS DE LA SECCION 1 A 0.000

AREA	7.107782	
CANTO	2.9984	3.0000
C.G.	0.0000	0.0000
V	1.4992	1.5000
VP	1.4992	1.5000
I	3.95642161	4.08695936
R.G.	0.7461	0.7583

CONDICIONES DE AGOTAMIENTO DE LA SECCION

RESISTENCIA DEL HORMIGON	1	3000.
LIMITE ELASTICO DEL ACERO DE ARMAR		50000.
LIMITE ELASTICO DEL ACERO DE PRETENSAR		0.

COMPROBACION DE AGOTAMIENTO DE LA SECCION

HIP.	N	Mx	My	Mxu	Myu	Fac.Seg.
1	-6007.	-1308.	247.	-4115.	778.	3.15
2	-1964.	1308.	163.	3042.	378.	2.33
3	-2510.	1337.	391.	3262.	954.	2.44
4	-2537.	-1336.	471.	-3234.	1139.	2.42
5	-3042.	1308.	-476.	3456.	-1257.	2.64
6	-4866.	-1308.	900.	-3598.	2475.	2.75
7	-4244.	-1308.	4278.	-1353.	4424.	1.03
8	-3071.	1308.	-3220.	1556.	-3831.	1.19
9	-3394.	1337.	542.	3559.	1443.	2.66
10	-2207.	-1336.	341.	-3125.	798.	2.34

V. El Papiol .- Pila-9, (secc. a pie de pila) (barra 228)

CARACTERISTICAS DE LA SECCION 1 A 0.000

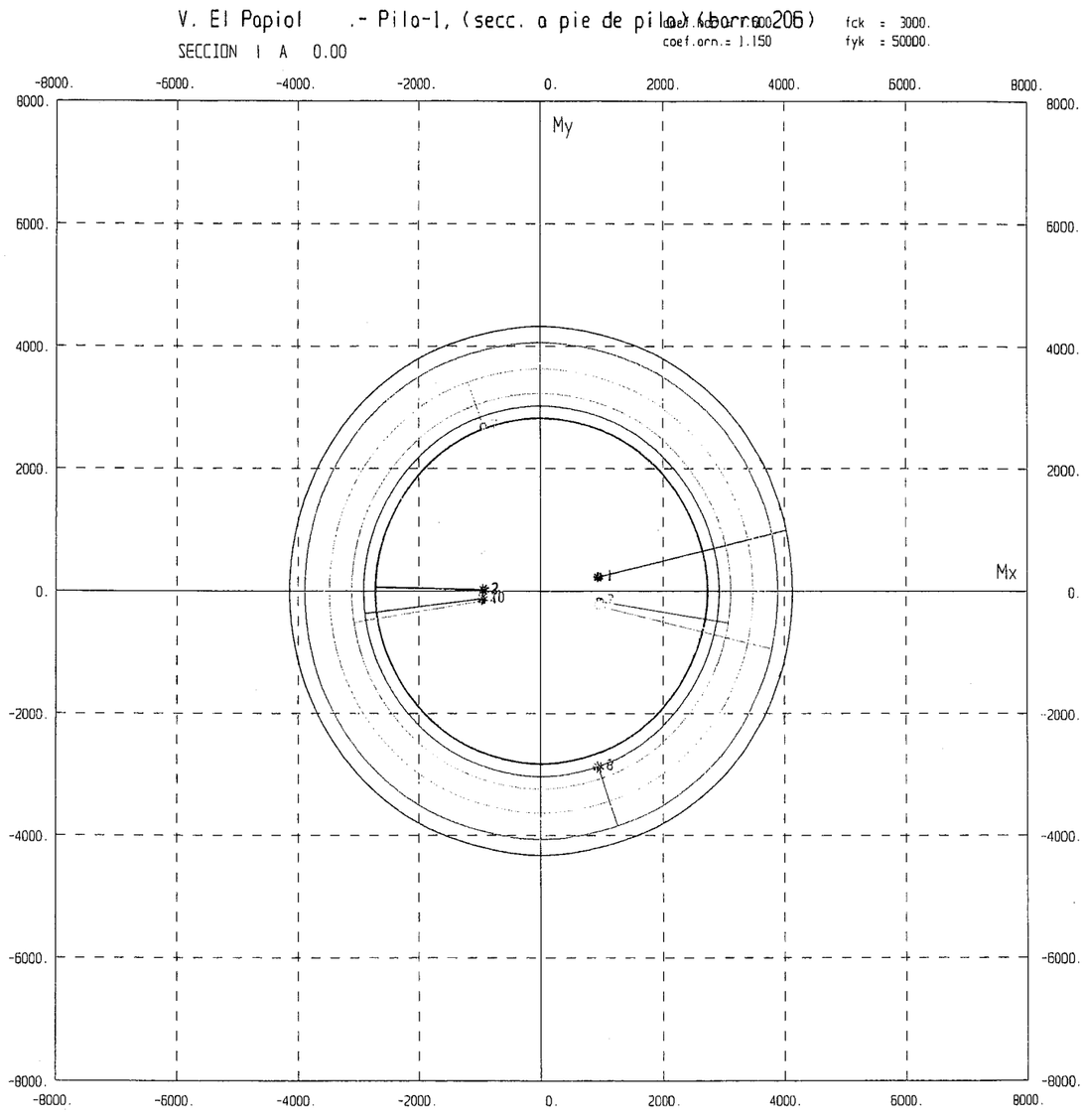
AREA	7.107782	
CANTO	2.9984	3.0000
C.G.	0.0000	0.0000
V	1.4992	1.5000
VP	1.4992	1.5000
I	3.95642161	4.08695936
R.G.	0.7461	0.7583

CONDICIONES DE AGOTAMIENTO DE LA SECCION

RESISTENCIA DEL HORMIGON	1	3000.
LIMITE ELASTICO DEL ACERO DE ARMAR		50000.
LIMITE ELASTICO DEL ACERO DE PRETENSAR		0.

COMPROBACION DE AGOTAMIENTO DE LA SECCION

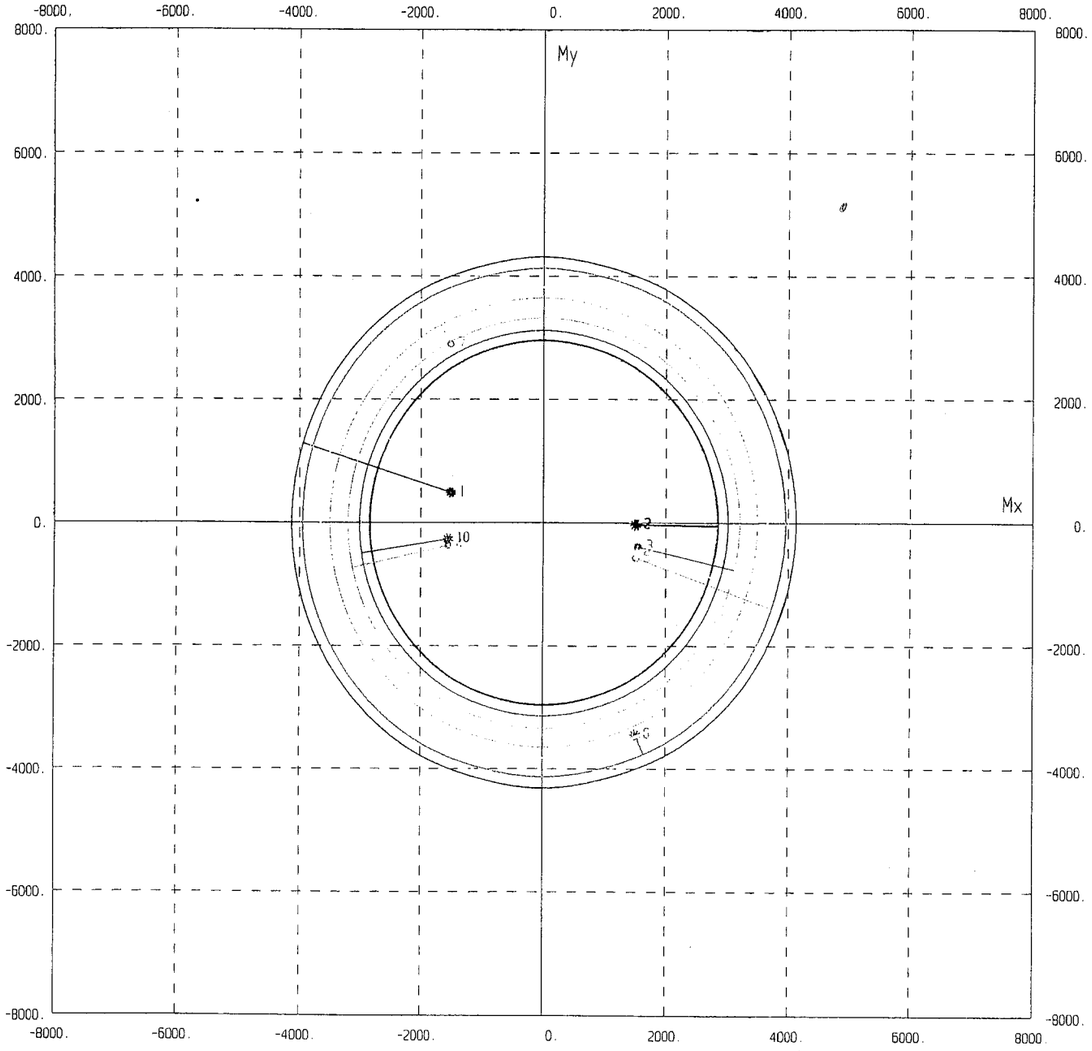
HIP.	N	Mx	My	Mxu	Myu	Fac.Seg.
1	-5756.	1160.	181.	4096.	640.	3.53
2	-1747.	-1160.	65.	-2652.	149.	2.29
3	-2485.	1185.	185.	3132.	489.	2.64
4	-2337.	-1185.	237.	-3018.	604.	2.55
5	-3017.	1160.	-33.	3464.	-99.	2.98
6	-4551.	-1160.	358.	-3859.	1189.	3.33
7	-3900.	-1160.	2503.	-1676.	3614.	1.44
8	-2836.	1160.	-2002.	1746.	-3013.	1.50
9	-3329.	1185.	259.	3540.	774.	2.99
10	-2044.	-1185.	172.	-2847.	414.	2.40


V. El Papiol .- Pilo-1, (secc. a pie de pilo) (barra 206)
SECCION 1 A 0.00
coef.nrm.= 1.150
fck = 3000.
fyk = 50000.
My
Mx
-8000.
-6000.
-4000.
-2000.
0.
2000.
4000.
6000.
8000.

V. El Papiol .- Pilo-2, (secc. a pie de pilo) (barra 208)

SECCION 1 A 0.00

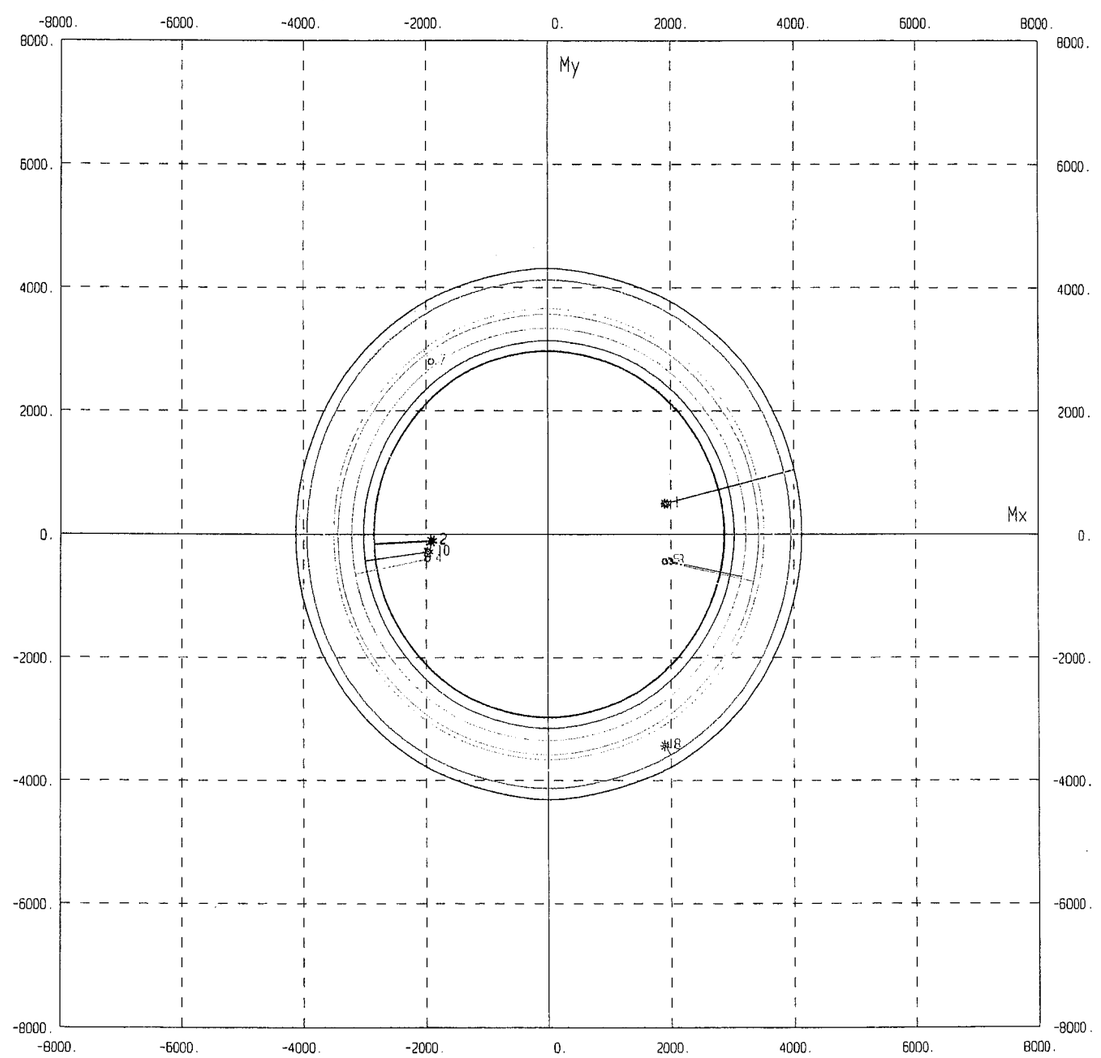
coef.mat.= 1.500 fck = 3000.
coef.arm.= 1.150 fyk = 50000.



V. El Papiol .- Pilo-3, (secc. a pie de pilo) (barra 211)

SECCION 1 A 0.00

coef.mat.= 1.500 fck = 3000.
coef.arm.= 1.150 fyk = 50000.

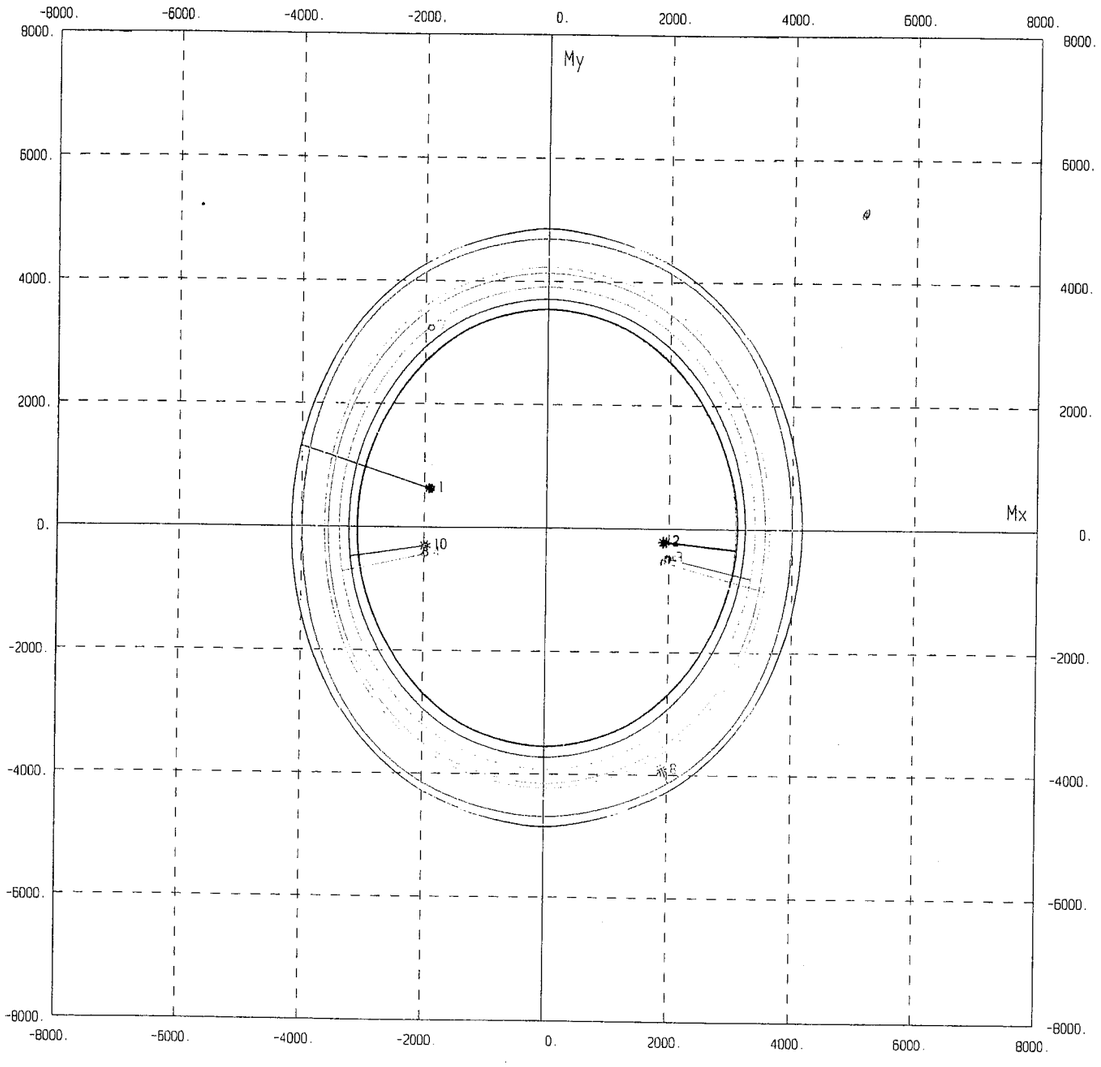


V. El Papiol .- Pila-4, (secc. a pie de pila) (barra 214)

SECCION 1 A 0.00

coef.mat.= 1.500 fck = 3000.

coef.arm.= 1.150 fyk = 50000.

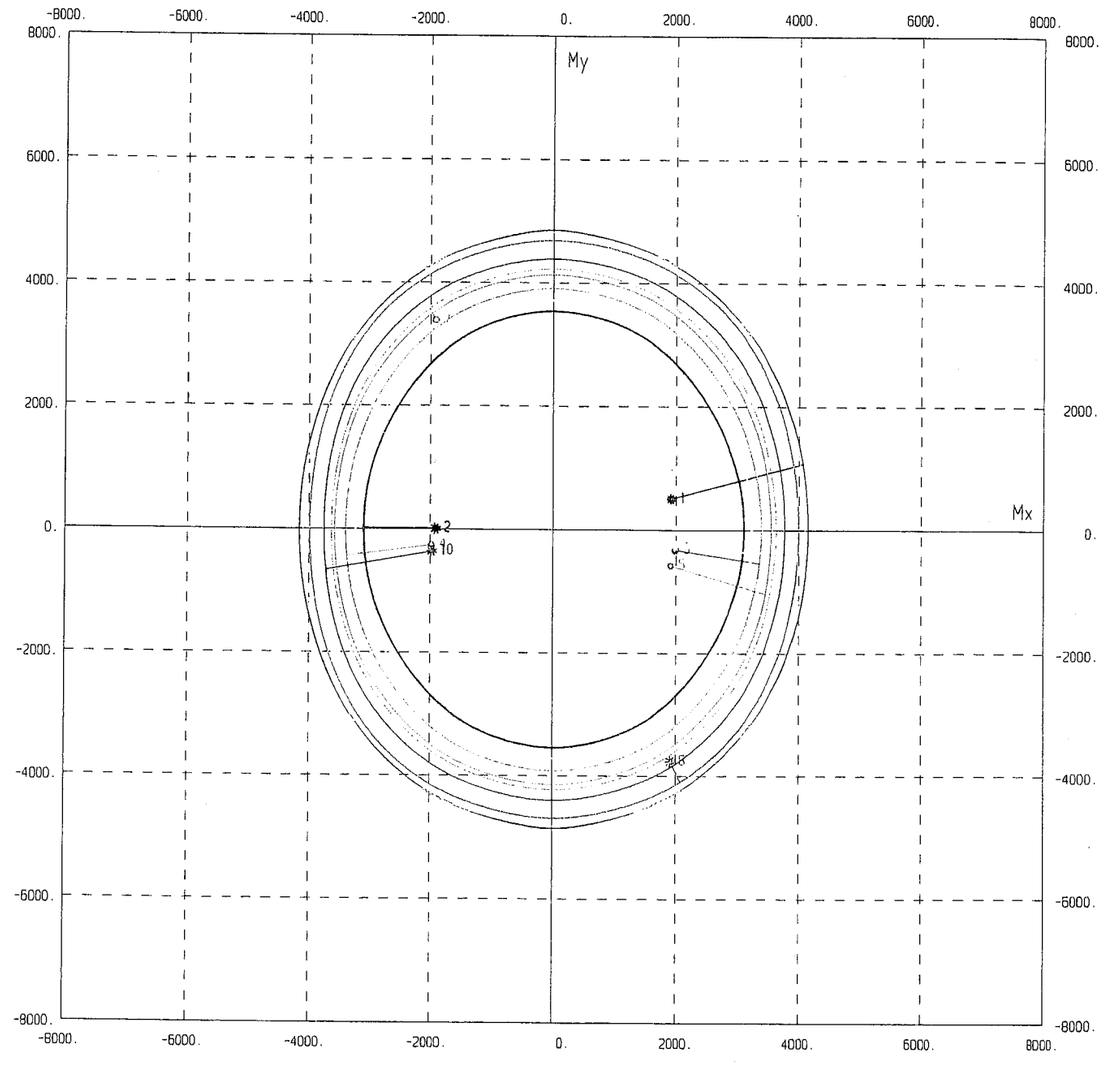


V. El Papiol .- Pila-5, (secc. a pie de pila) (barra 217)

SECCION 1 A 0.00

coef.mat.= 1.500 fck = 3000.

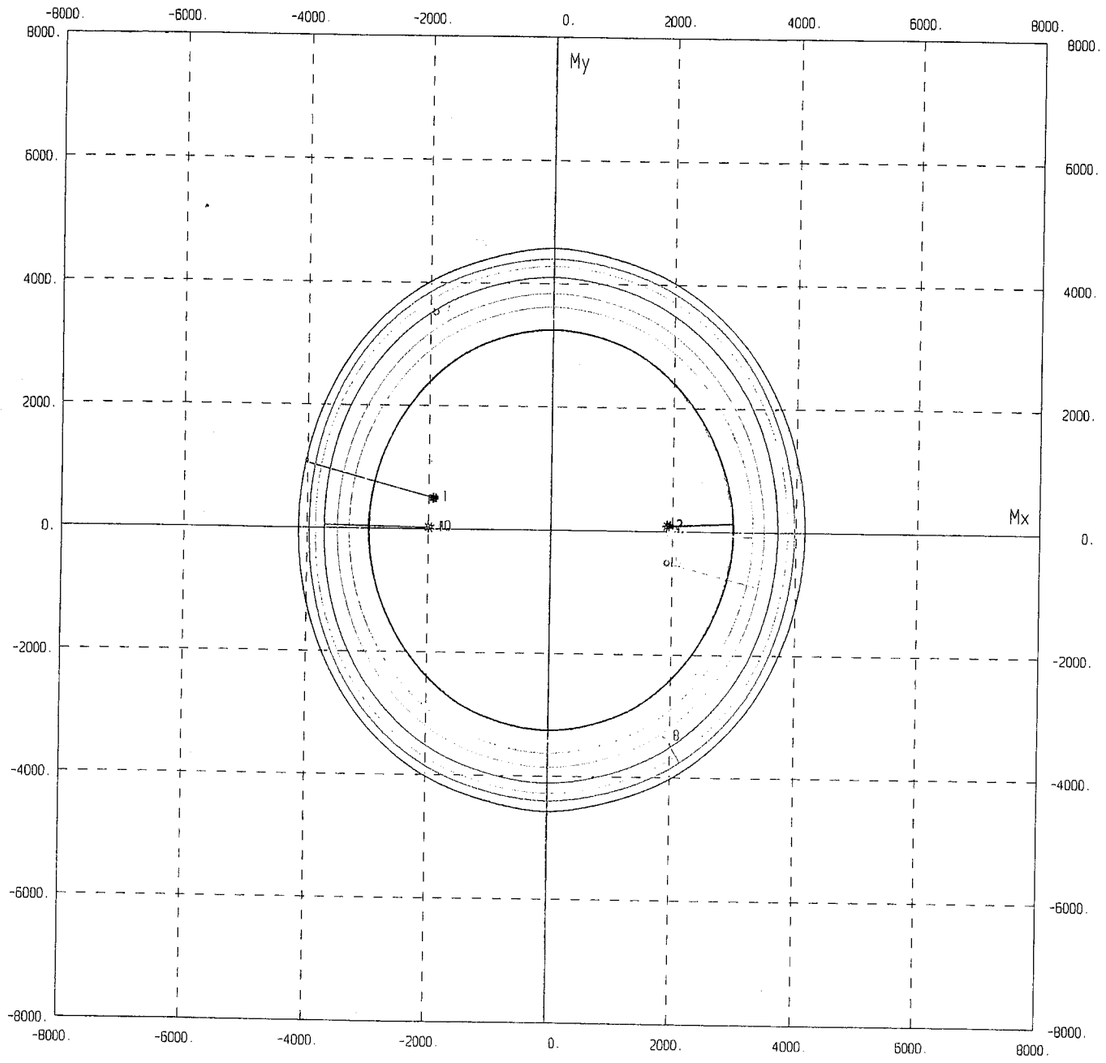
coef.arm.= 1.150 fyk = 50000.



V. El Popiol .- Pila-6, (secc. a pie de pilar) (barra 220)

SECCION 1 A 0.00

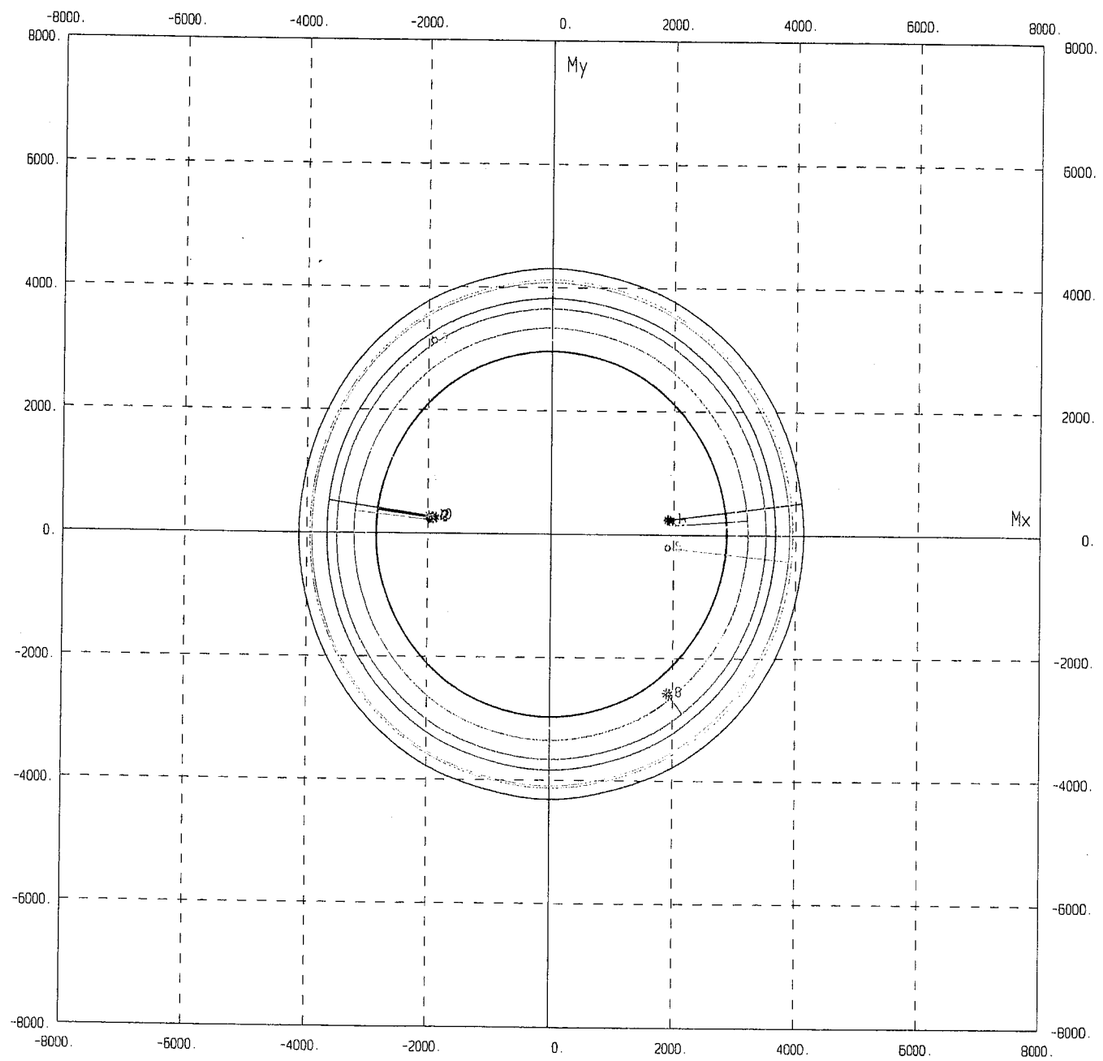
coef.mat.= 1.500 fck = 3000.
coef.acn.= 1.150 fyk = 50000.



V. El Popiol .- Pila-7, (secc. a pie de pilar) (barra 223)

SECCION 1 A 0.00

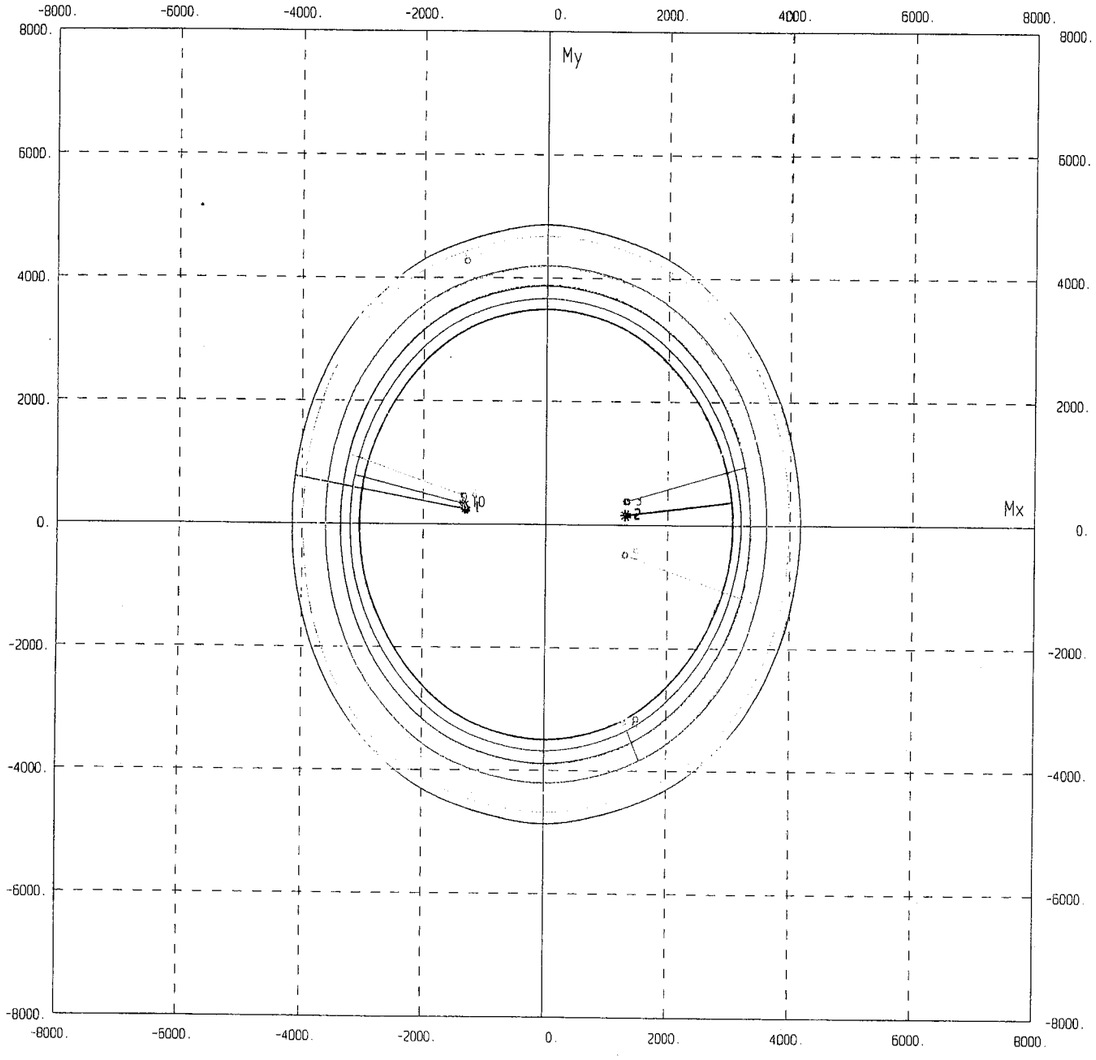
coef.mat.= 1.500 fck = 3000.
coef.acn.= 1.150 fyk = 50000.



V. El Papiol .- Pila-8, (secc. o pie de pila) (barra 226)

SECCION 1 A 0.00

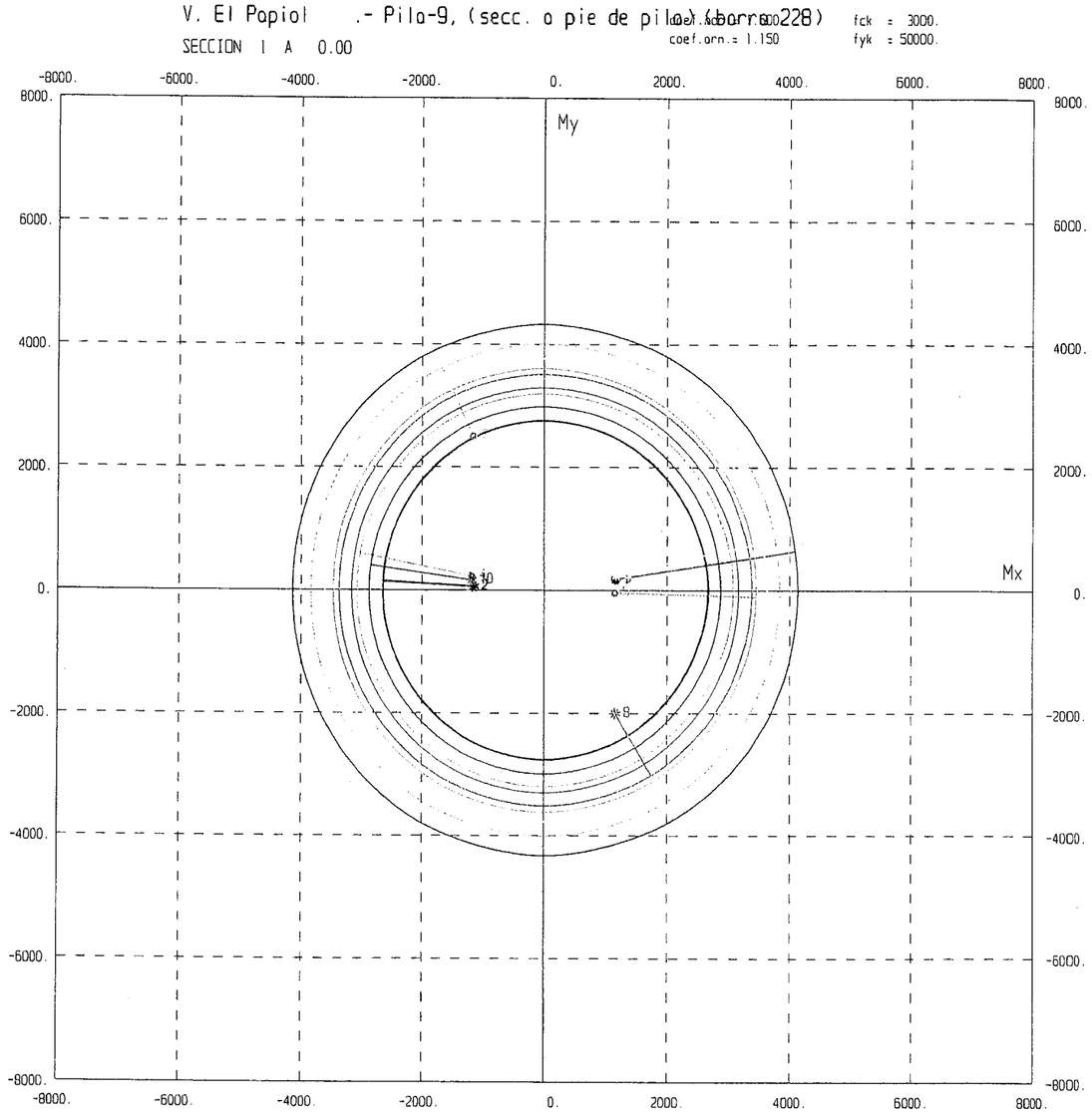
coef.mom.= 1.150 fck = 3000. fyk = 50000.



V. El Papiol .- Pila-9, (secc. o pie de pila) (barra 228)

SECCION 1 A 0.00

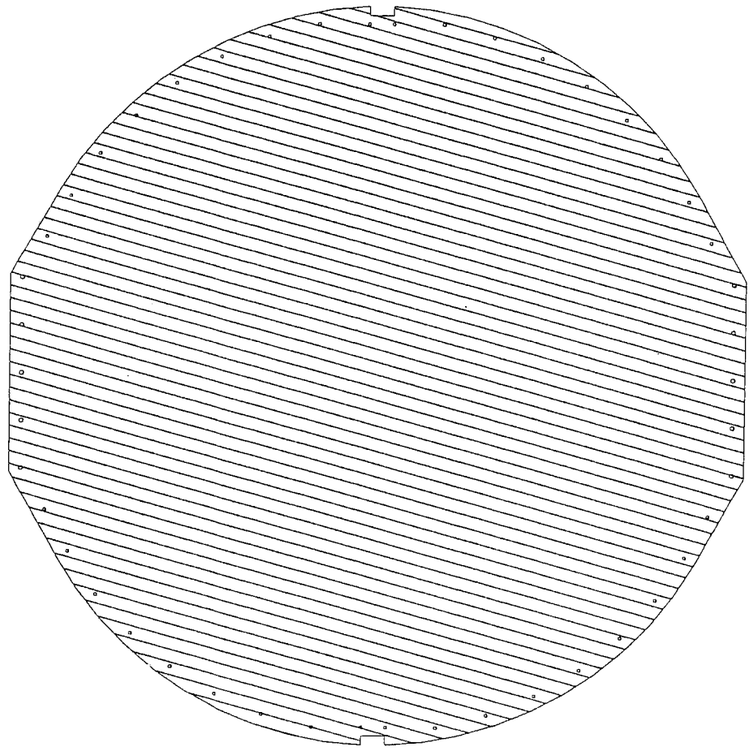
coef.mom.= 1.150 fck = 3000. fyk = 50000.



SECCIONES INTERMEDIAS

V. El Papiol .- Pilas-2, 3 y7 , (secc. intermedia)

ESCALA 1/ 25

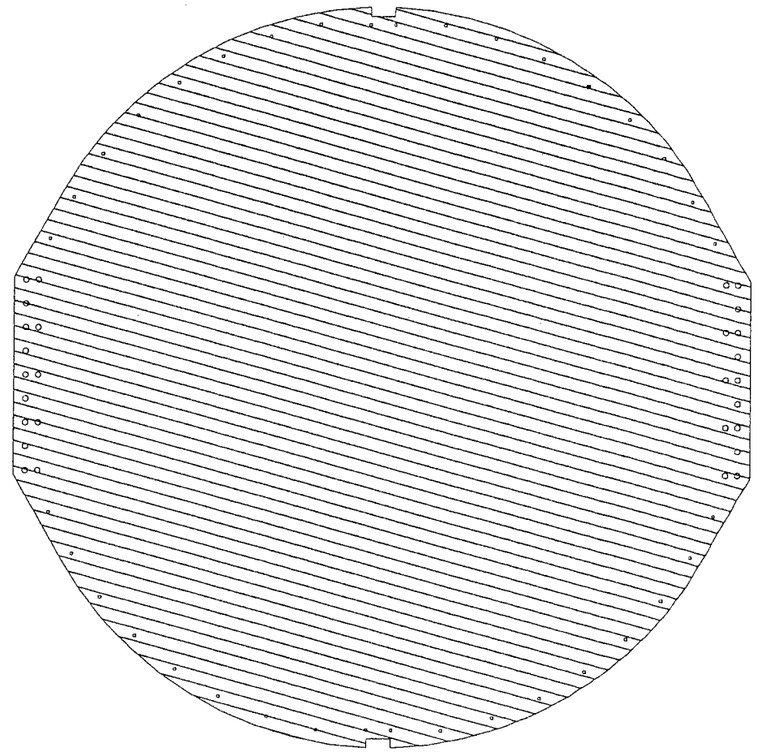


CARACTERISTICAS DE LA SECCION I A 0.000

AREA	7.107782	
CANTO	2.998400	3.000000
C.G.	0.000000	0.000000
V	1.499200	1.500000
VP	1.499200	1.500000
I	3.956422	4.086959
R.G.	0.746078	0.758286

V. El Papiol .- Pilas 4, 5 y 6 , (secc. intermedia)

ESCALA 1/ 25



CARACTERISTICAS DE LA SECCION I A 0.000

AREA	7.107782	
CANTO	2.998400	3.000000
C.G.	0.000000	0.000000
V	1.499200	1.500000
VP	1.499200	1.500000
I	3.956422	4.086959
R.G.	0.746078	0.758286

V. El Papiol .- Pilas-2,3, y 7, (secc. intermedia a 0.6m)

secc horm punt		
1	0.0000	1.4625
2	0.0500	1.4625
3	0.0500	1.4992
4	0.2018	1.4864
5	0.3516	1.4582
6	0.4977	1.4150
7	0.6387	1.3572
8	0.7731	1.2854
9	0.8995	1.2004
10	1.0166	1.1029
11	1.1233	0.9941
12	1.2183	0.8750
13	1.3008	0.7469
14	1.5000	0.4000
15	1.5000	0.0000
16	1.5000	-0.4000
17	1.3008	-0.7469
18	1.2183	-0.8750
19	1.1233	-0.9941
20	1.0166	-1.1029
21	0.8995	-1.2004
22	0.7731	-1.2854
23	0.6387	-1.3572
24	0.4977	-1.4150
25	0.3516	-1.4582
26	0.2018	-1.4864
27	0.0500	-1.4992
28	0.0500	-1.4625
29	0.0000	-1.4625
30	-0.0500	-1.4625
31	-0.0500	-1.4992
32	-0.2018	-1.4864
33	-0.3516	-1.4582
34	-0.4977	-1.4150
35	-0.6387	-1.3572
36	-0.7731	-1.2854
37	-0.8995	-1.2004
38	-1.0166	-1.1029
39	-1.1233	-0.9941
40	-1.2183	-0.8750
41	-1.3008	-0.7469
42	-1.5000	-0.4000
43	-1.5000	0.0000
44	-1.5000	0.4000
45	-1.3008	0.7469
46	-1.2183	0.8750
47	-1.1233	0.9941
48	-1.0166	1.1029
49	-0.8995	1.2004
50	-0.7731	1.2854
51	-0.6387	1.3572
52	-0.4977	1.4150
53	-0.3516	1.4582
54	-0.2018	1.4864
55	-0.0500	1.4992
56	-0.0500	1.4625
57	0.0513	1.4280
58	0.1539	1.4280
59	0.2561	1.4277
60	0.3593	1.4053
61	0.4604	1.3755

62	0.5591	1.3384
63	0.6547	1.2943
64	0.7470	1.2434
65	0.8353	1.1859
66	0.9191	1.1221
67	0.9982	1.0524
68	1.0719	0.9772
69	1.1401	0.8968
70	1.2021	0.8117
71	1.2579	0.7222
72	1.3061	0.6384
73	1.3542	0.5545
74	1.4024	0.4707
75	1.4505	0.3868
76	1.4505	0.2901
77	1.4505	0.1934
78	1.4505	0.0967
79	1.4505	0.0000
80	1.4505	-0.0967
81	1.4505	-0.1934
82	1.4505	-0.2901
83	1.4505	-0.3868
84	1.4024	-0.4707
85	1.3542	-0.5545
86	1.3061	-0.6384
87	1.2579	-0.7222
88	1.2021	-0.8117
89	1.1401	-0.8968
90	1.0719	-0.9772
91	0.9982	-1.0524
92	0.9191	-1.1221
93	0.8353	-1.1859
94	0.7470	-1.2434
95	0.6547	-1.2943
96	0.5591	-1.3384
97	0.4604	-1.3755
98	0.3593	-1.4053
99	0.2561	-1.4277
100	0.1539	-1.4280
101	0.0513	-1.4280
102	-0.0513	-1.4280
103	-0.1539	-1.4280
104	-0.2561	-1.4277
105	-0.3593	-1.4053
106	-0.4604	-1.3755
107	-0.5591	-1.3384
108	-0.6547	-1.2943
109	-0.7470	-1.2434
110	-0.8353	-1.1859
111	-0.9191	-1.1221
112	-0.9982	-1.0524
113	-1.0719	-0.9772
114	-1.1401	-0.8968
115	-1.2021	-0.8117
116	-1.2579	-0.7222
117	-1.3061	-0.6384
118	-1.3542	-0.5545
119	-1.4024	-0.4707
120	-1.4505	-0.3868
121	-1.4505	-0.2901
122	-1.4505	-0.1934
123	-1.4505	-0.0967
124	-1.4505	0.0000
125	-1.4505	0.0967
126	-1.4505	0.1934
127	-1.4505	0.2901
128	-1.4505	0.3868
129	-1.4024	0.4707
130	-1.3542	0.5545
131	-1.3061	0.6384
132	-1.2579	0.7222
133	-1.2021	0.8117
134	-1.1401	0.8968
135	-1.0719	0.9772
136	-0.9982	1.0524
137	-0.9191	1.1221
138	-0.8353	1.1859
139	-0.7470	1.2434
140	-0.6547	1.2943
141	-0.5591	1.3384
142	-0.4604	1.3755
143	-0.3593	1.4053
144	-0.2561	1.4277
145	-0.1539	1.4280
146	-0.0513	1.4280
147	-1.4005	-0.3868
148	-1.4005	-0.1934
149	-1.4005	0.
150	-1.4005	0.1934
151	-1.4005	0.3868
152	1.4005	0.3868
153	1.4005	0.1934
154	1.4005	0.
155	1.4005	-0.1934
156	1.4005	-0.3868

horm 7.00 3000.00

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42
43 44 45 46 47 48 49 50 51 52 53 54 55 56

arma 50000.

57	0.000157
58	0.000157
59	0.000157
60	0.000157
61	0.000157
62	0.000157
63	0.000157
64	0.000157
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66	0.000157
67	0.000157
68	0.000157
69	0.000157
70	0.000157
71	0.000157
72	0.000157
73	0.000157
74	0.000157
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76	0.000246
77	0.000246
78	0.000246
79	0.000246
80	0.000246
81	0.000246
82	0.000246
83	0.000246
84	0.000157

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 87   0.000157
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119   0.000157
120   0.000246
121   0.000246
122   0.000246
123   0.000246
124   0.000246
125   0.000246
126   0.000246
127   0.000246
128   0.000246
129   0.000157
130   0.000157
131   0.000157
132   0.000157
133   0.000157
134   0.000157
135   0.000157
136   0.000157
137   0.000157
138   0.000157
139   0.000157
140   0.000157
141   0.000157
142   0.000157
143   0.000157
144   0.000157
145   0.000157
146   0.000157
147   0.
148   0.
149   0.
150   0.
151   0.
152   0.
153   0.
154   0.
155   0.
156   0.
calc
1 0. dibu a4    1 inte
```

V. El Papiol .- Pilas-4,5 y 6, (secc. a 3.30m)

secc horm punt		
1	0.0000	1.4625
2	0.0500	1.4625
3	0.0500	1.4992
4	0.2018	1.4864
5	0.3516	1.4582
6	0.4977	1.4150
7	0.6387	1.3572
8	0.7731	1.2854
9	0.8995	1.2004
10	1.0166	1.1029
11	1.1233	0.9941
12	1.2183	0.8750
13	1.3008	0.7469
14	1.5000	0.4000
15	1.5000	0.0000
16	1.5000	-0.4000
17	1.3008	-0.7469
18	1.2183	-0.8750
19	1.1233	-0.9941
20	1.0166	-1.1029
21	0.8995	-1.2004
22	0.7731	-1.2854
23	0.6387	-1.3572
24	0.4977	-1.4150
25	0.3516	-1.4582
26	0.2018	-1.4864
27	0.0500	-1.4992
28	0.0500	-1.4625
29	0.0000	-1.4625
30	-0.0500	-1.4625
31	-0.0500	-1.4992
32	-0.2018	-1.4864
33	-0.3516	-1.4582
34	-0.4977	-1.4150
35	-0.6387	-1.3572
36	-0.7731	-1.2854
37	-0.8995	-1.2004
38	-1.0166	-1.1029
39	-1.1233	-0.9941
40	-1.2183	-0.8750
41	-1.3008	-0.7469
42	-1.5000	-0.4000
43	-1.5000	0.0000
44	-1.5000	0.4000
45	-1.3008	0.7469
46	-1.2183	0.8750
47	-1.1233	0.9941
48	-1.0166	1.1029
49	-0.8995	1.2004
50	-0.7731	1.2854
51	-0.6387	1.3572
52	-0.4977	1.4150
53	-0.3516	1.4582
54	-0.2018	1.4864
55	-0.0500	1.4992
56	-0.0500	1.4625
57	0.0513	1.4280
58	0.1539	1.4280
59	0.2561	1.4277
60	0.3593	1.4053
61	0.4604	1.3755

```
 62      0.5591      1.3384
 63      0.6547      1.2943
 64      0.7470      1.2434
 65      0.8353      1.1859
 66      0.9191      1.1221
 67      0.9982      1.0524
 68      1.0719      0.9772
 69      1.1401      0.8968
 70      1.2021      0.8117
 71      1.2579      0.7222
 72      1.3061      0.6384
 73      1.3542      0.5545
 74      1.4024      0.4707
 75      1.4505      0.3868
 76      1.4505      0.2901
 77      1.4505      0.1934
 78      1.4505      0.0967
 79      1.4505      0.0000
 80      1.4505     -0.0967
 81      1.4505     -0.1934
 82      1.4505     -0.2901
 83      1.4505     -0.3868
 84      1.4024     -0.4707
 85      1.3542     -0.5545
 86      1.3061     -0.6384
 87      1.2579     -0.7222
 88      1.2021     -0.8117
 89      1.1401     -0.8968
 90      1.0719     -0.9772
 91      0.9982     -1.0524
 92      0.9191     -1.1221
 93      0.8353     -1.1859
 94      0.7470     -1.2434
 95      0.6547     -1.2943
 96      0.5591     -1.3384
 97      0.4604     -1.3755
 98      0.3593     -1.4053
 99      0.2561     -1.4277
100      0.1539     -1.4280
101      0.0513     -1.4280
102     -0.0513     -1.4280
103     -0.1539     -1.4280
104     -0.2561     -1.4277
105     -0.3593     -1.4053
106     -0.4604     -1.3755
107     -0.5591     -1.3384
108     -0.6547     -1.2943
109     -0.7470     -1.2434
110     -0.8353     -1.1859
111     -0.9191     -1.1221
112     -0.9982     -1.0524
113     -1.0719     -0.9772
114     -1.1401     -0.8968
115     -1.2021     -0.8117
116     -1.2579     -0.7222
117     -1.3061     -0.6384
118     -1.3542     -0.5545
119     -1.4024     -0.4707
120     -1.4505     -0.3868
121     -1.4505     -0.2901
122     -1.4505     -0.1934
123     -1.4505     -0.0967
124     -1.4505      0.0000
125     -1.4505      0.0967
126     -1.4505      0.1934
127     -1.4505      0.2901
128     -1.4505      0.3868
129     -1.4024      0.4707
130     -1.3542      0.5545
131     -1.3061      0.6384
132     -1.2579      0.7222
133     -1.2021      0.8117
134     -1.1401      0.8968
135     -1.0719      0.9772
136     -0.9982      1.0524
137     -0.9191      1.1221
138     -0.8353      1.1859
139     -0.7470      1.2434
140     -0.6547      1.2943
141     -0.5591      1.3384
142     -0.4604      1.3755
143     -0.3593      1.4053
144     -0.2561      1.4277
145     -0.1539      1.4280
146     -0.0513      1.4280
147     -1.4005     -0.3868
148     -1.4005     -0.1934
149     -1.4005      0.
150     -1.4005      0.1934
151     -1.4005      0.3868
152      1.4005      0.3868
153      1.4005      0.1934
154      1.4005      0.
155      1.4005     -0.1934
156      1.4005     -0.3868
horm      7.00   3000.00
   1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21
22  23  24  25  26  27  28  29  30  31  32  33  34  35  36  37  38  39  40  41  42
43  44  45  46  47  48  49  50  51  52  53  54  55  56
arma     50000.
  57   0.000157
  58   0.000157
  59   0.000157
  60   0.000157
  61   0.000157
  62   0.000157
  63   0.000157
  64   0.000157
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  66   0.000157
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  70   0.000157
  71   0.000157
  72   0.000157
  73   0.000157
  74   0.000157
  75   0.000491
  76   0.000491
  77   0.000491
  78   0.000491
  79   0.000491
  80   0.000491
  81   0.000491
  82   0.000491
  83   0.000491
  84   0.000157
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 85   0.000157
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144   0.000157
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147   0.000491
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150   0.000491
151   0.000491
152   0.000491
153   0.000491
154   0.000491
155   0.000491
156   0.000491
calc
1 0. dibu a4    1 inte
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V. El Papiol .- Pila-2, (secc. intermedia a 0.6m) (barra

CARACTERISTICAS DE LA SECCION 1 A 0.000

AREA	7.107782	
CANTO	2.9984	3.0000
C.G.	0.0000	0.0000
V	1.4992	1.5000
VP	1.4992	1.5000
I	3.95642161	4.08695936
R.G.	0.7461	0.7583

CONDICIONES DE AGOTAMIENTO DE LA SECCION

RESISTENCIA DEL HORMIGON	1	3000.
LIMITE ELASTICO DEL ACERO DE ARMAR		50000.
LIMITE ELASTICO DEL ACERO DE PRETENSAR		0.

COMPROBACION DE AGOTAMIENTO DE LA SECCION

HIP.	N	Mx	My	Mxu	Myu	Fac.Seg.
1	-6001.	-1417.	479.	-3933.	1329.	2.78
2	-1993.	1417.	-34.	2838.	-68.	2.00
3	-2534.	1451.	-373.	3104.	-797.	2.14
4	-2534.	-1451.	-357.	-3111.	-765.	2.14
5	-4272.	1417.	-485.	3761.	-1288.	2.65
6	-4439.	-1417.	728.	-3595.	1847.	2.54
7	-3054.	-1417.	2852.	-1606.	3232.	1.13
8	-4284.	1417.	-3408.	1576.	-3790.	1.11
9	-3420.	1451.	-496.	3479.	-1190.	2.40
10	-2228.	-1451.	-251.	-2961.	-512.	2.04

V. El Papiol .- Pila-3, (secc. a 3.30 m) (barra 212)

CARACTERISTICAS DE LA SECCION 1 A 0.000

AREA	7.107782	
CANTO	2.9984	3.0000
C.G.	0.0000	0.0000
V	1.4992	1.5000
VP	1.4992	1.5000
I	3.95642161	4.08695936
R.G.	0.7461	0.7583

CONDICIONES DE AGOTAMIENTO DE LA SECCION

RESISTENCIA DEL HORMIGON	1	3000.
LIMITE ELASTICO DEL ACERO DE ARMAR		50000.
LIMITE ELASTICO DEL ACERO DE PRETENSAR		0.

COMPROBACION DE AGOTAMIENTO DE LA SECCION

HIP.	N	Mx	My	Mxu	Myu	Fac.Seg.
1	-5982.	1399.	470.	3936.	1321.	2.81
2	-1964.	-1399.	-134.	-2806.	-268.	2.01
3	-2504.	1435.	-432.	3053.	-920.	2.13
4	-2504.	-1435.	-409.	-3066.	-875.	2.14
5	-2889.	1399.	-36.	3397.	-88.	2.43
6	-4792.	-1399.	530.	-3829.	1450.	2.74
7	-3013.	-1399.	2610.	-1693.	3159.	1.21
8	-4229.	1399.	-3293.	1599.	-3763.	1.14
9	-3381.	1435.	-580.	3400.	-1373.	2.37
10	-2203.	-1435.	-284.	-2932.	-581.	2.04

V. El Papiol .- Pila-4, (secc. a 3.30m) (barra 215)

CARACTERISTICAS DE LA SECCION 1 A 0.000

AREA	7.107782	
CANTO	2.9984	3.0000
C.G.	0.0000	0.0000
V	1.4992	1.5000
VP	1.4992	1.5000
I	3.95642161	4.08695936
R.G.	0.7461	0.7583

CONDICIONES DE AGOTAMIENTO DE LA SECCION

RESISTENCIA DEL HORMIGON	1	3000.
LIMITE ELASTICO DEL ACERO DE ARMAR		50000.
LIMITE ELASTICO DEL ACERO DE PRETENSAR		0.

COMPROBACION DE AGOTAMIENTO DE LA SECCION

HIP.	N	Mx	My	Mxu	Myu	Fac.Seg.
1	-6013.	-1404.	560.	-3956.	1578.	2.82
2	-1972.	1404.	-226.	3035.	-488.	2.16
3	-2512.	1440.	-469.	3241.	-1057.	2.25
4	-2512.	-1440.	-433.	-3258.	-979.	2.26
5	-2899.	1404.	-124.	3533.	-313.	2.52
6	-4809.	-1404.	617.	-3869.	1701.	2.76
7	-3025.	-1404.	2959.	-1753.	3696.	1.25
8	-4245.	1404.	-3690.	1639.	-4309.	1.17
9	-3392.	1440.	-627.	3532.	-1539.	2.45
10	-2210.	-1440.	-297.	-3152.	-651.	2.19

V. El Papiol .- Pila-5, (secc. a 3.30 m) (barra 218)

CARACTERISTICAS DE LA SECCION 1 A 0.000

AREA	7.107782	
CANTO	2.9984	3.0000
C.G.	0.0000	0.0000
V	1.4992	1.5000
VP	1.4992	1.5000
I	3.95642161	4.08695936
R.G.	0.7461	0.7583

CONDICIONES DE AGOTAMIENTO DE LA SECCION

RESISTENCIA DEL HORMIGON	1	3000.
LIMITE ELASTICO DEL ACERO DE ARMAR		50000.
LIMITE ELASTICO DEL ACERO DE PRETENSAR		0.

COMPROBACION DE AGOTAMIENTO DE LA SECCION

HIP.	N	Mx	My	Mxu	Myu	Fac.Seg.
1	-6088.	1916.	508.	4065.	1077.	2.12
2	-2025.	-1916.	13.	-3097.	21.	1.62
3	-2568.	1979.	-314.	3359.	-534.	1.70
4	-2568.	-1979.	-250.	-3370.	-425.	1.70
5	-2950.	1916.	-570.	3463.	-1031.	1.81
6	-4872.	-1916.	1074.	-3750.	2101.	1.96
7	-3115.	-1916.	3392.	-2019.	3575.	1.05
8	-4287.	1916.	-3762.	2083.	-4090.	1.09
9	-2266.	1979.	-228.	3218.	-371.	1.63
10	-3466.	-1979.	-348.	-3725.	-656.	1.88

V. El Papiol .- Pila-6, (secc. a 3.30 m) (barra 221)

CARACTERISTICAS DE LA SECCION 1 A 0.000

AREA	7.107782	
CANTO	2.9984	3.0000
C.G.	0.0000	0.0000
V	1.4992	1.5000
VP	1.4992	1.5000
I	3.95642161	4.08695936
R.G.	0.7461	0.7583

CONDICIONES DE AGOTAMIENTO DE LA SECCION

RESISTENCIA DEL HORMIGON	1	3000.
LIMITE ELASTICO DEL ACERO DE ARMAR		50000.
LIMITE ELASTICO DEL ACERO DE PRETENSAR		0.

COMPROBACION DE AGOTAMIENTO DE LA SECCION

HIP.	N	Mx	My	Mxu	Myu	Fac.Seg.
1	-6008.	-1404.	410.	-4050.	1181.	2.88
2	-1971.	1404.	86.	3060.	187.	2.18
3	-2512.	1440.	-36.	3362.	-84.	2.34
4	-2514.	-1440.	21.	-3364.	49.	2.34
5	-2892.	1404.	-84.	3535.	-210.	2.52
6	-4802.	-1404.	644.	-3849.	1765.	2.74
7	-3020.	-1404.	3239.	-1631.	3762.	1.16
8	-4247.	1404.	-3088.	1902.	-4183.	1.35
9	-2209.	1440.	-29.	3203.	-64.	2.22
10	-3393.	-1440.	19.	-3732.	48.	2.59

V. El Papiol .- Pila-7, (secc. a 3.30 m) (barra 224)

CARACTERISTICAS DE LA SECCION 1 A 0.000

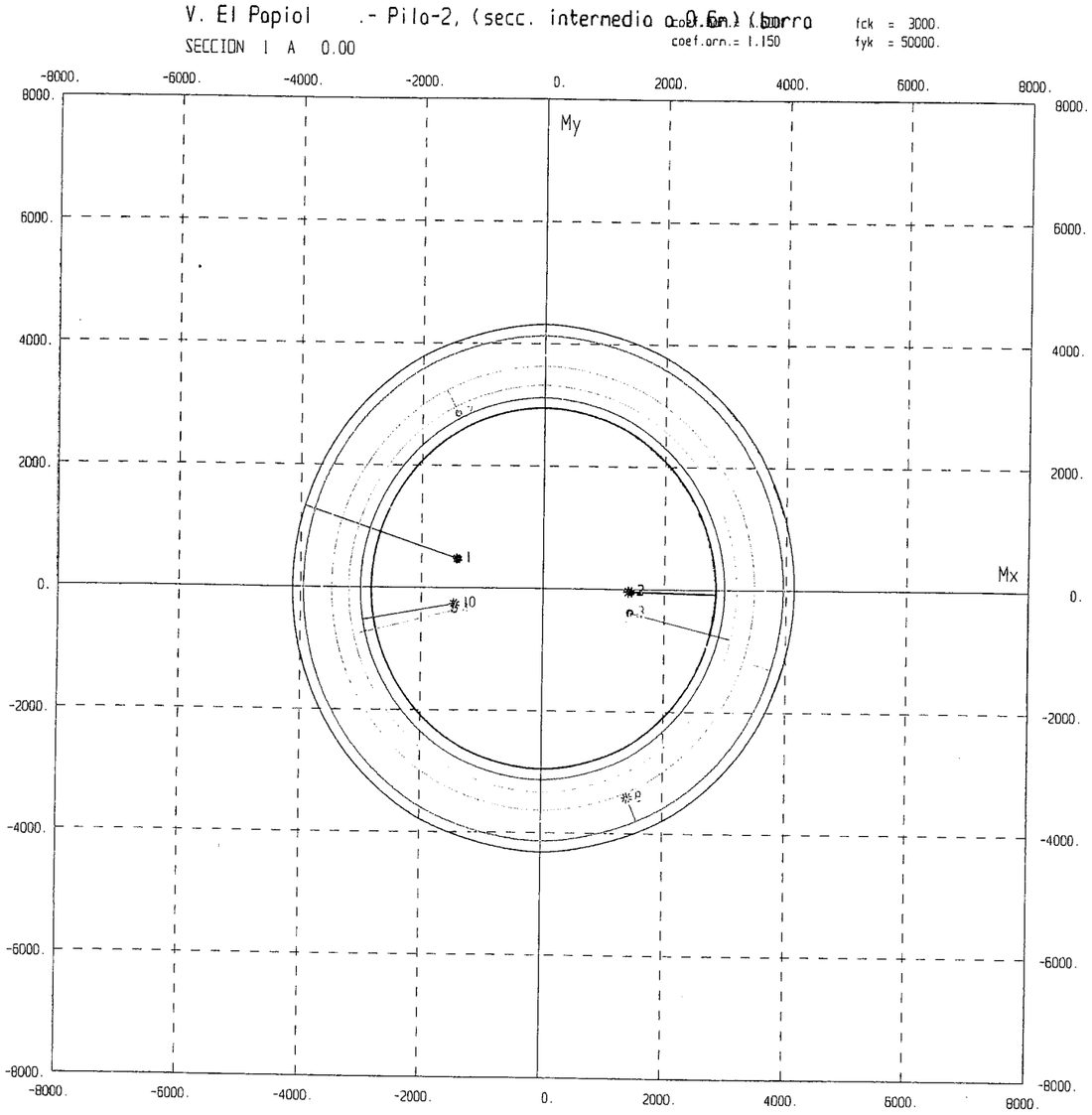
AREA	7.107782	
CANTO	2.9984	3.0000
C.G.	0.0000	0.0000
V	1.4992	1.5000
VP	1.4992	1.5000
I	3.95642161	4.08695936
R.G.	0.7461	0.7583

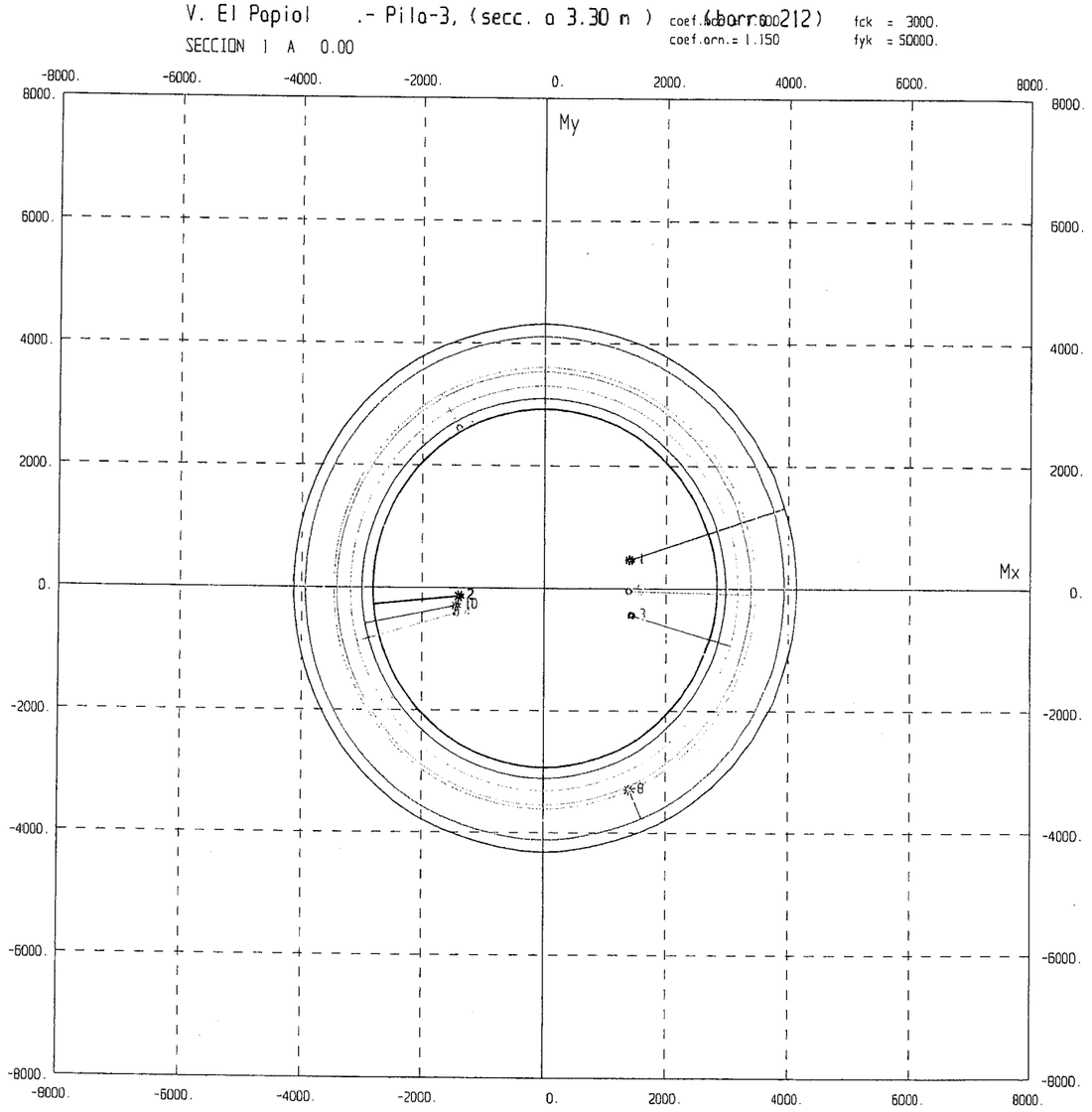
CONDICIONES DE AGOTAMIENTO DE LA SECCION

RESISTENCIA DEL HORMIGON	1	3000.
LIMITE ELASTICO DEL ACERO DE ARMAR		50000.
LIMITE ELASTICO DEL ACERO DE PRETENSAR		0.

COMPROBACION DE AGOTAMIENTO DE LA SECCION

HIP.	N	Mx	My	Mxu	Myu	Fac.Seg.
1	-5984.	1398.	160.	4108.	469.	2.94
2	-1958.	-1398.	252.	-2771.	500.	1.98
3	-2507.	1434.	180.	3157.	397.	2.20
4	-2500.	-1434.	233.	-3138.	511.	2.19
5	-4060.	1398.	184.	3859.	507.	2.76
6	-3618.	-1398.	492.	-3547.	1249.	2.54
7	-4176.	-1399.	3021.	-1712.	3698.	1.22
8	-3062.	1399.	-2459.	1784.	-3136.	1.28
9	-2205.	1434.	121.	2977.	252.	2.08
10	-3376.	-1434.	306.	-3564.	759.	2.48


V. El Papiol .- Pilo-2, (secc. intermedio a 0.6m.) (barra
SECCION 1 A 0.00
coef.mat.= 1.500
coef.grn.= 1.150
fck = 3000.
fyk = 50000.
My
Mx
-8000.
-6000.
-4000.
-2000.
0.
2000.
4000.
6000.
8000.

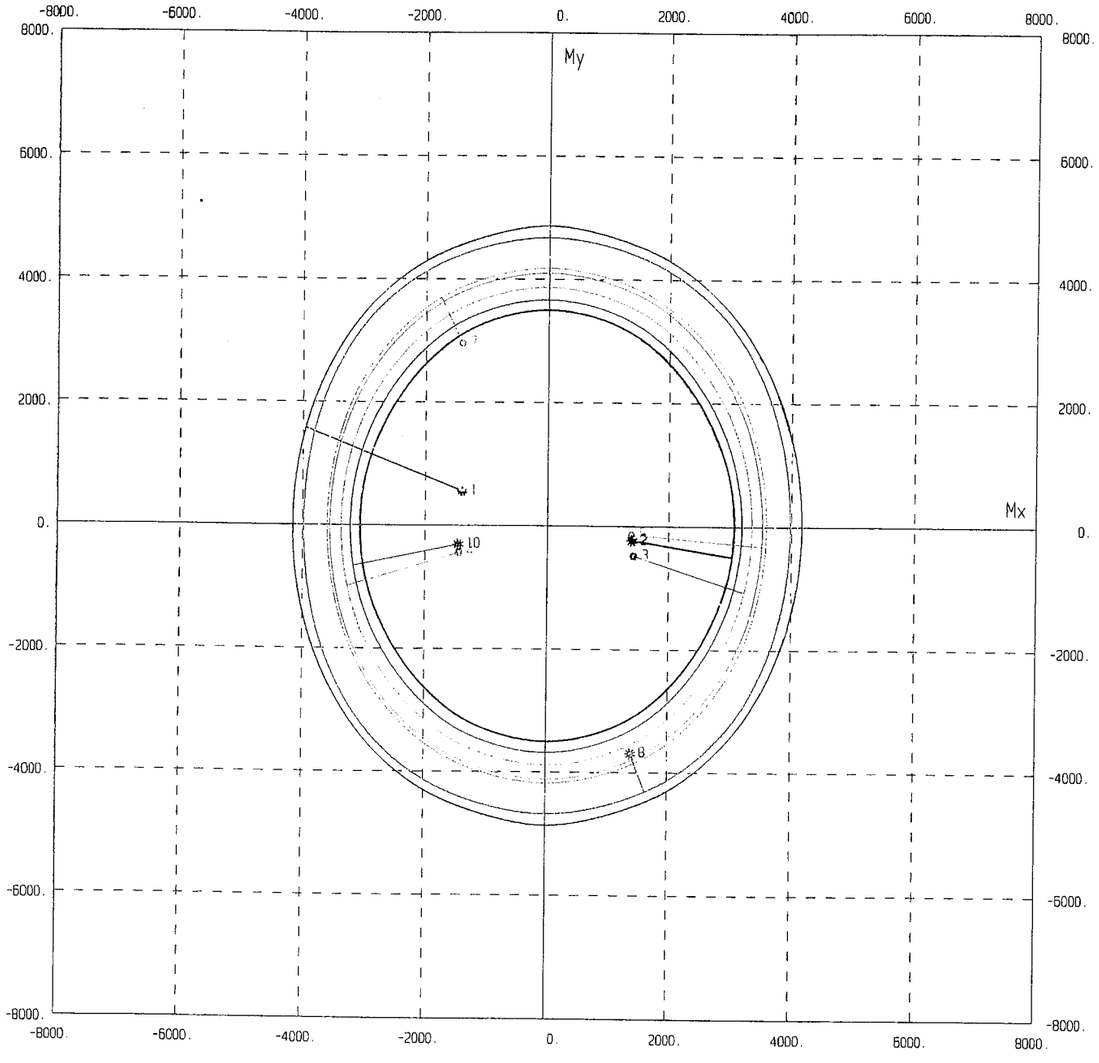

V. El Papiol .- Pilo-3, (secc. a 3.30 m) (barra 212)
SECCION 1 A 0.00
coef.mat.= 1.500
coef.grn.= 1.150
fck = 3000.
fyk = 50000.
My
Mx
-8000.
-6000.
-4000.
-2000.
0.
2000.
4000.
6000.
8000.

V. El Papiol .- Pila-4, (secc. a 3.30m) (barra 215)

SECCION 1 A 0.00

coef.mat.= 1.500 fck = 3000.

coef.arm.= 1.150 fyk = 50000.

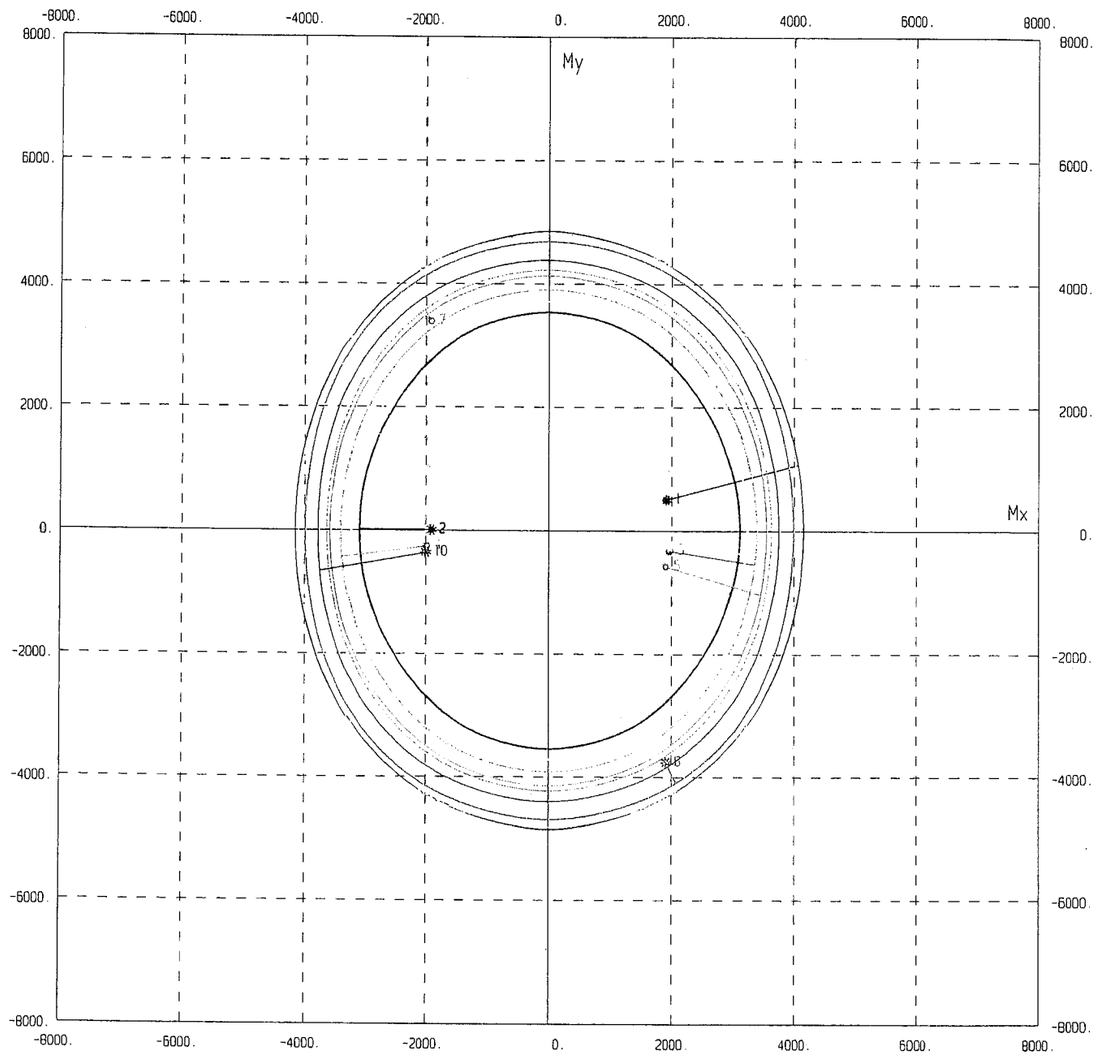


V. El Papiol .- Pila-5, (secc. a 3.30 m) (barra 218)

SECCION 1 A 0.00

coef.mat.= 1.500 fck = 3000.

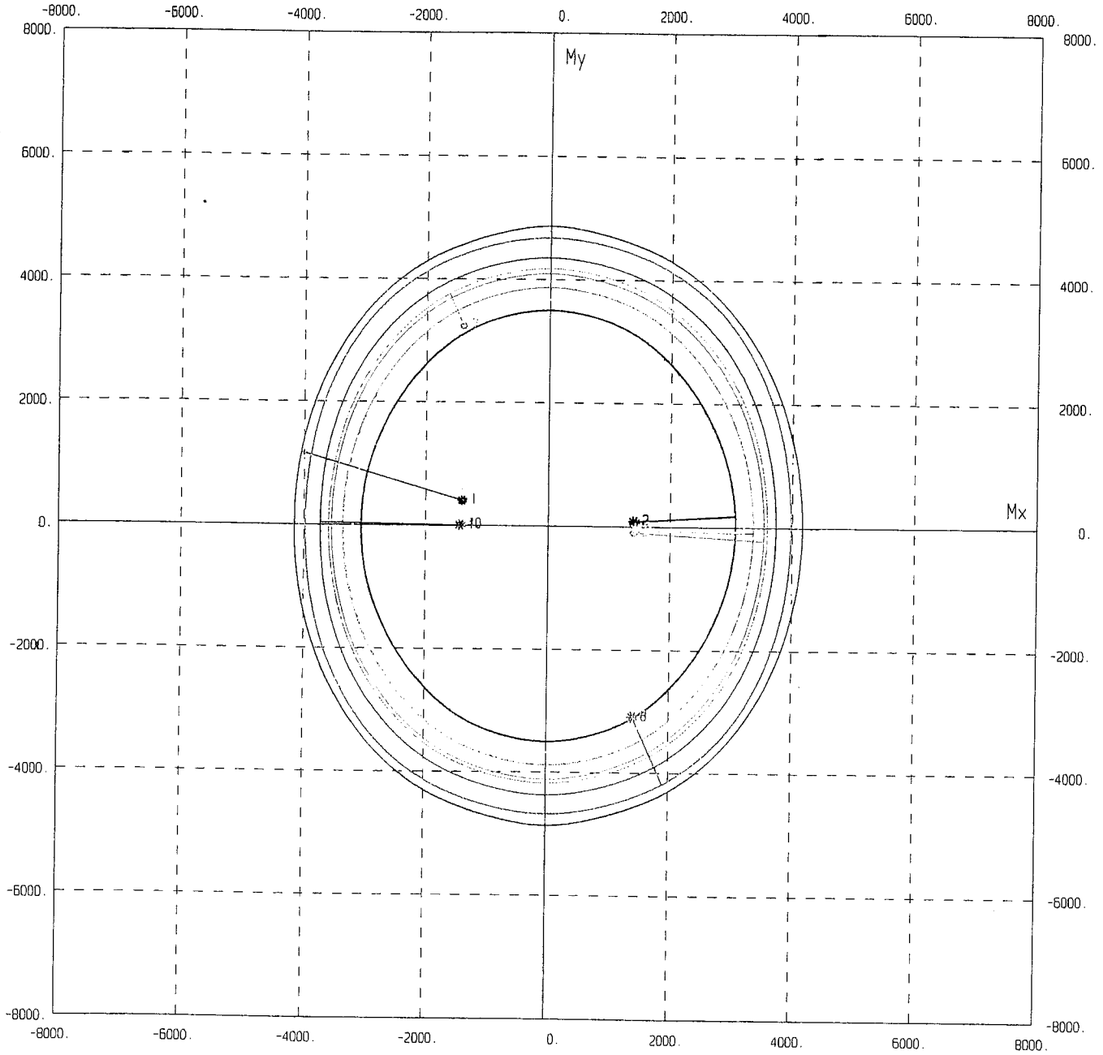
coef.arm.= 1.150 fyk = 50000.



V. El Papiol .- Pilo-6, (secc. a 3.30 m) (barra 221)

SECCION 1 A 0.00

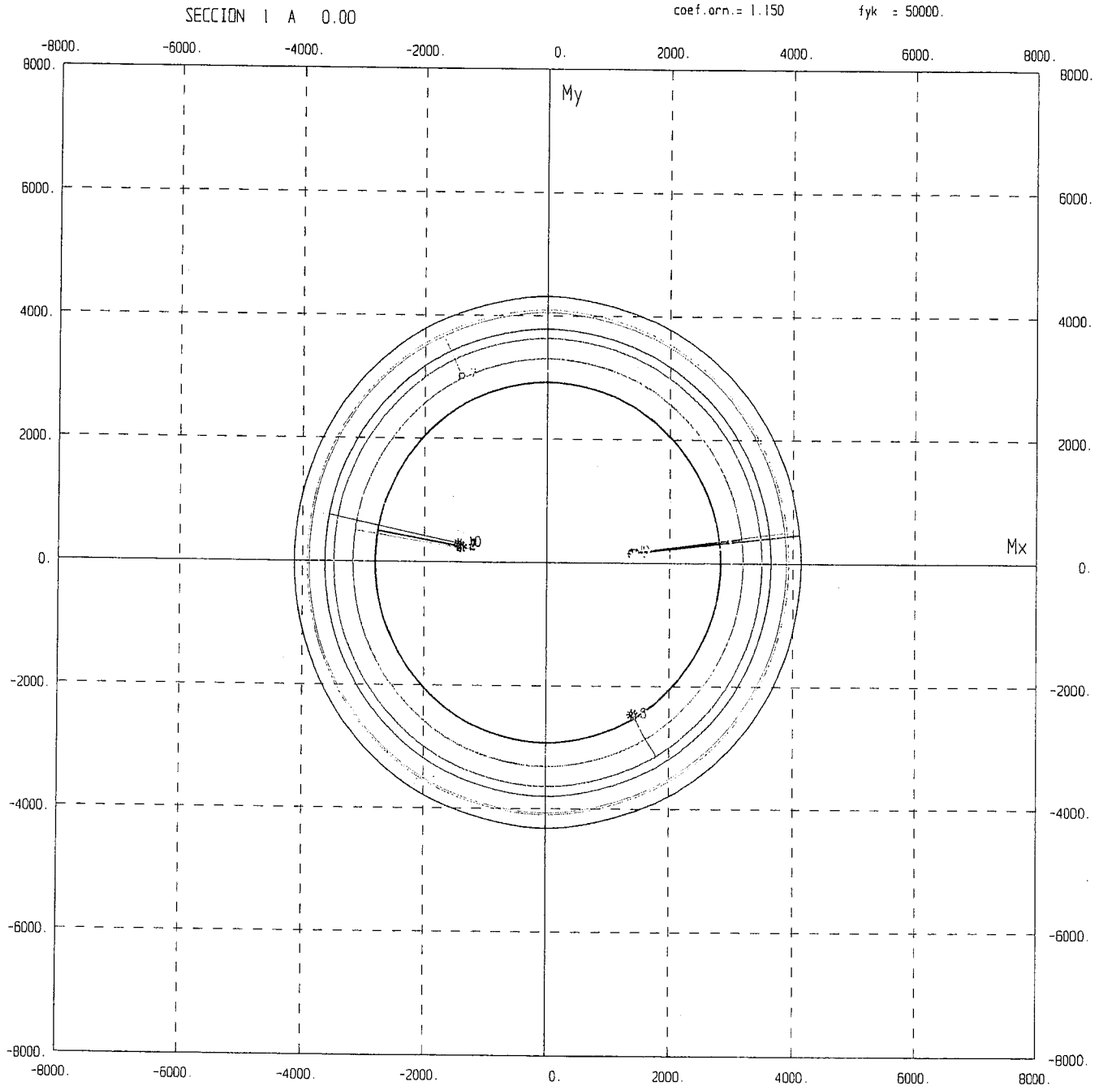
coef.mat.= 1.500 coef.arm.= 1.150 fck = 3000. fyk = 50000.



V. El Papiol .- Pilo-7, (secc. a 3.30 m) (barra 224)

SECCION 1 A 0.00

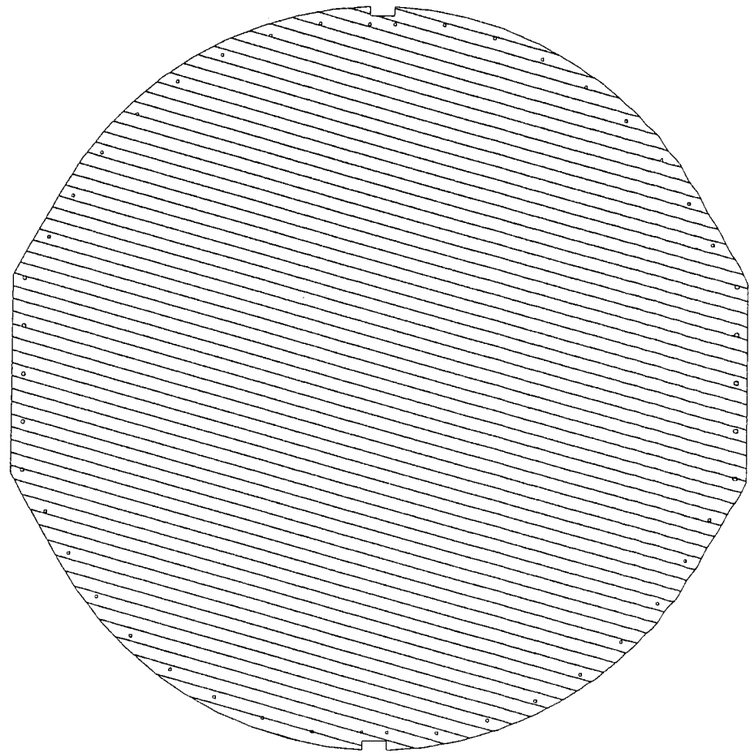
coef.mat.= 1.500 coef.arm.= 1.150 fck = 3000. fyk = 50000.



SECCIONES POR CUELLO

V. El Papiol - Pilas-1 a 9, (secc. por cuello)

ESCALA 1/ 25



CARACTERISTICAS DE LA SECCION 1 A 0.000

AREA	7.107782	
CANTO	2.998400	3.000000
C.G.	0.000000	0.000000
V	1.499200	1.500000
VP	1.499200	1.500000
I	3.956422	4.086959
R.G.	0.746078	0.758286

V. El Papiol .- Pila-1 a 9, (secc. por cuello)

secc horm punt		
1	0.0000	1.4625
2	0.0500	1.4625
3	0.0500	1.4992
4	0.2018	1.4864
5	0.3516	1.4582
6	0.4977	1.4150
7	0.6387	1.3572
8	0.7731	1.2854
9	0.8995	1.2004
10	1.0166	1.1029
11	1.1233	0.9941
12	1.2183	0.8750
13	1.3008	0.7469
14	1.5000	0.4000
15	1.5000	0.0000
16	1.5000	-0.4000
17	1.3008	-0.7469
18	1.2183	-0.8750
19	1.1233	-0.9941
20	1.0166	-1.1029
21	0.8995	-1.2004
22	0.7731	-1.2854
23	0.6387	-1.3572
24	0.4977	-1.4150
25	0.3516	-1.4582
26	0.2018	-1.4864
27	0.0500	-1.4992
28	0.0500	-1.4625
29	0.0000	-1.4625
30	-0.0500	-1.4625
31	-0.0500	-1.4992
32	-0.2018	-1.4864
33	-0.3516	-1.4582
34	-0.4977	-1.4150
35	-0.6387	-1.3572
36	-0.7731	-1.2854
37	-0.8995	-1.2004
38	-1.0166	-1.1029
39	-1.1233	-0.9941
40	-1.2183	-0.8750
41	-1.3008	-0.7469
42	-1.5000	-0.4000
43	-1.5000	0.0000
44	-1.5000	0.4000
45	-1.3008	0.7469
46	-1.2183	0.8750
47	-1.1233	0.9941
48	-1.0166	1.1029
49	-0.8995	1.2004
50	-0.7731	1.2854
51	-0.6387	1.3572
52	-0.4977	1.4150
53	-0.3516	1.4582
54	-0.2018	1.4864
55	-0.0500	1.4992
56	-0.0500	1.4625
57	0.0513	1.4280
58	0.1539	1.4280
59	0.2561	1.4277
60	0.3593	1.4053
61	0.4604	1.3755

62	0.5591	1.3384
63	0.6547	1.2943
64	0.7470	1.2434
65	0.8353	1.1859
66	0.9191	1.1221
67	0.9982	1.0524
68	1.0719	0.9772
69	1.1401	0.8968
70	1.2021	0.8117
71	1.2579	0.7222
72	1.3061	0.6384
73	1.3542	0.5545
74	1.4024	0.4707
75	1.4505	0.3868
76	1.4505	0.2901
77	1.4505	0.1934
78	1.4505	0.0967
79	1.4505	0.0000
80	1.4505	-0.0967
81	1.4505	-0.1934
82	1.4505	-0.2901
83	1.4505	-0.3868
84	1.4024	-0.4707
85	1.3542	-0.5545
86	1.3061	-0.6384
87	1.2579	-0.7222
88	1.2021	-0.8117
89	1.1401	-0.8968
90	1.0719	-0.9772
91	0.9982	-1.0524
92	0.9191	-1.1221
93	0.8353	-1.1859
94	0.7470	-1.2434
95	0.6547	-1.2943
96	0.5591	-1.3384
97	0.4604	-1.3755
98	0.3593	-1.4053
99	0.2561	-1.4277
100	0.1539	-1.4280
101	0.0513	-1.4280
102	-0.0513	-1.4280
103	-0.1539	-1.4280
104	-0.2561	-1.4277
105	-0.3593	-1.4053
106	-0.4604	-1.3755
107	-0.5591	-1.3384
108	-0.6547	-1.2943
109	-0.7470	-1.2434
110	-0.8353	-1.1859
111	-0.9191	-1.1221
112	-0.9982	-1.0524
113	-1.0719	-0.9772
114	-1.1401	-0.8968
115	-1.2021	-0.8117
116	-1.2579	-0.7222
117	-1.3061	-0.6384
118	-1.3542	-0.5545
119	-1.4024	-0.4707
120	-1.4505	-0.3868
121	-1.4505	-0.2901
122	-1.4505	-0.1934
123	-1.4505	-0.0967
124	-1.4505	0.0000
125	-1.4505	0.0967
126	-1.4505	0.1934
127	-1.4505	0.2901
128	-1.4505	0.3868
129	-1.4024	0.4707
130	-1.3542	0.5545
131	-1.3061	0.6384
132	-1.2579	0.7222
133	-1.2021	0.8117
134	-1.1401	0.8968
135	-1.0719	0.9772
136	-0.9982	1.0524
137	-0.9191	1.1221
138	-0.8353	1.1859
139	-0.7470	1.2434
140	-0.6547	1.2943
141	-0.5591	1.3384
142	-0.4604	1.3755
143	-0.3593	1.4053
144	-0.2561	1.4277
145	-0.1539	1.4280
146	-0.0513	1.4280
147	-1.4005	-0.3868
148	-1.4005	-0.1934
149	-1.4005	0.
150	-1.4005	0.1934
151	-1.4005	0.3868
152	1.4005	0.3868
153	1.4005	0.1934
154	1.4005	0.
155	1.4005	-0.1934
156	1.4005	-0.3868

```
horm       7.00    3000.00
   1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21
  22  23  24  25  26  27  28  29  30  31  32  33  34  35  36  37  38  39  40  41  42
  43  44  45  46  47  48  49  50  51  52  53  54  55  56
arma      50000.
  57   0.000157
  58   0.000157
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  61   0.000157
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  74   0.000157
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  80   0.000246
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  82   0.000246
  83   0.000246
  84   0.000157
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 91   0.000157
 92   0.000157
 93   0.000157
 94   0.000157
 95   0.000157
 96   0.000157
 97   0.000157
 98   0.000157
 99   0.000157
100   0.000157
101   0.000157
102   0.000157
103   0.000157
104   0.000157
105   0.000157
106   0.000157
107   0.000157
108   0.000157
109   0.000157
110   0.000157
111   0.000157
112   0.000157
113   0.000157
114   0.000157
115   0.000157
116   0.000157
117   0.000157
118   0.000157
119   0.000157
120   0.000246
121   0.000246
122   0.000246
123   0.000246
124   0.000246
125   0.000246
126   0.000246
127   0.000246
128   0.000246
129   0.000157
130   0.000157
131   0.000157
132   0.000157
133   0.000157
134   0.000157
135   0.000157
136   0.000157
137   0.000157
138   0.000157
139   0.000157
140   0.000157
141   0.000157
142   0.000157
143   0.000157
144   0.000157
145   0.000157
146   0.000157
147   0.
148   0.
149   0.
150   0.
151   0.
152   0.
153   0.
154   0.
155   0.
156   0.
calc
1 0. dibu a4    1 inte
```

V. El Papiol .- Pila-1, (secc. por cuello) (barra 207)

CARACTERISTICAS DE LA SECCION 1 A 0.000

AREA	7.107782	
CANTO	2.9984	3.0000
C.G.	0.0000	0.0000
V	1.4992	1.5000
VP	1.4992	1.5000
I	3.95642161	4.08695936
R.G.	0.7461	0.7583

CONDICIONES DE AGOTAMIENTO DE LA SECCION

RESISTENCIA DEL HORMIGON	1	3000.
LIMITE ELASTICO DEL ACERO DE ARMAR		50000.
LIMITE ELASTICO DEL ACERO DE PRETENSAR		0.

COMPROBACION DE AGOTAMIENTO DE LA SECCION

HIP.	N	Mx	My	Mxu	Myu	Fac.Seg.
1	-5571.	605.	171.	3999.	1130.	6.61
2	-1793.	-605.	21.	-2690.	94.	4.45
3	-2354.	613.	-149.	3004.	-728.	4.90
4	-2354.	-612.	-145.	-3007.	-714.	4.91
5	-4007.	605.	6.	3870.	37.	6.40
6	-3427.	-605.	362.	-3183.	1905.	5.26
7	-3013.	-605.	2632.	-806.	3505.	1.33
8	-4212.	605.	-2798.	865.	-4000.	1.43
9	-3178.	613.	-200.	3387.	-1106.	5.53
10	-2061.	-613.	-109.	-2845.	-506.	4.65

V. El Papiol .- Pila-2, (secc. por cuello) (barra 210)

CARACTERISTICAS DE LA SECCION 1 A 0.000

AREA	7.107782	
CANTO	2.9984	3.0000
C.G.	0.0000	0.0000
V	1.4992	1.5000
VP	1.4992	1.5000
I	3.95642161	4.08695936
R.G.	0.7461	0.7583

CONDICIONES DE AGOTAMIENTO DE LA SECCION

RESISTENCIA DEL HORMIGON	1	3000.
LIMITE ELASTICO DEL ACERO DE ARMAR		50000.
LIMITE ELASTICO DEL ACERO DE PRETENSAR		0.

COMPROBACION DE AGOTAMIENTO DE LA SECCION

HIP.	N	Mx	My	Mxu	Myu	Fac.Seg.
1	-5882.	-630.	354.	-3650.	2054.	5.80
2	-1904.	630.	-93.	2746.	-407.	4.36
3	-2445.	638.	-367.	2750.	-1582.	4.31
4	-2445.	-638.	-358.	-2766.	-1551.	4.34
5	-4153.	630.	113.	3863.	691.	6.13
6	-4319.	-630.	76.	-3937.	474.	6.25
7	-3386.	-630.	2706.	-858.	3683.	1.36
8	-4375.	630.	-3215.	796.	-4062.	1.26
9	-3301.	638.	-493.	2904.	-2243.	4.55
10	-2140.	-638.	-254.	-2744.	-1092.	4.30

V. El Papiol .- Pila-3, (secc. por cuello) (barra 213)

CARACTERISTICAS DE LA SECCION 1 A 0.000

AREA	7.107782	
CANTO	2.9984	3.0000
C.G.	0.0000	0.0000
V	1.4992	1.5000
VP	1.4992	1.5000
I	3.95642161	4.08695936
R.G.	0.7461	0.7583

CONDICIONES DE AGOTAMIENTO DE LA SECCION

RESISTENCIA DEL HORMIGON	1	3000.
LIMITE ELASTICO DEL ACERO DE ARMAR		50000.
LIMITE ELASTICO DEL ACERO DE PRETENSAR		0.

COMPROBACION DE AGOTAMIENTO DE LA SECCION

HIP.	N	Mx	My	Mxu	Myu	Fac.Seg.
1	-5863.	622.	423.	3479.	2364.	5.59
2	-1876.	-622.	-179.	-2648.	-763.	4.26
3	-2416.	630.	-440.	2594.	-1810.	4.12
4	-2416.	-630.	-427.	-2617.	-1775.	4.15
5	-2800.	622.	561.	2537.	2289.	4.08
6	-4673.	-622.	-74.	-4017.	-475.	6.46
7	-3370.	-622.	2628.	-869.	3673.	1.40
8	-4315.	622.	-3214.	783.	-4048.	1.26
9	-3261.	630.	-592.	2673.	-2509.	4.24
10	-2114.	-630.	-296.	-2662.	-1248.	4.22

V. El Papiol .- Pila-4, (secc. por cuello) (barra 216)

CARACTERISTICAS DE LA SECCION 1 A 0.000

AREA	7.107782	
CANTO	2.9984	3.0000
C.G.	0.0000	0.0000
V	1.4992	1.5000
VP	1.4992	1.5000
I	3.95642161	4.08695936
R.G.	0.7461	0.7583

CONDICIONES DE AGOTAMIENTO DE LA SECCION

RESISTENCIA DEL HORMIGON	1	3000.
LIMITE ELASTICO DEL ACERO DE ARMAR		50000.
LIMITE ELASTICO DEL ACERO DE PRETENSAR		0.

COMPROBACION DE AGOTAMIENTO DE LA SECCION

HIP.	N	Mx	My	Mxu	Myu	Fac.Seg.
1	-5893.	-624.	456.	-3400.	2485.	5.45
2	-1884.	624.	-253.	2565.	-1038.	4.11
3	-2424.	633.	-465.	2556.	-1877.	4.04
4	-2424.	-633.	-445.	-2591.	-1825.	4.10
5	-2810.	624.	492.	2680.	2113.	4.29
6	-4690.	-624.	-41.	-4037.	-266.	6.47
7	-3387.	-624.	2776.	-829.	3691.	1.33
8	-4333.	624.	-3452.	734.	-4063.	1.18
9	-3272.	633.	-624.	2616.	-2581.	4.14
10	-2121.	-633.	-310.	-2645.	-1298.	4.18

V. El Papiol .- Pila-5, (secc. por cuello) (barra 219)

CARACTERISTICAS DE LA SECCION 1 A 0.000

AREA	7.107782	
CANTO	2.9984	3.0000
C.G.	0.0000	0.0000
V	1.4992	1.5000
VP	1.4992	1.5000
I	3.95642161	4.08695936
R.G.	0.7461	0.7583

CONDICIONES DE AGOTAMIENTO DE LA SECCION

RESISTENCIA DEL HORMIGON	1	3000.
LIMITE ELASTICO DEL ACERO DE ARMAR		50000.
LIMITE ELASTICO DEL ACERO DE PRETENSAR		0.

COMPROBACION DE AGOTAMIENTO DE LA SECCION

HIP.	N	Mx	My	Mxu	Myu	Fac.Seg.
1	-5890.	623.	370.	3604.	2141.	5.78
2	-1878.	-623.	-61.	-2743.	-268.	4.40
3	-2421.	632.	-303.	2840.	-1362.	4.50
4	-2421.	-632.	-278.	-2880.	-1266.	4.56
5	-2803.	623.	479.	2701.	2076.	4.33
6	-4674.	-623.	-31.	-4037.	-198.	6.48
7	-3135.	-623.	2846.	-783.	3576.	1.26
8	-4331.	623.	-3281.	770.	-4055.	1.24
9	-2119.	632.	-213.	2781.	-940.	4.40
10	-3268.	-632.	-379.	-3118.	-1872.	4.93

V. El Papiol .- Pila-6, (secc. por cuello) (barra 222)

CARACTERISTICAS DE LA SECCION 1 A 0.000

AREA	7.107782	
CANTO	2.9984	3.0000
C.G.	0.0000	0.0000
V	1.4992	1.5000
VP	1.4992	1.5000
I	3.95642161	4.08695936
R.G.	0.7461	0.7583

CONDICIONES DE AGOTAMIENTO DE LA SECCION

RESISTENCIA DEL HORMIGON	1	3000.
LIMITE ELASTICO DEL ACERO DE ARMAR		50000.
LIMITE ELASTICO DEL ACERO DE PRETENSAR		0.

COMPROBACION DE AGOTAMIENTO DE LA SECCION

HIP.	N	Mx	My	Mxu	Myu	Fac.Seg.
1	-5889.	-624.	262.	-3843.	1614.	6.16
2	-1882.	624.	78.	2738.	342.	4.39
3	-2423.	633.	-27.	3127.	-131.	4.94
4	-2425.	-633.	1.	-3131.	7.	4.95
5	-2803.	624.	543.	2577.	2241.	4.13
6	-4682.	-624.	-32.	-4038.	-207.	6.47
7	-3139.	-624.	2953.	-758.	3584.	1.21
8	-4335.	624.	-2837.	887.	-4030.	1.42
9	-2121.	633.	-18.	2929.	-83.	4.63
10	-3274.	-633.	-3.	-3587.	-17.	5.67

V. El Papiol .- Pila-7, (secc. por cuello) (barra 225)

AREA	7.107782	
CANTO	2.9984	3.0000
C.G.	0.0000	0.0000
V	1.4992	1.5000
VP	1.4992	1.5000
I	3.95642161	4.08695936
R.G.	0.7461	0.7583

CONDICIONES DE AGOTAMIENTO DE LA SECCION

RESISTENCIA DEL HORMIGON	1	3000.
LIMITE ELASTICO DEL ACERO DE ARMAR		50000.
LIMITE ELASTICO DEL ACERO DE PRETENSAR		0.

COMPROBACION DE AGOTAMIENTO DE LA SECCION

HIP.	N	Mx	My	Mxu	Myu	Fac.Seg.
1	-5864.	621.	30.	4134.	200.	6.65
2	-1870.	-622.	240.	-2571.	992.	4.14
3	-2418.	630.	222.	2959.	1044.	4.70
4	-2412.	-630.	248.	-2918.	1149.	4.63
5	-3941.	621.	768.	2497.	3087.	4.02
6	-3529.	-622.	-130.	-3630.	-758.	5.84
7	-4263.	-622.	3023.	-828.	4024.	1.33
8	-3182.	622.	-2433.	912.	-3568.	1.47
9	-2117.	630.	155.	2846.	699.	4.52
10	-3257.	-630.	331.	-3208.	1683.	5.09

V. El Papiol .- Pila-8, (secc. por cuello) (barra 227)

CARACTERISTICAS DE LA SECCION 1 A 0.000

AREA	7.107782	
CANTO	2.9984	3.0000
C.G.	0.0000	0.0000
V	1.4992	1.5000
VP	1.4992	1.5000
I	3.95642161	4.08695936
R.G.	0.7461	0.7583

CONDICIONES DE AGOTAMIENTO DE LA SECCION

RESISTENCIA DEL HORMIGON	1	3000.
LIMITE ELASTICO DEL ACERO DE ARMAR		50000.
LIMITE ELASTICO DEL ACERO DE PRETENSAR		0.

COMPROBACION DE AGOTAMIENTO DE LA SECCION

HIP.	N	Mx	My	Mxu	Myu	Fac.Seg.
1	-5904.	-630.	46.	-4127.	303.	6.55
2	-1888.	630.	205.	2630.	857.	4.17
3	-2434.	638.	401.	2684.	1685.	4.21
4	-2461.	-638.	446.	-2617.	1829.	4.10
5	-2966.	631.	62.	3423.	336.	5.43
6	-4763.	-630.	287.	-3732.	1697.	5.92
7	-4352.	-630.	3863.	-666.	4081.	1.06
8	-3415.	631.	-2875.	813.	-3708.	1.29
9	-3291.	638.	549.	2785.	2395.	4.36
10	-2131.	-638.	319.	-2643.	1320.	4.14

V. El Papiol .- Pila-9, (secc. por cuello) (barra 229)

CARACTERISTICAS DE LA SECCION 1 A 0.000

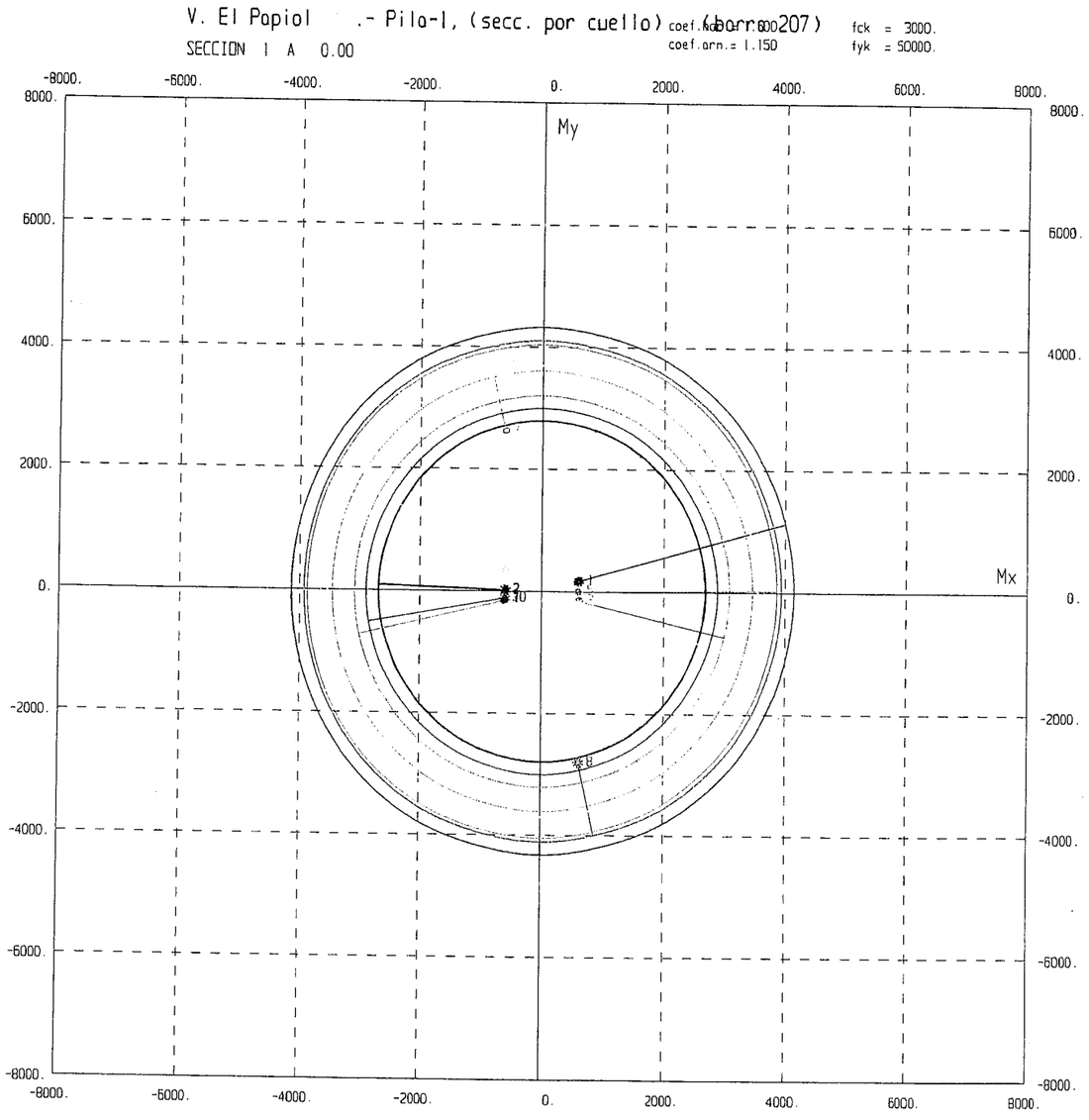
AREA	7.107782	
CANTO	2.9984	3.0000
C.G.	0.0000	0.0000
V	1.4992	1.5000
VP	1.4992	1.5000
I	3.95642161	4.08695936
R.G.	0.7461	0.7583

CONDICIONES DE AGOTAMIENTO DE LA SECCION

RESISTENCIA DEL HORMIGON	1	3000.
LIMITE ELASTICO DEL ACERO DE ARMAR		50000.
LIMITE ELASTICO DEL ACERO DE PRETENSAR		0.

COMPROBACION DE AGOTAMIENTO DE LA SECCION

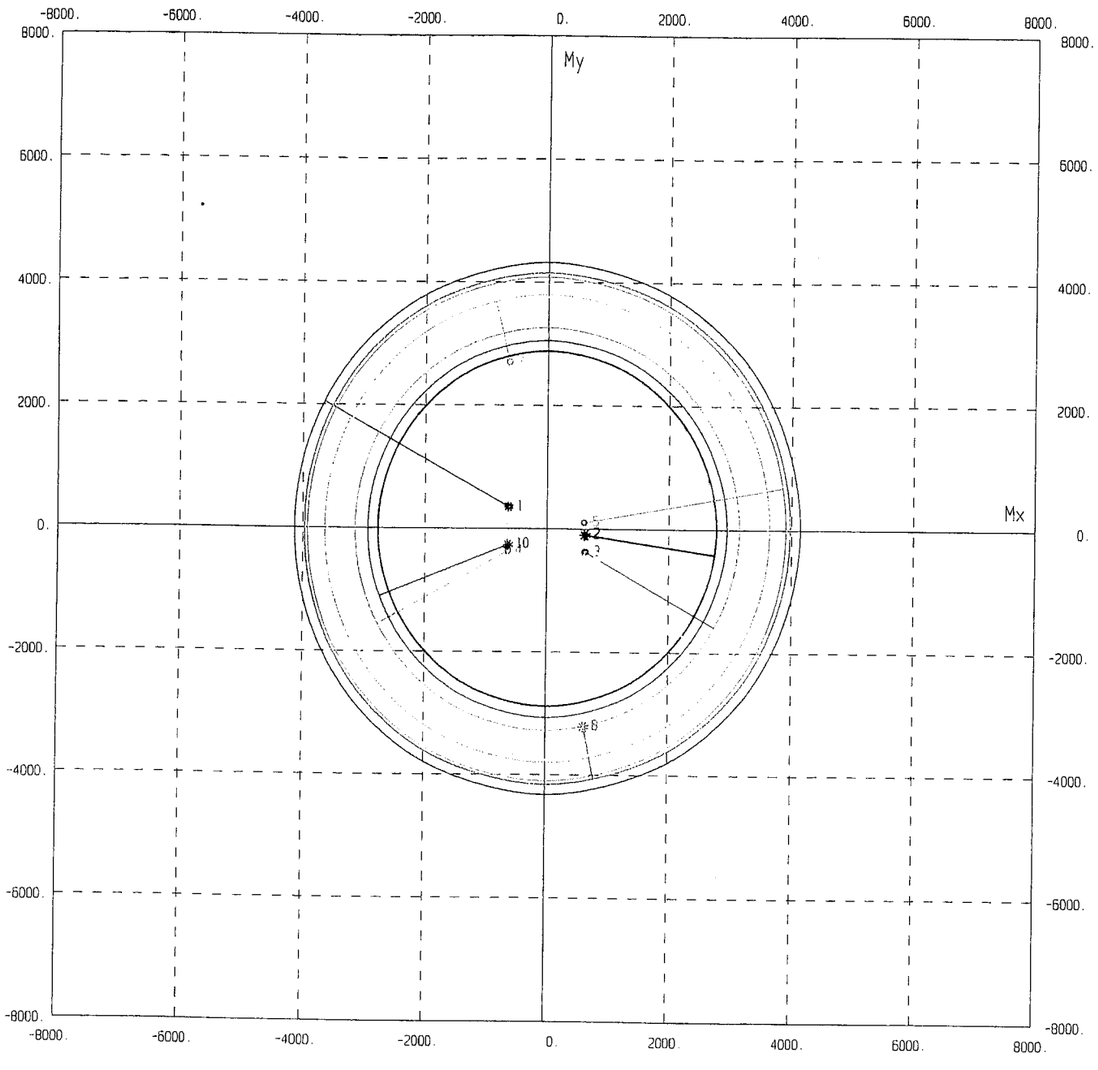
HIP.	N	Mx	My	Mxu	Myu	Fac.Seg.
1	-5668.	603.	81.	4108.	553.	6.81
2	-1682.	-603.	66.	-2589.	285.	4.30
3	-2420.	610.	191.	2993.	938.	4.90
4	-2272.	-610.	221.	-2861.	1034.	4.69
5	-2952.	603.	324.	3056.	1642.	5.07
6	-4463.	-603.	-29.	-3992.	-195.	6.62
7	-4007.	-603.	2494.	-946.	3915.	1.57
8	-2923.	603.	-2068.	992.	-3403.	1.65
9	-3241.	610.	263.	3310.	1428.	5.42
10	-1979.	-610.	156.	-2744.	703.	4.50


V. El Papiol .- Pila-1, (secc. por cuello) (barra 207)
SECCION 1 A 0.00
coef.mat.= 1.50
coef.arm.= 1.150
fck = 3000.
fyk = 50000.
My
Mx
-8000.
-6000.
-4000.
-2000.
0.
2000.
4000.
6000.
8000.

V. El Papiol .- Pilo-2, (secc. por cuello) (barra 210)

SECCION 1 A 0.00

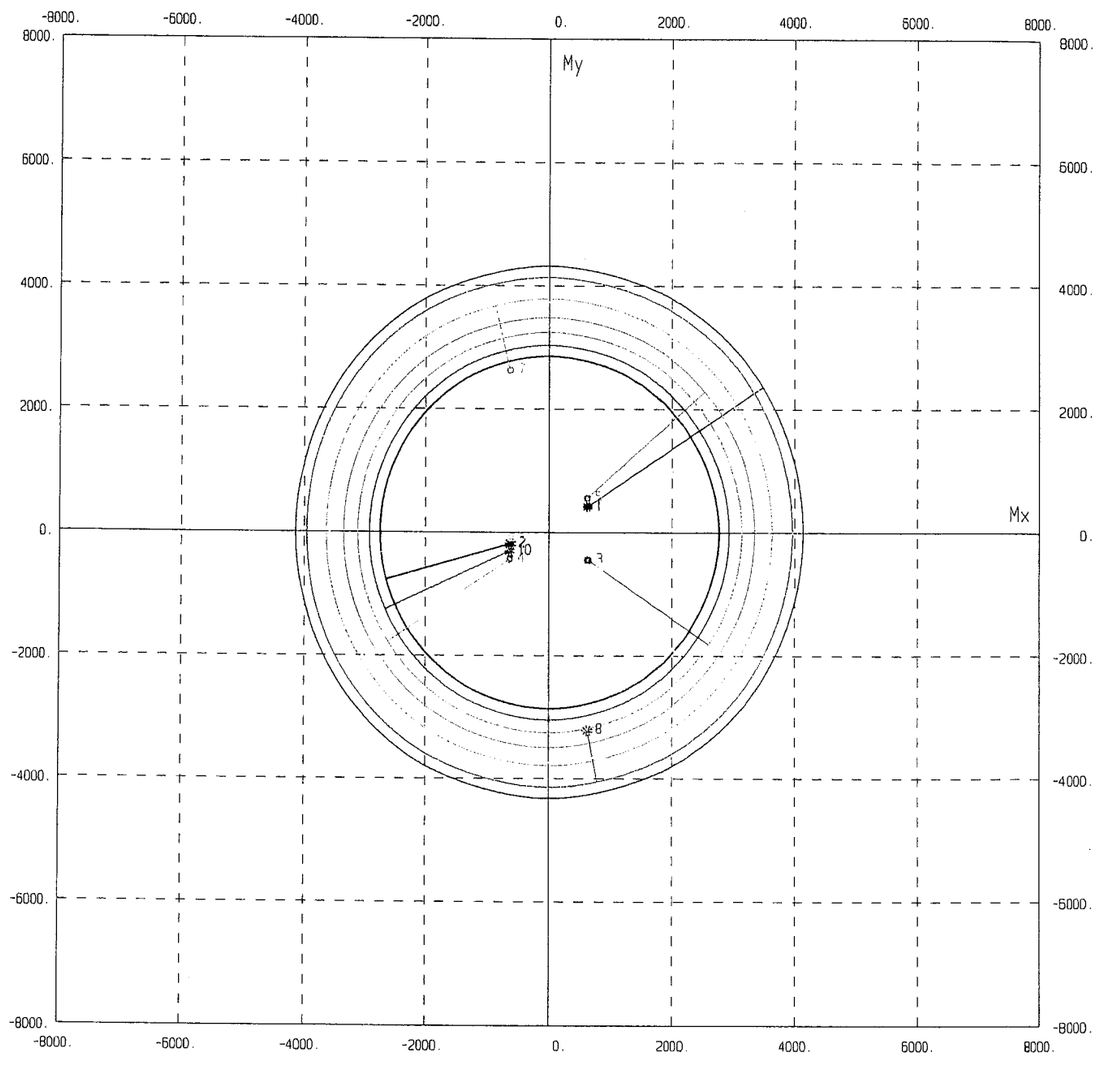
coef.mat.= 1.500 coef.acn.= 1.150 fck = 3000. fyk = 50000.

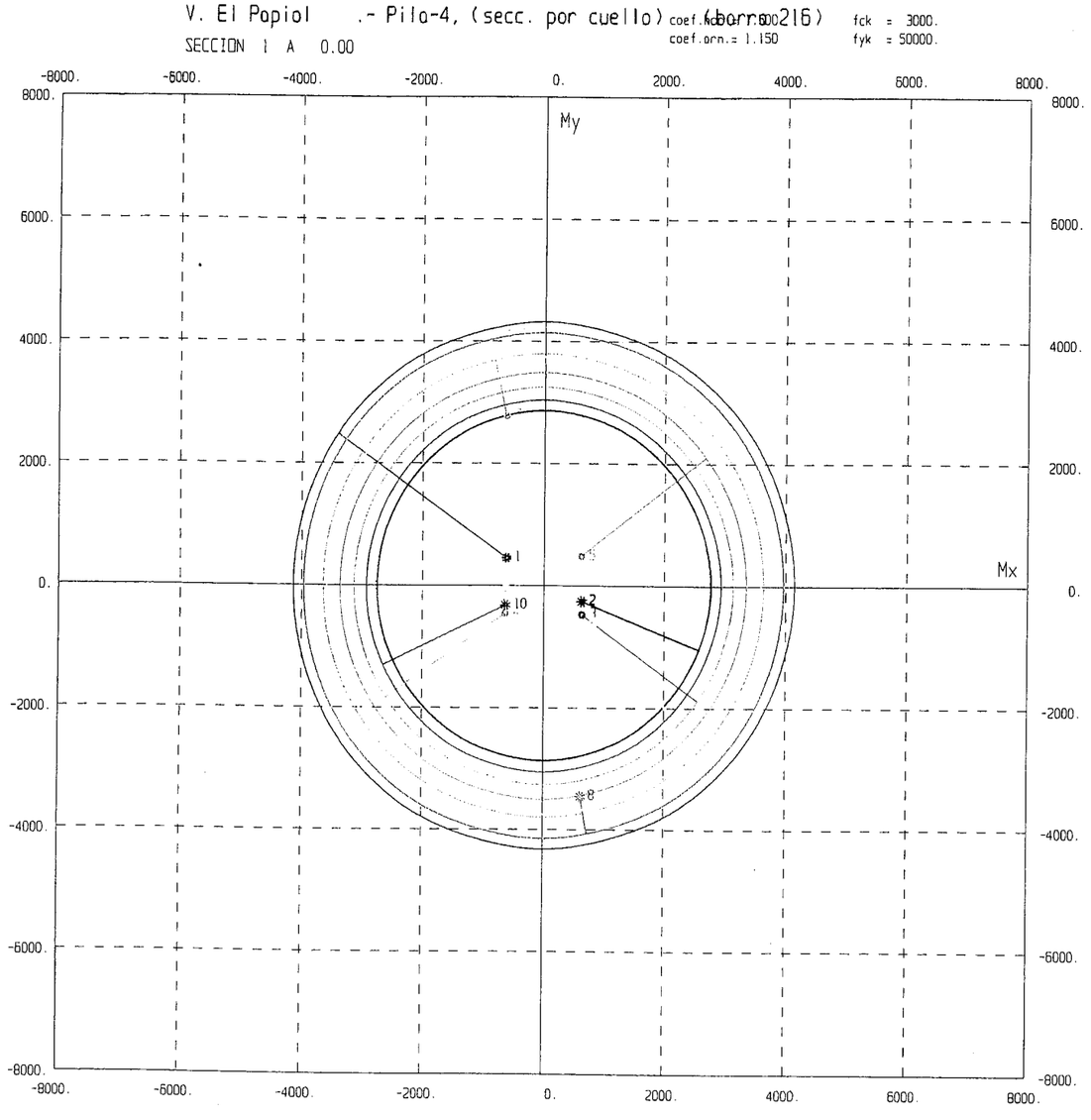


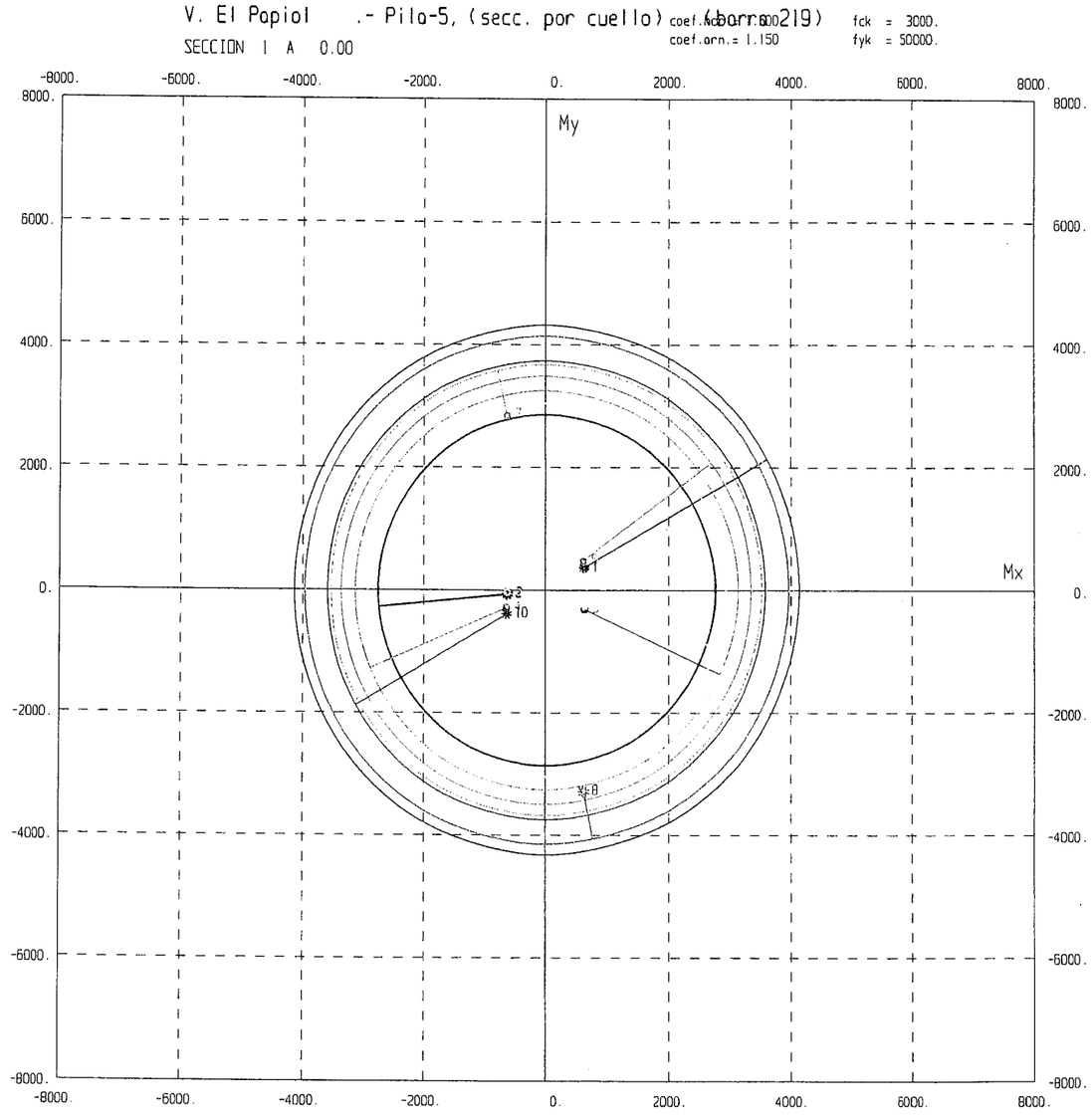
V. El Papiol .- Pilo-3, (secc. por cuello) (barra 213)

SECCION 1 A 0.00

coef.mat.= 1.500 coef.acn.= 1.150 fck = 3000. fyk = 50000.




V. El Papiol .- Pila-4, (secc. por cuello) (barra 216)
SECCION 1 A 0.00
coef.mat.= 1.500
coef.grn.= 1.150
fck = 3000.
fyk = 50000.
My
Mx
-8000.
-6000.
-4000.
-2000.
0.
2000.
4000.
6000.
8000.
1
2
10
8

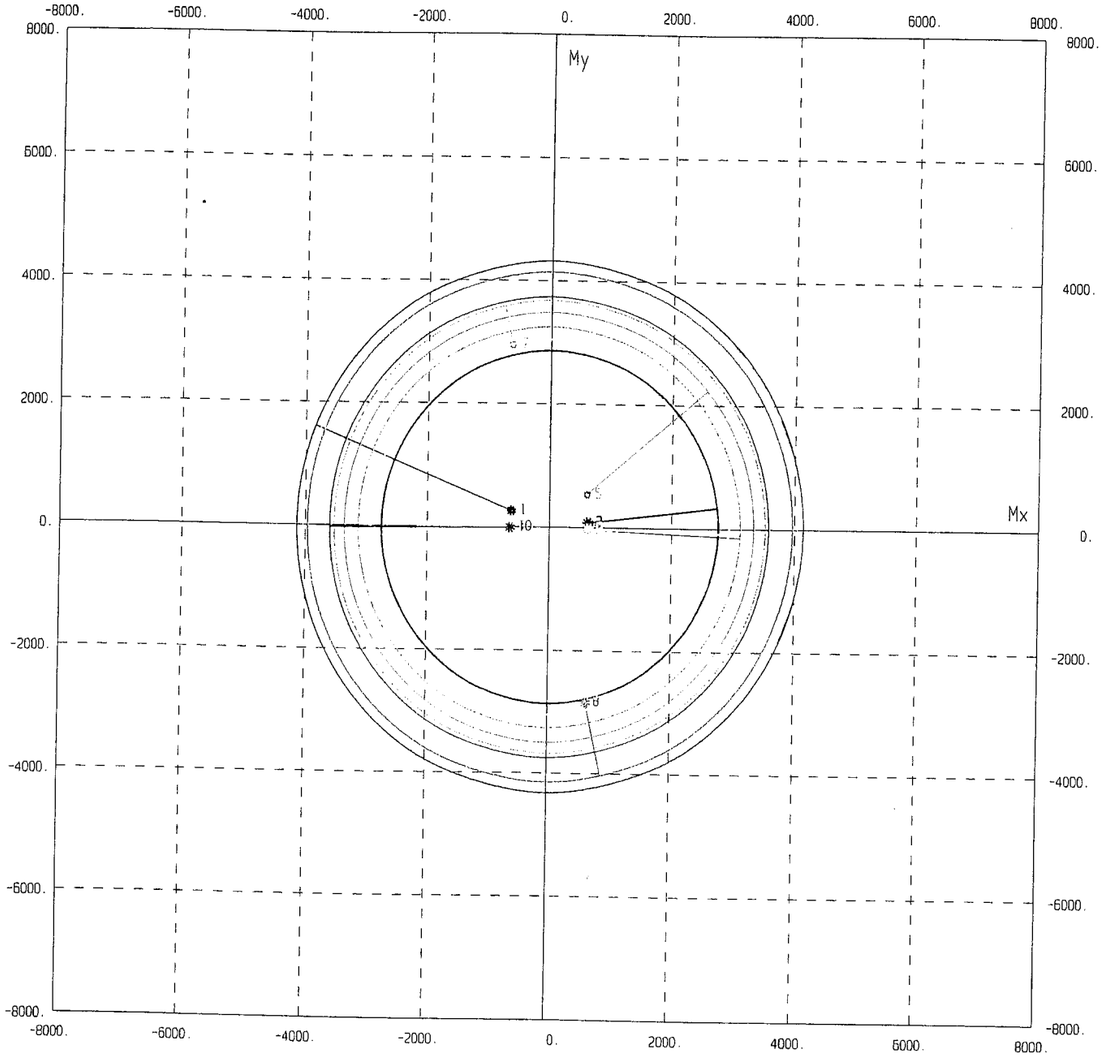

V. El Papiol .- Pila-5, (secc. por cuello) (barra 219)
SECCION 1 A 0.00
coef.mat.= 1.500
coef.grn.= 1.150
fck = 3000.
fyk = 50000.
My
Mx
-8000.
-6000.
-4000.
-2000.
0.
2000.
4000.
6000.
8000.
1
2
10
8

V. El Papiol .- Pilo-6, (secc. por cuello) (barra 222)

SECCION 1 A 0.00

coef.mat.= 1.500 fck = 3000.

coef.arm.= 1.150 fyk = 50000.

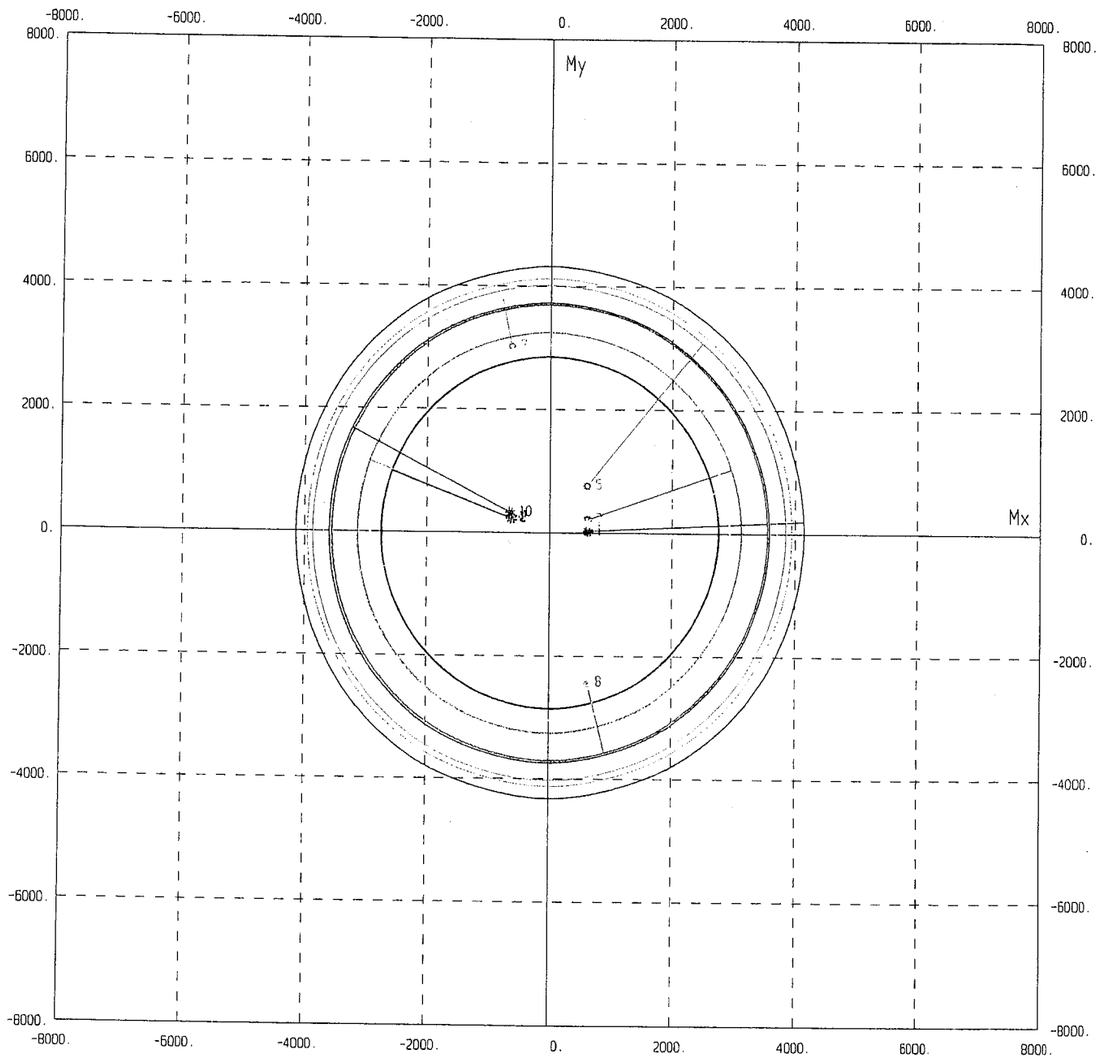


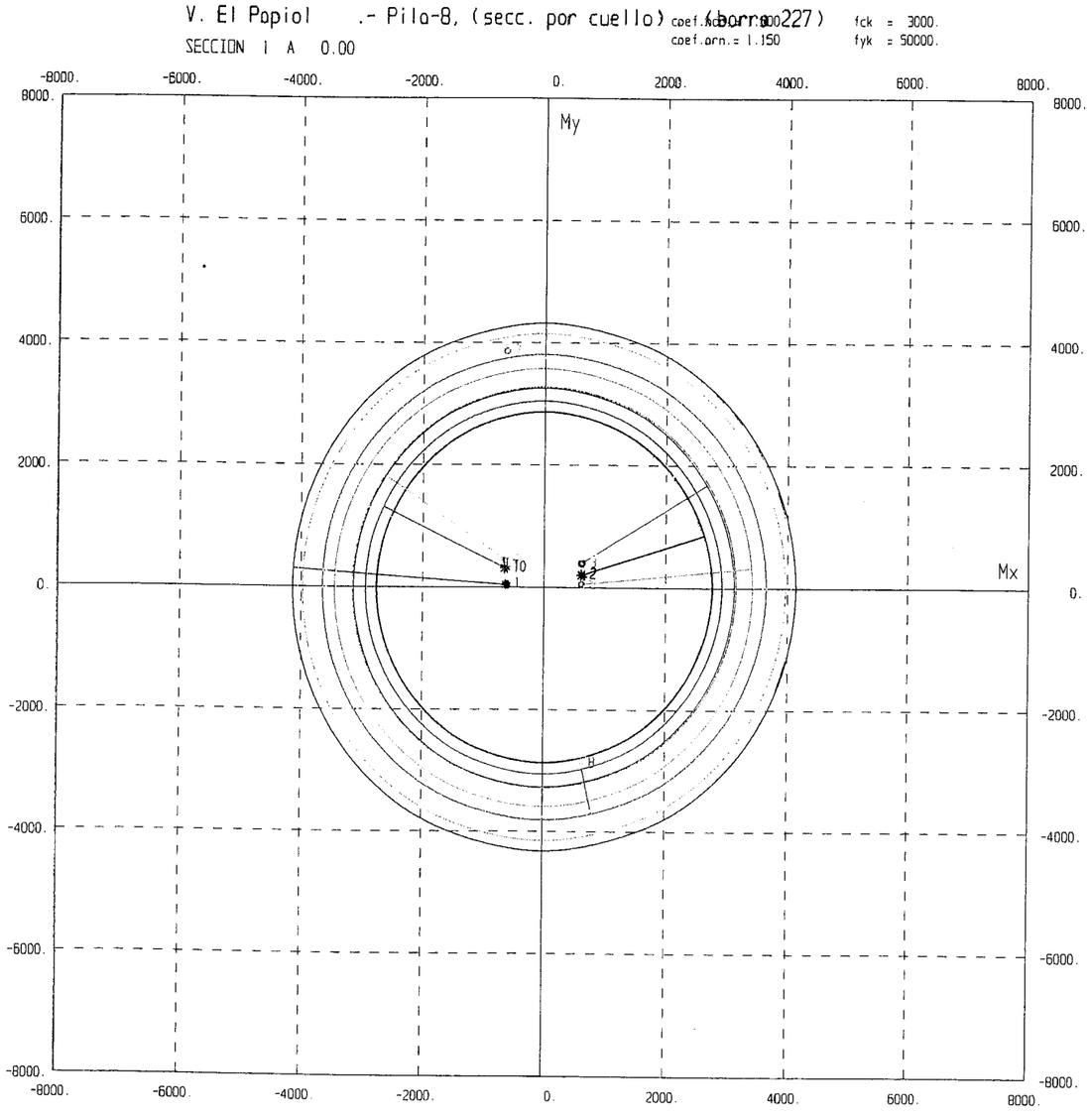
V. El Papiol .- Pilo-7, (secc. por cuello) (barra 225)

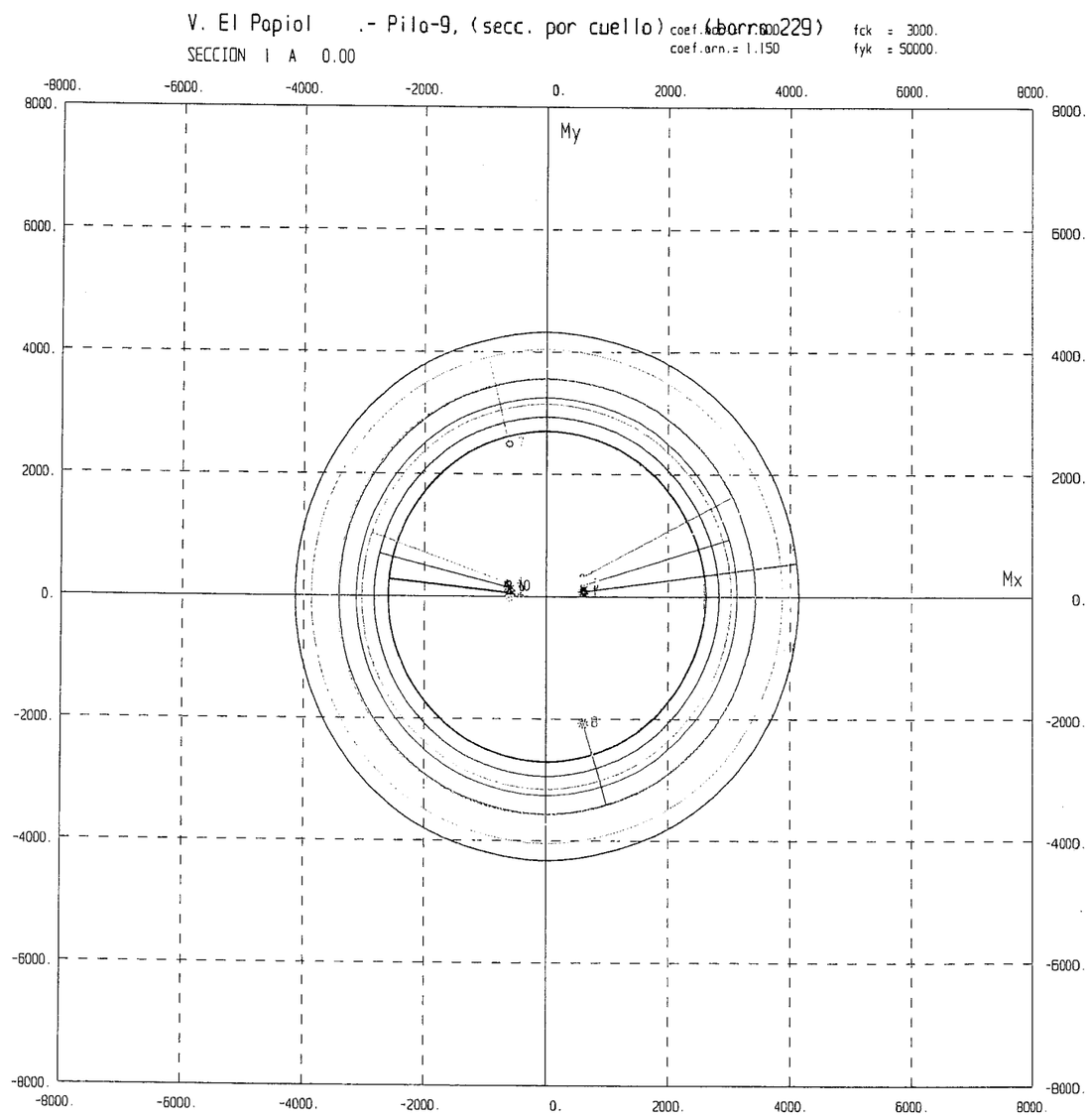
SECCION 1 A 0.00

coef.mat.= 1.500 fck = 3000.

coef.arm.= 1.150 fyk = 50000.




V. El Papiol .- Pila-8, (secc. por cuello) (barra 227)
SECCION 1 A 0.00
coef.fcd = 1.500
coef.grn.= 1.150
fck = 3000.
fyk = 50000.
My
Mx
-8000.
-6000.
-4000.
-2000.
0.
2000.
4000.
6000.
8000.
0
1
2

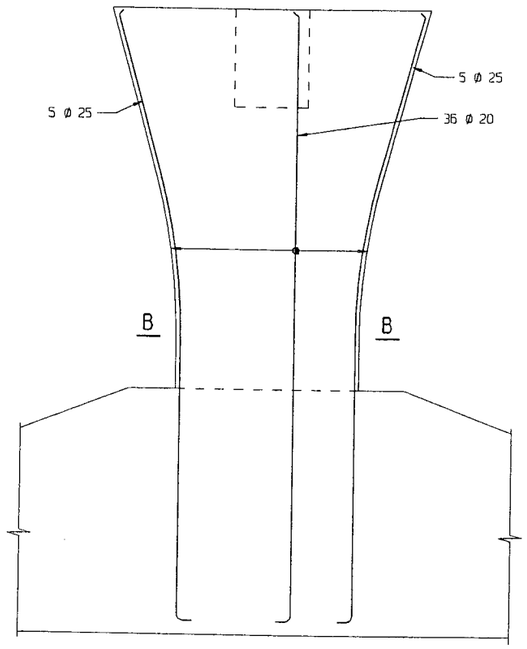

V. El Papiol .- Pila-9, (secc. por cuello) (barra 229)
SECCION 1 A 0.00
coef.fcd = 1.500
coef.grn.= 1.150
fck = 3000.
fyk = 50000.
My
Mx
-8000.
-6000.
-4000.
-2000.
0.
2000.
4000.
6000.
8000.
0
1

ESQUEMAS DE ALZADOS

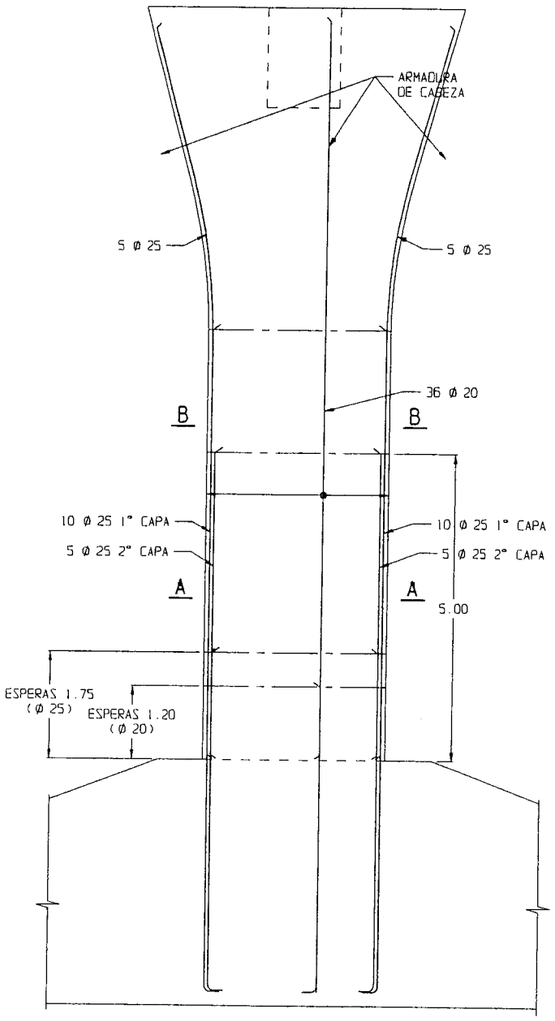
	NIVEL DE CONTROL DE CALIDAD	COEFICIENTE DE MAYORACION
ACERO	NORMAL	$\gamma_s = 1.15$
HORMIGON	CONTROL ESTADISTICO	$\gamma_c = 1.50$
EJECUCION	INTENSO	$\gamma_G = 1.35$ $\gamma_Q = 1.50$

ELEMENTO	DESIGNACION	RECUBRIMIENTO NOMINAL DE LA ARMADURA PASIVA ($r_{min} + \Delta r$) en mm.
BARRAS CORRUGADAS	B 500 S	
HORMIGON EN PILAS	HA-30/B/20/IIa	25 + 5
HORMIGON EN ENCEPADOS	HA-25/B/20/IIa	45 + 5
HORMIGON EN PILOTES	HA-25/F/20/IIa	65 + 5
HORMIGON DE LIMPIEZA	HM-15	

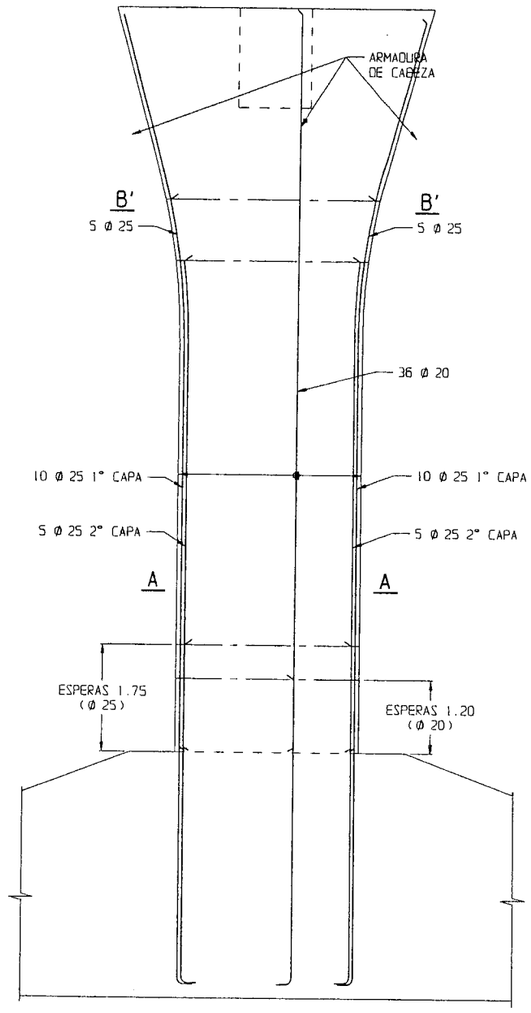
LAS LONGITUDES,NO ACOTADAS,DE ANCLAJES Y SOLAPOS DE LAS BARRAS CORRUGADAS SE REALIZARAN DE ACUERDO A LAS PRESCRIPCIONES DE LA NORMA EHE



PILAS 1 Y 9. ALZADO ESQUEMATICO
ESCALA 1:100

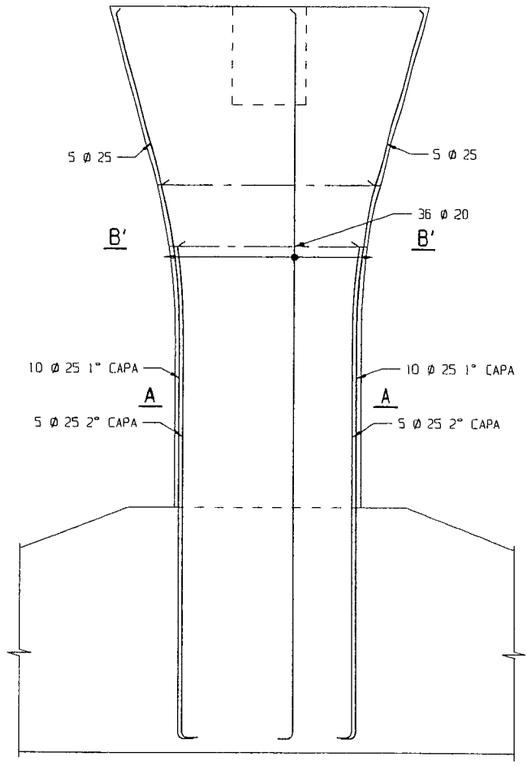


PILAS 2, 3 Y 7. ALZADO ESQUEMATICO
ESCALA 1:100



PILAS 4, 5 Y 6. ALZADO ESQUEMATICO
ESCALA 1:100

(*) SECCION 8'-8' COMO LA SECCION 8-8 CON OTRAS DIMENSIONES



PILA 8. ALZADO ESQUEMATICO
ESCALA 1:100

VIADUCTOS DE EL PAPIOL

GIF Gestor de Infraestructuras Ferroviarias

TITULO
PROYECTO DE CONSTRUCCION DE PLATAFORMA
L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA
TRAMO: PAPIOL - SANT VICENT DELS HORTS

UTE PAPIOL
SGS TECNOS
INFRAES
CFC

AUTORES
J.MANTEROLA I.C.C.P.
ALBERTO ODU I.C.C.P.
A.MARTINEZ CUTILLAS S.FUENTE GARCIA

ESCALA NORMAL
1:100
Numérica | Gráfica
0 1 2m.

FECHA
MAYO 2002

TITULO DEL PLANO
PILAS
ARMADURA DE PILAS (1)

Nº DE PLANO
2.10.1.3
Hoja 00 de 00

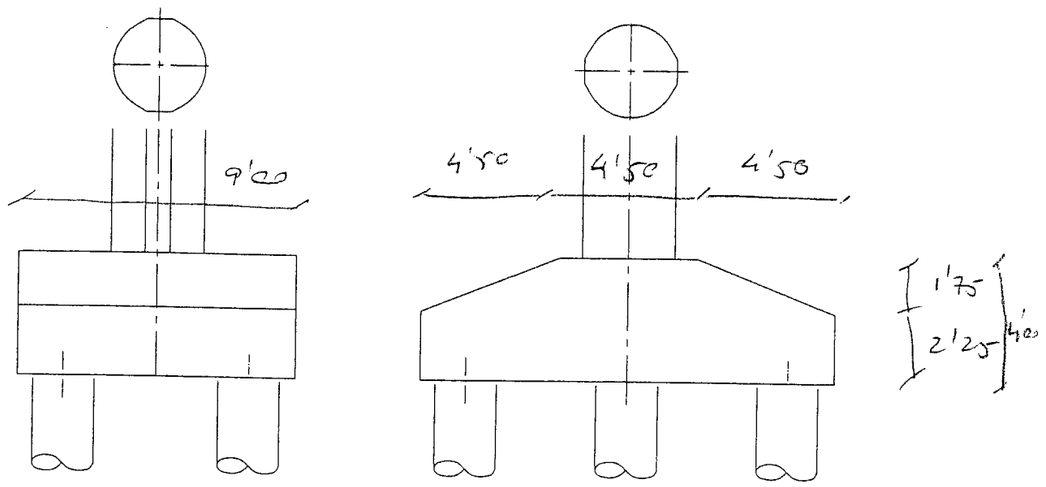
orpil-01

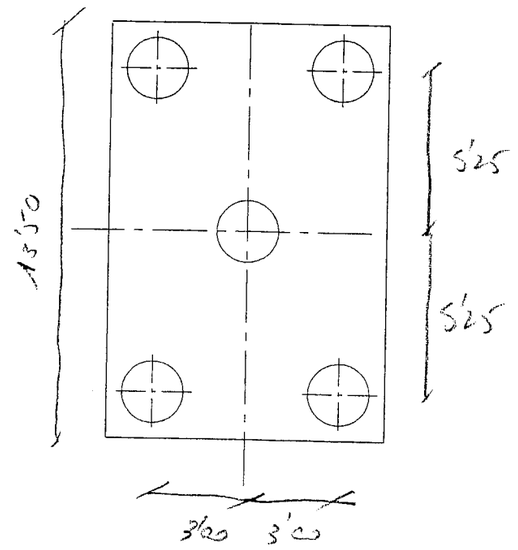
CIMENTACIONES DE PILAS

CARGAS EN PILOTES

VIADUCTOS DE EL PAMOL

CIMENTACIÓN DE PILAS





Peso propio encepado

47'44 x 9 x 2'50 = 1067'40

Coordenadas de pilote

1)	3'00	- 5'25
2)	-3'00	- 5'25
3)	0.	0.
4)	3'00	5'25
5)	-3'00	5'25

"PILOTS"

```
Cimentacion de pilas
4.00 1067.40 2.00
 3.00 -5.25
-3.00 -5.25
 0.00  0.00
 3.00  5.25
-3.00  5.25
barr
206 1 208 1 211 1 214 1 217 1 220 1 223 1 226 1 228 1
hipo
311 a 322   (ELU) ó  201 a 212 (ELS)
```

Resumen de Resultados.

Tensión máxima con esfuerzos ELS.

$\sigma = 39'94$ kg/cm² < 40 kg/cm² VALE

proc Viaducto Papiol

PILA 1

BARRA 206 NUDO 21

proc Viaducto Papiol

Cimentacion de pilas

Pilote mas cargado N= 1116.35 SIG= 35.53 hip. 201 pilote 4

Pilote menos cargado N= 501.35 SIG= 15.96 hip. 202 pilote 4

CARGA EN CADA PILOTE

	PILOTE					
HIP	1	2	3	4	5	CORT
201	1096.32	905.82	1011.09	1116.35	925.86	22.69
202	503.67	694.14	597.75	501.35	691.83	22.41
203	797.91	603.43	692.08	780.74	586.26	23.08
204	603.28	797.74	692.04	586.33	780.79	23.08
205	919.81	729.32	802.59	875.86	685.37	26.72
206	688.00	878.47	815.56	752.65	943.12	27.14
207	938.28	747.78	870.08	992.37	801.88	26.63
208	725.40	915.87	802.90	689.93	880.40	26.16
209	578.03	768.52	760.34	752.15	942.64	22.69
210	999.62	809.11	803.06	797.01	606.50	24.46
211	797.91	603.43	692.08	780.74	586.26	23.08
212	542.52	736.99	633.43	529.88	724.34	23.07

proc Viaducto Papiol

PILA 2

BARRA 208 NUDO 40

proc Viaducto Papiol

Cimentacion de pilas

Pilote mas cargado N= 1215.72 SIG= 38.70 hip. 201 pilote 5

Pilote menos cargado N= 494.14 SIG= 15.73 hip. 202 pilote 5

CARGA EN CADA PILOTE

HIP	PILOTE 1	2	3	4	5	CORT
201	917.08	1181.42	1066.40	951.38	1215.72	23.56
202	765.49	501.15	629.81	758.47	494.14	23.38
203	876.05	604.32	722.33	840.34	568.61	24.28
204	603.55	875.27	722.34	569.41	841.13	24.27
205	1002.56	738.24	835.63	933.02	668.70	28.32
206	678.74	943.07	852.00	760.93	1025.26	29.17
207	999.17	734.83	904.00	1073.16	808.82	28.49
208	739.35	1003.70	834.94	666.18	930.53	27.80
209	544.27	808.65	773.72	738.79	1003.17	25.30
210	1086.15	821.76	835.13	848.50	584.11	24.69
211	875.82	604.08	722.33	840.58	568.84	24.28
212	537.33	809.05	661.23	513.40	785.12	24.27

proc Viaducto Papiol

PILA 3

BARRA 211 NUDO 60

proc Viaducto Papiol

Cimentacion de pilas

Pilote mas cargado N= 1244.31 SIG= 39.61 hip. 201 pilote 4

Pilote menos cargado N= 470.82 SIG= 14.99 hip. 202 pilote 4

CARGA EN CADA PILOTE

HIP	PILOTE 1	2	3	4	5	CORT
201	1214.11	901.30	1072.81	1244.31	931.50	23.06
202	484.07	796.87	633.85	470.82	783.63	23.07
203	907.72	583.93	726.00	868.08	544.29	24.25
204	582.56	906.34	725.99	545.63	869.42	24.25
205	947.32	634.51	757.16	879.82	567.01	28.07
206	714.53	1027.34	914.17	801.01	1113.81	28.25
207	902.27	589.46	726.00	862.55	549.74	23.03
208	588.00	900.81	725.99	551.17	863.97	23.04
209	530.35	843.16	778.43	713.70	1026.51	24.30
210	1107.07	794.26	834.38	874.50	561.69	23.70
211	907.72	583.93	726.00	868.08	544.29	24.25
212	516.76	840.55	665.68	490.81	814.60	24.25

proc Viaducto Papiol

PILA 4

BARRA 214 NUDO 80

proc Viaducto Papiol

Cimentacion de pilas

Pilote mas cargado N= 1254.63 SIG= 39.94 hip. 201 pilote 5

Pilote menos cargado N= 467.52 SIG= 14.88 hip. 202 pilote 5

CARGA EN CADA PILOTE

HIP	PILOTE 1	2	3	4	5	CORT
201	899.53	1213.43	1077.08	940.73	1254.63	23.28
202	803.37	489.45	635.45	781.44	467.52	23.12
203	912.38	587.47	727.61	867.76	542.85	24.32
204	585.28	910.16	727.64	545.11	870.00	24.33
205	953.78	639.85	758.96	878.07	564.14	28.46
206	711.29	1025.19	916.65	808.11	1122.01	29.17
207	906.95	593.03	727.61	862.20	548.27	23.11
208	590.70	904.61	727.64	550.67	864.58	23.11
209	514.98	828.88	780.58	732.27	1046.17	25.74
210	1129.30	815.38	836.77	858.17	544.25	24.93
211	912.38	587.47	727.61	867.76	542.85	24.32
212	518.28	843.17	667.11	491.04	815.93	24.33

proc Viaducto Papiol

PILA 5

BARRA 217 NUDO 100

proc Viaducto Papiol

Cimentacion de pilas

Pilote mas cargado N= 1250.07 SIG= 39.79 hip. 201 pilote 4

Pilote menos cargado N= 476.41 SIG= 15.16 hip. 202 pilote 4

CARGA EN CADA PILOTE

HIP	PILOTE 1	2	3	4	5	CORT
201	1216.59	903.07	1076.57	1250.07	936.55	23.19
202	479.12	792.65	634.53	476.41	789.95	23.12
203	904.07	579.57	727.09	874.61	550.11	24.30
204	576.52	901.04	727.02	553.01	877.52	24.30
205	952.11	638.58	757.81	877.05	563.52	28.67
206	707.66	1021.20	914.38	807.56	1121.10	29.23
207	1017.66	704.14	818.72	933.30	619.77	27.98
208	698.85	1012.38	905.89	799.39	1112.93	28.64
209	507.84	821.36	779.86	738.36	1051.88	25.60
210	1123.10	809.59	836.45	863.30	549.80	24.94
211	839.59	515.09	666.64	818.18	493.68	24.30
212	576.52	901.04	727.02	553.01	877.52	24.30

proc Viaducto Papiol

PILA 6

BARRA 220 NUDO 120

proc Viaducto Papiol

Cimentacion de pilas

Pilote mas cargado N= 1253.51 SIG= 39.90 hip. 201 pilote 5

Pilote menos cargado N= 475.27 SIG= 15.13 hip. 202 pilote 2

CARGA EN CADA PILOTE

HIP	PILOTE 1	2	3	4	5	CORT
201	899.48	1213.45	1076.50	939.54	1253.51	23.46
202	789.22	475.27	635.21	795.16	481.21	23.11
203	891.77	566.84	727.56	888.27	563.34	24.33
204	563.56	888.50	727.82	567.13	892.07	24.34
205	946.85	632.91	757.78	882.65	568.72	28.63
206	706.39	1020.35	915.64	810.94	1124.90	29.48
207	1014.37	700.41	906.57	1112.72	798.77	28.40
208	691.59	1005.57	819.47	633.38	947.35	27.50
209	499.88	813.87	779.79	745.71	1059.71	25.83
210	1109.11	795.13	836.94	878.76	564.78	25.11
211	830.99	506.06	667.02	827.98	503.05	24.33
212	563.56	888.50	727.82	567.13	892.07	24.34

proc Viaducto Papiol

PILA 7

BARRA 223 NUDO 140

proc Viaducto Papiol

Cimentacion de pilas

Pilote mas cargado N= 1241.09 SIG= 39.51 hip. 201 pilote 4

Pilote menos cargado N= 466.00 SIG= 14.83 hip. 202 pilote 1

CARGA EN CADA PILOTE

HIP	PILOTE 1	2	3	4	5	CORT
201	1217.73	905.06	1073.08	1241.09	928.42	23.25
202	466.00	778.68	633.00	487.32	800.00	23.02
203	881.91	558.25	726.32	894.39	570.74	24.28
204	553.94	877.60	725.30	572.99	896.65	24.24
205	993.94	681.27	816.66	952.05	639.38	28.00
206	651.08	963.76	854.25	744.74	1057.41	28.36
207	624.13	936.80	816.82	696.84	1009.52	27.39
208	996.01	683.34	817.95	952.56	639.89	27.49
209	573.63	886.32	834.31	782.29	1094.99	23.41
210	1018.44	705.75	777.98	850.22	537.53	23.51
211	823.85	500.19	666.03	831.86	508.21	24.26
212	553.96	877.62	725.30	572.97	896.63	24.24

proc Viaducto Papiol

PILA 8

BARRA 226 NUDO 160

proc Viaducto Papiol

Cimentacion de pilas

Pilote mas cargado N= 1200.83 SIG= 38.22 hip. 201 pilote 5

Pilote menos cargado N= 494.75 SIG= 15.75 hip. 202 pilote 2

CARGA EN CADA PILOTE

	PILOTE					
HIP	1	2	3	4	5	CORT
201	929.38	1168.66	1065.11	961.55	1200.83	24.19
202	734.08	494.75	622.96	751.18	511.85	23.38
203	819.95	574.72	716.21	857.70	612.46	24.17
204	574.79	819.99	720.23	620.47	865.67	24.19
205	912.51	673.18	766.45	859.73	620.39	28.72
206	744.25	983.54	912.92	842.31	1081.59	30.22
207	735.95	975.23	902.09	828.94	1068.23	29.75
208	894.34	655.00	727.44	799.89	560.55	27.20
209	556.48	795.78	830.06	864.34	1103.64	28.71
210	1001.23	761.89	770.57	779.24	539.90	27.25
211	819.95	574.72	716.21	857.70	612.46	24.17
212	519.93	765.13	659.09	553.05	798.25	24.19

proc Viaducto Papiol

PILA 9

BARRA 228 NUDO 179

proc Viaducto Papiol

Cimentacion de pilas

Pilote mas cargado N= 1149.27 SIG= 36.58 hip. 201 pilote 4

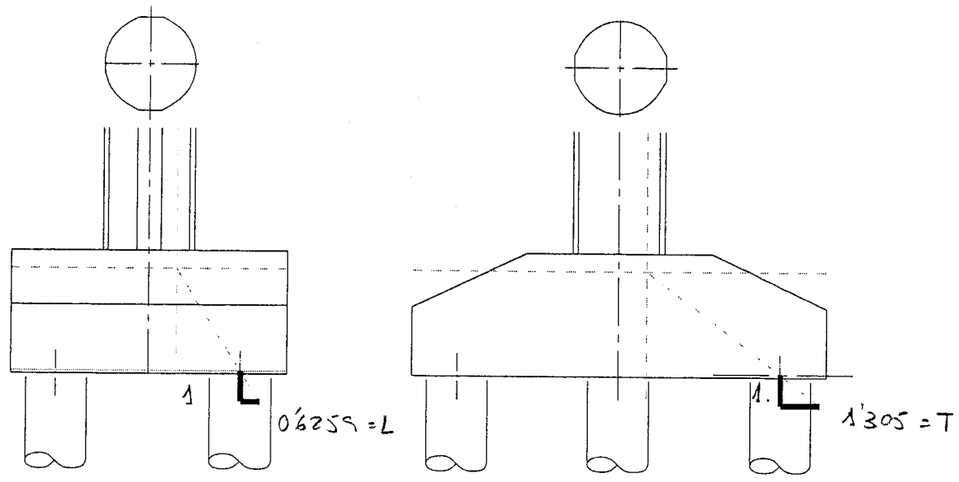
Pilote menos cargado N= 473.12 SIG= 15.06 hip. 202 pilote 1

CARGA EN CADA PILOTE

	PILOTE					
HIP	1	2	3	4	5	CORT
201	1129.12	911.45	1030.36	1149.27	931.60	22.61
202	473.12	690.79	586.49	482.18	699.85	22.33
203	809.25	586.28	706.73	827.18	604.21	23.10
204	561.49	784.46	684.65	584.85	807.81	23.11
205	878.17	660.50	758.19	855.88	638.21	25.79
206	732.66	950.34	867.38	784.42	1002.10	26.40
207	563.31	780.98	683.92	586.86	804.53	22.34
208	807.43	589.76	707.46	825.16	607.49	22.33
209	586.56	804.23	780.55	756.86	974.53	22.84
210	906.11	688.44	733.97	779.51	561.84	22.42
211	809.25	586.28	706.73	827.18	604.21	23.10
212	506.04	729.00	626.07	523.14	746.11	23.11

ARMADURA DE ENCEPADOS

CÁLCULO DE ARMADURAS DE ENCEPADO.



Armadura longitudinal y transversal

$$Ld_{máx} = 0'6259 \times Nd_{máx}$$

$$Td_{máx} = 1'305 \times Td_{máx}$$

$$We = \frac{Ld_{máx}}{4} \quad ; \quad Wt = \frac{Td_{máx}}{4}$$

Armadura de cortante

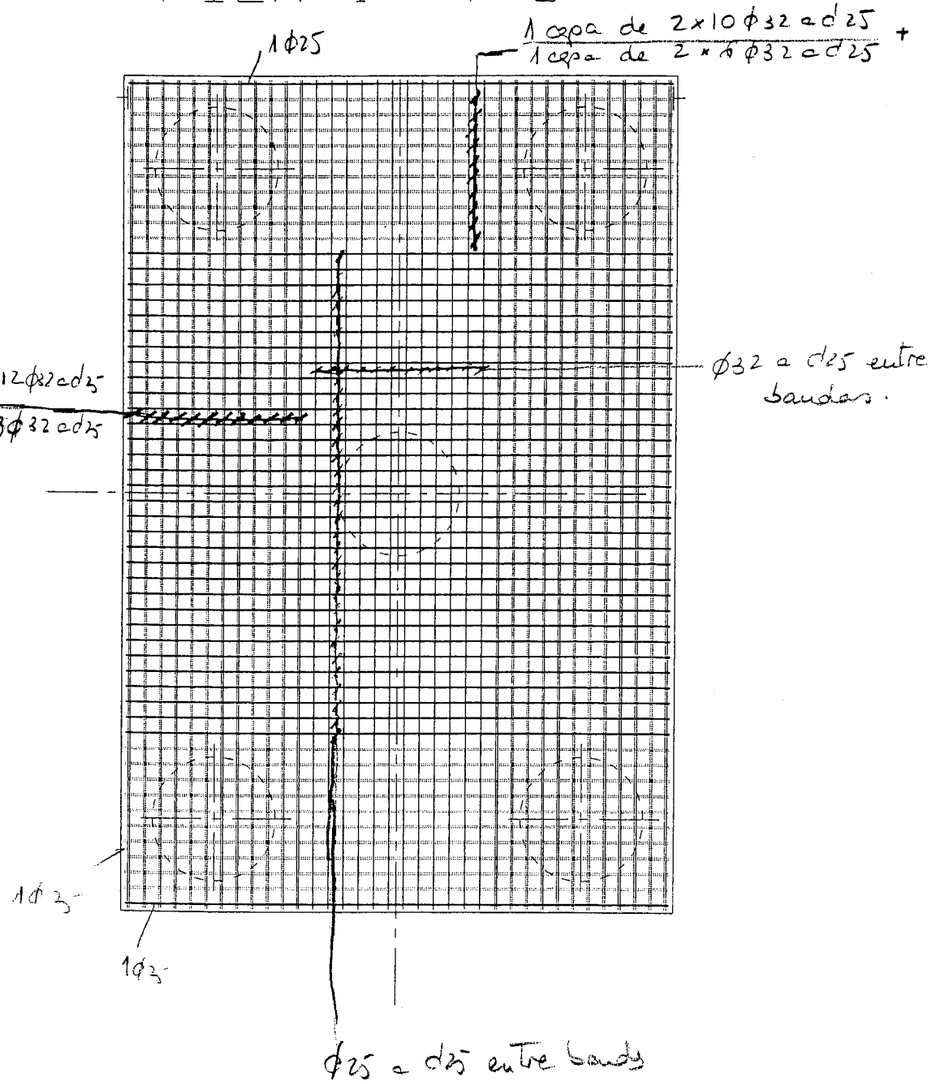
$$N = \frac{F_{x\,máx}}{1'5 \times 5} \quad Tn/pilote$$

$$W_{cort} = \frac{N}{4}$$

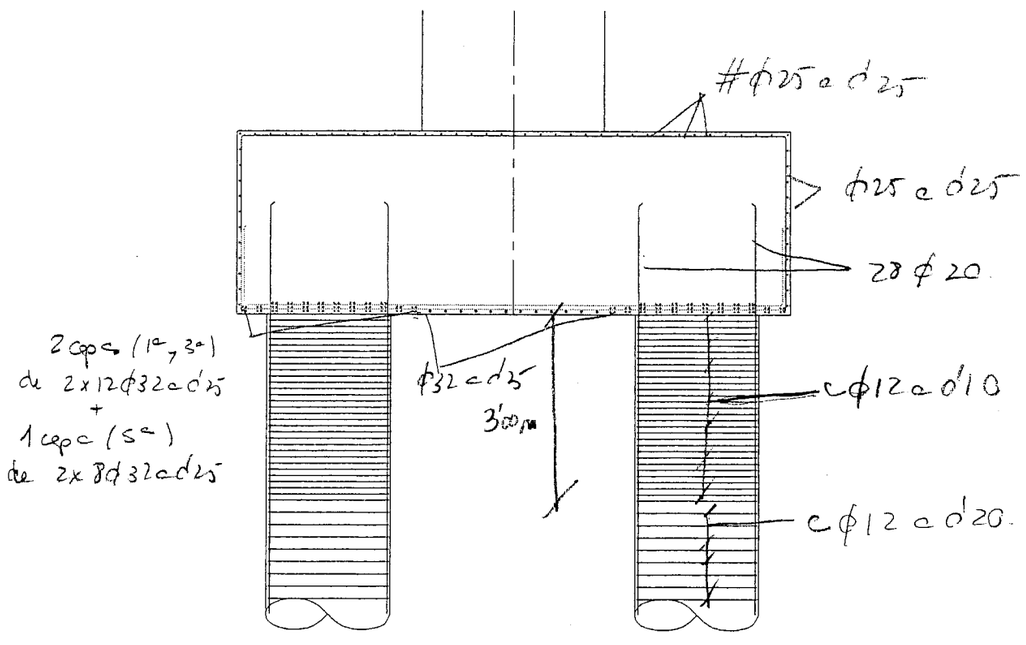
Cimentación de pilas Papiol CÁLCULO DE ARMADURA

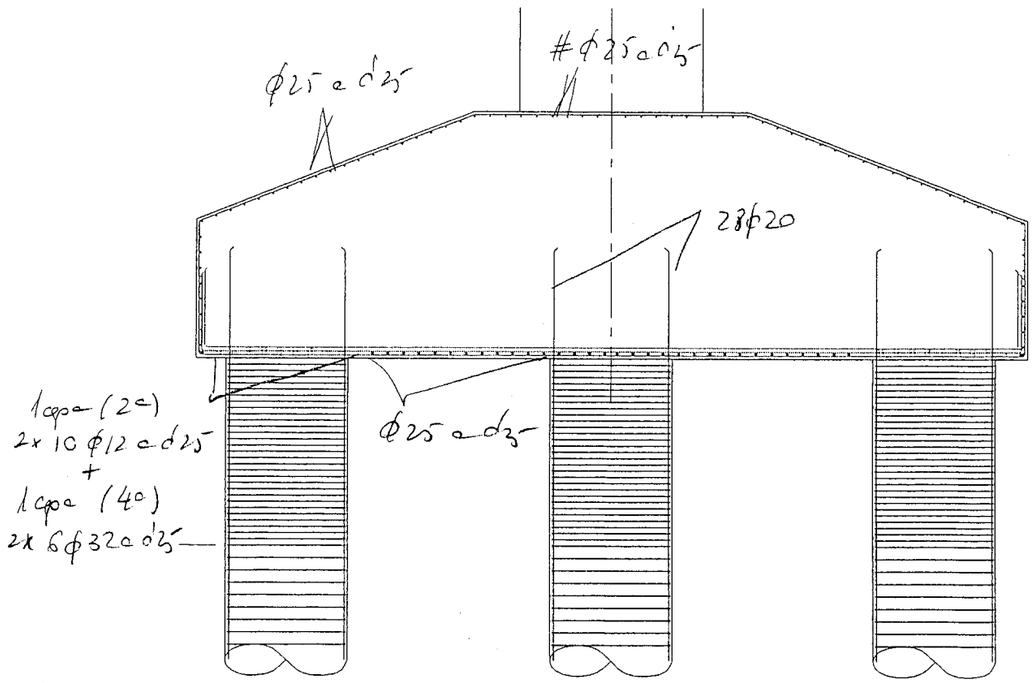
												Armadura necesaria			Armadura dispuesta		
												D 32 mm	D 32 mm	cerco D20+D16mm	longitudinal	transversal	cercos/pilote
	T		kg/cm2	Pilote mas cargado	Nd,max (T)	Ld,máx (T)	Td,máx (T)	wl (cm2)	wt (cm2)	Fx,máx (T)	N (T/pilote)	wcort	wl / 8.04	wt / 8.04	wc / (2.01+3.14)/2	D 32 mm	D 32 mm	D20 + D16mm
PILA 1	N= 1483	SIG=	47.21	hip. 311 pilote 4	1483.00	928.21	1935.32	232.05	483.83	5623.12	749.75	187.44	29	60	18	32	64	25
PILA 2	N= 1623.21	SIG=	51.67	hip. 311 pilote 5	1623.21	1015.97	2118.29	253.99	529.57	6015.25	802.03	200.51	32	66	19	36	72	25
PILA 3	N= 1662.37	SIG=	52.91	hip. 311 pilote 4	1662.37	1040.48	2169.39	260.12	542.35	6060.56	808.07	202.02	32	67	20	36	72	25
PILA 4	N= 1677.54	SIG=	53.4	hip. 311 pilote 5	1677.54	1049.97	2189.19	262.49	547.30	6091.39	812.19	203.05	33	68	20	36	72	25
PILA 5	N= 1670.03	SIG=	53.16	hip. 311 pilote 4	1670.03	1045.27	2179.39	261.32	544.85	6087.95	811.73	202.93	33	68	20	36	72	25
PILA 6	N= 1672.55	SIG=	53.24	hip. 311 pilote 5	1672.55	1046.85	2182.68	261.71	545.67	6086.85	811.58	202.90	33	68	20	36	72	25
PILA 7	N= 1653.6	SIG=	52.64	hip. 311 pilote 4	1653.60	1034.99	2157.95	258.75	539.49	6062.31	808.31	202.08	32	67	20	36	72	25
PILA 8	N= 1597.08	SIG=	50.84	hip. 311 pilote 5	1597.08	999.61	2084.19	249.90	521.05	6007.04	800.94	200.23	31	65	19	36	72	25
PILA 9	N= 1525.42	SIG=	48.56	hip. 311 pilote 4	1525.42	954.76	1990.67	238.69	497.67	5756.13	767.48	191.87	30	62	19	32	64	25

PILA 1 Y 9

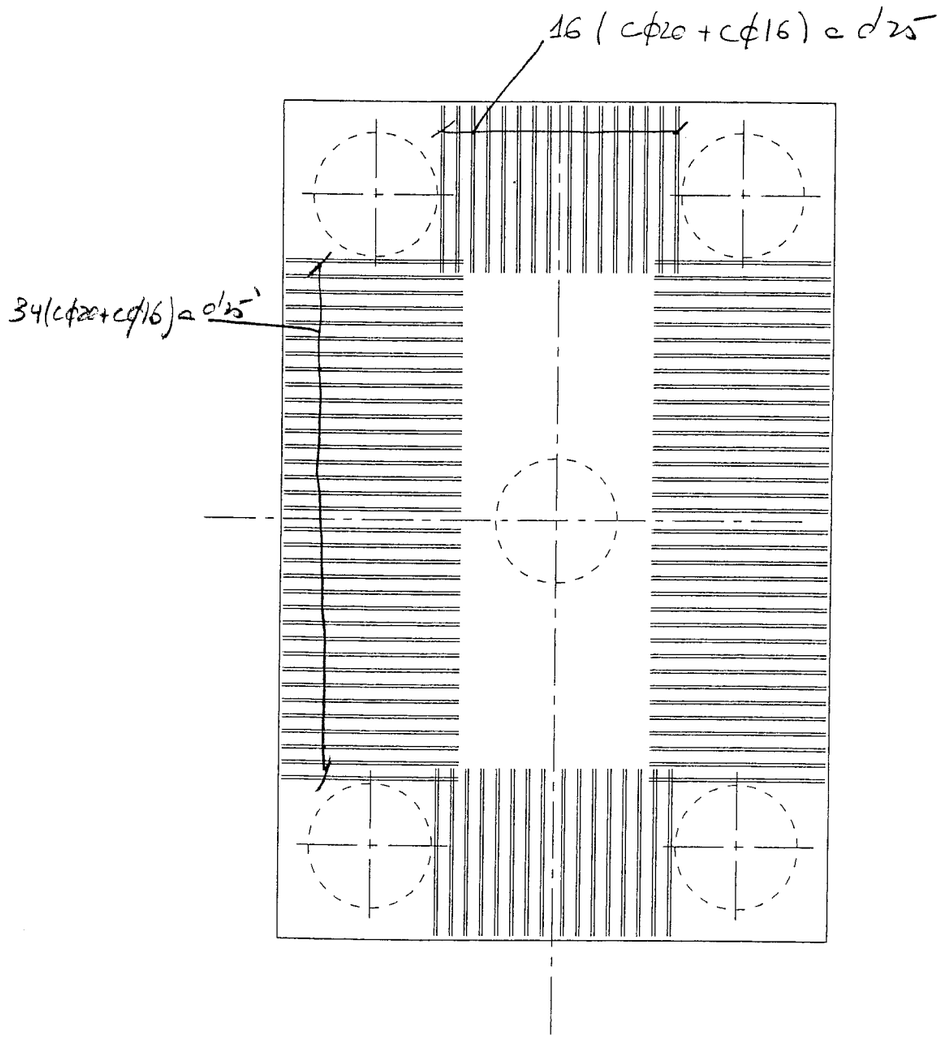


PILAS 1 Y 9

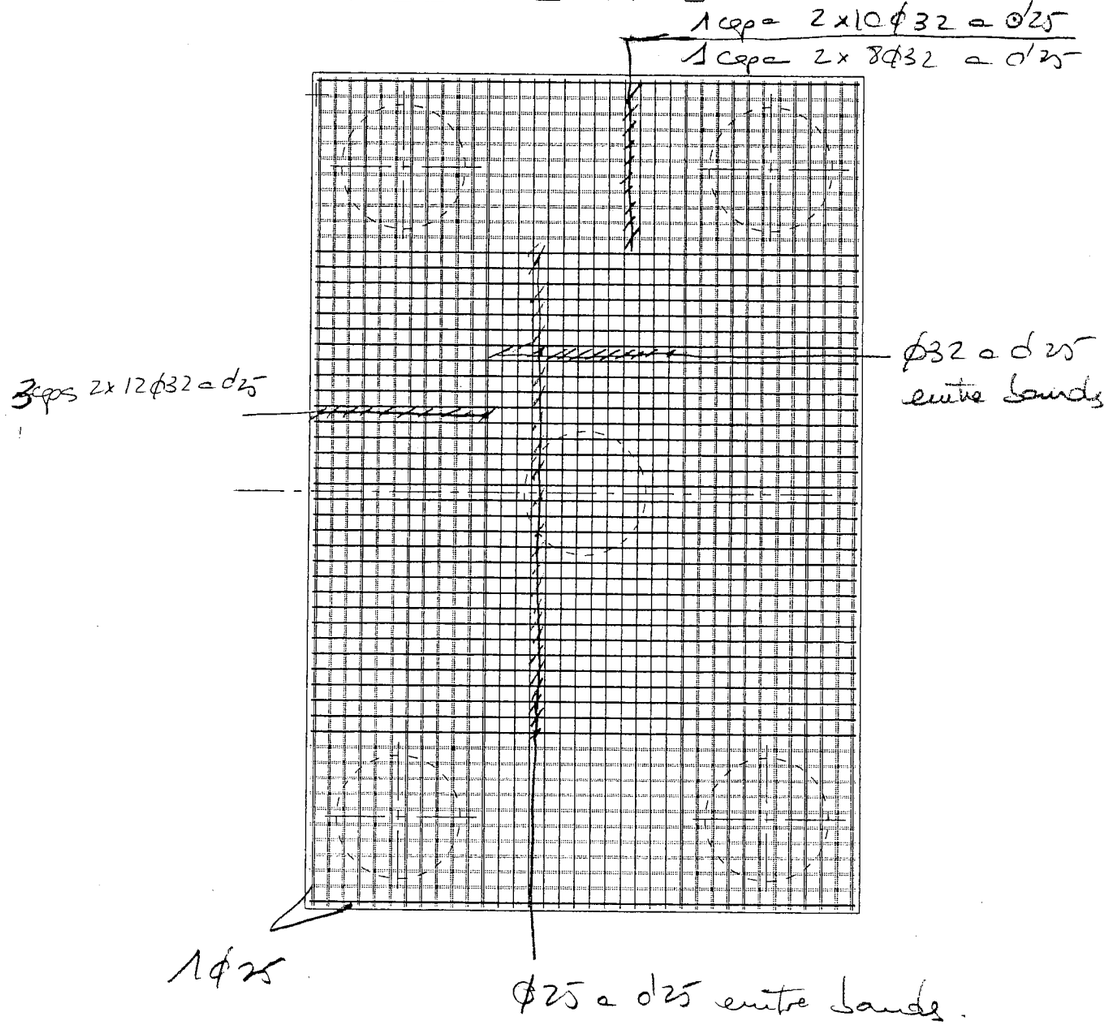




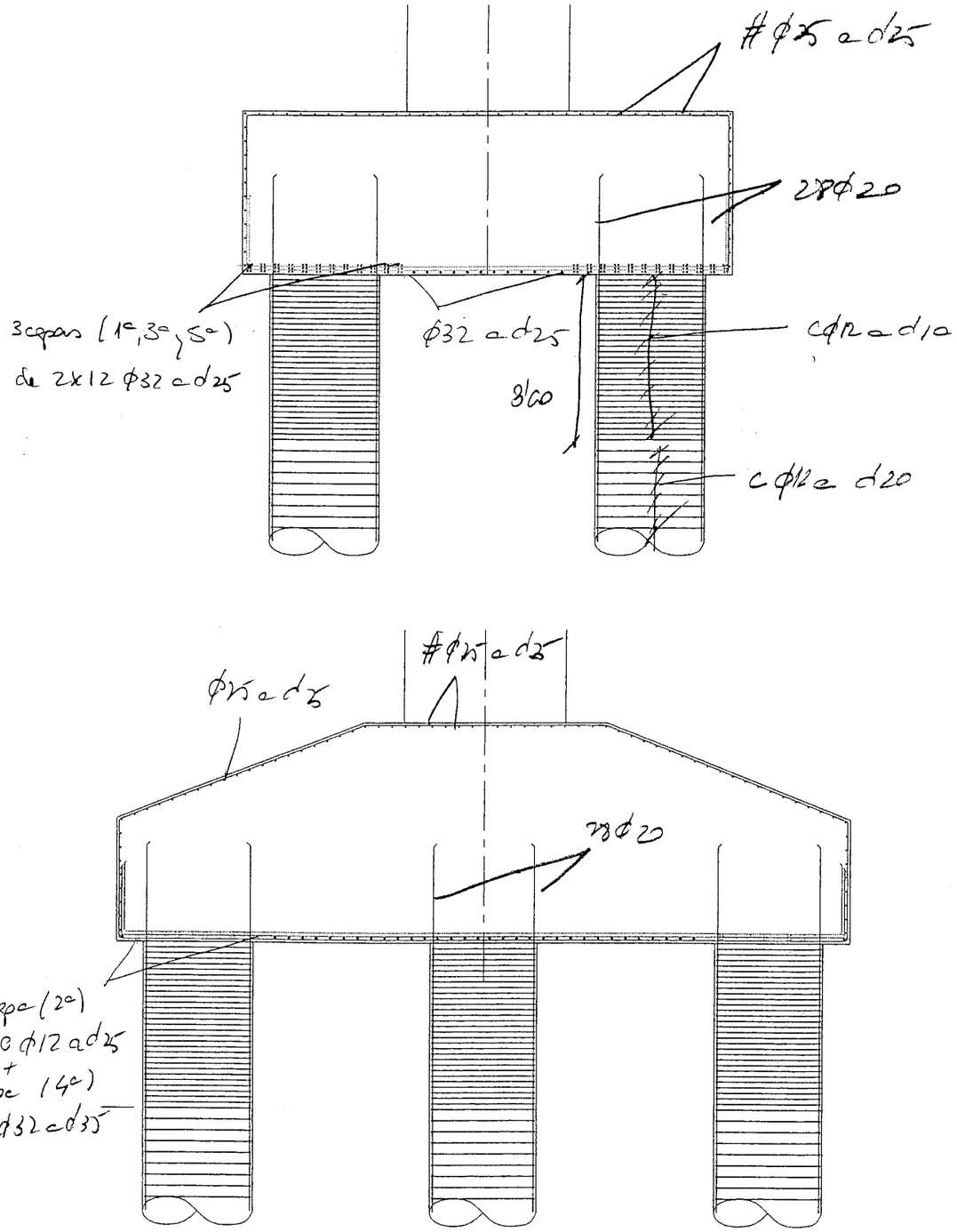
PILAS 1 Y 9



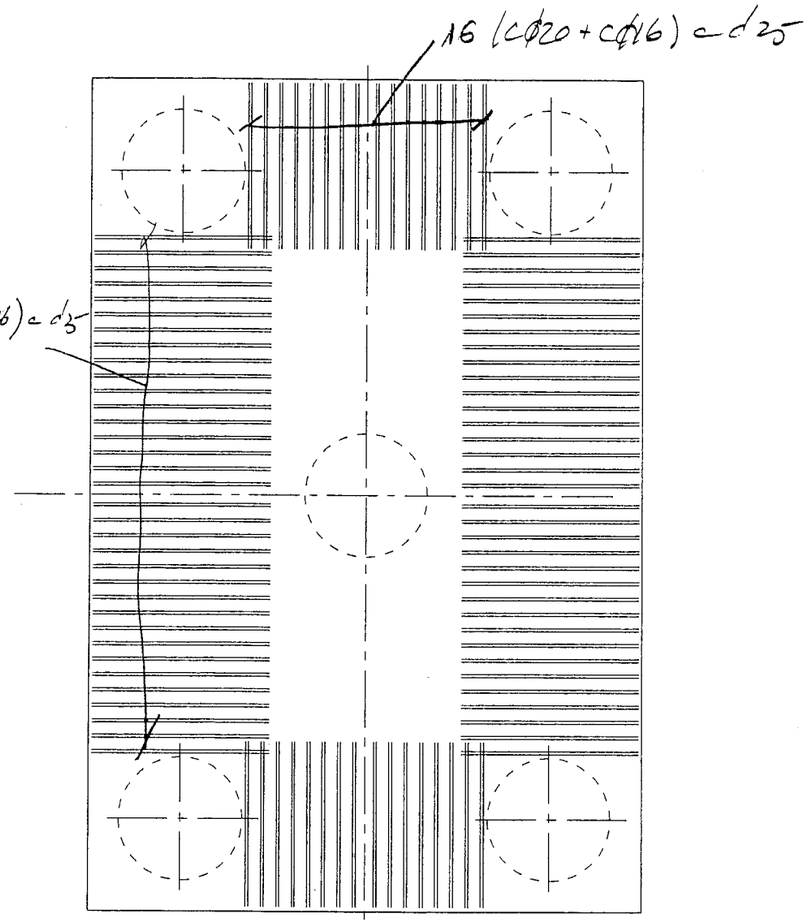
PILA 2 A 8



PILAS 2 A 8



PILAS 2 A 8



proc Viaducto Papiol

PILA 1

BARRA 206 NUDO 21

proc Viaducto Papiol

Cimentacion de pilas

Pilote mas cargado N= 1483.00 SIG= 47.21 hip. 311 pilote 4

Pilote menos cargado N= 449.89 SIG= 14.32 hip. 312 pilote 1

CARGA EN CADA PILOTE

	PILOTE					
HIP	1	2	3	4	5	CORT
311	1450.37	1193.20	1338.10	1483.00	1225.83	30.75
312	449.89	707.03	579.90	452.76	709.90	30.25
313	832.27	569.12	692.09	815.06	551.91	31.24
314	568.92	832.05	692.03	552.01	815.14	31.24
315	1185.61	928.45	1025.35	1122.26	865.10	37.21
316	726.40	983.53	906.62	829.70	1086.83	38.20
317	1042.82	785.65	959.08	1132.51	875.35	37.46
318	922.63	1179.77	1025.83	871.89	1129.03	36.32
319	561.44	818.61	823.78	828.95	1086.12	30.78
320	1305.22	1048.03	1025.96	1003.89	746.70	33.57
321	1002.76	739.61	859.59	979.58	716.43	31.25
322	508.17	771.29	633.42	495.55	758.68	31.23

proc Viaducto Papiol

PILA 2

BARRA 208 NUDO 40

proc Viaducto Papiol

Cimentacion de pilas

Pilote mas cargado N= 1623.21 SIG= 51.67 hip. 311 pilote 5

Pilote menos cargado N= 434.70 SIG= 13.84 hip. 312 pilote 2

CARGA EN CADA PILOTE

	PILOTE					
HIP	1	2	3	4	5	CORT
311	1209.85	1566.72	1416.53	1266.34	1623.21	31.88
312	791.55	434.70	614.11	793.52	436.67	31.58
313	924.29	556.34	722.33	888.31	520.36	32.91
314	555.32	923.25	722.34	521.44	889.37	32.91
315	1298.65	941.82	1070.76	1199.70	842.87	39.64
316	862.28	1219.12	1104.10	989.07	1345.92	40.99
317	1108.97	752.12	994.83	1237.54	880.69	39.96
318	759.01	1115.88	891.24	666.60	1023.47	38.79
319	499.62	856.54	829.97	803.40	1160.32	34.74
320	1423.66	1066.72	1069.63	1072.55	715.61	33.74
321	1108.18	740.23	900.43	1060.62	692.67	32.91
322	489.09	857.03	661.23	465.42	833.36	32.91

proc Viaducto Papiol

PILA 3

BARRA 211 NUDO 60

proc Viaducto Papiol

Cimentacion de pilas

Pilote mas cargado N= 1662.37 SIG= 52.91 hip. 311 pilote 4

Pilote menos cargado N= 403.57 SIG= 12.85 hip. 312 pilote 4

CARGA EN CADA PILOTE

	PILOTE					
HIP	1	2	3	4	5	CORT
311	1611.10	1188.81	1425.59	1662.37	1240.08	31.15
312	410.00	832.29	617.93	403.57	825.86	31.14
313	965.44	526.68	726.01	925.34	486.58	32.91
314	524.84	963.60	725.99	488.37	927.13	32.92
315	1057.73	635.44	802.90	970.35	548.06	39.39
316	908.88	1331.17	1187.65	1044.12	1466.41	39.54
317	906.43	484.14	726.01	967.88	545.59	33.08
318	583.85	1006.14	725.98	445.83	868.12	32.74
319	479.50	901.80	834.80	767.81	1190.10	33.14
320	1450.53	1028.23	1067.95	1107.68	685.38	32.22
321	1151.52	712.76	905.39	1098.02	659.26	32.91
322	459.04	897.80	665.68	433.56	872.31	32.91

proc Viaducto Papiol

PILA 4

BARRA 214 NUDO 80

proc Viaducto Papiol

Cimentacion de pilas

Pilote mas cargado N= 1677.54 SIG= 53.40 hip. 311 pilote 5

Pilote menos cargado N= 398.84 SIG= 12.70 hip. 312 pilote 5

CARGA EN CADA PILOTE

HIP	PILOTE 1	2	3	4	5	CORT
311	1185.98	1609.74	1431.76	1253.78	1677.54	31.48
312	840.40	416.61	619.62	822.64	398.84	31.22
313	970.43	530.17	727.61	925.05	484.79	33.02
314	527.22	967.47	727.64	487.81	928.06	33.02
315	1066.02	642.22	804.89	967.57	543.76	39.95
316	903.62	1327.39	1191.11	1054.84	1478.61	41.02
317	962.30	538.50	727.61	916.72	492.92	31.20
318	535.36	959.13	727.64	496.15	919.93	31.20
319	455.27	879.04	837.31	795.59	1219.35	35.46
320	1483.09	1059.29	1071.20	1083.11	659.32	34.19
321	1157.80	717.54	907.56	1097.59	657.32	33.02
322	460.23	900.48	667.11	433.75	874.00	33.02

proc Viaducto Papiol

PILA 5

BARRA 217 NUDO 100

proc Viaducto Papiol

Cimentacion de pilas

Pilote mas cargado N= 1670.03 SIG= 53.16 hip. 311 pilote 4

Pilote menos cargado N= 404.55 SIG= 12.88 hip. 312 pilote 1

CARGA EN CADA PILOTE

HIP	PILOTE 1	2	3	4	5	CORT
311	1615.36	1192.11	1431.07	1670.03	1246.78	31.34
312	404.55	827.81	618.50	409.19	832.46	31.21
313	962.20	522.48	727.10	931.73	492.00	32.98
314	518.39	958.13	727.01	495.89	935.63	32.99
315	1066.50	643.23	803.42	963.60	540.33	40.26
316	899.48	1322.76	1187.80	1052.84	1476.12	41.12
317	1132.59	709.32	864.54	1019.76	596.49	39.19
318	701.88	1125.15	995.31	865.47	1288.74	40.13
319	447.54	870.79	836.39	802.00	1225.25	35.25
320	1475.12	1051.89	1070.89	1089.89	666.67	34.21
321	897.73	458.00	666.65	875.29	435.57	32.98
322	702.77	1142.52	906.76	671.00	1110.75	32.99

proc Viaducto Papiol

PILA 6

BARRA 220 NUDO 120

proc Viaducto Papiol

Cimentacion de pilas

Pilote mas cargado N= 1672.55 SIG= 53.24 hip. 311 pilote 5

Pilote menos cargado N= 402.72 SIG= 12.82 hip. 312 pilote 2

CARGA EN CADA PILOTE

HIP	PILOTE 1	2	3	4	5	CORT
311	1189.16	1613.01	1430.85	1248.69	1672.55	31.76
312	826.55	402.72	619.27	835.82	411.98	31.20
313	950.02	509.71	727.51	945.31	505.00	33.03
314	505.32	945.63	727.86	510.09	950.41	33.03
315	1063.39	639.57	803.51	967.45	543.64	40.20
316	899.53	1323.37	1189.57	1055.77	1479.62	41.49
317	1133.91	710.07	996.03	1281.99	858.14	39.80
318	697.37	1121.23	865.34	609.46	1033.32	38.49
319	598.87	1022.77	994.88	966.99	1390.88	35.62
320	1455.89	1032.01	1071.47	1110.92	687.04	34.48
321	889.24	448.93	666.98	885.02	444.71	33.03
322	685.28	1125.60	907.83	690.07	1130.39	33.04

proc Viaducto Papiol

PILA 7

BARRA 223 NUDO 140

proc Viaducto Papiol

Cimentacion de pilas

Pilote mas cargado N= 1653.60 SIG= 52.64 hip. 311 pilote 4

Pilote menos cargado N= 392.86 SIG= 12.51 hip. 312 pilote 1

CARGA EN CADA PILOTE

HIP	PILOTE 1	2	3	4	5	CORT
311	1620.39	1198.28	1425.94	1653.60	1231.49	31.50
312	392.86	814.98	616.83	418.67	840.79	31.08
313	940.10	501.53	726.50	951.47	512.89	32.94
314	495.74	934.33	725.12	515.91	954.50	32.90
315	1284.70	862.60	1041.31	1220.03	797.93	39.07
316	670.49	1092.60	948.70	804.79	1226.91	40.00
317	601.02	1023.13	862.41	701.69	1123.80	38.53
318	1111.25	689.15	863.94	1038.73	616.62	38.02
319	701.83	1123.97	1067.96	1011.94	1434.08	31.74
320	1173.93	751.80	834.14	916.48	494.35	31.80
321	882.04	443.46	666.20	888.94	450.36	32.92
322	672.32	1110.91	904.44	697.96	1136.55	32.91

proc Viaducto Papiol

PILA 8

BARRA 226 NUDO 160

proc Viaducto Papiol

Cimentacion de pilas

Pilote mas cargado N= 1597.08 SIG= 50.84 hip. 311 pilote 5

Pilote menos cargado N= 438.83 SIG= 13.97 hip. 312 pilote 2

CARGA EN CADA PILOTE

	PILOTE					
HIP	1	2	3	4	5	CORT
311	1232.69	1555.72	1414.89	1274.06	1597.08	32.88
312	761.92	438.83	606.23	773.63	450.54	31.58
313	863.30	531.36	715.52	899.69	567.75	32.76
314	531.45	863.36	720.92	578.48	910.38	32.78
315	1029.95	706.86	821.84	936.83	613.73	40.30
316	955.00	1278.03	1186.61	1095.19	1418.23	42.58
317	773.18	1096.22	993.70	891.18	1214.23	41.75
318	974.87	651.78	732.38	812.98	489.88	37.88
319	673.35	996.40	1062.32	1128.24	1451.29	40.18
320	1162.65	839.54	827.63	815.72	492.62	37.94
321	1032.66	700.71	892.18	1083.66	751.70	32.76
322	471.69	803.60	654.89	506.19	838.10	32.77

proc Viaducto Papiol

PILA 9

BARRA 228 NUDO 179

proc Viaducto Papiol

Cimentacion de pilas

Pilote mas cargado N= 1525.42 SIG= 48.56 hip. 311 pilote 4

Pilote menos cargado N= 412.98 SIG= 13.15 hip. 312 pilote 1

CARGA EN CADA PILOTE

	PILOTE					
HIP	1	2	3	4	5	CORT
311	1497.85	1203.99	1364.71	1525.42	1231.56	30.62
312	412.98	706.84	562.94	419.04	712.90	30.14
313	852.88	551.08	710.48	869.89	568.08	31.30
314	517.86	819.66	680.90	542.14	843.94	31.31
315	983.94	690.08	816.96	943.85	649.99	35.84
316	939.80	1233.66	1123.76	1013.87	1307.73	36.74
317	520.59	814.44	679.80	545.15	839.01	30.15
318	850.15	556.29	711.58	866.87	573.01	30.14
319	720.54	1014.39	993.41	972.43	1266.28	30.97
320	1025.84	731.99	780.64	829.29	535.43	30.30
321	1018.04	716.24	879.26	1042.27	740.47	31.30
322	462.40	764.20	622.32	480.43	782.23	31.31

ARMADURA DE PILOTES

CÁLCULO DE ARMADURA DE PILOTES - PAPIOL

Diámetro del pilote	2 m
Longitud de empotramiento	10 m
Nº de pilotes por encepado	5

Hipótesis consideradas :

1- Mínimo axil con máximo cortante concomitante

2- Máximo cortante (Fh en cabeza de pilote) con mínimo axil concomitante

Nd = carga en pilote obtenida del "pilotes" en ELU

Fd = cortante / nº de pilotes

Md = Fdx5.00

PILA	HIPO	Nd (T)	Fd (T)	Md (mT)
1	312	449.89	30.25	151.25
	316	726.40	38.20	191.00
2	312	434.70	31.58	157.90
	316	862.28	40.99	204.95
3	312	403.57	31.14	155.70
	316	908.88	39.54	197.70
4	312	398.84	31.22	156.10
	316	903.62	41.02	205.10
5	312	404.55	31.21	156.05
	316	899.48	41.12	205.60
6	312	402.72	31.20	156.00
	316	899.53	41.49	207.45
7	312	392.86	31.08	155.40
	316	670.49	40.00	200.00
8	312	438.83	31.58	157.90
	316	955.00	42.58	212.90
9	312	412.98	30.14	150.70
	316	939.80	36.74	183.70

RESUMEN DE RESULTADOS

Todos los pilotes de las 9 pilas se armarán con:

longitudinal	28 ϕ 20	
cercos	ϕ 12 a 0.10 m	en 3.00 metros superiores
	ϕ 12 a 0.20 m	en el resto

Armadura de pilotes de pilas - Papiol

FCK 2500 T/M2 FY 50000 T/M2 May. Carg. 1.00 Min. Hor. 1.50 Min. Ace. 1.15

B	H	R	BW	HF	AXIL	MOME	W SUP	W INF	W MIN	CORT	W	W MIN	TORS	WT	WL	R
0.00	1.90	0.10			449.89	151.25	28.35	0.00	43.47	30.25	0.00	7.99	0.00	0.00	0.00	0
					726.40	191.00	28.35	0.00	43.47	38.20	0.00	7.99	0.00	0.00	0.00	0
					434.70	157.90	28.35	0.00	43.47	31.58	0.00	7.99	0.00	0.00	0.00	0
					862.28	204.95	28.35	0.00	43.47	40.99	0.00	7.99	0.00	0.00	0.00	0
					403.57	155.70	28.35	0.00	43.47	31.14	0.00	7.99	0.00	0.00	0.00	0
					908.88	197.70	28.35	0.00	43.47	39.54	0.00	7.99	0.00	0.00	0.00	0
					398.84	156.10	28.35	0.00	43.47	31.22	0.00	7.99	0.00	0.00	0.00	0
					903.62	205.10	28.35	0.00	43.47	41.02	0.00	7.99	0.00	0.00	0.00	0
					404.55	156.05	28.35	0.00	43.47	31.21	0.00	7.99	0.00	0.00	0.00	0
					899.48	205.60	28.35	0.00	43.47	41.12	0.00	7.99	0.00	0.00	0.00	0
					402.72	156.00	28.35	0.00	43.47	31.20	0.00	7.99	0.00	0.00	0.00	0
					899.53	207.45	28.35	0.00	43.47	41.49	0.00	7.99	0.00	0.00	0.00	0
					392.86	155.40	28.35	0.00	43.47	31.08	0.00	7.99	0.00	0.00	0.00	0
					670.49	200.00	28.35	0.00	43.47	40.00	0.00	7.99	0.00	0.00	0.00	0
					438.83	157.90	28.35	0.00	43.47	31.58	0.00	7.99	0.00	0.00	0.00	0
					955.00	212.90	28.35	0.00	43.47	42.58	0.00	7.99	0.00	0.00	0.00	0
					412.98	150.70	28.35	0.00	43.47	30.14	0.00	7.99	0.00	0.00	0.00	0
					939.80	183.70	28.35	0.00	43.47	36.74	0.00	7.99	0.00	0.00	0.00	0

CARLOS FERNANDEZ CASADO, S.L.
OFICINA DE PROYECTOS

HOJA ____ DE ____

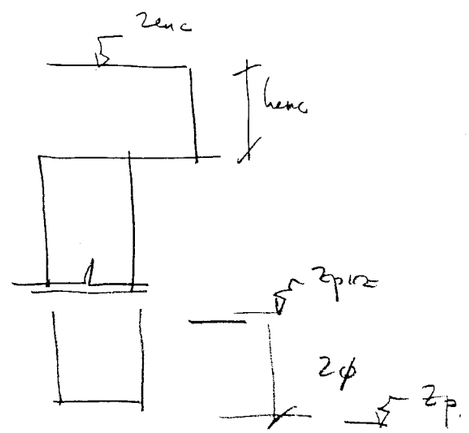
PROYECTO ____

FECHA ____

CTTN P. CONTENCIÓ VIADUCTE DEL PAPIOL

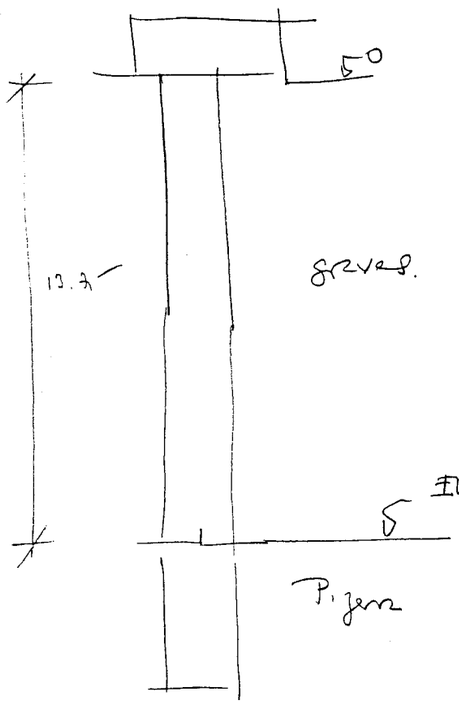
	Zenc	hec	Zpz	Zp	Lp
E.1	27.50	2.50	19.0	15.0	9.0
P.1	26.0	4.0	17.50	13.0	9.0
P.2	22.50	4.0	15.0	11.0	8.0
P.3	19.7	4.0	9.0	5.0	11.0
P.4	"	4.0	3.0	-1.0	17.0
P.5	"	4.0	2.0	-2.0	18.0
P.6	"	4.0	5.0	1.0	15.0
P.7	19.7	4.0	5.0	1.0	15.0
P.8	23.50	4.0	11.0	7.0	13.0
P.9	24.0	4.0	15.0	12.0	9.0
E.2	24.0	2.50	16.0	13.0	9.0

$t_p = Z_{enc} - h - Z_p$



Tramo de empotramiento de los Pilotes

a) Características del terreno



$k_h = 5.0.7 E_0$

$E_0 = 25.10^{-3} 13.7 . 10^4 . 10^{+2} = 34375 T/m^2$

$k_h = 0.7 . 0.60 34375 = 15468 T/m^2$

b) Características de los Pilotes

$\phi = 2.0 m.$ $\quad E_h = 10.(25+R)^{1/3} = 32.07 GPa = 3,2.10^6 T/m^2$

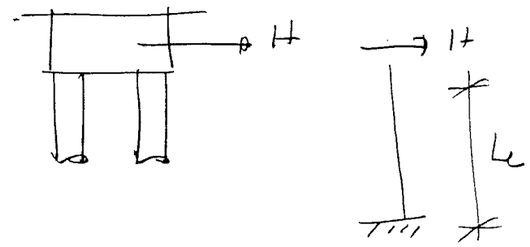
$A = \pi \frac{2^2}{4} = 3.14 m^2$

$I = \pi \frac{2^4}{64} = 0.7854 m^4$

$EA = 10053096 T.$

$EI = 2513274 T.m^2$

c) Tramo equivalente de empotramiento



$H = 1 on T \quad \eta_2 = 418.7 \%$ ⟹ $L_e = 4.18 \eta$

Pilotes Viaductos El Papiol

DATOS DEL TERRENO

Hi	K1	K2
0.000	0.00	0.00
13.750	15468.00	15468.00

Coef.dir. Y= 1.0000

DATOS DE LOS PILOTES

EA = 0.1005E+08
EIz= 0.2513E+07

DATOS DEL ENCEPADO

Canto = 4.0000
Kx = 0.0000
Ky = 0.0000
Peso = 0.0000

Pilotes Viaductos El Papiol

HIPOTESIS 1

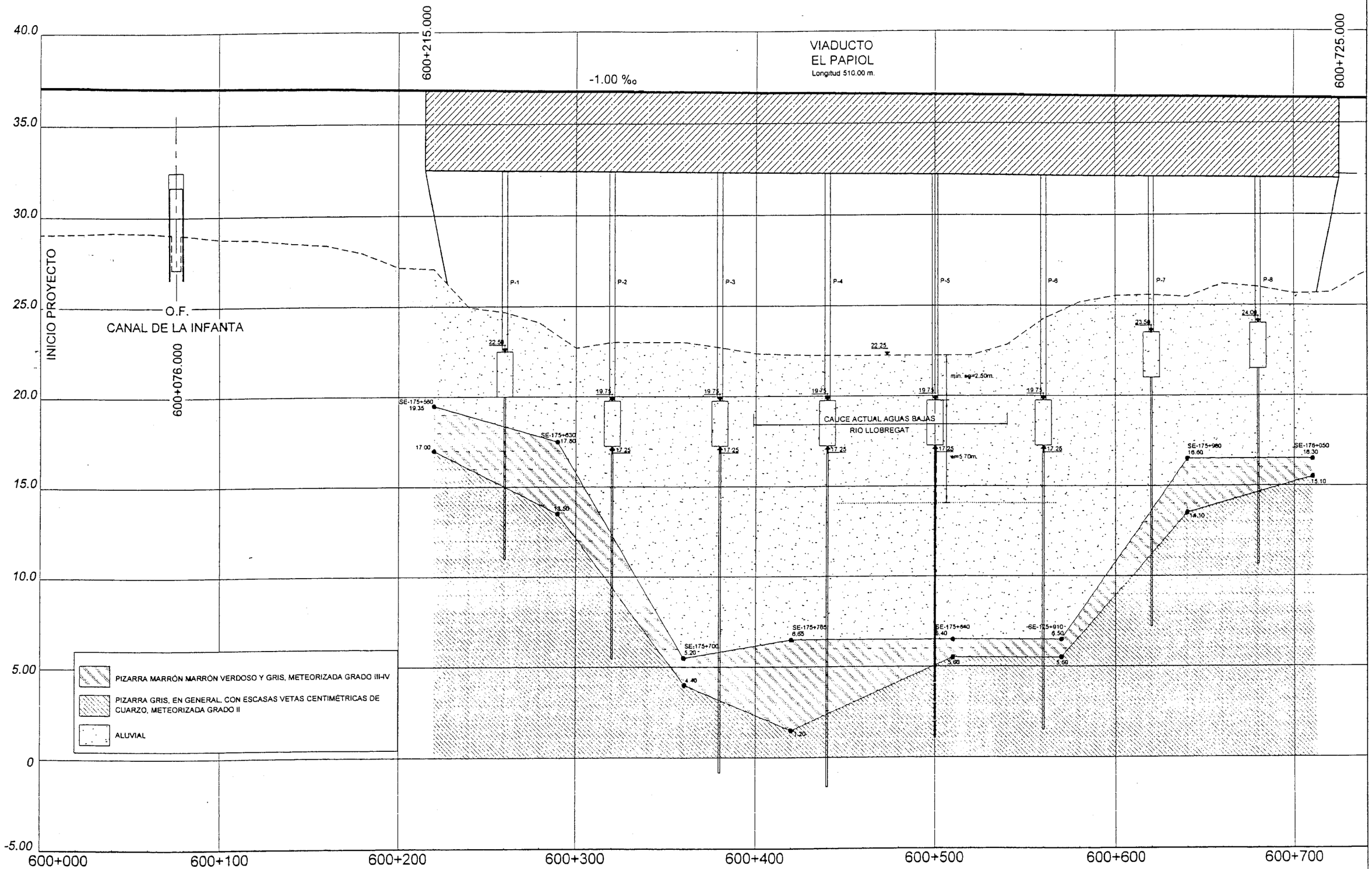
ESFUERZOS EN CABEZA

PIL.	AXIL	CORT.Y	MZ
1	272.797	100.000	-418.390
2	-272.797	100.000	-418.390

DESPLAZAMIENTOS EN CABEZA

DESP.X	DESP.Y	GIRO Z
0.000E+00	0.528E-02	0.124E-03

5. CÁLCULO DE LOS ESTRIBOS Y PARQUE DE FABRICACIÓN DE DOVELAS



GIF Gestor de Infraestructuras Ferroviarias	TITULO PROYECTO BASICO DE PLATAFORMA L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA TRAMO. PAPIOL-SANTA COLOMA DE CERVELLÓ	AUTOR UTE PAPIOL SGS TECNOS - INFRAES - CFC Fdo. J.MARIAS I.C.C.P	ESCALA H. 1:2000 V. 1:200 Numérica Gráfica 0 20 40 60 m 0 2 4 6	FECHA 2001	TITULO DEL PLANO VIADUCTO EL PAPIOL	Nº DE PLANO 1 Hoja 1 de 1

proc Viaducto Papiol

Esfuerzos de la barra 230 extremo frontal E-1

coeficiente del esfuerzo FX : 1.00
coeficiente del esfuerzo FY : 1.00
coeficiente del esfuerzo FZ : 1.00
coeficiente del esfuerzo MX : 1.00
coeficiente del esfuerzo MY : 1.00
coeficiente del esfuerzo MZ : 1.00

HIP.	FX	FY	FZ	MX	MY	MZ
71 carga permanente (t=0)(sup)	-694.93	0.00	3.12	0.00	-65.46	0.02
201 FUER X MAX envolvente (ELS)	-1283.36	34.75	7.16	-3.10	1.71	0.04
202 FUER X MIN envolvente (ELS)	-480.34	-34.75	0.87	3.10	-69.25	0.02
203 FUER Y MAX envolvente (ELS)	-691.60	-34.75	3.12	3.10	-65.14	0.02
204 FUER Y MIN envolvente (ELS)	-698.27	34.75	3.12	-3.10	-65.77	0.02
205 FUER Z MAX envolvente (ELS)	-672.91	0.00	-24.31	0.00	517.57	0.00
206 FUER Z MIN envolvente (ELS)	-750.39	0.00	27.34	0.00	-617.74	0.05
207 MOME X MAX envolvente (ELS)	-741.29	34.75	22.28	-3.11	-572.63	0.05
208 MOME X MIN envolvente (ELS)	-734.69	-34.75	-18.03	3.11	443.98	0.00
209 MOME Y MAX envolvente (ELS)	-983.88	34.75	7.46	-3.11	-1573.69	0.11
210 MOME Y MIN envolvente (ELS)	-868.93	-34.75	1.10	3.10	1574.36	-0.05
211 MOME Z MAX envolvente (ELS)	-878.68	0.00	3.21	0.00	1547.35	-0.05
212 MOME Z MIN envolvente (ELS)	-959.47	0.00	5.49	0.00	-1546.17	0.10
311 FUER X MAX envolvente (ELU)	-1820.30	46.91	10.27	-4.19	12.43	0.05
312 FUER X MIN envolvente (ELU)	-414.78	-46.91	0.21	4.19	-82.47	0.02
313 FUER Y MAX envolvente (ELU)	-690.43	-46.91	3.12	4.19	-65.03	0.02
314 FUER Y MIN envolvente (ELU)	-699.44	46.91	3.12	-4.19	-65.88	0.02
315 FUER Z MAX envolvente (ELU)	-703.13	0.00	-37.49	0.01	797.71	-0.02
316 FUER Z MIN envolvente (ELU)	-1023.04	0.00	40.55	-0.01	-916.81	0.07
317 MOME X MAX envolvente (ELU)	-763.97	46.91	31.86	-4.20	-826.16	0.06
318 MOME X MIN envolvente (ELU)	-755.07	-46.91	-28.60	4.19	698.65	-0.01
319 MOME Y MAX envolvente (ELU)	-1371.19	46.91	10.72	-4.19	-2350.67	0.15
320 MOME Y MIN envolvente (ELU)	-997.66	-46.91	0.62	4.19	2382.85	-0.08
321 MOME Z MAX envolvente (ELU)	-1011.78	0.00	3.78	0.00	2342.38	-0.08
322 MOME Z MIN envolvente (ELU)	-1334.96	0.00	7.77	0.00	-2309.44	0.15

CARLOS FERNANDEZ CASADO, S.L.
OFICINA DE PROYECTOS

HOJA 1 DE ____

PROYECTO ____

FECHA ____

Estribo 1 Viaducto 1

	a	b	c	dist	Peso	Mom
losa sup	14,41	1.0	0,35	2,20	12.61	27,74
peto	14,41	3,99	0,50	2,95	71,87	212,02
barandilla hol. (2)	3,20	3,60	0,50	1,10	28.80	31,68
puerto (2)	1,80	3,60	0,30	−0,35	9,72	−3,40
aleta	5,60	2,37	0,50	5,26	16,59	87,26
viga horizon	14,41	2,40	0,90	1,82	77,81	141,62
muro	14,41	4,88	1,6	0,	281,28	0.
muro lateral (2)	3,98	2,40	1,0	2,06	47,76	97,43
unión muro lateral	8,83	1,30	0,8	−0,10	22,96	−2,30
encepado	15,91	7,5	2,5	0.	745,78	0.
tierras (2.2)	12,41	3,98	2,40	2,06	260.79	532,01
	15,91	8,83	0,55	3,47	169,99	589,86

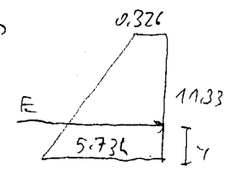
592,

1745,96 T 1713,92 mT

e = 0,9816 m

Empuje de tierras

λ = 0,247



E = 34,33 T/m

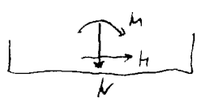
Y = 3,98 m

total E_T = 494,69 T

(61,84 T por pilote)

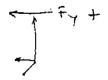
M_V = 3,98 × 494,69 = 1968,87 mT

Carga sobre borde inferior encepado



N = 1745,96 T
H = 494,69 T
M = 254,95 mT

pilotes



	Fx	Fy	My	N	H	M
Sin puente	—	—	—	1745.96	494.69	254.95
C.P.	694.93	—	65.46	2440.89	494.69	254.95
Fx max	1283.36	34.75	1.71	3029.32	459.94	-1.51
Fx min	480.34	-34.75	69.25	2226.30	529.44	511.41
My max	868.93	-34.75	1574.36	2614.89	529.44	511.41

Cargas en pilotes

	N	H	M	My	Pmax	Pmin	FH
	1745.96	494.84	254.95	—	230.99	205.50	61.84
C.P.	2440.89	494.84	254.95	65.46	319.99	290.23	61.84
	3029.32	459.94	-1.51	1.71	378.80	378.53	57.49
	2226.30	529.44	511.41	69.25	306.11	250.46	66.18
	2614.89	529.44	511.41	1574.36	403.71	250.02	66.18

$$P_i = \frac{N}{8} \pm \frac{M}{4 \times 5.0} \pm M_y \frac{d_i}{\Sigma d_i^2}$$

$$\Sigma d_i^2 = \left[2.114^2 + 2.486^2 + 6.905^2 + 6.905^2\right] 2 = 212.0145$$

$$F_H = \frac{H - \frac{0.5}{2.0} N}{8}$$

$$\sigma_{max} = \frac{403.71}{\frac{\pi}{4} 1.5^2} \frac{1}{10} = 22.85 \text{ kg/cm}^2$$

$$\sigma_{min} = \frac{205.50}{\frac{\pi}{4} 1.5^2} \frac{1}{10} = 11.63 \text{ kg/cm}^2$$

Armadura pilotes (emp. 3 ϕ)

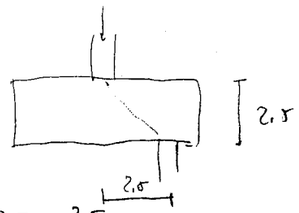
$N = 205.50$ T $M = 61.84 \times 4.50 = 278.28$ mT

$\nu = \frac{0.107}{0.10}$ $\mu = 0.09$

$$\omega = 0.20 \frac{250}{1.5} \frac{\pi}{4} 1.5^2 \frac{1.15}{5.0} = 135.48 \text{ cm}^2 \quad 30.8 \text{ cm}^2/\text{m}$$

ϕ25 a ϕ15 28 ϕ25

Encepado



$$T = 403.71 \cdot \frac{2.5}{0.85 \times 2.5} = 494.74 \text{ T}$$

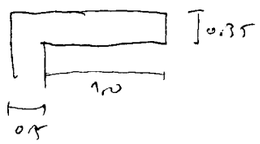
$\omega = 15 \times 494.74 \frac{1}{4.0} = 185.53 \text{ cm}^2$ 38ϕ25 2 capas 19 ϕ25 (1.80 metros)

entre pilotes $\omega = \frac{185.53}{4} = 46.38 \text{ cm}^2$ $\frac{46.38}{2.62} = 17.70 \text{ cm}^2/\text{m}$ ϕ20 c/95

armadura longitudinal

$$\omega = \frac{46.38}{(2.5 + 0.71)} = 14.27 \text{ cm}^2/\text{m}$$ ϕ20 c/20

Losa superior



p.p. $q = 0.35 \times 2.5 = 0.875$ T/m

cm $q = 0.6 \times 1.8 = 1.08$ T/m

S.C. $q = \frac{11.5}{1.2 \times 1.2} = 7.99$ T/m

$Q = 9.94$ T $M = \frac{9.94}{2} = 4.97$ mT

$U_o = 0.85 \frac{250}{1.5} 0.33 = 467.5$ T $U_o = 0.85 \frac{250}{1.5} 0.317 = 449.08$ T

$$\omega = 467.5 \left[1 - \sqrt{1 - \frac{2 \times 4.97 \times 1.5}{467.5 \times 0.33}}\right] \frac{1.15}{5.0} = 5.33 \text{ cm}^2/\text{m}$$ ϕ12 c/20

$\xi = 1 + \sqrt{\frac{200}{330}} = 1.7785$ $\rho = \frac{5.65 \times 10^{-4}}{0.33} = 0.0017$

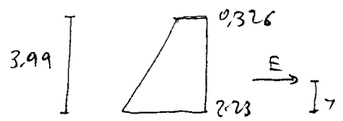
$V_{cu} = 0.12 \times 1.7785 \sqrt[3]{0.17 \times 25} \; 100 \times 0.33 = 11.44 \text{ T} < 2U = 14.91$

con ϕ16 a 0,20 $\rho = 0.003$ $V_{cu} = 13.85$ T no vale

ϕ16 a 0,15

$V_{cu} = 0.12 \times 1.7943 \sqrt[3]{0.42 \times 25} \; 100 \times 0.317 = 14.98 \text{ T} > U$ vale

puntera



$E = 5.10$ T/m
$y = 1.50$ m
$\} M = 7.65$

$Q = 5.10$ T $M = 7.65 + 4.97 = 12.62$ mT

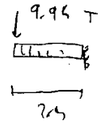
$U_o = 0.85 \frac{2500}{1.5} 0.467 = 661.58$ T

$\omega = 661.58 \left[1 - \sqrt{1 - \frac{2 \times 12.62 \times 1.5}{661.58 \times 0.467}} \right] \frac{1.15}{5.0} = 9.63$ cm²/m φ16 c/20

$\xi = 1 + \sqrt{\frac{200}{467}} = 1.6544$ $\rho = \frac{10.05 \times 10^{-4}}{0.467} = 0.0022$

$V_{cu} = 0.12 \times 1.6544 \sqrt[3]{0.22 \times 25}$ $100 \times 0.467 = 16.25$ T $> Q_d$ vale

Viga



$q = 0.9 \times 2.5 + 0.2 = 2.45$ T/m

$Q = 9.94 + 2.45 \times 2.4 = 15.82$ T $M = 9.94 \times 2.4 + 2.45 \frac{2.4^2}{2} = 30.91$ mT

$U_o = 0.85 \frac{2500}{1.5} 1.265 = 1797.08$ T

$\omega = 1797.08 \left[1 - \sqrt{1 - \frac{2 \times 30.91 \times 1.5}{1797.08 \times 1.265}} \right] \frac{1.15}{5.0} = 8.52$ cm²/m φ16 c/20

$\xi = 1 + \sqrt{\frac{200}{1265}} = 1.3976$ $\rho = \frac{10.05 \times 10^{-4}}{1.265} = 0.0008$

$V_{cu} = 0.12 \times 1.3976 \sqrt[3]{0.08 \times 25}$ $100 \times 1.265 = 26.67$ T $> Q_d = 23.73$ T

Se pone φ20 c/20 por cuantía mínima (1,2‰)

muro frontal

$E = 16.52$ T/m
$y = 2.16$ m
$\} M = 35.72$ mT

$Q = 16.52$ T $M = 4.47 + 35.72 = 40.69$ mT

$U_o = 0.85 \frac{2500}{1.5} 1.565 = 2217.08$ T

$\omega = 9.05$ cm²/m φ16 c/20 por cuantía se pone φ20 c/20

$\xi = 1 + \sqrt{\frac{200}{1565}} = 1.3577$ $\rho = \frac{15.71 \times 10^{-4}}{1.565} = 0.0010$

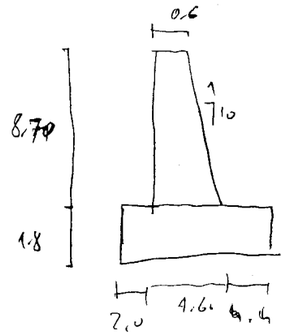
$V_{cu} = 34.64$ T/m $> Q_d = 24.78$ T/m vale

Armadura longitudinal muro

3,2 ‰ $\frac{3.2}{1000} 1.6 = 0.0059$ m²/m $= 51.2$ cm²/m

φ25 c/20 por cara $\omega = 49.10$ cm²/m

muro entre viaductos



E1

LAV Papiol -E2 muro central-

0.6 0. 1.0 2.0 4.4 1.8 0. 8.7

dibu

1.5

2500. 2500. 50000.

terr

2.2 40. 0.

hipo empuje solo

DIMENSIONES DEL MURO
A= 0.60 B= 0.00 C= 1.00 D= 2.00 E= 4.40 F= 1.80 H= 8.70

ESTABILIDAD AL VUELCO
MOM. VOLCADOR=113.94 MOM. ESTABILIZADOR=768.56 COEF. SEGURIDAD=6.75

ESTABILIDAD AL DESLIZAMIENTO
FUERZA HORIZ.=30.49 FUERZA VERTICAL=161.81 COEF. SEGURIDAD=4.45

ESFUERZOS EN BASE DE CIMENTACION
CARGA VERTICAL=161.81 MOMENTO=-7.37

TENSIONES AL TERRENO
ELASTICA MAXI=20.92 ELASTICA MINIMA=19.54 PLASTICA=20.46

CALCULO ARMADURA
fck= 2500.00 (t/m2) fy= 50000.00 (t/m2)

SEC	B	H	R	AXIL	MOME	W EXT	W INT	W MIN	CORT	W
1	1.00	0.60	0.05	0.00	0.00	0.00	0.00	8.43	0.00	0.00
2	1.00	0.70	0.05	1.48	0.19	0.02	-0.08	9.97	0.56	0.00
3	1.00	0.80	0.05	3.22	1.02	0.04	0.08	11.50	1.54	0.00
4	1.00	0.90	0.05	5.23	2.87	0.07	0.54	13.03	2.97	0.00
5	1.00	1.00	0.05	7.51	6.10	0.09	1.32	14.57	4.82	0.00
6	1.00	1.10	0.05	10.06	11.09	0.13	2.46	16.10	7.11	0.00
7	1.00	1.20	0.05	12.88	18.20	0.16	3.97	17.63	9.83	0.00
8	1.00	1.30	0.05	15.96	27.80	0.20	5.86	19.17	12.99	0.00
9	1.00	1.40	0.05	19.30	40.27	0.24	8.14	20.70	16.57	0.00
10	1.00	1.50	0.05	22.92	55.96	0.29	10.82	22.23	20.59	0.00
11	1.00	1.60	0.05	26.80	75.25	0.34	13.91	23.77	25.05	0.00

fck= 2500.00 (t/m2) fy= 50000.00 (t/m2)

PUN	1.00	1.80	0.05	0.00	30.43	0.00	6.03	26.83	30.52	0.00
TAL	1.00	1.80	0.05	0.00	-45.90	9.11	0.00	26.83	31.10	0.00

proc Viaducto Papiol
==========

Esfuerzos de la barra 231 extremo frontal E-2
==========

coeficiente del esfuerzo FX : 1.00
coeficiente del esfuerzo FY : 1.00
coeficiente del esfuerzo FZ : 1.00
coeficiente del esfuerzo MX : 1.00
coeficiente del esfuerzo MY : 1.00
coeficiente del esfuerzo MZ : 1.00

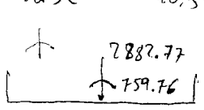
HIP.	FX	FY	FZ	MX	MY	MZ
71 carga permanente (t=0)(sup)	-809.14	0.00	-0.43	0.00	2.66	0.00
201 FUER X MAX envolvente (ELS)	-1456.02	-1443.54	10.63	0.00	-147.45	0.00
202 FUER X MIN envolvente (ELS)	-539.78	1418.08	-3.32	0.00	86.32	0.00
203 FUER Y MAX envolvente (ELS)	-1252.24	-1781.05	1.13	0.00	-8.34	0.00
204 FUER Y MIN envolvente (ELS)	-1092.96	1781.05	1.33	0.00	-35.61	0.00
205 FUER Z MAX envolvente (ELS)	-813.18	1348.16	-28.86	0.00	729.40	0.00
206 FUER Z MIN envolvente (ELS)	-1151.43	-1368.53	29.76	0.00	-454.04	0.00
207 MOME X MAX envolvente (ELS)	-809.14	0.00	-0.43	0.00	2.66	0.00
208 MOME X MIN envolvente (ELS)	-809.14	0.00	-0.43	0.00	2.66	0.00
209 MOME Y MAX envolvente (ELS)	-1160.46	-1443.55	14.96	0.00	-1741.01	-0.01
210 MOME Y MIN envolvente (ELS)	-921.15	1443.55	-5.89	0.00	1532.70	0.01
211 MOME Z MAX envolvente (ELS)	-1064.96	0.00	12.99	0.00	-1628.82	-0.01
212 MOME Z MIN envolvente (ELS)	-1065.07	0.00	-3.76	0.00	1414.64	0.01
311 FUER X MAX envolvente (ELU)	-2055.60	-2005.03	15.87	0.00	-220.79	0.00
312 FUER X MIN envolvente (ELU)	-453.42	1966.83	-4.57	0.00	126.36	0.00
313 FUER Y MAX envolvente (ELU)	-1466.72	-2511.29	1.77	0.00	-13.06	0.00
314 FUER Y MIN envolvente (ELU)	-1241.93	2511.30	2.34	0.00	-55.53	0.00
315 FUER Z MAX envolvente (ELU)	-1105.46	1861.95	-43.06	0.00	1092.91	0.00
316 FUER Z MIN envolvente (ELU)	-1358.47	-1892.51	44.68	0.00	-682.62	0.00
317 MOME X MAX envolvente (ELU)	-809.14	0.00	-0.43	0.00	2.66	0.00
318 MOME X MIN envolvente (ELU)	-809.14	0.00	-0.43	0.00	2.66	0.00
319 MOME Y MAX envolvente (ELU)	-1329.06	-2005.04	22.51	0.00	-2612.07	-0.01
320 MOME Y MIN envolvente (ELU)	-1279.79	2005.04	-8.62	0.00	2297.57	0.01
321 MOME Z MAX envolvente (ELU)	-1192.86	0.00	19.70	0.00	-2444.57	-0.01
322 MOME Z MIN envolvente (ELU)	-1193.03	0.00	-5.43	0.00	2120.62	0.01

Estribo 2 vuelo 1

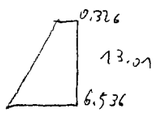
	a	b	c	dist	Peso	Mom
losa sup	14.80	1.0	0.35	4.90	12.95	63.45
peto	14.80	4.0	0.50	5.65	74.0	418.10
tabiques lat (2)	6.15	3.75	0.50	2.32	57.66	133.76
puentes (2)	1.80	3.75	0.30	-0.60	10.12	- 6.07
aleta						
viga horiz	14.80	4.75	0.90	3.17	158.18	501.41
muro	14.80	6.51	2.30	0.	554.0	—
muros laterales (2)	4.75	5.61	1.0	3.58	133.24	476.99
muros cent (2)	4.75	4.66	1.40	3.52	154.95	545.41
viga horiz cent	5.90	4.75	0.95	3.86	66.56	256.92
Unión muro lateral						
encepado	16.32	7.90	2.50	2.30	989.40	2275.62
tierras (7)	3.58	5.61	4.75	3.58	209.88	751.36
	3.05	5.61	4.75	3.58	178.80	640.12
	3.10	4.66	4.75	3.52	150.96	531.38
	16.32	10.51	0.35	6.07	132.07	801.68
					2882.77	7390.13

4665.59

e = 2.563 m



empujes de tierras

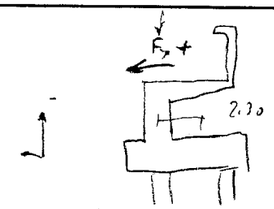


E = 44.64 T/m, y = 4.54 m → M = 202.77 mT/m

TOTAL E = 660.67 T (82.58 T por pilote)

M = 3002.99 mT

pilotes



	Fx	Fy	My	N	H	M
	—	—	—	2882.77	660.67	2261.24 *
C.P.	809.14	—	7.66	3691.91	—	1101.26
N_{max}	1456.02	-1443.55	147.45	4338.79	—	2589.09
N_{min}	539.78	1418.08	86.32	3422.55	—	481.73
$F_{x\,max}$	1092.96	1781.05	35.61	3975.73	—	1754.05
$F_{x\,min}$	1252.24	-1781.05	8.36	4135.01	—	2120.39
M_{max}	1160.46	-1443.55	1741.09	4043.23	—	1909.30
SIN PUENTE				2882.77	—	-759.76

* el empuje de tierras se recoge con el peso y estribo

Cargas en pilotes

	N	M	M_y	Pmax	Pmin
	2882.77	-759.76	—	398.33	322.36
C.P.	3691.91	1101.26	7.66	516.64	406.34
	4338.79	2589.09	147.45	676.76	407.94
	3422.55	481.73	86.32	454.81	400.83
	3975.73	1754.05	35.61	585.87	408.07
	4135.01	2120.39	8.36	623.18	410.58
	4043.23	1909.30	1741.09	659.41	351.40

$P_i = \frac{N}{8} \pm \frac{M}{4 \times 5.0} \pm M_y \frac{d_i}{\Sigma d_i^2}$

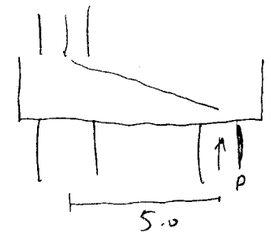
$\Sigma d_i^2 = 2[1.85^2 \times 2.65^2 + 6.65^2 \times 6.65^2] = 197.78$

$\sigma_{max} = \frac{676.76}{\frac{\pi}{4} 1.5^2} \frac{1}{10} = 38.30$ kg/cm²

$\sigma_{min} = 18.24$ kg/cm²

armadura a pilote 27 φ 20

hormigonado



$\phi_{max} = 468.48$ T

$T = 468.48 \frac{5.0}{0.85 \times 2.4} = 1148.24$ T

$\omega = 1.5 \times 1148.24 \frac{1}{4.0} = 430.59$ cm²

54 φ 32

3 Capas φ 32 a 0,10

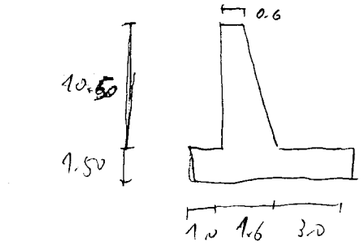
resto armadura $\frac{430.59}{4} = 107.65$ cm² $\quad \frac{107.65}{3} = 35.88$ cm²

φ 25 a 0,125

armadura longitudinal 107,65 cm²

$\frac{107.65}{35} = 30.76$ cm²/m φ 25 a 0,15

muro entre machones



LAV Papiol -E2 muro central-

0.6 0. 1.0 2.0 3.0 1.5 0. 10.5

dibu

1.5

2500. 2500. 50000.

terr

2.2 40. 0.

hipo empuje solo

DIMENSIONES DEL MURO
A= 0.60 B= 0.00 C= 1.00 D= 2.00 E= 3.00 F= 1.50 H= 10.50

ESTABILIDAD AL VUELCO
MOM. VOLCADOR=165.19 MOM. ESTABILIZADOR=575.16 COEF. SEGURIDAD=3.48

ESTABILIDAD AL DESLIZAMIENTO
FUERZA HORIZ.=39.01 FUERZA VERTICAL=140.48 COEF. SEGURIDAD=3.02

ESFUERZOS EN BASE DE CIMENTACION
CARGA VERTICAL=140.48 MOMENTO=53.59

TENSIONES AL TERRENO
ELASTICA MAXI=28.67 ELASTICA MINIMA=13.90 PLASTICA=24.07

CALCULO ARMADURA
fck= 2500.00 (t/m2) fy= 50000.00 (t/m2)

SEC	B	H	R	AXIL	MOME	W EXT	W INT	W MIN	CORT	W
1	1.00	0.60	0.05	0.00	0.00	0.00	0.00	8.43	0.00	0.00
2	1.00	0.70	0.05	1.77	0.29	0.02	-0.06	9.97	0.70	0.00
3	1.00	0.80	0.05	3.87	1.62	0.05	0.27	11.50	2.02	0.00
4	1.00	0.90	0.05	6.28	4.61	0.08	1.12	13.03	3.95	0.00
5	1.00	1.00	0.05	9.02	9.90	0.11	2.54	14.57	6.50	0.00
6	1.00	1.10	0.05	12.08	18.13	0.15	4.57	16.10	9.65	0.00
7	1.00	1.20	0.05	15.45	29.92	0.19	7.26	17.63	13.42	0.00
8	1.00	1.30	0.05	19.15	45.93	0.24	10.62	19.17	17.80	0.00
9	1.00	1.40	0.05	23.17	66.77	0.29	14.69	20.70	22.80	0.00
10	1.00	1.50	0.05	27.51	93.09	0.34	19.47	22.23	28.40	0.00
11	1.00	1.60	0.05	32.17	125.51	0.40	24.99	23.77	34.62	0.00

fck= 2500.00 (t/m2) fy= 50000.00 (t/m2)

PUN	1.00	1.50	0.05	0.00	59.41	0.00	14.32	22.23	46.23	0.00
TAL	1.00	1.50	0.05	0.00	-58.70	14.15	0.00	22.23	45.03	0.00

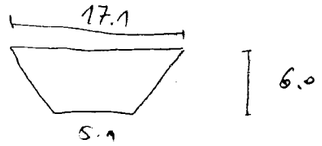
Parque fabricación

Cargo horizontal máximo $H = 1781.05 + 660.67 = 2441.72$ T

pretensado 10 cord 150.6"

$N_0 = 10 \times 284 = 2840$ T $\qquad N_{d} = 0.85 \times 2840 = 2414.0$ T

estabilidad



$$P = 2882.77 + \frac{5.1+17.1}{2} 6.0 \times 1.8 \times 55 = 9476.17 \text{ T}$$

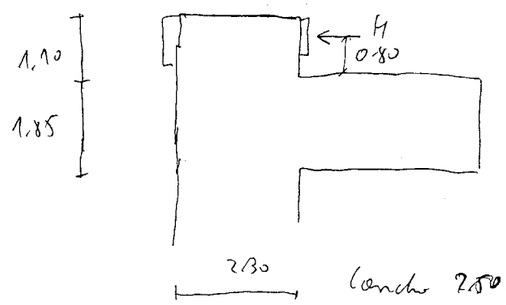
$$c.s.d. = \frac{9476.17 \times 0.55}{2441.72} = 2.13 > 1.5 \quad \text{VALE}$$

$$P = \frac{5.1+17.1}{2} 6.0 \times 1.8 \times 578 = 6929.06 \text{ T}$$

$$c.s.d. = \frac{6929.06 \times 0.55}{2441.72} = 1.56 \quad \text{VALE}$$

Tiro de anclaje

$H_{max} = 1781.05$ T



5 neoprenos 450×600

$N_{max} = 5 \times 405 = 2025$ T

$M = 0.8 \times 1781.05 = 1424.84$ mT

$T = C = \frac{1424.84}{1.70} = 838.14$ T $\qquad \omega = 1.5 \times 838.14 \frac{1.15}{5000} = 289.16 \text{ cm}^2$

59 φ25

se ponen 26 horquillas φ25 + 8 φ32 ($\omega = 319.64 \text{ cm}^2$)

$$\sigma = \frac{838.14}{2.5 \times 0.92} \frac{1}{10} = 36.44 \text{ kg/cm}^2$$

$$\beta = 1 + \sqrt{\frac{200}{\sigma}} = 1.3043 \qquad \rho = \frac{319.64 \times 10^{-4}}{2.5 \times 2.16} = 0.00059$$

$$V_{cu} = 0.10 \times 1.3043 \sqrt[3]{0.59 \times 25} \; 100 \times 2.5 \times 2.16 = 177.92 \text{ T}$$

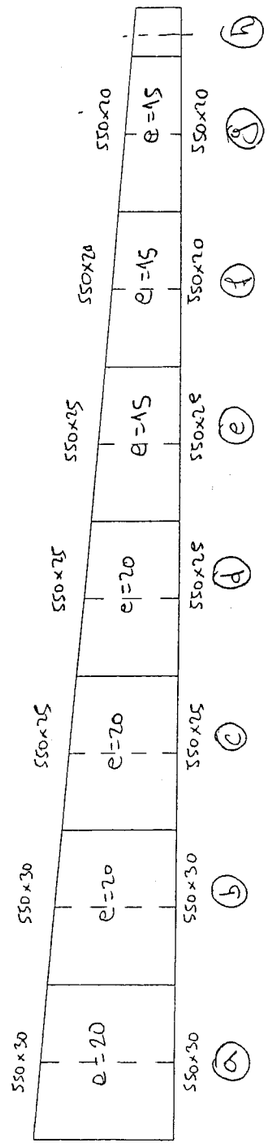
$$\omega_c = \frac{1781.05 \times 1.5 - 177.92}{0.9 \times 2.16} \frac{1}{5.0} = 321.33 \text{ cm}^2/\text{m}$$

6. CÁLCULO DE LOS ELEMENTOS AUXILIARES

NARIZ DE LANZAMIENTO

NARIZ CONSIDERADA EN CÁLCULOS

Características geométricas



CARLOS FERNANDEZ CASADO, S.L.
OFICINA DE PROYECTOS

HOJA ____ DE ____

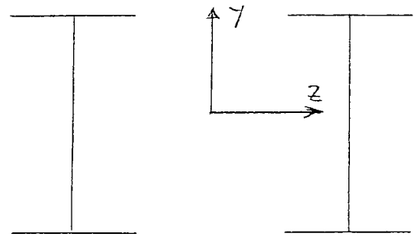
PROYECTO ____ FECHA ____

Características mecánicas de nariz de cálculo.

CARACTERISTICAS DE BARRAS DEL PICO

d(m)	BARRA	CANTO	Ax	Ay	Az	(x) Ix	(**) Iy	Iz
2,50	a	4,388	0,2391	0,1731	0,0660			0,5836
7,50	b	3,964	0,2222	0,1562	0,0660			0,4536
12,50	c	3,540	0,1946	0,1396	0,0550			0,3116
17,50	d	3,116	0,1776	0,1226	0,0550			0,2274
22,50	e	2,692	0,1343	0,0793	0,0550			0,1470
27,50	f	2,268	0,1108	0,0668	0,0440			0,0850
32,50	g	1,844	0,0981	0,0541	0,0440			0,0512
33,275	h	1,566	0,0898	0,0458	0,0440			

(x) y (xx)



PESO DEL PICO

Peso de las almas

$$P_1 = \left[(0,2391 + 0,2222 + 0,1946 + 0,1776 + 0,1343 + 0,1108 + 0,0981) \cdot 5.00 + (0.0898 \times 1,55) \right] \times 7,85 = 47,28 \text{ Tn.}$$

Peso por arriostramientos, rigidizadores, cartelas...

$P_2 = 65\% \, P_1 = 30,73$ Tn.

Peso total del pico.

En los refuerzos de cabeza y en punta consideramos 3,50 Tn y 1,25 Tn.

$P_T = 47,28 + 30,73 + 3,50 + 1,25 = 82,76$ Tn.

CARLOS FERNANDEZ CASADO, S.L.
OFICINA DE PROYECTOS

PROYECTO_____ HOJA____ DE ____
FECHA _____

CARGAS EN BARRAS DEL PICO

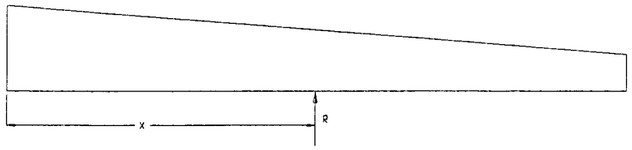
Los 47,28 Tn. los repartimos proporcional y linealmente a los valores 0,2560 y 0,0854.
Los restantes 30,73 los repartimos uniformemente en toda la longitud.
Los 3,50 Tn y 1,25 Tn de refuerzos en extremos serán cargas puntuales.

Valores

Barra	Peso almas	Peso refte	Total
a	2,187	0,878	3,065
b	1,947	"	2,825
c	1,708	"	2,586
d	1,467	"	2,345
e	1,228	"	2,106
f	0,988	"	1,866
g	0,749	"	1,627
	0,509	"	1,387

VIADUCTO DE EL PAPIOL

REACCIONES MÁXIMAS SOBRE LA NARIZ DE EMPUJE



X(m)	R(T)
35	60.23
30	107.48
25	175.48
20	264.53
15	369.85
10	490.04
5	623.87
0	772.69

Las Reacciones indicadas son totales para las dos almas

APOYO PIL- 2
=====

HIPOTESIS	Nizda	Ndcha
28	30.17	30.06
29	53.86	53.62
30	87.83	87.65
31	132.38	132.15
32	184.95	184.90
33	184.95	184.90
34	244.94	245.10
35	311.86	312.01

HIPOTESIS 453

FUER Y MAX (Envolv. de Proces ELS)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
127	9	0.00	82.66	0.00	0.45	0.00	1236.56
127	7	0.00	-64.43	0.00	-0.45	0.00	-877.22
128	7	0.00	64.43	0.00	0.44	0.00	877.22
128	6	0.00	-50.90	0.00	-0.44	0.00	-589.38
129	6	0.00	50.90	0.00	0.20	0.00	589.38
129	5	0.00	-38.58	0.00	-0.20	0.00	-366.19
130	5	0.00	38.58	0.00	0.06	0.00	366.19
130	4	0.00	-27.45	0.00	-0.06	0.00	-201.63
131	4	0.00	27.45	0.00	0.06	0.00	201.63
131	3	0.00	-17.52	0.00	-0.06	0.00	-89.72
132	3	0.00	17.52	0.00	-0.01	0.00	89.72
132	2	0.00	-8.79	0.00	0.01	0.00	-24.46
133	2	0.00	8.79	0.00	0.00	0.00	24.46
133	1	0.00	0.00	0.00	0.00	0.00	0.00

HIPOTESIS 454

FUER Y MIN (Envolv. de Proces ELS)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
127	9	0.00	-541.22	0.00	0.07	0.00	-1882.80
127	7	0.00	559.44	0.00	-0.07	0.00	-877.22
128	7	0.00	-425.62	0.00	0.05	0.00	-1573.02
128	6	0.00	439.14	0.00	-0.05	0.00	-589.38
129	6	0.00	-318.95	0.00	0.33	0.00	-1259.88
129	5	0.00	331.28	0.00	-0.33	0.00	-366.19
130	5	0.00	-225.96	0.00	0.59	0.00	-956.48
130	4	0.00	237.09	0.00	-0.59	0.00	-201.63
131	4	0.00	-148.03	0.00	0.49	0.00	-675.76
131	3	0.00	157.96	0.00	-0.49	0.00	-89.72
132	3	0.00	-89.96	0.00	0.54	0.00	-447.68
132	2	0.00	98.70	0.00	-0.54	0.00	-24.46
133	2	0.00	-51.44	0.00	0.26	0.00	-276.68
133	1	0.00	60.23	0.00	-0.26	0.00	0.00

HIPOTESIS 461

MOME Z MAX (Envolv. de Proces ELS)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
127	9	0.00	82.66	0.00	0.45	0.00	1236.56
127	7	0.00	541.23	0.00	-0.07	0.00	-877.22
128	7	0.00	64.43	0.00	0.44	0.00	877.22
128	6	0.00	429.54	0.00	-0.04	0.00	-589.38
129	6	0.00	50.90	0.00	0.20	0.00	589.38
129	5	0.00	-38.57	0.00	-0.20	0.00	-366.19
130	5	0.00	38.58	0.00	0.06	0.00	366.19
130	4	0.00	-27.45	0.00	-0.06	0.00	-201.63
131	4	0.00	27.45	0.00	0.06	0.00	201.63
131	3	0.00	-17.52	0.00	-0.06	0.00	-89.72
132	3	0.00	17.52	0.00	-0.01	0.00	89.72
132	2	0.00	90.99	0.00	-0.49	0.00	-24.46
133	2	0.00	8.79	0.00	0.00	0.00	24.46
133	1	0.00	0.00	0.00	0.00	0.00	0.00

HIPOTESIS 462

MOME Z MIN (Envolv. de Proces ELS)

E S F U E R Z O S E N B A R R A S

BARRA	NUDO	AXIL	CORT. Y	CORT. Z	TORSOR	FLECTOR Y	FLECTOR Z
127	9	0.00	-287.20	0.00	-0.23	0.00	-4311.23
127	7	0.00	200.10	0.00	0.66	0.00	3090.78
128	7	0.00	-200.10	0.00	-0.59	0.00	-3090.78
128	6	0.00	213.63	0.00	0.59	0.00	2055.95
129	6	0.00	-213.63	0.00	0.23	0.00	-2055.95
129	5	0.00	136.90	0.00	0.04	0.00	1388.60
130	5	0.00	-136.90	0.00	0.49	0.00	-1388.60
130	4	0.00	80.03	0.00	-0.19	0.00	873.17
131	4	0.00	-80.03	0.00	0.19	0.00	-873.17
131	3	0.00	42.71	0.00	0.03	0.00	512.56
132	3	0.00	-42.71	0.00	0.37	0.00	-512.56
132	2	0.00	51.44	0.00	-0.37	0.00	276.68
133	2	0.00	-51.44	0.00	0.26	0.00	-276.68
133	1	0.00	0.00	0.00	0.00	0.00	0.00

GATOS DE EMPUJE

GATOS DE EMPUJE VIADUCTOS DE EL PAPIOL

Datos: Longitud: 570 + 1'60 + 4'30 = 575'90
Pendiente = 0'001
Porque en E-2 E-1 ← E-2 (empuje subiendo)

Cargas para empuje horizontal

Coeficientes de rozamiento
Acero-teflón = 0'035 (a efectos de empuje)
Acero-hormigón = 0'50

Coeficientes corregidos con la pendiente
Acero-teflón = 0'035 + 0'001 = 0'034
Acero-hormigón = 0'500 + 0'001 = 0'501

Empuje de las penúltimas dovelas

$$F_H = 0'501 \times 23'675 \times 1'10 \times 20'00 +$$
$$+ 0'036 \cdot \left[23'675 \times 1'10 \times \left\{ \begin{matrix} 536'6 \\ 516'6 \\ 496'6 \end{matrix} \right\} + 60 \right] =$$
$$= 260'95 + \left\{ \begin{matrix} 505'24 \\ 486'50 \\ 467'17 \end{matrix} \right\} = \left\{ \begin{matrix} 766'18 \\ 747'43. \\ 728'12. \end{matrix} \right.$$

Empuje de la última dovela

$$F_H = 0'501 \times 19'30 \times 23'675 \times 1'10 +$$
$$+ 0'036 \left[556'6 \times 1'1 \times 23'675 + 60 \right] =$$
$$= 251'8 + 523'99 = 775'8.$$

$F_{H\,máx} = 776\ T.$

Se usarán gatos para 912 T

y carga de levantamiento máxima de
$\frac{45+15}{2} \times 25 \times 1'1 = 825\ T$

Gato de empuje tipo AH-317

7. REPLANTEO

DEFINICIÓN DE EJES

L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA
TRAMO: PAPIOL - SANT VICENT DELS HORTS

DEFINICION DE EJES
==========
DEFINICION DEL EJE 1

EJE DE VIAS VIADUCTO 1 EL PAPIOL (INTEREJE UIC)

PLANTA

EST	X	Y	AZI	R	P	XC/XO	YC/YO	AZO
598499.723	416158.756	4588497.464	154.1102	2360.00	0.00	414385.795	4586939.835	0.0000
599786.048	416709.427	4587352.548	188.8093	2360.00	-921.74	416754.275	4586995.446	393.6649
600146.048	416754.275	4586995.446	193.6649	0.00	0.00	0.000	0.000	0.0000
600464.669	416785.929	4586678.401	193.6649	0.00	935.41	416785.929	4586678.401	193.6649
600814.669	416828.807	4586331.114	189.2086	-2500.00	0.00	419292.975	4586752.866	0.0000
601064.735	416883.240	4586087.152	182.8407	-2500.00	-935.41	416992.053	4585754.576	378.3844
601414.735	416992.053	4585754.576	178.3844	0.00	0.00	0.000	0.000	0.0000
601835.405	417132.158	4585357.923	178.3844	0.00	953.94	417132.158	4585357.923	178.3844
601965.405	417175.833	4585235.480	177.7932	-7000.00	0.00	423754.262	4587628.025	0.0000
602202.696	417260.701	4585013.897	175.6352	-7000.00	-953.94	417309.995	4584893.605	375.0440
602332.696	417309.995	4584893.605	175.0440	0.00	0.00	0.000	0.000	0.0000
603109.648	417606.825	4584175.590	175.0440	0.00	953.94	417606.825	4584175.590	175.0440
603239.648	417656.119	4584055.298	175.6352	7000.00	0.00	411162.558	4581441.170	0.0000
603372.399	417704.523	4583931.689	176.8425	7000.00	-953.94	417750.023	4583809.912	377.4336
603502.399	417750.023	4583809.912	177.4336	0.00	0.00	0.000	0.000	0.0000
604469.057	418085.545	4582903.351	177.4336	0.00	871.78	418085.545	4582903.351	177.4336
604669.057	418156.604	4582716.407	175.7583	-3800.00	0.00	421684.419	4584128.684	0.0000
604796.281	418205.856	4582599.109	173.6269	-3800.00	-871.78	418289.556	4582417.473	371.9516
604996.281	418289.556	4582417.473	171.9516	0.00	0.00	0.000	0.000	0.0000
605284.496	418412.471	4582156.782	171.9516	0.00	894.43	418412.471	4582156.782	171.9516
605444.496	418479.932	4582011.701	172.9702	5000.00	0.00	413923.880	4579951.995	0.0000
605585.945	418536.370	4581882.004	174.7712	5000.00	-894.43	418596.551	4581733.756	375.7898
605745.945	418596.551	4581733.756	175.7898	0.00	0.00	0.000	0.000	0.0000
605889.700	418649.912	4581600.271	175.7898	0.00	734.85	418649.912	4581600.271	175.7898
606189.700	418768.927	4581324.990	170.4846	-1800.00	0.00	420378.913	4582129.941	0.0000
607056.624	419324.942	4580670.781	139.8234	-1800.00	-734.85	419577.436	4580508.945	334.5183
607356.624	419577.436	4580508.945	134.5183	0.00	0.00	0.000	0.000	0.0000
607485.019	419687.416	4580442.689	134.5183	0.00	593.30	419687.416	4580442.689	134.5183
607705.019	419873.171	4580324.899	138.8950	1600.00	0.00	418955.323	4579014.344	0.0000
608616.023	420434.899	4579623.322	175.1427	1600.00	-593.30	420509.208	4579416.301	379.5195
608836.023	420509.208	4579416.301	179.5195	0.00	0.00	0.000	0.000	0.0000
609212.475	420628.237	4579059.162	179.5195	0.00	0.00	0.000	0.000	0.0000

ALZADO

EST	COTA	PEND	KV	ES V	CO V
600000.000	37.070	-0.0010	0.00600000.000		37.070
600762.918	36.307	-0.0010	-44999.02	0.000	0.000
601013.551	35.359	-0.0066	0.00600888.234		36.182
601765.865	30.416	-0.0066	-44993.26	0.000	0.000
601970.271	28.609	-0.0111	0.00601868.068		29.745
602316.163	24.766	-0.0111	14999.88	0.000	0.000
602587.843	24.207	0.0070	0.00602452.003		23.256
602783.571	25.577	0.0070	-45001.27	0.000	0.000
603198.209	26.569	-0.0022	0.00602990.890		27.028
603804.149	25.227	-0.0022	-62004.36	0.000	0.000
603932.601	24.810	-0.0043	0.00603868.375		25.085

604578.019	22.044	-0.0043	25001.05	0.000	0.000
604714.981	21.832	0.0012	0.00604646.500		21.750
605012.163	22.186	0.0012	-55028.36	0.000	0.000
605149.713	22.178	-0.0013	0.00605080.938		22.268
605540.512	21.667	-0.0013	-44994.13	0.000	0.000
605813.157	20.485	-0.0074	0.00605676.834		21.489
605998.843	19.117	-0.0074	15001.78	0.000	0.000
606334.350	20.397	0.0150	0.00606166.596		17.881
606468.460	22.408	0.0150	-15003.12	0.000	0.000
606678.460	24.088	0.0010	0.00606573.460		23.983
607400.000	24.810	0.0010	0.00	0.000	0.000

PERALTES

EST	P IZD	P DCH	DIS	DIS
600000.000	0.0000	0.0000	0.00	0.00
607400.000	0.0000	0.0000	0.00	0.00

DEFINICION DEL EJE 2

EJE DE VIAS VIADUCTO 2 PAPIOL (INTEREJE VIA MIXTA)

PLANTA

EST	X	Y	AZI	R	P	XC/XO	YC/YO	AZO
599757.552	416718.324	4587383.244	188.0407	2374.30	-998.03	416772.255	4586967.356	393.6649
600177.068	416772.255	4586967.356	193.6649	0.00	0.00	0.000	0.000	0.0000
600466.480	416801.007	4586679.376	193.6649	0.00	931.17	416801.007	4586679.376	193.6649
600815.422	416843.780	4586333.142	189.1951	-2484.90	0.00	419292.976	4586752.866	0.0000
601031.547	416889.498	4586121.977	183.6580	-2484.90	-1011.44	417015.804	4585730.271	378.3844
601443.239	417015.804	4585730.271	178.3844	0.00	0.00	0.000	0.000	0.0000

ALZADO

EST	COTA	PEND	KV	ES V	CO V
600000.000	37.070	-0.0010	0.00600000.000		37.070
600762.918	36.307	-0.0010	-44999.02	0.000	0.000
601013.551	35.359	-0.0066	0.00600888.234		36.182
601765.865	30.416	-0.0066	-44993.26	0.000	0.000
601970.271	28.609	-0.0111	0.00601868.068		29.745
602316.163	24.766	-0.0111	14999.88	0.000	0.000
602587.843	24.207	0.0070	0.00602452.003		23.256
602783.571	25.577	0.0070	-45001.27	0.000	0.000
603198.209	26.569	-0.0022	0.00602990.890		27.028
603868.375	25.085	-0.0022	0.00	0.000	0.000

PERALTES

EST	P IZD	P DCH	DIS	DIS
600000.000	0.0000	0.0000	0.00	0.00
601440.000	0.0000	0.0000	0.00	0.00

DEFINICION DEL EJE 11

EJE DE PILAS Y CAJON VIADUCTO 1 PAPIOL

PLANTA

EST	X	Y	AZI	R	P	XC/XO	YC/YO	AZO
10100.000	416750.699	4587041.368	194.4630	-20000.00	0.00	436675.100	4588778.675	0.0000
10850.000	416829.840	4586295.599	192.0757	0.00	0.00	0.000	0.000	0.0000

ALZADO

EST	COTA	PEND	KV	ES V	CO V
10000.000	37.070	-0.0010	0.00	10000.000	37.070
10850.000	36.220	-0.0010	0.00	0.000	0.000

PERALTES

EST	P IZD	P DCH	DIS	DIS
10100.000	0.0000	0.0000	0.00	0.00
10850.000	0.0000	0.0000	0.00	0.00

DEFINICION DEL EJE 21

EJE DE PILAS Y CAJON VIADUCTO 2 PAPIOL

PLANTA

EST	X	Y	AZI	R	P	XC/XO	YC/YO	AZO
20100.000	416765.791	4587044.165	194.4668	-20000.00	0.00	436690.295	4588780.283	0.0000
20850.000	416844.888	4586298.392	192.0795	0.00	0.00	0.000	0.000	0.0000

ALZADO

EST	COTA	PEND	KV	ES V	CO V
20000.000	37.070	-0.0010	0.00	20000.000	37.070
20850.000	36.220	-0.0010	0.00	0.000	0.000

PERALTES

EST	P IZD	P DCH	DIS	DIS
20100.000	0.0000	0.0000	0.00	0.00
20850.000	0.0000	0.0000	0.00	0.00

REPLANTEO DE PILAS Y ESTRIBOS

L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA

resu 11 VIADUCTO 1 -PAPIOL- PILAS Y ESTRIBOS (COTA SOBRE CARRIL)

EJE DE PILAS Y CAJON VIADUCTO 1 PAPIOL

PUNTO	ESTAC	DIST	COOR X	COOR Y	AZIMUT	RADIO	PARAM	COTA	PERAL	PEND
E-1	10155.000	0.000	416755.552	4586986.582	194.288	-20000.00	0.00	36.915	0.0000	-0.0010
P-1	10200.000	0.000	416759.634	4586941.768	194.145	-20000.00	0.00	36.870	0.0000	-0.0010
P-2	10260.000	0.000	416765.234	4586882.030	193.954	-20000.00	0.00	36.810	0.0000	-0.0010
P-3	10320.000	0.000	416771.014	4586822.309	193.763	-20000.00	0.00	36.750	0.0000	-0.0010
P-4	10380.000	0.000	416776.973	4586762.605	193.572	-20000.00	0.00	36.690	0.0000	-0.0010
P-5	10440.000	0.000	416783.110	4586702.920	193.381	-20000.00	0.00	36.630	0.0000	-0.0010
P-6	10500.000	0.000	416789.427	4586643.254	193.190	-20000.00	0.00	36.570	0.0000	-0.0010
P-7	10560.000	0.000	416795.923	4586583.606	192.999	-20000.00	0.00	36.510	0.0000	-0.0010
P-8	10620.000	0.000	416802.598	4586523.979	192.808	-20000.00	0.00	36.450	0.0000	-0.0010
P-9	10680.000	0.000	416809.451	4586464.372	192.617	-20000.00	0.00	36.390	0.0000	-0.0010
E-2	10725.000	0.000	416814.709	4586419.680	192.474	-20000.00	0.00	36.345	0.0000	-0.0010

L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA

resu 11 VIADUCTO 1 -PAPIOL- PILAS Y ESTRIBOS (COTA SOBRE HORMIGON DINTEL) Z1

EJE DE PILAS Y CAJON VIADUCTO 1 PAPIOL

PUNTO	ESTAC	DIST	COOR X	COOR Y	AZIMUT	RADIO	PARAM	COTA	PERAL	PEND
E-1	10155.000	0.000	416755.552	4586986.582	194.288	-20000.00	0.00	36.127	0.0000	-0.0010
P-1	10200.000	0.000	416759.634	4586941.768	194.145	-20000.00	0.00	36.082	0.0000	-0.0010
P-2	10260.000	0.000	416765.234	4586882.030	193.954	-20000.00	0.00	36.022	0.0000	-0.0010
P-3	10320.000	0.000	416771.014	4586822.309	193.763	-20000.00	0.00	35.962	0.0000	-0.0010
P-4	10380.000	0.000	416776.973	4586762.605	193.572	-20000.00	0.00	35.902	0.0000	-0.0010
P-5	10440.000	0.000	416783.110	4586702.920	193.381	-20000.00	0.00	35.842	0.0000	-0.0010
P-6	10500.000	0.000	416789.427	4586643.254	193.190	-20000.00	0.00	35.782	0.0000	-0.0010
P-7	10560.000	0.000	416795.923	4586583.606	192.999	-20000.00	0.00	35.722	0.0000	-0.0010
P-8	10620.000	0.000	416802.598	4586523.979	192.808	-20000.00	0.00	35.662	0.0000	-0.0010
P-9	10680.000	0.000	416809.451	4586464.372	192.617	-20000.00	0.00	35.602	0.0000	-0.0010
E-2	10725.000	0.000	416814.709	4586419.680	192.474	-20000.00	0.00	35.557	0.0000	-0.0010

L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA

resu 11 VIADUCTO 1 -PAPIOL- PILAS Y ESTRIBOS (COTA DE CORONACION DE PILA) Z2

EJE DE PILAS Y CAJON VIADUCTO 1 PAPIOL

PUNTO	ESTAC	DIST	COOR X	COOR Y	AZIMUT	RADIO	PARAM	COTA	PERAL	PEND
E-1	10155.000	0.000	416755.552	4586986.582	194.288	-20000.00	0.00	32.178	0.0000	-0.0010
P-1	10200.000	0.000	416759.634	4586941.768	194.145	-20000.00	0.00	32.083	0.0000	-0.0010
P-2	10260.000	0.000	416765.234	4586882.030	193.954	-20000.00	0.00	32.023	0.0000	-0.0010
P-3	10320.000	0.000	416771.014	4586822.309	193.763	-20000.00	0.00	31.963	0.0000	-0.0010
P-4	10380.000	0.000	416776.973	4586762.605	193.572	-20000.00	0.00	31.903	0.0000	-0.0010
P-5	10440.000	0.000	416783.110	4586702.920	193.381	-20000.00	0.00	31.843	0.0000	-0.0010
P-6	10500.000	0.000	416789.427	4586643.254	193.190	-20000.00	0.00	31.783	0.0000	-0.0010
P-7	10560.000	0.000	416795.923	4586583.606	192.999	-20000.00	0.00	31.723	0.0000	-0.0010
P-8	10620.000	0.000	416802.598	4586523.979	192.808	-20000.00	0.00	31.663	0.0000	-0.0010
P-9	10680.000	0.000	416809.451	4586464.372	192.617	-20000.00	0.00	31.603	0.0000	-0.0010
E-2	10725.000	0.000	416814.709	4586419.680	192.474	-20000.00	0.00	31.458	0.0000	-0.0010

L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA

resu 21 VIADUCTO 2 - PAPIOL- PILAS Y ESTRIBOS (COTA SOBRE CARRIL)

EJE DE PILAS Y CAJON VIADUCTO 2 PAPIOL

PUNTO	ESTAC	DIST	COOR X	COOR Y	AZIMUT	RADIO	PARAM	COTA	PERAL	PEND
E-1	20175.000	0.000	416772.441	4586969.460	194.228	-20000.00	0.00	36.895	0.0000	-0.0010
P-1	20220.000	0.000	416776.566	4586924.650	194.085	-20000.00	0.00	36.850	0.0000	-0.0010
P-2	20280.000	0.000	416782.222	4586864.917	193.894	-20000.00	0.00	36.790	0.0000	-0.0010
P-3	20340.000	0.000	416788.058	4586805.202	193.703	-20000.00	0.00	36.730	0.0000	-0.0010
P-4	20400.000	0.000	416794.073	4586745.504	193.512	-20000.00	0.00	36.670	0.0000	-0.0010
P-5	20460.000	0.000	416800.267	4586685.825	193.321	-20000.00	0.00	36.610	0.0000	-0.0010
P-6	20520.000	0.000	416806.640	4586626.164	193.130	-20000.00	0.00	36.550	0.0000	-0.0010
P-7	20580.000	0.000	416813.191	4586566.523	192.939	-20000.00	0.00	36.490	0.0000	-0.0010
P-8	20640.000	0.000	416819.922	4586506.902	192.748	-20000.00	0.00	36.430	0.0000	-0.0010
P-9	20700.000	0.000	416826.832	4586447.301	192.557	-20000.00	0.00	36.370	0.0000	-0.0010
E-2	20745.000	0.000	416832.131	4586402.614	192.414	-20000.00	0.00	36.325	0.0000	-0.0010

L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA

resu 21 VIADUCTO 2 - PAPIOL- PILAS Y ESTRIBOS (COTA SOBRE HORMIGON DINTEL) Z1

EJE DE PILAS Y CAJON VIADUCTO 2 PAPIOL

PUNTO	ESTAC	DIST	COOR X	COOR Y	AZIMUT	RADIO	PARAM	COTA	PERAL	PEND
E-1	20175.000	0.000	416772.441	4586969.460	194.228	-20000.00	0.00	36.107	0.0000	-0.0010
P-1	20220.000	0.000	416776.566	4586924.650	194.085	-20000.00	0.00	36.062	0.0000	-0.0010
P-2	20280.000	0.000	416782.222	4586864.917	193.894	-20000.00	0.00	36.002	0.0000	-0.0010
P-3	20340.000	0.000	416788.058	4586805.202	193.703	-20000.00	0.00	35.942	0.0000	-0.0010
P-4	20400.000	0.000	416794.073	4586745.504	193.512	-20000.00	0.00	35.882	0.0000	-0.0010
P-5	20460.000	0.000	416800.267	4586685.825	193.321	-20000.00	0.00	35.822	0.0000	-0.0010
P-6	20520.000	0.000	416806.640	4586626.164	193.130	-20000.00	0.00	35.762	0.0000	-0.0010
P-7	20580.000	0.000	416813.191	4586566.523	192.939	-20000.00	0.00	35.702	0.0000	-0.0010
P-8	20640.000	0.000	416819.922	4586506.902	192.748	-20000.00	0.00	35.642	0.0000	-0.0010
P-9	20700.000	0.000	416826.832	4586447.301	192.557	-20000.00	0.00	35.582	0.0000	-0.0010
E-2	20745.000	0.000	416832.131	4586402.614	192.414	-20000.00	0.00	35.537	0.0000	-0.0010

L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA

resu 21 VIADUCTO 2 - PAPIOL- PILAS Y ESTRIBOS (COTA DE CORONACION DE PILA) Z2

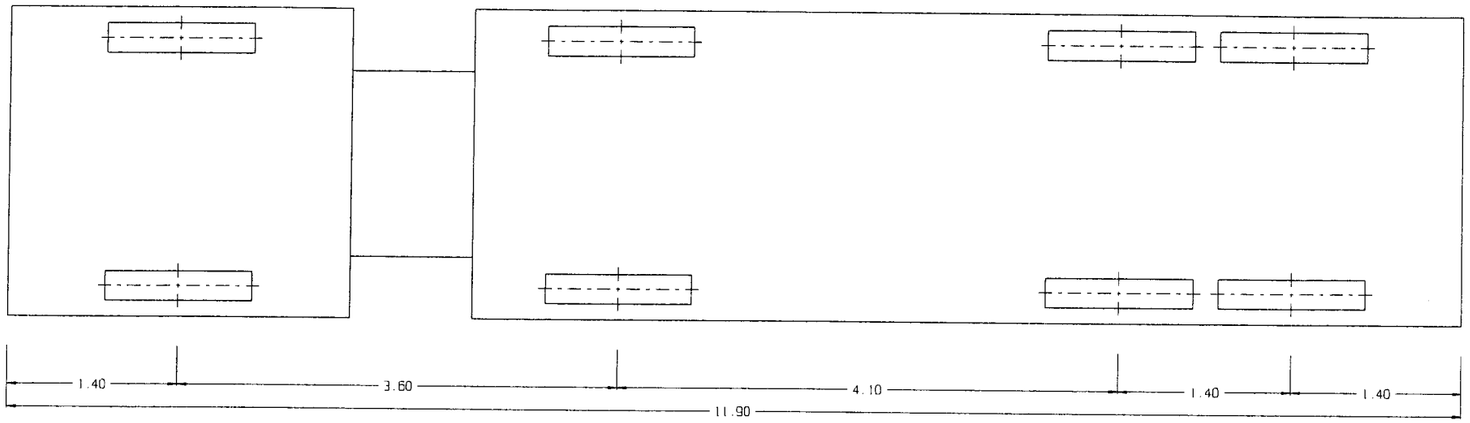
EJE DE PILAS Y CAJON VIADUCTO 2 PAPIOL

PUNTO	ESTAC	DIST	COOR X	COOR Y	AZIMUT	RADIO	PARAM	COTA	PERAL	PEND
E-1	20175.000	0.000	416772.441	4586969.460	194.228	-20000.00	0.00	32.158	0.0000	-0.0010
P-1	20220.000	0.000	416776.566	4586924.650	194.085	-20000.00	0.00	32.063	0.0000	-0.0010
P-2	20280.000	0.000	416782.222	4586864.917	193.894	-20000.00	0.00	32.003	0.0000	-0.0010
P-3	20340.000	0.000	416788.058	4586805.202	193.703	-20000.00	0.00	31.943	0.0000	-0.0010
P-4	20400.000	0.000	416794.073	4586745.504	193.512	-20000.00	0.00	31.883	0.0000	-0.0010
P-5	20460.000	0.000	416800.267	4586685.825	193.321	-20000.00	0.00	31.823	0.0000	-0.0010
P-6	20520.000	0.000	416806.640	4586626.164	193.130	-20000.00	0.00	31.763	0.0000	-0.0010
P-7	20580.000	0.000	416813.191	4586566.523	192.939	-20000.00	0.00	31.703	0.0000	-0.0010
P-8	20640.000	0.000	416819.922	4586506.902	192.748	-20000.00	0.00	31.643	0.0000	-0.0010
P-9	20700.000	0.000	416826.832	4586447.301	192.557	-20000.00	0.00	31.583	0.0000	-0.0010
E-2	20745.000	0.000	416832.131	4586402.614	192.414	-20000.00	0.00	31.438	0.0000	-0.0010

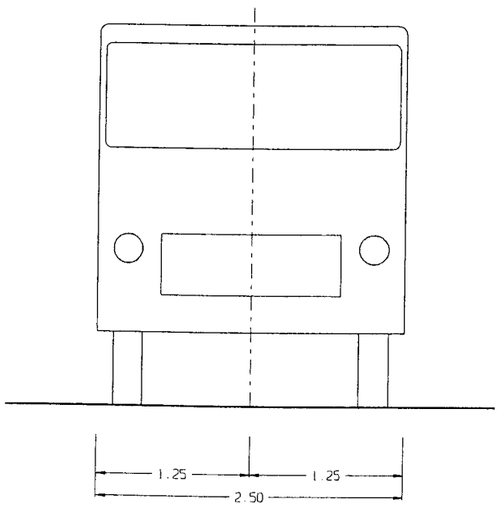
8. PRUEBA DE CARGA

CAMIÓN UTILIZADO

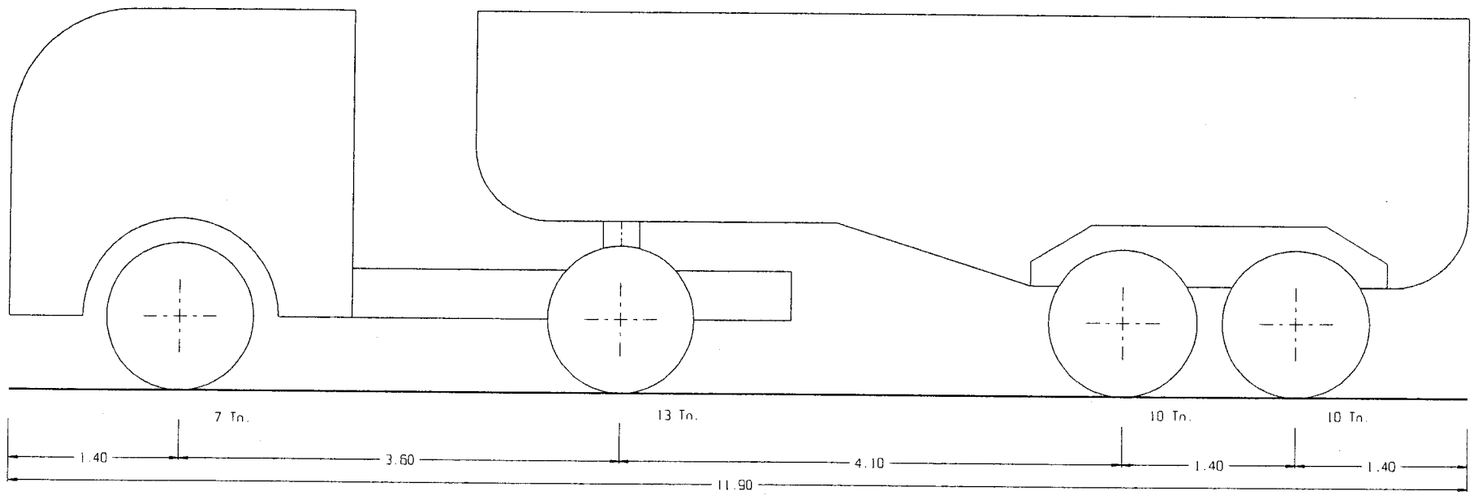
TRANSPORTE TIPO BAÑERA 40 Tn



PLANTA
ESCALA 1:50



ALZADO FRONTAL
ESCALA 1:50



ALZADO LATERAL
ESCALA 1:50

VIADUCTOS DE EL PAPIOL

GIF Gestor de Infraestructuras Ferroviarias

TITULO
PROYECTO DE CONSTRUCCION DE PLATAFORMA
L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA
TRAMO: PAPIOL - SANT VICENT DELS HORTS

UTE PAPIOL
SGS TECNOS
INFRAES
CFC

AUTORES
J.HANTEROLA I.C.C.P.
L. ALBERTO DOU I.C.C.P.
A.MARTINEZ CUTILLAS S.FUENTE GARCIA

ESCALA NORMAL
1:50
0 0.5 1m
Numérica | Gráfica

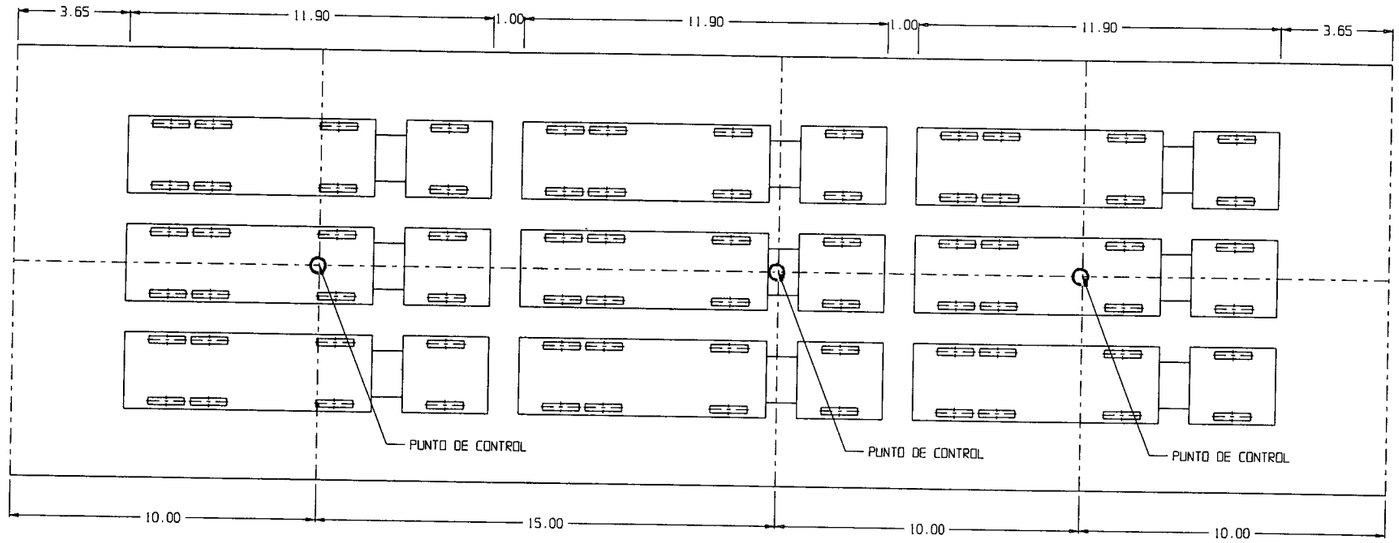
FECHA
MAYO 2002

TITULO DEL PLANO
PRUEBAS DE CARGA (I)

Nº DE PLANO
2.10.1.9
Hoja 1 de 15

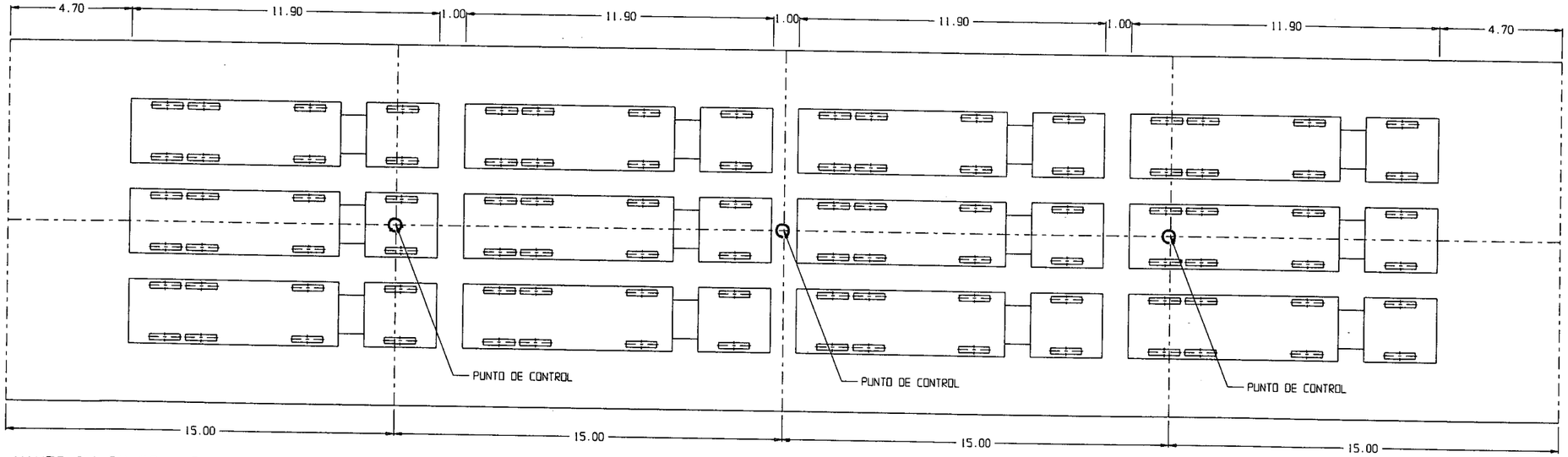
carga-01

POSICIÓN DE LOS CAMIONES



VANOS DE 45.00m. PLANTA

ESCALA 1:200



VANOS DE 60.00m. PLANTA

ESCALA 1:200

VIADUCTOS DE EL PAPIOL

carga-02

GIF Gestor de Infraestructuras Ferroviarias

TÍTULO
PROYECTO DE CONSTRUCCION DE PLATAFORMA
L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA
TRAMO: PAPIOL - SANT VICENT DELS HORTS

UTE PAPIOL
SGS TECNOS
INFRAES
CFC

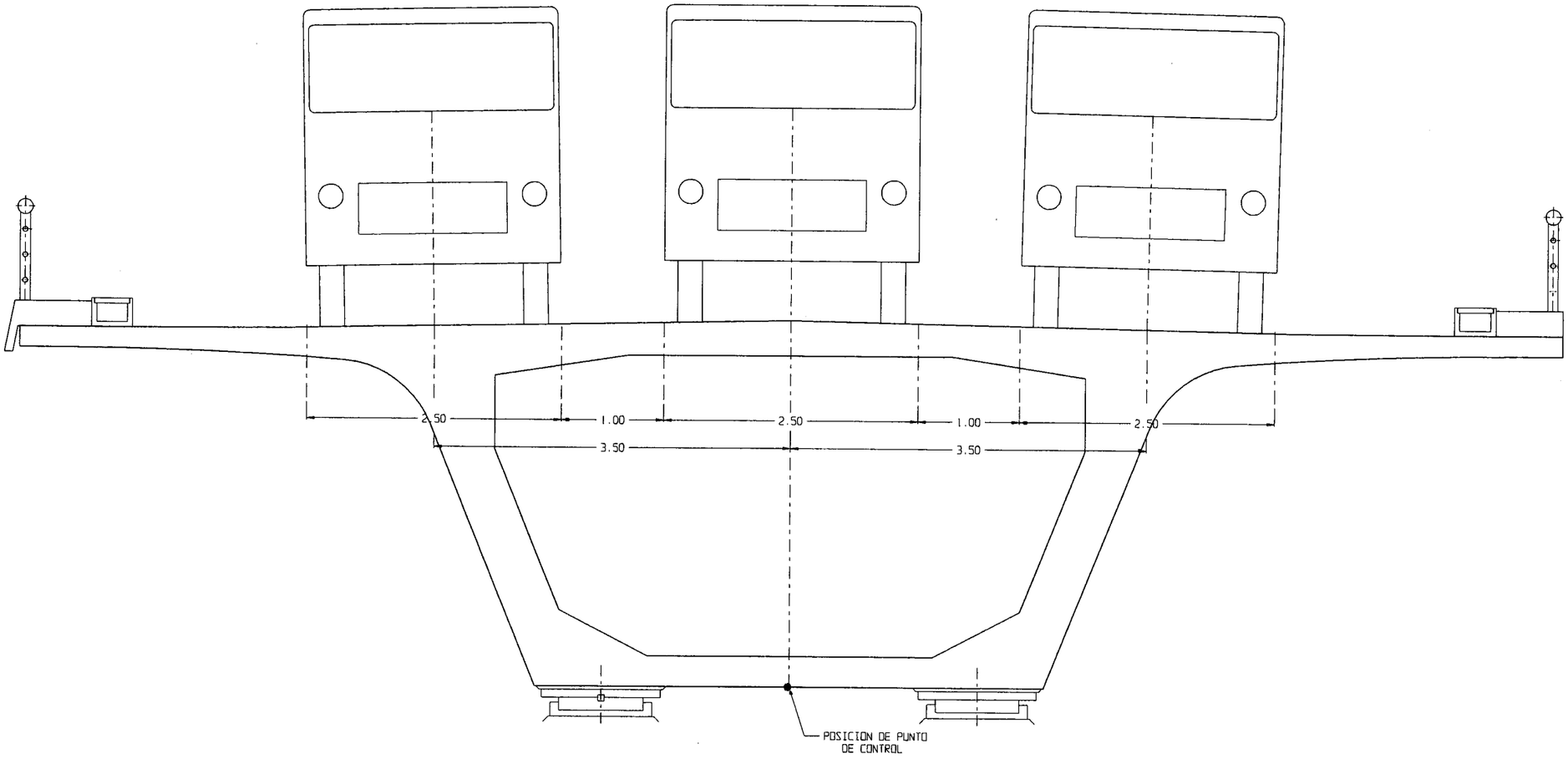
AUTORES
J.MANTEROLA I.C.C.P.
L. ALBERTO ODU I.C.C.P.
A.MARTINEZ CUTILLAS S.FUENTE GARCIA

ESCALA NORMAL
1:200
0 2 4m.
Numérica Gráfica

FECHA
MAYO 2002

TÍTULO DEL PLANO
PRUEBAS DE CARGA (2)

Nº DE PLANO
2.10.1.9
Hoja 2 de 15



POSICION DE PUNTOS PARA MEDICION DE FLECHAS EN SECCION TRANSVERSAL

ESCALA 1:50

VIADUCTOS DE EL PAPIOL

carga-03

GIF Gestor de Infraestructuras Ferroviarias

TÍTULO
PROYECTO DE CONSTRUCCION DE PLATAFORMA
L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA
TRAMO: PAPIOL - SANT VICENT DELS HORTS

UTE PAPIOL
SGS TECNOS
INFRAES
CFC

AUTORES
J.MANTEROLA I.C.C.P.
L. ALBERTO ODLI I.C.C.P.
A.MARTINEZ CUTILLAS S.FUENTE GARCIA

ESCALA NORMAL
1:50
0 0.5 1m.
Numérica | Gráfica

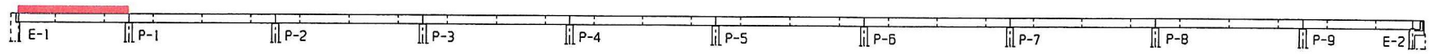
FECHA
MAYO 2002

TÍTULO DEL PLANO
PRUEBAS DE CARGA (3)

Nº DE PLANO
2.10.1.9
Hoja 3 de 15

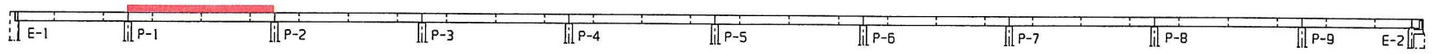
DEFINICIÓN DE LA SOBRECARGA

HIPÓTESIS DE CARGA



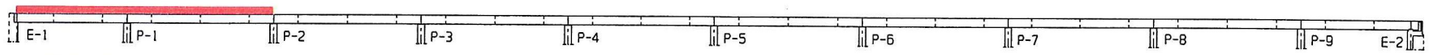
HIPOTESIS - 1

VANO 1



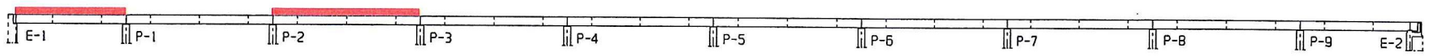
HIPOTESIS - 2

VANO 2



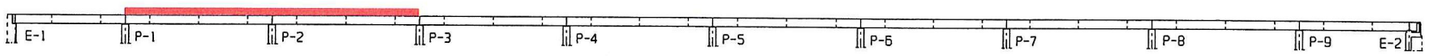
HIPOTESIS - 3

VANOS 1 Y 2



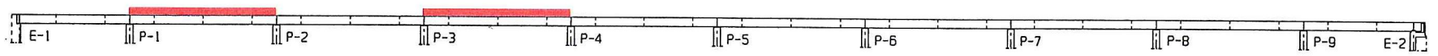
HIPOTESIS - 4

VANOS 1 Y 3



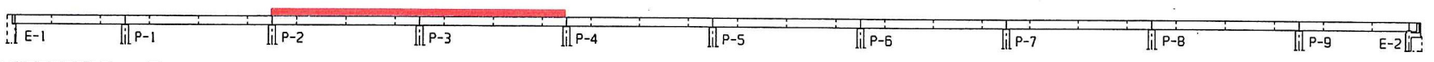
HIPOTESIS - 5

VANOS 2 Y 3



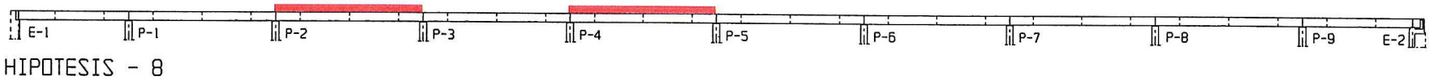
HIPOTESIS - 6

VANOS 2 Y 4



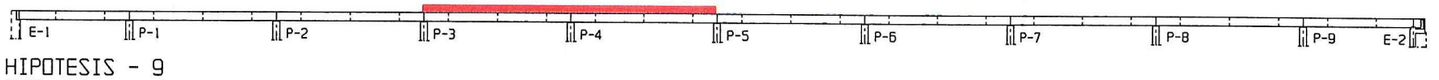
HIPOTESIS - 7

VANOS 3 Y 4



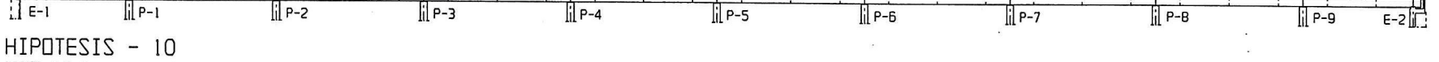
HIPOTESIS - 8

VANOS 3 Y 5



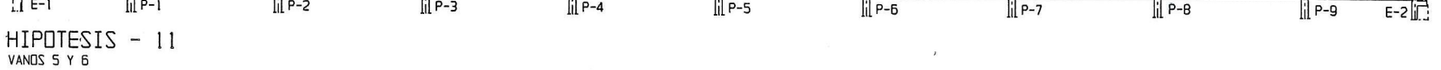
HIPOTESIS - 9

VANOS 4 Y 5



HIPOTESIS - 10

VANOS 4 Y 6



HIPOTESIS - 11

VANOS 5 Y 6

HIPOTESIS - 12

VANOS 5 Y 7

VIADUCTOS DE EL PAPIOL

carga-04

GIF Gestor de Infraestructuras Ferroviarias

TÍTULO
PROYECTO DE CONSTRUCCION DE PLATAFORMA
L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA
TRAMO: PAPIOL - SANT VICENT DELS HORTS

UTE PAPIOL
SGS TECNOS
INFRAES
CFC

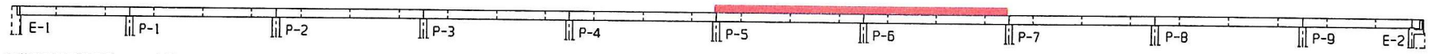
AUTORES
J.MANTEROLA I.C.C.P.
L. ALBERTO DOU I.C.C.P.
A.MARTINEZ CUTILLAS S.FUENTE GARCIA

ESCALA NORMAL
1:2500
0 25 50m.
Numérica | Gráfica

FECHA
MAYO 2002

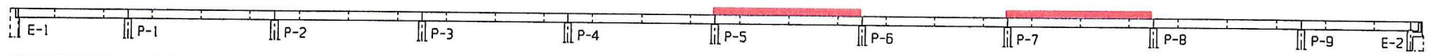
TÍTULO DEL PLANO
PRUEBAS DE CARGA (4)

Nº DE PLANO
2.10.1.9
Hoja 4 de 15



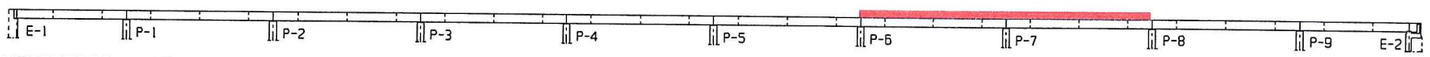
HIPOTESIS - 13

VANOS 6 Y 7



HIPOTESIS - 14

VANOS 6 Y 8



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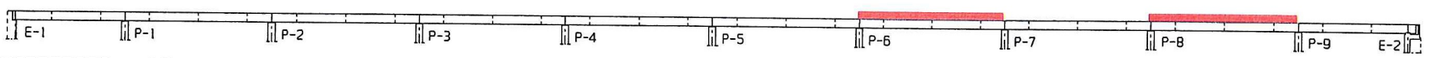
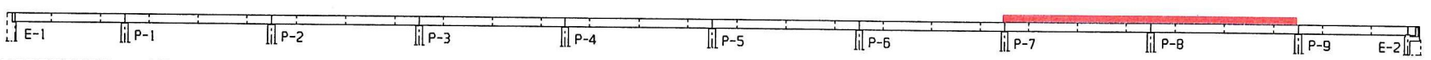
VANOS 7 Y 8



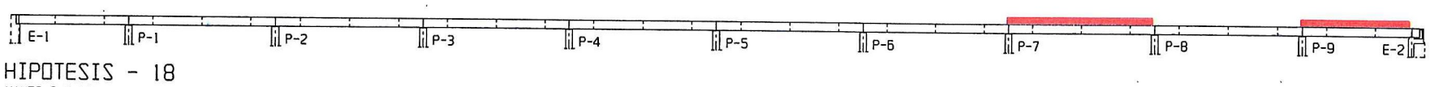
HIPOTESIS - 16

VANOS 7 Y 9



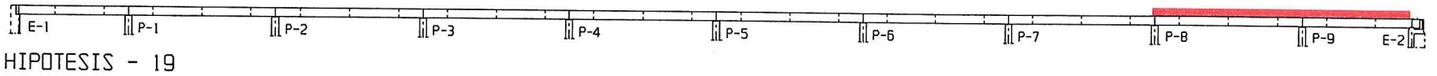
HIPOTESIS - 17

VANOS 8 Y 9



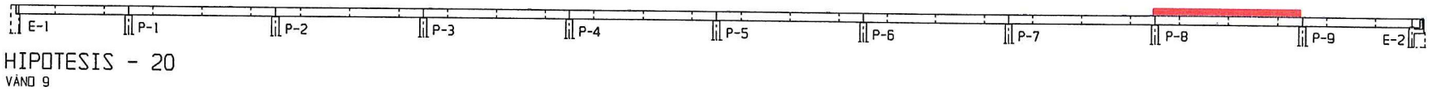
HIPOTESIS - 18

VANOS 8 Y 10



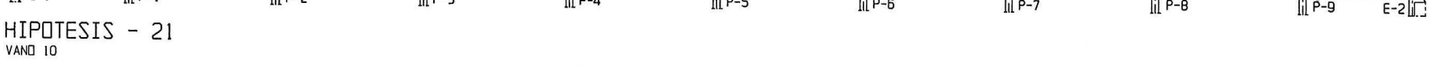
HIPOTESIS - 19

VANOS 9 Y 10



HIPOTESIS - 20

VANO 9



HIPOTESIS - 21

VANO 10

VIADUCTOS DE EL PAPIOL

carga-05

GIF Gestor de Infraestructuras Ferroviarias

TÍTULO
PROYECTO DE CONSTRUCCION DE PLATAFORMA
L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA
TRAMO: PAPIOL - SANT VICENT DELS HORTS

UTE PAPIOL
SGS TECNOS
INFRAES
CFC

AUTORES
J.MANTEROLA I.C.C.P.
L. ALBERTO DOU I.C.C.P.
A.MARTINEZ CUTILLAS S.FUENTE GARCIA

ESCALA NORMAL
1:2500
0 25 50m.
Numérica | Gráfica

FECHA
MAYO 2002

TÍTULO DEL PLANO
PRUEBAS DE CARGA (5)

Nº DE PLANO
2.10.1.9
Hoja 5 de 15

LISTADO DE DATOS

Fichero de datos para "SICAL"

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estr Viaducto Papiol -   Prueba de carga
nume de nudo  196
nume de barr  206
nume de hipo 21
nume de apoy   11
tipo port espa
list todo
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    2   -605.0366     -1.6860     -4.9023
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inci de barr

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57	94	97
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61	106	107
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63	108	109
64	109	110
65	110	111
66	111	112
67	112	113
68	113	114
69	114	117
70	117	124
71	124	125
72	125	126
73	126	127
74	127	128
75	128	129
76	129	130
77	130	131
78	131	132
79	132	133
80	133	134
81	134	137
82	137	144
83	144	145
84	145	146
85	146	147
86	147	148
87	148	149
88	149	150
89	150	151
90	151	152
91	152	153
92	153	154
93	154	157
94	157	163
95	163	164
96	164	165
97	165	166
98	166	167
99	167	168
100	168	169
101	169	170
102	170	171
103	171	172
104	172	173
105	173	176
106	176	182

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    107   182   183
    108   183   184
    109   184   185
    110   185   186
    111   186   187
    112   187   188
    113   188   189
    114   189   192
*   127   192   197
*   128   197   198
*   129   198   199
*   130   199   200
*   131   200   201
*   132   201   202
*   133   202   203
    134     6     3
    135     3     1
    136    22    18
    137    18    16
    138    43    37
    139    37    35
    140    63    57
    141    57    55
    142    83    77
    143    77    75
    144   103    97
    145    97    95
    146   123   117
    147   117   115
    148   143   137
    149   137   135
    150   162   157
    151   157   156
    152   181   176
    153   176   174
    154   195   192
    155   192   190
    156     7     4
    157     4     2
    158    23    19
    159    19    17
    160    42    38
    161    38    36
    162    62    58
    163    58    56
    164    82    78
    165    78    76
    166   102    98
    167    98    96
    168   122   118
    169   118   116
    170   142   138
    171   138   136
    172   161   158
    173   158   155
    174   180   177
    175   177   175
    176   196   193
    177   193   191
    182     7     6
    183     2     1
    184    23    22
    185    17    16
    186    42    43
    187    36    35
    188    62    63
    189    56    55
    190    82    83
    191    76    75
    192   102   103
    193    96    95
    194   122   123
    195   116   115
    196   142   143
    197   136   135
    198   161   162
    199   155   156
    200   180   181
    201   175   174
    202   196   195
    203   191   190
    206    21    20
    207    20    19
    208    40    39
    209    39    41
    210    41    38
    211    60    59
    212    59    61
    213    61    58
    214    80    79
    215    79    81
    216    81    78
    217   100    99
    218    99   101
    219   101    98
    220   120   119
    221   119   121
    222   121   118
    223   140   139
    224   139   141
    225   141   138
    226   160   159
    227   159   158
    228   179   178
    229   178   177
    230     5     4
    231   194   193
mate de barr
* 127 a  133    1
    1 a  126    2
  134 a  155    2
  156 a 177     3
  182 a 203     3
  206 a 231     3
libe de barr
182 inic fuer y   mome x y z
183 inic fuer y z mome x y z
184 inic fuer y   mome x y z
185 inic fuer y z mome x y z
186 inic fuer y   mome x y z
187 inic fuer y z mome x y z
188 inic fuer y   mome x y z
189 inic fuer y z mome x y z
190 inic fuer y   mome x y z
191 inic fuer y z mome x y z
192 inic fuer y   mome x y z
193 inic fuer y z mome x y z
194 inic fuer y   mome x y z
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195 inic fuer y z mome x y z
196 inic fuer y   mome x y z
197 inic fuer y z mome x y z
198 inic fuer y   mome x y z
199 inic fuer y z mome x y z
200 inic fuer y   mome x y z
201 inic fuer y z mome x y z
202 inic          mome x y z
203 inic fuer   z mome x y z
231 fina          mome x
prop de barr pris
* tablero
    1 a 126    9.47      3.6000    4.2600   25.67     93.87     16.35
* pilas
* pila 1
  206          7.07  5.30  5.30  7.94  3.98  3.98 beta 358.40
  207         11.30  9.26  9.26 18.71 19.56  7.84 beta 358.40
* pila 2
  208 a 209    7.07  5.30  5.30  7.94  3.98  3.98 beta 358.58
  210         11.30  9.26  9.26 18.71 19.56  7.84 beta 358.58
* pila 3
  211 a 212    7.07  5.30  5.30  7.94  3.98  3.98 beta 358.74
  213         11.30  9.26  9.26 18.71 19.56  7.84 beta 358.74
* pila 4
  214 a 215    7.07  5.30  5.30  7.94  3.98  3.98 beta 358.91
  216         11.30  9.26  9.26 18.71 19.56  7.84 beta 358.91
* pila 5
  217 a 218    7.07  5.30  5.30  7.94  3.98  3.98 beta 359.08
  219         11.30  9.26  9.26 18.71 19.56  7.84 beta 359.08
* pila 6
  220 a 221    7.07  5.30  5.30  7.94  3.98  3.98 beta 359.26
  222         11.30  9.26  9.26 18.71 19.56  7.84 beta 359.26
* pila 7
  223 a 224    7.07  5.30  5.30  7.94  3.98  3.98 beta 359.43
  225         11.30  9.26  9.26 18.71 19.56  7.84 beta 359.43
* pila 8
  226          7.07  5.30  5.30  7.94  3.98  3.98 beta 359.60
  227         11.30  9.26  9.26 18.71 19.56  7.84 beta 359.60
* pila 9
  228          7.07  5.30  5.30  7.94  3.98  3.98 beta 359.77
  229         11.30  9.26  9.26 18.71 19.56  7.84 beta 359.77
* estribo 1
  230        100.00 100.00 100.00 100.00 100.00 100.00 beta 358.27
* estribo 2
  231        100.00 100.00 100.00 100.00 100.00 100.00 beta 359.90
* apoyos
 182 100. 100. 100. 100. 100. 100. beta 358.27
 183 100. 100. 100. 100. 100. 100. beta 358.27
 184 100. 100. 100. 100. 100. 100. beta 358.40
 185 100. 100. 100. 100. 100. 100. beta 358.40
 186 100. 100. 100. 100. 100. 100. beta 358.58
 187 100. 100. 100. 100. 100. 100. beta 358.58
 188 100. 100. 100. 100. 100. 100. beta 358.74
 189 100. 100. 100. 100. 100. 100. beta 358.74
 190 100. 100. 100. 100. 100. 100. beta 358.91
 191 100. 100. 100. 100. 100. 100. beta 358.91
 192 100. 100. 100. 100. 100. 100. beta 359.08
 193 100. 100. 100. 100. 100. 100. beta 359.08
 194 100. 100. 100. 100. 100. 100. beta 359.26
 195 100. 100. 100. 100. 100. 100. beta 359.26
 196 100. 100. 100. 100. 100. 100. beta 359.43
 197 100. 100. 100. 100. 100. 100. beta 359.43
 198 100. 100. 100. 100. 100. 100. beta 359.60
 199 100. 100. 100. 100. 100. 100. beta 359.60
 200 100. 100. 100. 100. 100. 100. beta 359.77
 201 100. 100. 100. 100. 100. 100. beta 359.77
 202 100. 100. 100. 100. 100. 100. beta 359.90
 203 100. 100. 100. 100. 100. 100. beta 359.90
* aux tablero
  134 a 155    100.00    100.00    100.00    100.00    100.00    100.00
* aux pilas y estribos
  156 a 177    100.00    100.00    100.00    100.00    100.00    100.00
* nariz
* 127    0.2391    0.1731    0.0660    0.0453    1.2826    0.5836
* 128    0.2222    0.1562    0.0660    0.0379    1.0436    0.4536
* 129    0.1946    0.1396    0.0550    0.0311    0.7569    0.3116
* 130    0.1776    0.1226    0.0550    0.0251    0.6992    0.2274
* 131    0.1343    0.0793    0.0550    0.0198    0.5412    0.1470
* 132    0.1108    0.0668    0.0440    0.0149    0.4337    0.0850
* 133    0.0981    0.0541    0.0440    0.0109    0.3902    0.0512
cons de mate
    1    21000000.00      800000.00          7.85
    2     3870000.00     1610000.00          2.50
    3     3360000.00     1400000.00          2.50
hipo 1 Carga de Vano 1
carga en barr
2 fuer y conc -30. 0.05
2 fuer y conc -30. 1.45
3 fuer y conc -39. 0.55
3 fuer y conc -21. 4.15
4 fuer y conc -30. 2.95
4 fuer y conc -30. 4.35
5 fuer y conc -39. 3.45
6 fuer y conc -21. 2.05
7 fuer y conc -30. 0.85
7 fuer y conc -30. 2.25
8 fuer y conc -39. 1.35
8 fuer y conc -21. 4.95
hipo 2 Carga de Vano 2
carga en barr
11 fuer y conc -30. 1.1
11 fuer y conc -30. 2.5
12 fuer y conc -39. 1.6
13 fuer y conc -21. 0.2
13 fuer y conc -30. 4.0
14 fuer y conc -30. 0.4
14 fuer y conc -39. 4.5
15 fuer y conc -21. 3.1
16 fuer y conc -30. 1.9
16 fuer y conc -30. 3.3
17 fuer y conc -39. 2.4
18 fuer y conc -21. 1.0
18 fuer y conc -30. 4.8
19 fuer y conc -30. 1.2
20 fuer y conc -39. 0.3
20 fuer y conc -21. 3.9
hipo 3 Carga de Vanos 1 y 2
carga en barr
2 fuer y conc -30. 0.05
2 fuer y conc -30. 1.45
3 fuer y conc -39. 0.55
3 fuer y conc -21. 4.15
4 fuer y conc -30. 2.95
4 fuer y conc -30. 4.35
5 fuer y conc -39. 3.45
6 fuer y conc -21. 2.05
7 fuer y conc -30. 0.85
7 fuer y conc -30. 2.25
```

8 fuer y conc -39. 1.35
8 fuer y conc -21. 4.95
11 fuer y conc -30. 1.1
11 fuer y conc -30. 2.5
12 fuer y conc -39. 1.6
13 fuer y conc -21. 0.2
13 fuer y conc -30. 4.0
14 fuer y conc -30. 0.4
14 fuer y conc -39. 4.5
15 fuer y conc -21. 3.1
16 fuer y conc -30. 1.9
16 fuer y conc -30. 3.3
17 fuer y conc -39. 2.4
18 fuer y conc -21. 1.0
18 fuer y conc -30. 4.8
19 fuer y conc -30. 1.2
20 fuer y conc -39. 0.3
20 fuer y conc -21. 3.9
hipo 4 Carga de Vanos 1 y 3
carga en barr
2 fuer y conc -30. 0.05
2 fuer y conc -30. 1.45
3 fuer y conc -39. 0.55
3 fuer y conc -21. 4.15
4 fuer y conc -30. 2.95
4 fuer y conc -30. 4.35
5 fuer y conc -39. 3.45
6 fuer y conc -21. 2.05
7 fuer y conc -30. 0.85
7 fuer y conc -30. 2.25
8 fuer y conc -39. 1.35
8 fuer y conc -21. 4.95
23 fuer y conc -30. 1.1
23 fuer y conc -30. 2.5
24 fuer y conc -39. 1.6
25 fuer y conc -21. 0.2
25 fuer y conc -30. 4.0
26 fuer y conc -30. 0.4
26 fuer y conc -39. 4.5
27 fuer y conc -21. 3.1
28 fuer y conc -30. 1.9
28 fuer y conc -30. 3.3
29 fuer y conc -39. 2.4
30 fuer y conc -21. 1.0
30 fuer y conc -30. 4.8
31 fuer y conc -30. 1.2
32 fuer y conc -39. 0.3
32 fuer y conc -21. 3.9
hipo 5 Carga de Vanos 2 y 3
carga en barr
11 fuer y conc -30. 1.1
11 fuer y conc -30. 2.5
12 fuer y conc -39. 1.6
13 fuer y conc -21. 0.2
13 fuer y conc -30. 4.0
14 fuer y conc -30. 0.4
14 fuer y conc -39. 4.5
15 fuer y conc -21. 3.1
16 fuer y conc -30. 1.9
16 fuer y conc -30. 3.3
17 fuer y conc -39. 2.4
18 fuer y conc -21. 1.0
18 fuer y conc -30. 4.8
19 fuer y conc -30. 1.2
20 fuer y conc -39. 0.3
20 fuer y conc -21. 3.9
23 fuer y conc -30. 1.1
23 fuer y conc -30. 2.5
24 fuer y conc -39. 1.6
25 fuer y conc -21. 0.2
25 fuer y conc -30. 4.0
26 fuer y conc -30. 0.4
26 fuer y conc -39. 4.5
27 fuer y conc -21. 3.1
28 fuer y conc -30. 1.9
28 fuer y conc -30. 3.3
29 fuer y conc -39. 2.4
30 fuer y conc -21. 1.0
30 fuer y conc -30. 4.8
31 fuer y conc -30. 1.2
32 fuer y conc -39. 0.3
32 fuer y conc -21. 3.9
hipo 6 Carga de Vanos 2 y 4
carga en barr
11 fuer y conc -30. 1.1
11 fuer y conc -30. 2.5
12 fuer y conc -39. 1.6
13 fuer y conc -21. 0.2
13 fuer y conc -30. 4.0
14 fuer y conc -30. 0.4
14 fuer y conc -39. 4.5
15 fuer y conc -21. 3.1
16 fuer y conc -30. 1.9
16 fuer y conc -30. 3.3
17 fuer y conc -39. 2.4
18 fuer y conc -21. 1.0
18 fuer y conc -30. 4.8
19 fuer y conc -30. 1.2
20 fuer y conc -39. 0.3
20 fuer y conc -21. 3.9
35 fuer y conc -30. 1.1
35 fuer y conc -30. 2.5
36 fuer y conc -39. 1.6
37 fuer y conc -21. 0.2
37 fuer y conc -30. 4.0
38 fuer y conc -30. 0.4
38 fuer y conc -39. 4.5
39 fuer y conc -21. 3.1
40 fuer y conc -30. 1.9
40 fuer y conc -30. 3.3
41 fuer y conc -39. 2.4
42 fuer y conc -21. 1.0
42 fuer y conc -30. 4.8
43 fuer y conc -30. 1.2
44 fuer y conc -39. 0.3
44 fuer y conc -21. 3.9
hipo 7 Carga de Vanos 3 y 4
carga en barr
23 fuer y conc -30. 1.1
23 fuer y conc -30. 2.5
24 fuer y conc -39. 1.6
25 fuer y conc -21. 0.2
25 fuer y conc -30. 4.0
26 fuer y conc -30. 0.4
26 fuer y conc -39. 4.5
27 fuer y conc -21. 3.1
28 fuer y conc -30. 1.9
28 fuer y conc -30. 3.3

29 fuer y conc -39. 2.4
30 fuer y conc -21. 1.0
30 fuer y conc -30. 4.8
31 fuer y conc -30. 1.2
32 fuer y conc -39. 0.3
32 fuer y conc -21. 3.9
35 fuer y conc -30. 1.1
35 fuer y conc -30. 2.5
36 fuer y conc -39. 1.6
37 fuer y conc -21. 0.2
37 fuer y conc -30. 4.0
38 fuer y conc -30. 0.4
38 fuer y conc -39. 4.5
39 fuer y conc -21. 3.1
40 fuer y conc -30. 1.9
40 fuer y conc -30. 3.3
41 fuer y conc -39. 2.4
42 fuer y conc -21. 1.0
42 fuer y conc -30. 4.8
43 fuer y conc -30. 1.2
44 fuer y conc -39. 0.3
44 fuer y conc -21. 3.9
hipo 8 Carga de Vanos 3 y 5
carga en barr
23 fuer y conc -30. 1.1
23 fuer y conc -30. 2.5
24 fuer y conc -39. 1.6
25 fuer y conc -21. 0.2
25 fuer y conc -30. 4.0
26 fuer y conc -30. 0.4
26 fuer y conc -39. 4.5
27 fuer y conc -21. 3.1
28 fuer y conc -30. 1.9
28 fuer y conc -30. 3.3
29 fuer y conc -39. 2.4
30 fuer y conc -21. 1.0
30 fuer y conc -30. 4.8
31 fuer y conc -30. 1.2
32 fuer y conc -39. 0.3
32 fuer y conc -21. 3.9
47 fuer y conc -30. 1.1
47 fuer y conc -30. 2.5
48 fuer y conc -39. 1.6
49 fuer y conc -21. 0.2
49 fuer y conc -30. 4.0
50 fuer y conc -30. 0.4
50 fuer y conc -39. 4.5
51 fuer y conc -21. 3.1
52 fuer y conc -30. 1.9
52 fuer y conc -30. 3.3
53 fuer y conc -39. 2.4
54 fuer y conc -21. 1.0
54 fuer y conc -30. 4.8
55 fuer y conc -30. 1.2
56 fuer y conc -39. 0.3
56 fuer y conc -21. 3.9
hipo 9 Carga de Vanos 4 y 5
carga en barr
35 fuer y conc -30. 1.1
35 fuer y conc -30. 2.5
36 fuer y conc -39. 1.6
37 fuer y conc -21. 0.2
37 fuer y conc -30. 4.0
38 fuer y conc -30. 0.4
38 fuer y conc -39. 4.5
39 fuer y conc -21. 3.1
40 fuer y conc -30. 1.9
40 fuer y conc -30. 3.3
41 fuer y conc -39. 2.4
42 fuer y conc -21. 1.0
42 fuer y conc -30. 4.8
43 fuer y conc -30. 1.2
44 fuer y conc -39. 0.3
44 fuer y conc -21. 3.9
47 fuer y conc -30. 1.1
47 fuer y conc -30. 2.5
48 fuer y conc -39. 1.6
49 fuer y conc -21. 0.2
49 fuer y conc -30. 4.0
50 fuer y conc -30. 0.4
50 fuer y conc -39. 4.5
51 fuer y conc -21. 3.1
52 fuer y conc -30. 1.9
52 fuer y conc -30. 3.3
53 fuer y conc -39. 2.4
54 fuer y conc -21. 1.0
54 fuer y conc -30. 4.8
55 fuer y conc -30. 1.2
56 fuer y conc -39. 0.3
56 fuer y conc -21. 3.9
hipo 10 Carga de Vanos 4 y 6
carga en barr
35 fuer y conc -30. 1.1
35 fuer y conc -30. 2.5
36 fuer y conc -39. 1.6
37 fuer y conc -21. 0.2
37 fuer y conc -30. 4.0
38 fuer y conc -30. 0.4
38 fuer y conc -39. 4.5
39 fuer y conc -21. 3.1
40 fuer y conc -30. 1.9
40 fuer y conc -30. 3.3
41 fuer y conc -39. 2.4
42 fuer y conc -21. 1.0
42 fuer y conc -30. 4.8
43 fuer y conc -30. 1.2
44 fuer y conc -39. 0.3
44 fuer y conc -21. 3.9
59 fuer y conc -30. 1.1
59 fuer y conc -30. 2.5
60 fuer y conc -39. 1.6
61 fuer y conc -21. 0.2
61 fuer y conc -30. 4.0
62 fuer y conc -30. 0.4
62 fuer y conc -39. 4.5
63 fuer y conc -21. 3.1
64 fuer y conc -30. 1.9
64 fuer y conc -30. 3.3
65 fuer y conc -39. 2.4
66 fuer y conc -21. 1.0
66 fuer y conc -30. 4.8
67 fuer y conc -30. 1.2
68 fuer y conc -39. 0.3
68 fuer y conc -21. 3.9
hipo 11 Carga de Vanos 5 y 6
carga en barr
47 fuer y conc -30. 1.1
47 fuer y conc -30. 2.5

48 fuer y conc -39. 1.6
49 fuer y conc -21. 0.2
49 fuer y conc -30. 4.0
50 fuer y conc -30. 0.4
50 fuer y conc -39. 4.5
51 fuer y conc -21. 3.1
52 fuer y conc -30. 1.9
52 fuer y conc -30. 3.3
53 fuer y conc -39. 2.4
54 fuer y conc -21. 1.0
54 fuer y conc -30. 4.8
55 fuer y conc -30. 1.2
56 fuer y conc -39. 0.3
56 fuer y conc -21. 3.9
59 fuer y conc -30. 1.1
59 fuer y conc -30. 2.5
60 fuer y conc -39. 1.6
61 fuer y conc -21. 0.2
61 fuer y conc -30. 4.0
62 fuer y conc -30. 0.4
62 fuer y conc -39. 4.5
63 fuer y conc -21. 3.1
64 fuer y conc -30. 1.9
64 fuer y conc -30. 3.3
65 fuer y conc -39. 2.4
66 fuer y conc -21. 1.0
66 fuer y conc -30. 4.8
67 fuer y conc -30. 1.2
68 fuer y conc -39. 0.3
68 fuer y conc -21. 3.9

hipo 12 Carga de Vanos 5 y 7
carga en barr
47 fuer y conc -30. 1.1
47 fuer y conc -30. 2.5
48 fuer y conc -39. 1.6
49 fuer y conc -21. 0.2
49 fuer y conc -30. 4.0
50 fuer y conc -30. 0.4
50 fuer y conc -39. 4.5
51 fuer y conc -21. 3.1
52 fuer y conc -30. 1.9
52 fuer y conc -30. 3.3
53 fuer y conc -39. 2.4
54 fuer y conc -21. 1.0
54 fuer y conc -30. 4.8
55 fuer y conc -30. 1.2
56 fuer y conc -39. 0.3
56 fuer y conc -21. 3.9
71 fuer y conc -30. 1.1
71 fuer y conc -30. 2.5
72 fuer y conc -39. 1.6
73 fuer y conc -21. 0.2
73 fuer y conc -30. 4.0
74 fuer y conc -30. 0.4
74 fuer y conc -39. 4.5
75 fuer y conc -21. 3.1
76 fuer y conc -30. 1.9
76 fuer y conc -30. 3.3
77 fuer y conc -39. 2.4
78 fuer y conc -21. 1.0
78 fuer y conc -30. 4.8
79 fuer y conc -30. 1.2
80 fuer y conc -39. 0.3
80 fuer y conc -21. 3.9

hipo 13 Carga de Vanos 6 y 7
carga en barr
59 fuer y conc -30. 1.1
59 fuer y conc -30. 2.5
60 fuer y conc -39. 1.6
61 fuer y conc -21. 0.2
61 fuer y conc -30. 4.0
62 fuer y conc -30. 0.4
62 fuer y conc -39. 4.5
63 fuer y conc -21. 3.1
64 fuer y conc -30. 1.9
64 fuer y conc -30. 3.3
65 fuer y conc -39. 2.4
66 fuer y conc -21. 1.0
66 fuer y conc -30. 4.8
67 fuer y conc -30. 1.2
68 fuer y conc -39. 0.3
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71 fuer y conc -30. 1.1
71 fuer y conc -30. 2.5
72 fuer y conc -39. 1.6
73 fuer y conc -21. 0.2
73 fuer y conc -30. 4.0
74 fuer y conc -30. 0.4
74 fuer y conc -39. 4.5
75 fuer y conc -21. 3.1
76 fuer y conc -30. 1.9
76 fuer y conc -30. 3.3
77 fuer y conc -39. 2.4
78 fuer y conc -21. 1.0
78 fuer y conc -30. 4.8
79 fuer y conc -30. 1.2
80 fuer y conc -39. 0.3
80 fuer y conc -21. 3.9

hipo 14 Carga de Vanos 6 y 8
carga en barr
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59 fuer y conc -30. 2.5
60 fuer y conc -39. 1.6
61 fuer y conc -21. 0.2
61 fuer y conc -30. 4.0
62 fuer y conc -30. 0.4
62 fuer y conc -39. 4.5
63 fuer y conc -21. 3.1
64 fuer y conc -30. 1.9
64 fuer y conc -30. 3.3
65 fuer y conc -39. 2.4
66 fuer y conc -21. 1.0
66 fuer y conc -30. 4.8
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68 fuer y conc -21. 3.9
83 fuer y conc -30. 1.1
83 fuer y conc -30. 2.5
84 fuer y conc -39. 1.6
85 fuer y conc -21. 0.2
85 fuer y conc -30. 4.0
86 fuer y conc -30. 0.4
86 fuer y conc -39. 4.5
87 fuer y conc -21. 3.1
88 fuer y conc -30. 1.9
88 fuer y conc -30. 3.3
89 fuer y conc -39. 2.4
90 fuer y conc -21. 1.0

90 fuer y conc -30. 4.8
91 fuer y conc -30. 1.2
92 fuer y conc -39. 0.3
92 fuer y conc -21. 3.9
hipo 15 Carga de Vanos 7 y 8
carga en barr
71 fuer y conc -30. 1.1
71 fuer y conc -30. 2.5
72 fuer y conc -39. 1.6
73 fuer y conc -21. 0.2
73 fuer y conc -30. 4.0
74 fuer y conc -30. 0.4
74 fuer y conc -39. 4.5
75 fuer y conc -21. 3.1
76 fuer y conc -30. 1.9
76 fuer y conc -30. 3.3
77 fuer y conc -39. 2.4
78 fuer y conc -21. 1.0
78 fuer y conc -30. 4.8
79 fuer y conc -30. 1.2
80 fuer y conc -39. 0.3
80 fuer y conc -21. 3.9
83 fuer y conc -30. 1.1
83 fuer y conc -30. 2.5
84 fuer y conc -39. 1.6
85 fuer y conc -21. 0.2
85 fuer y conc -30. 4.0
86 fuer y conc -30. 0.4
86 fuer y conc -39. 4.5
87 fuer y conc -21. 3.1
88 fuer y conc -30. 1.9
88 fuer y conc -30. 3.3
89 fuer y conc -39. 2.4
90 fuer y conc -21. 1.0
90 fuer y conc -30. 4.8
91 fuer y conc -30. 1.2
92 fuer y conc -39. 0.3
92 fuer y conc -21. 3.9
hipo 16 Carga de Vanos 7 y 9
carga en barr
71 fuer y conc -30. 1.1
71 fuer y conc -30. 2.5
72 fuer y conc -39. 1.6
73 fuer y conc -21. 0.2
73 fuer y conc -30. 4.0
74 fuer y conc -30. 0.4
74 fuer y conc -39. 4.5
75 fuer y conc -21. 3.1
76 fuer y conc -30. 1.9
76 fuer y conc -30. 3.3
77 fuer y conc -39. 2.4
78 fuer y conc -21. 1.0
78 fuer y conc -30. 4.8
79 fuer y conc -30. 1.2
80 fuer y conc -39. 0.3
80 fuer y conc -21. 3.9
95 fuer y conc -30. 1.1
95 fuer y conc -30. 2.5
96 fuer y conc -39. 1.6
97 fuer y conc -21. 0.2
97 fuer y conc -30. 4.0
98 fuer y conc -30. 0.4
98 fuer y conc -39. 4.5
99 fuer y conc -21. 3.1
100 fuer y conc -30. 1.9
100 fuer y conc -30. 3.3
101 fuer y conc -39. 2.4
102 fuer y conc -21. 1.0
102 fuer y conc -30. 4.8
103 fuer y conc -30. 1.2
104 fuer y conc -39. 0.3
104 fuer y conc -21. 3.9
hipo 17 Carga de Vanos 8 y 9
carga en barr
83 fuer y conc -30. 1.1
83 fuer y conc -30. 2.5
84 fuer y conc -39. 1.6
85 fuer y conc -21. 0.2
85 fuer y conc -30. 4.0
86 fuer y conc -30. 0.4
86 fuer y conc -39. 4.5
87 fuer y conc -21. 3.1
88 fuer y conc -30. 1.9
88 fuer y conc -30. 3.3
89 fuer y conc -39. 2.4
90 fuer y conc -21. 1.0
90 fuer y conc -30. 4.8
91 fuer y conc -30. 1.2
92 fuer y conc -39. 0.3
92 fuer y conc -21. 3.9
95 fuer y conc -30. 1.1
95 fuer y conc -30. 2.5
96 fuer y conc -39. 1.6
97 fuer y conc -21. 0.2
97 fuer y conc -30. 4.0
98 fuer y conc -30. 0.4
98 fuer y conc -39. 4.5
99 fuer y conc -21. 3.1
100 fuer y conc -30. 1.9
100 fuer y conc -30. 3.3
101 fuer y conc -39. 2.4
102 fuer y conc -21. 1.0
102 fuer y conc -30. 4.8
103 fuer y conc -30. 1.2
104 fuer y conc -39. 0.3
104 fuer y conc -21. 3.9
hipo 18 Carga de Vanos 8 y 10
carga en barr
83 fuer y conc -30. 1.1
83 fuer y conc -30. 2.5
84 fuer y conc -39. 1.6
85 fuer y conc -21. 0.2
85 fuer y conc -30. 4.0
86 fuer y conc -30. 0.4
86 fuer y conc -39. 4.5
87 fuer y conc -21. 3.1
88 fuer y conc -30. 1.9
88 fuer y conc -30. 3.3
89 fuer y conc -39. 2.4
90 fuer y conc -21. 1.0
90 fuer y conc -30. 4.8
91 fuer y conc -30. 1.2
92 fuer y conc -39. 0.3
92 fuer y conc -21. 3.9
107 fuer y conc -30. 0.05
107 fuer y conc -30. 1.45
108 fuer y conc -39. 0.55
108 fuer y conc -21. 4.15

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109 fuer y conc -30. 2.95
109 fuer y conc -30. 4.35
110 fuer y conc -39. 3.45
111 fuer y conc -21. 2.05
112 fuer y conc -30. 0.85
112 fuer y conc -30. 2.25
113 fuer y conc -39. 1.35
113 fuer y conc -21. 4.95
hipo 19 Carga de Vanos 9 y 10
carga en barr
95 fuer y conc -30. 1.1
95 fuer y conc -30. 2.5
96 fuer y conc -39. 1.6
97 fuer y conc -21. 0.2
97 fuer y conc -30. 4.0
98 fuer y conc -30. 0.4
98 fuer y conc -39. 4.5
99 fuer y conc -21. 3.1
100 fuer y conc -30. 1.9
100 fuer y conc -30. 3.3
101 fuer y conc -39. 2.4
102 fuer y conc -21. 1.0
102 fuer y conc -30. 4.8
103 fuer y conc -30. 1.2
104 fuer y conc -39. 0.3
104 fuer y conc -21. 3.9
107 fuer y conc -30. 0.05
107 fuer y conc -30. 1.45
108 fuer y conc -39. 0.55
108 fuer y conc -21. 4.15
109 fuer y conc -30. 2.95
109 fuer y conc -30. 4.35
110 fuer y conc -39. 3.45
111 fuer y conc -21. 2.05
112 fuer y conc -30. 0.85
112 fuer y conc -30. 2.25
113 fuer y conc -39. 1.35
113 fuer y conc -21. 4.95
hipo 20 Carga de Vano 9
carga en barr
95 fuer y conc -30. 1.1
95 fuer y conc -30. 2.5
96 fuer y conc -39. 1.6
97 fuer y conc -21. 0.2
97 fuer y conc -30. 4.0
98 fuer y conc -30. 0.4
98 fuer y conc -39. 4.5
99 fuer y conc -21. 3.1
100 fuer y conc -30. 1.9
100 fuer y conc -30. 3.3
101 fuer y conc -39. 2.4
102 fuer y conc -21. 1.0
102 fuer y conc -30. 4.8
103 fuer y conc -30. 1.2
104 fuer y conc -39. 0.3
104 fuer y conc -21. 3.9
hipo 21 Carga de Vano 10
carga en barr
107 fuer y conc -30. 0.05
107 fuer y conc -30. 1.45
108 fuer y conc -39. 0.55
108 fuer y conc -21. 4.15
109 fuer y conc -30. 2.95
109 fuer y conc -30. 4.35
110 fuer y conc -39. 3.45
111 fuer y conc -21. 2.05
112 fuer y conc -30. 0.85
112 fuer y conc -30. 2.25
113 fuer y conc -39. 1.35
113 fuer y conc -21. 4.95
calcula y alma
2 2 2
```

LISTADO DE RESULTADOS

proc Viaducto Papiol - Prueba de carga

HIPOTESIS 1

hipo 1 Carga de Vano 1

DESPLAZAMIENTOS DE NUDOS

NUDO	DESP. X	DESP. Y	DESP. Z	GIRO X	GIRO Y	GIRO Z
3	0.000000	-0.000017	0.000003	0.000013	0.000000	-0.000430
8	0.000000	-0.002253	0.000003	0.000012	0.000000	-0.000397
9	0.000000	-0.004135	0.000003	0.000010	0.000000	-0.000309
10	0.000000	-0.005441	0.000002	0.000006	0.000000	-0.000186
11	0.000000	-0.006045	0.000002	0.000002	0.000000	-0.000044
12	0.000000	-0.005882	0.000002	-0.000002	0.000000	0.000097
13	0.000000	-0.005021	0.000002	-0.000006	0.000000	0.000219
14	0.000000	-0.003587	0.000001	-0.000008	0.000000	0.000305
15	0.000000	-0.001816	0.000001	-0.000009	0.000000	0.000335
18	0.000000	-0.000047	0.000001	-0.000008	0.000000	0.000291
24	0.000000	0.001193	0.000001	-0.000006	0.000000	0.000213
25	0.000000	0.002065	0.000001	-0.000004	0.000000	0.000144
26	0.000000	0.002611	0.000000	-0.000003	0.000000	0.000083
27	0.000000	0.002876	0.000000	-0.000001	0.000000	0.000031
28	0.000000	0.002901	0.000000	0.000000	0.000000	-0.000012
29	0.000000	0.002731	0.000000	0.000001	0.000000	-0.000047
30	0.000000	0.002408	0.000000	0.000002	0.000000	-0.000073
31	0.000000	0.001975	0.000000	0.000002	0.000000	-0.000091
32	0.000000	0.001476	0.000000	0.000002	0.000000	-0.000100
33	0.000000	0.000953	0.000000	0.000002	0.000000	-0.000100
34	0.000000	0.000450	0.000000	0.000002	0.000000	-0.000092
37	0.000000	0.000010	0.000000	0.000002	0.000000	-0.000075
44	0.000000	-0.000309	0.000000	0.000001	0.000000	-0.000055
45	0.000000	-0.000534	0.000000	0.000001	0.000000	-0.000037
46	0.000000	-0.000675	0.000000	0.000001	0.000000	-0.000021
47	0.000000	-0.000743	0.000000	0.000000	0.000000	-0.000008
48	0.000000	-0.000749	0.000000	0.000000	0.000000	0.000003
49	0.000000	-0.000705	0.000000	0.000000	0.000000	0.000012
50	0.000000	-0.000622	0.000000	0.000000	0.000000	0.000019
51	0.000000	-0.000510	0.000000	0.000000	0.000000	0.000023
52	0.000000	-0.000381	0.000000	-0.000001	0.000000	0.000026
53	0.000000	-0.000246	0.000000	-0.000001	0.000000	0.000026
54	0.000000	-0.000117	0.000000	-0.000001	0.000000	0.000024
57	0.000000	-0.000003	0.000000	0.000000	0.000000	0.000019
64	0.000000	0.000079	0.000000	0.000000	0.000000	0.000014
65	0.000000	0.000137	0.000000	0.000000	0.000000	0.000010
66	0.000000	0.000173	0.000000	0.000000	0.000000	0.000006
67	0.000000	0.000191	0.000000	0.000000	0.000000	0.000002
68	0.000000	0.000193	0.000000	0.000000	0.000000	-0.000001
69	0.000000	0.000181	0.000000	0.000000	0.000000	-0.000003
70	0.000000	0.000160	0.000000	0.000000	0.000000	-0.000005
71	0.000000	0.000131	0.000000	0.000000	0.000000	-0.000006
72	0.000000	0.000098	0.000000	0.000000	0.000000	-0.000007
73	0.000000	0.000063	0.000000	0.000000	0.000000	-0.000007
74	0.000000	0.000030	0.000000	0.000000	0.000000	-0.000006
77	0.000000	0.000001	0.000000	0.000000	0.000000	-0.000005
84	0.000000	-0.000020	0.000000	0.000000	0.000000	-0.000004
85	0.000000	-0.000035	0.000000	0.000000	0.000000	-0.000002
86	0.000000	-0.000045	0.000000	0.000000	0.000000	-0.000001
87	0.000000	-0.000049	0.000000	0.000000	0.000000	-0.000001
88	0.000000	-0.000050	0.000000	0.000000	0.000000	0.000000
89	0.000000	-0.000047	0.000000	0.000000	0.000000	0.000001
90	0.000000	-0.000041	0.000000	0.000000	0.000000	0.000001
91	0.000000	-0.000034	0.000000	0.000000	0.000000	0.000002
92	0.000000	-0.000025	0.000000	0.000000	0.000000	0.000002
93	0.000000	-0.000016	0.000000	0.000000	0.000000	0.000002
94	0.000000	-0.000008	0.000000	0.000000	0.000000	0.000002
97	0.000000	0.000000	0.000000	0.000000	0.000000	0.000001
104	0.000000	0.000005	0.000000	0.000000	0.000000	0.000001
105	0.000000	0.000009	0.000000	0.000000	0.000000	0.000001
106	0.000000	0.000011	0.000000	0.000000	0.000000	0.000000
107	0.000000	0.000013	0.000000	0.000000	0.000000	0.000000
108	0.000000	0.000013	0.000000	0.000000	0.000000	0.000000
109	0.000000	0.000012	0.000000	0.000000	0.000000	0.000000
110	0.000000	0.000011	0.000000	0.000000	0.000000	0.000000
111	0.000000	0.000009	0.000000	0.000000	0.000000	0.000000
112	0.000000	0.000006	0.000000	0.000000	0.000000	0.000000
113	0.000000	0.000004	0.000000	0.000000	0.000000	0.000000
114	0.000000	0.000002	0.000000	0.000000	0.000000	0.000000
117	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
124	0.000000	-0.000001	0.000000	0.000000	0.000000	0.000000
125	0.000000	-0.000002	0.000000	0.000000	0.000000	0.000000
126	0.000000	-0.000003	0.000000	0.000000	0.000000	0.000000
127	0.000000	-0.000003	0.000000	0.000000	0.000000	0.000000
128	0.000000	-0.000003	0.000000	0.000000	0.000000	0.000000
129	0.000000	-0.000003	0.000000	0.000000	0.000000	0.000000
130	0.000000	-0.000003	0.000000	0.000000	0.000000	0.000000
131	0.000000	-0.000002	0.000000	0.000000	0.000000	0.000000
132	0.000000	-0.000002	0.000000	0.000000	0.000000	0.000000
133	0.000000	-0.000001	0.000000	0.000000	0.000000	0.000000
134	0.000000	-0.000001	0.000000	0.000000	0.000000	0.000000
137	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
144	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
145	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000
146	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000
147	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000
148	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000
149	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000
150	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000
151	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000
152	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
153	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
154	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
157	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
163	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
164	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
165	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
166	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
167	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
168	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
169	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
170	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
171	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
172	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
173	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
176	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
182	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
183	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
184	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
185	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
186	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
187	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
188	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
189	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
192	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

proc Viaducto Papiol - Prueba de carga

HIPOTESIS 2

hipo 2 Carga de Vano 2

DESPLAZAMIENTOS DE NUDOS

NUDO	DESP. X	DESP. Y	DESP. Z	GIRO X	GIRO Y	GIRO Z
3	0.000000	0.000004	-0.000001	-0.000006	0.000000	0.000211
8	0.000000	0.001079	-0.000001	-0.000006	0.000000	0.000202
9	0.000000	0.002073	0.000000	-0.000006	0.000000	0.000178
10	0.000000	0.002905	0.000000	-0.000004	0.000000	0.000137
11	0.000000	0.003492	0.000000	-0.000003	0.000000	0.000081
12	0.000000	0.003756	0.000000	-0.000001	0.000000	0.000008
13	0.000000	0.003613	0.000001	0.000002	0.000000	-0.000082
14	0.000000	0.002983	0.000001	0.000005	0.000000	-0.000187
15	0.000000	0.001785	0.000001	0.000009	0.000000	-0.000309
18	0.000000	-0.000063	0.000001	0.000013	0.000000	-0.000447
24	0.000000	-0.002797	0.000001	0.000015	0.000000	-0.000544
25	0.000000	-0.005740	0.000001	0.000016	0.000000	-0.000547
26	0.000000	-0.008468	0.000001	0.000014	0.000000	-0.000477
27	0.000000	-0.010668	0.000001	0.000011	0.000000	-0.000351
28	0.000000	-0.012084	0.000001	0.000006	0.000000	-0.000187
29	0.000000	-0.012588	0.000001	0.000002	0.000000	-0.000005
30	0.000000	-0.012133	0.000001	-0.000003	0.000000	0.000179
31	0.000000	-0.010750	0.000001	-0.000008	0.000000	0.000345
32	0.000000	-0.008591	0.000001	-0.000011	0.000000	0.000474
33	0.000000	-0.005860	0.000001	-0.000013	0.000000	0.000551
34	0.000000	-0.002883	0.000001	-0.000014	0.000000	0.000553
37	0.000000	-0.000096	0.000001	-0.000012	0.000000	0.000467
44	0.000000	0.001891	0.000001	-0.000009	0.000000	0.000342
45	0.000000	0.003289	0.000001	-0.000006	0.000000	0.000231
46	0.000000	0.004166	0.000001	-0.000004	0.000000	0.000134
47	0.000000	0.004592	0.000001	-0.000002	0.000000	0.000051
48	0.000000	0.004635	0.000000	0.000000	0.000000	-0.000019
49	0.000000	0.004365	0.000000	0.000001	0.000000	-0.000075
50	0.000000	0.003850	0.000000	0.000002	0.000000	-0.000117
51	0.000000	0.003159	0.000000	0.000003	0.000000	-0.000145
52	0.000000	0.002362	0.000000	0.000003	0.000000	-0.000159
53	0.000000	0.001527	0.000000	0.000003	0.000000	-0.000160
54	0.000000	0.000724	0.000000	0.000003	0.000000	-0.000147
57	0.000000	0.000021	0.000000	0.000003	0.000000	-0.000120
64	0.000000	-0.000490	0.000000	0.000002	0.000000	-0.000088
65	0.000000	-0.000849	0.000000	0.000001	0.000000	-0.000059
66	0.000000	-0.001074	0.000000	0.000001	0.000000	-0.000034
67	0.000000	-0.001183	0.000000	0.000000	0.000000	-0.000013
68	0.000000	-0.001194	0.000000	0.000000	0.000000	0.000005
69	0.000000	-0.001124	0.000000	0.000000	0.000000	0.000019
70	0.000000	-0.000991	0.000000	0.000000	0.000000	0.000030
71	0.000000	-0.000813	0.000000	-0.000001	0.000000	0.000037
72	0.000000	-0.000608	0.000000	-0.000001	0.000000	0.000041
73	0.000000	-0.000393	0.000000	-0.000001	0.000000	0.000041
74	0.000000	-0.000186	0.000000	-0.000001	0.000000	0.000038
77	0.000000	-0.000005	0.000000	-0.000001	0.000000	0.000031
84	0.000000	0.000126	0.000000	0.000000	0.000000	0.000023
85	0.000000	0.000218	0.000000	0.000000	0.000000	0.000015
86	0.000000	0.000276	0.000000	0.000000	0.000000	0.000009
87	0.000000	0.000304	0.000000	0.000000	0.000000	0.000003
88	0.000000	0.000307	0.000000	0.000000	0.000000	-0.000001
89	0.000000	0.000289	0.000000	0.000000	0.000000	-0.000005
90	0.000000	0.000255	0.000000	0.000000	0.000000	-0.000008
91	0.000000	0.000209	0.000000	0.000000	0.000000	-0.000010
92	0.000000	0.000156	0.000000	0.000000	0.000000	-0.000011
93	0.000000	0.000101	0.000000	0.000000	0.000000	-0.000011
94	0.000000	0.000048	0.000000	0.000000	0.000000	-0.000010
97	0.000000	0.000001	0.000000	0.000000	0.000000	-0.000008
104	0.000000	-0.000032	0.000000	0.000000	0.000000	-0.000006
105	0.000000	-0.000056	0.000000	0.000000	0.000000	-0.000004
106	0.000000	-0.000071	0.000000	0.000000	0.000000	-0.000002
107	0.000000	-0.000078	0.000000	0.000000	0.000000	-0.000001
108	0.000000	-0.000079	0.000000	0.000000	0.000000	0.000000
109	0.000000	-0.000074	0.000000	0.000000	0.000000	0.000001
110	0.000000	-0.000066	0.000000	0.000000	0.000000	0.000002
111	0.000000	-0.000054	0.000000	0.000000	0.000000	0.000002
112	0.000000	-0.000040	0.000000	0.000000	0.000000	0.000003
113	0.000000	-0.000026	0.000000	0.000000	0.000000	0.000003
114	0.000000	-0.000012	0.000000	0.000000	0.000000	0.000003
117	0.000000	0.000000	0.000000	0.000000	0.000000	0.000002
124	0.000000	0.000008	0.000000	0.000000	0.000000	0.000001
125	0.000000	0.000014	0.000000	0.000000	0.000000	0.000001
126	0.000000	0.000018	0.000000	0.000000	0.000000	0.000001
127	0.000000	0.000020	0.000000	0.000000	0.000000	0.000000
128	0.000000	0.000020	0.000000	0.000000	0.000000	0.000000
129	0.000000	0.000019	0.000000	0.000000	0.000000	0.000000
130	0.000000	0.000017	0.000000	0.000000	0.000000	-0.000001
131	0.000000	0.000014	0.000000	0.000000	0.000000	-0.000001
132	0.000000	0.000010	0.000000	0.000000	0.000000	-0.000001
133	0.000000	0.000007	0.000000	0.000000	0.000000	-0.000001
134	0.000000	0.000003	0.000000	0.000000	0.000000	-0.000001
137	0.000000	0.000000	0.000000	0.000000	0.000000	-0.000001
144	0.000000	-0.000002	0.000000	0.000000	0.000000	0.000000
145	0.000000	-0.000004	0.000000	0.000000	0.000000	0.000000
146	0.000000	-0.000005	0.000000	0.000000	0.000000	0.000000
147	0.000000	-0.000005	0.000000	0.000000	0.000000	0.000000
148	0.000000	-0.000005	0.000000	0.000000	0.000000	0.000000
149	0.000000	-0.000005	0.000000	0.000000	0.000000	0.000000
150	0.000000	-0.000004	0.000000	0.000000	0.000000	0.000000
151	0.000000	-0.000004	0.000000	0.000000	0.000000	0.000000
152	0.000000	-0.000003	0.000000	0.000000	0.000000	0.000000
153	0.000000	-0.000002	0.000000	0.000000	0.000000	0.000000
154	0.000000	-0.000001	0.000000	0.000000	0.000000	0.000000
157	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
163	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000
164	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000
165	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000
166	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000
167	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000
168	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000
169	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000
170	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000
171	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000
172	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
173	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
176	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
182	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
183	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
184	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
185	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
186	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
187	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
188	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
189	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
192	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

proc Viaducto Papiol - Prueba de carga

HIPOTESIS 3

hipo 3 Carga de Vanos 1 y 2

DESPLAZAMIENTOS DE NUDOS

NUDO	DESP. X	DESP. Y	DESP. Z	GIRO X	GIRO Y	GIRO Z
3	0.000000	-0.000013	0.000002	0.000007	0.000000	-0.000219
8	0.000000	-0.001174	0.000002	0.000006	0.000000	-0.000195
9	0.000000	-0.002062	0.000002	0.000004	0.000000	-0.000131
10	0.000000	-0.002536	0.000002	0.000002	0.000000	-0.000049
11	0.000000	-0.002552	0.000002	-0.000001	0.000000	0.000037
12	0.000000	-0.002127	0.000002	-0.000003	0.000000	0.000105
13	0.000000	-0.001408	0.000002	-0.000004	0.000000	0.000137
14	0.000000	-0.000604	0.000002	-0.000003	0.000000	0.000118
15	0.000000	-0.000031	0.000002	-0.000001	0.000000	0.000026
18	0.000000	-0.000111	0.000002	0.000004	0.000000	-0.000155
24	0.000000	-0.001604	0.000002	0.000009	0.000000	-0.000330
25	0.000000	-0.003676	0.000002	0.000011	0.000000	-0.000403
26	0.000000	-0.005857	0.000002	0.000011	0.000000	-0.000394
27	0.000000	-0.007792	0.000002	0.000010	0.000000	-0.000320
28	0.000000	-0.009182	0.000002	0.000006	0.000000	-0.000199
29	0.000000	-0.009857	0.000001	0.000003	0.000000	-0.000052
30	0.000000	-0.009725	0.000001	-0.000002	0.000000	0.000106
31	0.000000	-0.008775	0.000001	-0.000006	0.000000	0.000254
32	0.000000	-0.007116	0.000001	-0.000009	0.000000	0.000375
33	0.000000	-0.004907	0.000001	-0.000011	0.000000	0.000450
34	0.000000	-0.002433	0.000001	-0.000011	0.000000	0.000461
37	0.000000	-0.000086	0.000001	-0.000010	0.000000	0.000392
44	0.000000	0.001582	0.000001	-0.000007	0.000000	0.000287
45	0.000000	0.002755	0.000001	-0.000005	0.000000	0.000194
46	0.000000	0.003492	0.000000	-0.000003	0.000000	0.000112
47	0.000000	0.003849	0.000000	-0.000002	0.000000	0.000043
48	0.000000	0.003886	0.000000	0.000000	0.000000	-0.000016
49	0.000000	0.003660	0.000000	0.000001	0.000000	-0.000063
50	0.000000	0.003228	0.000000	0.000002	0.000000	-0.000098
51	0.000000	0.002649	0.000000	0.000002	0.000000	-0.000122
52	0.000000	0.001981	0.000000	0.000003	0.000000	-0.000134
53	0.000000	0.001281	0.000000	0.000003	0.000000	-0.000134
54	0.000000	0.000607	0.000000	0.000003	0.000000	-0.000123
57	0.000000	0.000017	0.000000	0.000002	0.000000	-0.000101
64	0.000000	-0.000411	0.000000	0.000002	0.000000	-0.000074
65	0.000000	-0.000712	0.000000	0.000001	0.000000	-0.000050
66	0.000000	-0.000900	0.000000	0.000001	0.000000	-0.000029
67	0.000000	-0.000992	0.000000	0.000000	0.000000	-0.000011
68	0.000000	-0.001001	0.000000	0.000000	0.000000	0.000004
69	0.000000	-0.000942	0.000000	0.000000	0.000000	0.000016
70	0.000000	-0.000831	0.000000	0.000000	0.000000	0.000025
71	0.000000	-0.000682	0.000000	-0.000001	0.000000	0.000031
72	0.000000	-0.000510	0.000000	-0.000001	0.000000	0.000034
73	0.000000	-0.000330	0.000000	-0.000001	0.000000	0.000035
74	0.000000	-0.000156	0.000000	-0.000001	0.000000	0.000032
77	0.000000	-0.000004	0.000000	0.000000	0.000000	0.000026
84	0.000000	0.000106	0.000000	0.000000	0.000000	0.000019
85	0.000000	0.000183	0.000000	0.000000	0.000000	0.000013
86	0.000000	0.000232	0.000000	0.000000	0.000000	0.000007
87	0.000000	0.000255	0.000000	0.000000	0.000000	0.000003
88	0.000000	0.000258	0.000000	0.000000	0.000000	-0.000001
89	0.000000	0.000242	0.000000	0.000000	0.000000	-0.000004
90	0.000000	0.000214	0.000000	0.000000	0.000000	-0.000006
91	0.000000	0.000175	0.000000	0.000000	0.000000	-0.000008
92	0.000000	0.000131	0.000000	0.000000	0.000000	-0.000009
93	0.000000	0.000085	0.000000	0.000000	0.000000	-0.000009
94	0.000000	0.000040	0.000000	0.000000	0.000000	-0.000008
97	0.000000	0.000001	0.000000	0.000000	0.000000	-0.000007
104	0.000000	-0.000027	0.000000	0.000000	0.000000	-0.000005
105	0.000000	-0.000047	0.000000	0.000000	0.000000	-0.000003
106	0.000000	-0.000060	0.000000	0.000000	0.000000	-0.000002
107	0.000000	-0.000066	0.000000	0.000000	0.000000	-0.000001
108	0.000000	-0.000066	0.000000	0.000000	0.000000	0.000000
109	0.000000	-0.000062	0.000000	0.000000	0.000000	0.000001
110	0.000000	-0.000055	0.000000	0.000000	0.000000	0.000002
111	0.000000	-0.000045	0.000000	0.000000	0.000000	0.000002
112	0.000000	-0.000034	0.000000	0.000000	0.000000	0.000002
113	0.000000	-0.000022	0.000000	0.000000	0.000000	0.000002
114	0.000000	-0.000010	0.000000	0.000000	0.000000	0.000002
117	0.000000	0.000000	0.000000	0.000000	0.000000	0.000002
124	0.000000	0.000007	0.000000	0.000000	0.000000	0.000001
125	0.000000	0.000012	0.000000	0.000000	0.000000	0.000001
126	0.000000	0.000015	0.000000	0.000000	0.000000	0.000000
127	0.000000	0.000017	0.000000	0.000000	0.000000	0.000000
128	0.000000	0.000017	0.000000	0.000000	0.000000	0.000000
129	0.000000	0.000016	0.000000	0.000000	0.000000	0.000000
130	0.000000	0.000014	0.000000	0.000000	0.000000	0.000000
131	0.000000	0.000012	0.000000	0.000000	0.000000	-0.000001
132	0.000000	0.000009	0.000000	0.000000	0.000000	-0.000001
133	0.000000	0.000006	0.000000	0.000000	0.000000	-0.000001
134	0.000000	0.000003	0.000000	0.000000	0.000000	-0.000001
137	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
144	0.000000	-0.000002	0.000000	0.000000	0.000000	0.000000
145	0.000000	-0.000003	0.000000	0.000000	0.000000	0.000000
146	0.000000	-0.000004	0.000000	0.000000	0.000000	0.000000
147	0.000000	-0.000004	0.000000	0.000000	0.000000	0.000000
148	0.000000	-0.000004	0.000000	0.000000	0.000000	0.000000
149	0.000000	-0.000004	0.000000	0.000000	0.000000	0.000000
150	0.000000	-0.000004	0.000000	0.000000	0.000000	0.000000
151	0.000000	-0.000003	0.000000	0.000000	0.000000	0.000000
152	0.000000	-0.000002	0.000000	0.000000	0.000000	0.000000
153	0.000000	-0.000001	0.000000	0.000000	0.000000	0.000000
154	0.000000	-0.000001	0.000000	0.000000	0.000000	0.000000
157	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
163	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
164	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000
165	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000
166	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000
167	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000
168	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000
169	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000
170	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000
171	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000
172	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
173	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
176	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
182	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
183	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
184	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
185	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
186	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
187	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
188	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
189	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
192	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

HIPOTESIS 4

hipo 4 Carga de Vanos 1 y 3

DESPLAZAMIENTOS DE NUDOS

NUDO	DESP. X	DESP. Y	DESP. Z	GIRO X	GIRO Y	GIRO Z
3	0.000000	-0.000018	0.000003	0.000015	0.000000	-0.000484
8	0.000000	-0.002531	0.000003	0.000014	0.000000	-0.000449
9	0.000000	-0.004670	0.000003	0.000011	0.000000	-0.000355
10	0.000000	-0.006190	0.000002	0.000007	0.000000	-0.000222
11	0.000000	-0.006946	0.000002	0.000003	0.000000	-0.000065
12	0.000000	-0.006852	0.000002	-0.000002	0.000000	0.000095
13	0.000000	-0.005954	0.000001	-0.000006	0.000000	0.000240
14	0.000000	-0.004359	0.000001	-0.000009	0.000000	0.000353
15	0.000000	-0.002280	0.000001	-0.000011	0.000000	0.000414
18	0.000000	-0.000037	0.000001	-0.000011	0.000000	0.000406
24	0.000000	0.001891	0.000001	-0.000010	0.000000	0.000359
25	0.000000	0.003567	0.000001	-0.000009	0.000000	0.000305
26	0.000000	0.004959	0.000001	-0.000007	0.000000	0.000246
27	0.000000	0.006040	0.000001	-0.000006	0.000000	0.000180
28	0.000000	0.006779	0.000001	-0.000004	0.000000	0.000109
29	0.000000	0.007147	0.000001	-0.000002	0.000000	0.000032
30	0.000000	0.007114	0.000001	0.000000	0.000000	-0.000051
31	0.000000	0.006651	0.000001	0.000003	0.000000	-0.000140
32	0.000000	0.005729	0.000001	0.000005	0.000000	-0.000235
33	0.000000	0.004317	0.000001	0.000008	0.000000	-0.000336
34	0.000000	0.002386	0.000001	0.000011	0.000000	-0.000442
37	0.000000	-0.000092	0.000001	0.000014	0.000000	-0.000555
44	0.000000	-0.003286	0.000001	0.000016	0.000000	-0.000623
45	0.000000	-0.006553	0.000001	0.000015	0.000000	-0.000600
46	0.000000	-0.009483	0.000001	0.000013	0.000000	-0.000508
47	0.000000	-0.011780	0.000001	0.000010	0.000000	-0.000363
48	0.000000	-0.013204	0.000001	0.000006	0.000000	-0.000182
49	0.000000	-0.013644	0.000001	0.000001	0.000000	0.000013
50	0.000000	-0.013068	0.000001	-0.000003	0.000000	0.000207
51	0.000000	-0.011523	0.000001	-0.000007	0.000000	0.000379
52	0.000000	-0.009177	0.000001	-0.000011	0.000000	0.000512
53	0.000000	-0.006249	0.000001	-0.000012	0.000000	0.000588
54	0.000000	-0.003083	0.000001	-0.000013	0.000000	0.000588
57	0.000000	-0.000131	0.000001	-0.000011	0.000000	0.000495
64	0.000000	0.001978	0.000001	-0.000008	0.000000	0.000363
65	0.000000	0.003461	0.000001	-0.000006	0.000000	0.000245
66	0.000000	0.004394	0.000001	-0.000004	0.000000	0.000143
67	0.000000	0.004847	0.000001	-0.000002	0.000000	0.000054
68	0.000000	0.004896	0.000001	0.000000	0.000000	-0.000020
69	0.000000	0.004612	0.000000	0.000001	0.000000	-0.000079
70	0.000000	0.004069	0.000000	0.000002	0.000000	-0.000123
71	0.000000	0.003340	0.000000	0.000003	0.000000	-0.000153
72	0.000000	0.002498	0.000000	0.000003	0.000000	-0.000169
73	0.000000	0.001615	0.000000	0.000003	0.000000	-0.000169
74	0.000000	0.000766	0.000000	0.000003	0.000000	-0.000155
77	0.000000	0.000022	0.000000	0.000002	0.000000	-0.000127
84	0.000000	-0.000518	0.000000	0.000002	0.000000	-0.000093
85	0.000000	-0.000897	0.000000	0.000001	0.000000	-0.000063
86	0.000000	-0.001135	0.000000	0.000001	0.000000	-0.000036
87	0.000000	-0.001251	0.000000	0.000000	0.000000	-0.000014
88	0.000000	-0.001262	0.000000	0.000000	0.000000	0.000005
89	0.000000	-0.001188	0.000000	0.000000	0.000000	0.000020
90	0.000000	-0.001048	0.000000	0.000000	0.000000	0.000032
91	0.000000	-0.000860	0.000000	-0.000001	0.000000	0.000039
92	0.000000	-0.000643	0.000000	-0.000001	0.000000	0.000043
93	0.000000	-0.000416	0.000000	-0.000001	0.000000	0.000044
94	0.000000	-0.000197	0.000000	-0.000001	0.000000	0.000040
97	0.000000	-0.000006	0.000000	-0.000001	0.000000	0.000033
104	0.000000	0.000133	0.000000	0.000000	0.000000	0.000024
105	0.000000	0.000231	0.000000	0.000000	0.000000	0.000016
106	0.000000	0.000292	0.000000	0.000000	0.000000	0.000009
107	0.000000	0.000322	0.000000	0.000000	0.000000	0.000004
108	0.000000	0.000325	0.000000	0.000000	0.000000	-0.000001
109	0.000000	0.000306	0.000000	0.000000	0.000000	-0.000005
110	0.000000	0.000270	0.000000	0.000000	0.000000	-0.000008
111	0.000000	0.000221	0.000000	0.000000	0.000000	-0.000010
112	0.000000	0.000165	0.000000	0.000000	0.000000	-0.000011
113	0.000000	0.000107	0.000000	0.000000	0.000000	-0.000011
114	0.000000	0.000051	0.000000	0.000000	0.000000	-0.000010
117	0.000000	0.000001	0.000000	0.000000	0.000000	-0.000008
124	0.000000	-0.000034	0.000000	0.000000	0.000000	-0.000006
125	0.000000	-0.000059	0.000000	0.000000	0.000000	-0.000004
126	0.000000	-0.000075	0.000000	0.000000	0.000000	-0.000002
127	0.000000	-0.000083	0.000000	0.000000	0.000000	-0.000001
128	0.000000	-0.000084	0.000000	0.000000	0.000000	0.000000
129	0.000000	-0.000079	0.000000	0.000000	0.000000	0.000001
130	0.000000	-0.000069	0.000000	0.000000	0.000000	0.000002
131	0.000000	-0.000057	0.000000	0.000000	0.000000	0.000003
132	0.000000	-0.000043	0.000000	0.000000	0.000000	0.000003
133	0.000000	-0.000028	0.000000	0.000000	0.000000	0.000003
134	0.000000	-0.000013	0.000000	0.000000	0.000000	0.000003
137	0.000000	0.000000	0.000000	0.000000	0.000000	0.000002
144	0.000000	0.000009	0.000000	0.000000	0.000000	0.000002
145	0.000000	0.000015	0.000000	0.000000	0.000000	0.000001
146	0.000000	0.000019	0.000000	0.000000	0.000000	0.000001
147	0.000000	0.000021	0.000000	0.000000	0.000000	0.000000
148	0.000000	0.000021	0.000000	0.000000	0.000000	0.000000
149	0.000000	0.000020	0.000000	0.000000	0.000000	0.000000
150	0.000000	0.000018	0.000000	0.000000	0.000000	-0.000001
151	0.000000	0.000015	0.000000	0.000000	0.000000	-0.000001
152	0.000000	0.000011	0.000000	0.000000	0.000000	-0.000001
153	0.000000	0.000007	0.000000	0.000000	0.000000	-0.000001
154	0.000000	0.000003	0.000000	0.000000	0.000000	-0.000001
157	0.000000	0.000000	0.000000	0.000000	0.000000	-0.000001
163	0.000000	-0.000002	0.000000	0.000000	0.000000	0.000000
164	0.000000	-0.000004	0.000000	0.000000	0.000000	0.000000
165	0.000000	-0.000005	0.000000	0.000000	0.000000	0.000000
166	0.000000	-0.000005	0.000000	0.000000	0.000000	0.000000
167	0.000000	-0.000005	0.000000	0.000000	0.000000	0.000000
168	0.000000	-0.000005	0.000000	0.000000	0.000000	0.000000
169	0.000000	-0.000005	0.000000	0.000000	0.000000	0.000000
170	0.000000	-0.000004	0.000000	0.000000	0.000000	0.000000
171	0.000000	-0.000003	0.000000	0.000000	0.000000	0.000000
172	0.000000	-0.000002	0.000000	0.000000	0.000000	0.000000
173	0.000000	-0.000001	0.000000	0.000000	0.000000	0.000000
176	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
182	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000
183	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000
184	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000
185	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000
186	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000
187	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000
188	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000
189	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
192	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

HIPOTESIS 5

hipo 5 Carga de Vanos 2 y 3

DESPLAZAMIENTOS DE NUDOS

NUDO	DESP. X	DESP. Y	DESP. Z	GIRO X	GIRO Y	GIRO Z
3	0.000000	0.000003	-0.000001	-0.000005	0.000000	0.000156
8	0.000000	0.000801	0.000000	-0.000005	0.000000	0.000150
9	0.000000	0.001538	0.000000	-0.000004	0.000000	0.000132
10	0.000000	0.002155	0.000000	-0.000003	0.000000	0.000102
11	0.000000	0.002591	0.000000	-0.000002	0.000000	0.000060
12	0.000000	0.002786	0.000000	-0.000001	0.000000	0.000006
13	0.000000	0.002679	0.000001	0.000001	0.000000	-0.000061
14	0.000000	0.002211	0.000001	0.000004	0.000000	-0.000139
15	0.000000	0.001320	0.000001	0.000006	0.000000	-0.000230
18	0.000000	-0.000053	0.000001	0.000009	0.000000	-0.000332
24	0.000000	-0.002098	0.000001	0.000011	0.000000	-0.000398
25	0.000000	-0.004239	0.000001	0.000011	0.000000	-0.000386
26	0.000000	-0.006121	0.000001	0.000009	0.000000	-0.000315
27	0.000000	-0.007504	0.000002	0.000006	0.000000	-0.000202
28	0.000000	-0.008206	0.000002	0.000003	0.000000	-0.000066
29	0.000000	-0.008172	0.000002	-0.000001	0.000000	0.000074
30	0.000000	-0.007427	0.000002	-0.000004	0.000000	0.000201
31	0.000000	-0.006074	0.000002	-0.000007	0.000000	0.000296
32	0.000000	-0.004338	0.000002	-0.000008	0.000000	0.000339
33	0.000000	-0.002496	0.000002	-0.000008	0.000000	0.000315
34	0.000000	-0.000946	0.000002	-0.000005	0.000000	0.000202
37	0.000000	-0.000198	0.000002	0.000000	0.000000	-0.000013
44	0.000000	-0.001085	0.000002	0.000006	0.000000	-0.000226
45	0.000000	-0.002730	0.000002	0.000008	0.000000	-0.000332
46	0.000000	-0.004642	0.000002	0.000009	0.000000	-0.000353
47	0.000000	-0.006445	0.000002	0.000008	0.000000	-0.000304
48	0.000000	-0.007820	0.000002	0.000006	0.000000	-0.000204
49	0.000000	-0.008574	0.000002	0.000003	0.000000	-0.000074
50	0.000000	-0.008596	0.000002	-0.000001	0.000000	0.000071
51	0.000000	-0.007853	0.000001	-0.000004	0.000000	0.000210
52	0.000000	-0.006433	0.000001	-0.000007	0.000000	0.000327
53	0.000000	-0.004475	0.000001	-0.000009	0.000000	0.000402
54	0.000000	-0.002242	0.000001	-0.000009	0.000000	0.000417
57	0.000000	-0.000106	0.000001	-0.000008	0.000000	0.000356
64	0.000000	0.001409	0.000001	-0.000006	0.000000	0.000261
65	0.000000	0.002476	0.000001	-0.000004	0.000000	0.000177
66	0.000000	0.003147	0.000001	-0.000003	0.000000	0.000103
67	0.000000	0.003474	0.000001	-0.000001	0.000000	0.000039
68	0.000000	0.003510	0.000000	0.000000	0.000000	-0.000014
69	0.000000	0.003307	0.000000	0.000001	0.000000	-0.000056
70	0.000000	0.002918	0.000000	0.000001	0.000000	-0.000088
71	0.000000	0.002396	0.000000	0.000002	0.000000	-0.000110
72	0.000000	0.001792	0.000000	0.000002	0.000000	-0.000121
73	0.000000	0.001159	0.000000	0.000002	0.000000	-0.000121
74	0.000000	0.000549	0.000000	0.000002	0.000000	-0.000111
77	0.000000	0.000016	0.000000	0.000002	0.000000	-0.000091
84	0.000000	-0.000371	0.000000	0.000001	0.000000	-0.000067
85	0.000000	-0.000644	0.000000	0.000001	0.000000	-0.000045
86	0.000000	-0.000815	0.000000	0.000001	0.000000	-0.000026
87	0.000000	-0.000897	0.000000	0.000000	0.000000	-0.000010
88	0.000000	-0.000905	0.000000	0.000000	0.000000	0.000004
89	0.000000	-0.000852	0.000000	0.000000	0.000000	0.000015
90	0.000000	-0.000752	0.000000	0.000000	0.000000	0.000023
91	0.000000	-0.000617	0.000000	0.000000	0.000000	0.000028
92	0.000000	-0.000461	0.000000	0.000000	0.000000	0.000031
93	0.000000	-0.000298	0.000000	0.000000	0.000000	0.000031
94	0.000000	-0.000141	0.000000	0.000000	0.000000	0.000029
97	0.000000	-0.000004	0.000000	0.000000	0.000000	0.000023
104	0.000000	0.000096	0.000000	0.000000	0.000000	0.000017
105	0.000000	0.000166	0.000000	0.000000	0.000000	0.000012
106	0.000000	0.000210	0.000000	0.000000	0.000000	0.000007
107	0.000000	0.000231	0.000000	0.000000	0.000000	0.000003
108	0.000000	0.000233	0.000000	0.000000	0.000000	-0.000001
109	0.000000	0.000219	0.000000	0.000000	0.000000	-0.000004
110	0.000000	0.000193	0.000000	0.000000	0.000000	-0.000006
111	0.000000	0.000159	0.000000	0.000000	0.000000	-0.000007
112	0.000000	0.000119	0.000000	0.000000	0.000000	-0.000008
113	0.000000	0.000077	0.000000	0.000000	0.000000	-0.000008
114	0.000000	0.000036	0.000000	0.000000	0.000000	-0.000007
117	0.000000	0.000001	0.000000	0.000000	0.000000	-0.000006
124	0.000000	-0.000025	0.000000	0.000000	0.000000	-0.000004
125	0.000000	-0.000043	0.000000	0.000000	0.000000	-0.000003
126	0.000000	-0.000054	0.000000	0.000000	0.000000	-0.000002
127	0.000000	-0.000059	0.000000	0.000000	0.000000	-0.000001
128	0.000000	-0.000060	0.000000	0.000000	0.000000	0.000000
129	0.000000	-0.000056	0.000000	0.000000	0.000000	0.000001
130	0.000000	-0.000050	0.000000	0.000000	0.000000	0.000002
131	0.000000	-0.000041	0.000000	0.000000	0.000000	0.000002
132	0.000000	-0.000031	0.000000	0.000000	0.000000	0.000002
133	0.000000	-0.000020	0.000000	0.000000	0.000000	0.000002
134	0.000000	-0.000009	0.000000	0.000000	0.000000	0.000002
137	0.000000	0.000000	0.000000	0.000000	0.000000	0.000002
144	0.000000	0.000006	0.000000	0.000000	0.000000	0.000001
145	0.000000	0.000011	0.000000	0.000000	0.000000	0.000001
146	0.000000	0.000014	0.000000	0.000000	0.000000	0.000000
147	0.000000	0.000015	0.000000	0.000000	0.000000	0.000000
148	0.000000	0.000015	0.000000	0.000000	0.000000	0.000000
149	0.000000	0.000014	0.000000	0.000000	0.000000	0.000000
150	0.000000	0.000013	0.000000	0.000000	0.000000	0.000000
151	0.000000	0.000010	0.000000	0.000000	0.000000	0.000000
152	0.000000	0.000008	0.000000	0.000000	0.000000	-0.000001
153	0.000000	0.000005	0.000000	0.000000	0.000000	-0.000001
154	0.000000	0.000002	0.000000	0.000000	0.000000	0.000000
157	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
163	0.000000	-0.000002	0.000000	0.000000	0.000000	0.000000
164	0.000000	-0.000003	0.000000	0.000000	0.000000	0.000000
165	0.000000	-0.000004	0.000000	0.000000	0.000000	0.000000
166	0.000000	-0.000004	0.000000	0.000000	0.000000	0.000000
167	0.000000	-0.000004	0.000000	0.000000	0.000000	0.000000
168	0.000000	-0.000004	0.000000	0.000000	0.000000	0.000000
169	0.000000	-0.000003	0.000000	0.000000	0.000000	0.000000
170	0.000000	-0.000003	0.000000	0.000000	0.000000	0.000000
171	0.000000	-0.000002	0.000000	0.000000	0.000000	0.000000
172	0.000000	-0.000001	0.000000	0.000000	0.000000	0.000000
173	0.000000	-0.000001	0.000000	0.000000	0.000000	0.000000
176	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
182	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
183	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000
184	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000
185	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000
186	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000
187	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000
188	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
189	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
192	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

proc Viaducto Papiol - Prueba de carga

HIPOTESIS 6

hipo 6 Carga de Vanos 2 y 4

DESPLAZAMIENTOS DE NUDOS

NUDO	DESP. X	DESP. Y	DESP. Z	GIRO X	GIRO Y	GIRO Z
3	0.000000	0.000005	-0.000001	-0.000007	0.000000	0.000224
8	0.000000	0.001151	-0.000001	-0.000007	0.000000	0.000216
9	0.000000	0.002211	0.000000	-0.000006	0.000000	0.000190
10	0.000000	0.003097	0.000000	-0.000005	0.000000	0.000147
11	0.000000	0.003724	0.000000	-0.000003	0.000000	0.000086
12	0.000000	0.004005	0.000000	-0.000001	0.000000	0.000008
13	0.000000	0.003853	0.000001	0.000002	0.000000	-0.000087
14	0.000000	0.003181	0.000001	0.000005	0.000000	-0.000199
15	0.000000	0.001904	0.000001	0.000009	0.000000	-0.000329
18	0.000000	-0.000066	0.000001	0.000013	0.000000	-0.000476
24	0.000000	-0.002976	0.000001	0.000016	0.000000	-0.000581
25	0.000000	-0.006126	0.000001	0.000017	0.000000	-0.000588
26	0.000000	-0.009072	0.000001	0.000015	0.000000	-0.000519
27	0.000000	-0.011481	0.000001	0.000012	0.000000	-0.000389
28	0.000000	-0.013081	0.000001	0.000007	0.000000	-0.000218
29	0.000000	-0.013724	0.000001	0.000002	0.000000	-0.000026
30	0.000000	-0.013345	0.000001	-0.000003	0.000000	0.000173
31	0.000000	-0.011955	0.000001	-0.000008	0.000000	0.000357
32	0.000000	-0.009688	0.000001	-0.000012	0.000000	0.000509
33	0.000000	-0.006730	0.000001	-0.000015	0.000000	0.000611
34	0.000000	-0.003388	0.000001	-0.000016	0.000000	0.000643
37	0.000000	-0.000079	0.000001	-0.000015	0.000000	0.000590
44	0.000000	0.002629	0.000001	-0.000013	0.000000	0.000493
45	0.000000	0.004852	0.000001	-0.000010	0.000000	0.000396
46	0.000000	0.006587	0.000001	-0.000008	0.000000	0.000298
47	0.000000	0.007833	0.000001	-0.000006	0.000000	0.000200
48	0.000000	0.008586	0.000001	-0.000003	0.000000	0.000101
49	0.000000	0.008845	0.000001	-0.000001	0.000000	0.000002
50	0.000000	0.008607	0.000001	0.000001	0.000000	-0.000098
51	0.000000	0.007870	0.000001	0.000004	0.000000	-0.000198
52	0.000000	0.006632	0.000001	0.000006	0.000000	-0.000298
53	0.000000	0.004890	0.000001	0.000008	0.000000	-0.000399
54	0.000000	0.002642	0.000001	0.000011	0.000000	-0.000500
57	0.000000	-0.000113	0.000001	0.000013	0.000000	-0.000602
64	0.000000	-0.003507	0.000001	0.000015	0.000000	-0.000657
65	0.000000	-0.006914	0.000001	0.000014	0.000000	-0.000623
66	0.000000	-0.009931	0.000001	0.000012	0.000000	-0.000521
67	0.000000	-0.012268	0.000000	0.000009	0.000000	-0.000367
68	0.000000	-0.013694	0.000000	0.000005	0.000000	-0.000180
69	0.000000	-0.014103	0.000000	0.000001	0.000000	0.000021
70	0.000000	-0.013472	0.000000	-0.000003	0.000000	0.000219
71	0.000000	-0.011853	0.000000	-0.000007	0.000000	0.000394
72	0.000000	-0.009423	0.000000	-0.000009	0.000000	0.000529
73	0.000000	-0.006409	0.000000	-0.000011	0.000000	0.000605
74	0.000000	-0.003159	0.000000	-0.000011	0.000000	0.000603
77	0.000000	-0.000133	0.000000	-0.000010	0.000000	0.000508
84	0.000000	0.002029	0.000000	-0.000007	0.000000	0.000372
85	0.000000	0.003550	0.000000	-0.000005	0.000000	0.000252
86	0.000000	0.004506	0.000000	-0.000003	0.000000	0.000146
87	0.000000	0.004971	0.000000	-0.000002	0.000000	0.000056
88	0.000000	0.005021	0.000000	0.000000	0.000000	-0.000020
89	0.000000	0.004730	0.000000	0.000001	0.000000	-0.000081
90	0.000000	0.004173	0.000000	0.000002	0.000000	-0.000126
91	0.000000	0.003425	0.000000	0.000002	0.000000	-0.000157
92	0.000000	0.002561	0.000000	0.000003	0.000000	-0.000173
93	0.000000	0.001656	0.000000	0.000003	0.000000	-0.000174
94	0.000000	0.000785	0.000000	0.000002	0.000000	-0.000159
97	0.000000	0.000023	0.000000	0.000002	0.000000	-0.000130
104	0.000000	-0.000531	0.000000	0.000002	0.000000	-0.000095
105	0.000000	-0.000920	0.000000	0.000001	0.000000	-0.000064
106	0.000000	-0.001164	0.000000	0.000001	0.000000	-0.000037
107	0.000000	-0.001283	0.000000	0.000000	0.000000	-0.000014
108	0.000000	-0.001294	0.000000	0.000000	0.000000	0.000005
109	0.000000	-0.001218	0.000000	0.000000	0.000000	0.000021
110	0.000000	-0.001075	0.000000	0.000000	0.000000	0.000033
111	0.000000	-0.000882	0.000000	0.000000	0.000000	0.000040
112	0.000000	-0.000659	0.000000	-0.000001	0.000000	0.000045
113	0.000000	-0.000426	0.000000	-0.000001	0.000000	0.000045
114	0.000000	-0.000202	0.000000	-0.000001	0.000000	0.000041
117	0.000000	-0.000006	0.000000	0.000000	0.000000	0.000033
124	0.000000	0.000137	0.000000	0.000000	0.000000	0.000025
125	0.000000	0.000237	0.000000	0.000000	0.000000	0.000017
126	0.000000	0.000300	0.000000	0.000000	0.000000	0.000010
127	0.000000	0.000330	0.000000	0.000000	0.000000	0.000004
128	0.000000	0.000333	0.000000	0.000000	0.000000	-0.000001
129	0.000000	0.000314	0.000000	0.000000	0.000000	-0.000005
130	0.000000	0.000276	0.000000	0.000000	0.000000	-0.000008
131	0.000000	0.000227	0.000000	0.000000	0.000000	-0.000010
132	0.000000	0.000170	0.000000	0.000000	0.000000	-0.000011
133	0.000000	0.000110	0.000000	0.000000	0.000000	-0.000011
134	0.000000	0.000052	0.000000	0.000000	0.000000	-0.000011
137	0.000000	0.000001	0.000000	0.000000	0.000000	-0.000009
144	0.000000	-0.000035	0.000000	0.000000	0.000000	-0.000006
145	0.000000	-0.000061	0.000000	0.000000	0.000000	-0.000004
146	0.000000	-0.000077	0.000000	0.000000	0.000000	-0.000002
147	0.000000	-0.000085	0.000000	0.000000	0.000000	-0.000001
148	0.000000	-0.000086	0.000000	0.000000	0.000000	0.000000
149	0.000000	-0.000081	0.000000	0.000000	0.000000	0.000001
150	0.000000	-0.000071	0.000000	0.000000	0.000000	0.000002
151	0.000000	-0.000058	0.000000	0.000000	0.000000	0.000003
152	0.000000	-0.000043	0.000000	0.000000	0.000000	0.000003
153	0.000000	-0.000028	0.000000	0.000000	0.000000	0.000003
154	0.000000	-0.000013	0.000000	0.000000	0.000000	0.000003
157	0.000000	0.000000	0.000000	0.000000	0.000000	0.000002
163	0.000000	0.000009	0.000000	0.000000	0.000000	0.000002
164	0.000000	0.000016	0.000000	0.000000	0.000000	0.000001
165	0.000000	0.000020	0.000000	0.000000	0.000000	0.000001
166	0.000000	0.000022	0.000000	0.000000	0.000000	0.000000
167	0.000000	0.000022	0.000000	0.000000	0.000000	0.000000
168	0.000000	0.000020	0.000000	0.000000	0.000000	0.000000
169	0.000000	0.000018	0.000000	0.000000	0.000000	-0.000001
170	0.000000	0.000015	0.000000	0.000000	0.000000	-0.000001
171	0.000000	0.000011	0.000000	0.000000	0.000000	-0.000001
172	0.000000	0.000007	0.000000	0.000000	0.000000	-0.000001
173	0.000000	0.000003	0.000000	0.000000	0.000000	-0.000001
176	0.000000	0.000000	0.000000	0.000000	0.000000	-0.000001
182	0.000000	-0.000002	0.000000	0.000000	0.000000	0.000000
183	0.000000	-0.000004	0.000000	0.000000	0.000000	0.000000
184	0.000000	-0.000004	0.000000	0.000000	0.000000	0.000000
185	0.000000	-0.000004	0.000000	0.000000	0.000000	0.000000
186	0.000000	-0.000004	0.000000	0.000000	0.000000	0.000000
187	0.000000	-0.000003	0.000000	0.000000	0.000000	0.000000
188	0.000000	-0.000002	0.000000	0.000000	0.000000	0.000000
189	0.000000	-0.000001	0.000000	0.000000	0.000000	0.000000
192	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

proc Viaducto Papiol - Prueba de carga

HIPOTESIS 7

hipo 7 Carga de Vanos 3 y 4

DESPLAZAMIENTOS DE NUDOS

NUDO	DESP. X	DESP. Y	DESP. Z	GIRO X	GIRO Y	GIRO Z
3	0.000000	-0.000001	0.000000	0.000001	0.000000	-0.000040
8	0.000000	-0.000207	0.000000	0.000001	0.000000	-0.000039
9	0.000000	-0.000397	0.000000	0.000001	0.000000	-0.000034
10	0.000000	-0.000557	0.000000	0.000001	0.000000	-0.000026
11	0.000000	-0.000670	0.000000	0.000001	0.000000	-0.000016
12	0.000000	-0.000720	0.000000	0.000000	0.000000	-0.000002
13	0.000000	-0.000694	0.000000	0.000000	0.000000	0.000016
14	0.000000	-0.000574	0.000000	-0.000001	0.000000	0.000036
15	0.000000	-0.000345	0.000000	-0.000002	0.000000	0.000059
18	0.000000	0.000008	0.000000	-0.000002	0.000000	0.000085
24	0.000000	0.000519	0.000000	-0.000003	0.000000	0.000108
25	0.000000	0.001116	0.000000	-0.000003	0.000000	0.000120
26	0.000000	0.001744	0.000000	-0.000003	0.000000	0.000121
27	0.000000	0.002351	0.000000	-0.000003	0.000000	0.000111
28	0.000000	0.002881	0.000000	-0.000003	0.000000	0.000090
29	0.000000	0.003280	0.000000	-0.000002	0.000000	0.000059
30	0.000000	0.003495	0.000000	-0.000001	0.000000	0.000016
31	0.000000	0.003472	0.000001	0.000001	0.000000	-0.000037
32	0.000000	0.003156	0.000001	0.000002	0.000000	-0.000101
33	0.000000	0.002494	0.000001	0.000004	0.000000	-0.000175
34	0.000000	0.001431	0.000001	0.000006	0.000000	-0.000261
37	0.000000	-0.000086	0.000001	0.000009	0.000000	-0.000357
44	0.000000	-0.002239	0.000001	0.000011	0.000000	-0.000417
45	0.000000	-0.004456	0.000001	0.000010	0.000000	-0.000399
46	0.000000	-0.006387	0.000001	0.000009	0.000000	-0.000323
47	0.000000	-0.007796	0.000001	0.000006	0.000000	-0.000205
48	0.000000	-0.008504	0.000001	0.000003	0.000000	-0.000065
49	0.000000	-0.008458	0.000002	-0.000001	0.000000	0.000077
50	0.000000	-0.007689	0.000002	-0.000004	0.000000	0.000207
51	0.000000	-0.006302	0.000002	-0.000006	0.000000	0.000303
52	0.000000	-0.004526	0.000002	-0.000007	0.000000	0.000347
53	0.000000	-0.002640	0.000002	-0.000007	0.000000	0.000324
54	0.000000	-0.001048	0.000002	-0.000005	0.000000	0.000210
57	0.000000	-0.000261	0.000002	0.000000	0.000000	-0.000006
64	0.000000	-0.001119	0.000001	0.000005	0.000000	-0.000220
65	0.000000	-0.002741	0.000001	0.000007	0.000000	-0.000328
66	0.000000	-0.004637	0.000001	0.000008	0.000000	-0.000350
67	0.000000	-0.006429	0.000001	0.000007	0.000000	-0.000302
68	0.000000	-0.007797	0.000001	0.000005	0.000000	-0.000203
69	0.000000	-0.008548	0.000001	0.000002	0.000000	-0.000074
70	0.000000	-0.008571	0.000001	-0.000001	0.000000	0.000071
71	0.000000	-0.007831	0.000001	-0.000003	0.000000	0.000210
72	0.000000	-0.006416	0.000001	-0.000006	0.000000	0.000326
73	0.000000	-0.004464	0.000001	-0.000007	0.000000	0.000401
74	0.000000	-0.002237	0.000000	-0.000008	0.000000	0.000416
77	0.000000	-0.000106	0.000000	-0.000007	0.000000	0.000355
84	0.000000	0.001405	0.000000	-0.000005	0.000000	0.000260
85	0.000000	0.002469	0.000000	-0.000004	0.000000	0.000176
86	0.000000	0.003138	0.000000	-0.000002	0.000000	0.000102
87	0.000000	0.003465	0.000000	-0.000001	0.000000	0.000039
88	0.000000	0.003501	0.000000	0.000000	0.000000	-0.000014
89	0.000000	0.003299	0.000000	0.000001	0.000000	-0.000056
90	0.000000	0.002911	0.000000	0.000001	0.000000	-0.000088
91	0.000000	0.002390	0.000000	0.000002	0.000000	-0.000110
92	0.000000	0.001787	0.000000	0.000002	0.000000	-0.000121
93	0.000000	0.001156	0.000000	0.000002	0.000000	-0.000121
94	0.000000	0.000548	0.000000	0.000002	0.000000	-0.000111
97	0.000000	0.000016	0.000000	0.000001	0.000000	-0.000091
104	0.000000	-0.000370	0.000000	0.000001	0.000000	-0.000067
105	0.000000	-0.000642	0.000000	0.000001	0.000000	-0.000045
106	0.000000	-0.000812	0.000000	0.000000	0.000000	-0.000026
107	0.000000	-0.000895	0.000000	0.000000	0.000000	-0.000010
108	0.000000	-0.000903	0.000000	0.000000	0.000000	0.000004
109	0.000000	-0.000850	0.000000	0.000000	0.000000	0.000015
110	0.000000	-0.000750	0.000000	0.000000	0.000000	0.000023
111	0.000000	-0.000615	0.000000	0.000000	0.000000	0.000028
112	0.000000	-0.000460	0.000000	0.000000	0.000000	0.000031
113	0.000000	-0.000297	0.000000	0.000000	0.000000	0.000031
114	0.000000	-0.000141	0.000000	0.000000	0.000000	0.000029
117	0.000000	-0.000004	0.000000	0.000000	0.000000	0.000023
124	0.000000	0.000095	0.000000	0.000000	0.000000	0.000017
125	0.000000	0.000165	0.000000	0.000000	0.000000	0.000012
126	0.000000	0.000209	0.000000	0.000000	0.000000	0.000007
127	0.000000	0.000230	0.000000	0.000000	0.000000	0.000003
128	0.000000	0.000232	0.000000	0.000000	0.000000	-0.000001
129	0.000000	0.000219	0.000000	0.000000	0.000000	-0.000004
130	0.000000	0.000193	0.000000	0.000000	0.000000	-0.000006
131	0.000000	0.000158	0.000000	0.000000	0.000000	-0.000007
132	0.000000	0.000118	0.000000	0.000000	0.000000	-0.000008
133	0.000000	0.000077	0.000000	0.000000	0.000000	-0.000008
134	0.000000	0.000036	0.000000	0.000000	0.000000	-0.000007
137	0.000000	0.000001	0.000000	0.000000	0.000000	-0.000006
144	0.000000	-0.000025	0.000000	0.000000	0.000000	-0.000004
145	0.000000	-0.000042	0.000000	0.000000	0.000000	-0.000003
146	0.000000	-0.000054	0.000000	0.000000	0.000000	-0.000002
147	0.000000	-0.000059	0.000000	0.000000	0.000000	-0.000001
148	0.000000	-0.000060	0.000000	0.000000	0.000000	0.000000
149	0.000000	-0.000056	0.000000	0.000000	0.000000	0.000001
150	0.000000	-0.000050	0.000000	0.000000	0.000000	0.000002
151	0.000000	-0.000041	0.000000	0.000000	0.000000	0.000002
152	0.000000	-0.000030	0.000000	0.000000	0.000000	0.000002
153	0.000000	-0.000020	0.000000	0.000000	0.000000	0.000002
154	0.000000	-0.000009	0.000000	0.000000	0.000000	0.000002
157	0.000000	0.000000	0.000000	0.000000	0.000000	0.000002
163	0.000000	0.000006	0.000000	0.000000	0.000000	0.000001
164	0.000000	0.000011	0.000000	0.000000	0.000000	0.000001
165	0.000000	0.000014	0.000000	0.000000	0.000000	0.000000
166	0.000000	0.000015	0.000000	0.000000	0.000000	0.000000
167	0.000000	0.000015	0.000000	0.000000	0.000000	0.000000
168	0.000000	0.000014	0.000000	0.000000	0.000000	0.000000
169	0.000000	0.000013	0.000000	0.000000	0.000000	0.000000
170	0.000000	0.000010	0.000000	0.000000	0.000000	0.000000
171	0.000000	0.000008	0.000000	0.000000	0.000000	-0.000001
172	0.000000	0.000005	0.000000	0.000000	0.000000	-0.000001
173	0.000000	0.000002	0.000000	0.000000	0.000000	0.000000
176	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
182	0.000000	-0.000001	0.000000	0.000000	0.000000	0.000000
183	0.000000	-0.000002	0.000000	0.000000	0.000000	0.000000
184	0.000000	-0.000003	0.000000	0.000000	0.000000	0.000000
185	0.000000	-0.000003	0.000000	0.000000	0.000000	0.000000
186	0.000000	-0.000003	0.000000	0.000000	0.000000	0.000000
187	0.000000	-0.000002	0.000000	0.000000	0.000000	0.000000
188	0.000000	-0.000002	0.000000	0.000000	0.000000	0.000000
189	0.000000	-0.000001	0.000000	0.000000	0.000000	0.000000
192	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

proc Viaducto Papiol - Prueba de carga

HIPOTESIS 8

hipo 8 Carga de Vanos 3 y 5

DESPLAZAMIENTOS DE NUDOS

NUDO	DESP. X	DESP. Y	DESP. Z	GIRO X	GIRO Y	GIRO Z
3	0.000002	-0.000001	0.000000	0.000002	0.000000	-0.000058
8	0.000002	-0.000297	0.000000	0.000002	0.000000	-0.000056
9	0.000002	-0.000570	0.000000	0.000002	0.000000	-0.000049
10	0.000002	-0.000799	0.000000	0.000001	0.000000	-0.000038
11	0.000002	-0.000961	0.000000	0.000001	0.000000	-0.000022
12	0.000002	-0.001034	0.000000	0.000000	0.000000	-0.000002
13	0.000002	-0.000995	0.000000	-0.000001	0.000000	0.000022
14	0.000002	-0.000823	0.000000	-0.000001	0.000000	0.000051
15	0.000002	-0.000495	0.000000	-0.000002	0.000000	0.000085
18	0.000002	0.000011	0.000000	-0.000003	0.000000	0.000122
24	0.000002	0.000745	0.000000	-0.000004	0.000000	0.000155
25	0.000002	0.001601	0.000000	-0.000005	0.000000	0.000172
26	0.000002	0.002503	0.000000	-0.000005	0.000000	0.000173
27	0.000002	0.003374	0.000000	-0.000005	0.000000	0.000159
28	0.000002	0.004134	0.000000	-0.000004	0.000000	0.000129
29	0.000002	0.004709	0.000001	-0.000003	0.000000	0.000084
30	0.000002	0.005018	0.000001	-0.000001	0.000000	0.000024
31	0.000002	0.004987	0.000001	0.000001	0.000000	-0.000052
32	0.000002	0.004536	0.000001	0.000003	0.000000	-0.000144
33	0.000002	0.003588	0.000001	0.000006	0.000000	-0.000251
34	0.000002	0.002067	0.000001	0.000009	0.000000	-0.000374
37	0.000002	-0.000106	0.000001	0.000013	0.000000	-0.000512
44	0.000002	-0.003166	0.000001	0.000015	0.000000	-0.000607
45	0.000002	-0.006421	0.000001	0.000016	0.000000	-0.000606
46	0.000002	-0.009432	0.000001	0.000014	0.000000	-0.000529
47	0.000002	-0.011871	0.000001	0.000011	0.000000	-0.000393
48	0.000002	-0.013473	0.000001	0.000007	0.000000	-0.000216
49	0.000002	-0.014093	0.000001	0.000002	0.000000	-0.000019
50	0.000002	-0.013673	0.000001	-0.000003	0.000000	0.000183
51	0.000002	-0.012229	0.000001	-0.000007	0.000000	0.000369
52	0.000002	-0.009899	0.000001	-0.000011	0.000000	0.000521
53	0.000002	-0.006876	0.000001	-0.000013	0.000000	0.000623
54	0.000002	-0.003470	0.000001	-0.000014	0.000000	0.000654
57	0.000002	-0.000106	0.000001	-0.000013	0.000000	0.000599
64	0.000002	0.002644	0.000001	-0.000011	0.000000	0.000500
65	0.000002	0.004896	0.000001	-0.000009	0.000000	0.000401
66	0.000002	0.006651	0.000001	-0.000007	0.000000	0.000301
67	0.000002	0.007907	0.000001	-0.000005	0.000000	0.000201
68	0.000002	0.008664	0.000000	-0.000003	0.000000	0.000101
69	0.000002	0.008920	0.000000	-0.000001	0.000000	0.000001
70	0.000002	0.008674	0.000000	0.000001	0.000000	-0.000099
71	0.000002	0.007925	0.000000	0.000003	0.000000	-0.000200
72	0.000002	0.006674	0.000000	0.000005	0.000000	-0.000301
73	0.000002	0.004917	0.000000	0.000007	0.000000	-0.000402
74	0.000002	0.002655	0.000000	0.000009	0.000000	-0.000503
77	0.000002	-0.000113	0.000000	0.000011	0.000000	-0.000604
84	0.000002	-0.003516	0.000000	0.000013	0.000000	-0.000659
85	0.000002	-0.006929	0.000000	0.000012	0.000000	-0.000624
86	0.000002	-0.009950	0.000000	0.000011	0.000000	-0.000522
87	0.000002	-0.012289	0.000000	0.000008	0.000000	-0.000367
88	0.000002	-0.013715	0.000000	0.000005	0.000000	-0.000180
89	0.000002	-0.014123	0.000000	0.000001	0.000000	0.000021
90	0.000002	-0.013489	0.000000	-0.000002	0.000000	0.000220
91	0.000002	-0.011868	0.000000	-0.000005	0.000000	0.000395
92	0.000002	-0.009434	0.000000	-0.000008	0.000000	0.000529
93	0.000002	-0.006416	0.000000	-0.000009	0.000000	0.000606
94	0.000002	-0.003162	0.000000	-0.000010	0.000000	0.000604
97	0.000002	-0.000133	0.000000	-0.000008	0.000000	0.000508
104	0.000002	0.002031	0.000000	-0.000006	0.000000	0.000373
105	0.000002	0.003554	0.000000	-0.000004	0.000000	0.000252
106	0.000002	0.004510	0.000000	-0.000003	0.000000	0.000146
107	0.000002	0.004976	0.000000	-0.000002	0.000000	0.000056
108	0.000002	0.005026	0.000000	0.000000	0.000000	-0.000020
109	0.000002	0.004735	0.000000	0.000001	0.000000	-0.000081
110	0.000002	0.004177	0.000000	0.000001	0.000000	-0.000127
111	0.000002	0.003429	0.000000	0.000002	0.000000	-0.000157
112	0.000002	0.002564	0.000000	0.000002	0.000000	-0.000173
113	0.000002	0.001658	0.000000	0.000002	0.000000	-0.000174
114	0.000002	0.000786	0.000000	0.000002	0.000000	-0.000159
117	0.000002	0.000023	0.000000	0.000002	0.000000	-0.000130
124	0.000002	-0.000531	0.000000	0.000001	0.000000	-0.000095
125	0.000002	-0.000921	0.000000	0.000001	0.000000	-0.000064
126	0.000002	-0.001165	0.000000	0.000001	0.000000	-0.000037
127	0.000002	-0.001284	0.000000	0.000000	0.000000	-0.000014
128	0.000002	-0.001295	0.000000	0.000000	0.000000	0.000005
129	0.000002	-0.001220	0.000000	0.000000	0.000000	0.000021
130	0.000002	-0.001076	0.000000	0.000000	0.000000	0.000033
131	0.000002	-0.000882	0.000000	0.000000	0.000000	0.000041
132	0.000002	-0.000660	0.000000	0.000000	0.000000	0.000045
133	0.000002	-0.000427	0.000000	0.000000	0.000000	0.000045
134	0.000002	-0.000202	0.000000	0.000000	0.000000	0.000041
137	0.000002	-0.000006	0.000000	0.000000	0.000000	0.000033
144	0.000002	0.000137	0.000000	0.000000	0.000000	0.000025
145	0.000002	0.000237	0.000000	0.000000	0.000000	0.000017
146	0.000002	0.000300	0.000000	0.000000	0.000000	0.000010
147	0.000002	0.000330	0.000000	0.000000	0.000000	0.000004
148	0.000002	0.000333	0.000000	0.000000	0.000000	-0.000001
149	0.000002	0.000313	0.000000	0.000000	0.000000	-0.000005
150	0.000002	0.000276	0.000000	0.000000	0.000000	-0.000008
151	0.000002	0.000226	0.000000	0.000000	0.000000	-0.000010
152	0.000002	0.000169	0.000000	0.000000	0.000000	-0.000011
153	0.000002	0.000109	0.000000	0.000000	0.000000	-0.000011
154	0.000002	0.000051	0.000000	0.000000	0.000000	-0.000011
157	0.000002	0.000001	0.000000	0.000000	0.000000	-0.000009
163	0.000002	-0.000035	0.000000	0.000000	0.000000	-0.000006
164	0.000002	-0.000061	0.000000	0.000000	0.000000	-0.000004
165	0.000002	-0.000077	0.000000	0.000000	0.000000	-0.000002
166	0.000002	-0.000084	0.000000	0.000000	0.000000	-0.000001
167	0.000002	-0.000085	0.000000	0.000000	0.000000	0.000000
168	0.000002	-0.000079	0.000000	0.000000	0.000000	0.000001
169	0.000002	-0.000070	0.000000	0.000000	0.000000	0.000002
170	0.000002	-0.000057	0.000000	0.000000	0.000000	0.000003
171	0.000002	-0.000042	0.000000	0.000000	0.000000	0.000003
172	0.000002	-0.000027	0.000000	0.000000	0.000000	0.000003
173	0.000002	-0.000013	0.000000	0.000000	0.000000	0.000003
176	0.000002	0.000000	0.000000	0.000000	0.000000	0.000002
182	0.000002	0.000008	0.000000	0.000000	0.000000	0.000001
183	0.000002	0.000014	0.000000	0.000000	0.000000	0.000001
184	0.000002	0.000017	0.000000	0.000000	0.000000	0.000000
185	0.000002	0.000017	0.000000	0.000000	0.000000	0.000000
186	0.000002	0.000016	0.000000	0.000000	0.000000	0.000000
187	0.000002	0.000013	0.000000	0.000000	0.000000	-0.000001
188	0.000002	0.000010	0.000000	0.000000	0.000000	-0.000001
189	0.000002	0.000005	0.000000	0.000000	0.000000	-0.000001
192	0.000002	0.000000	0.000000	0.000000	0.000000	-0.000001

HIPOTESIS 9

hipo 9 Carga de Vanos 4 y 5

DESPLAZAMIENTOS DE NUDOS

NUDO	DESP. X	DESP. Y	DESP. Z	GIRO X	GIRO Y	GIRO Z
3	0.000001	0.000000	0.000000	0.000000	0.000000	0.000010
8	0.000001	0.000053	0.000000	0.000000	0.000000	0.000010
9	0.000001	0.000102	0.000000	0.000000	0.000000	0.000009
10	0.000001	0.000143	0.000000	0.000000	0.000000	0.000007
11	0.000001	0.000172	0.000000	0.000000	0.000000	0.000004
12	0.000001	0.000185	0.000000	0.000000	0.000000	0.000000
13	0.000001	0.000178	0.000000	0.000000	0.000000	-0.000004
14	0.000001	0.000147	0.000000	0.000000	0.000000	-0.000009
15	0.000001	0.000089	0.000000	0.000000	0.000000	-0.000015
18	0.000001	-0.000002	0.000000	0.000001	0.000000	-0.000022
24	0.000001	-0.000133	0.000000	0.000001	0.000000	-0.000028
25	0.000001	-0.000287	0.000000	0.000001	0.000000	-0.000031
26	0.000001	-0.000448	0.000000	0.000001	0.000000	-0.000031
27	0.000001	-0.000604	0.000000	0.000001	0.000000	-0.000028
28	0.000001	-0.000741	0.000000	0.000001	0.000000	-0.000023
29	0.000001	-0.000844	0.000000	0.000000	0.000000	-0.000015
30	0.000001	-0.000900	0.000000	0.000000	0.000000	-0.000004
31	0.000001	-0.000895	0.000000	0.000000	0.000000	0.000009
32	0.000001	-0.000815	0.000000	-0.000001	0.000000	0.000026
33	0.000001	-0.000646	0.000000	-0.000001	0.000000	0.000045
34	0.000001	-0.000375	0.000000	-0.000002	0.000000	0.000067
37	0.000001	0.000012	0.000000	-0.000002	0.000000	0.000091
44	0.000001	0.000548	0.000000	-0.000003	0.000000	0.000112
45	0.000001	0.001161	0.000000	-0.000003	0.000000	0.000122
46	0.000001	0.001798	0.000000	-0.000003	0.000000	0.000122
47	0.000001	0.002407	0.000000	-0.000003	0.000000	0.000111
48	0.000001	0.002933	0.000000	-0.000003	0.000000	0.000089
49	0.000001	0.003326	0.000000	-0.000002	0.000000	0.000057
50	0.000001	0.003530	0.000000	-0.000001	0.000000	0.000014
51	0.000001	0.003495	0.000000	0.000000	0.000000	-0.000039
52	0.000001	0.003165	0.000000	0.000002	0.000000	-0.000103
53	0.000001	0.002490	0.000000	0.000004	0.000000	-0.000178
54	0.000001	0.001415	0.000000	0.000006	0.000000	-0.000263
57	0.000001	-0.000113	0.000000	0.000008	0.000000	-0.000359
64	0.000001	-0.002272	0.000000	0.000009	0.000000	-0.000418
65	0.000001	-0.004493	0.000000	0.000009	0.000000	-0.000399
66	0.000001	-0.006426	0.000000	0.000007	0.000000	-0.000323
67	0.000001	-0.007834	0.000001	0.000005	0.000000	-0.000205
68	0.000001	-0.008540	0.000001	0.000002	0.000000	-0.000065
69	0.000001	-0.008490	0.000001	-0.000001	0.000000	0.000078
70	0.000001	-0.007716	0.000001	-0.000003	0.000000	0.000208
71	0.000001	-0.006324	0.000001	-0.000006	0.000000	0.000304
72	0.000001	-0.004542	0.000001	-0.000007	0.000000	0.000349
73	0.000001	-0.002650	0.000001	-0.000006	0.000000	0.000325
74	0.000001	-0.001053	0.000001	-0.000004	0.000000	0.000211
77	0.000001	-0.000261	0.000001	0.000000	0.000000	-0.000006
84	0.000001	-0.001115	0.000001	0.000004	0.000000	-0.000220
85	0.000001	-0.002735	0.000000	0.000006	0.000000	-0.000328
86	0.000001	-0.004629	0.000000	0.000007	0.000000	-0.000350
87	0.000001	-0.006421	0.000000	0.000006	0.000000	-0.000302
88	0.000001	-0.007789	0.000000	0.000004	0.000000	-0.000204
89	0.000001	-0.008541	0.000000	0.000002	0.000000	-0.000074
90	0.000001	-0.008565	0.000000	0.000000	0.000000	0.000070
91	0.000001	-0.007826	0.000000	-0.000003	0.000000	0.000210
92	0.000001	-0.006412	0.000000	-0.000005	0.000000	0.000325
93	0.000001	-0.004461	0.000000	-0.000006	0.000000	0.000401
94	0.000001	-0.002236	0.000000	-0.000007	0.000000	0.000416
97	0.000001	-0.000106	0.000000	-0.000006	0.000000	0.000355
104	0.000001	0.001404	0.000000	-0.000004	0.000000	0.000260
105	0.000001	0.002468	0.000000	-0.000003	0.000000	0.000176
106	0.000001	0.003137	0.000000	-0.000002	0.000000	0.000102
107	0.000001	0.003463	0.000000	-0.000001	0.000000	0.000039
108	0.000001	0.003499	0.000000	0.000000	0.000000	-0.000014
109	0.000001	0.003297	0.000000	0.000000	0.000000	-0.000056
110	0.000001	0.002909	0.000000	0.000001	0.000000	-0.000088
111	0.000001	0.002388	0.000000	0.000001	0.000000	-0.000109
112	0.000001	0.001786	0.000000	0.000001	0.000000	-0.000120
113	0.000001	0.001155	0.000000	0.000001	0.000000	-0.000121
114	0.000001	0.000548	0.000000	0.000001	0.000000	-0.000111
117	0.000001	0.000016	0.000000	0.000001	0.000000	-0.000091
124	0.000001	-0.000370	0.000000	0.000001	0.000000	-0.000066
125	0.000001	-0.000642	0.000000	0.000001	0.000000	-0.000045
126	0.000001	-0.000812	0.000000	0.000000	0.000000	-0.000026
127	0.000001	-0.000894	0.000000	0.000000	0.000000	-0.000010
128	0.000001	-0.000902	0.000000	0.000000	0.000000	0.000004
129	0.000001	-0.000850	0.000000	0.000000	0.000000	0.000015
130	0.000001	-0.000749	0.000000	0.000000	0.000000	0.000023
131	0.000001	-0.000615	0.000000	0.000000	0.000000	0.000028
132	0.000001	-0.000460	0.000000	0.000000	0.000000	0.000031
133	0.000001	-0.000297	0.000000	0.000000	0.000000	0.000031
134	0.000001	-0.000141	0.000000	0.000000	0.000000	0.000029
137	0.000001	-0.000004	0.000000	0.000000	0.000000	0.000023
144	0.000001	0.000095	0.000000	0.000000	0.000000	0.000017
145	0.000001	0.000165	0.000000	0.000000	0.000000	0.000012
146	0.000001	0.000209	0.000000	0.000000	0.000000	0.000007
147	0.000001	0.000230	0.000000	0.000000	0.000000	0.000002
148	0.000001	0.000232	0.000000	0.000000	0.000000	-0.000001
149	0.000001	0.000218	0.000000	0.000000	0.000000	-0.000004
150	0.000001	0.000192	0.000000	0.000000	0.000000	-0.000006
151	0.000001	0.000158	0.000000	0.000000	0.000000	-0.000007
152	0.000001	0.000118	0.000000	0.000000	0.000000	-0.000008
153	0.000001	0.000076	0.000000	0.000000	0.000000	-0.000008
154	0.000001	0.000036	0.000000	0.000000	0.000000	-0.000007
157	0.000001	0.000001	0.000000	0.000000	0.000000	-0.000006
163	0.000001	-0.000025	0.000000	0.000000	0.000000	-0.000004
164	0.000001	-0.000042	0.000000	0.000000	0.000000	-0.000003
165	0.000001	-0.000053	0.000000	0.000000	0.000000	-0.000002
166	0.000001	-0.000059	0.000000	0.000000	0.000000	-0.000001
167	0.000001	-0.000059	0.000000	0.000000	0.000000	0.000000
168	0.000001	-0.000055	0.000000	0.000000	0.000000	0.000001
169	0.000001	-0.000049	0.000000	0.000000	0.000000	0.000002
170	0.000001	-0.000040	0.000000	0.000000	0.000000	0.000002
171	0.000001	-0.000029	0.000000	0.000000	0.000000	0.000002
172	0.000001	-0.000019	0.000000	0.000000	0.000000	0.000002
173	0.000001	-0.000009	0.000000	0.000000	0.000000	0.000002
176	0.000001	0.000000	0.000000	0.000000	0.000000	0.000001
182	0.000001	0.000006	0.000000	0.000000	0.000000	0.000001
183	0.000001	0.000010	0.000000	0.000000	0.000000	0.000001
184	0.000001	0.000012	0.000000	0.000000	0.000000	0.000000
185	0.000001	0.000012	0.000000	0.000000	0.000000	0.000000
186	0.000001	0.000011	0.000000	0.000000	0.000000	0.000000
187	0.000001	0.000009	0.000000	0.000000	0.000000	0.000000
188	0.000001	0.000007	0.000000	0.000000	0.000000	-0.000001
189	0.000001	0.000003	0.000000	0.000000	0.000000	-0.000001
192	0.000001	0.000000	0.000000	0.000000	0.000000	-0.000001

proc Viaducto Papiol - Prueba de carga

HIPOTESIS 10

hipo 10 Carga de Vanos 4 y 6

DESPLAZAMIENTOS DE NUDOS

NUDO	DESP. X	DESP. Y	DESP. Z	GIRO X	GIRO Y	GIRO Z
3	-0.000006	0.000000	0.000000	0.000000	0.000000	0.000015
8	-0.000006	0.000076	0.000000	0.000000	0.000000	0.000014
9	-0.000006	0.000147	0.000000	0.000000	0.000000	0.000013
10	-0.000006	0.000205	0.000000	0.000000	0.000000	0.000010
11	-0.000006	0.000247	0.000000	0.000000	0.000000	0.000006
12	-0.000006	0.000266	0.000000	0.000000	0.000000	0.000001
13	-0.000006	0.000256	0.000000	0.000000	0.000000	-0.000006
14	-0.000006	0.000212	0.000000	0.000000	0.000000	-0.000013
15	-0.000006	0.000127	0.000000	0.000001	0.000000	-0.000022
18	-0.000006	-0.000003	0.000000	0.000001	0.000000	-0.000031
24	-0.000006	-0.000191	0.000000	0.000001	0.000000	-0.000040
25	-0.000006	-0.000412	0.000000	0.000001	0.000000	-0.000044
26	-0.000006	-0.000644	0.000000	0.000001	0.000000	-0.000044
27	-0.000006	-0.000867	0.000000	0.000001	0.000000	-0.000041
28	-0.000006	-0.001063	0.000000	0.000001	0.000000	-0.000033
29	-0.000006	-0.001211	0.000000	0.000001	0.000000	-0.000022
30	-0.000006	-0.001292	0.000000	0.000000	0.000000	-0.000006
31	-0.000006	-0.001285	0.000000	0.000000	0.000000	0.000013
32	-0.000006	-0.001170	0.000000	-0.000001	0.000000	0.000037
33	-0.000006	-0.000928	0.000000	-0.000002	0.000000	0.000064
34	-0.000006	-0.000539	0.000000	-0.000002	0.000000	0.000096
37	-0.000006	0.000017	0.000000	-0.000003	0.000000	0.000131
44	-0.000006	0.000787	0.000000	-0.000004	0.000000	0.000161
45	-0.000006	0.001667	0.000000	-0.000005	0.000000	0.000175
46	-0.000006	0.002582	0.000000	-0.000005	0.000000	0.000175
47	-0.000006	0.003456	0.000000	-0.000004	0.000000	0.000159
48	-0.000006	0.004213	0.000000	-0.000004	0.000000	0.000128
49	-0.000006	0.004777	0.000000	-0.000003	0.000000	0.000082
50	-0.000006	0.005073	0.000000	-0.000001	0.000000	0.000021
51	-0.000006	0.005024	0.000000	0.000001	0.000000	-0.000056
52	-0.000006	0.004554	0.000000	0.000003	0.000000	-0.000148
53	-0.000006	0.003587	0.000000	0.000005	0.000000	-0.000255
54	-0.000006	0.002048	0.000000	0.000008	0.000000	-0.000377
57	-0.000006	-0.000140	0.000000	0.000011	0.000000	-0.000514
64	-0.000006	-0.003209	0.000000	0.000014	0.000000	-0.000608
65	-0.000006	-0.006470	0.000000	0.000014	0.000000	-0.000606
66	-0.000006	-0.009483	0.000000	0.000012	0.000000	-0.000529
67	-0.000006	-0.011922	0.000000	0.000010	0.000000	-0.000393
68	-0.000006	-0.013520	0.000000	0.000006	0.000000	-0.000216
69	-0.000006	-0.014136	0.000000	0.000002	0.000000	-0.000018
70	-0.000006	-0.013709	0.000000	-0.000002	0.000000	0.000184
71	-0.000006	-0.012258	0.000000	-0.000006	0.000000	0.000370
72	-0.000006	-0.009921	0.000000	-0.000009	0.000000	0.000523
73	-0.000006	-0.006889	0.000000	-0.000012	0.000000	0.000625
74	-0.000006	-0.003476	0.000000	-0.000012	0.000000	0.000656
77	-0.000006	-0.000106	0.000000	-0.000012	0.000000	0.000600
84	-0.000006	0.002648	0.000000	-0.000010	0.000000	0.000501
85	-0.000006	0.004904	0.000000	-0.000008	0.000000	0.000401
86	-0.000006	0.006661	-0.000001	-0.000006	0.000000	0.000301
87	-0.000006	0.007918	-0.000001	-0.000005	0.000000	0.000201
88	-0.000006	0.008674	-0.000001	-0.000003	0.000000	0.000101
89	-0.000006	0.008930	-0.000001	-0.000001	0.000000	0.000001
90	-0.000006	0.008683	-0.000001	0.000000	0.000000	-0.000100
91	-0.000006	0.007933	-0.000001	0.000002	0.000000	-0.000200
92	-0.000006	0.006679	-0.000001	0.000004	0.000000	-0.000301
93	-0.000006	0.004921	-0.000001	0.000006	0.000000	-0.000402
94	-0.000006	0.002657	-0.000001	0.000008	0.000000	-0.000503
97	-0.000006	-0.000113	-0.000001	0.000010	0.000000	-0.000605
104	-0.000006	-0.003517	-0.000001	0.000011	0.000000	-0.000659
105	-0.000006	-0.006931	-0.000001	0.000010	0.000000	-0.000625
106	-0.000006	-0.009952	-0.000001	0.000009	0.000000	-0.000522
107	-0.000006	-0.012291	-0.000001	0.000007	0.000000	-0.000367
108	-0.000006	-0.013717	-0.000001	0.000004	0.000000	-0.000180
109	-0.000006	-0.014125	0.000000	0.000001	0.000000	0.000021
110	-0.000006	-0.013491	0.000000	-0.000002	0.000000	0.000220
111	-0.000006	-0.011869	0.000000	-0.000004	0.000000	0.000395
112	-0.000006	-0.009435	0.000000	-0.000006	0.000000	0.000529
113	-0.000006	-0.006416	0.000000	-0.000008	0.000000	0.000606
114	-0.000006	-0.003162	0.000000	-0.000008	0.000000	0.000604
117	-0.000006	-0.000133	0.000000	-0.000007	0.000000	0.000508
124	-0.000006	0.002031	0.000000	-0.000005	0.000000	0.000373
125	-0.000006	0.003554	0.000000	-0.000004	0.000000	0.000252
126	-0.000006	0.004511	0.000000	-0.000002	0.000000	0.000146
127	-0.000006	0.004976	0.000000	-0.000001	0.000000	0.000056
128	-0.000006	0.005026	0.000000	0.000000	0.000000	-0.000020
129	-0.000006	0.004735	0.000000	0.000000	0.000000	-0.000081
130	-0.000006	0.004177	0.000000	0.000001	0.000000	-0.000127
131	-0.000006	0.003428	0.000000	0.000001	0.000000	-0.000157
132	-0.000006	0.002564	0.000000	0.000001	0.000000	-0.000173
133	-0.000006	0.001658	0.000000	0.000002	0.000000	-0.000174
134	-0.000006	0.000786	0.000000	0.000002	0.000000	-0.000159
137	-0.000006	0.000023	0.000000	0.000001	0.000000	-0.000130
144	-0.000006	-0.000531	0.000000	0.000001	0.000000	-0.000095
145	-0.000006	-0.000920	0.000000	0.000001	0.000000	-0.000064
146	-0.000006	-0.001164	0.000000	0.000000	0.000000	-0.000037
147	-0.000006	-0.001282	0.000000	0.000000	0.000000	-0.000014
148	-0.000006	-0.001293	0.000000	0.000000	0.000000	0.000005
149	-0.000006	-0.001217	0.000000	0.000000	0.000000	0.000021
150	-0.000006	-0.001073	0.000000	0.000000	0.000000	0.000033
151	-0.000006	-0.000879	0.000000	0.000000	0.000000	0.000041
152	-0.000006	-0.000657	0.000000	0.000000	0.000000	0.000045
153	-0.000006	-0.000424	0.000000	0.000000	0.000000	0.000045
154	-0.000006	-0.000200	0.000000	0.000000	0.000000	0.000041
157	-0.000006	-0.000004	0.000000	0.000000	0.000000	0.000033
163	-0.000006	0.000138	0.000000	0.000000	0.000000	0.000024
164	-0.000006	0.000237	0.000000	0.000000	0.000000	0.000016
165	-0.000006	0.000298	0.000000	0.000000	0.000000	0.000009
166	-0.000006	0.000328	0.000000	0.000000	0.000000	0.000003
167	-0.000006	0.000329	0.000000	0.000000	0.000000	-0.000002
168	-0.000006	0.000309	0.000000	0.000000	0.000000	-0.000006
169	-0.000006	0.000271	0.000000	0.000000	0.000000	-0.000008
170	-0.000006	0.000221	0.000000	0.000000	0.000000	-0.000010
171	-0.000006	0.000164	0.000000	0.000000	0.000000	-0.000011
172	-0.000006	0.000105	0.000000	0.000000	0.000000	-0.000011
173	-0.000006	0.000049	0.000000	0.000000	0.000000	-0.000010
176	-0.000006	0.000001	0.000000	0.000000	0.000000	-0.000008
182	-0.000006	-0.000032	0.000000	0.000000	0.000000	-0.000006
183	-0.000006	-0.000054	0.000000	0.000000	0.000000	-0.000003
184	-0.000006	-0.000065	0.000000	0.000000	0.000000	-0.000001
185	-0.000006	-0.000068	0.000000	0.000000	0.000000	0.000000
186	-0.000006	-0.000063	0.000000	0.000000	0.000000	0.000001
187	-0.000006	-0.000052	0.000000	0.000000	0.000000	0.000002
188	-0.000006	-0.000037	0.000000	0.000000	0.000000	0.000003
189	-0.000006	-0.000019	0.000000	0.000000	0.000000	0.000004
192	-0.000006	0.000000	0.000000	0.000000	0.000000	0.000004

proc Viaducto Papiol - Prueba de carga

HIPOTESIS 11

hipo 11 Carga de Vanos 5 y 6

DESPLAZAMIENTOS DE NUDOS

NUDO	DESP. X	DESP. Y	DESP. Z	GIRO X	GIRO Y	GIRO Z
3	-0.000004	0.000000	0.000000	0.000000	0.000000	-0.000003
8	-0.000004	-0.000014	0.000000	0.000000	0.000000	-0.000003
9	-0.000004	-0.000026	0.000000	0.000000	0.000000	-0.000002
10	-0.000004	-0.000037	0.000000	0.000000	0.000000	-0.000002
11	-0.000004	-0.000044	0.000000	0.000000	0.000000	-0.000001
12	-0.000004	-0.000048	0.000000	0.000000	0.000000	0.000000
13	-0.000004	-0.000046	0.000000	0.000000	0.000000	0.000001
14	-0.000004	-0.000038	0.000000	0.000000	0.000000	0.000002
15	-0.000004	-0.000023	0.000000	0.000000	0.000000	0.000004
18	-0.000004	0.000001	0.000000	0.000000	0.000000	0.000006
24	-0.000004	0.000034	0.000000	0.000000	0.000000	0.000007
25	-0.000004	0.000074	0.000000	0.000000	0.000000	0.000008
26	-0.000004	0.000115	0.000000	0.000000	0.000000	0.000008
27	-0.000004	0.000155	0.000000	0.000000	0.000000	0.000007
28	-0.000004	0.000191	0.000000	0.000000	0.000000	0.000006
29	-0.000004	0.000217	0.000000	0.000000	0.000000	0.000004
30	-0.000004	0.000232	0.000000	0.000000	0.000000	0.000001
31	-0.000004	0.000230	0.000000	0.000000	0.000000	-0.000002
32	-0.000004	0.000210	0.000000	0.000000	0.000000	-0.000007
33	-0.000004	0.000166	0.000000	0.000000	0.000000	-0.000012
34	-0.000004	0.000097	0.000000	0.000000	0.000000	-0.000017
37	-0.000004	-0.000003	0.000000	0.000001	0.000000	-0.000023
44	-0.000004	-0.000141	0.000000	0.000001	0.000000	-0.000029
45	-0.000004	-0.000299	0.000000	0.000001	0.000000	-0.000031
46	-0.000004	-0.000463	0.000000	0.000001	0.000000	-0.000031
47	-0.000004	-0.000620	0.000000	0.000001	0.000000	-0.000029
48	-0.000004	-0.000756	0.000000	0.000001	0.000000	-0.000023
49	-0.000004	-0.000857	0.000000	0.000000	0.000000	-0.000015
50	-0.000004	-0.000911	0.000000	0.000000	0.000000	-0.000004
51	-0.000004	-0.000903	0.000000	0.000000	0.000000	0.000010
52	-0.000004	-0.000820	0.000000	-0.000001	0.000000	0.000026
53	-0.000004	-0.000648	0.000000	-0.000001	0.000000	0.000045
54	-0.000004	-0.000374	0.000000	-0.000001	0.000000	0.000067
57	-0.000004	0.000016	0.000000	-0.000002	0.000000	0.000092
64	-0.000004	0.000553	0.000000	-0.000003	0.000000	0.000112
65	-0.000004	0.001167	0.000000	-0.000003	0.000000	0.000122
66	-0.000004	0.001805	0.000000	-0.000003	0.000000	0.000122
67	-0.000004	0.002414	0.000000	-0.000003	0.000000	0.000111
68	-0.000004	0.002940	0.000000	-0.000002	0.000000	0.000089
69	-0.000004	0.003332	0.000000	-0.000002	0.000000	0.000057
70	-0.000004	0.003536	0.000000	-0.000001	0.000000	0.000014
71	-0.000004	0.003499	0.000000	0.000000	0.000000	-0.000040
72	-0.000004	0.003169	0.000000	0.000002	0.000000	-0.000104
73	-0.000004	0.002492	0.000000	0.000003	0.000000	-0.000178
74	-0.000004	0.001416	0.000000	0.000005	0.000000	-0.000263
77	-0.000004	-0.000113	0.000000	0.000007	0.000000	-0.000359
84	-0.000004	-0.002273	0.000000	0.000008	0.000000	-0.000418
85	-0.000004	-0.004494	-0.000001	0.000008	0.000000	-0.000399
86	-0.000004	-0.006427	-0.000001	0.000006	0.000000	-0.000323
87	-0.000004	-0.007836	-0.000001	0.000004	0.000000	-0.000205
88	-0.000004	-0.008541	-0.000001	0.000002	0.000000	-0.000065
89	-0.000004	-0.008492	-0.000001	-0.000001	0.000000	0.000078
90	-0.000004	-0.007717	-0.000001	-0.000003	0.000000	0.000208
91	-0.000004	-0.006325	-0.000001	-0.000005	0.000000	0.000304
92	-0.000004	-0.004542	-0.000001	-0.000006	0.000000	0.000349
93	-0.000004	-0.002651	-0.000001	-0.000005	0.000000	0.000325
94	-0.000004	-0.001053	-0.000001	-0.000004	0.000000	0.000211
97	-0.000004	-0.000261	-0.000001	0.000000	0.000000	-0.000006
104	-0.000004	-0.001115	-0.000001	0.000003	0.000000	-0.000220
105	-0.000004	-0.002735	-0.000001	0.000005	0.000000	-0.000328
106	-0.000004	-0.004629	-0.000001	0.000006	0.000000	-0.000350
107	-0.000004	-0.006420	-0.000001	0.000005	0.000000	-0.000302
108	-0.000004	-0.007788	-0.000001	0.000004	0.000000	-0.000204
109	-0.000004	-0.008540	-0.000001	0.000002	0.000000	-0.000074
110	-0.000004	-0.008564	-0.000001	0.000000	0.000000	0.000070
111	-0.000004	-0.007826	-0.000001	-0.000002	0.000000	0.000210
112	-0.000004	-0.006412	0.000000	-0.000004	0.000000	0.000325
113	-0.000004	-0.004461	0.000000	-0.000005	0.000000	0.000401
114	-0.000004	-0.002235	0.000000	-0.000005	0.000000	0.000416
117	-0.000004	-0.000106	0.000000	-0.000005	0.000000	0.000355
124	-0.000004	0.001404	0.000000	-0.000004	0.000000	0.000260
125	-0.000004	0.002468	0.000000	-0.000003	0.000000	0.000176
126	-0.000004	0.003136	0.000000	-0.000002	0.000000	0.000102
127	-0.000004	0.003462	0.000000	-0.000001	0.000000	0.000039
128	-0.000004	0.003498	0.000000	0.000000	0.000000	-0.000014
129	-0.000004	0.003296	0.000000	0.000000	0.000000	-0.000056
130	-0.000004	0.002909	0.000000	0.000001	0.000000	-0.000088
131	-0.000004	0.002388	0.000000	0.000001	0.000000	-0.000109
132	-0.000004	0.001786	0.000000	0.000001	0.000000	-0.000120
133	-0.000004	0.001155	0.000000	0.000001	0.000000	-0.000121
134	-0.000004	0.000547	0.000000	0.000001	0.000000	-0.000111
137	-0.000004	0.000016	0.000000	0.000001	0.000000	-0.000091
144	-0.000004	-0.000370	0.000000	0.000001	0.000000	-0.000066
145	-0.000004	-0.000641	0.000000	0.000000	0.000000	-0.000045
146	-0.000004	-0.000811	0.000000	0.000000	0.000000	-0.000026
147	-0.000004	-0.000893	0.000000	0.000000	0.000000	-0.000010
148	-0.000004	-0.000901	0.000000	0.000000	0.000000	0.000004
149	-0.000004	-0.000848	0.000000	0.000000	0.000000	0.000015
150	-0.000004	-0.000747	0.000000	0.000000	0.000000	0.000023
151	-0.000004	-0.000613	0.000000	0.000000	0.000000	0.000028
152	-0.000004	-0.000457	0.000000	0.000000	0.000000	0.000031
153	-0.000004	-0.000295	0.000000	0.000000	0.000000	0.000031
154	-0.000004	-0.000139	0.000000	0.000000	0.000000	0.000029
157	-0.000004	-0.000003	0.000000	0.000000	0.000000	0.000023
163	-0.000004	0.000096	0.000000	0.000000	0.000000	0.000017
164	-0.000004	0.000165	0.000000	0.000000	0.000000	0.000011
165	-0.000004	0.000208	0.000000	0.000000	0.000000	0.000007
166	-0.000004	0.000228	0.000000	0.000000	0.000000	0.000002
167	-0.000004	0.000229	0.000000	0.000000	0.000000	-0.000001
168	-0.000004	0.000215	0.000000	0.000000	0.000000	-0.000004
169	-0.000004	0.000189	0.000000	0.000000	0.000000	-0.000006
170	-0.000004	0.000154	0.000000	0.000000	0.000000	-0.000007
171	-0.000004	0.000114	0.000000	0.000000	0.000000	-0.000008
172	-0.000004	0.000073	0.000000	0.000000	0.000000	-0.000008
173	-0.000004	0.000034	0.000000	0.000000	0.000000	-0.000007
176	-0.000004	0.000001	0.000000	0.000000	0.000000	-0.000006
182	-0.000004	-0.000022	0.000000	0.000000	0.000000	-0.000004
183	-0.000004	-0.000037	0.000000	0.000000	0.000000	-0.000002
184	-0.000004	-0.000045	0.000000	0.000000	0.000000	-0.000001
185	-0.000004	-0.000047	0.000000	0.000000	0.000000	0.000000
186	-0.000004	-0.000044	0.000000	0.000000	0.000000	0.000001
187	-0.000004	-0.000036	0.000000	0.000000	0.000000	0.000002
188	-0.000004	-0.000026	0.000000	0.000000	0.000000	0.000002
189	-0.000004	-0.000014	0.000000	0.000000	0.000000	0.000003
192	-0.000004	0.000000	0.000000	0.000000	0.000000	0.000003

proc Viaducto Papiol - Prueba de carga

HIPOTESIS 12

hipo 12 Carga de Vanos 5 y 7

DESPLAZAMIENTOS DE NUDOS

NUDO	DESP. X	DESP. Y	DESP. Z	GIRO X	GIRO Y	GIRO Z
3	0.000025	0.000000	0.000001	0.000000	0.000000	-0.000004
8	0.000025	-0.000020	0.000001	0.000000	0.000000	-0.000004
9	0.000025	-0.000038	0.000001	0.000000	0.000000	-0.000003
10	0.000025	-0.000053	0.000001	0.000000	0.000000	-0.000003
11	0.000025	-0.000064	0.000001	0.000000	0.000000	-0.000001
12	0.000025	-0.000068	0.000001	0.000000	0.000000	0.000000
13	0.000025	-0.000066	0.000001	0.000000	0.000000	0.000001
14	0.000025	-0.000054	0.000001	0.000000	0.000000	0.000003
15	0.000025	-0.000033	0.000001	0.000000	0.000000	0.000006
18	0.000025	0.000001	0.000001	0.000000	0.000000	0.000008
24	0.000025	0.000049	0.000001	0.000000	0.000000	0.000010
25	0.000025	0.000106	0.000001	0.000000	0.000000	0.000011
26	0.000025	0.000166	0.000001	0.000000	0.000000	0.000011
27	0.000025	0.000223	0.000001	0.000000	0.000000	0.000011
28	0.000025	0.000274	0.000001	0.000000	0.000000	0.000009
29	0.000025	0.000312	0.000001	0.000000	0.000000	0.000006
30	0.000025	0.000332	0.000001	0.000000	0.000000	0.000002
31	0.000025	0.000331	0.000001	0.000000	0.000000	-0.000003
32	0.000025	0.000301	0.000001	0.000000	0.000000	-0.000009
33	0.000025	0.000239	0.000001	0.000000	0.000000	-0.000017
34	0.000025	0.000139	0.000001	0.000001	0.000000	-0.000025
37	0.000025	-0.000004	0.000001	0.000001	0.000000	-0.000034
44	0.000025	-0.000202	0.000001	0.000001	0.000000	-0.000041
45	0.000025	-0.000429	0.000001	0.000001	0.000000	-0.000045
46	0.000025	-0.000664	0.000001	0.000001	0.000000	-0.000045
47	0.000025	-0.000890	0.000000	0.000001	0.000000	-0.000041
48	0.000025	-0.001085	0.000000	0.000001	0.000000	-0.000033
49	0.000025	-0.001231	0.000000	0.000001	0.000000	-0.000021
50	0.000025	-0.001308	0.000000	0.000000	0.000000	-0.000006
51	0.000025	-0.001297	0.000000	0.000000	0.000000	0.000014
52	0.000025	-0.001177	0.000000	-0.000001	0.000000	0.000038
53	0.000025	-0.000931	0.000000	-0.000001	0.000000	0.000065
54	0.000025	-0.000537	0.000000	-0.000002	0.000000	0.000096
57	0.000025	0.000023	0.000000	-0.000003	0.000000	0.000132
64	0.000025	0.000794	0.000000	-0.000004	0.000000	0.000161
65	0.000025	0.001676	0.000000	-0.000004	0.000000	0.000176
66	0.000025	0.002592	0.000000	-0.000004	0.000000	0.000175
67	0.000025	0.003466	0.000000	-0.000004	0.000000	0.000159
68	0.000025	0.004223	0.000000	-0.000003	0.000000	0.000128
69	0.000025	0.004786	0.000000	-0.000002	0.000000	0.000082
70	0.000025	0.005081	0.000001	-0.000001	0.000000	0.000020
71	0.000025	0.005030	0.000001	0.000000	0.000000	-0.000056
72	0.000025	0.004558	0.000001	0.000002	0.000000	-0.000148
73	0.000025	0.003590	0.000001	0.000004	0.000000	-0.000255
74	0.000025	0.002050	0.000001	0.000007	0.000000	-0.000377
77	0.000025	-0.000140	0.000001	0.000010	0.000000	-0.000514
84	0.000025	-0.003210	0.000001	0.000012	0.000000	-0.000608
85	0.000025	-0.006471	0.000001	0.000012	0.000000	-0.000607
86	0.000025	-0.009485	0.000001	0.000011	0.000000	-0.000529
87	0.000025	-0.011924	0.000001	0.000008	0.000000	-0.000393
88	0.000025	-0.013522	0.000001	0.000005	0.000000	-0.000216
89	0.000025	-0.014138	0.000000	0.000002	0.000000	-0.000018
90	0.000025	-0.013711	0.000000	-0.000002	0.000000	0.000184
91	0.000025	-0.012259	0.000000	-0.000005	0.000000	0.000370
92	0.000025	-0.009922	0.000000	-0.000008	0.000000	0.000523
93	0.000025	-0.006890	0.000000	-0.000010	0.000000	0.000625
94	0.000025	-0.003477	0.000000	-0.000010	0.000000	0.000656
97	0.000025	-0.000106	0.000000	-0.000010	0.000000	0.000600
104	0.000025	0.002648	0.000000	-0.000008	0.000000	0.000501
105	0.000025	0.004904	0.000000	-0.000007	0.000000	0.000401
106	0.000025	0.006661	0.000000	-0.000006	0.000000	0.000301
107	0.000025	0.007918	0.000000	-0.000004	0.000000	0.000201
108	0.000025	0.008674	0.000000	-0.000003	0.000000	0.000101
109	0.000025	0.008929	0.000000	-0.000001	0.000000	0.000001
110	0.000025	0.008682	0.000000	0.000000	0.000000	-0.000100
111	0.000025	0.007932	0.000000	0.000002	0.000000	-0.000200
112	0.000025	0.006679	0.000000	0.000003	0.000000	-0.000301
113	0.000025	0.004920	0.000000	0.000005	0.000000	-0.000402
114	0.000025	0.002657	0.000000	0.000006	0.000000	-0.000503
117	0.000025	-0.000113	0.000000	0.000008	0.000000	-0.000605
124	0.000025	-0.003516	0.000000	0.000009	0.000000	-0.000659
125	0.000025	-0.006930	0.000000	0.000009	0.000000	-0.000625
126	0.000025	-0.009951	0.000001	0.000008	0.000000	-0.000522
127	0.000025	-0.012290	0.000001	0.000006	0.000000	-0.000367
128	0.000025	-0.013715	0.000001	0.000004	0.000000	-0.000180
129	0.000025	-0.014123	0.000001	0.000001	0.000000	0.000021
130	0.000025	-0.013489	0.000001	-0.000001	0.000000	0.000220
131	0.000025	-0.011867	0.000001	-0.000003	0.000000	0.000395
132	0.000025	-0.009433	0.000001	-0.000005	0.000000	0.000529
133	0.000025	-0.006415	0.000001	-0.000006	0.000000	0.000606
134	0.000025	-0.003161	0.000001	-0.000006	0.000000	0.000604
137	0.000025	-0.000133	0.000001	-0.000005	0.000000	0.000508
144	0.000025	0.002030	0.000001	-0.000004	0.000000	0.000372
145	0.000025	0.003551	0.000001	-0.000003	0.000000	0.000252
146	0.000025	0.004506	0.000001	-0.000002	0.000000	0.000146
147	0.000025	0.004969	0.000000	-0.000001	0.000000	0.000055
148	0.000025	0.005017	0.000000	-0.000001	0.000000	-0.000020
149	0.000025	0.004724	0.000000	0.000000	0.000000	-0.000081
150	0.000025	0.004165	0.000000	0.000000	0.000000	-0.000127
151	0.000025	0.003416	0.000000	0.000001	0.000000	-0.000157
152	0.000025	0.002551	0.000000	0.000001	0.000000	-0.000173
153	0.000025	0.001646	0.000000	0.000001	0.000000	-0.000174
154	0.000025	0.000775	0.000000	0.000001	0.000000	-0.000159
157	0.000025	0.000015	0.000000	0.000001	0.000000	-0.000130
163	0.000025	-0.000536	0.000000	0.000001	0.000000	-0.000095
164	0.000025	-0.000920	0.000000	0.000001	0.000000	-0.000063
165	0.000025	-0.001160	0.000000	0.000000	0.000000	-0.000036
166	0.000025	-0.001273	0.000000	0.000000	0.000000	-0.000013
167	0.000025	-0.001280	0.000000	0.000000	0.000000	0.000006
168	0.000025	-0.001200	0.000000	0.000000	0.000000	0.000022
169	0.000025	-0.001054	0.000000	0.000000	0.000000	0.000033
170	0.000025	-0.000860	0.000000	0.000000	0.000000	0.000041
171	0.000025	-0.000638	0.000000	0.000000	0.000000	0.000044
172	0.000025	-0.000408	0.000000	0.000000	0.000000	0.000044
173	0.000025	-0.000190	0.000000	0.000000	0.000000	0.000039
176	0.000025	-0.000004	0.000000	0.000000	0.000000	0.000031
182	0.000025	0.000125	0.000000	0.000000	0.000000	0.000022
183	0.000025	0.000209	0.000000	0.000000	0.000000	0.000013
184	0.000025	0.000253	0.000000	0.000000	0.000000	0.000006
185	0.000025	0.000263	0.000000	0.000000	0.000000	-0.000001
186	0.000025	0.000244	0.000000	0.000000	0.000000	-0.000006
187	0.000025	0.000203	0.000000	0.000000	0.000000	-0.000010
188	0.000025	0.000145	0.000000	0.000000	0.000000	-0.000012
189	0.000025	0.000075	0.000000	0.000000	0.000000	-0.000014
192	0.000025	0.000000	0.000000	0.000000	0.000000	-0.000015

HIPOTESIS 13

hipo 13 Carga de Vanos 6 y 7

DESPLAZAMIENTOS DE NUDOS

NUDO	DESP. X	DESP. Y	DESP. Z	GIRO X	GIRO Y	GIRO Z
3	0.000017	0.000000	0.000001	0.000000	0.000000	0.000001
8	0.000017	0.000004	0.000001	0.000000	0.000000	0.000001
9	0.000017	0.000007	0.000001	0.000000	0.000000	0.000001
10	0.000017	0.000009	0.000001	0.000000	0.000000	0.000000
11	0.000017	0.000011	0.000001	0.000000	0.000000	0.000000
12	0.000017	0.000012	0.000001	0.000000	0.000000	0.000000
13	0.000017	0.000012	0.000000	0.000000	0.000000	0.000000
14	0.000017	0.000010	0.000000	0.000000	0.000000	-0.000001
15	0.000017	0.000006	0.000000	0.000000	0.000000	-0.000001
18	0.000017	0.000000	0.000000	0.000000	0.000000	-0.000001
24	0.000017	-0.000009	0.000000	0.000000	0.000000	-0.000002
25	0.000017	-0.000019	0.000000	0.000000	0.000000	-0.000002
26	0.000017	-0.000030	0.000000	0.000000	0.000000	-0.000002
27	0.000017	-0.000040	0.000000	0.000000	0.000000	-0.000002
28	0.000017	-0.000049	0.000000	0.000000	0.000000	-0.000002
29	0.000017	-0.000056	0.000000	0.000000	0.000000	-0.000001
30	0.000017	-0.000060	0.000000	0.000000	0.000000	0.000000
31	0.000017	-0.000059	0.000000	0.000000	0.000000	0.000001
32	0.000017	-0.000054	0.000000	0.000000	0.000000	0.000002
33	0.000017	-0.000043	0.000000	0.000000	0.000000	0.000003
34	0.000017	-0.000025	0.000000	0.000000	0.000000	0.000004
37	0.000017	0.000001	0.000000	0.000000	0.000000	0.000006
44	0.000017	0.000036	0.000000	0.000000	0.000000	0.000007
45	0.000017	0.000077	0.000000	0.000000	0.000000	0.000008
46	0.000017	0.000119	0.000000	0.000000	0.000000	0.000008
47	0.000017	0.000159	0.000000	0.000000	0.000000	0.000007
48	0.000017	0.000194	0.000000	0.000000	0.000000	0.000006
49	0.000017	0.000221	0.000000	0.000000	0.000000	0.000004
50	0.000017	0.000234	0.000000	0.000000	0.000000	0.000001
51	0.000017	0.000232	0.000000	0.000000	0.000000	-0.000003
52	0.000017	0.000211	0.000000	0.000000	0.000000	-0.000007
53	0.000017	0.000167	0.000000	0.000000	0.000000	-0.000012
54	0.000017	0.000096	0.000000	0.000000	0.000000	-0.000017
57	0.000017	-0.000004	0.000000	0.000001	0.000000	-0.000024
64	0.000017	-0.000142	0.000000	0.000001	0.000000	-0.000029
65	0.000017	-0.000300	0.000000	0.000001	0.000000	-0.000031
66	0.000017	-0.000465	0.000000	0.000001	0.000000	-0.000031
67	0.000017	-0.000622	0.000000	0.000001	0.000000	-0.000029
68	0.000017	-0.000758	0.000000	0.000001	0.000000	-0.000023
69	0.000017	-0.000859	0.000000	0.000000	0.000000	-0.000015
70	0.000017	-0.000912	0.000000	0.000000	0.000000	-0.000004
71	0.000017	-0.000904	0.000000	0.000000	0.000000	0.000010
72	0.000017	-0.000821	0.000000	0.000000	0.000000	0.000026
73	0.000017	-0.000649	0.000000	-0.000001	0.000000	0.000045
74	0.000017	-0.000374	0.000000	-0.000001	0.000000	0.000067
77	0.000017	0.000016	0.000000	-0.000002	0.000000	0.000092
84	0.000017	0.000554	0.000000	-0.000002	0.000000	0.000112
85	0.000017	0.001168	0.000000	-0.000002	0.000000	0.000122
86	0.000017	0.001806	0.000000	-0.000003	0.000000	0.000122
87	0.000017	0.002414	0.000000	-0.000002	0.000000	0.000111
88	0.000017	0.002941	0.000000	-0.000002	0.000000	0.000089
89	0.000017	0.003333	0.000000	-0.000002	0.000000	0.000057
90	0.000017	0.003536	0.000000	-0.000001	0.000000	0.000014
91	0.000017	0.003499	0.000000	0.000000	0.000000	-0.000040
92	0.000017	0.003169	0.000000	0.000001	0.000000	-0.000104
93	0.000017	0.002492	0.000000	0.000002	0.000000	-0.000178
94	0.000017	0.001416	0.000000	0.000004	0.000000	-0.000263
97	0.000017	-0.000113	0.000000	0.000006	0.000000	-0.000359
104	0.000017	-0.002273	0.000000	0.000007	0.000000	-0.000418
105	0.000017	-0.004495	0.000000	0.000007	0.000000	-0.000399
106	0.000017	-0.006428	0.000000	0.000005	0.000000	-0.000323
107	0.000017	-0.007836	0.000000	0.000004	0.000000	-0.000205
108	0.000017	-0.008542	0.000000	0.000002	0.000000	-0.000065
109	0.000017	-0.008492	0.000000	0.000000	0.000000	0.000078
110	0.000017	-0.007718	0.000000	-0.000002	0.000000	0.000208
111	0.000017	-0.006325	0.000000	-0.000004	0.000000	0.000304
112	0.000017	-0.004543	0.000000	-0.000004	0.000000	0.000349
113	0.000017	-0.002651	0.000000	-0.000004	0.000000	0.000325
114	0.000017	-0.001053	0.000001	-0.000003	0.000000	0.000212
117	0.000017	-0.000261	0.000001	0.000000	0.000000	-0.000005
124	0.000017	-0.001115	0.000001	0.000003	0.000000	-0.000220
125	0.000017	-0.002734	0.000001	0.000004	0.000000	-0.000328
126	0.000017	-0.004628	0.000001	0.000005	0.000000	-0.000349
127	0.000017	-0.006419	0.000001	0.000004	0.000000	-0.000302
128	0.000017	-0.007787	0.000001	0.000003	0.000000	-0.000204
129	0.000017	-0.008539	0.000001	0.000002	0.000000	-0.000074
130	0.000017	-0.008562	0.000001	0.000000	0.000000	0.000070
131	0.000017	-0.007824	0.000001	-0.000001	0.000000	0.000209
132	0.000017	-0.006410	0.000001	-0.000003	0.000000	0.000325
133	0.000017	-0.004460	0.000001	-0.000004	0.000000	0.000401
134	0.000017	-0.002235	0.000001	-0.000004	0.000000	0.000416
137	0.000017	-0.000106	0.000000	-0.000004	0.000000	0.000355
144	0.000017	0.001403	0.000000	-0.000003	0.000000	0.000260
145	0.000017	0.002465	0.000000	-0.000002	0.000000	0.000176
146	0.000017	0.003133	0.000000	-0.000001	0.000000	0.000102
147	0.000017	0.003457	0.000000	-0.000001	0.000000	0.000039
148	0.000017	0.003492	0.000000	0.000000	0.000000	-0.000014
149	0.000017	0.003289	0.000000	0.000000	0.000000	-0.000056
150	0.000017	0.002901	0.000000	0.000000	0.000000	-0.000088
151	0.000017	0.002379	0.000000	0.000001	0.000000	-0.000110
152	0.000017	0.001777	0.000000	0.000001	0.000000	-0.000120
153	0.000017	0.001146	0.000000	0.000001	0.000000	-0.000121
154	0.000017	0.000540	0.000000	0.000001	0.000000	-0.000111
157	0.000017	0.000010	0.000000	0.000001	0.000000	-0.000090
163	0.000017	-0.000373	0.000000	0.000000	0.000000	-0.000066
164	0.000017	-0.000641	0.000000	0.000000	0.000000	-0.000044
165	0.000017	-0.000808	0.000000	0.000000	0.000000	-0.000025
166	0.000017	-0.000887	0.000000	0.000000	0.000000	-0.000009
167	0.000017	-0.000891	0.000000	0.000000	0.000000	0.000004
168	0.000017	-0.000836	0.000000	0.000000	0.000000	0.000015
169	0.000017	-0.000734	0.000000	0.000000	0.000000	0.000023
170	0.000017	-0.000599	0.000000	0.000000	0.000000	0.000028
171	0.000017	-0.000444	0.000000	0.000000	0.000000	0.000031
172	0.000017	-0.000284	0.000000	0.000000	0.000000	0.000030
173	0.000017	-0.000133	0.000000	0.000000	0.000000	0.000027
176	0.000017	-0.000003	0.000000	0.000000	0.000000	0.000022
182	0.000017	0.000087	0.000000	0.000000	0.000000	0.000015
183	0.000017	0.000145	0.000000	0.000000	0.000000	0.000009
184	0.000017	0.000176	0.000000	0.000000	0.000000	0.000004
185	0.000017	0.000183	0.000000	0.000000	0.000000	0.000000
186	0.000017	0.000170	0.000000	0.000000	0.000000	-0.000004
187	0.000017	0.000141	0.000000	0.000000	0.000000	-0.000007
188	0.000017	0.000101	0.000000	0.000000	0.000000	-0.000009
189	0.000017	0.000053	0.000000	0.000000	0.000000	-0.000010
192	0.000017	0.000000	0.000000	0.000000	0.000000	-0.000010

proc Viaducto Papiol - Prueba de carga

HIPOTESIS 14

hipo 14 Carga de Vanos 6 y 8

DESPLAZAMIENTOS DE NUDOS

NUDO	DESP. X	DESP. Y	DESP. Z	GIRO X	GIRO Y	GIRO Z
3	-0.000097	0.000000	-0.000003	0.000000	0.000000	0.000001
8	-0.000097	0.000005	-0.000003	0.000000	0.000000	0.000001
9	-0.000097	0.000010	-0.000003	0.000000	0.000000	0.000001
10	-0.000097	0.000014	-0.000003	0.000000	0.000000	0.000001
11	-0.000097	0.000016	-0.000003	0.000000	0.000000	0.000000
12	-0.000097	0.000018	-0.000003	0.000000	0.000000	0.000000
13	-0.000097	0.000017	-0.000003	0.000000	0.000000	0.000000
14	-0.000097	0.000014	-0.000003	0.000000	0.000000	-0.000001
15	-0.000097	0.000008	-0.000003	0.000000	0.000000	-0.000001
18	-0.000097	0.000000	-0.000003	0.000000	0.000000	-0.000002
24	-0.000097	-0.000013	-0.000003	0.000000	0.000000	-0.000003
25	-0.000097	-0.000027	-0.000003	0.000000	0.000000	-0.000003
26	-0.000097	-0.000043	-0.000003	0.000000	0.000000	-0.000003
27	-0.000097	-0.000057	-0.000003	0.000000	0.000000	-0.000003
28	-0.000097	-0.000070	-0.000003	0.000000	0.000000	-0.000002
29	-0.000097	-0.000080	-0.000003	0.000000	0.000000	-0.000001
30	-0.000097	-0.000086	-0.000003	0.000000	0.000000	0.000000
31	-0.000097	-0.000085	-0.000003	0.000000	0.000000	0.000001
32	-0.000097	-0.000077	-0.000002	0.000000	0.000000	0.000002
33	-0.000097	-0.000061	-0.000002	0.000000	0.000000	0.000004
34	-0.000097	-0.000036	-0.000002	0.000000	0.000000	0.000006
37	-0.000097	0.000001	-0.000002	0.000000	0.000000	0.000009
44	-0.000097	0.000052	-0.000002	0.000000	0.000000	0.000011
45	-0.000097	0.000110	-0.000002	0.000000	0.000000	0.000012
46	-0.000097	0.000171	-0.000002	0.000000	0.000000	0.000012
47	-0.000097	0.000229	-0.000002	0.000000	0.000000	0.000011
48	-0.000097	0.000279	-0.000002	0.000000	0.000000	0.000009
49	-0.000097	0.000317	-0.000002	0.000000	0.000000	0.000005
50	-0.000097	0.000337	-0.000002	0.000000	0.000000	0.000001
51	-0.000097	0.000334	-0.000002	0.000000	0.000000	-0.000004
52	-0.000097	0.000303	-0.000002	0.000000	0.000000	-0.000010
53	-0.000097	0.000239	-0.000002	0.000000	0.000000	-0.000017
54	-0.000097	0.000138	-0.000002	0.000001	0.000000	-0.000025
57	-0.000097	-0.000006	-0.000002	0.000001	0.000000	-0.000034
64	-0.000097	-0.000204	-0.000002	0.000001	0.000000	-0.000041
65	-0.000097	-0.000431	-0.000002	0.000001	0.000000	-0.000045
66	-0.000097	-0.000667	-0.000002	0.000001	0.000000	-0.000045
67	-0.000097	-0.000892	-0.000002	0.000001	0.000000	-0.000041
68	-0.000097	-0.001087	-0.000002	0.000001	0.000000	-0.000033
69	-0.000097	-0.001233	-0.000002	0.000001	0.000000	-0.000021
70	-0.000097	-0.001310	-0.000002	0.000000	0.000000	-0.000005
71	-0.000097	-0.001298	-0.000002	0.000000	0.000000	0.000014
72	-0.000097	-0.001178	-0.000002	-0.000001	0.000000	0.000038
73	-0.000097	-0.000931	-0.000002	-0.000001	0.000000	0.000065
74	-0.000097	-0.000537	-0.000002	-0.000002	0.000000	0.000096
77	-0.000097	0.000023	-0.000002	-0.000003	0.000000	0.000132
84	-0.000097	0.000795	-0.000002	-0.000003	0.000000	0.000161
85	-0.000097	0.001676	-0.000002	-0.000004	0.000000	0.000176
86	-0.000097	0.002592	-0.000002	-0.000004	0.000000	0.000175
87	-0.000097	0.003466	-0.000002	-0.000003	0.000000	0.000159
88	-0.000097	0.004223	-0.000002	-0.000003	0.000000	0.000128
89	-0.000097	0.004786	-0.000002	-0.000002	0.000000	0.000082
90	-0.000097	0.005080	-0.000002	-0.000001	0.000000	0.000020
91	-0.000097	0.005030	-0.000002	0.000000	0.000000	-0.000056
92	-0.000097	0.004558	-0.000002	0.000002	0.000000	-0.000148
93	-0.000097	0.003590	-0.000002	0.000004	0.000000	-0.000255
94	-0.000097	0.002049	-0.000002	0.000006	0.000000	-0.000377
97	-0.000097	-0.000140	-0.000002	0.000008	0.000000	-0.000514
104	-0.000097	-0.003210	-0.000002	0.000010	0.000000	-0.000608
105	-0.000097	-0.006470	-0.000002	0.000010	0.000000	-0.000607
106	-0.000097	-0.009483	-0.000002	0.000009	0.000000	-0.000529
107	-0.000097	-0.011922	-0.000002	0.000007	0.000000	-0.000393
108	-0.000097	-0.013520	-0.000002	0.000005	0.000000	-0.000216
109	-0.000097	-0.014135	-0.000002	0.000002	0.000000	-0.000018
110	-0.000097	-0.013708	-0.000002	-0.000001	0.000000	0.000184
111	-0.000097	-0.012256	-0.000001	-0.000004	0.000000	0.000370
112	-0.000097	-0.009919	-0.000001	-0.000006	0.000000	0.000523
113	-0.000097	-0.006888	-0.000001	-0.000008	0.000000	0.000625
114	-0.000097	-0.003475	-0.000001	-0.000008	0.000000	0.000656
117	-0.000097	-0.000106	-0.000001	-0.000008	0.000000	0.000600
124	-0.000097	0.002646	-0.000001	-0.000007	0.000000	0.000501
125	-0.000097	0.004900	-0.000001	-0.000006	0.000000	0.000401
126	-0.000097	0.006655	-0.000001	-0.000005	0.000000	0.000301
127	-0.000097	0.007910	-0.000001	-0.000003	0.000000	0.000201
128	-0.000097	0.008664	-0.000001	-0.000002	0.000000	0.000101
129	-0.000097	0.008918	-0.000001	-0.000001	0.000000	0.000001
130	-0.000097	0.008670	0.000000	0.000000	0.000000	-0.000100
131	-0.000097	0.007920	0.000000	0.000001	0.000000	-0.000200
132	-0.000097	0.006668	0.000000	0.000002	0.000000	-0.000301
133	-0.000097	0.004912	0.000000	0.000004	0.000000	-0.000402
134	-0.000097	0.002652	0.000000	0.000005	0.000000	-0.000502
137	-0.000097	-0.000113	0.000000	0.000006	0.000000	-0.000603
144	-0.000097	-0.003509	0.000000	0.000007	0.000000	-0.000658
145	-0.000097	-0.006914	0.000000	0.000007	0.000000	-0.000623
146	-0.000097	-0.009926	0.000000	0.000006	0.000000	-0.000520
147	-0.000097	-0.012256	0.000000	0.000005	0.000000	-0.000366
148	-0.000097	-0.013673	0.000000	0.000003	0.000000	-0.000178
149	-0.000097	-0.014073	0.000000	0.000001	0.000000	0.000023
150	-0.000097	-0.013432	0.000000	0.000000	0.000000	0.000221
151	-0.000097	-0.011806	0.000000	-0.000002	0.000000	0.000396
152	-0.000097	-0.009371	0.000000	-0.000003	0.000000	0.000529
153	-0.000097	-0.006354	0.000000	-0.000004	0.000000	0.000605
154	-0.000097	-0.003105	0.000000	-0.000004	0.000000	0.000602
157	-0.000097	-0.000086	0.000000	-0.000004	0.000000	0.000506
163	-0.000097	0.002062	0.000000	-0.000003	0.000000	0.000369
164	-0.000097	0.003566	0.000000	-0.000002	0.000000	0.000248
165	-0.000097	0.004502	0.000000	-0.000001	0.000000	0.000142
166	-0.000097	0.004946	0.000000	-0.000001	0.000000	0.000052
167	-0.000097	0.004976	0.000000	-0.000001	0.000000	-0.000024
168	-0.000097	0.004668	0.000000	0.000000	0.000000	-0.000084
169	-0.000097	0.004099	0.000000	0.000000	0.000000	-0.000128
170	-0.000097	0.003345	0.000000	0.000000	0.000000	-0.000157
171	-0.000097	0.002482	0.000000	0.000000	0.000000	-0.000171
172	-0.000097	0.001589	0.000000	0.000001	0.000000	-0.000170
173	-0.000097	0.000741	-0.000001	0.000001	0.000000	-0.000153
176	-0.000097	0.000014	-0.000001	0.000000	0.000000	-0.000121
182	-0.000097	-0.000487	-0.000001	0.000000	0.000000	-0.000084
183	-0.000097	-0.000813	0.000000	0.000000	0.000000	-0.000051
184	-0.000097	-0.000983	0.000000	0.000000	0.000000	-0.000022
185	-0.000097	-0.001022	0.000000	0.000000	0.000000	0.000002
186	-0.000097	-0.000950	0.000000	0.000000	0.000000	0.000022
187	-0.000097	-0.000790	0.000000	0.000000	0.000000	0.000037
188	-0.000097	-0.000564	0.000000	0.000000	0.000000	0.000048
189	-0.000097	-0.000293	0.000000	0.000000	0.000000	0.000055
192	-0.000097	-0.000001	0.000000	0.000000	0.000000	0.000057

HIPOTESIS 15

hipo 15 Carga de Vanos 7 y 8

DESPLAZAMIENTOS DE NUDOS

NUDO	DESP. X	DESP. Y	DESP. Z	GIRO X	GIRO Y	GIRO Z
3	-0.000067	0.000000	-0.000002	0.000000	0.000000	0.000000
8	-0.000067	-0.000001	-0.000002	0.000000	0.000000	0.000000
9	-0.000067	-0.000002	-0.000002	0.000000	0.000000	0.000000
10	-0.000067	-0.000002	-0.000002	0.000000	0.000000	0.000000
11	-0.000067	-0.000003	-0.000002	0.000000	0.000000	0.000000
12	-0.000067	-0.000003	-0.000002	0.000000	0.000000	0.000000
13	-0.000067	-0.000003	-0.000002	0.000000	0.000000	0.000000
14	-0.000067	-0.000003	-0.000002	0.000000	0.000000	0.000000
15	-0.000067	-0.000002	-0.000002	0.000000	0.000000	0.000000
18	-0.000067	0.000000	-0.000002	0.000000	0.000000	0.000000
24	-0.000067	0.000002	-0.000002	0.000000	0.000000	0.000000
25	-0.000067	0.000005	-0.000002	0.000000	0.000000	0.000001
26	-0.000067	0.000008	-0.000002	0.000000	0.000000	0.000001
27	-0.000067	0.000010	-0.000002	0.000000	0.000000	0.000000
28	-0.000067	0.000013	-0.000002	0.000000	0.000000	0.000000
29	-0.000067	0.000014	-0.000002	0.000000	0.000000	0.000000
30	-0.000067	0.000015	-0.000002	0.000000	0.000000	0.000000
31	-0.000067	0.000015	-0.000002	0.000000	0.000000	0.000000
32	-0.000067	0.000014	-0.000002	0.000000	0.000000	0.000000
33	-0.000067	0.000011	-0.000002	0.000000	0.000000	-0.000001
34	-0.000067	0.000006	-0.000002	0.000000	0.000000	-0.000001
37	-0.000067	0.000000	-0.000002	0.000000	0.000000	-0.000002
44	-0.000067	-0.000009	-0.000002	0.000000	0.000000	-0.000002
45	-0.000067	-0.000020	-0.000002	0.000000	0.000000	-0.000002
46	-0.000067	-0.000031	-0.000002	0.000000	0.000000	-0.000002
47	-0.000067	-0.000041	-0.000002	0.000000	0.000000	-0.000002
48	-0.000067	-0.000050	-0.000002	0.000000	0.000000	-0.000002
49	-0.000067	-0.000057	-0.000002	0.000000	0.000000	-0.000001
50	-0.000067	-0.000060	-0.000002	0.000000	0.000000	0.000000
51	-0.000067	-0.000060	-0.000002	0.000000	0.000000	0.000001
52	-0.000067	-0.000054	-0.000002	0.000000	0.000000	0.000002
53	-0.000067	-0.000043	-0.000002	0.000000	0.000000	0.000003
54	-0.000067	-0.000025	-0.000002	0.000000	0.000000	0.000004
57	-0.000067	0.000001	-0.000001	0.000000	0.000000	0.000006
64	-0.000067	0.000037	-0.000001	0.000000	0.000000	0.000007
65	-0.000067	0.000077	-0.000001	0.000000	0.000000	0.000008
66	-0.000067	0.000120	-0.000001	0.000000	0.000000	0.000008
67	-0.000067	0.000160	-0.000001	0.000000	0.000000	0.000007
68	-0.000067	0.000195	-0.000001	0.000000	0.000000	0.000006
69	-0.000067	0.000221	-0.000001	0.000000	0.000000	0.000004
70	-0.000067	0.000235	-0.000001	0.000000	0.000000	0.000001
71	-0.000067	0.000233	-0.000001	0.000000	0.000000	-0.000003
72	-0.000067	0.000211	-0.000001	0.000000	0.000000	-0.000007
73	-0.000067	0.000167	-0.000001	0.000000	0.000000	-0.000012
74	-0.000067	0.000096	-0.000001	0.000000	0.000000	-0.000017
77	-0.000067	-0.000004	-0.000001	0.000000	0.000000	-0.000024
84	-0.000067	-0.000143	-0.000001	0.000001	0.000000	-0.000029
85	-0.000067	-0.000301	-0.000001	0.000001	0.000000	-0.000032
86	-0.000067	-0.000465	-0.000001	0.000001	0.000000	-0.000031
87	-0.000067	-0.000622	-0.000001	0.000001	0.000000	-0.000029
88	-0.000067	-0.000758	-0.000001	0.000001	0.000000	-0.000023
89	-0.000067	-0.000860	-0.000001	0.000000	0.000000	-0.000015
90	-0.000067	-0.000913	-0.000001	0.000000	0.000000	-0.000004
91	-0.000067	-0.000905	-0.000001	0.000000	0.000000	0.000010
92	-0.000067	-0.000821	-0.000001	0.000000	0.000000	0.000026
93	-0.000067	-0.000649	-0.000001	-0.000001	0.000000	0.000045
94	-0.000067	-0.000375	-0.000001	-0.000001	0.000000	0.000067
97	-0.000067	0.000016	-0.000001	-0.000001	0.000000	0.000092
104	-0.000067	0.000554	-0.000001	-0.000002	0.000000	0.000112
105	-0.000067	0.001169	-0.000001	-0.000002	0.000000	0.000122
106	-0.000067	0.001807	-0.000001	-0.000002	0.000000	0.000122
107	-0.000067	0.002416	-0.000001	-0.000002	0.000000	0.000111
108	-0.000067	0.002943	-0.000001	-0.000002	0.000000	0.000089
109	-0.000067	0.003335	-0.000001	-0.000001	0.000000	0.000057
110	-0.000067	0.003539	-0.000001	-0.000001	0.000000	0.000014
111	-0.000067	0.003502	-0.000001	0.000000	0.000000	-0.000040
112	-0.000067	0.003171	-0.000001	0.000001	0.000000	-0.000104
113	-0.000067	0.002494	0.000000	0.000002	0.000000	-0.000178
114	-0.000067	0.001417	0.000000	0.000003	0.000000	-0.000263
117	-0.000067	-0.000113	0.000000	0.000005	0.000000	-0.000359
124	-0.000067	-0.002274	0.000000	0.000006	0.000000	-0.000419
125	-0.000067	-0.004498	0.000000	0.000006	0.000000	-0.000400
126	-0.000067	-0.006432	0.000000	0.000005	0.000000	-0.000323
127	-0.000067	-0.007843	0.000000	0.000003	0.000000	-0.000205
128	-0.000067	-0.008549	0.000000	0.000002	0.000000	-0.000065
129	-0.000067	-0.008501	0.000001	0.000000	0.000000	0.000078
130	-0.000067	-0.007727	0.000001	-0.000001	0.000000	0.000208
131	-0.000067	-0.006334	0.000001	-0.000003	0.000000	0.000304
132	-0.000067	-0.004551	0.000001	-0.000003	0.000000	0.000349
133	-0.000067	-0.002658	0.000001	-0.000003	0.000000	0.000325
134	-0.000067	-0.001057	0.000001	-0.000002	0.000000	0.000212
137	-0.000067	-0.000261	0.000001	0.000000	0.000000	-0.000005
144	-0.000067	-0.001109	0.000001	0.000002	0.000000	-0.000219
145	-0.000067	-0.002723	0.000001	0.000003	0.000000	-0.000326
146	-0.000067	-0.004610	0.000001	0.000004	0.000000	-0.000348
147	-0.000067	-0.006394	0.000001	0.000003	0.000000	-0.000301
148	-0.000067	-0.007755	0.000001	0.000003	0.000000	-0.000202
149	-0.000067	-0.008501	0.000001	0.000002	0.000000	-0.000073
150	-0.000067	-0.008520	0.000001	0.000000	0.000000	0.000071
151	-0.000067	-0.007778	0.000001	-0.000001	0.000000	0.000210
152	-0.000067	-0.006362	0.000000	-0.000002	0.000000	0.000325
153	-0.000067	-0.004413	0.000000	-0.000003	0.000000	0.000401
154	-0.000067	-0.002191	0.000000	-0.000003	0.000000	0.000415
157	-0.000067	-0.000069	0.000000	-0.000002	0.000000	0.000353
163	-0.000067	0.001431	0.000000	-0.000002	0.000000	0.000258
164	-0.000067	0.002480	0.000000	-0.000001	0.000000	0.000173
165	-0.000067	0.003134	0.000000	-0.000001	0.000000	0.000099
166	-0.000067	0.003445	0.000000	-0.000001	0.000000	0.000036
167	-0.000067	0.003467	0.000000	0.000000	0.000000	-0.000016
168	-0.000067	0.003253	0.000000	0.000000	0.000000	-0.000058
169	-0.000067	0.002856	0.000000	0.000000	0.000000	-0.000089
170	-0.000067	0.002331	0.000000	0.000000	0.000000	-0.000110
171	-0.000067	0.001730	0.000000	0.000000	0.000000	-0.000119
172	-0.000067	0.001108	0.000000	0.000000	0.000000	-0.000119
173	-0.000067	0.000516	0.000000	0.000000	0.000000	-0.000107
176	-0.000067	0.000010	0.000000	0.000000	0.000000	-0.000085
182	-0.000067	-0.000340	0.000000	0.000000	0.000000	-0.000058
183	-0.000067	-0.000566	0.000000	0.000000	0.000000	-0.000035
184	-0.000067	-0.000685	0.000000	0.000000	0.000000	-0.000015
185	-0.000067	-0.000712	0.000000	0.000000	0.000000	0.000001
186	-0.000067	-0.000662	0.000000	0.000000	0.000000	0.000015
187	-0.000067	-0.000551	0.000000	0.000000	0.000000	0.000026
188	-0.000067	-0.000393	0.000000	0.000000	0.000000	0.000034
189	-0.000067	-0.000205	0.000000	0.000000	0.000000	0.000038
192	-0.000067	-0.000001	0.000000	0.000000	0.000000	0.000040

HIPOTESIS 16

hipo 16 Carga de Vanos 7 y 9

DESPLAZAMIENTOS DE NUDOS

NUDO	DESP. X	DESP. Y	DESP. Z	GIRO X	GIRO Y	GIRO Z
3	0.000373	0.000000	0.000011	0.000000	0.000000	0.000000
8	0.000373	-0.000001	0.000011	0.000000	0.000000	0.000000
9	0.000373	-0.000002	0.000011	0.000000	0.000000	0.000000
10	0.000373	-0.000003	0.000011	0.000000	0.000000	0.000000
11	0.000373	-0.000004	0.000011	0.000000	0.000000	0.000000
12	0.000373	-0.000005	0.000011	0.000000	0.000000	0.000000
13	0.000373	-0.000004	0.000011	0.000000	0.000000	0.000000
14	0.000373	-0.000004	0.000011	0.000000	0.000000	0.000000
15	0.000373	-0.000002	0.000011	0.000000	0.000000	0.000000
18	0.000373	0.000000	0.000010	0.000000	0.000000	0.000001
24	0.000373	0.000003	0.000010	0.000000	0.000000	0.000001
25	0.000373	0.000007	0.000010	0.000000	0.000000	0.000001
26	0.000373	0.000011	0.000010	0.000000	0.000000	0.000001
27	0.000373	0.000015	0.000010	0.000000	0.000000	0.000001
28	0.000373	0.000018	0.000010	0.000000	0.000000	0.000001
29	0.000373	0.000021	0.000010	0.000000	0.000000	0.000000
30	0.000373	0.000022	0.000010	0.000000	0.000000	0.000000
31	0.000373	0.000022	0.000010	0.000000	0.000000	0.000000
32	0.000373	0.000020	0.000010	0.000000	0.000000	-0.000001
33	0.000373	0.000016	0.000009	0.000000	0.000000	-0.000001
34	0.000373	0.000009	0.000009	0.000000	0.000000	-0.000002
37	0.000373	0.000000	0.000009	0.000000	0.000000	-0.000002
44	0.000373	-0.000013	0.000009	0.000000	0.000000	-0.000003
45	0.000373	-0.000028	0.000009	0.000000	0.000000	-0.000003
46	0.000373	-0.000044	0.000009	0.000000	0.000000	-0.000003
47	0.000373	-0.000059	0.000009	0.000000	0.000000	-0.000003
48	0.000373	-0.000072	0.000009	0.000000	0.000000	-0.000002
49	0.000373	-0.000081	0.000009	0.000000	0.000000	-0.000001
50	0.000373	-0.000087	0.000009	0.000000	0.000000	0.000000
51	0.000373	-0.000086	0.000009	0.000000	0.000000	0.000001
52	0.000373	-0.000078	0.000008	0.000000	0.000000	0.000002
53	0.000373	-0.000062	0.000008	0.000000	0.000000	0.000004
54	0.000373	-0.000036	0.000008	0.000000	0.000000	0.000006
57	0.000373	0.000002	0.000008	0.000000	0.000000	0.000009
64	0.000373	0.000053	0.000008	0.000000	0.000000	0.000011
65	0.000373	0.000111	0.000008	0.000000	0.000000	0.000012
66	0.000373	0.000172	0.000008	0.000000	0.000000	0.000012
67	0.000373	0.000229	0.000008	0.000000	0.000000	0.000011
68	0.000373	0.000280	0.000008	0.000000	0.000000	0.000008
69	0.000373	0.000317	0.000008	0.000000	0.000000	0.000005
70	0.000373	0.000337	0.000008	0.000000	0.000000	0.000001
71	0.000373	0.000334	0.000007	0.000000	0.000000	-0.000004
72	0.000373	0.000303	0.000007	0.000000	0.000000	-0.000010
73	0.000373	0.000239	0.000007	0.000000	0.000000	-0.000017
74	0.000373	0.000138	0.000007	0.000000	0.000000	-0.000025
77	0.000373	-0.000006	0.000007	0.000001	0.000000	-0.000034
84	0.000373	-0.000204	0.000007	0.000001	0.000000	-0.000041
85	0.000373	-0.000431	0.000007	0.000001	0.000000	-0.000045
86	0.000373	-0.000667	0.000007	0.000001	0.000000	-0.000045
87	0.000373	-0.000892	0.000007	0.000001	0.000000	-0.000041
88	0.000373	-0.001087	0.000007	0.000001	0.000000	-0.000033
89	0.000373	-0.001232	0.000006	0.000001	0.000000	-0.000021
90	0.000373	-0.001309	0.000006	0.000000	0.000000	-0.000005
91	0.000373	-0.001297	0.000006	0.000000	0.000000	0.000014
92	0.000373	-0.001177	0.000006	0.000000	0.000000	0.000038
93	0.000373	-0.000930	0.000006	-0.000001	0.000000	0.000065
94	0.000373	-0.000537	0.000006	-0.000001	0.000000	0.000096
97	0.000373	0.000023	0.000006	-0.000002	0.000000	0.000132
104	0.000373	0.000794	0.000006	-0.000003	0.000000	0.000161
105	0.000373	0.001675	0.000006	-0.000003	0.000000	0.000175
106	0.000373	0.002590	0.000006	-0.000003	0.000000	0.000175
107	0.000373	0.003463	0.000006	-0.000003	0.000000	0.000159
108	0.000373	0.004219	0.000006	-0.000002	0.000000	0.000128
109	0.000373	0.004782	0.000006	-0.000002	0.000000	0.000082
110	0.000373	0.005076	0.000006	-0.000001	0.000000	0.000020
111	0.000373	0.005025	0.000005	0.000000	0.000000	-0.000056
112	0.000373	0.004554	0.000005	0.000001	0.000000	-0.000148
113	0.000373	0.003587	0.000005	0.000003	0.000000	-0.000255
114	0.000373	0.002047	0.000005	0.000005	0.000000	-0.000377
117	0.000373	-0.000139	0.000005	0.000007	0.000000	-0.000514
124	0.000373	-0.003207	0.000005	0.000008	0.000000	-0.000608
125	0.000373	-0.006464	0.000005	0.000008	0.000000	-0.000606
126	0.000373	-0.009474	0.000005	0.000008	0.000000	-0.000528
127	0.000373	-0.011910	0.000005	0.000006	0.000000	-0.000392
128	0.000373	-0.013505	0.000005	0.000004	0.000000	-0.000215
129	0.000373	-0.014118	0.000005	0.000002	0.000000	-0.000018
130	0.000373	-0.013690	0.000005	0.000000	0.000000	0.000184
131	0.000373	-0.012238	0.000005	-0.000003	0.000000	0.000370
132	0.000373	-0.009903	0.000005	-0.000004	0.000000	0.000522
133	0.000373	-0.006875	0.000005	-0.000006	0.000000	0.000624
134	0.000373	-0.003468	0.000004	-0.000006	0.000000	0.000654
137	0.000373	-0.000106	0.000004	-0.000006	0.000000	0.000598
144	0.000373	0.002635	0.000004	-0.000005	0.000000	0.000498
145	0.000373	0.004877	0.000004	-0.000004	0.000000	0.000398
146	0.000373	0.006620	0.000004	-0.000004	0.000000	0.000299
147	0.000373	0.007864	0.000004	-0.000003	0.000000	0.000199
148	0.000373	0.008609	0.000004	-0.000002	0.000000	0.000099
149	0.000373	0.008857	0.000004	-0.000001	0.000000	0.000000
150	0.000373	0.008608	0.000004	0.000000	0.000000	-0.000099
151	0.000373	0.007863	0.000004	0.000001	0.000000	-0.000199
152	0.000373	0.006622	0.000004	0.000002	0.000000	-0.000298
153	0.000373	0.004885	0.000004	0.000002	0.000000	-0.000397
154	0.000373	0.002654	0.000004	0.000003	0.000000	-0.000496
157	0.000373	-0.000072	0.000004	0.000004	0.000000	-0.000594
163	0.000373	-0.003416	0.000004	0.000005	0.000000	-0.000647
164	0.000373	-0.006763	0.000004	0.000005	0.000000	-0.000611
165	0.000373	-0.009714	0.000004	0.000004	0.000000	-0.000509
166	0.000373	-0.011987	0.000004	0.000004	0.000000	-0.000355
167	0.000373	-0.013356	0.000003	0.000003	0.000000	-0.000170
168	0.000373	-0.013720	0.000003	0.000002	0.000000	0.000027
169	0.000373	-0.013063	0.000003	0.000000	0.000000	0.000222
170	0.000373	-0.011443	0.000003	-0.000001	0.000000	0.000391
171	0.000373	-0.009042	0.000003	-0.000001	0.000000	0.000519
172	0.000373	-0.006093	0.000003	-0.000002	0.000000	0.000588
173	0.000373	-0.002951	0.000003	-0.000002	0.000000	0.000576
176	0.000373	-0.000081	0.000002	-0.000002	0.000000	0.000471
182	0.000373	0.001866	0.000002	-0.000001	0.000000	0.000326
183	0.000373	0.003129	0.000002	-0.000001	0.000000	0.000197
184	0.000373	0.003794	0.000002	-0.000001	0.000000	0.000086
185	0.000373	0.003946	0.000001	0.000000	0.000000	-0.000008
186	0.000373	0.003671	0.000001	0.000000	0.000000	-0.000085
187	0.000373	0.003053	0.000001	0.000000	0.000000	-0.000144
188	0.000373	0.002179	0.000000	0.000000	0.000000	-0.000187
189	0.000373	0.001135	0.000000	0.000000	0.000000	-0.000213
192	0.000373	0.000005	0.000000	0.000000	0.000000	-0.000221

proc Viaducto Papiol - Prueba de carga

HIPOTESIS 17

hipo 17 Carga de Vanos 8 y 9

DESPLAZAMIENTOS DE NUDOS

NUDO	DESP. X	DESP. Y	DESP. Z	GIRO X	GIRO Y	GIRO Z
3	0.000259	0.000000	0.000008	0.000000	0.000000	0.000000
8	0.000259	0.000000	0.000008	0.000000	0.000000	0.000000
9	0.000259	0.000000	0.000008	0.000000	0.000000	0.000000
10	0.000259	0.000001	0.000008	0.000000	0.000000	0.000000
11	0.000259	0.000001	0.000008	0.000000	0.000000	0.000000
12	0.000259	0.000001	0.000008	0.000000	0.000000	0.000000
13	0.000259	0.000001	0.000007	0.000000	0.000000	0.000000
14	0.000259	0.000001	0.000007	0.000000	0.000000	0.000000
15	0.000259	0.000000	0.000007	0.000000	0.000000	0.000000
18	0.000259	0.000000	0.000007	0.000000	0.000000	0.000000
24	0.000259	-0.000001	0.000007	0.000000	0.000000	0.000000
25	0.000259	-0.000001	0.000007	0.000000	0.000000	0.000000
26	0.000259	-0.000002	0.000007	0.000000	0.000000	0.000000
27	0.000259	-0.000003	0.000007	0.000000	0.000000	0.000000
28	0.000259	-0.000003	0.000007	0.000000	0.000000	0.000000
29	0.000259	-0.000004	0.000007	0.000000	0.000000	0.000000
30	0.000259	-0.000004	0.000007	0.000000	0.000000	0.000000
31	0.000259	-0.000004	0.000007	0.000000	0.000000	0.000000
32	0.000259	-0.000004	0.000007	0.000000	0.000000	0.000000
33	0.000259	-0.000003	0.000007	0.000000	0.000000	0.000000
34	0.000259	-0.000002	0.000007	0.000000	0.000000	0.000000
37	0.000259	0.000000	0.000006	0.000000	0.000000	0.000000
44	0.000259	0.000002	0.000006	0.000000	0.000000	0.000000
45	0.000259	0.000005	0.000006	0.000000	0.000000	0.000001
46	0.000259	0.000008	0.000006	0.000000	0.000000	0.000001
47	0.000259	0.000011	0.000006	0.000000	0.000000	0.000000
48	0.000259	0.000013	0.000006	0.000000	0.000000	0.000000
49	0.000259	0.000015	0.000006	0.000000	0.000000	0.000000
50	0.000259	0.000016	0.000006	0.000000	0.000000	0.000000
51	0.000259	0.000015	0.000006	0.000000	0.000000	0.000000
52	0.000259	0.000014	0.000006	0.000000	0.000000	0.000000
53	0.000259	0.000011	0.000006	0.000000	0.000000	-0.000001
54	0.000259	0.000006	0.000006	0.000000	0.000000	-0.000001
57	0.000259	0.000000	0.000006	0.000000	0.000000	-0.000002
64	0.000259	-0.000009	0.000006	0.000000	0.000000	-0.000002
65	0.000259	-0.000020	0.000006	0.000000	0.000000	-0.000002
66	0.000259	-0.000031	0.000006	0.000000	0.000000	-0.000002
67	0.000259	-0.000041	0.000005	0.000000	0.000000	-0.000002
68	0.000259	-0.000050	0.000005	0.000000	0.000000	-0.000002
69	0.000259	-0.000057	0.000005	0.000000	0.000000	-0.000001
70	0.000259	-0.000061	0.000005	0.000000	0.000000	0.000000
71	0.000259	-0.000060	0.000005	0.000000	0.000000	0.000001
72	0.000259	-0.000054	0.000005	0.000000	0.000000	0.000002
73	0.000259	-0.000043	0.000005	0.000000	0.000000	0.000003
74	0.000259	-0.000025	0.000005	0.000000	0.000000	0.000004
77	0.000259	0.000001	0.000005	0.000000	0.000000	0.000006
84	0.000259	0.000037	0.000005	0.000000	0.000000	0.000007
85	0.000259	0.000077	0.000005	0.000000	0.000000	0.000008
86	0.000259	0.000120	0.000005	0.000000	0.000000	0.000008
87	0.000259	0.000160	0.000005	0.000000	0.000000	0.000007
88	0.000259	0.000195	0.000005	0.000000	0.000000	0.000006
89	0.000259	0.000221	0.000005	0.000000	0.000000	0.000004
90	0.000259	0.000235	0.000004	0.000000	0.000000	0.000001
91	0.000259	0.000233	0.000004	0.000000	0.000000	-0.000003
92	0.000259	0.000212	0.000004	0.000000	0.000000	-0.000007
93	0.000259	0.000167	0.000004	0.000000	0.000000	-0.000012
94	0.000259	0.000097	0.000004	0.000000	0.000000	-0.000017
97	0.000259	-0.000004	0.000004	0.000000	0.000000	-0.000024
104	0.000259	-0.000143	0.000004	0.000000	0.000000	-0.000029
105	0.000259	-0.000301	0.000004	0.000001	0.000000	-0.000032
106	0.000259	-0.000466	0.000004	0.000001	0.000000	-0.000031
107	0.000259	-0.000623	0.000004	0.000001	0.000000	-0.000029
108	0.000259	-0.000759	0.000004	0.000000	0.000000	-0.000023
109	0.000259	-0.000861	0.000004	0.000000	0.000000	-0.000015
110	0.000259	-0.000914	0.000004	0.000000	0.000000	-0.000004
111	0.000259	-0.000906	0.000004	0.000000	0.000000	0.000010
112	0.000259	-0.000822	0.000004	0.000000	0.000000	0.000026
113	0.000259	-0.000650	0.000004	-0.000001	0.000000	0.000045
114	0.000259	-0.000375	0.000004	-0.000001	0.000000	0.000067
117	0.000259	0.000016	0.000004	-0.000001	0.000000	0.000092
124	0.000259	0.000555	0.000004	-0.000001	0.000000	0.000113
125	0.000259	0.001170	0.000004	-0.000002	0.000000	0.000123
126	0.000259	0.001809	0.000004	-0.000002	0.000000	0.000122
127	0.000259	0.002419	0.000004	-0.000002	0.000000	0.000111
128	0.000259	0.002946	0.000004	-0.000001	0.000000	0.000089
129	0.000259	0.003338	0.000004	-0.000001	0.000000	0.000057
130	0.000259	0.003543	0.000004	-0.000001	0.000000	0.000014
131	0.000259	0.003506	0.000004	0.000000	0.000000	-0.000040
132	0.000259	0.003175	0.000004	0.000001	0.000000	-0.000104
133	0.000259	0.002496	0.000004	0.000002	0.000000	-0.000178
134	0.000259	0.001418	0.000004	0.000003	0.000000	-0.000264
137	0.000259	-0.000113	0.000004	0.000004	0.000000	-0.000360
144	0.000259	-0.002277	0.000004	0.000004	0.000000	-0.000419
145	0.000259	-0.004502	0.000004	0.000004	0.000000	-0.000400
146	0.000259	-0.006439	0.000004	0.000004	0.000000	-0.000323
147	0.000259	-0.007850	0.000004	0.000003	0.000000	-0.000205
148	0.000259	-0.008556	0.000004	0.000002	0.000000	-0.000065
149	0.000259	-0.008504	0.000004	0.000000	0.000000	0.000079
150	0.000259	-0.007725	0.000004	-0.000001	0.000000	0.000210
151	0.000259	-0.006322	0.000004	-0.000002	0.000000	0.000306
152	0.000259	-0.004526	0.000004	-0.000002	0.000000	0.000352
153	0.000259	-0.002615	0.000004	-0.000002	0.000000	0.000329
154	0.000259	-0.000992	0.000004	-0.000001	0.000000	0.000217
157	0.000259	-0.000168	0.000004	0.000000	0.000000	0.000002
163	0.000259	-0.000981	0.000004	0.000002	0.000000	-0.000212
164	0.000259	-0.002556	0.000004	0.000002	0.000000	-0.000319
165	0.000259	-0.004405	0.000004	0.000003	0.000000	-0.000341
166	0.000259	-0.006154	0.000003	0.000002	0.000000	-0.000295
167	0.000259	-0.007488	0.000003	0.000002	0.000000	-0.000198
168	0.000259	-0.008216	0.000003	0.000001	0.000000	-0.000071
169	0.000259	-0.008230	0.000003	0.000001	0.000000	0.000070
170	0.000259	-0.007500	0.000003	0.000000	0.000000	0.000206
171	0.000259	-0.006115	0.000002	-0.000001	0.000000	0.000317
172	0.000259	-0.004220	0.000002	-0.000001	0.000000	0.000387
173	0.000259	-0.002078	0.000002	-0.000001	0.000000	0.000396
176	0.000259	-0.000064	0.000002	-0.000001	0.000000	0.000328
182	0.000259	0.001291	0.000002	-0.000001	0.000000	0.000227
183	0.000259	0.002171	0.000001	-0.000001	0.000000	0.000138
184	0.000259	0.002635	0.000001	-0.000001	0.000000	0.000060
185	0.000259	0.002741	0.000001	0.000000	0.000000	-0.000005
186	0.000259	0.002551	0.000001	0.000000	0.000000	-0.000059
187	0.000259	0.002122	0.000001	0.000000	0.000000	-0.000100
188	0.000259	0.001515	0.000000	0.000000	0.000000	-0.000130
189	0.000259	0.000789	0.000000	0.000000	0.000000	-0.000148
192	0.000259	0.000003	0.000000	0.000000	0.000000	-0.000154

proc Viaducto Papiol - Prueba de carga

HIPOTESIS 18

hipo 18 Carga de Vanos 8 y 10

DESPLAZAMIENTOS DE NUDOS

NUDO	DESP. X	DESP. Y	DESP. Z	GIRO X	GIRO Y	GIRO Z
3	-0.000805	0.000000	-0.000024	0.000000	0.000000	0.000000
8	-0.000805	0.000000	-0.000024	0.000000	0.000000	0.000000
9	-0.000805	0.000001	-0.000024	0.000000	0.000000	0.000000
10	-0.000805	0.000001	-0.000024	0.000000	0.000000	0.000000
11	-0.000805	0.000001	-0.000023	0.000000	0.000000	0.000000
12	-0.000805	0.000001	-0.000023	0.000000	0.000000	0.000000
13	-0.000805	0.000001	-0.000023	0.000000	0.000000	0.000000
14	-0.000805	0.000001	-0.000023	0.000000	0.000000	0.000000
15	-0.000805	0.000001	-0.000023	0.000000	0.000000	0.000000
18	-0.000805	0.000000	-0.000022	0.000000	0.000000	0.000000
24	-0.000805	-0.000001	-0.000022	0.000000	0.000000	0.000000
25	-0.000805	-0.000002	-0.000022	0.000000	0.000000	0.000000
26	-0.000805	-0.000003	-0.000022	0.000000	0.000000	0.000000
27	-0.000805	-0.000004	-0.000022	0.000000	0.000000	0.000000
28	-0.000805	-0.000005	-0.000021	0.000000	0.000000	0.000000
29	-0.000805	-0.000005	-0.000021	0.000000	0.000000	0.000000
30	-0.000805	-0.000006	-0.000021	0.000000	0.000000	0.000000
31	-0.000805	-0.000005	-0.000021	0.000000	0.000000	0.000000
32	-0.000805	-0.000005	-0.000021	0.000000	0.000000	0.000000
33	-0.000805	-0.000004	-0.000020	0.000000	0.000000	0.000000
34	-0.000805	-0.000002	-0.000020	0.000000	0.000000	0.000000
37	-0.000805	0.000000	-0.000020	0.000000	0.000000	0.000001
44	-0.000805	0.000003	-0.000020	0.000000	0.000000	0.000001
45	-0.000805	0.000007	-0.000020	0.000000	0.000000	0.000001
46	-0.000805	0.000011	-0.000019	0.000000	0.000000	0.000001
47	-0.000805	0.000015	-0.000019	0.000000	0.000000	0.000001
48	-0.000805	0.000018	-0.000019	0.000000	0.000000	0.000001
49	-0.000805	0.000020	-0.000019	0.000000	0.000000	0.000000
50	-0.000805	0.000022	-0.000019	0.000000	0.000000	0.000000
51	-0.000805	0.000022	-0.000018	0.000000	0.000000	0.000000
52	-0.000805	0.000020	-0.000018	0.000000	0.000000	-0.000001
53	-0.000805	0.000015	-0.000018	0.000000	0.000000	-0.000001
54	-0.000805	0.000009	-0.000018	0.000000	0.000000	-0.000002
57	-0.000805	0.000000	-0.000018	0.000000	0.000000	-0.000002
64	-0.000805	-0.000013	-0.000017	0.000000	0.000000	-0.000003
65	-0.000805	-0.000028	-0.000017	0.000000	0.000000	-0.000003
66	-0.000805	-0.000043	-0.000017	0.000000	0.000000	-0.000003
67	-0.000805	-0.000058	-0.000017	0.000000	0.000000	-0.000003
68	-0.000805	-0.000070	-0.000017	0.000000	0.000000	-0.000002
69	-0.000805	-0.000080	-0.000017	0.000000	0.000000	-0.000001
70	-0.000805	-0.000084	-0.000016	0.000000	0.000000	0.000000
71	-0.000805	-0.000084	-0.000016	0.000000	0.000000	0.000001
72	-0.000805	-0.000076	-0.000016	0.000000	0.000000	0.000002
73	-0.000805	-0.000060	-0.000016	0.000000	0.000000	0.000004
74	-0.000805	-0.000035	-0.000016	0.000000	0.000000	0.000006
77	-0.000805	0.000001	-0.000015	0.000000	0.000000	0.000008
84	-0.000805	0.000051	-0.000015	0.000000	0.000000	0.000010
85	-0.000805	0.000108	-0.000015	0.000000	0.000000	0.000011
86	-0.000805	0.000167	-0.000015	0.000000	0.000000	0.000011
87	-0.000805	0.000224	-0.000015	0.000000	0.000000	0.000010
88	-0.000805	0.000273	-0.000014	0.000000	0.000000	0.000008
89	-0.000805	0.000309	-0.000014	0.000000	0.000000	0.000005
90	-0.000805	0.000328	-0.000014	0.000000	0.000000	0.000001
91	-0.000805	0.000325	-0.000014	0.000000	0.000000	-0.000004
92	-0.000805	0.000295	-0.000014	0.000000	0.000000	-0.000009
93	-0.000805	0.000233	-0.000013	0.000000	0.000000	-0.000016
94	-0.000805	0.000135	-0.000013	0.000000	0.000000	-0.000024
97	-0.000805	-0.000006	-0.000013	0.000001	0.000000	-0.000033
104	-0.000805	-0.000199	-0.000013	0.000001	0.000000	-0.000040
105	-0.000805	-0.000420	-0.000013	0.000001	0.000000	-0.000044
106	-0.000805	-0.000650	-0.000012	0.000001	0.000000	-0.000044
107	-0.000805	-0.000869	-0.000012	0.000001	0.000000	-0.000040
108	-0.000805	-0.001059	-0.000012	0.000001	0.000000	-0.000032
109	-0.000805	-0.001201	-0.000012	0.000000	0.000000	-0.000021
110	-0.000805	-0.001276	-0.000011	0.000000	0.000000	-0.000005
111	-0.000805	-0.001264	-0.000011	0.000000	0.000000	0.000014
112	-0.000805	-0.001147	-0.000011	0.000000	0.000000	0.000037
113	-0.000805	-0.000907	-0.000011	-0.000001	0.000000	0.000063
114	-0.000805	-0.000523	-0.000011	-0.000001	0.000000	0.000094
117	-0.000805	0.000022	-0.000010	-0.000002	0.000000	0.000128
124	-0.000805	0.000774	-0.000010	-0.000002	0.000000	0.000157
125	-0.000805	0.001632	-0.000010	-0.000002	0.000000	0.000171
126	-0.000805	0.002524	-0.000009	-0.000002	0.000000	0.000170
127	-0.000805	0.003375	-0.000009	-0.000002	0.000000	0.000155
128	-0.000805	0.004112	-0.000009	-0.000002	0.000000	0.000125
129	-0.000805	0.004660	-0.000008	-0.000001	0.000000	0.000079
130	-0.000805	0.004947	-0.000008	-0.000001	0.000000	0.000020
131	-0.000805	0.004897	-0.000008	0.000000	0.000000	-0.000055
132	-0.000805	0.004438	-0.000008	0.000001	0.000000	-0.000144
133	-0.000805	0.003495	-0.000007	0.000002	0.000000	-0.000248
134	-0.000805	0.001994	-0.000007	0.000004	0.000000	-0.000367
137	-0.000805	-0.000137	-0.000007	0.000005	0.000000	-0.000501
144	-0.000805	-0.003129	-0.000007	0.000006	0.000000	-0.000592
145	-0.000805	-0.006300	-0.000006	0.000006	0.000000	-0.000589
146	-0.000805	-0.009219	-0.000006	0.000006	0.000000	-0.000511
147	-0.000805	-0.011568	-0.000006	0.000005	0.000000	-0.000376
148	-0.000805	-0.013087	-0.000006	0.000003	0.000000	-0.000202
149	-0.000805	-0.013642	-0.000006	0.000002	0.000000	-0.000009
150	-0.000805	-0.013181	-0.000006	0.000000	0.000000	0.000187
151	-0.000805	-0.011730	-0.000006	-0.000002	0.000000	0.000366
152	-0.000805	-0.009435	-0.000005	-0.000003	0.000000	0.000509
153	-0.000805	-0.006495	-0.000005	-0.000004	0.000000	0.000601
154	-0.000805	-0.003231	-0.000005	-0.000004	0.000000	0.000619
157	-0.000805	-0.000074	-0.000005	-0.000004	0.000000	0.000550
163	-0.000805	0.002384	-0.000005	-0.000003	0.000000	0.000439
164	-0.000805	0.004301	-0.000005	-0.000003	0.000000	0.000334
165	-0.000805	0.005706	-0.000005	-0.000002	0.000000	0.000234
166	-0.000805	0.006625	-0.000004	-0.000002	0.000000	0.000140
167	-0.000805	0.007089	-0.000004	-0.000001	0.000000	0.000051
168	-0.000805	0.007125	-0.000004	-0.000001	0.000000	-0.000031
169	-0.000805	0.006761	-0.000004	0.000000	0.000000	-0.000108
170	-0.000805	0.006027	-0.000004	0.000000	0.000000	-0.000180
171	-0.000805	0.004950	-0.000003	0.000001	0.000000	-0.000245
172	-0.000805	0.003559	-0.000003	0.000001	0.000000	-0.000305
173	-0.000805	0.001882	-0.000003	0.000001	0.000000	-0.000360
176	-0.000805	-0.000052	-0.000002	0.000002	0.000000	-0.000408
182	-0.000805	-0.002314	-0.000002	0.000002	0.000000	-0.000415
183	-0.000805	-0.004379	-0.000002	0.000002	0.000000	-0.000351
184	-0.000805	-0.005955	-0.000001	0.000002	0.000000	-0.000238
185	-0.000805	-0.006845	-0.000001	0.000001	0.000000	-0.000092
186	-0.000805	-0.006912	0.000000	0.000001	0.000000	0.000068
187	-0.000805	-0.006154	0.000000	0.000000	0.000000	0.000222
188	-0.000805	-0.004625	0.000001	0.000000	0.000000	0.000355
189	-0.000805	-0.002490	0.000001	-0.000001	0.000000	0.000446
192	-0.000805	-0.000017	0.000002	-0.000001	0.000000	0.000477

proc Viaducto Papiol - Prueba de carga

HIPOTESIS 19

hipo 19 Carga de Vanos 9 y 10

DESPLAZAMIENTOS DE NUDOS

NUDO	DESP. X	DESP. Y	DESP. Z	GIRO X	GIRO Y	GIRO Z
3	-0.000364	0.000000	-0.000011	0.000000	0.000000	0.000000
8	-0.000364	0.000000	-0.000011	0.000000	0.000000	0.000000
9	-0.000364	0.000000	-0.000011	0.000000	0.000000	0.000000
10	-0.000364	0.000000	-0.000011	0.000000	0.000000	0.000000
11	-0.000364	0.000000	-0.000011	0.000000	0.000000	0.000000
12	-0.000364	0.000000	-0.000011	0.000000	0.000000	0.000000
13	-0.000364	0.000000	-0.000010	0.000000	0.000000	0.000000
14	-0.000364	0.000000	-0.000010	0.000000	0.000000	0.000000
15	-0.000364	0.000000	-0.000010	0.000000	0.000000	0.000000
18	-0.000364	0.000000	-0.000010	0.000000	0.000000	0.000000
24	-0.000364	0.000000	-0.000010	0.000000	0.000000	0.000000
25	-0.000364	0.000000	-0.000010	0.000000	0.000000	0.000000
26	-0.000364	0.000001	-0.000010	0.000000	0.000000	0.000000
27	-0.000364	0.000001	-0.000010	0.000000	0.000000	0.000000
28	-0.000364	0.000001	-0.000010	0.000000	0.000000	0.000000
29	-0.000364	0.000001	-0.000010	0.000000	0.000000	0.000000
30	-0.000364	0.000001	-0.000010	0.000000	0.000000	0.000000
31	-0.000364	0.000001	-0.000009	0.000000	0.000000	0.000000
32	-0.000364	0.000001	-0.000009	0.000000	0.000000	0.000000
33	-0.000364	0.000001	-0.000009	0.000000	0.000000	0.000000
34	-0.000364	0.000000	-0.000009	0.000000	0.000000	0.000000
37	-0.000364	0.000000	-0.000009	0.000000	0.000000	0.000000
44	-0.000364	-0.000001	-0.000009	0.000000	0.000000	0.000000
45	-0.000364	-0.000001	-0.000009	0.000000	0.000000	0.000000
46	-0.000364	-0.000002	-0.000009	0.000000	0.000000	0.000000
47	-0.000364	-0.000003	-0.000009	0.000000	0.000000	0.000000
48	-0.000364	-0.000004	-0.000009	0.000000	0.000000	0.000000
49	-0.000364	-0.000004	-0.000009	0.000000	0.000000	0.000000
50	-0.000364	-0.000004	-0.000008	0.000000	0.000000	0.000000
51	-0.000364	-0.000004	-0.000008	0.000000	0.000000	0.000000
52	-0.000364	-0.000004	-0.000008	0.000000	0.000000	0.000000
53	-0.000364	-0.000003	-0.000008	0.000000	0.000000	0.000000
54	-0.000364	-0.000002	-0.000008	0.000000	0.000000	0.000000
57	-0.000364	0.000000	-0.000008	0.000000	0.000000	0.000000
64	-0.000364	0.000003	-0.000008	0.000000	0.000000	0.000001
65	-0.000364	0.000006	-0.000008	0.000000	0.000000	0.000001
66	-0.000364	0.000009	-0.000008	0.000000	0.000000	0.000001
67	-0.000364	0.000012	-0.000008	0.000000	0.000000	0.000001
68	-0.000364	0.000014	-0.000008	0.000000	0.000000	0.000000
69	-0.000364	0.000016	-0.000007	0.000000	0.000000	0.000000
70	-0.000364	0.000017	-0.000007	0.000000	0.000000	0.000000
71	-0.000364	0.000017	-0.000007	0.000000	0.000000	0.000000
72	-0.000364	0.000016	-0.000007	0.000000	0.000000	0.000000
73	-0.000364	0.000012	-0.000007	0.000000	0.000000	-0.000001
74	-0.000364	0.000007	-0.000007	0.000000	0.000000	-0.000001
77	-0.000364	0.000000	-0.000007	0.000000	0.000000	-0.000002
84	-0.000364	-0.000011	-0.000007	0.000000	0.000000	-0.000002
85	-0.000364	-0.000022	-0.000007	0.000000	0.000000	-0.000002
86	-0.000364	-0.000034	-0.000007	0.000000	0.000000	-0.000002
87	-0.000364	-0.000046	-0.000007	0.000000	0.000000	-0.000002
88	-0.000364	-0.000056	-0.000006	0.000000	0.000000	-0.000002
89	-0.000364	-0.000063	-0.000006	0.000000	0.000000	-0.000001
90	-0.000364	-0.000067	-0.000006	0.000000	0.000000	0.000000
91	-0.000364	-0.000067	-0.000006	0.000000	0.000000	0.000001
92	-0.000364	-0.000061	-0.000006	0.000000	0.000000	0.000002
93	-0.000364	-0.000048	-0.000006	0.000000	0.000000	0.000003
94	-0.000364	-0.000028	-0.000006	0.000000	0.000000	0.000005
97	-0.000364	0.000001	-0.000006	0.000000	0.000000	0.000007
104	-0.000364	0.000041	-0.000006	0.000000	0.000000	0.000008
105	-0.000364	0.000086	-0.000006	0.000000	0.000000	0.000009
106	-0.000364	0.000133	-0.000006	0.000000	0.000000	0.000009
107	-0.000364	0.000178	-0.000005	0.000000	0.000000	0.000008
108	-0.000364	0.000217	-0.000005	0.000000	0.000000	0.000007
109	-0.000364	0.000246	-0.000005	0.000000	0.000000	0.000004
110	-0.000364	0.000261	-0.000005	0.000000	0.000000	0.000001
111	-0.000364	0.000259	-0.000005	0.000000	0.000000	-0.000003
112	-0.000364	0.000235	-0.000005	0.000000	0.000000	-0.000008
113	-0.000364	0.000186	-0.000005	0.000000	0.000000	-0.000013
114	-0.000364	0.000107	-0.000005	0.000000	0.000000	-0.000019
117	-0.000364	-0.000005	-0.000005	0.000000	0.000000	-0.000026
124	-0.000364	-0.000159	-0.000005	0.000000	0.000000	-0.000032
125	-0.000364	-0.000335	-0.000005	0.000000	0.000000	-0.000035
126	-0.000364	-0.000518	-0.000004	0.000000	0.000000	-0.000035
127	-0.000364	-0.000692	-0.000004	0.000000	0.000000	-0.000032
128	-0.000364	-0.000844	-0.000004	0.000000	0.000000	-0.000026
129	-0.000364	-0.000957	-0.000004	0.000000	0.000000	-0.000016
130	-0.000364	-0.001016	-0.000004	0.000000	0.000000	-0.000004
131	-0.000364	-0.001007	-0.000004	0.000000	0.000000	0.000011
132	-0.000364	-0.000914	-0.000004	0.000000	0.000000	0.000029
133	-0.000364	-0.000722	-0.000004	0.000000	0.000000	0.000051
134	-0.000364	-0.000417	-0.000004	-0.000001	0.000000	0.000075
137	-0.000364	0.000018	-0.000004	-0.000001	0.000000	0.000102
144	-0.000364	0.000616	-0.000003	-0.000001	0.000000	0.000125
145	-0.000364	0.001300	-0.000003	-0.000001	0.000000	0.000136
146	-0.000364	0.002011	-0.000003	-0.000001	0.000000	0.000136
147	-0.000364	0.002690	-0.000003	-0.000001	0.000000	0.000123
148	-0.000364	0.003278	-0.000003	-0.000001	0.000000	0.000099
149	-0.000364	0.003716	-0.000003	-0.000001	0.000000	0.000064
150	-0.000364	0.003947	-0.000002	-0.000001	0.000000	0.000016
151	-0.000364	0.003910	-0.000002	0.000000	0.000000	-0.000043
152	-0.000364	0.003549	-0.000002	0.000000	0.000000	-0.000114
153	-0.000364	0.002802	-0.000002	0.000001	0.000000	-0.000197
154	-0.000364	0.001614	-0.000002	0.000002	0.000000	-0.000291
157	-0.000364	-0.000077	-0.000001	0.000003	0.000000	-0.000397
163	-0.000364	-0.002462	-0.000001	0.000003	0.000000	-0.000465
164	-0.000364	-0.004941	-0.000001	0.000004	0.000000	-0.000451
165	-0.000364	-0.007143	-0.000001	0.000003	0.000000	-0.000374
166	-0.000364	-0.008807	-0.000001	0.000003	0.000000	-0.000252
167	-0.000364	-0.009734	0.000000	0.000002	0.000000	-0.000102
168	-0.000364	-0.009848	0.000000	0.000001	0.000000	0.000054
169	-0.000364	-0.009158	0.000000	0.000000	0.000000	0.000203
170	-0.000364	-0.007747	0.000000	-0.000001	0.000000	0.000321
171	-0.000364	-0.005823	0.000000	-0.000001	0.000000	0.000393
172	-0.000364	-0.003642	0.000000	-0.000001	0.000000	0.000401
173	-0.000364	-0.001585	0.000000	-0.000001	0.000000	0.000324
176	-0.000364	-0.000142	0.000001	-0.000001	0.000000	0.000147
182	-0.000364	-0.000108	0.000001	0.000000	0.000000	-0.000030
183	-0.000364	-0.000684	0.000001	0.000001	0.000000	-0.000118
184	-0.000364	-0.001476	0.000001	0.000001	0.000000	-0.000136
185	-0.000364	-0.002187	0.000001	0.000001	0.000000	-0.000101
186	-0.000364	-0.002580	0.000001	0.000000	0.000000	-0.000032
187	-0.000364	-0.002550	0.000001	0.000000	0.000000	0.000052
188	-0.000364	-0.002053	0.000001	0.000000	0.000000	0.000134
189	-0.000364	-0.001150	0.000001	0.000000	0.000000	0.000194
192	-0.000364	-0.000011	0.000002	0.000000	0.000000	0.000216

HIPOTESIS 20

hipo 20 Carga de Vano 9

DESPLAZAMIENTOS DE NUDOS

NUDO	DESP. X	DESP. Y	DESP. Z	GIRO X	GIRO Y	GIRO Z
3	0.000350	0.000000	0.000011	0.000000	0.000000	0.000000
8	0.000350	0.000000	0.000010	0.000000	0.000000	0.000000
9	0.000350	0.000000	0.000010	0.000000	0.000000	0.000000
10	0.000350	0.000000	0.000010	0.000000	0.000000	0.000000
11	0.000350	0.000000	0.000010	0.000000	0.000000	0.000000
12	0.000350	0.000000	0.000010	0.000000	0.000000	0.000000
13	0.000350	0.000000	0.000010	0.000000	0.000000	0.000000
14	0.000350	0.000000	0.000010	0.000000	0.000000	0.000000
15	0.000350	0.000000	0.000010	0.000000	0.000000	0.000000
18	0.000350	0.000000	0.000010	0.000000	0.000000	0.000000
24	0.000350	0.000000	0.000010	0.000000	0.000000	0.000000
25	0.000350	0.000000	0.000010	0.000000	0.000000	0.000000
26	0.000350	0.000001	0.000009	0.000000	0.000000	0.000000
27	0.000350	0.000001	0.000009	0.000000	0.000000	0.000000
28	0.000350	0.000001	0.000009	0.000000	0.000000	0.000000
29	0.000350	0.000001	0.000009	0.000000	0.000000	0.000000
30	0.000350	0.000001	0.000009	0.000000	0.000000	0.000000
31	0.000350	0.000001	0.000009	0.000000	0.000000	0.000000
32	0.000350	0.000001	0.000009	0.000000	0.000000	0.000000
33	0.000350	0.000001	0.000009	0.000000	0.000000	0.000000
34	0.000350	0.000001	0.000009	0.000000	0.000000	0.000000
37	0.000350	0.000000	0.000009	0.000000	0.000000	0.000000
44	0.000350	-0.000001	0.000009	0.000000	0.000000	0.000000
45	0.000350	-0.000002	0.000009	0.000000	0.000000	0.000000
46	0.000350	-0.000003	0.000008	0.000000	0.000000	0.000000
47	0.000350	-0.000004	0.000008	0.000000	0.000000	0.000000
48	0.000350	-0.000004	0.000008	0.000000	0.000000	0.000000
49	0.000350	-0.000005	0.000008	0.000000	0.000000	0.000000
50	0.000350	-0.000005	0.000008	0.000000	0.000000	0.000000
51	0.000350	-0.000005	0.000008	0.000000	0.000000	0.000000
52	0.000350	-0.000005	0.000008	0.000000	0.000000	0.000000
53	0.000350	-0.000004	0.000008	0.000000	0.000000	0.000000
54	0.000350	-0.000002	0.000008	0.000000	0.000000	0.000000
57	0.000350	0.000000	0.000008	0.000000	0.000000	0.000001
64	0.000350	0.000003	0.000008	0.000000	0.000000	0.000001
65	0.000350	0.000007	0.000008	0.000000	0.000000	0.000001
66	0.000350	0.000011	0.000007	0.000000	0.000000	0.000001
67	0.000350	0.000014	0.000007	0.000000	0.000000	0.000001
68	0.000350	0.000017	0.000007	0.000000	0.000000	0.000001
69	0.000350	0.000019	0.000007	0.000000	0.000000	0.000000
70	0.000350	0.000021	0.000007	0.000000	0.000000	0.000000
71	0.000350	0.000020	0.000007	0.000000	0.000000	0.000000
72	0.000350	0.000019	0.000007	0.000000	0.000000	-0.000001
73	0.000350	0.000015	0.000007	0.000000	0.000000	-0.000001
74	0.000350	0.000008	0.000007	0.000000	0.000000	-0.000002
77	0.000350	0.000000	0.000007	0.000000	0.000000	-0.000002
84	0.000350	-0.000013	0.000007	0.000000	0.000000	-0.000003
85	0.000350	-0.000026	0.000006	0.000000	0.000000	-0.000003
86	0.000350	-0.000041	0.000006	0.000000	0.000000	-0.000003
87	0.000350	-0.000055	0.000006	0.000000	0.000000	-0.000003
88	0.000350	-0.000067	0.000006	0.000000	0.000000	-0.000002
89	0.000350	-0.000075	0.000006	0.000000	0.000000	-0.000001
90	0.000350	-0.000080	0.000006	0.000000	0.000000	0.000000
91	0.000350	-0.000079	0.000006	0.000000	0.000000	0.000001
92	0.000350	-0.000072	0.000006	0.000000	0.000000	0.000002
93	0.000350	-0.000057	0.000006	0.000000	0.000000	0.000004
94	0.000350	-0.000033	0.000006	0.000000	0.000000	0.000006
97	0.000350	0.000001	0.000006	0.000000	0.000000	0.000008
104	0.000350	0.000049	0.000006	0.000000	0.000000	0.000010
105	0.000350	0.000103	0.000005	0.000000	0.000000	0.000011
106	0.000350	0.000159	0.000005	0.000000	0.000000	0.000011
107	0.000350	0.000212	0.000005	0.000000	0.000000	0.000010
108	0.000350	0.000259	0.000005	0.000000	0.000000	0.000008
109	0.000350	0.000293	0.000005	0.000000	0.000000	0.000005
110	0.000350	0.000311	0.000005	0.000000	0.000000	0.000001
111	0.000350	0.000309	0.000005	0.000000	0.000000	-0.000003
112	0.000350	0.000280	0.000005	0.000000	0.000000	-0.000009
113	0.000350	0.000221	0.000005	0.000000	0.000000	-0.000015
114	0.000350	0.000128	0.000005	0.000000	0.000000	-0.000023
117	0.000350	-0.000005	0.000005	0.000000	0.000000	-0.000031
124	0.000350	-0.000189	0.000004	0.000001	0.000000	-0.000038
125	0.000350	-0.000399	0.000004	0.000001	0.000000	-0.000042
126	0.000350	-0.000616	0.000004	0.000001	0.000000	-0.000042
127	0.000350	-0.000824	0.000004	0.000001	0.000000	-0.000038
128	0.000350	-0.001005	0.000004	0.000000	0.000000	-0.000031
129	0.000350	-0.001139	0.000004	0.000000	0.000000	-0.000020
130	0.000350	-0.001210	0.000004	0.000000	0.000000	-0.000005
131	0.000350	-0.001199	0.000004	0.000000	0.000000	0.000013
132	0.000350	-0.001089	0.000004	0.000000	0.000000	0.000035
133	0.000350	-0.000860	0.000004	-0.000001	0.000000	0.000060
134	0.000350	-0.000496	0.000004	-0.000001	0.000000	0.000089
137	0.000350	0.000021	0.000004	-0.000001	0.000000	0.000122
144	0.000350	0.000734	0.000004	-0.000002	0.000000	0.000149
145	0.000350	0.001549	0.000004	-0.000002	0.000000	0.000162
146	0.000350	0.002395	0.000004	-0.000002	0.000000	0.000162
147	0.000350	0.003204	0.000004	-0.000002	0.000000	0.000147
148	0.000350	0.003904	0.000004	-0.000001	0.000000	0.000119
149	0.000350	0.004427	0.000004	-0.000001	0.000000	0.000076
150	0.000350	0.004702	0.000004	-0.000001	0.000000	0.000019
151	0.000350	0.004659	0.000004	0.000000	0.000000	-0.000051
152	0.000350	0.004229	0.000004	0.000001	0.000000	-0.000136
153	0.000350	0.003341	0.000004	0.000001	0.000000	-0.000234
154	0.000350	0.001927	0.000004	0.000002	0.000000	-0.000346
157	0.000350	-0.000085	0.000004	0.000003	0.000000	-0.000473
163	0.000350	-0.002914	0.000004	0.000004	0.000000	-0.000558
164	0.000350	-0.005899	0.000004	0.000004	0.000000	-0.000552
165	0.000350	-0.008627	0.000004	0.000004	0.000000	-0.000474
166	0.000350	-0.010793	0.000004	0.000003	0.000000	-0.000343
167	0.000350	-0.012155	0.000003	0.000003	0.000000	-0.000176
168	0.000350	-0.012594	0.000003	0.000001	0.000000	0.000007
169	0.000350	-0.012075	0.000003	0.000000	0.000000	0.000191
170	0.000350	-0.010637	0.000003	0.000000	0.000000	0.000353
171	0.000350	-0.008444	0.000003	-0.000001	0.000000	0.000478
172	0.000350	-0.005710	0.000003	-0.000002	0.000000	0.000547
173	0.000350	-0.002772	0.000003	-0.000002	0.000000	0.000539
176	0.000350	-0.000077	0.000002	-0.000002	0.000000	0.000442
182	0.000350	0.001749	0.000002	-0.000001	0.000000	0.000305
183	0.000350	0.002933	0.000002	-0.000001	0.000000	0.000185
184	0.000350	0.003557	0.000002	-0.000001	0.000000	0.000081
185	0.000350	0.003700	0.000001	0.000000	0.000000	-0.000007
186	0.000350	0.003442	0.000001	0.000000	0.000000	-0.000079
187	0.000350	0.002863	0.000001	0.000000	0.000000	-0.000135
188	0.000350	0.002044	0.000000	0.000000	0.000000	-0.000176
189	0.000350	0.001064	0.000000	0.000000	0.000000	-0.000200
192	0.000350	0.000004	0.000000	0.000000	0.000000	-0.000208

proc Viaducto Papiol - Prueba de carga

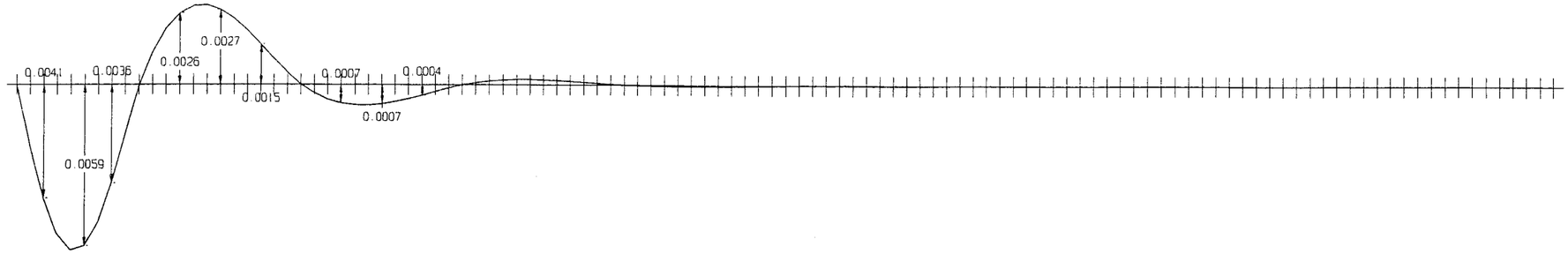
HIPOTESIS 21

hipo 21 Carga de Vano 10

DESPLAZAMIENTOS DE NUDOS

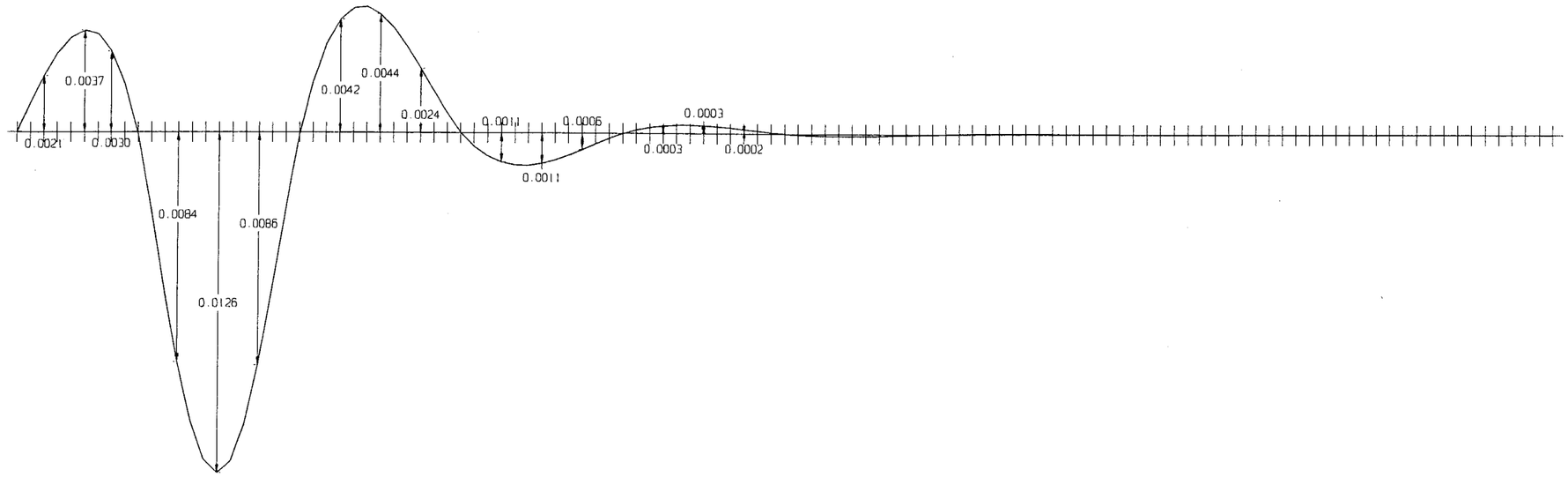
NUDO	DESP. X	DESP. Y	DESP. Z	GIRO X	GIRO Y	GIRO Z
3	-0.000714	0.000000	-0.000022	0.000000	0.000000	0.000000
8	-0.000714	0.000000	-0.000021	0.000000	0.000000	0.000000
9	-0.000714	0.000000	-0.000021	0.000000	0.000000	0.000000
10	-0.000714	0.000000	-0.000021	0.000000	0.000000	0.000000
11	-0.000714	0.000000	-0.000021	0.000000	0.000000	0.000000
12	-0.000714	0.000000	-0.000021	0.000000	0.000000	0.000000
13	-0.000714	0.000000	-0.000020	0.000000	0.000000	0.000000
14	-0.000714	0.000000	-0.000020	0.000000	0.000000	0.000000
15	-0.000714	0.000000	-0.000020	0.000000	0.000000	0.000000
18	-0.000714	0.000000	-0.000020	0.000000	0.000000	0.000000
24	-0.000714	0.000000	-0.000020	0.000000	0.000000	0.000000
25	-0.000714	0.000000	-0.000020	0.000000	0.000000	0.000000
26	-0.000714	0.000000	-0.000019	0.000000	0.000000	0.000000
27	-0.000714	0.000000	-0.000019	0.000000	0.000000	0.000000
28	-0.000714	0.000000	-0.000019	0.000000	0.000000	0.000000
29	-0.000714	0.000000	-0.000019	0.000000	0.000000	0.000000
30	-0.000714	0.000000	-0.000019	0.000000	0.000000	0.000000
31	-0.000714	0.000000	-0.000018	0.000000	0.000000	0.000000
32	-0.000714	0.000000	-0.000018	0.000000	0.000000	0.000000
33	-0.000714	0.000000	-0.000018	0.000000	0.000000	0.000000
34	-0.000714	0.000000	-0.000018	0.000000	0.000000	0.000000
37	-0.000714	0.000000	-0.000018	0.000000	0.000000	0.000000
44	-0.000714	0.000000	-0.000018	0.000000	0.000000	0.000000
45	-0.000714	0.000000	-0.000017	0.000000	0.000000	0.000000
46	-0.000714	0.000000	-0.000017	0.000000	0.000000	0.000000
47	-0.000714	0.000001	-0.000017	0.000000	0.000000	0.000000
48	-0.000714	0.000001	-0.000017	0.000000	0.000000	0.000000
49	-0.000714	0.000001	-0.000017	0.000000	0.000000	0.000000
50	-0.000714	0.000001	-0.000017	0.000000	0.000000	0.000000
51	-0.000714	0.000001	-0.000016	0.000000	0.000000	0.000000
52	-0.000714	0.000001	-0.000016	0.000000	0.000000	0.000000
53	-0.000714	0.000001	-0.000016	0.000000	0.000000	0.000000
54	-0.000714	0.000000	-0.000016	0.000000	0.000000	0.000000
57	-0.000714	0.000000	-0.000016	0.000000	0.000000	0.000000
64	-0.000714	-0.000001	-0.000016	0.000000	0.000000	0.000000
65	-0.000714	-0.000001	-0.000015	0.000000	0.000000	0.000000
66	-0.000714	-0.000002	-0.000015	0.000000	0.000000	0.000000
67	-0.000714	-0.000002	-0.000015	0.000000	0.000000	0.000000
68	-0.000714	-0.000003	-0.000015	0.000000	0.000000	0.000000
69	-0.000714	-0.000003	-0.000015	0.000000	0.000000	0.000000
70	-0.000714	-0.000003	-0.000014	0.000000	0.000000	0.000000
71	-0.000714	-0.000003	-0.000014	0.000000	0.000000	0.000000
72	-0.000714	-0.000003	-0.000014	0.000000	0.000000	0.000000
73	-0.000714	-0.000002	-0.000014	0.000000	0.000000	0.000000
74	-0.000714	-0.000001	-0.000014	0.000000	0.000000	0.000000
77	-0.000714	0.000000	-0.000014	0.000000	0.000000	0.000000
84	-0.000714	0.000002	-0.000013	0.000000	0.000000	0.000000
85	-0.000714	0.000004	-0.000013	0.000000	0.000000	0.000000
86	-0.000714	0.000007	-0.000013	0.000000	0.000000	0.000000
87	-0.000714	0.000009	-0.000013	0.000000	0.000000	0.000000
88	-0.000714	0.000011	-0.000013	0.000000	0.000000	0.000000
89	-0.000714	0.000012	-0.000013	0.000000	0.000000	0.000000
90	-0.000714	0.000013	-0.000012	0.000000	0.000000	0.000000
91	-0.000714	0.000013	-0.000012	0.000000	0.000000	0.000000
92	-0.000714	0.000012	-0.000012	0.000000	0.000000	0.000000
93	-0.000714	0.000009	-0.000012	0.000000	0.000000	-0.000001
94	-0.000714	0.000005	-0.000012	0.000000	0.000000	-0.000001
97	-0.000714	0.000000	-0.000011	0.000000	0.000000	-0.000001
104	-0.000714	-0.000008	-0.000011	0.000000	0.000000	-0.000002
105	-0.000714	-0.000016	-0.000011	0.000000	0.000000	-0.000002
106	-0.000714	-0.000025	-0.000011	0.000000	0.000000	-0.000002
107	-0.000714	-0.000034	-0.000011	0.000000	0.000000	-0.000002
108	-0.000714	-0.000041	-0.000011	0.000000	0.000000	-0.000001
109	-0.000714	-0.000047	-0.000010	0.000000	0.000000	-0.000001
110	-0.000714	-0.000050	-0.000010	0.000000	0.000000	0.000000
111	-0.000714	-0.000050	-0.000010	0.000000	0.000000	0.000001
112	-0.000714	-0.000045	-0.000010	0.000000	0.000000	0.000001
113	-0.000714	-0.000036	-0.000010	0.000000	0.000000	0.000002
114	-0.000714	-0.000020	-0.000009	0.000000	0.000000	0.000004
117	-0.000714	0.000001	-0.000009	0.000000	0.000000	0.000005
124	-0.000714	0.000030	-0.000009	0.000000	0.000000	0.000006
125	-0.000714	0.000064	-0.000009	0.000000	0.000000	0.000007
126	-0.000714	0.000099	-0.000009	0.000000	0.000000	0.000007
127	-0.000714	0.000132	-0.000009	0.000000	0.000000	0.000006
128	-0.000714	0.000161	-0.000008	0.000000	0.000000	0.000005
129	-0.000714	0.000183	-0.000008	0.000000	0.000000	0.000003
130	-0.000714	0.000194	-0.000008	0.000000	0.000000	0.000001
131	-0.000714	0.000192	-0.000008	0.000000	0.000000	-0.000002
132	-0.000714	0.000175	-0.000008	0.000000	0.000000	-0.000006
133	-0.000714	0.000138	-0.000008	0.000000	0.000000	-0.000010
134	-0.000714	0.000080	-0.000007	0.000000	0.000000	-0.000014
137	-0.000714	-0.000003	-0.000007	0.000000	0.000000	-0.000020
144	-0.000714	-0.000118	-0.000007	0.000000	0.000000	-0.000024
145	-0.000714	-0.000248	-0.000007	0.000000	0.000000	-0.000026
146	-0.000714	-0.000384	-0.000007	0.000000	0.000000	-0.000026
147	-0.000714	-0.000514	-0.000007	0.000000	0.000000	-0.000024
148	-0.000714	-0.000627	-0.000006	0.000000	0.000000	-0.000019
149	-0.000714	-0.000711	-0.000006	0.000000	0.000000	-0.000012
150	-0.000714	-0.000755	-0.000006	0.000000	0.000000	-0.000003
151	-0.000714	-0.000749	-0.000006	0.000000	0.000000	0.000008
152	-0.000714	-0.000680	-0.000006	0.000000	0.000000	0.000022
153	-0.000714	-0.000539	-0.000005	0.000000	0.000000	0.000037
154	-0.000714	-0.000313	-0.000005	0.000000	0.000000	0.000055
157	-0.000714	0.000008	-0.000005	-0.000001	0.000000	0.000076
163	-0.000714	0.000451	-0.000005	-0.000001	0.000000	0.000093
164	-0.000714	0.000958	-0.000005	-0.000001	0.000000	0.000101
165	-0.000714	0.001484	-0.000004	-0.000001	0.000000	0.000101
166	-0.000714	0.001986	-0.000004	-0.000001	0.000000	0.000091
167	-0.000714	0.002422	-0.000004	-0.000001	0.000000	0.000074
168	-0.000714	0.002746	-0.000004	-0.000001	0.000000	0.000047
169	-0.000714	0.002917	-0.000003	0.000000	0.000000	0.000012
170	-0.000714	0.002890	-0.000003	0.000000	0.000000	-0.000032
171	-0.000714	0.002621	-0.000003	0.000000	0.000000	-0.000084
172	-0.000714	0.002068	-0.000003	0.000000	0.000000	-0.000146
173	-0.000714	0.001188	-0.000002	0.000001	0.000000	-0.000216
176	-0.000714	-0.000065	-0.000002	0.000001	0.000000	-0.000294
182	-0.000714	-0.001856	-0.000001	0.000002	0.000000	-0.000336
183	-0.000714	-0.003617	-0.000001	0.000002	0.000000	-0.000303
184	-0.000714	-0.005033	-0.000001	0.000001	0.000000	-0.000217
185	-0.000714	-0.005886	0.000000	0.000001	0.000000	-0.000094
186	-0.000714	-0.006021	0.000000	0.000001	0.000000	0.000047
187	-0.000714	-0.005413	0.000000	0.000000	0.000000	0.000187
188	-0.000714	-0.004097	0.000001	0.000000	0.000000	0.000310
189	-0.000714	-0.002214	0.000001	0.000000	0.000000	0.000394
192	-0.000714	-0.000016	0.000002	-0.000001	0.000000	0.000424

DEFORMADAS



HIPOTESIS 1 VANO 1

ESCALAS V = 1:10000
H = 1:2000



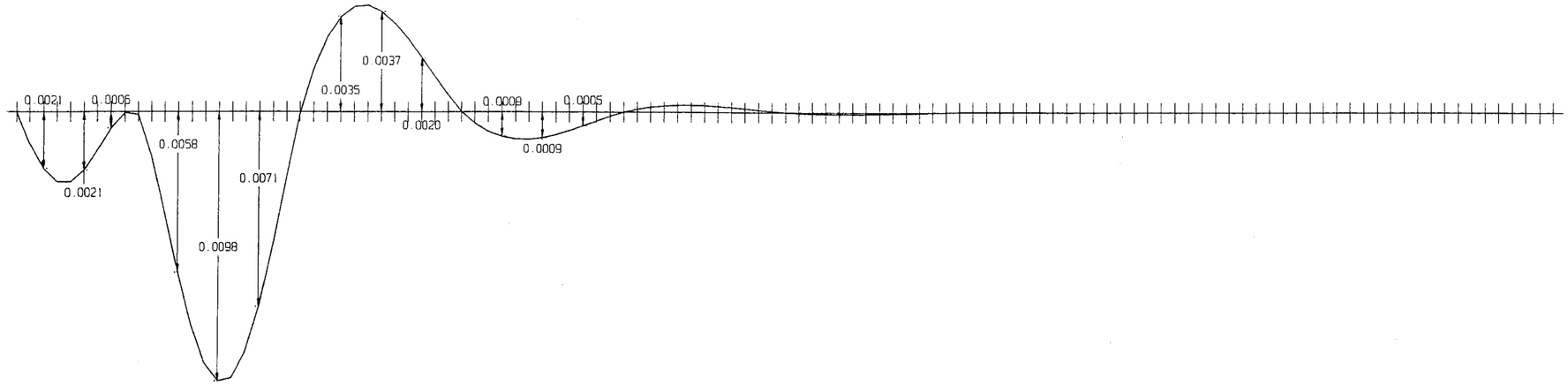
HIPOTESIS 2 VANO 2

ESCALAS V = 1:10000
H = 1:2000

VIADUCTOS DE EL PAPIOL

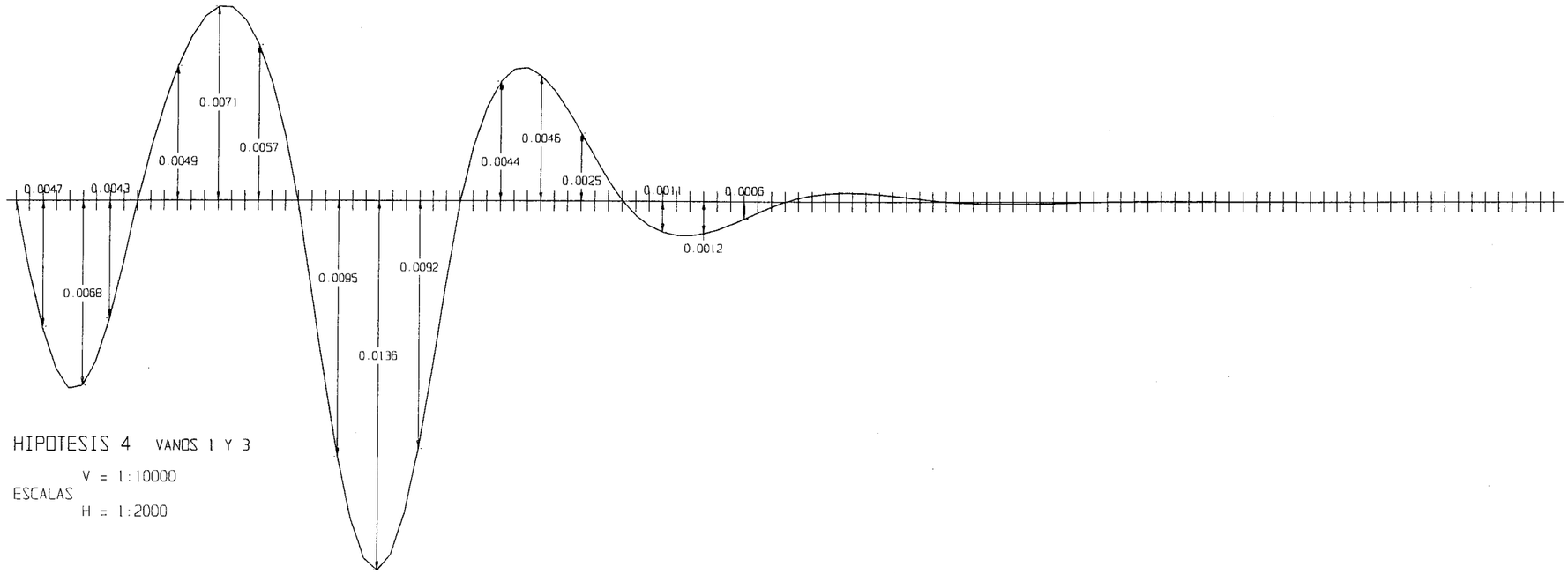
GIF Gestor de Infraestructuras Ferroviarias	TÍTULO PROYECTO DE CONSTRUCCION DE PLATAFORMA L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA TRAMO: PAPIOL - SANT VICENT DELS HORTS	UTE PAPIOL SGS TECNOS INFRAES CFC AUTORES L. ALBERTO DOU I.C.C.P. J. MANTEROLA I.C.C.P. A. MARTINEZ CUTILLAS S. FUENTE GARCIA	ESCALA NORMAL 1:2000 Numérica Gráfica 0 20 40m.	FECHA MAYO 2002	TÍTULO DEL PLANO PRUEBAS DE CARGA (6) DIAGRAMA DE FLECHAS (1)	Nº DE PLANO 2.10.1.9 Hoja 6 de 15

carga-06



HIPOTESIS 3 VANOS 1 Y 2

ESCALAS V = 1:10000
H = 1:2000



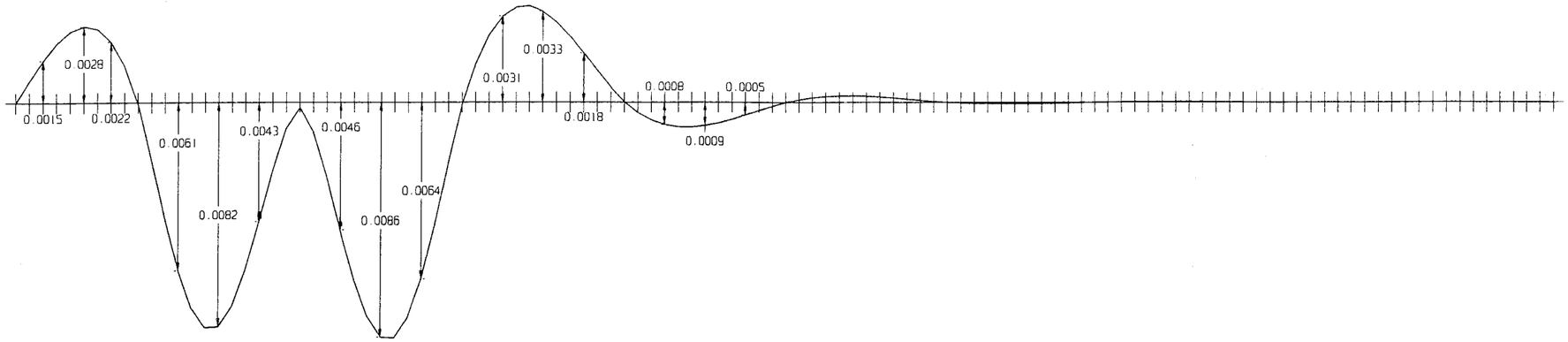
HIPOTESIS 4 VANOS 1 Y 3

ESCALAS V = 1:10000
H = 1:2000

VIADUCTOS DE EL PAPIOL

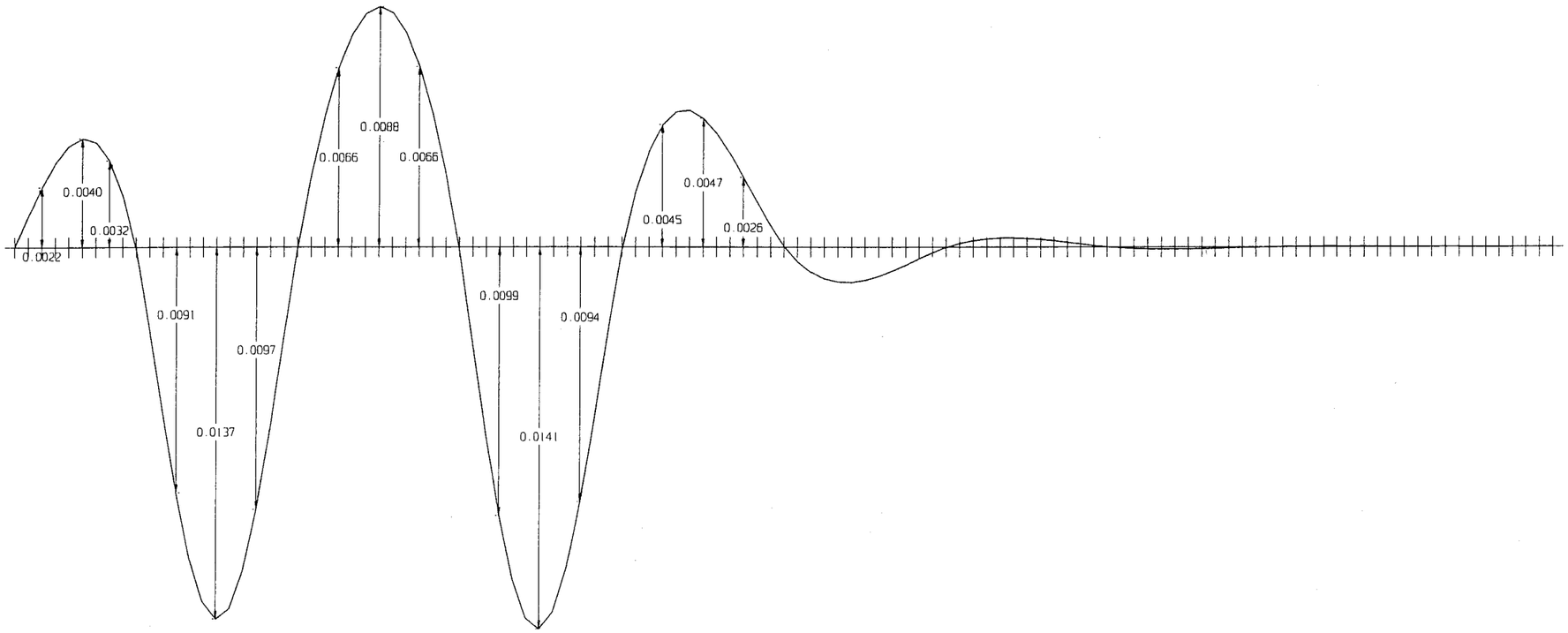
GIF Gestor de Infraestructuras Ferroviarias	TÍTULO PROYECTO DE CONSTRUCCION DE PLATAFORMA L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA TRAMO: PAPIOL - SANT VICENT DELS HORTS	UTE PAPIOL SGS TECNOS INFRAES CFC AUTORES J.MANTEROLA I.C.C.P. L.ALBERTO COLI I.C.C.P. A.MARTINEZ CUTILLAS S.FUENTE GARCIA	ESCALA NORMAL 1:2000 Numérica Gráfica 0 20 40m.	FECHA MAYO 2002	TÍTULO DEL PLANO PRUEBAS DE CARGA (7) DIAGRAMA DE FLECHAS (2)	Nº DE PLANO 2.10.1.9 Hoja 7 de 15

carga-07



HIPOTESIS 5 VANOS 2 Y 3

ESCALAS V = 1:10000
H = 1:2000



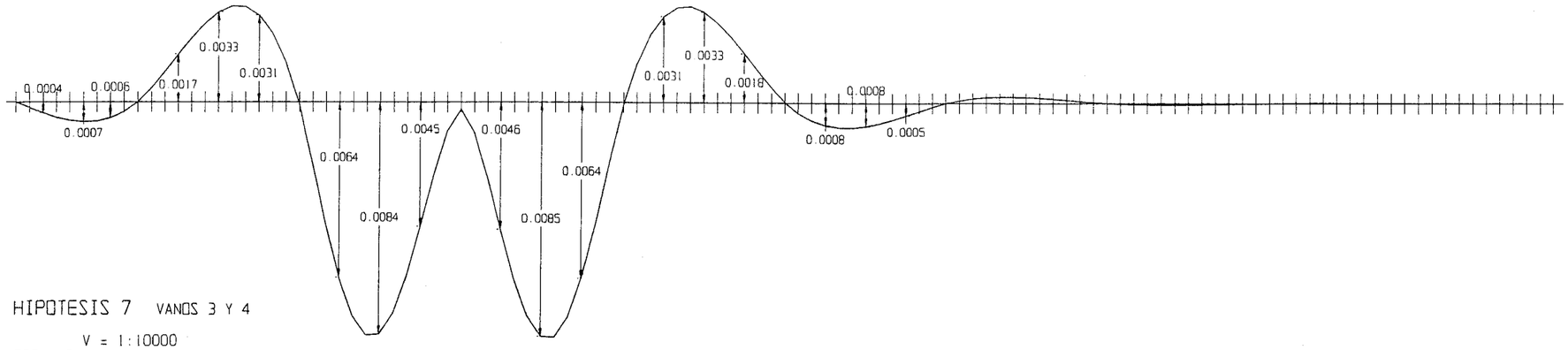
HIPOTESIS 6 VANOS 2 Y 4

ESCALAS V = 1:10000
H = 1:2000

VIADUCTOS DE EL PAPIOL

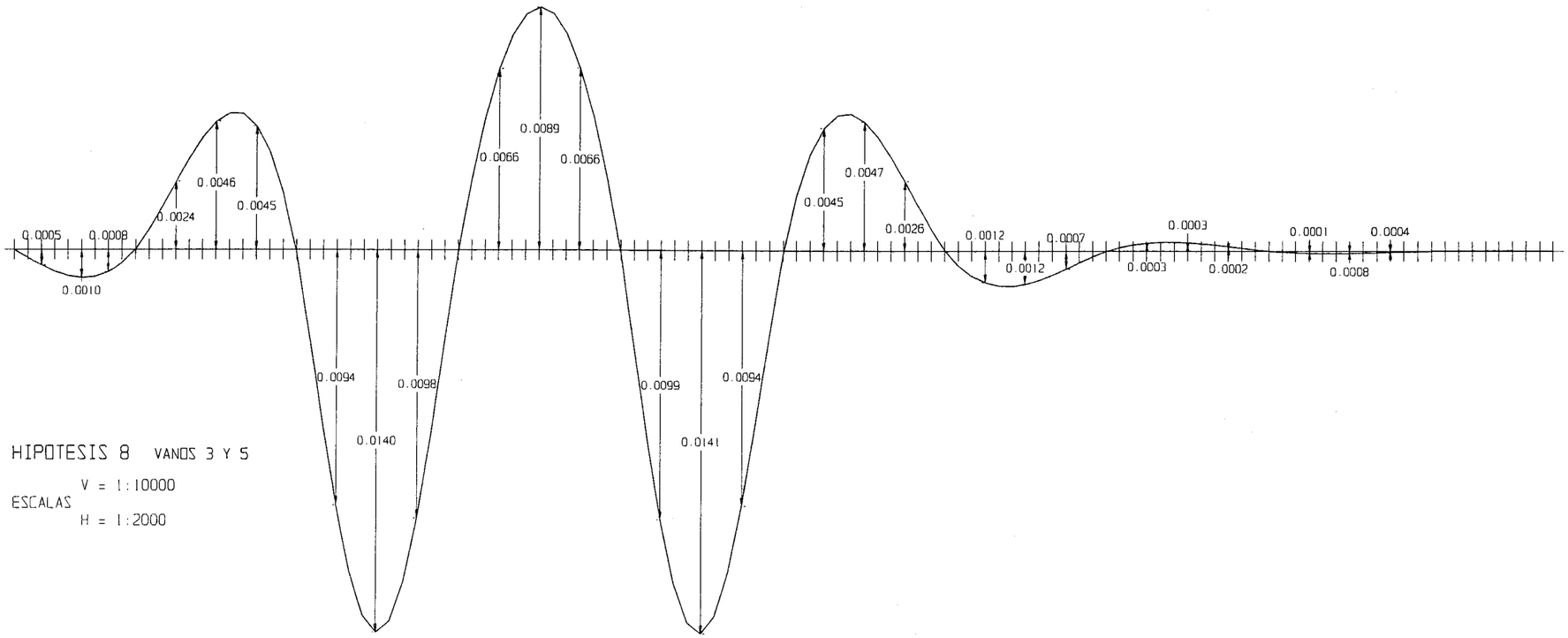
GIF Gestor de Infraestructuras Ferroviarias	TÍTULO PROYECTO DE CONSTRUCCION DE PLATAFORMA L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA TRAMO: PAPIOL - SANT VICENT DELS HORTS	UTE PAPIOL SGS TECNOS INFRAES CFC AUTORES L. ALBERTO LOU I.C.C.P. J.MANTEROLA I.C.C.P. A.MARTINEZ CUTILLAS S.FUENTE GARCIA	ESCALA NORMAL 1:2000 Numérica Gráfica 0 20 40m.	FECHA MAYO 2002	TÍTULO DEL PLANO PRUEBAS DE CARGA (8) DIAGRAMA DE FLECHAS (3)	Nº DE PLANO 2.10.1.9 Hoja 8 de 15

carga-08



HIPOTESIS 7 VANOS 3 Y 4

ESCALAS V = 1:10000
H = 1:2000



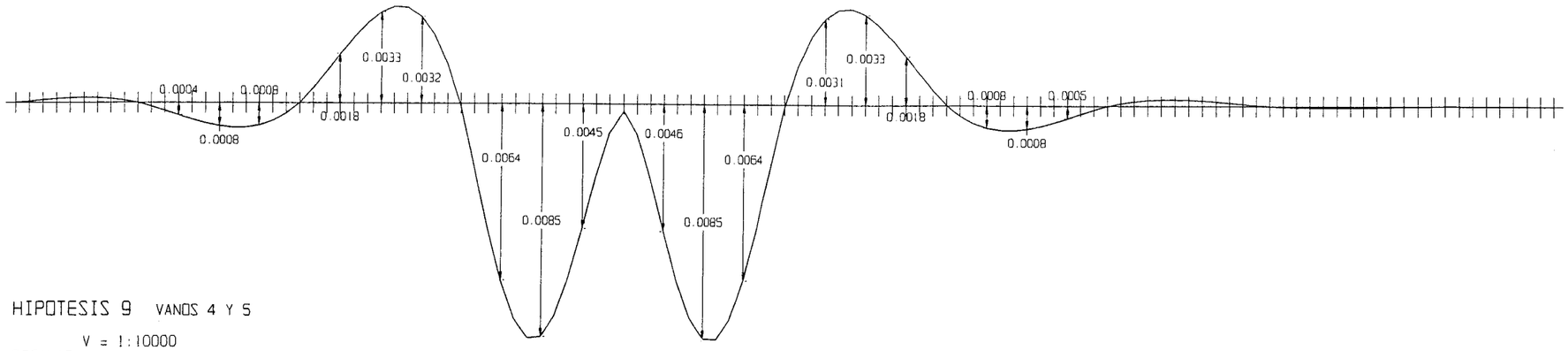
HIPOTESIS 8 VANOS 3 Y 5

ESCALAS V = 1:10000
H = 1:2000

VIADUCTOS DE EL PAPIOL

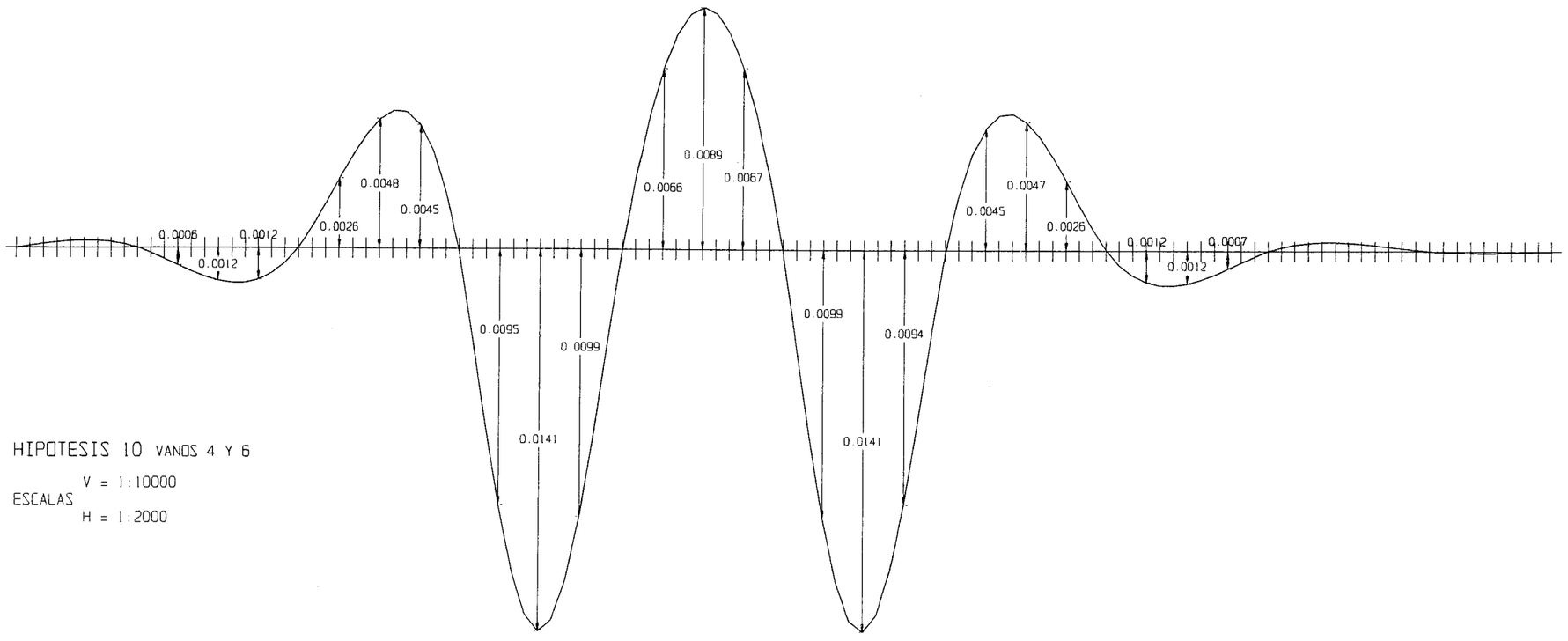
GIF Gestor de Infraestructuras Ferroviarias	TÍTULO PROYECTO DE CONSTRUCCION DE PLATAFORMA L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA TRAMO: PAPIOL - SANT VICENT DELS HORTS	UTE PAPIOL SGS TECNOS INFRAES CFC AUTORES J.MANTEROLA I.C.C.P. L. ALBERTO ODU I.C.C.P. A.MARTINEZ CUTILLAS S.FUENTE GARCIA	ESCALA NORMAL 1:2000 Numérica Gráfica 0 20 40m.	FECHA MAYO 2002	TÍTULO DEL PLANO PRUEBAS DE CARGA (9) DIAGRAMA DE FLECHAS (4)	Nº DE PLANO 2.10.1.9 Hoja 9 de 15

carga-09



HIPOTESIS 9 VANOS 4 Y 5

ESCALAS
V = 1:10000
H = 1:2000



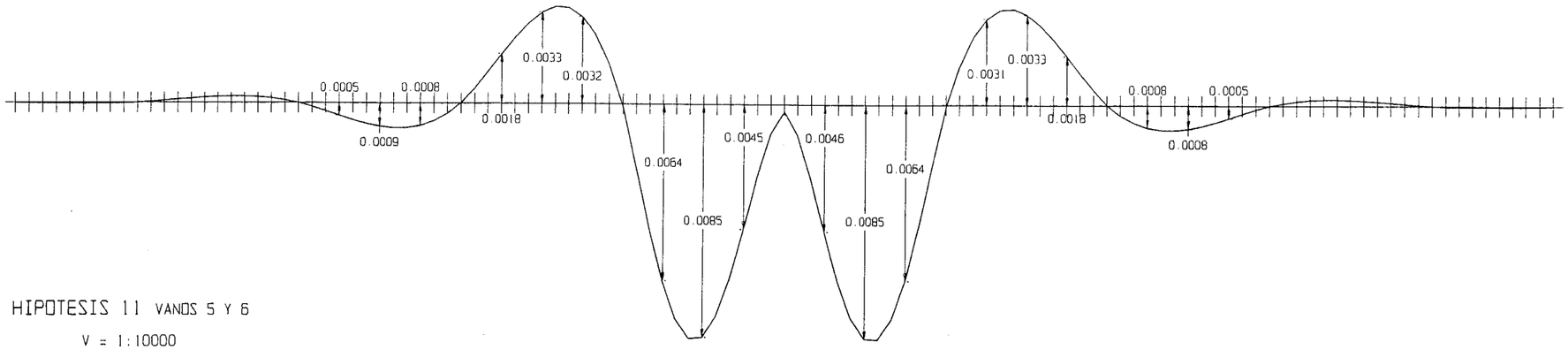
HIPOTESIS 10 VANOS 4 Y 6

ESCALAS
V = 1:10000
H = 1:2000

VIADUCTOS DE EL PAPIOL

GIF Gestor de Infraestructuras Ferroviarias	TÍTULO PROYECTO DE CONSTRUCCION DE PLATAFORMA L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA TRAMO: PAPIOL - SANT VICENT DELS HORTS	UTE PAPIOL SGS TECNOS INFRAES CFC — AUTORES J.MANTEROLA I.C.C.P. L. ALBERTO COLL I.C.C.P. A.MARTINEZ CUTILLAS S.FUENTE GARCIA	ESCALA NORMAL 1:2000 Numérica / Gráfica 0 20 40m.	FECHA MAYO 2002	TÍTULO DEL PLANO PRUEBAS DE CARGA (10) DIAGRAMA DE FLECHAS (5)	Nº DE PLANO 2.10.1.9 Hoja 10 de 15

carga-10



HIPOTESIS 11 VANOS 5 Y 6

ESCALAS
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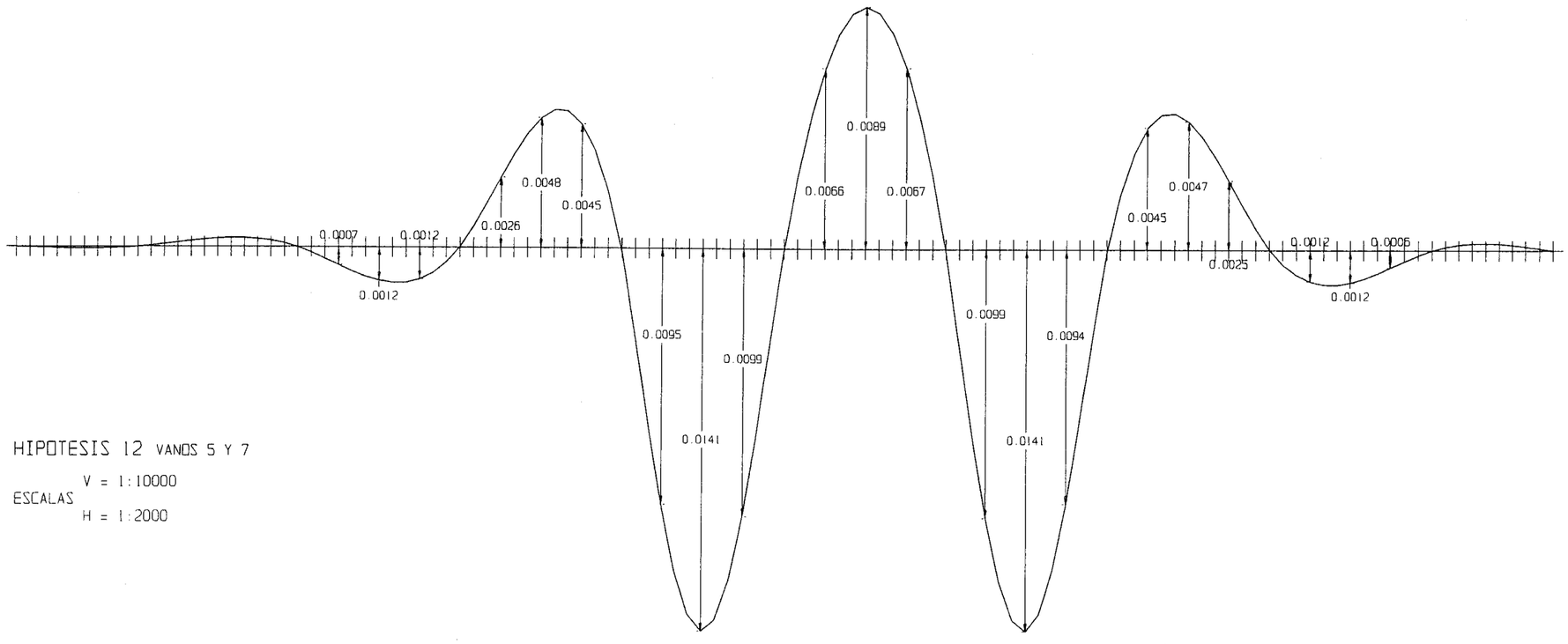
H = 1:2000



HIPOTESIS 12 VANOS 5 Y 7

ESCALAS
V = 1:10000
H = 1:2000

VIADUCTOS DE EL PAPIOL

cargo-11

GIF Gestor de Infraestructuras Ferroviarias

TÍTULO
PROYECTO DE CONSTRUCCION DE PLATAFORMA
L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA
TRAMO: PAPIOL - SANT VICENT DELS HORTS

UTE PAPIOL
SGS TECNOS
INFRAES
CFC

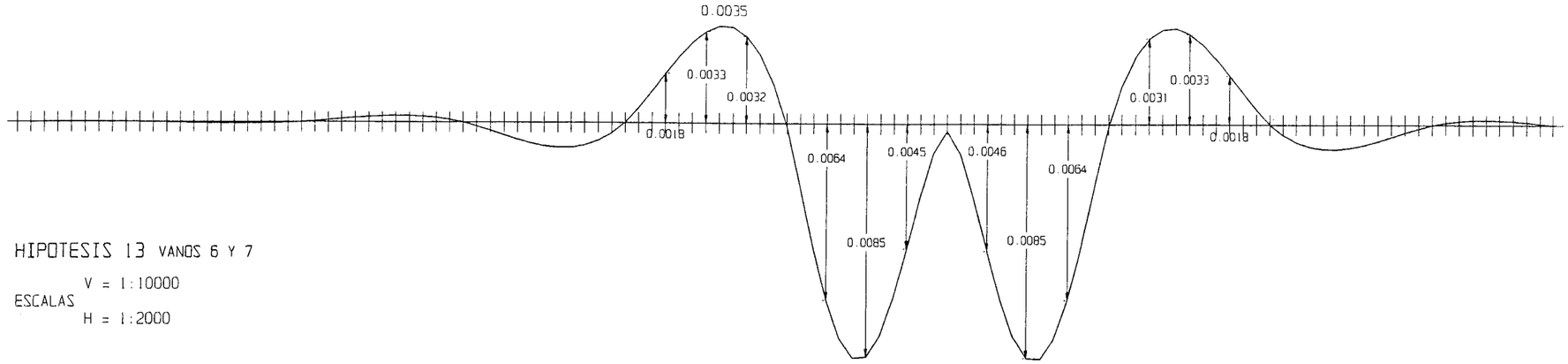
AUTORES
L. ALBERTO DOU I.C.C.P.
J. MANTEROLA I.C.C.P.
A. MARTINEZ CUTILLAS
S. FUENTE GARCIA

ESCALA NORMAL
1:2000
Numérica | Gráfica
0 20 40m.

FECHA
MAYO 2002

TÍTULO DEL PLANO
PRUEBAS DE CARGA (11)
DIAGRAMA DE FLECHAS (6)

Nº DE PLANO
2.10.1.9
Hoja 11 de 15



HIPOTESIS 13 VANOS 6 Y 7

ESCALAS
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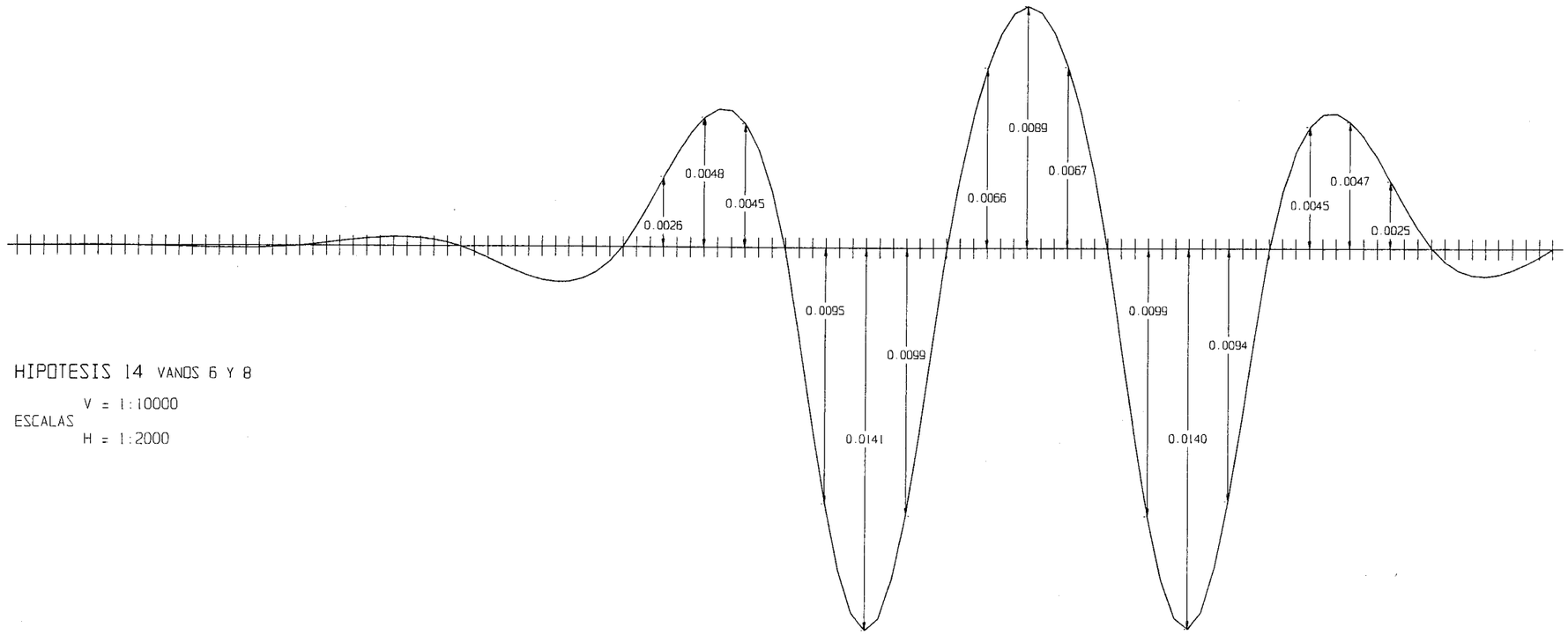


HIPOTESIS 14 VANOS 6 Y 8

ESCALAS
V = 1:10000
H = 1:2000

VIADUCTOS DE EL PAPIOL

carga-12

GIF Gestor de Infraestructuras Ferroviarias

TÍTULO
PROYECTO DE CONSTRUCCION DE PLATAFORMA
L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA
TRAMO: PAPIOL - SANT VICENT DELS HORTS

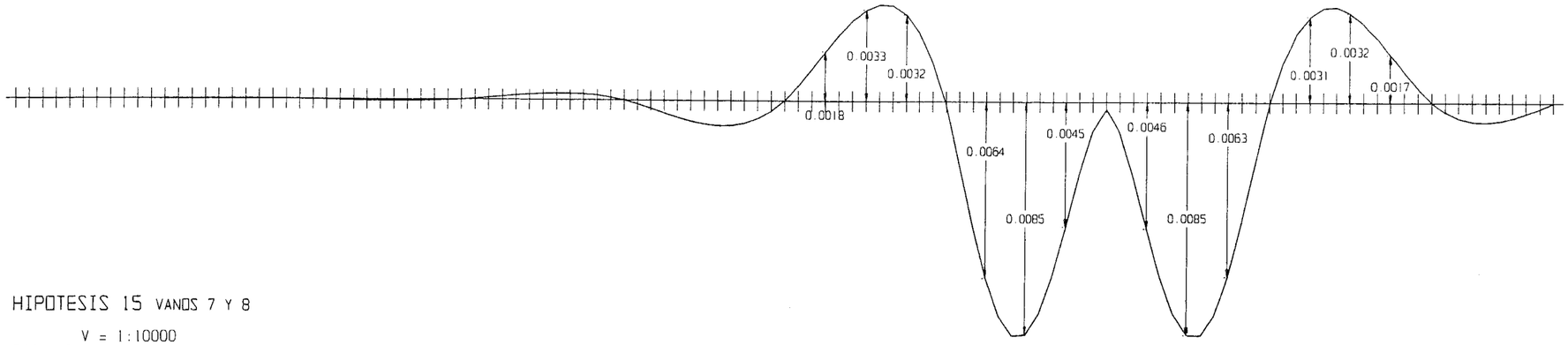
AUTORES
UTE PAPIOL
SGS TECNOS — J. MANTEROLA I.C.C.P.
INFRAES
CFC — L. ALBERTO ODU I.C.C.P. — A. MARTINEZ CUTILLAS — S. FUENTE GARCIA

ESCALA NORMAL
1:2000
Numérica | Gráfica
0 20 40m.

FECHA
MAYO 2002

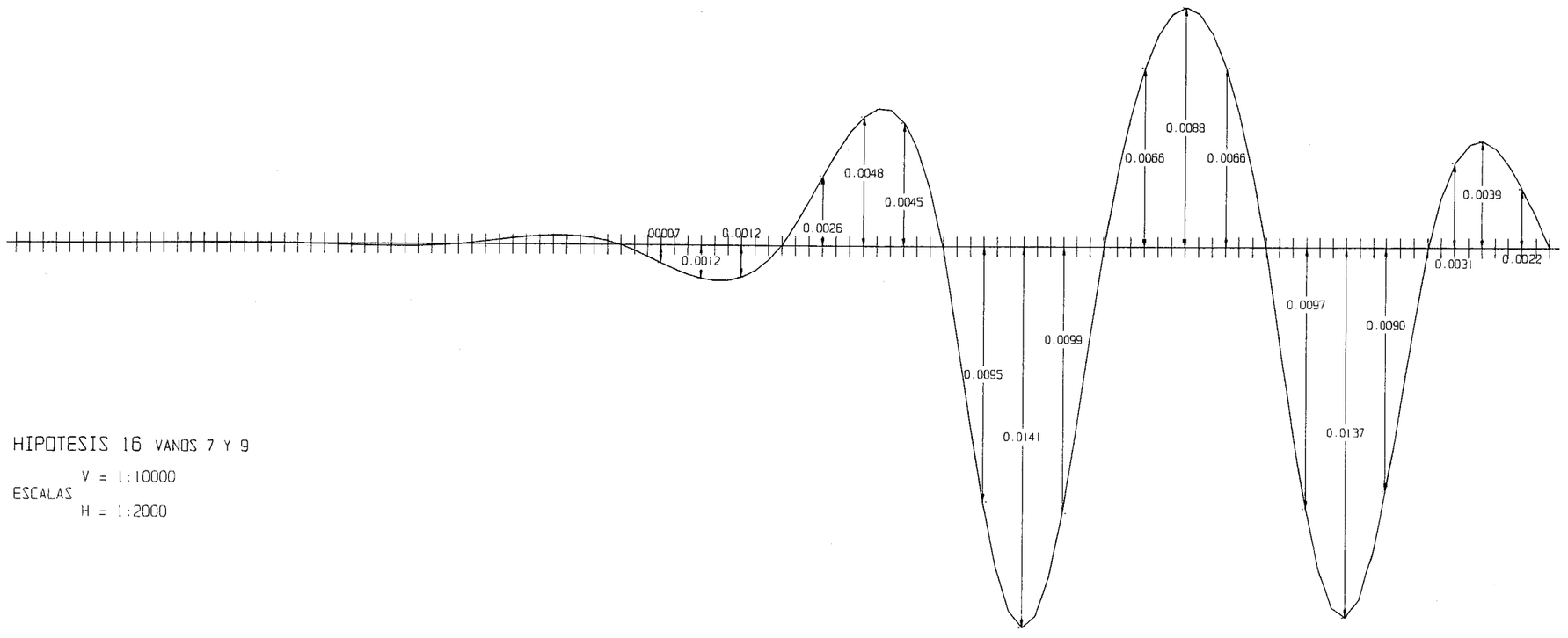
TÍTULO DEL PLANO
PRUEBAS DE CARGA (12)
DIAGRAMA DE FLECHAS (7)

Nº DE PLANO
2.10.1.9
Hoja 12 de 15



HIPOTESIS 15 VANOS 7 Y 8

ESCALAS
V = 1:10000
H = 1:2000



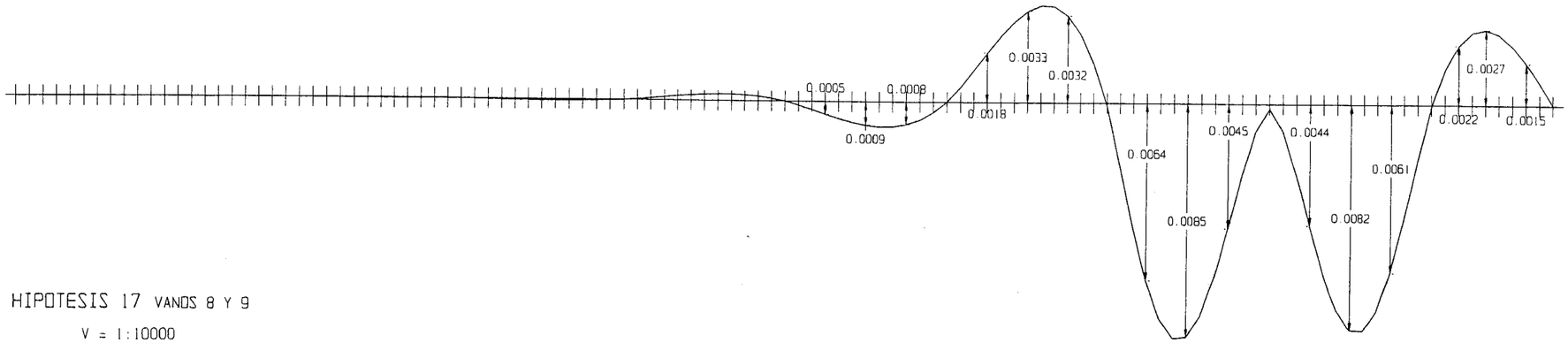
HIPOTESIS 16 VANOS 7 Y 9

ESCALAS
V = 1:10000
H = 1:2000

VIADUCTOS DE EL PAPIOL

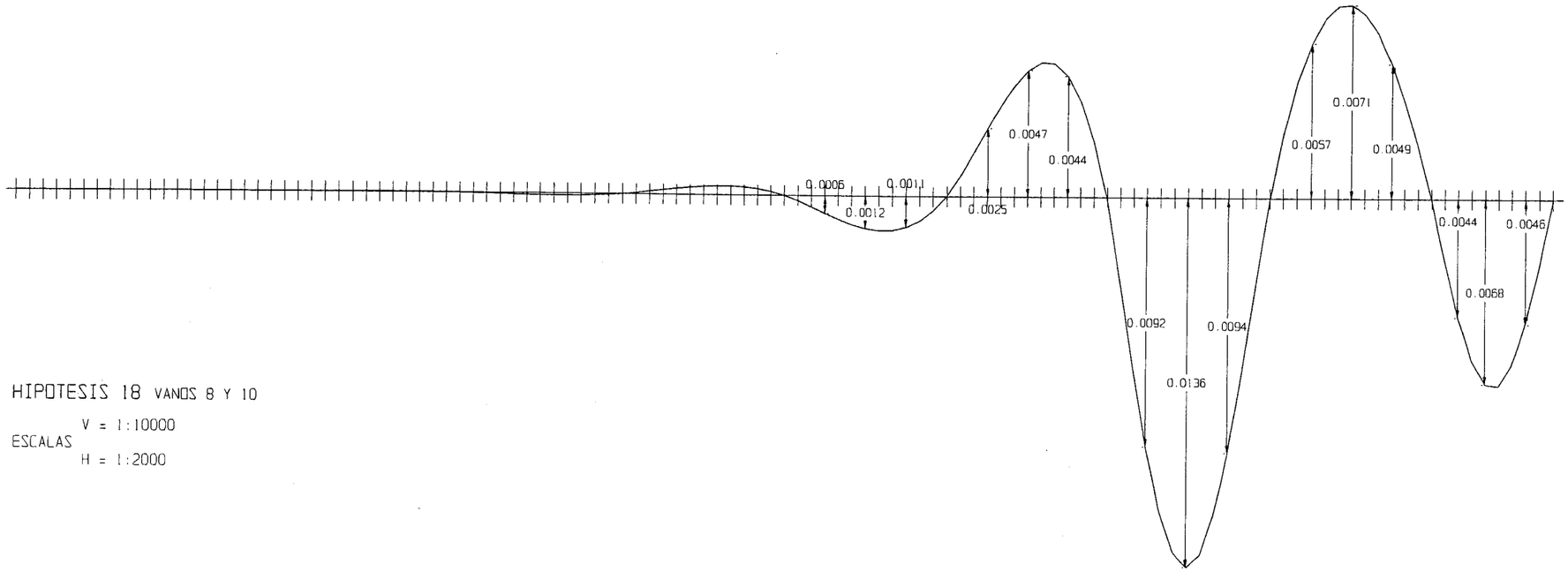
GIF Gestor de Infraestructuras Ferroviarias	TITULO: PROYECTO DE CONSTRUCCION DE PLATAFORMA L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA TRAMO: PAPIOL - SANT VICENT DELS HORTS	UTE PAPIOL SGS TECNOS INFRAES CFC — AUTORES J.MANTEROLA I.C.C.P. L.ALBERTO DOU I.C.C.P. A.MARTINEZ CUTILLAS S.FUENTE GARCIA	ESCALA NORMAL 1:2000 Numérica Gráfica 0 20 40m.	FECHA MAYO 2002	TÍTULO DEL PLANO PRUEBAS DE CARGA (13) DIAGRAMA DE FLECHAS (8)	Nº DE PLANO 2.10.1.9 Hoja 13 de 15

carga-13



HIPOTESIS 17 VANOS 8 Y 9

ESCALAS V = 1:10000
H = 1:2000



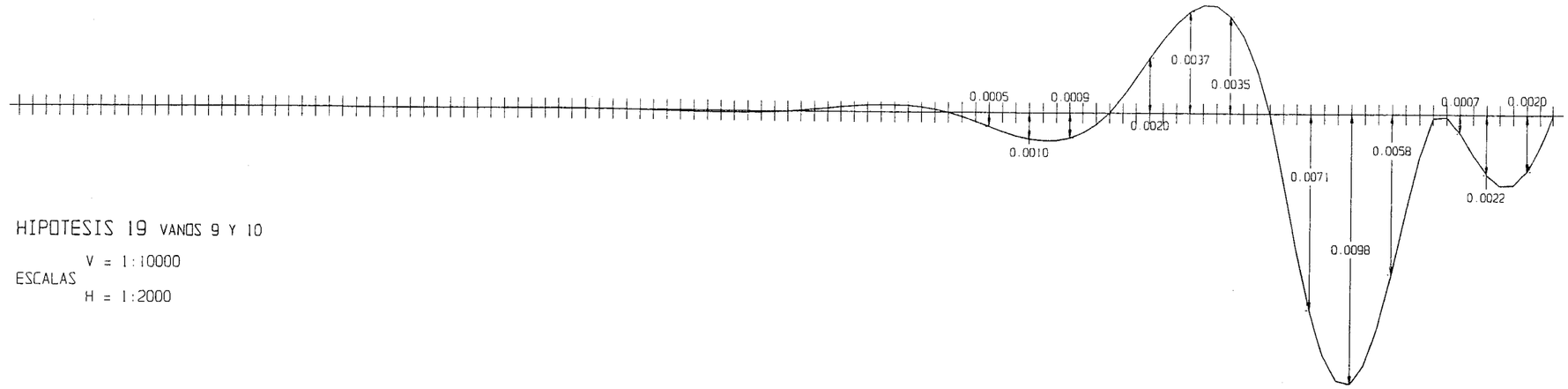
HIPOTESIS 18 VANOS 8 Y 10

ESCALAS V = 1:10000
H = 1:2000

VIADUCTOS DE EL PAPIOL

GIF Gestor de Infraestructuras Ferroviarias	TÍTULO PROYECTO DE CONSTRUCCION DE PLATAFORMA L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA TRAMO: PAPIOL - SANT VICENT DELS HORTS	UTE PAPIOL SGS TECNOS INFRAES CFC — AUTORES J.MANTEROLA I.C.C.P. A.MARTINEZ CUTILLAS S.FUENTE GARCIA L. ALBERTO COLI I.C.C.P.	ESCALA NORMAL 1:2000 Numérica Gráfica 0 20 40m.	FECHA MAYO 2002	TÍTULO DEL PLANO PRUEBAS DE CARGA (14) DIAGRAMA DE FLECHAS (9)	Nº DE PLANO 2.10.1.9 Hoja 14 de 15

carga-14



HIPOTESIS 19 VANOS 9 Y 10

ESCALAS V = 1:10000
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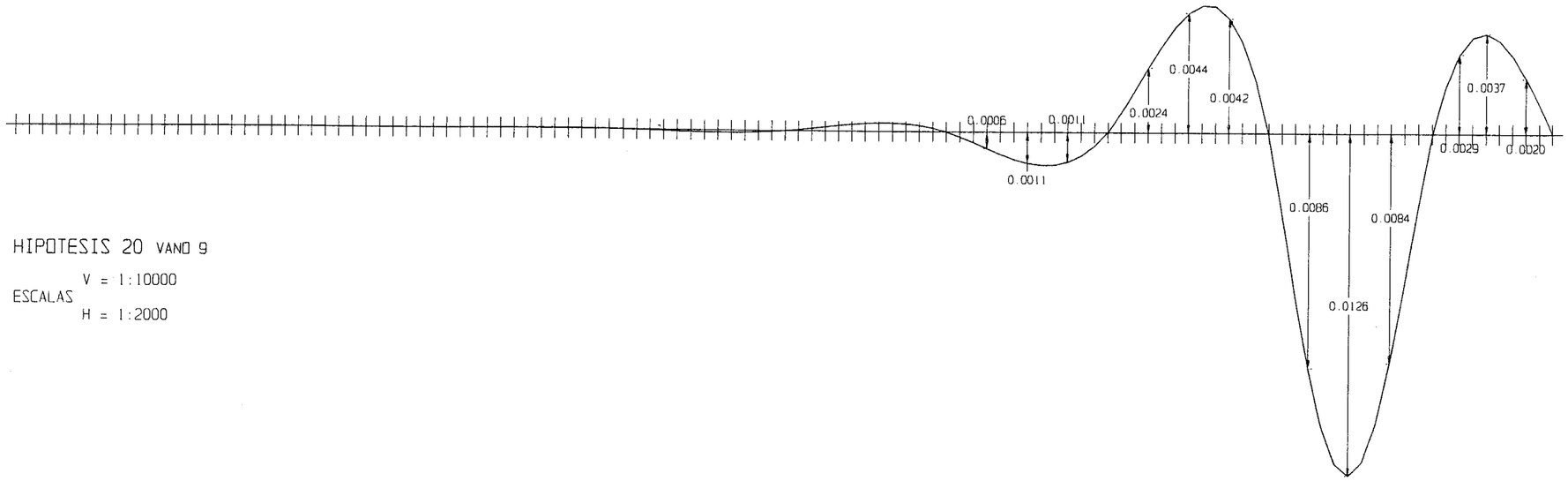

HIPOTESIS 20 VANO 9

ESCALAS V = 1:10000
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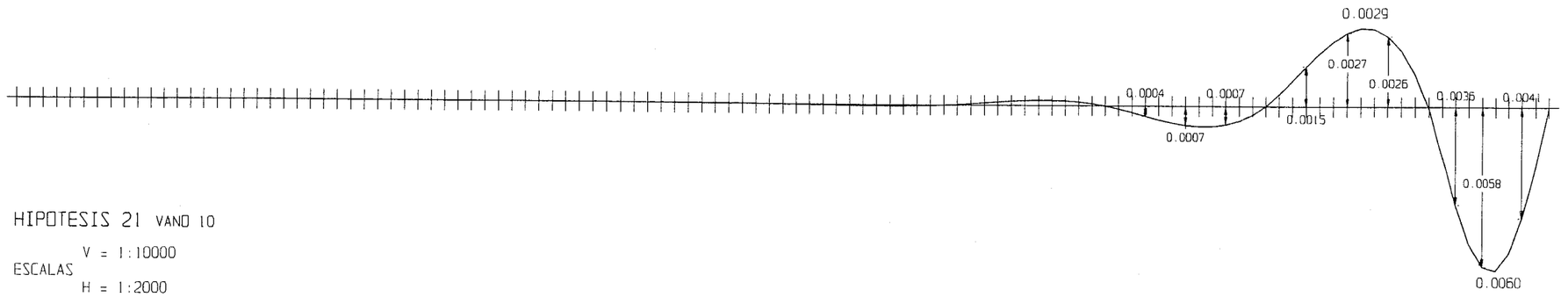

HIPOTESIS 21 VANO 10

ESCALAS V = 1:10000
H = 1:2000

VIADUCTOS DE EL PAPIOL

cargo-15

GIF Gestor de Infraestructuras Ferroviarias

TÍTULO
PROYECTO DE CONSTRUCCION DE PLATAFORMA
L.A.V. MADRID-ZARAGOZA-BARCELONA-FRONTERA FRANCESA
TRAMO: PAPIOL - SANT VICENT DELS HORTS

UTE PAPIOL
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L. ALBERTO DOU I.C.C.P.

ESCALA NORMAL
1:2000
0 20 40m.
Numérica Gráfica

FECHA
MAYO 2002

TÍTULO DEL PLANO
PRUEBAS DE CARGA (15)
DIAGRAMA DE FLECHAS (10)

Nº DE PLANO
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