ANEJO Nº 6. ESTRUCTURAS

4. Cálculos

Estructura E-4. (PK 303+200)

ESTRUCTURA E-4. (PK 303+200)

INDICE

CARACTERÍSTICAS MECÁNICAS DE LA SECCIÓN
CARGAS Y MODELO DE CÁLCULO DE TABLERO
DATOS DE ENTRADA SAP 90
SECCIÓN TRANSVERSAL
- ARMADO LONGITUDINAL
- CORTANTE
- TORSIÓN
- ARMADO TRANSVERSAL

VIGA DE ESTRIBO
COMPROBACIÓN ANCHURA FISURA
CÁLCULO DE PILAS. CIMENTACIÓN
REACCIONES PARA CÁLCULOS DE ESTRIBOS
CÁLCULO DE ESTRIBOS
SALIDAS DE RESULTADOS SAP 90
ANEJO DE PRUEBA DE CARGA
1. GENERALIDADES
2. TREN DE CARGAS
3. REALIZACIÓN DE LA PRUEBA DE CARGA
4. CÁLCULO DE ESFUERZOS Y DEFORMACIONES
5. CONCLUSIONES

LINEA DE ALTA VELOCIDAD

MADRID-BARCELONA-FRONTERA FRANCESA

TRAMO: LLEIDA-MARTORELL, SUBTRAMO:III-A, PLATAFORMA

ESTRUCTURA E-4

P.K. 303+200

Madrid, Octubre1999

PUENTE P.K. 303+200 **13+17+13**

HA – 30 / P / 20 / II b -H Acero B500 S

(H-300) (AEH-500)

- CARACTERISTICAS MECANICAS DE LA SECCION
- CARGAS Y MODELO DE CALCULO DE TABLERO
- DATOS DE ENTRADA SAP 90
- SECCION TRANSVERSAL

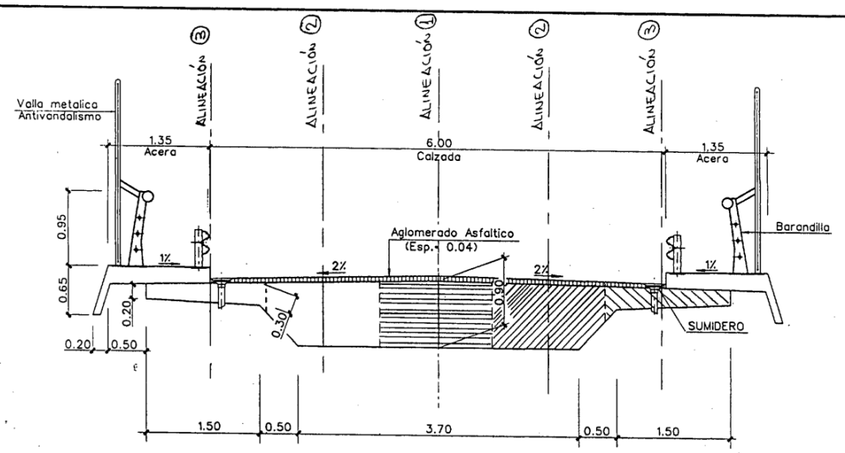
  ARMADO LONGITUDINAL

  CORTANTE

  TORSION

  ARMADO TRANSVERSAL
- VIGA DE ESTRIBO
- COMPROBACION ANCHURA FISURA
- CALCULO DE PILAS. CIMENTACION
- REACCIONES PARA CALCULO DE ESTRIBOS
- CALCULO DE ESTRIBOS
- SALIDA RESULTADOS SAP 90

CARACTERISTICAS MECANICAS DE LA SECCION

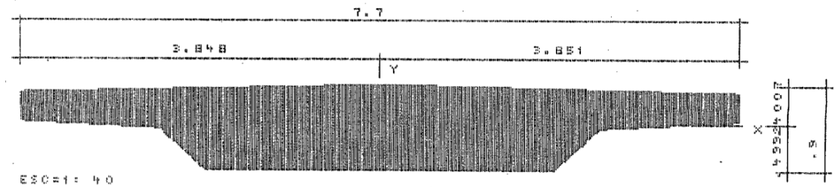


SECCION TRANSVERSAL TIPO

ESCALA 1:50

CARACTERISTICAS MECANICAS

AREA= 4.9444(M2)
XC..= 3.849 (M)
YC..= 0.499 (M)
Ixx = 0.2885(M4)
Iyy = 16.4584(M4)
Izz = 16.7467(M4)
Wxs = 0.7198(M3)
Wxi = 0.5778(M3)

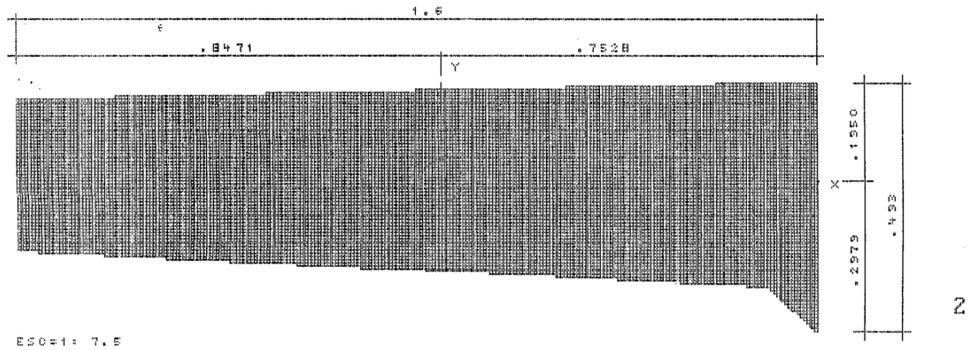


ESC=1: 40

2

CARACTERISTICAS MECANICAS

AREA=	0.5707	(M2)
XC..=	0.847	(M)
YC..=	0.298	(M)
Ixx =	0.0063	(M4)
Iyy =	0.1225	(M4)
Izz =	0.1288	(M4)
Wxs =	0.0324	(M3)
Wxi =	0.0212	(M3)

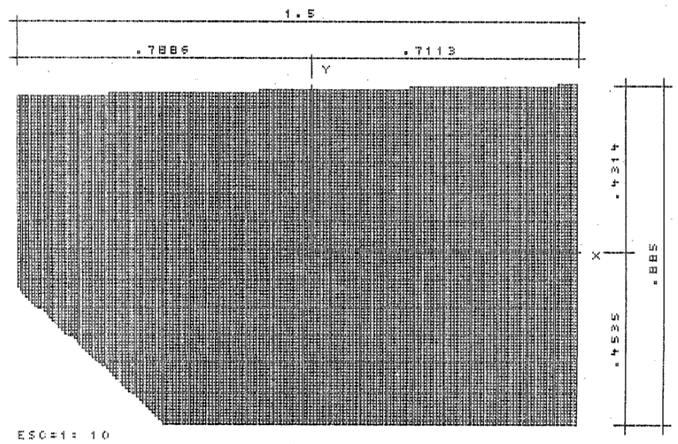


ESC=1: 7.5

2

CARACTERISTICAS MECANICAS

AREA=	1.2290	(M2)
XC..=	0.789	(M)
YC..=	0.454	(M)
Ixx =	0.0740	(M4)
Iyy =	0.2126	(M4)
Izz =	0.2866	(M4)
Wxs =	0.1715	(M3)
Wxi =	0.1632	(M3)

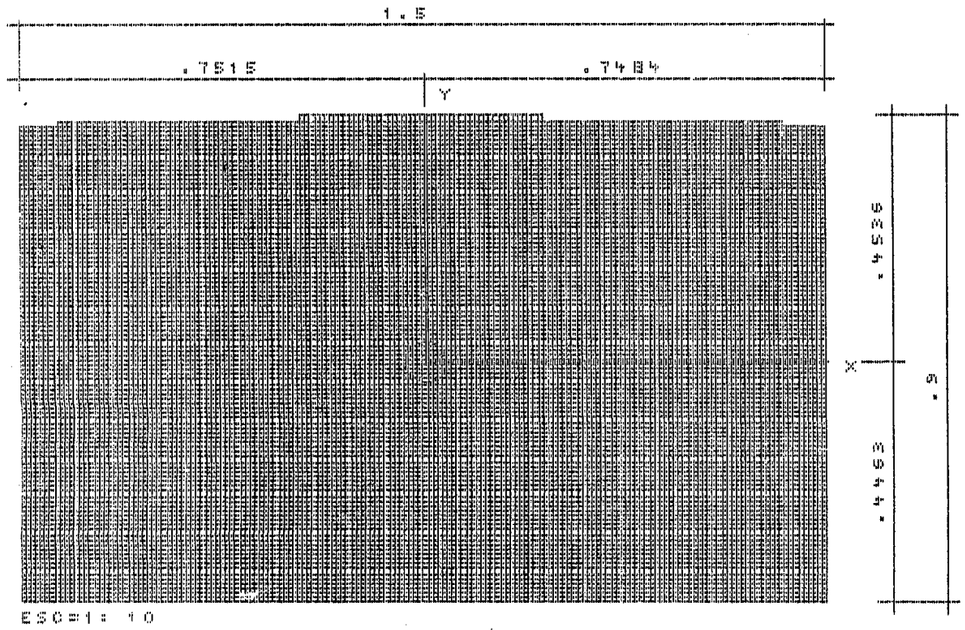


ESC=1: 10

2

CARACTERISTICAS MECANICAS

AREA=	1.3416	(M2)
XC..=	0.752	(M)
YC..=	0.446	(M)
Ixx =	0.0891	(M4)
Iyy =	0.2515	(M4)
Izz =	0.3406	(M4)
Wxs =	0.1965	(M3)
Wxi =	0.1997	(M3)



Z

CARGAS Y MODELO DE CALCULO DE TABLERO

CARGAS

PESO PROPIO TABLERO $4{,}21\ m^2 \times 2{,}50\ t/m^3 = 10{,}53\ t/m$

PESO AGLOMERADO $0{,}04\ m \times 2{,}50\ t/m^3 = 0{,}100\ t/m^2$

ACERAS Y BARANDILLAS $= 1{,}40\ t/m$

SOBRECARGAS

CARRO DE 60 t.

$400\ kg/m^2$

VIENTO

$$V_c = C_t \times C_r \times C_z \times C_g \times V_{ref}$$

$V_{ref} = 28\ m/s$

$C_t = 1{,}1$

$C_r = 1{,}04$

$K_z = 0{,}19 \quad z_0 = 0{,}05 \quad z_{min} = 4 \quad (\text{TIPO II})$

$z = 9\ m \Rightarrow C_z = K_z \times \ln(z/z_0) = 0{,}987$

$C_g = 1{,}49$

$$V_c = 1{,}1 \times 1{,}04 \times 0{,}987 \times 1{,}49 \times 28 = 47\ m/s$$

$$F = C_D \times \left(\frac{1}{2} \times \rho \times V_c^2\right) \qquad \rho = 1{,}25$$

$C_D = 2{,}5 - 0{,}3\ B/h \qquad B = 7{,}7\ m. \qquad h = 2{,}80\ m.$

$C_D = 1{,}675$

$F = 1{,}675 \times (0{,}5 \times 1{,}25 \times 47^2) = 236\ kp/m^2$

Altura expuesta $= 2{,}80\ m.$

$F = 661\ kp/m = 0{,}661\ t/ml$

FRENADO

$$\frac{1}{20} \times (7{,}7 \times 43 \times 0{,}4 + 60\ t) = 9{,}62\ t$$

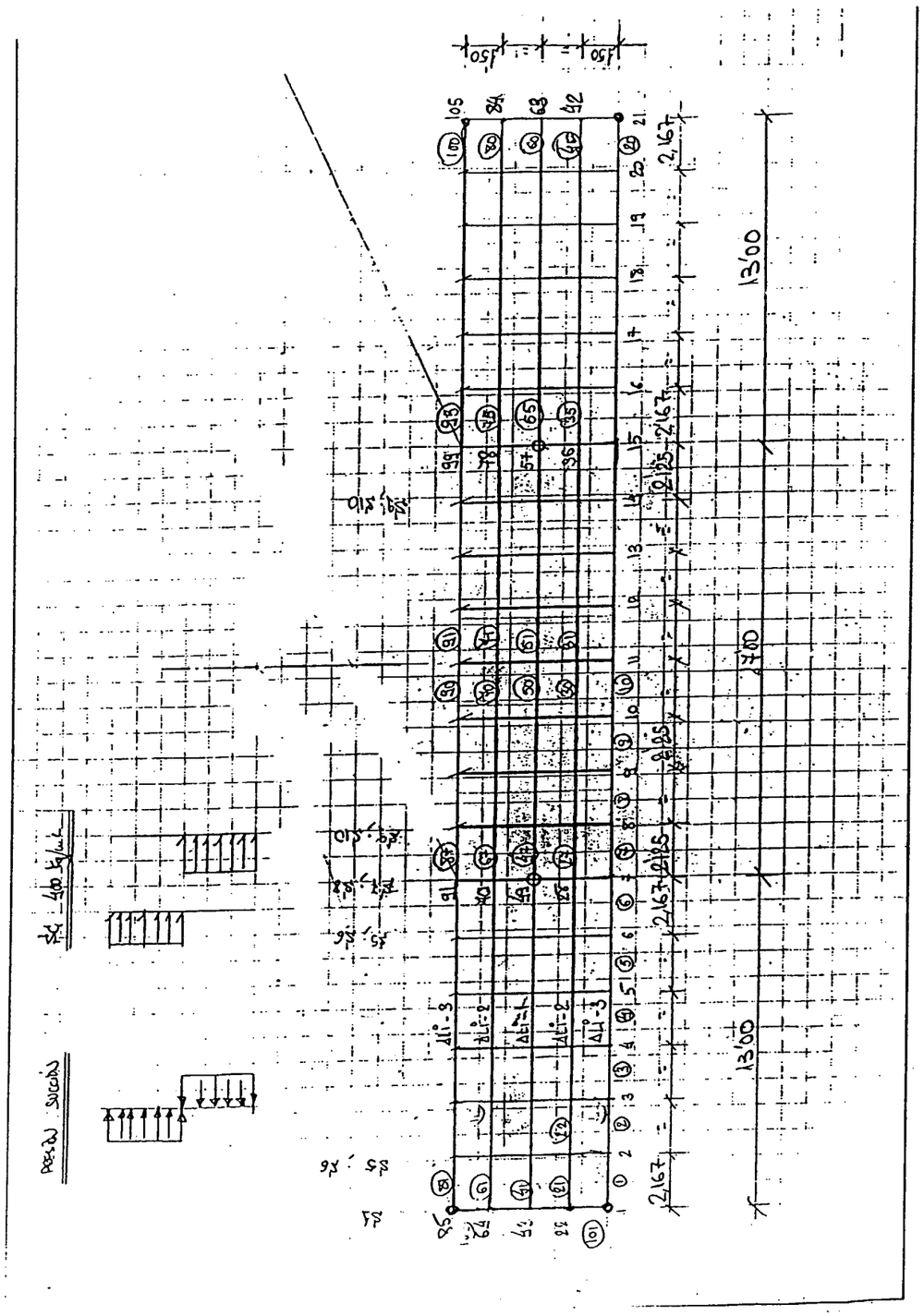
MÍNIMO $= 20 \times 7{,}7 = 15{,}4\ t \Rightarrow F_{FR} = 15{,}4\ t$

PASO DEL FERROCARRIL (Presión, Succión)

EUROCÓDIGO.

$V = 300\ km/h \qquad h_g = 7{,}00\ m\ (\text{tipo}) \rightarrow 65\ kp/m^2$

Vía doble acciones sumables.



DATOS DE ENTRADA SAP 90

```
REPOSICION 303+200. 3 VANOS 13+17+13 FILE:303200
C PUENTE RECTO,canto max. 0.90 m.,ancho tablero 7.70 m.
C HIPOTESIS 7 CENTRO VANO INTERMEDIO: 400 kg/m2 + 60 tn

SYSTEM
L=7

JOINTS
1       X=0.000         Y=0.000         Z=10.000
7       X=13.00                                         G=1,7,1
15      X=30.00                                         G=7,15,1
21      X=43.00                                         G=15,21,1
64      X=0.000         Y=4.500                         G=1,64,1
85      X=0.000         Y=6.000                         F=1,20,4,1,21
C
C NUDOS ARRANQUE DE PILAS
1049    X=13.00         Y=3.000         Z=0.000
1057    X=30.00         Y=3.000         Z=0.000
C
C NUDOS ARRANQUE ESTRIBOS
1001    X=0.000         Y=0.000         Z=9.95
1085    X=0.000         Y=6.000         Z=9.95
1021    X=43.00         Y=0.000         Z=9.95
1105    X=43.00         Y=6.000         Z=9.95

RESTRAINTS
C ARRANQUE DE PILAS
1049    R=1,1,1,1,1,1
1057    R=1,1,1,1,1,1
C ESTRIBOS
1001    R=1,1,1,1,1,1
1021    R=1,1,1,1,1,1
1085    R=1,1,1,1,1,1
1105    R=1,1,1,1,1,1
C
C SPRINGS
C 22 42 20      K=100000,1E6,100000,0,0,0
C 64 84 20      K=100000,1E6,100000,0,0,0

FRAME
NM=12   NL=6    Z=-1,0,0,0,0,0,0    NSEC=3
C SECCION BARRAS LONGITUDINALES
1  A=1.3416  J=.3406  I=.0891,.2515  AS=1.0733,1.0733  E=3500000  W=3.354
2  A=1.2290  J=.2866  I=.0740,.2126  AS=0.9832,0.9832             W=3.0725
3  A=0.5707  J=.1288  I=.0063,.1225  AS=0.4566,0.4566             W=1.42675
C SECCION BARRAS TRANSVERSALES
4  SH=R     T=0.862,1.0835
5  SH=R     T=0.550,2.167
6  SH=R     T=0.878,2.167
7  SH=R     T=0.550,2.146
8  SH=R     T=0.878,2.146
9  SH=R     T=0.550,2.125
10 SH=R     T=0.878,2.125
C SECCION PILAS CIRCULARES DE DIAMETRO 0.90 M.
11 SH=P     T=0.90,0.44999
C SECCION NEOPRENOS ESTRIBOS
12 SH=R     T=0.40,0.30     E=63000   G=9000
C
C CARGAS
C PESO DE AGLOMERADO  100 KG/M2
1       WG=0,0,-0.150
C PESO DE BARANDILLAS,ACERAS E IMPOSTAS
2       WG=0,0,-1.4
C ACCION TRANSVERSAL DE VIENTO
3       WG=0,0.661,0
C PRESION SUCCION PASO FERROCARRIL 130 KG/M2, (2 VIAS 7 M. GALIBO V=500KM/H)
C VANO CENTRAL
4       WG=0,0,0.28
5       WG=0,0,-0.28
C SOBRECARGA 400kg/m2 EN CADA BARRA LONGITUDINAL
6       WG=0,0,-0.60
C
C PESO PROPIO TABLERO,AGLOMERADO,IMPOSTA,VIENTO,SUCCION,FRENADO
C
C BARRAS LONGITUDINALES
1    1   2   M=3  LP=-2,0   NSL=0,1,2,3,0,0,0     G=5,1,1,1
7    7   8   M=3            NSL=0,1,2,3,0,0,6     G=7,1,1,1
15   15  16  M=3            NSL=0,1,2,3,0,0,0     G=5,1,1,1
21   22  23  M=2            NSL=0,1,0,0,0,0,0     G=5,1,1,1
27   28  29  M=2            NSL=0,1,0,0,0,0,6     G=7,1,1,1
35   36  37  M=2            NSL=0.1.0.0.0.0.0     G=5.1.1.1
41   43  44  M=1            NSL=0,1,0,0,0,0,0     G=5,1,1,1
47   49  50  M=1            NSL=0,1,0,0,0,0,6     G=7,1,1,1
55   57  58  M=1            NSL=0,1,0,0,0,0,0     G=5,1,1,1
61   64  65  M=2            NSL=0,1,0,0,0,0,0     G=5,1,1,1
67   70  71  M=2            NSL=0,1,0,0,0,0,6     G=7,1,1,1
75   78  79  M=2            NSL=0,1,0,0,0,0,0     G=5,1,1,1
81   85  86  M=3            NSL=0,1,2,0,0,0,0     G=5,1,1,1
87   91  92  M=3            NSL=0,1,2,0,0,0,6     G=7,1,1,1
95   99 100  M=3            NSL=0,1,2,0,0,0,0     G=5,1,1,1
C BARRAS TRANSVERSALES
101   1  22   M=4  LP=3,0
102   2  23   M=5                                 G=4,1,1,1
107   7  28   M=7            NSL=0,0,0,0,4,0,0
108   8  29   M=9            NSL=0,0,0,0,4,0,0    G=6,1,1,1
115  15  36   M=7            NSL=0,0,0,0,4,0,0
116  16  37   M=5                                 G=4,1,1,1
121  21  42   M=4
C
122  22  43   M=4  LP=3,0
123  23  44   M=6                                 G=4,1,1,1
128  28  49   M=8            NSL=0,0,0,0,4,0,0
129  29  50   M=10           NSL=0,0,0,0,4,0,0    G=6,1,1,1
136  36  57   M=8            NSL=0,0,0,0,4,0,0
137  37  58   M=6                                 G=4,1,1,1
142  42  63   M=4
C
143  43  64   M=4  LP=3,0
144  44  65   M=6                                 G=4,1,1,1
149  49  70   M=8            NSL=0,0,0,0,5,0,0
150  50  71   M=10           NSL=0,0,0,0,5,0,0    G=6,1,1,1
157  57  78   M=8            NSL=0,0,0,0,5,0,0
158  58  79   M=6                                 G=4,1,1,1
163  63  84   M=4
C
164  64  85   M=4  LP=3,0
165  65  86   M=5                                 G=4,1,1,1
170  70  91   M=7            NSL=0,0,0,0,5,0,0
171  71  92   M=9            NSL=0,0,0,0,5,0,0    G=6,1,1,1
178  78  99   M=7            NSL=0,0,0,0,5,0,0
179  79 100   M=5                                 G=4,1,1,1
184  84 105   M=4
C
C BARRAS DE PILARES
5049 1049 49  M=11
5057 1057 57  M=11
C BARRAS DE ESTRIBOS
5001 1001   1  M=12      LR=0,1,0,0,1,0
5021 1021  21  M=12      LR=0,1,0,0,1,0
5085 1085  85  M=12      LR=0,1,0,0,1,0
5105 1105 105  M=12      LR=0,1,0,0,1,0

LOADS
C FRENADO CON CARGA MAXIMA SOBRE TABLERO
53 L=6 F=15.4,0,0,0,0,0
C CARRO 60 TN (Para deformacion centro de vano intermedio)
31 L=7 F=0,0,-3.33,0,0,0
32 L=7 F=0,0,-3.33,0,0,0
33 L=7 F=0,0,-3.33,0,0,0
52 L=7 F=0,0,-13.34,0,0,0
53 L=7 F=0,0,-13.34,0,0,0
54 L=7 F=0,0,-13.34,0,0,0
73 L=7 F=0,0,-3.33,0,0,0
74 L=7 F=0,0,-3.33,0,0,0
75 L=7 F=0,0,-3.33,0,0,0

BRIDGE
NL=6    UP=Z
L=1
        S=1
                F=1,20,1    E=0
L=2
        S=1
                F=21,40,1   E=0
L=3
        S=1
                F=41,60,1   E=0
L=4
        S=1
                F=61,80,1   E=0
L=5
        S=1
                F=81,100,1  E=0
L=6
```

```
S=1
                F=61,80,1    E=0.5

VEHICLE
NV=3    NG=3    UNITS=KN,M        TRUCK=QUICK
C CARRIL 1,50 m. * 400 Kg/m2 = 600 Kg/m = 0.60 T/m
V=1     TYPE=LANE                 W=0.60
C CARRIL 1,60 m. * 400 Kg/m2 = 640 Kg/m = 0.64 T/m
V=2     TYPE=LANE                 W=0.64
C CARRO DE 60 T.
V=3     TYPE=TRUCK                P=20,20,20    D=1.5,1.5
C
G=1     V=1
G=2     V=2
G=3     V=3

MOVING LOAD
NC=1    MK=2
C=1
K=FIX   L=1,2,3,4,5  DIR=B,B,B          G=2,1,1,1,2
K=MIX   L=3,4,6      DIR=B,B,B          G=3

ENVELOPE
C VIENTO ACCION DETERMINANTE
1       C=1,1,1,1,0,0,0      B=0
; PRESION-SUCCION ACCION DETERMINANTE
2       C=1,1,1,0.6,1,0.6,0      B=0.6
; FRENADO DETERMINANTE
3       C=1,1,1,0.6,0.6,1,0      B=0.6
; SC 400 Kp/m2 + CARRO 60 t. DETERMINANTE
4       C=1,1,1,0.6,0.6,0.6,0    B=1
; TOTAL PESO PROPIO + VANO CENTRAL CON CARRO Y SC DE 400 Kp/m2.
5       C=1,1,1,0,0,0,1      B=0
; TOTAL PESO PROPIO
6       C=1,1,1,0,0,0,0      B=0

SELECT
T=1 ID=1,11,1    SW=1
T=1 ID=22,32,1   SW=1
T=1 ID=43,53,1   SW=1
T=1 ID=64,74,1   SW=1
T=1 ID=85,95,1   SW=1
T=5 ID=5049      SW=1
T=5 ID=1,10,1    SW=1
T=5 ID=21,30,1   SW=1
T=5 ID=41,50,1   SW=1
T=5 ID=61,70,1   SW=1
T=5 ID=81,90,1   SW=1
T=5 ID=101,111,1 SW=1
T=5 ID=122,132,1 SW=1
T=5 ID=143,153,1 SW=1
T=5 ID=164,174,1 SW=1
T=2 ID=1001      SW=1
T=2 ID=1049      SW=1
T=2 ID=1085      SW=1
```

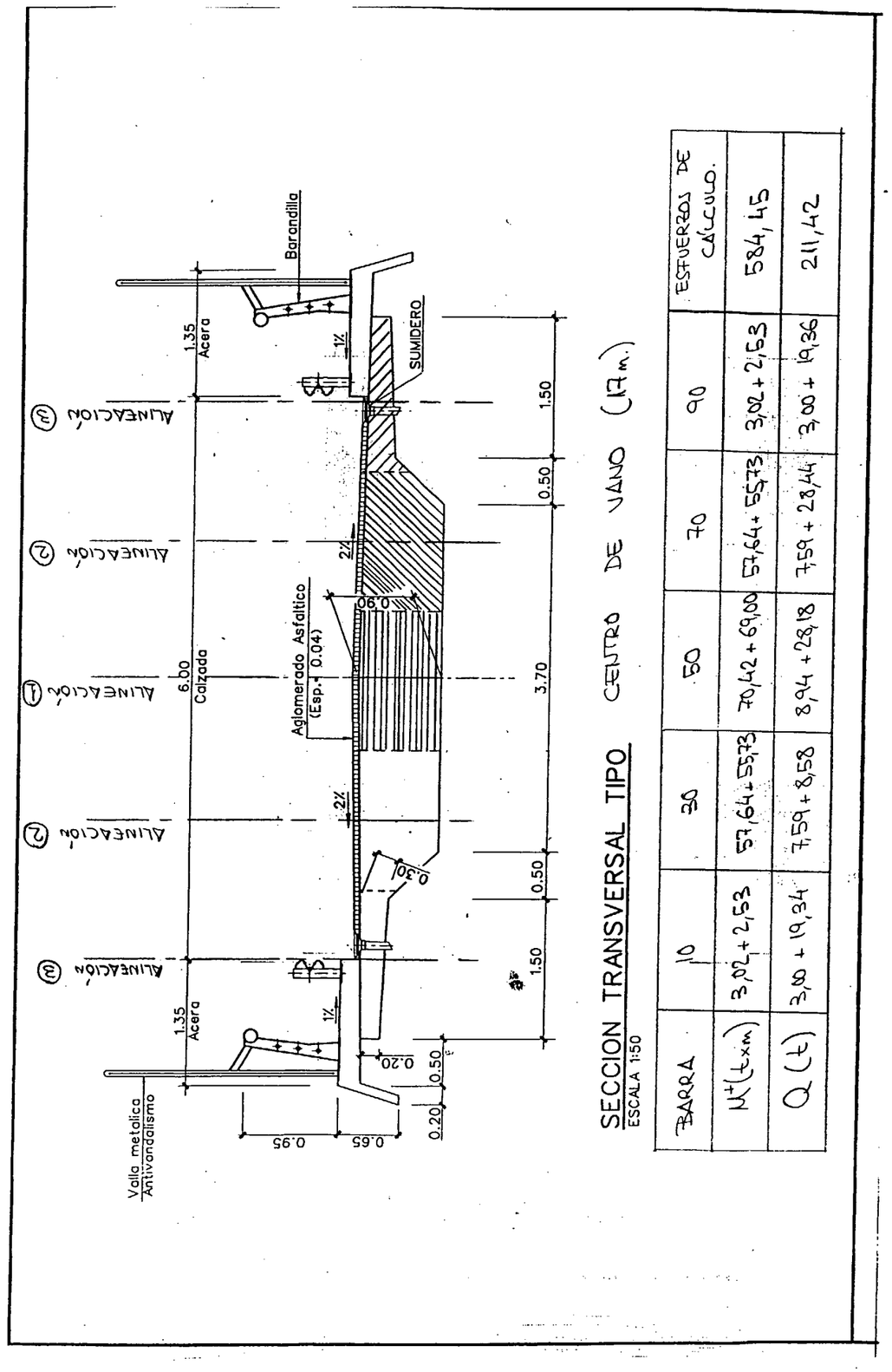
SECCION TRANSVERSAL

ARMADO LONGITUDINAL

CORTANTE

TORSION

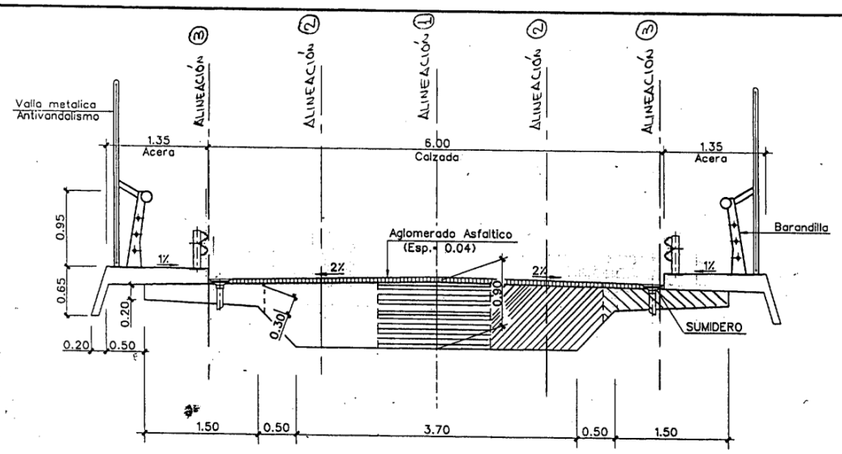
ARMADO TRANSVERSAL



SECCION TRANSVERSAL TIPO
ESCALA 1:50

CENTRO DE VANO (19 m.)

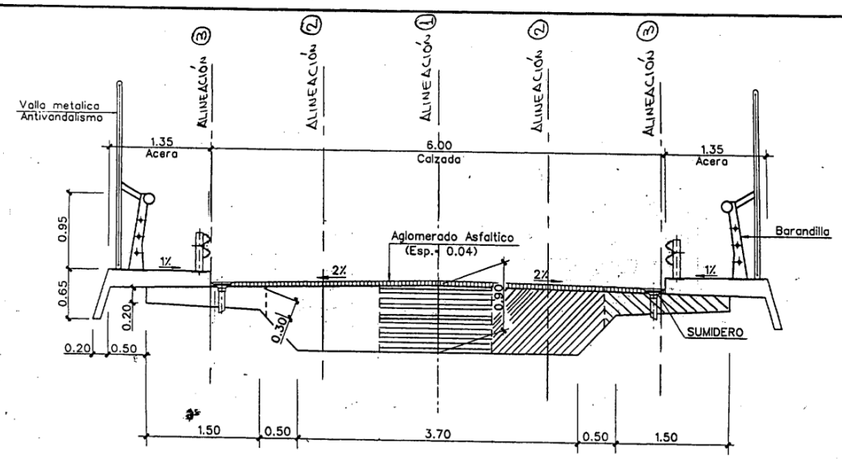
BARRA	10	30	50	70	90	ESFUERZOS DE CÁLCULO.
M^+(t·m)	3,02 + 2,53	57,64 + 55,73	70,42 + 69,00	57,64 + 55,73	3,02 + 2,53	584,45
Q (t)	3,00 + 19,34	7,59 + 8,58	8,94 + 28,18	7,59 + 28,44	3,00 + 19,36	211,42



SECCION TRANSVERSAL TIPO CENTRO VANO 13 m.

ESCALA 1:50

BARRA	3	23	43	63	83	ESFUERZOS DE CÁLCULO.
M^t(t×m)	2,63+1,74	46,6+37,6	57,8+48,1	46,6+45,5	2,63+2,1	451,00
Q (t)	3,16+19,63	14,92+12,18	18,6+30,66	14,92+28,26	3,10+20,00	260,00



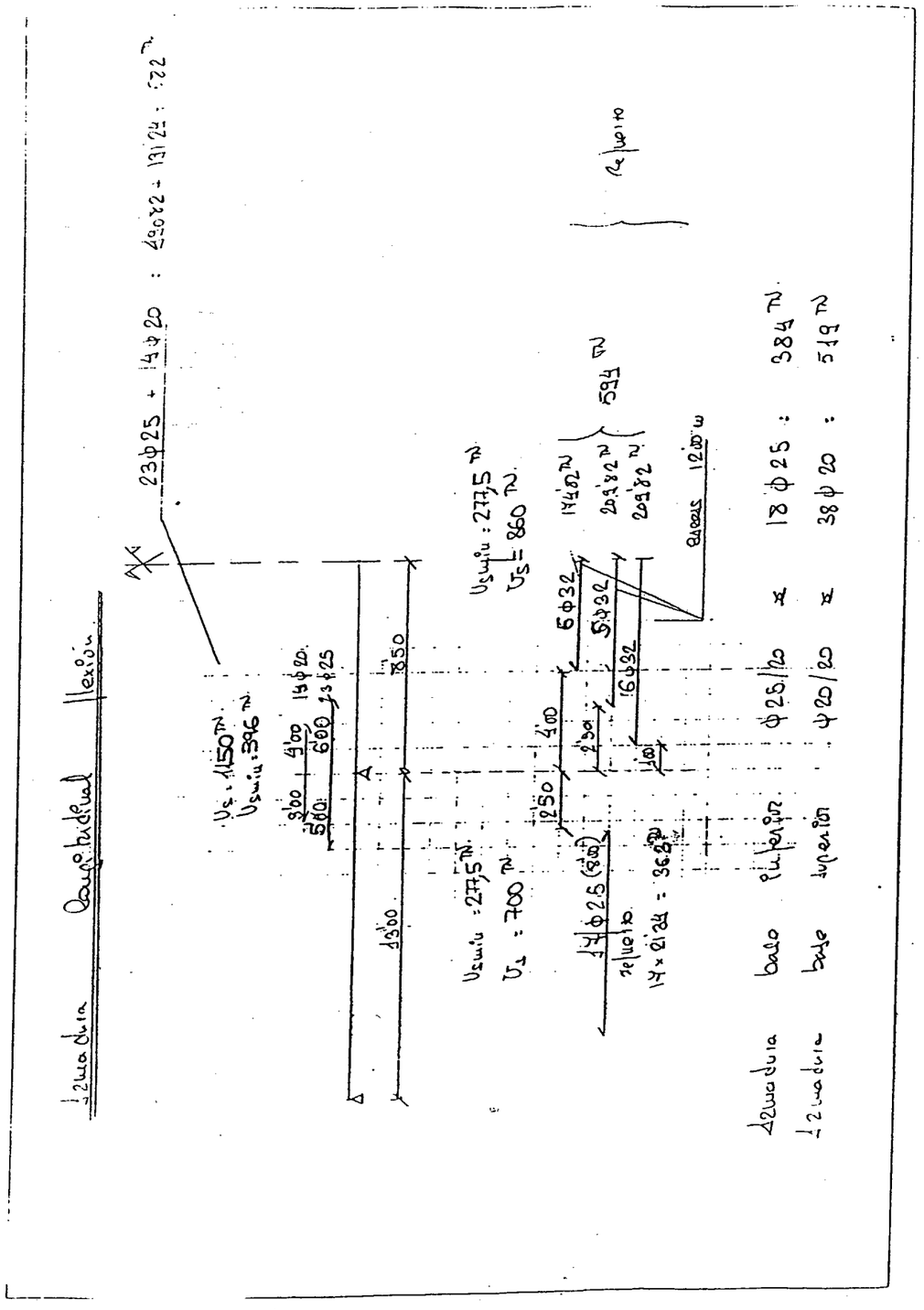
SECCION TRANSVERSAL TIPO SECCIÓN APOYO.

ESCALA 1:50

BARRA	6	27	47	67	86	ESFUERZOS DE CÁLCULO.
M^-(t×m)	4,62+1,81	90,66+38,44	137,5+60,84	90,66+38,44	4,67+1,87	-717,61
Q (t)	3,54+19,68	28,37+16,07	56,33+40,68	28,37+35,73	3,66+19,82	391,60

Resistencia característica del hormigón
Recubrimiento= 4 cms
MOMENTO LIMITE(tXM) Secc Rect = 2910.40

	CABEZA COMPRESION= 7.7		CABEZA COMPRESION= 3.7	
N	Us1	Us2	Us1	Us2
0.00	296.07	0.00	419.92	0.00
50.00	296.07	0.00	419.92	0.00
100.00	296.07	0.00	419.92	0.00
150.00	296.07	0.00	419.92	0.00
200.00	296.07	0.00	419.92	0.00
250.00	330.08	0.00	419.92	0.00
300.00	397.45	0.00	419.92	0.00
350.00	465.28	0.00	478.15	0.00
400.00	533.61	0.00	550.80	0.00
450.00	602.42	0.00	624.50	0.00
500.00	671.73	0.00	698.74	0.00
550.00	741.57	0.00	776.54	0.00
600.00	811.92	0.00	854.62	0.00
650.00	882.82	0.00	934.26	0.00
700.00	954.26	0.00	1015.57	0.00
750.00	1026.27	0.00	1098.63	0.00
800.00	1098.86	0.00	1183.58	0.00
850.00	1172.04	0.00	1270.55	0.00
900.00	1245.82	0.00	1359.68	0.00
950.00	1320.21	0.00	1451.16	0.00
1000.00	1395.23	0.00	1545.17	0.00
1050.00	1470.88	0.00	1641.91	0.00
1100.00	1547.19	0.00	1741.61	0.00
1150.00	1624.17	0.00	1844.51	0.00
1200.00	1701.83	0.00	1950.87	0.00
1250.00	1780.19	0.00	2060.98	0.00
1300.00	1859.27	0.00	2175.16	0.00
1350.00	1939.09	0.00	2293.78	0.00
1400.00	2019.67	0.00	2417.26	0.00
1450.00	2101.03	0.00	2546.08	0.00
1500.00	2184.85	0.00	2680.69	139.60
1550.00	2268.20	0.00	2829.18	207.52
1600.00	2352.44	0.00	2982.67	276.02
1650.00	2437.62	0.00	3148.17	344.52
1700.00	2523.73	0.00	3334.67	413.02
1750.00	2610.80	0.00	3540.15	481.52
1800.00	2698.80	0.00	3764.65	550.02
1850.00	2788.26	0.00	4040.44	618.42
1900.00	2878.59	0.00	4308.63	686.91
1950.00	2970.06	0.00	4577.13	755.41
2000.00	3062.73	0.00	4845.62	823.92



CORTANTE EN SECCIÓN DE APOYO INTERMEDIO:

$V_{rd} = 391,6\ t$

$V_{u2} = V_{cu} + V_{su}$

$V_{cu} = \left[0,10\ \xi\ (100\ \rho_1\ f_{ck})^{1/3} - 0,15\ \sigma'_{cd}\right] b_o\ d\ \beta$

σ'_{cd} = tensión por axil. Despreciable en el cálculo

$V_{cu} = 0,10 \times \xi \left(100 \times \frac{A_s}{b_o \cdot d} \times f_{ck}\right)^{1/3} \times b_o \times d$

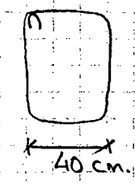
$V_{cu} = 120,57\ t$

$V_{su} = V_{u2} - V_{cu} = 391,6 - 120,57 = 271,1\ t$

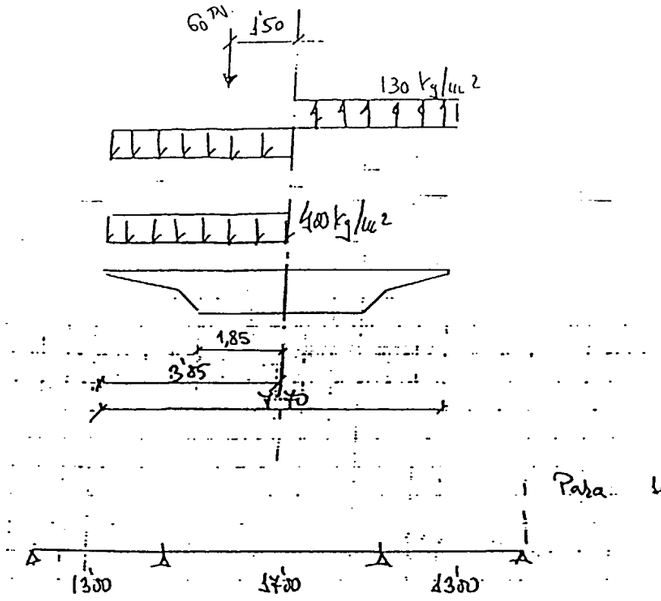
Sección de armadura necesaria:

$$A_s = \frac{271,1 \times 1000}{4200 \times 0,9 \times 85} \times 100 = 84,40\ cm^2$$

Se disponen 16 estribos $\phi 12$



Torsión máxima en la sección



90 TN×m

1'93 TN×m/m

2'96 TN×m/m

Para sección de apoyo.

$Td = 1'60 \times \frac{1}{2}\left(90 + 1'93 \times 20 + 2'96 \times 43\right) = 205$ TN×m

$h_e = \frac{0,90}{6} = 0,15$ m.

$A_e = (0,90 - 0,15) \times (3,70 - 0,15) = 2,6625$ m²

$Tu_1 = 1'2 \times 0'60 \cdot f_{cd} \cdot A_e \cdot h_e \cdot \frac{1}{2}$

$Tu_1 = 0'36 \times \frac{3000}{1'5} \times 2,6625 \times 0,15 = 287,6$ TN×m.

$Td \leq Tu_1$ o.k ✓

$Tu_2 \geq Td \Rightarrow M_c = \frac{Td \cdot S}{2 \cdot A_e} = \frac{205 \times 0'20}{2 \times 2,6625} = 7,70$ TN

$Tu_3 \geq Td \Rightarrow M_c = \frac{Td \cdot u}{2 \cdot A_e} = \frac{205 \times u}{2 \times 2,6625} = 331$ TN

$u = (0,90 - 0,15) \times 2 + (3,70 - 0,15) \times 2 = 8,6$ m

Comprobación tensión cortante con cortante

$V_{u1} = 0'60 \cdot f_{cd} \cdot b_o \cdot d \cdot \frac{1}{2} = 1598$ TN

Cortante en apoyo estribo

Debido a peso propio = 6'35 + 19'46 + 14'45 + 19'46 + 6'35 = 65'64 TN
(1) (2) (4) (5) (3)

Debido a SC 400 Kg/m² = 7'04 TN

Debido a carro 60 TN ± del lado de la seguridad 30 TN

= 103 TN

$V_{rd} = 1'5 \cdot 65'64 + 1'6 \times (7'04 + 30) =$

$= 158$ TN

$\left(\frac{Td}{Tu_1}\right)^{\beta} + \left(\frac{V_{rd}}{V_{u1}}\right)^{\beta} \leq 1$ $\quad \beta = 2\left(1 - \frac{h_e}{b}\right) = 2\left(1 - \frac{0,15}{7,70}\right) = 1,96$

$\left(\frac{205}{287,6}\right)^{1,96} + \left(\frac{158}{1598}\right)^{1,96} = 0,53 < 1$ o.k ✓

SECCIÓN APOYO PILA INTERMEDIA

ARMADURA TRANSVERSAL.

Barra (149)

$M_d^- = 1{,}35 \times 80{,}88 + 1{,}50 \times 40{,}6 = 170{,}10$ mxt

$Q_d = 1{,}35 \times 63{,}00 + 1{,}50 \times 33{,}00 = 134{,}55$ t

Sección tipo 8 ; $2{,}146 \times 0{,}878$

Flexión: $U_o = 0{,}85 \times \frac{3000}{1{,}5} \times 2{,}146 \times 0{,}828 = 3021$ t.

$$U_{s1} = 3021 \left(1 - \sqrt{1 - \frac{2 \times 170{,}10}{3021 \times 0{,}828}}\right)$$

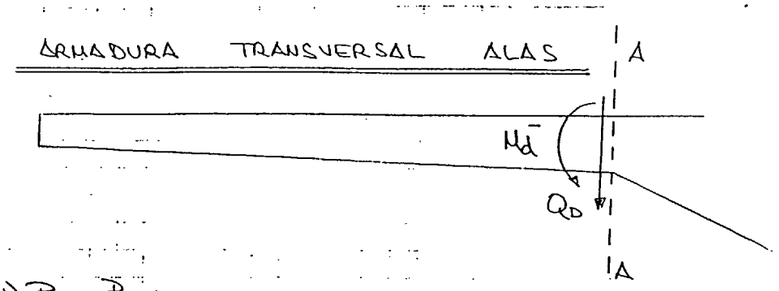
$U_{s1} = 213$ t

Cortante: $V_{cu} = 0{,}10 \cdot \xi \, (100 \, \rho_1 \, f_{ck})^{1/3} \cdot b_o \cdot d$

$V_{cu} = 58{,}1$ t

$V_{su} = 134{,}55 - 58{,}1 = 76{,}5$ t

$$A_\alpha = \frac{76{,}5}{0{,}90 \times 0{,}828 \times f_{yk,d}} = 26 \text{ cm}^2/\text{ml}$$



1) Peso Propio:

$Q_A = 0{,}75 + 0{,}1875$ t/m $M_A = 0{,}5625 + 0{,}094$ tm/ml

2) Superestructura (Resto C.P)

$Q_A = 1{,}40 + 0{,}07$ t/m $M_A = 2{,}1 + 0{,}0245$ mt/ml

3) S.C. (Presión - Succión + 400 kp/m² + Carro)

$Q_A = 0{,}098$ t/m $+ 0{,}28 + 8{,}83$

$M_A = 0{,}073 + 0{,}098 + 1{,}765$

$Q_D = 1{,}35 \times (0{,}75 + 0{,}1875 + 1{,}40 + 0{,}07) + 1{,}5 \times (0{,}098 + 0{,}28 + 8{,}83)$

$Q_D = 17{,}06$ t.

$M_D = 1{,}35 \times (0{,}5625 + 0{,}094 + 2{,}1 + 0{,}0245) + 1{,}5 \times (0{,}073 + 0{,}098 + 1{,}765)$

$M_D = 6{,}66$ mxt

Flexión

$U_o = 0{,}85 \cdot \frac{3000}{1{,}5} \times 2{,}00 \times 0{.}26 = 442$ t

$U_{s1} = 442 \times \left(1 - \sqrt{1 - \frac{2 \times 6{,}66}{442 \times 0{,}26}}\right) = 26{,}40$ t

$\phi 16/20$

Cortante

$V_{cu} = 0{,}10 \cdot \xi \cdot (100 \times \rho_1 \times f_{ck})^{1/3} \cdot b_o \times d$

$\xi = 1{,}877$

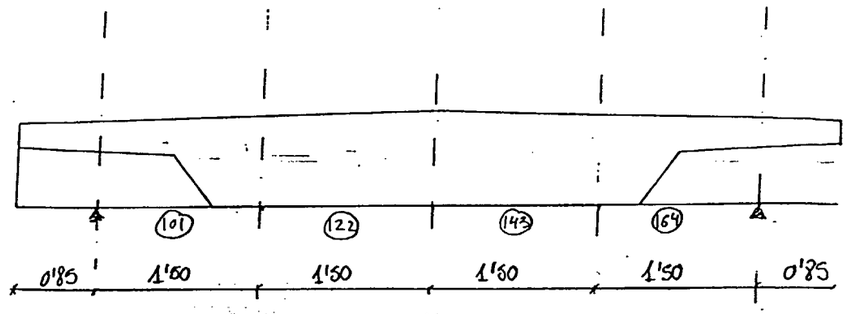
$\rho_1 = 0{,}00386$

$\Rightarrow V_{cu} = 13{,}52 \Rightarrow V_{su} = 17{,}06 - 13{,}52$

$V_{su} = 3{,}54$ t

VIGA DE ESTRIBO

VIGA DE ESTRIBO



$M = 29+50$; $M = 21+32$

$Q = 27+41$; $Q = 7+14$

$M_T = 4+8$; $M_T = 4+8$

$M_{max} = 1235\ T_N \times M$; $Q_D = 106\ T_N$; $M_{T_D} = 19\ h \times T_N$

Viga de 0'70 m ancho

Flexión

$M_o = 0'85 \times \frac{3000}{1'5} \times 0'70 \times 0{,}825 = 981\ T_N$

$\mu = \frac{123{,}5}{981 \times 0{,}825} = 0{,}153 \Rightarrow M_s = w \cdot U_o = 163{,}3\ T_N \rightarrow 7\phi 32$

Cortante

$V_d = 106\ T_N$

$V_{cu} = 22'4\ T_N$

$V_{su} = 106 - 22'4 = 83{,}6\ T_N$

$83{,}6 = 0{,}90 \times 0{,}825 \times A_\alpha \times 40000$

$A_\alpha = 28{,}2\ cm^2/ml$ 2 II ϕ16 cada 15 cm

Torsión

$b/b = 0'116 \cdot = h_e$

$A_e = (0'70 - 0'116) \times (0,82 - 0'116) = 0,41\ m^2$

$T_{u1} = 0'35 \times \frac{3000}{1'5} \times 0'116 \times 0,41 = 34,24\ T_{Nam} > T_d$ O.K.

$T_{u2} = \frac{2 \cdot A_e \cdot A_T}{s} \cdot f_H = 2 \times \frac{0,41 \times 1'57}{0'15} \times 4'20 = 36,05 > T_d$ O.K.

$T_{u3} = \frac{2 \times 0,41}{2,808}\ M_s \geq T_d \Rightarrow M_s = 65,10\ T_N$

Comprobación torsión - cortante

$$\left(\frac{T_d}{T_{u1}}\right)^{\beta} + \left(\frac{V_d}{V_{u1}}\right)^{\beta} \leq 1$$

$\beta = 2 \cdot \left(1 - \frac{h_e}{b}\right) = 2 \cdot \left(1 - \frac{0'116}{0'70}\right) = 1'67$

$V_{u1} = 0'6 \times \frac{3000}{1'5} \times 0'70 \times 0,82 \times \frac{1}{2} = 344,4\ T_N$

$\left(\frac{19}{34,24}\right)^{1'67} + \left(\frac{106}{344}\right)^{1'67} = 0,51 < 1$ O.K.

COMPROBACION ANCHURA DE FISURA

Comprobació quadres fissura

Secció central Vano 17'00 m

Ambiente tipo IIb-H $w_k \leq 0'3$ mm

Abertura característica de fissura és:

$$w_k = 1'7\ S_{sm} \cdot \varepsilon_{sm}$$

$$S_{sm} = 2c + 0'2 \cdot s + 0,4 \cdot k_1 \cdot \frac{\phi}{A_{c,eficaç}/A_s}$$

$s = 10$ cm $k_1 = \frac{\varepsilon_1 + \varepsilon_2}{8 \cdot \varepsilon_1}$ Suposem $k_1 = 0'125$ (flexió simple)

$\phi = 32$ mm $= 3'2$ cm

$A_{c,ef} = 3'70$ (ample) $\times 45 \times 3'2 \cdot 10^{-2} = 0'89$ m^2 $= 0'89 \cdot 10^4$ cm^2

$A_s = 18\ \phi 25 + 18\ \phi 32 = 88'35 + 136'72 = 225'07$ cm^2

$S_{sm} = 153'3$ cm.

$$\varepsilon_{sm} = \frac{\sigma_s}{E_s}\left(1 - k_2 \left(\frac{\sigma_{sr}}{\sigma_s}\right)^2\right) + 0'4 \cdot \frac{\sigma_s}{E_s}$$

$E_s = 2\,100\,000$ kg/cm^2 $= 3'6496 \cdot 10^{-4}$

$k_2 = 1'0$

$f_{ct,w} = 1'5\ f_{ct,k} = 30'47$ kg/cm^2

$k = 0'80$

$$A_{s,nec} = \frac{860 \text{ m.}/1'10}{115} = 193,9 \text{ cm}^2$$

$A_{s,real} = A_s = 225'07$ cm^2

$$\sigma_s = \frac{0'80 \cdot 5100}{115 \cdot 160} \times \frac{193,9}{225'07} = 1910,3 \text{ kg/cm}^2$$

$$\sigma_{sr} = \frac{6h^2}{6} \cdot \frac{f_{ct,w}}{0'9 \cdot d \cdot A_c} = 792 \text{ kg/cm}^2$$

$\varepsilon_{sm} = 7,533 \times 10^{-4}$.

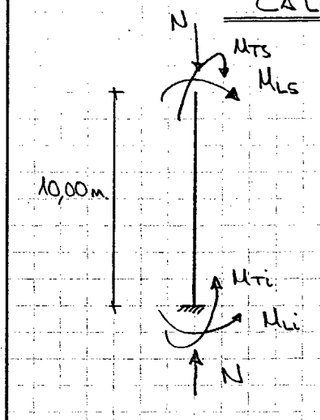
$w_k = 1'70 \cdot S_{sm} \cdot \varepsilon_{sm}$

$w_k = 1'70 \cdot 153'30 \text{(mm)} \cdot 7,533 \times 10^{-4}$

$w_k = 0,196$ mm $< 0'30$ mm ok.

CALCULO DE PILAS. CIMENTACION

CÁLCULO DE PILAS



$l_o = \alpha \times l = 1 \times 10{,}00 = 10{,}00$

Esbeltez mecánica:

$$\lambda = \frac{l_f}{i} = 45$$

$$i = \sqrt{\frac{I}{A}} = \sqrt{\frac{\pi D^4/64}{\pi D^2/4}} = \sqrt{\frac{D^2}{16}} = 0{,}225 m$$

A) AXIL MÁXIMO

$N_{d\,máx} = 500\ t$

$M_{dTS} = 31{,}47\ m\times t$
$M_{dLS} = 16{,}96\ m\times t$
$\Rightarrow M_{ds} = \sqrt{M_{dTS}^2 + M_{dLS}^2} = 35{,}75 m\times t$
$e_2 = 0{,}0715$

$M_{dTi} = 11{,}20\ m\times t$
$M_{dLi} = 24{,}00\ m\times t$
$\Rightarrow M_{di} = 26{,}48\ m\times t$
$e_1 = 0{,}0529$

$e_{TOT} = e_e + e_a$

$e_e = 0{,}6\, e_2 + 0{,}4\, e_1 = 0{,}064$

$$e_a = (1 + 0{,}12\beta)(\varepsilon_y + \varepsilon)\ \frac{h + 20\, e_e}{h + 10\, e_e}\ \frac{l_o^2}{50\, i_c}$$

$\beta = 1{,}5$ (igualmente repartida)

$$\varepsilon_y = \frac{f_{yd}}{E_s} = \frac{5100/1{,}15}{2{,}1 \times 10^6} = 2{,}11 \times 10^{-3}$$

$\varepsilon = 0{,}0045$

$i_c = 0{,}225 m.$

$e_a = 0{,}074$ m $\Rightarrow$ $e_{TOT} = 0{,}064 + 0{,}074$

$e_{TOT} = 0{,}138$ m

Por tanto:

$Md = 500 \times 0{,}138 = 69$ mxt

B) AXIL MÍNIMO

$N_{Mín} = 368$ t

$M_{TS} = 18{,}48$ mxt, $M_{LS} = 53{,}57$ mxt $\Rightarrow$ $M_S = 56{,}67$ mxt

$e_2 = 0{,}154$

$M_{Ti} = 11{,}52$ mxt, $M_{Li} = 8{,}64$ mxt $\Rightarrow$ $M_i = 14{,}4$ mxt

$e_1 = 0{,}039$

$e_e = 0{,}108$

$e_a = 0{,}076$

$e_{TOT} = 0{,}184$

$Md = 0{,}184 \times 368 = 67{,}7$ mxt

C) MOMENTO MÁXIMO

$M_{TS} = 72{,}46$ mxt $M_{LS} = 0{,}00$ $\longrightarrow$ superior $e_2 = 0{,}151$

$N_d = 299{,}4 \times 1{,}6 = 479{,}1$ t

$M_{Ti} = -35{,}43$ mxt $M_{Li} = 0{,}00$ $e_1 = 0{,}074$

$e_e = 0{,}061$

$e_a = 0{,}073$

$e_{TOT} = 0{,}134$

$Md = 479{,}1 \times 0{,}134 = 64{,}2$ txm

D) ARMADO

$$\omega = \frac{Nd}{Ac \cdot f_{cd}} \qquad \mu = \frac{Nd \cdot e_o}{Ac \cdot h \cdot f_{cd}} = \frac{Md}{Ac \cdot h \cdot f_{cd}}$$

D.1) $Nd = 500$ t $\quad Md = 69{,}00$

$Ac = \pi \times 0{,}9^2/4 = 0{,}636$ m^2

$f_{cd} = 0{,}9 \times \frac{3000}{1{,}5} = 1800$ t/m^2

$h = 0{,}9$ m

$\Rightarrow$ $\omega = 0{,}44$, $\mu = 0{,}068$, $w = 0{,}05$

D.2) $Nd = 368$ $\quad Md = 67{,}7$ mxt

$\omega = 0{,}32$ $\quad \mu = 0{,}066$

$w = 0{,}05$

D.3) $Nd = 479{,}1$ $\quad Md = 72{,}46$ mxt

$\omega = 0{,}42$ $\quad \mu = 0{,}0703$

$w = 0{,}10$

$$\omega = \frac{A_{TOT} \times f_{yd}}{Ac \times f_{cd}} \Rightarrow A_{TOT} = \frac{0{,}1 \times Ac \times f_{cd}}{f_{yd}} = 25{,}8 \text{ cm}^2$$

$14\phi 25$

COMPROBACIÓN A PUNZONAMIENTO

$u_1 = 4 \times 3{,}70 = 14{,}8$ m. $\quad Nd = 500$ t

1) ARMADURA NECESARIA

$V_{cu} = 482{,}28$ t

$V_{su} = 500 - 482{,}28 = 17{,}72$ t

$$A_{sx} = \frac{17{,}72}{0{,}9 \times 0{,}85 \times 41000} = 5{,}65 \text{ cm}^2/\text{ml}$$

- Dirección longitudinal

A_{nec} (cortante) $= 84{,}40$ cm²/ml

$A_{REAL} = 17 \times 2 \times 1{,}13 \times 5 = 192{,}1$ cm²/ml

$A_{REAL} - A_{nec} = 107{,}7$ cm²/ml

- Dirección transversal

A_{nec} (cortante) $= 26$ cm²/ml

$A_{REAL} = 113$ cm²/ml

$A_{REAL} - A_{nec} = 87$ cm²/ml

2) COMPROBACIÓN FUERA DEL PERÍMETRO ARMADO A PUNZONAMIENTO.

$$F_{sd,ef} \leq 0{,}12 \cdot \xi \cdot (100 \cdot \rho_l \cdot f_{ck})^{1/3} \cdot u_{1,ef} \cdot d$$

$u_{1,ef} = 2 \times (6{,}1 + 3{,}7) = 19{,}6$ m.

$\rho_l = 0{,}0054$

$$1{,}15 \times 500 \times 10^4 \leq 0{,}12 \times \left(1 + \sqrt{\frac{200}{850}}\right) \times (100 \times 0{,}0054 \times 30)^{1/3} \times 19600 \times 850$$

$5.750.000 \leq 7.512.340$ ⌣ O.K

3) RESISTENCIA MÁXIMA.

$$\left.\begin{aligned} \frac{F_{sd,ef}}{u_0 \times d} &= \frac{1{,}15 \times 500}{\pi \times 0{,}9 \times 0{,}85} = 240 \text{ t/m}^2 \\ f_{lcd} &= 0{,}30 \times \frac{3000}{1{,}5} = 600 \text{ t/m}^2 \end{aligned}\right\} \text{O.K.}$$

CÁLCULO ZAPATA

Tensión admisible = 5 kp/cm²

a) Axil Máximo

N = 334 t M_x = 7,00 mxt M_y = 15,00 mxt

b) Momento Máximo

N = 299 t M_x = 22,14 mxt M_y = 0,00 mxt

Zapata cuadrada de 3,00 x 3,00 m x 1,00 m de canto.

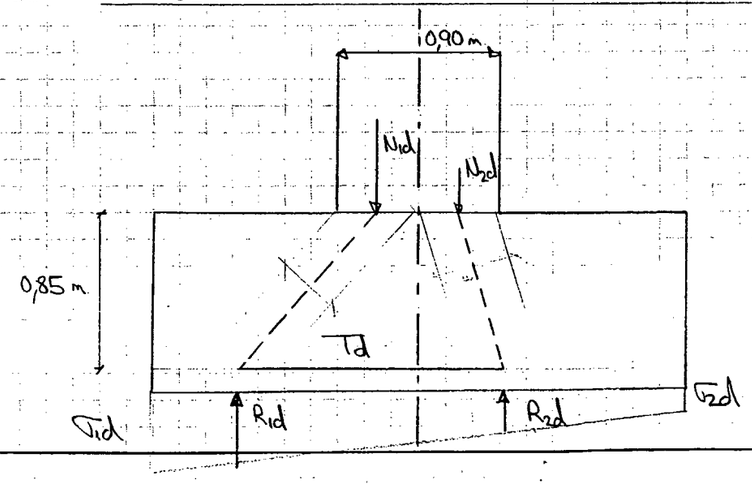
1) TENSIONES EN EL TERRENO.

$\sigma_{máx}$ = 4,51 kp/cm² < 1,25 x σ_{adm}

$\sigma_{mín}$ = 3,46 kp/cm²

σ_{med} = 3,98 kp/cm² < σ_{adm}

MODELO DE BIELAS Y TIRANTES



$$T_d = \frac{R_{1d}}{0{,}85d}(x_1 - 0{,}25a)$$

$$\sigma_{1d} = \frac{568}{9} + \frac{35{,}42 \times 1{,}5}{1/12 \times 3^4} = 70{,}98 \ t/m^2$$

$$\sigma_{2d} = \frac{568}{9} - \frac{35{,}42 \times 1{,}5}{1/12\ 3^4} = 55{,}24 \ t/m^2$$

x_1 = 0,764 m. a = 0,9 m. X_2 = 0,731

R_{1d} = 362 t

T_d = 237 t → ϕ 20 / 175

COMPROBACIÓN DE LAS BIELAS:

A_c = 0,40 x 0,90 = 0,36 m²

$f_{1cd} = 0{,}85 \times f_{cd} = 0{,}85 \times \frac{2500}{1{,}5} = 1416 \ t/m^2$

$R_B = A_c \times f_{1cd}$ = 510 t

C_B = 486 t

$C_B < R_B$ O.K.

COMPROBACIÓN DE NUDO

NUDO CON TIRANTE ANCLADO

$\sigma_{c1} = \frac{362}{3 \times 0{,}3} = 402{,}2 \ t/m^2$

$f_{2cd} = 0{,}70 \times f_{cd} = 1167 \ t/m^2$

$\sigma_{c1} < f_{2cd}$ O.K.

REACCIONES PARA CALCULO DE ESTRIBOS

REACCIONES EN LOS ESTRIBOS

REACCIONES VERTICALES	
Peso Propio tablero	49 t
Peso Superestructura (Resto C.P.)	16,68 t
Reacción Hip. de Pretensado	—
Reacción Máxima SC.	61,56 t
Reacción Mínima SC.	−8,30 t
Gradiente térmico	—
Otras	—
REACCIONES HORIZONTALES LONGITUDINALES	
Reacción debida al frenado	7,4 t
Deformaciones impuestas	—
Rozamiento, sismo, otras	—
REACCIONES HORIZONTALES TRANSVERSALES	
Reacción viento transversal	13,32 t
Fuerza centrífuga	—
Rozamiento, sismo, otras	—

CALCULO DE ESTRIBOS

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PROGRAMA  ESTRIBOS

CALCULO Y ARMADO DE ESTRIBOS DE PUENTE

VERSION Nº 1     FECHA : 12/10/1995

Copyright :  J.Diaz del Valle, 1995

E.T.S. de I.C.C. y P.  de Santander
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DATOS DEL PROYECTO DEL ESTRIBO

PROYECTO : AVE LLEIDA-MARTORELL

REFERENCIA : P.K.303+200. ESTRIBO 1.

FECHA DEL CALCULO : 22-9-99
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DATOS DEL ESTRIBO

ESTRIBO 1

-Datos geométricos:

H1= 3.05	H2= 0.00	H3= 0.00	H4= 1.00	H5= 0.00 m.
H6= 0.00	H7= 1.00	H8= 0.00	H9= 2.00	H10= 0.00 m.
B1= 1.05	B2= 0.80	B3= 1.45	B4= 0.00	B5= 0.00 m.
B6= 0.50	B7= 0.00	B8= 0.00	B9= 0.00	HY= 0.00 m.
C1= 0.35	C2= 0.45	C3= 0.00	C4= 0.25	C5= 0.25 m.
D1= 0.00	D2= 0.00	D3= 0.95	D4= 0.95	D5= 0.25 m.
D6= 0.25				
A1= 1.25	A2= 0.20	A3= 0.35	A4= 0.60	A5= 0.25 m.
E1= 7.90	E2= 7.70	E3= 0.30	E4= 0.00	E5= 0.30 m.
E6= 0.30	E7= 0.00	E8= 0.00	E9= 0.95	E10= 6.00 m.

-Caracteristicas de los materiales:

Peso especifico del hormigón (t/m3) ..... γ_h = 2.50
Resistencia del hormigón del alzado (Kp/cm²) ..... fck = 250
Resistencia del hormigón de la zapata (Kp/cm²) ..... fck = 250
Limite elástico del acero (Kp/cm²) ..... fyk = 5100
Recubrimiento de las armaduras (m) ..... r = 0.05
Se incluyen las cuantias geométricas minimas
Coeficiente de minoración resistencia hormigón ..... γ_c = 1.50
Coeficiente de minoración resistencia acero ..... γ_s = 1.15
Coeficiente de mayoración de las acciones ..... γ_f = 1.60

-Caracteristicas del terreno:

Terreno sobre talón:
Peso especifico de las tierras (t/m3) ..... γ_t = 1.80
Angulo de rozamiento interno de las tierras (°) ..... ϕ = 30.00
Angulo de rozamiento entre las tierras y el muro (°) .... δ = 0.00
Coeficiente de empuje activo calculado segun Coulomb ... Kax = 0.333
Cohesión de las tierras (t/m²) ..... c = 0.00
Terreno sobre puntera :
Peso especifico de las tierras (t/m3) ..... γ_t = 1.80
Angulo de rozamiento interno de las tierras (°) ..... ϕ = 30.00
Angulo de rozamiento entre las tierras y el muro (°) .... δ = 0.00
Coeficiente de empuje pasivo de las tierras ..... Kpx = 3.000

Terreno de cimentación :
Coeficiente de rozamiento entre el cimiento y el suelo .. μ = 0.577
Adherencia entre el cimiento y el suelo (t/m²) ..... a = 0.00

Angulo de la superficie del terreno con la horizontal ... β = 0.00°

-Sobrecargas:

Carga por unidad de longitud de talud (t/m²) ..... q = 1.00
No se considera la acción sismica .....

-Acciones del tablero sobre el estribo :

Reacciones verticales (t) y excentricidades transversales (m) :

Reaccion del peso propio del tablero ... Rpp = 49.00 , Exc.= 0.00
Reaccion del peso de la superestructura. Rse = 16.68 , Exc.= 0.00
Reaccion hiperestática de pretensado ... Rhp = 0.00 , Exc.= 0.00
Reaccion máxima de la sobrecarga ..... Rma = 51.56 , Exc.= 0.00
Reaccion mínima de la sobrecarga ..... Rmi = -8.30 , Exc.= 0.00
Reaccion debida al gradiente térmico ... Rgt = 0.00 , Exc.= 0.00
Reaccion debidas a otras acciones ..... Rot = 0.00 , Exc.= 0.00

Reacciones horizontales longitudinales (t) :

Reaccion debida al frenado (+ -) ..... Rfx = 7.40
Reaccion debida a las deformaciones impuestas ..... Rdx = 0.00
Reacciones debidas a otras causas (Rozam.,sismo,etc) . Rox = 0.00

Reacciones horizontales transversales (t) :

Reaccion debida al viento ..... Rvy = 13.32
Reaccion debida a la fuerza centrifuga ..... Rcy = 0.00
Reacciones debidas a otras causas (Rozam.,sismo,etc) , Roy = 0.00

ACCIONES SOBRE EL ESTRIBO

Las acciones actuantes sobre el estribo tienen el siguiente origen:

a) Peso propio del estribo.
b) Acciones del tablero.
c) Empuje y peso de las tierras.

Estas acciones pueden ser verticales Fz ,horizontales longitudinales Fx ,y horizontales transversales Fy. En las tablas que siguen, se recogen las citadas acciones junto con los momentos Ma ,Mx, y My :

Ma : Momento respecto a la puntera del estribo.Se utiliza para la comprobación de seguridad al vuelco.

Mx, My: Momentos respecto al c.d.g de la zapata. Se utilizan para el cálculo de las tensiones sobre el terreno.

a) PESO PROPIO DEL ESTRIBO

Zona	Volumen (m3)	Peso Fz (t)	Ma (txm)	My (txm)
Muro frontal	23.40	58.51	-81.03	26.73
Muro de guarda	1.69	4.22	-6.91	0.32
Muros en vuelta	5.52	13.80	-22.77	-2.07
Aletas en voladizo	0.17	0.41	-1.23	-0.61
Contrafuertes aleta	0.00	0.00	0.00	0.00
Impostas	0.00	0.00	0.00	0.00
Macizos caquejeado	0.00	0.00	0.00	0.00
Zapata	23.70	59.25	-88.88	0.00
TOTAL	54.47	136.19	-179.91	24.37

b) ACCIONES DEL TABLERO

b1) Reacciones verticales:

Se consideran las reacciones del tablero en los siguientes casos:

-Caso permanente: Incluye las reacciones del peso propio del tablero y de la superestructura, las reacciones hiperestáticas de pretensado y otras acciones permanentes.

-Caso máximo: Incluye la suma de las reacciones de las acciones permanentes y las reacciones máximas de las sobrecargas variables.

-Caso mínimo: Incluye la suma de las reacciones de las acciones permanentes y las reacciones mínimas de las sobrecargas variables.

Reacción	Axil Fz (t)	Ma (txm)	My (txm)
Permanente	65.88	-55.83	42.69
Máxima	127.24	-108.15	82.71
Mínima	57.38	-48.77	37.30

b2) Reacciones horizontales longitudinales:

Las reacciones horizontales que ejerce el tablero provienen de movimientos impuestos, frenado,sismo , rozamiento de apoyos y de otras acciones.

El valor máximo considerado para estas acciones es:

Reacción Longitudinal	Fx (t)	Ma (txm)	My (txm)
Máxima	7.40	29.97	29.97

b3) Reacciones horizontales transversales:

Estas reacciones provienen de dos tipos de fuerzas:

-Fuerzas transversales:

Son debidas a las acciones de viento y sismo, y a la fuerza centrífuga de los vehículos que circulan por el tablero :

Fy = 13.32 t. ; Mx = 53.95 txm.

-Fuerzas verticales:

Debido a la excentricidad transversal de las reacciones verticales, se produce un momento transversal Mx :

. Para reacción vertical permanente .. Mx = 0.00 txm.
. Para reacción vertical máxima ..... Mx = 0.00 txm.
. Para reacción vertical mínima ..... Mx = 0.00 txm.

c) EMPUJE Y PESO DE TIERRAS

c1) Acciones horizontales:

Acción	Fuerza Fx (t)	Ma (txm)	My (txm)
Empuje de tierras.	44.59	74.31	74.31
Empuje de sobrecarga.	12.83	32.08	32.08
Empuje del agua.	0.00	0.00	0.00
Empuje total sobre trasdós.	57.42	106.40	106.40
Empuje pasivo frente puntera.	83.16	55.44	55.44

c2) Acciones verticales:

Acción	Fuerza Fz (t)	Ma (txm)	My (txm)
Peso tierras sobre talón.	73.33	-169.66	-59.67
Peso tierras sobre puntera.	6.39	-1.60	7.99
Sobrecarga sobre terraplen.	10.30	-23.42	-7.98
Rozamiento vertical tierras.	0.00	0.00	0.00
Resultante total vertical.	90.01	-194.68	-59.66

COMPROBACION DE ESTABILIDAD

Se consideran las siguientes hipótesis para las comprobaciones al vuelco y deslizamiento :

Hipótesis 1 : Construcción. Situación de estribo con relleno antes de construir el tablero.

Hipótesis 2 : Construcción. Situación de tablero construido antes del relleno del estribo.

Hipótesis 3 : Servicio. Se considera la hipótesis más desfavorable que corresponde al mínimo valor de la reacción vertical del tablero.

Hipótesis Nº	Coeficientes de seguridad Vuelco	Deslizamiento
1	7.351	3.071
2	7.866	7.844
3	5.232	7.219

El coeficiente de seguridad al vuelco se obtiene a partir de los momentos Ma respecto de la puntera de la zapata.Se distinguen momentos volcadores y estabilizadores.El coeficiente de seguridad se obtiene como cociente entre estos momentos.

El mínimo coeficiente de seguridad al vuelco es mayor que 2, y por tanto se cumple la seguridad al vuelco.

El coeficiente de seguridad al deslizamiento se obtiene como cociente entre la fuerza estabilizadora y la desestabilizadora. La primera es la fuerza de rozamiento obtenida como producto de las fuerzas verticales por un coeficiente de rozamiento igual a

$$\mu = tg\ \phi = 0.577$$

en donde ϕ es el ángulo de rozamiento entre la zapata y terreno. También se consideran como fuerzas estabilizadoras,la fuerza de adherencia suelo-zapata, el empuje pasivo frente a puntera, la existencia de tacón y la inclinación de la base de la zapata.

La fuerza desestabilizadora es la resultante de las fuerzas horizontales tanto longitudinales como transversales.

El mínimo coeficiente de seguridad al deslizamiento es mayor que 1.5 ,cumpliéndose por tanto la seguridad al deslizamiento.

ESTADO TENSIONAL EN EL TERRENO

Se consideran las siguientes hipótesis para el cálculo de las tensiones en el terreno :

Hipótesis 1 : Construcción. Se supone que el relleno se ejecuta antes que el tablero.

Hipótesis 2 : Construcción. Se supone que el tablero se ejecuta antes que el relleno.

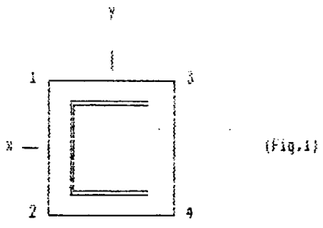
Hipótesis 3 : Servicio, con reacción de tablero mínima y acciones horizontales máximas.

Hipótesis 4 : Servicio, con reacción de tablero mínima y acciones longitudinales nulas.

Hipótesis 5 : Servicio, con reacción de tablero máxima y acciones longitudinales nulas.

Hipótesis 6 : Servicio, con reacción de tablero máxima y acciones horizontales máximas.

Las tensiones σ1,σ2,σ3,σ4 del terreno en las 4 esquinas de la base de la zapata (figura 1),



(Fig.1)

se obtienen a partir de la fórmula de flexocompresión:

$$\sigma = \frac{N}{A} + \frac{Mx}{-Wx} + \frac{My}{-Wy}$$

donde N , Mx , My , son los esfuerzos en la base de la zapata , y

A = 23.70 m2 , Wx= 31.20 m3 , Wy = 11.85 m3

son las características mecánicas de la base de la zapata.

La expresión anterior solamente es válida en el caso de que toda la planta resulte comprimida. En otro caso, y dado que el terreno no puede soportar tracción alguna, el programa calcula las tensiones del terreno de manera iterativa.

El proceso iterativo anterior, se detiene cuando la resultante de las tensiones obtenidas, sea sensiblemente igual a los esfuerzos que solicitan a la base de la zapata.

La tensión media, se obtiene según la expresión : $\sigma med = \frac{N}{A}$

Siguiendo esta formulación,resulta la siguiente tabla que resume el estado tensional correspondiente a las 6 hipótesis anteriores :

ESFUERZOS DE ZAPATA Y TENSIONES DEL TERRENO

Hip	N (t)	Mx (txm)	My (txm)	σ1 (t/m²)	σ2 (t/m²)	σ3 (t/m²)	σ4 (t/m²)	σmed (t/m²)
1	268.20	0.00	126.54	21.99	21.99	0.64	0.64	11.32
2	243.37	53.95	97.03	20.21	16.75	3.83	0.37	10.29
3	325.38	53.95	195.81	31.82	28.36	0.00	0.00	15.74
4	325.38	53.95	2.00	15.64	12.18	15.30	11.84	13.74
5	393.44	53.95	47.41	22.41	18.96	14.41	10.96	16.69
6	395.44	53.95	239.22	38.60	35.14	0.00	0.00	16.69

ANALISIS ESTRUCTURAL DEL ESTRIBO COMO EMPARRILLADO ESPACIAL

DIMENSIONES Y CARACTERISTICAS MECANICAS DE LAS BARRAS

Barra Nº	i Nº	j Nº	Long. (m.)	Canto (m.)	Ancho (m.)	Area (m²)	Iner.1 (m4)	Iner.2 (m4)
1	1	2	0.57	1.05	0.31	0.324	0.003	0.030
2	2	3	0.57	1.05	0.31	0.324	0.003	0.030
3	3	4	0.57	1.05	0.31	0.324	0.003	0.030
4	4	5	0.57	1.05	0.31	0.324	0.003	0.030
5	5	6	0.57	1.07	0.31	0.330	0.003	0.032
6	6	7	0.57	0.25	0.31	0.077	0.001	0.000
7	7	8	0.57	0.25	0.31	0.077	0.001	0.000
8	9	10	0.57	1.05	0.62	0.647	0.021	0.059
9	10	11	0.57	1.05	0.62	0.647	0.021	0.059
10	11	12	0.57	1.05	0.62	0.647	0.021	0.059
11	12	13	0.57	1.05	0.62	0.647	0.021	0.059
12	13	14	0.57	1.07	0.62	0.661	0.021	0.063
13	14	15	0.57	0.25	0.62	0.154	0.005	0.001
14	15	16	0.57	0.25	0.62	0.154	0.005	0.001
15	17	18	0.57	1.05	0.62	0.647	0.021	0.059
16	18	19	0.57	1.05	0.62	0.647	0.021	0.059
17	19	20	0.57	1.05	0.62	0.647	0.021	0.059
18	20	21	0.57	1.05	0.62	0.647	0.021	0.059
19	21	22	0.57	1.07	0.62	0.661	0.021	0.063
20	22	23	0.57	0.25	0.62	0.154	0.005	0.001
21	23	24	0.57	0.25	0.62	0.154	0.005	0.001
22	25	26	0.57	1.05	0.62	0.647	0.021	0.059
23	26	27	0.57	1.05	0.62	0.647	0.021	0.059
24	27	28	0.57	1.05	0.62	0.647	0.021	0.059
25	28	29	0.57	1.05	0.62	0.647	0.021	0.059
26	29	30	0.57	1.07	0.62	0.661	0.021	0.063
27	30	31	0.57	0.25	0.62	0.154	0.005	0.001
28	31	32	0.57	0.25	0.62	0.154	0.005	0.001
29	33	34	0.57	1.05	0.62	0.647	0.021	0.059
30	34	35	0.57	1.05	0.62	0.647	0.021	0.059
31	35	36	0.57	1.05	0.62	0.647	0.021	0.059
32	36	37	0.57	1.05	0.62	0.647	0.021	0.059
33	37	38	0.57	1.07	0.62	0.661	0.021	0.063
34	38	39	0.57	0.25	0.62	0.154	0.005	0.001
35	39	40	0.57	0.25	0.62	0.154	0.005	0.001
36	41	42	0.57	1.05	0.62	0.647	0.021	0.059
37	42	43	0.57	1.05	0.62	0.647	0.021	0.059
38	43	44	0.57	1.05	0.62	0.647	0.021	0.059
39	44	45	0.57	1.05	0.62	0.647	0.021	0.059
40	45	46	0.57	1.07	0.62	0.661	0.021	0.063
41	46	47	0.57	0.25	0.62	0.154	0.005	0.001
42	47	48	0.57	0.25	0.62	0.154	0.005	0.001
43	49	50	0.57	1.05	0.31	0.324	0.003	0.030
44	50	51	0.57	1.05	0.31	0.324	0.003	0.030

45	51	52	0.57	1.05	0.31	0.324	0.003	0.030
46	52	53	0.57	1.05	0.31	0.324	0.003	0.030
47	53	54	0.57	1.07	0.31	0.330	0.003	0.032
48	54	55	0.57	1.05	0.31	0.324	0.003	0.030
49	55	56	0.57	1.05	0.31	0.324	0.003	0.030
50	57	58	0.57	0.30	0.57	0.172	0.005	0.001
51	58	59	0.57	0.30	0.57	0.172	0.005	0.001
52	59	60	0.57	0.30	0.57	0.172	0.005	0.001
53	60	61	0.57	0.30	0.57	0.172	0.005	0.001
54	61	62	0.57	0.30	0.57	0.172	0.005	0.001
55	62	63	0.57	0.30	0.57	0.172	0.005	0.001
56	63	64	0.57	0.30	0.57	0.172	0.005	0.001
57	65	66	0.57	0.30	0.77	0.231	0.011	0.002
58	66	67	0.57	0.30	0.77	0.231	0.011	0.002
59	67	68	0.57	0.30	0.77	0.231	0.011	0.002
60	68	69	0.57	0.30	0.77	0.231	0.011	0.002
61	69	70	0.57	0.30	0.77	0.231	0.011	0.002
62	70	71	0.57	0.30	1.02	0.306	0.027	0.002
63	71	72	0.57	0.30	1.02	0.306	0.027	0.002
64	1	9	0.62	1.05	0.29	0.300	0.002	0.028
65	9	17	0.62	1.05	0.29	0.300	0.002	0.028
66	17	25	0.62	1.05	0.29	0.300	0.002	0.028
67	25	33	0.62	1.05	0.29	0.300	0.002	0.028
68	33	41	0.62	1.05	0.29	0.300	0.002	0.028
69	41	49	0.62	1.05	0.29	0.300	0.002	0.028
70	49	57	0.57	0.30	0.29	0.086	0.001	0.001
71	57	65	0.57	0.30	0.29	0.086	0.001	0.001
72	2	10	0.62	1.05	0.57	0.600	0.016	0.055
73	10	18	0.62	1.05	0.57	0.600	0.016	0.055
74	18	26	0.62	1.05	0.57	0.600	0.016	0.055
75	26	34	0.62	1.05	0.57	0.600	0.016	0.055
76	34	42	0.62	1.05	0.57	0.600	0.016	0.055
77	42	50	0.62	1.05	0.57	0.600	0.016	0.055
78	50	58	0.57	0.30	0.57	0.171	0.005	0.001
79	58	66	0.57	0.30	0.57	0.171	0.005	0.001
80	3	11	0.62	1.05	0.57	0.600	0.016	0.055
81	11	19	0.62	1.05	0.57	0.600	0.016	0.055
82	19	27	0.62	1.05	0.57	0.600	0.016	0.055
83	27	35	0.62	1.05	0.57	0.600	0.016	0.055
84	35	43	0.62	1.05	0.57	0.600	0.016	0.055
85	43	51	0.62	1.05	0.57	0.600	0.016	0.055
86	51	59	0.57	0.30	0.57	0.171	0.005	0.001
87	59	67	0.57	0.30	0.57	0.171	0.005	0.001
88	4	12	0.62	1.05	0.57	0.600	0.016	0.055
89	12	20	0.62	1.05	0.57	0.600	0.016	0.055
90	20	28	0.62	1.05	0.57	0.600	0.016	0.055
91	28	36	0.62	1.05	0.57	0.600	0.016	0.055
92	36	44	0.62	1.05	0.57	0.600	0.016	0.055
93	44	52	0.62	1.05	0.57	0.600	0.016	0.055
94	52	60	0.57	0.30	0.57	0.171	0.005	0.001
95	60	68	0.57	0.30	0.57	0.171	0.005	0.001
96	5	13	0.62	1.05	0.57	0.600	0.016	0.055
97	13	21	0.62	1.05	0.57	0.600	0.016	0.055
98	21	29	0.62	1.05	0.57	0.600	0.016	0.055
99	29	37	0.62	1.05	0.57	0.600	0.016	0.055

100	37	45	0.62	1.05	0.57	0.600	0.016	0.055
101	45	53	0.62	1.05	0.57	0.600	0.016	0.055
102	53	61	0.57	0.30	0.57	0.171	0.005	0.001
103	61	69	0.57	0.30	0.57	0.171	0.005	0.001
104	6	14	0.62	1.12	0.57	0.638	0.017	0.066
105	14	22	0.62	1.12	0.57	0.638	0.017	0.066
106	22	30	0.62	1.12	0.57	0.638	0.017	0.066
107	30	38	0.62	1.12	0.57	0.638	0.017	0.066
108	38	46	0.62	1.12	0.57	0.638	0.017	0.066
109	46	54	0.62	1.12	0.57	0.638	0.017	0.066
110	54	62	0.57	0.30	0.57	0.171	0.005	0.001
111	62	70	0.57	0.30	0.57	0.171	0.005	0.001
112	7	15	0.62	0.25	0.57	0.143	0.004	0.001
113	15	23	0.62	0.25	0.57	0.143	0.004	0.001
114	23	31	0.62	0.25	0.57	0.143	0.004	0.001
115	31	39	0.62	0.25	0.57	0.143	0.004	0.001
116	39	47	0.62	0.25	0.57	0.143	0.004	0.001
117	47	55	0.62	0.25	0.57	0.143	0.004	0.001
118	55	63	0.57	0.30	0.57	0.171	0.005	0.001
119	63	71	0.57	0.30	0.57	0.171	0.005	0.001
120	8	16	0.62	0.30	0.29	0.086	0.001	0.001
121	16	24	0.62	0.30	0.29	0.086	0.001	0.001
122	24	32	0.62	0.30	0.29	0.086	0.001	0.001
123	32	40	0.62	0.30	0.29	0.086	0.001	0.001
124	40	48	0.62	0.30	0.29	0.086	0.001	0.001
125	48	56	0.62	0.30	0.29	0.086	0.001	0.001
126	56	64	0.57	0.30	0.29	0.086	0.001	0.001
127	64	72	0.57	0.30	0.29	0.086	0.001	0.001
128	73	74	0.57	0.30	1.00	0.302	0.025	0.002
129	71	73	1.00	0.30	0.57	0.171	0.005	0.001
130	72	74	1.00	0.30	0.29	0.086	0.001	0.001
131	74	75	1.00	0.30	0.29	0.086	0.001	0.001
132	70	73	1.16	0.30	0.57	0.171	0.005	0.001
133	73	75	1.16	0.30	0.57	0.171	0.005	0.001

Hipótesis (1) : Peso propio del muro y aletas del estribo

DESPLAZAMIENTOS DE LOS NUDOS

Nudo Nº	Desp1.y (mm)	Desp1.x (mm)	Desp1.z (mm)	Giro y 1000xrad	Giro x 1000xrad	Giro z 1000xrad
1	-0.000	-0.000	0.000	-0.000	-0.000	-0.000
2	-0.000	-0.000	0.001	-0.000	-0.000	-0.000
3	-0.000	-0.000	0.002	-0.000	-0.000	-0.000
4	0.000	-0.001	0.003	-0.001	-0.000	-0.000
5	0.000	-0.001	0.004	-0.001	-0.000	-0.000
6	0.000	-0.001	0.004	-0.001	-0.000	-0.000
7	0.000	-0.002	0.004	-0.002	-0.000	-0.000
8	0.000	-0.003	0.005	-0.002	-0.000	-0.000
9	-0.000	-0.000	0.000	-0.000	0.000	-0.000
10	-0.000	-0.000	0.001	-0.000	-0.000	-0.000
11	-0.000	-0.000	0.002	-0.000	-0.000	-0.000
12	0.000	-0.001	0.003	-0.001	-0.000	-0.000
13	0.000	-0.001	0.004	-0.001	-0.000	-0.000
14	0.000	-0.001	0.004	-0.001	-0.000	-0.000
15	0.000	-0.002	0.004	-0.002	-0.000	-0.000
16	0.000	-0.003	0.005	-0.002	-0.000	-0.000
17	-0.000	-0.000	0.000	-0.000	0.000	-0.000
18	-0.000	-0.000	0.001	-0.000	-0.000	-0.000
19	-0.000	-0.000	0.002	-0.000	-0.000	-0.000
20	0.000	-0.001	0.003	-0.001	-0.000	-0.000
21	0.000	-0.001	0.004	-0.001	-0.000	-0.000
22	0.000	-0.002	0.004	-0.001	-0.000	-0.000
23	0.000	-0.002	0.005	-0.002	-0.000	-0.001
24	0.000	-0.004	0.005	-0.002	-0.000	-0.001
25	-0.000	-0.000	0.000	-0.000	0.000	-0.000
26	-0.000	-0.000	0.001	-0.000	-0.000	-0.000
27	-0.000	-0.000	0.002	-0.001	-0.000	-0.000
28	0.000	-0.001	0.003	-0.001	-0.000	-0.000
29	0.000	-0.001	0.004	-0.001	-0.000	-0.000
30	0.000	-0.002	0.004	-0.001	-0.000	-0.001
31	0.000	-0.003	0.005	-0.002	-0.000	-0.001
32	0.000	-0.004	0.005	-0.003	-0.000	-0.001
33	-0.000	-0.000	0.000	-0.000	0.000	-0.000
34	-0.000	-0.000	0.001	-0.000	-0.000	-0.000
35	-0.000	-0.000	0.003	-0.001	-0.000	-0.000
36	0.000	-0.001	0.003	-0.001	-0.000	-0.000
37	0.000	-0.002	0.004	-0.001	-0.000	-0.000
38	0.000	-0.002	0.004	-0.001	-0.000	-0.001
39	0.000	-0.003	0.005	-0.003	-0.000	-0.001
40	0.000	-0.005	0.005	-0.003	-0.000	-0.001
41	-0.000	0.000	0.000	-0.000	0.000	-0.000
42	-0.000	-0.000	0.001	-0.000	0.000	-0.000
43	-0.000	-0.000	0.003	-0.001	-0.000	-0.000
44	-0.000	-0.001	0.004	-0.001	-0.000	-0.000
45	0.000	-0.002	0.004	-0.002	-0.000	-0.001

46	0.000	-0.003	0.004	-0.002	-0.000	-0.001
47	0.000	-0.004	0.005	-0.003	-0.000	-0.001
48	0.000	-0.006	0.005	-0.003	-0.000	-0.002
49	-0.000	0.000	0.000	-0.000	0.000	0.000
50	-0.000	-0.000	0.001	-0.000	-0.000	0.000
51	-0.000	-0.001	0.003	-0.001	-0.000	-0.000
52	-0.000	-0.001	0.004	-0.001	-0.000	-0.000
53	0.000	-0.002	0.004	-0.002	-0.000	-0.000
54	0.000	-0.004	0.005	-0.003	-0.001	-0.001
55	0.000	-0.005	0.005	-0.003	-0.000	-0.001
56	0.000	-0.007	0.005	-0.003	-0.000	-0.001
57	-0.000	0.000	0.000	0.000	0.000	-0.000
58	-0.000	-0.000	0.002	-0.001	0.000	-0.000
59	-0.000	-0.000	0.003	-0.001	0.000	-0.000
60	-0.000	-0.001	0.005	-0.002	0.000	-0.000
61	-0.000	-0.002	0.006	-0.002	-0.000	-0.000
62	-0.000	-0.003	0.006	-0.003	-0.000	-0.000
63	-0.000	-0.005	0.007	-0.003	-0.000	-0.000
64	-0.000	-0.006	0.007	-0.004	-0.000	-0.000
65	-0.000	0.000	0.000	0.000	0.000	-0.000
66	-0.000	-0.000	0.002	-0.000	0.000	-0.000
67	-0.000	-0.000	0.004	-0.001	0.000	-0.000
68	-0.000	-0.001	0.005	-0.002	0.000	-0.000
69	-0.000	-0.002	0.007	-0.002	0.000	-0.000
70	-0.000	-0.003	0.008	-0.004	-0.000	-0.000
71	-0.000	-0.006	0.009	-0.004	-0.000	-0.000
72	-0.000	-0.008	0.009	-0.004	-0.000	-0.000
73	-0.000	-0.006	0.015	-0.006	-0.000	-0.000
74	-0.000	-0.009	0.015	-0.005	-0.000	-0.000
75	-0.001	-0.009	0.020	-0.005	-0.000	-0.000

ESFUERZOS EN LAS BARRAS

Barra Nº	i Nº	j Nº	Axil (t.)	Cort.1 (t.)	Cort.2 (t.)	Flec.1i (txm)	Flec.1j (txm)	Flec.2i (txm)	Flec.2j (txm)
1	1	2	2.31	-0.00	0.01	0.00	0.00	0.04	-0.03
2	2	3	1.85	0.00	0.01	-0.00	-0.00	0.03	-0.03
3	3	4	1.38	0.00	0.01	-0.00	-0.00	0.03	-0.02
4	4	5	0.92	0.00	0.01	-0.00	-0.00	0.02	-0.01
5	5	6	0.45	0.00	0.01	-0.00	-0.00	0.01	-0.01
6	6	7	0.16	-0.00	0.00	0.00	0.00	0.00	-0.00
7	7	8	0.05	-0.00	0.00	0.00	0.00	0.00	-0.00
8	9	10	4.64	-0.01	0.02	0.00	0.00	0.08	-0.07
9	10	11	3.70	-0.01	0.02	0.00	0.00	0.07	-0.06
10	11	12	2.77	-0.01	0.02	0.00	0.00	0.05	-0.04
11	12	13	1.84	0.00	0.02	-0.00	0.00	0.04	-0.03
12	13	14	0.91	0.01	0.01	-0.00	-0.00	0.02	-0.01
13	14	15	0.33	0.00	0.00	-0.00	-0.00	0.01	-0.00
14	15	16	0.11	0.00	0.00	-0.00	-0.00	0.00	-0.00
15	17	18	4.67	-0.03	0.02	0.01	0.01	0.09	-0.08
16	18	19	3.73	-0.03	0.02	0.01	0.01	0.08	-0.07
17	19	20	2.79	-0.02	0.02	0.00	0.01	0.06	-0.05
18	20	21	1.85	-0.00	0.02	-0.00	0.00	0.04	-0.03

19	21	22	0.91	0.01	0.02	-0.00	-0.00	0.02	-0.02
20	22	23	0.33	0.00	0.00	-0.00	-0.00	0.01	-0.00
21	23	24	0.11	0.00	0.00	-0.00	-0.00	0.00	-0.00
22	25	26	4.73	-0.05	0.02	0.01	0.02	0.11	-0.09
23	26	27	3.78	-0.05	0.02	0.01	0.02	0.09	-0.08
24	27	28	2.83	-0.04	0.03	0.01	0.02	0.08	-0.06
25	28	29	1.88	-0.02	0.03	0.00	0.01	0.06	-0.04
26	29	30	0.93	0.00	0.02	-0.00	0.00	0.03	-0.02
27	30	31	0.34	0.00	0.00	-0.00	0.00	0.01	-0.00
28	31	32	0.11	-0.00	0.00	0.00	0.00	0.00	-0.00
29	33	34	4.81	-0.07	0.02	0.02	0.02	0.12	-0.11
30	34	35	3.86	-0.07	0.02	0.02	0.03	0.11	-0.10
31	35	36	2.91	-0.07	0.03	0.02	0.03	0.10	-0.09
32	36	37	1.95	-0.06	0.04	0.01	0.02	0.08	-0.06
33	37	38	0.96	-0.03	0.04	0.00	0.01	0.05	-0.03
34	38	39	0.35	-0.01	0.01	0.00	0.00	0.01	-0.00
35	39	40	0.11	-0.01	0.00	0.00	0.00	0.00	-0.00
36	41	42	4.90	-0.08	-0.01	0.02	0.02	0.13	-0.13
37	42	43	3.98	-0.09	-0.00	0.02	0.03	0.13	-0.13
38	43	44	3.05	-0.11	0.01	0.02	0.04	0.13	-0.13
39	44	45	2.10	-0.13	0.04	0.03	0.05	0.13	-0.11
40	45	46	1.10	-0.13	0.10	0.02	0.05	0.10	-0.04
41	46	47	0.35	-0.04	0.01	0.01	0.01	0.01	-0.00
42	47	48	0.11	-0.02	0.00	0.01	0.00	0.00	0.00
43	49	50	2.51	-0.02	-0.04	0.00	0.01	0.06	-0.08
44	50	51	2.07	-0.03	-0.03	0.01	0.01	0.07	-0.09
45	51	52	1.63	-0.03	-0.03	0.01	0.01	0.07	-0.09
46	52	53	1.19	-0.04	-0.03	0.01	0.01	0.08	-0.10
47	53	54	0.79	-0.05	0.02	0.01	0.02	0.11	-0.10
48	54	55	0.52	-0.05	0.25	0.01	0.00	0.17	-0.03
49	55	56	0.20	-0.01	0.13	0.00	0.00	0.07	0.01
50	57	58	1.65	-0.01	-0.02	0.00	0.00	-0.00	-0.01
51	58	59	1.41	-0.01	-0.03	0.00	0.00	-0.00	-0.01
52	59	60	1.19	-0.01	-0.05	0.00	0.00	-0.01	-0.02
53	60	61	0.95	-0.01	-0.07	0.00	0.01	-0.01	-0.02
54	61	62	0.65	-0.02	-0.06	0.00	0.01	-0.01	-0.02
55	62	63	0.41	-0.01	0.04	0.00	0.00	0.01	0.01
56	63	64	0.13	-0.00	0.04	0.00	0.00	0.01	0.01
57	65	66	2.61	-0.01	-0.02	0.01	-0.00	-0.00	-0.01
58	66	67	2.31	-0.01	-0.02	0.00	0.00	-0.00	-0.01
59	67	68	2.02	-0.01	-0.03	0.00	0.00	-0.00	-0.01
60	68	69	1.77	-0.01	-0.06	-0.00	0.01	-0.01	-0.02
61	69	70	1.57	-0.00	-0.15	-0.00	0.01	-0.03	-0.06
62	70	71	0.82	-0.00	-0.03	-0.00	0.00	-0.01	-0.01
63	71	72	0.26	0.00	-0.05	-0.00	0.00	-0.01	-0.01
64	1	9	0.00	-0.00	-0.00	0.00	0.00	-0.00	-0.00
65	9	17	0.00	-0.00	-0.00	0.00	0.00	-0.00	-0.00
66	17	25	0.00	-0.00	-0.00	0.00	0.00	-0.00	-0.00
67	25	33	0.00	-0.00	0.00	0.00	0.00	0.00	0.00
68	33	41	0.00	-0.00	0.00	0.00	0.00	0.00	0.00
69	41	49	-0.00	0.00	0.00	-0.00	-0.00	0.00	0.00
70	49	57	-0.00	0.00	0.00	-0.00	-0.00	0.00	0.00
71	57	65	-0.00	-0.00	-0.00	0.00	0.00	-0.00	-0.00
72	2	10	0.01	-0.01	0.00	0.00	0.00	-0.00	0.00
73	10	18	0.01	-0.02	0.00	0.01	0.00	-0.00	0.00

74	18	26	0.01	-0.03	0.01	0.01	0.01	0.00	0.00
75	26	34	0.02	-0.03	0.01	0.02	0.02	0.00	0.00
76	34	42	0.01	-0.07	0.01	0.02	0.02	0.01	0.00
77	42	50	0.01	-0.06	0.01	0.02	0.02	0.01	0.00
78	50	58	0.02	-0.04	0.00	0.02	0.01	0.00	0.00
79	58	66	0.01	-0.03	0.00	0.01	0.01	0.00	0.00
80	3	11	0.00	-0.00	0.00	0.00	0.00	-0.01	0.01
81	11	19	0.01	-0.01	0.00	0.01	0.00	-0.01	0.01
82	19	27	0.02	-0.03	0.00	0.01	0.01	-0.01	0.01
83	27	35	0.03	-0.03	0.00	0.02	0.02	0.00	0.00
84	35	43	0.03	-0.08	0.01	0.02	0.02	0.01	-0.00
85	43	51	0.01	-0.09	0.03	0.03	0.02	0.01	0.00
86	51	59	0.03	-0.06	-0.00	0.02	0.01	-0.00	-0.00
87	59	67	0.01	-0.04	0.00	0.01	0.02	0.00	0.00
88	4	12	-0.02	-0.00	-0.00	0.00	-0.00	-0.02	0.02
89	12	20	-0.01	-0.00	-0.00	0.00	-0.00	-0.02	0.02
90	20	28	0.00	-0.02	-0.01	0.01	0.00	-0.02	0.01
91	28	36	0.02	-0.04	-0.01	0.02	0.01	-0.01	0.00
92	36	44	0.03	-0.08	0.01	0.03	0.02	0.01	-0.00
93	44	52	0.01	-0.11	0.04	0.04	0.03	0.02	0.00
94	52	60	0.05	-0.09	-0.00	0.03	0.02	-0.00	-0.00
95	60	68	0.02	-0.07	0.00	0.02	0.03	0.00	0.00
96	5	13	-0.06	0.00	-0.00	0.00	-0.00	-0.04	0.04
97	13	21	-0.06	0.00	-0.00	0.00	-0.00	-0.04	0.04
98	21	29	-0.05	-0.00	-0.01	0.00	-0.00	-0.03	0.03
99	29	37	-0.02	-0.02	-0.01	0.01	0.00	-0.03	0.02
100	37	45	0.01	-0.07	-0.01	0.03	0.02	-0.01	0.00
101	45	53	0.01	-0.14	0.04	0.05	0.03	0.02	0.00
102	53	61	0.09	-0.07	-0.00	0.03	0.01	0.00	-0.00
103	61	69	0.10	-0.13	0.00	0.03	0.05	0.00	0.00
104	6	14	-0.13	0.00	-0.01	0.00	-0.00	-0.07	0.06
105	14	22	-0.13	0.01	-0.02	0.00	-0.01	-0.07	0.06
106	22	30	-0.13	0.01	-0.03	0.00	-0.01	-0.07	0.06
107	30	38	-0.13	0.00	-0.05	0.01	-0.01	-0.08	0.05
108	38	46	-0.12	-0.03	-0.08	0.02	-0.01	-0.08	0.03
109	46	54	-0.03	-0.19	-0.16	0.08	0.04	-0.08	-0.02
110	54	62	0.07	0.00	0.01	0.01	-0.01	0.01	-0.00
111	62	70	0.17	0.01	0.00	0.02	-0.02	0.00	-0.00
112	7	15	-0.05	0.00	-0.00	0.00	-0.00	-0.00	0.00
113	15	23	-0.05	0.00	-0.00	-0.00	-0.00	-0.00	0.00
114	23	31	-0.05	0.00	-0.00	0.00	-0.00	-0.00	0.00
115	31	39	-0.05	-0.00	-0.00	0.00	-0.00	-0.00	-0.00
116	39	47	-0.05	-0.02	-0.01	0.01	0.01	-0.00	-0.00
117	47	55	-0.03	-0.04	-0.02	0.01	0.01	-0.00	-0.01
118	55	63	-0.14	0.10	0.00	-0.03	-0.03	0.01	-0.00
119	63	71	-0.14	0.07	0.00	0.01	-0.05	0.00	-0.00
120	8	16	-0.04	0.00	-0.00	0.00	-0.00	-0.00	0.00
121	16	24	-0.04	0.00	-0.00	-0.00	-0.00	-0.00	-0.00
122	24	32	-0.04	0.00	-0.01	-0.00	-0.00	-0.00	-0.00
123	32	40	-0.04	-0.00	-0.01	0.00	0.00	-0.00	-0.00
124	40	48	-0.03	-0.01	-0.01	0.00	0.00	-0.00	-0.00
125	48	56	-0.01	-0.01	-0.02	0.00	0.00	-0.00	-0.01
126	56	64	-0.15	0.02	0.00	-0.01	-0.01	0.00	-0.00
127	64	72	-0.19	0.01	-0.00	-0.00	-0.01	0.00	-0.00
128	73	74	0.20	-0.00	-0.11	-0.00	0.00	-0.05	-0.02

129	71	73	-0.13	-0.10	0.00	0.07	0.03	0.00	0.00
130	72	74	-0.16	-0.05	0.00	0.01	0.01	0.00	-0.00
131	74	75	-0.04	-0.01	0.00	0.00	0.00	0.00	0.00
132	70	73	0.40	-0.12	-0.00	0.09	0.04	-0.00	-0.00
133	73	75	0.03	0.03	-0.00	-0.03	-0.00	-0.00	-0.00

Hipotesis (2) : Empuje de tierras + Reaccion Fx del tablero

DESPLAZAMIENTOS DE LOS NUDOS

Nudo Nº	Despl.y (mm)	Despl.x (mm)	Despl.z (mm)	Giro y 1000xrad	Giro x 1000xrad	Giro z 1000xrad
1	0.000	0.000	-0.000	0.000	-0.000	0.000
2	0.000	0.005	-0.000	0.015	-0.000	-0.000
3	0.000	0.016	-0.000	0.025	-0.000	-0.000
4	0.000	0.032	-0.000	0.030	-0.000	-0.000
5	0.000	0.050	-0.000	0.033	-0.000	-0.000
6	0.000	0.070	-0.000	0.034	-0.000	-0.000
7	0.000	0.097	-0.000	0.053	-0.000	-0.000
8	0.000	0.128	-0.000	0.055	-0.000	-0.000
9	-0.000	0.000	-0.000	0.000	-0.000	-0.000
10	0.000	0.005	-0.000	0.015	-0.000	-0.000
11	0.000	0.016	-0.000	0.025	-0.000	-0.000
12	0.000	0.032	-0.000	0.030	-0.000	-0.000
13	0.000	0.050	-0.000	0.033	-0.000	-0.000
14	0.001	0.070	-0.000	0.034	-0.000	-0.000
15	0.001	0.096	-0.000	0.052	-0.000	-0.001
16	0.001	0.127	-0.000	0.054	-0.001	-0.001
17	-0.000	0.000	0.000	0.000	-0.000	-0.000
18	0.000	0.005	0.000	0.015	-0.000	-0.000
19	0.000	0.016	0.000	0.025	-0.000	-0.000
20	0.001	0.032	0.000	0.030	-0.001	-0.000
21	0.001	0.050	0.000	0.033	-0.001	-0.000
22	0.001	0.070	0.000	0.034	-0.001	-0.001
23	0.002	0.096	0.000	0.051	-0.001	-0.002
24	0.003	0.125	0.000	0.052	-0.001	-0.003
25	-0.000	0.000	0.000	0.000	0.000	-0.000
26	0.000	0.005	0.000	0.015	-0.000	-0.000
27	0.000	0.016	0.000	0.024	-0.001	-0.000
28	0.001	0.032	0.001	0.030	-0.001	-0.001
29	0.001	0.050	0.001	0.033	-0.001	-0.001
30	0.002	0.069	0.001	0.034	-0.001	-0.001
31	0.003	0.094	0.001	0.048	-0.002	-0.003
32	0.004	0.122	0.001	0.047	-0.002	-0.005
33	-0.000	0.000	0.000	0.000	0.000	-0.000
34	0.000	0.004	0.001	0.015	-0.000	-0.000
35	0.000	0.016	0.001	0.024	-0.001	-0.000
36	0.001	0.031	0.001	0.030	-0.001	-0.001
37	0.002	0.049	0.002	0.033	-0.002	-0.001
38	0.003	0.068	0.002	0.034	-0.002	-0.002
39	0.004	0.093	0.002	0.048	-0.002	-0.003
40	0.006	0.116	0.002	0.040	-0.002	-0.009
41	-0.000	0.000	0.000	0.000	0.000	0.000
42	0.000	0.005	0.001	0.015	-0.001	0.000
43	0.000	0.016	0.002	0.024	-0.002	0.000
44	0.001	0.031	0.003	0.029	-0.002	-0.001
45	0.002	0.048	0.003	0.031	-0.003	-0.002

46	0.004	0.066	0.004	0.032	-0.003	-0.003
47	0.005	0.089	0.004	0.036	-0.003	-0.011
48	0.007	0.106	0.004	0.030	-0.003	-0.016
49	-0.000	0.000	0.000	0.000	0.000	0.000
50	0.000	0.005	0.002	0.015	-0.002	0.001
51	0.001	0.016	0.004	0.023	-0.003	0.001
52	0.001	0.031	0.005	0.027	-0.004	0.000
53	0.003	0.047	0.006	0.029	-0.004	-0.001
54	0.004	0.064	0.006	0.029	-0.005	-0.003
55	0.006	0.081	0.007	0.028	-0.004	0.001
56	0.008	0.096	0.007	0.028	-0.004	0.001
57	0.000	0.000	-0.000	0.000	-0.000	0.000
58	0.002	0.005	-0.002	0.008	-0.006	0.005
59	0.006	0.016	-0.004	0.014	-0.006	0.011
60	0.009	0.031	-0.006	0.018	-0.005	0.018
61	0.011	0.047	-0.007	0.021	-0.005	0.023
62	0.014	0.064	-0.007	0.023	-0.005	0.027
63	0.017	0.080	-0.007	0.024	-0.006	0.030
64	0.020	0.095	-0.007	0.026	-0.006	0.032
65	0.000	0.000	-0.000	0.000	-0.000	0.000
66	0.004	0.005	-0.006	0.011	-0.011	0.005
67	0.012	0.016	-0.012	0.017	-0.013	0.011
68	0.019	0.031	-0.016	0.022	-0.012	0.017
69	0.025	0.047	-0.018	0.025	-0.010	0.024
70	0.031	0.063	-0.020	0.026	-0.009	0.030
71	0.036	0.079	-0.020	0.026	-0.008	0.031
72	0.040	0.095	-0.021	0.026	-0.008	0.032
73	0.076	0.079	-0.047	0.027	-0.012	0.044
74	0.083	0.095	-0.047	0.027	-0.012	0.044
75	0.127	0.095	-0.074	0.027	-0.012	0.044

ESFUERZOS EN LAS BARRAS

Barra Nº	i Nº	j Nº	Axil (t.)	Cort.1 (t.)	Cort.2 (t.)	Flec.1i (txm)	Flec.1j (txm)	Flec.2i (txm)	Flec.2j (txm)
1	1	2	-0.15	0.00	-1.71	-0.00	-0.00	-2.85	1.87
2	2	3	-0.15	0.00	-1.28	-0.00	-0.00	-1.88	1.14
3	3	4	-0.14	0.00	-0.92	-0.00	-0.00	-1.15	0.62
4	4	5	-0.10	0.00	-0.61	-0.00	-0.00	-0.62	0.28
5	5	6	-0.06	0.00	-0.35	-0.00	-0.00	-0.28	0.08
6	6	7	-0.02	-0.00	-0.14	0.00	0.00	-0.08	-0.00
7	7	8	-0.00	-0.00	-0.02	0.00	0.00	-0.01	-0.00
8	9	10	-0.20	-0.02	-3.40	-0.01	0.02	-5.69	3.74
9	10	11	-0.21	0.00	-2.56	-0.01	0.01	-3.75	2.29
10	11	12	-0.20	0.04	-1.83	-0.02	-0.00	-2.29	1.25
11	12	13	-0.16	0.07	-1.22	-0.03	-0.01	-1.25	0.55
12	13	14	-0.10	0.09	-0.71	-0.03	-0.02	-0.56	0.15
13	14	15	-0.04	0.04	-0.29	-0.01	-0.01	-0.16	-0.01
14	15	16	-0.01	0.02	-0.05	-0.01	-0.00	-0.02	-0.01
15	17	18	0.15	-0.06	-3.36	-0.00	0.04	-5.65	3.72
16	18	19	0.09	-0.03	-2.53	-0.02	0.03	-3.73	2.29
17	19	20	0.04	0.02	-1.83	-0.03	0.01	-2.30	1.25
18	20	21	-0.00	0.07	-1.24	-0.04	-0.01	-1.26	0.55

19	21	22	-0.02	0.13	-0.74	-0.04	-0.03	-0.56	0.14
20	22	23	-0.01	0.07	-0.29	-0.02	-0.02	-0.15	-0.01
21	23	24	-0.00	0.04	-0.04	-0.01	-0.01	-0.02	-0.01
22	25	26	0.79	-0.16	-3.29	0.01	0.08	-3.58	3.70
23	26	27	0.67	-0.13	-2.48	-0.00	0.08	-3.70	2.28
24	27	28	0.52	-0.10	-1.81	-0.01	0.06	-2.29	1.26
25	28	29	0.32	-0.04	-1.27	-0.01	0.04	-1.28	0.55
26	29	30	0.14	0.03	-0.81	-0.03	-0.00	-0.56	0.12
27	30	31	0.04	0.05	-0.32	-0.02	-0.01	-0.15	-0.03
28	31	32	0.01	0.03	-0.03	-0.01	-0.01	-0.01	-0.01
29	33	34	1.84	-0.32	-3.26	0.04	0.14	-5.53	3.67
30	34	35	1.66	-0.34	-2.48	0.04	0.16	-3.65	2.23
31	35	36	1.35	-0.42	-1.77	0.07	0.17	-2.24	1.22
32	36	37	0.90	-0.43	-1.24	0.08	0.17	-1.26	0.55
33	37	38	0.42	-0.27	-0.96	0.05	0.11	-0.62	0.07
34	38	39	0.12	-0.04	-0.42	0.00	0.02	-0.16	-0.08
35	39	40	0.03	-0.01	0.02	0.00	0.00	0.02	-0.01
36	41	42	3.58	-0.62	-3.69	0.10	0.26	-5.66	3.55
37	42	43	3.23	-0.86	-2.60	0.16	0.33	-3.55	2.06
38	43	44	2.38	-1.16	-1.74	0.27	0.39	-2.10	1.10
39	44	45	1.81	-1.29	-1.20	0.31	0.43	-1.16	0.47
40	45	46	1.02	-1.10	-1.06	0.24	0.39	-0.57	-0.04
41	46	47	0.23	-0.22	-0.45	0.06	0.07	-0.14	-0.11
42	47	48	0.05	-0.11	0.19	0.04	0.03	0.08	0.03
43	49	50	3.79	-0.24	-3.32	0.04	0.10	-3.26	1.36
44	50	51	2.86	-0.49	-2.54	0.13	0.15	-2.00	0.55
45	51	52	2.01	-0.59	-2.03	0.16	0.18	-1.28	0.12
46	52	53	1.36	-0.60	-1.58	0.17	0.18	-0.79	-0.17
47	53	54	0.92	-0.53	-1.33	0.14	0.16	-0.34	-0.42
48	54	55	0.62	-0.21	0.01	0.06	0.06	0.20	-0.19
49	55	56	0.08	-0.13	0.01	0.05	0.03	0.05	-0.04
50	57	58	-2.15	0.39	-0.80	-0.26	0.04	-0.28	-0.18
51	58	59	-1.79	-0.05	-1.19	0.01	0.02	-0.38	-0.30
52	59	60	-1.29	-0.24	-1.31	0.09	0.04	-0.40	-0.34
53	60	61	-0.80	-0.31	-1.23	0.10	0.07	-0.37	-0.33
54	61	62	-0.36	-0.29	-1.03	0.07	0.10	-0.30	-0.28
55	62	63	-0.08	-0.02	-0.68	-0.01	0.02	-0.20	-0.19
56	63	64	0.02	-0.03	-0.33	0.02	0.00	-0.11	-0.08
57	65	66	-7.64	1.59	-0.79	-1.14	0.23	-0.33	-0.12
58	66	67	-6.39	0.97	-0.91	-0.39	-0.16	-0.32	-0.20
59	67	68	-4.87	0.51	-0.99	-0.05	-0.24	-0.33	-0.24
60	68	69	-3.33	0.26	-0.94	0.04	-0.19	-0.29	-0.24
61	69	70	-1.96	0.16	-0.77	0.03	-0.12	-0.23	-0.21
62	70	71	-0.88	0.04	-0.49	0.01	-0.03	-0.13	-0.15
63	71	72	-0.16	-0.03	-0.22	0.02	-0.00	-0.07	-0.05
64	1	9	0.00	0.00	0.00	-0.00	-0.00	0.00	0.00
65	9	17	0.00	-0.00	-0.00	0.00	0.00	-0.00	-0.00
66	17	25	0.00	-0.00	-0.00	0.00	0.00	-0.00	-0.00
67	25	33	0.00	-0.00	-0.00	0.00	0.00	-0.00	-0.00
68	33	41	0.00	-0.00	0.00	0.00	0.00	0.00	0.00
69	41	49	-0.00	-0.00	-0.00	0.00	0.00	-0.00	-0.00
70	49	57	-0.00	0.00	0.00	-0.00	-0.00	0.00	0.00
71	57	65	-0.00	0.00	0.00	-0.00	-0.00	0.00	0.00
72	2	10	-0.07	0.00	0.00	0.01	-0.01	-0.01	0.01
73	10	18	-0.05	-0.01	0.01	0.01	-0.00	-0.01	0.01

74	18	26	-0.02	-0.06	0.01	0.03	0.01	-0.00	0.01
75	26	34	0.00	-0.18	-0.02	0.07	0.04	0.01	-0.02
76	34	42	-0.02	-0.36	-0.09	0.13	0.09	0.04	-0.10
77	42	50	-0.26	-0.70	0.15	0.33	0.10	0.15	-0.05
78	50	58	0.51	-1.61	0.12	0.64	0.29	0.06	0.01
79	58	66	0.12	-1.25	-0.23	0.27	0.44	-0.06	-0.07
80	3	11	-0.34	0.01	0.01	0.01	-0.02	-0.02	0.03
81	11	19	-0.30	0.02	0.01	0.01	-0.03	-0.03	0.03
82	19	27	-0.25	-0.03	-0.02	0.03	-0.01	-0.03	0.02
83	27	35	-0.22	-0.18	-0.07	0.08	0.03	-0.01	-0.03
84	35	43	-0.30	-0.49	-0.08	0.19	0.11	0.07	-0.12
85	43	51	-0.60	-1.15	0.05	0.49	0.22	0.19	-0.16
86	51	59	0.20	-2.02	0.37	0.80	0.36	0.18	0.04
87	59	67	0.09	-1.52	-0.12	0.35	0.56	-0.04	-0.05
88	4	12	-0.79	0.03	0.01	0.01	-0.03	-0.04	0.04
89	12	20	-0.76	0.07	0.02	0.00	-0.05	-0.04	0.05
90	20	28	-0.70	0.03	0.00	0.02	-0.04	-0.06	0.06
91	28	36	-0.64	-0.17	-0.06	0.09	0.02	-0.06	0.02
92	36	44	-0.56	-0.61	-0.13	0.24	0.14	-0.00	-0.08
93	44	52	-0.79	-1.38	-0.18	0.56	0.29	0.14	-0.25
94	52	60	-0.15	-2.03	0.51	0.80	0.36	0.27	0.03
95	60	68	-0.06	-1.55	0.03	0.35	0.53	0.00	0.01
96	5	13	-1.40	0.04	0.01	0.02	-0.04	-0.05	0.05
97	13	21	-1.39	0.11	0.04	0.00	-0.06	-0.05	0.08
98	21	29	-1.34	0.09	0.07	0.01	-0.07	-0.08	0.12
99	29	37	-1.25	-0.10	0.05	0.08	-0.02	-0.12	0.16
100	37	45	-1.08	-0.57	-0.14	0.23	0.12	-0.15	0.06
101	45	53	-0.89	-1.37	-0.49	0.54	0.30	0.02	-0.32
102	53	61	-0.57	-1.81	0.59	0.72	0.32	0.33	0.01
103	61	69	-0.17	-1.37	0.12	0.31	0.47	0.04	0.03
104	6	14	-2.21	0.04	0.03	0.02	-0.04	-0.07	0.08
105	14	22	-2.26	0.10	0.10	0.01	-0.07	-0.07	0.13
106	22	30	-2.32	0.11	0.18	0.01	-0.08	-0.11	0.22
107	30	38	-2.32	0.01	0.32	0.06	-0.07	-0.21	0.40
108	38	46	-2.09	-0.29	0.17	0.18	-0.00	-0.40	0.51
109	46	54	-1.21	-1.06	-1.67	0.45	0.20	-0.50	-0.55
110	54	62	-0.51	-1.36	0.72	0.54	0.24	0.42	0.00
111	62	70	-0.16	-1.08	0.12	0.24	0.38	0.05	0.02
112	7	15	-0.69	0.02	0.00	0.00	-0.01	-0.00	0.00
113	15	23	-0.71	0.05	0.01	-0.00	-0.02	-0.00	0.01
114	23	31	-0.75	0.05	0.02	-0.00	-0.03	0.00	0.01
115	31	39	-0.77	0.02	0.07	0.01	-0.02	0.01	0.03
116	39	47	-0.75	-0.07	0.10	0.04	0.00	0.01	0.05
117	47	55	-0.64	-0.27	-0.60	0.10	0.05	-0.14	-0.23
118	55	63	-0.72	-0.81	0.45	0.34	0.13	0.32	-0.06
119	63	71	-0.37	-0.71	0.25	0.15	0.25	0.08	0.06
120	8	16	-0.54	0.00	-0.02	0.00	-0.00	-0.01	-0.00
121	16	24	-0.56	0.01	-0.05	-0.00	-0.01	-0.02	-0.01
122	24	32	-0.60	0.01	-0.09	-0.00	-0.01	-0.03	-0.02
123	32	40	-0.63	0.01	-0.13	0.00	-0.00	-0.05	-0.03
124	40	48	-0.62	-0.02	-0.24	0.01	0.00	-0.10	-0.05
125	48	56	-0.50	-0.07	-0.51	0.02	0.02	-0.11	-0.21
126	56	64	-0.56	-0.15	0.33	0.05	0.04	0.20	-0.01
127	64	72	-0.23	-0.16	0.22	0.04	0.05	0.07	0.06
128	73	74	-0.01	0.03	-0.01	-0.01	-0.01	-0.00	-0.00

129	71	73	-0.10	0.01	0.12	-0.03	0.02	0.11	0.01
130	72	74	-0.01	-0.01	0.10	0.00	0.01	0.07	0.03
131	74	75	0.00	0.00	-0.00	-0.00	-0.00	-0.00	-0.00
132	70	73	0.10	0.05	0.07	-0.04	-0.02	0.09	-0.01
133	73	75	-0.00	-0.00	0.00	0.00	0.00	0.00	0.00

Hipótesis (3) : Reaccion vertical máxima del tablero: Fzmax

DESPLAZAMIENTOS DE LOS NUDOS

Nudo Nº	Despl.y (mm)	Despl.x (mm)	Despl.z (mm)	Giro y 1000xrad	Giro x 1000xrad	Giro z 1000xrad
1	-0.000	-0.000	0.000	-0.000	-0.000	-0.000
2	-0.000	-0.001	0.001	-0.002	-0.000	0.000
3	-0.000	-0.002	0.002	-0.004	-0.000	0.000
4	-0.000	-0.005	0.002	-0.005	-0.000	0.000
5	0.000	-0.008	0.003	-0.006	-0.000	0.000
6	0.000	-0.012	0.003	-0.007	-0.000	-0.000
7	0.000	-0.024	0.003	-0.034	-0.000	-0.000
8	0.000	-0.045	0.003	-0.039	-0.000	-0.000
9	-0.000	-0.000	0.000	-0.000	0.000	0.000
10	-0.000	-0.001	0.001	-0.002	-0.000	0.000
11	-0.000	-0.002	0.002	-0.004	-0.001	0.000
12	-0.000	-0.005	0.003	-0.005	-0.001	0.000
13	0.001	-0.008	0.003	-0.006	-0.002	0.000
14	0.002	-0.012	0.004	-0.007	-0.002	-0.000
15	0.003	-0.024	0.004	-0.035	-0.003	-0.002
16	0.004	-0.046	0.004	-0.040	-0.003	-0.003
17	-0.000	0.000	0.000	-0.000	0.000	0.000
18	-0.000	-0.000	0.002	-0.002	-0.000	0.000
19	-0.001	-0.002	0.003	-0.003	-0.001	0.001
20	-0.000	-0.004	0.005	-0.005	-0.002	0.001
21	0.001	-0.008	0.006	-0.007	-0.004	0.000
22	0.003	-0.012	0.006	-0.008	-0.005	-0.000
23	0.006	-0.026	0.007	-0.039	-0.006	-0.003
24	0.008	-0.049	0.007	-0.041	-0.005	-0.005
25	-0.000	0.000	0.000	-0.000	0.000	0.000
26	-0.001	-0.000	0.003	-0.001	-0.000	0.000
27	-0.001	-0.001	0.005	-0.003	-0.001	0.001
28	-0.000	-0.004	0.007	-0.005	-0.003	0.001
29	0.001	-0.007	0.009	-0.007	-0.005	0.001
30	0.004	-0.012	0.011	-0.009	-0.009	-0.000
31	0.008	-0.029	0.013	-0.047	-0.010	-0.004
32	0.012	-0.054	0.014	-0.041	-0.008	-0.005
33	-0.000	0.000	0.000	-0.000	0.000	0.000
34	-0.001	-0.000	0.003	-0.001	-0.000	0.000
35	-0.001	-0.001	0.007	-0.002	-0.001	0.001
36	-0.000	-0.003	0.011	-0.004	-0.003	0.001
37	0.001	-0.006	0.015	-0.006	-0.006	0.002
38	0.005	-0.012	0.019	-0.012	-0.012	0.001
39	0.008	-0.031	0.025	-0.061	-0.014	0.001
40	0.012	-0.056	0.025	-0.033	-0.007	0.003
41	-0.000	0.000	0.000	-0.000	0.000	-0.000
42	-0.000	-0.000	0.004	-0.001	0.000	-0.000
43	-0.000	-0.001	0.009	-0.002	-0.001	-0.000
44	0.000	-0.002	0.014	-0.003	-0.003	0.000
45	0.002	-0.005	0.020	-0.007	-0.004	0.001

46	0.005	-0.011	0.027	-0.016	-0.005	0.003
47	0.007	-0.026	0.037	-0.075	-0.001	0.016
48	0.008	-0.045	0.035	-0.013	-0.002	0.027
49	-0.000	-0.000	0.000	-0.000	0.000	-0.000
50	-0.000	-0.000	0.004	-0.001	-0.000	-0.000
51	-0.000	-0.001	0.009	-0.002	-0.001	-0.000
52	0.001	-0.002	0.015	-0.003	-0.002	-0.000
53	0.003	-0.004	0.020	-0.005	-0.001	0.000
54	0.005	-0.008	0.024	-0.006	0.000	0.006
55	0.005	-0.012	0.026	-0.007	0.009	0.017
56	0.005	-0.015	0.026	-0.006	0.001	0.029
57	-0.000	-0.000	0.000	-0.000	0.000	0.000
58	0.000	-0.001	0.005	-0.000	-0.001	0.001
59	0.001	-0.002	0.009	0.000	-0.002	0.002
60	0.002	-0.003	0.014	0.001	-0.004	0.003
61	0.005	-0.005	0.018	0.003	-0.005	0.004
62	0.008	-0.008	0.021	0.005	-0.004	0.004
63	0.010	-0.010	0.023	0.006	-0.003	0.004
64	0.012	-0.012	0.023	0.001	-0.004	0.004
65	0.000	-0.000	0.000	-0.000	-0.000	0.000
66	0.000	-0.001	0.005	-0.001	-0.002	0.001
67	0.002	-0.002	0.009	-0.001	-0.003	0.001
68	0.004	-0.003	0.013	-0.001	-0.004	0.002
69	0.006	-0.005	0.016	-0.001	-0.005	0.002
70	0.009	-0.008	0.019	-0.000	-0.004	0.002
71	0.011	-0.010	0.020	0.001	-0.004	0.002
72	0.014	-0.011	0.020	-0.001	-0.004	0.002
73	0.013	-0.010	0.020	-0.002	-0.004	0.002
74	0.016	-0.011	0.020	-0.002	-0.004	0.002
75	0.018	-0.011	0.022	-0.002	-0.004	0.002

ESFUERZOS EN LAS BARRAS

Barra Nº	i Nº	j Nº	Axil (t.)	Cort.1 (t.)	Cort.2 (t.)	Flec.1i (txm)	Flec.1j (txm)	Flec.2i (txm)	Flec.2j (txm)
1	1	2	1.85	-0.00	0.11	0.00	0.00	0.34	-0.28
2	2	3	1.42	-0.00	0.10	0.00	0.00	0.29	-0.23
3	3	4	0.94	0.00	0.09	-0.00	-0.00	0.24	-0.19
4	4	5	0.51	0.00	0.08	-0.00	-0.00	0.18	-0.14
5	5	6	0.20	0.00	0.06	-0.00	-0.00	0.12	-0.09
6	6	7	0.06	-0.00	0.03	0.00	0.00	0.07	-0.05
7	7	8	0.01	-0.00	0.03	0.00	0.00	0.02	-0.00
8	9	10	4.26	-0.92	0.14	0.26	0.27	0.63	-0.55
9	10	11	3.47	-1.00	0.14	0.23	0.34	0.57	-0.49
10	11	12	2.58	-1.07	0.18	0.24	0.37	0.51	-0.41
11	12	13	1.49	-0.94	0.18	0.20	0.34	0.41	-0.30
12	13	14	0.69	-0.55	0.14	0.10	0.21	0.27	-0.19
13	14	15	0.24	-0.21	0.08	0.05	0.07	0.14	-0.10
14	15	16	0.05	-0.09	0.05	0.03	0.02	0.03	-0.00
15	17	18	6.81	-1.70	-0.06	0.48	0.49	0.48	-0.52
16	18	19	5.38	-1.92	-0.04	0.44	0.66	0.33	-0.56
17	19	20	4.47	-2.22	0.09	0.50	0.77	0.38	-0.53
18	20	21	3.22	-2.22	0.26	0.48	0.79	0.55	-0.41

19	21	22	1.79	-1.58	0.24	0.31	0.59	0.38	-0.24
20	22	23	0.74	-0.72	0.10	0.18	0.23	0.16	-0.11
21	23	24	0.17	-0.36	0.05	0.12	0.09	0.02	0.01
22	25	26	8.68	-2.15	-0.27	0.61	0.62	0.29	-0.44
23	26	27	8.44	-2.50	-0.28	0.58	0.85	0.44	-0.60
24	27	28	8.03	-3.12	-0.23	0.71	1.08	0.62	-0.75
25	28	29	7.11	-3.79	0.18	0.81	1.35	0.81	-0.71
26	29	30	5.08	-3.70	0.58	0.72	1.40	0.74	-0.35
27	30	31	2.02	-2.00	0.09	0.53	0.61	0.18	-0.13
28	31	32	0.37	-1.09	0.00	0.38	0.25	-0.03	0.03
29	33	34	11.66	-2.11	-0.32	0.60	0.61	0.15	-0.34
30	34	35	12.05	-2.36	-0.36	0.54	0.81	0.31	-0.31
31	35	36	12.81	-2.89	-0.64	0.64	1.01	0.48	-0.85
32	36	37	13.92	-3.99	-0.88	0.94	1.44	0.89	-1.39
33	37	38	14.55	-5.83	0.63	1.01	2.32	1.57	-1.21
34	38	39	4.81	-5.59	-0.34	0.98	1.87	0.11	-0.30
35	39	40	0.05	-1.93	-0.29	0.73	0.37	-0.20	0.04
36	41	42	13.96	-1.61	-0.10	0.47	0.46	0.20	-0.26
37	42	43	15.09	-1.43	-0.19	0.28	0.54	0.24	-0.35
38	43	44	16.96	-1.12	-0.53	0.15	0.49	0.31	-0.61
39	44	45	20.41	-0.44	-1.78	-0.04	0.30	0.55	-1.36
40	45	46	27.58	0.49	-5.40	-0.21	-0.06	1.62	-4.71
41	46	47	7.59	0.12	-1.67	0.06	-0.13	-0.23	-0.73
42	47	48	-1.48	0.25	-1.06	-0.09	-0.05	-0.56	-0.04
43	49	50	7.57	-0.26	0.26	0.07	0.08	0.22	-0.07
44	50	51	8.30	-0.22	0.20	0.05	0.07	0.16	-0.05
45	51	52	8.92	0.03	0.21	-0.02	-0.00	0.23	-0.10
46	52	53	9.02	0.63	0.51	-0.17	-0.19	0.45	-0.16
47	53	54	7.74	1.86	1.52	-0.44	-0.63	0.72	0.15
48	54	55	2.84	2.09	-0.67	-0.56	-0.64	-0.09	-0.29
49	55	56	0.35	1.16	-0.20	-0.43	-0.23	-0.24	0.13
50	57	58	4.14	-0.11	0.12	0.02	0.05	0.03	0.03
51	58	59	4.20	-0.07	0.24	-0.02	0.06	0.07	0.07
52	59	60	4.18	0.01	0.47	-0.05	0.09	0.13	0.14
53	60	61	3.90	0.17	0.85	-0.08	-0.02	0.23	0.26
54	61	62	3.05	0.46	1.30	-0.09	-0.15	0.36	0.39
55	62	63	1.55	0.49	1.38	-0.11	-0.17	0.39	0.40
56	63	64	0.11	0.25	0.89	-0.12	-0.02	0.29	0.22
57	65	66	5.52	0.07	0.13	-0.11	0.07	0.04	0.03
58	66	67	5.26	0.06	0.20	-0.10	0.07	0.06	0.06
59	67	68	4.81	0.08	0.36	-0.10	0.05	0.10	0.10
60	68	69	4.04	0.11	0.50	-0.06	0.00	0.17	0.17
61	69	70	2.93	0.09	0.35	-0.00	-0.05	0.24	0.24
62	70	71	1.63	0.03	0.32	0.02	-0.04	0.21	0.25
63	71	72	0.35	0.01	0.49	-0.01	0.00	0.16	0.12
64	1	9	0.00	-0.00	-0.00	0.00	0.00	-0.00	-0.00
65	9	17	0.00	-0.00	0.00	0.00	0.00	0.00	0.00
66	17	25	0.00	-0.00	0.00	0.00	0.00	0.00	0.00
67	25	33	-0.00	-0.00	0.00	0.00	0.00	0.00	0.00
68	33	41	-0.00	-0.00	-0.00	0.00	0.00	-0.00	-0.00
69	41	49	-0.00	0.00	-0.00	-0.00	-0.00	-0.00	-0.00
70	49	57	0.00	0.00	0.00	-0.00	-0.00	0.00	0.00
71	57	65	-0.00	-0.00	0.00	0.00	0.00	0.00	0.00
72	2	10	0.64	-0.41	-0.01	0.13	0.12	0.03	-0.03
73	10	18	0.55	-1.20	-0.01	0.37	0.37	0.03	-0.03

74	18	26	0.32	-1.84	0.01	0.57	0.56	0.01	-0.00
75	26	34	-0.02	-2.07	-0.00	0.64	0.64	-0.04	0.03
76	34	42	-0.26	-1.68	-0.04	0.51	0.53	-0.07	0.05
77	42	50	-0.08	-0.55	-0.13	0.21	0.13	-0.06	-0.02
78	50	58	-0.19	0.19	0.04	-0.07	-0.04	0.02	0.00
79	58	66	-0.07	0.26	-0.01	-0.06	-0.09	-0.01	0.00
80	3	11	0.86	-0.47	-0.00	0.19	0.10	0.07	-0.08
81	11	19	0.80	-1.44	0.03	0.48	0.41	0.09	-0.07
82	19	27	0.50	-2.36	0.16	0.73	0.70	0.10	0.00
83	27	35	-0.13	-2.76	0.22	0.85	0.85	-0.00	0.13
84	35	43	-0.66	-2.01	-0.07	0.60	0.64	-0.19	0.14
85	43	51	-0.35	-0.13	-0.41	0.05	0.05	-0.20	-0.05
86	51	59	-0.39	0.48	0.10	-0.18	-0.09	0.05	0.01
87	59	67	-0.16	0.46	0.02	-0.11	-0.16	-0.00	0.01
88	4	12	0.17	-0.44	-0.02	0.23	0.04	0.08	-0.09
89	12	20	0.31	-1.44	-0.01	0.53	0.36	0.12	-0.13
90	20	28	0.31	-2.70	0.16	0.89	0.77	0.19	-0.09
91	28	36	-0.36	-3.62	0.57	1.12	1.11	0.19	0.17
92	36	44	-1.46	-2.31	0.34	0.74	0.80	-0.16	0.37
93	44	52	-0.78	0.94	-0.91	-0.36	-0.22	-0.47	-0.09
94	52	60	-0.62	1.04	0.18	-0.39	-0.21	0.08	0.03
95	60	68	-0.24	0.76	0.02	-0.17	-0.27	-0.01	0.02
96	5	13	-1.67	-0.30	-0.02	0.24	-0.05	0.03	-0.04
97	13	21	-1.28	-1.10	-0.06	0.49	0.19	0.06	-0.10
98	21	29	-0.64	-2.52	-0.08	0.92	0.64	0.17	-0.22
99	29	37	-0.55	-4.55	0.42	1.43	1.38	0.38	-0.13
100	37	45	-2.40	-3.92	1.93	1.08	1.34	0.43	0.76
101	45	53	-1.46	3.25	-1.69	-1.25	-0.74	-0.87	-0.17
102	53	61	-0.68	1.97	0.23	-0.75	-0.38	0.09	0.04
103	61	69	-0.24	1.11	-0.02	-0.23	-0.41	-0.02	0.01
104	6	14	-5.03	-0.15	-0.02	0.24	-0.15	-0.08	0.06
105	14	22	-4.69	-0.59	-0.09	0.41	-0.04	-0.06	0.01
106	22	30	-3.83	-1.65	-0.23	0.81	0.20	-0.03	-0.11
107	30	38	-2.12	-4.71	-0.82	1.72	1.18	0.03	-0.34
108	38	46	0.12	-8.75	-1.79	2.12	3.28	0.33	-1.44
109	46	54	-0.24	7.72	1.94	-3.29	-1.47	1.29	-0.09
110	54	62	-0.25	2.82	0.01	-1.09	-0.53	-0.01	0.02
111	62	70	-0.16	1.32	-0.05	-0.24	-0.31	-0.05	-0.00
112	7	15	-1.98	-0.05	-0.01	0.07	-0.04	-0.01	0.00
113	15	23	-1.85	-0.29	-0.03	0.13	0.01	-0.01	-0.00
114	23	31	-1.49	-0.82	-0.08	0.33	0.17	-0.03	-0.02
115	31	39	-0.59	-2.47	-0.16	0.82	0.70	-0.05	-0.07
116	39	47	1.07	-4.33	-0.11	1.10	1.56	0.02	-0.09
117	47	55	1.21	5.17	0.50	-1.78	-1.41	0.16	0.15
118	55	63	0.97	2.69	-0.27	-1.09	-0.45	-0.17	0.01
119	63	71	0.48	1.25	-0.02	-0.24	-0.48	-0.02	0.00
120	8	16	-1.80	-0.01	-0.03	0.01	-0.00	-0.02	-0.00
121	16	24	-1.71	-0.06	-0.08	0.03	0.01	-0.03	-0.02
122	24	32	-1.35	-0.23	-0.13	0.08	0.06	-0.04	-0.04
123	32	40	-0.76	-0.80	-0.13	0.18	0.19	-0.02	-0.07
124	40	48	1.67	-0.65	0.15	0.19	0.21	0.12	-0.03
125	48	56	1.41	0.85	1.21	-0.26	-0.25	0.38	0.37
126	56	64	1.40	0.48	-0.25	-0.16	-0.12	-0.16	0.01
127	64	72	0.52	0.37	-0.01	-0.10	-0.11	-0.01	0.00
128	73	74	0.02	-0.00	0.03	0.00	-0.00	0.00	0.01

129	71	73	0.15	-0.05	-0.00	0.06	-0.03	-0.00	0.00
130	72	74	0.05	0.02	0.00	-0.01	-0.01	-0.00	0.00
131	74	75	0.00	-0.00	-0.00	0.00	0.00	-0.00	-0.00
132	70	73	-0.16	-0.07	-0.00	0.06	0.02	-0.00	0.00
133	73	75	-0.00	0.00	0.00	-0.00	-0.00	0.00	0.00

Hipotesis (4) : Reacción vertical minima del tablero: Fzmin

DESPLAZAMIENTOS DE LOS NUDOS

Nudo Nº	Despl.y (mm)	Despl.x (mm)	Despl.z (mm)	Giro y 1000xrad	Giro x 1000xrad	Giro z 1000xrad
1	-0.000	-0.000	0.000	-0.000	-0.000	-0.000
2	-0.000	-0.000	0.000	-0.001	-0.000	0.000
3	-0.000	-0.001	0.001	-0.002	-0.000	0.000
4	-0.000	-0.002	0.001	-0.002	-0.000	0.000
5	0.000	-0.004	0.001	-0.003	-0.000	0.000
6	0.000	-0.005	0.001	-0.003	-0.000	-0.000
7	0.000	-0.011	0.001	-0.015	-0.000	-0.000
8	0.000	-0.020	0.001	-0.018	-0.000	-0.000
9	-0.000	-0.000	0.000	-0.000	0.000	0.000
10	-0.000	-0.000	0.001	-0.001	-0.000	0.000
11	-0.000	-0.001	0.001	-0.002	-0.000	0.000
12	-0.000	-0.002	0.001	-0.002	-0.001	0.000
13	0.000	-0.004	0.002	-0.003	-0.001	0.000
14	0.001	-0.005	0.002	-0.003	-0.001	-0.000
15	0.001	-0.011	0.002	-0.016	-0.001	-0.001
16	0.002	-0.021	0.002	-0.018	-0.001	-0.001
17	-0.000	0.000	0.000	-0.000	0.000	0.000
18	-0.000	-0.000	0.001	-0.001	-0.000	0.000
19	-0.000	-0.001	0.002	-0.002	-0.000	0.000
20	-0.000	-0.002	0.002	-0.002	-0.001	0.000
21	0.000	-0.003	0.003	-0.003	-0.002	0.000
22	0.001	-0.005	0.003	-0.003	-0.002	-0.000
23	0.002	-0.012	0.003	-0.018	-0.003	-0.001
24	0.004	-0.022	0.003	-0.018	-0.002	-0.002
25	-0.000	0.000	0.000	-0.000	0.000	0.000
26	-0.000	-0.000	0.001	-0.001	-0.000	0.000
27	-0.000	-0.001	0.002	-0.001	-0.001	0.000
28	-0.000	-0.002	0.003	-0.002	-0.001	0.001
29	0.001	-0.003	0.004	-0.003	-0.002	0.001
30	0.002	-0.005	0.005	-0.004	-0.004	-0.000
31	0.003	-0.013	0.006	-0.021	-0.005	-0.002
32	0.005	-0.024	0.006	-0.018	-0.003	-0.002
33	-0.000	0.000	0.000	-0.000	0.000	0.000
34	-0.000	-0.000	0.002	-0.000	-0.000	0.000
35	-0.000	-0.000	0.003	-0.001	-0.001	0.000
36	-0.000	-0.001	0.005	-0.002	-0.001	0.001
37	0.001	-0.003	0.007	-0.004	-0.003	0.001
38	0.002	-0.005	0.009	-0.005	-0.005	0.000
39	0.004	-0.014	0.011	-0.028	-0.006	0.000
40	0.006	-0.025	0.011	-0.015	-0.003	0.001
41	-0.000	0.000	0.000	-0.000	0.000	-0.000
42	-0.000	-0.000	0.002	-0.000	0.000	-0.000
43	-0.000	-0.000	0.004	-0.001	-0.001	-0.000
44	0.000	-0.001	0.006	-0.001	-0.001	0.000
45	0.001	-0.002	0.009	-0.003	-0.002	0.001

46	0.002	-0.005	0.012	-0.007	-0.002	0.002
47	0.003	-0.012	0.017	-0.034	-0.001	0.007
48	0.004	-0.020	0.016	-0.006	-0.001	0.012
49	-0.000	-0.000	0.000	-0.000	0.000	-0.000
50	-0.000	-0.000	0.002	-0.000	-0.000	-0.000
51	-0.000	-0.000	0.004	-0.001	-0.001	-0.000
52	0.000	-0.001	0.007	-0.001	-0.001	-0.000
53	0.001	-0.002	0.009	-0.002	-0.000	0.000
54	0.002	-0.004	0.011	-0.003	0.003	0.003
55	0.002	-0.005	0.012	-0.003	0.004	0.008
56	0.002	-0.007	0.012	-0.003	0.000	0.013
57	-0.000	-0.000	0.000	-0.000	0.000	0.000
58	0.000	-0.000	0.002	-0.000	-0.000	0.001
59	0.000	-0.001	0.004	0.000	-0.001	0.001
60	0.001	-0.001	0.006	0.001	-0.002	0.002
61	0.002	-0.002	0.008	0.001	-0.002	0.002
62	0.003	-0.004	0.010	0.002	-0.002	0.002
63	0.005	-0.005	0.010	0.003	-0.001	0.002
64	0.006	-0.005	0.011	0.000	-0.002	0.002
65	0.000	-0.000	0.000	-0.000	-0.000	0.000
66	0.000	-0.000	0.002	-0.000	-0.001	0.000
67	0.001	-0.001	0.004	-0.000	-0.001	0.001
68	0.002	-0.001	0.006	-0.000	-0.002	0.001
69	0.003	-0.002	0.007	-0.000	-0.002	0.001
70	0.004	-0.004	0.008	-0.000	-0.002	0.001
71	0.005	-0.004	0.009	0.001	-0.002	0.001
72	0.006	-0.005	0.009	-0.000	-0.002	0.001
73	0.006	-0.004	0.009	-0.001	-0.002	0.001
74	0.007	-0.005	0.009	-0.001	-0.002	0.001
75	0.008	-0.005	0.010	-0.001	-0.002	0.001

ESFUERZOS EN LAS BARRAS

Barra Nº	i Nº	j Nº	Axil (t.)	Cort.1 (t.)	Cort.2 (t.)	Flec.1i (txm)	Flec.1j (txm)	Flec.2i (txm)	Flec.2j (txm)
1	1	2	0.82	-0.00	0.05	0.00	0.00	0.15	-0.13
2	2	3	0.64	-0.00	0.04	0.00	0.00	0.13	-0.11
3	3	4	0.43	0.00	0.04	-0.00	-0.00	0.11	-0.08
4	4	5	0.23	0.00	0.04	-0.00	-0.00	0.08	-0.06
5	5	6	0.09	0.00	0.03	-0.00	-0.00	0.06	-0.04
6	6	7	0.03	-0.00	0.02	0.00	0.00	0.03	-0.02
7	7	8	0.01	-0.00	0.01	0.00	0.00	0.01	-0.00
8	9	10	1.92	-0.41	0.06	0.12	0.12	0.28	-0.25
9	10	11	1.56	-0.45	0.06	0.10	0.16	0.26	-0.22
10	11	12	1.13	-0.48	0.06	0.11	0.17	0.23	-0.18
11	12	13	0.67	-0.42	0.08	0.09	0.15	0.18	-0.14
12	13	14	0.31	-0.25	0.06	0.05	0.10	0.12	-0.09
13	14	15	0.11	-0.09	0.03	0.02	0.05	0.06	-0.04
14	15	16	0.02	-0.04	0.02	0.01	0.01	0.02	-0.00
15	17	18	2.71	-0.77	-0.03	0.22	0.22	0.22	-0.23
16	18	19	2.43	-0.87	-0.02	0.20	0.30	0.24	-0.25
17	19	20	2.01	-1.00	0.04	0.23	0.35	0.26	-0.24
18	20	21	1.45	-1.30	0.12	0.22	0.36	0.23	-0.18

19	21	22	0.81	-0.71	0.11	0.14	0.27	0.17	-0.11
20	22	23	0.33	-0.32	0.04	0.08	0.10	0.07	-0.05
21	23	24	0.07	-0.16	0.02	0.05	0.04	0.01	0.00
22	25	26	3.91	-0.97	-0.12	0.27	0.28	0.13	-0.20
23	26	27	3.81	-1.13	-0.13	0.26	0.38	0.20	-0.27
24	27	28	3.62	-1.41	-0.10	0.32	0.49	0.28	-0.34
25	28	29	3.21	-1.71	0.08	0.37	0.61	0.37	-0.32
26	29	30	2.29	-1.67	0.31	0.32	0.65	0.53	-0.16
27	30	31	0.91	-0.90	0.04	0.24	0.28	0.08	-0.06
28	31	32	0.17	-0.49	0.00	0.17	0.11	-0.01	0.01
29	33	34	5.26	-0.95	-0.14	0.27	0.28	0.07	-0.15
30	34	35	5.45	-1.06	-0.16	0.24	0.37	0.14	-0.25
31	35	36	5.78	-1.30	-0.29	0.29	0.46	0.22	-0.38
32	36	37	6.28	-1.80	-0.40	0.38	0.65	0.40	-0.63
33	37	38	6.36	-2.63	0.29	0.46	1.05	0.71	-0.55
34	38	39	2.17	-1.62	-0.15	0.44	0.48	0.05	-0.14
35	39	40	0.02	-0.87	-0.13	0.56	0.17	-0.09	0.02
36	41	42	6.30	-0.73	-0.05	0.21	0.21	0.09	-0.12
37	42	43	6.81	-0.64	-0.09	0.13	0.24	0.11	-0.16
38	43	44	7.65	-0.50	-0.24	0.07	0.22	0.14	-0.28
39	44	45	9.20	-0.20	-0.80	-0.02	0.13	0.25	-0.71
40	45	46	12.64	0.22	-2.44	-0.10	-0.05	0.73	-2.12
41	46	47	3.42	0.06	-0.75	0.02	-0.06	-0.10	-0.33
42	47	48	-0.67	0.11	-0.48	-0.04	-0.02	-0.25	-0.02
43	49	50	3.41	-0.12	0.12	0.03	0.04	0.10	-0.03
44	50	51	3.74	-0.10	0.09	0.02	0.03	0.07	-0.02
45	51	52	4.02	0.02	0.10	-0.01	-0.00	0.10	-0.05
46	52	53	4.07	0.29	0.23	-0.08	-0.09	0.20	-0.07
47	53	54	3.49	0.84	0.69	-0.20	-0.28	0.32	0.07
48	54	55	1.28	0.94	-0.30	-0.25	-0.29	-0.04	-0.13
49	55	56	0.16	0.52	-0.09	-0.20	-0.10	-0.11	0.06
50	57	58	1.87	-0.05	0.05	0.01	0.02	0.02	0.01
51	58	59	1.90	-0.03	0.11	-0.01	0.02	0.03	0.03
52	59	60	1.89	0.01	0.21	-0.02	0.02	0.06	0.06
53	60	61	1.76	0.08	0.39	-0.03	-0.01	0.10	0.12
54	61	62	1.37	0.19	0.59	-0.04	-0.07	0.16	0.17
55	62	63	0.70	0.22	0.62	-0.05	-0.08	0.18	0.18
56	63	64	0.05	0.11	0.40	-0.05	-0.01	0.13	0.10
57	65	66	2.49	0.03	0.06	-0.05	0.03	0.02	0.01
58	66	67	2.37	0.03	0.09	-0.05	0.03	0.03	0.03
59	67	68	2.17	0.04	0.16	-0.04	0.02	0.05	0.05
60	68	69	1.82	0.05	0.27	-0.03	0.00	0.08	0.08
61	69	70	1.32	0.04	0.38	-0.00	-0.02	0.11	0.11
62	70	71	0.74	0.01	0.37	0.01	-0.02	0.10	0.11
63	71	72	0.16	0.00	0.22	-0.00	0.00	0.07	0.05
64	1	9	0.00	-0.00	-0.00	0.00	0.00	-0.00	-0.00
65	9	17	0.00	-0.00	0.00	0.00	0.00	0.00	0.00
66	17	25	0.00	-0.00	0.00	0.00	0.00	0.00	0.00
67	25	33	-0.00	-0.00	0.00	0.00	0.00	0.00	0.00
68	33	41	-0.00	-0.00	-0.00	0.00	0.00	-0.00	-0.00
69	41	49	-0.00	0.00	-0.00	-0.00	-0.00	-0.00	-0.00
70	49	57	0.00	0.00	0.00	-0.00	-0.00	0.00	0.00
71	57	65	-0.00	-0.00	0.00	0.00	0.00	0.00	0.00
72	2	10	0.29	-0.19	-0.00	0.06	0.06	0.01	-0.01
73	10	18	0.25	-0.34	-0.00	0.17	0.17	0.01	-0.01

74	18	26	0.15	-0.83	0.00	0.26	0.25	0.00	-0.00
75	26	34	-0.01	-0.93	-0.00	0.29	0.29	-0.02	0.02
76	34	42	-0.12	-0.76	-0.02	0.23	0.24	-0.03	0.02
77	42	50	-0.04	-0.23	-0.06	0.09	0.06	-0.03	-0.01
78	50	58	-0.09	0.09	0.02	-0.03	-0.02	0.01	0.00
79	58	66	-0.03	0.12	-0.01	-0.03	-0.04	-0.00	0.00
80	3	11	0.39	-0.21	-0.00	0.09	0.05	0.03	-0.03
81	11	19	0.36	-0.65	0.01	0.22	0.18	0.04	-0.03
82	19	27	0.23	-1.06	0.07	0.34	0.32	0.04	0.00
83	27	35	-0.06	-1.25	0.10	0.38	0.38	-0.00	0.06
84	35	43	-0.30	-0.90	-0.03	0.27	0.29	-0.08	0.07
85	43	51	-0.16	-0.06	-0.18	0.02	0.01	-0.09	-0.02
86	51	59	-0.18	0.22	0.05	-0.08	-0.04	0.02	0.00
87	59	67	-0.07	0.21	0.01	-0.05	-0.07	-0.00	0.01
88	4	12	0.08	-0.20	-0.01	0.10	0.02	0.04	-0.04
89	12	20	0.14	-0.65	-0.01	0.24	0.16	0.05	-0.06
90	20	28	0.14	-1.22	0.07	0.40	0.35	0.09	-0.04
91	28	36	-0.16	-1.63	0.26	0.50	0.50	0.08	0.08
92	36	44	-0.66	-1.13	0.15	0.33	0.36	-0.07	0.17
93	44	52	-0.35	0.42	-0.41	-0.16	-0.10	-0.21	-0.04
94	52	60	-0.28	0.47	0.08	-0.18	-0.09	0.04	0.01
95	60	68	-0.11	0.34	0.01	-0.08	-0.12	-0.00	0.01
96	5	13	-0.75	-0.14	-0.01	0.11	-0.02	0.01	-0.02
97	13	21	-0.58	-0.50	-0.03	0.22	0.08	0.03	-0.05
98	21	29	-0.29	-1.14	-0.05	0.41	0.29	0.07	-0.10
99	29	37	-0.25	-2.05	0.19	0.65	0.62	0.17	-0.08
100	37	45	-1.08	-1.77	0.87	0.49	0.60	0.19	0.34
101	45	53	-0.86	1.46	-0.76	-0.57	-0.34	-0.39	-0.08
102	53	61	-0.51	0.89	0.11	-0.34	-0.17	0.04	0.02
103	61	69	-0.11	0.50	-0.01	-0.10	-0.18	-0.01	0.00
104	6	14	-2.27	-0.07	-0.01	0.11	-0.07	-0.03	0.03
105	14	22	-2.11	-0.27	-0.04	0.19	-0.02	-0.03	0.01
106	22	30	-1.73	-0.74	-0.10	0.37	0.04	-0.01	-0.05
107	30	38	-0.93	-2.12	-0.37	0.78	0.53	0.01	-0.24
108	38	46	0.06	-3.95	-0.81	0.95	1.48	0.15	-0.65
109	46	54	-0.11	3.48	0.98	-1.48	-0.66	0.58	-0.04
110	54	62	-0.11	1.27	0.30	-0.49	-0.24	-0.00	0.01
111	62	70	-0.07	0.59	-0.02	-0.11	-0.23	-0.01	-0.00
112	7	15	-0.89	-0.02	-0.00	0.03	-0.02	-0.00	0.00
113	15	23	-0.84	-0.11	-0.01	0.06	0.01	-0.01	-0.00
114	23	31	-0.67	-0.37	-0.03	0.15	0.08	-0.01	-0.01
115	31	39	-0.27	-1.11	-0.07	0.37	0.31	-0.01	-0.03
116	39	47	0.48	-1.93	-0.05	0.50	0.71	0.01	-0.04
117	47	55	0.54	2.33	0.23	-0.80	-0.63	0.07	0.07
118	55	63	0.44	1.21	-0.12	-0.49	-0.20	-0.08	0.01
119	63	71	0.21	0.56	-0.01	-0.11	-0.22	-0.01	0.00
120	8	16	-0.81	-0.01	-0.01	0.01	-0.00	-0.01	-0.00
121	16	24	-0.77	-0.03	-0.04	0.01	0.01	-0.01	-0.01
122	24	32	-0.61	-0.10	-0.06	0.03	0.03	-0.02	-0.02
123	32	40	-0.12	-0.27	-0.06	0.08	0.08	-0.01	-0.03
124	40	48	0.75	-0.29	0.07	0.08	0.10	0.06	-0.01
125	48	56	0.64	0.37	0.53	-0.12	-0.11	0.17	0.17
126	56	64	0.63	0.21	-0.11	-0.07	-0.05	-0.07	0.01
127	64	72	0.23	0.17	-0.00	-0.05	-0.05	-0.00	0.00
128	73	74	0.01	-0.00	0.01	0.00	-0.00	0.00	0.00

129	71	73	0.07	-0.02	-0.00	0.03	-0.01	-0.00	0.00
130	72	74	0.01	0.01	0.00	-0.00	-0.00	-0.00	0.00
131	74	75	0.00	-0.00	-0.00	0.00	0.00	-0.00	-0.00
132	70	73	-0.07	-0.03	-0.00	0.03	0.01	-0.00	0.00
133	73	75	-0.00	0.00	0.00	-0.00	-0.00	0.00	0.00

DIMENSIONAMIENTO DE ARMADURAS

Esfuerzos de cálculo y armadura vertical del muro frontal

Nudo Nº	Canto (m)	Ancho (m)	Recu. (m)	(1)+(2)+(3) Nd (t/m)	(1)+(2)+(3) Md (txm/m)	(1)+(2)+(4) Nd (t/m)	(1)+(2)+(4) Md (txm/m)	Aint. (cm²/m)	Aext. (cm²/m)
8	0.25	1.00	0.05	0.33	-0.02	0.15	-0.02	1.13	1.13
7	0.25	1.00	0.05	0.33	0.01	0.15	-0.03	1.13	1.13
6	0.25	1.00	0.05	1.09	0.13	0.44	-0.32	1.13	1.13
5	1.07	1.00	0.05	3.22	-0.12	1.27	-1.26	4.82	4.82
4	1.05	1.00	0.05	7.08	-0.78	2.80	-2.95	4.72	4.72
3	1.05	1.00	0.05	11.66	-1.96	4.57	-5.55	4.72	4.72
2	1.05	1.00	0.05	16.49	-3.80	6.47	-9.25	4.72	4.72
1	1.05	1.00	0.05	21.05	-6.35	8.37	-14.23	4.72	4.72
16	0.25	1.00	0.05	0.41	-0.02	0.18	-0.02	1.13	1.13
15	0.25	1.00	0.05	0.41	0.06	0.18	-0.03	1.13	1.13
14	0.25	1.00	0.05	1.43	0.15	0.55	-0.31	1.13	1.13
13	1.07	1.00	0.05	4.00	-0.05	1.52	-1.24	4.82	4.82
12	1.05	1.00	0.05	8.41	-0.67	3.25	-2.93	4.72	4.72
11	1.05	1.00	0.05	13.37	-1.88	5.17	-5.53	4.72	4.72
10	1.05	1.00	0.05	18.30	-3.81	7.14	-9.24	4.72	4.72
9	1.05	1.00	0.05	22.80	-6.45	9.07	-14.22	4.72	4.72
24	0.25	1.00	0.05	0.71	0.00	0.26	-0.02	1.13	1.13
23	0.25	1.00	0.05	0.71	0.04	0.26	-0.02	1.13	1.13
22	0.25	1.00	0.05	2.77	0.21	0.94	-0.28	1.13	1.13
21	1.07	1.00	0.05	6.99	0.22	2.46	-1.18	4.82	4.82
20	1.05	1.00	0.05	13.14	-0.29	4.81	-2.85	4.72	4.72
19	1.05	1.00	0.05	18.93	-4.28	7.07	-2.88	4.72	4.72
18	1.05	1.00	0.05	23.88	-8.10	9.12	-4.98	4.72	4.72
17	1.05	1.00	0.05	28.10	-13.16	10.99	-7.79	4.72	4.72
32	0.25	1.00	0.05	1.26	0.04	0.42	0.00	1.13	1.13
31	0.25	1.00	0.05	1.26	-0.08	0.42	-0.02	1.13	1.13
30	0.25	1.00	0.05	6.21	0.11	1.88	-0.09	1.13	1.13
29	1.07	1.00	0.05	15.95	0.49	4.90	-0.31	4.82	4.82
28	1.05	1.00	0.05	24.16	-1.07	7.89	-1.25	4.72	4.72
27	1.05	1.00	0.05	29.53	-4.15	10.18	-2.83	4.72	4.72
26	1.05	1.00	0.05	33.46	-8.23	12.06	-4.98	4.72	4.72
25	1.05	1.00	0.05	36.81	-13.46	13.75	-7.80	4.72	4.72
40	0.25	1.00	0.05	0.49	0.08	0.24	0.01	1.13	1.13
39	0.25	1.00	0.05	0.49	-0.46	0.24	-0.10	1.13	1.13
38	0.25	1.00	0.05	13.72	-0.11	5.86	-0.15	1.13	1.13
37	1.07	1.00	0.05	41.35	2.60	11.60	0.20	4.82	4.82
36	1.03	1.00	0.05	45.31	-0.76	13.32	-1.14	4.72	4.72

35	1.05	1.00	0.05	44.28	-4.29	14.65	-2.80	4.72	4.72
34	1.05	1.00	0.05	45.59	-8.38	15.99	-4.96	4.72	4.72
33	1.05	1.00	0.05	47.48	-13.62	17.37	-7.79	4.72	4.72
48	0.25	1.00	0.05	-3.41	-0.03	-0.74	0.02	1.13	1.13
47	0.25	1.00	0.05	-3.41	-1.24	-0.74	-0.25	1.85	1.13
46	0.25	1.00	0.05	21.26	-0.92	5.88	-0.34	1.43	1.13
45	1.07	1.00	0.05	77.06	2.99	21.25	0.39	4.82	4.82
44	1.05	1.00	0.05	63.12	-1.26	19.15	-1.15	4.72	4.72
43	1.05	1.00	0.05	58.63	-4.31	19.39	-2.67	4.72	4.72
42	1.05	1.00	0.05	57.88	-8.26	20.47	-4.84	4.72	4.72
41	1.05	1.00	0.05	58.23	-13.83	21.56	-7.94	4.72	4.72
56	1.05	1.00	0.05	3.29	0.49	1.29	0.07	4.72	4.72
55	1.05	1.00	0.05	3.28	-0.66	1.28	0.01	4.72	4.72
54	1.05	1.00	0.05	20.66	1.46	7.07	0.97	4.72	4.72
53	1.07	1.00	0.05	49.06	2.51	15.19	0.26	4.82	4.82
52	1.05	1.00	0.05	50.07	-1.34	19.33	-1.47	4.72	4.72
51	1.05	1.00	0.05	65.16	-5.10	22.36	-3.23	4.72	4.72
50	1.05	1.00	0.05	68.79	-9.20	25.38	-5.43	4.72	4.72
49	1.05	1.00	0.05	71.95	-15.47	28.35	-9.06	4.90	4.72

Esfuerzos de calculo y armadura horizontal del muro frontal

Nudo Nº	Canto (m)	Ancho (m)	Recu. (m)	(2)+Emp.tierras+(x Md (t/m)	Md (txm/m)	Aint. (cm²/m)	Aext. (cm²/m)
1	1.05	1.00	0.05	0.00	-0.00	8.40	8.40
9	1.05	1.00	0.05	0.00	0.00	8.40	8.40
17	1.05	1.00	0.05	0.00	0.00	8.40	8.40
25	1.05	1.00	0.05	0.00	0.00	8.40	8.40
33	1.05	1.00	0.05	0.00	-0.00	8.40	8.40
41	1.05	1.00	0.05	-0.00	0.00	8.40	8.40
49	1.05	1.00	0.05	-0.00	-0.00	8.40	8.40
2	1.05	1.00	0.05	-0.13	0.01	8.40	8.40
10	1.05	1.00	0.05	-0.09	0.01	8.40	8.40
18	1.05	1.00	0.05	-0.04	0.01	8.40	8.40
26	1.05	1.00	0.05	0.01	-0.01	8.40	8.40
34	1.05	1.00	0.05	-0.03	-0.07	8.40	8.40
42	1.05	1.00	0.05	-0.45	-0.25	8.40	8.40
50	1.05	1.00	0.05	-0.53	-0.10	8.40	8.40
3	1.05	1.00	0.05	-0.39	0.04	8.40	8.40
11	1.05	1.00	0.05	-0.33	0.05	8.40	8.40
19	1.05	1.00	0.05	-0.44	0.05	8.40	8.40
27	1.05	1.00	0.05	-0.39	0.02	8.40	8.40
35	1.05	1.00	0.05	-0.52	-0.12	8.40	8.40
43	1.05	1.00	0.05	-1.05	-0.34	8.40	8.40
51	1.05	1.00	0.05	-1.05	-0.29	8.40	8.40

4	1.05	1.00	0.05	-1.39	0.06	8.40	8.40
12	1.05	1.00	0.05	-1.33	0.08	8.40	8.40
20	1.05	1.00	0.05	-1.22	0.10	8.40	8.40
28	1.05	1.00	0.05	-1.12	0.10	8.40	8.40
36	1.05	1.00	0.05	-1.15	0.00	8.40	8.40
44	1.05	1.00	0.05	-1.38	-0.25	8.40	8.40
52	1.05	1.00	0.05	-1.38	-0.45	8.40	8.40
5	1.05	1.00	0.05	-2.45	0.08	8.40	8.40
13	1.05	1.00	0.05	-2.42	0.09	8.40	8.40
21	1.05	1.00	0.05	-2.36	0.14	8.40	8.40
29	1.05	1.00	0.05	-2.19	0.21	8.40	8.40
37	1.05	1.00	0.05	-1.89	0.26	8.40	8.40
45	1.05	1.00	0.05	-1.56	-0.03	8.40	8.40
53	1.05	1.00	0.05	-1.56	-0.56	8.40	8.40
6	1.12	1.00	0.05	-3.87	0.12	8.94	8.94
14	1.12	1.00	0.05	-3.95	0.13	8.94	8.94
22	1.12	1.00	0.05	-4.06	0.19	8.94	8.94
30	1.12	1.00	0.05	-4.06	0.36	8.94	8.94
38	1.12	1.00	0.05	-3.65	0.71	8.94	8.94
46	1.12	1.00	0.05	-2.12	0.87	8.94	8.94
54	1.12	1.00	0.05	-2.12	-0.94	8.94	8.94
7	0.25	1.00	0.05	-1.21	0.00	2.00	2.00
15	0.25	1.00	0.05	-1.25	0.00	2.00	2.00
23	0.25	1.00	0.05	-1.31	-0.00	2.00	2.00
31	0.25	1.00	0.05	-1.35	-0.02	2.00	2.00
39	0.25	1.00	0.05	-1.31	-0.01	2.00	2.00
47	0.25	1.00	0.05	-1.12	0.24	2.00	2.00
55	0.25	1.00	0.05	-1.12	-0.40	2.00	2.00
8	0.30	1.00	0.05	-1.89	0.03	2.40	2.40
16	0.30	1.00	0.05	-1.97	0.07	2.40	2.40
24	0.30	1.00	0.05	-2.09	0.12	2.40	2.40
32	0.30	1.00	0.05	-2.20	0.19	2.40	2.40
40	0.30	1.00	0.05	-2.15	0.33	2.40	2.40
48	0.30	1.00	0.05	-1.76	0.37	2.40	2.40
56	0.30	1.00	0.05	-1.76	-0.73	2.40	2.40

Esfuerzos de calculo y armadura vertical en la aleta

Nudo Nº	Canto (m)	Ancho (m)	Recu. (m)	(1)+(2)+(3) Nd (t/m)	Md (txm/m)	(1)+(2)+(4) Nd (t/m)	Md (txm/m)	Aint. (cm²/m)	Aext. (cm²/m)
63	0.30	1.00	0.05	0.71	0.55	0.31	0.06	1.35	1.35
62	0.30	1.00	0.05	5.30	0.81	1.49	-0.26	1.35	1.35
61	0.30	1.00	0.05	9.71	0.48	2.15	-0.62	1.35	1.35
60	0.30	1.00	0.05	12.25	0.02	2.01	-0.90	1.35	1.35

59	0.30	1.00	0.05	12.92	-0.30	1.23	-1.05	1.35	1.35
58	0.30	1.00	0.05	12.83	-0.43	0.21	-1.03	1.35	1.35
57	0.30	1.00	0.05	12.72	-0.35	-0.49	-0.76	1.35	1.35
71	0.30	1.00	0.05	0.82	0.17	0.13	-0.06	1.35	1.35
70	0.30	1.00	0.05	3.16	0.21	0.04	-0.13	1.35	1.35
69	0.30	1.00	0.05	7.07	0.16	-0.70	-0.39	1.35	1.35
68	0.30	1.00	0.05	8.20	-0.02	-2.72	-0.53	1.35	1.35
67	0.30	1.00	0.05	8.51	-0.18	-5.23	-0.63	1.35	1.35
66	0.30	1.00	0.05	8.28	-0.25	-7.82	-0.63	1.35	1.35
65	0.30	1.00	0.05	7.99	-0.29	-9.92	-0.65	1.35	1.35
73	0.30	1.00	0.05	0.33	-0.07	0.17	-0.04	1.35	1.35

Esfuerzos de cálculo y armadura horizontal en la aleta

Nudo Nº	Canto (m)	Ancho (m)	Recu. (m)	(2):Esp.tierras+Fx Nd (t/m)	Md (txm/m)	Aint. (cm²/m)	Aext. (cm²/m)
49	0.30	1.00	0.05	-0.00	-0.00	2.40	2.40
57	0.30	1.00	0.05	-0.00	-0.00	2.40	2.40
65	0.30	1.00	0.05	-0.00	0.00	2.40	2.40
50	0.30	1.00	0.05	0.90	-0.11	2.40	2.40
58	0.30	1.00	0.05	0.21	0.11	2.40	2.40
66	0.30	1.00	0.05	0.21	-0.12	2.40	2.40
51	0.30	1.00	0.05	0.34	-0.31	2.40	2.40
59	0.30	1.00	0.05	0.13	0.06	2.40	2.40
67	0.30	1.00	0.05	0.15	-0.06	2.40	2.40
52	0.30	1.00	0.05	-0.23	-0.47	2.40	2.40
60	0.30	1.00	0.05	-0.10	-0.01	2.40	2.40
68	0.30	1.00	0.05	-0.10	0.02	2.40	2.40
53	0.30	1.00	0.05	-0.65	-0.59	2.40	2.40
61	0.30	1.00	0.05	-0.30	-0.07	2.40	2.40
69	0.30	1.00	0.05	-0.30	0.06	2.40	2.40
54	0.30	1.00	0.05	-0.90	-0.73	2.40	2.40
62	0.30	1.00	0.05	-0.29	-0.07	2.40	2.40
70	0.30	1.00	0.05	-0.29	0.04	2.40	2.40
55	0.30	1.00	0.05	-1.26	-0.56	2.40	2.40
63	0.30	1.00	0.05	-0.65	-0.14	2.40	2.40
71	0.30	1.00	0.05	-0.18	-0.17	2.40	2.40
73	0.30	1.00	0.05	-0.18	0.02	2.40	2.40
56	0.30	1.00	0.05	-1.96	-0.69	2.40	2.40
64	0.30	1.00	0.05	-0.80	-0.23	2.40	2.40

72	0.30	1.00	0.05	-0.03	-0.25	2.40	2.40
74	0.30	1.00	0.05	0.00	0.00	2.40	2.40
75	0.30	1.00	0.05	0.00	-0.00	2.40	2.40

Esfuerzos de cálculo y armadura en zapata

Puntera :

Flexión: Md = 10.95 txm/m ; Asup.= 15.00 cm²/m ; Ainf.= 0.00 cm²/m
Comprobación a cortante ...: Vcu= 64.55 t ; Vd = 0.00 t
Vd < Vcu ..... No es necesaria armadura transversal por cortante

Talón :

Borde empotrado en muro frontal ..... ; Mxd = 3.01 txm/m
Borde empotrado en aleta ..... ; Myd = 0.02 txm/m
Borde libre ..... ; Myd = -0.00 txm/m
Centro del talón ..... ; Mxd = -0.85 txm/m ; Myd = -0.04 txm/m
Armaduras ..... ; Asup.= 7.50 cm²/m ; Ainf.= 7.50 cm²/m

PROGRAMA ESTRIBOS

CALCULO Y ARMADO DE ESTRIBOS DE PUENTE

VERSION Nº 1 FECHA : 12/10/1995

Copyright : J.Diaz del Valle, 1995

E.T.S. de I.C.C. y P. de Santander

DATOS DEL PROYECTO DEL ESTRIBO

PROYECTO : AVE LLEIDA-MANRESA

REFERENCIA : P.K. 303+200. ESTRIBO 2.

FECHA DEL CALCULO : 22-9-99

DATOS DEL ESTRIBO

ESTRIBO 2.

-Datos geométricos:

H1= 3.55	H2= 0.00	H3= 0.00	H4= 1.00	H5= 0.00	m.
H6= 0.00	H7= 1.00	H8= 0.00	H9= 2.00	H10= 0.00	m.
B1= 1.05	B2= 0.00	B3= 1.45	B4= 0.00	B5= 0.00	m.
B6= 0.50	B7= 0.00	B8= 0.00	B9= 0.00	H*= 0.00	m.
C1= 0.35	C2= 0.45	C3= 0.00	C4= 0.25	C5= 0.25	m.
D1= 0.00	D2= 0.00	D3= 0.95	D4= 0.95	D5= 0.25	m.
D6= 0.25					
A1= 1.25	A2= 0.20	A3= 1.09	A4= 0.60	A5= 0.72	m.
E1= 7.90	E2= 7.70	E3= 0.30	E4= 0.00	E5= 0.30	m.
E6= 0.30	E7= 0.00	E8= 0.00	E9= 0.95	E10= 6.00	m.

-Caracteristicas de los materiales:

Peso especifico del hormigón (t/m3) ..... γh = 2.50
Resistencia del hormigón del alzado (Kp/cm²) ..... fck = 250
Resistencia del hormigón de la zapata (Kp/cm²) ..... fck'= 250
Limite elástico del acero (Kp/cm²) ..... fyk = 5100
Recubrimiento de las armaduras (m) ..... r = 0.05
Se incluyen las cuantias geométricas minimas
Coeficiente de minoración resistencia hormigón ..... γc = 1.50
Coeficiente de minoración resistencia acero ..... γs = 1.15
Coeficiente de mayoración de las acciones ..... γf = 1.60

-Caracteristicas del terreno:

Terreno sobre talón:
Peso especifico de las tierras (t/m3) ..... γt = 1.80
Angulo de rozamiento interno de las tierras (°) ..... φ = 30.00
Angulo de rozamiento entre las tierras y el muro (°) .... δ = 0.00
Coeficiente de empuje activo calculado segun Coulomb ... Kax = 0.333
Cohesión de las tierras (t/m²) ..... c = 0.00
Terreno sobre puntera :
Peso especifico de las tierras (t/m3) ..... γt = 1.80
Angulo de rozamiento interno de las tierras (°) ..... φ = 30.00
Angulo de rozamiento entre las tierras y el muro (°) .... δ = 0.00
Coeficiente de empuje pasivo de las tierras ..... Kpx = 3.000

Terreno de cimentación :
Coeficiente de rozamiento entre el cimiento y el suelo .. μ = 0,577
Adherencia entre el cimiento y el suelo (t/m²) ..... a = 0,00

Angulo de la superficie del terreno con la horizontal ... β = 0,00°

-Sobrecargas:

Carga por unidad de longitud de talud (t/m²) ..... q = 1,00
No se considera la acción sísmica .....

-Acciones del tablero sobre el estribo :

Reacciones verticales (t) y excentricidades transversales (m) :

Reaccion del peso propio del tablero ... Rpp = 49,00 , Exc.= 0,00
Reaccion del peso de la superestructura. Rse = 16,68 , Exc.= 0,00
Reacción hiperestática de pretensado ... Rhp = 0,00 , Exc.= 0,00
Reaccion máxima de la sobrecarga ..... Rma = 61,56 , Exc.= 0,00
Reacción mínima de la sobrecarga ..... Rmi = -8,30 , Exc.= 0,00
Reacción debida al gradiente termico ... Rgt = 0,00 , Exc.= 0,00
Reaccion debidas a otras acciones ..... Rot = 0,00 , Exc.= 0,00

Reacciones horizontales longitudinales (t) :

Reacción debida al frenado (+ -) ..... Rfx = 7,40
Reacción debida a las deformaciones impuestas ..... Rdx = 0,00
Reacciones debidas a otras causas (Rozam.,sismo,etc) . Rox = 0,00

Reacciones horizontales transversales (t) :

Reacción debida al viento ..... Rvy = 15,32
Reacción debida a la fuerza centrifuga ..... Rcy = 0,00
Reacciones debidas a otras causas (Rozam.,sismo,etc) . Roy = 0,00

ACCIONES SOBRE EL ESTRIBO

Las acciones actuantes sobre el estribo tienen el siguiente origen:

a) Peso propio del estribo.
b) Acciones del tablero.
c) Empuje y peso de las tierras.

Estas acciones pueden ser verticales Fz ,horizontales longitudinales Fx ,y horizontales transversales Fy. En las tablas que siguen, se recogen las citadas acciones junto con los momentos Ma ,Mx, y My :

Ma : Momento respecto a la puntera del estribo.Se utiliza para la comprobación de seguridad al vuelco.

Mx, My: Momentos respecto al c.d.g de la zapata. Se utilizan para el cálculo de las tensiones sobre el terreno.

a) PESO PROPIO DEL ESTRIBO

Zona	Volumen (m3)	Peso Fz (t)	Ma (txm)	My (txm)
Muro frontal	27,13	67,83	-70,58	31,16
Muro de guarda	1,69	4,22	-6,01	0,32
Muros en vuelta	6,21	15,52	-25,62	-2,33
Aletas en voladizo	0,63	1,57	-3,14	-2,79
Contrafuertes aleta	0,00	0,00	0,00	0,00
Impostas	0,00	0,00	0,00	0,00
Macizos caquejeado	0,00	0,00	0,00	0,00
Zapata	23,70	59,25	-88,88	0,00
TOTAL	59,35	148,39	-196,22	26,36

b) ACCIONES DEL TABLERO

b1) Reacciones verticales:

Se consideran las reacciones del tablero en los siguientes casos:

-Caso permanente: Incluye las reacciones del peso propio del tablero y de la superestructura, las reacciones hiperestáticas de pretensado y otras acciones permanentes.

-Caso máximo: incluye la suma de las reacciones de las acciones permanentes y las reacciones máximas de las sobrecargas variables.

-Caso mínimo: incluye la suma de las reacciones de las acciones permanentes y las reacciones mínimas de las sobrecargas variables.

Reacción	Axil Fz (t)	Mx (txm)	My (txm)
Permanente	65.68	-53.93	42.69
Máxima	127.24	-108.15	82.71
Mínima	57.38	-48.77	37.30

b2) Reacciones horizontales longitudinales:

Las reacciones horizontales que ejerce el tablero provienen de movimientos impuestos, frenado,sismo , rozamiento de apoyos y de otras acciones.

El valor máximo considerado para estas acciones es:

Reacción Longitudinal	Fx (t)	Mz (txm)	My (txm)
Máxima	7.40	33.67	33.67

b3) Reacciones horizontales transversales:

Estas reacciones provienen de dos tipos de fuerzas:

-Fuerzas transversales:

Son debidas a las acciones de viento y sismo, y a la fuerza centrífuga de los vehículos que circulan por el tablero :

Fy =	13.32 t.	Mx =	60.61 txm.

-Fuerzas verticales:

Debido a la excentricidad transversal de las reacciones verticales, se produce un momento transversal Mx :

. Para reacción vertical permanente .. Mx =	0.00 txm.
. Para reacción vertical máxima ..... Mx =	0.00 txm.
. Para reacción vertical mínima ..... Mx =	0.00 txm.

c) EMPUJE Y PESO DE TIERRAS

c1) Acciones horizontales:

Acción	Fuerza Fx (t)	Mz (txm)	My (txm)
Empuje de tierras.	44.59	96.61	96.61
Empuje de sobrecarga.	12.83	38.50	38.50
Empuje del agua.	0.00	0.00	0.00
Empuje total sobre trasdós.	57.42	135.11	135.11
Empuje pasivo frente puntera.	83.16	55.44	55.44

c2) Acciones verticales:

Acción	Fuerza Fz (t)	Mz (txm)	My (txm)
Peso tierras sobre talón.	82.39	-190.74	-66.85
Peso tierras sobre puntera.	6.39	-1.60	7.99
Sobrecarga sobre terraplen.	10.30	-23.42	-7.98
Rozamiento vertical tierras.	0.00	0.00	0.00
Resultante total vertical.	99.28	-215.76	-66.85

COMPROBACION DE ESTABILIDAD

Se consideran las siguientes hipótesis para las comprobaciones al vuelco y deslizamiento :

Hipótesis 1 : Construccion. Situación de estribo con relleno antes de construir el tablero.

Hipótesis 2 : Construccion. Situacion de tablero construido antes del relleno del estribo.

Hipótesis 3 : Servicio. Se considera la hipótesis más desfavorable que corresponde al mínimo valor de la reacción vertical del tablero.

Hipótesis Nº	Coeficientes de seguridad Vuelco	Deslizamiento
1	5.171	3.552
2	7.486	8.106
3	4.865	7.765

El coeficiente de seguridad al vuelco se obtiene a partir de los momentos Ma respecto de la puntera de la zapata.Se distinguen momentos volcadores y estabilizadores.El coeficiente de seguridad se obtiene como cociente entre estos momentos.

El mínimo coeficiente de seguridad al vuelco es mayor que 2, y por tanto se cumple la seguridad al vuelco.

El coeficiente de seguridad al deslizamiento se obtiene como cociente entre la fuerza estabilizadora y la desestabilizadora. La primera es la fuerza de rozamiento obtenida como producto de las fuerzas verticales por un coeficiente de rozamiento igual a

$$\mu = \operatorname{tg} \phi = 0,577$$

en donde ϕ es el ángulo de rozamiento entre la zapata y terreno. También se consideran como fuerzas estabilizadoras,la fuerza de adherencia suelo-zapata, el empuje pasivo frente a puntera, la existencia de tacón y la inclinación de la base de la zapata.

La fuerza desestabilizadora es la resultante de las fuerzas horizontales tanto longitudinales como transversales.

El mínimo coeficiente de seguridad al deslizamiento es mayor que 1.5 ,cumpliéndose por tanto la seguridad al deslizamiento.

ESTADO TENSIONAL EN EL TERRENO

Se consideran las siguientes hipótesis para el cálculo de las tensiones en el terreno :

Hipótesis 1 : Construccion. Se supone que el relleno se ejecuta antes que el tablero.

Hipótesis 2 : Construccion. Se supone que el tablero se ejecuta antes que el relleno.

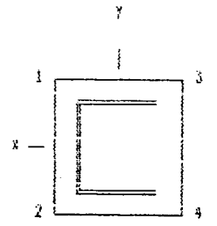
Hipótesis 3 : Servicio, con reaccion de tablero mínima y acciones horizontales máximas.

Hipótesis 4 : Servicio, con reaccion de tablero mínima y acciones longitudinales nulas.

Hipótesis 5 : Servicio, con reaccion de tablero máxima y acciones longitudinales nulas.

Hipótesis 6 : Servicio, con reaccion de tablero máxima y acciones horizontales máximas.

Las tensiones $\sigma 1, \sigma 2, \sigma 3, \sigma 4$ del terreno en las 4 esquinas de la base de la zapata (figura 1),



(Fig.1)

se obtienen a partir de la formula de flexocompresión:

$$\sigma = \frac{N}{A} \pm \frac{Mx}{Wx} \pm \frac{My}{Wy}$$

donde N , Mx , My , son los esfuerzos en la base de la zapata , y

A = 23.70 m2 , Wx= 31.20 m3 , Wy = 11.85 m3

son las caracteristicas mecánicas de la base de la zapata.

La expresión anterior solamente es valida en el caso de que toda la planta resulte comprimida, en otro caso, y dado que el terreno no puede soportar tracción alguna, el programa calcula las tensiones del terreno de manera iterativa.

El proceso iterativo anterior, se detiene cuando la resultante de las tensiones obtenidas, sea sensiblemente igual a los esfuerzos que solicitan a la base de la zapata.

La tensión media, se obtiene según la expresión : $\sigma med = \frac{N}{A}$

Siguiendo esta formulación,resulta la siguiente tabla que resume el estado tensional correspondiente a las 6 hipotesis anteriores :

ESFUERZOS DE ZAPATA Y TENSIONES DEL TERRENO

Hip	N (t)	Mx (txm)	My (txm)	σ1 (t/m²)	σ2 (t/m²)	σ3 (t/m²)	σ4 (t/m²)	σmed (t/m²)
1	289.66	0.00	130.06	24.89	24.89	0.00	0.00	12.22
2	256.07	60.61	102.72	21.42	17.53	4.08	0.19	10.80
3	347.04	60.61	221.06	35.24	31.35	0.00	0.00	14.64
4	347.04	60.61	3.19	16.32	12.43	16.85	12.97	14.64
5	416.90	60.61	42.22	23.18	19.21	15.97	12.09	17.59
6	416.90	60.61	286.43	42.02	38.13	0.00	0.00	17.59

ANALISIS ESTRUCTURAL DEL ESTRIBO COMO EMPARRILLADO ESPACIAL

DIMENSIONES Y CARACTERISTICAS MECANICAS DE LAS BARRAS

Barra Nº	i Nº	j Nº	Long. (m.)	Canto (m.)	Ancho (m.)	Area (m²)	Iner.1 (m4)	Iner.2 (m4)
1	1	2	0.64	1.05	0.37	0.388	0.004	0.036
2	2	3	0.64	1.05	0.37	0.388	0.004	0.036
3	3	4	0.64	1.05	0.37	0.388	0.004	0.036
4	4	5	0.64	1.05	0.37	0.388	0.004	0.036
5	5	6	0.64	1.05	0.37	0.388	0.004	0.036
6	6	7	0.64	0.55	0.37	0.202	0.002	0.005
7	7	8	0.64	0.25	0.37	0.092	0.001	0.000
8	9	10	0.64	1.05	0.74	0.777	0.035	0.071
9	10	11	0.64	1.05	0.74	0.777	0.035	0.071
10	11	12	0.64	1.05	0.74	0.777	0.035	0.071
11	12	13	0.64	1.05	0.74	0.777	0.035	0.071
12	13	14	0.64	1.05	0.74	0.777	0.035	0.071
13	14	15	0.64	0.55	0.74	0.404	0.018	0.010
14	15	16	0.64	0.25	0.74	0.185	0.008	0.001
15	17	18	0.64	1.05	0.74	0.777	0.035	0.071
16	18	19	0.64	1.05	0.74	0.777	0.035	0.071
17	19	20	0.64	1.05	0.74	0.777	0.035	0.071
18	20	21	0.64	1.05	0.74	0.777	0.035	0.071
19	21	22	0.64	1.05	0.74	0.777	0.035	0.071
20	22	23	0.64	0.55	0.74	0.404	0.018	0.010
21	23	24	0.64	0.25	0.74	0.185	0.008	0.001
22	25	26	0.64	1.05	0.74	0.777	0.035	0.071
23	26	27	0.64	1.05	0.74	0.777	0.035	0.071
24	27	28	0.64	1.05	0.74	0.777	0.035	0.071
25	28	29	0.64	1.05	0.74	0.777	0.035	0.071
26	29	30	0.64	1.05	0.74	0.777	0.035	0.071
27	30	31	0.64	0.55	0.74	0.404	0.018	0.010
28	31	32	0.64	0.25	0.74	0.185	0.008	0.001
29	33	34	0.64	1.05	0.74	0.777	0.035	0.071
30	34	35	0.64	1.05	0.74	0.777	0.035	0.071
31	35	36	0.64	1.05	0.74	0.777	0.035	0.071
32	36	37	0.64	1.05	0.74	0.777	0.035	0.071
33	37	38	0.64	1.05	0.74	0.777	0.035	0.071
34	38	39	0.64	0.55	0.74	0.404	0.018	0.010
35	39	40	0.64	0.25	0.74	0.185	0.008	0.001
36	41	42	0.64	1.05	0.37	0.388	0.004	0.036
37	42	43	0.64	1.05	0.37	0.388	0.004	0.036
38	43	44	0.64	1.05	0.37	0.388	0.004	0.036
39	44	45	0.64	1.05	0.37	0.388	0.004	0.036
40	45	46	0.64	1.05	0.37	0.388	0.004	0.036
41	46	47	0.64	1.30	0.37	0.481	0.005	0.068
42	47	48	0.64	1.05	0.37	0.388	0.004	0.036
43	49	50	0.64	0.30	0.91	0.274	0.019	0.002
44	50	51	0.64	0.30	0.91	0.274	0.019	0.002

45	51	52	0.64	0.30	0.91	0.274	0.019	0.002
46	52	53	0.64	0.30	0.91	0.274	0.019	0.002
47	53	54	0.64	0.30	1.13	0.338	0.036	0.003
48	54	55	0.64	0.30	1.13	0.338	0.036	0.003
49	55	56	0.64	0.30	1.13	0.338	0.036	0.003
50	1	9	0.74	1.05	0.32	0.337	0.003	0.031
51	9	17	0.74	1.05	0.32	0.337	0.003	0.031
52	17	25	0.74	1.05	0.32	0.337	0.003	0.031
53	25	33	0.74	1.05	0.32	0.337	0.003	0.031
54	33	41	0.74	1.05	0.32	0.337	0.003	0.031
55	41	49	1.15	0.30	0.32	0.096	0.001	0.001
56	2	10	0.74	1.05	0.64	0.675	0.023	0.062
57	10	18	0.74	1.05	0.64	0.675	0.023	0.062
58	18	26	0.74	1.05	0.64	0.675	0.023	0.062
59	26	34	0.74	1.05	0.64	0.675	0.023	0.062
60	34	42	0.74	1.05	0.64	0.675	0.023	0.062
61	42	50	1.15	0.30	0.64	0.193	0.007	0.001
62	3	11	0.74	1.05	0.64	0.675	0.023	0.062
63	11	19	0.74	1.05	0.64	0.675	0.023	0.062
64	19	27	0.74	1.05	0.64	0.675	0.023	0.062
65	27	35	0.74	1.05	0.64	0.675	0.023	0.062
66	35	43	0.74	1.05	0.64	0.675	0.023	0.062
67	43	51	1.15	0.30	0.64	0.193	0.007	0.001
68	4	12	0.74	1.05	0.64	0.675	0.023	0.062
69	12	20	0.74	1.05	0.64	0.675	0.023	0.062
70	20	28	0.74	1.05	0.64	0.675	0.023	0.062
71	28	36	0.74	1.05	0.64	0.675	0.023	0.062
72	36	44	0.74	1.05	0.64	0.675	0.023	0.062
73	44	52	1.15	0.30	0.64	0.193	0.007	0.001
74	5	13	0.74	1.05	0.64	0.675	0.023	0.062
75	13	21	0.74	1.05	0.64	0.675	0.023	0.062
76	21	29	0.74	1.05	0.64	0.675	0.023	0.062
77	29	37	0.74	1.05	0.64	0.675	0.023	0.062
78	37	45	0.74	1.05	0.64	0.675	0.023	0.062
79	45	53	1.15	0.30	0.64	0.193	0.007	0.001
80	6	14	0.74	1.21	0.64	0.781	0.027	0.096
81	14	22	0.74	1.21	0.64	0.781	0.027	0.096
82	22	30	0.74	1.21	0.64	0.781	0.027	0.096
83	30	38	0.74	1.21	0.64	0.781	0.027	0.096
84	38	46	0.74	1.21	0.64	0.781	0.027	0.096
85	46	54	1.15	0.30	0.64	0.193	0.007	0.001
86	7	15	0.74	0.25	0.64	0.161	0.006	0.001
87	15	23	0.74	0.25	0.64	0.161	0.006	0.001
88	23	31	0.74	0.25	0.64	0.161	0.006	0.001
89	31	39	0.74	0.25	0.64	0.161	0.006	0.001
90	39	47	0.74	0.25	0.64	0.161	0.006	0.001
91	47	55	1.15	0.30	0.64	0.193	0.007	0.001
92	8	16	0.74	0.30	0.32	0.096	0.001	0.001
93	16	24	0.74	0.30	0.32	0.096	0.001	0.001
94	24	32	0.74	0.30	0.32	0.096	0.001	0.001
95	32	40	0.74	0.30	0.32	0.096	0.001	0.001
96	40	48	0.74	0.30	0.32	0.096	0.001	0.001
97	48	56	1.15	0.30	0.32	0.096	0.001	0.001
98	57	58	0.64	0.30	0.86	0.257	0.016	0.002
99	58	59	0.64	0.30	0.86	0.257	0.016	0.002

100	60	61	0.64	0.30	0.86	0.257	0.016	0.002
101	54	57	0.86	0.30	0.64	0.193	0.007	0.001
102	55	58	0.86	0.30	0.64	0.193	0.007	0.001
103	58	60	0.86	0.30	0.64	0.193	0.007	0.001
104	56	59	0.86	0.30	0.32	0.096	0.001	0.001
105	59	61	0.86	0.30	0.32	0.096	0.001	0.001
106	61	62	0.86	0.30	0.32	0.096	0.001	0.001
107	53	57	1.07	0.30	0.64	0.193	0.007	0.001
108	57	60	1.07	0.30	0.64	0.193	0.007	0.001
109	60	62	1.07	0.30	0.64	0.193	0.007	0.001

Hipótesis (1) : Peso propio del muro y aletas del estribo

DESPLAZAMIENTOS DE LOS NUDOS

Nudo Nº	Despl.y (mm)	Despl.x (mm)	Despl.z (mm)	Giro y 1000xrad	Giro x 1000xrad	Giro z 1000xrad
1	-0.000	-0.000	0.000	-0.000	-0.000	-0.000
2	-0.000	-0.000	0.002	-0.001	-0.000	-0.000
3	-0.000	-0.001	0.003	-0.001	-0.000	-0.000
4	0.000	-0.002	0.004	-0.002	-0.000	-0.000
5	0.000	-0.003	0.005	-0.002	-0.000	-0.000
6	0.000	-0.005	0.006	-0.002	-0.000	-0.000
7	0.000	-0.007	0.006	-0.003	-0.000	-0.000
8	0.000	-0.009	0.006	-0.004	-0.000	-0.000
9	-0.000	-0.000	0.000	-0.000	0.000	-0.000
10	-0.000	-0.000	0.002	-0.001	-0.000	-0.000
11	-0.000	-0.001	0.003	-0.001	-0.000	-0.000
12	0.000	-0.002	0.004	-0.002	-0.000	-0.000
13	0.000	-0.003	0.005	-0.002	-0.000	-0.000
14	0.000	-0.005	0.006	-0.003	-0.000	-0.000
15	0.000	-0.007	0.006	-0.003	-0.000	-0.001
16	0.000	-0.009	0.006	-0.004	-0.000	-0.001
17	-0.000	-0.000	0.000	-0.000	0.000	-0.000
18	-0.000	-0.000	0.002	-0.001	-0.000	-0.000
19	-0.000	-0.001	0.003	-0.002	-0.000	-0.000
20	0.000	-0.002	0.004	-0.002	-0.000	-0.000
21	0.000	-0.004	0.005	-0.003	-0.000	-0.001
22	0.000	-0.006	0.006	-0.003	-0.000	-0.001
23	0.000	-0.008	0.006	-0.003	-0.000	-0.001
24	0.000	-0.010	0.006	-0.004	-0.000	-0.001
25	-0.000	-0.000	0.000	-0.000	0.000	-0.000
26	-0.000	-0.000	0.002	-0.001	0.000	-0.000
27	-0.000	-0.001	0.003	-0.002	-0.000	-0.000
28	-0.000	-0.002	0.005	-0.002	-0.000	-0.000
29	0.000	-0.004	0.005	-0.003	-0.000	-0.001
30	0.000	-0.006	0.006	-0.003	-0.000	-0.001
31	0.000	-0.009	0.006	-0.004	-0.000	-0.002
32	0.000	-0.012	0.006	-0.005	-0.000	-0.002
33	-0.000	0.000	0.000	-0.000	0.000	0.000
34	-0.000	-0.000	0.002	-0.001	0.000	0.000
35	-0.000	-0.001	0.003	-0.002	-0.000	-0.000
36	-0.000	-0.003	0.005	-0.003	-0.000	-0.000
37	0.000	-0.005	0.005	-0.004	-0.000	-0.001
38	0.000	-0.008	0.006	-0.004	-0.000	-0.002
39	0.000	-0.011	0.006	-0.005	-0.000	-0.002
40	0.001	-0.014	0.007	-0.006	-0.000	-0.003
41	-0.000	0.000	0.000	-0.000	0.000	0.000
42	-0.000	-0.000	0.002	-0.001	-0.000	0.000
43	-0.000	-0.001	0.004	-0.002	-0.000	0.000
44	-0.000	-0.003	0.005	-0.003	-0.000	-0.000
45	0.000	-0.005	0.005	-0.003	-0.000	-0.001

46	0.000	-0.009	0.006	-0.006	-0.000	-0.002
47	0.000	-0.013	0.007	-0.007	-0.000	-0.002
48	0.001	-0.017	0.007	-0.007	-0.000	-0.003
49	-0.000	0.000	0.000	-0.000	0.000	-0.000
50	-0.000	-0.000	0.003	-0.001	0.000	-0.000
51	-0.000	-0.001	0.007	-0.002	0.000	-0.000
52	-0.000	-0.002	0.009	-0.003	0.000	-0.000
53	-0.001	-0.005	0.012	-0.007	0.000	-0.000
54	-0.001	-0.009	0.013	-0.007	0.000	-0.000
55	-0.001	-0.014	0.014	-0.008	0.000	-0.000
56	-0.001	-0.018	0.014	-0.008	0.000	-0.000
57	-0.001	-0.009	0.021	-0.010	0.000	-0.000
58	-0.001	-0.014	0.022	-0.009	0.000	-0.000
59	-0.001	-0.019	0.022	-0.008	0.000	-0.000
60	-0.001	-0.014	0.030	-0.009	0.000	-0.000
61	-0.002	-0.020	0.030	-0.008	0.000	-0.000
62	-0.002	-0.029	0.037	-0.008	0.000	-0.000

ESFUERZOS EN LAS BARRAS

Barra Nº	i Nº	j Nº	Axil (t.)	Cort.1 (t.)	Cort.2 (t.)	Flec.1i (txm)	Flec.1j (txm)	Flec.2i (txm)	Flec.2j (txm)
1	1	2	3.30	-0.00	0.02	0.00	0.00	0.13	-0.12
2	2	3	2.67	-0.00	0.03	0.00	0.00	0.12	-0.10
3	3	4	2.04	0.00	0.03	-0.00	-0.00	0.09	-0.08
4	4	5	1.41	0.00	0.03	-0.00	-0.00	0.07	-0.05
5	5	6	0.78	0.00	0.02	-0.00	-0.00	0.04	-0.02
6	6	7	0.31	-0.00	0.01	0.00	0.00	0.01	-0.01
7	7	8	0.07	-0.00	0.00	0.00	0.00	0.00	-0.00
8	9	10	6.62	-0.03	0.05	0.01	0.01	0.28	-0.24
9	10	11	5.35	-0.02	0.06	0.01	0.01	0.24	-0.20
10	11	12	4.08	-0.02	0.06	0.00	0.01	0.20	-0.16
11	12	13	2.82	-0.01	0.06	0.00	0.00	0.14	-0.11
12	13	14	1.57	0.00	0.05	-0.00	0.00	0.09	-0.05
13	14	15	0.62	0.00	0.02	-0.00	-0.00	0.02	-0.01
14	15	16	0.15	0.00	0.01	-0.00	-0.00	0.01	-0.00
15	17	18	6.67	-0.05	0.05	0.02	0.02	0.29	-0.26
16	18	19	5.40	-0.05	0.05	0.01	0.02	0.26	-0.23
17	19	20	4.13	-0.05	0.06	0.01	0.02	0.22	-0.18
18	20	21	2.85	-0.03	0.06	0.00	0.01	0.17	-0.13
19	21	22	1.58	-0.01	0.06	-0.00	0.01	0.10	-0.06
20	22	23	0.63	0.01	0.02	-0.00	-0.00	0.03	-0.02
21	23	24	0.15	0.00	0.01	-0.00	-0.00	0.01	-0.00
22	25	26	6.76	-0.08	0.03	0.03	0.03	0.31	-0.29
23	26	27	5.49	-0.08	0.03	0.02	0.03	0.29	-0.27
24	27	28	4.22	-0.08	0.06	0.02	0.03	0.27	-0.24
25	28	29	2.95	-0.07	0.08	0.02	0.03	0.23	-0.17
26	29	30	1.63	-0.04	0.09	0.01	0.02	0.14	-0.09
27	30	31	0.64	-0.01	0.02	0.00	0.00	0.04	-0.02
28	31	32	0.15	-0.01	0.01	0.00	0.00	0.01	-0.00
29	33	34	6.88	-0.18	-0.03	0.03	0.03	0.30	-0.31
30	34	35	5.65	-0.11	-0.02	0.03	0.04	0.32	-0.33
31	35	36	4.37	-0.13	0.01	0.03	0.05	0.35	-0.33

32	36	37	3.09	-0.14	0.08	0.03	0.06	0.33	-0.28
33	37	38	1.79	-0.14	0.20	0.02	0.07	0.26	-0.13
34	38	39	0.68	-0.05	0.04	0.02	0.02	0.05	-0.02
35	39	40	0.16	-0.03	0.02	0.01	0.01	0.01	0.00
36	41	42	3.52	-0.02	-0.10	0.01	0.01	0.12	-0.18
37	42	43	2.92	-0.03	-0.10	0.01	0.01	0.15	-0.21
38	43	44	2.30	-0.04	-0.12	0.01	0.01	0.17	-0.25
39	44	45	1.65	-0.05	-0.02	0.01	0.02	0.22	-0.23
40	45	46	1.18	-0.06	0.29	0.01	0.02	0.31	-0.13
41	46	47	0.79	-0.03	0.34	0.02	0.01	0.38	-0.04
42	47	48	0.28	-0.02	0.22	0.01	0.00	0.13	0.01
43	49	50	4.40	-0.01	-0.03	0.02	-0.01	0.00	-0.02
44	50	51	4.01	-0.02	-0.05	0.01	-0.00	-0.01	-0.03
45	51	52	3.65	-0.02	-0.09	0.01	0.06	-0.02	-0.04
46	52	53	3.37	-0.03	-0.29	0.01	0.01	-0.06	-0.13
47	53	54	2.05	-0.03	-0.05	0.00	0.01	-0.01	-0.02
48	54	55	1.20	-0.01	-0.06	0.00	0.01	-0.02	-0.02
49	55	56	0.33	-0.01	-0.03	0.00	0.00	-0.01	-0.01
50	1	9	0.00	-0.00	-0.00	0.00	0.00	-0.00	-0.00
51	9	17	0.00	-0.00	0.00	0.00	0.00	0.00	0.00
52	17	25	0.00	-0.00	0.00	0.00	0.00	0.00	0.00
53	25	33	0.00	-0.00	0.00	0.00	0.00	0.00	0.00
54	33	41	-0.00	0.00	0.00	-0.00	-0.00	0.00	0.00
55	41	49	-0.00	-0.00	0.00	0.00	0.00	0.00	0.00
56	2	10	0.01	-0.01	0.00	0.00	0.00	-0.00	0.01
57	10	18	0.02	-0.03	0.01	0.01	0.01	0.00	0.01
58	18	26	0.02	-0.05	0.01	0.02	0.02	0.01	0.00
59	26	34	0.02	-0.07	0.02	0.03	0.03	0.01	-0.00
60	34	42	0.01	-0.07	0.02	0.03	0.02	0.01	0.00
61	42	50	0.02	-0.05	-0.00	0.03	0.03	-0.00	0.00
62	3	11	0.02	-0.01	0.00	0.00	0.00	-0.02	0.02
63	11	19	0.02	-0.03	0.00	0.01	0.01	-0.01	0.01
64	19	27	0.03	-0.06	0.01	0.02	0.02	0.01	0.00
65	27	35	0.03	-0.09	0.03	0.03	0.03	0.03	-0.00
66	35	43	0.01	-0.10	0.05	0.04	0.03	0.04	0.01
67	43	51	0.04	-0.09	-0.00	0.06	0.05	-0.00	-0.00
68	4	12	-0.01	-0.01	-0.00	0.00	-0.00	-0.04	0.04
69	12	20	0.00	-0.02	-0.00	0.01	0.00	-0.03	0.03
70	20	28	0.02	-0.05	-0.00	0.02	0.01	-0.01	0.01
71	28	36	0.03	-0.09	0.03	0.03	0.03	0.03	-0.00
72	36	44	0.01	-0.12	0.10	0.05	0.04	0.06	0.01
73	44	52	0.20	-0.15	-0.00	0.08	0.09	-0.00	-0.00
74	5	13	-0.06	-0.00	-0.00	0.00	-0.00	-0.08	0.07
75	13	21	-0.05	-0.01	-0.01	0.01	-0.00	-0.07	0.06
76	21	29	-0.03	-0.03	-0.01	0.02	0.00	-0.05	0.04
77	29	37	0.01	-0.08	-0.01	0.03	0.03	-0.02	0.01
78	37	45	0.01	-0.13	0.11	0.05	0.04	0.06	0.02
79	45	53	0.42	0.03	-0.00	0.02	-0.05	0.00	-0.00
80	6	14	-0.16	0.00	-0.02	0.00	-0.01	-0.18	0.17
81	14	22	-0.16	0.00	-0.05	0.00	-0.01	-0.19	0.15
82	22	30	-0.15	-0.00	-0.10	0.01	-0.01	-0.20	0.13
83	30	38	-0.11	-0.04	-0.16	0.03	-0.00	-0.20	0.08
84	38	46	-0.03	-0.19	-0.31	0.09	0.05	-0.21	-0.03
85	46	54	-0.07	0.12	0.01	-0.04	-0.09	0.01	0.00
86	7	15	-0.06	0.00	-0.00	0.00	-0.00	-0.00	0.00

87	15	23	-0.06	0.00	-0.01	0.00	-0.00	-0.00	-0.00
88	23	31	-0.06	0.00	-0.02	0.00	-0.00	-0.01	-0.00
89	31	39	-0.06	-0.02	-0.03	0.01	0.00	-0.01	-0.01
90	39	47	-0.03	-0.07	-0.05	0.03	0.02	-0.02	-0.02
91	47	55	-0.36	0.12	0.01	-0.05	-0.09	0.01	-0.00
92	8	16	-0.05	0.00	-0.00	0.00	-0.00	-0.00	0.00
93	16	24	-0.05	0.00	-0.01	-0.00	-0.00	-0.01	-0.00
94	24	32	-0.05	-0.00	-0.03	0.00	-0.00	-0.01	-0.01
95	32	40	-0.05	-0.00	-0.04	0.00	0.00	-0.02	-0.01
96	40	48	-0.02	-0.01	-0.06	0.00	0.00	-0.02	-0.02
97	48	56	-0.28	0.02	0.00	-0.01	-0.01	0.01	-0.00
98	57	58	0.55	-0.00	-0.24	-0.00	0.00	-0.09	-0.07
99	58	59	0.21	0.00	-0.12	-0.00	0.00	-0.04	-0.03
100	60	61	0.17	0.00	-0.08	-0.00	0.00	-0.03	-0.02
101	54	57	-0.08	-0.19	0.00	0.14	0.03	0.00	-0.00
102	55	58	-0.35	-0.20	0.00	0.12	0.06	0.00	-0.00
103	53	60	-0.20	-0.13	0.00	0.06	0.06	0.00	-0.00
104	56	59	-0.25	-0.04	-0.00	0.02	0.01	0.00	-0.00
105	59	61	-0.13	-0.04	-0.00	0.02	0.02	0.00	-0.00
106	61	62	-0.05	-0.00	0.00	0.00	0.00	0.00	-0.00
107	53	57	1.01	-0.25	-0.00	0.19	0.08	-0.00	-0.00
108	57	60	0.41	0.01	0.00	-0.02	0.01	0.00	-0.00
109	60	62	0.04	0.03	-0.00	-0.05	-0.00	-0.00	-0.00

Hipotesis (2) : Empuje de tierras + Reaccion Fx del tablero

DESPLAZAMIENTOS DE LOS NUDOS

Nudo Nº	Despl.y (mm)	Despl.x (mm)	Despl.z (mm)	Giro y 1000xrad	Giro x 1000xrad	Giro z 1000xrad
1	-0.000	0.000	-0.000	0.000	-0.000	0.000
2	0.000	0.008	-0.000	0.022	-0.000	-0.000
3	0.000	0.027	-0.000	0.036	-0.000	-0.000
4	0.000	0.053	-0.000	0.045	-0.000	-0.000
5	0.000	0.083	-0.000	0.049	-0.000	-0.000
6	0.000	0.115	-0.000	0.050	-0.000	-0.000
7	0.000	0.149	-0.000	0.054	-0.000	-0.000
8	0.000	0.186	-0.000	0.059	-0.000	-0.000
9	-0.000	0.000	0.000	0.000	0.000	-0.000
10	0.000	0.008	0.000	0.022	-0.000	-0.000
11	0.000	0.027	-0.000	0.036	-0.000	-0.000
12	0.000	0.053	-0.000	0.044	-0.000	-0.000
13	0.001	0.083	-0.000	0.049	-0.001	-0.000
14	0.001	0.115	-0.000	0.050	-0.001	-0.000
15	0.001	0.149	-0.000	0.054	-0.001	-0.001
16	0.002	0.185	-0.000	0.058	-0.001	-0.001
17	-0.000	0.000	0.000	0.000	0.000	-0.000
18	0.000	0.008	0.000	0.022	-0.000	-0.000
19	0.000	0.027	0.000	0.036	-0.001	-0.000
20	0.001	0.053	0.000	0.044	-0.001	-0.000
21	0.001	0.083	0.001	0.048	-0.001	-0.001
22	0.002	0.115	0.001	0.050	-0.001	-0.001
23	0.003	0.148	0.001	0.053	-0.002	-0.001
24	0.004	0.183	0.001	0.055	-0.002	-0.003
25	-0.000	0.000	0.000	0.000	0.000	0.000
26	0.000	0.008	0.001	0.022	-0.000	0.000
27	0.000	0.027	0.001	0.036	-0.001	0.000
28	0.001	0.053	0.001	0.044	-0.001	-0.000
29	0.002	0.082	0.002	0.048	-0.002	-0.001
30	0.003	0.114	0.002	0.049	-0.002	-0.002
31	0.005	0.146	0.002	0.052	-0.003	-0.002
32	0.006	0.179	0.002	0.050	-0.003	-0.005
33	-0.000	0.000	0.000	0.000	0.000	0.000
34	0.000	0.008	0.001	0.022	-0.001	0.000
35	0.000	0.027	0.002	0.036	-0.001	0.001
36	0.001	0.053	0.003	0.043	-0.002	0.000
37	0.002	0.082	0.004	0.047	-0.003	-0.001
38	0.004	0.112	0.004	0.048	-0.004	-0.003
39	0.006	0.144	0.004	0.050	-0.004	-0.006
40	0.009	0.171	0.004	0.041	-0.004	-0.009
41	0.000	0.000	0.000	0.000	0.000	0.000
42	0.000	0.008	0.003	0.023	-0.002	0.001
43	0.001	0.028	0.005	0.035	-0.004	0.001
44	0.002	0.053	0.006	0.042	-0.004	0.001
45	0.003	0.081	0.007	0.044	-0.005	0.000

46	0.005	0.110	0.008	0.044	-0.005	-0.002
47	0.008	0.138	0.009	0.042	-0.006	0.010
48	0.011	0.165	0.009	0.041	-0.005	0.014
49	0.000	0.000	-0.000	0.000	-0.000	0.000
50	0.007	0.009	-0.009	0.016	-0.015	0.014
51	0.020	0.028	-0.016	0.025	-0.022	0.028
52	0.035	0.053	-0.022	0.032	-0.022	0.043
53	0.048	0.081	-0.026	0.038	-0.019	0.058
54	0.060	0.109	-0.028	0.037	-0.019	0.064
55	0.072	0.136	-0.029	0.037	-0.019	0.068
56	0.084	0.162	-0.029	0.040	-0.018	0.069
57	0.131	0.109	-0.062	0.042	-0.025	0.094
58	0.147	0.136	-0.062	0.041	-0.024	0.096
59	0.163	0.162	-0.062	0.041	-0.024	0.098
60	0.234	0.136	-0.098	0.042	-0.027	0.103
61	0.251	0.162	-0.098	0.041	-0.027	0.103
62	0.339	0.163	-0.133	0.041	-0.027	0.103

ESFUERZOS EN LAS BARRAS

Barra Nº	i Nº	j Nº	Axil (t.)	Cort.1 (t.)	Cort.2 (t.)	Flec.1i (txm)	Flec.1j (txm)	Flec.2i (txm)	Flec.2j (txm)
1	1	2	-0.09	0.00	-2.44	-0.00	-0.00	-4.49	2.93
2	2	3	-0.12	0.00	-1.80	-0.00	-0.00	-2.95	1.77
3	3	4	-0.14	0.00	-1.27	-0.00	-0.00	-1.78	0.96
4	4	5	-0.13	0.00	-0.85	-0.00	-0.00	-0.97	0.45
5	5	6	-0.09	0.00	-0.47	-0.00	-0.00	-0.44	0.14
6	6	7	-0.03	-0.00	-0.21	0.00	0.00	-0.15	0.02
7	7	8	-0.01	-0.00	-0.04	0.00	0.00	-0.02	-0.00
8	9	10	0.03	-0.11	-4.86	0.02	0.05	-8.97	5.85
9	10	11	-0.05	-0.09	-3.60	0.00	0.05	-5.85	3.54
10	11	12	-0.13	-0.04	-2.34	-0.01	0.04	-3.55	1.91
11	12	13	-0.16	0.03	-1.67	-0.03	0.01	-1.93	0.86
12	13	14	-0.14	0.10	-0.95	-0.04	-0.02	-0.88	0.27
13	14	15	-0.06	0.08	-0.42	-0.04	-0.02	-0.30	0.03
14	15	16	-0.01	0.04	-0.08	-0.02	-0.01	-0.04	-0.01
15	17	18	0.71	-0.25	-4.81	0.04	0.12	-8.93	5.84
16	18	19	0.57	-0.23	-3.58	0.02	0.13	-5.83	3.52
17	19	20	0.39	-0.19	-2.55	0.01	0.11	-3.53	1.89
18	20	21	0.19	-0.08	-1.69	-0.02	0.07	-1.92	0.83
19	21	22	0.03	0.08	-0.99	-0.05	-0.00	-0.87	0.23
20	22	23	-0.01	0.13	-0.41	-0.06	-0.02	-0.28	0.02
21	23	24	-0.00	0.07	-0.07	-0.03	-0.01	-0.03	-0.01
22	25	26	1.95	-0.44	-4.83	0.08	0.20	-8.93	5.83
23	26	27	1.76	-0.49	-3.64	0.07	0.24	-5.79	3.45
24	27	28	1.46	-0.57	-2.53	0.10	0.27	-3.45	1.82
25	28	29	0.94	-0.54	-1.63	0.09	0.25	-1.86	0.79
26	29	30	0.40	-0.26	-1.11	0.02	0.14	-0.87	0.15
27	30	31	0.10	0.09	-0.44	-0.05	-0.00	-0.26	-0.02
28	31	32	0.02	0.05	-0.02	-0.02	-0.01	0.00	-0.02
29	33	34	4.05	-0.75	-5.45	0.14	0.34	-9.22	5.71
30	34	35	3.77	-1.10	-3.87	0.23	0.48	-5.72	3.24
31	35	36	3.13	-1.30	-2.59	0.38	0.59	-3.30	1.63

32	36	37	2.33	-1.69	-1.67	0.43	0.66	-1.70	0.62
33	37	38	1.36	-1.44	-1.02	0.31	0.62	-0.74	0.09
34	38	39	0.34	-0.17	-1.20	0.03	0.08	-0.48	-0.30
35	39	40	0.09	-0.10	0.26	0.05	0.03	0.15	0.04
36	41	42	4.66	-0.36	-4.73	0.08	0.16	-5.29	2.25
37	42	43	3.71	-0.87	-3.87	0.25	0.31	-3.34	0.85
38	43	44	2.17	-1.07	-3.31	0.33	0.36	-2.19	0.07
39	44	45	2.08	-1.11	-2.93	0.35	0.37	-1.37	-0.51
40	45	46	1.48	-1.01	-2.34	0.31	0.35	-0.60	-0.90
41	46	47	1.07	-0.44	-0.27	0.13	0.15	0.45	-0.62
42	47	48	0.09	-0.33	-0.09	0.14	0.07	0.06	-0.11
43	49	50	-11.29	2.81	-1.15	-2.46	0.66	-0.52	-0.22
44	50	51	-9.63	1.77	-1.61	-0.99	-0.15	-0.61	-0.42
45	51	52	-7.47	1.02	-1.80	-0.26	-0.40	-0.64	-0.51
46	52	53	-5.24	0.59	-1.69	0.03	-0.41	-0.60	-0.48
47	53	54	-2.89	0.29	-1.23	-0.07	-0.11	-0.39	-0.41
48	54	55	-1.32	0.16	-1.06	0.02	-0.12	-0.34	-0.35
49	55	56	-0.12	-0.01	-0.50	0.02	-0.02	-0.20	-0.12
50	1	9	0.00	-0.00	0.00	0.00	0.00	0.00	0.00
51	9	17	0.00	-0.00	-0.00	0.00	0.00	-0.00	-0.00
52	17	25	0.00	-0.00	0.00	0.00	0.00	0.00	0.00
53	25	33	0.00	-0.00	0.00	0.00	0.00	0.00	0.00
54	33	41	-0.00	-0.00	-0.00	0.00	0.00	-0.00	-0.00
55	41	49	-0.00	0.00	0.00	-0.00	-0.00	0.00	0.00
56	2	10	-0.04	-0.03	0.00	0.02	0.00	-0.01	0.01
57	10	18	-0.02	-0.12	-0.00	0.05	0.03	-0.00	0.00
58	18	26	-0.00	-0.26	-0.03	0.11	0.08	0.01	-0.03
59	26	34	-0.05	-0.44	-0.10	0.19	0.14	0.05	-0.13
60	34	42	-0.40	-0.70	0.23	0.43	0.09	0.18	-0.01
61	42	50	0.45	-1.66	-0.06	1.07	0.83	0.01	-0.08
62	3	11	-0.34	-0.02	-0.00	0.03	-0.02	-0.03	0.02
63	11	19	-0.29	-0.09	-0.03	0.06	0.01	-0.02	0.00
64	19	27	-0.25	-0.27	-0.06	0.13	0.07	0.02	-0.06
65	27	35	-0.33	-0.61	-0.03	0.27	0.18	0.12	-0.15
66	35	43	-0.72	-1.23	0.16	0.67	0.23	0.26	-0.14
67	43	51	0.19	-2.16	0.09	1.42	1.07	0.15	-0.05
68	4	12	-0.94	0.01	-0.00	0.04	-0.04	-0.05	0.05
69	12	20	-0.87	-0.03	-0.02	0.05	-0.05	-0.04	0.03
70	20	28	-0.76	-0.23	-0.06	0.13	0.04	-0.01	-0.03
71	28	36	-0.73	-0.72	-0.07	0.32	0.21	0.09	-0.14
72	36	44	-0.92	-1.54	-0.04	0.80	0.34	0.26	-0.29
73	44	52	-0.11	-2.23	0.27	1.46	1.11	0.31	-0.00
74	5	13	-1.81	0.04	0.00	0.04	-0.07	-0.08	0.08
75	13	21	-1.74	0.06	0.01	0.03	-0.08	-0.07	0.08
76	21	29	-1.58	-0.09	0.00	0.10	-0.03	-0.06	0.07
77	29	37	-1.30	-0.62	-0.17	0.31	0.15	-0.04	-0.08
78	37	45	-1.06	-1.50	-0.22	0.81	0.37	0.24	-0.41
79	45	53	0.01	-2.20	0.40	1.57	1.16	0.45	0.01
80	6	14	-3.32	0.06	-0.00	0.04	-0.09	-0.18	0.18
81	14	22	-3.34	0.14	0.01	0.03	-0.13	-0.19	0.20
82	22	30	-3.29	0.10	0.06	0.07	-0.14	-0.21	0.26
83	30	38	-2.94	-0.21	0.21	0.23	-0.07	-0.31	0.47
84	38	46	-1.67	-1.23	-2.17	0.71	0.19	-0.51	-1.10
85	46	54	-0.45	-1.63	0.69	1.04	0.83	0.64	0.15
86	7	15	-0.98	0.03	-0.00	0.01	-0.03	-0.00	0.00

87	15	23	-1.02	0.07	-0.01	-0.01	-0.05	-0.00	0.00
88	23	31	-1.09	0.08	-0.01	-0.01	-0.05	-0.01	0.00
89	31	39	-1.12	0.01	0.07	0.03	-0.03	0.01	0.04
90	39	47	-1.04	-0.25	-0.65	0.15	0.04	-0.18	-0.29
91	47	55	-0.72	-1.23	0.67	0.79	0.62	0.60	0.17
92	8	16	-0.79	0.01	-0.01	0.00	-0.01	-0.01	-0.00
93	16	24	-0.83	0.02	-0.04	-0.00	-0.01	-0.02	-0.01
94	24	32	-0.90	0.02	-0.09	-0.00	-0.01	-0.04	-0.03
95	32	40	-0.95	0.00	-0.18	0.00	-0.00	-0.08	-0.05
96	40	48	-0.85	-0.09	-0.55	0.03	0.03	-0.14	-0.27
97	48	56	-0.52	-0.18	0.44	0.11	0.10	0.36	0.15
98	57	58	-0.18	0.09	-0.11	0.06	-0.12	-0.02	-0.05
99	58	59	-0.07	-0.05	-0.05	0.04	-0.01	-0.01	-0.02
100	60	61	0.01	0.02	0.02	-0.00	-0.01	0.01	0.00
101	54	57	-0.28	-0.06	0.27	-0.09	0.14	0.27	-0.04
102	55	58	-0.16	-0.05	0.37	-0.08	0.11	0.31	0.01
103	58	60	-0.10	0.07	0.12	-0.05	-0.02	0.08	0.02
104	56	59	-0.02	-0.06	0.28	0.02	0.03	0.19	0.05
105	59	61	0.03	0.01	0.11	-0.01	-0.00	0.06	0.03
106	61	62	0.01	0.00	-0.00	-0.00	-0.00	-0.00	-0.00
107	53	57	0.28	0.40	0.16	-0.29	-0.14	0.22	-0.05
108	57	60	0.11	-0.05	0.07	0.03	0.00	0.07	0.00
109	60	62	-0.01	-0.01	0.00	0.01	0.00	0.00	0.00

Hipotesis (3) : Reacción vertical máxima del tablero: Fzmáx

DESPLAZAMIENTOS DE LOS NUDOS

Nudo Nº	Despl.y (mm)	Despl.x (mm)	Despl.z (mm)	Giro y 1000xrad	Giro x 1000xrad	Giro z 1000xrad
1	-0.000	-0.000	0.000	-0.000	-0.000	0.000
2	-0.000	-0.001	0.002	-0.002	-0.000	0.000
3	-0.000	-0.003	0.003	-0.003	-0.000	0.000
4	-0.000	-0.007	0.004	-0.007	-0.000	0.000
5	0.000	-0.012	0.004	-0.008	-0.000	0.000
6	0.000	-0.018	0.005	-0.010	-0.000	-0.000
7	0.000	-0.025	0.005	-0.013	-0.000	-0.000
8	0.000	-0.035	0.005	-0.019	-0.000	-0.000
9	-0.000	-0.000	0.000	-0.000	0.000	0.000
10	-0.000	-0.001	0.002	-0.002	0.000	0.000
11	-0.000	-0.003	0.003	-0.003	-0.001	0.000
12	-0.000	-0.007	0.005	-0.007	-0.001	0.000
13	0.000	-0.012	0.005	-0.009	-0.002	0.000
14	0.002	-0.018	0.006	-0.010	-0.003	-0.000
15	0.004	-0.025	0.006	-0.014	-0.003	-0.001
16	0.006	-0.037	0.006	-0.020	-0.003	-0.002
17	-0.000	0.000	0.000	-0.000	0.000	0.000
18	-0.001	-0.001	0.003	-0.002	0.000	0.000
19	-0.001	-0.003	0.005	-0.006	-0.001	0.001
20	-0.001	-0.006	0.007	-0.007	-0.002	0.001
21	0.001	-0.011	0.009	-0.009	-0.004	0.001
22	0.004	-0.018	0.010	-0.011	-0.007	-0.000
23	0.007	-0.027	0.011	-0.018	-0.007	-0.002
24	0.011	-0.041	0.011	-0.021	-0.008	-0.004
25	-0.000	0.000	0.000	-0.000	0.000	0.000
26	-0.001	-0.000	0.004	-0.002	0.000	0.000
27	-0.001	-0.002	0.007	-0.004	-0.001	0.000
28	-0.001	-0.005	0.011	-0.006	-0.003	0.001
29	0.001	-0.010	0.014	-0.010	-0.005	0.002
30	0.005	-0.018	0.018	-0.014	-0.011	0.000
31	0.010	-0.032	0.021	-0.028	-0.012	-0.003
32	0.014	-0.048	0.021	-0.019	-0.007	-0.006
33	-0.000	0.000	0.000	-0.000	0.000	-0.000
34	-0.001	-0.000	0.004	-0.002	0.000	-0.000
35	-0.001	-0.002	0.009	-0.005	-0.001	-0.000
36	-0.000	-0.005	0.014	-0.005	-0.005	0.000
37	0.002	-0.009	0.021	-0.009	-0.005	0.001
38	0.005	-0.017	0.029	-0.018	-0.007	0.002
39	0.009	-0.040	0.039	-0.038	-0.006	0.005
40	0.012	-0.051	0.038	-0.003	-0.005	0.009
41	-0.000	-0.000	0.000	-0.000	0.000	-0.000
42	-0.001	-0.001	0.005	-0.002	-0.000	-0.000
43	-0.001	-0.002	0.010	-0.003	-0.001	-0.000
44	-0.000	-0.005	0.016	-0.005	-0.002	-0.000
45	0.002	-0.009	0.023	-0.007	-0.005	-0.000

46	0.005	-0.015	0.029	-0.010	0.001	0.004
47	0.007	-0.021	0.031	-0.010	0.004	0.014
48	0.009	-0.027	0.031	-0.009	-0.003	0.020
49	-0.000	-0.000	0.000	-0.000	-0.000	0.000
50	0.000	-0.001	0.005	-0.001	-0.001	0.001
51	0.001	-0.003	0.011	-0.002	-0.002	0.001
52	0.003	-0.005	0.016	-0.002	-0.004	0.002
53	0.006	-0.010	0.020	-0.004	-0.005	0.002
54	0.009	-0.015	0.023	-0.001	-0.005	0.002
55	0.012	-0.020	0.024	0.000	-0.004	0.001
56	0.015	-0.024	0.024	-0.005	-0.005	0.001
57	0.010	-0.015	0.026	-0.007	-0.004	0.002
58	0.013	-0.020	0.026	-0.006	-0.004	0.002
59	0.016	-0.023	0.026	-0.005	-0.004	0.002
60	0.014	-0.019	0.032	-0.006	-0.004	0.002
61	0.017	-0.024	0.032	-0.006	-0.004	0.002
62	0.019	-0.024	0.037	-0.006	-0.004	0.002

ESFUERZOS EN LAS BARRAS

Barra Nº	i Nº	j Nº	Axil (t.)	Cort.1 (t.)	Cort.2 (t.)	Flec.1i (txm)	Flec.1j (txm)	Flec.2i (txm)	Flec.2j (txm)
1	1	2	2.93	-0.00	0.06	0.00	0.00	0.42	-0.38
2	2	3	2.36	-0.00	0.06	0.00	0.00	0.40	-0.36
3	3	4	1.84	0.00	0.09	-0.00	-0.00	0.38	-0.32
4	4	5	0.92	0.00	0.11	-0.00	-0.00	0.32	-0.24
5	5	6	0.37	0.00	0.12	-0.00	-0.00	0.22	-0.14
6	6	7	0.10	-0.00	0.05	0.00	0.00	0.09	-0.06
7	7	8	0.02	-0.00	0.03	0.00	0.00	0.02	-0.00
8	9	10	6.78	-1.35	0.04	0.45	0.42	0.78	-0.75
9	10	11	5.73	-1.53	0.04	0.40	0.59	0.78	-0.75
10	11	12	4.35	-1.76	0.13	0.44	0.70	0.78	-0.70
11	12	13	2.76	-1.72	0.24	0.40	0.70	0.71	-0.56
12	13	14	1.32	-1.14	0.27	0.23	0.51	0.51	-0.34
13	14	15	0.43	-0.32	0.12	0.09	0.12	0.21	-0.13
14	15	16	0.09	-0.19	0.07	0.07	0.05	0.05	-0.00
15	17	18	9.35	-2.37	-0.13	0.79	0.74	0.61	-0.69
16	18	19	8.68	-2.74	-0.15	0.71	1.05	0.69	-0.79
17	19	20	7.70	-3.36	-0.09	0.84	1.32	0.81	-0.87
18	20	21	6.18	-3.82	0.19	0.89	1.57	0.93	-0.80
19	21	22	3.86	-3.29	0.44	0.67	1.45	0.81	-0.53
20	22	23	1.37	-1.33	0.22	0.41	0.45	0.37	-0.23
21	23	24	0.30	-0.74	0.10	0.28	0.19	0.05	0.02
22	25	26	12.89	-2.78	-0.22	0.92	0.85	0.46	-0.60
23	26	27	12.99	-3.12	-0.25	0.81	1.20	0.57	-0.73
24	27	28	13.25	-3.86	-0.46	0.96	1.52	0.71	-1.01
25	28	29	13.45	-5.12	-0.56	1.19	2.10	1.05	-1.41
26	29	30	12.43	-6.88	0.80	1.30	3.13	1.59	-1.08
27	30	31	5.00	-4.74	0.51	1.44	1.61	0.85	-0.52
28	31	32	0.49	-2.17	0.07	0.91	0.48	-0.02	0.06
29	33	34	15.95	-2.37	-0.08	0.82	0.70	0.47	-0.53
30	34	35	17.24	-2.28	-0.14	0.54	0.95	0.30	-0.59
31	35	36	19.35	-2.27	-0.40	0.44	1.02	0.55	-0.81

32	36	37	23.08	-2.01	-1.40	0.28	1.01	0.74	-1.64
33	37	38	30.46	-1.45	-4.34	0.08	0.85	1.68	-4.47
34	38	39	19.18	-0.94	-2.56	0.39	0.21	1.07	-2.71
35	39	40	-1.60	-0.43	-1.09	0.19	0.08	-0.60	-0.10
36	41	42	8.76	-0.44	0.24	0.13	0.15	0.35	-0.20
37	42	43	9.85	-0.47	0.23	0.13	0.17	0.32	-0.17
38	43	44	10.92	-0.27	0.32	0.06	0.11	0.40	-0.19
39	44	45	11.56	0.32	0.67	-0.11	-0.09	0.62	-0.19
40	45	46	10.94	1.65	1.26	-0.44	-0.62	0.90	-0.09
41	46	47	4.87	2.37	-0.04	-0.70	-0.32	0.03	-0.06
42	47	48	0.39	1.18	-0.12	-0.52	-0.24	-0.28	0.20
43	49	50	6.95	-0.03	0.10	-0.08	0.10	0.04	0.02
44	50	51	6.78	-0.01	0.20	-0.11	0.11	0.07	0.06
45	51	52	6.40	0.05	0.41	-0.13	0.10	0.14	0.13
46	52	53	5.66	0.14	0.74	-0.13	0.04	0.26	0.22
47	53	54	4.07	0.23	1.12	-0.08	-0.07	0.32	0.40
48	54	55	2.14	0.25	1.48	-0.06	-0.10	0.46	0.49
49	55	56	0.19	0.11	0.89	-0.07	-0.00	0.33	0.21
50	1	9	0.00	-0.00	0.00	0.00	0.00	0.00	0.00
51	9	17	0.00	-0.00	0.00	0.00	0.00	0.00	0.00
52	17	25	0.00	-0.00	0.00	0.00	0.00	0.00	0.00
53	25	33	-0.00	-0.00	-0.00	0.00	0.00	-0.00	-0.00
54	33	41	-0.00	0.00	-0.00	-0.00	-0.00	-0.00	-0.00
55	41	49	0.00	0.00	0.00	-0.00	-0.00	0.00	0.00
56	2	10	0.83	-0.58	-0.00	0.21	0.22	0.03	-0.04
57	10	18	0.65	-1.63	-0.00	0.60	0.61	0.02	-0.02
58	18	26	0.28	-2.30	-0.01	0.84	0.86	-0.02	0.02
59	26	34	-0.08	-2.20	-0.04	0.80	0.83	-0.07	0.04
60	34	42	0.01	-0.91	-0.10	0.41	0.27	-0.06	-0.01
61	42	50	-0.10	0.17	0.02	-0.10	-0.09	0.02	0.01
62	3	11	1.32	-0.71	0.03	0.31	0.22	0.10	-0.08
63	11	19	1.09	-2.10	0.11	0.81	0.74	0.11	-0.02
64	19	27	0.47	-3.08	0.17	1.15	1.13	0.03	0.09
65	27	35	-0.27	-2.82	-0.04	1.03	1.06	-0.15	0.12
66	35	43	-0.26	-0.70	-0.30	0.31	0.21	-0.18	-0.04
67	43	51	-0.21	0.38	0.05	-0.24	-0.20	0.04	0.03
68	4	12	0.75	-0.72	0.03	0.39	0.15	0.13	-0.11
69	12	20	0.80	-2.31	0.14	0.95	0.76	0.18	-0.08
70	20	28	0.33	-3.83	0.42	1.45	1.38	0.19	0.12
71	28	36	-0.92	-3.65	0.32	1.33	1.35	-0.09	0.33
72	36	44	-0.67	0.10	-0.68	-0.05	-0.03	-0.43	-0.07
73	44	52	-0.33	0.74	0.09	-0.47	-0.38	0.06	0.04
74	5	13	-1.34	-0.55	0.00	0.41	-0.01	0.08	-0.07
75	13	21	-0.77	-1.99	0.04	0.94	0.54	0.15	-0.12
76	21	29	-0.23	-4.31	0.28	1.70	1.49	0.31	-0.10
77	29	37	-1.99	-5.33	1.65	1.91	2.03	0.48	0.74
78	37	45	-1.45	2.05	-1.30	-0.94	-0.57	-0.80	-0.16
79	45	53	-0.71	1.45	0.10	-0.88	-0.77	0.06	0.05
80	6	14	-5.15	-0.27	-0.07	0.43	-0.23	-0.12	0.07
81	14	22	-5.34	-1.16	-0.22	0.83	0.03	-0.09	-0.07
82	22	30	-3.38	-3.66	-0.44	1.82	0.89	0.05	-0.38
83	30	38	-1.24	-11.09	-0.74	3.68	4.53	0.49	-1.04
84	38	46	-0.73	6.39	1.04	-3.28	-1.45	0.99	-0.22
85	46	54	-0.26	1.96	0.01	-1.29	-0.97	-0.00	0.02
86	7	15	-2.50	-0.08	-0.02	0.10	-0.04	-0.01	-0.00

87	15	23	-2.36	-0.41	-0.06	0.23	0.07	-0.03	-0.02
88	23	31	-1.77	-1.48	-0.18	0.66	0.45	-0.07	-0.05
89	31	39	0.80	-5.99	-0.62	2.08	2.35	-0.20	-0.26
90	39	47	1.32	4.66	0.85	-1.94	-1.51	0.35	0.28
91	47	55	0.77	1.97	-0.14	-1.32	-0.95	-0.13	-0.03
92	8	16	-2.22	-0.02	-0.03	0.02	-0.00	-0.02	-0.01
93	16	24	-2.04	-0.12	-0.11	0.05	0.03	-0.05	-0.03
94	24	32	-1.30	-0.42	-0.20	0.16	0.15	-0.08	-0.07
95	32	40	0.87	-0.91	-0.27	0.33	0.34	-0.06	-0.14
96	40	48	1.29	0.69	0.61	-0.26	-0.25	0.34	0.27
97	48	56	0.94	0.29	-0.11	-0.18	-0.16	-0.10	-0.03
98	57	58	0.22	-0.00	0.15	0.00	-0.00	0.04	0.06
99	58	59	0.12	-0.00	0.11	-0.00	0.00	0.03	0.04
100	60	61	-0.01	-0.00	-0.01	0.00	0.00	-0.00	-0.00
101	54	57	0.18	0.03	-0.00	0.12	-0.15	-0.00	-0.00
102	55	58	0.13	0.02	0.00	0.12	-0.15	0.00	-0.00
103	58	60	0.10	-0.07	0.00	0.05	0.01	0.00	0.00
104	56	59	0.10	0.11	0.00	-0.05	-0.05	0.00	-0.00
105	59	61	-0.01	-0.01	0.00	0.01	0.00	0.00	0.00
106	61	62	-0.01	-0.00	-0.00	0.00	0.00	-0.00	0.00
107	53	57	-0.17	-0.33	-0.00	0.23	0.13	-0.00	0.00
108	57	60	-0.12	0.02	-0.00	-0.02	-0.00	-0.00	-0.00
109	60	62	0.00	0.00	0.00	-0.00	-0.00	0.00	0.00

Hipotesis (4) : Reaccion vertical minima del tablero: Fzmin

DESPLAZAMIENTOS DE LOS NUDOS

Nudo Nº	Despl.y (mm)	Despl.x (mm)	Despl.z (mm)	Giro y 1000xrad	Giro x 1000xrad	Giro z 1000xrad
1	-0.000	-0.000	0.000	-0.000	-0.000	0.000
2	-0.000	-0.000	0.001	-0.001	-0.000	0.000
3	-0.000	-0.001	0.001	-0.002	-0.000	0.000
4	-0.000	-0.003	0.002	-0.003	-0.000	0.000
5	0.000	-0.005	0.002	-0.004	-0.000	0.000
6	0.000	-0.008	0.002	-0.004	-0.000	-0.000
7	0.000	-0.011	0.002	-0.006	-0.000	-0.000
8	0.000	-0.015	0.002	-0.008	-0.000	-0.000
9	-0.000	-0.000	0.000	-0.000	0.000	0.000
10	-0.000	-0.000	0.001	-0.001	0.000	0.000
11	-0.000	-0.001	0.002	-0.002	-0.000	0.000
12	-0.000	-0.003	0.002	-0.003	-0.001	0.000
13	0.000	-0.005	0.002	-0.004	-0.001	0.000
14	0.001	-0.008	0.003	-0.004	-0.001	-0.000
15	0.002	-0.011	0.003	-0.006	-0.001	-0.000
16	0.003	-0.017	0.003	-0.009	-0.001	-0.001
17	-0.000	0.000	0.000	-0.000	0.000	0.000
18	-0.000	-0.000	0.001	-0.001	0.000	0.000
19	-0.000	-0.001	0.002	-0.002	-0.000	0.000
20	-0.000	-0.003	0.003	-0.003	-0.001	0.000
21	0.000	-0.005	0.004	-0.004	-0.002	0.000
22	0.002	-0.008	0.004	-0.005	-0.003	-0.000
23	0.003	-0.012	0.005	-0.008	-0.003	-0.001
24	0.005	-0.018	0.005	-0.010	-0.003	-0.002
25	-0.000	0.000	0.000	-0.000	0.000	0.000
26	-0.000	-0.000	0.002	-0.001	0.000	0.000
27	-0.000	-0.001	0.003	-0.002	-0.000	0.000
28	-0.000	-0.002	0.005	-0.003	-0.001	0.001
29	0.000	-0.003	0.007	-0.004	-0.002	0.001
30	0.002	-0.008	0.008	-0.006	-0.005	0.000
31	0.005	-0.014	0.009	-0.013	-0.005	-0.002
32	0.006	-0.022	0.010	-0.009	-0.003	-0.003
33	-0.000	0.000	0.000	-0.000	0.000	-0.000
34	-0.000	-0.000	0.002	-0.001	0.000	-0.000
35	-0.000	-0.001	0.004	-0.001	-0.000	-0.000
36	-0.000	-0.002	0.007	-0.002	-0.001	0.000
37	0.001	-0.004	0.009	-0.004	-0.002	0.001
38	0.002	-0.008	0.013	-0.008	-0.003	0.001
39	0.004	-0.018	0.018	-0.026	-0.005	0.002
40	0.005	-0.023	0.017	-0.001	-0.002	0.004
41	-0.000	-0.000	0.000	-0.000	0.000	-0.000
42	-0.000	-0.000	0.002	-0.001	-0.000	-0.000
43	-0.000	-0.001	0.005	-0.001	-0.001	-0.000
44	-0.000	-0.002	0.007	-0.002	-0.001	-0.000
45	0.001	-0.004	0.010	-0.003	-0.001	-0.000

46	0.002	-0.007	0.013	-0.005	0.001	0.002
47	0.003	-0.010	0.014	-0.005	0.002	0.006
48	0.004	-0.012	0.014	-0.004	-0.001	0.009
49	-0.000	-0.000	0.000	-0.000	-0.000	0.000
50	0.000	-0.000	0.002	-0.001	-0.000	0.000
51	0.001	-0.001	0.005	-0.001	-0.001	0.001
52	0.001	-0.002	0.007	-0.001	-0.002	0.001
53	0.003	-0.005	0.009	-0.002	-0.002	0.001
54	0.004	-0.007	0.010	-0.001	-0.002	0.001
55	0.005	-0.009	0.011	0.000	-0.002	0.001
56	0.007	-0.011	0.011	-0.002	-0.002	0.001
57	0.005	-0.007	0.012	-0.003	-0.002	0.001
58	0.006	-0.009	0.012	-0.002	-0.002	0.001
59	0.007	-0.011	0.012	-0.002	-0.002	0.001
60	0.007	-0.009	0.014	-0.003	-0.002	0.001
61	0.008	-0.011	0.014	-0.003	-0.002	0.001
62	0.008	-0.011	0.017	-0.003	-0.002	0.001

ESFUERZOS EN LAS BARRAS

Barra Nº	i Nº	j Nº	Axil (t.)	Cort.1 (t.)	Cort.2 (t.)	Flec.1i (txm)	Flec.1j (txm)	Flec.2i (txm)	Flec.2j (txm)
1	1	2	1.32	-0.00	0.03	0.00	0.00	0.19	-0.17
2	2	3	1.06	-0.00	0.05	0.00	0.00	0.18	-0.16
3	3	4	0.74	0.00	0.04	-0.00	-0.00	0.17	-0.14
4	4	5	0.41	0.00	0.05	-0.00	-0.00	0.14	-0.11
5	5	6	0.17	0.00	0.05	-0.00	-0.00	0.10	-0.06
6	6	7	0.05	-0.00	0.02	0.00	0.00	0.04	-0.02
7	7	8	0.01	-0.00	0.01	0.00	0.00	0.01	-0.00
8	9	10	3.06	-0.61	0.02	0.20	0.19	0.35	-0.34
9	10	11	2.58	-0.69	0.02	0.18	0.27	0.35	-0.34
10	11	12	1.96	-0.80	0.06	0.20	0.31	0.35	-0.32
11	12	13	1.25	-0.77	0.11	0.18	0.32	0.32	-0.25
12	13	14	0.59	-0.51	0.12	0.10	0.23	0.23	-0.15
13	14	15	0.19	-0.15	0.05	0.04	0.05	0.10	-0.06
14	15	16	0.04	-0.08	0.03	0.03	0.02	0.02	-0.00
15	17	18	4.22	-1.07	-0.06	0.36	0.33	0.27	-0.31
16	18	19	3.91	-1.24	-0.07	0.32	0.47	0.31	-0.36
17	19	20	3.47	-1.52	-0.04	0.38	0.59	0.37	-0.39
18	20	21	2.79	-1.72	0.09	0.40	0.71	0.42	-0.38
19	21	22	1.74	-1.48	0.20	0.30	0.65	0.37	-0.24
20	22	23	0.62	-0.60	0.10	0.18	0.20	0.17	-0.10
21	23	24	0.14	-0.33	0.04	0.13	0.09	0.02	0.01
22	25	26	5.81	-1.24	-0.10	0.42	0.38	0.21	-0.27
23	26	27	5.86	-1.41	-0.11	0.36	0.54	0.26	-0.33
24	27	28	5.98	-1.74	-0.21	0.43	0.69	0.32	-0.45
25	28	29	6.07	-2.31	-0.25	0.54	0.95	0.47	-0.63
26	29	30	5.61	-3.10	0.56	0.58	1.41	0.72	-0.49
27	30	31	2.26	-2.14	0.23	0.55	0.72	0.38	-0.23
28	31	32	0.22	-0.98	0.03	0.41	0.22	-0.01	0.03
29	33	34	7.19	-1.07	-0.04	0.37	0.31	0.21	-0.24
30	34	35	7.77	-1.03	-0.06	0.24	0.42	0.23	-0.27
31	35	36	8.73	-1.02	-0.18	0.20	0.46	0.25	-0.36

32	36	37	10.41	-0.91	-0.63	0.13	0.46	0.33	-0.74
33	37	38	13.74	-0.85	-1.96	0.04	0.38	0.76	-2.02
34	38	39	8.65	-0.42	-1.16	0.18	0.10	0.48	-1.22
35	39	40	-0.72	-0.19	-0.49	0.09	0.04	-0.27	-0.04
36	41	42	3.95	-0.20	0.11	0.06	0.07	0.16	-0.09
37	42	43	4.44	-0.21	0.10	0.06	0.08	0.14	-0.08
38	43	44	4.93	-0.12	0.15	0.03	0.05	0.18	-0.09
39	44	45	5.21	0.14	0.30	-0.05	-0.04	0.28	-0.09
40	45	46	4.94	0.74	0.57	-0.20	-0.29	0.40	-0.04
41	46	47	2.20	1.07	-0.02	-0.32	-0.37	0.01	-0.03
42	47	48	0.18	0.33	-0.06	-0.23	-0.11	-0.13	0.09
43	49	50	3.13	-0.01	0.05	-0.04	0.04	0.02	0.01
44	50	51	3.06	-0.00	0.09	-0.05	0.05	0.03	0.03
45	51	52	2.89	0.02	0.19	-0.06	0.05	0.06	0.06
46	52	53	2.55	0.06	0.33	-0.06	0.02	0.12	0.10
47	53	54	1.83	0.11	0.50	-0.03	-0.03	0.15	0.13
48	54	55	0.96	0.11	0.67	-0.03	-0.05	0.21	0.22
49	55	56	0.08	0.05	0.38	-0.03	-0.00	0.15	0.09
50	1	9	0.00	-0.00	0.00	0.00	0.00	0.00	0.00
51	9	17	0.00	-0.00	0.00	0.00	0.00	0.00	0.00
52	17	25	0.00	-0.00	0.00	0.00	0.00	0.00	0.00
53	25	33	-0.00	-0.00	-0.00	0.00	0.00	-0.00	-0.00
54	33	41	-0.00	0.00	-0.00	-0.00	-0.00	-0.00	-0.00
55	41	49	0.00	0.00	0.00	-0.00	-0.00	0.00	0.00
56	2	10	0.38	-0.26	-0.00	0.09	0.10	0.02	-0.02
57	10	18	0.29	-0.74	-0.00	0.27	0.28	0.01	-0.01
58	18	26	0.13	-1.04	-0.01	0.38	0.39	-0.01	0.01
59	26	34	-0.04	-0.99	-0.02	0.36	0.37	-0.03	0.02
60	34	42	0.00	-0.41	-0.04	0.18	0.12	-0.03	-0.01
61	42	50	-0.05	0.08	0.01	-0.05	-0.04	0.01	0.00
62	3	11	0.60	-0.52	0.01	0.14	0.10	0.05	-0.04
63	11	19	0.49	-0.95	0.05	0.36	0.33	0.05	-0.01
64	19	27	0.21	-1.39	0.08	0.52	0.51	0.01	0.04
65	27	35	-0.12	-1.27	-0.02	0.46	0.48	-0.07	0.05
66	35	43	-0.12	-0.32	-0.13	0.14	0.10	-0.08	-0.02
67	43	51	-0.09	0.17	0.02	-0.11	-0.09	0.02	0.01
68	4	12	0.34	-0.33	0.01	0.18	0.07	0.06	-0.03
69	12	20	0.36	-1.04	0.06	0.43	0.34	0.08	-0.03
70	20	28	0.15	-1.73	0.19	0.65	0.62	0.09	0.05
71	28	36	-0.42	-1.64	0.15	0.60	0.61	-0.04	0.15
72	36	44	-0.30	0.05	-0.30	-0.02	-0.01	-0.19	-0.03
73	44	52	-0.15	0.33	0.04	-0.21	-0.17	0.03	0.02
74	5	13	-0.61	-0.25	0.00	0.19	-0.00	0.03	-0.03
75	13	21	-0.35	-0.90	0.02	0.42	0.29	0.07	-0.05
76	21	29	-0.10	-1.94	0.13	0.77	0.67	0.14	-0.04
77	29	37	-0.90	-2.40	0.74	0.86	0.92	0.22	0.33
78	37	45	-0.64	0.92	-0.29	-0.42	-0.26	-0.36	-0.07
79	45	53	-0.32	0.65	0.04	-0.40	-0.32	0.05	0.02
80	6	14	-2.77	-0.12	-0.03	0.19	-0.10	-0.05	0.03
81	14	22	-2.41	-0.52	-0.10	0.37	0.02	-0.04	-0.03
82	22	30	-1.53	-1.63	-0.20	0.82	0.40	0.02	-0.17
83	30	38	-0.36	-5.00	-0.33	1.66	2.04	0.22	-0.47
84	38	46	-0.33	2.88	0.47	-1.48	-0.65	0.45	-0.10
85	46	54	-0.12	0.89	0.01	-0.58	-0.44	-0.00	0.01
86	7	15	-1.13	-0.04	-0.01	0.05	-0.02	-0.00	-0.00

87	15	23	-1.07	-0.18	-0.03	0.11	0.03	-0.01	-0.01
88	23	31	-0.80	-0.67	-0.08	0.30	0.20	-0.03	-0.03
89	31	39	0.36	-2.70	-0.28	0.94	1.06	-0.09	-0.12
90	39	47	0.59	2.10	0.38	-0.87	-0.68	0.16	0.15
91	47	55	0.35	0.89	-0.06	-0.60	-0.43	-0.06	-0.01
92	8	16	-1.00	-0.01	-0.01	0.01	-0.00	-0.01	-0.00
93	16	24	-0.92	-0.05	-0.05	0.02	0.02	-0.02	-0.01
94	24	32	-0.59	-0.19	-0.09	0.07	0.07	-0.04	-0.03
95	32	40	0.39	-0.41	-0.12	0.15	0.15	-0.03	-0.06
96	40	48	0.58	0.31	0.37	-0.12	-0.11	0.15	0.12
97	48	56	0.42	0.13	-0.05	-0.08	-0.07	-0.05	-0.01
98	57	58	0.10	-0.00	0.07	0.00	-0.00	0.02	0.03
99	58	59	0.05	-0.00	0.05	-0.00	0.00	0.02	0.02
100	60	61	-0.00	-0.00	-0.00	0.00	0.00	-0.00	-0.00
101	54	57	0.05	0.01	-0.00	0.05	-0.07	-0.00	-0.00
102	55	58	0.06	0.01	0.00	0.06	-0.07	0.00	-0.00
103	58	60	0.04	-0.03	0.00	0.02	0.00	0.00	0.00
104	56	59	0.04	0.03	0.00	-0.02	-0.02	0.00	-0.00
105	59	61	-0.01	-0.01	0.00	0.00	0.00	0.00	0.00
106	61	62	-0.00	-0.00	-0.00	0.00	0.00	-0.00	0.00
107	53	57	-0.08	-0.15	-0.00	0.19	0.06	-0.00	0.00
108	57	60	-0.05	0.01	-0.00	-0.01	-0.00	-0.00	-0.00
109	60	62	0.00	0.00	0.00	-0.00	-0.00	0.00	0.00

DIMENSIONAMIENTO DE ARMADURAS

Esfuerzos de calculo y armadura vertical del muro frontal

Nudo Nº	Canto (m)	Ancho (m)	Recu. (m)	(1)+(2)+(3) Nd (t/m)	(1)+(2)+(3) Md (txm/m)	(1)+(2)+(4) Nd (t/m)	(1)+(2)+(4) Md (txm/m)	Aint. (cm²/m)	Aext. (cm²/m)
8	0.25	1.00	0.05	0.40	-0.03	0.17	-0.02	1.13	1.13
7	0.25	1.00	0.05	0.40	0.07	0.17	-0.07	1.13	1.13
6	0.55	1.00	0.05	1.89	0.05	0.71	-0.54	2.46	2.46
5	1.05	1.00	0.05	9.75	0.05	1.91	-1.58	4.72	4.72
4	1.05	1.00	0.05	9.73	-0.68	3.96	-3.67	4.72	4.72
3	1.05	1.00	0.05	15.56	-2.29	5.14	-7.04	4.72	4.72
2	1.05	1.00	0.05	21.43	-4.90	8.55	-11.95	4.72	4.72
1	1.05	1.00	0.05	26.75	-8.51	10.86	-18.64	5.80	4.72
16	0.25	1.00	0.05	0.51	-0.02	0.21	-0.02	1.13	1.13
15	0.25	1.00	0.05	0.51	0.07	0.21	-0.06	1.13	1.13
14	0.55	1.00	0.05	2.19	0.15	0.86	-0.50	2.46	2.46
13	1.05	1.00	0.05	6.07	0.23	2.33	-1.52	4.72	4.72
12	1.05	1.00	0.05	11.88	-0.50	4.60	-3.61	4.72	4.72
11	1.05	1.00	0.05	18.32	-2.20	7.08	-7.01	4.72	4.72
10	1.05	1.00	0.05	23.90	-4.92	9.54	-11.94	4.72	4.72
9	1.05	1.00	0.05	29.06	-17.11	11.81	-10.13	5.57	4.72
24	0.25	1.00	0.05	0.97	0.02	0.34	-0.02	1.13	1.13
23	0.25	1.00	0.05	0.97	0.08	0.34	-0.03	1.13	1.13
22	0.55	1.00	0.05	4.30	0.53	1.49	-0.36	2.46	2.46
21	1.05	1.00	0.05	11.84	0.11	4.08	-0.48	4.72	4.72
20	1.05	1.00	0.05	19.93	-1.78	7.08	-1.62	4.72	4.72
19	1.05	1.00	0.05	26.41	-5.39	9.72	-3.58	4.72	4.72
18	1.05	1.00	0.05	31.69	-10.54	12.03	-6.39	4.72	4.72
17	1.05	1.00	0.05	36.18	-17.36	14.11	-10.17	5.44	4.72
32	0.25	1.00	0.05	1.44	0.10	0.48	0.01	1.13	1.13
31	0.25	1.00	0.05	1.44	-0.02	0.48	0.00	1.13	1.13
30	0.55	1.00	0.05	12.41	1.35	3.64	0.19	2.46	2.46
29	1.05	1.00	0.05	31.27	1.88	9.29	-0.01	4.72	4.72
28	1.05	1.00	0.05	37.43	-1.26	12.07	-1.41	4.72	4.72
27	1.05	1.00	0.05	40.86	-5.34	14.15	-3.48	4.72	4.72
26	1.05	1.00	0.05	43.78	-10.86	15.95	-6.38	4.72	4.72
25	1.05	1.00	0.05	46.71	-17.85	17.67	-10.24	5.52	4.72
40	0.25	1.00	0.05	-2.92	-0.12	-0.38	-0.00	1.13	1.13
39	0.25	1.00	0.05	-2.92	-1.00	-0.38	-0.16	1.13	1.13
38	0.55	1.00	0.05	43.89	1.37	11.77	0.06	2.46	2.46
37	1.05	1.00	0.05	72.66	2.59	20.53	0.33	4.72	4.72
36	1.05	1.00	0.05	81.53	-1.17	19.75	-1.26	4.72	4.72

35	1.05	1.00	0.05	58.10	-5.21	19.76	-3.30	4.72	4.72
34	1.05	1.00	0.05	57.59	-10.60	20.89	-6.30	4.72	4.72
33	1.05	1.00	0.05	58.06	-18.26	22.01	-10.59	5.69	4.72
48	1.05	1.00	0.05	3.33	0.46	1.35	-0.02	4.72	4.72
47	1.05	1.00	0.05	3.33	-0.42	1.35	0.14	4.72	4.72
46	1.30	1.00	0.05	29.14	3.73	9.88	2.05	5.85	5.85
45	1.05	1.00	0.05	58.81	2.62	18.47	0.28	4.72	4.72
44	1.05	1.00	0.05	66.09	-2.31	21.74	-2.13	4.72	4.72
43	1.05	1.00	0.05	69.17	-7.00	24.32	-4.47	4.72	4.72
42	1.05	1.00	0.05	71.22	-12.44	26.91	-7.42	4.72	4.72
41	1.05	1.00	0.05	73.29	-20.82	29.52	-12.18	6.40	4.72

Esfuerzos de calculo y armadura horizontal del muro frontal

Nudo Nº	Canto (m)	Ancho (m)	Recu. (m)	(2)+Emp.tierras+Fx Nd (t/m)	(2)+Emp.tierras+Fx Md (txm/m)	Aint. (cm²/m)	Aext. (cm²/m)
1	1.05	1.00	0.05	0.00	-0.00	8.40	8.40
9	1.05	1.00	0.05	0.00	0.00	8.40	8.40
17	1.05	1.00	0.05	0.00	-0.00	8.40	8.40
25	1.05	1.00	0.05	0.00	-0.00	8.40	8.40
33	1.05	1.00	0.05	-0.00	0.00	8.40	8.40
41	1.05	1.00	0.05	-0.00	-0.00	8.40	8.40
2	1.05	1.00	0.05	-0.06	0.01	8.40	8.40
10	1.05	1.00	0.05	-0.03	0.00	8.40	8.40
18	1.05	1.00	0.05	-0.00	-0.02	8.40	8.40
26	1.05	1.00	0.05	-0.07	-0.08	8.40	8.40
34	1.05	1.00	0.05	-0.63	-0.28	8.40	8.40
42	1.05	1.00	0.05	-0.63	-0.01	8.40	8.40
3	1.05	1.00	0.05	-0.33	0.04	8.40	8.40
11	1.05	1.00	0.05	-0.45	0.03	8.40	8.40
19	1.05	1.00	0.05	-0.39	-0.03	8.40	8.40
27	1.05	1.00	0.05	-0.51	-0.19	8.40	8.40
35	1.05	1.00	0.05	-1.13	-0.40	8.40	8.40
43	1.05	1.00	0.05	-1.13	-0.21	8.40	8.40
4	1.05	1.00	0.05	-1.46	0.08	8.40	8.40
12	1.05	1.00	0.05	-1.35	0.07	8.40	8.40
20	1.05	1.00	0.05	-1.18	0.02	8.40	8.40
28	1.05	1.00	0.05	-1.14	-0.14	8.40	8.40
36	1.05	1.00	0.05	-1.43	-0.41	8.40	8.40
44	1.05	1.00	0.05	-1.43	-0.46	8.40	8.40
5	1.05	1.00	0.05	-2.82	0.12	8.40	8.40
13	1.05	1.00	0.05	-2.71	0.11	8.40	8.40
21	1.05	1.00	0.05	-2.46	0.10	8.40	8.40
29	1.05	1.00	0.05	-2.03	0.07	8.40	8.40

37	1.05	1.00	0.05	-1.64	-0.38	8.40	8.40
45	1.05	1.00	0.05	-1.64	-0.64	8.40	8.40
6	1.21	1.00	0.05	-5.16	0.29	9.71	9.71
14	1.21	1.00	0.05	-5.19	0.30	9.71	9.71
22	1.21	1.00	0.05	-5.11	0.33	9.71	9.71
30	1.21	1.00	0.05	-4.58	0.49	9.71	9.71
38	1.21	1.00	0.05	-2.60	0.79	9.71	9.71
46	1.21	1.00	0.05	-2.60	-1.71	9.71	9.71
7	0.25	1.00	0.05	-1.52	0.00	2.00	2.00
15	0.25	1.00	0.05	-1.58	0.01	2.00	2.00
23	0.25	1.00	0.05	-1.68	0.01	2.00	2.00
31	0.25	1.00	0.05	-1.74	-0.02	2.00	2.00
39	0.25	1.00	0.05	-1.62	0.28	2.00	2.00
47	0.25	1.00	0.05	-1.62	-0.45	2.00	2.00
8	0.30	1.00	0.05	-2.46	0.03	2.40	2.40
16	0.30	1.00	0.05	-2.59	0.06	2.40	2.40
24	0.30	1.00	0.05	-2.80	0.12	2.40	2.40
32	0.30	1.00	0.05	-2.94	0.25	2.40	2.40
40	0.30	1.00	0.05	-2.65	0.42	2.40	2.40
48	0.30	1.00	0.05	-2.65	-0.84	2.40	2.40

Esfuerzos de cálculo y armadura vertical en la aleta

Nudo Nº	Canto (m)	Ancho (m)	Recu. (m)	(1)+(2)+(3) Nd (t/m)	(1)+(2)+(3) Md (txm/m)	(1)+(2)+(4) Nd (t/m)	(1)+(2)+(4) Md (txm/m)	Aint. (cm²/m)	Aext. (cm²/m)
55	0.30	1.00	0.05	0.63	0.30	0.16	-0.17	1.35	1.35
54	0.30	1.00	0.05	3.68	0.36	-0.14	-0.33	1.35	1.35
53	0.30	1.00	0.05	6.38	0.14	-1.00	-0.44	1.35	1.35
52	0.30	1.00	0.05	10.68	-0.24	-3.34	-1.00	1.35	1.35
51	0.30	1.00	0.05	10.28	-0.43	-6.64	-1.09	1.38	1.35
50	0.30	1.00	0.05	9.42	-0.48	-9.92	-1.04	1.35	1.35
49	0.30	1.00	0.05	8.76	-0.43	-12.37	-0.89	1.35	1.35
58	0.30	1.00	0.05	0.54	-0.03	0.14	-0.05	1.35	1.35
57	0.30	1.00	0.05	1.24	-0.12	0.35	-0.12	1.35	1.35
60	0.30	1.00	0.05	0.32	-0.06	0.19	-0.03	1.35	1.35

Esfuerzos de cálculo y armadura horizontal en la aleta

Nudo Nº	Canto (m)	Ancho (m)	Recu. (m)	(2):Esp.tierras+Fx Nd (t/m)	(2):Esp.tierras+Fx Md (txm/m)	Aint. (cm²/m)	Aext. (cm²/m)

41	0.30	1.00	0.05	-0.00	-0.00	2.40	2.40
49	0.30	1.00	0.05	-0.00	0.00	2.40	2.40
42	0.30	1.00	0.05	0.70	-0.02	2.40	2.40
50	0.30	1.00	0.05	0.70	-0.13	2.40	2.40
43	0.30	1.00	0.05	0.30	-0.24	2.40	2.40
51	0.30	1.00	0.05	0.30	-0.08	2.40	2.40
44	0.30	1.00	0.05	-0.18	-0.48	2.40	2.40
52	0.30	1.00	0.05	-0.18	-0.01	2.40	2.40
45	0.30	1.00	0.05	0.01	-0.70	2.40	2.40
53	0.30	1.00	0.05	0.01	0.02	2.40	2.40
46	0.30	1.00	0.05	-0.70	-1.00	2.40	2.40
54	0.30	1.00	0.05	-0.43	-0.42	2.40	2.40
57	0.30	1.00	0.05	-0.43	-0.06	2.40	2.40
47	0.30	1.00	0.05	-1.13	-0.93	2.40	2.40
55	0.30	1.00	0.05	-0.26	-0.48	2.40	2.40
58	0.30	1.00	0.05	-0.15	-0.13	2.40	2.40
60	0.30	1.00	0.05	-0.15	0.03	2.40	2.40
48	0.30	1.00	0.05	-1.61	-1.11	2.40	2.40
56	0.30	1.00	0.05	-0.06	-0.60	2.40	2.40
59	0.30	1.00	0.05	0.09	-0.19	2.40	2.40
61	0.30	1.00	0.05	0.03	0.00	2.40	2.40
62	0.30	1.00	0.05	0.03	-0.00	2.40	2.40

Esfuerzos de cálculo y armadura en zapata

Puntera :

Flexión: Md = 11.98 txm/m ; Asup.= 15.00 cm²/m ; Ainf.= 0.00 cm²/m
Comprobación a cortante ...: Vcu= 64.55 t ; Vd = 0.00 t
Vd (Vcu ..... No es necesaria armadura transversal por cortante

Talón :

Borde empotrado en muro frontal ..... ; Mxd = 3.28 txm/m
Borde empotrado en aleta ..... ; Myd = 0.02 txm/m
Borde libre ..... ; Myd = -0.00 txm/m
Centro del talón ..... ; Mxd = -0.91 txm/m ; Myd = -0.04 txm/m
Armaduras ..... ; Asup.= 7.50 cm²/m ; Ainf.= 7.50 cm²/m

SALIDA RESULTADOS SAP 90

STRUCTURAL ANALYSIS PROGRAMS

VERSION 5.40

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REPOSICION 303+200, 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
1								
	MAX & MIN							
	1	.000			.043			10.252
		.000	6.054	-3.661		2.147	-1.663	
		1.075	3.287	1.359		1.436	.263	
		2.150	.520	3.406		.726	1.426	
		2.150			.043			10.252
	MAX							
	2	.000			1.941			17.912
		.000	19.162	-2.660		1.756	-1.309	
		1.075	10.869	1.708		1.330	.050	
		2.150	2.568	5.068		.903	1.199	
		2.150			1.941			17.912
	MIN							
	2	.000			1.298			6.438
		.000	5.103	-4.834		1.360	-1.628	
		1.075	-2.756	1.311		.934	-.008	
		2.150	-10.644	2.355		.508	.888	
		2.150			1.298			6.438
	MAX							
	3	.000			2.979			18.182
		.000	19.228	-2.733		1.885	-1.541	
		1.075	10.936	1.706		1.459	-.043	
		2.150	2.635	5.138		1.033	1.245	
		2.150			2.979			18.182
	MIN							
	3	.000			2.336			6.708
		.000	5.169	-4.907		1.490	-1.860	
		1.075	-2.690	1.310		1.063	-.101	
		2.150	-10.578	2.425		.637	.934	
		2.150			2.336			6.708
	MAX							
	4	.000			2.159			23.660
		.000	28.058	-2.165		1.869	-1.211	
		1.075	16.083	1.937		1.443	.070	
		2.150	4.092	6.344		1.017	1.307	
		2.150			2.159			23.660
	MIN							
	4	.000			1.087			4.536
		.000	4.627	-5.789		1.210	-1.743	
		1.075	-6.626	1.276		.784	-.026	
		2.150	-17.929	1.823		.357	.788	
		2.150			1.087			4.536
	MAX & MIN							
	5	.000			.023			9.433
		.000	5.693	-3.397		.005	-.007	
		1.075	2.926	1.235		.005	-.002	
		2.150	.159	2.893		.005	.003	
		2.150			.023			9.433
	MAX & MIN							
	6	.000			-.005			10.579

REPOSICION 303+200, 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	6.135	-3.750		-.001	.002	
		1.075	3.368	1.358		-.001	.000	
		2.150	.601	3.491		-.001	-.001	
		2.150			-.005			10.579
	MAX							
	ALL	.000			2.979			23.660
		.000	28.058	-2.165		2.147	.002	
		1.075	16.083	1.937		1.459	.263	
		2.150	4.092	6.344		1.033	1.426	
		2.150			2.979			23.660
	MIN							
	ALL	.000			-.005			4.536
		.000	4.627	-5.789		-.001	-1.860	
		1.075	-6.626	1.235		-.001	-.101	
		2.150	-17.929	1.823		-.001	-.001	
		2.150			-.005			4.536
2								
	MAX & MIN							
	1	.000			-2.553			5.924
		.000	3.705	.066		1.745	-1.100	
		1.075	.938	2.562		1.034	.393	
		2.150	-1.829	2.084		.523	1.123	
		2.150			-2.553			5.924
	MAX							
	2	.000			-.309			12.005
		.000	15.748	1.099		1.351	-.777	
		1.075	7.526	3.446		.924	.225	
		2.150	-.533	3.282		.498	.968	
		2.150			-.309			12.005
	MIN							
	2	.000			-1.071			1.577
		.000	2.394	-.255		1.036	-.989	
		1.075	-5.415	2.383		.610	.182	
		2.150	-13.385	1.269		.184	.684	
		2.150			-1.071			1.577
	MAX							
	3	.000			.349			12.264
		.000	15.793	1.052		1.408	-.872	
		1.075	7.572	3.446		.982	.193	
		2.150	-.488	3.331		.556	.998	
		2.150			.349			12.264
	MIN							
	3	.000			-.412			1.836
		.000	2.439	-.303		1.094	-1.084	
		1.075	-5.369	2.384		.668	.150	
		2.150	-13.340	1.318		.241	.713	
		2.150			-.412			1.836
	MAX							
	4	.000			-.041			16.671
		.000	23.883	1.677		1.441	-.710	
		1.075	12.026	4.039		1.014	.242	

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REPOSICION 303+200, 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		2.150	.439	4.201		.588	1.067	
		2.150			-.041			16.671
	MIN							
	4	.000			-1.311			-.708
		.000	1.627	-.581		.917	-1.064	
		1.075	-9.543	2.268		.490	.170	
		2.150	-20.982	.845		.064	.592	
		2.150			-1.311			-.708
	MAX & MIN							
	5	.000			.007			5.615
		.000	3.553	-.163		.004	-.004	
		1.075	.786	2.169		.004	-.000	
		2.150	-1.981	1.526		.004	.004	
		2.150			.007			5.615
	MAX & MIN							
	6	.000			-.002			6.235
		.000	3.760	.009		-.001	.001	
		1.075	.993	2.564		-.001	.000	
		2.150	-1.774	2.144		-.001	-.001	
		2.150			-.002			6.235
	MAX							
	ALL	.000			.349			16.671
		.000	23.883	1.677		1.745	.001	
		1.075	12.026	4.039		1.034	.393	
		2.150	.439	4.201		.588	1.123	
		2.150			.349			16.671
	MIN							
	ALL	.000			-2.553			-.708
		.000	1.627	-.581		-.001	-1.100	
		1.075	-9.543	2.169		-.001	-.000	
		2.150	-20.982	.845		-.001	-.001	
		2.150			-2.553			-.708
3								
	MAX & MIN							
	1	.000			-4.693			3.221
		.000	2.933	.962		1.621	-.843	
		1.075	.166	2.628		.910	.517	
		2.150	-2.601	1.319		.199	1.113	
		2.150			-4.693			3.221
	MAX							
	2	.000			-1.640			8.147
		.000	14.766	2.252		1.213	-.533	
		1.075	6.547	3.671		.787	.349	
		2.150	-1.457	2.362		.361	.947	
		2.150			-1.640			8.147
	MIN							
	2	.000			-2.993			-1.408
		.000	1.525	.727		.900	-.710	
		1.075	-6.281	2.365		.473	.279	
		2.150	-14.300	.438		.047	.632	
		2.150			-2.993			-1.408

REPOSICION 303+200. 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	MAX							
	3	.000			-1.138			8.395
		.000	14.812	2.202		1.229	-.566	
		1.075	6.593	3.670		.803	.333	
		2.150	-1.412	2.410		.377	.949	
		2.150			-1.138			8.395
	MIN							
	3	.000			-2.491			-1.160
		.000	1.571	.676		.916	-.743	
		1.075	-6.235	2.363		.489	.263	
		2.150	-14.254	.485		.063	.634	
		2.150			-2.491			-1.160
	MAX							
	4	.000			-1.126			12.017
		.000	22.763	2.997		1.303	-.476	
		1.075	10.910	4.367		.877	.373	
		2.150	-.586	3.176		.450	1.055	
		2.150			-1.126			12.017
	MIN							
	4	.000			-3.380			-3.909
		.000	.695	.454		.780	-.771	
		1.075	-10.471	2.191		.354	.257	
		2.150	-21.990	-.032		-.072	.531	
		2.150			-3.380			-3.909
	MAX & MIN							
	5	.000			-.008			3.325
		.000	2.827	.440		.005	-.004	
		1.075	.060	1.992		.005	.001	
		2.150	-2.707	.569		.005	.006	
		2.150			-.008			3.325
	MAX & MIN							
	6	.000			.002			3.512
		.000	2.988	.903		-.001	.001	
		1.075	.221	2.628		-.001	-.000	
		2.150	-2.546	1.378		-.001	-.001	
		2.150			.002			3.512
	MAX							
	ALL	.000			.002			12.017
		.000	22.763	2.997		1.621	.001	
		1.075	10.910	4.367		.910	.317	
		2.150	-.586	3.176		.450	1.113	
		2.150			.002			12.017
	MIN							
	ALL	.000			-4.693			-3.909
		.000	.695	.440		-.001	-.843	
		1.075	-10.471	1.992		-.001	-.000	
		2.150	-21.990	-.032		-.072	-.001	
		2.150			-4.693			-3.909
4	------------------------------							
	MAX & MIN							
	1	.000			-6.524			2.189

REPOSICION 303+200. 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	2.320	.842		1.487	-.571	
		1.075	-.447	1.848		.777	.645	
		2.150	-3.214	-.120		.066	1.098	
		2.150			-6.524			2.189
	MAX							
	2	.000			-2.608			6.528
		.000	13.978	2.035		1.108	-.340	
		1.075	5.763	2.752		.681	.463	
		2.150	-2.185	.609		.255	.948	
		2.150			-2.608			6.528
	MIN							
	2	.000			-4.636			-2.432
		.000	.844	.635		.793	-.482	
		1.075	-6.958	1.481		.367	.357	
		2.150	-15.023	-1.082		-.059	.597	
		2.150			-4.636			-2.432
	MAX							
	3	.000			-2.157			6.773
		.000	14.023	1.984		1.106	-.350	
		1.075	5.809	2.750		.680	.452	
		2.150	-2.140	.656		.254	.936	
		2.150			-2.157			6.773
	MIN							
	3	.000			-4.184			-2.187
		.000	.889	.584		.792	-.492	
		1.075	-6.912	1.479		.366	.346	
		2.150	-14.977	-1.035		-.061	.584	
		2.150			-4.184			-2.187
	MAX							
	4	.000			-1.835			10.001
		.000	21.858	2.716		1.197	-.295	
		1.075	10.012	3.356		.771	.500	
		2.150	-1.391	1.213		.345	1.070	
		2.150			-1.835			10.001
	MIN							
	4	.000			-5.215			-4.932
		.000	-.032	.383		.674	-.530	
		1.075	-11.190	1.238		.247	.324	
		2.150	-22.786	-1.605		-.179	.484	
		2.150			-5.215			-4.932
	MAX & MIN							
	5	.000			-.033			2.617
		.000	2.254	.024		.009	-.007	
		1.075	-.513	.960		.009	.003	
		2.150	-3.280	-1.079		.009	.012	
		2.150			-.033			2.617
	MAX & MIN							
	6	.000			.007			2.463
		.000	2.374	.783		-.002	.001	
		1.075	-.393	1.848		-.002	-.001	
		2.150	-3.160	-.062		-.002	-.003	

REPOSICION 303+200. 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		2.150			.007			2.463
	MAX							
	ALL	.000			.007			10.001
		.000	21.858	2.716		1.487	.001	
		1.075	10.012	3.356		.777	.645	
		2.150	-1.391	1.213		.345	1.098	
		2.150			.007			10.001
	MIN							
	ALL	.000			-6.524			-4.932
		.000	-.032	.024		-.002	-.571	
		1.075	-11.190	.960		-.002	-.001	
		2.150	-22.786	-1.605		-.179	-.003	
		2.150			-6.524			-4.932
5	------------------------------							
	MAX & MIN							
	1	.000			-8.057			2.149
		.000	1.861	-.388		1.351	-.318	
		1.075	-.906	.125		.640	.752	
		2.150	-3.674	-2.337		-.070	1.059	
		2.150			-8.057			2.149
	MAX							
	2	.000			-3.324			6.206
		.000	13.381	.478		1.018	-.181	
		1.075	5.172	.636		.591	.564	
		2.150	-2.727	-2.097		.165	.955	
		2.150			-3.324			6.206
	MIN							
	2	.000			-6.034			-2.339
		.000	.347	-.715		.699	-.286	
		1.075	-7.450	-.348		.272	.416	
		2.150	-15.554	-3.378		-.154	.555	
		2.150			-6.034			-2.339
	MAX							
	3	.000			-2.878			6.452
		.000	13.427	.426		1.009	-.183	
		1.075	5.217	.633		.583	.553	
		2.150	-2.682	-2.050		.157	.934	
		2.150			-2.878			6.452
	MIN							
	3	.000			-5.588			-2.093
		.000	.393	-.767		.690	-.288	
		1.075	-7.404	-.351		.264	.405	
		2.150	-15.509	-3.332		-.162	.535	
		2.150			-5.588			-2.093
	MAX							
	4	.000			-2.290			9.503
		.000	21.170	.940		1.109	-.148	
		1.075	9.332	.977		.683	.616	
		2.150	-1.988	-1.819		.256	1.094	
		2.150			-2.290			9.503

REPOSICION 303+200. 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	MIN							
	4	.000			-6.806			-4.739
		.000	-.553	-1.049		.577	-.322	
		1.075	-11.704	-.662		.151	.369	
		2.150	-23.367	-3.955		-.275	.428	
		2.150			-6.806			-4.739
	MAX & MIN							
	5	.000			-.076			2.911
		.000	1.841	-1.518		.017	-.013	
		1.075	-.926	-1.026		.017	.006	
		2.150	-3.693	-3.508		.017	.024	
		2.150			-.076			2.911
	MAX & MIN							
	6	.000			.016			2.390
		.000	1.913	-.443		-.004	.003	
		1.075	-.854	.126		-.004	-.001	
		2.150	-3.621	-2.280		-.004	-.005	
		2.150			.016			2.390
	MAX							
	ALL	.000			.016			9.503
		.000	21.170	.940		1.351	.003	
		1.075	9.332	.977		.683	.752	
		2.150	-1.988	-1.819		.256	1.094	
		2.150			.016			9.503
	MIN							
	ALL	.000			-8.057			-4.739
		.000	-.553	-1.518		-.004	-.322	
		1.075	-11.704	-1.026		-.004	-.001	
		2.150	-23.367	-3.955		-.275	-.005	
		2.150			-8.057			-4.739
6	------------------------------							
	MAX & MIN							
	1	.000			-9.300			1.893
		.000	1.943	-2.960		1.218	-.100	
		1.075	-.824	-2.358		.507	.827	
		2.150	-3.591	-4.732		-.204	.990	
		2.150			-9.300			1.893
	MAX							
	2	.000			-3.848			5.749
		.000	13.404	-2.590		.926	-.058	
		1.075	5.201	-2.252		.500	.667	
		2.150	-2.670	-4.741		.073	.961	
		2.150			-3.848			5.749
	MIN							
	2	.000			-7.220			-2.533
		.000	.475	-3.429		.620	-.095	
		1.075	-7.314	-2.941		.194	.449	
		2.150	-15.443	-5.829		-.233	.500	
		2.150			-7.220			-2.533
	MAX							
	3	.000			-3.393			5.995

REPOSICION 303+200. 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	13.455	-2.647		.916	-.061	
		1.075	5.252	-2.254		.490	.653	
		2.150	-2.619	-4.688		.064	.936	
		2.150			-3.393			5.995
	MIN							
	3	.000			-6.765			-2.288
		.000	.527	-3.486		.610	-.099	
		1.075	-7.263	-2.943		.184	.435	
		2.150	-15.392	-5.776		-.242	.475	
		2.150			-6.765			-2.288
	MAX							
	4	.000			-2.562			8.932
		.000	21.166	-2.474		1.014	-.047	
		1.075	9.339	-2.182		.587	.744	
		2.150	-1.935	-4.617		.161	1.123	
		2.150			-2.562			8.932
	MIN							
	4	.000			-8.182			-4.872
		.000	-.382	-3.872		.503	-.109	
		1.075	-11.520	-3.330		.077	.380	
		2.150	-23.223	-6.430		-.349	.354	
		2.150			-8.182			-4.872
	MAX & MIN							
	5	.000			-.145			2.916
		.000	2.055	-4.509		.029	-.022	
		1.075	-.712	-3.787		.029	.009	
		2.150	-3.479	-6.039		.029	.040	
		2.150			-.145			2.916
	MAX & MIN							
	6	.000			.031			2.071
		.000	1.990	-3.003		-.006	.005	
		1.075	-.777	-2.350		-.006	-.002	
		2.150	-3.544	-4.673		-.006	-.008	
		2.150			.031			2.071
	MAX							
	ALL	.000			.031			8.932
		.000	21.166	-2.474		1.218	.005	
		1.075	9.339	-2.182		.587	.827	
		2.150	-1.935	-4.617		.161	1.123	
		2.150			.031			8.932
	MIN							
	ALL	.000			-9.300			-4.872
		.000	-.382	-4.509		-.006	-.109	
		1.075	-11.520	-3.787		-.006	-.002	
		2.150	-23.223	-6.430		-.349	-.008	
		2.150			-9.300			-4.872
7	-----------							
	MAX & MIN							
	1	.000			-10.333			-1.496
		.000	3.657	-4.834		1.165	.035	
		1.075	.890	-2.390		.454	.905	

REPOSICION 303+200. 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		2.150	-1.877	-2.921		-.257	1.011	
		2.150			-10.333			-1.496
	MAX							
	2	.000			-4.383			1.805
		.000	15.396	-4.403		.742	.229	
		1.075	7.200	-2.285		.316	.730	
		2.150	-.722	-2.843		-.111	.795	
		2.150			-4.383			1.805
	MIN							
	2	.000			-8.070			-6.201
		.000	2.437	-5.410		.671	-.032	
		1.075	-5.347	-2.853		.245	.497	
		2.150	-13.417	-3.750		-.181	.567	
		2.150			-8.070			-6.201
	MAX							
	3	.000			-3.934			2.013
		.000	15.441	-4.446		.749	.208	
		1.075	7.245	-2.280		.323	.717	
		2.150	-.677	-2.790		-.104	.789	
		2.150			-3.934			2.013
	MIN							
	3	.000			-7.621			-5.993
		.000	2.482	-5.453		.678	-.053	
		1.075	-5.302	-2.848		.252	.483	
		2.150	-13.372	-3.697		-.175	.562	
		2.150			-7.621			-5.993
	MAX							
	4	.000			-2.976			4.535
		.000	23.338	-4.238		.764	.331	
		1.075	11.522	-2.213		.538	.811	
		2.150	.164	-2.666		-.088	.870	
		2.150			-2.976			4.535
	MIN							
	4	.000			-9.122			-8.808
		.000	1.739	-5.917		.646	-.104	
		1.075	-9.389	-3.161		.220	.422	
		2.150	-20.995	-4.177		-.206	.490	
		2.150			-9.122			-8.808
	MAX & MIN							
	5	.000			-.208			-1.452
		.000	4.916	-6.819		.029	-.040	
		1.075	1.504	-3.368		.029	-.009	
		2.150	-1.908	-3.585		.029	.022	
		2.150			-.208			-1.452
	MAX & MIN							
	6	.000			.044			-1.384
		.000	3.664	-4.834		-.006	.008	
		1.075	.897	-2.382		-.006	.002	
		2.150	-1.870	-2.905		-.006	-.005	
		2.150			.044			-1.384

REPOSICION 303+200. 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	MAX							
	ALL	.000			.044			4.535
		.000	23.338	-4.238		1.165	.331	
		1.075	11.522	-2.213		.454	.905	
		2.150	.164	-2.666		.029	1.011	
		2.150			.044			4.535
	MIN							
	ALL	.000			-10.333			-8.808
		.000	1.739	-6.819		-.006	-.104	
		1.075	-9.389	-3.368		-.006	-.009	
		2.150	-20.995	-4.177		-.257	-.005	
		2.150			-10.333			-8.808
8	-----------							
	MAX & MIN							
	1	.000			-11.176			-1.547
		.000	3.799	-2.381		1.040	.244	
		1.075	1.031	.215		.329	.980	
		2.150	-1.736	-.165		-.382	.952	
		2.150			-11.176			-1.547
	MAX							
	2	.000			-4.964			1.694
		.000	15.553	-1.960		.676	.321	
		1.075	7.354	.662		.250	.746	
		2.150	-.541	.460		-.177	.755	
		2.150			-4.964			1.694
	MIN							
	2	.000			-8.615			-5.983
		.000	2.662	-2.850		.604	.088	
		1.075	-5.124	-.156		.178	.552	
		2.150	-13.216	-.594		-.249	.557	
		2.150			-8.615			-5.983
	MAX							
	3	.000			-4.551			1.855
		.000	15.585	-1.987		.691	.296	
		1.075	7.386	.669		.265	.737	
		2.150	-.509	.501		-.162	.762	
		2.150			-4.551			1.855
	MIN							
	3	.000			-8.202			-5.821
		.000	2.694	-2.878		.619	.064	
		1.075	-5.092	-.149		.192	.543	
		2.150	-13.184	-.552		-.234	.565	
		2.150			-8.202			-5.821
	MAX							
	4	.000			-3.572			4.269
		.000	23.475	-1.763		.698	.410	
		1.075	11.655	.969		.272	.811	
		2.150	.342	.977		-.154	.824	
		2.150			-3.572			4.269
	MIN							
	4	.000			-9.657			-8.525

REPOSICION 303+200. 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	1.991	-3.247		.578	.023	
		1.075	-9.141	-.395		.152	.488	
		2.150	-20.784	-.780		-.274	.494	
		2.150			-9.657			-8.525
	MAX & MIN							
	5	.000			-.274			-1.925
		.000	3.148	-3.069		.017	-.024	
		1.075	1.736	.631		.017	-.006	
		2.150	-1.676	.664		.017	.012	
		2.150			-.274			-1.925
	MAX & MIN							
	6	.000			.058			-1.497
		.000	3.801	-2.383		-.004	.005	
		1.075	1.034	.216		-.004	.001	
		2.150	-1.733	-.159		-.004	-.003	
		2.150			.058			-1.497
	MAX							
	ALL	.000			.058			4.269
		.000	23.475	-1.763		1.040	.410	
		1.075	11.655	.969		.329	.980	
		2.150	.342	.977		.017	.952	
		2.150			.058			4.269
	MIN							
	ALL	.000			-11.176			-8.525
		.000	1.991	-3.247		-.004	-.024	
		1.075	-9.141	-.395		-.004	-.006	
		2.150	-20.784	-.780		-.382	-.003	
		2.150			-11.176			-8.525
9	-----------							
	MAX & MIN							
	1	.000			-11.747			-.839
		.000	3.423	-.098		.908	.429	
		1.075	.656	2.095		.197	1.023	
		2.150	-2.111	1.313		-.513	.854	
		2.150			-11.747			-.839
	MAX							
	2	.000			-5.443			2.403
		.000	15.110	.696		.619	.400	
		1.075	6.908	2.942		.192	.768	
		2.150	-.947	2.301		-.234	.730	
		2.150			-5.443			2.403
	MIN							
	2	.000			-9.034			-4.794
		.000	2.308	-.539		.553	.184	
		1.075	-5.480	1.802		.126	.586	
		2.150	-13.616	.959		-.300	.531	
		2.150			-9.034			-4.794
	MAX							
	3	.000			-5.101			2.504
		.000	15.129	.681		.648	.365	
		1.075	6.927	2.948		.221	.765	

REFOSITION 30#200. 3 YARDS 13#1/#13 FILE#30200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD	DIST	I-2 PLANE		AXIAL	I-3 PLANE		AXIAL
ID ENVE	END1	SHEAR	MOMENT	FORCE	SHEAR	MOMENT	LOAD
MAX							
	Z.150		.161				3.750
MAX & MIN							
5	.000			.010			16.142
	.000	16.785	.154		.007	-.010	
	1.075	13.708	16.345		.007	-.005	
	Z.150	10.631	29.626		.007	.005	
	Z.150			.010			16.142
6	.000			-.002			18.570
MAX & MIN							
	.000	19.462	.052		-.001	.002	
	1.075	16.285	19.420		-.001	.001	
	Z.150	12.309	35.280		-.001	-.001	
	Z.150			-.002			18.570
ALL	.000			.992			42.100
MAX							
	.000	36.465	4.866		3.110	.002	
	1.075	30.743	42.200		3.110	.221	
	Z.150	27.021	69.910		3.110	3.345	
	Z.150			.992			42.100
MIN							
ALL	.000	14.317	-1.741		-.001	-3.154	
	1.075	11.240	16.345		-.001	-1.176	
	Z.150	8.165	27.168		-.001	-.001	
	Z.150			-.324			3.750

MAX & MIN							
1	.000			-3.246			7.770
	.000	9.387	33.613		2.819	-2.528	
	1.075	6.310	42.050		2.819	.363	
	Z.150	3.234	47.180		2.819	3.555	
	Z.150			-1.246			7.770
MAX							
	.000			-.611			18.690
2	.000	15.833	49.625		2.378	-1.618	
	1.075	12.569	60.727		2.378	.308	
	Z.150	8.905	69.242		2.378	2.811	
	Z.150			-.611			18.690
MIN							
2	.000			-1.383			-2.109
	.000	4.934	31.804		1.532	-2.208	
	1.075	1.857	38.604		1.532	-.227	
	Z.150	-1.220	40.276		1.532	2.076	
MAX							
	Z.150			-1.585			-2.109
3	.000			.082			19.351
	.000	16.028	49.607		2.445	-1.725	
	1.075	12.544	60.269		2.445	.265	
	Z.150	9.100	69.963		2.445	2.860	
	Z.150			.082			19.351

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD	DIST	I-2 PLANE		AXIAL	I-3 PLANE		AXIAL
ID ENVE	END1	SHEAR	MOMENT	FORCE	SHEAR	MOMENT	LOAD
MAX							
	Z.150		.002	-.660			4.182
	1.075						10.316
	Z.150						3.534
	1.075						.189
	Z.150						1.044
	1.075						.192
	Z.150						.731
MIN							
ALL	.000			-12.032			5.206
	.000				.070		
	1.075	1.172	.592		-.000	-.004	
	Z.150	-9.986	2.669		-.000	-.002	
	Z.150	-21.736	1.166		-.645	.000	
	Z.150			-12.032			-5.933

MAX & MIN							
1	.000			-.324			17.804
	.000	19.221	.250		3.110	-3.122	
	1.075	16.155	19.270		3.110	.221	
	Z.150	13.078	34.982		3.110	3.565	
	Z.150			-.324			17.804
MAX							
2	.000			.527			31.488
	.000	28.100	3.249		2.683	-2.229	
	1.075	24.634	26.946		2.683	.015	
	Z.150	21.173	30.125		2.683	2.825	
	Z.150			.527			31.488
MIN							
2	.000			-.299			8.478
	.000	18.011	-.715		1.852	-2.847	
	1.075	12.724	17.672		1.852	-.062	
	Z.150	9.458	29.940		1.852	2.148	
	Z.150			.299			8.478
MAX							
3	.000			.942			32.116
	.000	28.285	3.086		2.844	-2.316	
	1.075	24.422	27.002		2.844	-.098	
	Z.150	21.358	30.561		2.844	2.883	
	Z.150			.942			32.116
MIN							
3	.000			.674			9.106
	.000	16.196	-.828		2.013	-3.154	
	1.075	13.120	17.708		2.013	-.176	
	Z.150	10.043	30.173		2.013	2.208	
	Z.150			.674			9.106
MAX							
4	.000			.607			42.100
	.000	34.465	4.866		2.921	-2.028	
	1.075	30.743	32.200		2.921	.065	
	Z.150	27.021	60.810		2.921	3.056	
	Z.150			.607			42.100
MIN							
4	.000			.161			3.790
	.000	14.317	-1.741		1.536	-3.092	
	1.075	11.240	16.710		1.536	-.065	
	Z.150	8.165	27.168		1.536	1.932	

REFOSITION 30#200. 3 YARDS 13#1/#13 FILE#30200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD	DIST	I-2 PLANE		AXIAL	I-3 PLANE		AXIAL
ID ENVE	END1	SHEAR	MOMENT	FORCE	SHEAR	MOMENT	LOAD
MAX							
	Z.150		.753	-.928			2.327
	1.075						1.944
	Z.150						.731
MIN							
ALL	.000			-12.032			-5.933
	.000				-.000	-.004	
	1.075	-9.986	2.669		-.000	-.002	
	Z.150	-21.736	1.166		-.645	.000	
	Z.150			-12.032			-5.933

MAX & MIN							
1	.000			-12.032			-.253
	.000	2.991	1.290		.776	.991	
	1.075	.224	3.018		.046	1.044	
	Z.150	-2.543	1.772		-.645	.753	
	Z.150			-12.032			-.253

MAX & MIN							
10	.000			-11.747			-7.168
	.000	1.617	-.880		-.002	-.012	
	1.075	-9.519	1.617		-.002	-.003	
	Z.150	-21.234	.790		-.513	-.001	
	Z.150			-11.747			-7.168
MIN							
ALL	.000			-10.061			-7.168
	.000	1.617	-.880		.520	.121	
	1.075	-9.519	1.617		.104	.524	
	Z.150	-21.234	.790		-.323	.469	
	Z.150			-10.061			-7.168
MAX							
4	.000			-4.026			4.827
	.000	22.953	1.179		.640	.681	
	1.075	11.129	3.517		.213	.827	
	Z.150	-.218	3.026		-.213	.801	
	Z.150			-4.026			4.827
MIN							
ALL	.000			-11.747			-7.168
	.000	1.617	-.880		-.002	-.012	
	1.075	-9.519	1.617		-.002	-.003	
	Z.150	-21.234	.790		-.513	-.001	
	Z.150			-11.747			-7.168

MAX & MIN							
5	.000			-.214			-1.231
	.000	4.655	.655		.008	-.012	
	1.075	1.243	3.826		.008	-.003	
	Z.150	-2.169	3.529		.008	.003	
	Z.150			-.214			-1.231

MAX & MIN							
6	.000			.067			-.820
	.000	3.424	-.100		-.002	.002	
	1.075	.637	2.993		-.002	.001	
	Z.150	-2.150	1.314		-.002	-.001	
	Z.150			.067			-.820
MIN							
ALL	.000			-10.061			-7.168
	.000	1.617	-.880		.520	.121	
	1.075	-9.519	1.617		.104	.524	
	Z.150	-21.234	.790		-.323	.469	
	Z.150			-10.061			-7.168
MAX							
1	.000			-.214			-1.231
	.000	4.655	.655		.008	-.012	
	1.075	1.243	3.826		.008	-.003	
	Z.150	-2.169	3.529		.008	.003	
	Z.150			-.214			-1.231
MIN							
1	.000			-.067			-.820
	.000	3.424	-.100		-.002	.002	
	1.075	.637	2.993		-.002	.001	
	Z.150	-2.150	1.314		-.002	-.001	
	Z.150			.067			-.820
MAX							
2	.000			.708			4.827
	.000	22.953	1.179		.681		
	1.075	11.129	3.526		.221	1.023	
	Z.150	-.118	3.529		.008	.854	
	Z.150			.067			4.827
MIN							
ALL	.000			-11.747			-7.168
	.000	1.617	-.880		-.002	-.012	
	1.075	-9.519	1.617		-.002	-.003	
	Z.150	-21.234	.790		-.513	-.001	
	Z.150			-11.747			-7.168

MAX & MIN							
10	.000			-12.032			-.253
	.000	2.991	1.290		.776	.991	
	1.075	.224	3.018		.046	1.044	
	Z.150	-2.543	1.772		-.645	.753	
	Z.150			-12.032			-.253

FRAME ELEMENT FORCES (USING "QUICK" INDEX RESPONSE CALC)

REFPOSITION 30#200, 3 MANOS 15#1/#13 FILE:30200

ELT LOAD ID ENVE	DIST ENDI	I-2 PLANE SHEAR	AXIAL MOMENT	AXIAL FORCE	I-3 PLANE SHEAR	AXIAL MOMENT	AXIAL TORQ
MIN							
ALL	.000	-8.991	35.840	-.012	-6.015		-11.736
	1.075	-12.068	51.872	-.002	-.000		
	2.150	-15.126	24.997	-.002	-.002		
	2.150			-.897	-6.015		-11.736
24 ---------- MAX & MIN							
1	.000	-9.023	69.558	-8.430			2.673
	1.075	-12.100	29.205	2.100	1.096		
	2.150	-15.176	14.544	2.100	3.553		
	2.150			-8.430			2.673
MAI							
2	.000			-2.900			10.757
	.000	-5.619	63.981	1.814	-.644		
	1.075	-9.083	48.364	1.814	.825		
	2.150	-12.189	32.302	1.814	2.726		
	2.150			-2.900			10.757
MIN							
2	.000	-16.102	34.325	.973	-1.079		-6.932
	.000	-14.179	21.411	.973	.599		
	1.075	-22.615	5.205	.973	1.843		
	2.150			-5.578			-6.932
MAI							
5	.000			-2.016			11.395
	.000	-5.414	63.723	1.796	-.645		
	1.075	-8.879	48.346	1.796	.804		
	2.150	-11.984	32.483	1.796	2.684		
	2.150			-2.014			11.395
MIN							
3	.000			-4.645			-6.200
	.000	-15.897	34.066	.934	-1.079		
	1.075	-18.974	21.372	.934	.578		
	2.150	-22.408	5.387	.934	1.802		
	2.150			-4.693			-6.200
MAI							
4	.000			-1.880			17.639
	.000	-2.853	79.102	2.055	-.503		
	1.075	-6.575	61.542	2.055	.905		
	2.150	-9.701	43.045	2.055	3.029		
	2.150			-1.880			17.639
MIN							
4	.000			-6.345			-11.852
	.000	-20.526	29.675	.651	-1.227		
	1.075	-25.492	16.755	.651	.528		
	2.150	-27.073	-5.982	.651	1.558		
	2.150			-6.345			-11.852

REFPOSITION 30#200, 3 MANOS 15#1/#13 FILE:30200

FRAME ELEMENT FORCES (USING "QUICK" INDEX RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	I-2 PLANE SHEAR	AXIAL MOMENT	AXIAL FORCE	I-3 PLANE SHEAR	AXIAL MOMENT	AXIAL TORQ
MIN							
3	.000			-1.647			-3.647
	.000	-5.129	33.586	-.899	-2.322		
	1.075	-2.052	30.396	1.599	.186		
	2.150	-1.025	90.497	1.599	2.105		
	2.150			-.899			-1.467
MAI							
4	.000			-.257			27.480
	.000	20.604	99.826	2.619	-1.429		
	1.075	16.882	72.464	2.619	.347		
	2.150	13.161	84.995	2.619	2.064		
	2.150			-.257			27.480
MIN							
4	.000			-1.826			-7.184
	.000	2.439	30.125	1.210	-2.411		
	1.075	-.638	36.343	1.210	.205		
	2.150	-3.716	36.219	1.210	1.859		
	2.150			-1.826			-7.184
MAI & MIN							
5	.000			.016			7.573
	.000	7.088	27.974	.006	-.007		
	1.075	4.009	35.937	.006	.000		
	2.150	.932	36.595	.006	.007		
	2.150			.016			7.573
MAI & MIN							
6	.000			-.003			8.349
	.000	9.629	33.842	-.001	.001		
	1.075	6.352	42.059	-.001	.000		
	2.150	5.476	47.499	-.001	-.001		
	2.150			-.003			8.349
MAI							
ALL	.000	20.604	99.826	.002	.001		27.480
	.000	16.882	72.464	2.819	.505		
	1.075	13.161	84.995	2.819	3.523		
	2.150			.002			27.480
MIN							
ALL	.000	2.439	27.974	-.001	-2.528		-7.184
	.000	-.638	33.937	-.001	.000		
	2.150	-3.716	36.219	-.001	-.001		
	2.150			-3.246			-7.184
25 ---------- MAX & MIN							
1	.000			-6.015			3.477
	.000	.009	46.897	2.459	-1.824		
	1.075	-2.578	43.249	2.459	.819		
	2.150	-6.055	40.494	2.459	3.463		
	2.150			-6.015			3.477
MAI							
2	.000			-1.823			12.486

REFUSICIUN 304*200, 3 VARUS 13+1/+13 FILE:3U3ZUU

F R A M E E L E M E N T F O R C E S (USING 'WUICK' INDEX RESPONSE CALC)

ELT LOAD	DIST	1-2 PLANE		AXIAL	1-3 PLANE		AXIAL
ID ENVE	END1	SHEAR	MOMENT	FORCE	SHEAR	MOMENT	TORQ
			MIN				
ALL	.000	-12.137					-1.374
	.000	-56.304	-64.494	-.017	-.243		
	1.075	-60.305	-92.236	-.017	-.007		
	2.150	-64.307	-121.289	-.017	-.025		
	2.150		-12.137				-1.374
ZJ							
			MAX & MIN				
1	.000		-13.382				-10.223
	.000	28.487	-90.904	1.232	.330		
	1.075	25.411	-61.934	1.232	2.634		
	2.150	22.334	-36.271	1.232	2.978		
	2.150		-13.382				-10.223
			MAX				
2	.000	37.642	-86.377	.843	.676		-5.103
	.000	34.179	-59.440	.843	1.390		
	1.075	30.715	-31.309	.843	2.193		
	2.150		-9.744				-9.103
			MIN				
2	.000		-9.744				-21.386
	.000	25.747	-103.865	.648	.092		
	1.075	22.621	-71.991	.648	.894		
	2.150	19.594	-43.998	.648	1.696		
	2.150		-9.744				-21.386
			MAX				
3	.000		-3.943				-4.509
	.000	27.902	-86.367	.854	.636		
	1.075	24.438	-59.561	.854	1.342		
	2.150	20.974	-31.142	.854	2.177		
	2.150		-3.943				-4.509
			MIN				
3	.000		-8.724				-20.789
	.000	28.007	-106.055	.659	.052		
	1.075	22.930	-71.902	.659	.866		
	2.150	19.853	-43.530	.659	1.680		
	2.150		-8.724				-20.789
			MAI				
4	.000		-3.182				-.113
	.000	44.637	-84.150	.902	.913		
	1.075	40.716	-54.138	.902	1.343		
	2.150	36.998	-27.619	.902	2.361		
	2.150		-3.182				-.113
			MIN				
4	.000		-11.109				-27.247
	.000	24.612	-116.611	.537	-.041		
	1.075	21.536	-78.723	.537	.736		
	2.150	18.459	-43.599	.537	1.533		
	2.150		-11.109				-27.247
			MAX & MIN				
5	.000		-.758				-12.260

REFUSICIUN 304*200, 3 VARUS 13+1/+13 FILE:3U3ZUU

F R A M E E L E M E N T F O R C E S (USING 'WUICK' INDEX RESPONSE CALC)

ELT LOAD	DIST	1-2 PLANE		AXIAL	1-3 PLANE		AXIAL
ID ENVE	END1	SHEAR	MOMENT	FORCE	SHEAR	MOMENT	TORQ
			MIN				
ALL	.000	-12.137					-1.374
	.000	-56.304	-64.494	-.017	-.243		
	1.075	-60.305	-92.236	-.017	-.007		
	2.150	-64.307	-121.289	-.017	-.025		
	2.150		-12.137				-1.374
ZJ							
			MAX & MIN				
1	.000		-13.382				-10.223
	.000	28.487	-90.904	1.232	.330		
	1.075	25.411	-61.934	1.232	2.634		
	2.150	22.334	-36.271	1.232	2.978		
	2.150		-13.382				-10.223
			MAX				
2	.000	37.642	-86.377	.843	.676		-5.103
	.000	34.179	-59.440	.843	1.390		
	1.075	30.715	-31.309	.843	2.193		
	2.150		-9.744				-9.103
			MIN				
2	.000		-9.744				-21.386
	.000	25.747	-103.865	.648	.092		
	1.075	22.621	-71.991	.648	.894		
	2.150	19.594	-43.998	.648	1.696		
	2.150		-9.744				-21.386
			MAX				
3	.000		-3.943				-4.509
	.000	27.902	-86.367	.854	.636		
	1.075	24.438	-59.561	.854	1.342		
	2.150	20.974	-31.142	.854	2.177		
	2.150		-3.943				-4.509
			MIN				
3	.000		-8.724				-20.789
	.000	28.007	-106.055	.659	.052		
	1.075	22.930	-71.902	.659	.866		
	2.150	19.853	-43.530	.659	1.680		
	2.150		-8.724				-20.789
			MAI				
4	.000		-3.182				-.113
	.000	44.637	-84.150	.902	.913		
	1.075	40.716	-54.138	.902	1.343		
	2.150	36.998	-27.619	.902	2.361		
	2.150		-3.182				-.113
			MIN				
4	.000		-11.109				-27.247
	.000	24.612	-116.611	.537	-.041		
	1.075	21.536	-78.723	.537	.736		
	2.150	18.459	-43.599	.537	1.533		
	2.150		-11.109				-27.247
			MAX & MIN				
5	.000		-.758				-12.260
ZJ							
			MAX & MIN				
1	.000		-12.137				10.260
	.000	24.612	-116.611	.537	-.041		
	1.075	21.536	-78.723	.537	.736		
	2.150	18.459	-43.599	.537	1.533		
	2.150		-12.137				10.260
			MAI				
2	.000		-4.475				18.704
	.000	-19.974	-79.372	1.344	.045		
	1.075	-23.050	-58.885	1.344	1.254		

REFOSICION 304*200. 3 VANOS 15#1/#15 FILE:3052VD0

FRAME ELEMENT FORCES (USING 'QUICK' INDEX RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	I-Z PLANE SHEAR	MOMENT	AXIAL FORCE	I-3 PLANE SHEAR	MOMENT	AXIAL TORQ
1.075	5.475	36.829	-.003	24.717	-.006		
Z.150							
			-.002		-.003		
		-15.207				-14.130	
MAX & MIN							
J .000		-15.583			.179	1.757	
.000	7.391	47.938					
1.075	4.344	34.445			.179	1.994	
Z.150	1.438	57.044			.179	2.141	
		-15.583				-.427	
MAX							
I .000		-6.828			.393	1.289	3.488
.000	12.682	70.634					
1.075	9.218	77.464			.393	1.536	
Z.150	5.990	82.568			.393	1.942	
		-6.828					
MIN							
I .000		-11.399			.225	.825	
.000	3.941	41.906					
1.075	.884	49.922			.225	1.157	
Z.150	-2.429	55.057			.225	1.489	
		-11.399				-6.940	
MAX							
J .000		-6.117			.530	1.168	5.384
.000	12.703	70.701					
1.075	9.259	77.534			.530	1.560	
Z.150	6.011	82.661			.530	2.111	
		-6.117					5.584
MIN							
J .000		-10.888			.258	.764	-6.845
.000	3.982	44.953					
1.075	.905	49.991			.258	1.181	
Z.150	-2.407	52.149			.258	1.658	
		-10.888				-6.845	
MAI							
4 .000		-5.045			.452	1.466	9.684
.000	16.168	83.845					
1.075	12.447	92.797			.452	1.636	
Z.150	9.117	99.452			.452	2.112	
		-5.045					9.684
MIN							
4 .000		-12.997			.166	.692	-11.051
.000	1.654	32.942					
1.075	-1.443	41.053			.166	1.025	
Z.150	-4.912	30.246			.166	1.357	
		-12.997					-11.051
MAX & MIN							
J .000		-.953			.004	-.008	-.172
.000	12.213	93.111					
1.075	8.991	106.259			.004	-.003	
Z.150	6.769	113.566			.004	.001	

FRAME ELEMENT FORCES (USING 'QUICK' INDEX RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	I-Z PLANE SHEAR	MOMENT	AXIAL FORCE	I-3 PLANE SHEAR	MOMENT	AXIAL TORQ
1.075	5.475	36.829	-.003	24.717	-.006		
Z.150							
			-.002		-.003		
		-15.207				-14.130	
MAX & MIN							
J .000		-15.583			.179	1.757	
.000	7.391	47.938					
1.075	4.344	34.445			.179	1.994	
Z.150	1.438	57.044			.179	2.141	
		-15.583				-.427	
MAI							
I .000		-6.828			.393	1.289	3.488
.000	12.682	70.634					
1.075	9.218	77.464			.393	1.536	
Z.150	5.990	82.568			.393	1.942	
		-6.828					3.488
MIN							
I .000		-11.399			.225	.825	
.000	3.941	41.906					
1.075	.884	49.922			.225	1.157	
Z.150	-2.429	55.057			.225	1.489	
		-11.399				-6.940	
MAI							
J .000		-6.117			.530	1.168	5.384
.000	12.703	70.701					
1.075	9.259	77.534			.530	1.560	
Z.150	6.011	82.661			.530	2.111	
		-6.117					5.584
MIN							
J .000		-10.888			.258	.764	-6.845
.000	3.982	44.953					
1.075	.905	49.991			.258	1.181	
Z.150	-2.407	52.149			.258	1.658	
		-10.888				-6.845	
MAI							
4 .000		-5.045			.452	1.466	9.684
.000	16.168	83.845					
1.075	12.447	92.797			.452	1.636	
Z.150	9.117	99.452			.452	2.112	
		-5.045					9.684
MIN							
4 .000		-12.997			.166	.692	-11.051
.000	1.654	32.942					
1.075	-1.443	41.053			.166	1.025	
Z.150	-4.912	30.246			.166	1.357	
		-12.997					-11.051
MAX & MIN							
J .000		-.953			.004	-.008	-.172
.000	12.213	93.111					
1.075	8.991	106.259			.004	-.003	
Z.150	6.769	113.566			.004	.001	

REFOSICION 304*200. 3 VANOS 15#1/#15 FILE:3052VD0

FRAME ELEMENT FORCES (USING 'QUICK' INDEX RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	I-Z PLANE SHEAR	MOMENT	AXIAL FORCE	I-3 PLANE SHEAR	MOMENT	AXIAL TORQ
1.075	10.978	10.701			.305	1.636	
Z.150							
		-9.440				-14.260	
MAX							
I .000		-5.810			.715	1.095	5.616
.000	61.106	-20.133					
1.075	3/.285	11.627			.715	1.556	
Z.150	35.665	43.983			.715	2.220	
		-5.810					5.616
MIN							
I .000		-14.662			.192		5.616
.000	21.384	-46.070					
1.075	18.307	-17.764			-.008	-.054	
Z.150	15.430	6.051			-.008	-.015	
		-14.662				-.006	-19.883
MAX							
ALL .000		-14.662			.192		5.616
.000	61.106	-20.133					
1.075	37.385	11.627			.889	1.814	
Z.150	35.665	43.983			.889	2.771	
		-5.810					5.616
MAX & MIN							
J .000		-15.207			.179	1.757	
.000	7.391	47.938					
1.075	4.344	34.445			.179	1.994	
Z.150	1.438	57.044			.179	2.141	
		-15.583				-.427	
MAX							
2 .000		-6.828			.393	1.289	3.488
.000	12.682	70.634					
1.075	9.218	77.464			.393	1.536	
Z.150	5.990	82.568			.393	1.942	
		-6.828					3.488
MIN							
2 .000		-11.399			.225	.825	
.000	3.941	41.906					
1.075	.884	49.922			.225	1.157	
Z.150	-2.429	55.057			.225	1.489	
		-11.399				-6.940	
MAX & MIN							
5 .000		-.990			.038	-.054	-6.916
.000	40.224	-39.496					
1.075	36.502	1.744			.038	-.015	
Z.150	32.780	38.983			.038	.027	
		-.990					-6.916
MIN							
5 .000		-13.850			.414	1.489	-19.883
.000	21.384	-46.070					
1.075	18.307	-17.764			.414	.815	
Z.150	15.430	6.051			.414	1.489	
		-13.850					-19.883
MAX							
4 .000		-11.850			.715	1.095	5.616
.000	61.106	-20.133					
1.075	3/.285	11.627			.715	1.556	
Z.150	35.665	43.983			.715	2.220	
		-5.810					5.616
MIN							
4 .000		-12.997			.166	.692	-11.051
.000	1.654	32.942					
1.075	-1.443	41.053			.166	1.025	
Z.150	-4.912	30.246			.166	1.357	
		-12.997					-11.051
MAX & MIN							
J .000		-15.207			.535	1.330	-1.746
.000	16.631	18.099					
1.075	13.355	24.824			.535	1.905	
Z.150	10.478	47.751			.535	2.480	
		-15.207					-1.746
MAX							
2 .000		-6.193			.300	1.117	4.212
.000	23.321	94.738					
1.075	20.063	53.157			.300	1.474	
Z.150	16.604	70.098			.300	1.937	
		-6.193					4.212

REPOSICION 303+200. 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	SHEAR	MOMENT	AXIAL FORCE	SHEAR	MOMENT	AXIAL TORQ
		1-2 PLANE	1-2 PLANE		1-3 PLANE	1-3 PLANE	
MAX							
4	.000			.134			16.158
	.000	41.819	13.477		2.885	-1.672	
	1.075	28.013	42.261		2.885	.246	
	2.150	18.083	56.940		2.885	3.262	
	2.150			.134			16.158
MIN							
4	.000			.070			-19.474
	.000	10.379	6.771		1.373	-2.769	
	1.075	.865	18.993		1.373	.163	
	2.150	-15.383	26.092		1.373	1.998	
	2.150			.070			-19.474
MAX & MIN							
5	.000			.005			.000
	.000	12.409	6.487		.000	.000	
	1.075	9.046	18.019		.000	.000	
	2.150	5.683	25.936		.000	.000	
	2.150			.005			.000
MAX & MIN							
6	.000			-.001			.000
	.000	14.453	7.396		.000	.000	
	1.075	11.090	21.125		.000	.000	
	2.150	7.728	31.240		.000	.000	
	2.150			-.001			.000
MAX							
ALL	.000			.187			16.158
	.000	41.819	13.477		3.439	.000	
	1.075	28.013	42.261		3.439	.315	
	2.150	18.083	56.940		3.439	4.012	
	2.150			.187			16.158
MIN							
ALL	.000			-.001			-19.474
	.000	10.379	6.487		.000	-3.383	
	1.075	.865	18.019		.000	.000	
	2.150	-15.383	25.936		.000	.000	
	2.150			-.001			-19.474
42 ----------							
MAX & MIN							
1	.000			.009			-.900
	.000	8.768	42.041		3.439	-3.133	
	1.075	5.405	49.660		3.439	.563	
	2.150	2.043	53.663		3.439	4.260	
	2.150			.009			-.900
MAX							
2	.000			.744			8.674
	.000	26.229	61.058		2.699	-1.723	
	1.075	16.299	75.100		2.699	.407	
	2.150	8.302	79.647		2.699	3.249	
	2.150			.744			8.674
MIN							
2	.000			.498			-14.027

REPOSICION 303+200. 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	SHEAR	MOMENT	AXIAL FORCE	SHEAR	MOMENT	AXIAL TORQ
		1-2 PLANE	1-2 PLANE		1-3 PLANE	1-3 PLANE	
	.000	6.041	39.273		1.675	-2.434	
	1.075	-2.187	45.659		1.675	.320	
	2.150	-12.189	48.430		1.675	2.362	
	2.150			.498			-14.027
MAX							
3	.000			1.162			9.416
	.000	26.224	61.044		2.649	-1.676	
	1.075	16.293	75.081		2.649	.401	
	2.150	8.297	79.621		2.649	3.190	
	2.150			1.162			9.416
MIN							
3	.000			.915			-13.285
	.000	6.036	39.260		1.626	-2.386	
	1.075	-2.193	45.640		1.626	.314	
	2.150	-12.194	48.404		1.626	2.304	
	2.150			.915			-13.285
MAX							
4	.000			.821			16.796
	.000	37.876	73.749		2.991	-1.492	
	1.075	23.567	92.080		2.991	.438	
	2.150	12.481	96.994		2.991	3.554	
	2.150			.821			16.796
MIN							
4	.000			.410			-21.039
	.000	4.229	37.441		1.285	-2.675	
	1.075	-7.243	43.012		1.285	.292	
	2.150	-21.671	44.966		1.285	2.076	
	2.150			.410			-21.039
MAX & MIN							
5	.000			.026			.000
	.000	5.986	35.352		.000	.000	
	1.075	2.623	39.980		.000	.000	
	2.150	-.739	40.992		.000	.000	
	2.150			.026			.000
MAX & MIN							
6	.000			-.005			.000
	.000	8.768	42.041		.000	.000	
	1.075	5.405	49.660		.000	.000	
	2.150	2.043	53.663		.000	.000	
	2.150			-.005			.000
MAX							
ALL	.000			1.162			16.796
	.000	37.876	73.749		3.439	.000	
	1.075	23.567	92.080		3.439	.563	
	2.150	12.481	96.994		3.439	4.260	
	2.150			1.162			16.796
MIN							
ALL	.000			-.005			-21.039
	.000	4.229	35.352		.000	-3.133	
	1.075	-7.243	39.980		.000	.000	
	2.150	-21.671	40.992		.000	.000	

REPOSICION 303+200. 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	SHEAR	MOMENT	AXIAL FORCE	SHEAR	MOMENT	AXIAL TORQ
		1-2 PLANE	1-2 PLANE		1-3 PLANE	1-3 PLANE	
	2.150			-.005			-21.039
43 ----------							
MAX & MIN							
1	.000			-.003			-.921
	.000	-1.233	57.801		2.998	-2.259	
	1.075	-4.596	54.668		2.998	.963	
	2.150	-7.958	47.920		2.998	4.186	
	2.150			-.003			-.921
MAX							
2	.000			1.125			7.959
	.000	14.248	85.032		2.434	-1.219	
	1.075	4.358	85.372		2.434	.718	
	2.150	-3.568	75.548		2.434	3.273	
	2.150			1.125			7.959
MIN							
2	.000			.740			-13.131
	.000	-6.053	52.367		1.411	-1.838	
	1.075	-14.194	47.930		1.411	.340	
	2.150	-24.185	39.875		1.411	2.298	
	2.150			.740			-13.131
MAX							
3	.000			1.763			8.711
	.000	14.242	85.005		2.385	-1.177	
	1.075	4.352	85.339		2.385	.706	
	2.150	-3.574	75.508		2.385	3.208	
	2.150			1.763			8.711
MIN							
3	.000			1.379			-12.379
	.000	-6.059	52.340		1.361	-1.796	
	1.075	-14.200	47.897		1.361	.528	
	2.150	-24.191	39.836		1.361	2.233	
	2.150			1.379			-12.379
MAX							
4	.000			1.241			15.639
	.000	24.574	103.213		2.726	-1.016	
	1.075	10.333	105.874		2.726	.780	
	2.150	-.635	94.006		2.726	3.608	
	2.150			1.241			15.639
MIN							
4	.000			.600			-19.510
	.000	-9.261	48.770		1.020	-2.049	
	1.075	-20.587	43.471		1.020	.483	
	2.150	-34.997	34.552		1.020	1.983	
	2.150			.600			-19.510
MAX & MIN							
5	.000			.056			.000
	.000	-4.185	44.671		.000	.000	
	1.075	-7.548	38.365		.000	.000	
	2.150	-10.911	28.443		.000	.000	
	2.150			.056			.000

REPOSICION 303+200. 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	SHEAR	MOMENT	AXIAL FORCE	SHEAR	MOMENT	AXIAL TORQ
		1-2 PLANE	1-2 PLANE		1-3 PLANE	1-3 PLANE	
MAX & MIN							
6	.000			-.012			.000
	.000	-1.233	57.801		.000	.000	
	1.075	-4.596	54.668		.000	.000	
	2.150	-7.958	47.920		.000	.000	
	2.150			-.012			.000
MAX							
ALL	.000			1.763			15.639
	.000	24.574	103.213		2.998	.000	
	1.075	10.333	105.874		2.998	.963	
	2.150	-.635	94.006		2.998	4.186	
	2.150			1.763			15.639
MIN							
ALL	.000			-.012			-19.510
	.000	-9.261	44.671		.000	-2.259	
	1.075	-20.587	38.365		.000	.000	
	2.150	-34.997	28.443		.000	.000	
	2.150			-.012			-19.510
44 ----------							
MAX & MIN							
1	.000			-.021			-.948
	.000	-11.874	50.091		2.562	-1.459	
	1.075	-15.237	35.519		2.562	1.295	
	2.150	-18.599	17.332		2.562	4.049	
	2.150			-.021			-.948
MAX							
2	.000			1.305			7.139
	.000	1.523	78.125		2.171	-.758	
	1.075	-8.229	62.932		2.171	.987	
	2.150	-15.992	38.140		2.171	3.259	
	2.150			1.305			7.139
MIN							
2	.000			.828			-12.060
	.000	-19.018	42.000		1.150	-1.287	
	1.075	-27.098	26.076		1.150	.719	
	2.150	-37.000	6.529		1.150	2.197	
	2.150			.828			-12.060
MAX							
3	.000			2.056			7.893
	.000	1.517	78.086		2.122	-.723	
	1.075	-8.235	62.886		2.122	.969	
	2.150	-15.998	38.088		2.122	3.189	
	2.150			2.056			7.893
MIN							
3	.000			1.580			-11.306
	.000	-19.024	41.960		1.101	-1.251	
	1.075	-27.104	26.030		1.101	.702	
	2.150	-37.006	6.477		1.101	2.126	
	2.150			1.580			-11.306
MAX							
4	.000			1.438			14.288

REPOSICION 303+200. 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	10.460	96.854		2.462	-.585	
		1.075	-3.552	81.254		2.462	1.079	
		2.150	-14.248	52.065		2.462	3.624	
		2.150			1.438			14.288
	MIN							
	4	.000			.643			-17.710
		.000	-23.775	36.645		.760	-1.466	
		1.075	-34.999	19.827		.760	.634	
		2.150	-49.260	-.621		.760	1.853	
		2.150			.643			-17.710
	MAX & MIN							
	5	.000			.119			.000
		.000	-14.956	30.558		.000	.000	
		1.075	-18.318	12.674		.000	.000	
		2.150	-21.681	-8.826		.000	.000	
		2.150			.119			.000
	MAX & MIN							
	6	.000			-.025			.000
		.000	-11.874	50.091		.000	.000	
		1.075	-15.237	35.519		.000	.000	
		2.150	-18.599	17.332		.000	.000	
		2.150			-.025			.000
	MAX							
	ALL	.000			2.056			14.288
		.000	10.460	96.854		2.562	.000	
		1.075	-3.552	81.254		2.562	1.295	
		2.150	-14.248	52.065		2.562	4.049	
		2.150			2.056			14.288
	MIN							
	ALL	.000			-.025			-17.710
		.000	-23.775	30.558		.000	-1.466	
		1.075	-34.999	12.674		.000	.000	
		2.150	-49.260	-8.826		.000	.000	
		2.150			-.025			-17.710
45								
	MAX & MIN							
	1	.000			-.057			-1.013
		.000	-22.781	19.828		2.128	-.714	
		1.075	-26.144	-6.469		2.128	1.574	
		2.150	-29.506	-36.381		2.128	3.862	
		2.150			-.057			-1.013
	MAX							
	2	.000			1.360			6.245
		.000	-11.257	40.997		1.906	-.333	
		1.075	-20.798	11.166		1.906	1.227	
		2.150	-28.324	-27.395		1.906	3.214	
		2.150			1.360			6.245
	MIN							
	2	.000			.774			-11.180
		.000	-32.239	9.131		.894	-.761	
		1.075	-40.185	-18.517		.894	.866	

REPOSICION 303+200. 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		2.150	-49.926	-49.802		.894	2.065	
		2.150			.774			-11.180
	MAX							
	3	.000			2.168			6.989
		.000	-11.264	40.946		1.857	-.304	
		1.075	-20.805	11.108		1.857	1.203	
		2.150	-28.331	-27.461		1.857	3.138	
		2.150			2.168			6.989
	MIN							
	3	.000			1.582			-10.436
		.000	-32.246	9.081		.844	-.732	
		1.075	-40.192	-18.575		.844	.842	
		2.150	-49.933	-49.068		.844	1.988	
		2.150			1.582			-10.436
	MAX							
	4	.000			1.496			12.798
		.000	-3.568	55.159		2.194	-.193	
		1.075	-17.227	22.980		2.194	1.352	
		2.150	-27.528	-21.339		2.194	3.608	
		2.150			1.496			12.798
	MIN							
	4	.000			.521			-16.245
		.000	-38.537	2.050		.507	-.905	
		1.075	-49.538	-26.491		.507	.750	
		2.150	-63.532	-58.684		.507	1.693	
		2.150			.521			-16.245
	MAX & MIN							
	5	.000			.279			.000
		.000	-25.900	-5.961		.000	.000	
		1.075	-29.263	-35.611		.000	.000	
		2.150	-32.626	-68.877		.000	.000	
		2.150			.279			.000
	MAX & MIN							
	6	.000			-.059			.000
		.000	-22.781	19.828		.000	.000	
		1.075	-26.144	-6.469		.000	.000	
		2.150	-29.506	-36.381		.000	.000	
		2.150			-.059			.000
	MAX							
	ALL	.000			2.168			12.798
		.000	-3.568	55.159		2.194	.000	
		1.075	-17.227	22.980		2.194	1.574	
		2.150	-27.528	-21.339		2.194	3.862	
		2.150			2.168			12.798
	MIN							
	ALL	.000			-.059			-16.245
		.000	-38.537	-5.961		.000	-.905	
		1.075	-49.538	-35.611		.000	.000	
		2.150	-63.532	-68.877		.000	.000	
		2.150			-.059			-16.245

REPOSICION 303+200. 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
46								
	MAX & MIN							
	1	.000			-.151			-1.271
		.000	-46.280	-24.362		1.686	-.030	
		1.075	-49.643	-75.921		1.686	1.783	
		2.150	-53.005	-131.095		1.686	3.595	
		2.150			-.151			-1.271
	MAX							
	2	.000			1.520			5.240
		.000	-38.371	-13.440		1.679	.051	
		1.075	-47.373	-72.248		1.679	1.493	
		2.150	-52.873	-128.705		1.679	3.237	
		2.150			1.520			5.240
	MIN							
	2	.000			.476			-10.010
		.000	-60.816	-36.806		.604	-.250	
		1.075	-68.073	-90.259		.604	.954	
		2.150	-77.425	-151.894		.604	1.858	
		2.150			.476			-10.010
	MAX							
	3	.000			2.358			5.889
		.000	-38.415	-13.492		1.627	.071	
		1.075	-47.417	-72.347		1.627	1.458	
		2.150	-52.917	-128.852		1.627	3.146	
		2.150			2.358			5.889
	MIN							
	3	.000			1.313			-9.361
		.000	-60.859	-36.859		.552	-.229	
		1.075	-68.117	-90.359		.552	.919	
		2.150	-77.468	-152.040		.552	1.767	
		2.150			1.313			-9.361
	MAX							
	4	.000			1.797			10.972
		.000	-33.054	-6.105		1.985	.152	
		1.075	-45.816	-69.699		1.985	1.682	
		2.150	-52.741	-126.966		1.985	3.714	
		2.150			1.797			10.972
	MIN							
	4	.000			.056			-14.444
		.000	-70.463	-45.049		.194	-.349	
		1.075	-80.317	-99.719		.194	.784	
		2.150	-93.660	-165.614		.194	1.417	
		2.150			.056			-14.444
	MAX & MIN							
	5	.000			.718			.000
		.000	-50.568	-54.278		.000	.000	
		1.075	-53.931	-110.446		.000	.000	
		2.150	-57.293	-170.229		.000	.000	
		2.150			.718			.000
	MAX & MIN							
	6	.000			-.152			.000

REPOSICION 303+200. 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	-46.280	-24.362		.000	.000	
		1.075	-49.643	-75.921		.000	.000	
		2.150	-53.005	-131.095		.000	.000	
		2.150			-.152			.000
	MAX							
	ALL	.000			2.358			10.972
		.000	-33.054	-6.105		1.985	.152	
		1.075	-45.816	-69.699		1.985	1.783	
		2.150	-52.741	-126.966		1.985	3.714	
		2.150			2.358			10.972
	MIN							
	ALL	.000			-.152			-14.444
		.000	-70.463	-54.278		.000	-.349	
		1.075	-80.317	-110.446		.000	.000	
		2.150	-93.660	-170.229		.000	.000	
		2.150			-.152			-14.444
47								
	MAX & MIN							
	1	.000			.371			.349
		.000	56.331	-137.504		1.557	.264	
		1.075	52.969	-78.755		1.557	1.937	
		2.150	49.606	-23.621		1.557	3.611	
		2.150			.371			.349
	MAX							
	2	.000			2.533			7.672
		.000	80.755	-132.995		1.056	.772	
		1.075	71.525	-75.455		1.056	1.630	
		2.150	64.644	-13.699		1.056	2.593	
		2.150			2.533			7.672
	MIN							
	2	.000			.978			-12.701
		.000	54.949	-162.443		.793	.021	
		1.075	50.540	-92.396		.793	1.034	
		2.150	41.625	-32.780		.793	2.048	
		2.150			.978			-12.701
	MAX							
	3	.000			3.492			8.563
		.000	80.704	-132.820		1.058	.730	
		1.075	71.474	-75.335		1.058	1.591	
		2.150	64.592	-13.635		1.058	2.557	
		2.150			3.492			8.563
	MIN							
	3	.000			1.936			-11.811
		.000	54.897	-162.268		.796	-.021	
		1.075	50.488	-92.277		.796	.995	
		2.150	41.574	-32.716		.796	2.012	
		2.150			1.936			-11.811
	MAX							
	4	.000			3.017			15.022
		.000	97.089	-130.164		1.144	1.070	
		1.075	83.948	-73.374		1.144	1.838	

REPOSICION 303+200, 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	2.150	74.720	-7.147		1.144	2.782	
	2.150			3.017			15.022
MIN							
4	.000			.425			-18.934
	.000	54.079	-179.243		.706	-.183	
	1.075	48.972	-101.610		.706	.845	
	2.150	36.356	-38.950		.706	1.873	
	2.150			.425			-18.934
MAX & MIN							
5	.000			-1.744			.000
	.000	82.425	-198.339		.000	.000	
	1.075	78.417	-111.886		.000	.000	
	2.150	74.409	-29.742		.000	.000	
	2.150			-1.744			.000
MAX & MIN							
6	.000			.369			.000
	.000	56.331	-137.504		.000	.000	
	1.075	52.969	-78.755		.000	.000	
	2.150	49.606	-23.621		.000	.000	
	2.150			.369			.000
MAX							
ALL	.000			3.492			15.022
	.000	97.089	-130.164		1.557	1.070	
	1.075	83.948	-73.374		1.557	1.957	
	2.150	74.720	-7.147		1.557	3.611	
	2.150			3.492			15.022
MIN							
ALL	.000			-1.744			-18.934
	.000	54.079	-198.339		.000	-.183	
	1.075	48.972	-111.886		.000	.000	
	2.150	36.356	-38.950		.000	.000	
	2.150			-1.744			-18.934
48 ----------							
MAX & MIN							
1	.000			.279			.094
	.000	31.266	-35.522		1.093	.973	
	1.075	27.904	-3.719		1.093	2.148	
	2.150	24.541	24.470		1.093	3.322	
	2.150			.279			.094
MAX							
2	.000			2.341			6.945
	.000	51.909	-27.496		.763	1.053	
	1.075	42.294	12.622		.763	1.660	
	2.150	34.501	44.225		.763	2.413	
	2.150			2.341			6.945
MIN							
2	.000			1.237			-10.507
	.000	30.075	-45.660		.553	.478	
	1.075	22.619	-12.852		.553	1.181	
	2.150	13.166	16.323		.553	1.883	
	2.150			1.237			-10.507

REPOSICION 303+200, 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
MAX							
3	.000			3.393			7.539
	.000	51.895	-27.417		.763	1.021	
	1.075	42.281	12.686		.763	1.627	
	2.150	34.487	44.275		.763	2.379	
	2.150			3.393			7.539
MIN							
3	.000			2.288			-9.914
	.000	30.062	-45.581		.552	.446	
	1.075	22.606	-12.788		.552	1.148	
	2.150	13.153	16.373		.552	1.850	
	2.150			2.288			-9.914
MAX							
4	.000			2.665			13.120
	.000	65.684	-22.223		.833	1.280	
	1.075	51.901	23.452		.833	1.820	
	2.150	41.154	57.345		.833	2.603	
	2.150			2.665			13.120
MIN							
4	.000			.824			-15.968
	.000	29.294	-52.496		.483	.321	
	1.075	19.110	-19.005		.483	1.021	
	2.150	5.597	10.841		.483	1.721	
	2.150			.824			-15.968
MAX & MIN							
5	.000			-1.312			.000
	.000	48.906	-45.501		.000	.000	
	1.075	44.899	4.919		.000	.000	
	2.150	40.891	51.031		.000	.000	
	2.150			-1.312			.000
MAX & MIN							
6	.000			.278			.000
	.000	31.266	-35.522		.000	.000	
	1.075	27.904	-3.719		.000	.000	
	2.150	24.541	24.470		.000	.000	
	2.150			.278			.000
MAX							
ALL	.000			3.393			13.120
	.000	65.684	-22.223		1.093	1.280	
	1.075	51.901	23.452		1.093	2.148	
	2.150	41.154	57.345		1.093	3.322	
	2.150			3.393			13.120
MIN							
ALL	.000			-1.312			-15.968
	.000	29.294	-52.496		.000	.000	
	1.075	19.110	-19.005		.000	.000	
	2.150	5.597	10.841		.000	.000	
	2.150			-1.312			-15.968
49 ----------							
MAX & MIN							
1	.000			.247			.031

REPOSICION 303+200, 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	.000	20.097	22.793		.656	1.550	
	1.075	16.735	42.590		.656	2.255	
	2.150	13.372	58.773		.656	2.961	
	2.150			.247			.031
MAX							
2	.000			2.610			6.596
	.000	38.944	42.279		.499	1.388	
	1.075	29.219	68.955		.499	1.709	
	2.150	21.351	86.458		.499	2.202	
	2.150			2.610			6.596
MIN							
2	.000			1.665			-8.859
	.000	17.615	14.512		.291	.823	
	1.075	9.946	35.318		.291	1.246	
	2.150	.315	52.507		.291	1.669	
	2.150			1.665			-8.859
MAX							
3	.000			3.921			6.944
	.000	38.932	42.331		.499	1.356	
	1.075	29.207	68.995		.499	1.676	
	2.150	21.339	86.484		.499	2.169	
	2.150			3.921			6.944
MIN							
3	.000			2.976			-8.511
	.000	17.603	14.565		.291	.791	
	1.075	9.934	35.358		.291	1.214	
	2.150	.303	52.533		.291	1.636	
	2.150			2.976			-8.511
MAX							
4	.000			2.875			11.910
	.000	51.521	55.217		.568	1.607	
	1.075	37.554	86.493		.568	1.859	
	2.150	26.683	104.889		.568	2.398	
	2.150			2.875			11.910
MIN							
4	.000			1.301			-13.849
	.000	15.972	8.940		.222	.666	
	1.075	5.432	30.431		.222	1.088	
	2.150	-8.378	48.304		.222	1.510	
	2.150			1.301			-13.849
MAX & MIN							
5	.000			-1.159			.000
	.000	35.852	48.387		.000	.000	
	1.075	31.845	84.774		.000	.000	
	2.150	27.837	116.854		.000	.000	
	2.150			-1.159			.000
MAX & MIN							
6	.000			.245			.000
	.000	20.097	22.793		.000	.000	
	1.075	16.735	42.590		.000	.000	
	2.150	13.372	58.773		.000	.000	

REPOSICION 303+200, 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	2.150			.245			.000
MAX							
ALL	.000			3.921			11.910
	.000	51.521	55.217		.656	1.607	
	1.075	37.554	86.493		.656	2.255	
	2.150	27.837	116.854		.656	2.961	
	2.150			3.921			11.910
MIN							
ALL	.000			-1.159			-13.849
	.000	15.972	8.940		.000	.000	
	1.075	5.432	30.431		.000	.000	
	2.150	-8.378	48.304		.000	.000	
	2.150			-1.159			-13.849
50 ----------							
MAX & MIN							
1	.000			.236			.007
	.000	8.938	58.429		.219	2.073	
	1.075	5.575	66.230		.219	2.308	
	2.150	2.212	70.415		.219	2.543	
	2.150			.236			.007
MAX							
2	.000			3.642			6.317
	.000	25.838	86.075		.235	1.690	
	1.075	16.075	98.263		.235	1.730	
	2.150	8.205	100.969		.235	1.961	
	2.150			3.642			6.317
MIN							
2	.000			2.754			-7.322
	.000	4.797	52.125		.028	1.137	
	1.075	-3.006	60.915		.028	1.278	
	2.150	-12.737	66.082		.028	1.419	
	2.150			2.754			-7.322
MAX							
3	.000			5.670			6.432
	.000	25.825	86.101		.235	1.658	
	1.075	16.063	98.276		.235	1.697	
	2.150	8.193	100.969		.235	1.929	
	2.150			5.670			6.432
MIN							
3	.000			4.782			-7.207
	.000	4.785	52.152		.028	1.105	
	1.075	-3.018	60.928		.028	1.246	
	2.150	-12.749	66.082		.028	1.387	
	2.150			4.782			-7.207
MAX							
4	.000			3.885			10.832
	.000	37.117	104.478		.305	1.902	
	1.075	25.087	119.605		.305	1.873	
	2.150	12.212	121.338		.305	2.165	
	2.150			3.885			10.832

REPOSITION 304+200, 5 YARDS 134+/+13 FILE:3U3200

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD	DIST	1-2 PLANE		AXIAL	1-3 PLANE		AXIAL
ID ENVE	ENDI	SHEAR	MOMENT	FORCE	SHEAR	MOMENT	TORQ
MIN							
ALL	.000	4.312		4.319			
MAI							
	.000	62.616	30.349		2.853	.007	
	1.075	30.231	81.444		2.853	.478	
	2.130	20.236	90.802		2.853	5.944	
	2.150			4.312			4.319
MIN							
ALL	.000		-.003				-37.428
	.000	3.330	26.130		-.006	-2.347	
	1.075	-4.144	35.937		-.006	.000	
	2.130	-17.294	36.393		-.006	-.007	
	2.150			-.003			-33.017
63 ----------							
MAR & MIN							
I	.000			6.013			-5.017
	.000	.606	66.347		2.467	-1.823	
	1.075	-2.471	65.344		2.467	.819	
	2.130	-5.548	61.024		2.467	3.471	
	2.150			6.013			-5.017
MAR							
2	.000	18.247	69.330		1.923	-.890	2.454
	1.075	9.693	73.550		1.932	.650	
	2.130	2.367	68.408		1.932	2.656	
	2.150			5.817			2.454
MIN							
2	.000			4.011			-19.850
	.000	-4.344	39.462		1.090	-1.396	
	1.075	-13.316	39.737		1.090	.491	
	2.130	-20.196	34.807		1.090	1.852	
	2.150			4.011			-17.651
MAI							
3	.000			6.462			3.090
	.000	18.033	69.533		1.845	-.790	
	1.075	9.479	73.352		1.845	.653	
	2.130	2.375	68.151		1.845	2.365	
	2.150			6.462			3.090
MIN							
3	.000	-4.518	39.665		1.001	-1.297	4.636
	1.075	-11.529	39.730		1.001	.488	
	2.130	-20.410	34.550		1.001	1.761	
	2.150			4.636			-17.015
MAI							
4	.000			6.334			8.924
	.000	29.523	85.200		2.172	-.724	
	1.075	17.319	92.062		2.172	.662	
	2.130	7.326	86.165		2.172	2.921	
	2.150			6.334			8.924
MIN							
4	.000			3.324			-20.248

F R A M E E L E M E N T F O R C E S (USING "QUICK" RESPONSE CALC)

ELT LOAD	DIST	1-2 PLANE		AXIAL	1-3 PLANE		AXIAL
ID ENVE	ENDI	SHEAR	MOMENT	FORCE	SHEAR	MOMENT	TORQ
MIN							
	2.130	5.718	49.749		2.833	3.944	
	2.150			5.259			-9.227
MAI							
	.000	29.797	47.937		2.063	-1.170	
	1.075	21.135	65.696		2.063	.418	
	2.130	13.907	75.670		2.063	2.361	
	2.150			5.504			-2.044
MIN							
2	.000			2.361			-27.092
	.000	6.225	28.625		1.217	-1.755	
	1.075	.510	36.731		1.217	.340	
	2.130	-8.367	43.665		1.217	1.869	
	2.150			2.361			-24.445
MAR							
3	.000			4.112			-1.398
	.000	29.092	48.152		1.914	-.937	
	1.075	20.930	65.671		1.914	.451	
	2.130	13.102	75.425		1.914	2.454	
	2.150			4.112			-1.398
MIN							
3	.000	6.020	28.821		1.069	-1.362	
	1.075	.304	36.706		1.069	.373	
	2.130	-8.792	43.440		1.069	1.723	
	2.150			3.169			-23.800
MAI							
4	.000			3.773			4.319
	.000	42.614	58.349		2.303	-.980	
	1.075	30.231	81.444		2.303	.446	
	2.130	20.236	92.802		2.303	2.852	
	2.150			3.773			4.319
MIN							
4	.000			2.291			-37.428
	.000	3.550	26.130		.894	-1.955	
	1.075	-4.144	36.392		.894	.316	
	2.130	-17.294	46.494		.894	1.613	
	2.150			2.291			-33.017
MAI & MIN							
5	.000		.018				-7.573
	.000	7.086	27.974		-.006	.997	
	1.075	4.099	35.937		-.006	.000	
	2.130	.452	36.393		-.006	-.007	
	2.150			.018			-7.573
MAR & MIN							
6	.000		-.003				-8.349
	.000	9.629	33.562		.001	-.001	
	1.075	6.352	42.099		.001	.000	
	2.130	3.476	49.499		.001	.001	
	2.150			-.003			-8.549

REPOSITION 304+200, 3 YARDS 134+/+13 FILE:304200

F R A M E E L E M E N T F O R C E S (USING "QUICK" RESPONSE CALC)

ELT LOAD	DIST	1-2 PLANE		AXIAL	1-3 PLANE		AXIAL
ID ENVE	ENDI	SHEAR	MOMENT	FORCE	SHEAR	MOMENT	TORQ
MIN							
ALL	.000	4.312		4.319			
MAI							
	.000	62.616	30.349		2.853	.007	
	1.075	30.231	81.444		2.853	.478	
	2.130	20.236	90.802		2.853	5.944	
	2.150			4.312			4.319
MIN							
ALL	.000		-.003				-37.428
	.000	3.330	26.130		-.006	-2.347	
	1.075	-4.144	35.937		-.006	.000	
	2.130	-17.294	46.393		-.006	-.007	
	2.150			-.003			-33.017
63 ----------							
MAR & MIN							
I	.000			6.013			-5.017
	.000	.606	66.347		2.467	-1.823	
	1.075	-2.471	65.344		2.467	.819	
	2.130	-5.548	61.024		2.467	3.471	
	2.150			6.013			-5.017
MAR							
2	.000	18.247	69.330		1.923	-.890	2.454
	1.075	9.693	73.550		1.932	.650	
	2.130	2.367	68.408		1.932	2.656	
	2.150			5.817			2.454
MIN							
2	.000			4.011			-19.850
	.000	-4.344	39.462		1.090	-1.396	
	1.075	-13.316	39.737		1.090	.491	
	2.130	-20.196	34.807		1.090	1.852	
	2.150			4.011			-17.651
MAI							
3	.000			6.462			3.090
	.000	18.033	69.533		1.845	-.790	
	1.075	9.479	73.352		1.845	.653	
	2.130	2.375	68.151		1.845	2.365	
	2.150			6.462			3.090
MIN							
3	.000	-4.518	39.665		1.001	-1.297	4.636
	1.075	-11.529	39.730		1.001	.488	
	2.130	-20.410	34.550		1.001	1.761	
	2.150			4.636			-17.015
MAI							
4	.000			6.334			8.924
	.000	29.523	85.200		2.172	-.724	
	1.075	17.319	92.062		2.172	.662	
	2.130	7.326	86.165		2.172	2.921	
	2.150			6.334			8.924
MIN							
4	.000			3.324			-20.248

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD	DIST	1-2 PLANE		AXIAL	1-3 PLANE		AXIAL
ID ENVE	ENDI	SHEAR	MOMENT	FORCE	SHEAR	MOMENT	TORQ
MIN							
	2.130	5.718	49.749		2.833	3.944	
	2.150			5.259			-9.227
MAI							
	.000	29.797	47.937		2.063	-1.170	
	1.075	21.135	65.696		2.063	.418	
	2.130	13.907	75.670		2.063	2.361	
	2.150			5.504			-2.044
MIN							
2	.000			2.361			-27.092
	.000	6.225	28.625		1.217	-1.755	
	1.075	.510	36.731		1.217	.340	
	2.130	-8.367	43.665		1.217	1.869	
	2.150			2.361			-24.445
MAR							
3	.000			4.112			-1.398
	.000	29.092	48.152		1.914	-.937	
	1.075	20.930	65.671		1.914	.451	
	2.130	13.102	75.425		1.914	2.454	
	2.150			4.112			-1.398
MIN							
3	.000	6.020	28.821		1.069	-1.362	
	1.075	.304	36.706		1.069	.373	
	2.130	-8.792	43.440		1.069	1.723	
	2.150			3.169			-23.800
MAI							
4	.000			3.773			4.319
	.000	42.614	58.349		2.303	-.980	
	1.075	30.231	81.444		2.303	.446	
	2.130	20.236	92.802		2.303	2.852	
	2.150			3.773			4.319
MIN							
4	.000			2.291			-37.428
	.000	3.550	26.130		.894	-1.955	
	1.075	-4.144	36.392		.894	.316	
	2.130	-17.294	46.494		.894	1.613	
	2.150			2.291			-33.017
MAI & MIN							
5	.000		.018				-7.573
	.000	7.086	27.974		-.006	.997	
	1.075	4.099	35.937		-.006	.000	
	2.130	.452	36.393		-.006	-.007	
	2.150			.018			-7.573
MAR & MIN							
6	.000		-.003				-8.349
	.000	9.629	33.562		.001	-.001	
	1.075	6.352	42.099		.001	.000	
	2.130	3.476	49.499		.001	.001	
	2.150			-.003			-8.549

REPOSICIÓN 305x200. 5 VANOS 134+1+13 FILE3302200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD / ID ENVE	DIST ENDI	1-2 FLANGE SHEAR	MOMENT	AXIAL FORCE	1-3 FLANGE SHEAR	MOMENT	AXIAL TORQ
MAL							
2	.000	-4.046	33.216	1.562			-.457
	.000						
	1.075	-19.021	-20.017	1.562			
	2.150						
	2.150	-12.282	9.999	1.562			
	.000						
	1.075	-19.021	33.216	1.562			-.234
	2.150						
	2.150		9.633				-.457
MIN							
2	.000		6.107				-19.634
	.000	-26.979	2.304	.718			-.582
	1.075	-34.074	-17.927	.718			.157
	2.150	-42.553	-41.391	.718			1.710
	2.150		6.107				-17.385
MAL							
3	.000		10.252				.186
	.000	-4.238	35.598	1.510			-.198
	1.075	-12.494	9.912	1.510			1.027
	2.150	-19.225	-20.294	1.510			2.598
	2.150		10.252				.186
MIN							
5	.000	-27.191	2.485	.666			-.544
	.000						
	1.075	-34.286	-17.015	.666			.719
	2.150	-42.745	-41.865	.666			1.637
	2.150		6.707				-17.142
MAL							
4	.000		10.440				5.197
	.000	4.527	46.829	1.802			-.122
	1.075	-7.147	23.285	1.802			1.152
	2.150	-16.329	-13.256	1.802			3.001
	2.150		10.440				5.192
MIN							
4	.000	-53.694	-6.692	4.765			-.699
	.000						
	1.075	-63.446	-23.690	4.765			.538
	2.150	-55.348	-49.207	4.765			1.399
	2.150						-25.687
MAL & MIN							
5	.000		-.027				-7.214
	.000	-20.909	-7.700	-.038			.028
	1.075	-23.686	-51.294	-.038			-.013
	2.150	-26.463	-36.195	-.038			-.054
	2.150		-.027				-7.214
MAL & MIN							
6	.000		.006				-5.994
	.000	-17.899	15.950	.008			-.006
	1.075	-20.476	-6.945	.008			.003
	2.150	-24.052	-31.147	.008			.011
	2.150		.006				-5.994
MAL							
ALL	.000		10.440				5.192
	.000	4.527	46.829	1.802			.028

REPOSICIÓN 305x200. 3 VANOS 134+1+13 FILE3302200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD / ID ENVE	DIST ENDI	1-2 FLANGE SHEAR	MOMENT	AXIAL FORCE	1-3 FLANGE SHEAR	MOMENT	AXIAL TORQ
MAL							
2	.000	-.046	9.633				-.457
	.000						
	1.075	-17.696	26.093	.748			-1.548
	2.150	-30.445	30.163	.748			.634
	2.150						
	2.150	-25.421	25.421	.748			-1.548
MIN							
2	.000		6.482				-19.944
	.000	-27.191	2.485	.666			-.544
	1.075	-34.286	-17.015	.666			.719
	2.150	-42.745	-41.865	.666			1.637
	2.150		6.707				-17.142
MAL							
3	.000		10.252				.186
	.000	-4.238	35.598	1.510			-.198
	1.075	-12.494	9.912	1.510			1.027
	2.150	-19.225	-20.294	1.510			2.598
	2.150		10.252				.186
MIN							
5	.000		6.462				-19.011
	.000	-27.191	2.485	.666			-.544
	1.075	-34.286	-17.015	.666			.719
	2.150	-42.745	-41.865	.666			1.637
	2.150		6.707				-17.142
MAL							
4	.000		10.440				5.197
	.000	4.527	46.829	1.802			-.122
	1.075	-7.147	23.285	1.802			1.152
	2.150	-16.329	-13.256	1.802			3.001
	2.150		10.440				5.192
MIN							
4	.000	-53.694	-6.692	4.765			-.699
	.000						
	1.075	-63.446	-23.690	4.765			.538
	2.150	-55.348	-49.207	4.765			1.399
	2.150						-25.687
MAL & MIN							
5	.000		-.027				-7.214
	.000	-20.909	-7.700	-.038			.028
	1.075	-23.686	-51.294	-.038			-.013
	2.150	-26.463	-36.195	-.038			-.054
	2.150		-.027				-7.214
MAL & MIN							
6	.000		.006				-5.994
	.000	-17.899	15.950	.008			-.006
	1.075	-20.476	-6.945	.008			.003
	2.150	-24.052	-31.147	.008			.011
	2.150		.006				-5.994
MAL							
ALL	.000		10.440				5.192
	.000	4.527	46.829	1.802			.028

REPOSICIÓN 305x200. 5 VANOS 134+1+13 FILE3302200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD / ID ENVE	DIST ENDI	1-2 FLANGE SHEAR	MOMENT	AXIAL FORCE	1-3 FLANGE SHEAR	MOMENT	AXIAL TORQ
MAL							
2	.000		5.242				-32.600
	.000	-38.684	-59.455	.202			-.208
	1.075	-48.299	-82.226	.202			.641
	2.150	-60.057	-112.143	.202			1.213
MIN							
4	.000		12.395				-1.291
	.000	-31.483	-50.672	.473			-.123
	1.075	-38.439	-73.748	.473			.176
	2.150	-46.168	-102.596	.473			1.496
	2.150		7.448				-22.721
MAL							
3	.000		7.448				-24.358
	.000	-31.483	-50.672	.473			-.123
	1.075	-38.439	-73.748	.473			.176
	2.150	-46.168	-102.596	.473			1.496
	2.150		7.448				-22.721
MIN							
5	.000		11.740				-5.672
	.000	-8.270	-22.382	1.305			.067
	1.075	-16.626	-34.884	1.305			1.215
	2.150	-25.099	-85.904	1.305			2.387
	2.150		11.740				-5.672
MAL							
2	.000		11.740				-5.672
	.000	-8.270	-22.382	1.305			.067
	1.075	-16.626	-34.884	1.305			1.215
	2.150	-25.099	-85.904	1.305			2.387
	2.150		11.740				-5.672
MIN							
2	.000		6.879				-25.010
	.000	-31.281	-50.848	.521			-.145
	1.075	-38.257	-73.727	.521			.906
	2.150	-46.366	-102.538	.521			1.566
	2.150		6.879				-23.394
MAL							
3	.000		11.374				-6.345
	.000	-8.043	-22.897	1.353			.065
	1.075	-16.225	-54.845	1.353			1.264
	2.150	-22.897	-85.645	1.353			2.668
	2.150		11.374				-6.345
MIN							
2	.000		11.373				-6.345
	.000	-8.048	-27.357	1.352			.065
	1.075	-16.225	-54.845	1.352			1.264
	2.150	-22.897	-85.645	1.352			2.668
	2.150		12.214				-11.487
MAL							
1	.000		12.214				-11.487
	.000	-29.904	-26.211	1.405			-.810
	1.075	-23.981	-60.857	1.405			1.300
	2.150	-27.058	-88.270	1.405			5.010
	2.150		12.214				-11.487
66 ----------							
MAL & MIN							
1	.000		10.488				-6.842
	.000	-17.614	15.648	1.753			-.552
	1.075	-20.693	-6.943	1.753			1.552
	2.150	-23.279	-30.841	1.753			3.217
	2.150		10.488				-6.842

REPOSICIÓN 305x200. 3 VANOS 134+1+13 FILE3302200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD / ID ENVE	DIST ENDI	1-2 FLANGE SHEAR	MOMENT	AXIAL FORCE	1-3 FLANGE SHEAR	MOMENT	AXIAL TORQ
MAL							
2	.000	-.046	9.633				-.457
	.000						
	1.075	-17.696	26.093	.748			-1.548
	2.150	-30.445	30.163	.748			.634
	2.150						
	2.150	-25.421	25.421	.748			-1.548
MIN							
2	.000		6.482				-19.944
	.000	-27.191	2.485	.666			-.544
	1.075	-34.286	-17.015	.666			.719
	2.150	-42.745	-41.865	.666			1.637
	2.150		6.707				-17.142
MAL							
3	.000		10.252				.186
	.000	-4.238	35.598	1.510			-.198
	1.075	-12.494	9.912	1.510			1.027
	2.150	-19.225	-20.294	1.510			2.598
	2.150		10.252				.186
MIN							
5	.000		6.462				-19.011
	.000	-27.191	2.485	.666			-.544
	1.075	-34.286	-17.015	.666			.719
	2.150	-42.745	-41.865	.666			1.637
	2.150		6.707				-17.142
MAL							
4	.000		10.440				5.197
	.000	4.527	46.829	1.802			-.122
	1.075	-7.147	23.285	1.802			1.152
	2.150	-16.329	-13.256	1.802			3.001
	2.150		10.440				5.192
MIN							
4	.000	-53.694	-6.692	4.765			-.699
	.000						
	1.075	-63.446	-23.690	4.765			.538
	2.150	-55.348	-49.207	4.765			1.399
	2.150						-25.687
MAL & MIN							
5	.000		-.027				-7.214
	.000	-20.909	-7.700	-.038			.028
	1.075	-23.686	-51.294	-.038			-.013
	2.150	-26.463	-36.195	-.038			-.054
	2.150		-.027				-7.214
MAL & MIN							
6	.000		.006				-5.994
	.000	-17.899	15.950	.008			-.006
	1.075	-20.476	-6.945	.008			.003
	2.150	-24.052	-31.147	.008			.011
	2.150		.006				-5.994
MAL							
ALL	.000		10.440				5.192
	.000	4.527	46.829	1.802			.028

REPOSICIÓN 305x200. 5 VANOS 134+1+13 FILE3302200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD / ID ENVE	DIST ENDI	1-2 FLANGE SHEAR	MOMENT	AXIAL FORCE	1-3 FLANGE SHEAR	MOMENT	AXIAL TORQ
MAL							
2	.000		5.242				-32.600
	.000	-38.684	-59.455	.202			-.208
	1.075	-48.299	-82.226	.202			.641
	2.150	-60.057	-112.143	.202			1.213
MIN							
4	.000		12.395				-1.291
	.000	-31.483	-50.672	.473			-.123
	1.075	-38.439	-73.748	.473			.176
	2.150	-46.168	-102.596	.473			1.496
	2.150		7.448				-22.721
MAL							
3	.000		7.448				-24.358
	.000	-31.483	-50.672	.473			-.123
	1.075	-38.439	-73.748	.473			.176
	2.150	-46.168	-102.596	.473			1.496
	2.150		7.448				-22.721
MIN							
5	.000		11.740				-5.672
	.000	-8.270	-22.382	1.305			.067
	1.075	-16.626	-34.884	1.305			1.215
	2.150	-25.099	-85.904	1.305			2.387
	2.150		11.740				-5.672
MAL							
2	.000		11.740				-5.672
	.000	-8.270	-22.382	1.305			.067
	1.075	-16.626	-34.884	1.305			1.215
	2.150	-25.099	-85.904	1.305			2.387
	2.150		11.740				-5.672
MIN							
2	.000		6.879				-25.010
	.000	-31.281	-50.848	.521			-.145
	1.075	-38.257	-73.727	.521			.906
	2.150	-46.366	-102.538	.521			1.566
	2.150		6.879				-23.394
MAL							
3	.000		11.374				-6.345
	.000	-8.043	-22.897	1.353			.065
	1.075	-16.225	-54.845	1.353			1.264
	2.150	-22.897	-85.645	1.353			2.668
	2.150		11.374				-6.345
MIN							
2	.000		11.373				-6.345
	.000	-8.048	-27.357	1.352			.065
	1.075	-16.225	-54.845	1.352			1.264
	2.150	-22.897	-85.645	1.352			2.668
	2.150		12.214				-11.487
MAL							
1	.000		12.214				-11.487
	.000	-29.904	-26.211	1.405			-.810
	1.075	-23.981	-60.857	1.405			1.300
	2.150	-27.058	-88.270	1.405			5.010
	2.150		12.214				-11.487
66 ----------							
MAL & MIN							
1	.000		10.488				-6.842
	.000	-17.614	15.648	1.753			-.552
	1.075	-20.693	-6.943	1.753			1.552
	2.150	-23.279	-30.841	1.753			3.217
	2.150		10.488				-6.842

REPOSICION 303+200. 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		2.150			5.242			-29.706
	MAX & MIN							
	5	.000			-.178			-14.454
		.000	-23.340	-64.494		-.081	.056	
		1.075	-26.416	-91.238		-.081	-.031	
		2.150	-29.493	-121.289		-.081	-.118	
		2.150			-.178			-14.454
	MAX & MIN							
	6	.000			.038			-10.934
		.000	-21.277	-36.434		.017	-.012	
		1.075	-24.353	-60.960		.017	.007	
		2.150	-27.430	-88.794		.017	.025	
		2.150			.038			-10.934
	MAX							
	ALL	.000			12.395			-1.291
		.000	.004	-20.837		1.589	.109	
		1.075	-11.539	-50.755		1.589	1.500	
		2.150	-20.610	-84.322		1.589	3.049	
		2.150			12.395			-1.291
	MIN							
	ALL	.000			-.178			-32.400
		.000	-38.684	-64.494		-.081	-.208	
		1.075	-48.259	-91.238		-.081	-.031	
		2.150	-60.057	-121.289		-.081	-.118	
		2.150			-.178			-29.706
67 --								
	MAX & MIN							
	1	.000			13.705			9.841
		.000	28.253	-90.404		1.266	.280	
		1.075	25.176	-61.685		1.266	1.641	
		2.150	22.100	-36.274		1.266	3.001	
		2.150			13.705			9.841
	MAX							
	2	.000			12.412			18.124
		.000	50.185	-88.265		.846	.649	
		1.075	41.961	-56.008		.846	1.370	
		2.150	35.076	-25.994		.846	2.155	
		2.150			12.412			18.124
	MIN							
	2	.000			7.655			-.940
		.000	26.314	-110.272		.665	.065	
		1.075	19.714	-72.085		.665	.868	
		2.150	11.410	-45.532		.665	1.670	
		2.150			7.655			.558
	MAX							
	3	.000			12.973			18.729
		.000	49.943	-87.967		.833	.627	
		1.075	41.718	-55.971		.833	1.333	
		2.150	34.834	-26.217		.833	2.104	
		2.150			12.973			18.729

REPOSICION 303+200. 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	MIN							
	3	.000			8.216			-.335
		.000	26.072	-109.974		.652	.043	
		1.075	19.471	-72.048		.652	.831	
		2.150	11.167	-45.556		.652	1.620	
		2.150			8.216			1.163
	MAX							
	4	.000			13.759			25.186
		.000	64.098	-86.176		.910	.884	
		1.075	52.441	-52.322		.910	1.545	
		2.150	43.018	-20.001		.910	2.315	
		2.150			13.759			25.186
	MIN							
	4	.000			5.831			-6.587
		.000	24.312	-122.854		.608	-.090	
		1.075	15.363	-79.117		.608	.709	
		2.150	3.574	-52.232		.608	1.508	
		2.150			5.831			-4.091
	MAX & MIN							
	5	.000			-.758			12.260
		.000	41.971	-129.097		-.081	.118	
		1.075	38.250	-85.978		-.081	.031	
		2.150	34.528	-46.860		-.081	-.056	
		2.150			-.758			12.260
	MAX & MIN							
	6	.000			.161			10.057
		.000	28.370	-90.654		.017	-.025	
		1.075	25.294	-61.810		.017	-.007	
		2.150	22.217	-36.273		.017	.012	
		2.150			.161			10.057
	MAX							
	ALL	.000			13.759			25.186
		.000	64.098	-86.176		1.266	.884	
		1.075	52.441	-52.322		1.266	1.641	
		2.150	43.018	-20.001		1.266	3.001	
		2.150			13.759			25.186
	MIN							
	ALL	.000			-.758			-6.587
		.000	24.312	-129.097		-.081	-.090	
		1.075	15.363	-85.978		-.081	-.007	
		2.150	3.574	-52.232		-.081	-.056	
		2.150			-.758			-4.091
68 --								
	MAX & MIN							
	1	.000			14.849			5.113
		.000	25.688	-30.813		.906	.835	
		1.075	22.611	-4.852		.906	1.809	
		2.150	19.535	17.802		.906	2.782	
		2.150			14.849			5.113
	MAX							
	2	.000			13.126			12.379

REPOSICION 303+200. 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	46.721	-22.862		.593	.935	
		1.075	38.451	11.141		.593	1.390	
		2.150	31.513	38.502		.593	1.960	
		2.150			13.126			12.379
	MIN							
	2	.000			8.302			-5.906
		.000	23.006	-39.588		.422	.435	
		1.075	16.346	-12.379		.422	.979	
		2.150	8.113	10.776		.422	1.522	
		2.150			8.302			-4.283
	MAX							
	3	.000			13.673			12.839
		.000	46.551	-22.683		.565	.928	
		1.075	38.280	11.137		.565	1.353	
		2.150	31.342	38.314		.565	1.894	
		2.150			13.673			12.839
	MIN							
	3	.000			8.849			-5.446
		.000	22.835	-39.409		.394	.428	
		1.075	16.176	-12.383		.394	.942	
		2.150	7.942	10.588		.394	1.455	
		2.150			8.849			-3.823
	MAX							
	4	.000			14.480			18.454
		.000	60.316	-17.314		.651	1.133	
		1.075	48.584	21.592		.651	1.528	
		2.150	39.071	51.631		.651	2.117	
		2.150			14.480			18.454
	MIN							
	4	.000			6.439			-12.021
		.000	20.791	-45.191		.366	.298	
		1.075	11.742	-17.609		.366	.842	
		2.150	.070	5.421		.366	1.386	
		2.150			6.439			-9.316
	MAX & MIN							
	5	.000			-.908			6.916
		.000	40.224	-39.496		-.038	.054	
		1.075	36.502	1.744		-.038	.013	
		2.150	32.780	38.983		-.038	-.027	
		2.150			-.908			6.916
	MAX & MIN							
	6	.000			.192			5.144
		.000	25.716	-30.845		.008	-.011	
		1.075	22.639	-4.854		.008	-.003	
		2.150	19.562	17.829		.008	.006	
		2.150			.192			5.144
	MAX							
	ALL	.000			14.849			18.454
		.000	60.316	-17.314		.906	1.133	
		1.075	48.584	21.592		.906	1.809	
		2.150	39.071	51.631		.906	2.782	

REPOSICION 303+200. 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		2.150			14.849			18.454
	MIN							
	ALL	.000			-.908			-12.021
		.000	20.791	-45.191		-.038	-.011	
		1.075	11.742	-17.609		-.038	-.003	
		2.150	.070	5.421		-.038	-.027	
		2.150			-.908			-9.316
69 --								
	MAX & MIN							
	1	.000			15.609			1.746
		.000	16.622	18.608		.542	1.320	
		1.075	13.546	34.823		.542	1.903	
		2.150	10.469	47.731		.542	2.485	
		2.150			15.609			1.746
	MAX							
	2	.000			13.476			8.213
		.000	35.732	36.746		.317	1.247	
		1.075	27.377	59.314		.317	1.410	
		2.150	20.382	74.216		.317	1.711	
		2.150			13.476			8.992
	MIN							
	2	.000			8.666			-8.689
		.000	12.415	11.713		.148	.770	
		1.075	5.585	28.980		.148	1.019	
		2.150	-2.711	42.155		.148	1.268	
		2.150			8.666			-7.030
	MAX							
	3	.000			13.961			8.495
		.000	35.629	36.830		.253	1.266	
		1.075	27.274	59.287		.253	1.361	
		2.150	20.279	74.078		.253	1.595	
		2.150			13.961			9.274
	MIN							
	3	.000			9.151			-8.408
		.000	12.311	11.797		.084	.789	
		1.075	5.481	28.953		.084	.970	
		2.150	-2.815	42.017		.084	1.151	
		2.150			9.151			-6.748
	MAX							
	4	.000			14.812			13.281
		.000	48.232	48.902		.374	1.431	
		1.075	36.358	75.448		.374	1.537	
		2.150	26.751	91.421		.374	1.874	
		2.150			14.812			14.579
	MIN							
	4	.000			6.795			-14.890
		.000	9.369	7.180		.092	.637	
		1.075	.038	24.891		.092	.886	
		2.150	-11.738	37.986		.092	1.135	
		2.150			6.795			-12.124

REPOSICION 303+200, 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	MAX & MIN							
	5	.000			-.945			2.995
		.000	28.958	40.313		-.015	.022	
		1.075	25.247	69.454		-.015	.006	
		2.150	21.525	94.594		-.015	-.011	
		2.150			-.945			2.995
	MAX & MIN							
	6	.000			.200			1.746
		.000	16.627	18.608		.003	-.005	
		1.075	13.550	34.828		.003	-.001	
		2.150	10.474	47.741		.003	.002	
		2.150			.200			1.746
	MAX							
	ALL	.000			15.609			13.281
		.000	48.232	48.902		.542	1.431	
		1.075	36.358	75.448		.542	1.903	
		2.150	26.751	94.594		.542	2.485	
		2.150			15.609			14.579
	MIN							
	ALL	.000			-.945			-14.890
		.000	9.369	7.180		-.015	-.005	
		1.075	.038	24.891		-.015	-.001	
		2.150	-11.738	37.986		-.015	-.011	
		2.150			-.945			-12.124
70								
	MAX & MIN							
	1	.000			15.989			.429
		.000	7.589	47.935		.180	1.754	
		1.075	4.513	54.440		.180	1.948	
		2.150	1.436	57.637		.180	2.142	
		2.150			15.989			.429
	MAX							
	2	.000			13.297			7.023
		.000	24.699	73.228		-.009	1.566	
		1.075	16.313	83.606		-.009	1.382	
		2.150	9.315	85.742		-.009	1.354	
		2.150			13.297			8.707
	MIN							
	2	.000			8.526			-8.972
		.000	1.624	42.822		-.178	1.103	
		1.075	-5.319	50.213		-.178	1.002	
		2.150	-13.680	53.506		-.178	.901	
		2.150			8.526			-7.293
	MAX							
	3	.000			13.535			7.116
		.000	24.659	73.224		-.144	1.633	
		1.075	16.272	83.558		-.144	1.303	
		2.150	9.274	85.650		-.144	1.130	
		2.150			13.535			8.801
	MIN							
	3	.000			8.764			-8.878

REPOSICION 303+200, 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	1.583	42.818		-.313	1.169	
		1.075	-5.360	50.165		-.313	.923	
		2.150	-13.721	53.413		-.313	.678	
		2.150			8.764			-7.199
	MAX							
	4	.000			14.608			11.671
		.000	36.034	90.000		.047	1.743	
		1.075	24.107	102.882		.047	1.503	
		2.150	14.495	104.232		.047	1.323	
		2.150			14.608			14.478
	MIN							
	4	.000			6.656			-14.986
		.000	-2.425	39.323		-.234	.970	
		1.075	-11.946	47.227		-.234	.869	
		2.150	-23.829	50.504		-.234	.769	
		2.150			6.656			-12.188
	MAX & MIN							
	5	.000			-.953			.772
		.000	12.213	95.111		-.004	.008	
		1.075	8.491	106.239		-.004	.003	
		2.150	4.769	113.366		-.004	-.001	
		2.150			-.953			.772
	MAX & MIN							
	6	.000			.202			.428
		.000	7.590	47.937		.001	-.002	
		1.075	4.513	54.442		.001	-.001	
		2.150	1.437	57.640		.001	.000	
		2.150			.202			.428
	MAX							
	ALL	.000			15.989			11.671
		.000	36.034	95.111		.180	1.754	
		1.075	24.107	106.239		.180	1.948	
		2.150	14.495	113.366		.180	2.142	
		2.150			15.989			14.478
	MIN							
	ALL	.000			-.953			-14.986
		.000	-2.425	39.323		-.313	-.002	
		1.075	-11.946	47.227		-.313	-.001	
		2.150	-23.829	50.504		-.313	-.001	
		2.150			-.953			-12.188
81								
	MAX & MIN							
	1	.000			-.120			-10.906
		.000	6.216	-3.839		1.482	-1.524	
		1.075	3.449	1.356		1.482	.069	
		2.150	.682	3.577		1.482	1.663	
		2.150			-.120			-10.906
	MAX							
	2	.000			1.770			-8.191
		.000	19.595	-3.525		.912	-.471	
		1.075	11.303	1.766		.912	.207	

REPOSICION 303+200, 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		2.150	3.303	6.785		.912	1.140	
		2.150			1.770			-8.191
	MIN							
	2	.000			1.159			-19.666
		.000	5.557	-6.265		.516	-.799	
		1.075	-2.323	1.293		.516	.154	
		2.150	-10.211	3.346		.516	.831	
		2.150			1.159			-19.666
	MAX							
	3	.000			2.820			-7.917
		.000	19.527	-3.451		.745	-.198	
		1.075	11.235	1.767		.745	.300	
		2.150	3.234	6.713		.745	1.053	
		2.150			2.820			-7.917
	MIN							
	3	.000			2.210			-19.391
		.000	5.489	-6.191		.349	-.526	
		1.075	-2.391	1.294		.349	.246	
		2.150	-10.279	3.274		.349	.744	
		2.150			2.210			-19.391
	MAX							
	4	.000			1.970			-5.745
		.000	28.357	-3.145		1.024	-.373	
		1.075	16.382	2.042		1.024	.224	
		2.150	4.893	8.758		1.024	1.247	
		2.150			1.970			-5.745
	MIN							
	4	.000			.953			-24.869
		.000	4.960	-7.711		.365	-.920	
		1.075	-6.327	1.253		.365	.135	
		2.150	-17.630	3.027		.365	.731	
		2.150			.953			-24.869
	MAX & MIN							
	5	.000			.023			-9.433
		.000	5.693	-3.397		-.005	.007	
		1.075	2.926	1.235		-.005	.002	
		2.150	.159	2.893		-.005	-.003	
		2.150			.023			-9.433
	MAX & MIN							
	6	.000			-.005			-10.579
		.000	6.135	-3.750		.001	-.002	
		1.075	3.368	1.358		.001	-.000	
		2.150	.601	3.491		.001	.001	
		2.150			-.005			-10.579
	MAX							
	ALL	.000			2.820			-5.745
		.000	28.357	-3.145		1.482	.007	
		1.075	16.382	2.042		1.482	.300	
		2.150	4.893	8.758		1.482	1.663	
		2.150			2.820			-5.745

REPOSICION 303+200, 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	MIN							
	ALL	.000			-.120			-24.869
		.000	4.960	-7.711		-.005	-1.524	
		1.075	-6.327	1.235		-.005	-.000	
		2.150	-17.630	2.893		-.005	-.003	
		2.150			-.120			-24.869
82								
	MAX & MIN							
	1	.000			2.518			-6.546
		.000	3.815	-.048		1.046	-.864	
		1.075	1.048	2.566		1.046	.260	
		2.150	-1.719	2.205		1.046	1.385	
		2.150			2.518			-6.546
	MAX							
	2	.000			2.885			-3.251
		.000	16.041	.382		.714	-.311	
		1.075	7.820	3.629		.714	.234	
		2.150	-.239	4.515		.714	.981	
		2.150			2.885			-3.251
	MIN							
	2	.000			2.174			-13.679
		.000	2.687	-.698		.399	-.523	
		1.075	-5.121	2.406		.399	.193	
		2.150	-13.091	2.050		.399	.698	
		2.150			2.174			-13.679
	MAX							
	3	.000			3.483			-2.990
		.000	15.995	.429		.626	-.189	
		1.075	7.774	3.627		.626	.262	
		2.150	-.285	4.463		.626	.914	
		2.150			3.483			-2.990
	MIN							
	3	.000			2.772			-13.417
		.000	2.641	-.651		.311	-.401	
		1.075	-5.167	2.403		.311	.221	
		2.150	-13.137	1.999		.311	.631	
		2.150			2.772			-13.417
	MAX							
	4	.000			3.092			-.446
		.000	24.085	.780		.803	-.245	
		1.075	12.228	4.335		.803	.250	
		2.150	.641	5.938		.803	1.078	
		2.150			3.092			-.446
	MIN							
	4	.000			1.908			-17.825
		.000	1.829	-1.019		.279	-.597	
		1.075	-9.340	2.296		.279	.181	
		2.150	-20.779	1.830		.279	.606	
		2.150			1.908			-17.825
	MAX & MIN							
	5	.000			.007			-5.615

REPOSICION 303+200, 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	.000	3.553	-.163		-.004	.004	
	1.075	.786	2.169		-.004	.000	
	2.150	-1.981	1.526		-.004	-.004	
	2.150			.007			-5.615
MAX & MIN							
6	.000			-.002			-6.235
	.000	3.760	.009		.001	-.001	
	1.075	.993	2.564		.001	.000	
	2.150	-1.774	2.144		.001	.001	
	2.150			-.002			-6.235
MAX							
ALL	.000			3.483			-.446
	.000	24.085	.780		1.046	.004	
	1.075	12.228	4.335		1.046	.262	
	2.150	.641	5.938		1.046	1.385	
	2.150			3.483			-.446
MIN							
ALL	.000			-.002			-17.825
	.000	1.829	-1.019		-.004	-.864	
	1.075	-9.340	2.169		-.004	.000	
	2.150	-20.779	1.526		-.004	-.004	
	2.150			-.002			-17.825
83 ----------							
MAX & MIN							
1	.000			4.684			-3.803
	.000	3.043	.844		.915	-.595	
	1.075	.276	2.628		.915	.389	
	2.150	-2.491	1.437		.915	1.373	
	2.150			4.684			-3.803
MAX							
2	.000			4.304			-.182
	.000	15.062	1.859		.697	-.252	
	1.075	6.843	3.848		.697	.305	
	2.150	-1.161	3.477		.697	1.034	
	2.150			4.304			-.182
MIN							
2	.000			2.952			-9.738
	.000	1.821	.091		.384	-.427	
	1.075	-5.985	2.365		.384	.235	
	2.150	-14.003	1.201		.384	.722	
	2.150			2.952			-9.738
MAX							
3	.000			4.679			.066
	.000	15.016	1.907		.651	-.196	
	1.075	6.797	3.847		.651	.311	
	2.150	-1.207	3.426		.651	.991	
	2.150			4.679			.066
MIN							
3	.000			3.326			-9.489
	.000	1.775	.140		.338	-.371	
	1.075	-6.031	2.364		.338	.241	

REPOSICION 303+200, 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	2.150	-14.050	1.149		.338	.679	
	2.150			3.326			-9.489
MAX							
4	.000			4.691			2.815
	.000	22.967	2.652		.787	-.195	
	1.075	11.114	4.663		.787	.329	
	2.150	-.382	4.723		.787	1.141	
	2.150			4.691			2.815
MIN							
4	.000			2.437			-13.111
	.000	.899	-.293		.264	-.487	
	1.075	-10.266	2.192		.264	.213	
	2.150	-21.786	.928		.264	.621	
	2.150			2.437			-13.111
MAX & MIN							
5	.000			-.008			-3.325
	.000	2.827	.440		-.005	.004	
	1.075	.060	1.992		-.005	-.001	
	2.150	-2.707	.569		-.005	-.006	
	2.150			-.008			-3.325
MAX & MIN							
6	.000			.002			-3.512
	.000	2.988	.903		.001	-.001	
	1.075	.221	2.628		.001	.000	
	2.150	-2.546	1.378		.001	.001	
	2.150			.002			-3.512
MAX							
ALL	.000			4.691			2.815
	.000	22.967	2.652		.915	.004	
	1.075	11.114	4.663		.915	.389	
	2.150	-.382	4.723		.915	1.373	
	2.150			4.691			2.815
MIN							
ALL	.000			-.008			-13.111
	.000	.899	-.293		-.005	-.595	
	1.075	-10.266	1.992		-.005	-.001	
	2.150	-21.786	.569		-.005	-.006	
	2.150			-.008			-13.111
84 ----------							
MAX & MIN							
1	.000			6.533			-2.736
	.000	2.428	.725		.782	-.321	
	1.075	-.339	1.848		.782	.519	
	2.150	-3.106	-.004		.782	1.359	
	2.150			6.533			-2.736
MAX							
2	.000			5.710			.879
	.000	14.272	1.948		.644	-.134	
	1.075	6.058	2.929		.644	.401	
	2.150	-1.891	1.625		.644	1.073	
	2.150			5.710			.879

REPOSICION 303+200, 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
MIN							
2	.000			3.682			-8.080
	.000	1.138	-.139		.330	-.273	
	1.075	-6.663	1.481		.330	.295	
	2.150	-14.728	-.330		.330	.725	
	2.150			3.682			-8.080
MAX							
3	.000			5.968			1.124
	.000	14.226	1.996		.615	-.105	
	1.075	6.011	2.927		.615	.398	
	2.150	-1.937	1.574		.615	1.039	
	2.150			5.968			1.124
MIN							
3	.000			3.940			-7.836
	.000	1.092	-.091		.300	-.244	
	1.075	-6.710	1.479		.300	.293	
	2.150	-14.774	-.381		.300	.691	
	2.150			3.940			-7.836
MAX							
4	.000			6.289			3.869
	.000	22.060	2.880		.733	-.088	
	1.075	10.214	3.652		.733	.438	
	2.150	-1.188	2.598		.733	1.192	
	2.150			6.289			3.869
MIN							
4	.000			2.909			-11.064
	.000	.170	-.598		.209	-.320	
	1.075	-10.987	1.238		.209	.262	
	2.150	-22.584	-.661		.209	.612	
	2.150			2.909			-11.064
MAX & MIN							
5	.000			-.033			-2.617
	.000	2.254	.024		-.009	.007	
	1.075	-.513	.960		-.009	-.003	
	2.150	-3.280	-1.079		-.009	-.012	
	2.150			-.033			-2.617
MAX & MIN							
6	.000			.007			-2.463
	.000	2.374	.783		.002	-.001	
	1.075	-.393	1.848		.002	.001	
	2.150	-3.160	-.062		.002	.003	
	2.150			.007			-2.463
MAX							
ALL	.000			6.533			3.869
	.000	22.060	2.880		.782	.007	
	1.075	10.214	3.652		.782	.519	
	2.150	-1.188	2.598		.782	1.359	
	2.150			6.533			3.869
MIN							
ALL	.000			-.033			-11.064
	.000	.170	-.598		-.009	-.321	

REPOSICION 303+200, 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	1.075	-10.987	.960		-.009	-.003	
	2.150	-22.584	-1.079		-.009	-.012	
	2.150			-.033			-11.064
85 ----------							
MAX & MIN							
1	.000			8.088			-2.632
	.000	1.965	-.499		.648	-.070	
	1.075	-.802	.127		.648	.627	
	2.150	-3.569	-2.222		.648	1.324	
	2.150			8.088			-2.632
MAX							
2	.000			7.013			.819
	.000	13.674	.603		.578	-.007	
	1.075	5.464	.811		.578	.494	
	2.150	-2.435	-1.144		.578	1.096	
	2.150			7.013			.819
MIN							
2	.000			4.304			-7.726
	.000	.639	-1.498		.259	-.108	
	1.075	-7.158	-.352		.259	.348	
	2.150	-15.262	-2.642		.259	.702	
	2.150			4.304			-7.726
MAX							
3	.000			7.199			1.065
	.000	13.628	.651		.556	.009	
	1.075	5.418	.809		.556	.487	
	2.150	-2.481	-1.195		.556	1.064	
	2.150			7.199			1.065
MIN							
3	.000			4.489			-7.480
	.000	.593	-1.450		.236	-.092	
	1.075	-7.204	-.354		.236	.340	
	2.150	-15.308	-2.693		.236	.670	
	2.150			4.489			-7.480
MAX							
4	.000			7.787			3.711
	.000	21.371	1.458		.669	.026	
	1.075	9.532	1.271		.669	.545	
	2.150	-1.788	-.537		.669	1.231	
	2.150			7.787			3.711
MIN							
4	.000			3.271			-10.531
	.000	-.353	-2.044		.137	-.142	
	1.075	-11.503	-.668		.137	.301	
	2.150	-23.166	-3.034		.137	.575	
	2.150			3.271			-10.531
MAX & MIN							
5	.000			-.076			-2.911
	.000	1.841	-1.518		-.017	.013	
	1.075	-.926	-1.026		-.017	-.006	
	2.150	-3.693	-3.508		-.017	-.024	

REPOSICIÓN 304*200, 3 VANOS 134*13 FILE:302200

F R A M E E L E M E N T F O R C E S (USING "QUICK" INDEX RESPONSE CALC)

ELT LOAD ID LBYE	DIST LBDI	1-2 PLANE SHEAR	MOMENT	AXIAL FORCE	SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
1	,000	15,383	-4,548	9,036			5,230
	,000				,004	,373	
	1,075	7,386	-2,207		,000	,627	
	2,130	-,536	-1,866	,004	,000	,994	
	2,150			,016			-2,390
MAX							
ALL	,000			8,038			5,230
3	,000			5,366			-2,776
	1,075	2,624	-6,215		,223	,111	
	1,075	-5,160	-2,837		,223	,392	
	2,130	-13,231	-3,329		,223	,674	
	2,150			3,366			-2,776
MIN							
ALL	,000			8,038			5,711
	,000	21,371	1,638		,669	,026	
	1,075	9,342	1,271		,669	,627	
	2,130	-1,788	-,537		,669	1,324	
	2,150			8,038			5,711
MIN							
ALL	,000			-,076			-10,531
	,000	-,153	-2,044		-,017	-,142	
	1,075	-11,303	-1,626		-,017	-,006	
	2,130	-25,166	-3,598		-,017	-,024	
	2,150			-,076			-10,531
BB							
MAX							
1	,000			9,361			-2,248
	,000	2,038	-3,046		,519	,146	
	1,075	-,729	-2,342		,519	,704	
	2,130	-2,496	-4,614		,519	1,261	
	2,150			9,361			-2,248
MAX							
2	,000			8,160			1,068
	,000	15,713	-2,440		,495	,101	
	1,075	5,319	-2,163		,495	,593	
	2,130	-2,361	-3,930		,495	1,107	
	2,150			8,160			1,068
MIN							
2	,000			4,788			-7,196
	,000	,985	-4,266		,189	,071	
	1,075	-7,005	-2,936		,189	,571	
	2,130	-15,149	-5,367		,189	,654	
	2,150			4,788			-7,196
MAX							
3	,000			8,291			1,334
	,000	15,665	-2,388		,476	,108	
	1,075	5,461	-2,164		,476	,379	
	2,130	-2,411	-5,985		,476	1,072	
	2,150			8,291			1,334
MIN							
3	,000			4,919			-6,948
	,000	,715	-4,214		,170	,079	
	1,075	-7,055	-2,997		,170	,365	
	2,130	-15,196	-5,422		,170	,619	
	2,150			4,919			-6,948

REPOSICIÓN 304*200, 3 VANOS 134*13 FILE:302200

F R A M E E L E M E N T F O R C E S (USING "QUICK" INDEX RESPONSE CALC)

ELT LOAD ID LBYE	DIST LBDI	1-2 PLANE SHEAR	MOMENT	AXIAL FORCE	SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
MAX & MIN							
1	,000			11,292			1,448
	,000	5,866	-2,585		,336	,499	
	1,075	1,037	,217		,336	,850	
	2,130	-1,730	-,136		,336	1,212	
	2,150			11,292			1,448
MAX							
2	,000			9,416			5,119
	,000	15,719	-1,779		,216	,496	
	1,075	7,519	,843		,216	,654	
	2,130	-,375	1,405		,216	,851	
	2,150			9,416			5,119
MIN							
2	,000			5,765			-2,557
	,000	2,827	-3,236		,147	,263	
	1,075	-4,929	-,138		,147	,459	
	2,130	-13,031	-,600		,147	,655	
	2,150			5,765			-2,557
MAX							
3	,000			9,669			5,280
	,000	15,685	-1,746		,202	,493	
	1,075	7,468	,861		,202	,636	
	2,130	-,408	1,368		,202	,818	
	2,150			9,669			5,280
MIN							
3	,000			3,818			-2,397
	,000	2,795	-3,205		,135	,260	
	1,075	-4,991	-,139		,135	,441	
	2,130	-15,084	-,637		,135	,622	
	2,150			3,818			-2,397
MAX							
4	,000			10,449			7,983
	,000	23,573	-1,798		,239	,505	
	1,075	11,756	1,280		,239	,720	
	2,130	,445	2,341		,239	,918	
	2,150			10,449			7,983
MIN							
4	,000			4,364			-4,811
	,000	2,091	-3,726		,125	,196	
	1,075	-9,041	-,387		,125	,395	
	2,130	-20,684	-1,902		,125	,592	
	2,150			4,364			-4,811
MAX & MIN							
5	,000			-,224			1,925
	,000	5,148	-3,069		-,017	,024	
	1,075	1,736	,631		-,017	,006	
	2,130	-1,676	,664		-,017	-,012	
	2,150			-,224			1,925

REPOSICIÓN 304*200, 3 VANOS 134*13 FILE:302200

F R A M E E L E M E N T F O R C E S (USING "QUICK" INDEX RESPONSE CALC)

ELT LOAD ID LBYE	DIST LBDI	1-2 PLANE SHEAR	MOMENT	AXIAL FORCE	SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
MAX & MIN							
1	,000			11,292			1,448
	,000	5,866	-2,585		,336	,499	
	1,075	1,037	,217		,336	,850	
	2,130	-1,730	-,136		,336	1,212	
	2,150			11,292			1,448
MAX							
2	,000			9,416			5,119
	,000	15,719	-1,779		,216	,496	
	1,075	7,519	,843		,216	,654	
	2,130	-,375	1,405		,216	,851	
	2,150			9,416			5,119
MIN							
2	,000			5,765			-2,557
	,000	2,827	-3,236		,147	,263	
	1,075	-4,929	-,138		,147	,459	
	2,130	-13,031	-,600		,147	,655	
	2,150			5,765			-2,557
MAX							
3	,000			9,669			5,280
	,000	15,685	-1,746		,202	,493	
	1,075	7,468	,861		,202	,636	
	2,130	-,408	1,368		,202	,818	
	2,150			9,669			5,280
MIN							
3	,000			3,818			-2,397
	,000	2,795	-3,205		,135	,260	
	1,075	-4,991	-,139		,135	,441	
	2,130	-15,084	-,637		,135	,622	
	2,150			3,818			-2,397
MAX							
4	,000			10,449			7,983
	,000	23,573	-1,798		,239	,505	
	1,075	11,756	1,280		,239	,720	
	2,130	,445	2,341		,239	,918	
	2,150			10,449			7,983
MIN							
4	,000			4,364			-4,811
	,000	2,091	-3,726		,125	,196	
	1,075	-9,041	-,387		,125	,395	
	2,130	-20,684	-1,902		,125	,592	
	2,150			4,364			-4,811
MAX & MIN							
5	,000			-,224			1,925
	,000	5,148	-3,069		-,017	,024	
	1,075	1,736	,631		-,017	,006	
	2,130	-1,676	,664		-,017	-,012	
	2,150			-,224			1,925

BB ----------

MAX & MIN

1	,000			11,292			1,448
	,000	5,866	-2,585		,336	,499	
	1,075	1,037	,217		,336	,850	
	2,130	-1,730	-,136		,336	1,212	
	2,150			11,292			1,448
MAX							
2	,000			9,416			5,119
	,000	15,719	-1,779		,216	,496	
	1,075	7,519	,843		,216	,654	
	2,130	-,375	1,405		,216	,851	
	2,150			9,416			5,119
MIN							
2	,000			5,765			-2,557
	,000	2,827	-3,236		,147	,263	
	1,075	-4,929	-,138		,147	,459	
	2,130	-13,031	-,600		,147	,655	
	2,150			5,765			-2,557
MAX							
3	,000			9,669			5,280
	,000	15,685	-1,746		,202	,493	
	1,075	7,468	,861		,202	,636	
	2,130	-,408	1,368		,202	,818	
	2,150			9,669			5,280
MIN							
3	,000			3,818			-2,397
	,000	2,795	-3,205		,135	,260	
	1,075	-4,991	-,139		,135	,441	
	2,130	-15,084	-,637		,135	,622	
	2,150			3,818			-2,397
MAX							
4	,000			10,449			7,983
	,000	23,573	-1,798		,239	,505	
	1,075	11,756	1,280		,239	,720	
	2,130	,445	2,341		,239	,918	
	2,150			10,449			7,983
MIN							
4	,000			4,364			-4,811
	,000	2,091	-3,726		,125	,196	
	1,075	-9,041	-,387		,125	,395	
	2,130	-20,684	-1,902		,125	,592	
	2,150			4,364			-4,811
MAX & MIN							
5	,000			-,224			1,925
	,000	5,148	-3,069		-,017	,024	
	1,075	1,736	,631		-,017	,006	
	2,130	-1,676	,664		-,017	-,012	
	2,150			-,224			1,925

BB ----------

MAX & MIN

1	,000			9,361			-2,248
	,000	2,038	-3,046		,519	,166	
	1,075	-,729	-2,342		,519	,704	
	2,130	-2,496	-4,614		,519	1,261	
	2,150			9,361			-2,248
MAX							
2	,000			8,160			1,068
	,000	15,713	-2,440		,495	,101	
	1,075	5,319	-2,163		,495	,593	
	2,130	-2,361	-3,930		,495	1,107	
	2,150			8,160			1,068
MIN							
2	,000			4,788			-7,196
	,000	,985	-4,266		,189	,071	
	1,075	-7,005	-2,936		,189	,571	
	2,130	-15,149	-5,367		,189	,654	
	2,150			4,788			-7,196
MAX							
3	,000			8,291			1,334
	,000	15,665	-2,388		,476	,108	
	1,075	5,461	-2,164		,476	,379	
	2,130	-2,411	-5,985		,476	1,072	
	2,150			8,291			1,334
MIN							
3	,000			4,919			-6,948
	,000	,715	-4,214		,170	,079	
	1,075	-7,055	-2,997		,170	,365	
	2,130	-15,196	-5,422		,170	,619	
	2,150			4,919			-6,948
MAX							
ALL	,000			10,421			8,045
	,000	23,480	-4,551		,466	,484	
	1,075	11,665	-2,145		,466	,774	
	2,130	,305	-1,239		,466	1,274	
	2,150			10,421			8,045
MIN							
ALL	,000			-,208			-5,298
	,000	1,881	-7,097		,219	,047	
	1,075	-9,247	-3,187		,219	,335	
	2,130	-20,853	-4,011		,219	,623	
	2,150			3,868			-5,298
MIN							
4	,000			3,868			-5,298
	,000	1,881	-7,097		,219	,047	
	1,075	-9,247	-3,187		,219	,335	
	2,130	-20,853	-4,011		,219	,623	
	2,150			3,868			-5,298
MAX & MIN							
5	,000			-,208			1,452
	,000	4,914	-6,819		-,029	,040	
	1,075	1,504	-3,368		-,029	,097	
	2,130	-1,908	-3,385		-,029	-,022	
	2,150			-,208			1,452
MAX							
6	,000			,044			1,384
	,000	3,664	-4,834		,006	-,008	
	1,075	,897	-2,062		,006	-,002	
	2,130	-1,870	-2,905		,006	,002	
	2,150			,044			1,384
MIN							
ALL	,000			-,208			-5,298
	,000	1,881	-7,097		,219	,047	
	1,075	-9,247	-3,187		,219	,335	
	2,130	-20,853	-4,011		,219	,623	
	2,150			3,868			-5,298
MIN							
ALL	,000			-,076			-10,531
	,000	-,153	-2,044		-,017	-,142	
	1,075	-11,303	-1,626		-,017	-,006	
	2,130	-25,166	-3,598		-,017	-,024	
	2,150			-,076			-10,531
MAX							
ALL	,000			8,038			5,230
	,000	21,371	1,638		,669	,026	
	1,075	9,342	1,271		,669	,627	
	2,130	-1,788	-,537		,669	1,324	
	2,150			8,038			5,711
MAX							
2	,000			4,788			-7,196
	,000	,985	-4,266		,189	,071	
	1,075	-7,005	-2,936		,189	,571	
	2,130	-15,149	-5,367		,189	,654	
	2,150			4,788			-7,196
MIN							
2	,000			5,277			-2,986

REPOSICION 303+200, 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
MAX & MIN							
6	.000			.058			1.497
	.000	3.801	-2.383		.004	-.005	
	1.075	1.034	.216		.004	-.001	
	2.150	-1.733	-.159		.004	.003	
	2.150			.058			1.497
MAX							
ALL	.000			11.292			7.983
	.000	23.575	-1.298		.336	.585	
	1.075	11.756	1.280		.336	.850	
	2.150	.443	2.341		.336	1.212	
	2.150			11.292			7.983
MIN							
ALL	.000			-.274			-4.811
	.000	2.091	-3.726		-.017	-.005	
	1.075	-9.041	-.387		-.017	-.001	
	2.150	-20.684	-1.002		-.017	-.012	
	2.150			-.274			-4.811
89 ----------							
MAX & MIN							
1	.000			11.880			.801
	.000	3.426	-.101		.201	.679	
	1.075	.659	2.094		.201	.895	
	2.150	-2.108	1.315		.201	1.111	
	2.150			11.880			.801
MAX							
2	.000			9.629			4.270
	.000	15.209	1.001		.110	.612	
	1.075	7.008	3.143		.110	.663	
	2.150	-.847	3.096		.110	.763	
	2.150			9.629			4.270
MIN							
2	.000			6.038			-2.927
	.000	2.407	-.505		.046	.396	
	1.075	-5.381	1.824		.046	.480	
	2.150	-13.517	.938		.046	.564	
	2.150			6.038			-2.927
MAX							
3	.000			9.613			4.370
	.000	15.189	1.020		.081	.621	
	1.075	6.988	3.141		.081	.641	
	2.150	-.867	3.072		.081	.709	
	2.150			9.613			4.370
MIN							
3	.000			6.022			-2.827
	.000	2.387	-.486		.017	.405	
	1.075	-5.401	1.821		.017	.458	
	2.150	-13.537	.913		.017	.511	
	2.150			6.022			-2.827
MAX							
4	.000			10.638			6.845

REPOSICION 303+200, 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	.000	23.013	1.777		.132	.694	
	1.075	11.189	3.830		.132	.723	
	2.150	-.058	4.215		.132	.833	
	2.150			10.638			6.845
MIN							
4	.000			4.653			-5.150
	.000	1.677	-.732		.025	.333	
	1.075	-9.459	1.630		.025	.418	
	2.150	-21.174	.618		.025	.503	
	2.150			4.653			-5.150
MAX & MIN							
5	.000			-.314			1.231
	.000	4.655	.655		-.008	.012	
	1.075	1.243	3.826		-.008	.003	
	2.150	-2.169	3.329		-.008	-.005	
	2.150			-.314			1.231
MAX & MIN							
6	.000			.067			.820
	.000	3.424	-.100		.002	-.002	
	1.075	.657	2.095		.002	-.001	
	2.150	-2.110	1.314		.002	.001	
	2.150			.067			.820
MAX							
ALL	.000			11.880			6.845
	.000	23.013	1.777		.201	.694	
	1.075	11.189	3.830		.201	.895	
	2.150	-.058	4.215		.201	1.111	
	2.150			11.880			6.845
MIN							
ALL	.000			-.314			-5.150
	.000	1.677	-.732		-.008	-.002	
	1.075	-9.459	1.630		-.008	-.001	
	2.150	-21.174	.618		-.008	-.005	
	2.150			-.314			-5.150
90 ----------							
MAX & MIN							
1	.000			12.173			.245
	.000	2.991	1.290		.067	.844	
	1.075	.224	3.018		.067	.916	
	2.150	-2.543	1.772		.067	.988	
	2.150			12.173			.245
MAX							
2	.000			9.605			3.540
	.000	14.624	2.800		.001	.727	
	1.075	6.421	4.288		.001	.663	
	2.150	-1.391	3.527		.001	.656	
	2.150			9.605			3.540
MIN							
2	.000			6.059			-3.144
	.000	1.922	.988		-.062	.518	
	1.075	-5.868	2.824		-.062	.485	

REPOSICION 303+200, 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	2.150	-14.048	1.441		-.062	.453	
	2.150			6.059			-3.144
MAX							
3	.000			9.477			3.573
	.000	14.617	2.804		-.046	.751	
	1.075	6.414	4.284		-.046	.636	
	2.150	-1.398	3.515		-.046	.578	
	2.150			9.477			3.573
MIN							
3	.000			5.931			-3.110
	.000	1.915	.992		-.109	.542	
	1.075	-5.875	2.820		-.109	.458	
	2.150	-14.056	1.429		-.109	.375	
	2.150			5.931			-3.110
MAX							
4	.000			10.591			5.826
	.000	22.362	3.812		.022	.804	
	1.075	10.536	5.122		.022	.720	
	2.150	-.640	4.666		.022	.730	
	2.150			10.591			5.826
MIN							
4	.000			4.681			-5.314
	.000	1.192	.793		-.083	.456	
	1.075	-9.946	2.682		-.083	.424	
	2.150	-21.736	1.190		-.083	.391	
	2.150			4.681			-5.314
MAX & MIN							
5	.000			-.331			.391
	.000	3.841	3.259		-.002	.004	
	1.075	.429	5.554		-.002	.002	
	2.150	-2.983	4.182		-.002	-.000	
	2.150			-.331			.391
MAX & MIN							
6	.000			.070			.250
	.000	2.991	1.290		.000	-.001	
	1.075	.224	3.018		.000	-.000	
	2.150	-2.543	1.772		.000	.000	
	2.150			.070			.250
MAX							
ALL	.000			12.173			5.826
	.000	22.362	3.812		.067	.844	
	1.075	10.536	5.554		.067	.916	
	2.150	-.640	4.666		.067	.988	
	2.150			12.173			5.826
MIN							
ALL	.000			-.331			-5.314
	.000	1.192	.793		-.109	-.001	
	1.075	-9.946	2.682		-.109	-.000	
	2.150	-21.736	1.190		-.109	-.000	
	2.150			-.331			-5.314

REPOSICION 303+200, 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
101 ----------							
MAX & MIN							
1	.000			4.510			-3.661
	.000	26.080	-10.252		-1.992	1.648	
	.750	26.080	9.309		-1.992	.154	
	1.500	26.080	28.869		-1.992	-1.340	
	1.500			4.510			-3.661
MAX							
2	.000			3.285			-2.614
	.000	39.832	-6.592		-1.642	1.617	
	.750	39.832	14.847		-1.642	.002	
	1.500	39.832	44.009		-1.642	-1.346	
	1.500			3.285			-2.614
MIN							
2	.000			2.005			-8.188
	.000	18.827	-14.314		-2.202	1.301	
	.750	18.827	7.468		-2.202	-.048	
	1.500	18.827	21.597		-2.202	-1.675	
	1.500			2.005			-8.188
MAX							
3	.000			3.079			-2.687
	.000	40.328	-6.862		-2.060	1.850	
	.750	40.328	14.949		-2.060	-.078	
	1.500	40.328	44.483		-2.060	-1.740	
	1.500			3.079			-2.687
MIN							
3	.000			1.799			-8.261
	.000	19.323	-14.584		-2.619	1.534	
	.750	19.323	7.570		-2.619	-.129	
	1.500	19.323	22.071		-2.619	-2.068	
	1.500			1.799			-8.261
MAX							
4	.000			3.649			-2.089
	.000	50.187	-4.793		-1.428	1.731	
	.750	50.187	18.790		-1.428	.021	
	1.500	50.187	55.243		-1.428	-1.246	
	1.500			3.649			-2.089
MIN							
4	.000			1.516			-11.379
	.000	15.180	-17.664		-2.361	1.204	
	.750	15.180	6.490		-2.361	-.064	
	1.500	15.180	17.890		-2.361	-1.793	
	1.500			1.516			-11.379
MAX & MIN							
5	.000			-.005			-3.397
	.000	22.989	-9.433		-.013	.007	
	.750	22.989	7.809		-.013	-.002	
	1.500	22.989	25.051		-.013	-.012	
	1.500			-.005			-3.397
MAX & MIN							
6	.000			.001			-3.750

REPOSITION 305x200, 3 YARDS 134/413 FILE:305200

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	1-2 FLANE SHEAR	MOMENT	AXIAL FORCE	AXIAL SHEAR	1-3 FLANE SHEAR	MOMENT	AXIAL TORQ
MAI								
1	.000			-.662				2.661
	.000	-6.435	6.021		-1.460		1.749	
	.750	-6.435	.655		-1.460		.126	
	1.500	-6.435	-2.754		-1.460		-1.142	
	1.500			-.662				2.661
2	.000							
MAI								
	.000	-15.364	2.040		-2.137		1.279	-5.224
	.750	-15.364	-1.349		-2.137		.048	
	1.500	-15.364	-5.488		-2.137		-1.435	
	1.500			-.686				-5.224
3	.000							
MAI								
	.000	50.187	-4.793		.002		1.850	
	.750	50.187	18.790		.002	.134		
	1.500	50.187	25.243		.002	.002		
	1.500			4.510				-2.089
MLT	.000				.005			-11.379
MIN								
	.000	15.180	-17.044		-2.619		-.002	
	.750	15.180	6.490		-2.619		-.129	
	1.500	15.180	17.890		-2.619		-2.068	
	1.500			-.005				-11.379
6	.000							
MAI & MIN								
	.000	-5.159	6.344		.003		-.002	
	.750	-5.159	1.973		.003		.001	
	1.500	-5.159	-.394		.003		.004	
	1.500			-.000				-3.492
MAL	.000				.001			2.386
MAI								
	.000	-1.550	7.028		.003		2.526	
	.750	-1.550	5.998		.003		.379	
	1.500	-1.550	4.967		.003		.004	
	1.500			.001				2.386
MIN								
1	.000			-1.019				-3.359
MAI & MIN								
	.000	-3.186	4.328		-2.596		2.526	
	.750	-3.186	1.979		-2.596		.379	
	1.500	-3.186	-.450		-2.596		-1.368	
	1.500			-1.019				-3.359
2	.000							
MAI								
	.000	-2.255	5.931		-1.887		2.186	.263
	.750	-2.255	4.234		-1.887		.231	
	1.500	-2.255	2.737		-1.887		-1.407	
	1.500			-.497				.263
MIN								
2	.000			-.531				-8.252
MAI								
	.000	-15.630	3.981		-2.655		1.665	
	.750	-15.630	1.328		-2.655		.119	
	1.500	-15.630	-1.525		-2.655		-1.766	-8.252
	1.500			-.531				
MAI	.000							.146
3				-.375				
MAI								
	.000	-2.214	5.942		-2.267		2.327	
	.750	-2.214	4.241		-2.267	.107		
	1.500	-2.214	2.480		-2.267	-1.826		
	1.500			-.375				.146
MLT	.000							-8.369
MIN				-.459				
	.000	-13.699	3.992		-3.025		1.865	
	.750	-13.699	1.365		-3.025		-.025	
	1.500	-13.699	-1.262		-3.025	-2.195		
	1.500			-.459				-8.369
4	.000			-.425				2.386
MAI								
	.000	7.028		-1.595		2.367		
	.750	2.998		-1.595		.004		
	1.500	-1.550		-1.595		-1.280		
	1.500			-.727				-5.124
2	.000							
MAI								
	.000	-15.563	2.049		-2.001		1.217	
	.750	-15.563	-1.520		-2.001		.124	
	1.500	-15.563	-5.494		-2.001		-1.280	
	1.500			-.727				-5.124

REPOSITION 305x200, 3 YARDS 134/413 FILE:305200

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	1-2 FLANE SHEAR	MOMENT	AXIAL FORCE	AXIAL SHEAR	1-3 FLANE SHEAR	MOMENT	AXIAL TORQ
MAI								
1	.000			-.662				2.661
	.000	-6.435	6.021		-1.460		1.749	
	.750	-6.435	.655		-1.460		.126	
	1.500	-6.435	-2.734		-1.460		-1.142	
	1.500			-.662				2.661
2	.000							
MAI								
	.000	-15.364	2.040		-2.137		1.279	-5.224
	.750	-15.364	-1.369		-2.137		.048	
	1.500	-15.364	-5.488		-2.137		-1.435	
	1.500			-.686				-5.224
3	.000							
MAI								
	.000	50.187	-4.793		.002		1.850	
	.750	50.187	18.790		.002	.134		
	1.500	50.187	25.243		.002	.002		
	1.500			4.510				-2.089
MLT	.000				.005			-11.379
MIN								
	.000	15.180	-17.044		-2.619		-.002	
	.750	15.180	6.490		-2.619		-.129	
	1.500	15.180	17.890		-2.619		-2.068	
	1.500			-.005				-11.379
6	.000							
MAI & MIN								
	.000	-5.186	4.328		-2.596		2.526	
	.750	-5.186	1.979		-2.596	.379		
	1.500	-5.186	-.450		-2.596	-1.368		
	1.500			-1.019				-5.359
2	.000							
MAI								
	.000	-2.255	5.931		-1.887		2.186	.263
	.750	-2.255	4.234		-1.887	.231		
	1.500	-2.255	2.737		-1.887	-1.407		
	1.500			-.497				.263
MIN								
2	.000			-.531				-8.252
MAI								
	.000	-15.630	3.981		-2.655		1.665	
	.750	-15.630	1.328		-2.655	.119		
	1.500	-15.630	-1.525		-2.655	-1.766		-8.252
	1.500			-.531				
MAI	.000							.146
3				-.375				
MAI								
	.000	-2.214	5.942		-2.267		2.327	
	.750	-2.214	4.241		-2.267	.107		
	1.500	-2.214	2.480		-2.267	-1.826		
	1.500			-.375				.146
MLT	.000							-8.369
MIN				-.459				
	.000	-13.699	3.992		-3.025		1.865	
	.750	-13.699	1.365		-3.025	-.025		
	1.500	-13.699	-1.262		-3.025	-2.195		
	1.500			-.459				-8.369
4	.000			-.425				2.386
MAI								
	.000	7.028		-1.595		2.367		
	.750	2.998		-1.595		.004		
	1.500	-1.550		-1.595		-1.280		
	1.500			-.727				-5.124
2	.000							
MAI								
	.000	-15.563	2.049		-2.001		1.217	
	.750	-15.563	-1.520		-2.001		.124	
	1.500	-15.563	-5.494		-2.001		-1.280	
	1.500			-.727				-5.124

REFUSICIUM 304*200. 3 VANUS 134*413 FILE:30200

F R A M E E L E M E N T F O R C E S (USING "QUICK" INDEX RESYUME CALC)

ELT LOAD ID ENVE	DIST END1	I-2 FLANE SHEAR	MUMENT	AXIAL FUNCE	I-3 FLANE SHEAR	MUMENT	AXIAL TUNG
MAI							
1	.000	-6.483	2.341	.005	1.685		
	.750	-4.483	-1.222	.005	.011		
	1.500	-4.483	-4.786	.005	.005		
				.001			3.805
MIN							
ALL	.000			-1.288			-6.906
	.000	-22.993	-4.615		-.003		
	.750	-22.993	-4.548	-1.847	-.005		
	1.500	-22.993	-8.516	-1.847	-1.106		
				-1.288			-6.906
MAX & MIN							
1	.000	-5.075	.040	-1.285			-.248
	.000	-5.075	-3.746	-1.533	1.417		
	.750	-5.075	-.247	-1.533	.247		
	1.500	-5.075	-7.572	-1.533	-.885		
				-1.285			-.248
105 ----------							
MAX & MIN							
2	.000	-4.869	.462	-.732	1.234		
	.000	-4.869	-3.311	-.712	.206		
	.750	-4.869	-7.084	-.712	-.519		
	1.500	-4.869	-7.084	-.732	-.519		
				-.737			3.598
MIN							
ALL	.000			-1.288			-6.906
	.000	-22.993	-4.615		-.003		
	.750	-22.993	-4.548	-1.847	-.005		
	1.500	-22.993	-8.516	-1.847	-1.106		
				-1.288			-6.906
MAX							
4	.000	-6.699	.732	-.499	1.591		
	.000	-6.699	-2.019	-.499	.232		
	.750	-6.699	-6.770	-.499	-.422		
	1.500	-6.699	-6.770	-.734	-.422		5.942
MIN							
3	.000	-15.952	-1.087	-.750			-3.924
	.000	-15.952	-4.934	-1.410	.115		
	.750	-15.952	-8.824	-1.410	-.848		
	1.500	-15.952	-8.824	-.739			-3.924
MAI							
2	.000	-15.952	-1.086	-1.405	.778		
	.000	-15.952	-4.953	-1.405	.129		
	.750	-15.952	-8.825	-1.405	-.829		
	1.500	-15.952	-8.825	-.746			-3.815
MAX							
3	.000	-4.869	.461	-.718	1.223		
	.000	-4.869	-3.312	-.718	.134		
	1.500	-4.869	-7.065	-.718	-.336		
				-.750			3.499
MIN							
ALL	.000			-1.288			-6.721
	.000	-23.204	-4.615		-.005		
	.750	-23.204	-5.756	-1.603	-.007		
	1.500	-23.204	-9.669	-1.603	-.940		
				-1.288			-6.413
106 ----------							
MAX & MIN							
1	.000			-1.288			-.623
	.000	-5.616	.256	-1.283	1.139		
	.750	-5.616	-3.956	-1.283	.226		
	1.500	-5.616	-8.169	-1.283	-.706		
				-1.288			-.624
MAI							
2	.000			-.737			3.145
	.000	-5.475	.512		-.521	1.042	
	.750	-5.475	-3.693		-.521	.169	
	1.500	-5.475	-7.898		-.521	-.385	
					-.737		3.145
MIN							
2	.000	-16.592	-.705		-1.190	.615	
	.750	-16.592	-5.033		-1.190	.115	
	1.500	-16.592	-9.414		-1.190	-.307	
					-.735		-4.152
MAI							
3	.000				-.736		5.041

F R A M E E L E M E N T F O R C E S (USING "QUICK" INDEX RESYUME CALC)

ELT LOAD ID ENVE	DIST END1	I-2 FLANE SHEAR	MUMENT	AXIAL FUNCE	I-3 FLANE SHEAR	MUMENT	AXIAL TUNG
MIN							
3	.000	-16.598	-.704	-1.180	.599		
	.750	-16.598	-5.057	-1.180	.106		
	1.500	-16.598	-9.422	-1.180	-.709		
				-.734			-4.256
MAI							
4	.000			-.751			5.408
	.000	-5.393	.662	-.266	1.190		
	.750	-5.393	-3.548	-.266	.187		
	1.500	-5.393	-7.437	-.266	-.296		
				-.734			5.408
MIN							
4	.000			-.782			-6.721
	.000	-23.922	-1.266	-1.382	.429		
	.750	-23.922	-5.780	-1.382	.096		
	1.500	-23.922	-10.294	-1.382	-.825		
				-.782			-6.721
MAX & MIN							
5	.000	-5.748	-.005	-.069	.046		
	.000	-5.748	-4.316	-.069	-.005		
	.750	-5.748	-4.628	-.069	-.057		
	1.500	-5.748	-8.628	-.011			-13.000
MAX							
6	.000	-5.611	.320	.015	-.010		
	.000	-5.611	-3.589	.015	.001		
	.750	-5.611	-8.097	.015	.012		
	1.500	-5.611	-8.097	.002			-.725
MIN							
ALL	.000			-1.288			-6.721
	.000	-6.899	-.661	.012	1.190		
	.750	-6.899	-3.548	.012	.226		
	1.500	-6.899	-7.437	.012	.012		
				.002			5.408
107 ----------							
MAX & MIN							
1	.000	-7.248	3.389	-1.033	.935		
	.000	-7.248	-2.047	-1.033	.180		
	.750	-7.248	-2.047	-1.644			-.102
MAX & MIN							
1	.000						
	.000	-7.248	3.389	-1.033	.935		
	.750	-7.248	-2.047	-1.033	.180		
	1.500	-7.248	-2.047	-1.288			-6.721
MAI							
2	.000			-.737			3.145
	.000	-5.393	.662	-.266	1.190		
	.750	-5.393	-3.548	-.266	.187		
	1.500	-5.393	-7.437	-.266	-.296		
				-.737			3.145
MIN							
2	.000	-15.952	-1.087	-.750			-3.924
	.000	-15.952	-4.934	-1.410	.115		
	.750	-15.952	-8.824	-1.410	-.848		
	1.500	-15.952	-8.824	-.739			-3.924
MAX							
4	.000	-6.699	.732	-.499	1.591		
	.000	-6.699	-2.019	-.499	.232		
	.750	-6.699	-6.770	-.499	-.422		
	1.500	-6.699	-6.770	-.734			5.942

REPOSITION 304x200. 3 YARDS 134/+13 FILE:302200

F R A M E E L E M E N T F O R C E S (USING "QUICK" RIGID RESPONSE CALC)

ELT LOAD ID ENVE	DIST END1	1-2 FLANE SHEAR	MOMENT MOMENT	AXIAL FORCE	1-3 FLANE SHEAR	MOMENT TORQ	AXIAL TORQ
ALL	.000	-.145	4.348	.013	.955		3.967
	.750	-6.980	-1.497	.013	.180		
	1.500	-6.770	-3.050	.013	.003		
	1.500		.000				3.605
			-.806				
		-4.712	-6.278	-.427	-.293		
3	.000		-.817				-3.312
	.000	-16.057	-1.784	-.583	.348		
	.750	-15.931	-5.886	-.583	.029		
	1.500	-15.805	-9.701	-.583	-.391		
	1.500		-.817				-3.312
			-.819				
4	.000		-.799				5.911
	.000	-4.823	-.499	.000	.923		
	.750	-4.697	-4.311	.000	.045		
	1.500	-4.571	-8.122		-.200	-.190	
	1.500		-.799				5.911
			-.800				
ALL	.000		.009				5.911
			-.002				
		-4.823	-.499	.000	.923		
	.750	-4.697	-4.311	.000	.045		
	1.500	-4.571	-8.122		-.200	-.190	
	1.500		.009				5.911
			-.009				
MIN							
ALL	.000		-1.290				-5.617
		-23.311	-2.783		-.583	-.005	
	.750	-23.185	-6.728		-.583	-.006	
	1.500	-23.059	-10.593		-.583	-.391	
	1.500		-1.290				-5.617
6	.000		-.001				-.024
MAI & MIN							
	.000	-5.101	-.576	.004	-.002		
	.750	-5.101	-6.396	.004	.001		
	1.500	-5.101	-8.221	.004	.003		
	1.500		-.001				-.024
MAI							
		-4.748	-.338		.004	.441	
ALL	.000			.006			5.399
MAI							
1	.000		-1.290				-.022
MAI & MIN							
	.000	-5.102	-.384		-.286	.262	
	.750	-5.102	-6.410		-.286	.048	
	1.500	-5.102	-8.237		-.286	-.166	
	1.500		-1.290				-.022

REPOSITION 304x200. 3 YARDS 134/+13 FILE:302200

F R A M E E L E M E N T F O R C E S (USING "QUICK" RIGID RESPONSE CALC)

ELT LOAD ID ENVE	DIST END1	1-2 FLANE SHEAR	MOMENT MOMENT	AXIAL FORCE	1-3 FLANE SHEAR	MOMENT TORQ	AXIAL TORQ
ALL	.000	-.145	4.348	.013	.955		3.967
	.750	-6.980	-1.497	.013	.180		
	1.500	-6.770	-3.050	.013	.003		
	1.500		.000				3.605
			-.806				
		-4.712	-6.278	-.427	-.293		
3	.000		-.817				-3.312
	.000	-16.057	-1.784	-.583	.348		
	.750	-15.931	-5.886	-.583	.029		
	1.500	-15.805	-9.701	-.583	-.391		
	1.500		-.817				-3.312
			-.819				
4	.000		-.799				5.911
	.000	-4.823	-.499	.000	.923		
	.750	-4.697	-4.311	.000	.045		
	1.500	-4.571	-8.122		-.200	-.190	
	1.500		.009				5.911
			-.009				
MIN							
ALL	.000		-1.290				-5.617
		-23.311	-2.783		-.583	-.005	
	.750	-23.185	-6.728		-.583	-.006	
	1.500	-23.059	-10.593		-.583	-.391	
	1.500		-1.290				-5.617
6	.000		-.002				-.024
MAI & MIN							
	.000	-5.157	-.677	.000	-.005		
	.750	-5.157	-4.345	.000	.001		
	1.500	-5.157	-8.013	.000	.008		
	1.500		-.002				.040
			.009				-.008
MAI & MIN							
5	.000		-.994				-.008
	.000	-6.331	-.494	-.040	.024		
	.750	-6.331	-5.443	-.040	-.006		
	1.500	-6.331	-10.391	-.040	-.026		
	1.500		.009				-.008
			-.807				
		-23.099	-10.393	-.560	-.353		
	1.500						5.617
MAI & MIN							
4	.000		-.997				-5.617
	.000	-23.311	-2.785	-.560	.261		
	.750	-23.185	-6.728	-.560	.031		
	1.500	-23.059	-10.593	-.560	-.353		
	1.500		-1.290				-5.617
MIN							
ALL	.000		-1.290				-5.617
		-23.311	-2.783		-.583	-.005	
	.750	-23.185	-6.728		-.583	-.006	
	1.500	-23.059	-10.593		-.583	-.391	
	1.500		-1.290				-5.617
3	.000		-.817				-3.312
	.000	-16.057	-1.784	-.583	.348		
	.750	-15.931	-5.886	-.583	.029		
	1.500	-15.805	-9.701	-.583	-.391		
	1.500		-.817				-3.312
			-.819				
4	.000		-.799				5.911
	.000	-4.823	-.499	.000	.923		
	.750	-4.697	-4.311	.000	.045		
	1.500	-4.571	-8.122		-.200	-.190	
	1.500		.009				5.911
			-.009				
ALL	.000		.009				5.911
			-.002				
		-4.823	-.499	.000	.923		
	.750	-4.697	-4.311	.000	.045		
	1.500	-4.571	-8.122		-.200	-.190	
	1.500		.009				5.911
			-.009				
MIN							
4	.000		-.997				-5.617
	.000	-23.311	-2.785	-.560	.261		
	.750	-23.185	-6.728	-.560	.031		
	1.500	-23.059	-10.593	-.560	-.353		
	1.500		-1.290				-5.617
5	.000		-.807				-5.386
	.000	-6.010	-.841	-.017	.010		
	.750	-6.010	-5.348	-.017	-.003		
	1.500	-6.010	-9.855	-.017	-.016		
	1.500		-.006				-.069
MAI & MIN							
5	.000		-.006				-.069
	.000	-33.235	-2.713	-.452	.161		
	.750	-23.109	-6.606	-.452	.002		
	1.500	-22.983	-10.463	-.452	-.301		
	1.500		-.807				-5.386
4	.000		-.797				5.999
MIN							
		-4.994	-8.002	-.211	-.135		
	1.500		-.797				5.999
		-4.748	-.338	-.211	.376		
	.750	-4.622	-4.339	-.211	.018		
	1.500	-4.496	-8.002	-.211	-.135		
	1.500		-.797				5.999
MAI							
4	.000		-.797				5.999
	.000	-4.748	-.338	-.211	.376		
	.750	-4.622	-4.339	-.211	.018		
	1.500	-4.496	-8.002	-.211	-.135		
	1.500		-.797				5.999
			-.799				
		-15.737	-9.510	-.518	-.365		
	1.500						-3.544
			-.825				
	.750	-15.862	-5.792	-.318	.002		
	1.500	-15.987	-1.899	-.318	.282		
	1.500		-.825				-3.344
3	.000		-.818				3.367
MIN							
		-4.645	-8.069	-.373	-.277		
	1.500		-.818				3.367
	.750	-4.271	-4.392	-.373	.023		
	.000	-4.897	-.494	-.373	.411		
3	.000		-.818				3.367
MAI							
		-15.382	-9.420	-.406	-.274		
	1.500		-.805				-3.316
	.750	-15.792	-5.797	-.406	.099		
	.000	-16.002	-1.966	-.406	.205		
2	.000		-.805				-3.316
MIN							
		-7.056	-10.319	-.067	-.034		
	1.500		.011				.516
	.750	-7.056	-4.818	-.067	-.004		
	.000	-7.056	.494	-.067	.046		
5	.000		.011				.516
MAI & MIN							
		-23.342	-10.340	-.639	-.406		
	1.500		-.004				-3.149
	.750	-23.868	-6.061	-.639	.037		
	1.500	-23.994	-1.632	-.639	.376		
1	.000		-1.296				-3.149
MIN							
		-23.742	-10.540	-.843	-.497		
	1.500		-1.296				-3.149
	.750	-23.868	-6.061	-.843	-.004		
	.000	-23.994	-1.632	-.843	-.010		
ALL	.000		-1.296				-3.149
MIN							
		-15.737	-9.510	-.518	-.365		
	1.500		-.825				-3.544
	.750	-15.862	-5.792	-.318	.002		
	.000	-15.987	-1.899	-.318	.282		
4	.000		-.825				-3.344
MAI							
		-4.645	-8.069	-.373	-.277		
	1.500		-.818				3.367
	.750	-4.271	-4.392	-.373	.023		
	.000	-4.897	-.494	-.373	.411		
3	.000		-.818				3.367
MIN							
		-7.056	-10.319	-.067	-.034		
	1.500		.011				.516
	.750	-7.056	-4.818	-.067	-.004		
	.000	-7.056	.494	-.067	.046		
5	.000		.011				.516
MAI & MIN							
		-4.748	-.338		.004	.441	
ALL	.000			.006			5.399
MAI							
1	.000		-1.290				-.022
MAI & MIN							
	.000	-5.102	-.384		-.286	.262	
	.750	-5.102	-6.410		-.286	.048	
	1.500	-5.102	-8.237		-.286	-.166	
	1.500		-1.290				-.022

REPOSITION 304x200. 3 YARDS 134/+13 FILE:302200

F R A M E E L E M E N T F O R C E S (USING "QUICK" RIGID RESPONSE CALC)

ELT LOAD ID ENVE	DIST END1	1-2 FLANE SHEAR	MOMENT MOMENT	AXIAL FORCE	1-3 FLANE SHEAR	MOMENT TORQ	AXIAL TORQ
MAI							
ALL	.000		.009				5.911
			-.002				
		-4.823	-.499	.000	.923		
	.750	-4.697	-4.311	.000	.045		
	1.500	-4.571	-8.122		-.200	-.190	
	1.500		.009				5.911
			-.009				
MIN							
ALL	.000		-1.290				-5.617
		-23.311	-2.783		-.583	-.005	
	.750	-23.185	-6.728		-.583	-.006	
	1.500	-23.059	-10.593		-.583	-.391	
	1.500		-1.290				-5.617
6	.000		-.002				-.024
MAI & MIN							
	.000	-5.157	-.677	.000	-.005		
	.750	-5.157	-4.345	.000	.001		
	1.500	-5.157	-8.013	.000	.008		
	1.500		-.002				.040
			.009				-.008
MAI & MIN							
5	.000		-.994				-.008
	.000	-6.331	-.494	-.040	.024		
	.750	-6.331	-5.443	-.040	-.006		
	1.500	-6.331	-10.391	-.040	-.026		
	1.500		.009				-.008
			-.807				
		-23.099	-10.393	-.560	-.353		
	1.500						5.617
MAI & MIN							
4	.000		-.997				-5.617
	.000	-23.311	-2.785	-.560	.261		
	.750	-23.185	-6.728	-.560	.031		
	1.500	-23.059	-10.593	-.560	-.353		
	1.500		-1.290				-5.617
MIN							
ALL	.000		-1.290				-5.617
		-23.311	-2.783		-.583	-.005	
	.750	-23.185	-6.728		-.583	-.006	
	1.500	-23.059	-10.593		-.583	-.391	
	1.500		-1.290				-5.617
3	.000		-.817				-3.312
	.000	-16.057	-1.784	-.583	.348		
	.750	-15.931	-5.886	-.583	.029		
	1.500	-15.805	-9.701	-.583	-.391		
	1.500		-.817				-3.312
			-.819				
4	.000		-.799				5.911
	.000	-4.823	-.499	.000	.923		
	.750	-4.697	-4.311	.000	.045		
	1.500	-4.571	-8.122		-.200	-.190	
	1.500		.009				5.911
			-.009				
ALL	.000		.009				5.911
			-.002				
		-4.823	-.499	.000	.923		
	.750	-4.697	-4.311	.000	.045		
	1.500	-4.571	-8.122		-.200	-.190	
	1.500		.009				5.911
			-.009				
MIN							
4	.000		-.997				-5.617
	.000	-23.311	-2.785	-.560	.261		
	.750	-23.185	-6.728	-.560	.031		
	1.500	-23.059	-10.593	-.560	-.353		
	1.500		-1.290				-5.617
5	.000		-.807				-5.386
	.000	-6.010	-.841	-.017	.010		
	.750	-6.010	-5.348	-.017	-.003		
	1.500	-6.010	-9.855	-.017	-.016		
	1.500		-.006				-.069
MAI & MIN							
5	.000		-.006				-.069
	.000	-33.235	-2.713	-.452	.161		
	.750	-23.109	-6.606	-.452	.002		
	1.500	-22.983	-10.463	-.452	-.301		
	1.500		-.807				-5.386
4	.000		-.797				5.999
MIN							
		-4.994	-8.002	-.211	-.135		
	1.500		-.797				5.999
	.750	-4.622	-4.339	-.211	.018		
	.000	-4.748	-.338	-.211	.376		
4	.000		-.797				5.999
MAI							
		-15.737	-9.510	-.518	-.365		
	1.500		-.825				-3.544
	.750	-15.862	-5.792	-.318	.002		
	.000	-15.987	-1.899	-.318	.282		
3	.000		-.825				-3.344
MIN							
		-4.645	-8.069	-.373	-.277		
	1.500		-.818				3.367
	.750	-4.271	-4.392	-.373	.023		
	.000	-4.897	-.494	-.373	.411		
3	.000		-.818				3.367
MAI							
		-15.382	-9.420	-.406	-.274		
	1.500		-.805				-3.316
	.750	-15.792	-5.797	-.406	.099		
	.000	-16.002	-1.966	-.406	.205		
2	.000		-.805				-3.316
MIN							
		-7.056	-10.319	-.067	-.034		
	1.500		.011				.516
	.750	-7.056	-4.818	-.067	-.004		
	.000	-7.056	.494	-.067	.046		
5	.000		.011				.516
MAI & MIN							
		-23.342	-10.340	-.639	-.406		
	1.500		-.004				-3.149
	.750	-23.868	-6.061	-.639	.037		
	1.500	-23.994	-1.632	-.639	.376		
1	.000		-1.296				-3.149
MIN							
		-23.742	-10.540	-.843	-.497		
	1.500		-1.296				-3.149
	.750	-23.868	-6.061	-.843	-.004		
	1.500	-23.994	-1.632	-.843	-.010		
ALL	.000		-1.296				-3.149
MIN							
		-15.737	-9.510	-.518	-.365		
	1.500		-.825				-3.544
	.750	-15.862	-5.792	-.318	.002		
	.000	-15.987	-1.899	-.318	.282		
4	.000		-.825				-3.344
MAI							
		-4.645	-8.069	-.373	-.277		
	1.500		-.818				3.367
	.750	-4.271	-4.392	-.373	.023		
	.000	-4.897	-.494	-.373	.411		
3	.000		-.818				3.367
MIN							
		-7.056	-10.319	-.067	-.034		
	1.500		.011				.516
	.750	-7.056	-4.818	-.067	-.004		
	.000	-7.056	.494	-.067	.046		
5	.000		.011				.516
MAI & MIN							
		-4.748	-.338		.004	.441	
ALL	.000			.006			5.399
MAI							
1	.000		-1.290				-.022
MAI & MIN							
	.000	-5.102	-.384		-.286	.262	
	.750	-5.102	-6.410		-.286	.048	
	1.500	-5.102	-8.237		-.286	-.166	
	1.500		-1.290				-.022

REPOSITION 305*200. 3 YARDS 15*17*13 FILE:305200

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST END1	I-Z PLANE SHEAR	MOMENT	AXIAL FORCE	SHEAR	I-J PLANE MOMENT	AXIAL TORQ
1,500			-.777				-5.424
MAE & MIN							
1 .000							
.000	-25.216	-2.659		-.773	.090		
.750	-23.090	-6.318		-2.73	.062		
1.500	-22.964	-10.302		-.773	-.107		
MIN							
2 .000							
1.500	-15.973	-9.574		-.776			-3.234
MAI							
2 .000							
.750	-15.725	-5.715		-.776	.049		
1.500	-15.365	-9.574		-.776	-.079		-3.234
MAE & MIN							
6 .000							
.000	-4.880	-.392		-.183	.391		
.750	-4.754	-4.306		-.183	.144		
1.500	-4.628	-7.949		-.182	-.017		
MAI							
5 .000							
.000	-15.972	-1.826		-.329	.264		
.750	-15.846	-5.667		-.329	.125		
1.500	-15.720	-9.412		-.329	-.103		-3.234
MIN							
5 .000							
.000	-15.365	-9.574		-.776	-.079		-3.234
MAE & MIN							
1 .000							
.000	-15.985	-1.894		-.226	.133		
.750	-15.725	-5.715		-.226	.049		
1.500	-15.365	-9.574		-.226	-.079		-3.234
MIN							
2 .000							
1.500	-4.973	-7.931		-.084	.007		3.255
MAI							
2 .000							
.750	-4.845	-4.552		-.084	.091		
1.500	-4.717	-1.172		-.084	.260		3.255
MAE & MIN							
4 .000							
.000	-4.893	-.460		-1.289			.000
.750	-4.845	-4.552		-1.994	-.460		
1.500	-4.717	-7.931		-1.994	-1.397		-11.655
MIN							
3 .000							
1.500	-4.893	-.460		-.039			-11.655
MAE & MIN							
5 .000							
.000	-4.893	-.460		-.002	-.002		-3.244
.750	-4.717	-4.552		-.002	-.002		
1.500	-4.541	-7.931		-.002	-.005		-3.244
MAE & MIN							
6 .000							
.000	-4.717	-.460		.001	.000		-3.698
.750	-4.541	-4.552		.001	.001		
1.500	-4.365	-7.931		.001	.001		-3.698
MAI							
ALL .000				.002			2.588
MAE							
ALL .000				.001	.001		1.782
.750	-4.717	-.460		.001	.001		
1.500	-4.541	-7.931		.001	.001		2.588
MIN							
ALL .000				-.226			-11.655
1.500	-4.717	-.460		-.226	-.002		
.750	-4.541	-4.552		-.226	-.275		
1.500	-4.365	-7.931		-.226	-1.891		-11.655
MAE & MIN							
1 .000				-.728			-4.709
.000	-4.717	-.460		-5.318	4.724		
.750	-4.541	-4.552		-5.318	.546		
1.500	-4.365	-7.931		-5.318	-3.331		-4.709
MAI							
2 .000				-.116			4.680

REPOSITION 305*200. 3 YARDS 15*17*13 FILE:305200

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST END1	I-Z PLANE SHEAR	MOMENT	AXIAL FORCE	SHEAR	I-J PLANE MOMENT	AXIAL TORQ
3 .000				-.226			-8.260
MIN							
3 .000							
1.500	2.457	10.606		-1.822	.762		
.750	2.457	14.234		-1.822	-.275		
1.500	2.457	16.628		-1.822	-1.590		-8.260
MAI							
4 .000				.179			2.588
.000	20.214	22.076		-.971	1.331		
.750	20.214	36.600		-.971	-.017		
1.500	20.214	51.761		-.971	-1.935		
MIN							
4 .000				-.039			-11.655
.000	-.286	9.875		-1.994	.760		
.750	-.286	12.993		-1.994	-.126		
1.500	-.286	15.725		-1.994	-1.397		-11.655
MIN							
5 .000				-.002			-3.244
.000	6.204	8.908		-.002	-.002		
.750	6.204	12.561		-.002	-.005		
1.500	6.204	16.215		-.002	-.005		-3.244
MAE & MIN							
6 .000				.002			-3.698
.000	7.226	10.883		.001	.000		
.750	7.226	16.303		.001	.001		
1.500	7.226	21.723		.001	.001		-3.698
MAE							
ALL .000				1.490			2.588
MAI							
ALL .000				1.490			2.588
.750	20.214	22.076		.001	1.782		
1.500	20.214	36.600		.001	.045		
1.500	20.214	51.761		.001	.001		2.588
MIN							
ALL .000				-.226			-11.655
1.500	-.286	8.908		-2.316	-.002		
.750	-.286	12.993		-2.316	-.275		
1.500	-.286	15.725		-2.316	-1.891		-11.655
MAE & MIN							
1 .000				-.728			-4.709
125 ----------							
.000	.506	9.384		-5.318	4.724		
.750	.506	9.965		-5.318	.546		
1.500	.506	10.342		-5.318	-3.331		-4.709
MAI							
2 .000				-.116			4.680

REPOSITION 305*200. 3 YARDS 15*17*13 FILE:305200

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST END1	I-Z PLANE SHEAR	MOMENT	AXIAL FORCE	SHEAR	I-J PLANE MOMENT	AXIAL TORQ
1.500			-.777				-5.424
MAE & MIN							
1 .000							
.000	-25.216	-2.659		-.773	.090		
.750	-23.090	-6.318		-2.73	.062		
1.500	-22.964	-10.302		-.773	-.107		
MIN							
4 .000				-.777			-5.424
.000	-25.216	-2.659		-.773	.090		
.750	-23.090	-6.318		-2.73	.062		
1.500	-22.964	-10.302		-.773	-.107		
MIN							
2 .000				-.172			3.255
MAI							
2 .000				-.172			3.255
.750	-4.845	-4.552		-.084	.091		
1.500	-4.973	-7.931		-.084	.007		3.255
MIN							
2 .000				-.776			-3.234
.000	-15.985	-1.894		-.226	.133		
.750	-15.725	-5.715		-.226	.049		
1.500	-15.365	-9.574		-.226	-.079		-3.234
MIN							
3 .000				-.776			-3.234
.000	-15.972	-1.826		-.329	.264		
.750	-15.846	-5.667		-.329	.125		
1.500	-15.720	-9.412		-.329	-.103		-3.234
MAI							
4 .000				-.171			5.424
.000	-9.729	-.299		-.037	.302		
.750	-9.603	-9.250		-.037	.096		
1.500	-9.477	-7.897		-.037	.036		5.424
MAE & MIN							
5 .000				-.731			5.424
.000	-9.729	-.299		-.037	.302		
.750	-9.603	-9.250		-.037	.096		
1.500	-9.477	-7.897		-.037	.036		5.424
MAI							
6 .000				-.265			-8.024
.000	2.127	10.560		-1.819	.869		
.750	2.127	14.155		-1.819	-.166		
1.500	2.127	16.317		-1.819	-1.479		-8.024
MAE & MIN							
3 .000				-.265			.286
.000	14.738	17.727		-1.208	1.105		
.750	14.738	28.398		-1.208	-.209		
1.500	14.738	39.451		-1.208	-1.253		.286
MIN							
3 .000				-.265			.286
.000	14.827	17.581		-1.205	1.242		
.750	14.827	28.319		-1.205	-.100		
1.500	14.827	39.139		-1.205	-1.142		.522
MAI							
2 .000				.632			.522
.000	6.899	11.064		-2.316	1.782		
.750	6.899	16.201		-2.316	.045		
1.500	6.899	21.338		-2.316	-1.692		-3.912
MAE & MIN							
1 .000				1.400			-3.412
122 ----------							
.000	-6.918	7.586		-4.986	2.031		
.750	-6.918	7.499		-4.986	-.271		
1.500	-6.918	7.412		-4.986	-3.899		-22.054
MAI							
5 .000				.002			-4.708
.000	.151	7.295		-.010	-.005		
.750	.151	7.409		-.010	-.015		
1.500	.151	7.522		-.010	-.021		-4.708
MAE & MIN							
6 .000				-.000			-3.401
.000	.320	9.627		.002	.001		
.750	.320	10.017		.002	.003		
1.500	.320	10.407		.002	.004		-5.401
MAI							
ALL .000				.050			9.598
.000	12.476	22.877		.002	4.724		
.750	12.476	31.599		.002	.546		
1.500	12.476	39.580		.002	.004		

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST END1	I-Z PLANE SHEAR	MOMENT	AXIAL FORCE	SHEAR	I-J PLANE MOMENT	AXIAL TORQ
1.500			-.777				-5.424
MAE & MIN							
1 .000							
.000	-25.216	-2.659		-.773	.090		
.750	-23.090	-6.318		-2.73	.062		
1.500	-22.964	-10.302		-.773	-.107		
MIN							
4 .000				-.777			-5.424
.000	-25.216	-2.659		-.773	.090		
.750	-23.090	-6.318		-2.73	.062		
1.500	-22.964	-10.302		-.773	-.107		
MIN							
2 .000				-.172			3.255
MAI							
2 .000				-.172			3.255
.750	-4.845	-4.552		-.084	.091		
1.500	-4.973	-7.931		-.084	.007		3.255
MIN							
2 .000				-.776			-3.234
.000	-15.985	-1.894		-.226	.133		
.750	-15.725	-5.715		-.226	.049		
1.500	-15.365	-9.574		-.226	-.079		-3.234
MIN							
3 .000				-.776			-3.234
.000	-15.972	-1.826		-.329	.264		
.750	-15.846	-5.667		-.329	.125		
1.500	-15.720	-9.412		-.329	-.103		-3.234
MAI							
4 .000				-.171			5.424
.000	-9.729	-.299		-.037	.302		
.750	-9.603	-9.250		-.037	.096		
1.500	-9.477	-7.897		-.037	.036		5.424
MAE & MIN							
5 .000				-.731			5.424
.000	-9.729	-.299		-.037	.302		
.750	-9.603	-9.250		-.037	.096		
1.500	-9.477	-7.897		-.037	.036		5.424
MAI							
6 .000				-.265			-8.024
.000	2.127	10.560		-1.819	.869		
.750	2.127	14.155		-1.819	-.166		
1.500	2.127	16.317		-1.819	-1.479		-8.024
MAE & MIN							
3 .000				-.265			.286
.000	14.738	17.727		-1.208	1.105		
.750	14.738	28.398		-1.208	-.209		
1.500	14.738	39.451		-1.208	-1.253		.286
MIN							
3 .000				-.265			.286
.000	14.827	17.581		-1.205	1.242		
.750	14.827	28.319		-1.205	-.100		
1.500	14.827	39.139		-1.205	-1.142		.522
MAI							
2 .000				.632			.522
.000	6.899	11.064		-2.316	1.782		
.750	6.899	16.201		-2.316	.045		
1.500	6.899	21.338		-2.316	-1.692		-3.912
MAE & MIN							
1 .000				1.400			-3.412
122 ----------							
.000	-6.918	7.586		-4.986	2.031		
.750	-6.918	7.499		-4.986	-.271		
1.500	-6.918	7.412		-4.986	-3.899		-22.054
MAI							
5 .000				.002			-4.708
.000	.151	7.295		-.010	-.005		
.750	.151	7.409		-.010	-.015		
1.500	.151	7.522		-.010	-.021		-4.708
MAE & MIN							
6 .000				-.000			-3.401
.000	.320	9.627		.002	.001		
.750	.320	10.017		.002	.003		
1.500	.320	10.407		.002	.004		-5.401
MAI							
ALL .000				.050			9.598
.000	12.476	22.877		.002	4.724		
.750	12.476	31.599		.002	.546		
1.500	12.476	39.580		.002	.004		

REPOSICION 302x200, 3 VANOS 13+1/+13 FILE:302ZOO

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CASE)

ELT LOAD	DIST	1-2 PLANE		AXIAL	1-3 PLANE		AXIAL
ID ENVE	END1	SHEAR	MOMENT	FORCE	SHEAR	MOMENT	TORQ
MAT							
1	.000	3.512	-9.036		-1.397	2.320	
	.000						
	.750	3.512	-9.036		-1.397	.248	
	1.500			-.314			7.848
MAT							
2	.000						
	.000	3.512	-9.036		-1.397	2.320	
	.750						
	1.500	3.512	-9.036		-1.397	.248	
MAT & MIN							
1	.000			-.422			-.599
	.000	-2.092	-10.965		-3.578	3.010	
	.750	-2.092	-11.617		-3.578	.327	
	1.500	-2.092	-13.169		-3.578	-2.357	
	1.500			-.422			-.599
MAT & MIN							
6	.000						-13.328
	.000	-8.253	-14.484		-4.247	-.000	
	.750	-8.253	-15.052		-4.247	-.022	
	1.500	-8.253	-11.661		-4.247	-2.809	
	1.500			-.928			-13.328
MIN							
ALL	.000			-.428			-13.328
	.000	-8.253	-14.484		-4.247	-.000	
	.750	-8.253	-15.052		-4.247	-.022	
	1.500	-8.253	-11.661		-4.247	-2.809	
	1.500			-.928			-13.328
MAX							
ALL	.000			.003			12.985
	.000	7.471	-1.600		.007	3.562	
	.750	7.471	-1.097		.007	.317	
	1.500	7.471	4.206		.007	.010	
	1.500			.003			12.985
MAX							
1	.000			.003			12.985
	.000	7.471	-1.600		.007	3.562	
	.750	7.471	-1.097		.007	.317	
	1.500	7.471	4.206		.007	.010	
	1.500			.003			12.985
MAX & MIN							
6	.000						-13.328
	.000	-8.253	-14.484		-4.247	-.000	
	.750	-8.253	-15.052		-4.247	-.022	
	1.500	-8.253	-11.661		-4.247	-2.809	
	1.500			-.928			-13.328
MIN							
ALL	.000			-.428			-13.328
	.000	-8.253	-14.484		-4.247	-.000	
	.750	-8.253	-15.052		-4.247	-.022	
	1.500	-8.253	-11.661		-4.247	-2.809	
	1.500			-.928			-13.328
MAX & MIN							
1	.000			-.428			-.599
	.000	-2.092	-10.965		-3.578	3.010	
	.750	-2.092	-11.617		-3.578	.327	
	1.500	-2.092	-13.169		-3.578	-2.357	
	1.500			-.922			-.599
MAX							
2	.000			-.314			7.848
	.000	3.512	-9.036		-1.397	2.320	
	.750	3.512	-9.036		-1.397	.248	
	1.500			-.314			7.848
MAX							
4	.000			-.506			11.826
	.000	7.246	-8.422		-1.008	2.837	
	.750	7.246	-7.381		-1.008	.291	
	1.500	7.246	-1.946		-1.008	-1.070	
	1.500			-.506			11.826
MIN							
4	.000			-.506			-12.485
	.000	-8.537	-20.235		-5.386	1.286	
	.750	-8.537	-19.023		-5.386	.108	
	1.500	-8.537	-17.811		-5.386	-2.365	
	1.500			-.550			-12.485
MAX & MIN							
5	.000			-.029			-1.432
	.000	-2.110	-11.424		-.089	.012	
	.750	-2.110	-13.006		-.089	-.048	
	1.500	-2.110	-14.588		-.089	-.108	
	1.500			-.029			-1.432
MAX & MIN							
6	.000			.006			-1.248
	.000	-2.091	-10.089		.017	.003	
	.750	-2.091	-11.340		.017	.010	
	1.500	-2.091	-13.137		.017	.023	
	1.500			.006			-1.248
MAX							
ALL	.000			.006			11.826
	.000	7.246	-8.422		.017	3.010	
	.750	7.246	-7.381		.017	.327	
	1.500	7.246	-1.946		.017	.023	
	1.500			.006			11.826

REPOSICION 302x200, 3 VANOS 13+1/+13 FILE:302ZOO

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CASE)

ELT LOAD	DIST	1-2 PLANE		AXIAL	1-3 PLANE		AXIAL
ID ENVE	END1	SHEAR	MOMENT	FORCE	SHEAR	MOMENT	TORQ
MIN							
3	.000			-.496			-7.496
	.000	-5.850	-16.143		-3.144	1.589	
	.750	-5.850	-16.049		-3.144	.138	
	1.500	-5.850	-15.955		-3.144	-2.090	
	1.500			-.540			-6.945
MAX							
3	.000			-.496			-7.496
	.000	3.514	-9.047		-1.351	2.450	
	.750	3.514	-9.047		-1.351	.215	
	1.500	3.514	-6.432		-1.351	-1.313	
	1.500			-.496			7.097
MIN							
3	.000			-.522			-7.496
	.000	-5.848	-16.134		-5.098	1.320	
	.750	-5.848	-16.059		-5.098	.103	
	1.500	-5.848	-15.985		-5.098	-2.090	
	1.500			-.522			-7.496
MAX							
4	.000			-.506			11.826
	.000	7.246	-8.422		-1.008	2.837	
	.750	7.246	-7.381		-1.008	.291	
	1.500	7.246	-1.946		-1.008	-1.070	
	1.500			-.506			11.826
MIN							
4	.000			-.506			-12.485
	.000	-8.537	-20.235		-5.386	1.286	
	.750	-8.537	-19.023		-5.386	.108	
	1.500	-8.537	-17.811		-5.386	-2.365	
	1.500			-.550			-12.485
MAX & MIN							
5	.000			-.029			-1.432
	.000	-2.110	-11.424		-.089	.012	
	.750	-2.110	-13.006		-.089	-.048	
	1.500	-2.110	-14.588		-.089	-.108	
	1.500			-.029			-1.432
MAX & MIN							
6	.000			.006			-1.248
	.000	-2.091	-10.089		.017	.003	
	.750	-2.091	-11.340		.017	.010	
	1.500	-2.091	-13.137		.017	.023	
	1.500			.006			-1.248
MAX							
ALL	.000			.006			11.826
	.000	7.246	-8.422		.017	3.010	
	.750	7.246	-7.381		.017	.327	
	1.500	7.246	-1.946		.017	.023	
	1.500			.006			11.826

REPOSICION 302x200, 3 VANOS 13+1/+13 FILE:302ZOO

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CASE)

ELT LOAD	DIST	1-2 PLANE		AXIAL	1-3 PLANE		AXIAL
ID ENVE	END1	SHEAR	MOMENT	FORCE	SHEAR	MOMENT	TORQ
MIN							
3	.000			-.496			-7.496
	.000	-5.850	-16.143		-3.144	1.589	
	.750	-5.850	-16.049		-3.144	.138	
	1.500	-5.850	-15.955		-3.144	-2.090	
	1.500			-.540			-6.945
MAX							
3	.000			-.496			-7.496
	.000	3.514	-9.047		-1.351	2.450	
	.750	3.514	-9.047		-1.351	.215	
	1.500	3.514	-6.432		-1.351	-1.313	
	1.500			-.496			7.097
MIN							
3	.000			-.522			-7.496
	.000	-5.848	-16.134		-5.098	1.320	
	.750	-5.848	-16.059		-5.098	.103	
	1.500	-5.848	-15.985		-5.098	-2.090	
	1.500			-.522			-7.496
MAX							
4	.000			-.506			11.826
	.000	7.246	-8.422		-1.008	2.837	
	.750	7.246	-7.381		-1.008	.291	
	1.500	7.246	-1.946		-1.008	-1.070	
	1.500			-.506			11.826
MIN							
4	.000			-.506			-12.485
	.000	-8.537	-20.235		-5.386	1.286	
	.750	-8.537	-19.023		-5.386	.108	
	1.500	-8.537	-17.811		-5.386	-2.365	
	1.500			-.550			-12.485
MAX & MIN							
5	.000			-.029			-1.432
	.000	-2.110	-11.424		-.089	.012	
	.750	-2.110	-13.006		-.089	-.048	
	1.500	-2.110	-14.588		-.089	-.108	
	1.500			-.029			-1.432
MAX & MIN							
6	.000			.006			-1.248
	.000	-2.091	-10.089		.017	.003	
	.750	-2.091	-11.340		.017	.010	
	1.500	-2.091	-13.137		.017	.023	
	1.500			.006			-1.248
MAX							
ALL	.000			.006			11.826
	.000	7.246	-8.422		.017	3.010	
	.750	7.246	-7.381		.017	.327	
	1.500	7.246	-1.946		.017	.023	
	1.500			.006			11.826

REPOSICION 302x200, 3 VANOS 13+1/+13 FILE:302ZOO

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CASE)

ELT LOAD	DIST	1-2 PLANE		AXIAL	1-3 PLANE		AXIAL
ID ENVE	END1	SHEAR	MOMENT	FORCE	SHEAR	MOMENT	TORQ
MIN							
1	.000			-.428			9.598
	.000	-5.143	-10.588		-3.385	-2.486	
	.750	-5.143	-10.629		-3.385	.052	
	1.500	-5.143	-10.670		-3.385	1.824	
	1.500			-.050			9.598
MIN							
2	.000			-.436			-7.990
	.000	7.471	-11.800		-1.444	3.174	
	.750	7.471	-11.097		-1.444	.269	
	1.500	7.471	4.306		-1.444	-1.624	
	1.500			-.446			12.985
MIN							
4	.000			-.505			-13.328
	.000	-8.255	-14.484		-4.047	1.597	
	.750	-8.255	-13.052		-4.047	.086	
	1.500	-8.255	-11.661		-4.047	-2.701	
	1.500			-.505			-13.328
MIN							
5	.000			-.013			-1.058
	.000	-2.023	-6.482		-.023	.002	
	.750	-2.023	-7.799		-.023	-.022	
	1.500	-2.023	-9.516		-.022	-.046	
	1.500			-.013			-1.058
MAX & MIN							
6	.000			.003			-1.085
	.000	-1.938	-5.325		.007	-.000	
	.750	-1.938	-6.395		.007	.005	
	1.500	-1.938	-8.662		.007	.010	
	1.500			.003			-1.085
MAX							
ALL	.000			.003			12.985
	.000	7.471	-1.600		.007	3.562	
	.750	7.471	-1.097		.007	.317	
	1.500	7.471	4.206		.007	.010	
	1.500			.003			12.985
MIN							
ALL	.000			-.428			-13.328
	.000	-8.253	-14.484		-4.247	-.000	
	.750	-8.253	-15.052		-4.247	-.022	
	1.500	-8.253	-11.661		-4.247	-2.809	
	1.500			-.928			-13.328
MAX & MIN							
1	.000			-.428			-.599
	.000	-2.092	-10.965		-3.578	3.010	
	.750	-2.092	-11.617		-3.578	.327	
	1.500	-2.092	-13.169		-3.578	-2.357	
	1.500			-.922			-.599
MAX							
2	.000			-.314			7.848
	.000	3.512	-9.036		-1.397	2.320	
	.750	3.512	-9.036		-1.397	.248	
	1.500			-.314			7.848
MAX							
4	.000			-.506			11.826
	.000	7.246	-8.422		-1.008	2.837	
	.750	7.246	-7.381		-1.008	.291	
	1.500	7.246	-1.946		-1.008	-1.070	
	1.500			-.506			11.826
MIN							
4	.000			-.506			-12.485
	.000	-8.537	-20.235		-5.386	1.286	
	.750	-8.537	-19.023		-5.386	.108	
	1.500	-8.537	-17.811		-5.386	-2.365	
	1.500			-.550			-12.485
MAX & MIN							
5	.000			-.029			-1.432
	.000	-2.110	-11.424		-.089	.012	
	.750	-2.110	-13.006		-.089	-.048	
	1.500	-2.110	-14.588		-.089	-.108	
	1.500			-.029			-1.432
MAX & MIN							
6	.000			.006			-1.248
	.000	-2.091	-10.089		.017	.003	
	.750	-2.091	-11.340		.017	.010	
	1.500	-2.091	-13.137		.017	.023	
	1.500			.006			-1.248
MAX							
ALL	.000			.006			11.826
	.000	7.246	-8.422		.017	3.010	
	.750	7.246	-7.381		.017	.327	
	1.500	7.246	-1.946		.017	.023	
	1.500			.006			11.826

REPOSICION 302x200, 3 VANOS 13+1/+13 FILE:302ZOO

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CASE)

ELT LOAD	DIST	1-2 PLANE		AXIAL	1-3 PLANE		AXIAL
ID ENVE	END1	SHEAR	MOMENT	FORCE	SHEAR	MOMENT	TORQ
MIN							
1	.000			-.950			9.598
	.000	-5.143	-10.588		-3.385	-2.486	
	.750	-5.143	-10.629		-3.385	.052	
	1.500	-5.143	-10.670		-3.385	1.824	
	1.500			-.950			9.598
MIN							
2	.000			-.436			-7.990
	.000	7.471	-11.800		-1.444	3.174	
	.750	7.471	-11.097		-1.444	.269	
	1.500	7.471	4.306		-1.444	-1.624	
	1.500			-.446			12.985
MIN							
4	.000			-.505			-13.328
	.000	-8.255	-14.484		-4.047	1.597	
	.750	-8.255	-13.052		-4.047	.086	
	1.500	-8.255	-11.661		-4.047	-2.701	
	1.500			-.505			-13.328
MIN							
5	.000			-.013			-1.058
	.000	-2.023	-6.482		-.023	.002	
	.750	-2.023	-7.799		-.023	-.022	
	1.500	-2.023	-9.516		-.022	-.046	
	1.500			-.013			-1.058
MAX & MIN							
6	.000			.003			-1.085
	.000	-1.938	-5.325		.007	-.000	
	.750	-1.938	-6.395		.007	.005	
	1.500	-1.938	-8.662		.007	.010	
	1.500			.003			-1.085
MAX							
ALL	.000			.003			12.985
	.000	7.471	-1.600		.007	3.562	
	.750	7.471	-1.097		.007	.317	
	1.500	7.471	4.206		.007	.010	
	1.500			.003			12.985
MAX							
1	.000			.003			12.985
	.000	7.471	-1.600		.007	3.562	
	.750	7.471	-1.097		.007	.317	
	1.500	7.471	4.206		.007	.010	
	1.500			.003			12.985
MAX & MIN							
6	.000						-13.328
	.000	-8.253	-14.484		-4.247	-.000	
	.750	-8.253	-15.052		-4.247	-.022	
	1.500	-8.253	-11.661		-4.247	-2.809	
	1.500			-.928			-13.328
MIN							
ALL	.000			-.428			-13.328
	.000	-8.253	-14.484		-4.247	-.000	
	.750	-8.253	-15.052		-4.247	-.022	
	1.500	-8.253	-11.661		-4.247	-2.809	
	1.500			-.928			-13.328
MAX & MIN							
1	.000			-.428			-.599
	.000	-2.092	-10.965		-3.578	3.010	
	.750	-2.092	-11.617		-3.578	.327	
	1.500	-2.092	-13.169		-3.578	-2.357	
	1.500			-.922			-.599
MAX							
2	.000			-.314			7.848
	.000	3.512	-9.036		-1.397	2.320	
	.750	3.512	-9.036		-1.397	.248	
	1.500			-.314			7.848
MAX							
4	.000			-.435			-13.640
	.000	-8.010	-6.602		-4.527	1.881	
	.750	-8.010	-6.385		-4.527	.011	
	1.500	-8.010	-4.747		-4.527	-3.128	
	1.500			-.435			-13.640
MIN							
4	.000			-.435			-13.640
	.000	-8.010	-6.602		-4.527	1.881	
	.750	-8.010	-6.385		-4.527	.011	
	1.500	-8.010	-4.747		-4.527	-3.128	
	1.500			-.435			-13.640
MAX							
1	.000			-.428			9.598
	.000	-5.143	-10.588		-3.385	-2.486	
	.750	-5.143	-10.629		-3.385	.052	
	1.500	-5.143	-10.670		-3.385	1.824	
	1.500			-.950			9.598
MAX							
2	.000			-.436			-7.990
	.000	7.471	-11.800		-1.444	3.174	
	.750	7.471	-11.097		-1.444	.269	
	1.500	7.471	4.306		-1.444	-1.624	
	1.500			-.446			12.985
MAX							
4	.000			-.505			-13.328
	.000	-8.255	-14.484		-4.047	1.597	
	.750	-8.255	-13.052		-4.047	.086	
	1.500	-8.255	-11.661		-4.047	-2.701	
	1.500			-.505			-13.328
MAX							
5	.000			-.013			-1.058
	.000	-2.023	-6.482		-.023	.002	
	.750	-2.023	-7.799		-.023	-.022	
	1.500	-2.023	-9.516		-.022	-.046	
	1.500			-.013			-1.058
MAX & MIN							
6	.000			.003			-1.085
	.000	-1.938	-5.325		.007	-.000	
	.750	-1.938	-6.395		.007	.005	
	1.500	-1.938	-8.662		.007	.010	
	1.500			.003			-1.085
MAX							
ALL	.000			.003			12.985
	.000	7.471	-1.600		.007	3.562	
	.750	7.471	-1.097		.007	.317	
	1.500	7.471	4.206		.007	.010	
	1.500			.003			12.985
MAX							
1	.000			.003			12.985
	.000	7.471	-1.600		.007	3.562	
	.750	7.471	-1.097		.007	.317	
	1.500	7.471	4.206		.007	.010	
	1.500			.003			12.985
MAX & MIN							
6	.000						-13.328
	.000	-8.253	-14.484		-4.247	-.000	
	.750	-8.253	-15.052		-4.247	-.022	
	1.500	-8.253	-11.661		-4.247	-2.809	
	1.500			-.928			-13.328
MIN							
ALL	.000			-.428			-13.328
	.000	-8.253	-14.484		-4.247	-.000	
	.750	-8.253	-15.052		-4.247	-.022	
	1.500	-8.253	-11.661		-4.247	-2.809	
	1.500			-.928			-13.328
MAX & MIN							
1	.000			-.428			-.599
	.000	-2.092	-10.965		-3.578	3.010	
	.750	-2.092	-11.617		-3.578	.327	
	1.500	-2.092	-13.169		-3.578	-2.357	
	1.500			-.922			-.599
MAX							
2	.000			-.314			7.848
	.000	3.512	-9.036		-1.397	2.320	
	.750	3.512	-9.036		-1.397	.248	
	1.500			-.314			7.848
MAX							
4	.000			-.506			11.826
	.000	7.246	-8.422		-1.008	2.837	
	.750	7.246	-7.381		-1.008	.291	
	1.500	7.246	-1.946		-1.008	-1.070	
	1.500			-.506			11.826
MIN							
4	.000			-.506			-12.485
	.000	-8.537	-20.235		-5.386	1.286	
	.750	-8.537	-19.023		-5.386	.108	
	1.500	-8.537	-17.811		-5.386	-2.365	
	1.500			-.550			-12.485
MAX & MIN							
5	.000			-.029			-1.432
	.000	-2.110	-11.424		-.089	.012	
	.750	-2.110	-13.006		-.089	-.048	
	1.500	-2.110	-14.588		-.089	-.108	
	1.500			-.029			-1.432
MAX & MIN							
6	.000			.006			-1.248
	.000	-2.091	-10.089		.017	.003	
	.750	-2.091	-11.340		.017	.010	
	1.500	-2.091	-13.137		.017	.023	
	1.500			.006			-1.248
MAX							
ALL	.000			.006			11.826
	.000	7.246	-8.422		.017	3.010	
	.750	7.246	-7.381		.017	.327	
	1.500	7.246	-1.946		.017	.023	
	1.500			.006			11.826

REPOSITION 303x200, 3 VARUS 134/413 FILE:303200

F R A M E E L E M E N T F O R C E S (USING "QUICK" HOOKE RESPONSE CALC)

ELT LOAD	DIST	1-2 FLANE		AXIAL	1-3 FLANE		AXIAL
ID LNYE	END1	SHEAR	MOMENT	FORCE	SHEAR	MOMENT	TORQ
MIN							
	.000	-79.962	-91.871	-2.015	-1.436		-7.666
	1.300			-1.279			
MAI							
	4 .000			.339			10.138
	.000	-61.082	19.387	-.552	1.829		
	.750	-69.936	-52.171	-.552	.449		
	1.300	-69.850	-77.885	-.552	-.196		
MIN							
	1.300			.339			10.138
	4 .000			-1.675			-12.371
	.000	-91.683	11.044	-2.424	.921		
	.750	-91.357	-42.732	-2.424	-.014		
	1.300	-91.431	-99.144	-2.424	-1.807		
MAI & MIN							
	4 .000			-1.675			-12.371
	.000	-79.860	18.990	-.643	.221		
	.750	-79.860	-61.405	-.643	-.261		
	1.300	-79.860	-101.300	-.643	-.744		-8.588
MAI & MIN							
	5 .000			.000			-8.588
	.000	-79.860	18.990	-.643	.221		
	.750	-79.860	-61.405	-.643	-.261		
	1.300	-79.860	-101.300	-.643	-.744		-8.588
MAI & MIN							
	6 .000			.000			-2.022
	.000	-63.008	13.634	.136	-.047		
	.750	-63.008	-33.625	.136	.035		
	1.300	-63.008	-80.879	.136	.158		
MAI							
	1.300			.000			-2.022
	MAI .000			.339			10.138
	.000	-61.082	19.387	.136	2.025		
	.750	-69.936	-52.171	.136	.449		
	1.300	-69.830	-77.885	.136	.158		
MIN							
	1.300			.339			10.138
	MIN .000			-1.675			-12.371
	ALL .000	-91.885	11.044	-2.424	-.047		
	.750	-91.357	-42.732	-2.424	-.261		
	1.300	-91.431	-101.300	-2.424	-1.807		-12.371
MAI & MIN							
	1 .000			-.934			5.935
	.000	-9.085	-13.561	-1.923	1.623		
	.750	-9.085	-20.373	-1.923	.181		
	1.300	-9.085	-27.189	-1.923	-1.262		5.935
MAI							
	2 .000			-.345			14.999
	.000	-4.680	-13.492	-1.016	1.150		
	.750	-4.590	-19.349	-1.016	.102		
	1.300	-4.180	-22.355	-1.016	-.629		14.999
	1.300			-.345			

F R A M E E L E M E N T F O R C E S (USING "QUICK" HOOKE RESPONSE CALC)

REPOSITION 303x200, 3 VARUS 134/413 FILE:303200

ELT LOAD	DIST	1-2 FLANE		AXIAL	1-3 FLANE		AXIAL
ID LNYE	END1	SHEAR	MOMENT	FORCE	SHEAR	MOMENT	TORQ
MIN							
	.000			-.922			-12.485
	1.300	-8.537	-11.831	-3.386	-.090		
	.750	-8.537	-19.043	-3.386	-.090		
	1.300	-8.537	-27.855	-3.386	-2.365		-12.485
	1.300			-.922			
MAI & MIN							
	1Z/ ----------						
	1 .000			-.921			-9.326
	.000	-8.303	-13.383	-2.906	2.473		
	.750	-8.303	-19.419	-2.906	.294		
	1.300	-8.303	-25.837	-2.906	-1.806		-9.326
MAI							
	2 .000			-.499			1.724
	.000	-5.941	-12.809	-1.193	2.138		
	.750	-5.941	-18.204	-1.193	.260		
	1.300	-5.941	-23.173	-1.193	-.984		1.724
MIN							
	1.300			-.499			1.724
	MIN .000			-.543			-12.021
	ALL .000	-13.273	-19.150	-2.666	1.284		
	.750	-13.273	-24.772	-2.666	.116		
	1.300	-15.273	-30.914	-2.666	-1.817		-12.021
MAI & MIN							
	1 .000			-.543			-12.021
	.000	-3.991	-12.830	-1.137	2.074		
	.750	-3.991	-18.246	-1.137	.240		
	1.300	-3.991	-21.262	-1.137	-.962		1.148
MAI							
	1.300			-.493			1.148
	MAI .000			-.360			-12.382
	.000	-15.303	-19.152	-2.610	1.222		
	.750	-15.303	-24.816	-2.610	.096		
	1.300	-15.303	-30.481	-2.610	-1.795		-12.382
MIN							
	1.300			-.560			-12.382
	MIN .000			-.493			1.148
	ALL .000	-3.991	-12.830	-1.137	2.074		
	.750	-3.991	-18.246	-1.137	.240		
	1.300	-3.991	-21.262	-1.137	-.962		1.148
MAI							
	2 .000			-.543			-12.021
	.000	-13.273	-19.150	-2.666	1.284		
	.750	-13.273	-24.772	-2.666	.116		
	1.300	-15.273	-30.914	-2.666	-1.817		-12.021
MAI & MIN							
	3 .000			-.543			-12.021
	.000	-16.537	-23.117	-5.099	-.011		
	.750	-16.537	-28.364	-5.099	-.112		
	1.300	-16.537	-33.607	-5.099	-2.133		-12.021
MIN							
	1.300			-.921			-12.021
	MIN .000			-.543			-12.021
	ALL .000	-16.537	-23.117	-5.099	-.011		
	.750	-16.537	-28.364	-5.099	-.112		
	1.300	-16.537	-33.607	-5.099	-2.133		-12.021
MAI & MIN							
	1 .000			-.921			-12.485
	.000	-8.387	-13.127	.047	-.011		
	.750	-8.387	-19.417	.047	.024		
	1.300	-8.387	-25.707	.047	.059		-6.009
MAI & MIN							
	6 .000			.012			-6.009
	.000	-8.387	-13.127	.047	-.011		
	.750	-8.387	-19.417	.047	.024		
	1.300	-8.387	-25.707	.047	.059		-6.009
MAI							
	1.300			.012			-6.009
	MAI .000			-.054			-7.299
	.000	-13.844	-19.555	-1.411	.909		
	.750	-13.834	-25.397	-1.411	.022		
	1.300	-13.624	-31.461	-1.411	-.965		1.249
MAI							
	2 .000			-.640			1.249
	.000	-4.647	-13.332	-1.057	1.146		
	.750	-4.321	-19.137	-1.057	.107		
	1.300	-4.321	-22.480	-1.057	-.694		14.462
	1.300			-.590			14.462
	MIN .000			-.664			.752
	.000	-14.091	-19.485	-1.452	.905		
	.750	-13.965	-25.294	-1.452	-.012		
	1.300	-13.839	-31.609	-1.452	-1.030		.752
MAI							
	4 .000			-.539			19.621
	.000	-1.782	-13.150	-.824	1.251		
	.750	-1.657	-18.365	-.824	.184		
	1.300	-1.531	-19.580	-.824	-.487		19.621
MIN							
	1.300			-.539			19.621
	MIN .000			-.643			-3.178
	ALL .000	-13.523	-23.406	-1.523	.869		
	.750	-13.397	-29.148	-1.523	-.013		
	1.300	-13.271	-34.795	-1.523	-1.080		-3.178
MAI & MIN							
	5 .000			-.643			-3.178
	.000	-12.732	-15.454	-.216	.056		7.879
	.750	-12.732	-23.018	-.216	-.108		
	1.300	-12.732	-34.582	-.216	-.268		7.879
MAI & MIN							
	6 .000			.055			7.879
	.000	-9.170	-13.306	.046	-.012		
	.750	-9.170	-20.184	.046	.022		
	1.300	-9.170	-27.061	.046	.057		5.921
MAI							
	1.300			-.012			5.921
	MAI .000			.055			19.621
	.000	-1.863	-13.150	.046	1.623		
	.750	-1.657	-18.365	.046	.184		
	1.300	-1.531	-19.580	.046	.057		19.621
MIN							
	1.300			.055			19.621
	MIN .000			-.954			-5.178
	ALL .000	-13.523	-23.406	-1.923	-.012		
	.750	-13.397	-29.148	-1.923	-.107		
	1.300	-13.271	-34.795	-1.923	-1.080		-5.178
MAI & MIN							
	1 .000			-.954			-5.178
	.000	-9.244	11.986	-2.015	1.047		
	.750	-9.088	-39.176	-2.015	.059		

REPOSITION 303x200, 3 VARUS 13+1/+13 FILE:3302200

FRAME ELEMENT FORCES (USING "BUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST END1	I-2 PLANE SHEAR	MOMENT	AXIAL FORCE	I-3 PLANE SHEAR	MOMENT	AXIAL TORQ
MAI 4	.000			-.685			9.692
	.000	7.243	-9.027		-.685	.696	
	.750	7.371	-6.924		-.685	-.705	
	1.500	7.497	-3.949		-.685	-.717	
	1.500			-.685			9.692
MIN 4	.000			-.711			-8.790
	.000	-8.449	-19.920		-1.202	.258	
	.750	-8.293	-18.588		-1.202	-.231	
	1.500	-8.167	-17.161		-1.202	-1.107	
	1.500			-.711			-8.790
MAI 5	.000			-.624			7.932
	.000	-.027	-12.078		-.025	.003	
	.750	-.027	-12.098		-.025	-.016	
	1.500	-.027	-12.119		-.025	-.035	
	1.500			.017			.448
MAI 6 MIN	.000			-.004			.172
	.000	-2.217	-9.529		.005	-.001	
	.750	-2.217	-11.202		.005	.003	
	1.500	-2.217	-12.865		.005	.007	
	1.500			-.004			.172
MAI ALL	.000			.017			9.692
	.000	7.245	-9.027		.005	.699	
	.750	7.371	-6.924		.005	.040	
	1.500	7.497	-3.948		.005	.007	
	1.500			.017			9.692
MIN ALL	.000			-.933			-8.790
	.000	-8.419	-19.920		-1.455	-.001	
	.750	-8.293	-18.588		-1.455	-.418	
	1.500	-8.167	-17.161		-1.455	-1.480	
	1.500			-.933			-8.790
122 ----------							
MAI & MIN 1	.000			-.932			.000
	.000	-2.211	-8.993		.000	.000	
	.750	-2.211	-10.652		.000	.000	
	1.500	-2.211	-12.510		.000	.000	
	1.500			-.932			.000
MAI 2	.000			-.555			4.933
	.000	3.619	-8.996		-1.419	.685	
	.750	3.825	-8.065		-1.419	-.618	
	1.500	4.025	-5.117		-1.419	-1.706	
	1.500			-.555			4.933
MIN 2	.000			-.565			-4.953

REPOSITION 303x200, 3 VARUS 13+1/+13 FILE:3302200

FRAME ELEMENT FORCES (USING "BUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST END1	I-2 PLANE SHEAR	MOMENT	AXIAL FORCE	I-3 PLANE SHEAR	MOMENT	AXIAL TORQ
MAI 3	.000			-.554			4.933
	.000	3.522	-8.745		-2.471	1.055	
	.750	3.648	-8.015		-2.471	-1.059	
	1.500	3.774	-5.322		-2.471	-2.916	
	1.500			-.554			4.933
MIN 3	.000			-.565			-4.953
	.000	-5.898	-15.233		-2.790	.790	
	.750	-5.752	-15.030		-2.790	-1.064	
	1.500	-5.626	-14.734		-2.790	-3.134	
	1.500			-.565			-4.953
MAI 4	.000			-.350			8.255
	.000	7.251	-8.432		-1.313	.773	
	.750	7.377	-6.210		-1.313	-.610	
	1.500	7.503	-.630		-1.313	-1.614	
	1.500			-.350			8.255
MIN 4	.000			-.348			-8.255
	.000	-8.416	-19.244		-1.844	.333	
	.750	-8.290	-17.902		-1.844	-.632	
	1.500	-8.164	-16.466		-1.844	-1.996	
	1.500			-.348			-8.255
MAI & MIN 5	.000			.013			.000
	.000	.742	-11.274		.000	.000	
	.750	.242	-11.092		.000	.000	
	1.500	.242	-10.911		.000	.000	
	1.500			.013			.000
MAI & MIN 6	.000			-.003			.000
	.000	-2.212	-8.985		.000	.000	
	.750	-2.212	-10.644		.000	.000	
	1.500	-2.212	-12.303		.000	.000	
	1.500			-.003			.000
MAI ALL	.000			.013			8.255
	.000	7.251	-8.432		.000	1.053	
	.750	7.377	-6.210		.000	.000	
	1.500	7.503	-.630		.000	.000	
	1.500			.013			8.255
MIN ALL	.000			-.932			-8.255
	.000	-8.416	-19.244		-2.790	.000	
	.750	-8.290	-17.902		-2.790	-1.064	
	1.500	-8.164	-16.466		-2.790	-3.134	

REPOSITION 303x200, 3 VARUS 13+1/+13 FILE:3302200

FRAME ELEMENT FORCES (USING "BUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST END1	I-2 PLANE SHEAR	MOMENT	AXIAL FORCE	I-3 PLANE SHEAR	MOMENT	AXIAL TORQ
MAI 1	.000			-.932			.817
	.000	-2.519	-14.315		-.027	.014	
	.750	-2.319	-16.092		-.027	-.043	
	1.500	-2.319	-17.892		-.027	-.101	
	1.500			.031			1.322
MAI & MIN 5	.000			-.930			-3.178
	.000	-11.297	-29.148		-1.923	-1.166	
	.750	-13.297	-29.148		-1.923	-1.166	
	1.500	-17.297	-34.795		-1.923	-1.262	
	1.500			-.934			-3.178
MAI 2	.000			-.711			-8.790
	.000	-8.449	-19.920		-1.202	.258	
	.750	-8.293	-18.588		-1.202	-.231	
	1.500	-8.167	-17.161		-1.202	-1.107	
	1.500			-.711			-8.790
MAI 3	.000			-.624			7.932
	.000	3.587	-11.984		-.812	.859	
	.750	3.797	-11.367		-.812	-.009	
	1.500	4.007	-8.440		-.812	-.633	
	1.500			-.624			7.932
MIN 3	.000			-.634			-4.746
	.000	-5.770	-18.909		-1.146	.580	
	.750	-5.960	-18.269		-1.146	-.057	
	1.500	-5.350	-17.870		-1.146	-.879	
	1.500			-.634			-4.746
MAI 4	.000			-.625			7.608
	.000	3.000	-11.849		-.941	.860	
	.750	3.626	-11.427		-.941	-.004	
	1.500	3.752	-8.560		-.941	-.864	
	1.500			-.615			7.608
MIN 4	.000			-.605			-4.705
	.000	-5.857	-18.375		-1.274	.601	
	.750	-5.731	-18.229		-1.274	-.132	
	1.500	-5.605	-17.990		-1.274	-1.051	
	1.500			-.707			-4.705
MAI 5	.000			-.613			11.804
	.000	7.218	-11.718		-.699	.930	
	.750	7.344	-9.863		-.699	.007	
	1.500	7.470	-6.208		-.699	-.941	
	1.500			-.613			11.804
MIN 5	.000			-.670			-8.717
	.000	-8.378	-22.593		-1.255	.498	
	.750	-8.252	-21.346		-1.255	-.013	
	1.500	-8.126	-20.005		-1.255	-.992	
	1.500			-.670			-8.717
MAI 6 MIN	.000			-.793			-5.109
	.000	-5.882	-15.859		-1.453	.437	
	.750	-5.736	-15.684		-1.453	-.418	
	1.500	-5.650	-15.375		-1.453	-1.460	
	1.500			-.795			-5.109

REPOSITION 305+200, 5 YARDS 134+13 FILE:305200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD	DIST	1-2 PLANE		AXIAL	SHEAR	1-3 PLANE		AXIAL
ID ENVE	ENDI	SHEAR	MOMENT	FORCE	SHEAR	MOMENT		TORQ
MAX 6 MIN								
6	.000	-1,226	21,725	.002		-.001	.001	3,698
	.750	-7,226	16,303			-.001	.001	
	1.500	-7,226	10,883			-.001	.000	
	1.500			.002				3,698
MAX								
ALL	.000			.002				14,024
	.000	-1,104	53,178			.002	1,891	
	.750	-1,104	36,974			.002	.001	
	1.500	-1,104	30,450			.002	.000	
MIN				.002				14,024
ALL	.000				-2,355			-1,324
	.000	-21,605	18,215			-2,305	-.005	
	.750	-21,605	13,561			-2,305	-.324	
	1.500	-21,605	8,908			-2,305	-1,763	
	1.500				-2,355			-1,324
MAX 6 MIN								
1	.000		-.727					6,093
	.000	-.555	10,472		-5,521		3,993	
	.750	-.555	10,071		-5,521		-.348	
	1.500	-.555	9,670		-5,521		-4,689	
	1.500			-.727				6,093
MAX								
2	.000			-.140				19,522
	.000	1,696	28,149		-2,457		2,095	
	.750	1,696	25,043		-2,457		-.732	
	1.500	1,696	25,123		-2,457		-2,890	
	1.500			-.140				19,522
MIN								
2	.000		-.255					-.991
	.000	-1,749	9,906		-4,015		1,314	
	.750	-1,749	9,099		-4,015		-.998	
	1.500	-1,749	8,793		-4,015		-3,856	
	1.500			-.255				-.991
MAX								
3	.000			.032				18,949
	.000	7,709	28,091		-2,206		1,569	
	.750	7,709	22,994		-2,206		-1,048	
	1.500	7,709	25,084		-2,206		-3,018	
	1.500			.032				18,949
MIN								
3	.000			-.084				-1,564
	.000	-7,736	9,347		-3,764		-.809	
	.750	-7,736	9,051		-3,764		-1,264	
	1.500	-7,736	8,754		-3,764		-1,984	
	1.500			-.084				-1,564
MAX								
4	.000			-.104				27,136

REPOSITION 305+200, 5 YARDS 134+13 FILE:305200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD	DIST	1-2 PLANE		AXIAL	SHEAR	1-3 PLANE		AXIAL
ID ENVE	ENDI	SHEAR	MOMENT	FORCE	SHEAR	MOMENT		TORQ
	1.500			-.932				-8,235
145								
MAX 6 MIN								
1	.000			-2.009				5,984
	.000	-7,604	22,108		-2,305		1,691	
	.750	-7,604	16,405		-2,305		-.006	
	1.500	-7,604	10,702		-2,305		-1,703	
	1.500			-2.009				5,984
MAX								
2	.000			-1.553				10,347
	.000	-6,143	41,193		-1,100		1,080	
	.750	-6,143	28,861		-1,100		-.135	
	1.500	-6,143	22,537		-1,100		-1,111	
	1.500			-1.553				10,347
MIN								
2	.000			-2.052				1,006
	.000	-16,443	21,150		-1,714		.743	
	.750	-16,443	15,449		-1,714		-.215	
	1.500	-16,443	8,707		-1,714		-1,654	
	1.500			-2.052				1,006
MAX								
3	.000			-1.876				10,109
	.000	-5,828	40,868		-1,038		.925	
	.750	-5,828	28,772		-1,038		-.241	
	1.500	-5,828	22,483		-1,038		-1,173	
	1.500			-1.876				10,109
MIN								
3	.000			-2.355				.748
	.000	-16,128	20,805		-1,652		.588	
	.750	-16,128	15,359		-1,652		-.524	
	1.500	-16,128	8,355		-1,652		-1,317	
	1.500			-2.355				.748
MAX								
4	.000			-1.371				14,024
	.000	-1.104	55,178		-.866		1,199	
	.750	-1.104	36,974		-.866		-.131	
	1.500	-1.104	30,450		-.866		-1,002	
	1.500			-1.371				14,024
MIN								
4	.000			-2.169				-1,534
	.000	-21,605	19,739		-1,889		.637	
	.750	-21,605	14,620		-1,889		-.235	
	1.500	-21,605	8,900		-1,889		-1,375	
	1.500			-2.169				-1,534
MAX 6 MIN								
5	.000			-.012				1,244
	.000	-6,204	18,215		.002		-.005	
	.750	-6,204	13,561		.002		-.003	
	1.500	-6,204	8,908		.002		-.002	
	1.500			-.012				1,244
MAX								
1	.000			-.727				-7,052
	.000	-12,530	7,522		-5,521		-.021	
	.750	-12,530	7,409		-5,521		-1,244	
	1.500	-12,530	7,295		-5,521		-4,689	
	1.500			-.727				-7,052
MIN								
1	.000			-.497				2,734
	.000	-1,630	-2,366		-9,920		3,272	
	.750	-1,630	-1,328		-9,920		-.418	
	1.500	-1,630	-.291		-9,920		-4,108	
	1.500			-.497				2,734
MAX								
2	.000			-.116				13,279
	.000	-10,972	7,465		-2,194		2,240	
	.750	-10,972	4,768		-2,194		-.417	
	1.500	-10,972	9,898		-2,194		-2,330	
	1.500			-.116				13,279
MIN								
2	.000			-.132				-4,205
	.000	-4,122	-10,004		-5,736		1,478	
	.750	-4,122	-2,620		-5,736		-.539	
	.750							

REPOSITION 30x200. 3 YARDS 15+17+13 FILE:30200

FRAME ELEMENT FORCES (USING "QUICK" INDEX RESPONSE CALC)

ELT LOAD	DIST	I-Z PLANE		AXIAL	I-J PLANE		AXIAL
ID ENVE	END1	SHEAR	MOMENT	FORCE	SHEAR	MOMENT	TORQ
1	.000	17.655	1.273	-.243			15.231
	1.500			-.933	-1.313		
4	.000	-7.228	-30.720	-.287	-3.522	.975	-9.350
	1.500	-7.228	-12.827		-3.522	-2.862	
	.750	-7.228	-19.025		-3.522	-.360	
	.000	18.907	-7.931		-1.230	-1.520	
	1.500			-.479			6.693
2	.000	18.907	-21.258	-.249	-1.230	1.897	15.638
	.750	18.907	-18.166		-1.230	-.106	
	1.500	8.472	-12.821		-3.000	-2.494	
	.750	8.472	-19.225		-3.000	-.244	
	.000	8.472	-25.578	-.479	-3.000	2.005	6.693
MAI & MIN							
149							
	1.500			-.488			-9.350
ALL	.000			-.488	-5.614	-.108	-9.350
	.000	-7.228	-30.770		-5.614	-.360	
	.750	-7.228	-19.025		-5.614	-3.014	
	1.500	-7.228	-12.827		-3.614	-3.014	
MIN							
	1.500			.006			15.231
MAI	.000	17.655	-1.925	.080		2.407	
	1.500	17.655	1.271	.012			
	.750	17.655	-7.244	.010			
	.000			.080			15.231
ALL				.006			
	1.500			-.013			1.248
MAI	.000	2.091	-10.000	-.005			
	1.500	2.091	-11.568	.010			
	.750	2.091	-13.137	.023			
	.000			-.017			
MAI & MIN							
	1.500			-.029			1.432
5	.000	2.110	-14.388	-.029			1.432
	.750	2.110	-13.906	.080		-.048	
	1.500	2.110	-11.424	.080	.012		
	.000			.080	-.108		
MAI & MIN							
	1.500			-.287			-9.350
MIN							
2	.000			-.317			1.994
	1.500				-2.703	1.029	
	.750	4.122	-28.854		-2.703	-.242	
	.000	4.122	-23.395		-2.703	-2.138	
	1.500	4.122	-13.993	-.317			1.994
MIN							
148							
MAI & MIN							
1	.000	8.472	-25.578	-.479	-3.000	2.005	6.693
	.000	8.472	-19.225		-3.000	-.244	
	.750	8.472	-12.821		-3.000	-2.494	
	1.500			-.479			6.693
2	.000	18.907	-21.258	-.249	-1.230	1.897	15.638
	.750	18.907	-18.166		-1.230	-.106	
	1.500	18.907	-7.931		-1.230	-1.520	
	1.500			-.249			15.638
MAI							
	2 .000			-.317			1.994
MIN							
	1.500				-2.703	1.029	
	.750	4.122	-28.854		-2.703	-.242	
	.000	4.122	-23.395		-2.703	-2.138	
	1.500	4.122	-13.993	-.317			1.994
MIN							
147							
MAI & MIN							
1	.000			-.492			1.250
	.000	1.963	-8.448		-6.265	2.826	
	.750	1.963	-6.976		-6.265	-.362	
	1.500	1.963	-5.504		-6.265	-3.561	
	1.500			-.492			1.738
MAI							
	2 .000			-.216			11.236
	.750	11.289	-.666		-1.884	2.142	
	.000	11.289	-3.634		-1.884	-.285	
	1.500	11.289	2.329		-1.884	-1.955	
	1.500			-.216			11.236
MIN							
	2 .000			-.257			-9.844
	.000	-5.491	-17.943		-5.445	1.388	
	.750	-5.491	-10.359		-5.445	-.393	
	1.500	-5.491	-8.862		-5.445	-2.899	
	1.500			-.237			-9.844
MAI							
	3 .000			-.135			10.687
	.000	11.279	-.668		-1.751	1.990	
	.750	11.279	-3.637		-1.751	-.336	
	1.500	11.279	2.525		-1.751	-1.908	
	1.500			-.123			10.687
MIN							
	3 .000			-.194			-5.393
	.000	-5.692	-17.946		-3.313	1.225	
	.750	-5.692	-10.362		-3.313	-.446	
	1.500	-5.692	-8.897		-3.313	-2.852	
	1.500			-.194			-5.393
MIN							
	4 .000			-.207			16.270
MAI							
	.000	17.490	4.525		-1.287	2.402	
	.750	17.490	-1.074		-1.287	-.232	
	1.500	17.490	7.551		-1.287	-1.648	
	1.500			-.207			16.270
MIN							
	4 .000			-.245			-10.531
	.000	-7.462	-24.271		-5.890	1.144	
	.750	-7.462	-12.612		-5.890	-.434	
	1.500	-7.462	-7.735		-5.890	-5.222	
	1.500			-.245			-10.531
MAI & MIN							
	5 .000			-.013			1.058
	.000	2.023	-9.516	.032		-.046	
	.750	2.023	-7.999	.002		-.022	
	1.500	2.023	-6.482	.032		.002	
	1.500			-.013			1.058
MAI & MIN							
	6 .000			.003			1.065

REPOSITION 30x200. 3 YARDS 15+17+13 FILE:30200

FRAME ELEMENT FORCES (USING "QUICK" INDEX RESPONSE CALC)

ELT LOAD	DIST	I-Z PLANE		AXIAL	I-J PLANE		AXIAL
ID ENVE	END1	SHEAR	MOMENT	FORCE	SHEAR	MOMENT	TORQ
1	.000	17.655	1.273	-.243			15.231
	1.500			-.933	-1.313		
4	.000	-7.228	-30.720	-.287	-3.522	.975	-9.350
	1.500	-7.228	-12.827		-3.522	-2.862	
	.750	-7.228	-19.025		-3.522	-.360	
	.000	18.907	-7.931		-1.230	-1.520	
	1.500			-.479			6.693
2	.000	18.907	-21.258	-.249	-1.230	1.897	15.638
	.750	18.907	-18.166		-1.230	-.106	
	1.500	8.472	-12.821		-3.000	-2.494	
	.750	8.472	-19.225		-3.000	-.244	
	.000	8.472	-25.578	-.479	-3.000	2.005	6.693
MAI & MIN							
149							
	1.500			-.488			-9.350
ALL	.000			-.488	-5.614	-.108	-9.350
	.000	-7.228	-30.770		-5.614	-.360	
	.750	-7.228	-19.025		-5.614	-3.014	
	1.500	-7.228	-12.827		-3.614	-3.014	
MIN							
	1.500			.006			15.231
MAI	.000	17.655	1.272	.080		2.407	
	1.500	17.655	-7.244	.080			
	.750	17.655	-7.244	.010			
	.000			.080			15.231
ALL				.006			
	1.500			-.013			1.248
MAI	.000	2.091	-10.000	-.005			
	1.500	2.091	-11.568	.010			
	.750	2.091	-13.137	.023			
	.000			-.017			
MAI & MIN							
	1.500			-.029			1.432
5	.000	2.110	-14.388	-.029			1.432
	.750	2.110	-13.906	.080		-.048	
	1.500	2.110	-11.424	.080	.012		
	.000			.080	-.108		
MAI & MIN							
	1.500			-.287			-9.350
MIN							
2	.000			-.317			1.994
	1.500				-2.703	1.029	
	.750	4.122	-28.854		-2.703	-.242	
	.000	4.122	-23.395		-2.703	-2.138	
	1.500	4.122	-13.993	-.317			1.994
MIN							
148							
MAI & MIN							
1	.000			-.492			1.250
	.000	1.963	-8.448		-6.265	2.826	
	.750	1.963	-6.976		-6.265	-.362	
	1.500	1.963	-5.504		-6.265	-3.561	
	1.500			-.492			1.738
MAI							
	2 .000			-.216			11.236
	.750	11.289	-.666		-1.884	2.142	
	.000	11.289	-3.634		-1.884	-.285	
	1.500	11.289	2.329		-1.884	-1.955	
	1.500			-.216			11.236
MIN							
	2 .000			-.257			-9.844
	.000	-5.491	-17.943		-5.445	1.388	
	.750	-5.491	-10.359		-5.445	-.393	
	1.500	-5.491	-8.862		-5.445	-2.899	
	1.500			-.237			-9.844
MAI							
	3 .000			-.135			10.687
	.000	11.279	-.668		-1.751	1.990	
	.750	11.279	-3.637		-1.751	-.336	
	1.500	11.279	2.525		-1.751	-1.908	
	1.500			-.123			10.687
MIN							
	3 .000			-.194			-5.393
	.000	-5.692	-17.946		-3.313	1.225	
	.750	-5.692	-10.362		-3.313	-.446	
	1.500	-5.692	-8.897		-3.313	-2.852	
	1.500			-.194			-5.393
MIN							
	4 .000			-.207			16.270
MAI							
	.000	17.490	4.525		-1.287	2.402	
	.750	17.490	-1.074		-1.287	-.232	
	1.500	17.490	7.551		-1.287	-1.648	
	1.500			-.207			16.270
MIN							
	4 .000			-.245			-10.531
	.000	-7.462	-24.271		-5.890	1.144	
	.750	-7.462	-12.612		-5.890	-.434	
	1.500	-7.462	-7.735		-5.890	-5.222	
	1.500			-.245			-10.531
MAI & MIN							
	5 .000			-.013			1.058
	.000	2.023	-9.516	.032		-.046	
	.750	2.023	-7.999	.002		-.022	
	1.500	2.023	-6.482	.032		.002	
	1.500			-.013			1.058
MAI & MIN							
	6 .000			.003			1.065

REPOSITION 30x200. 3 YARDS 15+17+13 FILE:30200

FRAME ELEMENT FORCES (USING "QUICK" INDEX RESPONSE CALC)

ELT LOAD	DIST	I-Z PLANE		AXIAL	I-J PLANE		AXIAL
ID ENVE	END1	SHEAR	MOMENT	FORCE	SHEAR	MOMENT	TORQ
1	.000	17.655	1.273	-.243			15.231
	1.500			-.933	-1.313		
4	.000	-7.228	-30.720	-.287	-3.522	.975	-9.350
	1.500	-7.228	-12.827		-3.522	-2.862	
	.750	-7.228	-19.025		-3.522	-.360	
	.000	18.907	-7.931		-1.230	-1.520	
	1.500			-.479			6.693
2	.000	18.907	-21.258	-.249	-1.230	1.897	15.638
	.750	18.907	-18.166		-1.230	-.106	
	1.500	8.472	-12.821		-3.000	-2.494	
	.750	8.472	-19.225		-3.000	-.244	
	.000	8.472	-25.578	-.479	-3.000	2.005	6.693
MAI & MIN							
149							
	1.500			-.488			-9.350
ALL	.000			-.488	-5.614	-.108	-9.350
	.000	-7.228	-30.770		-5.614	-.360	
	.750	-7.228	-19.025		-5.614	-3.014	
	1.500	-7.228	-12.827		-3.614	-3.014	
MIN							
	1.500			.006			15.231
MAI	.000	17.655	1.272	.080		2.407	
	1.500	17.655	-7.244	.080			
	.750	17.655	-7.244	.010			
	.000			.080			15.231
ALL				.006			
	1.500			-.013			1.248
MAI	.000	2.091	-10.000	-.005			
	1.500	2.091	-11.568	.010			
	.750	2.091	-13.137	.023			
	.000			-.017			
MAI & MIN							
	1.500			-.029			1.432
5	.000	2.110	-14.388	-.029			1.432
	.750	2.110	-13.906	.080		-.048	
	1.500	2.110	-11.424	.080	.012		
	.000			.080	-.108		
MAI & MIN							
	1.500			-.287			-9.350
MIN							
2	.000			-.317			1.994
	1.500				-2.703	1.029	
	.750	4.122	-28.854		-2.703	-.242	
	.000	4.122	-23.395		-2.703	-2.138	
	1.500	4.122	-13.993	-.317			1.994
MIN							
147							
MAI & MIN							
1	.000			-.492			1.250
	.000	1.963	-8.448		-6.265	2.826	
	.750	1.963	-6.976		-6.265	-.362	
	1.500	1.963	-5.504		-6.265	-3.561	
	1.500			-.492			1.738
MAI							
	2 .000			-.216			11.236
	.750	11.289	-.666		-1.884	2.142	
	.000	11.289	-3.634		-1.884	-.285	
	1.500	11.289	2.329		-1.884	-1.955	
	1.500			-.216			11.236
MIN							
	2 .000			-.257			-9.844
	.000	-5.491	-17.943		-5.445	1.388	
	.750	-5.491	-10.359		-5.445	-.393	
	1.500	-5.491	-8.862		-5.445	-2.899	
	1.500			-.237			-9.844
MAI							
	3 .000			-.135			10.687
	.000	11.279	-.668		-1.751	1.990	
	.750	11.279	-3.637		-1.751	-.336	
	1.500	11.279	2.525		-1.751	-1.908	
	1.500			-.123			10.687
MIN							
	3 .000			-.194			-5.393
	.000	-5.692	-17.946		-3.313	1.225	
	.750	-5.692	-10.362		-3.313	-.446	
	1.500	-5.692	-8.897		-3.313	-2.852	
	1.500			-.194			-5.393
MIN							
	4 .000			-.207			16.270
MAI							
	.000	17.490	4.525		-1.287	2.402	
	.750	17.490	-1.074		-1.287	-.232	
	1.500	17.490	7.551		-1.287	-1.648	
	1.500			-.207			16.270
MIN							
	4 .000			-.245			-10.531
	.000	-7.462	-24.271		-5.890	1.144	
	.750	-7.462	-12.612		-5.890	-.434	
	1.500	-7.462	-7.735		-5.890	-5.222	
	1.500			-.245			-10.531
MAI & MIN							
	5 .000			-.013			1.058
	.000	2.023	-9.516	.032		-.046	
	.750	2.023	-7.999	.002		-.022	
	1.500	2.023	-6.482	.032		.002	
	1.500			-.013			1.058
MAI & MIN							
	6 .000			.003			1.065

REPOSITION 30x200. 3 YARDS 15+17+13 FILE:30200

FRAME ELEMENT FORCES (USING "QUICK" INDEX RESPONSE CALC)

ELT LOAD	DIST	I-Z PLANE		AXIAL	I-J PLANE		AXIAL
ID ENVE	END1	SHEAR	MOMENT	FORCE	SHEAR	MOMENT	TORQ
1	.000	17.655	1.273	-.243			15.231
	1.500			-.933	-1.313		
4	.000	-7.228	-30.720	-.287	-3.522	.975	-9.350
	1.500	-7.228	-12.827		-3.522	-2.862	
	.750	-7.228	-19.025		-3.522	-.360	
	.000	18.907	-7.931		-1.230	-1.520	
	1.500			-.479			6.693
2	.000	18.907	-21.258	-.249	-1.230	1.897	15.638
	.750	18.907	-18.166		-1.230	-.106	
	1.500	8.472	-12.821		-3.000	-2.494	
	.750	8.472	-19.225		-3.000	-.244	
	.000	8.472	-25.578	-.479	-3.000	2.005	6.693
MAI & MIN							
149							
	1.500			-.488			-9.350
ALL	.000			-.488	-5.614	-.108	-9.350
	.000	-7.228	-30.770		-5.614	-.360	
	.750	-7.228	-19.025		-5.614	-3.014	
	1.500	-7.228	-12.827		-3.614	-3.014	
MIN							
	1.500			.006			15.231
MAI	.000	17.655	1.272	.080		2.407	
	1.500	17.655	-7.244	.080			
	.750	17.655	-7.244	.010			
	.000			.080			15.231
ALL				.006			
	1.500			-.013			1.248
MAI	.000	2.091	-10.000	-.005			
	1.500	2.091	-11.568	.010			
	.750	2.091	-13.137	.023			
	.000			-.017			
MAI & MIN							
	1.500			-.029			1.432
5	.000	2.110	-14.388	-.029			1.432
	.750	2.110	-13.906	.080		-.048	
	1.500	2.110	-11.424	.080	.012		
	.000			.080	-.108		
MAI & MIN							
	1.500			-.287			-9.350
MIN							
2	.000			-.317			1.994
	1.500				-2.703	1.029	
	.750	4.122	-28.854		-2.703	-.242	
	.000	4.122	-23.395		-2.703	-2.138	
	1.500	4.122	-13.993	-.317			1.994
MIN							
148							
MAI & MIN							
1	.000			-.492			1.250
	.000	1.963	-8.448		-6.265	2.826	
	.750	1.963	-6.976		-6.265	-.362	
	1.500	1.963	-5.504		-6.265	-3.561	
	1.500			-.492			1.738
MAI							
	2 .000			-.216			11.236
	.750	11.289	-.666		-1.884	2.142	
	.000	11.289	-3.634		-1.884	-.285	
	1.500	11.289	2.329		-1.884	-1.955	
	1.500			-.216			11.236
MIN							
	2 .000			-.257			-9.844
	.000	-5.491	-17.943		-5.445	1.388	
	.750	-5.491	-10.359		-5.445	-.393	
	1.500	-5.491	-8.862		-5.445	-2.899	
	1.500			-.237			-9.844
MAI							
	3 .000			-.135			10.687
	.000	11.279	-.668		-1.751	1.990	
	.750	11.279	-3.637		-1.751	-.336	
	1.500	11.279	2.525		-1.751	-1.908	
	1.500			-.123			10.687
MIN							
	3 .000			-.194			-5.393
	.000	-5.692	-17.946		-3.313	1.225	
	.750	-5.692	-10.362		-3.313	-.446	
	1.500	-5.692	-8.897		-3.313	-2.852	
	1.500			-.194			-5.393
MIN							
	4 .000			-.207			16.270
MAI							
	.000	17.490	4.525		-1.287	2.402	
	.750	17.490	-1.074		-1.287	-.232	
	1.500	17.490	7.551		-1.287	-1.648	
	1.500			-.207			16.270
MIN							
	4 .000			-.245			-10.531
	.000	-7.462	-24.271		-5.890	1.144	
	.750	-7.462	-12.612		-5.890	-.434	
	1.500	-7.462	-7.735		-5.890	-5.222	
	1.500			-.245			-10.531
MAI & MIN							
	5 .000			-.013			1.058
	.000	2.023	-9.516	.032		-.046	
	.750	2.023	-7.999	.002		-.022	
	1.500	2.023	-6.482	.032		.002	
	1.500			-.013			1.058
MAI & MIN							
	6 .000			.003			1.065

REFUSILIUM 303+Z00. 3 VANUS 13+1/+13 FILE:3UZZ00

F R A M E E L E M E N T F O R C E S (USING "QUICK" INDEX RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	1-2 FLANE SHEAR	MOMENT	AXIAL FORCE	SHEAR	1-3 FLANE MOMENT	AXIAL TORQ
	.000						2.022
	1.500			.000			
MAI							
ALL	.000			.002			18.675
	.000	93.983	-79.211		.443	2.004	
	.750	93.857	-32.042		.443	.114	
	1.500	93.731	29.336		.443	.221	
MIN							
ALL	.000			.002			18.675
	.000	-6.878	-33.451		-1.347	-.101	
	.750	-6.804	-21.337		-1.347	-.269	
	1.500	-6.730	-9.224		-1.347	-1.115	
				-.499			-10.846
MAX							
ALL	.000	18.184	-4.618	.044	.027	.998	11.020
	.000	18.058	-9.674		.027	.009	
	.750	17.932	-.796		.027	.014	
	1.500			.021			11.020
MAI							
	.000			-.007			-.829
	1.500						
MAX & MIN							
6	.000			-.007			-.829
	.000	2.222	-15.144		-.016	.021	
	.750	2.222	-13.478		-.016	.009	
	1.500	2.222	-11.812		-.016	-.003	
MAX & MIN							
5	.000			.021			-1.322
	.000	2.519	-17.892		.027	-.101	
	.750	2.519	-16.092		.027	-.043	
	1.500	2.519	-14.112		.027	.014	
MAX & MIN							
4	.000			-.005			-10.846
	.000	-6.678	-33.451		-.901	.121	
	.750	-6.804	-21.337		-.901	-.210	
	1.500	-6.930	-14.824		-.901	-.867	
				-.405			-10.846
MAI							
	.000			-.348			11.020
	1.500						
MAX & MIN							
3	.000			-.444			-6.650
	.000	-2.940	-26.190		-.660	.019	
	.750	-3.088	-18.135		-.660	-.269	
	1.500	-3.212	-13.319		-.660	-.735	
				-.444			-6.650
MAI							
	.000			-.348			11.020
	.000	18.184	-4.618		-.361	.477	
	.750	18.058	-.9.674		-.361	-.118	
	1.500	17.932	-.796		-.361	-.444	
				-.348			11.020
MIN							
ALL	.000			-1.213			-8.025
	.000	61.088	-121.437		-2.551	-.744	
	.750	61.762	-30.326		-2.551	-.268	
	1.500	61.436	12.086		-2.551	-2.127	
				-1.213			-8.025
130 ----------							
MAI & MIN							
1	.000			-.489			-5.966
	.000	9.255	-26.924		-2.015	1.376	
	.750	9.255	-19.993		-2.015	-.135	
	1.500	9.255	-13.062		-2.015	-1.646	
				-.489			-5.966
MAI							
2	.000			-.309			1.961
	.000	20.203	-22.992		-.998	.902	
	.750	19.993	-18.933		-.998	-.067	
	1.500	19.783	-7.106		-.998	-.930	
				-.309			1.961
MIN							
2	.000			-.309			-12.527
	.000	5.453	-40.497		-1.375	.599	
	.750	5.243	-26.347		-1.375	-.196	
	1.500	5.033	-15.078		-1.375	-1.163	
				-.380			-12.527
MAI							
3	.000			-.330			1.478
	.000	19.999	-22.773		-.946	.033	
	.750	19.824	-10.970		-.946	-.096	
	1.500	19.697	-7.170		-.946	-.940	
				-.330			1.478
MIN							
3	.000			-.401			-13.010
	.000	5.200	-40.327		-1.323	.599	
	.750	5.074	-26.336		-1.323	-.226	
	1.500	4.948	-15.167		-1.323	-1.154	
				-.401			-13.010
MAI							
4	.000			-.288			5.928
	.000	26.918	-19.873		-.827	1.000	
	.750	26.792	-10.168		-.827	-.025	
	1.500	26.666	-5.272		-.827	-.906	
				-.288			5.928

REFUSILIUM 303+Z00. 3 VANUS 13+1/+13 FILE:3UZZ00

F R A M E E L E M E N T F O R C E S (USING "QUICK" INDEX RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	1-2 FLANE SHEAR	MOMENT	AXIAL FORCE	SHEAR	1-3 FLANE MOMENT	AXIAL TORQ
	.000	62.479	-7.+42		-2.551	1.699	
	.750	62.479	-22.162		-2.551	-.224	
	1.500	62.479	14.097		-2.551	-2.127	
MAI							
	2 .000			-.492			2.554
	.000	82.299	-69.121		-1.189	1.667	
	.750	82.039	-33.255		-1.189	.013	
	1.500	82.829	23.145		-1.189	-1.205	
				.345			12.999
MIN							
2	.000			-.843			-3.077
	.000	62.792	-105.630		-2.215	.755	
	.750	62.582	-63.871		-2.215	-.279	
	1.500	62.372	15.245		-2.215	-1.660	
MAI				-.843			-3.077
	5 .000			.392			12.290
	.000	82.+39	-79.830		-1.+42	1.621	
	.750	82.753	-52.041		-1.+42	.004	
	1.500	82.627	23.156		-1.+42	-1.181	
				.392			12.290
MIN							
3	.000			-.+16			-3.736
	.000	62.+22	-105.189		-2.168	.707	
	.750	62.296	-63.677		-2.168	-.286	
	1.500	62.170	13.236		-2.168	-1.635	
				-.+16			-3.736
MAI							
4	.000			.802			18.675
	.000	95.983	-79.211		-.830	2.004	
	.750	95.857	-32.042		-.830	.114	
	1.500	95.731	29.336		-.830	-1.035	
				.802			18.675
MIN							
4	.000			-1.215			-8.035
	.000	61.888	-121.+77		-2.539	.+80	
	.750	61.762	-30.326		-2.539	-.268	
	1.500	61.636	12.826		-2.539	-1.812	
				-1.215			-8.035
MAX & MIN							
5	.000			.000			8.588
	.000	79.860	-101.300		.643	-.744	
	.750	79.860	-81.+05		.643	-.261	
	1.500	79.869	10.990		.643	.221	
				.000			8.588
MAX & MIN							
6	.000			.000			2.022
	.000	63.008	-80.879		-.136	.158	
	.750	63.008	-33.625		-.136	.035	
	1.500	63.008	13.624		-.136	-.+07	

REPOSITION 304x200, 3 YARDS 154/+13 FILE:3D2D0

F R A M E E L E M E N T F O R C E S (USING "DUICK" INDEX RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	1-2 FLANE SHEAR	MOMENT	AXIAL FORCE	AXIAL SHEAR	1-3 FLANE MOMENT	AXIAL TORQ
MAI							
ALL	.000						
	.000	18.215	-1.683	.017			10.463
	.750	18.084	-6.763		.696	.492	
	1.500	17.963	2.252		.696	.023	
MIN							
	1.500		-2.710	.017			10.463
MAI							
3	.000		-4.190				3.014
	.000	-31.907	27.882		-.385	-.289	
	.750	-31.907	9.002		-.385	-.262	
	1.500	-31.907	-18.327		-.385	-.515	
MIN							
	1.500		-4.190				3.014
MAI							
4	.000		-2.340				11.706
	.000	-17.893	79.328		-.068	.636	
	.750	-17.893	28.335		-.068	-.120	
	1.500	-17.893	-6.414		-.068	-.365	
MIN							
	1.500		-2.340				11.706
MAI							
5	.000		-4.973				2.416
	.000	-67.993	26.140		-1.028	.047	
	.750	-67.993	8.364		-1.028	-.197	
	1.500	-67.993	-22.093		-1.028	-.907	
MIN							
	1.500		-4.973				2.416
MAI & MIN							
6	.000		-.005				3.397
	.000	-22.989	29.053		.013	-.012	
	.750	-22.989	7.809		.013	-.002	
	1.500	-22.989	-9.433		.013	.007	
MIN							
	1.500		-.005				3.397
MAI & MIN							
6	.000		.001				3.730
	.000	-26.688	29.453		-.003	.002	
	.750	-26.688	9.437		-.003	.000	
	1.500	-26.688	-10.379		-.003	-.002	
MIN							
	1.500		.001				3.730
MAI							
ALL	.000		.001				11.706
	.000	-17.893	79.328		.191	1.381	
	.750	-17.893	28.335		.191	.000	
	1.500	-17.893	-8.414		.191	.007	
MIN							
	1.500		.001				11.706
MAI & MIN							
1	.000		-.436				3.629
	.000	5.133	-.339		-2.638	1.429	
	.750	5.133	2.011		-2.638	-.549	
	1.500	5.133	4.361		-2.638	-2.327	
	1.500		-.436				3.629

ELT LOAD ID ENVE	DIST ENDI	1-2 FLANE SHEAR	MOMENT	AXIAL FORCE	AXIAL SHEAR	1-3 FLANE MOMENT	AXIAL TORQ
163							
MAI & MIN							
1	.000		-3.163				2.416
	.000	-21.847	59.794		.191	.065	
	.750	-21.847	20.044		.191	-.215	
	1.500	-21.847	-19.706		.191	-.495	
MAI							
2	.000		-2.910				8.588
MIN							
	1.500		-4.108				3.088
MAI							
3	.000		-4.108				3.088
	.000	-52.418	28.375		-.855	.143	
	.750	-52.418	9.111		-.855	-.182	
	1.500	-52.418	-10.601		-.855	-.707	
MIN							
	1.500		-4.108				3.088
MAI							
4	.000		-2.828				8.662
	.000	-22.358	60.285		-2.719	.496	
	.750	-22.358	20.972		-2.719	-.136	
	1.500	-22.358	-9.745		-2.719	-.462	
MIN							
	1.500		-2.828				8.662
MAI & MIN							
1	.000		-5.163				3.429
	.000	-27.296	50.038		-1.927	1.381	
	.750	-27.296	9.366		-1.927	-.064	
	1.500	-27.296	-10.906		-1.927	-1.510	
MIN							
	1.500		-5.163				3.429
MAI & MIN							
164							
	1.500		-.494				-9.309
MIN							
ALL	.000		-.494				-9.309
	.000	-6.718	-29.689		.000	-3.128	
	.750	-6.844	-12.265		.000	-1.067	
	1.500	-6.970	-11.467		.000	.000	
MAI							
4	.000		-.494				-9.309
	.000	18.215	-.983		.000		
	.750	18.089	-6.025		2.787	.000	
	1.500	17.963	2.483		2.787	1.023	
MIN							
	1.500		.012				9.310
MAI							
ALL	.000		.012				9.310
	.000	18.215	-.983		2.783	.000	
	.750	18.089	-6.025		2.787	.000	
	1.500	17.963	2.483		2.787	1.023	
MIN							
	1.500		-.003				.000
MAI & MIN							
6	.000		-.003				.000
	.000	2.212	-12.305		.000	.000	
	.750	2.212	-10.644		.000	.000	
	1.500	2.212	-8.983		.000	.000	
MIN							
	1.500		-.003				.000
MAI & MIN							
5	.000		.013				.000
	.000	-.242	-10.911		.000	.000	
	.750	-.242	-11.092		.000	.000	
	1.500	-.242	-11.274		.000	.000	
MIN							
	1.500		.013				.000
MAI							
4	.000		-.494				-9.309
	.000	-6.718	-29.689		.000	-3.128	
	.750	-6.844	-12.265		.000	-1.067	
	1.500	-6.970	-11.467		.000	.000	
MIN							
	1.500		-.494				-9.309
MAI & MIN							
3	.000		-.552				-5.300
	.000	-2.983	-23.668		.331	-.939	
	.750	-3.109	-13.412		.331	-.467	
	1.500	-3.235	-10.988		.331	-.239	
MIN							
	1.500		-.342				-5.300
MAI							
2	.000		-.342				-5.586
	.000	18.215	-1.683		.392	-.220	
	.750	18.089	-6.765		.392	-.262	
	1.500	17.963	2.252		.392	.017	
MIN							
	1.500		-.419				10.463
MAI							
4	.000		-.447				-9.232
	.000	-6.712	-30.428		-.134	-.361	
	.750	-6.838	-18.274		-.134	-.220	
	1.500	-6.964	-12.110		-.134	-.420	
MIN							
	1.500		-.447				-9.232
MAI & MIN							
5	.000		.017				-.448
	.000	.027	-12.119		.025	-.025	
	.750	.027	-12.098		.025	-.016	
	1.500	.027	-12.078		.025	.003	
MIN							
	1.500		.017				-.448
MAI & MIN							
6	.000		-.004				-.172
	.000	2.217	-12.865		-.005	.007	
	.750	2.217	-11.202		-.005	.003	
	1.500	2.217	-9.539		-.005	-.001	
	1.500		-.004				-.172

REPOSITION 304x200, 3 YARDS 154/+13 FILE:3D2D0

F R A M E E L E M E N T F O R C E S (USING "DUICK" INDEX RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	1-2 FLANE SHEAR	MOMENT	AXIAL FORCE	AXIAL SHEAR	1-3 FLANE MOMENT	AXIAL TORQ
MAX							
2	.000		-.425				6.448
	.000	12.235	-6.339		.288	-.289	
	.750	12.023	-8.440		.288	-.276	
	1.500	11.813	-2.222		.288	-.069	
MIN							
	1.500		-.425				6.448
MAI							
2	.000		-.442				-5.337
	.000	-2.225	-23.386		-.028	-.494	
	.750	-2.933	-13.365		-.028	-.310	
	1.500	-3.143	-10.940		-.028	-.331	
MIN							
	1.500		-.442				-5.337
MAI							
3	.000		-.515				6.305
	.000	11.973	-6.222		.646	-.725	
	.750	11.847	-8.307		.646	-.432	
	1.500	11.721	-2.370		.646	.023	
MIN							
	1.500		-.515				6.305
MAX							
3	.000		-.552				-5.300
	.000	-2.983	-23.668		.331	-.939	
	.750	-3.109	-13.412		.331	-.467	
	1.500	-3.235	-10.988		.331	-.239	
MIN							
	1.500		-.552				-5.300
MAI							
4	.000		-.494				-9.309
	.000	18.215	-1.683		.392	-.220	
	.750	18.089	-6.765		.392	-.262	
	1.500	17.963	2.252		.392	.017	
MIN							
	1.500		-.494				-9.309
MAI & MIN							
5	.000		-.447				-.448
	.000	.027	-12.119		.025	-.025	
	.750	.027	-12.098		.025	-.016	
	1.500	.027	-12.078		.025	.003	
MIN							
	1.500		-.447				-.448
MAI & MIN							
6	.000		-.004				-.172
	.000	2.217	-12.865		-.005	.007	
	.750	2.217	-11.202		-.005	.003	
	1.500	2.217	-9.539		-.005	-.001	
	1.500		-.004				-.172

REPOSICION 303+200. 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	MAX							
	2	.000			-.116			9.016
		.000	13.490	6.181		-.666	.496	
		.750	13.490	6.931		-.666	-.511	
		1.500	13.490	7.682		-.666	-1.142	
		1.500			-.116			9.016
	MIN							
	2	.000			-.204			.501
		.000	1.001	-1.005		-1.434	.111	
		.750	1.001	1.784		-1.434	-.632	
		1.500	1.001	4.174		-1.434	-1.660	
		1.500			-.204			.501
	MAX							
	3	.000			-.037			8.896
		.000	13.513	6.134		-.214	.027	
		.750	13.513	6.902		-.214	-.641	
		1.500	13.513	7.669		-.214	-.933	
		1.500			-.037			8.896
	MIN							
	3	.000			-.125			.381
		.000	1.023	-1.051		-.982	-.358	
		.750	1.023	1.755		-.982	-.762	
		1.500	1.023	4.161		-.982	-1.451	
		1.500			-.125			.381
	MAX							
	4	.000			-.085			12.332
		.000	20.446	10.425		-.374	.649	
		.750	20.446	10.147		-.374	-.476	
		1.500	20.446	9.869		-.374	-.976	
		1.500			-.085			12.332
	MIN							
	4	.000			-.231			-1.859
		.000	-.370	-1.551		-1.653	.008	
		.750	-.370	1.569		-1.653	-.678	
		1.500	-.370	4.022		-1.653	-1.839	
		1.500			-.231			-1.859
	MAX & MIN							
	5	.000			.001			3.056
		.000	3.394	-1.274		.016	-.017	
		.750	3.394	1.272		.016	-.005	
		1.500	3.394	3.818		.016	.007	
		1.500			.001			3.056
	MAX & MIN							
	6	.000			-.000			3.482
		.000	3.159	-.394		-.003	.004	
		.750	3.159	1.975		-.003	.001	
		1.500	3.159	4.344		-.003	-.002	
		1.500			-.000			3.482
	MAX							
	ALL	.000			.001			12.332
		.000	20.446	10.425		.016	1.429	

REPOSICION 303+200. 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.750	20.446	10.147		.016	.001	
		1.500	20.446	9.869		.016	.007	
		1.500			.001			12.332
	MIN							
	ALL	.000			-.436			-1.859
		.000	-.370	-1.551		-2.638	-.358	
		.750	-.370	1.272		-2.638	-.762	
		1.500	-.370	3.818		-2.638	-2.527	
		1.500			-.436			-1.859
166 ----------								
	MAX & MIN							
	1	.000			-.131			1.361
		.000	4.762	-4.401		-2.166	1.269	
		.750	4.762	-.829		-2.166	-.355	
		1.500	4.762	2.742		-2.166	-1.980	
		1.500			-.131			1.361
	MAX							
	2	.000			-.004			5.767
		.000	15.566	-.275		-.750	.724	
		.750	15.566	2.531		-.750	-.270	
		1.500	15.566	5.337		-.750	-.950	
		1.500			-.004			5.767
	MIN							
	2	.000			-.027			-2.117
		.000	3.742	-5.415		-1.447	.409	
		.750	3.742	-1.260		-1.447	-.356	
		1.500	3.742	2.558		-1.447	-1.408	
		1.500			-.027			-2.117
	MAX							
	3	.000			.038			5.667
		.000	15.566	-.287		-.527	.512	
		.750	15.566	2.518		-.527	-.315	
		1.500	15.566	5.324		-.527	-.827	
		1.500			.038			5.667
	MIN							
	3	.000			.015			-2.217
		.000	3.741	-5.427		-1.224	.197	
		.750	3.741	-1.272		-1.224	-.401	
		1.500	3.741	2.545		-1.224	-1.285	
		1.500			.015			-2.217
	MAX							
	4	.000			.004			8.471
		.000	22.767	2.451		-.484	.839	
		.750	22.767	4.746		-.484	-.244	
		1.500	22.767	7.041		-.484	-.802	
		1.500			.004			8.471
	MIN							
	4	.000			-.035			-4.670
		.000	3.060	-6.115		-1.646	.314	
		.750	3.060	-1.572		-1.646	-.388	
		1.500	3.060	2.409		-1.646	-1.565	

REPOSICION 303+200. 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		1.500			-.035			-4.670
	MAX & MIN							
	5	.000			-.001			1.086
		.000	4.808	-4.922		.016	-.015	
		.750	4.808	-1.316		.016	-.004	
		1.500	4.808	2.290		.016	.008	
		1.500			-.001			1.086
	MAX & MIN							
	6	.000			.000			1.241
		.000	4.762	-4.420		-.003	.003	
		.750	4.762	-.849		-.003	.001	
		1.500	4.762	2.722		-.003	-.002	
		1.500			.000			1.241
	MAX							
	ALL	.000			.038			8.471
		.000	22.767	2.451		.016	1.269	
		.750	22.767	4.746		.016	.001	
		1.500	22.767	7.041		.016	.008	
		1.500			.038			8.471
	MIN							
	ALL	.000			-.131			-4.670
		.000	3.060	-6.115		-2.166	-.015	
		.750	3.060	-1.572		-2.166	-.401	
		1.500	3.060	2.290		-2.166	-1.980	
		1.500			-.131			-4.670
167 ----------								
	MAX & MIN							
	1	.000			-.133			.712
		.000	4.919	-6.311		-1.849	1.079	
		.750	4.919	-2.622		-1.849	-.307	
		1.500	4.919	1.067		-1.849	-1.694	
		1.500			-.133			.712
	MAX							
	2	.000			-.049			4.830
		.000	15.762	-3.000		-.724	.758	
		.750	15.762	-.043		-.724	-.198	
		1.500	15.762	2.913		-.724	-.856	
		1.500			-.049			4.830
	MIN							
	2	.000			-.057			-2.796
		.000	3.942	-7.491		-1.412	.460	
		.750	3.942	-3.209		-1.412	-.281	
		1.500	3.942	.849		-1.412	-1.307	
		1.500			-.057			-2.796
	MAX							
	3	.000			-.031			4.731
		.000	15.762	-3.004		-.607	.654	
		.750	15.762	-.047		-.607	-.213	
		1.500	15.762	2.909		-.607	-.783	
		1.500			-.031			4.731

REPOSICION 303+200. 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	MIN							
	3	.000			-.040			-2.895
		.000	3.942	-7.496		-1.295	.357	
		.750	3.942	-3.213		-1.295	-.296	
		1.500	3.942	.846		-1.295	-1.255	
		1.500			-.040			-2.895
	MAX							
	4	.000			-.045			7.343
		.000	22.991	-.797		-.461	.862	
		.750	22.991	1.672		-.461	-.172	
		1.500	22.991	4.140		-.461	-.709	
		1.500			-.045			7.343
	MIN							
	4	.000			-.059			-5.367
		.000	3.291	-8.282		-1.608	.366	
		.750	3.291	-3.604		-1.608	-.310	
		1.500	3.291	.700		-1.608	-1.461	
		1.500			-.059			-5.367
	MAX & MIN							
	5	.000			-.004			.545
		.000	4.961	-6.734		.024	-.023	
		.750	4.961	-3.013		.024	-.005	
		1.500	4.961	.708		.024	.013	
		1.500			-.004			.545
	MAX & MIN							
	6	.000			.001			.595
		.000	4.920	-6.330		-.005	.005	
		.750	4.920	-2.640		-.005	.001	
		1.500	4.920	1.050		-.005	-.003	
		1.500			.001			.595
	MAX							
	ALL	.000			.001			7.343
		.000	22.991	-.797		.024	1.079	
		.750	22.991	1.672		.024	.001	
		1.500	22.991	4.140		.024	.013	
		1.500			.001			7.343
	MIN							
	ALL	.000			-.133			-5.367
		.000	3.291	-8.282		-1.849	-.023	
		.750	3.291	-3.604		-1.849	-.310	
		1.500	3.291	.700		-1.849	-1.694	
		1.500			-.133			-5.367
168 ----------								
	MAX & MIN							
	1	.000			-.133			.495
		.000	5.072	-7.503		-1.555	.903	
		.750	5.072	-3.699		-1.555	-.263	
		1.500	5.072	.104		-1.555	-1.429	
		1.500			-.133			.495
	MAX							
	2	.000			-.064			4.446

REPOSICION 303+200. 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	15.950	-4.611		-.615	.724	
		.750	15.950	-1.509		-.615	-.154	
		1.500	15.950	1.593		-.615	-.731	
		1.500			-.064			4.446
	MIN							
	2	.000			-.072			-2.967
		.000	4.136	-8.787		-1.307	.423	
		.750	4.136	-4.381		-1.307	-.233	
		1.500	4.136	-.181		-1.307	-1.181	
		1.500			-.072			-2.967
	MAX							
	3	.000			-.058			4.347
		.000	15.950	-4.610		-.542	.665	
		.750	15.950	-1.508		-.542	-.159	
		1.500	15.950	1.594		-.542	-.682	
		1.500			-.058			4.347
	MIN							
	3	.000			-.066			-3.066
		.000	4.136	-8.786		-1.235	.364	
		.750	4.136	-4.380		-1.235	-.238	
		1.500	4.136	-.180		-1.235	-1.131	
		1.500			-.066			-3.066
	MAX							
	4	.000			-.062			6.846
		.000	23.202	-2.670		-.350	.828	
		.750	23.202	-.036		-.350	-.129	
		1.500	23.202	2.598		-.350	-.585	
		1.500			-.062			6.846
	MIN							
	4	.000			-.075			-5.508
		.000	3.511	-9.630		-1.504	.327	
		.750	3.511	-4.822		-1.504	-.260	
		1.500	3.511	-.360		-1.504	-1.334	
		1.500			-.075			-5.508
	MAX & MIN							
	5	.000			-.009			.439
		.000	5.121	-7.976		.043	-.039	
		.750	5.121	-4.135		.043	-.007	
		1.500	5.121	-.294		.043	.025	
		1.500			-.009			.439
	MAX & MIN							
	6	.000			.002			.381
		.000	5.073	-7.538		-.009	.008	
		.750	5.073	-3.733		-.009	.001	
		1.500	5.073	.072		-.009	-.005	
		1.500			.002			.381
	MAX							
	ALL	.000			.002			6.846
		.000	23.202	-2.670		.043	.903	
		.750	23.202	-.036		.043	.001	
		1.500	23.202	2.598		.043	.025	

REPOSICION 303+200. 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		1.500			.002			6.846
	MIN							
	ALL	.000			-.133			-5.508
		.000	3.511	-9.630		-1.555	-.039	
		.750	3.511	-4.822		-1.555	-.263	
		1.500	3.511	-.360		-1.555	-1.429	
		1.500			-.133			-5.508
169	----------							
	MAX & MIN							
	1	.000			-.130			.823
		.000	5.606	-8.026		-1.274	.732	
		.750	5.606	-3.821		-1.274	-.223	
		1.500	5.606	.384		-1.274	-1.178	
		1.500			-.130			.823
	MAX							
	2	.000			-.067			4.769
		.000	16.609	-5.406		-.481	.655	
		.750	16.609	-1.812		-.481	-.129	
		1.500	16.609	1.781		-.481	-.603	
		1.500			-.067			4.769
	MIN							
	2	.000			-.087			-2.508
		.000	4.791	-9.367		-1.150	.345	
		.750	4.791	-4.517		-1.150	-.186	
		1.500	4.791	.120		-1.150	-1.017	
		1.500			-.087			-2.508
	MAX							
	3	.000			-.065			4.666
		.000	16.606	-5.398		-.426	.612	
		.750	16.606	-1.808		-.426	-.131	
		1.500	16.606	1.783		-.426	-.563	
		1.500			-.065			4.666
	MIN							
	3	.000			-.084			-2.611
		.000	4.787	-9.359		-1.095	.302	
		.750	4.787	-4.512		-1.095	-.188	
		1.500	4.787	.123		-1.095	-.977	
		1.500			-.084			-2.611
	MAX							
	4	.000			-.061			7.150
		.000	23.930	-3.620		-.225	.764	
		.750	23.930	-.445		-.225	-.110	
		1.500	23.930	2.730		-.225	-.467	
		1.500			-.061			7.150
	MIN							
	4	.000			-.093			-4.978
		.000	4.233	-10.221		-1.340	.247	
		.750	4.233	-4.952		-1.340	-.205	
		1.500	4.233	-.037		-1.340	-1.157	
		1.500			-.093			-4.978

REPOSICION 303+200. 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	MAX & MIN							
	5	.000			-.011			1.000
		.000	5.748	-8.628		.069	-.057	
		.750	5.748	-4.316		.069	-.005	
		1.500	5.748	-.005		.069	.046	
		1.500			-.011			1.000
	MAX & MIN							
	6	.000			.002			.723
		.000	5.611	-8.097		-.015	.012	
		.750	5.611	-3.889		-.015	.001	
		1.500	5.611	.320		-.015	-.010	
		1.500			.002			.723
	MAX							
	ALL	.000			.002			7.150
		.000	23.930	-3.620		.069	.764	
		.750	23.930	-.445		.069	.001	
		1.500	23.930	2.730		.069	.046	
		1.500			.002			7.150
	MIN							
	ALL	.000			-.130			-4.978
		.000	4.233	-10.221		-1.340	-.057	
		.750	4.233	-4.952		-1.340	-.225	
		1.500	4.233	-.037		-1.340	-1.178	
		1.500			-.130			-4.978
170	----------							
	MAX & MIN							
	1	.000			-.053			.220
		.000	7.168	-7.232		-1.060	.603	
		.750	7.168	-1.856		-1.060	-.193	
		1.500	7.168	3.520		-1.060	-.988	
		1.500			-.053			.220
	MAX							
	2	.000			.091			4.031
		.000	18.919	-4.895		-.476	.434	
		.750	18.709	.343		-.476	-.118	
		1.500	18.499	5.424		-.476	-.534	
		1.500			.091			4.031
	MIN							
	2	.000			-.232			-3.123
		.000	7.089	-8.684		-.814	.295	
		.750	6.879	-2.365		-.814	-.165	
		1.500	6.669	3.493		-.814	-.744	
		1.500			-.232			-3.123
	MAX							
	3	.000			.103			3.929
		.000	18.757	-4.816		-.437	.400	
		.750	18.631	.332		-.437	-.122	
		1.500	18.505	5.386		-.437	-.508	
		1.500			.103			3.929
	MIN							
	3	.000			-.220			-3.226

REPOSICION 303+200. 3 VANOS 13+17+13 FILE:303200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	6.927	-8.605		-.775	.261	
		.750	6.801	-2.576		-.775	-.166	
		1.500	6.675	3.455		-.775	-.718	
		1.500			-.220			-3.226
	MAX							
	4	.000			.213			6.326
		.000	26.312	-3.093		-.345	.478	
		.750	26.186	1.806		-.345	-.105	
		1.500	26.060	6.610		-.345	-.461	
		1.500			.213			6.326
	MIN							
	4	.000			-.326			-5.598
		.000	6.595	-9.407		-.908	.247	
		.750	6.469	-2.708		-.908	-.179	
		1.500	6.343	3.393		-.908	-.812	
		1.500			-.326			-5.598
	MAX & MIN							
	5	.000			.000			.780
		.000	8.395	-8.225		.063	-.015	
		.750	8.395	-1.929		.063	.032	
		1.500	8.395	4.368		.063	.079	
		1.500			.000			.780
	MAX & MIN							
	6	.000			.000			.161
		.000	7.208	-7.357		-.013	.003	
		.750	7.208	-1.951		-.013	-.007	
		1.500	7.208	3.455		-.013	-.017	
		1.500			.000			.161
	MAX							
	ALL	.000			.213			6.326
		.000	26.312	-3.093		.063	.603	
		.750	26.186	1.806		.063	.032	
		1.500	26.060	6.610		.063	.079	
		1.500			.213			6.326
	MIN							
	ALL	.000			-.326			-5.598
		.000	6.595	-9.407		-1.060	-.015	
		.750	6.469	-2.708		-1.060	-.193	
		1.500	6.343	3.393		-1.060	-.988	
		1.500			-.326			-5.598
171	----------							
	MAX & MIN							
	1	.000			-.129			-.504
		.000	5.666	-8.324		-.871	.521	
		.750	5.666	-4.074		-.871	-.133	
		1.500	5.666	.176		-.871	-.786	
		1.500			-.129			-.504
	MAX							
	2	.000			-.082			3.171
		.000	17.039	-5.898		-.405	.298	
		.750	16.829	-2.051		-.405	-.085	

REPOSICION 304+200, 3 VANOS 12+1/+13 FILE:30200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD	DIST	1-2 PLANE		AXIAL	1-3 PLANE		AXIAL
ID ENVE	ENDI	SHEAR	MOMENT	FORCE	SHEAR	MOMENT	TORQ
MIN							
ALL	.000	6,530	-10,635	-.129	-.821	-.634	-6,432
	.750	4,404	-5,190		-.841	-.135	
	1,500	4,278	-,211		-.821	-,946	
	1,500			-.129			-6,432
MAX & MIN							
1	.000			-.135			-,055
	.000	5,136	-8,580		-,388	,149	
	.750	5,136	-4,512		-,388	-,092	
	1,500	5,136	-,446		-,388	-,532	
	1,500			-,135			-,055
MAI							
2	.000			-,097			3,540
	.000	16,424	-9,769		-,178	,155	
	.750	16,214	-2,379		-,178	-,042	
	1,500	16,004	,834	-,097	-,178	-,200	
	1,500						3,540
MIN							
2	.000	6,625	-9,846		-,326	,046	-3,326
	.000	6,415	-5,167		-,326	-,085	
	.750	6,205	-,681		-,326	-,322	
	1,500			-,108			-3,326
MAI							
3	.000			-,112			3,485
	.000	16,269	-9,723		-,109	,091	
	.750	16,143	-2,418		-,109	-,073	
	1,500	16,017	,793		-,109	-,158	
	1,500			-,112			3,485
MIN							
3	.000			-,123			-3,432
	.000	6,470	-9,800		-,257	,004	
	.750	6,344	-5,205		-,257	-,095	
	1,500	6,218	-,942		-,257	-,280	
	1,500			-,123			-3,432
MAI							
4	.000			-,093			3,790
	.000	25,523	-13,896		-,130	,179	
	.750	25,397	-1,051		-,130	-,036	
	1,500	25,271	1,700		-,130	-,160	
	1,500			-,093			3,790
MIN							
4	.000			-,112			-3,728
	.000	3,857	-10,492		-,326	,024	
	.750	3,731	-5,697		-,326	-,093	
	1,500	3,605	-1,191		-,326	-,343	
	1,500			-,112			-3,728
MAX & MIN							
5	.000			,009			,000

REPOSICION 304+200, 3 VANOS 12+1/+13 FILE:30200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD	DIST	1-2 PLANE		AXIAL	1-3 PLANE		AXIAL
ID ENVE	ENDI	SHEAR	MOMENT	FORCE	SHEAR	MOMENT	TORQ
MIN							
ALL	.000	10,617	1,659	-,402			3,172
	1,500			-,082			
MAX & MIN							
1	.000			-,102			-3,934
	.000	5,235	-9,817		-,552	,204	
	.750	5,029	-4,713		-,552	-,113	
	1,500	4,815	,010		-,552	-,521	
	1,500			-,102			-3,934
MAI							
2	.000			-,002			5,790
	.000	16,882	-5,838		-,147	,263	
	.750	16,736	-2,027		-,147	-,090	
	1,500	16,590	1,369		-,147	-,389	
	1,500			-,088			5,790
MIN							
2	.000			-,110			-4,014
	.000	5,978	-9,757		-,514	,170	
	.750	4,952	-4,740		-,514	-,118	
	1,500	4,826	-,040		-,514	-,498	
	1,500			-,110			-4,014
MAI							
3	.000			-,075			5,411
	.000	24,204	-4,103		-,339	,025	
	.750	24,078	-,754		-,339	-,077	
	1,500	23,952	2,905		-,339	-,385	
	1,500			-,075			5,411
MIN							
3	.000			-,111			-6,431
	.000	6,550	-10,635		-,603	,166	
	.750	6,404	-5,190		-,603	-,124	
	1,500	6,278	-,211		-,603	-,546	
	1,500			-,111			-6,431
MAX & MIN							
3	.000			-,011			-,516
	.000	7,054	-10,310		-,067	-,054	
	.750	7,054	-4,818		-,067	-,004	
	1,500	7,054	,474		-,067	,046	
	1,500			-,011			-,516
MAX & MIN							
6	.000			-,002			-,522
	.000	5,672	-8,594		-,014	,011	
	.750	5,672	-4,140		-,014	,001	
	1,500	5,672	,113		-,014	-,010	
	1,500			-,002			-,522
MAI							
ALL	.000	24,204	-4,103	,011			5,411
	.000	24,204	-4,103	,067	,521		
	.750	24,078	-,754	,067	,001		
	1,500	23,952	2,303	,011	,067	,046	5,411

REPOSICION 304+200, 3 VANOS 12+1/+13 FILE:30200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD	DIST	1-2 PLANE		AXIAL	1-3 PLANE		AXIAL
ID ENVE	ENDI	SHEAR	MOMENT	FORCE	SHEAR	MOMENT	TORQ
MIN							
ALL	.000	10,617	1,659	-,402			3,172
	1,500			-,082			
MAX & MIN							
1	.000			-,102			-3,934
	.000	5,235	-9,817		-,552	,204	
	.750	5,029	-4,713		-,552	-,113	
	1,500	4,815	,010		-,552	-,521	
	1,500			-,102			-3,934
MAI							
2	.000			-,002			5,790
	.000	16,882	-5,838		-,147	,263	
	.750	16,736	-2,027		-,147	-,090	
	1,500	16,590	1,369		-,147	-,389	
	1,500			-,088			5,790
MIN							
2	.000			-,110			-4,014
	.000	5,978	-9,757		-,514	,170	
	.750	4,952	-4,740		-,514	-,118	
	1,500	4,826	-,040		-,514	-,498	
	1,500			-,110			-4,014
MAI							
3	.000			-,075			5,411
	.000	24,204	-4,103		-,339	,025	
	.750	24,078	-,754		-,339	-,077	
	1,500	23,952	2,303		-,339	-,385	
	1,500			-,075			5,411
MIN							
3	.000			-,111			-6,431
	.000	6,550	-10,635		-,603	,166	
	.750	6,404	-5,190		-,603	-,124	
	1,500	6,278	-,211		-,603	-,546	
	1,500			-,111			-6,431
MAX & MIN							
3	.000			-,011			-,516
	.000	7,054	-10,310		-,067	-,054	
	.750	7,054	-4,818		-,067	-,004	
	1,500	7,054	,474		-,067	,046	
	1,500			-,011			-,516
MAX & MIN							
6	.000			-,002			-,522
	.000	5,672	-8,594		-,014	,011	
	.750	5,672	-4,140		-,014	,001	
	1,500	5,672	,113		-,014	-,010	
	1,500			-,002			-,522
MAI							
ALL	.000	24,204	-4,103	,011			5,411
	.000	24,204	-4,103	,067	,521		
	.750	24,078	-,754	,067	,001		
	1,500	23,952	2,303	,011	,067	,046	5,411

REPOSICION 304+200, 3 VANOS 12+1/+13 FILE:30200

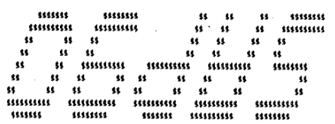
FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD	DIST	1-2 PLANE		AXIAL	1-3 PLANE		AXIAL
ID ENVE	ENDI	SHEAR	MOMENT	FORCE	SHEAR	MOMENT	TORQ
1/2 ----------							
MAX & MIN							
1	.000			-,135			-5,728
	.000	3,605	-,194		-,588	-,533	
	.750	5,731	-4,492		-,588	-,095	
	1,500	3,857	-10,692		-,588	-,026	
	1,500			-,135			-5,728
MIN							
ALL	.000			-,154			,025
MAI & MIN							
1	.000			-,154			,025
	.000	5,100	-8,206	-,293	,173		
	.750	5,100	-4,381	-,293	-,047		
	1,500	5,100	-,556	-,293	-,267		
	1,500			-,134			,025
MAI							
2	.000			-,105			3,436
	.000	16,356	-5,479	,060	,007		
	.750	16,146	-2,141	,060	-,028		
	1,500	15,936	1,059	,060	,016		
	1,500			-,105			3,436
MIN							
2	.000			-,111			-3,235
	.000	6,355	-9,641	-,088	-,074		
	.750	6,245	-5,046	-,088	-,021		
	1,500	6,135	-,744	-,088	-,168		
	1,500			-,111			-3,235
MAX							
3	.000			-,124			3,430
	.000	16,201	-9,438	,171	-,084		
	.750	16,075	-2,185	,171	-,025		
	1,500	15,949	,973	,171	,093		
	1,500			-,124			3,430
MIN							
3	.000			-,127			-3,281
	.000	6,400	-9,600	,031	-,144		
	.750	4,274	-5,051	,031	-,058		
	1,500						

REPOSICION 304+200, 3 VANOS 12+1/+13 FILE:30200

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD	DIST	1-2 PLANE		AXIAL	1-3 PLANE		AXIAL
ID ENVE	ENDI	SHEAR	MOMENT	FORCE	SHEAR	MOMENT	TORQ
MIN							
ALL	.000	6,531	-10,174	-,082			3,172
	1,500			-,082			
MAX & MIN							
1	.000			-,102			-3,934
	.000	5,235	-9,817		-,552	,204	
	.750	5,029	-4,713		-,552	-,113	
	1,500	4,815	,010		-,552	-,521	
	1,500			-,102			-3,934
MAI							
2	.000			-,002			5,790
	.000	16,882	-5,838		-,147	,263	
	.750	16,736	-2,027		-,147	-,090	
	1,500	16,590	1,369		-,147	-,389	
	1,500			-,088			5,790
MIN							
2	.000			-,110			-4,014
	.000	5,978	-9,757		-,514	,170	
	.750	4,952	-4,740		-,514	-,118	
	1,500	4,826	-,040		-,514	-,498	
	1,500			-,110			-4,014
MAI							
3	.000			-,075			5,411
	.000	24,204	-4,103		-,339	,025	
	.750	24,078	-,754		-,339	-,077	
	1,500	23,952	2,303		-,339	-,385	
	1,500			-,075			5,411
MIN							
3	.000			-,111			-6,431
	.000	6,550	-10,635		-,603	,166	
	.750	6,404	-5,190		-,603	-,124	
	1,500	6,278	-,211		-,603	-,546	
	1,500			-,111			-6,431
MAX & MIN							
5	.000			-,011			-,516
	.000	7,054	-10,310		-,067	-,054	
	.750	7,054	-4,818		-,067	-,004	
	1,500	7,054	,474		-,067	,046	
	1,500			-,011			-,516
MAX & MIN							
6	.000			-,002			-,522
	.000	5,672	-8,594		-,014	,011	
	.750	5,672	-4,140		-,014	,001	
	1,500	5,672	,113		-,014	-,010	
	1,500			-,002			-,522
MAI							
ALL	.000	24,204	-4,103	,011			5,411
	.000	24,204	-4,103	,067	,521		
	.750	24,078	-,754	,067	,001		
	1,500	23,952	2,303	,011	,067	,046	5,411



SHUCTUBUL ANALYSIS PROGRAMS

VERSION 5.40

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C S I / S A P 9 0 - - FINITE ELEMENT ANALYSIS OF STRUCTURES PAGE 1
PROGRAM:SAP90/FILE:303200.SOL
REPOSICION 303+200, 3 VANOS 13+17+13 FILE:303200

J O I N T   D I S P L A C E M E N T S

LOAD CONDITION 1 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
1	-.3306E-06	-.1372E-08	-.1620E-03	-.2380E-03	.7853E-03	.4734E-08
2	-.000000	.000000	-.001934	-.000105	.000624	.000000
3	-.000000	.000000	-.002929	-.000025	.000230	.000000
4	-.000000	.000000	-.003002	.000020	-.000177	.000000
5	-.000000	.000000	-.002315	.000052	-.000434	.000000
6	-.000000	.000000	-.001391	.000083	-.000363	.000000
7	-.000000	.000000	-.001136	.000111	.000182	.000000
8	-.000000	.000000	-.002187	.000092	.000732	.000000
9	-.000000	.000000	-.003899	.000072	.000786	.000000
10	.000000	.000000	-.005312	.000061	.000481	.000000
11	.000000	.000000	-.005847	.000058	.000000	.000000
22	-.3417E-06	-.9800E-09	-.5288E-03	-.1499E-03	.7554E-03	.2857E-08
23	-.000000	.000000	-.002052	-.000055	.000588	.000000
24	-.000000	.000000	-.002949	-.000012	.000217	.000000
25	-.000000	.000000	-.002972	.000009	-.000183	.000000
26	-.000000	.000000	-.002247	.000026	-.000439	.000000
27	-.000000	.000000	-.001276	.000056	-.000371	.000000
28	-.3276E-06	.8205E-11	-.9533E-03	.1104E-03	.1799E-03	.2835E-07
29	-.000000	.000000	-.002062	.000060	.000738	.000000
30	-.000000	.000000	-.003810	.000034	.000787	.000000
31	.000000	.000000	-.005238	.000025	.000481	.000000
32	.000000	.000000	-.005777	.000023	.000000	.000000
43	-.3449E-06	.0000E+00	-.6618E-03	.0000E+00	.7217E-03	.0000E+00
44	-.000000	.000000	-.002095	.000000	.000571	.000000
45	-.000000	.000000	-.002957	.000000	.000210	.000000
46	-.000000	.000000	-.002964	.000000	-.000186	.000000
47	-.000000	.000000	-.002226	.000000	-.000442	.000000
48	-.000000	.000000	-.001224	.000000	-.000390	.000000
49	-.4456E-06	.0000E+00	-.7891E-03	.0000E+00	.1735E-03	.0000E+00
50	-.000000	.000000	-.002006	.000000	.000757	.000000
51	-.000000	.000000	-.003782	.000000	.000790	.000000
52	.000000	.000000	-.005217	.000000	.000482	.000000
53	.000000	.000000	-.005758	.000000	.000000	.000000
64	-.3417E-06	.9800E-09	-.5288E-03	.1499E-03	.7554E-03	-.2857E-08
65	-.000000	.000000	-.002052	.000055	.000588	.000000
66	-.000000	.000000	-.002949	.000012	.000217	.000000
67	-.000000	.000000	-.002972	-.000009	-.000183	.000000
68	-.000000	.000000	-.002247	-.000026	-.000439	.000000
69	-.000000	.000000	-.001276	-.000056	-.000371	.000000
70	-.3276E-06	-.8205E-11	-.9533E-03	-.1104E-03	.1799E-03	-.2835E-07
71	-.000000	.000000	-.002062	-.000060	.000738	.000000
72	-.000000	.000000	-.003810	-.000034	.000787	.000000
73	.000000	.000000	-.005238	-.000025	.000481	.000000
74	.000000	.000000	-.005777	-.000023	.000000	.000000
85	-.3306E-06	.1372E-08	-.1620E-03	.2380E-03	.7853E-03	-.4734E-08
86	-.000000	.000000	-.001934	.000105	.000624	.000000
87	-.000000	.000000	-.002929	.000025	.000230	.000000
88	-.000000	.000000	-.003002	-.000020	-.000177	.000000
89	-.000000	.000000	-.002315	-.000052	-.000434	.000000
90	-.000000	.000000	-.001391	-.000083	-.000363	.000000

C S I / S A P 9 0 - - FINITE ELEMENT ANALYSIS OF STRUCTURES PAGE 2
PROGRAM:SAP90/FILE:303200.SOL
REPOSICION 303+200, 3 VANOS 13+17+13 FILE:303200

J O I N T   D I S P L A C E M E N T S

LOAD CONDITION 1 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
91	-.000000	.000000	-.001136	-.000111	.000182	.000000
92	-.000000	.000000	-.002187	-.000092	.000732	.000000
93	-.000000	.000000	-.003899	-.000072	.000786	.000000
94	.000000	.000000	-.005312	-.000061	.000481	.000000
95	.000000	.000000	-.005847	-.000058	.000000	.000000

C S I / S A P 9 0 - - FINITE ELEMENT ANALYSIS OF STRUCTURES PAGE 3
PROGRAM:SAP90/FILE:303200.SOL
REPOSICION 303+200, 3 VANOS 13+17+13 FILE:303200

J O I N T   D I S P L A C E M E N T S

LOAD CONDITION 2 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
1	-.2298E-07	-.9541E-10	-.1163E-04	-.1433E-04	.5722E-04	.3292E-09
2	-.2338E-07	.9023E-11	-.1406E-03	-.4144E-05	.4534E-04	.1512E-09
3	-.2350E-07	-.1431E-10	-.2131E-03	.1837E-05	.1697E-04	.1349E-09
4	-.2336E-07	-.5405E-10	-.2194E-03	.5200E-05	-.1227E-04	.2177E-09
5	-.2281E-07	-.1225E-09	-.1709E-03	.7554E-05	-.3082E-04	.4305E-09
6	-.2153E-07	-.2061E-09	-.1053E-03	.9837E-05	-.2576E-04	.8830E-09
7	-.1908E-07	.1316E-11	-.8760E-04	.1181E-04	.1325E-04	.1593E-08
8	-.1556E-07	.2132E-09	-.1635E-03	.1050E-04	.5271E-04	.8741E-09
9	-.1092E-07	.1339E-09	-.2866E-03	.9074E-05	.5653E-04	.4079E-09
10	-.5600E-08	.7482E-10	-.3882E-03	.8294E-05	.3460E-04	.1598E-09
11	.0000E+00	.5733E-10	-.4267E-03	.8056E-05	.0000E+00	.0000E+00
22	-.2376E-07	-.6814E-10	-.3432E-04	-.9072E-05	.5469E-04	.1987E-09
23	-.2382E-07	.4796E-11	-.1446E-03	-.2434E-05	.4264E-04	.9657E-10
24	-.2393E-07	-.9719E-11	-.2099E-03	.6291E-06	.1601E-04	.9368E-10
25	-.2403E-07	-.3598E-10	-.2125E-03	.2154E-05	-.1273E-04	.1626E-09
26	-.2409E-07	-.8438E-10	-.1613E-03	.3390E-05	-.3112E-04	.3500E-09
27	-.2391E-07	-.1561E-09	-.9227E-04	.5511E-05	-.2632E-04	.8216E-09
28	-.2278E-07	.0000E+00	-.6966E-04	.9437E-05	.1313E-04	.1971E-08
29	-.1793E-07	.1610E-09	-.1496E-03	.5829E-05	.5312E-04	.8241E-09
30	-.1213E-07	.9197E-10	-.2754E-03	.3984E-05	.5658E-04	.3379E-09
31	-.6091E-08	.4929E-10	-.3780E-03	.3357E-05	.3458E-04	.1239E-09
32	.0000E+00	.3720E-10	-.4168E-03	.3204E-05	.0000E+00	.0000E+00
43	-.2390E-07	.0000E+00	-.4250E-04	.0000E+00	.5223E-04	.0000E+00
44	-.2400E-07	.0000E+00	-.1464E-03	.0000E+00	.4142E-04	.0000E+00
45	-.2415E-07	.0000E+00	-.2093E-03	.0000E+00	.1554E-04	.0000E+00
46	-.2448E-07	.0000E+00	-.2107E-03	.0000E+00	-.1298E-04	.0000E+00
47	-.2518E-07	.0000E+00	-.1585E-03	.0000E+00	-.3140E-04	.0000E+00
48	-.2680E-07	.0000E+00	-.8732E-04	.0000E+00	-.2768E-04	.0000E+00
49	-.3098E-07	.0000E+00	-.5663E-04	.0000E+00	.1266E-04	.0000E+00
50	-.2083E-07	.0000E+00	-.1443E-03	.0000E+00	.5450E-04	.0000E+00
51	-.1319E-07	.0000E+00	-.2721E-03	.0000E+00	.5677E-04	.0000E+00
52	-.6450E-08	.0000E+00	-.3753E-03	.0000E+00	.3462E-04	.0000E+00
53	.0000E+00	.0000E+00	-.4141E-03	.0000E+00	.0000E+00	.0000E+00
64	-.2376E-07	.6814E-10	-.3432E-04	.9072E-05	.5469E-04	-.1987E-09
65	-.2382E-07	-.4796E-11	-.1446E-03	.2434E-05	.4264E-04	-.9657E-10
66	-.2393E-07	.9719E-11	-.2099E-03	-.6291E-06	.1601E-04	-.9368E-10
67	-.2403E-07	.3598E-10	-.2125E-03	-.2154E-05	-.1273E-04	-.1626E-09
68	-.2409E-07	.8438E-10	-.1613E-03	-.3390E-05	-.3112E-04	-.3500E-09
69	-.2391E-07	.1561E-09	-.9227E-04	-.5511E-05	-.2632E-04	-.8216E-09
70	-.2278E-07	.0000E+00	-.6966E-04	-.9437E-05	.1313E-04	-.1971E-08
71	-.1793E-07	-.1610E-09	-.1496E-03	-.5829E-05	.5312E-04	-.8241E-09
72	-.1213E-07	-.9197E-10	-.2754E-03	-.3984E-05	.5658E-04	-.3379E-09
73	-.6091E-08	-.4929E-10	-.3780E-03	-.3357E-05	.3458E-04	-.1239E-09
74	.0000E+00	-.3720E-10	-.4168E-03	-.3204E-05	.0000E+00	.0000E+00
85	-.2278E-07	.9541E-10	-.1163E-04	.1433E-04	.5722E-04	-.3292E-09
86	-.2338E-07	-.9023E-11	-.1406E-03	.4144E-05	.4534E-04	-.1512E-09
87	-.2350E-07	.1431E-10	-.2131E-03	-.1837E-05	.1697E-04	-.1349E-09
88	-.2336E-07	.5405E-10	-.2194E-03	-.5200E-05	-.1227E-04	-.2177E-09
89	-.2281E-07	.1225E-09	-.1709E-03	-.7554E-05	-.3082E-04	-.4305E-09
90	-.2153E-07	.2061E-09	-.1053E-03	-.9837E-05	-.2576E-04	-.8830E-09

C S I / S A P 9 0 - - FINITE ELEMENT ANALYSIS OF STRUCTURES PAGE 4
PROGRAM:SAP90/FILE:303200.SOL
REPOSICION 303+200, 3 VANOS 13+17+13 FILE:303200

J O I N T   D I S P L A C E M E N T S

LOAD CONDITION 2 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
91	-.1908E-07	-.1316E-11	-.8760E-04	-.1181E-04	.1325E-04	-.1593E-08
92	-.1556E-07	-.2132E-09	-.1635E-03	-.1050E-04	.5271E-04	-.8741E-09
93	-.1092E-07	-.1339E-09	-.2866E-03	-.9074E-05	.5653E-04	-.4079E-09
94	-.5600E-08	-.7482E-10	-.3882E-03	-.8294E-05	.3460E-04	-.1598E-09
95	.0000E+00	-.5733E-10	-.4267E-03	-.8056E-05	.0000E+00	.0000E+00

REPOSICION 303+200. 3 VANOS 13+17+13 FILE:303200

J O I N T   D I S P L A C E M E N T S

LOAD CONDITION 3 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
1	-.7788E-07	-.3234E-09	-.4349E-04	-.2381E-04	.2228E-03	.1115E-08
2	-.7922E-07	.3057E-10	-.5441E-03	.2134E-04	.1749E-03	.5122E-09
3	-.7964E-07	-.4848E-10	-.8270E-03	.4648E-04	.6829E-04	.4572E-09
4	-.7916E-07	-.1832E-09	-.8611E-03	.6020E-04	-.4136E-04	.7378E-09
5	-.7729E-07	-.4150E-09	-.6893E-03	.6952E-04	-.1112E-03	.1459E-08
6	-.7295E-07	-.6983E-09	-.4523E-03	.7837E-04	-.9300E-04	.2992E-08
7	-.6464E-07	.4461E-11	-.3923E-03	.8606E-04	.5185E-04	.5398E-08
8	-.5272E-07	.7226E-09	-.6802E-03	.8141E-04	.1985E-03	.2962E-08
9	.000000	.000000	-.001143	.000076	.000212	.000000
10	.000000	.000000	-.001524	.000073	.000130	.000000
11	.000000	.000000	-.001669	.000072	.000000	.000000
22	-.8050E-07	-.2509E-09	-.8913E-04	-.1592E-04	.2091E-03	.6732E-09
23	-.8073E-07	.1625E-10	-.5108E-03	.6916E-05	.1640E-03	.3273E-09
24	-.8108E-07	-.3293E-10	-.7649E-03	.1806E-04	.6446E-04	.3175E-09
25	-.8143E-07	-.1219E-09	-.7843E-03	.2380E-04	-.4521E-04	.5509E-09
26	-.8163E-07	-.2859E-09	-.6018E-03	.2851E-04	-.1124E-03	.1186E-08
27	-.8103E-07	-.5289E-09	-.3516E-03	.3651E-04	-.9516E-04	.2784E-08
28	-.7718E-07	.1953E-11	-.2731E-03	.5127E-04	.5130E-04	.6678E-08
29	-.6075E-07	.5455E-09	-.3759E-03	.3791E-04	.2000E-03	.2792E-08
30	.000000	.000000	-.001048	.000031	.000212	.000000
31	.000000	.000000	-.001434	.000029	.000130	.000000
32	.000000	.000000	-.001579	.000028	.000000	.000000
43	-.8125E-07	.0000E+00	-.1053E-03	.0000E+00	.1997E-03	.0000E+00
44	-.8134E-07	.0000E+00	-.5046E-03	.0000E+00	.1597E-03	.0000E+00
45	-.8185E-07	.0000E+00	-.7496E-03	.0000E+00	.6273E-04	.0000E+00
46	-.8295E-07	.0000E+00	-.7646E-03	.0000E+00	-.4415E-04	.0000E+00
47	-.8531E-07	.0000E+00	-.5785E-03	.0000E+00	-.1135E-03	.0000E+00
48	-.9001E-07	.0000E+00	-.3202E-03	.0000E+00	-.1003E-03	.0000E+00
49	-.1050E-06	.0000E+00	-.2113E-03	.0000E+00	.4946E-04	.0000E+00
50	-.7059E-07	.0000E+00	-.5430E-03	.0000E+00	.2032E-03	.0000E+00
51	.000000	.000000	-.001023	.000000	.000213	.000000
52	.000000	.000000	-.001410	.000000	.000130	.000000
53	.000000	.000000	-.001556	.000000	.000000	.000000
64	-.8050E-07	.2509E-09	-.8913E-04	.1592E-04	.2091E-03	-.6732E-09
65	-.8073E-07	-.1625E-10	-.5108E-03	-.6916E-05	.1640E-03	-.3273E-09
66	-.8108E-07	.3293E-10	-.7649E-03	-.1806E-04	.6446E-04	-.3175E-09
67	-.8143E-07	.1219E-09	-.7843E-03	-.2380E-04	-.4521E-04	-.5509E-09
68	-.8163E-07	.2859E-09	-.6018E-03	-.2851E-04	-.1124E-03	-.1186E-08
69	-.8103E-07	.5289E-09	-.3516E-03	-.3651E-04	-.9516E-04	-.2784E-08
70	-.7718E-07	-.1953E-11	-.2731E-03	-.5127E-04	.5130E-04	-.6678E-08
71	-.6075E-07	-.5455E-09	-.3759E-03	-.3791E-04	.2000E-03	-.2792E-08
72	.000000	.000000	-.001048	-.000031	.000212	.000000
73	.000000	.000000	-.001434	-.000029	.000130	.000000
74	.000000	.000000	-.001579	-.000028	.000000	.000000
85	-.7788E-07	.3234E-09	-.4349E-04	.2381E-04	.2228E-03	-.1115E-08
86	-.7922E-07	-.3057E-10	-.5441E-03	-.2134E-04	.1749E-03	-.5122E-09
87	-.7964E-07	.4848E-10	-.8270E-03	-.4648E-04	.6829E-04	-.4572E-09
88	-.7916E-07	.1832E-09	-.8611E-03	-.6020E-04	-.4136E-04	-.7378E-09
89	-.7729E-07	.4150E-09	-.6893E-03	-.6952E-04	-.1112E-03	-.1459E-08
90	-.7295E-07	.6983E-09	-.4523E-03	-.7837E-04	-.9300E-04	-.2992E-08

REPOSICION 303+200. 3 VANOS 13+17+13 FILE:303200

J O I N T   D I S P L A C E M E N T S

LOAD CONDITION 3 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
91	-.6464E-07	-.4461E-11	-.3923E-03	-.8606E-04	.5185E-04	-.5398E-08
92	-.5272E-07	-.7226E-09	-.6802E-03	-.8141E-04	.1985E-03	-.2962E-08
93	.000000	.000000	-.001143	-.000076	.000212	.000000
94	.000000	.000000	-.001524	-.000073	.000130	.000000
95	.000000	.000000	-.001669	-.000072	.000000	.000000

REPOSICION 303+200. 3 VANOS 13+17+13 FILE:303200

J O I N T   D I S P L A C E M E N T S

LOAD CONDITION 4 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
1	.1150E-03	.3726E-03	.4558E-05	-.1404E-05	-.4620E-05	.4276E-04
2	.1150E-03	.4744E-03	.2328E-04	-.7228E-05	-.4991E-05	.4180E-04
3	.1112E-03	.5701E-03	.3920E-04	-.1276E-04	-.4545E-05	.3993E-04
4	.1042E-03	.6599E-03	.5467E-04	-.1794E-04	-.4541E-05	.3719E-04
5	.9438E-04	.7419E-03	.7005E-04	-.2280E-04	-.4555E-05	.3354E-04
6	.8227E-04	.8141E-03	.8503E-04	-.2710E-04	-.4338E-05	.2914E-04
7	.6828E-04	.8754E-03	.9705E-04	-.3026E-04	-.2282E-05	.2420E-04
8	.5271E-04	.9250E-03	.1005E-03	-.3225E-04	-.2026E-06	.1874E-04
9	.3587E-04	.9614E-03	.1010E-03	-.3313E-04	.1944E-07	.1275E-04
10	.1815E-04	.9835E-03	.1011E-03	-.3346E-04	.7483E-08	.6448E-05
11	.0000E+00	.9910E-03	.1011E-03	-.3354E-04	.0000E+00	.0000E+00
22	.5666E-04	.3749E-03	.3625E-05	-.2784E-05	-.3527E-05	.4194E-04
23	.5648E-04	.4740E-03	.1205E-04	-.7914E-05	-.2927E-05	.4122E-04
24	.5464E-04	.5696E-03	.1979E-04	-.1313E-04	-.2814E-05	.3957E-04
25	.5124E-04	.6594E-03	.2751E-04	-.1829E-04	-.2845E-05	.3688E-04
26	.4646E-04	.7414E-03	.3538E-04	-.2344E-04	-.2915E-05	.3327E-04
27	.4053E-04	.8136E-03	.4344E-04	-.2838E-04	-.2893E-05	.2891E-04
28	.3363E-04	.8748E-03	.5049E-04	-.3209E-04	-.1422E-05	.2401E-04
29	.2596E-04	.9245E-03	.5119E-04	-.3353E-04	.6692E-07	.1860E-04
30	.1766E-04	.9609E-03	.5083E-04	-.3374E-04	.9438E-07	.1265E-04
31	.8939E-05	.9830E-03	.5067E-04	-.3374E-04	.3018E-07	.6397E-05
32	.0000E+00	.9905E-03	.5063E-04	-.3373E-04	.0000E+00	.0000E+00
43	-.2626E-07	.3757E-03	-.1038E-10	-.3877E-05	.3304E-10	.4171E-04
44	-.1926E-07	.4738E-03	-.7960E-10	-.8187E-05	.3047E-10	.4084E-04
45	-.1159E-07	.5694E-03	-.1377E-09	-.1323E-04	.2244E-10	.3929E-04
46	-.7113E-08	.6592E-03	-.1728E-09	-.1838E-04	.8922E-11	.3664E-04
47	-.4691E-08	.7411E-03	-.1751E-09	-.2368E-04	-.9968E-11	.3307E-04
48	-.3371E-08	.8134E-03	-.1274E-09	-.2935E-04	-.3391E-10	.2873E-04
49	-.2526E-08	.8745E-03	-.2200E-10	-.3647E-04	-.7090E-10	.2382E-04
50	-.1787E-08	.9243E-03	.1002E-09	-.3451E-04	-.4775E-10	.1849E-04
51	-.1114E-08	.9606E-03	.1858E-09	-.3399E-04	-.3206E-10	.1257E-04
52	-.5352E-09	.9828E-03	.2376E-09	-.3381E-04	-.1606E-10	.6358E-05
53	.0000E+00	.9902E-03	.2548E-09	-.3377E-04	.0000E+00	.0000E+00
64	-.5671E-04	.3746E-03	-.3625E-05	-.2784E-05	.3527E-05	.4190E-04
65	-.5650E-04	.4736E-03	-.1205E-04	-.7914E-05	.2927E-05	.4120E-04
66	-.5465E-04	.5692E-03	-.1979E-04	-.1313E-04	.2814E-05	.3956E-04
67	-.5124E-04	.6591E-03	-.2751E-04	-.1829E-04	.2845E-05	.3687E-04
68	-.4647E-04	.7410E-03	-.3538E-04	-.2344E-04	.2915E-05	.3327E-04
69	-.4053E-04	.8133E-03	-.4345E-04	-.2838E-04	.2892E-05	.2891E-04
70	-.3364E-04	.8745E-03	-.5049E-04	-.3209E-04	.1421E-05	.2400E-04
71	-.2597E-04	.9241E-03	-.5119E-04	-.3353E-04	-.6702E-07	.1860E-04
72	-.1767E-04	.9605E-03	-.5083E-04	-.3374E-04	-.9445E-07	.1265E-04
73	-.8940E-05	.9827E-03	-.5067E-04	-.3374E-04	-.3021E-07	.6397E-05
74	.0000E+00	.9901E-03	-.5063E-04	-.3373E-04	.0000E+00	.0000E+00
85	-.1148E-03	.3719E-03	-.4558E-05	-.1404E-05	.4620E-05	.4224E-04
86	-.1150E-03	.4735E-03	-.2328E-04	-.7228E-05	.4991E-05	.4175E-04
87	-.1112E-03	.5692E-03	-.3920E-04	-.1276E-04	.4545E-05	.3992E-04
88	-.1042E-03	.6590E-03	-.5467E-04	-.1794E-04	.4541E-05	.3719E-04
89	-.9438E-04	.7410E-03	-.7005E-04	-.2280E-04	.4555E-05	.3354E-04
90	-.8227E-04	.8132E-03	-.8503E-04	-.2710E-04	.4338E-05	.2913E-04

REPOSICION 303+200. 3 VANOS 13+17+13 FILE:303200

J O I N T   D I S P L A C E M E N T S

LOAD CONDITION 4 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
91	-.6828E-04	.8744E-03	-.9705E-04	-.3026E-04	.2282E-05	.2420E-04
92	-.5272E-04	.9241E-03	-.1005E-03	-.3225E-04	.2025E-06	.1874E-04
93	-.3587E-04	.9605E-03	-.1010E-03	-.3313E-04	-.1951E-07	.1275E-04
94	-.1815E-04	.9826E-03	-.1011E-03	-.3346E-04	-.7515E-08	.6448E-05
95	.0000E+00	.9900E-03	-.1011E-03	-.3354E-04	.0000E+00	.0000E+00

J O I N T D I S P L A C E M E N T S

LOAD CONDITION 5 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
1	.4476E-05	.1129E-04	.9433E-05	-.2931E-05	-.9558E-05	.1619E-05
2	.4479E-05	.1513E-04	.4820E-04	-.1503E-04	-.1033E-04	.1616E-05
3	.4385E-05	.1884E-04	.8119E-04	-.2660E-04	-.9404E-05	.1572E-05
4	.4147E-05	.2242E-04	.1133E-03	-.3763E-04	-.9381E-05	.1492E-05
5	.3784E-05	.2579E-04	.1454E-03	-.4852E-04	-.9398E-05	.1370E-05
6	.3296E-05	.2884E-04	.1777E-03	-.5946E-04	-.9646E-05	.1200E-05
7	.2688E-05	.3143E-04	.2116E-03	-.7044E-04	-.9718E-05	.9519E-06
8	.2017E-05	.3320E-04	.2423E-03	-.7975E-04	-.8287E-05	.6822E-06
9	.1343E-05	.3441E-04	.2657E-03	-.8690E-04	-.5615E-05	.4492E-06
10	.6713E-06	.3513E-04	.2798E-03	-.9135E-04	-.2805E-05	.2240E-06
11	.0000E+00	.3537E-04	.2845E-03	-.9205E-04	.0000E+00	.0000E+00
22	.2222E-05	.1137E-04	.7486E-05	-.5758E-05	-.7295E-05	.1612E-05
23	.2217E-05	.1513E-04	.2491E-04	-.1637E-04	-.6050E-05	.1598E-05
24	.2157E-05	.1884E-04	.4087E-04	-.2715E-04	-.5799E-05	.1538E-05
25	.2037E-05	.2242E-04	.5672E-04	-.3780E-04	-.5810E-05	.1478E-05
26	.1857E-05	.2579E-04	.7262E-04	-.4846E-04	-.5824E-05	.1357E-05
27	.1618E-05	.2884E-04	.8859E-04	-.5927E-04	-.5919E-05	.1190E-05
28	.1325E-05	.3145E-04	.1050E-03	-.7044E-04	-.6090E-05	.9452E-06
29	.1000E-05	.3320E-04	.1213E-03	-.8050E-04	-.5519E-05	.6777E-06
30	.6687E-06	.3441E-04	.1334E-03	-.8826E-04	-.3559E-05	.4482E-06
31	.3347E-06	.3513E-04	.1406E-03	-.9300E-04	-.1765E-05	.2238E-06
32	.0000E+00	.3537E-04	.1430E-03	-.9459E-04	.0000E+00	.0000E+00
43	.0000E+00	.1140E-04	.0000E+00	-.8007E-05	.0000E+00	.1608E-05
44	.0000E+00	.1513E-04	.0000E+00	-.1692E-04	.0000E+00	.1586E-05
45	.0000E+00	.1884E-04	.0000E+00	-.2730E-04	.0000E+00	.1548E-05
46	.0000E+00	.2242E-04	.0000E+00	-.3782E-04	.0000E+00	.1468E-05
47	.0000E+00	.2579E-04	.0000E+00	-.4837E-04	.0000E+00	.1347E-05
48	.0000E+00	.2884E-04	.0000E+00	-.5878E-04	.0000E+00	.1183E-05
49	.0000E+00	.3148E-04	.0000E+00	-.6785E-04	.0000E+00	.9419E-06
50	.0000E+00	.3320E-04	.0000E+00	-.8031E-04	.0000E+00	.6737E-06
51	.0000E+00	.3441E-04	.0000E+00	-.8861E-04	.0000E+00	.4475E-06
52	.0000E+00	.3513E-04	.0000E+00	-.9348E-04	.0000E+00	.2236E-06
53	.0000E+00	.3537E-04	.0000E+00	-.9509E-04	.0000E+00	.0000E+00
64	-.2222E-05	.1137E-04	-.7486E-05	-.5758E-05	.7295E-05	.1612E-05
65	-.2217E-05	.1513E-04	-.2491E-04	-.1637E-04	.6050E-05	.1598E-05
66	-.2157E-05	.1884E-04	-.4087E-04	-.2715E-04	.5799E-05	.1538E-05
67	-.2037E-05	.2242E-04	-.5672E-04	-.3780E-04	.5810E-05	.1478E-05
68	-.1857E-05	.2579E-04	-.7262E-04	-.4846E-04	.5824E-05	.1357E-05
69	-.1618E-05	.2884E-04	-.8859E-04	-.5927E-04	.5919E-05	.1190E-05
70	-.1325E-05	.3145E-04	-.1050E-03	-.7044E-04	.6090E-05	.9452E-06
71	-.1000E-05	.3320E-04	-.1213E-03	-.8050E-04	.5519E-05	.6777E-06
72	-.6687E-06	.3441E-04	-.1334E-03	-.8826E-04	.3559E-05	.4482E-06
73	-.3347E-06	.3513E-04	-.1406E-03	-.9300E-04	.1765E-05	.2238E-06
74	.0000E+00	.3537E-04	-.1430E-03	-.9459E-04	.0000E+00	.0000E+00
85	-.4476E-05	.1129E-04	-.9433E-05	-.2931E-05	.9558E-05	.1619E-05
86	-.4479E-05	.1513E-04	-.4820E-04	-.1503E-04	.1033E-04	.1616E-05
87	-.4385E-05	.1884E-04	-.8119E-04	-.2660E-04	.9404E-05	.1572E-05
88	-.4147E-05	.2242E-04	-.1133E-03	-.3763E-04	.9381E-05	.1492E-05
89	-.3784E-05	.2579E-04	-.1454E-03	-.4852E-04	.9398E-05	.1370E-05
90	-.3296E-05	.2884E-04	-.1777E-03	-.5946E-04	.9646E-05	.1200E-05

J O I N T D I S P L A C E M E N T S

LOAD CONDITION 5 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
91	-.2688E-05	.3143E-04	-.2116E-03	-.7044E-04	.9718E-05	.9519E-06
92	-.2017E-05	.3320E-04	-.2423E-03	-.7975E-04	.8287E-05	.6822E-06
93	-.1343E-05	.3441E-04	-.2657E-03	-.8690E-04	.5615E-05	.4492E-06
94	-.6713E-06	.3513E-04	-.2798E-03	-.9135E-04	.2805E-05	.2240E-06
95	.0000E+00	.3537E-04	-.2845E-03	-.9286E-04	.0000E+00	.0000E+00

J O I N T D I S P L A C E M E N T S

LOAD CONDITION 6 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
1	.2094E-03	.6342E-06	.1381E-06	.2342E-06	-.2115E-05	-.2505E-05
2	.2133E-03	-.1821E-06	.4747E-05	.1299E-06	-.1957E-05	-.8710E-06
3	.2157E-03	-.1038E-06	.8510E-05	.7083E-07	-.1448E-05	-.3409E-06
4	.2173E-03	-.4444E-07	.1084E-04	.4603E-07	-.6275E-06	-.1496E-06
5	.2186E-03	-.1016E-07	.1102E-04	.4188E-07	.5209E-06	-.7027E-07
6	.2198E-03	-.5214E-08	.8347E-05	.4361E-07	.2013E-05	-.3989E-07
7	.2209E-03	.6503E-08	.2449E-05	-.1299E-07	.3291E-05	-.3817E-07
8	.2219E-03	.2209E-07	-.2896E-05	-.5670E-07	.1535E-05	-.7508E-07
9	.2228E-03	.4679E-07	-.4310E-05	-.3645E-07	-.1219E-06	-.1568E-06
10	.2234E-03	.7695E-07	-.2861E-05	-.1602E-07	-.1105E-05	-.3232E-06
11	.2236E-03	.0000E+00	.0000E+00	.0000E+00	-.1431E-05	-.5813E-06
22	.2152E-03	.4476E-06	.4918E-06	.1471E-06	-.2093E-05	-.1444E-05
23	.2158E-03	-.1073E-06	.4899E-05	.6499E-07	-.1926E-05	-.5248E-06
24	.2167E-03	-.6462E-07	.8595E-05	.3120E-07	-.1435E-05	-.2141E-06
25	.2178E-03	-.2744E-07	.1089E-04	.2186E-07	-.6219E-06	-.9668E-07
26	.2188E-03	-.1132E-07	.1108E-04	.3192E-07	.3193E-06	-.4602E-07
27	.2199E-03	-.3350E-08	.8445E-05	.7256E-07	.2002E-05	-.2564E-07
28	.2210E-03	.4308E-08	.2421E-05	-.2136E-07	.3411E-05	-.2185E-07
29	.2222E-03	.1482E-07	-.3018E-05	-.8968E-07	.1521E-05	-.5558E-07
30	.2233E-03	.3232E-07	-.4363E-05	-.3312E-07	-.1249E-06	-.1285E-06
31	.2243E-03	.5837E-07	-.2881E-05	-.1053E-07	-.1102E-05	-.3040E-06
32	.2250E-03	.0000E+00	.0000E+00	.0000E+00	-.1427E-05	-.7245E-06
43	.2165E-03	.0000E+00	.6209E-06	.0000E+00	-.2065E-05	.0000E+00
44	.2166E-03	.0000E+00	.4951E-05	.0000E+00	-.1911E-05	.0000E+00
45	.2172E-03	.0000E+00	.8619E-05	.0000E+00	-.1430E-05	.0000E+00
46	.2180E-03	.0000E+00	.1090E-04	.0000E+00	-.6207E-06	.0000E+00
47	.2189E-03	.0000E+00	.1111E-04	.0000E+00	.5086E-06	.0000E+00
48	.2200E-03	.0000E+00	.8579E-05	.0000E+00	.1934E-05	.0000E+00
49	.2211E-03	.0000E+00	.2386E-05	.0000E+00	.4382E-05	.0000E+00
50	.2223E-03	.0000E+00	-.3170E-05	.0000E+00	.1443E-05	.0000E+00
51	.2237E-03	.0000E+00	-.4391E-05	.0000E+00	-.1380E-06	.0000E+00
52	.2254E-03	.0000E+00	-.2889E-05	.0000E+00	-.1104E-05	.0000E+00
53	.2280E-03	.0000E+00	.0000E+00	.0000E+00	-.1428E-05	.0000E+00
64	.2152E-03	-.4476E-06	.4918E-06	-.1471E-06	-.2093E-05	.1444E-05
65	.2158E-03	.1073E-06	.4899E-05	-.6499E-07	-.1926E-05	.5248E-06
66	.2167E-03	.6462E-07	.8595E-05	-.3120E-07	-.1435E-05	.2141E-06
67	.2178E-03	.2744E-07	.1089E-04	-.2186E-07	-.6219E-06	.9668E-07
68	.2188E-03	.1132E-07	.1108E-04	-.3192E-07	.3193E-06	.4602E-07
69	.2199E-03	.3350E-08	.8445E-05	-.7256E-07	.2002E-05	.2564E-07
70	.2210E-03	-.4308E-08	.2421E-05	.2136E-07	.3411E-05	.2185E-07
71	.2222E-03	-.1482E-07	-.3018E-05	.8968E-07	.1521E-05	.5558E-07
72	.2233E-03	-.3232E-07	-.4363E-05	.3312E-07	-.1249E-06	.1285E-06
73	.2243E-03	-.5837E-07	-.2881E-05	.1053E-07	-.1102E-05	.3040E-06
74	.2250E-03	.0000E+00	.0000E+00	.0000E+00	-.1427E-05	.7245E-06
85	.2094E-03	-.6342E-06	.1381E-06	-.2342E-06	-.2115E-05	.2505E-05
86	.2133E-03	.1821E-06	.4747E-05	-.1299E-06	-.1957E-05	.8710E-06
87	.2157E-03	.1038E-06	.8518E-05	-.7083E-07	-.1448E-05	.3409E-06
88	.2173E-03	.4444E-07	.1084E-04	-.4603E-07	-.6275E-06	.1496E-06
89	.2186E-03	.1016E-07	.1102E-04	-.4188E-07	.5209E-06	.7027E-07
90	.2198E-03	.5214E-08	.8347E-05	-.4361E-07	.2013E-05	.3989E-07

J O I N T D I S P L A C E M E N T S

LOAD CONDITION 6 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
91	.2209E-03	-.6503E-08	.2449E-05	.1299E-07	.3291E-05	.3817E-07
92	.2219E-03	-.2209E-07	-.2896E-05	.5670E-07	.1535E-05	.7508E-07
93	.2228E-03	-.4679E-07	-.4310E-05	.3645E-07	-.1219E-06	.1568E-06
94	.2234E-03	-.7695E-07	-.2861E-05	.1602E-07	-.1105E-05	.3232E-06
95	.2236E-03	.0000E+00	.0000E+00	.0000E+00	-.1431E-05	.5813E-06

CSI / SAP90 - - FINITE ELEMENT ANALYSIS OF STRUCTURES PAGE 13
PROGRAM:SAP90/FILE:303200.SOL
REPOSICION 303+200, 3 VANOS 13+17+13 FILE:303200

J O I N T   D I S P L A C E M E N T S

LOAD CONDITION 7 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
1	.2468E-05	.1025E-07	.2739E-04	.4688E-04	-.3572E-03	-.3534E-07
2	.2511E-05	-.9679E-09	.8073E-03	.2649E-04	-.3257E-03	-.1623E-07
3	.000003	.000000	.001420	.000015	-.000225	.000000
4	.000003	.000000	.001745	.000012	-.000062	.000000
5	.000002	.000000	.001645	.000015	.000166	.000000
6	.2312E-05	.2213E-07	.9800E-03	.2414E-04	.4604E-03	-.9483E-07
7	.2049E-05	-.1413E-09	-.4117E-03	.3917E-04	.8280E-03	-.1711E-06
8	.000002	.000000	-.002558	.000038	.001110	.000000
9	.000001	.000000	-.004934	.000030	.001033	.000000
10	.000001	.000000	-.006771	.000023	.000620	.000000
11	.000000	.000000	-.007458	.000021	.000000	.000000
22	.2551E-05	.7319E-08	.9804E-04	.2941E-04	-.3528E-03	-.2153E-07
23	.2558E-05	-.5145E-09	.8582E-03	.1314E-04	-.3196E-03	-.1037E-07
24	.000003	.000000	.001437	.000007	-.000222	.000000
25	.000003	.000000	.001758	.000005	-.000061	.000000
26	.000003	.000000	.001662	.000007	.000165	.000000
27	.000003	.000000	.001011	.000016	.000456	.000000
28	.2446E-05	-.6125E-10	-.3469E-03	.3961E-04	.8189E-03	-.2116E-06
29	.000002	.000000	-.002504	.000025	.001110	.000000
30	.000001	.000000	-.004896	.000013	.001032	.000000
31	.000001	.000000	-.006746	.000005	.000619	.000000
32	.000000	.000000	-.007437	.000002	.000000	.000000
43	.2575E-05	.0000E+00	.1238E-03	.0000E+00	-.3472E-03	.0000E+00
44	.2578E-05	.0000E+00	.8487E-03	.0000E+00	-.3167E-03	.0000E+00
45	.000003	.000000	.001442	.000000	-.000221	.000000
46	.000003	.000000	.001762	.000000	-.000061	.000000
47	.000003	.000000	.001668	.000000	.000164	.000000
48	.000003	.000000	.001024	.000000	.000451	.000000
49	.3327E-05	.0000E+00	-.2876E-03	.0000E+00	.7908E-03	.0000E+00
50	.000002	.000000	-.002479	.000000	.001118	.000000
51	.000001	.000000	-.004885	.000000	.001034	.000000
52	.000001	.000000	-.006746	.000000	.000620	.000000
53	.000000	.000000	-.007439	.000000	.000000	.000000
64	.2551E-05	-.7319E-08	.9804E-04	-.2941E-04	-.3528E-03	.2153E-07
65	.2558E-05	.5145E-09	.8582E-03	-.1314E-04	-.3196E-03	.1037E-07
66	.000003	.000000	.001437	-.000007	-.000222	.000000
67	.000003	.000000	.001758	-.000005	-.000061	.000000
68	.000003	.000000	.001662	-.000007	.000165	.000000
69	.000003	.000000	.001011	-.000016	.000456	.000000
70	.2446E-05	.6125E-10	-.3469E-03	-.3961E-04	.8189E-03	.2116E-06
71	.000002	.000000	-.002504	-.000025	.001110	.000000
72	.000001	.000000	-.004896	-.000013	.001032	.000000
73	.000001	.000000	-.006746	-.000005	.000619	.000000
74	.000000	.000000	-.007437	-.000002	.000000	.000000
85	.2468E-05	-.1025E-07	.2739E-04	-.4688E-04	-.3572E-03	.3534E-07
86	.2511E-05	.9679E-09	.8073E-03	-.2649E-04	-.3257E-03	.1623E-07
87	.000003	.000000	.001420	-.000015	-.000225	.000000
88	.000003	.000000	.001745	-.000012	-.000062	.000000
89	.000002	.000000	.001645	-.000015	.000166	.000000
90	.2312E-05	-.2213E-07	.9800E-03	-.2414E-04	.4604E-03	.9483E-07

CSI / SAP90 - - FINITE ELEMENT ANALYSIS OF STRUCTURES PAGE 14
PROGRAM:SAP90/FILE:303200.SOL
REPOSICION 303+200, 3 VANOS 13+17+13 FILE:303200

J O I N T   D I S P L A C E M E N T S

LOAD CONDITION 7 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
91	.2049E-05	.1413E-09	-.4117E-03	-.3917E-04	.8280E-03	.1711E-06
92	.000002	.000000	-.002558	-.000038	.001110	.000000
93	.000001	.000000	-.004934	-.000030	.001033	.000000
94	.000001	.000000	-.006771	-.000023	.000620	.000000
95	.000000	.000000	-.007458	-.000021	.000000	.000000

CSI / SAP90 - - FINITE ELEMENT ANALYSIS OF STRUCTURES PAGE 15
PROGRAM:SAP90/FILE:303200.SOL
REPOSICION 303+200, 3 VANOS 13+17+13 FILE:303200

R E A C T I O N S   A N D   A P P L I E D   F O R C E S

LOAD CONDITION 1 - FORCES "F" AND MOMENTS "M"

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1001	.0059	.0000	24.4897	.0000	.0003	.0000
1049	-.6085	.0000	175.6955	.0000	3.7866	.0000
1085	.0059	-.0000	24.4897	.0000	.0003	.0000
TOTAL	-.5967E+00	-.9404E-14	.2247E+03	-.1153E-12	.3787E+01	-.3104E-14

CSI / SAP90 - - FINITE ELEMENT ANALYSIS OF STRUCTURES PAGE 16
PROGRAM:SAP90/FILE:303200.SOL
REPOSICION 303+200, 3 VANOS 13+17+13 FILE:303200

R E A C T I O N S   A N D   A P P L I E D   F O R C E S

LOAD CONDITION 2 - FORCES "F" AND MOMENTS "M"

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1001	.0004	.0000	1.7586	.0000	.0000	.0000
1049	-.0423	.0000	12.6079	.0000	.2762	.0000
1085	.0004	.0000	1.7586	.0000	.0000	.0000
TOTAL	-.4149E-01	-.6523E-15	.1613E+02	-.8153E-14	.2762E+00	-.2177E-15

REACTIONS AND APPLIED FORCES

LOAD CONDITION 5 - FORCES "F" AND MOMENTS "M"

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1001	-9.79	-.2017	1.4263	.0101	-.0040	-.0006
1049	.0000	.4053	.0000	-1.2325	.0000	-.0266
1065	.0079	-.2017	1.4263	.0101	.0040	-.0006
TOTAL	-.1539E-14	-.3308E-13	.1110E-13	-1.1252E+01	-1.1308E-14	-.2.771E-01

LOAD CONDITION 3 - FORCES "F" AND MOMENTS "M"

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1001	-9.79	-.2017	1.4263	.0101	-.0040	-.0006
1049	.0000	.4053	.0000	-1.2325	.0000	-.0266
1065	.0079	-.2017	1.4263	.0101	.0040	-.0006
TOTAL	-.1539E-14	-.3308E-13	.1110E-13	-1.1252E+01	-1.1308E-14	-.2.771E-01

REACTIONS AND APPLIED FORCES

LOAD CONDITION 4 - FORCES "F" AND MOMENTS "M"

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1001	-2.6424	-6.6312	-.6841	.5529	-.1021	-.0130
1049	.0000	-.7090	.0000	4.9536	.0000	-.1602
1065	2.0393	-6.6492	.6841	.5523	.1020	-.0148
TOTAL	-.0132E-02	-.1432E+02	.8650E-14	.3642E+01	-.1432/E-01	-.1899E+00

REACTIONS AND APPLIED FORCES

LOAD CONDITION 6 - FORCES "F" AND MOMENTS "M"

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1001	-5.7196	-.0113	-.0Z99	.0006	-.1860	.0009
1049	-.2607	.6000	-.0413	.0000	-1.3551	.0000
1065	-5.7196	.0113	-.0Z99	-.0006	-.1860	-.0009
TOTAL	-.7700E+01	-.33/2E-13	-.8343E-01	.8899/E-14	-.1/2/E+01	.2311/E-13

R E A C T I O N S A N D A P P L I E D F O R C E S

LOAD CONDITION 7 - FORCES "F" AND MOMENTS "M"

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1001	-.0630	-.0002	-4.1418	.0000	-.0022	.0000
1004	4.3427	.0000	84.0826	.0000	17.0052	.0000
1005	-.0630	.0002	-4.1418	.0000	-.0022	-.0000
TOTAL	.4432E+01	-.28/4E-13	.2200E+02	-.1182E-13	.1/00E+02	-.3068E-13

LINEA DE ALTA VELOCIDAD

MADRID – BARCELONA – FRONTERA FRANCESA

TRAMO: LLEIDA – MARTORELL, SUBTRAMO III-A

PLATAFORMA

ESTRUCTURA E-4. PASO SUPERIOR P.K. 303+200

ANEJO DE PRUEBA DE CARGA

LINEA DE ALTA VELOCIDAD
MADRID – BARCELONA – FRONTERA FRANCESA
TRAMO: LLEIDA – MARTORELL, SUBTRAMO III A,
PLATAFORMA

ESTRUCTURA E-4. PASO SUPERIOR P.K. 303+200

ANEJO DE PRUEBA DE CARGA

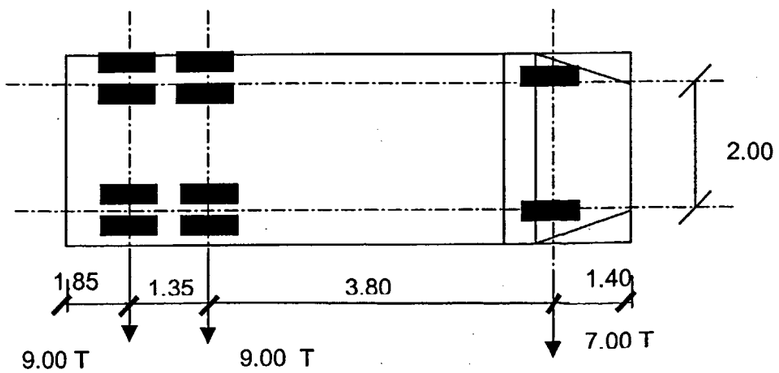
1.- GENERALIDADES

Se calculan en este Anejo los esfuerzos producidos por la acción de un tren de cargas de prueba formado por camiones tipo, que se disponen en una serie de posiciones estudiadas de modo que dan lugar a unos esfuerzos próximos al 80% de los teóricos correspondientes a la envolvente de sobrecarga de uso (sobrecarga uniforme + vehículo pesado) obtenida en el cálculo del tablero.

La estructura analizada es una losa de hormigón armado con luces de 13.00 + 17.00 +13.00 y un ancho de 7.70 m.

2.- TREN DE CARGAS

Se formará mediante camiones tipo de 25 toneladas. La distribución de ejes y pesos se refleja en el siguiente esquema:



En todas las posiciones del tren de cargas, los camiones se dispondrán en 2 hileras en pararelo, ocupando todo el ancho del tablero.

La prueba de carga consistirá en la disposición de los camiones en las situaciones siguientes:

- Posición 1: 4 camiones en vano 1
- Posición 2: 4 camiones en vano 2.

Los resultados del cálculo y los croquis de disposición de camiones se incluyen en el apartado 4 del presente Anejo.

3.- REALIZACION DE LA PRUEBA DE CARGA

En primer lugar se efectuará una detallada inspección de la obra que incluirá no sólo la estructura sino también los aparatos de apoyos y juntas.

Antes de comenzar el ensayo se anotarán las características de los vehículos a utilizar (matrícula, dimensiones y pesos por eje).

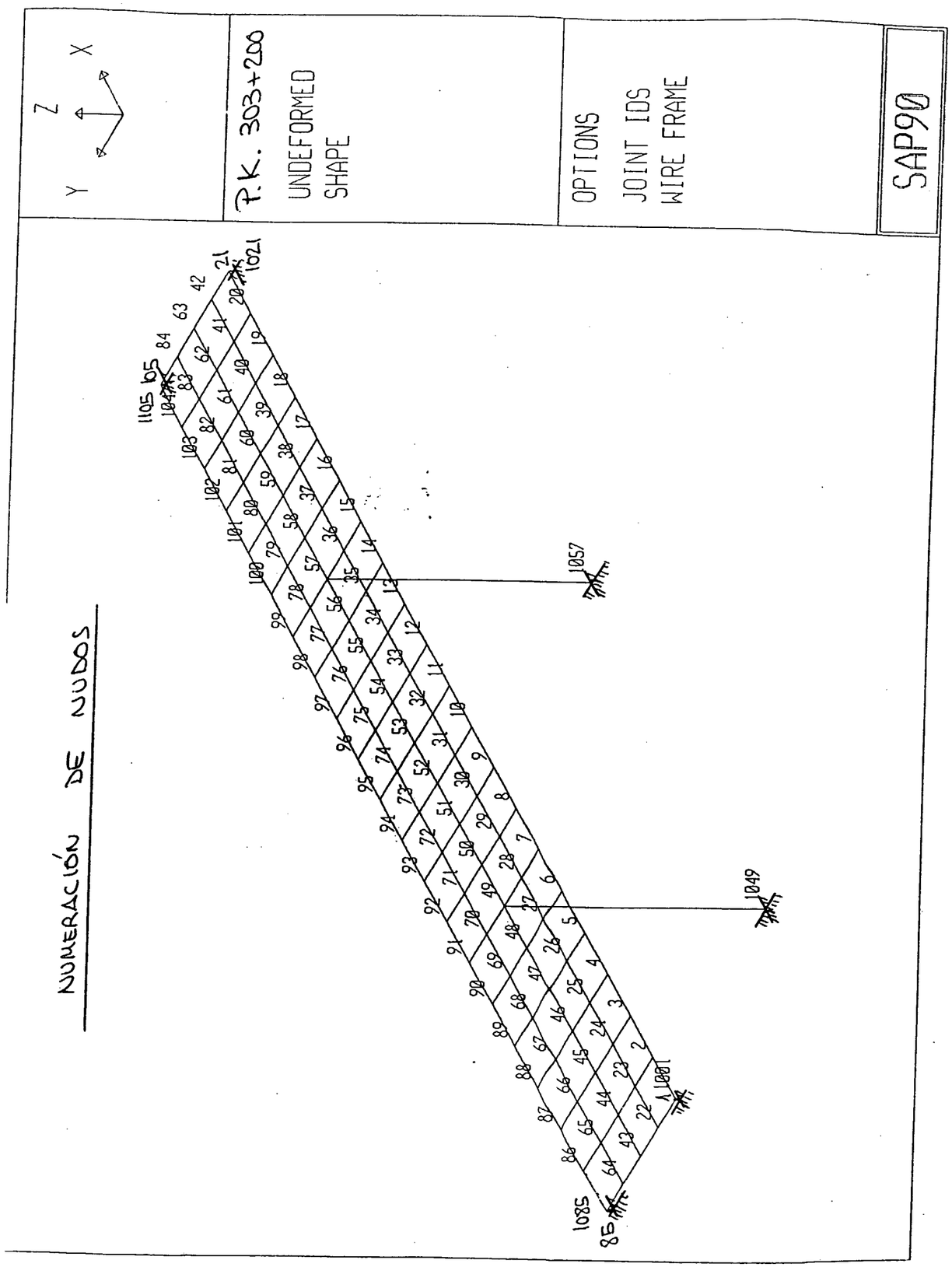
La medición de las deformaciones se efectuará en el centro de la luz del vano (con una precisión de ± 0.5 mm) y para su lectura se utilizarán flexímetros.

Las lecturas se realizarán en cada situación de carga de la forma siguiente:

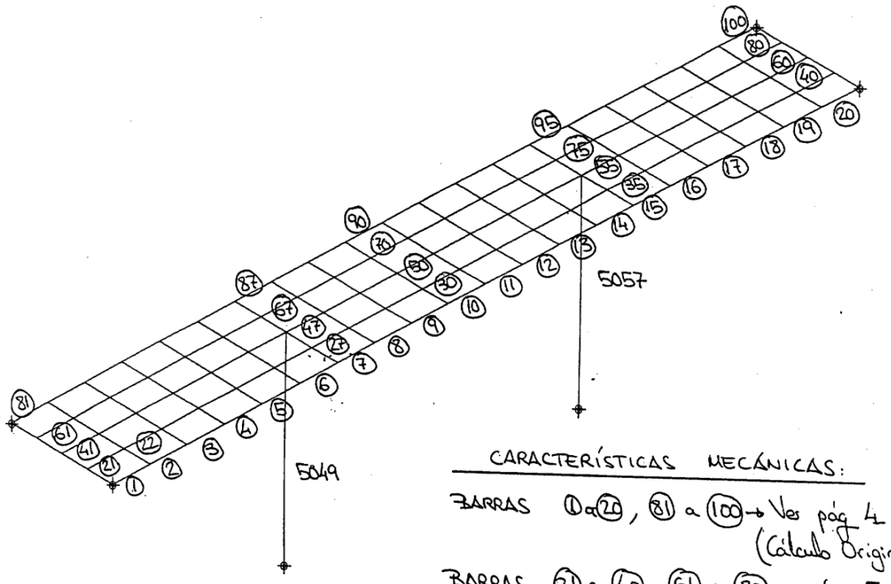
1ª lectura:	En vacío.
2ª lectura:	A los 20 minutos de posicionar la carga.
3ª lectura:	A los 35 minutos de posicionar la carga.
	Se comprobará que las flechas obtenidas en estas dos últimas lecturas estén estabilizadas, admitiéndose una variación de +5%.
4ª lectura:	A los 15 minutos de retirar la carga.

4.- CALCULO DE ESFUERZOS Y DEFORMACIONES

Se utiliza el mismo modelo de cálculo y programa que el empleado para el dimensionamiento de la estructura. Los correspondientes listados, esfuerzos y deformaciones obtenidos se acompañan a continuación.



NUMERACIÓN DE BARRAS (LONGITUDINALES Y PILARES)



Y Z X

P.K. 303+200
UNDEFORMED SHAPE

OPTIONS
RESTRAINTS
WIRE FRAME

SAP90

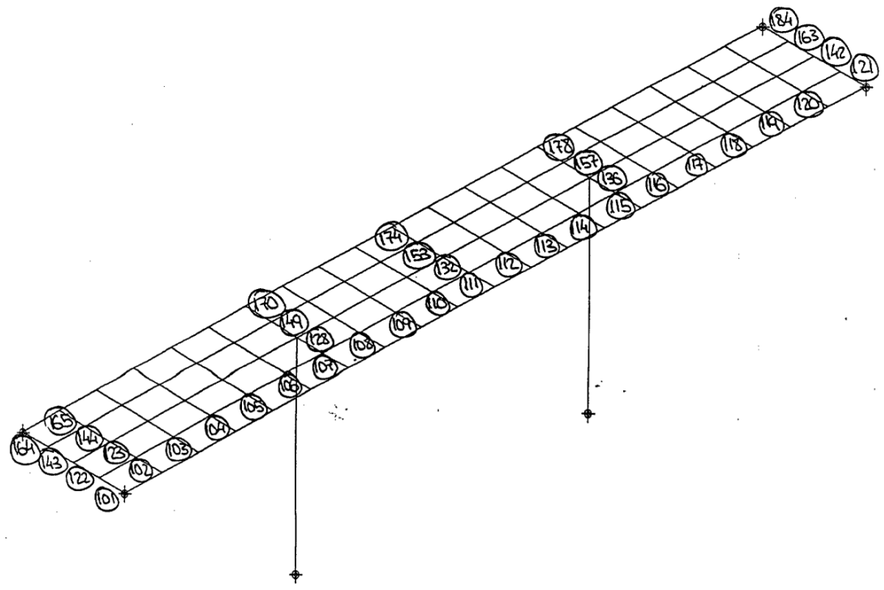
CARACTERÍSTICAS MECÁNICAS:

BARRAS 1 a 20, 81 a 100 → Ver pág 4 (Cálculo Original)

BARRAS 21 a 40, 61 a 80 → pág 5

BARRAS 41 a 60 ⟶ pág 6

NUMERACIÓN DE BARRAS (TRANSVERSALES)



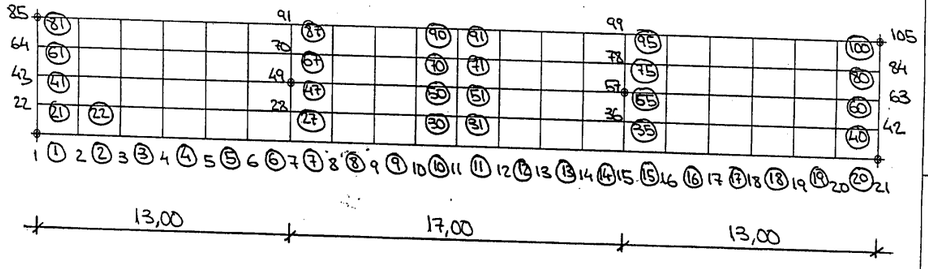
Y Z X

P.K. 303+200
UNDEFORMED SHAPE

OPTIONS
RESTRAINTS
WIRE FRAME

SAP90

PLANTA



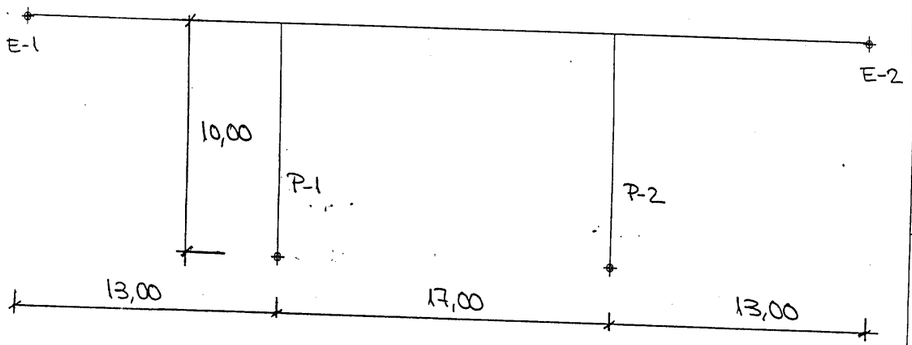
Y
X

P.K. 303+200
UNDEFORMED SHAPE

OPTIONS
RESTRAINTS
WIRE FRAME

SAP90

ALZADO



Z
X

P.K. 303+200
UNDEFORMED SHAPE

OPTIONS
RESTRAINTS
WIRE FRAME

SAP90

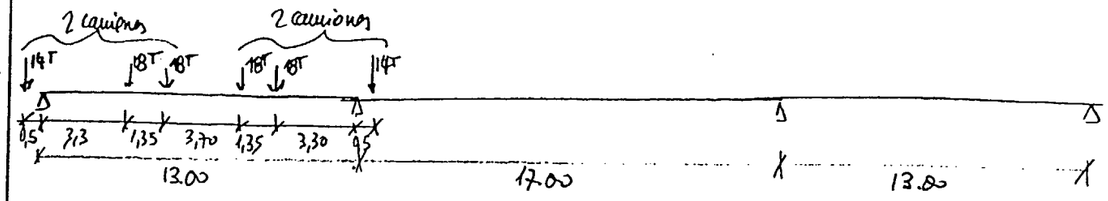
FECHA

FIRMA:

Hoja ..... de .....

PRUEBA DE CARGA

Pos.1=



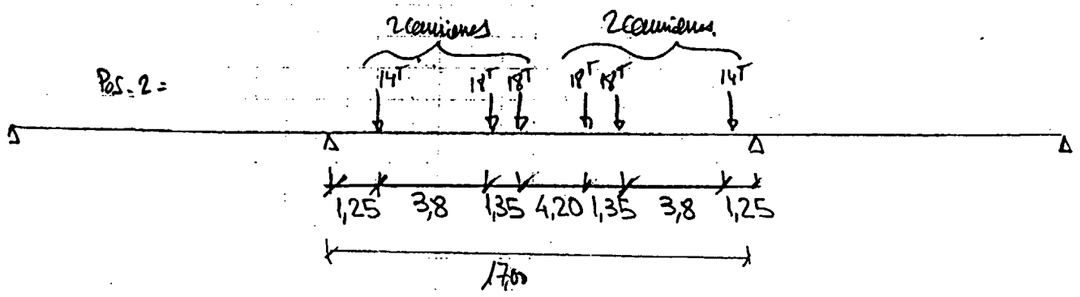
Posición 1: Centro vano 1:

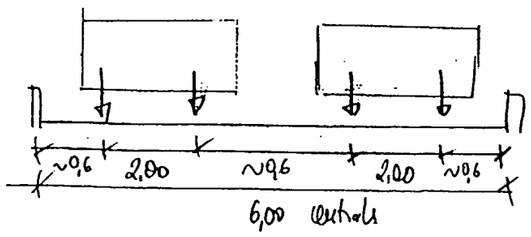
Máxima sobrecarga: $0,4 \times 13 \times 7,70 + 60 = 100,04^T \Rightarrow$ 4 camiones.

Posición 2: Centro de vano 2.

Máxima sobrecarga: $0,4 \times 17 \times 7,70 + 60 = 112^T \Rightarrow$ 4 camiones.

Pos. 2 =





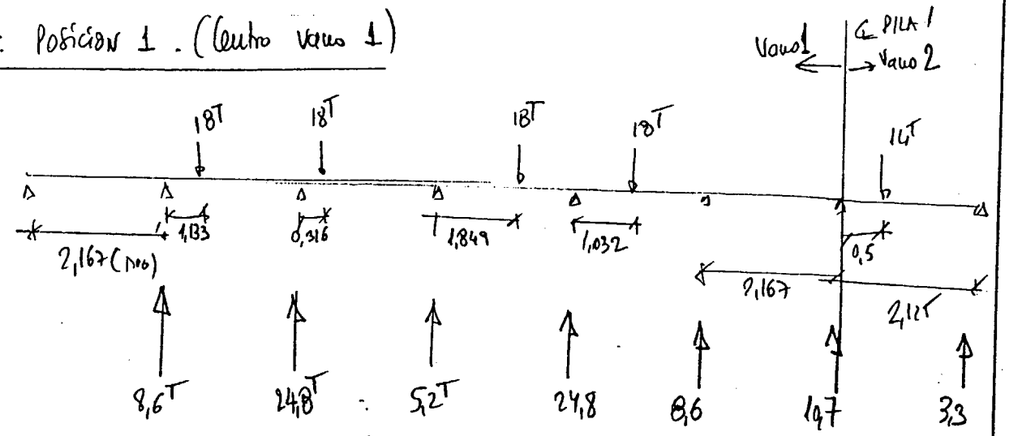
FECHA

FIRMA:

Hoja ..... de .....

Cargas en nudos

HIP1: Posición 1. (Centro vano 1)



Nudos	Carga (TON)
23	2,15
24	6,20
25	1,30
26	6,20
27	2,15
28	2,675
29	0,825

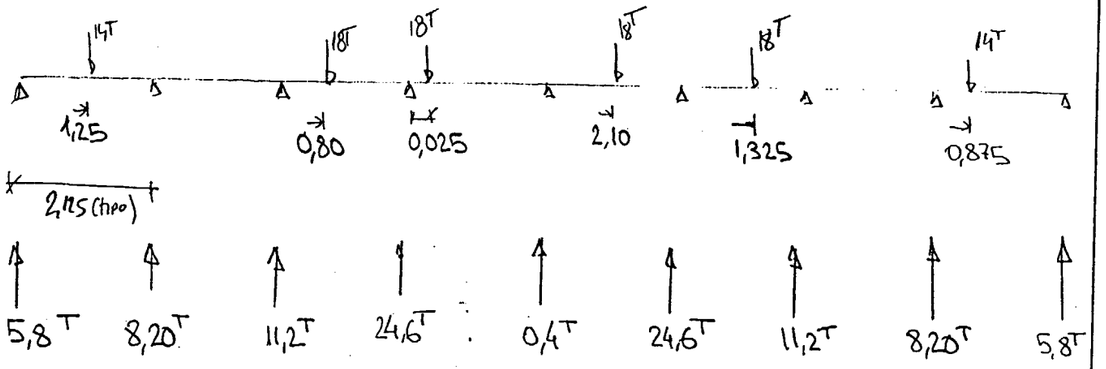
Nudo	Carga (TON)
44	4,30
45	12,40
46	2,60
47	12,40
48	4,30
49	5,35
50	1,65T

Nudo	Carga (TON)
65	2,15
66	6,20
67	1,30
68	6,20
69	2,15
70	2,67T
71	0,82T

Σ Cargas: 86 TON

FECHA
FIRMA:
Hoja ..... de .....

HIP 2: Posición 2 (Centro vano 2)



Carga en nudos.

Nudo	25% Carga (TON)
28	1,45
29	2,05
30	2,8
31	6,15
32	0,1
33	6,15
34	2,8
35	2,05
36	1,45

Nudo	50% Carga (TON)
49	2,9
50	4,1
51	5,6
52	12,3
53	0,2
54	12,3
55	5,6
56	4,1
57	2,9

Nudo	25% Carga (TON)
70	1,45
71	2,05
72	2,8
73	6,15
74	0,1
75	6,15
76	2,8
77	2,05
78	1,45

Σ Cargas = 100 TON

FECHA
FIRMA:
Hoja ... de

A continuación se detallan los momentos flectores producidos por la sobrecarga viajera más el carro de la Dosificación, tenidos en cuenta en el Proyecto Original.

Estos esfuerzos corresponden a la hipótesis "B", módulo Bridge del Programa "SAP-90"

Centro vano 1

Barra 4	4,25	TXM
24	53,06	
44	64,10	
64	53,06	
84	4,25	
	178,7	TXM

Centro vano 2

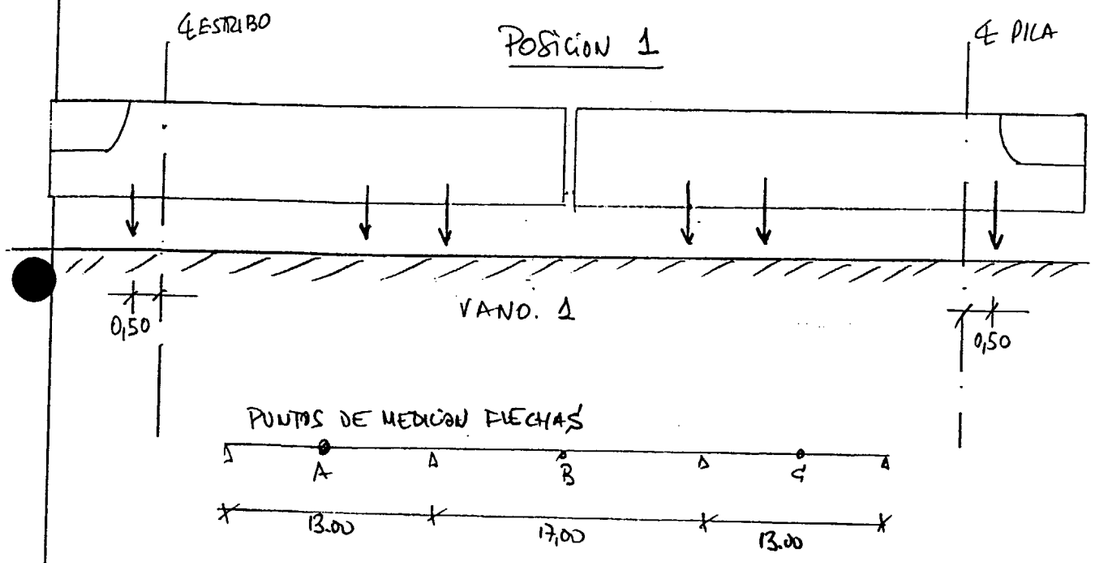
Barra 10	4,83	TXM
30	58,64	
50	70,58	
70	58,64	
90	4,83	
	197,5	TXM

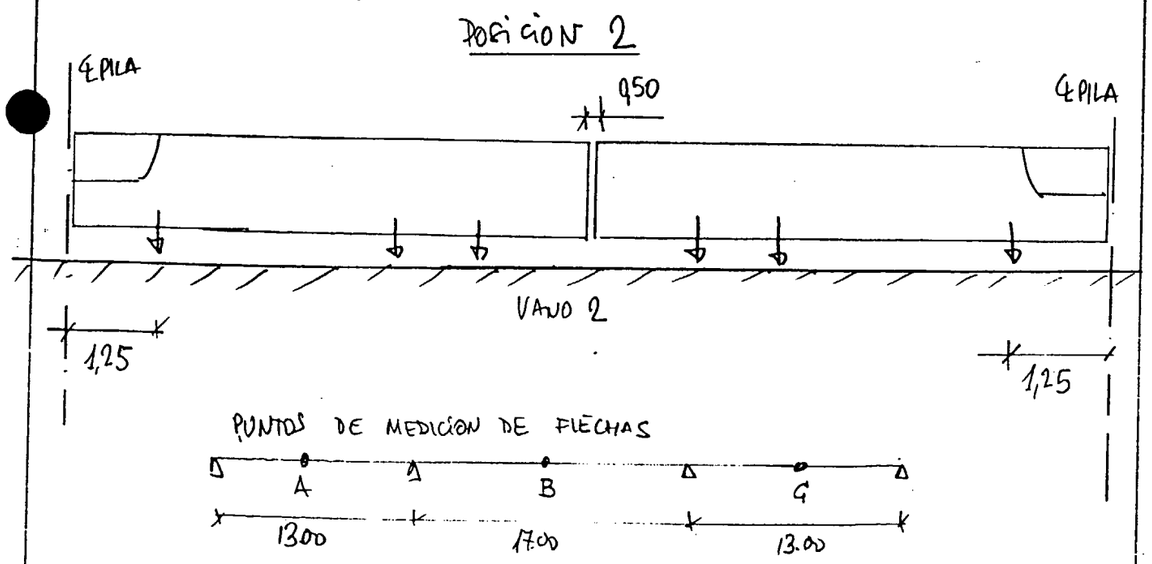
		FECHA
		FIRMA.
		Hoja de ...

PK 312+917,600

PRUEBA DE CARGA

CROQUIS DE DISPOSICIÓN DE CAMIONES





En las dos posiciones del tren de cargas, los 4 camiones se disponían en dos hileras en paralelo, ocupando todo el ancho del tablero

C S I / S A P 9 0 - - FINITE ELEMENT ANALYSIS OF STRUCTURES PAGE 1
PROGRAM:SAP90/FILE:PCARGA.SAP
REPOSICION 303+200. 3 VANOS 13+17+13 FILE:PCARGA. PRUEBA DE CARGA.

S Y S T E M D A T A

EXECUTION CODE	0
NUMBER OF LOAD CONDITIONS	2
STEADY STATE LOAD FREQUENCY	.0000E+00
NUMBER OF EIGENVALUES	0
EIGEN CONVERGENCE TOLERANCE	.1000E-03
EIGEN CUTOFF TIME PERIOD	.0000E+00

G E N E R A T E D J O I N T C O O R D I N A T E S

JOINT	X	Y	Z
1	.000	.000	10.000
2	2.167	.000	10.000
3	4.333	.000	10.000
4	6.500	.000	10.000
5	8.667	.000	10.000
6	10.833	.000	10.000
7	13.000	.000	10.000
8	15.125	.000	10.000
9	17.250	.000	10.000
10	19.375	.000	10.000
11	21.500	.000	10.000
12	23.625	.000	10.000
13	25.750	.000	10.000
14	27.875	.000	10.000
15	30.000	.000	10.000
16	32.167	.000	10.000
17	34.333	.000	10.000
18	36.500	.000	10.000
19	38.667	.000	10.000
20	40.833	.000	10.000
21	43.000	.000	10.000
22	.000	1.500	10.000
23	2.167	1.500	10.000
24	4.333	1.500	10.000
25	6.500	1.500	10.000
26	8.667	1.500	10.000
27	10.833	1.500	10.000
28	13.000	1.500	10.000
29	15.125	1.500	10.000
30	17.250	1.500	10.000
31	19.375	1.500	10.000
32	21.500	1.500	10.000
33	23.625	1.500	10.000
34	25.750	1.500	10.000
35	27.875	1.500	10.000
36	30.000	1.500	10.000
37	32.167	1.500	10.000
38	34.333	1.500	10.000
39	36.500	1.500	10.000
40	38.667	1.500	10.000
41	40.833	1.500	10.000
42	43.000	1.500	10.000
43	.000	3.000	10.000
44	2.167	3.000	10.000
45	4.333	3.000	10.000
46	6.500	3.000	10.000
47	8.667	3.000	10.000
48	10.833	3.000	10.000
49	13.000	3.000	10.000
50	15.125	3.000	10.000
51	17.250	3.000	10.000
52	19.375	3.000	10.000

G E N E R A T E D J O I N T C O O R D I N A T E S

JOINT	X	Y	Z
53	21.500	3.000	10.000
54	23.625	3.000	10.000
55	25.750	3.000	10.000
56	27.875	3.000	10.000
57	30.000	3.000	10.000
58	32.167	3.000	10.000
59	34.333	3.000	10.000
60	36.500	3.000	10.000
61	38.667	3.000	10.000
62	40.833	3.000	10.000
63	43.000	3.000	10.000
64	.000	4.500	10.000
65	2.167	4.500	10.000
66	4.333	4.500	10.000
67	6.500	4.500	10.000
68	8.667	4.500	10.000
69	10.833	4.500	10.000
70	13.000	4.500	10.000
71	15.125	4.500	10.000
72	17.250	4.500	10.000
73	19.375	4.500	10.000
74	21.500	4.500	10.000
75	23.625	4.500	10.000
76	25.750	4.500	10.000
77	27.875	4.500	10.000
78	30.000	4.500	10.000
79	32.167	4.500	10.000
80	34.333	4.500	10.000
81	36.500	4.500	10.000
82	38.667	4.500	10.000
83	40.833	4.500	10.000
84	43.000	4.500	10.000
85	.000	6.000	10.000
86	2.167	6.000	10.000
87	4.333	6.000	10.000
88	6.500	6.000	10.000
89	8.667	6.000	10.000
90	10.833	6.000	10.000
91	13.000	6.000	10.000
92	15.125	6.000	10.000
93	17.250	6.000	10.000
94	19.375	6.000	10.000
95	21.500	6.000	10.000
96	23.625	6.000	10.000
97	25.750	6.000	10.000
98	27.875	6.000	10.000
99	30.000	6.000	10.000
100	32.167	6.000	10.000
101	34.333	6.000	10.000
102	36.500	6.000	10.000
103	38.667	6.000	10.000
104	40.833	6.000	10.000

G E N E R A T E D J O I N T C O O R D I N A T E S

JOINT	X	Y	Z
105	43.000	6.000	10.000
1001	.000	.000	9.950
1021	43.000	.000	9.950
1049	13.000	3.000	.000
1057	30.000	3.000	.000
1085	.000	6.000	9.950
1105	43.000	6.000	9.950

R E S T R A I N T D A T A

JOINT	RX	RY	RZ	RXX	RYY	RZZ
1001	1	1	1	1	1	1
1021	1	1	1	1	1	1
1049	1	1	1	1	1	1
1057	1	1	1	1	1	1
1085	1	1	1	1	1	1
1105	1	1	1	1	1	1

REPOSICION 303+200. 3 VANOS 13+17+13 FILE:PCARGA. PRUEBA DE CARGA.

F R A M E C O N T R O L D A T A

NUMBER OF MEMBER SECTION PROPERTIES	12
NUMBER OF SPAN LOADING PATTERNS	0
NUMBER OF MEMBER FORCE OUTPUT STATIONS	3

LOAD	GRAVITATIONAL MULTIPLIERS			TEMPERATURE	PRESTRESS
COND	X	Y	Z	MULTIPLIERS	MULTIPLIERS
1	.000	.000	.000	.000	.000
2	.000	.000	.000	.000	.000

REPOSICION 303+200. 3 VANOS 13+17+13 FILE:PCARGA. PRUEBA DE CARGA.

S E C T I O N P R O P E R T Y D A T A

PROP	AREA	TORSIONAL	MOMENTS OF INERTIA		SHEAR AREAS	
ID		INERTIA	I33	I22	A2	A3
1	.134E+01	.34060E+00	.89100E-01	.25150E+00	.107E+01	.107E+01
2	.123E+01	.28660E+00	.74000E-01	.21260E+00	.983E+00	.983E+00
3	.571E+00	.12880E+00	.63000E-02	.12250E+00	.457E+00	.457E+00
4	.934E+00	.11926E+00	.57832E-01	.91372E-01	.778E+00	.778E+00
5	.119E+01	.10097E+00	.30045E-01	.46640E+00	.993E+00	.993E+00
6	.190E+01	.36439E+00	.12223E+00	.74454E+00	.159E+01	.159E+01
7	.118E+01	.99804E-01	.29753E-01	.45297E+00	.984E+00	.984E+00
8	.188E+01	.35966E+00	.12104E+00	.72311E+00	.157E+01	.157E+01
9	.117E+01	.98640E-01	.29462E-01	.43980E+00	.974E+00	.974E+00
10	.187E+01	.35493E+00	.11986E+00	.70209E+00	.155E+01	.155E+01
11	.636E+00	.64412E-01	.32206E-01	.32206E-01	.318E+00	.318E+00
12	.800E-01	.73242E-03	.10667E-02	.26667E-03	.667E-01	.667E-01

M A T E R I A L P R O P E R T Y D A T A

PROP ID	MODULUS OF ELASTICITY	SHEAR MODULUS	WEIGHT PER UNIT LEN	MASS PER UNIT LEN	THERMAL EXPANSION
1	.3500E+07	.1346E+07	.3354E+01	.0000E+00	.1000E-04
2	.3500E+07	.1346E+07	.3073E+01	.0000E+00	.1000E-04
3	.3500E+07	.1346E+07	.1427E+01	.0000E+00	.1000E-04
4	.3500E+07	.1346E+07	.0000E+00	.0000E+00	.0000E+00
5	.3500E+07	.1346E+07	.0000E+00	.0000E+00	.0000E+00
6	.3500E+07	.1346E+07	.0000E+00	.0000E+00	.0000E+00
7	.3500E+07	.1346E+07	.0000E+00	.0000E+00	.0000E+00
8	.3500E+07	.1346E+07	.0000E+00	.0000E+00	.0000E+00
9	.3500E+07	.1346E+07	.0000E+00	.0000E+00	.0000E+00
10	.3500E+07	.1346E+07	.0000E+00	.0000E+00	.0000E+00
11	.3500E+07	.1346E+07	.0000E+00	.0000E+00	.0000E+00
12	.4300E+05	.9000E+02	.0000E+00	.0000E+00	.0000E+00

F R A M E E L E M E N T D A T A

ELT ID	JOINT END-I	JOINT END-J	LOCAL-AXIS N1	LOCAL-AXIS N2	PROPERTY-ID END-I	PROPERTY-ID END-J	VAR	REL CODES	REF TEMP	ELEMENT LENGTH
1	1	2	-2	0	3	3	0	000000	.00	2.17
2	2	3	-2	0	3	3	0	000000	.00	2.17
3	3	4	-2	0	3	3	0	000000	.00	2.17
4	4	5	-2	0	3	3	0	000000	.00	2.17
5	5	6	-2	0	3	3	0	000000	.00	2.17
6	6	7	-2	0	3	3	0	000000	.00	2.17
7	7	8	-2	0	3	3	0	000000	.00	2.13
8	8	9	-2	0	3	3	0	000000	.00	2.13
9	9	10	-2	0	3	3	0	000000	.00	2.13
10	10	11	-2	0	3	3	0	000000	.00	2.13
11	11	12	-2	0	3	3	0	000000	.00	2.13
12	12	13	-2	0	3	3	0	000000	.00	2.13
13	13	14	-2	0	3	3	0	000000	.00	2.13
14	14	15	-2	0	3	3	0	000000	.00	2.13
15	15	16	-2	0	3	3	0	000000	.00	2.17
16	16	17	-2	0	3	3	0	000000	.00	2.17
17	17	18	-2	0	3	3	0	000000	.00	2.17
18	18	19	-2	0	3	3	0	000000	.00	2.17
19	19	20	-2	0	3	3	0	000000	.00	2.17
20	20	21	-2	0	3	3	0	000000	.00	2.17
21	22	23	-2	0	2	2	0	000000	.00	2.17
22	23	24	-2	0	2	2	0	000000	.00	2.17
23	24	25	-2	0	2	2	0	000000	.00	2.17
24	25	26	-2	0	2	2	0	000000	.00	2.17
25	26	27	-2	0	2	2	0	000000	.00	2.17
26	27	28	-2	0	2	2	0	000000	.00	2.17
27	28	29	-2	0	2	2	0	000000	.00	2.13
28	29	30	-2	0	2	2	0	000000	.00	2.13
29	30	31	-2	0	2	2	0	000000	.00	2.13
30	31	32	-2	0	2	2	0	000000	.00	2.13
31	32	33	-2	0	2	2	0	000000	.00	2.13
32	33	34	-2	0	2	2	0	000000	.00	2.13
33	34	35	-2	0	2	2	0	000000	.00	2.13
34	35	36	-2	0	2	2	0	000000	.00	2.13
35	36	37	-2	0	2	2	0	000000	.00	2.17
36	37	38	-2	0	2	2	0	000000	.00	2.17
37	38	39	-2	0	2	2	0	000000	.00	2.17
38	39	40	-2	0	2	2	0	000000	.00	2.17
39	40	41	-2	0	2	2	0	000000	.00	2.17
40	41	42	-2	0	2	2	0	000000	.00	2.17
41	43	44	-2	0	1	1	0	000000	.00	2.17
42	44	45	-2	0	1	1	0	000000	.00	2.17
43	45	46	-2	0	1	1	0	000000	.00	2.17
44	46	47	-2	0	1	1	0	000000	.00	2.17
45	47	48	-2	0	1	1	0	000000	.00	2.17
46	48	49	-2	0	1	1	0	000000	.00	2.17
47	49	50	-2	0	1	1	0	000000	.00	2.13
48	50	51	-2	0	1	1	0	000000	.00	2.13
49	51	52	-2	0	1	1	0	000000	.00	2.13
50	52	53	-2	0	1	1	0	000000	.00	2.13
51	53	54	-2	0	1	1	0	000000	.00	2.13

F R A M E E L E M E N T D A T A

ELT ID	JOINT END-I	JOINT END-J	LOCAL-AXIS N1	LOCAL-AXIS N2	PROPERTY-ID END-I	PROPERTY-ID END-J	VAR	REL CODES	REF TEMP	ELEMENT LENGTH
52	54	55	-2	0	1	1	0	000000	.00	2.13
53	55	56	-2	0	1	1	0	000000	.00	2.13
54	56	57	-2	0	1	1	0	000000	.00	2.13
55	57	58	-2	0	1	1	0	000000	.00	2.17
56	58	59	-2	0	1	1	0	000000	.00	2.17
57	59	60	-2	0	1	1	0	000000	.00	2.17
58	60	61	-2	0	1	1	0	000000	.00	2.17
59	61	62	-2	0	1	1	0	000000	.00	2.17
60	62	63	-2	0	1	1	0	000000	.00	2.17
61	64	65	-2	0	2	2	0	000000	.00	2.17
62	65	66	-2	0	2	2	0	000000	.00	2.17
63	66	67	-2	0	2	2	0	000000	.00	2.17
64	67	68	-2	0	2	2	0	000000	.00	2.17
65	68	69	-2	0	2	2	0	000000	.00	2.17
66	69	70	-2	0	2	2	0	000000	.00	2.17
67	70	71	-2	0	2	2	0	000000	.00	2.13
68	71	72	-2	0	2	2	0	000000	.00	2.13
69	72	73	-2	0	2	2	0	000000	.00	2.13
70	73	74	-2	0	2	2	0	000000	.00	2.13
71	74	75	-2	0	2	2	0	000000	.00	2.13
72	75	76	-2	0	2	2	0	000000	.00	2.13
73	76	77	-2	0	2	2	0	000000	.00	2.13
74	77	78	-2	0	2	2	0	000000	.00	2.13
75	78	79	-2	0	2	2	0	000000	.00	2.17
76	79	80	-2	0	2	2	0	000000	.00	2.17
77	80	81	-2	0	2	2	0	000000	.00	2.17
78	81	82	-2	0	2	2	0	000000	.00	2.17
79	82	83	-2	0	2	2	0	000000	.00	2.17
80	83	84	-2	0	2	2	0	000000	.00	2.17
81	85	86	-2	0	3	3	0	000000	.00	2.17
82	86	87	-2	0	3	3	0	000000	.00	2.17
83	87	88	-2	0	3	3	0	000000	.00	2.17
84	88	89	-2	0	3	3	0	000000	.00	2.17
85	89	90	-2	0	3	3	0	000000	.00	2.17
86	90	91	-2	0	3	3	0	000000	.00	2.17
87	91	92	-2	0	3	3	0	000000	.00	2.13
88	92	93	-2	0	3	3	0	000000	.00	2.13
89	93	94	-2	0	3	3	0	000000	.00	2.13
90	94	95	-2	0	3	3	0	000000	.00	2.13
91	95	96	-2	0	3	3	0	000000	.00	2.13
92	96	97	-2	0	3	3	0	000000	.00	2.13
93	97	98	-2	0	3	3	0	000000	.00	2.13
94	98	99	-2	0	3	3	0	000000	.00	2.13
95	99	100	-2	0	3	3	0	000000	.00	2.17
96	100	101	-2	0	3	3	0	000000	.00	2.17
97	101	102	-2	0	3	3	0	000000	.00	2.17
98	102	103	-2	0	3	3	0	000000	.00	2.17
99	103	104	-2	0	3	3	0	000000	.00	2.17
100	104	105	-2	0	3	3	0	000000	.00	2.17
101	1	22	3	0	4	4	0	000000	.00	1.50
102	2	23	3	0	5	5	0	000000	.00	1.50

F R A M E E L E M E N T D A T A

ELT ID	JOINT END-I	JOINT END-J	LOCAL-AXIS N1	LOCAL-AXIS N2	PROPERTY-ID END-I	PROPERTY-ID END-J	VAR	REL CODES	REF TEMP	ELEMENT LENGTH
103	3	24	3	0	5	5	0	000000	.00	1.50
104	4	25	3	0	5	5	0	000000	.00	1.50
105	5	26	3	0	5	5	0	000000	.00	1.50
106	6	27	3	0	5	5	0	000000	.00	1.50
107	7	28	3	0	7	7	0	000000	.00	1.50
108	8	29	3	0	9	9	0	000000	.00	1.50
109	9	30	3	0	9	9	0	000000	.00	1.50
110	10	31	3	0	9	9	0	000000	.00	1.50
111	11	32	3	0	9	9	0	000000	.00	1.50
112	12	33	3	0	9	9	0	000000	.00	1.50
113	13	34	3	0	9	9	0	000000	.00	1.50
114	14	35	3	0	9	9	0	000000	.00	1.50
115	15	36	3	0	7	7	0	000000	.00	1.50
116	16	37	3	0	5	5	0	000000	.00	1.50
117	17	38	3	0	5	5	0	000000	.00	1.50
118	18	39	3	0	5	5	0	000000	.00	1.50
119	19	40	3	0	5	5	0	000000	.00	1.50
120	20	41	3	0	5	5	0	000000	.00	1.50
121	21	42	3	0	4	4	0	000000	.00	1.50
122	22	43	3	0	4	4	0	000000	.00	1.50
123	23	44	3	0	6	6	0	000000	.00	1.50
124	24	45	3	0	6	6	0	000000	.00	1.50
125	25	46	3	0	6	6	0	000000	.00	1.50
126	26	47	3	0	6	6	0	000000	.00	1.50
127	27	48	3	0	6	6	0	000000	.00	1.50
128	28	49	3	0	8	8	0	000000	.00	1.50
129	29	50	3	0	10	10	0	000000	.00	1.50
130	30	51	3	0	10	10	0	000000	.00	1.50
131	31	52	3	0	10	10	0	000000	.00	1.50
132	32	53	3	0	10	10	0	000000	.00	1.50
133	33	54	3	0	10	10	0	000000	.00	1.50
134	34	55	3	0	10	10	0	000000	.00	1.50
135	35	56	3	0	10	10	0	000000	.00	1.50
136	36	57	3	0	8	8	0	000000	.00	1.50
137	37	58	3	0	6	6	0	000000	.00	1.50
138	38	59	3	0	6	6	0	000000	.00	1.50
139	39	60	3	0	6	6	0	000000	.00	1.50
140	40	61	3	0	6	6	0	000000	.00	1.50
141	41	62	3	0	6	6	0	000000	.00	1.50
142	42	63	3	0	4	4	0	000000	.00	1.50
143	43	64	3	0	4	4	0	000000	.00	1.50
144	44	65	3	0	6	6	0	000000	.00	1.50
145	45	66	3	0	6	6	0	000000	.00	1.50
146	46	67	3	0	6	6	0	000000	.00	1.50
147	47	68	3	0	6	6	0	000000	.00	1.50
148	48	69	3	0	6	6	0	000000	.00	1.50
149	49	70	3	0	8	8	0	000000	.00	1.50
150	50	71	3	0	10	10	0	000000	.00	1.50
151	51	72	3	0	10	10	0	000000	.00	1.50
152	52	73	3	0	10	10	0	000000	.00	1.50
153	53	74	3	0	10	10	0	000000	.00	1.50

F R A M E E L E M E N T D A T A

ELT ID	JOINT END-I	JOINT END-J	LOCAL-AXIS N1	LOCAL-AXIS N2	PROPERTY-ID END-I	PROPERTY-ID END-J	VAR	REL CODES	REF TEMP	ELEMENT LENGTH
154	54	75	3	0	10	10	0	000000	.00	1.50
155	55	76	3	0	10	10	0	000000	.00	1.50
156	56	77	3	0	10	10	0	000000	.00	1.50
157	57	78	3	0	8	8	0	000000	.00	1.50
158	58	79	3	0	6	6	0	000000	.00	1.50
159	59	80	3	0	6	6	0	000000	.00	1.50
160	60	81	3	0	6	6	0	000000	.00	1.50
161	61	82	3	0	6	6	0	000000	.00	1.50
162	62	83	3	0	6	6	0	000000	.00	1.50
163	63	84	3	0	4	4	0	000000	.00	1.50
164	64	85	3	0	4	4	0	000000	.00	1.50
165	65	86	3	0	5	5	0	000000	.00	1.50
166	66	87	3	0	5	5	0	000000	.00	1.50
167	67	88	3	0	5	5	0	000000	.00	1.50
168	68	89	3	0	5	5	0	000000	.00	1.50
169	69	90	3	0	5	5	0	000000	.00	1.50
170	70	91	3	0	7	7	0	000000	.00	1.50
171	71	92	3	0	9	9	0	000000	.00	1.50
172	72	93	3	0	9	9	0	000000	.00	1.50
173	73	94	3	0	9	9	0	000000	.00	1.50
174	74	95	3	0	9	9	0	000000	.00	1.50
175	75	96	3	0	9	9	0	000000	.00	1.50
176	76	97	3	0	9	9	0	000000	.00	1.50
177	77	98	3	0	9	9	0	000000	.00	1.50
178	78	99	3	0	7	7	0	000000	.00	1.50
179	79	100	3	0	5	5	0	000000	.00	1.50
180	80	101	3	0	5	5	0	000000	.00	1.50
181	81	102	3	0	5	5	0	000000	.00	1.50
182	82	103	3	0	5	5	0	000000	.00	1.50
183	83	104	3	0	5	5	0	000000	.00	1.50
184	84	105	3	0	4	4	0	000000	.00	1.50
5001	1001	1	3	0	12	12	0	010010	.00	.05
5021	1021	21	3	0	12	12	0	010010	.00	.05
5049	1049	49	3	0	11	11	0	000000	.00	10.00
5057	1057	57	3	0	11	11	0	000000	.00	10.00
5085	1085	85	3	0	12	12	0	010010	.00	.05
5105	1105	105	3	0	12	12	0	010010	.00	.05

T O T A L W E I G H T S A N D M A S S E S

PROP	WEIGHT	MASS
1	144.2220	.0000
2	264.2350	.0000
3	122.7005	.0000
4	.0000	.0000
5	.0000	.0000
6	.0000	.0000
7	.0000	.0000
8	.0000	.0000
9	.0000	.0000
10	.0000	.0000
11	.0000	.0000
12	.0000	.0000
TOTAL	531.1575	.0000

J O I N T L O A D S

JOINT	LOAD	FX	FY	FZ	MX	MY	MZ
23	1	.000E+00	.000E+00	-.215E+01	.000E+00	.000E+00	.000E+00
24	1	.000E+00	.000E+00	-.620E+01	.000E+00	.000E+00	.000E+00
25	1	.000E+00	.000E+00	-.130E+01	.000E+00	.000E+00	.000E+00
26	1	.000E+00	.000E+00	-.620E+01	.000E+00	.000E+00	.000E+00
27	1	.000E+00	.000E+00	-.215E+01	.000E+00	.000E+00	.000E+00
28	1	.000E+00	.000E+00	-.267E+01	.000E+00	.000E+00	.000E+00
29	1	.000E+00	.000E+00	-.825E+00	.000E+00	.000E+00	.000E+00
44	1	.000E+00	.000E+00	-.430E+01	.000E+00	.000E+00	.000E+00
45	1	.000E+00	.000E+00	-.124E+02	.000E+00	.000E+00	.000E+00
46	1	.000E+00	.000E+00	-.260E+01	.000E+00	.000E+00	.000E+00
47	1	.000E+00	.000E+00	-.124E+02	.000E+00	.000E+00	.000E+00
48	1	.000E+00	.000E+00	-.430E+01	.000E+00	.000E+00	.000E+00
49	1	.000E+00	.000E+00	-.535E+01	.000E+00	.000E+00	.000E+00
50	1	.000E+00	.000E+00	-.165E+01	.000E+00	.000E+00	.000E+00
65	1	.000E+00	.000E+00	-.215E+01	.000E+00	.000E+00	.000E+00
66	1	.000E+00	.000E+00	-.620E+01	.000E+00	.000E+00	.000E+00
67	1	.000E+00	.000E+00	-.130E+01	.000E+00	.000E+00	.000E+00
68	1	.000E+00	.000E+00	-.620E+01	.000E+00	.000E+00	.000E+00
69	1	.000E+00	.000E+00	-.215E+01	.000E+00	.000E+00	.000E+00
70	1	.000E+00	.000E+00	-.267E+01	.000E+00	.000E+00	.000E+00
71	1	.000E+00	.000E+00	-.825E+00	.000E+00	.000E+00	.000E+00
28	2	.000E+00	.000E+00	-.145E+01	.000E+00	.000E+00	.000E+00
29	2	.000E+00	.000E+00	-.205E+01	.000E+00	.000E+00	.000E+00
30	2	.000E+00	.000E+00	-.280E+01	.000E+00	.000E+00	.000E+00
31	2	.000E+00	.000E+00	-.615E+01	.000E+00	.000E+00	.000E+00
32	2	.000E+00	.000E+00	-.100E+00	.000E+00	.000E+00	.000E+00
33	2	.000E+00	.000E+00	-.615E+01	.000E+00	.000E+00	.000E+00
34	2	.000E+00	.000E+00	-.280E+01	.000E+00	.000E+00	.000E+00
35	2	.000E+00	.000E+00	-.205E+01	.000E+00	.000E+00	.000E+00
36	2	.000E+00	.000E+00	-.145E+01	.000E+00	.000E+00	.000E+00
49	2	.000E+00	.000E+00	-.290E+01	.000E+00	.000E+00	.000E+00
50	2	.000E+00	.000E+00	-.410E+01	.000E+00	.000E+00	.000E+00
51	2	.000E+00	.000E+00	-.560E+01	.000E+00	.000E+00	.000E+00
52	2	.000E+00	.000E+00	-.123E+02	.000E+00	.000E+00	.000E+00
53	2	.000E+00	.000E+00	-.200E+00	.000E+00	.000E+00	.000E+00
54	2	.000E+00	.000E+00	-.123E+02	.000E+00	.000E+00	.000E+00
55	2	.000E+00	.000E+00	-.560E+01	.000E+00	.000E+00	.000E+00
56	2	.000E+00	.000E+00	-.410E+01	.000E+00	.000E+00	.000E+00
57	2	.000E+00	.000E+00	-.290E+01	.000E+00	.000E+00	.000E+00
70	2	.000E+00	.000E+00	-.145E+01	.000E+00	.000E+00	.000E+00
71	2	.000E+00	.000E+00	-.205E+01	.000E+00	.000E+00	.000E+00
72	2	.000E+00	.000E+00	-.280E+01	.000E+00	.000E+00	.000E+00
73	2	.000E+00	.000E+00	-.615E+01	.000E+00	.000E+00	.000E+00
74	2	.000E+00	.000E+00	-.100E+00	.000E+00	.000E+00	.000E+00
75	2	.000E+00	.000E+00	-.615E+01	.000E+00	.000E+00	.000E+00
76	2	.000E+00	.000E+00	-.280E+01	.000E+00	.000E+00	.000E+00
77	2	.000E+00	.000E+00	-.205E+01	.000E+00	.000E+00	.000E+00
78	2	.000E+00	.000E+00	-.145E+01	.000E+00	.000E+00	.000E+00

J O I N T A N D E L E M E N T O U T P U T S E L E C T I O N

TYPE		FIRST ID	LAST ID	ID INC	CODE
1	(JOINT DISPL)	1	105	1	1
2	(JOINT REACT)	1001	1021	20	1
2	(JOINT REACT)	1085	1105	20	1
2	(JOINT REACT)	1049	1057	8	1
5	(FRAME ELEMT)	5049	5049	1	1
5	(FRAME ELEMT)	5001	5001	1	1
5	(FRAME ELEMT)	5021	5021	1	1
5	(FRAME ELEMT)	1	10	1	1
5	(FRAME ELEMT)	21	30	1	1
5	(FRAME ELEMT)	41	50	1	1
5	(FRAME ELEMT)	61	70	1	1
5	(FRAME ELEMT)	81	90	1	1

REPOSICION 303+200. 3 VANOS 13+17+13 FILE:PCARGA. PRUEBA DE CARGA.

J O I N T D I S P L A C E M E N T S

LOAD CONDITION 1 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
1	-.6076E-03	-.1153E-07	-.2195E-03	-.1184E-03	.5377E-03	.3723E-07
2	-.000608	.000000	-.001400	-.000070	.000459	.000000
3	-.000608	.000000	-.002177	-.000039	.000224	.000000
4	-.000608	.000000	-.002370	-.000020	-.000051	.000000
5	-.000608	.000000	-.001992	-.000009	-.000291	.000000
6	-.000608	.000000	-.001194	.000004	-.000415	.000000
7	-.6076E-03	-.7849E-10	-.3354E-03	.1322E-04	-.3490E-03	.4630E-07
8	-.6075E-03	.6832E-08	.2652E-03	.9569E-05	-.2130E-03	.2625E-07
9	-.6074E-03	.4538E-08	.5991E-03	.5289E-05	-.1038E-03	.1270E-07
10	-.6073E-03	.2599E-08	.7267E-03	.2674E-05	-.1994E-04	.5361E-08
11	-.6071E-03	.1910E-08	.7001E-03	.1186E-05	.4076E-04	.6795E-09
12	-.6070E-03	.2248E-08	.5685E-03	.2607E-06	.7863E-04	-.3646E-08
13	-.6068E-03	.3678E-08	.3806E-03	-.4997E-06	.9368E-04	-.9747E-08
14	-.6067E-03	.5424E-08	.1854E-03	-.1321E-05	.8573E-04	-.2059E-07
15	-.6066E-03	-.1833E-09	.3006E-04	-.1749E-05	.5806E-04	-.3642E-07
16	-.6065E-03	-.5435E-08	-.6676E-04	-.1060E-05	.3199E-04	-.2023E-07
17	-.6065E-03	-.3662E-08	-.1133E-03	-.7012E-06	.1184E-04	-.9157E-08
18	-.6065E-03	-.2419E-08	-.1211E-03	-.6791E-06	-.3722E-05	-.2686E-08
19	-.6064E-03	-.2537E-08	-.9982E-04	-.1002E-05	-.1490E-04	.2694E-08
20	-.6064E-03	-.3133E-08	-.5858E-04	-.1818E-05	-.2193E-04	.1151E-07
21	-.6063E-03	.9639E-08	-.5975E-05	-.3156E-05	-.2407E-04	.3365E-07
22	-.6077E-03	-.7975E-08	-.4014E-03	-.7645E-04	.5209E-03	.2368E-07
23	-.000608	.000000	-.001484	-.000034	.000437	.000000
24	-.000608	.000000	-.002222	-.000017	.000216	.000000
25	-.000608	.000000	-.002393	-.000008	-.000054	.000000
26	-.000608	.000000	-.002004	-.000004	-.000293	.000000
27	-.000608	.000000	-.001187	.000006	-.000418	.000000
28	-.6077E-03	-.8248E-10	-.3068E-03	.2150E-04	-.3471E-03	.6007E-07
29	-.6076E-03	.5006E-08	.2795E-03	.8579E-05	-.2097E-03	.2577E-07
30	-.6074E-03	.2984E-08	.6054E-03	.3025E-05	-.1029E-03	.1095E-07
31	-.6073E-03	.1633E-08	.7296E-03	.1176E-05	-.1973E-04	.4313E-08
32	-.6071E-03	.1180E-08	.7013E-03	.4435E-06	.4067E-04	.5110E-09
33	-.6070E-03	.1409E-08	.5687E-03	.4784E-07	.7843E-04	-.2981E-08
34	-.6068E-03	.2416E-08	.3800E-03	-.3719E-06	.9354E-04	-.8464E-08
35	-.6067E-03	.3978E-08	.1833E-03	-.1238E-05	.8588E-04	-.2031E-07
36	-.6065E-03	-.1375E-09	.2682E-04	-.2156E-05	.5726E-04	-.4755E-07
37	-.6065E-03	-.3964E-08	-.6805E-04	-.6436E-06	.3178E-04	-.1975E-07
38	-.6065E-03	-.2385E-08	-.1141E-03	-.2895E-06	.1186E-04	-.7945E-08
39	-.6064E-03	-.1491E-08	-.1219E-03	-.2455E-06	-.3604E-05	-.2353E-08
40	-.6064E-03	-.1501E-08	-.1009E-03	-.3882E-06	-.1466E-04	.1564E-08
41	-.6064E-03	-.1815E-08	-.6071E-04	-.8599E-06	-.2131E-04	.7056E-08
42	-.6064E-03	.6624E-08	-.1084E-04	-.2032E-05	-.2360E-04	.2089E-07
43	-.6077E-03	.0000E+00	-.4688E-03	.0000E+00	.5058E-03	.0000E+00
44	-.000608	.000000	-.001512	.000000	.000429	.000000
45	-.000608	.000000	-.002237	.000000	.000213	.000000
46	-.000608	.000000	-.002400	.000000	-.000056	.000000
47	-.000608	.000000	-.002009	.000000	-.000294	.000000
48	-.000608	.000000	-.001180	.000000	-.000424	.000000
49	-.6080E-03	.0000E+00	-.2702E-03	.0000E+00	-.3409E-03	.0000E+00
50	-.6077E-03	.0000E+00	.2875E-03	.0000E+00	-.2052E-03	.0000E+00

REPOSICION 303+200. 3 VANOS 13+17+13 FILE:PCARGA. PRUEBA DE CARGA.

J O I N T D I S P L A C E M E N T S

LOAD CONDITION 1 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
51	-.6075E-03	.0000E+00	.6077E-03	.0000E+00	-.1022E-03	.0000E+00
52	-.6073E-03	.0000E+00	.7305E-03	.0000E+00	-.1956E-04	.0000E+00
53	-.6071E-03	.0000E+00	.7017E-03	.0000E+00	.4071E-04	.0000E+00
54	-.6070E-03	.0000E+00	.5688E-03	.0000E+00	.7844E-04	.0000E+00
55	-.6068E-03	.0000E+00	.3797E-03	.0000E+00	.9364E-04	.0000E+00
56	-.6066E-03	.0000E+00	.1818E-03	.0000E+00	.8653E-04	.0000E+00
57	-.6063E-03	.0000E+00	.2335E-04	.0000E+00	.5366E-04	.0000E+00
58	-.6064E-03	.0000E+00	-.6843E-04	.0000E+00	.3160E-04	.0000E+00
59	-.6064E-03	.0000E+00	-.1143E-03	.0000E+00	.1185E-04	.0000E+00
60	-.6064E-03	.0000E+00	-.1220E-03	.0000E+00	-.3579E-05	.0000E+00
61	-.6064E-03	.0000E+00	-.1012E-03	.0000E+00	-.1458E-04	.0000E+00
62	-.6064E-03	.0000E+00	-.6141E-04	.0000E+00	-.2110E-04	.0000E+00
63	-.6064E-03	.0000E+00	-.1263E-04	.0000E+00	-.2318E-04	.0000E+00
64	-.6077E-03	.7975E-08	-.4014E-03	.7645E-04	.5209E-03	-.2368E-07
65	-.000608	.000000	-.001484	.000034	.000437	.000000
66	-.000608	.000000	-.002222	.000017	.000216	.000000
67	-.000608	.000000	-.002393	.000008	-.000054	.000000
68	-.000608	.000000	-.002004	.000004	-.000293	.000000
69	-.000608	.000000	-.001187	-.000006	-.000418	.000000
70	-.6077E-03	.8248E-10	-.3068E-03	-.2150E-04	-.3471E-03	-.6007E-07
71	-.6076E-03	-.5006E-08	.2795E-03	-.8579E-05	-.2097E-03	-.2577E-07
72	-.6074E-03	-.2984E-08	.6054E-03	-.3025E-05	-.1029E-03	-.1095E-07
73	-.6073E-03	-.1633E-08	.7296E-03	-.1176E-05	-.1973E-04	-.4313E-08
74	-.6071E-03	-.1180E-08	.7013E-03	-.4435E-06	.4067E-04	-.5110E-09
75	-.6070E-03	-.1409E-08	.5687E-03	-.4784E-07	.7843E-04	.2981E-08
76	-.6068E-03	-.2416E-08	.3800E-03	.3719E-06	.9354E-04	.8464E-08
77	-.6067E-03	-.3978E-08	.1833E-03	.1238E-05	.8588E-04	.2031E-07
78	-.6065E-03	.1375E-09	.2682E-04	.2156E-05	.5726E-04	.4755E-07
79	-.6065E-03	.3964E-08	-.6805E-04	.6436E-06	.3178E-04	.1975E-07
80	-.6065E-03	.2385E-08	-.1141E-03	.2895E-06	.1186E-04	.7945E-08
81	-.6064E-03	.1491E-08	-.1219E-03	.2455E-06	-.3604E-05	.2353E-08
82	-.6064E-03	.1501E-08	-.1009E-03	.3882E-06	-.1466E-04	-.1564E-08
83	-.6064E-03	.1815E-08	-.6071E-04	.8599E-06	-.2131E-04	-.7056E-08
84	-.6064E-03	-.6624E-08	-.1084E-04	.2032E-05	-.2360E-04	-.2089E-07
85	-.6076E-03	.1153E-07	-.2195E-03	.1184E-03	.5377E-03	-.3723E-07
86	-.000608	.000000	-.001400	.000070	.000459	.000000
87	-.000608	.000000	-.002177	.000039	.000224	.000000
88	-.000608	.000000	-.002370	.000020	-.000051	.000000
89	-.000608	.000000	-.001992	.000009	-.000291	.000000
90	-.000608	.000000	-.001194	-.000004	-.000415	.000000
91	-.6076E-03	.7849E-10	-.3354E-03	-.1322E-04	-.3490E-03	-.4630E-07
92	-.6075E-03	-.6832E-08	.2652E-03	-.9569E-05	-.2130E-03	-.2625E-07
93	-.6074E-03	-.4538E-08	.5991E-03	-.5289E-05	-.1038E-03	-.1270E-07
94	-.6073E-03	-.2599E-08	.7267E-03	-.2674E-05	-.1994E-04	-.5361E-08
95	-.6071E-03	-.1910E-08	.7001E-03	-.1186E-05	.4076E-04	-.6795E-09
96	-.6070E-03	-.2248E-08	.5685E-03	-.2607E-06	.7863E-04	.3646E-08
97	-.6068E-03	-.3678E-08	.3806E-03	.4997E-06	.9368E-04	.9747E-08
98	-.6067E-03	-.5424E-08	.1854E-03	.1321E-05	.8573E-04	.2059E-07
99	-.6066E-03	.1833E-09	.3006E-04	.1749E-05	.5806E-04	.3642E-07
100	-.6065E-03	.5435E-08	-.6676E-04	.1060E-05	.3199E-04	.2023E-07

J O I N T D I S P L A C E M E N T S

LOAD CONDITION 1 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
101	-.6065E-03	.3662E-08	-.1133E-03	.7012E-06	.1184E-04	.9157E-08
102	-.6065E-03	.2419E-08	-.1211E-03	.6791E-06	-.3722E-05	.2686E-08
103	-.6064E-03	.2537E-08	-.9982E-04	.1002E-05	-.1490E-04	-.2694E-08
104	-.6064E-03	.3133E-08	-.5858E-04	.1818E-05	-.2193E-04	-.1151E-07
105	-.6063E-03	-.9639E-08	-.5975E-05	.3156E-05	-.2407E-04	-.3365E-07

J O I N T D I S P L A C E M E N T S

LOAD CONDITION 2 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
1	.1409E-05	.2117E-08	.4716E-04	.2507E-04	-.1841E-03	-.3991E-08
2	.1407E-05	.8220E-09	.4496E-03	.1462E-04	-.1672E-03	-.3942E-08
3	.1398E-05	.1844E-08	.7622E-03	.8419E-05	-.1117E-03	-.6497E-08
4	.1378E-05	.4071E-08	.9173E-03	.6358E-05	-.2330E-04	-.1280E-07
5	.1335E-05	.8309E-08	.8416E-03	.7424E-05	.9999E-04	-.2589E-07
6	.1252E-05	.1327E-07	.4569E-03	.1148E-04	.2604E-03	-.5230E-07
7	.1103E-05	.2924E-09	-.3208E-03	.1608E-04	.4548E-03	-.9240E-07
8	.000001	.000000	-.001455	.000009	.000582	.000000
9	.000001	.000000	-.002660	.000001	.000517	.000000
10	.000000	.000000	-.003545	-.000004	.000291	.000000
11	.000000	.000000	-.003857	-.000004	.000000	.000000
12	-.000000	.000000	-.003545	-.000004	-.000291	.000000
13	-.000001	.000000	-.002660	.000001	-.000517	.000000
14	-.000001	.000000	-.001455	.000009	-.000582	.000000
15	-.1103E-05	.2924E-09	-.3208E-03	.1608E-04	-.4548E-03	.9240E-07
16	-.1252E-05	.1327E-07	.4569E-03	.1148E-04	-.2604E-03	.5230E-07
17	-.1335E-05	.8309E-08	.8416E-03	.7424E-05	-.9999E-04	.2589E-07
18	-.1378E-05	.4071E-08	.9173E-03	.6358E-05	.2330E-04	.1280E-07
19	-.1398E-05	.1844E-08	.7622E-03	.8419E-05	.1117E-03	.6497E-08
20	-.1407E-05	.8220E-09	.4496E-03	.1462E-04	.1672E-03	.3942E-08
21	-.1409E-05	.2117E-08	.4716E-04	.2507E-04	.1841E-03	.3991E-08
22	.1420E-05	.1509E-08	.8574E-04	.1613E-04	-.1804E-03	-.3116E-08
23	.1420E-05	.4932E-09	.4668E-03	.6892E-05	-.1624E-03	-.2847E-08
24	.1421E-05	.1138E-08	.7712E-03	.3268E-05	-.1098E-03	-.4850E-08
25	.1422E-05	.2566E-08	.9240E-03	.2418E-05	-.2260E-04	-.1003E-07
26	.1420E-05	.5465E-08	.8500E-03	.3574E-05	.9954E-04	-.2196E-07
27	.1407E-05	.9735E-08	.4728E-03	.8692E-05	.2574E-03	-.5068E-07
28	.1338E-05	.2458E-09	-.2896E-03	.2175E-04	.4517E-03	-.1202E-06
29	.000001	.000000	-.001441	.000009	.000584	.000000
30	.000001	.000000	-.002660	.000000	.000517	.000000
31	.000000	.000000	-.003552	-.000003	.000291	.000000
32	.000000	.000000	-.003862	-.000002	.000000	.000000
33	-.000000	.000000	-.003552	-.000003	-.000291	.000000
34	-.000001	.000000	-.002660	.000000	-.000517	.000000
35	-.000001	.000000	-.001441	.000009	-.000584	.000000
36	-.1338E-05	.2458E-09	-.2896E-03	.2175E-04	-.4517E-03	.1202E-06
37	-.1407E-05	.9735E-08	.4728E-03	.8692E-05	-.2574E-03	.5068E-07
38	-.1420E-05	.5465E-08	.8500E-03	.3574E-05	-.9954E-04	.2196E-07
39	-.1422E-05	.2566E-08	.9240E-03	.2418E-05	.2260E-04	.1003E-07
40	-.1421E-05	.1138E-08	.7712E-03	.3268E-05	.1098E-03	.4850E-08
41	-.1420E-05	.4932E-09	.4668E-03	.6892E-05	.1624E-03	.2847E-08
42	-.1420E-05	.1509E-08	.8574E-04	.1613E-04	.1804E-03	.3116E-08
43	.1425E-05	.0000E+00	.9998E-04	.0000E+00	-.1771E-03	.0000E+00
44	.1427E-05	.0000E+00	.4723E-03	.0000E+00	-.1607E-03	.0000E+00
45	.1433E-05	.0000E+00	.7737E-03	.0000E+00	-.1093E-03	.0000E+00
46	.1449E-05	.0000E+00	.9259E-03	.0000E+00	-.2250E-04	.0000E+00
47	.1487E-05	.0000E+00	.8527E-03	.0000E+00	.9906E-04	.0000E+00
48	.1583E-05	.0000E+00	.4806E-03	.0000E+00	.2536E-03	.0000E+00
49	.1837E-05	.0000E+00	-.2537E-03	.0000E+00	.4408E-03	.0000E+00
50	.000001	.000000	-.001432	.000000	.000590	.000000

REPOSICION 303+200. 3 VANOS 13+17+13 FILE:PCARGA. PRUEBA DE CARGA.

J O I N T D I S P L A C E M E N T S

LOAD CONDITION 2 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
51	.000001	.000000	-.002661	.000000	.000518	.000000
52	.000000	.000000	-.003557	.000000	.000291	.000000
53	.000000	.000000	-.003864	.000000	.000000	.000000
54	-.000000	.000000	-.003557	.000000	-.000291	.000000
55	-.000001	.000000	-.002661	.000000	-.000518	.000000
56	-.000001	.000000	-.001432	.000000	-.000590	.000000
57	-.1837E-05	.0000E+00	-.2537E-03	.0000E+00	-.4408E-03	.0000E+00
58	-.1583E-05	.0000E+00	.4806E-03	.0000E+00	-.2536E-03	.0000E+00
59	-.1487E-05	.0000E+00	.8527E-03	.0000E+00	-.9906E-04	.0000E+00
60	-.1449E-05	.0000E+00	.9259E-03	.0000E+00	.2250E-04	.0000E+00
61	-.1433E-05	.0000E+00	.7737E-03	.0000E+00	.1093E-03	.0000E+00
62	-.1427E-05	.0000E+00	.4723E-03	.0000E+00	.1607E-03	.0000E+00
63	-.1425E-05	.0000E+00	.9998E-04	.0000E+00	.1771E-03	.0000E+00
64	.1420E-05	-.1509E-08	.8574E-04	-.1613E-04	-.1804E-03	.3116E-08
65	.1420E-05	-.4932E-09	.4668E-03	-.6892E-05	-.1624E-03	.2847E-08
66	.1421E-05	-.1138E-08	.7712E-03	-.3268E-05	-.1098E-03	.4850E-08
67	.1422E-05	-.2566E-08	.9240E-03	-.2418E-05	-.2260E-04	.1003E-07
68	.1420E-05	-.5465E-08	.8500E-03	-.3574E-05	.9954E-04	.2196E-07
69	.1407E-05	-.9735E-08	.4728E-03	-.8692E-05	.2574E-03	.5068E-07
70	.1338E-05	-.2458E-09	-.2896E-03	-.2175E-04	.4517E-03	.1202E-06
71	.000001	.000000	-.001441	-.000009	.000584	.000000
72	.000001	.000000	-.002660	-.000000	.000517	.000000
73	.000000	.000000	-.003552	.000003	.000291	.000000
74	.000000	.000000	-.003862	.000002	.000000	.000000
75	-.000000	.000000	-.003552	.000003	-.000291	.000000
76	-.000001	.000000	-.002660	-.000000	-.000517	.000000
77	-.000001	.000000	-.001441	-.000009	-.000584	.000000
78	-.1338E-05	-.2458E-09	-.2896E-03	-.2175E-04	-.4517E-03	-.1202E-06
79	-.1407E-05	-.9735E-08	.4728E-03	-.8692E-05	-.2574E-03	-.5068E-07
80	-.1420E-05	-.5465E-08	.8500E-03	-.3574E-05	-.9954E-04	-.2196E-07
81	-.1422E-05	-.2566E-08	.9240E-03	-.2418E-05	.2260E-04	-.1003E-07
82	-.1421E-05	-.1138E-08	.7712E-03	-.3268E-05	.1098E-03	-.4850E-08
83	-.1420E-05	-.4932E-09	.4668E-03	-.6892E-05	.1624E-03	-.2847E-08
84	-.1420E-05	-.1509E-08	.8574E-04	-.1613E-04	.1804E-03	-.3116E-08
85	.1409E-05	-.2117E-08	.4716E-04	-.2507E-04	-.1841E-03	.3991E-08
86	.1407E-05	-.8220E-09	.4496E-03	-.1462E-04	-.1672E-03	.3942E-08
87	.1398E-05	-.1844E-08	.7622E-03	-.8419E-05	-.1117E-03	.6497E-08
88	.1378E-05	-.4071E-08	.9173E-03	-.6358E-05	-.2330E-04	.1280E-07
89	.1335E-05	-.8309E-08	.8416E-03	-.7424E-05	.9999E-04	.2589E-07
90	.1252E-05	-.1327E-07	.4569E-03	-.1148E-04	.2604E-03	.5230E-07
91	.1103E-05	-.2924E-09	-.3208E-03	-.1608E-04	.4548E-03	.9240E-07
92	.000001	.000000	-.001455	-.000009	.000582	.000000
93	.000001	.000000	-.002660	-.000001	.000517	.000000
94	.000000	.000000	-.003545	.000004	.000291	.000000
95	.000000	.000000	-.003857	.000004	.000000	.000000
96	-.000000	.000000	-.003545	.000004	-.000291	.000000
97	-.000001	.000000	-.002660	-.000001	-.000517	.000000
98	-.000001	.000000	-.001455	-.000009	-.000582	.000000
99	-.1103E-05	-.2924E-09	-.3208E-03	-.1608E-04	-.4548E-03	-.9240E-07
100	-.1252E-05	-.1327E-07	.4569E-03	-.1148E-04	-.2604E-03	-.5230E-07

REPOSICION 303+200. 3 VANOS 13+17+13 FILE:PCARGA. PRUEBA DE CARGA.

J O I N T D I S P L A C E M E N T S

LOAD CONDITION 2 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
101	-.1335E-05	-.8309E-08	.8416E-03	-.7424E-05	-.9999E-04	-.2589E-07
102	-.1378E-05	-.4071E-08	.9173E-03	-.6358E-05	.2330E-04	-.1280E-07
103	-.1398E-05	-.1844E-08	.7622E-03	-.8419E-05	.1117E-03	-.6497E-08
104	-.1407E-05	-.8220E-09	.4496E-03	-.1462E-04	.1672E-03	-.3942E-08
105	-.1409E-05	-.2117E-08	.4716E-04	-.2507E-04	.1841E-03	-.3991E-08

REPOSICION 303+200. 3 VANOS 13+17+13 FILE:PCARGA. PRUEBA DE CARGA.

R E A C T I O N S A N D A P P L I E D F O R C E S

LOAD CONDITION 1 - FORCES "F" AND MOMENTS "M"

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1001	.0729	.0000	15.0989	.0000	.0036	.0000
1021	.0727	.0000	.4111	.0000	.0036	.0000
1049	-1.4381	.0000	60.1692	.0000	-3.3472	.0000
1057	1.1468	.0000	-5.1991	.0000	5.1293	.0000
1085	.0729	.0000	15.0989	.0000	.0036	.0000
1105	.0727	.0000	.4111	.0000	.0036	.0000
TOTAL	-.5153E-11	-.3904E-13	.8599E+02	.1157E-12	.1797E+01	-.2974E-12

REPOSICION 303+200. 3 VANOS 13+17+13 FILE:PCARGA. PRUEBA DE CARGA.

R E A C T I O N S A N D A P P L I E D F O R C E S

LOAD CONDITION 2 - FORCES "F" AND MOMENTS "M"

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1001	-.0002	.0000	-3.2443	.0000	.0000	.0000
1021	.0002	.0000	-3.2443	.0000	.0000	.0000
1049	2.8874	.0000	56.4886	.0000	9.4684	.0000
1057	-2.8874	.0000	56.4886	.0000	-9.4684	.0000
1085	-.0002	.0000	-3.2443	.0000	.0000	.0000
1105	.0002	.0000	-3.2443	.0000	.0000	.0000
TOTAL	-.1123E-14	-.1633E-14	.1000E+03	.3168E-13	-.5350E-13	.1926E-14

F R A M E E L E M E N T F O R C E S

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
1								
	1	.000			-.052			3.867
		.000	2.404	-1.800		-.008	.013	
		1.083	2.404	.804		-.008	.004	
		2.167	2.404	3.408		-.008	-.004	
		2.167			-.052			3.867
	2	.000			-.002			-.836
		.000	-.520	.392		.001	-.001	
		1.083	-.520	-.172		.001	.000	
		2.167	-.520	-.735		.001	.001	
		2.167			-.002			-.836
2								
	1	.000			-.030			2.476
		.000	.899	1.418		-.005	.007	
		1.083	.899	2.392		-.005	.001	
		2.167	.899	3.366		-.005	-.004	
		2.167			-.030			2.476
	2	.000			-.008			-.496
		.000	-.250	-.294		.002	-.002	
		1.083	-.250	-.565		.002	.001	
		2.167	-.250	-.837		.002	.003	
		2.167			-.008			-.496
3								
	1	.000			-.015			1.507
		.000	.141	2.641		-.004	.004	
		1.083	.141	2.794		-.004	.000	
		2.167	.141	2.946		-.004	-.004	
		2.167			-.015			1.507
	2	.000			-.019			-.165
		.000	-.211	-.671		.004	-.003	
		1.083	-.211	-.899		.004	.001	
		2.167	-.211	-1.128		.004	.006	
		2.167			-.019			-.165
4								
	1	.000			-.001			.906
		.000	-.172	2.632		-.005	.004	
		1.083	-.172	2.445		-.005	-.001	
		2.167	-.172	2.259		-.005	-.006	
		2.167			-.001			.906
	2	.000			-.039			.085
		.000	-.176	-1.064		.008	-.006	
		1.083	-.176	-1.255		.008	.003	
		2.167	-.176	-1.446		.008	.012	

F R A M E E L E M E N T F O R C E S

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		2.167			-.039			.085
5								
	1	.000			.020			.999
		.000	-.789	2.115		-.008	.007	
		1.083	-.789	1.260		-.008	-.002	
		2.167	-.789	.406		-.008	-.012	
		2.167			.020			.999
	2	.000			-.077			.325
		.000	-.136	-1.486		.016	-.012	
		1.083	-.136	-1.633		.016	.005	
		2.167	-.136	-1.780		.016	.023	
		2.167			-.077			.325
6								
	1	.000			.051			.773
		.000	-.750	.142		-.013	.010	
		1.083	-.750	-.671		-.013	-.004	
		2.167	-.750	-1.484		-.013	-.018	
		2.167			.051			.773
	2	.000			-.137			.367
		.000	.068	-2.052		.026	-.020	
		1.083	.068	-1.978		.026	.008	
		2.167	.068	-1.904		.026	.036	
		2.167			-.137			.367
7								
	1	.000			.080			-.298
		.000	-.088	-1.317		-.013	.018	
		1.063	-.088	-1.411		-.013	.004	
		2.125	-.088	-1.504		-.013	-.010	
		2.125			.080			-.298
	2	.000			-.194			-.581
		.000	.808	-2.183		.026	-.036	
		1.063	.808	-1.325		.026	-.008	
		2.125	.808	-.466		.026	.020	
		2.125			-.194			-.581
8								
	1	.000			.109			-.349
		.000	.071	-1.209		-.008	.011	
		1.063	.071	-1.133		-.008	.003	
		2.125	.071	-1.058		-.008	-.006	
		2.125			.109			-.349
	2	.000			-.252			-.653
		.000	.938	-.315		.016	-.023	
		1.063	.938	.681		.016	-.005	

F R A M E E L E M E N T F O R C E S

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		2.125	.938	1.677		.016	.012	
		2.125			-.252			-.653
9								
	1	.000			.127			-.213
		.000	.097	-.974		-.004	.006	
		1.063	.097	-.870		-.004	.001	
		2.125	.097	-.767		-.004	-.003	
		2.125			.127			-.213
	2	.000			-.288			-.390
		.000	.645	1.653		.008	-.011	
		1.063	.645	2.338		.008	-.003	
		2.125	.645	3.024		.008	.005	
		2.125			-.288			-.390
10								
	1	.000			.135			-.121
		.000	.112	-.749		-.001	.002	
		1.063	.112	-.630		-.001	.001	
		2.125	.112	-.511		-.001	-.000	
		2.125			.135			-.121
	2	.000			-.303			.001
		.000	.060	2.961		.002	-.004	
		1.063	.060	3.024		.002	-.002	
		2.125	.060	3.088		.002	.000	
		2.125			-.303			.001
21								
	1	.000			-.019			7.542
		.000	9.118	.178		-.010	.015	
		1.083	9.118	10.056		-.010	.005	
		2.167	9.118	19.934		-.010	-.006	
		2.167			-.019			7.542
	2	.000			.001			-1.644
		.000	-1.964	-.034		.002	-.002	
		1.083	-1.964	-2.161		.002	.000	
		2.167	-1.964	-4.289		.002	.002	
		2.167			.001			-1.644
22								
	1	.000			-.030			3.016
		.000	6.405	19.497		-.006	.008	
		1.083	6.405	26.435		-.006	.001	
		2.167	6.405	33.374		-.006	-.006	
		2.167			-.030			3.016
	2	.000			.001			-.645
		.000	-1.937	-4.180		.003	-.003	

F R A M E E L E M E N T F O R C E S

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		1.083	-1.937	-6.279		.003	.001	
		2.167	-1.937	-8.377		.003	.004	
		2.167			.001			-.645
23								
	1	.000			-.034			1.574
		.000	-.831	33.170		-.005	.006	
		1.083	-.831	32.270		-.005	-.000	
		2.167	-.831	31.370		-.005	-.006	
		2.167			-.034			1.574
	2	.000			.002			-.151
		.000	-1.913	-8.357		.006	-.005	
		1.083	-1.913	-10.429		.006	.002	
		2.167	-1.913	-12.502		.006	.009	
		2.167			.002			-.151
24								
	1	.000			-.034			.833
		.000	-2.565	31.274		-.008	.007	
		1.083	-2.565	28.495		-.008	-.002	
		2.167	-2.565	25.716		-.008	-.010	
		2.167			-.034			.833
	2	.000			-.002			.206
		.000	-1.908	-12.533		.014	-.011	
		1.083	-1.908	-14.600		.014	.004	
		2.167	-1.908	-16.667		.014	.019	
		2.167			-.002			.206
25								
	1	.000			-.022			1.782
		.000	-9.690	25.463		-.015	.012	
		1.083	-9.690	14.965		-.015	-.005	
		2.167	-9.690	4.467		-.015	-.021	
		2.167			-.022			1.782
	2	.000			-.027			.911
		.000	-1.930	-16.784		.030	-.023	
		1.083	-1.930	-18.875		.030	.010	
		2.167	-1.930	-20.966		.030	.042	
		2.167			-.027			.911
26								
	1	.000			.033			2.695
		.000	-10.456	2.871		-.032	.023	
		1.083	-10.456	-8.455		-.032	-.012	
		2.167	-10.456	-19.782		-.032	-.046	
		2.167			.033			2.695
	2	.000			-.138			2.326

F R A M E E L E M E N T F O R C E S

ELT	LOAD	DIST	1-2 PLANE		AXIAL	1-3 PLANE		AXIAL
ID	COND	ENDI	SHEAR	MOMENT	FORCE	SHEAR	MOMENT	TORQ
		.000	-1.181	-21.937		.063	-.045	
		1.083	-1.181	-23.217		.063	.024	
		2.167	-1.181	-24.496		.063	.092	
		2.167			-.138			2.326
27								
	1	.000			.252			-2.345
		.000	1.132	-17.953		-.032	.046	
		1.063	1.132	-16.750		-.032	.012	
		2.125	1.132	-15.547		-.032	-.022	
		2.125			.252			-2.345
	2	.000			-.579			-2.393
		.000	10.901	-27.732		.064	-.092	
		1.063	10.901	-16.150		.064	-.024	
		2.125	10.901	-4.568		.064	.044	
		2.125			-.579			-2.393
28								
	1	.000			.308			-1.008
		.000	1.314	-14.417		-.015	.021	
		1.063	1.314	-13.022		-.015	.005	
		2.125	1.314	-11.626		-.015	-.011	
		2.125			.308			-1.008
	2	.000			-.691			-1.498
		.000	10.560	-2.977		.030	-.043	
		1.063	10.560	8.243		.030	-.010	
		2.125	10.560	19.462		.030	.022	
		2.125			-.691			-1.498
29								
	1	.000			.320			-.336
		.000	1.285	-11.497		-.007	.009	
		1.063	1.285	-10.132		-.007	.002	
		2.125	1.285	-8.766		-.007	-.005	
		2.125			.320			-.336
	2	.000			-.716			-.623
		.000	7.239	19.828		.013	-.018	
		1.063	7.239	27.519		.013	-.005	
		2.125	7.239	35.210		.013	.009	
		2.125			-.716			-.623
30								
	1	.000			.323			-.133
		.000	1.287	-8.729		-.002	.004	
		1.063	1.287	-7.362		-.002	.001	
		2.167	1.287	-5.994		-.002	-.001	
		2.167			.323			-.133

F R A M E E L E M E N T F O R C E S

ELT	LOAD	DIST	1-2 PLANE		AXIAL	1-3 PLANE		AXIAL
ID	COND	ENDI	SHEAR	MOMENT	FORCE	SHEAR	MOMENT	TORQ
	2	.000			-.721			.115
		.000	.178	35.248		.004	-.007	
		1.063	.178	35.437		.004	-.003	
		2.125	.178	35.627		.004	.001	
		2.125			-.721			.115
41								
	1	.000			-.005			.000
		.000	7.155	3.244		.000	.000	
		1.083	7.155	10.995		.000	.000	
		2.167	7.155	18.745		.000	.000	
		2.167			-.005			.000
	2	.000			.003			.000
		.000	-1.521	-.715		.000	.000	
		1.083	-1.521	-2.363		.000	.000	
		2.167	-1.521	-4.011		.000	.000	
		2.167			.003			.000
42								
	1	.000			-.026			.000
		.000	6.990	23.598		.000	.000	
		1.083	6.990	31.171		.000	.000	
		2.167	6.990	38.744		.000	.000	
		2.167			-.026			.000
	2	.000			.014			.000
		.000	-2.114	-5.110		.000	.000	
		1.083	-2.114	-7.400		.000	.000	
		2.167	-2.114	-9.690		.000	.000	
		2.167			.014			.000
43								
	1	.000			-.047			.000
		.000	-1.823	40.602		.000	.000	
		1.083	-1.823	38.627		.000	.000	
		2.167	-1.823	36.652		.000	.000	
		2.167			-.047			.000
	2	.000			.035			.000
		.000	-2.240	-10.063		.000	.000	
		1.083	-2.240	-12.490		.000	.000	
		2.167	-2.240	-14.917		.000	.000	
		2.167			.035			.000
44								
	1	.000			-.076			.000
		.000	-2.927	37.474		.000	.000	
		1.083	-2.927	34.303		.000	.000	
		2.167	-2.927	31.132		.000	.000	

F R A M E E L E M E N T F O R C E S

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		2.167			-.076			.000
	2	.000			.083			.000
		.000	-2.321	-14.981		.000	.000	
		1.083	-2.321	-17.496		.000	.000	
		2.167	-2.321	-20.010		.000	.000	
		2.167			.083			.000
45	----------							
	1	.000			-.141			.000
		.000	-12.244	31.926		.000	.000	
		1.083	-12.244	18.662		.000	.000	
		2.167	-12.244	5.398		.000	.000	
		2.167			-.141			.000
	2	.000			.208			.000
		.000	-2.357	-19.695		.000	.000	
		1.083	-2.357	-22.248		.000	.000	
		2.167	-2.357	-24.802		.000	.000	
		2.167			.208			.000
46	----------							
	1	.000			-.312			.000
		.000	-19.391	9.117		.000	.000	
		1.083	-19.391	-11.889		.000	.000	
		2.167	-19.391	-32.896		.000	.000	
		2.167			-.312			.000
	2	.000			.550			.000
		.000	-4.264	-22.315		.000	.000	
		1.083	-4.264	-26.934		.000	.000	
		2.167	-4.264	-31.553		.000	.000	
		2.167			.550			.000
47	----------							
	1	.000			.628			.000
		.000	5.589	-25.855		.000	.000	
		1.063	5.589	-19.917		.000	.000	
		2.125	5.589	-13.978		.000	.000	
		2.125			.628			.000
	2	.000			-1.340			.000
		.000	20.783	-43.927		.000	.000	
		1.063	20.783	-21.846		.000	.000	
		2.125	20.783	.236		.000	.000	
		2.125			-1.340			.000
48	----------							
	1	.000			.459			.000
		.000	1.607	-16.828		.000	.000	
		1.063	1.607	-15.120		.000	.000	

F R A M E E L E M E N T F O R C E S

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		2.125	1.607	-13.413		.000	.000	
		2.125			.459			.000
	2	.000			-1.002			.000
		.000	13.005	-3.248		.000	.000	
		1.063	13.005	10.570		.000	.000	
		2.125	13.005	24.388		.000	.000	
		2.125			-1.002			.000
49	----------							
	1	.000			.398			.000
		.000	1.611	-13.838		.000	.000	
		1.063	1.611	-12.126		.000	.000	
		2.125	1.611	-10.414		.000	.000	
		2.125			.398			.000
	2	.000			-.879			.000
		.000	9.032	23.707		.000	.000	
		1.063	9.032	33.303		.000	.000	
		2.125	9.032	42.899		.000	.000	
		2.125			-.879			.000
50	----------							
	1	.000			.376			.000
		.000	1.579	-10.523		.000	.000	
		1.063	1.579	-8.845		.000	.000	
		2.125	1.579	-7.168		.000	.000	
		2.125			.376			.000
	2	.000			-.838			.000
		.000	-.276	42.950		.000	.000	
		1.063	-.276	42.657		.000	.000	
		2.125	-.276	42.364		.000	.000	
		2.125			-.838			.000
61	----------							
	1	.000			-.019			-7.542
		.000	9.118	.178		.010	-.015	
		1.083	9.118	10.056		.010	-.005	
		2.167	9.118	19.934		.010	.006	
		2.167			-.019			-7.542
	2	.000			.001			1.644
		.000	-1.964	-.034		-.002	.002	
		1.083	-1.964	-2.161		-.002	.000	
		2.167	-1.964	-4.289		-.002	-.002	
		2.167			.001			1.644
62	----------							
	1	.000			-.030			-3.016
		.000	6.405	19.497		.006	-.008	

F R A M E E L E M E N T F O R C E S

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		1.083	6.405	26.435		.006	-.001	
		2.167	6.405	33.374		.006	.006	
		2.167			-.030			-3.016
	2	.000			.001			.645
		.000	-1.937	-4.180		-.003	.003	
		1.083	-1.937	-6.279		-.003	-.001	
		2.167	-1.937	-8.377		-.003	-.004	
		2.167			.001			.645
63								
	1	.000			-.034			-1.574
		.000	-.831	33.170		.005	-.006	
		1.083	-.831	32.270		.005	.000	
		2.167	-.831	31.370		.005	.006	
		2.167			-.034			-1.574
	2	.000			.002			.151
		.000	-1.913	-8.357		-.006	.005	
		1.083	-1.913	-10.429		-.006	-.002	
		2.167	-1.913	-12.502		-.006	-.009	
		2.167			.002			.151
64								
	1	.000			-.034			-.833
		.000	-2.565	31.274		.008	-.007	
		1.083	-2.565	28.495		.008	.002	
		2.167	-2.565	25.716		.008	.010	
		2.167			-.034			-.833
	2	.000			-.002			-.206
		.000	-1.908	-12.533		-.014	.011	
		1.083	-1.908	-14.600		-.014	-.004	
		2.167	-1.908	-16.667		-.014	-.019	
		2.167			-.002			-.206
65								
	1	.000			-.022			-1.782
		.000	-9.690	25.463		.015	-.012	
		1.083	-9.690	14.965		.015	.005	
		2.167	-9.690	4.467		.015	.021	
		2.167			-.022			-1.782
	2	.000			-.027			-.911
		.000	-1.930	-16.784		-.030	.023	
		1.083	-1.930	-18.875		-.030	-.010	
		2.167	-1.930	-20.966		-.030	-.042	
		2.167			-.027			-.911
66								
	1	.000			.033			-2.695

F R A M E E L E M E N T F O R C E S

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	-10.456	2.871		.032	-.023	
		1.083	-10.456	-8.455		.032	.012	
		2.167	-10.456	-19.782		.032	.046	
		2.167			.033			-2.695
	2	.000			-.138			-2.326
		.000	-1.181	-21.937		-.063	.045	
		1.083	-1.181	-23.217		-.063	-.024	
		2.167	-1.181	-24.496		-.063	-.092	
		2.167			-.138			-2.326
67								
	1	.000			.252			2.345
		.000	1.132	-17.953		.032	-.046	
		1.063	1.132	-16.750		.032	-.012	
		2.125	1.132	-15.547		.032	.022	
		2.125			.252			2.345
	2	.000			-.579			2.393
		.000	10.901	-27.732		-.064	.092	
		1.063	10.901	-16.150		-.064	.024	
		2.125	10.901	-4.568		-.064	-.044	
		2.125			-.579			2.393
68								
	1	.000			.308			1.008
		.000	1.314	-14.417		.015	-.021	
		1.063	1.314	-13.022		.015	-.005	
		2.125	1.314	-11.626		.015	.011	
		2.125			.308			1.008
	2	.000			-.691			1.498
		.000	10.560	-2.977		-.030	.043	
		1.063	10.560	8.243		-.030	.010	
		2.125	10.560	19.462		-.030	-.022	
		2.125			-.691			1.498
69								
	1	.000			.320			.336
		.000	1.285	-11.497		.007	-.009	
		1.063	1.285	-10.132		.007	-.002	
		2.125	1.285	-8.766		.007	.005	
		2.125			.320			.336
	2	.000			-.716			.623
		.000	7.239	19.828		-.013	.018	
		1.063	7.239	27.519		-.013	.005	
		2.125	7.239	35.210		-.013	-.009	
		2.125			-.716			.623

F R A M E E L E M E N T F O R C E S

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
70								
	1	.000			.323			.133
		.000	1.287	-8.729		.002	-.004	
		1.063	1.287	-7.362		.002	-.001	
		2.125	1.287	-5.994		.002	.001	
		2.125			.323			.133
	2	.000			-.721			-.115
		.000	.178	35.248		-.004	.007	
		1.063	.178	35.437		-.004	.003	
		2.125	.178	35.627		-.004	-.001	
		2.125			-.721			-.115
81								
	1	.000			-.052			-3.867
		.000	2.404	-1.800		.008	-.013	
		1.083	2.404	.804		.008	-.004	
		2.167	2.404	3.408		.008	.004	
		2.167			-.052			-3.867
	2	.000			-.002			.836
		.000	-.520	.392		-.001	.001	
		1.083	-.520	-.172		-.001	.000	
		2.167	-.520	-.735		-.001	-.001	
		2.167			-.002			.836
82								
	1	.000			-.030			-2.476
		.000	.899	1.418		.005	-.007	
		1.083	.899	2.392		.005	-.001	
		2.167	.899	3.366		.005	.004	
		2.167			-.030			-2.476
	2	.000			-.008			.496
		.000	-.250	-.294		-.002	.002	
		1.083	-.250	-.565		-.002	-.001	
		2.167	-.250	-.837		-.002	-.003	
		2.167			-.008			.496
83								
	1	.000			-.015			-1.507
		.000	.141	2.641		.004	-.004	
		1.083	.141	2.794		.004	.000	
		2.167	.141	2.946		.004	.004	
		2.167			-.015			-1.507
	2	.000			-.019			.165
		.000	-.211	-.671		-.004	.003	
		1.083	-.211	-.899		-.004	-.001	
		2.167	-.211	-1.128		-.004	-.006	

F R A M E E L E M E N T F O R C E S

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		2.167			-.019			.165
84								
	1	.000			-.001			-.906
		.000	-.172	2.632		.005	-.004	
		1.083	-.172	2.445		.005	.001	
		2.167	-.172	2.259		.005	.006	
		2.167			-.001			-.906
	2	.000			-.039			-.085
		.000	-.176	-1.064		-.008	.006	
		1.083	-.176	-1.255		-.008	-.003	
		2.167	-.176	-1.446		-.008	-.012	
		2.167			-.039			-.085
85								
	1	.000			.020			-.999
		.000	-.789	2.115		.008	-.007	
		1.083	-.789	1.260		.008	.002	
		2.167	-.789	.406		.008	.012	
		2.167			.020			-.999
	2	.000			-.077			-.325
		.000	-.136	-1.486		-.016	.012	
		1.083	-.136	-1.633		-.016	-.005	
		2.167	-.136	-1.780		-.016	-.023	
		2.167			-.077			-.325
86								
	1	.000			.051			-.773
		.000	-.750	.142		.013	-.010	
		1.083	-.750	-.671		.013	.004	
		2.167	-.750	-1.484		.013	.018	
		2.167			.051			-.773
	2	.000			-.137			-.367
		.000	.068	-2.052		-.026	.020	
		1.083	.068	-1.978		-.026	-.008	
		2.167	.068	-1.904		-.026	-.036	
		2.167			-.137			-.367
87								
	1	.000			.080			.298
		.000	-.088	-1.317		.013	-.018	
		1.063	-.088	-1.411		.013	-.004	
		2.125	-.088	-1.504		.013	.010	
		2.125			.080			.298
	2	.000			-.194			.581
		.000	.808	-2.183		-.026	.036	
		1.063	.808	-1.325		-.026	.008	

F R A M E E L E M E N T F O R C E S

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		2.125	.808	-.466		-.026	-.020	
		2.125			-.194			.581
88								
	1	.000			.109			.349
		.000	.071	-1.209		.008	-.011	
		1.063	.071	-1.133		.008	-.003	
		2.125	.071	-1.058		.008	.006	
		2.125			.109			.349
	2	.000			-.252			.653
		.000	.938	-.315		-.016	.023	
		1.063	.938	.681		-.016	.005	
		2.125	.938	1.677		-.016	-.012	
		2.125			-.252			.653
89								
	1	.000			.127			.213
		.000	.097	-.974		.004	-.006	
		1.063	.097	-.870		.004	-.001	
		2.125	.097	-.767		.004	.003	
		2.125			.127			.213
	2	.000			-.288			.390
		.000	.645	1.653		-.008	.011	
		1.063	.645	2.338		-.008	.003	
		2.125	.645	3.024		-.008	-.005	
		2.125			-.288			.390
90								
	1	.000			.135			.121
		.000	.112	-.749		.001	-.002	
		1.063	.112	-.630		.001	-.001	
		2.125	.112	-.511		.001	.000	
		2.125			.135			.121
	2	.000			-.303			-.001
		.000	.060	2.961		-.002	.004	
		1.063	.060	3.024		-.002	.002	
		2.125	.060	3.088		-.002	-.000	
		2.125			-.303			-.001
5001								
	1	.000			-15.099			.000
		.000	.000	.000		.073	-.004	
		.025	.000	.000		.073	-.002	
		.050	.000	.000		.073	.000	
		.050			-15.099			.000
	2	.000			3.244			.000
		.000	.000	.000		-.000	.000	

F R A M E E L E M E N T F O R C E S

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.025	.000	.000		-.000	.000	
		.050	.000	.000		-.000	.000	
		.050			3.244			.000
5021								
	1	.000			-.411			.000
		.000	.000	.000		.073	-.004	
		.025	.000	.000		.073	-.002	
		.050	.000	.000		.073	.000	
		.050			-.411			.000
	2	.000			3.244			.000
		.000	.000	.000		.000	.000	
		.025	.000	.000		.000	.000	
		.050	.000	.000		.000	.000	
		.050			3.244			.000
5049								
	1	.000			-60.169			.000
		.000	.000	.000		-1.438	3.347	
		5.000	.000	.000		-1.438	-3.843	
		10.000	.000	.000		-1.438	-11.033	
		10.000			-60.169			.000
	2	.000			-56.489			.000
		.000	.000	.000		2.887	-9.468	
		5.000	.000	.000		2.887	4.968	
		10.000	.000	.000		2.887	19.405	
		10.000			-56.489			.000

Deformaciones (en mm, + gravitatorias)

POSICION	PUNTO	DEFORMACION (mm)
1	A	2
1	B	-1
1	C	0
2	A	-1
2	B	4
2	C	-1

El punto A corresponde al centro de del primer vano, el B al centro del segundo vano y el C al centro del tercer vano.

Madrid, 15 de Noviembre de 1999

5.- CONCLUSIONES

Los esfuerzos y deformaciones que se producen en las distintas posiciones del tren de cargas resultan como sigue:

Momentos flectores

Posición	Punto	M_{prueba}	$M_{cálculo}$	Relación
1	A	104.6	178.7	58.6 %
2	B	120.4	197.5	61.0 %

Debido a las dimensiones de los camiones empleados en la prueba de carga se consideran aceptables los anteriores porcentajes, comprobándose que en ningún caso se supera el 90% del valor del momento de cálculo.

Estructura E-5. (PK 303+620)

ESTRUCTURA E-5. (PK 303+620)

ÍNDICE

CARACTERÍSTICAS MECÁNICAS DE LA SECCIÓN
CARGAS Y MODELO DE CÁLCULO DE TABLERO
DATOS DE ENTRADA SAP 90
SECCIÓN TRANSVERSAL
- ARMADO LONGITUDINAL
- CORTANTE
- TORSIÓN
- ARMADO TRANSVERSAL

VIGA DE ESTRIBO
COMPROBACIÓN ANCHURA FISURA
CÁLCULO DE PILAS. CIMENTACIÓN
REACCIONES PARA CÁLCULOS DE ESTRIBOS
CÁLCULO DE ESTRIBOS
SALIDAS DE RESULTADOS SAP 90
ANEJO DE PRUEBA DE CARGA
1. GENERALIDADES
2. TREN DE CARGAS
3. REALIZACIÓN DE LA PRUEBA DE CARGA
4. CÁLCULO DE ESFUERZOS Y DEFORMACIONES
5. CONCLUSIONES

LINEA DE ALTA VELOCIDAD

MADRID-BARCELONA-FRONTERA FRANCESA

TRAMO: LLEIDA-MARTORELL, SUBTRAMO:III-A, PLATAFORMA

ESTRUCTURA E-5

P.K. 303+620

Madrid, Octubre1999

PUENTE P.K. 303+620 **14+17+14**

HA – 30 / P / 20 / II b -H Acero B500 S

(H-300) (AEH-500)

- CARACTERISTICAS MECANICAS DE LA SECCION
- CARGAS Y MODELO DE CALCULO DE TABLERO
- DATOS DE ENTRADA SAP 90
- SECCION TRANSVERSAL

  ARMADO LONGITUDINAL

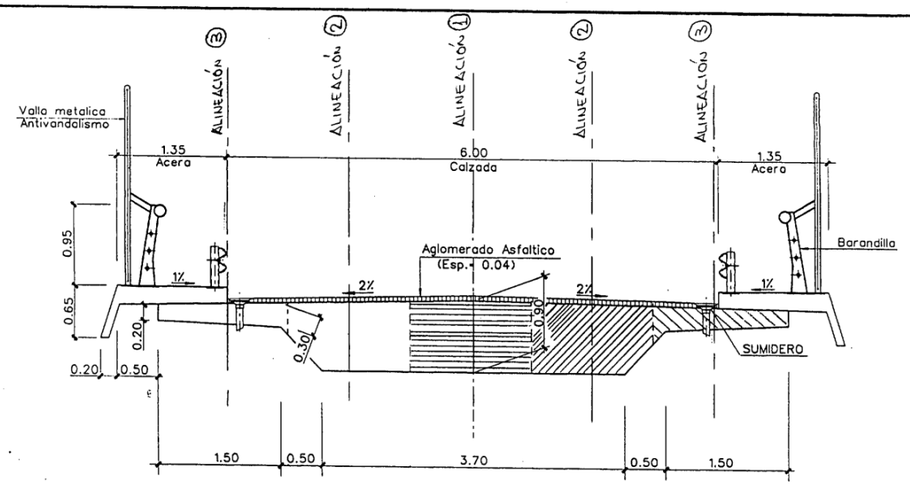
  CORTANTE

  TORSION

  ARMADO TRANSVERSAL
- VIGA DE ESTRIBO
- COMPROBACION ANCHURA FISURA
- CALCULO DE PILAS. CIMENTACION
- REACCIONES PARA CALCULO DE ESTRIBOS
- CALCULO DE ESTRIBOS
- SALIDA RESULTADOS SAP 90

CARACTERISTICAS MECANICAS

DE LA SECCION



SECCION TRANSVERSAL TIPO
ESCALA 1:50

CARACTERISTICAS MECANICAS

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AREA=  4.9444(M2)
XC..=  3.849  (M)
YC..=  0.499  (M)
Ixx =  0.2885(M4)
Iyy = 16.4584(M4)
Izz = 16.7467(M4)
Wxs =  0.7198(M3)
Wxi =  0.5778(M3)
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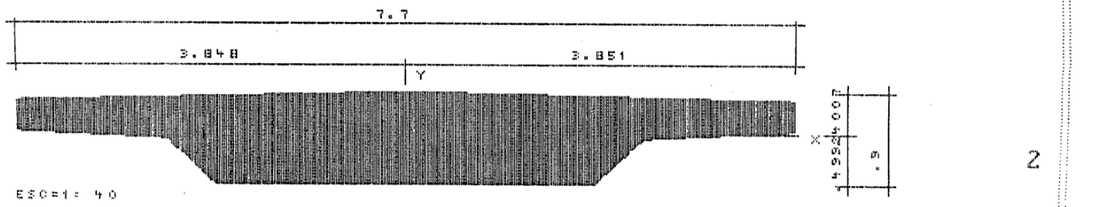
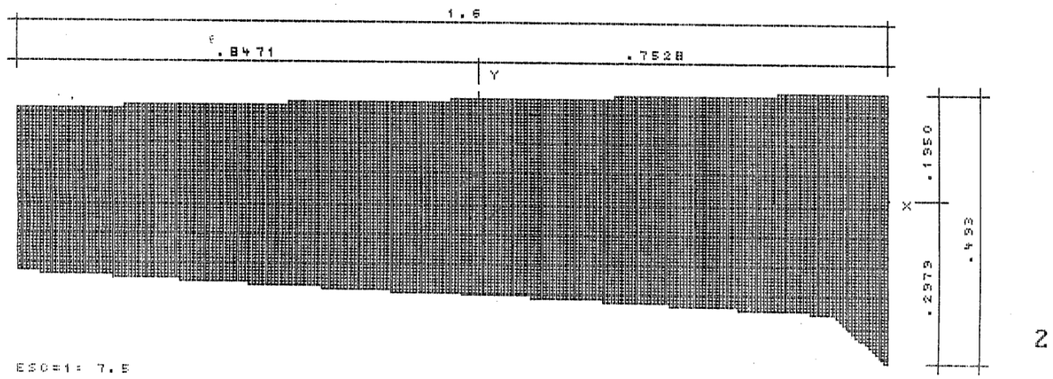


2

CARACTERISTICAS MECANICAS

AREA=	0.5707	(M2)
XC..=	0.847	(M)
YC..=	0.298	(M)
Ixx =	0.0063	(M4)
Iyy =	0.1225	(M4)
Izz =	0.1288	(M4)
Wxs =	0.0324	(M3)
Wxi =	0.0212	(M3)



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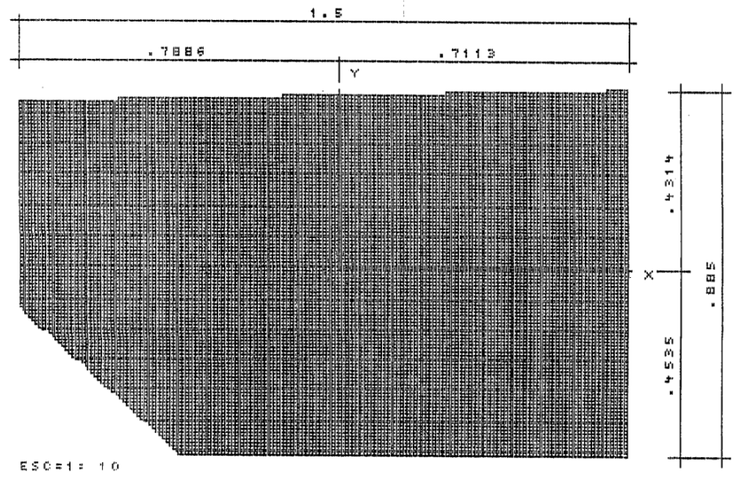
2

CARACTERISTICAS MECANICAS

AREA=	1.2290	(M2)
XC..=	0.789	(M)
YC..=	0.454	(M)
Ixx =	0.0740	(M4)
Iyy =	0.2126	(M4)
Izz =	0.2866	(M4)
Wxs =	0.1715	(M3)
Wxi =	0.1632	(M3)



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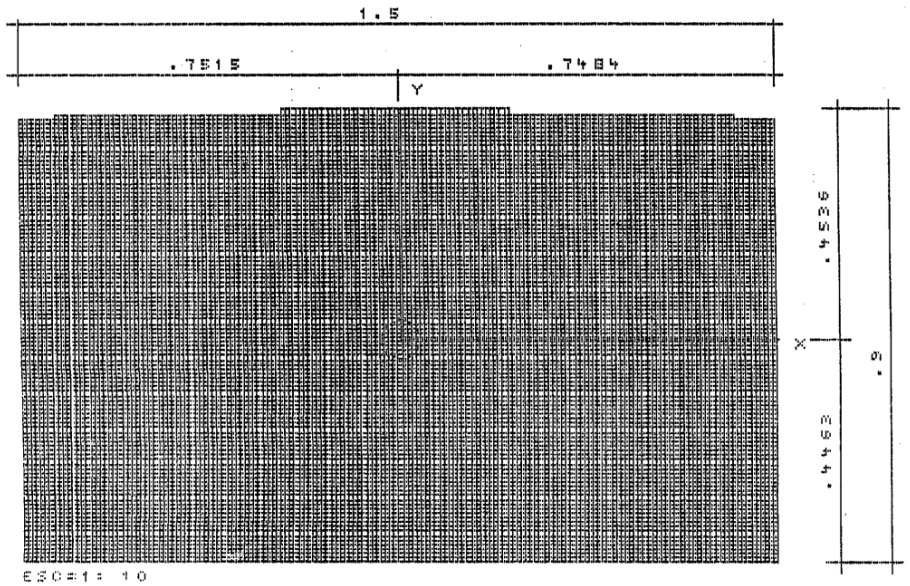
2

CARACTERISTICAS MECANICAS

AREA= 1.3416(M2)
XC..= 0.752 (M)
YC..= 0.446 (M)
Ixx = 0.0891(M4)
Iyy = 0.2515(M4)
Izz = 0.3406(M4)
Wxs = 0.1965(M3)
Wxi = 0.1997(M3)



2

CARGAS Y MODELO DE CALCULO DE TABLERO

CARGAS

PESO PROPIO TABLERO $4{,}21\ m^2 \times 2{,}50\ t/m^3 = 10{,}53\ t/m$

PESO AGLOMERADO $0{,}04\ m \times 2{,}50\ t/m^3 = 0{,}100\ t/m^2$

ACERAS Y BARANDILLAS $= 1{,}40\ t/m$

SOBRECARGAS

CARRO DE 60 t.

$400\ kg/m^2$

VIENTO

$$V_c = C_t \times C_r \times C_z \times C_g \times V_{ref}$$

$V_{ref} = 28\ m/s$

$C_t = 1{,}1$

$C_r = 1{,}04$

$K_z = 0{,}19 \quad z_0 = 0{,}05 \quad z_{min} = 4 \quad (TIPO\ II)$

$z = 19\ m \Rightarrow C_z = K_z \times \ln(z/z_0) = 1{,}129$

$C_g = 1{,}44$

$V_c = 1{,}1 \times 1{,}04 \times 1{,}129 \times 1{,}44 \times 28 = 52{,}08\ m/s$

$$F = C_D \times \left(\frac{1}{2} \times \rho \times V_c^2\right) \quad ; \quad \rho = 1{,}25$$

$C_D = 2{,}5 - 0{,}3\ B/h \qquad B = 7{,}7\ m. \qquad h = 2{,}80\ m.$

$C_D = 1{,}675$

$F = 1{,}675 \times (0{,}5 \times 1{,}25 \times 52{,}08^2) = 2121\ kp/m^2$

Altura expuesta $= 2{,}80\ m.$

$F = 795\ kp/m = 0{,}795\ t/ml$

FRENADO

$$\frac{1}{20} \times (7{,}7 \times 45 \times 0{,}4 + 60\ t) = 9{,}93\ t$$

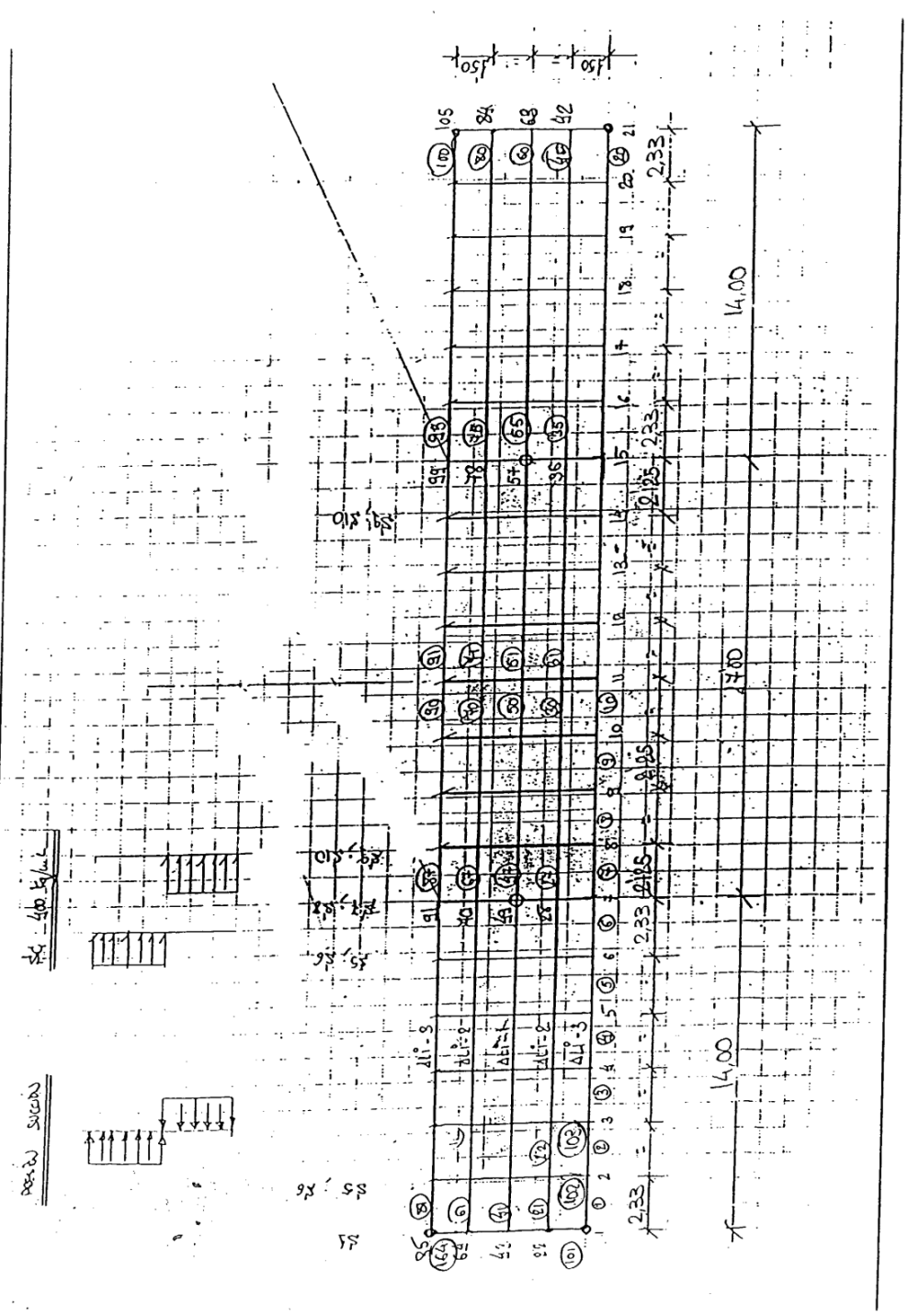
Mínimo $= 20 \times 7{,}7 = 15{,}4\ t \Rightarrow F_{FR} = 15{,}4\ t$

PASO DEL FERROCARRIL (Presión, Succión)

EUROCÓDIGO.

$V = 300\ km/h \qquad h_g = 7{,}00\ m\ (tipo) \rightarrow 65\ kp/m^2$

Vía doble acciones sumables.



DATOS DE ENTRADA SAP 90

```
C PUENTE RECTO,canto max. 0.90 m.,ancho tablero 7.70 m.
C HIPOTESIS 7 CENTRO VANO INTERMEDIO: 400 kg/m2 + 60 tn

SYSTEM
L=7

JOINTS
1       X=0.000         Y=0.000         Z=19.000
7       X=14.000                                        G=1,7,1
15      X=31.000                                        G=7,15,1
21      X=45.00                                         G=15,21,1
64      X=0.000         Y=4.500                         G=1,64,21
85      X=0.000         Y=6.000                         F=1,20,4,1,21
C
C NUDOS ARRANQUE DE PILAS
1049    X=14.00         Y=3.000         Z=0.000
1057    X=31.00         Y=3.000         Z=0.000
C
C NUDOS ARRANQUE ESTRIBOS
1001    X=0.000         Y=0.000         Z=18.95
1085    X=0.000         Y=6.000         Z=18.95
1021    X=45.00         Y=0.000         Z=18.95
1105    X=45.00         Y=6.000         Z=18.95

RESTRAINTS
C ARRANQUE DE PILAS
1049      R=1,1,1,1,1,1
1057      R=1,1,1,1,1,1
C ESTRIBOS
1001      R=1,1,1,1,1,1
1021      R=1,1,1,1,1,1
1085      R=1,1,1,1,1,1
1105      R=1,1,1,1,1,1
C
C SPRINGS
C 22 42 20          K=100000,1E5,100000,0,0,0
C 64 84 20          K=100000,1E6,100000,0,0,0

FRAME
NM=12     NL=6     Z=-1,0,0,0,0,0,0     NSEC=5
C SECCION BARRAS LONGITUDINALES
1  A=1.3416  J=.3406  I=.0891,.2515  AS=1.0733,1.0733  E=3500000  W=3.354
2  A=1.2290  J=.2866  I=.0740,.2126  AS=0.9832,0.9832             W=3.0725
3  A=0.5707  J=.1283  I=.0065,.1225  AS=0.4566,0.4566             W=1.42675
C SECCION BARRAS TRANSVERSALES
4  SH=R      T=0.862,1.165
5  SH=R      T=0.550,2.35
6  SH=R      T=0.878,2.35
7  SH=R      T=0.550,2.2275
8  SH=R      T=0.878,2.2275
9  SH=R      T=0.550,2.125
10 SH=R      T=0.878,2.125
C SECCION PILAS
11 A=2.4854  J=.6089  I=1.3023,0.19075 AS=2.07117,2.07117 W=6.2135
C SECCION NEUPRENOS ESTRIBOS
12 SH=R      T=0.40,0.50     E=63000   G=9000
C
C CARGAS
C PESO DE AGLOMERADO  100 KG/M2
1       WG=0,0,-0.150
C PESO DE BARANDILLAS,ACERAS E IMPOSTAS
2       WG=0,0,-1.4
C ACCION TRANSVERSAL DE VIENTO
3       WG=0,0.795,0
C PRESION SUCCION PASO FERROCARRIL 130 KG/M2 (2 VIAS 7 M. GALIBO V=100KM/H)
C VANO CENTRAL
4       WG=0,0,0.28
5       WG=0,0,-0.28
C SOBRECARGA 400kg/m2 EN CADA BARRA LONGITUDINAL
6       WG=0,0,-0.60
C
C PESO PROPIO TABLERO,AGLOMERADO,IMPOSTA,VIENTO,SUCCION,FRENADO
C
C BARRAS LONGITUDINALES
1    1   2   M=3  LP=-2,0   NSL=0,1,2,3,0,0,0      G=5,1,1,1
7    7   8   M=3            NSL=0,1,2,3,0,0,6      G=7,1,1,1
15   15  16  M=3            NSL=0,1,2,3,0,0,0      G=5,1,1,1
21   22  23  M=2            NSL=0,1,0,0,0,0,0      G=5,1,1,1
27   28  29  M=2            NSL=0,1,0,0,0,0,6      G=7,1,1,1
35   36  37  M=2            NSL=0,1,0,0,0,0,0      G=5,1,1,1
41   43  44  M=1            NSL=0,1,0,0,0,0,0      G=5,1,1,1
47   49  50  M=1            NSL=0,1,0,0,0,0,6      G=7,1,1,1
55   57  58  M=1            NSL=0,1,0,0,0,0,0      G=5,1,1,1
61   64  65  M=2            NSL=0,1,0,0,0,0,0      G=5,1,1,1
67   70  71  M=2            NSL=0,1,0,0,0,0,6      G=7,1,1,1
75   78  79  M=2            NSL=0,1,0,0,0,0,0      G=5,1,1,1
81   85  86  M=3            NSL=0,1,2,0,0,0,0      G=5,1,1,1
87   91  92  M=3            NSL=0,1,2,0,0,0,6      G=7,1,1,1
95   99 100  M=3            NSL=0,1,2,0,0,0,0      G=5,1,1,1
C BARRAS TRANSVERSALES
101   1  22  M=4  LP=3,0
102   2  23  M=5                                   G=4,1,1,1
107   7  28  M=7            NSL=0,0,0,0,4,0,0
108   8  29  M=9            NSL=0,0,0,0,4,0,0      G=6,1,1,1
115  15  36  M=7            NSL=0,0,0,0,4,0,0
116  16  37  M=5                                   G=4,1,1,1
121  21  42  M=4
C
122  22  43  M=4  LP=3,0
123  23  44  M=6                                   G=4,1,1,1
128  28  49  M=8            NSL=0,0,0,0,4,0,0
129  29  50  M=10           NSL=0,0,0,0,4,0,0      G=6,1,1,1
136  36  57  M=8            NSL=0,0,0,0,4,0,0
137  37  58  M=6                                   G=4,1,1,1
142  42  63  M=4
C
143  43  64  M=4  LP=3,0
144  44  65  M=6                                   G=4,1,1,1
149  49  70  M=8            NSL=0,0,0,0,5,0,0
150  50  71  M=10           NSL=0,0,0,0,5,0,0      G=6,1,1,1
157  57  78  M=8            NSL=0,0,0,0,5,0,0
158  58  79  M=6                                   G=4,1,1,1
163  63  84  M=4
C
164  64  85  M=4  LP=3,0
165  65  86  M=5                                   G=4,1,1,1
170  70  91  M=7            NSL=0,0,0,0,5,0,0
171  71  92  M=9            NSL=0,0,0,0,5,0,0      G=6,1,1,1
178  78  99  M=7            NSL=0,0,0,0,5,0,0
179  79 100  M=5                                   G=4,1,1,1
184  84 105  M=4
C
C BARRAS DE PILARES
5049 1049 49  M=11
5057 1057 57  M=11
C BARRAS DE ESTRIBOS
5001 1001   1  M=12      LR=0,1,0,0,1,0
5021 1021  21  M=12      LR=0,1,0,0,1,0
5085 1085  85  M=12      LR=0,1,0,0,1,0
5105 1105 105  M=12      LR=0,1,0,0,1,0
```

```
C FRENADO CON CARGA MAXIMA SOBRE TABLERO
53 L=6 F=19.4,0,0,0,0,0
C CARRO 60 TN (Para deformacion centro de vano intermedio)
51 L=7 F=0,0,-3.33,0,0,0
52 L=7 F=0,0,-3.33,0,0,0
53 L=7 F=0,0,-3.33,0,0,0
52 L=7 F=0,0,-13.34,0,0,0
53 L=7 F=0,0,-13.34,0,0,0
54 L=7 F=0,0,-13.34,0,0,0
73 L=7 F=0,0,-3.33,0,0,0
74 L=7 F=0,0,-3.33,0,0,0
75 L=7 F=0,0,-3.33,0,0,0

BRIDGE
NL=6    UP=Z
L=1
        S=1
                F=1,20,1    E=0
L=2
        S=1
                F=21,40,1   E=0
L=3
        S=1
                F=41,60,1   E=0
L=4
        S=1
                F=61,80,1   E=0
L=5
        S=1
                F=81,100,1  E=0
L=6
        S=1
                F=61,80,1   E=0.5

VEHICLE
NV=3    NG=3    UNITS=KN,M      TRUCK=QUICK
C CARRIL 1,50 m. * 400 Kg/m2 = 600 Kg/m = 0.60 T/m
V=1     TYPE=LANE               W=0.60
C CARRIL 1,60 m. * 400 Kg/m2 = 640 kg/m = 0.64 T/m
V=2     TYPE=LANE               W=0.64
C CARRO DE 60 T.
V=3     TYPE=TRUCK              P=20,20,20   D=1.5,1.5
C
G=1     V=1
G=2     V=2
G=3     V=3

MOVING LOAD
NC=1    MK=2
C=1
K=FIX   L=1,2,3,4,5  DIR=B,B,B          G=2,1,1,1,2
K=MIX   L=3,4,6      DIR=B,B,B          G=3

ENVELOPE
C VIENTO ACCION DETERMINANTE
1       C=1,1,1,1,0,0,0     B=0
C PRESION-SUCCION ACCION DETERMINANTE
2       C=1,1,1,0.6,1,0.6,0     B=0.6
C FRENADO DETERMINANTE
3       C=1,1,1,0.6,0.6,1,0     B=0.6
C SC 400 Kp/m2 + CARRO 60 t. DETERMINANTE
4       C=1,1,1,0.6,0.6,0.6,0     B=1
C TOTAL PESO PROPIO + VANO CENTRAL CON CARRO Y SC DE 400 Kp/m2.
5       C=1,1,1,0,0,0,1     B=0
C TOTAL PESO PROPIO
6       C=1,1,1,0,0,0,0     B=0

SELECT
NT=1 ID=1,11,1    SW=1
NT=1 ID=22,32,1   SW=1
NT=1 ID=43,53,1   SW=1
NT=1 ID=64,74,1   SW=1
NT=1 ID=85,95,1   SW=1
NT=5 ID=5001,5021,20  SW=1
NT=5 ID=5085,5105,20  SW=1
NT=5 ID=5049      SW=1
NT=5 ID=1,10,1    SW=1
NT=5 ID=21,30,1   SW=1
NT=5 ID=41,50,1   SW=1
NT=5 ID=61,70,1   SW=1
NT=5 ID=81,90,1   SW=1
NT=5 ID=101,111,1 SW=1
NT=5 ID=122,132,1 SW=1
NT=5 ID=143,153,1 SW=1
NT=5 ID=164,174,1 SW=1
NT=2 ID=1001      SW=1
NT=2 ID=1049      SW=1
NT=2 ID=1035      SW=1
```

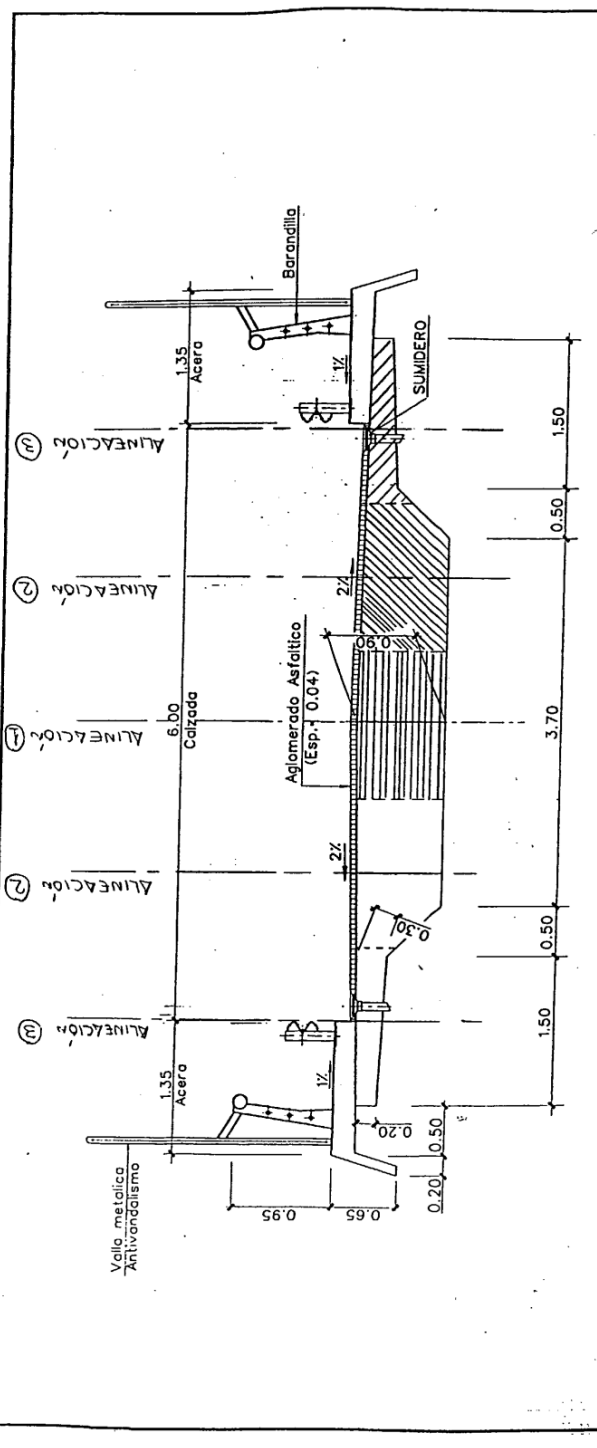
SECCION TRANSVERSAL

ARMADO LONGITUDINAL

CORTANTE

TORSION

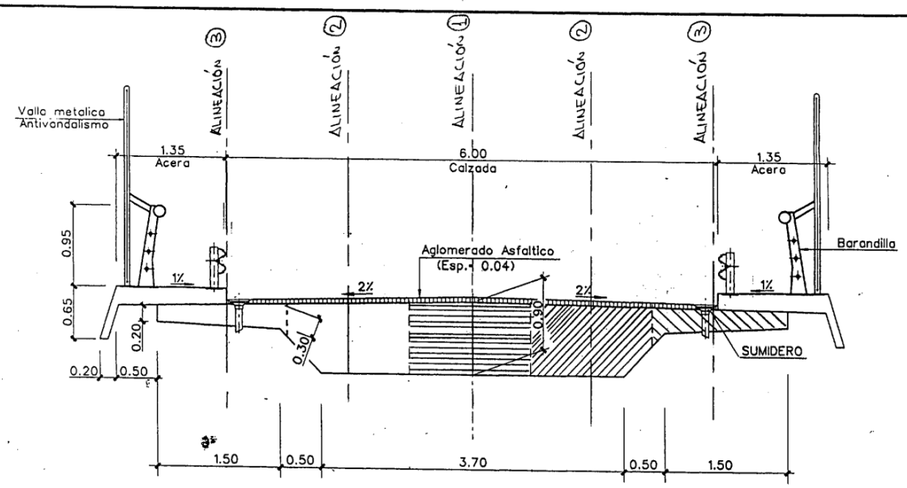
ARMADO TRANSVERSAL



SECCION TRANSVERSAL TIPO
ESCALA 1:50

CENTRO DE VANO DE 17 m.

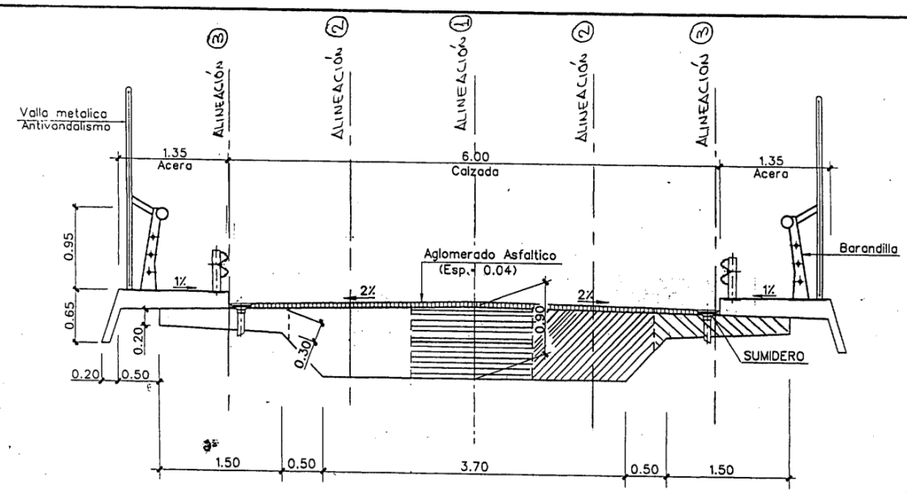
BARRA	10	30	50	70	90	ESFUERZOS DE CALCULO.
M⁺(t×m)	2,7 + 2,315	41,4 + 42,16	62,4 + 62,19	51,08 + 50,92	2,7 + 2,315	496,26
Q (t)	2,95 + 19,25	16,43 + 12,2	8,84 + 28,06	7,5 + 28,44	2,95 + 19,27	229,72



SECCION TRANSVERSAL TIPO SECCIÓN APOYO

ESCALA 1:50

BARRA	6	27	47	67	86	ESFUERZOS DE CÁLCULO.
M⁻(t×m)	5,00 + 2,00	94,36+39,16	139,5 + 70,2	94,35 +39,15	5,13 + 2,09	-751,67
Q (t)	3,92 + 19,95	28,28 + 16,23	55,2 +41,74	28,28 + 38,07	3,92 + 19,79	396,65



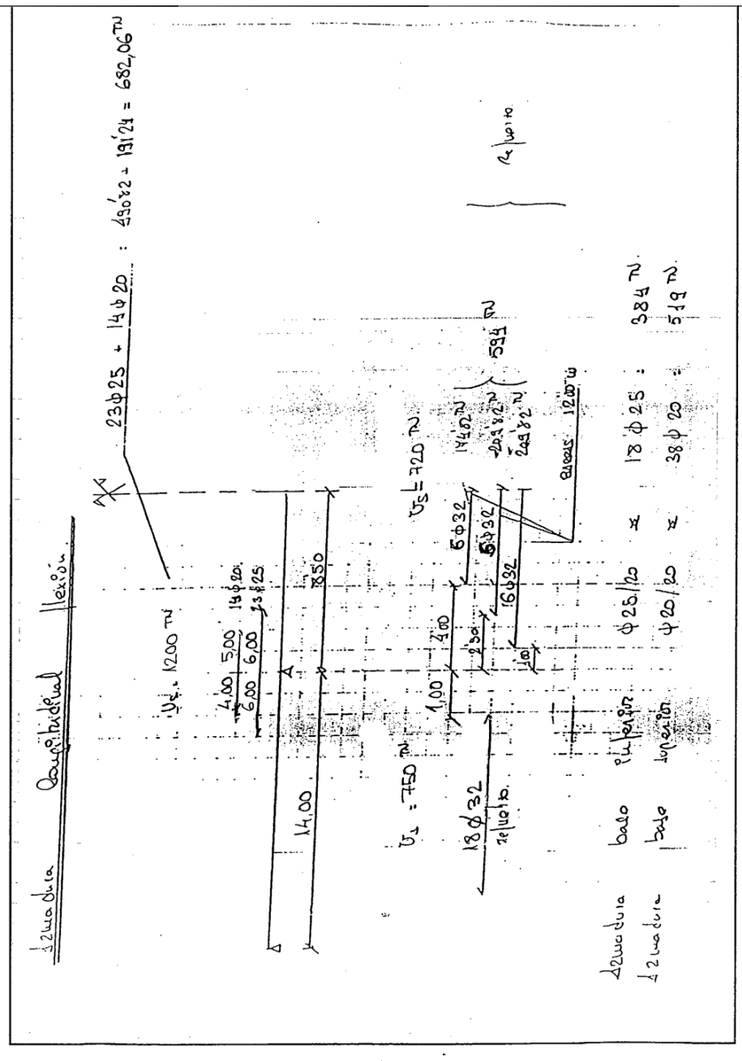
SECCION TRANSVERSAL TIPO CENTRO VANO 14 m.

ESCALA 1:50

BARRA	3	23	43	63	83	ESFUERZOS DE CÁLCULO.
M⁺(t×m)	3,29 + 1,81	58,4 +40,06	72,14 + 51,26	58,4 + 48,01	3,29 + 2,11	522,48
Q (t)	3,2 + 19,62	5,6 + 7,57	7,52 + 28,39	5,6 + 26,95	3,2 + 19,8	201,41

SECCION= TABLERO PASOS SUPERIORES
**SECCION EN I: H,HF,B,BW = 0.81 0.25 7.70 3.70
Resistencia caracteristica del hormigon: 300
Recubrimiento= 4 cms.
MOMENTO LIMITE(tnm) Seco Real = 2910.40

	CABEZA COMPRESION= 7.7		CABEZA COMPRESION= 3.7	
M	Us1	Us2	Us1	Us2
0.00	296.07	0.00	419.92	0.00
50.00	296.07	0.00	419.92	0.00
100.00	296.07	0.00	419.92	0.00
150.00	296.07	0.00	419.92	0.00
200.00	296.07	0.00	419.92	0.00
250.00	350.08	0.00	419.92	0.00
300.00	397.45	0.00	419.92	0.00
350.00	465.28	0.00	478.15	0.00
400.00	535.61	0.00	550.80	0.00
450.00	602.42	0.00	624.70	0.00
500.00	671.73	0.00	699.93	0.00
550.00	741.57	0.00	776.54	0.00
600.00	811.92	0.00	854.62	0.00
650.00	882.82	0.00	934.26	0.00
700.00	954.26	0.00	1015.57	0.00
750.00	1026.27	0.00	1098.65	0.00
800.00	1098.86	0.00	1183.58	0.00
850.00	1172.04	0.00	1270.55	0.00
900.00	1245.82	0.00	1359.69	0.00
950.00	1320.23	0.00	1451.17	0.00
1000.00	1395.28	0.00	1545.19	0.00
1050.00	1470.97	0.00	1641.76	0.00
1100.00	1547.34	0.00	1741.06	0.00
1150.00	1624.40	0.00	1844.18	0.00
1200.00	1702.17	0.00	1951.66	0.00
1250.00	1780.67	0.00	2062.55	0.00
1300.00	1859.92	0.00	2178.07	0.00
1350.00	1939.93	0.00	2298.27	0.00
1400.00	2020.75	0.00	2423.70	2.05
1450.00	2102.38	0.00	2492.19	70.54
1500.00	2184.85	0.00	2560.69	139.04
1550.00	2268.20	0.00	2629.18	207.53
1600.00	2352.44	0.00	2697.67	276.02
1650.00	2437.62	0.00	2766.17	344.52
1700.00	2523.75	0.00	2834.66	413.01
1750.00	2610.88	0.00	2903.15	481.50
1800.00	2699.04	0.00	2971.65	550.00
1850.00	2788.26	0.00	3040.14	618.49
1900.00	2878.59	0.00	3108.63	686.98
1950.00	2970.06	0.00	3177.13	755.48
2000.00	3062.73	0.00	3245.62	823.97



CORTANTE EN SECCIÓN DE APOYO INTERMEDIO.

$V_{rd} = 397$ t

$V_{u2} = V_{cu} + V_{su}$

$V_{cu} = [0,10 \xi (100 \rho_1 f_{ck})^{1/3} - 0,15 \sigma'_{cd}] b_o d \beta$

σ'_{cd} = Tensión por axil. Despreciable en el cálculo

$V_{cu} = 0,10 \cdot \xi \left(100 \cdot \frac{A_s}{b_o d} \cdot f_{ck}\right)^{1/3} \cdot b_o \cdot d$

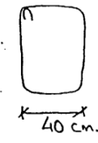
$V_{cu} = 120,57$ t

$V_{su} = V_{u2} - V_{cu} = 397 - 120,57 = 276,43$ t

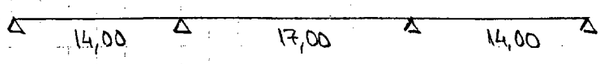
Sección de armadura necesaria:

$$A_s = \frac{276,43 \times 1000}{4200 \times 0,9 \times 85} \times 100 = 86,1 \text{ cm}^2$$

A disponer 16 estribos ϕ12



CÁLCULO A TORSIÓN.



* SECCIÓN PILA:

$$Td = 1{,}50 \times \left(\underbrace{\tfrac{1}{2} \times 60 \times 1{,}5}_{\text{CARRO}} + \underbrace{0{,}4 \times \frac{3{,}85^2}{2} \times \left(\frac{17+14}{2}\right)}_{\text{S.C. } 400 \text{ kp/m}^2} + \underbrace{0{,}13 \times \frac{17}{2} \times 3{,}85^2}_{\text{Flexión - Succión}} \right)$$

$Td = 161{,}0$ t×m.

$he = \frac{0{,}90}{6} = 0{,}15$ m $Ae = (0{,}90 - 0{,}15) \times (3{,}70 - 0{,}15)$

$Ae = 2{,}6625$ m²

$Tu_1 = 1{,}2 \times 0{,}60 \times f_{cd} \times Ae \times he \times \frac{1}{2} = 287{,}6$ T×M

$Td \leq Tu_1$ o.k. ✓

$Tu_2 \geq Td \Rightarrow u_s = \frac{Td \times s}{2 \times Ae} = \frac{161 \times 0{,}2}{2 \times 2{,}6625} = 6{,}05$ T

$Tu_3 \geq Td \Rightarrow u_s = \frac{Td \times u_e}{2 \times Ae} = 264$ T

$u_e = (0{,}90 - 0{,}15) \times 2 + 2 \times (3{,}70 - 0{,}15) = 8{,}6$ m

* COMPROBACIÓN TORSIÓN COMBINADA CON CORTANTE.

CORTANTE EN SECCIÓN APOYO:

$Vrd = 1{,}35 \times 119{,}6 + 1{,}5 \times (30^T + 26{,}54) = 246{,}27$ T

$Vu_1 = 0{,}30 \times f_{cd} \times b \times d = 1887$ T

$\beta = 2 \times \left(1 - \frac{he}{b}\right) = 1{,}96$; $\left(\frac{161}{287{,}6}\right)^{1{,}96} + \left(\frac{246{,}27}{1887}\right)^{1{,}96} = 0{,}34 < 1$ o.k.

SECCIÓN APOYO PILA INTERMEDIA

ARMADURA TRANSVERSAL.

Barra (149)

$Md = 1{,}35 \times 84{,}8 + 1{,}5 \times 22{,}2 = 148$ m×t

$Qd = 1{,}35 \times 81{,}63 + 1{,}5 \times 24{,}37 = 147$ t

Sección tipo 8 ; $2{,}146 \times 0{,}878$

Flexión: $U_o = 0{,}85 \times \frac{3000}{1{,}5} \times 2{,}146 \times 0{,}828 = 3021$ t.

$U_{s1} = 3021 \left(1 - \sqrt{1 - \frac{2 \times 148}{3021 \times 0{,}828}}\right)$

$U_{s1} = 185$ t

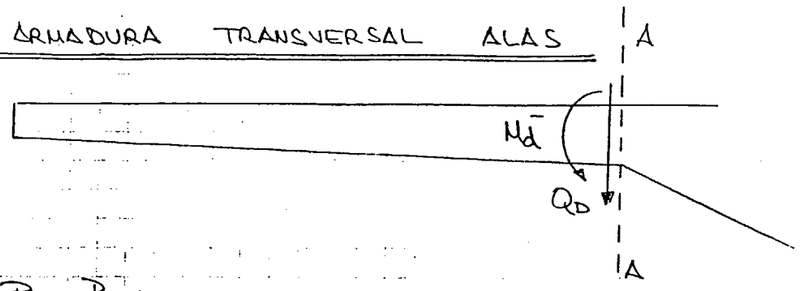
Cortante: $V_{cu} = 0{,}10 \times \xi \, (100 \, \rho_1 \, f_{ck})^{1/3} \cdot b_o \cdot d$

$V_{cu} = 58{,}1$ t

$V_{su} = 147 - 58{,}1 = 88{,}9$ t

$A_\alpha = \frac{88{,}9}{0{,}90 \times 0{,}828 \times f_{yk,d}} = 28{,}4$ cm²/ml

ARMADURA TRANSVERSAL ALAS



1) Peso Propio:

$Q_A = 0,75 + 0,1875$ t/m $M_A = 0,5625 + 0,094$ txm/m

2) Superestructura (Resto C.P)

$Q_A = 1,40 + 0,07$ t/m $M_A = 2,1 + 0,0245$ mxt/m

3) S.C (Presión - Succión + 400 kp/m² + Carro)

$Q_A = 0,098$ t/m $+ 0,28 + 8,83$

$M_A = 0,073 + 0,098 + 1,765$

$Q_D = 1,35 \times (0,75 + 0,1875 + 1,40 + 0,07) + 1,5 \times (0,098 + 0,28 + 8,83)$

$Q_D = 17,06$ t.

$M_D = 1,35 \times (0,5625 + 0,094 + 2,1 + 0,0245) + 1,5 \times (0,073 + 0,098 + 1,765)$

$M_D = 6,66$ mxt

Flexión

$U_o = 0,85 \times \frac{3000}{1,5} \times 1,00 \times 0.26 = 442$ t

$U_{s1} = 442 \times \left(1 - \sqrt{1 - \frac{2 \times 6,66}{442 \times 0,26}}\right) = 26,4$ t

$\phi 16/20$

Cortante

$V_{cu} = 0,10 \times \xi \times (100 \times \rho_1 \times f_{ck})^{1/3} \times b_o \times d$

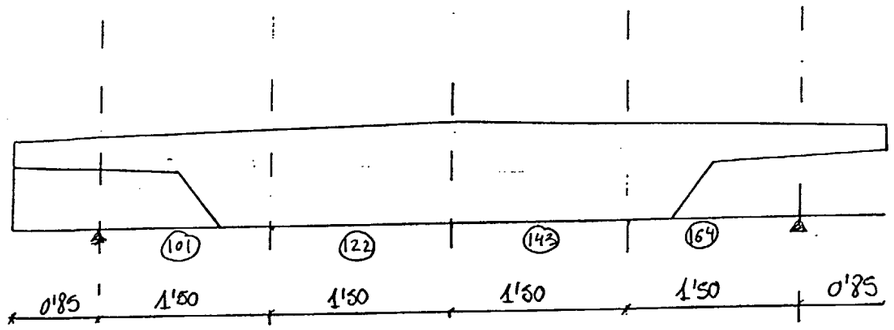
$\xi = 1,877$

$\rho_1 = 0,00386$

$\Rightarrow V_{cu} = 13,52 \Rightarrow V_{su} = 17,06 - 13,52$

$V_{su} = 3,54$ t

VIGA DE ESTRIBO



$M = 34,37 + 50$; $M = 26,77 + 33,53$

$Q = 30,53 + 40,67$; $Q = 8,5 + 15,00$

$M_T = 4,0 + 7,83$; $M_T = 4,26 + 9,95$

$M_{max} = 132$ TN x M ; $Q_D = 111$ TN ; $M_{TD} = 22,3$ h x Td

Viga de 0'70 m ancho

Flexión

$M_o = 0'85 \cdot \frac{3000}{1'5} \cdot 0'90 \cdot 0,825 = 982$ TN

$\mu = \frac{132}{982 \times 0,825} = 0,163 \Rightarrow M_s = w \cdot M_o = 176$ TN $\rightarrow 7\phi 32$

Cortante

$V_d = 111$ TN

$V_{cu} = 22'4$ TN

$V_{su} = 111 - 22'4 = 88,6$ TN

$88,6 = 0,90 \cdot 0,825 \cdot A_\alpha \cdot 40000$

$A_\alpha = 30$ cm²/ml 2 ⊔ ϕ 16 cada 15 cm

Torsión

$b/6 = 0'116 = h_e$

$A_e = (0'70 - 0'116) \cdot (0,82 - 0'116) = 0,41$ m²

$T_{u1} = 0'36 \cdot \frac{3000}{1'5} \cdot 0'116 \cdot 0,41 = 34,24$ TNam > Td O.K.

$T_{u2} = \frac{2 \cdot A_e \cdot A_T}{s} \cdot f_{td} = 2 \cdot \frac{0,41 \times 1'57}{0'15} \times 4'20 = 36,05$ > Td O.K.

$T_{u3} = \frac{2 \times 0,41}{2,808} M_s \geq Td \Rightarrow M_s = 76,36$ TN

Comprobación torsión - cortante

$$\left(\frac{Td}{Tu_1}\right)^\beta + \left(\frac{Vd}{Vu_1}\right)^\beta < 1$$

$\beta = 2 \cdot \left(1 - \frac{h_e}{b}\right) = 2 \cdot \left(1 - \frac{0'116}{0'70}\right) = 1'67$

$V_{u1} = 0'6 \times \frac{3000}{1'5} \times 0'70 \times 0,82 \times \frac{1}{2} = 344,4$ TN

$\left(\frac{22,3}{34,24}\right)^{1'67} + \left(\frac{111}{344,4}\right)^{1'67} = 0,64 < 1$ O.K.

COMPROBACION ANCHURA FISURA

Comprobación anchura fisura

Sección central Vano 14,00 m

Ambiente: Hpo IIb-H $W_k \leq 0'3$ mm

Anchura característica de fisura es:

$$W_k = 1'7\, S_m \cdot \varepsilon_{sm}$$

$$S_m = 2c + 0'2\,s + 0,4 \cdot k_1 \cdot \frac{\phi}{A_s} A_{c\,eficaz}$$

$\frac{1}{2} = 10$ cm $k_1 = \frac{\varepsilon_1 + \varepsilon_2}{8 \cdot \varepsilon_1}$ flexiones $k_1 = 0'125$ (Flexión simple)

$\phi = 32$ mm = 3'2 cm

$A_{c\,ef} = 37$ (anchos) $\times 25 \times 8'2 \cdot 10^{-2} = 0'89$ m^2 $= 0'89 \cdot 10^4$ cm^2

$A_s = 18\,\phi 25 + 17\,\phi 32 = 88'35 + 136'72 = 225'07$ cm^2

$S_m = 15'33$ cm.

$$\varepsilon_{sm} = \frac{\sigma_s}{E_s}\left(1 - k_2\left(\frac{\sigma_{sr}}{\sigma_s}\right)^2\right] \quad \geq 0{,}4\cdot\frac{\sigma_s}{E_s}$$

$E_s = 2.100.000 \ kg/cm^2$

$k_2 = 10$

$f_{ct,w} = 1{,}5\ f_{ct,k} = 30{,}47 \ kg/cm^2$

$k = 0{,}80$

$A_{s,nec} = \frac{750 \ M./1510}{1{,}15} = 169{,}12 \ cm^2$

$A_{s,real} = A_s = 225{,}07 \ cm^2$

$\sigma_s = \frac{0{,}80 \ 5100}{1{,}15 \cdot 1{,}60} \times \frac{169{,}12}{225{,}07} = 1666{,}2 \ kg/cm^2$

$\sigma_{sr} = \frac{bh^2}{6} \cdot \frac{f_{ct,w}}{0{,}9 \ d \ A_s} = 492 \ kg/cm^2$

$\varepsilon_{sm} = 6{,}1416 \times 10^{-4}$.

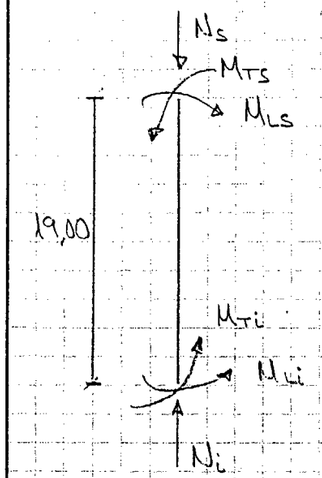
$w_k = 1{,}70 \cdot s_m \cdot \varepsilon_{sm}$

$w_k = 1{,}70 \cdot 153{,}30 (mm) \times 6{,}1416 \times 10^{-4}$

$w_k = 0{,}16 \ mm < 0{,}30 mm$ ok. ✓

CALCULO DE PILAS. CIMENTACION

CÁLCULO DE PILAS



$l_p = \alpha \times l = 1 \times 19,00 = 19,00$ m.

Escolteces:

$$i_y = \sqrt{\frac{I_y}{A}} = \sqrt{\frac{0,19075}{2,4854}} = 0,277$$

$$i_x = \sqrt{\frac{I_x}{A}} = \sqrt{\frac{1,3093}{2,4854}} = 0,726$$

$$\lambda_x = \frac{l_p}{i_y} = \frac{19,00}{0,277} \simeq 69$$

$$\lambda_y = \frac{l_p}{i_x} = \frac{19,00}{0,726} \simeq 26$$

A) AXIL MÁXIMO. MOMENTO MAXIMO Mxs

	C.P.	S.C.	TOTAL	ex	ey
Nds	241,29	92,79	510,40		
Mdxs	0,00	-81,90	-131,04	-0,18	
Mdys	-1,80	-55,88	-92,11		-0,26
Ndi	359,34	92,79	687,47		
Mdxi	0,00	-34,22	-54,75	-0,06	
Mdyi	0,90	-24,85	-38,41		-0,08

b= 1
h= 1,7

B) AXIL MÍNIMO.

	C.P.	S.C.	TOTAL	ex	ey
Nds	241,29	0,00	361,94		
Mdxs	0,00	35,32	56,51	0,21	
Mdys	-1,80	49,91	77,16		0,16
Ndi	359,34	0,00	539,01		
Mdxi	0,00	2,94	4,70	0,08	
Mdyi	0,90	27,32	45,06		0,01

b= 1
h= 1,7

C) MOMENTO MAXIMO Mys. MOMENTO MÁXIMO Myi.

	C.P.	S.C.	TOTAL	ex	ey
Nds	241,29	0,00	361,94		
Mdxs	0,00	0,00	0,00	0,33	
Mdys	-1,80	76,61	119,88		0,00
Ndi	359,34	0,00	539,01		
Mdxi	0,00	0,00	0,00	-0,11	
Mdyi	0,90	-38,05	-59,54		0,00

b= 1
h= 1,7

D) MOMENTO MAXIMO Mxi

	C.P.	S.C.	TOTAL	ex	ey
Nds	241,29	0,00	361,94		
Mdxs	0,00	-43,62	-69,79	-0,01	
Mdys	-1,80	0,00	-2,70		-0,19
Ndi	359,34	0,00	539,01		
Mdxi	0,00	7,82	12,51	0,00	
Mdyi	0,90	0,00	1,35		0,02

b= 1
h= 1,7

CÁLCULO DE EXCENTRICIDADES.

A) AXIL MÁXIMO. MOMENTO MAXIMO Mxs

Direccion Longitudinal (My)		Direccion Transversal (Mx)	
i=	0,277	i=	0,726
e2=	0,18	e2=	0,26
e1=	0,06	e1=	0,08
ee=	0,132	ee=	0,188
0,4*e2=	0,072	0,4*e2=	0,104
h=	1	h=	1,7
ea=	0,2948	ea=	0,1094
etot=	0,4268	etot=	0,2974

B) AXIL MÍNIMO.

Direccion Longitudinal (My)		Direccion Transversal (Mx)	
i=	0,277	i=	0,726
e2=	0,21	e2=	0,16
e1=	0,08	e1=	0,01
ee=	0,158	ee=	0,1
0,4*e2=	0,084	0,4*e2=	0,064
h=	1	h=	1,7
ea=	0,3030	ea=	0,0983
etot=	0,4610	etot=	0,1983

C) MOMENTO MAXIMO Mys. MOMENTO MÁXIMO Myi.

Direccion Longitudinal (My)		Direccion Transversal (Mx)	
i=	0,277	i=	0,726
e2=	0,33	e2=	0
e1=	-0,11	e1=	0
ee=	0,154	ee=	0
0,4*e2=	0,132	0,4*e2=	0
h=	1	h=	1,7
ea=	0,3019	ea=	0,0717
etot=	0,4559	etot=	0,0717

D) MOMENTO MAXIMO Mxi **Nd=**

Direccion Longitudinal (My)		Direccion Transversal (Mx)	
i=	0,277	i=	0,726
e2=	0,01	e2=	0,19
e1=	0	e1=	0,02
ee=	0,006	ee=	0,122
0,4*e2=	0,004	0,4*e2=	0,076
h=	1	h=	1,7
ea=	0,1986	ea=	0,1017
etot=	0,2046	etot=	0,2237

ESFUERZOS DE CÁLCULO.

A) AXIL MÁXIMO.

$N_{ds} \times e_{TOT1} = 510{,}40 \times 0{,}4268 = 217{,}84$ mxt

$N_{ds} \times e_{TOT2} = 510{,}40 \times 0{,}2974 = 152$ mxt

$N_{dc} = 510{,}4$ t
$M_{dy} = 217{,}84$ mxt
$M_{dx} = 152$ mxt

$N_{di} \times e_{TOT1} = 687{,}47 \times 0{,}4268 = 293$ mxt

$N_{di} \times e_{TOT2} = 687{,}47 \times 0{,}2974 = 204{,}5$ mxt

$N_{di} = 687{,}47$ t
$M_{dy} = 293$ mxt
$M_{dx} = 204{,}5$ mxt

B) AXIL MÍNIMO.

$N_{dc} \times e_{TOT1} = 361{,}94 \times 0{,}461 = 166{,}85$ mxt

$N_{dc} \times e_{TOT2} = 361{,}94 \times 0{,}1983 = 71{,}77$ mxt

$N_{dc} = 361{,}94$ t
$M_{dy} = 166{,}85$ mxt
$M_{dx} = 71{,}77$ mxt

$N_{di} \times e_{TOT1} = 539{,}01 \times 0{,}461 = 248{,}48$ mxt

$N_{di} \times e_{TOT2} = 539{,}01 \times 0{,}1983 = 106{,}86$ mxt

$N_{di} = 539{,}01$ t
$M_{dy} = 248{,}48$ mxt
$M_{dx} = 106{,}86$ mxt.

C) MOMENTO MÁXIMO (M_{ys}). MOMENTO MÁXIMO (M_{yi})

$N_{ds} \times e_{TOT} = 361{,}94 \times 0{,}456 = 165{,}044$ mxt

Esfuerzos de cálculo: $N_d = 361{,}94$ t; $M_{dy} = 165{,}044$ t

$N_{di} \times e_{TOT} = 539{,}01 \times 0{,}456 = 245{,}79$ mxt

Esfuerzos de cálculo: $N_d = 539{,}01$ t; $M_{dy} = 245{,}79$ mxt

D) MOMENTO MÁXIMO (M_{xi}).

$N_{ds} \times e_{TOT} = 361{,}94 \times 0{,}2046 = 74{,}053$ mxt

$N_{dc} = 361{,}94$ t
$M_{dy} = 74{,}053$

$N_{ds} \times e_{TOT} = 361{,}94 \times 0{,}2237 = 81$ mxt

$N_{dc} = 361{,}94$ t
$M_{dx} = 81{,}00$ mxt

$N_{di} \times e_{TOT} = 539{,}01 \times 0{,}2046 = 110{,}3$ mxt

$N_{di} = 539{,}01$ t
$M_{dy} = 110{,}3$ mxt

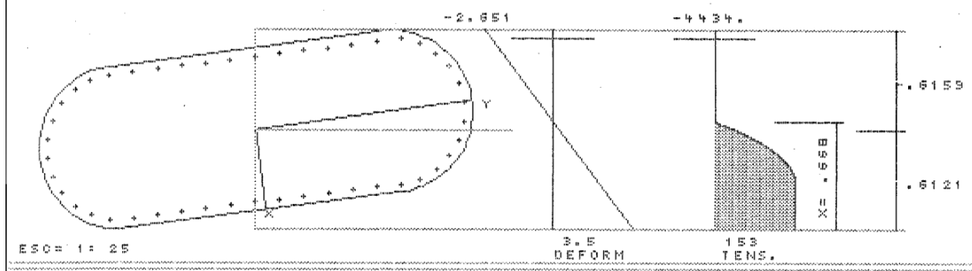
$N_{di} \times e_{TOT} = 539{,}01 \times 0{,}2237 = 120{,}6$ mxt

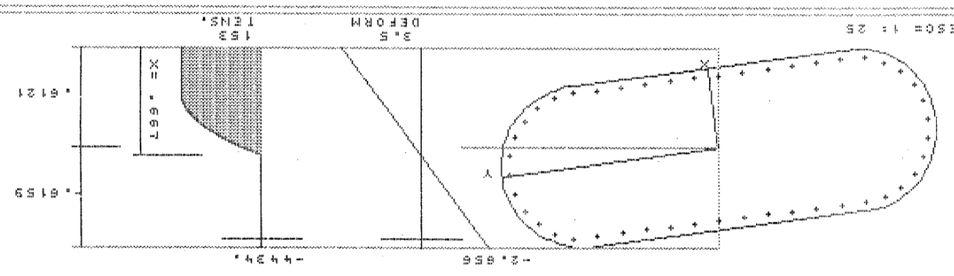
$N_{di} = 539{,}01$ t
$M_{dx} = 120{,}6$ mxt

ESFUERZOS DE AGOTAMIENTO (PILA)

Nd= 687.5(TN) : Mxd= 204.5(Tnxm) : Myd= 293.0(Tnxm)
FCK= 300(KG/CM2) : FYK= 5100(KG/CM2)
SECCION= 2.492(M2) : CUANTIA= 0.00906

NU =	1690.2(TN)
MxU=	503.7(TNxM)
MyU=	719.8(TMxM)
C.S=	2.459
BETA=	-7.737





ESFUERZOS DE AGOTAMIENTO (PILA)

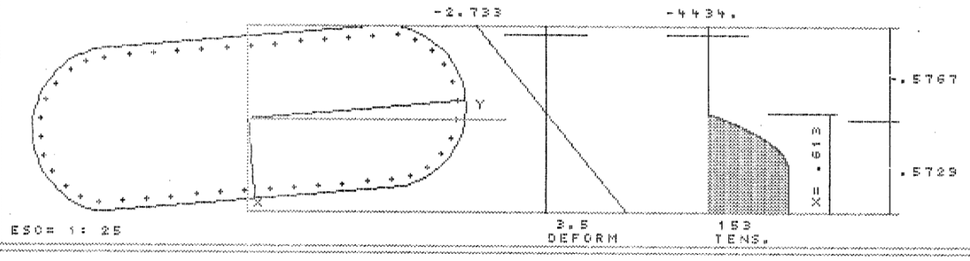
Nd= 510.4(TN) : Mxd= 152.0(Tnxm) : Myd= 217.8(Tnxm)
FCK= 300(KG/CM2) : FYK= 5100(KG/CM2)
SECCION= 2.492(M2) : CUANTIA= 0.00906

NU =	1687.9(TN)
MxU=	503.6(TNxM)
MyU=	719.9(TMxM)
C.S=	3.307
BETA=	-7.737

ESFUERZOS DE AGOTAMIENTO (PILA)

Nd= 539.0(TN) : Mxd= 106.9(Tnxm) : Myd= 248.5(Tnxm)
FCK= 300(KG/CM2) : FYK= 5100(KG/CM2)
SECCION= 2.492(M2) : CUANTIA= 0.00906

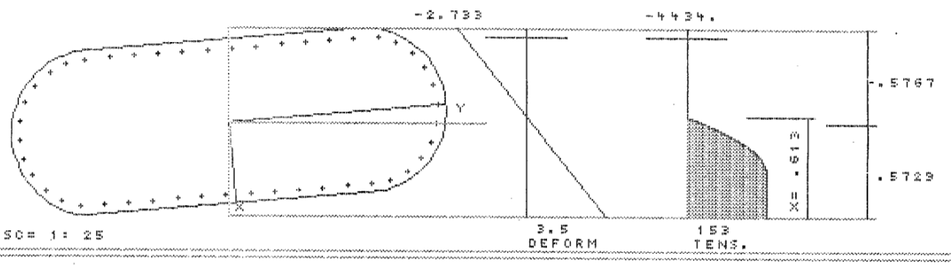
NU =	1635.8(TN)
MxU=	325.3(TNxM)
MyU=	753.7(TMxM)
C.S=	3.035
BETA=	-5.053



ESFUERZOS DE AGOTAMIENTO (PILA)

Nd= 361.9(TN) : Mxd= 71.8(Tnxm) : Myd= 166.9(Tnxm)
FCK= 300(KG/CM2) : FYK= 5100(KG/CM2)
SECCION= 2.492(M2) : CUANTIA= 0.00906

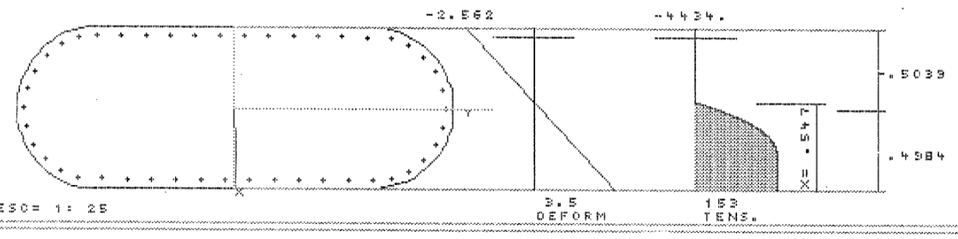
NU =	1635.8(TN)
MxU=	325.3(TNxM)
MyU=	753.7(TMxM)
C.S=	4.520
BETA=	-5.054



ESFUERZOS DE AGOTAMIENTO (PILA)

Nd= 539.0(TN) : Mxd= 0.0(Tnxm) : Myd= 245.8(Tnxm)
FCK= 300(KG/CM2) : FYK= 5100(KG/CM2)
SECCION= 2.492(M2) : CUANTIA= 0.00906

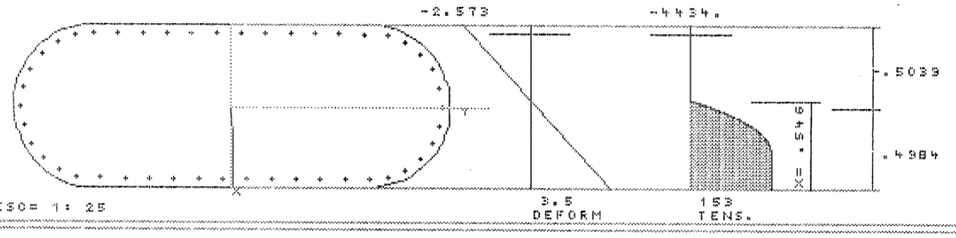
NU =	1718.1(TN)
MxU=	0.1(TNxM)
MyU=	783.3(TMxM)
C.S=	3.187
BETA=	-0.142



ESFUERZOS DE AGOTAMIENTO (PILA)

Nd= 361.9(TN) : Mxd= 0.0(Tnxm) : Myd= 165.4(Tnxm)
FCK= 300(KG/CM2) : FYK= 5100(KG/CM2)
SECCION= 2.492(M2) : CUANTIA= 0.00906

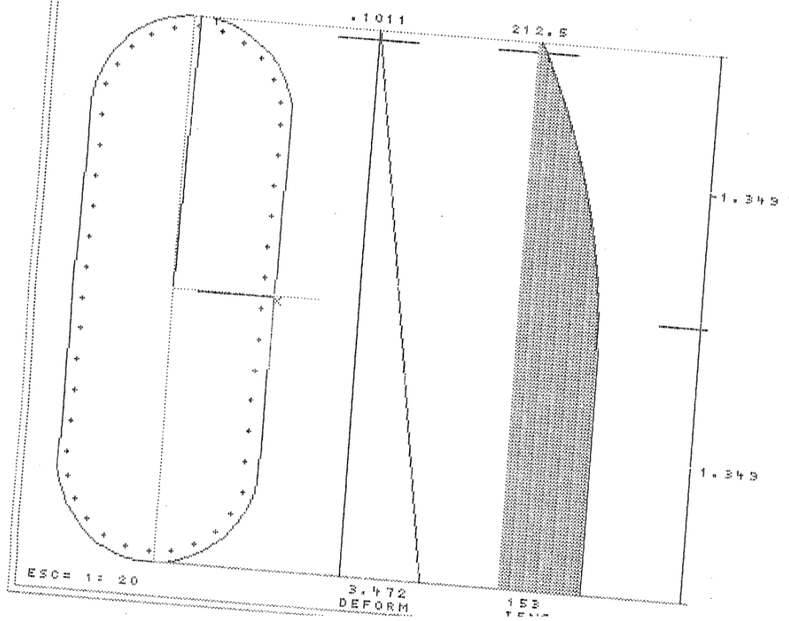
NU =	1713.9(TN)
MxU=	0.2(TNxM)
MyU=	783.2(TMxM)
C.S=	4.735
BETA=	-0.142



ESFUERZOS DE AGOTAMIENTO (PILA)

Nd= 361.9(TN) : Mxd= 81.0(Tnxm) : Myd= 0.0(Tnxm)
FCK= 300(KG/CM2) : FYK= 5100(KG/CM2)
SECCION= 2.492(M2) : CUANTIA= 0.00906

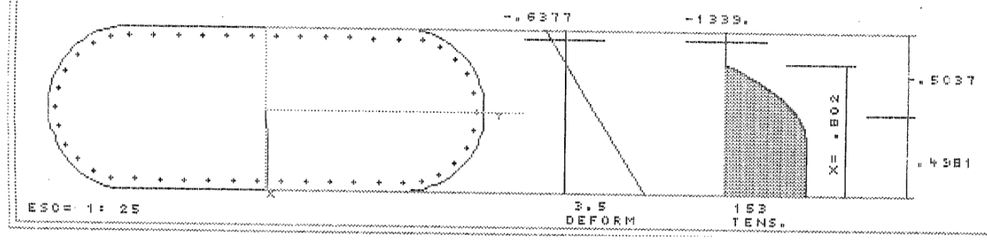
NU = 3863.1(TN)
MxU= 864.6(TNxM)
MyU= 0.1(TMxM)
C.S= 10.673
BETA= -88.756



ESFUERZOS DE AGOTAMIENTO (PILA)

Nd= 361.9(TN) : Mxd= 0.0(Tnxm) : Myd= 74.1(Tnxm)
FCK= 300(KG/CM2) : FYK= 5100(KG/CM2)
SECCION= 2.492(M2) : CUANTIA= 0.00906

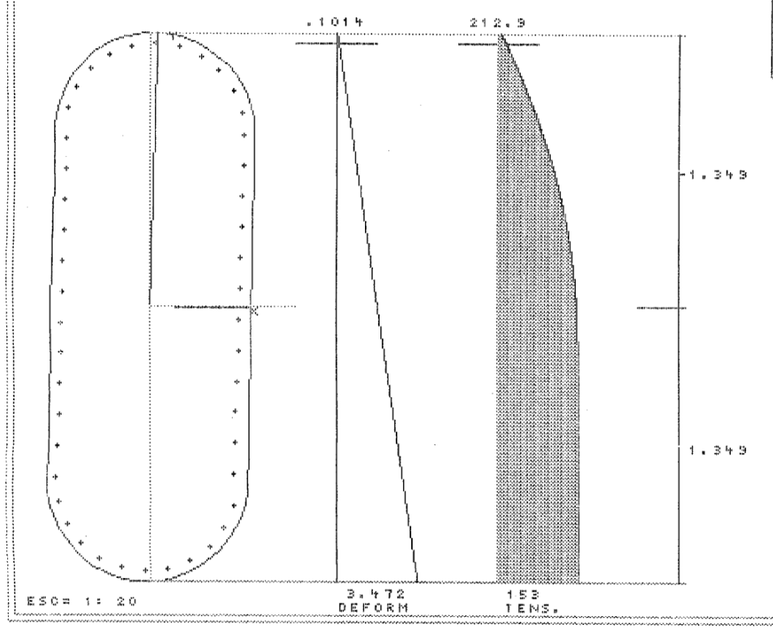
NU = 2948.2(TN)
MxU= 0.1(TNxM)
MyU= 603.5(TMxM)
C.S= 8.146
BETA= -0.125



ESFUERZOS DE AGOTAMIENTO (PILA)

Nd= 539.0(TN) : Mxd= 120.6(Tnxm) : Myd= 0.0(Tnxm)
FCK= 300(KG/CM2) : FYK= 5100(KG/CM2)
SECCION= 2.492(M2) : CUANTIA= 0.00906

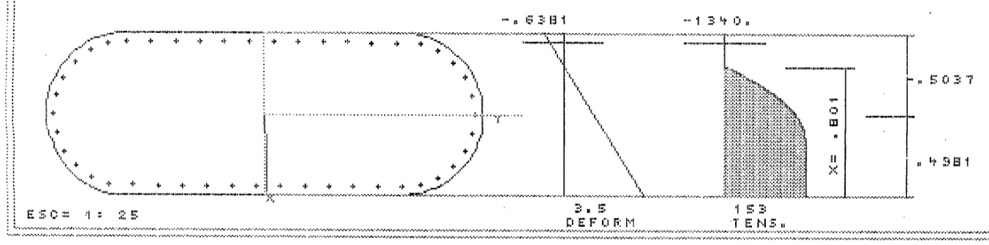
NU = 3863.3(TN)
MxU= 864.4(TNxM)
MyU= 0.1(TMxM)
C.S= 7.167
BETA= -88.770



ESFUERZOS DE AGOTAMIENTO (PILA)

Nd= 539.0(TN) : Mxd= 0.0(Tnxm) : Myd= 110.3(Tnxm)
FCK= 300(KG/CM2) : FYK= 5100(KG/CM2)
SECCION= 2.492(M2) : CUANTIA= 0.00906

NU = 2947.9(TN)
MxU= 0.1(TNxM)
MyU= 603.6(TMxM)
C.S= 5.469
BETA= -0.124



COMPROBACIÓN Δ PUNZONAMIENTO

$u_1 = 2\times(3{,}7+4{,}4) = 16{,}2$ m. $\quad Nd. = 510{,}4$ t

1) ARMADURA NECESARIA

$V_{cu} = 482{,}28$ t

$V_{su} = 510{,}4 - 482{,}28 = 28{,}12$ t

$$A_\alpha = \frac{28{,}12}{0{,}9 \times 0{,}85 \times 41000} = 9{,}0 \quad cm^2/ml$$

- Dirección longitudinal

$A_{nec.}$ (cortante) $= 86{,}1$ cm^2/ml

$A_{REAL} = 17 \times 2 \times 1{,}13 \times 5 = 192{,}1$ cm^2/ml

$A_{REAL} - A_{nec} = 106$ cm^2/ml

- Dirección transversal

A_{nec} (cortante) $= 28{,}4$ cm^2/ml

$A_{REAL} = 113$ cm^2/ml

$A_{REAL} - A_{nec} = 84{,}6$ cm^2/ml

2) COMPROBACIÓN FUERA DEL PERÍMETRO ARMADO A PUNZONAMIENTO.

$$F_{sd,ef} \le 0{,}12 \cdot \xi \cdot (100 \cdot \rho_l \cdot f_{ck})^{1/3} \cdot u_{n,ef} \cdot d$$

$u_{n,ef} = 2 \times (6{,}1 + 3{,}7) = 19{,}6$ m.

$\rho_l = 0{,}0054$

$$1{,}15 \times 510{,}4 \times 10^4 \le 0{,}12 \times \left(1+\sqrt{\frac{200}{850}}\right) \times (100 \times 0{,}0054 \times 30)^{1/3} \times 19600 \times 850$$

$5{,}869.600 \le 7{,}512.340$ ⌣ O.K

3) RESISTENCIA MÁXIMA.

$$\left.\begin{aligned} \frac{F_{sd,ef}}{u_0 \times d} &= \frac{1{,}15 \times 510{,}4}{6{,}54 \times 0{,}85} = 106 \ t/m^2 \\ f_{1cd} &= 0{,}30 \times \frac{3000}{1{,}5} = 600 \ t/m^2 \end{aligned}\right\} \text{O.K.}$$

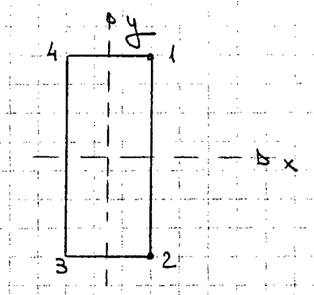
CÁLCULO ZAPATA

DIMENSIONES : 5,00 × 2,60 × 1,00.

ESFUERZOS DE CÁLCULO : $N_d = 687,5\ t$

$M_{xd} = 54,75\ t\times m$

$M_{yd} = 38,41\ t\times m$



TENSIONES EN EL TERRENO :

$N = 458,3 \quad M_x = 36,5 \quad M_y = 25,6$ (SIN MAYORAR)

$$\sigma = \frac{N}{A} \pm \frac{M_x \times 2,5}{\frac{1}{12}\times 5^3 \times 2,60} \pm \frac{M_y \times 1,30}{\frac{1}{12}\times 2,60^3 \times 5}$$

$\sigma_1 = 43,2\ t/m^2 \quad \sigma_2 = 36,43\ t/m^2 \quad \sigma_3 = 27,34\ t/m^2 \quad \sigma_4 = 34,1\ t/m^2$

$\sigma_{med} = 35,3\ t/m^2$

DIMENSIONAMOS LA ARMADURA SUPONIENDO UNA

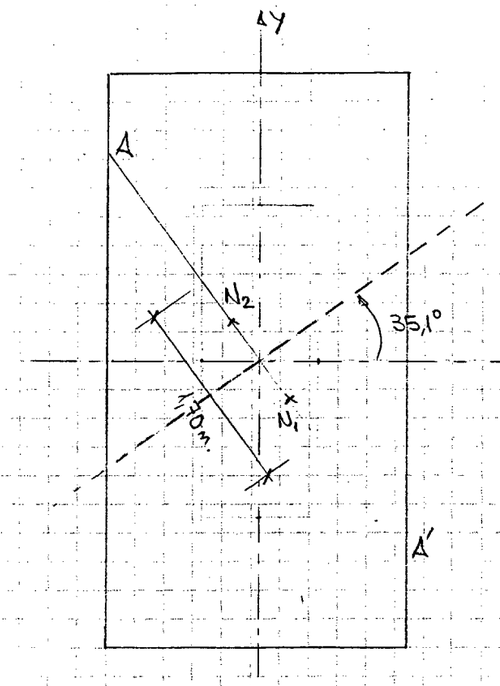
$\sigma_{med} = 50\ t/m^2$

$$M_{yd} = 1,5 \times 50 \times \frac{0,95^2}{2} \times 1,00 = 34\ T\times M/ml \rightarrow U_s = 67^T$$

$$M_{xd} = 1,5 \times 50 \times \frac{1,625^2}{2} \times 1,00 = 99\ T\times M/ml \rightarrow U_s = 110^T$$

SE DISPONE UN MALLAZO $\phi\ 25/17,5$.

COMPROBACIÓN DE BIELAS



$$M_R = \sqrt{54,75^2 + 38,41^2} = 67\ T\times M$$

$N_D = 687,5 + 18,9 + 32,5 = 739^T$

$$\alpha = \text{arc tg}\ \frac{38,41}{54,75} = 35,1°$$

EN EL PLANO VERTICAL AA' :

$N_1 + N_2 = 739^T$

$(N_1 - N_2) \times 0,425 = 67$

$N_1 = 448,3^T \quad N_2 = 290,7^T$

$f_{1cd} = 0,85 \times f_{cd} = 0,85 \times \frac{2500}{1,5} = 1.416\ t/m^2$

$A_c = 0,85 \times 1,00 = 0,85\ m^2$

$A_c \times f_{1cd} = 0,85 \times 1416 = 1203\ t$

$448,3/\cos 45° = 634^T$

$448,3/\cos 55° = 782^T$

} O.K.

COMPROBACIÓN DE NUDO

NUDO CON TIRANTE ANCLADO.

$f_{2cd} = 0,70 \times f_{cd} = 1167\ t/m^2$

$$\sigma_{c2} = \frac{782}{1,5\times 0,5} = 1043\ t/m^2 \quad \text{(BIELA A 55° CON LA VERTICAL)}$$

$$\sigma_{c2} = \frac{634}{1,5\times 0,6} = 704\ t/m^2 \quad \text{(BIELA A 45°)}$$

REACCIONES PARA CALCULO

DE ESTRIBOS

REACCIONES EN LOS ESTRIBOS

REACCIONES VERTICALES	
Peso Propio tablero	55 t
Peso Superestructura (Resto C.P.)	18,7 t
Reacción Hip. de Pretensado	———
Reacción Máxima SC.	59,03 t
Reacción Mínima SC.	−5,40 t
Gradiente térmico.	———
Otras	———
REACCIONES HORIZONTALES LONGITUDINALES	
Reacción debida al frenado	7,51 t
Deformaciones impuestas	———
Rozamiento, sismo, otras	———
REACCIONES HORIZONTALES TRANSUERSALES	
Reacción viento transversal	15,16 t
Fuerza centrífuga	———
Rozamiento, sismo, otros	———

CALCULO DE ESTRIBOS

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PROGRAMA . ESTRIBOS

CALCULO Y ARMADO DE ESTRIBOS DE PUENTE

VERSION Nº 1     FECHA : 12/10/1995

Copyright :  J.Diaz del Valle, 1995

E.T.S. de I.C.C. y P.  de Santander
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DATOS DEL PROYECTO DEL ESTRIBO

PROYECTO : AVE LLEIDA-MARTORELL

REFERENCIA : P.K.303+820. ESTRIBO 1.

FECHA DEL CALCULO : 22-9-99
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D A T O S D E L E S T R I B O

ESTRIBO 1.

-Datos geométricos:

H1= 9.45	H2= 0.00	H3= 0.00	H4= 1.00	H5= 0.00	m.
H6= 0.00	H7= 1.00	H8= 0.00	H9= 2.00	H10= 0.00	m.
B1= 1.05	B2= 0.00	B3= 3.75	B4= 0.00	B5= 0.00	m.
B6= 0.60	B7= 0.00	B8= 0.00	B9= 0.00	B9= 0.00	m.
C1= 0.35	C2= 0.45	C3= 0.00	C4= 0.25	C5= 0.25	m.
D1= 0.00	D2= 0.00	D3= 0.95	D4= 0.95	D5= 0.25	m.
D6= 0.25					
A1= 3.55	A2= 0.20	A3= 1.85	A4= 0.30	A5= 3.32	m.
E1= 7.90	E2= 7.70	E3= 0.30	E4= 0.00	E5= 0.30	m.
E6= 0.30	E7= 0.00	E8= 0.00	E9= 0.95	E10= 6.00	m.

-Caracteristicas de los materiales:

Peso especifico del hormigón (t/m3) ..... γ_h = 2.50
Resistencia del hormigón del alzado (Kp/cm²) ..... fck = 250
Resistencia del hormigón de la zapata (Kp/cm²) ..... fck' = 250
Limite elástico del acero (Kp/cm²) ..... fyk = 5100
Recubrimiento de las armaduras (m) ..... r = 0.05
Se incluyen las cuantias geométricas minimas
Coeficiente de minoración resistencia hormigón ..... γ_c = 1.50
Coeficiente de minoración resistencia acero ..... γ_s = 1.15
Coeficiente de mayoración de las acciones ..... γ_f = 1.60

-Caracteristicas del terreno:

Terreno sobre talón:
Peso especifico de las tierras (t/m3) ..... γ_t = 1.80
Angulo de rozamiento interno de las tierras (°) ..... ϕ = 30.00
Angulo de rozamiento entre las tierras y el muro (°) .... δ = 0.00
Coeficiente de empuje activo calculado segun Coulomb ... Kax = 0.333
Cohesión de las tierras (t/m²) ..... c = 0.00
Terreno sobre puntera :
Peso especifico de las tierras (t/m3) ..... γ_t = 1.80
Angulo de rozamiento interno de las tierras (°) ..... ϕ = 30.00
Angulo de rozamiento entre las tierras y el muro (°) .... δ = 0.00
Coeficiente de empuje pasivo de las tierras ..... Kpx = 3.000

Terreno de cimentación :
Coeficiente de rozamiento entre el cimiento y el suelo .. μ = 0.577
Adherencia entre el cimiento y el suelo (t/m²) ..... a = 0.00

Angulo de la superficie del terreno con la horizontal ... β = 0.00°

-Sobrecargas:

Carga por unidad de longitud de talud (t/m²) ..... q = 1.00
No se considera la acción sísmica .....

-Acciones del tablero sobre el estribo :

Reacciones verticales (t) y excentricidades transversales (m) :

Reacción del peso propio del tablero ... Rpp = 55.00 , Exc.= 0.00
Reacción del peso de la superestructura. Rse = 18.70 , Exc.= 0.00
Reacción hiperestática de pretensado ... Rhp = 0.00 , Exc.= 0.00
Reacción máxima de la sobrecarga ..... Rma = 59.03 , Exc.= 0.00
Reacción mínima de la sobrecarga ..... Rmi = -5.40 , Exc.= 0.00
Reacción debida al gradiente termico ... Rgt = 0.00 , Exc.= 0.00
Reacción debidas a otras acciones ..... Rot = 0.00 , Exc.= 0.00

Reacciones horizontales longitudinales (t) :

Reacción debida al frenado (+ -) ..... Rfx = 7.51
Reacción debida a las deformaciones impuestas ..... Rdx = 0.00
Reacciones debidas a otras causas (Rozam.,sismo,etc) . Rox = 0.00

Reacciones horizontales transversales (t) :

Reacción debida al viento ..... Rvy = 15.17
Reacción debida a la fuerza centrifuga ..... Rcy = 0.00
Reacciones debidas a otras causas (Rozam.,sismo,etc) . Roy = 0.00

ACCIONES SOBRE EL ESTRIBO

Las acciones actuantes sobre el estribo tienen el siguiente origen:

a) Peso propio del estribo.
b) Acciones del tablero.
c) Empuje y peso de las tierras.

Estas acciones pueden ser verticales Fz ,horizontales longitudinales Fx ,y horizontales transversales Fy. En las tablas que siguen, se recogen las citadas acciones junto con los momentos Ma ,Mx, y My :

Ma : Momento respecto a la puntera del estribo.Se utiliza para la comprobación de seguridad al vuelco.

Mx, My: Momentos respecto al c.d.g de la zapata. Se utilizan para el cálculo de las tensiones sobre el terreno.

a) PESO PROPIO DEL ESTRIBO

Zona	Volumen (m3)	Peso Fz (t)	Ma (txm)	My (txm)
Muro frontal	71.12	177.79	-201.07	278.96
Muro de guarda	1.69	4.22	-6.43	4.95
Muros en vuelta	28.70	71.76	-298.10	-14.35
Aletas en voladizo	2.18	5.44	-31.89	-17.21
Contrafuertes aleta	0.00	0.00	0.00	0.00
Impostas	0.00	0.00	0.00	0.00
Macizos caquejeado	0.00	0.00	0.00	0.00
Zapata	42.66	106.65	-287.95	0.00
TOTAL	146.34	365.85	-735.45	252.35

b) ACCIONES DEL TABLERO

b1) Reacciones verticales:

Se consideran las reacciones del tablero en los siguientes casos:

-Caso permanente: Incluye las reacciones del peso propio del tablero y de la superestructura, las reacciones hiperestáticas de pretensado y otras acciones permanentes.

-Caso máximo: Incluye la suma de las reacciones de las acciones permanentes y las reacciones máximas de las sobrecargas variables.

-Caso mínimo: Incluye la suma de las reacciones de las acciones permanentes y las reacciones mínimas de las sobrecargas variables.

Reacción	Axil Fz (t)	Ma (txm)	My (txm)
Permanente	73.70	-70.91	128.97
Máxima	132.73	-126.09	232.28
Mínima	68.30	-64.89	119.52

b2) Reacciones horizontales longitudinales:

Las reacciones horizontales que ejerce el tablero provienen de movimientos impuestos, frenado,sismo , rozamiento de apoyos y de otras acciones.

El valor máximo considerado para estas acciones es:

Reacción Longitudinal	Fx (t)	Ma (txm)	My (txm)
Máxima	7.51	78.48	78.48

b3) Reacciones horizontales transversales:

Estas reacciones provienen de dos tipos de fuerzas:

-Fuerzas transversales:

Son debidas a las acciones de viento y sismo, y a la fuerza centrífuga de los vehículos que circulan por el tablero :

Fy = 15.17 t. ; Mx = 158.48 txm.

-Fuerzas verticales:

Debido a la excentricidad transversal de las reacciones verticales, se produce un momento transversal Mx :

. Para reacción vertical permanente .. Mx = 0.00 txm.
. Para reacción vertical máxima ..... Mx = 0.00 txm.
. Para reacción vertical mínima ..... Mx = 0.00 txm.

c) EMPUJE Y PESO DE TIERRAS

c1) Acciones horizontales:

Acción	Fuerza Fx (t)	Ma (txm)	My (txm)
Empuje de tierras.	44.59	359.67	359.67
Empuje de sobrecarga.	12.83	114.22	114.22
Empuje del agua.	0.00	0.00	0.00
Empuje total sobre trasdós.	57.42	473.89	473.89
Empuje pasivo frente puntera.	83.16	55.44	55.44

c2) Acciones verticales:

Acción	Fuerza Fz (t)	Ma (txm)	My (txm)
Peso tierras sobre talón.	497.62	-1761.37	-417.79
Peso tierras sobre puntera.	7.67	-2.30	18.40
Sobrecarga sobre terraplen.	26.63	-93.85	-21.97
Rozamiento vertical tierras.	0.00	0.00	0.00
Resultante total vertical.	531.91	-1857.52	-421.36

COMPROBACION DE ESTABILIDAD

Se consideran las siguientes hipótesis para las comprobaciones al vuelco y deslizamiento :

Hipótesis 1 : Construcción. Situación de estribo con relleno antes de construir el tablero.

Hipótesis 2 : Construcción. Situación de tablero construido antes del relleno del estribo.

Hipótesis 3 : Servicio. Se considera la hipótesis mas desfa - vorable que corresponde al mínimo valor de la reacción vertical del tablero.

Hipótesis Nº	Coeficientes de seguridad Vuelco	Deslizamiento
1	6.197	20.125
2	10.263	14.986
3	5.349	23.307

El coeficiente de seguridad al vuelco se obtiene a partir de los momentos Ma respecto de la puntera de la zapata.Se distinguen momentos volcadores y estabilizadores.El coeficiente de seguridad se obtiene como cociente entre estos momentos.

El mínimo coeficiente de seguridad al vuelco es mayor que 2, y por tanto se cumple la seguridad al vuelco.

El coeficiente de seguridad al deslizamiento se obtiene como cociente entre la fuerza estabilizadora y la desestabilizadora. La primera es la fuerza de rozamiento obtenida como producto de las fuerzas verticales por un coeficiente de rozamiento igual a

$$\mu = \operatorname{tg} \phi = 0.577$$

en donde ϕ es el ángulo de rozamiento entre la zapata y terreno. Tambien se consideran como fuerzas estabilizadoras,la fuerza de adherencia suelo-zapata, el empuje pasivo frente a puntera, la existencia de tacón y la inclinación de la base de la zapata.

La fuerza desestabilizadora es la resultante de las fuerzas horizontales tanto longitudinales como transversales.

El mínimo coeficiente de seguridad al deslizamiento es mayor que 1.5 ,cumpliendose por tanto la seguridad al deslizamiento.

ESTADO TENSIONAL EN EL TERRENO

Se consideran las siguientes hipótesis para el cálculo de las tensiones en el terreno :

Hipótesis 1 : Construcción. Se supone que el relleno se ejecuta antes que el tablero.

Hipótesis 2 : Construcción. Se supone que el tablero se ejecuta antes que el relleno.

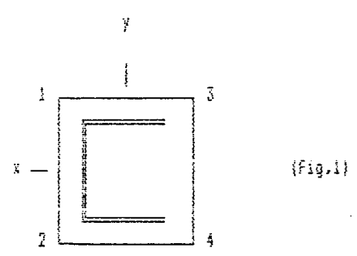
Hipótesis 3 : Servicio, con reacción de tablero mínima y acciones horizontales máximas.

Hipótesis 4 : Servicio, con reacción de tablero mínima y acciones longitudinales nulas.

Hipótesis 5 : Servicio, con reacción de tablero máxima y acciones longitudinales nulas.

Hipótesis 6 : Servicio, con reacción de tablero máxima y acciones horizontales máximas.

Las tensiones σ1,σ2,σ3,σ4 del terreno en las 4 esquinas de la base de la zapata (figura 1),



(Fig.1)

se obtienen a partir de la fórmula de flexocompresión:

$$\sigma = \frac{N}{A} + \frac{Mx}{-Wx} + \frac{My}{-Wy}$$

donde N , Mx , My , son los esfuerzos en la base de la zapata , y

A = 42,66 m2 , Wx= 56,17 m3 , Wy = 38,39 m3

son las características mecánicas de la base de la zapata.

La expresión anterior solamente es válida en el caso de que toda la planta resulte comprimida. En otro caso, y dado que el terreno no puede soportar tracción alguna, el programa calcula las tensiones del terreno de manera iterativa.

El proceso iterativo anterior, se detiene cuando la resultante de las tensiones obtenidas, sea sensiblemente igual a los esfuerzos que solicitan a la base de la zapata.

La tensión media, se obtiene según la expresión : $\sigma med = \frac{N}{A}$

Siguiendo esta formulación,resulta la siguiente tabla que resume el estado tensional correspondiente a las 6 hipótesis anteriores :

ESFUERZOS DE ZAPATA Y TENSIONES DEL TERRENO

Hip	N (t)	Mx (txm)	My (txm)	σ1 (t/m²)	σ2 (t/m²)	σ3 (t/m²)	σ4 (t/m²)	σmed (t/m²)
1	939.91	0.00	359.52	31.40	31.40	12.67	12.67	22.03
2	481.70	158.48	459.00	26.07	20.42	2.16	0.00	11.29
3	1008.21	158.48	557.52	40.98	35.33	11.93	6.29	23.63
4	1008.21	158.48	90.29	25.15	19.50	27.77	22.12	23.63
5	1072.64	158.48	62.47	29.59	23.95	26.34	20.70	25.14
6	1072.64	158.48	670.27	45.42	39.78	10.51	4.86	25.14

ANALISIS ESTRUCTURAL DEL ESTRIBO COMO EMPARRILLADO ESPACIAL

DIMENSIONES Y CARACTERISTICAS MECANICAS DE LAS BARRAS

Barra Nº	i Nº	j Nº	Long. (m.)	Canto (m.)	Ancho (m.)	Area (m²)	Iner.1 (m4)	Iner.2 (m4)
1	1	2	1.49	1.05	0.92	0.971	0.069	0.089
2	2	3	1.49	1.05	0.92	0.971	0.069	0.089
3	3	4	1.49	1.05	0.92	0.971	0.069	0.089
4	4	5	1.49	1.05	0.92	0.971	0.069	0.089
5	5	6	1.49	1.05	0.92	0.971	0.069	0.089
6	6	7	1.49	1.05	0.92	0.971	0.069	0.089
7	7	8	1.49	0.25	0.92	0.231	0.016	0.001
8	9	10	1.49	1.05	1.85	1.942	0.554	0.178
9	10	11	1.49	1.05	1.85	1.942	0.554	0.178
10	11	12	1.49	1.05	1.85	1.942	0.554	0.178
11	12	13	1.49	1.05	1.85	1.942	0.554	0.178
12	13	14	1.49	1.05	1.85	1.942	0.554	0.178
13	14	15	1.49	1.05	1.85	1.942	0.554	0.178
14	15	16	1.49	0.25	1.85	0.462	0.132	0.002
15	17	18	1.49	1.05	0.92	0.971	0.069	0.089
16	18	19	1.49	1.05	0.92	0.971	0.069	0.089
17	19	20	1.49	1.05	0.92	0.971	0.069	0.089
18	20	21	1.49	1.05	0.92	0.971	0.069	0.089
19	21	22	1.49	1.05	0.92	0.971	0.069	0.089
20	22	23	1.49	1.05	0.92	0.971	0.069	0.089
21	23	24	1.49	1.05	0.92	0.971	0.069	0.089
22	25	26	1.49	0.30	2.35	0.705	0.324	0.005
23	26	27	1.49	0.30	2.35	0.705	0.324	0.005
24	27	28	1.49	0.30	2.35	0.705	0.324	0.005
25	28	29	1.49	0.30	2.35	0.705	0.324	0.005
26	29	30	1.49	0.30	2.80	0.841	0.551	0.006
27	30	31	1.49	0.30	2.80	0.841	0.551	0.006
28	31	32	1.49	0.30	2.80	0.841	0.551	0.006
29	1	9	1.85	1.05	0.74	0.780	0.036	0.072
30	9	17	1.85	1.05	0.74	0.780	0.036	0.072
31	17	25	2.30	0.30	0.74	0.223	0.010	0.002
32	2	10	1.85	1.05	1.49	1.560	0.287	0.143
33	10	18	1.85	1.05	1.49	1.560	0.287	0.143
34	18	26	2.30	0.30	1.49	0.446	0.082	0.003
35	3	11	1.85	1.05	1.49	1.560	0.287	0.143
36	11	19	1.85	1.05	1.49	1.560	0.287	0.143
37	19	27	2.30	0.30	1.49	0.446	0.082	0.003
38	4	12	1.85	1.05	1.49	1.560	0.287	0.143
39	12	20	1.85	1.05	1.49	1.560	0.287	0.143
40	20	28	2.30	0.30	1.49	0.446	0.082	0.003
41	5	13	1.85	1.05	1.49	1.560	0.287	0.143
42	13	21	1.85	1.05	1.49	1.560	0.287	0.143
43	21	29	2.30	0.30	1.49	0.446	0.082	0.003
44	6	14	1.85	1.05	1.49	1.560	0.287	0.143

45	14	22	1.85	1.05	1.49	1.560	0.287	0.143
46	22	30	2.30	0.30	1.49	0.446	0.082	0.003
47	7	15	1.85	1.05	1.49	1.560	0.287	0.143
48	15	23	1.85	1.05	1.49	1.560	0.287	0.143
49	23	31	2.30	0.30	1.49	0.446	0.082	0.003
50	8	16	1.85	0.30	0.74	0.223	0.010	0.002
51	16	24	1.85	0.30	0.74	0.223	0.010	0.002
52	24	32	2.30	0.30	0.74	0.223	0.010	0.002
53	33	34	1.49	0.30	1.81	0.544	0.149	0.004
54	34	35	1.49	0.30	1.81	0.544	0.149	0.004
55	36	37	1.49	0.30	1.81	0.544	0.149	0.004
56	30	33	1.81	0.30	1.49	0.446	0.082	0.003
57	31	34	1.81	0.30	1.49	0.446	0.082	0.003
58	34	36	1.81	0.30	1.49	0.446	0.082	0.003
59	32	35	1.81	0.30	0.74	0.223	0.010	0.002
60	35	37	1.81	0.30	0.74	0.223	0.010	0.002
61	37	38	1.81	0.30	0.74	0.223	0.010	0.002
62	29	33	2.34	0.30	1.49	0.446	0.082	0.003
63	33	36	2.34	0.30	1.49	0.446	0.082	0.003
64	36	38	2.34	0.30	1.49	0.446	0.082	0.003

Hipótesis (1) : Peso propio del muro y aletas del estribo

DESPLAZAMIENTOS DE LOS NUDOS

Nudo Nº	Despl.y (mm)	Despl.x (mm)	Despl.z (mm)	Giro y 1000xrad	Giro x 1000xrad	Giro z 1000xrad
1	0.000	-0.000	0.000	-0.000	-0.000	-0.000
2	0.000	-0.004	0.010	-0.005	0.000	0.000
3	0.000	-0.014	0.019	-0.010	0.000	0.000
4	0.000	-0.032	0.025	-0.014	0.000	0.000
5	0.000	-0.056	0.030	-0.019	0.000	0.000
6	-0.000	-0.087	0.033	-0.022	0.000	-0.000
7	-0.000	-0.120	0.035	-0.023	0.000	-0.000
8	-0.000	-0.156	0.036	-0.025	0.000	-0.000
9	0.000	-0.000	0.000	-0.000	-0.000	0.000
10	0.000	-0.004	0.010	-0.005	-0.000	0.000
11	0.000	-0.014	0.019	-0.009	-0.000	0.000
12	0.000	-0.032	0.025	-0.014	0.000	0.000
13	0.000	-0.056	0.030	-0.019	0.000	0.000
14	-0.000	-0.087	0.033	-0.022	0.000	-0.000
15	-0.000	-0.121	0.035	-0.023	0.000	-0.001
16	-0.000	-0.157	0.036	-0.025	-0.000	-0.001
17	0.000	0.000	0.000	-0.000	-0.000	0.000
18	0.000	-0.003	0.010	-0.005	0.000	0.000
19	0.000	-0.014	0.019	-0.009	0.000	0.000
20	0.000	-0.031	0.025	-0.014	0.000	0.001
21	0.000	-0.055	0.030	-0.019	0.000	0.001
22	-0.000	-0.088	0.033	-0.023	0.000	-0.001
23	-0.000	-0.124	0.035	-0.024	0.000	-0.002
24	-0.000	-0.161	0.035	-0.025	0.000	-0.002
25	0.000	-0.000	0.000	-0.000	0.000	-0.000
26	-0.000	-0.003	0.021	-0.005	0.000	-0.000
27	-0.000	-0.014	0.039	-0.009	0.000	-0.000
28	-0.000	-0.030	0.056	-0.013	0.000	-0.000
29	-0.001	-0.052	0.072	-0.023	0.000	-0.000
30	-0.001	-0.089	0.079	-0.024	0.000	-0.000
31	-0.001	-0.126	0.084	-0.024	0.000	-0.000
32	-0.002	-0.164	0.085	-0.024	0.000	-0.000
33	-0.001	-0.090	0.131	-0.031	0.000	-0.000
34	-0.001	-0.128	0.134	-0.029	0.000	-0.000
35	-0.002	-0.166	0.135	-0.028	0.000	-0.000
36	-0.002	-0.130	0.187	-0.028	0.000	-0.000
37	-0.002	-0.168	0.188	-0.027	0.000	-0.000
38	-0.002	-0.169	0.235	-0.025	0.000	-0.000

ESFUERZOS EN LAS BARRAS

Barra Nº	i Nº	j Nº	Axil (t.)	Cort.1 (t.)	Cort.2 (t.)	Flec.1i (txm)	Flec.1j (txm)	Flec.2i (txm)	Flec.2j (txm)
1	1	2	20.21	0.00	0.02	-0.00	-0.00	0.88	-0.84
2	2	3	16.65	0.00	0.02	-0.00	-0.00	0.87	-0.84
3	3	4	13.12	0.00	0.03	-0.00	-0.00	0.88	-0.84
4	4	5	9.61	0.00	0.07	-0.00	-0.00	0.84	-0.74
5	5	6	6.09	-0.00	0.11	0.00	0.00	0.65	-0.49
6	6	7	2.56	0.00	0.10	-0.00	-0.00	0.30	-0.14
7	7	8	0.42	0.00	0.00	-0.00	-0.00	0.01	-0.00
8	9	10	40.37	0.09	0.02	-0.08	-0.05	1.72	-1.68
9	10	11	33.19	0.13	0.02	-0.08	-0.11	1.73	-1.69
10	11	12	26.05	0.23	0.05	-0.13	-0.21	1.78	-1.70
11	12	13	19.01	0.33	0.18	-0.16	-0.33	1.76	-1.51
12	13	14	12.21	0.35	0.50	-0.26	-0.25	1.58	-0.83
13	14	15	5.37	0.25	0.42	-0.28	-0.09	0.72	-0.09
14	15	16	0.85	0.03	0.01	-0.03	-0.01	0.02	-0.00
15	17	18	20.09	0.03	-0.05	-0.02	-0.03	0.79	-0.86
16	18	19	16.42	0.06	-0.05	-0.04	-0.05	0.80	-0.88
17	19	20	12.68	0.11	-0.10	-0.07	-0.10	0.81	-0.95
18	20	21	8.75	0.20	0.09	-0.12	-0.17	0.92	-0.79
19	21	22	6.21	0.24	1.95	-0.18	-0.17	2.14	0.76
20	22	23	3.83	0.14	1.56	-0.14	-0.06	1.33	0.98
21	23	24	1.59	0.02	0.73	-0.02	-0.01	0.81	0.28
22	25	26	29.47	0.01	0.00	0.01	-0.03	0.05	-0.05
23	26	27	26.84	0.01	0.01	0.03	-0.04	0.05	-0.04
24	27	28	24.19	0.00	0.01	0.04	-0.05	0.05	-0.03
25	28	29	21.62	-0.01	-0.33	0.05	-0.04	-0.14	-0.36
26	29	30	13.08	-0.02	0.16	0.03	-0.00	0.13	0.11
27	30	31	7.31	-0.02	0.13	-0.00	0.03	0.10	0.09
28	31	32	1.92	-0.00	0.09	0.00	0.00	0.07	0.06
29	1	9	-0.00	-0.00	-0.00	0.00	0.00	-0.00	-0.00
30	9	17	0.00	0.00	-0.00	-0.00	-0.00	-0.00	-0.00
31	17	25	-0.00	-0.00	-0.00	0.00	0.00	-0.00	-0.00
32	2	10	-0.06	0.05	-0.01	-0.04	-0.05	0.01	-0.02
33	10	18	-0.03	0.08	-0.00	-0.09	-0.06	0.01	-0.01
34	18	26	-0.01	0.01	-0.00	-0.02	-0.01	-0.00	-0.00
35	3	11	-0.15	0.08	0.01	-0.07	-0.07	0.04	-0.02
36	11	19	-0.05	0.16	0.04	-0.17	-0.12	0.08	0.00
37	19	27	-0.01	0.03	-0.00	-0.05	-0.01	-0.01	-0.00
38	4	12	-0.18	0.10	0.04	-0.11	-0.08	0.08	-0.00
39	12	20	-0.07	0.27	0.16	-0.29	-0.21	0.24	0.06
40	20	28	0.35	-0.05	-0.01	-0.06	0.17	-0.01	-0.01
41	5	13	-0.05	0.08	0.04	-0.13	-0.03	0.05	0.03
42	13	21	-0.05	0.50	0.36	-0.56	-0.36	0.45	0.23
43	21	29	2.23	1.57	-0.01	-1.32	-2.29	-0.02	-0.01
44	6	14	0.20	0.08	-0.01	-0.12	-0.02	-0.11	0.10
45	14	22	0.10	0.45	-0.09	-0.51	-0.32	-0.15	-0.01
46	22	30	-0.48	1.68	0.00	-1.80	-2.07	0.00	-0.00
47	7	15	0.33	0.10	-0.10	-0.10	-0.08	-0.30	0.11
48	15	23	0.11	0.05	-0.51	-0.04	-0.05	-0.72	-0.23
49	23	31	-1.34	1.41	0.01	-1.58	-1.66	0.02	0.01
50	8	16	0.04	0.00	-0.00	-0.00	-0.00	-0.01	-0.00
51	16	24	0.01	0.01	-0.01	-0.01	-0.01	-0.01	-0.01
52	24	32	-0.75	0.23	0.00	-0.27	-0.25	0.01	0.00
53	33	34	2.74	-0.00	-0.28	-0.00	0.00	-0.23	-0.20
54	34	35	1.04	0.00	-0.24	-0.00	0.00	-0.18	-0.17
55	36	37	0.83	0.00	-0.17	-0.00	0.00	-0.13	-0.12

56	30	33	-0.51	-0.97	0.00	1.86	-0.11	-0.00	0.00
57	31	34	-1.37	-0.85	0.00	1.50	0.05	-0.00	0.00
58	34	36	-1.33	-0.54	0.00	0.33	0.64	0.00	-0.00
59	32	35	-0.84	-0.13	-0.00	0.19	0.05	-0.00	0.00
60	35	37	-0.60	-0.16	-0.00	0.12	0.17	0.00	-0.00
61	37	38	-0.43	0.02	0.00	-0.05	0.01	0.00	-0.00
62	29	33	4.71	-1.45	-0.00	2.52	0.88	-0.00	0.00
63	33	36	2.33	0.20	0.00	-0.55	0.08	0.00	-0.00
64	36	38	0.35	0.26	-0.00	-0.59	-0.01	0.00	-0.00

Hipótesis (2) : Empuje de tierras + Reacción Fx del tablero

DESPLAZAMIENTOS DE LOS NUDOS

Nudo Nº	Despl.y (mm)	Despl.x (mm)	Despl.z (mm)	Giro y 1000xrad	Giro x 1000xrad	Giro z 1000xrad
1	-0.000	0.000	0.000	0.000	-0.000	0.000
2	-0.000	0.163	0.011	0.191	-0.000	0.000
3	0.000	0.504	0.020	0.250	-0.000	-0.000
4	0.000	0.881	0.029	0.247	-0.000	-0.000
5	0.000	1.231	0.034	0.221	-0.000	-0.000
6	0.000	1.542	0.038	0.196	-0.000	-0.000
7	0.000	1.824	0.039	0.185	-0.000	-0.000
8	0.000	2.141	0.039	0.207	-0.000	-0.000
9	-0.000	0.000	0.000	0.000	0.000	-0.000
10	-0.000	0.163	0.013	0.187	-0.001	-0.001
11	0.001	0.498	0.025	0.245	-0.003	-0.006
12	0.003	0.869	0.034	0.243	-0.003	-0.012
13	0.004	1.214	0.040	0.217	-0.003	-0.017
14	0.006	1.520	0.043	0.194	-0.003	-0.021
15	0.010	1.798	0.044	0.182	-0.005	-0.024
16	0.017	2.106	0.045	0.198	-0.005	-0.026
17	0.000	0.000	0.000	0.000	0.000	0.000
18	0.001	0.169	0.029	0.168	-0.009	0.003
19	0.004	0.489	0.048	0.219	-0.013	-0.003
20	0.006	0.844	0.058	0.223	-0.013	-0.010
21	0.007	1.181	0.063	0.202	-0.012	-0.014
22	0.009	1.476	0.065	0.183	-0.012	-0.018
23	0.016	1.747	0.067	0.171	-0.015	-0.019
24	0.033	1.999	0.067	0.167	-0.012	-0.003
25	0.000	0.000	-0.000	0.000	-0.000	0.000
26	0.061	0.176	-0.091	0.033	-0.070	0.045
27	0.187	0.488	-0.162	0.073	-0.093	0.085
28	0.329	0.839	-0.212	0.104	-0.092	0.127
29	0.461	1.188	-0.244	0.147	-0.082	0.167
30	0.583	1.465	-0.258	0.145	-0.082	0.182
31	0.704	1.738	-0.264	0.148	-0.080	0.192
32	0.822	1.992	-0.264	0.156	-0.079	0.196
33	1.213	1.457	-0.552	0.179	-0.120	0.373
34	1.383	1.733	-0.554	0.172	-0.109	0.385
35	1.548	1.993	-0.556	0.170	-0.107	0.390
36	2.149	1.729	-0.876	0.180	-0.122	0.407
37	2.331	1.994	-0.876	0.179	-0.122	0.409
38	3.070	1.993	-1.200	0.178	-0.122	0.407

ESFUERZOS EN LAS BARRAS

Barra Nº	i Nº	j Nº	Axil (t.)	Cort.1 (t.)	Cort.2 (t.)	Flec.1i (txm)	Flec.1j (txm)	Flec.2i (txm)	Flec.2j (txm)

1	1	2	21.12	-0.00	-21.42	0.00	0.00	-50.32	18.49
2	2	3	19.12	-0.00	-13.03	0.00	0.00	-20.45	1.10
3	3	4	15.86	-0.00	-6.70	0.00	0.00	-4.42	-5.54
4	4	5	11.33	-0.00	-2.53	0.00	0.00	2.85	-6.61
5	5	6	6.31	-0.00	-0.06	0.00	0.00	4.40	-4.49
6	6	7	2.06	0.00	0.86	-0.00	-0.00	2.77	-1.50
7	7	8	0.07	-0.00	-0.34	0.00	0.00	-0.31	-0.20
8	9	10	51.99	-6.73	-46.64	3.47	6.53	-102.23	32.94
9	10	11	45.43	-10.31	-28.76	6.58	8.94	-42.07	-0.65
10	11	12	35.03	-14.16	-15.96	10.45	10.60	-11.13	-12.58
11	12	13	23.91	-16.02	-7.34	11.88	11.92	3.72	-14.62
12	13	14	13.20	-15.39	-1.06	10.68	12.18	7.79	-9.37
13	14	15	4.95	-10.74	1.05	6.04	9.91	5.10	-3.54
14	15	16	0.31	-0.52	-0.70	0.33	0.44	-0.60	-0.44
15	17	18	56.01	-4.43	-42.48	1.96	4.62	-61.91	-1.20
16	18	19	37.38	-10.86	-32.80	7.57	8.56	-33.48	-15.26
17	19	20	20.53	-13.29	-26.39	9.84	9.91	-20.35	-18.86
18	20	21	10.59	-13.50	-21.02	10.14	9.92	-11.80	-19.43
19	21	22	3.70	-12.49	-9.12	9.30	9.26	-3.43	-10.12
20	22	23	3.11	-10.42	-7.02	7.39	8.09	-3.07	-7.36
21	23	24	0.85	-2.34	-0.23	2.12	1.36	0.58	-0.92
22	25	26	-129.11	30.89	-8.84	-68.74	22.84	-6.92	-6.22
23	26	27	-101.94	21.25	-13.55	-30.91	-0.66	-10.50	-9.64
24	27	28	-71.43	13.95	-12.77	-10.82	-10.70	-9.81	-9.15
25	28	29	-46.83	9.15	-9.50	0.12	-13.71	-7.52	-6.60
26	29	30	-23.17	5.70	-9.19	-4.54	-3.93	-3.09	-3.14
27	30	31	-9.87	2.13	-3.82	0.96	-4.12	-2.88	-2.80
28	31	32	-0.86	0.08	-1.97	0.42	-0.54	-1.57	-1.36
29	1	9	0.00	-0.00	0.00	0.00	0.00	0.00	0.00
30	9	17	-0.00	-0.00	-0.00	0.00	0.00	-0.00	-0.00
31	17	25	-0.00	0.00	-0.00	-0.00	-0.00	0.00	-0.00
32	2	10	0.23	-1.99	0.38	2.48	1.21	0.22	0.86
33	10	18	-3.35	-8.55	2.84	11.70	4.12	3.76	1.51
34	18	26	4.71	-27.17	0.06	45.78	16.72	0.24	-0.10
35	3	11	-2.78	-3.26	-0.25	4.18	1.84	-1.65	1.18
36	11	19	-6.63	-13.66	-0.62	17.54	7.72	0.12	-1.27
37	19	27	-0.79	-30.51	0.88	50.72	19.45	1.40	0.63
38	4	12	-6.46	-4.53	-1.19	5.39	2.99	-3.82	1.63
39	12	20	-8.32	-15.66	-3.28	19.49	9.48	-2.73	-3.34
40	20	28	-3.27	-25.59	1.87	42.20	16.67	2.75	1.54
41	5	13	-9.53	-5.02	-1.67	5.86	3.44	-5.40	2.32
42	13	21	-8.90	-15.73	-3.66	19.17	9.94	-2.86	-3.92
43	21	29	4.11	-22.62	2.75	31.90	20.14	3.95	2.36
44	6	14	-14.16	-4.25	-1.99	5.45	2.41	-6.74	3.05
45	14	22	-9.50	-12.50	-5.70	15.81	7.32	-4.66	-5.88
46	22	30	-6.50	-13.09	3.82	19.18	10.93	5.27	3.52
47	7	15	-25.23	-1.99	-2.88	4.16	-0.49	-8.33	3.01
48	15	23	-15.02	-6.63	-8.90	10.74	1.53	-6.98	-9.48
49	23	31	-5.29	-8.89	4.84	12.72	7.73	6.49	4.65
50	8	16	-6.21	-0.07	-0.10	0.15	-0.82	-0.16	-0.82
51	16	24	-5.69	-0.38	-0.77	0.47	0.23	-0.65	-0.78
52	24	32	-1.82	-1.23	2.81	1.56	1.27	3.66	2.80
53	33	34	-1.92	0.69	-0.68	2.62	-3.65	-0.45	-0.57
54	34	35	-0.62	-0.43	-0.24	0.92	-0.28	-0.16	-0.19
55	36	37	0.23	0.20	0.11	0.01	-0.30	0.09	0.08

56	30	33	-6.13	0.21	2.56	-4.91	4.53	3.37	1.26
57	31	34	-3.43	0.12	3.16	-3.35	3.14	3.93	1.79
58	34	36	-2.99	1.42	0.98	-2.41	-0.17	1.01	0.77
59	32	35	0.15	-0.37	1.93	0.09	0.57	2.28	1.21
60	35	37	0.39	0.25	0.85	-0.38	-0.07	0.84	0.53
61	37	38	0.28	0.02	-0.01	-0.00	-0.04	-0.01	-0.00
62	29	33	7.26	6.00	1.06	-10.45	-3.60	2.02	0.45
63	33	36	3.07	0.35	0.47	-0.48	-0.34	0.67	0.43
64	36	38	-0.20	-0.20	0.01	0.42	0.04	0.01	0.01

Hipotesis (3) : Reaccion vertical máxima del tablero: Rmáx

DESPLAZAMIENTOS DE LOS NUDOS

Nudo Nº	Despl.y (mm)	Despl.x (mm)	Despl.z (mm)	Giro y 1000xrad	Giro x 1000xrad	Giro z 1000xrad
1	-0.000	0.000	0.000	0.000	-0.000	0.000
2	-0.000	0.001	0.008	0.002	-0.000	-0.000
3	-0.000	0.006	0.015	0.004	-0.000	-0.000
4	-0.000	0.012	0.022	0.005	-0.000	-0.000
5	-0.000	0.021	0.028	0.007	-0.000	-0.000
6	-0.000	0.032	0.034	0.007	-0.000	0.000
7	0.000	0.040	0.037	0.004	-0.000	0.000
8	0.000	0.041	0.038	-0.045	-0.000	0.000
9	-0.000	0.000	0.000	0.000	0.000	-0.000
10	-0.000	0.001	0.008	0.002	0.000	-0.000
11	-0.001	0.005	0.015	0.004	0.000	-0.000
12	-0.001	0.012	0.023	0.005	0.000	-0.000
13	-0.001	0.021	0.030	0.007	-0.000	0.000
14	-0.001	0.032	0.038	0.007	-0.002	0.000
15	0.003	0.041	0.044	0.004	-0.005	0.001
16	0.008	0.015	0.054	-0.051	-0.004	0.002
17	-0.000	-0.000	0.000	0.000	0.000	-0.000
18	-0.000	0.001	0.008	0.002	0.000	-0.000
19	-0.001	0.005	0.016	0.004	-0.000	-0.000
20	-0.001	0.012	0.025	0.005	-0.001	-0.000
21	-0.002	0.021	0.034	0.007	-0.002	-0.000
22	-0.001	0.033	0.046	0.009	-0.004	0.001
23	0.004	0.044	0.061	0.005	-0.008	0.002
24	0.012	0.047	0.068	-0.083	-0.004	0.004
25	-0.000	-0.000	0.000	0.000	0.000	0.000
26	-0.000	0.001	0.004	0.002	0.000	0.000
27	0.000	0.005	0.008	0.004	-0.000	0.000
28	0.001	0.012	0.012	0.006	-0.001	0.001
29	0.003	0.020	0.016	0.008	-0.002	0.001
30	0.006	0.032	0.019	0.012	-0.003	0.001
31	0.010	0.043	0.022	0.016	-0.003	0.001
32	0.015	0.052	0.022	0.015	-0.003	0.001
33	0.008	0.052	-0.000	0.009	-0.003	0.002
34	0.013	0.043	-0.000	0.009	-0.003	0.002
35	0.017	0.053	-0.000	0.009	-0.003	0.002
36	0.015	0.044	-0.015	0.007	-0.003	0.002
37	0.020	0.053	-0.015	0.007	-0.003	0.002
38	0.023	0.053	-0.027	0.007	-0.003	0.002

ESFUERZOS EN LAS BARRAS

Barra Nº	i Nº	j Nº	Axil (t.)	Cort.1 (t.)	Cort.2 (t.)	Flec.1i (txm)	Flec.1j (txm)	Flec.2i (txm)	Flec.2j (txm)

1	1	2	14.98	-0.00	-0.02	0.00	0.00	-0.35	0.32
2	2	3	14.64	-0.00	-0.02	0.00	0.00	-0.34	0.32
3	3	4	13.91	-0.00	-0.03	0.00	0.00	-0.34	0.29
4	4	5	12.44	-0.00	-0.08	0.00	0.00	-0.29	0.18
5	5	6	9.85	-0.00	-0.12	0.00	0.00	-0.07	-0.11
6	6	7	6.00	0.00	-0.01	-0.00	-0.00	0.42	-0.43
7	7	8	0.71	-0.00	-0.02	0.00	0.00	0.11	-0.13
8	9	10	30.30	-0.55	-0.02	0.56	0.26	-0.67	0.64
9	10	11	30.14	-0.83	-0.02	0.64	0.60	-0.67	0.64
10	11	12	29.82	-1.78	-0.05	1.25	1.40	-0.68	0.61
11	12	13	29.22	-3.62	-0.13	2.19	3.19	-0.64	0.45
12	13	14	28.19	-6.26	-0.35	2.96	6.35	-0.34	-0.18
13	14	15	26.70	-7.59	-0.60	2.18	9.10	0.78	-1.68
14	15	16	8.74	-1.78	-0.24	1.67	0.98	0.09	-0.45
15	17	18	15.47	-0.19	0.03	0.15	0.14	-0.29	0.34
16	18	19	15.96	-0.59	0.04	0.27	0.31	-0.30	0.35
17	19	20	17.01	-0.82	0.06	0.55	0.66	-0.29	0.38
18	20	21	19.15	-1.54	0.12	1.00	1.29	-0.26	0.44
19	21	22	23.00	-2.48	-0.09	1.53	2.16	-0.32	0.19
20	22	23	29.27	-3.14	-0.45	1.71	2.96	0.28	-0.95
21	23	24	13.54	-1.21	-1.13	1.46	0.34	0.60	-2.28
22	25	26	5.62	-0.14	0.00	0.12	0.08	-0.02	0.02
23	26	27	5.63	-0.14	0.00	-0.08	0.29	-0.02	0.02
24	27	28	5.62	-0.13	0.01	-0.31	0.50	-0.01	0.03
25	28	29	5.55	-0.11	0.09	-0.55	0.71	0.04	0.09
26	29	30	5.30	-0.07	0.18	-0.73	0.84	0.09	0.18
27	30	31	4.82	-0.02	0.67	-0.84	0.67	0.43	0.56
28	31	32	0.90	0.01	1.05	-0.02	0.01	0.80	0.77
29	1	9	0.00	-0.00	0.00	0.00	0.00	0.00	0.00
30	9	17	-0.00	0.00	0.00	-0.00	-0.00	0.00	-0.00
31	17	25	0.00	0.00	-0.00	-0.00	-0.00	-0.00	-0.00
32	2	10	0.48	-0.34	0.00	0.26	0.38	-0.01	0.01
33	10	18	0.20	-0.50	-0.00	0.52	0.41	-0.01	0.01
34	18	26	-0.00	-0.00	0.00	0.01	0.00	0.00	-0.00
35	3	11	1.37	-0.73	-0.01	0.61	0.75	-0.03	0.00
36	11	19	0.42	-1.05	-0.04	1.10	0.84	-0.06	-0.01
37	19	27	-0.01	0.00	0.01	-0.00	-0.01	0.01	0.00
38	4	12	2.55	-1.46	-0.05	1.31	1.39	-0.06	-0.02
39	12	20	0.71	-2.07	-0.13	2.20	1.62	-0.17	-0.06
40	20	28	-0.07	0.07	0.02	-0.09	-0.07	0.02	0.02
41	5	13	3.54	-2.60	-0.05	2.57	2.23	-0.03	-0.06
42	13	21	0.90	-3.62	-0.27	3.91	2.78	-0.31	-0.18
43	21	29	-0.47	0.22	0.04	-0.34	-0.17	0.05	0.04
44	6	14	1.94	-3.84	0.12	4.45	2.68	0.22	-0.00
45	14	22	0.61	-5.34	-0.14	5.85	4.04	-0.08	-0.18
46	22	30	-0.50	0.93	0.05	-1.38	-0.77	0.06	0.06
47	7	15	-7.77	-5.29	-0.01	7.20	2.58	0.21	-0.23
48	15	23	-1.96	-7.19	0.35	8.19	5.11	0.62	0.02
49	23	31	-0.34	3.46	0.03	-5.17	-2.78	0.03	0.04
50	8	16	-2.99	-0.71	0.02	0.72	0.60	0.02	0.01
51	16	24	-1.20	-0.40	0.26	0.38	0.36	0.25	0.24
52	24	32	1.39	0.94	-0.01	-1.32	-0.84	-0.02	-0.00
53	33	34	-0.30	0.00	0.10	-0.05	0.05	0.07	0.07
54	34	35	0.03	0.00	0.18	-0.01	0.00	0.15	0.15
55	36	37	0.01	0.00	0.05	-0.00	0.00	0.04	0.03

56	30	33	-0.01	0.21	0.00	0.16	-0.53	0.01	-0.00
57	31	34	0.05	-0.47	0.00	1.43	-0.58	0.00	-0.00
58	34	36	0.13	-0.14	0.00	0.37	-0.12	0.00	-0.00
59	32	35	0.34	0.04	-0.00	0.07	-0.15	-0.00	-0.00
60	35	37	0.16	0.01	-0.00	0.02	-0.04	0.00	-0.00
61	37	38	0.12	0.00	0.00	0.01	-0.01	0.00	-0.00
62	29	33	-0.43	-0.07	0.00	-0.01	0.17	0.01	-0.01
63	33	36	-0.31	-0.09	0.00	0.29	-0.08	0.00	-0.00
64	36	38	-0.09	-0.08	-0.00	0.17	0.01	0.00	-0.00

Hipotesis (4) : Reaccion vertical minima del tablero: Fzmin

DESPLAZAMIENTOS DE LOS NUDOS

Nudo Nº	Despl.y (mm)	Despl.x (mm)	Despl.z (mm)	Giro y 1000xrad	Giro x 1000xrad	Giro z 1000xrad
1	-0.000	0.000	0.000	0.000	-0.000	0.000
2	-0.000	0.001	0.004	0.001	-0.000	-0.000
3	-0.000	0.003	0.008	0.002	-0.000	-0.000
4	-0.000	0.006	0.011	0.003	-0.000	-0.000
5	-0.000	0.011	0.015	0.003	-0.000	-0.000
6	-0.000	0.016	0.017	0.003	-0.000	0.000
7	0.000	0.020	0.019	0.002	-0.000	0.000
8	0.000	0.006	0.020	-0.023	-0.000	0.000
9	-0.000	0.000	0.000	0.000	0.000	-0.000
10	-0.000	0.001	0.004	0.001	0.000	-0.000
11	-0.000	0.003	0.008	0.002	0.000	-0.000
12	-0.001	0.006	0.012	0.003	0.000	-0.000
13	-0.001	0.011	0.016	0.004	-0.000	0.000
14	-0.000	0.017	0.019	0.004	-0.001	0.000
15	0.002	0.021	0.023	0.002	-0.003	0.000
16	0.004	0.008	0.028	-0.026	-0.002	0.001
17	-0.000	-0.000	0.000	0.000	0.000	-0.000
18	-0.000	0.001	0.004	0.001	0.000	-0.000
19	-0.000	0.003	0.008	0.002	-0.000	-0.000
20	-0.001	0.006	0.013	0.003	-0.000	-0.000
21	-0.001	0.011	0.018	0.004	-0.001	-0.000
22	-0.001	0.017	0.024	0.004	-0.002	0.000
23	0.002	0.023	0.031	0.003	-0.004	0.001
24	0.006	0.024	0.035	-0.001	-0.002	0.002
25	-0.000	-0.000	0.000	0.000	0.000	0.000
26	-0.000	0.001	0.002	0.001	0.000	0.000
27	0.000	0.003	0.004	0.002	-0.000	0.000
28	0.000	0.006	0.006	0.003	-0.000	0.000
29	0.001	0.010	0.008	0.004	-0.001	0.000
30	0.003	0.017	0.010	0.006	-0.001	0.000
31	0.005	0.022	0.011	0.008	-0.002	0.000
32	0.008	0.027	0.012	0.008	-0.002	0.000
33	0.004	0.017	-0.000	0.005	-0.001	0.001
34	0.006	0.022	-0.000	0.005	-0.001	0.001
35	0.009	0.027	-0.000	0.005	-0.001	0.001
36	0.008	0.022	-0.008	0.004	-0.001	0.001
37	0.010	0.027	-0.008	0.004	-0.001	0.001
38	0.012	0.027	-0.014	0.003	-0.001	0.001

ESFUERZOS EN LAS BARRAS

Barra Nº	i Nº	j Nº	Axil (t.)	Cort.1 (t.)	Cort.2 (t.)	Flec.1i (txm)	Flec.1j (txm)	Flec.2i (txm)	Flec.2j (txm)

1	1	2	7.71	-0.00	-0.01	0.00	0.00	-0.18	0.17
2	2	3	7.53	-0.00	-0.01	0.00	0.00	-0.18	0.16
3	3	4	7.16	-0.00	-0.02	0.00	0.00	-0.17	0.15
4	4	5	6.40	-0.00	-0.04	0.00	0.00	-0.15	0.09
5	5	6	5.07	-0.00	-0.06	0.00	0.00	-0.04	-0.06
6	6	7	3.09	0.00	-0.00	-0.00	-0.00	0.21	-0.22
7	7	8	0.37	-0.00	-0.01	0.00	0.00	0.05	-0.07
8	9	10	15.59	-0.28	-0.01	0.29	0.13	-0.34	0.33
9	10	11	15.51	-0.43	-0.01	0.33	0.31	-0.35	0.33
10	11	12	15.35	-0.92	-0.02	0.64	0.72	-0.35	0.32
11	12	13	15.03	-1.86	-0.07	1.13	1.64	-0.33	0.23
12	13	14	14.51	-3.22	-0.18	1.52	3.27	-0.17	-0.09
13	14	15	13.74	-3.91	-0.31	1.12	4.68	0.40	-0.86
14	15	16	4.50	-0.92	-0.13	0.86	0.50	0.04	-0.23
15	17	18	7.96	-0.10	0.02	0.07	0.07	-0.15	0.17
16	18	19	8.21	-0.20	0.02	0.14	0.16	-0.15	0.18
17	19	20	8.76	-0.42	0.03	0.28	0.34	-0.15	0.20
18	20	21	9.86	-0.79	0.06	0.52	0.66	-0.13	0.22
19	21	22	11.83	-1.28	-0.05	0.79	1.11	-0.16	0.10
20	22	23	15.06	-1.62	-0.23	0.88	1.52	0.15	-0.49
21	23	24	6.96	-0.62	-0.58	0.75	0.17	0.31	-1.18
22	25	26	2.89	-0.07	0.00	0.06	0.04	-0.01	0.01
23	26	27	2.90	-0.07	0.00	-0.04	0.15	-0.01	0.01
24	27	28	2.89	-0.07	0.01	-0.16	0.26	-0.01	0.02
25	28	29	2.86	-0.06	0.04	-0.28	0.37	0.02	0.05
26	29	30	2.86	-0.04	0.09	-0.38	0.43	0.05	0.09
27	30	31	2.48	-0.01	0.34	-0.33	0.34	0.22	0.29
28	31	32	0.46	0.00	0.54	-0.01	0.01	0.41	0.40
29	1	9	0.00	-0.00	0.00	0.00	0.00	0.00	0.00
30	9	17	-0.00	0.00	0.00	-0.00	-0.00	0.00	-0.00
31	17	25	0.00	0.00	-0.00	-0.00	-0.00	-0.00	-0.00
32	2	10	0.25	-0.18	0.00	0.15	0.20	-0.00	0.01
33	10	18	0.10	-0.26	-0.00	0.27	0.21	-0.01	0.00
34	18	26	-0.00	-0.00	0.00	0.00	0.00	0.00	-0.00
35	3	11	0.70	-0.38	-0.01	0.31	0.38	-0.02	0.00
36	11	19	0.22	-0.54	-0.02	0.57	0.45	-0.03	-0.01
37	19	27	-0.01	0.00	0.00	-0.00	-0.00	0.00	0.00
38	4	12	1.31	-0.75	-0.02	0.68	0.72	-0.05	-0.01
39	12	20	0.36	-1.06	-0.07	1.13	0.84	-0.09	-0.03
40	20	28	-0.04	0.04	0.01	-0.05	-0.04	0.01	0.01
41	5	13	1.82	-1.34	-0.02	1.32	1.15	-0.01	-0.03
42	13	21	0.46	-1.86	-0.14	2.01	1.45	-0.16	-0.10
43	21	29	-0.24	0.12	0.02	-0.18	-0.09	0.03	0.02
44	6	14	1.00	-1.98	0.06	2.28	1.38	0.11	-0.00
45	14	22	0.31	-2.75	-0.07	3.01	2.08	-0.04	-0.09
46	22	30	-0.26	0.48	0.03	-0.71	-0.40	0.03	0.03
47	7	15	-4.00	-2.72	-0.01	3.71	1.33	0.11	-0.12
48	15	23	-1.01	-3.70	0.18	4.21	2.63	0.32	0.01
49	23	31	-0.17	1.78	0.01	-2.66	-1.43	0.01	0.02
50	8	16	-1.54	-0.37	0.01	0.37	0.31	0.01	0.01
51	16	24	-0.62	-0.21	0.13	0.20	0.18	0.13	0.12
52	24	32	0.72	0.48	-0.00	-0.68	-0.45	-0.01	-0.00
53	33	34	-0.15	0.00	0.05	-0.03	0.02	0.04	0.04
54	34	35	0.02	0.00	0.09	-0.00	0.00	0.07	0.07
55	36	37	0.00	0.00	0.02	-0.00	0.00	0.02	0.02

56	30	33	-0.01	0.11	0.00	0.08	-0.27	0.00	-0.00
57	31	34	0.03	-0.24	0.00	0.14	-0.30	0.00	-0.00
58	34	36	0.07	-0.07	0.00	0.19	-0.06	0.00	-0.00
59	32	35	0.18	0.02	-0.00	0.04	-0.08	-0.00	-0.00
60	35	37	0.08	0.01	-0.00	0.01	-0.02	0.00	-0.00
61	37	38	0.06	0.00	0.00	0.00	-0.01	0.00	-0.00
62	29	33	-0.22	-0.04	0.00	-0.01	0.09	0.00	-0.00
63	33	36	-0.16	-0.05	0.00	0.15	-0.04	0.00	-0.00
64	36	38	-0.05	-0.04	-0.00	0.09	0.01	0.00	-0.00

DIMENSIONAMIENTO DE ARMADURAS

Esfuerzos de cálculo y armadura vertical del muro frontal

Nudo Nº	Canto (m)	Ancho (m)	Recu. (m)	(1)+(2)+(3) Nd (t/m)	(1)+(2)+(3) Md (txm/m)	(1)+(2)+(4) Nd (t/m)	(1)+(2)+(4) Md (txm/m)	Aint. (cm²/m)	Aext. (cm²/m)
8	0.25	1.00	0.05	2.09	-0.57	0.84	-0.26	1.13	1.13
7	0.25	1.00	0.05	2.09	-0.34	0.84	-0.24	1.13	1.13
6	1.05	1.00	0.05	18.37	6.02	7.30	3.19	4.72	4.72
5	1.05	1.00	0.05	38.48	8.61	16.99	4.88	4.72	4.72
4	1.05	1.00	0.05	57.75	5.89	26.61	3.45	4.72	4.72
3	1.05	1.00	0.05	76.19	-6.70	35.16	-3.61	4.72	4.72
2	1.05	1.00	0.05	87.19	-34.46	42.13	-19.23	9.75	4.72
1	1.05	1.00	0.05	97.40	-86.12	47.71	-48.28	20.34	4.72
16	0.25	1.00	0.05	8.56	-0.77	2.75	-0.33	1.22	1.13
15	0.25	1.00	0.05	8.56	-0.43	2.75	-0.26	1.13	1.13
14	1.05	1.00	0.05	32.01	5.71	11.70	3.02	4.72	4.72
13	1.05	1.00	0.05	46.36	7.81	19.42	4.47	4.72	4.72
12	1.05	1.00	0.05	62.39	4.20	28.19	2.51	4.72	4.72
11	1.05	1.00	0.05	78.62	-8.68	37.18	-4.72	4.72	4.72
10	1.05	1.00	0.05	94.06	-35.48	45.79	-19.80	9.97	4.72
9	1.05	1.00	0.05	106.08	-87.51	52.51	-49.07	20.68	4.72
24	1.05	1.00	0.05	27.62	-5.06	9.15	-1.77	4.72	4.72
23	1.05	1.00	0.05	27.62	3.45	9.15	1.66	4.72	4.72
22	1.05	1.00	0.05	62.64	-2.51	21.41	-1.54	4.72	4.72
21	1.05	1.00	0.05	56.91	-2.79	21.15	-1.42	4.72	4.72
20	1.05	1.00	0.05	86.58	-19.28	28.41	-10.72	5.97	4.72
19	1.05	1.00	0.05	86.87	-34.31	40.83	-19.16	9.71	4.72
18	1.05	1.00	0.05	120.67	-57.04	60.34	-31.94	13.53	4.72
17	1.05	1.00	0.05	158.38	-106.22	81.79	-59.61	25.28	4.72

Esfuerzos de cálculo y armadura horizontal del muro frontal

Nudo Nº	Canto (m)	Ancho (m)	Recu. (m)	(2)+tmp.tierras+Fx Nd (t/m)	(2)+tmp.tierras+Fx Md (txm/m)	Aint. (cm²/m)	Aext. (cm²/m)
1	1.05	1.00	0.05	0.00	-0.00	8.40	8.40
9	1.05	1.00	0.05	-0.00	0.00	8.40	8.40
17	1.05	1.00	0.05	-0.00	-0.00	8.40	8.40

2	1.05	1.00	0.05	0.15	-0.15	8.40	8.40
10	1.05	1.00	0.05	-2.25	-2.53	8.40	8.40
18	1.05	1.00	0.05	-2.25	1.01	8.40	8.40
3	1.05	1.00	0.05	-1.87	1.11	8.40	8.40
11	1.05	1.00	0.05	-4.46	-0.08	8.40	8.40
19	1.05	1.00	0.05	-4.46	-0.85	8.40	8.40
4	1.05	1.00	0.05	-4.35	2.57	8.40	8.40
12	1.05	1.00	0.05	-5.60	1.83	8.40	8.40
20	1.05	1.00	0.05	-5.60	-2.25	8.40	8.40
5	1.05	1.00	0.05	-6.41	3.63	8.40	8.40
13	1.05	1.00	0.05	-5.99	1.92	8.40	8.40
21	1.05	1.00	0.05	-5.99	-2.64	8.40	8.40
6	1.05	1.00	0.05	-9.53	4.54	8.40	8.40
14	1.05	1.00	0.05	-6.40	3.13	8.40	8.40
22	1.05	1.00	0.05	-6.40	-3.96	8.40	8.40
7	1.05	1.00	0.05	-16.98	5.61	8.40	8.40
15	1.05	1.00	0.05	-10.11	4.70	8.40	8.40
23	1.05	1.00	0.05	-10.11	-6.38	8.40	8.40
8	0.30	1.00	0.05	-8.37	0.21	2.40	2.40
16	0.30	1.00	0.05	-7.66	0.87	2.40	2.40
24	0.30	1.00	0.05	-7.66	-1.05	2.40	2.40

Esfuerzos de cálculo y armadura vertical en la aleta

Nudo Nº	Canto (m)	Ancho (m)	Recu. (m)	(1)+(2)+(3) Nd (t/m)	(1)+(2)+(3) Md (txm/m)	(1)+(2)+(4) Nd (t/m)	(1)+(2)+(4) Md (txm/m)	Aint. (cm²/m)	Aext. (cm²/m)
31	0.30	1.00	0.05	1.33	-0.01	0.27	-0.74	1.35	1.35
30	0.30	1.00	0.05	3.75	-0.62	-2.49	-1.54	1.89	1.35
29	0.30	1.00	0.05	3.19	-0.87	-8.11	-1.71	2.06	1.35
28	0.30	1.00	0.05	0.95	-2.95	-21.83	-5.16	4.87	1.35
27	0.30	1.00	0.05	-7.05	-3.73	-38.26	-6.66	6.34	1.35
26	0.30	1.00	0.05	-16.93	-4.00	-58.02	-7.13	6.81	1.35
25	0.30	1.00	0.05	-25.55	-2.63	-75.51	-4.70	4.42	1.35
34	0.30	1.00	0.05	0.64	-0.13	-0.02	-0.20	1.35	1.35
33	0.30	1.00	0.05	1.20	-0.36	-0.41	-0.49	1.35	1.35
36	0.30	1.00	0.05	0.94	-0.01	0.53	-0.01	1.35	1.35

Esfuerzos de cálculo y armadura horizontal en la aleta

Nudo Nº	Canto (m)	Ancho (m)	Recu. (m)	(2):Emp.tierras+Fx Nd (t/m)	Md (txm/m)	Ainf. (cm²/m)	Aext. (cm²/m)
17	0.30	1.00	0.05	-0.00	-0.00	2.40	2.40
25	0.30	1.00	0.05	-0.00	-0.00	2.40	2.40
18	0.30	1.00	0.05	3.17	-0.16	2.40	2.40
26	0.30	1.00	0.05	3.17	-0.07	2.40	2.40
19	0.30	1.00	0.05	-0.53	-0.94	2.40	2.40
27	0.30	1.00	0.05	-0.53	0.42	2.40	2.40
20	0.30	1.00	0.05	-2.20	-1.85	2.40	2.40
28	0.30	1.00	0.05	-2.20	1.04	2.40	2.40
21	0.30	1.00	0.05	2.76	-2.66	2.96	2.40
29	0.30	1.00	0.05	2.76	1.59	2.96	2.40
22	0.30	1.00	0.05	-4.38	-3.55	3.38	2.40
30	0.30	1.00	0.05	-4.13	-2.27	2.62	2.40
33	0.30	1.00	0.05	-4.13	0.85	2.62	2.40
23	0.30	1.00	0.05	-3.56	-4.37	4.11	2.40
31	0.30	1.00	0.05	-2.31	-2.64	2.95	2.40
34	0.30	1.00	0.05	-2.01	-0.68	2.40	2.40
36	0.30	1.00	0.05	-2.01	0.52	2.40	2.40
24	0.30	1.00	0.05	-2.45	-4.93	4.65	2.40
32	0.30	1.00	0.05	0.21	-3.07	3.29	2.40
35	0.30	1.00	0.05	0.53	-0.86	2.40	2.40
37	0.30	1.00	0.05	0.38	0.01	2.40	2.40
38	0.30	1.00	0.05	0.38	-0.00	2.40	2.40

Esfuerzos de cálculo y armadura en zapata

Puntera :

Flexión: Md = 17.67 txm/m ; Asup.= 15.00 cm²/m ; Ainf.= 0.00 cm²/m
Comprobación a cortante ...: Vcu= 64.55 t ; Vd = 6.37 t
Vd < Vcu ..... No es necesaria armadura transversal por cortante

Talón :

Borde empotrado en muro frontal ..... : Mxd = 3.66 txm/m
Borde empotrado en aleta ..... : Myd = -0.98 txm/m
Borde libre ..... : Myd = 1.91 txm/m
Centro del talón ..... : Mxd = -1.54 txm/m ; Myd = 2.30 txm/m
Armaduras ..... : Asup.= 7.50 cm²/m ; Ainf.= 7.50 cm²/m

PROGRAMA ESTRIBOS

CALCULO Y ARMADO DE ESTRIBOS DE PUENTE

VERSION Nº 1 FECHA : 12/10/1995

Copyright : J.Diaz del Valle, 1995

E.T.S. de I.C.C. y P. de Santander

DATOS DEL PROYECTO DEL ESTRIBO

PROYECTO : AVE LLEIDA-MARTORELL

REFERENCIA : P.K.303+620. ESTRIBO 2.

FECHA DEL CALCULO : 22-9-99

DATOS DEL ESTRIBO

ESTRIBO 2.

-Datos geométricos:

H1=	9.45	H2=	0.00	H3=	0.00	H4=	1.00	H5=	0.00 m.
H6=	0.00	H7=	1.00	H8=	0.00	H9=	2.00	H10=	0.00 m.
B1=	1.05	B2=	0.00	B3=	3.75	B4=	0.00	B5=	0.00 m.
B6=	0.80	B7=	0.00	B8=	0.00	B9=	0.00	HY=	0.00 m.
C1=	0.35	C2=	0.45	C3=	0.00	C4=	0.25	C5=	0.25 m.
D1=	0.00	D2=	0.00	D3=	0.95	D4=	0.95	D5=	0.25 m.
D6=	0.25								
A1=	3.55	A2=	0.20	A3=	1.89	A4=	0.60	A5=	2.74 m.
E1=	7.90	E2=	7.70	E3=	0.30	E4=	0.00	E5=	0.30 m.
E6=	0.30	E7=	0.00	E8=	0.00	E9=	0.95	E10=	6.00 m.

-Caracteristicas de los materiales:

Peso especifico del hormigon (t/m3) ..... γ_h = 2.50
Resistencia del hormigón del alzado (Kp/cm²) ..... fck = 250
Resistencia del hormigón de la zapata (Kp/cm²) ..... fck'= 250
Limite elástico del acero (Kp/cm²) ..... γ_{yk} = 5100
Recubrimiento de las armaduras (m) ..... r = 0.05
Se incluyen las cuantias geometricas minimas
Coeficiente de minoración resistencia hormigón ..... γ_c = 1.50
Coeficiente de minoración resistencia acero ..... γ_s = 1.15
Coeficiente de mayoracion de las acciones ..... γ_f = 1.60

-Caracteristicas del terreno:

Terreno sobre talón:
Peso especifico de las tierras (t/m3) ..... γ_t = 1.80
Angulo de rozamiento interno de las tierras (°) ..... ϕ = 30.00
Angulo de rozamiento entre las tierras y el muro (°) .... δ = 0.00
Coeficiente de empuje activo calculado segun Coulomb ... Kax = 0.333
Cohesión de las tierras (t/m²) ..... c = 0.00
Terreno sobre puntera :
Peso especifico de las tierras (t/m3) ..... γ_t = 1.80
Angulo de rozamiento interno de las tierras (°) ..... ϕ = 30.00
Angulo de rozamiento entre las tierras y el muro (°) .... δ = 0.00
Coeficiente de empuje pasivo de las tierras ..... Kpx = 3.000

Terreno de cimentación :
Coeficiente de rozamiento entre el cimiento y el suelo .. μ = 0.577
Adherencia entre el cimiento y el suelo (t/m²) ..... a = 0.00

Angulo de la superficie del terreno con la horizontal ... β = 0.00°

-Sobrecargas:

Carga por unidad de longitud de talud (t/m²) ..... q = 1.00
No se considera la acción sísmica .....

-Acciones del tablero sobre el estribo :

Reacciones verticales (t) y excentricidades transversales (m) :

Reacción del peso propio del tablero ... Rpp = 55.00 , Exc.= 0.00
Reacción del peso de la superestructura. Rse = 18.70 , Exc.= 0.00
Reacción hiperestática de pretensado ... Rhp = 0.00 , Exc.= 0.00
Reacción máxima de la sobrecarga ..... Rma = 59.03 , Exc.= 0.00
Reacción mínima de la sobrecarga ..... Rmi = -5.40 , Exc.= 0.00
Reacción debida al gradiente térmico ... Rgt = 0.00 , Exc.= 0.00
Reacción debidas a otras acciones ..... Rot = 0.00 , Exc.= 0.00

Reacciones horizontales longitudinales (t) :

Reacción debida al frenado (+ -) ..... Rfx = 7.51
Reacción debida a las deformaciones impuestas ..... Rdx = 0.00
Reacciones debidas a otras causas (Hormm.,sismo,etc) . Rox = 0.00

Reacciones horizontales transversales (t) :

Reacción debida al viento ..... Rvy = 15.17
Reacción debida a la fuerza centrífuga ..... Rcy = 0.00
Reacciones debidas a otras causas (Hormm.,sismo,etc) . Roy = 0.00

ACCIONES SOBRE EL ESTRIBO

Las acciones actuantes sobre el estribo tienen el siguiente origen:

a) Peso propio del estribo.
b) Acciones del tablero.
c) Empuje y peso de las tierras.

Estas acciones pueden ser verticales Fz ,horizontales longitudinales Fx ,y horizontales transversales Fy. En las tablas que siguen, se recogen las citadas acciones junto con los momentos Ma ,Mx, y My :

Ma : Momento respecto a la puntera del estribo.Se utiliza para la comprobación de seguridad al vuelco.

Mx, My: Momentos respecto al c.d.g de la zapata. Se utilizan para el cálculo de las tensiones sobre el terreno.

a) PESO PROPIO DEL ESTRIBO

Zona	Volumen (m3)	Peso Fz (t)	Ma (txm)	My (txm)
Muro frontal	71.12	177.79	-201.07	278.96
Muro de guarda	1.69	4.22	-6.45	4.95
Muros en vuelta	28.70	71.76	-208.10	-14.35
Aletas en voladizo	2.23	5.58	-33.10	-18.02
Contrafuertes aleta	0.00	0.00	0.00	0.00
Impostas	0.00	0.00	0.00	0.00
Macizos caqueiseado	0.00	0.00	0.00	0.00
Zapata	42.66	106.65	-297.95	0.00
TOTAL	146.40	366.00	-736.65	251.54

b) ACCIONES DEL TABLERO

b1) Reacciones verticales:

Se consideran las reacciones del tablero en los siguientes casos:

-Caso permanente: incluye las reacciones del peso propio del ta - blero y de la superestructura, las reacciones hiperestáticas de pretensado y otras acciones permanentes.

-Caso máximo: Incluye la suma de las reacciones de las acciones permanentes y las reacciones máximas de las sobrecargas variables.

-Caso mínimo: Incluye la suma de las reacciones de las acciones permanentes y las reacciones mínimas de las sobrecargas variables.

Reacción	Axil Fz (t)	Ma (txm)	My (txm)
Permanente	73.70	-70.01	128.97
Máxima	132.73	-126.09	232.28
Mínima	68.30	-64.89	119.52

b2) Reacciones horizontales longitudinales:

Las reacciones horizontales que ejerce el tablero provienen de movimientos impuestos, frenado,sismo , rozamiento de apoyos y de otras acciones.

El valor máximo considerado para estas acciones es:

Reacción Longitudinal	Fx (t)	Ma (txm)	My (txm)
Máxima	7.51	78.48	78.48

b3) Reacciones horizontales transversales:

Estas reacciones provienen de dos tipos de fuerzas:

-Fuerzas transversales:

Son debidas a las acciones de viento y sismo, y a la fuerza centrifuga de los vehiculos que circulan por el tablero :

Fy = 15.17 t. ; Mx = 158.48 txm.

-Fuerzas verticales:

Debido a la excentricidad transversal de las reacciones verticales, se produce un momento transversal Mx :

. Para reacción vertical permanente .. Mx = 0.00 txm.
. Para reacción vertical máxima ..... Mx = 0.00 txm.
. Para reacción vertical mínima ..... Mx = 0.00 txm.

c) EMPUJE Y PESO DE TIERRAS

c1) Acciones horizontales:

Acción	Fuerza Fx (t)	Ma (txm)	My (txm)
Empuje de tierras.	44.59	359.67	359.67
Empuje de sobrecarga.	12.83	114.22	114.22
Empuje del agua.	0.00	0.00	0.00
Empuje total sobre trasdos.	57.42	473.89	473.89
Empuje pasivo frente puntera.	83.16	55.44	55.44

c2) Acciones verticales:

Acción	Fuerza Fz (t)	Ma (txm)	My (txm)
Peso tierras sobre talón.	497.62	-1761.37	-417.79
Peso tierras sobre puntera.	7.67	-2.30	18.40
Sobrecarga sobre terraplen.	26.63	-93.85	-21.97
Rozamiento vertical tierras.	0.00	0.00	0.00
Resultante total vertical.	531.91	-1857.52	-421.36

COMPROBACION DE ESTABILIDAD

Se consideran las siguientes hipótesis para las comprobaciones al vuelco y deslizamiento :

Hipótesis 1 : Construcción. Situación de estribo con relleno antes de construir el tablero.

Hipótesis 2 : Construcción. Situación de tablero construido antes del relleno del estribo.

Hipótesis 3 : Servicio. Se considera la hipótesis más desfavorable que corresponde al mínimo valor de la reacción vertical del tablero.

Hipótesis Nº	Coeficientes de seguridad Vuelco	Deslizamiento
1	6.200	20.129
2	10.279	14.991
3	5.351	23.510

El coeficiente de seguridad al vuelco se obtiene a partir de los momentos Ma respecto de la puntera de la zapata.Se distinguen momentos volcadores y estabilizadores.El coeficiente de seguridad se obtiene como cociente entre estos momentos.

El mínimo coeficiente de seguridad al vuelco es mayor que 2, y por tanto se cumple la seguridad al vuelco.

El coeficiente de seguridad al deslizamiento se obtiene como cociente entre la fuerza estabilizadora y la desestabilizadora. La primera es la fuerza de rozamiento obtenida como producto de las fuerzas verticales por un coeficiente de rozamiento igual a

$$\mu = \operatorname{Tg} \phi = 0.577$$

en donde ϕ es el ángulo de rozamiento entre la zapata y terreno. Tambien se consideran como fuerzas estabilizadoras,la fuerza de adherencia suelo-zapata, el empuje pasivo frente a puntera, la existencia de tacón y la inclinación de la base de la zapata.

La fuerza desestabilizadora es la resultante de las fuerzas horizontales tanto longitudinales como transversales.

El mínimo coeficiente de seguridad al deslizamiento es mayor que 1.5 ,cumpliendose por tanto la seguridad al deslizamiento.

ESTADO TENSIONAL EN EL TERRENO

Se consideran las siguientes hipótesis para el cálculo de las tensiones en el terreno :

Hipótesis 1 : Construcción. Se supone que el relleno se ejecuta antes que el tablero.

Hipótesis 2 : Construcción. Se supone que el tablero se ejecuta antes que el relleno.

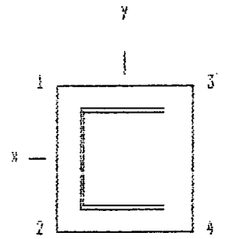
Hipótesis 3 : Servicio, con reacción de tablero mínima y acciones horizontales máximas.

Hipótesis 4 : Servicio, con reacción de tablero mínima y acciones longitudinales nulas.

Hipótesis 5 : Servicio, con reacción de tablero máxima y acciones longitudinales nulas.

Hipótesis 6 : Servicio, con reacción de tablero máxima y acciones horizontales máximas.

Las tensiones $\sigma 1, \sigma 2, \sigma 3, \sigma 4$ del terreno en las 4 esquinas de la base de la zapata (figura 1),



(Fig.1)

se obtienen a partir de la fórmula de flexocompresión:

$$\sigma = \frac{N}{A} + \frac{Mx}{Wx} + \frac{My}{Wy}$$

donde N , Mx , My , son los esfuerzos en la base de la zapata , y

A = 42.66 m2 , Wx= 56.17 m3 , Wy = 38.39 m3

son las características mecánicas de la base de la zapata.

La expresión anterior solamente es válida en el caso de que toda la planta resulte comprimida. En otro caso, y dado que el terreno no puede soportar tracción alguna, el programa calcula las tensiones del terreno de manera iterativa.

El proceso iterativo anterior, se detiene cuando la resultante de las tensiones obtenidas, sea sensiblemente igual a los esfuerzos que solicitan a la base de la zapata.

La tensión media, se obtiene según la expresión : $\sigma med = \frac{N}{A}$

Siguiendo esta formulación,resulta la siguiente tabla que resume el estado tensional correspondiente a las 6 hipotesis anteriores :

ESFUERZOS DE ZAPATA Y TENSIONES DEL TERRENO

Hip	N (t)	Mx (txm)	My (txm)	σ1 (t/m²)	σ2 (t/m²)	σ3 (t/m²)	σ4 (t/m²)	σmed (t/m²)
1	939.77	0.00	360.33	31.41	31.41	12.64	12.64	22.03
2	481.55	158.48	459.81	26.09	20.44	2.13	0.00	11.29
3	1008.07	158.48	558.33	40.99	35.35	11.91	6.27	23.63
4	1008.07	158.48	49.48	25.16	19.52	27.74	22.10	23.63
5	1072.50	158.48	63.27	29.61	23.97	26.31	20.67	25.14
6	1072.50	158.48	671.08	45.44	39.80	10.48	4.84	25.14

ANALISIS ESTRUCTURAL DEL ESTRIBO COMO EMPARRILLADO ESPACIAL

DIMENSIONES Y CARACTERISTICAS MECANICAS DE LAS BARRAS

Barra Nº	i Nº	j Nº	Long. (m.)	Canto (m.)	Ancho (m.)	Area (m²)	Iner.1 (m4)	Iner.2 (m4)
1	1	2	1.49	1.05	0.92	0.971	0.069	0.089
2	2	3	1.49	1.05	0.92	0.971	0.069	0.089
3	3	4	1.49	1.05	0.92	0.971	0.069	0.089
4	4	5	1.49	1.05	0.92	0.971	0.069	0.089
5	5	6	1.49	1.05	0.92	0.971	0.069	0.089
6	6	7	1.49	1.05	0.92	0.971	0.069	0.089
7	7	8	1.49	0.25	0.92	0.231	0.016	0.001
8	9	10	1.49	1.05	1.85	1.942	0.554	0.178
9	10	11	1.49	1.05	1.85	1.942	0.554	0.178
10	11	12	1.49	1.05	1.85	1.942	0.554	0.178
11	12	13	1.49	1.05	1.85	1.942	0.554	0.178
12	13	14	1.49	1.05	1.85	1.942	0.554	0.178
13	14	15	1.49	1.05	1.85	1.942	0.554	0.178
14	15	16	1.49	0.25	1.85	0.462	0.132	0.002
15	17	18	1.49	1.05	0.92	0.971	0.069	0.089
16	18	19	1.49	1.05	0.92	0.971	0.069	0.089
17	19	20	1.49	1.05	0.92	0.971	0.069	0.089
18	20	21	1.49	1.05	0.92	0.971	0.069	0.089
19	21	22	1.49	1.05	0.92	0.971	0.069	0.089
20	22	23	1.49	1.05	0.92	0.971	0.069	0.089
21	23	24	1.49	1.05	0.92	0.971	0.069	0.089
22	25	26	1.49	0.30	2.35	0.705	0.324	0.005
23	26	27	1.49	0.30	2.35	0.705	0.324	0.005
24	27	28	1.49	0.30	2.35	0.705	0.324	0.005
25	28	29	1.49	0.30	2.35	0.705	0.324	0.005
26	29	30	1.49	0.30	2.81	0.842	0.554	0.006
27	30	31	1.49	0.30	2.81	0.842	0.554	0.006
28	31	32	1.49	0.30	2.81	0.842	0.554	0.006
29	1	9	1.85	1.05	0.74	0.780	0.036	0.072
30	9	17	1.85	1.05	0.74	0.780	0.036	0.072
31	17	25	2.30	0.30	0.74	0.223	0.010	0.002
32	2	10	1.85	1.05	1.49	1.560	0.287	0.143
33	10	18	1.85	1.05	1.49	1.560	0.287	0.143
34	18	26	2.30	0.30	1.49	0.446	0.082	0.003
35	3	11	1.85	1.05	1.49	1.560	0.287	0.143
36	11	19	1.85	1.05	1.49	1.560	0.287	0.143
37	19	27	2.30	0.30	1.49	0.446	0.082	0.003
38	4	12	1.85	1.05	1.49	1.560	0.287	0.143
39	12	20	1.85	1.05	1.49	1.560	0.287	0.143
40	20	28	2.30	0.30	1.49	0.446	0.082	0.003
41	5	13	1.85	1.05	1.49	1.560	0.287	0.143
42	13	21	1.85	1.05	1.49	1.560	0.287	0.143
43	21	29	2.30	0.30	1.49	0.446	0.082	0.003
44	6	14	1.85	1.05	1.49	1.560	0.287	0.143

45	14	22	1.85	1.05	1.49	1.560	0.287	0.143
46	22	30	2.30	0.30	1.49	0.446	0.082	0.003
47	7	15	1.85	1.05	1.49	1.560	0.287	0.143
48	15	23	1.85	1.05	1.49	1.560	0.287	0.143
49	23	31	2.30	0.30	1.49	0.446	0.082	0.003
50	8	16	1.85	0.30	0.74	0.223	0.010	0.002
51	16	24	1.85	0.30	0.74	0.223	0.010	0.002
52	24	32	2.30	0.30	0.74	0.223	0.010	0.002
53	33	34	1.49	0.30	1.83	0.550	0.154	0.004
54	34	35	1.49	0.30	1.83	0.550	0.154	0.004
55	36	37	1.49	0.30	1.83	0.550	0.154	0.004
56	30	33	1.83	0.30	1.49	0.446	0.082	0.003
57	31	34	1.83	0.30	1.49	0.446	0.082	0.003
58	34	36	1.83	0.30	1.49	0.446	0.082	0.003
59	32	35	1.83	0.30	0.74	0.223	0.010	0.002
60	35	37	1.83	0.30	0.74	0.223	0.010	0.002
61	37	38	1.83	0.30	0.74	0.223	0.010	0.002
62	29	33	2.36	0.30	1.49	0.446	0.082	0.003
63	33	36	2.36	0.30	1.49	0.446	0.082	0.003
64	36	38	2.36	0.30	1.49	0.446	0.082	0.003

Hipótesis (1) : Peso propio del muro y aletas del estribo

DESPLAZAMIENTOS DE LOS NUDOS

Nudo Nº	Despl.y (mm)	Despl.x (mm)	Despl.z (mm)	Giro y 1000xrad	Giro x 1000xrad	Giro z 1000xrad
1	0.000	-0.000	0.000	-0.000	-0.000	-0.000
2	0.000	-0.004	0.010	-0.005	0.000	0.000
3	0.000	-0.014	0.019	-0.010	0.000	0.000
4	0.000	-0.032	0.025	-0.014	0.000	0.000
5	0.000	-0.057	0.030	-0.019	0.000	0.000
6	-0.000	-0.088	0.033	-0.022	0.000	-0.000
7	-0.000	-0.122	0.035	-0.023	0.000	-0.000
8	-0.000	-0.158	0.036	-0.025	0.000	-0.000
9	0.000	-0.000	0.000	-0.000	-0.000	0.000
10	0.000	-0.004	0.010	-0.005	-0.000	0.000
11	0.000	-0.014	0.019	-0.010	-0.000	0.000
12	0.000	-0.032	0.025	-0.014	0.000	0.000
13	0.000	-0.057	0.030	-0.019	0.000	0.000
14	-0.000	-0.088	0.033	-0.023	0.000	-0.000
15	-0.000	-0.123	0.035	-0.024	0.000	-0.001
16	-0.000	-0.160	0.036	-0.025	0.000	-0.001
17	0.000	0.000	0.000	-0.000	-0.000	0.000
18	0.000	-0.003	0.010	-0.005	0.000	0.000
19	0.000	-0.014	0.019	-0.009	0.000	0.000
20	0.000	-0.031	0.025	-0.014	0.000	0.001
21	0.000	-0.056	0.029	-0.019	0.000	0.001
22	-0.000	-0.090	0.033	-0.023	0.000	-0.001
23	-0.000	-0.126	0.035	-0.024	0.000	-0.002
24	-0.000	-0.164	0.035	-0.026	0.000	-0.002
25	0.000	-0.000	0.000	-0.000	0.000	-0.000
26	-0.000	-0.003	0.021	-0.005	0.000	-0.000
27	-0.000	-0.014	0.040	-0.009	0.000	-0.000
28	-0.000	-0.031	0.057	-0.013	0.000	-0.000
29	-0.001	-0.052	0.072	-0.024	0.000	-0.000
30	-0.001	-0.090	0.080	-0.024	0.000	-0.000
31	-0.001	-0.129	0.084	-0.024	0.000	-0.000
32	-0.002	-0.166	0.085	-0.025	0.000	-0.000
33	-0.001	-0.091	0.136	-0.032	0.000	-0.000
34	-0.001	-0.130	0.136	-0.030	0.000	-0.000
35	-0.002	-0.169	0.137	-0.029	0.000	-0.000
36	-0.002	-0.132	0.191	-0.029	0.000	-0.000
37	-0.002	-0.171	0.192	-0.028	0.000	-0.000
38	-0.002	-0.172	0.240	-0.026	0.000	-0.000

ESFUERZOS EN LAS BARRAS

Barra Nº	i Nº	j Nº	Axil (t.)	Cort.1 (t.)	Cort.2 (t.)	Flec.1i (txm)	Flec.1j (txm)	Flec.2i (txm)	Flec.2j (txm)

1	1	2	20.19	0.00	0.02	-0.00	-0.00	0.89	-0.85
2	2	3	16.63	0.00	0.02	-0.00	-0.00	0.88	-0.86
3	3	4	13.10	0.00	0.03	-0.00	-0.00	0.90	-0.85
4	4	5	9.60	0.00	0.07	-0.00	-0.00	0.86	-0.75
5	5	6	6.08	-0.00	0.11	0.00	0.00	0.66	-0.50
6	6	7	2.56	0.00	0.11	-0.00	-0.00	0.30	-0.15
7	7	8	0.42	0.00	0.00	-0.00	-0.00	0.01	-0.00
8	9	10	40.31	0.10	0.02	-0.09	-0.06	1.74	-1.71
9	10	11	33.13	0.13	0.02	-0.08	-0.11	1.75	-1.72
10	11	12	26.00	0.24	0.05	-0.13	-0.22	1.81	-1.72
11	12	13	18.96	0.34	0.18	-0.17	-0.34	1.81	-1.54
12	13	14	12.18	0.37	0.51	-0.28	-0.27	1.60	-0.84
13	14	15	5.35	0.27	0.43	-0.29	-0.11	0.75	-0.10
14	15	16	0.85	0.03	0.01	-0.03	-0.02	0.02	-0.00
15	17	18	20.08	0.03	-0.05	-0.02	-0.03	0.80	-0.87
16	18	19	16.38	0.06	-0.05	-0.04	-0.05	0.82	-0.89
17	19	20	12.64	0.12	-0.10	-0.08	-0.10	0.82	-0.97
18	20	21	8.70	0.21	0.09	-0.12	-0.18	0.94	-0.81
19	21	22	6.17	0.25	1.99	-0.19	-0.18	2.18	0.78
20	22	23	3.81	0.15	1.60	-0.15	-0.07	1.37	1.01
21	23	24	1.58	0.02	0.75	-0.02	-0.01	0.83	0.28
22	25	26	29.67	0.01	0.00	0.01	-0.03	0.05	-0.05
23	26	27	27.04	0.01	0.01	0.03	-0.04	0.05	-0.04
24	27	28	24.39	0.00	0.01	0.05	-0.05	0.05	-0.03
25	28	29	21.82	-0.01	-0.34	0.06	-0.05	-0.14	-0.36
26	29	30	13.21	-0.02	0.17	0.03	-0.01	0.13	0.12
27	30	31	7.38	-0.02	0.13	-0.00	0.02	0.10	0.10
28	31	32	1.93	-0.00	0.09	0.00	0.00	0.07	0.07
29	1	9	-0.00	-0.00	-0.00	0.00	0.00	-0.00	-0.00
30	9	17	0.00	0.00	-0.00	-0.00	-0.00	-0.00	-0.00
31	17	25	-0.00	-0.00	-0.00	0.00	0.00	-0.00	-0.00
32	2	10	-0.37	0.05	-0.01	-0.04	-0.05	0.01	-0.02
33	10	18	-0.03	0.08	-0.00	-0.09	-0.07	0.01	-0.01
34	18	26	-0.01	0.01	-0.00	-0.02	-0.01	-0.00	-0.00
35	3	11	-0.15	0.08	0.01	-0.07	-0.07	0.04	-0.02
36	11	19	-0.05	0.16	0.04	-0.17	-0.13	0.08	0.00
37	19	27	-0.01	0.03	-0.00	-0.05	-0.01	-0.01	-0.00
38	4	12	-0.19	0.11	0.04	-0.11	-0.08	0.08	-0.00
39	12	20	-0.08	0.28	0.17	-0.31	-0.22	0.24	0.06
40	20	28	0.35	-0.05	-0.01	-0.08	0.17	-0.01	-0.01
41	5	13	-0.06	0.09	0.04	-0.13	-0.03	0.05	0.03
42	13	21	-0.03	0.52	0.37	-0.58	-0.38	0.46	0.23
43	21	29	2.28	1.60	-0.01	-1.35	-2.33	-0.02	-0.01
44	6	14	0.20	0.08	-0.01	-0.13	-0.03	-0.11	0.10
45	14	22	0.10	0.47	-0.09	-0.53	-0.34	-0.15	-0.01
46	22	30	-0.48	1.72	0.00	-1.84	-2.12	0.00	-0.00
47	7	15	0.35	0.10	-0.10	-0.11	-0.08	-0.30	0.12
48	15	23	0.11	0.07	-0.52	-0.07	-0.06	-0.73	-0.24
49	23	31	-1.36	1.45	0.01	-1.62	-1.71	0.02	0.01
50	8	16	0.05	0.01	-0.00	-0.00	-0.00	-0.01	-0.00
51	16	24	0.02	0.01	-0.01	-0.01	-0.01	-0.02	-0.01
52	24	32	-0.77	0.23	0.00	-0.28	-0.26	0.01	0.00
53	33	34	2.77	-0.00	-0.30	-0.00	0.00	-0.24	-0.20
54	34	35	1.05	0.00	-0.25	-0.00	0.00	-0.19	-0.18
55	36	37	0.84	0.00	-0.17	-0.00	0.00	-0.14	-0.12

56	30	33	-0.52	-0.99	0.00	1.90	-0.10	-0.00	0.00
57	31	34	-1.40	-0.87	0.00	1.34	0.06	-0.00	0.00
58	34	36	-1.35	-0.55	0.00	0.34	0.66	0.00	-0.00
59	32	35	-0.86	-0.13	-0.00	0.19	0.05	-0.00	0.00
60	35	37	-0.61	-0.16	-0.00	0.13	0.17	0.00	-0.00
61	37	38	-0.44	0.02	0.00	-0.05	0.01	0.00	-0.00
62	29	33	4.77	-1.46	-0.00	2.56	0.89	-0.00	0.00
63	33	36	2.37	0.20	0.00	-0.55	0.08	0.00	-0.00
64	36	38	0.36	0.26	-0.00	-0.61	-0.01	0.00	-0.00

Hipotesis (2) : Empuje de tierras + Reacción Fx del tablero

DESPLAZAMIENTOS DE LOS NUDOS

Nudo Nº	Despl.y (mm)	Despl.x (mm)	Despl.z (mm)	Giro y 1000xrad	Giro x 1000xrad	Giro z 1000xrad
1	-0.000	0.000	0.000	0.000	-0.000	0.000
2	-0.000	0.163	0.011	0.191	-0.000	0.000
3	0.000	0.504	0.020	0.250	-0.000	-0.000
4	0.000	0.881	0.029	0.247	-0.000	-0.000
5	0.000	1.231	0.034	0.221	-0.000	-0.000
6	0.000	1.542	0.038	0.196	-0.000	-0.000
7	0.000	1.824	0.039	0.185	-0.000	-0.000
8	0.000	2.141	0.039	0.207	-0.000	-0.000
9	-0.000	0.000	0.000	0.000	0.000	-0.000
10	-0.000	0.163	0.013	0.187	-0.001	-0.001
11	0.001	0.498	0.025	0.245	-0.003	-0.006
12	0.003	0.869	0.034	0.243	-0.003	-0.012
13	0.004	1.214	0.040	0.217	-0.003	-0.017
14	0.006	1.520	0.043	0.194	-0.003	-0.021
15	0.010	1.798	0.044	0.182	-0.005	-0.024
16	0.017	2.106	0.045	0.198	-0.005	-0.026
17	0.000	0.000	0.000	0.000	0.000	0.000
18	0.001	0.168	0.029	0.168	-0.010	0.003
19	0.004	0.489	0.048	0.219	-0.013	-0.003
20	0.006	0.844	0.058	0.223	-0.013	-0.010
21	0.007	1.181	0.063	0.202	-0.013	-0.014
22	0.009	1.477	0.065	0.183	-0.012	-0.018
23	0.016	1.747	0.067	0.171	-0.015	-0.019
24	0.033	1.999	0.067	0.167	-0.012	-0.002
25	0.000	0.000	-0.000	0.000	-0.000	0.000
26	0.061	0.176	-0.091	0.033	-0.070	0.043
27	0.188	0.488	-0.162	0.073	-0.093	0.086
28	0.331	0.839	-0.212	0.104	-0.093	0.129
29	0.463	1.198	-0.244	0.147	-0.082	0.170
30	0.587	1.465	-0.258	0.143	-0.083	0.184
31	0.709	1.738	-0.264	0.148	-0.081	0.194
32	0.829	1.993	-0.264	0.156	-0.080	0.198
33	1.239	1.457	-0.556	0.180	-0.122	0.383
34	1.412	1.733	-0.557	0.172	-0.111	0.396
35	1.576	1.993	-0.558	0.171	-0.109	0.400
36	2.210	1.729	-0.883	0.180	-0.125	0.419
37	2.395	1.994	-0.883	0.180	-0.124	0.421
38	3.165	1.995	-1.211	0.178	-0.125	0.419

ESFUERZOS EN LAS BARRAS

Barra Nº	i Nº	j Nº	Axil (t.)	Cort.1 (t.)	Cort.2 (t.)	Flec.1i (txm)	Flec.1j (txm)	Flec.2i (txm)	Flec.2j (txm)

1	1	2	21.11	-0.00	-21.42	0.00	0.00	-50.31	18.49
2	2	3	19.11	-0.00	-15.03	0.00	0.00	-20.45	1.10
3	3	4	15.86	-0.00	-6.70	0.00	0.00	-4.42	-5.53
4	4	5	11.32	-0.00	-2.52	0.00	0.00	2.85	-6.60
5	5	6	6.30	-0.00	-0.06	0.00	0.00	4.40	-4.48
6	6	7	2.05	0.00	0.86	-0.00	-0.00	2.77	-1.49
7	7	8	0.07	-0.00	-0.34	0.00	0.00	-0.31	-0.20
8	9	10	51.98	-6.75	-46.63	3.48	6.54	-102.23	32.94
9	10	11	45.42	-10.32	-28.75	6.38	8.95	-42.07	-0.65
10	11	12	35.03	-14.17	-15.95	10.45	10.60	-11.13	-12.57
11	12	13	23.90	-16.04	-7.33	11.89	11.94	3.72	-14.61
12	13	14	13.19	-15.41	-1.06	10.69	12.20	7.79	-9.36
13	14	15	4.94	-10.74	1.05	6.04	9.92	5.10	-3.54
14	15	16	0.31	-0.52	-0.70	0.32	0.44	-0.60	-0.44
15	17	18	56.03	-4.45	-42.49	1.97	4.64	-61.92	-1.20
16	18	19	37.40	-10.89	-32.81	7.59	8.59	-33.49	-15.26
17	19	20	20.55	-13.33	-26.40	9.86	9.94	-20.36	-18.86
18	20	21	10.60	-13.54	-21.02	10.18	9.95	-11.81	-19.42
19	21	22	3.74	-12.54	-9.14	9.33	9.30	-3.45	-10.14
20	22	23	3.14	-10.48	-7.03	7.45	8.14	-3.08	-7.37
21	23	24	0.85	-2.36	-0.23	2.13	1.37	0.58	-0.92
22	25	26	-129.11	30.99	-8.85	-69.03	22.99	-6.92	-6.22
23	26	27	-101.94	21.34	-13.56	-31.10	-0.60	-10.50	-9.64
24	27	28	-71.43	14.03	-12.77	-10.14	-10.71	-9.81	-9.15
25	28	29	-45.83	9.24	-9.50	0.05	-13.78	-7.52	-6.60
26	29	30	-23.22	5.77	-4.22	-4.82	-3.75	-3.11	-3.16
27	30	31	-9.88	2.17	-3.84	0.84	-4.06	-2.89	-2.81
28	31	32	-0.87	0.09	-1.98	0.40	-0.53	-1.58	-1.36
29	1	9	0.00	-0.00	0.00	0.00	0.00	0.00	0.00
30	9	17	-0.00	-0.00	-0.00	0.00	0.00	-0.00	-0.00
31	17	25	-0.00	0.00	-0.00	-0.00	-0.00	0.00	-0.00
32	2	10	0.24	-2.00	0.58	2.48	1.21	0.22	0.86
33	10	18	-3.33	-8.55	2.84	11.71	4.11	3.76	1.51
34	18	26	4.71	-27.17	0.06	45.78	16.72	0.24	-0.11
35	3	11	-2.76	-3.26	-0.25	4.18	1.84	-1.65	1.18
36	11	19	-6.62	-13.65	-0.62	17.55	7.70	0.15	-1.27
37	19	27	-0.79	-30.51	0.88	50.72	19.46	1.40	0.62
38	4	12	-6.45	-4.53	-1.19	5.39	2.99	-3.82	1.62
39	12	20	-8.31	-15.66	-3.28	19.50	9.46	-2.72	-3.35
40	20	28	-3.26	-25.60	1.87	42.20	16.67	2.75	1.54
41	5	13	-9.52	-5.02	-1.67	5.86	3.44	-5.39	2.30
42	13	21	-8.89	-15.74	-3.66	19.19	9.93	-2.85	-3.93
43	21	29	4.08	-22.61	2.75	31.90	20.10	3.96	2.36
44	6	14	-14.17	-4.25	-1.99	5.46	2.41	-6.73	3.04
45	14	22	-9.51	-12.50	-5.70	15.83	7.30	-4.63	-5.90
46	22	30	-6.49	-13.10	3.83	19.19	10.94	5.29	3.52
47	7	15	-25.30	-1.78	-2.88	4.16	-0.50	-8.31	2.99
48	15	23	-15.07	-6.61	-8.91	10.75	1.47	-6.98	-9.52
49	23	31	-5.28	-8.89	4.86	12.73	7.72	6.52	4.66
50	8	16	-6.24	-0.67	-0.10	0.15	-0.82	-0.18	-0.02
51	16	24	-5.72	-0.38	-0.77	0.47	0.23	-0.65	-0.78
52	24	32	-1.82	-1.23	2.82	1.56	1.27	3.68	2.81
53	33	34	-1.89	0.70	-0.69	2.72	-3.76	-0.45	-0.57
54	34	35	-0.61	-0.44	-0.24	0.94	-0.29	-0.18	-0.19
55	36	37	0.23	0.20	0.11	0.01	-0.61	0.09	0.08

56	30	33	-6.11	0.24	2.58	-4.89	4.46	3.45	1.27
57	31	34	-3.42	0.12	3.19	-3.34	3.12	4.02	1.82
58	34	36	-2.96	1.40	0.99	-2.39	-0.19	1.04	0.78
59	32	35	0.16	-0.36	1.95	0.09	0.57	2.34	1.23
60	35	37	0.39	0.25	0.65	-0.38	-0.08	0.65	0.54
61	37	38	0.28	0.02	-0.01	-0.00	-0.04	-0.01	-0.00
62	29	33	7.28	5.91	1.08	-10.39	-3.54	2.08	0.46
63	33	36	3.04	0.33	0.48	-0.47	-0.32	0.69	0.43
64	36	38	-0.21	-0.19	0.01	0.42	0.04	0.01	0.01

Hipotesis (3) : Reaccion vertical máxima del tablero: Rmáx

DESPLAZAMIENTOS DE LOS NUDOS

Nudo Nº	Despl.y (mm)	Despl.x (mm)	Despl.z (mm)	Giro y 1000xrad	Giro x 1000xrad	Giro z 1000xrad
1	-0.000	0.000	0.000	0.000	-0.000	0.000
2	-0.000	0.001	0.008	0.002	-0.000	-0.000
3	-0.000	0.006	0.015	0.004	-0.000	-0.000
4	-0.000	0.012	0.022	0.005	-0.000	-0.000
5	-0.000	0.021	0.028	0.007	-0.000	-0.000
6	-0.000	0.032	0.034	0.007	-0.000	0.000
7	0.000	0.040	0.037	0.004	-0.000	0.000
8	0.000	0.011	0.038	-0.045	-0.000	0.000
9	-0.000	0.000	0.000	0.000	0.000	-0.000
10	-0.000	0.001	0.008	0.002	0.000	-0.000
11	-0.001	0.005	0.015	0.004	0.000	-0.000
12	-0.001	0.012	0.023	0.005	0.000	-0.000
13	-0.001	0.021	0.030	0.007	-0.000	0.000
14	-0.001	0.032	0.038	0.007	-0.002	0.000
15	0.003	0.041	0.044	0.004	-0.005	0.001
16	0.008	0.015	0.054	-0.051	-0.004	0.002
17	-0.000	-0.000	0.000	0.000	0.000	-0.000
18	-0.000	0.001	0.008	0.002	0.000	-0.000
19	-0.001	0.005	0.016	0.004	-0.000	-0.000
20	-0.001	0.012	0.025	0.005	-0.001	-0.000
21	-0.002	0.021	0.034	0.007	-0.002	-0.000
22	-0.001	0.033	0.046	0.009	-0.004	0.001
23	0.004	0.044	0.061	0.005	-0.008	0.002
24	0.012	0.047	0.068	-0.003	-0.004	0.004
25	-0.000	-0.000	0.000	0.000	0.000	0.000
26	-0.000	0.001	0.004	0.002	0.000	0.000
27	0.000	0.005	0.008	0.004	-0.000	0.000
28	0.001	0.012	0.012	0.006	-0.001	0.001
29	0.003	0.020	0.016	0.008	-0.002	0.001
30	0.006	0.032	0.019	0.012	-0.003	0.001
31	0.010	0.043	0.022	0.016	-0.003	0.001
32	0.015	0.052	0.022	0.015	-0.003	0.001
33	0.008	0.032	-0.000	0.009	-0.003	0.002
34	0.013	0.043	-0.001	0.009	-0.003	0.002
35	0.017	0.053	-0.000	0.009	-0.003	0.002
36	0.016	0.044	-0.015	0.007	-0.003	0.002
37	0.020	0.053	-0.015	0.007	-0.003	0.002
38	0.023	0.053	-0.028	0.006	-0.003	0.002

ESFUERZOS EN LAS BARRAS

Barra Nº	i Nº	j Nº	Axil (t.)	Cort.1 (t.)	Cort.2 (t.)	Flec.1i (txm)	Flec.1j (txm)	Flec.2i (txm)	Flec.2j (txm)

1	1	2	14.98	-0.00	-0.02	0.00	0.00	-0.35	0.32
2	2	3	14.64	-0.00	-0.02	0.00	0.00	-0.34	0.32
3	3	4	13.91	-0.00	-0.03	0.00	0.00	-0.34	0.29
4	4	5	12.44	-0.00	-0.08	0.00	0.00	-0.29	0.18
5	5	6	9.85	-0.00	-0.12	0.00	0.00	-0.07	-0.11
6	6	7	6.00	0.00	-0.01	-0.00	-0.00	0.42	-0.43
7	7	8	0.71	-0.00	-0.02	0.00	0.00	0.11	-0.13
8	9	10	30.30	-0.55	-0.02	0.56	0.26	-0.67	0.64
9	10	11	30.14	-0.83	-0.02	0.84	0.60	-0.67	0.64
10	11	12	29.82	-1.78	-0.05	1.25	1.40	-0.68	0.61
11	12	13	29.22	-3.62	-0.13	2.19	3.19	-0.64	0.45
12	13	14	28.19	-6.26	-0.35	2.96	6.35	-0.34	-0.18
13	14	15	26.70	-7.59	-0.60	2.18	9.10	0.78	-1.68
14	15	16	8.74	-1.78	-0.24	1.67	0.98	0.09	-0.45
15	17	18	15.47	-0.19	0.03	0.15	0.14	-0.29	0.34
16	18	19	15.96	-0.39	0.04	0.27	0.31	-0.30	0.35
17	19	20	17.01	-0.82	0.06	0.55	0.66	-0.29	0.38
18	20	21	19.15	-1.54	0.12	1.00	1.29	-0.26	0.44
19	21	22	22.99	-2.48	-0.09	1.53	2.16	-0.32	0.18
20	22	23	29.27	-3.14	-0.45	1.71	2.96	0.29	-0.95
21	23	24	13.53	-1.21	-1.13	1.46	0.34	0.60	-2.28
22	25	26	5.62	-0.14	0.00	0.12	0.09	-0.02	0.02
23	26	27	5.63	-0.14	0.00	-0.08	0.29	-0.02	0.02
24	27	28	5.62	-0.13	0.01	-0.31	0.50	-0.01	0.03
25	28	29	5.55	-0.11	0.09	-0.55	0.72	0.04	0.09
26	29	30	5.56	-0.07	0.18	-0.73	0.84	0.09	0.18
27	30	31	4.82	-0.02	0.67	-0.64	0.67	0.43	0.56
28	31	32	0.50	0.01	1.05	-0.02	0.01	0.80	0.77
29	1	9	0.00	-0.00	0.00	0.00	0.00	0.00	0.00
30	9	17	-0.00	0.00	0.00	-0.00	-0.00	0.00	-0.00
31	17	25	0.00	0.00	-0.00	-0.00	-0.00	-0.00	-0.00
32	2	10	0.48	-0.34	0.00	0.26	0.38	-0.01	0.01
33	10	18	0.20	-0.50	-0.00	0.52	0.41	-0.01	0.01
34	18	26	-0.00	-0.00	0.00	0.01	0.00	0.00	-0.00
35	3	11	1.37	-0.73	-0.01	0.61	0.75	-0.03	0.00
36	11	19	0.42	-1.05	-0.04	1.10	0.84	-0.06	-0.01
37	19	27	-0.01	0.00	0.01	-0.00	-0.01	0.01	0.00
38	4	12	2.55	-1.46	-0.05	1.31	1.39	-0.06	-0.02
39	12	20	0.71	-2.07	-0.13	2.20	1.62	-0.17	-0.06
40	20	28	-0.07	0.07	0.02	-0.09	-0.07	0.02	0.02
41	5	13	3.54	-2.60	-0.05	2.57	2.23	-0.03	-0.06
42	13	21	0.90	-3.62	-0.27	3.91	2.78	-0.31	-0.19
43	21	29	-0.47	0.22	0.04	-0.34	-0.17	0.05	0.04
44	6	14	1.94	-3.84	0.12	4.43	2.68	0.22	-0.00
45	14	22	0.61	-5.34	-0.14	5.85	4.04	-0.08	-0.18
46	22	30	-0.50	0.93	0.05	-1.38	-0.77	0.06	0.06
47	7	15	-7.77	-5.29	-0.01	7.20	2.58	0.21	-0.23
48	15	23	-1.96	-7.19	0.35	8.19	5.11	0.52	0.02
49	23	31	-0.34	3.46	0.03	-5.17	-2.78	0.03	0.04
50	8	16	-2.94	-0.71	0.02	0.72	0.60	0.02	0.01
51	16	24	-1.20	-0.40	0.26	0.38	0.36	0.25	0.24
52	24	32	1.39	0.94	-0.01	-1.32	-0.84	-0.02	-0.00
53	33	34	-0.31	0.00	0.10	-0.05	0.05	0.07	0.07
54	34	35	0.03	0.00	0.18	-0.01	0.00	0.13	0.13
55	36	37	0.01	0.00	0.05	-0.00	0.00	0.04	0.03

56	30	33	-0.01	0.20	0.00	0.16	-0.52	0.01	-0.00
57	31	34	0.05	-0.47	0.00	1.43	-0.57	0.00	-0.00
58	34	36	0.13	-0.13	0.00	0.36	-0.12	0.00	-0.00
59	32	35	0.34	0.04	-0.00	0.07	-0.15	-0.00	-0.00
60	35	37	0.16	0.01	-0.00	0.02	-0.04	0.00	-0.00
61	37	38	0.11	0.00	0.00	0.01	-0.01	0.00	-0.00
62	29	33	-0.44	-0.06	0.00	-0.02	0.16	0.01	-0.01
63	33	36	-0.30	-0.09	0.00	0.29	-0.08	0.00	-0.00
64	36	38	-0.09	-0.07	-0.00	0.16	0.01	0.00	-0.00

Hipótesis (4) : Reacción vertical mínima del tablero: Fzmin

DESPLAZAMIENTOS DE LOS NUDOS

Nudo Nº	Despl.y (mm)	Despl.x (mm)	Despl.z (mm)	Giro y 1000xrad	Giro x 1000xrad	Giro z 1000xrad
1	-0.000	0.000	0.000	0.000	-0.000	0.000
2	-0.000	0.001	0.004	0.001	-0.000	-0.000
3	-0.000	0.003	0.008	0.002	-0.000	-0.000
4	-0.000	0.006	0.011	0.003	-0.000	-0.000
5	-0.000	0.011	0.015	0.003	-0.000	-0.000
6	-0.000	0.016	0.017	0.003	-0.000	0.000
7	0.000	0.020	0.019	0.002	-0.000	0.000
8	0.000	0.006	0.020	-0.023	-0.000	0.000
9	-0.000	0.000	0.000	0.000	0.000	-0.000
10	-0.000	0.001	0.004	0.001	0.000	-0.000
11	-0.000	0.003	0.008	0.002	0.000	-0.000
12	-0.001	0.006	0.012	0.003	0.000	-0.000
13	-0.001	0.011	0.016	0.004	-0.000	0.000
14	-0.000	0.017	0.019	0.004	-0.001	0.000
15	0.002	0.021	0.023	0.002	-0.003	0.000
16	0.004	0.008	0.028	-0.026	-0.002	0.001
17	-0.000	-0.000	0.000	0.000	0.000	-0.000
18	-0.000	0.001	0.004	0.001	0.000	-0.000
19	-0.000	0.003	0.008	0.002	-0.000	-0.000
20	-0.001	0.006	0.013	0.003	-0.000	-0.000
21	-0.001	0.011	0.018	0.004	-0.001	-0.000
22	-0.001	0.017	0.024	0.004	-0.002	0.000
23	0.002	0.023	0.031	0.003	-0.004	0.001
24	0.006	0.024	0.035	-0.001	-0.002	0.002
25	-0.000	-0.000	0.000	0.000	0.000	0.000
26	-0.000	0.001	0.002	0.001	0.000	0.000
27	0.000	0.003	0.004	0.002	-0.000	0.000
28	0.000	0.006	0.006	0.003	-0.000	0.000
29	0.001	0.010	0.008	0.004	-0.001	0.000
30	0.003	0.017	0.010	0.006	-0.001	0.000
31	0.005	0.022	0.011	0.008	-0.002	0.000
32	0.008	0.027	0.012	0.008	-0.002	0.000
33	0.004	0.017	-0.000	0.005	-0.001	0.001
34	0.006	0.022	-0.000	0.005	-0.001	0.001
35	0.009	0.027	-0.000	0.005	-0.001	0.001
36	0.008	0.022	-0.008	0.004	-0.001	0.001
37	0.010	0.027	-0.008	0.004	-0.001	0.001
38	0.012	0.027	-0.014	0.003	-0.001	0.001

ESFUERZOS EN LAS BARRAS

Barra Nº	i Nº	j Nº	Axil (t.)	Cort.1 (t.)	Cort.2 (t.)	Flec.1i (txm)	Flec.1j (txm)	Flec.2i (txm)	Flec.2j (txm)

1	1	2	7.71	-0.00	-0.01	0.00	0.00	-0.18	0.17
2	2	3	7.53	-0.00	-0.01	0.00	0.00	-0.18	0.16
3	3	4	7.16	-0.00	-0.02	0.00	0.00	-0.17	0.15
4	4	5	6.40	-0.00	-0.04	0.00	0.00	-0.15	0.09
5	5	6	5.07	-0.00	-0.06	0.00	0.00	-0.04	-0.06
6	6	7	3.09	0.00	-0.00	-0.00	-0.00	0.21	-0.22
7	7	8	0.37	-0.00	-0.01	0.00	0.00	0.05	-0.07
8	9	10	15.59	-0.28	-0.01	0.29	0.13	-0.34	0.33
9	10	11	15.51	-0.43	-0.01	0.33	0.31	-0.35	0.33
10	11	12	15.35	-0.92	-0.02	0.64	0.72	-0.35	0.31
11	12	13	15.03	-1.86	-0.07	1.13	1.64	-0.33	0.23
12	13	14	14.51	-3.22	-0.18	1.52	3.27	-0.17	-0.09
13	14	15	13.74	-3.91	-0.31	1.12	4.68	0.40	-0.86
14	15	16	4.50	-0.92	-0.13	0.86	0.50	0.04	-0.23
15	17	18	7.96	-0.10	0.02	0.07	0.07	-0.15	0.17
16	18	19	8.21	-0.20	0.02	0.14	0.16	-0.15	0.18
17	19	20	8.76	-0.42	0.03	0.28	0.34	-0.15	0.20
18	20	21	9.86	-0.79	0.06	0.52	0.66	-0.13	0.22
19	21	22	11.83	-1.28	-0.05	0.79	1.11	-0.16	0.10
20	22	23	15.06	-1.62	-0.23	0.88	1.52	0.15	-0.49
21	23	24	6.96	-0.62	-0.58	0.75	0.17	0.31	-1.17
22	25	26	2.89	-0.07	0.00	0.06	0.04	-0.01	0.01
23	26	27	2.90	-0.07	0.00	-0.04	0.15	-0.01	0.01
24	27	28	2.89	-0.07	0.01	-0.16	0.26	-0.01	0.02
25	28	29	2.86	-0.06	0.04	-0.28	0.37	0.02	0.05
26	29	30	2.86	-0.04	0.09	-0.38	0.43	0.05	0.09
27	30	31	2.48	-0.01	0.34	-0.33	0.35	0.22	0.29
28	31	32	0.46	0.00	0.54	-0.01	0.01	0.41	0.40
29	1	9	0.00	-0.00	0.00	0.00	0.00	0.00	0.00
30	9	17	-0.00	0.00	0.00	-0.00	-0.00	0.00	-0.00
31	17	25	0.00	0.00	-0.00	-0.00	-0.00	-0.00	-0.00
32	2	10	0.25	-0.18	0.00	0.13	0.29	-0.00	0.01
33	10	18	0.10	-0.26	-0.00	0.27	0.21	-0.01	0.00
34	18	26	-0.00	-0.00	0.00	0.00	0.00	0.00	-0.00
35	3	11	0.70	-0.38	-0.01	0.31	0.38	-0.02	0.00
36	11	19	0.22	-0.54	-0.02	0.57	0.43	-0.03	-0.01
37	19	27	-0.01	0.00	0.00	-0.00	-0.00	0.00	0.00
38	4	12	1.31	-0.75	-0.02	0.68	0.72	-0.03	-0.01
39	12	20	0.37	-1.06	-0.07	1.13	0.84	-0.09	-0.03
40	20	28	-0.04	0.04	0.01	-0.05	-0.04	0.01	0.01
41	5	13	1.82	-1.34	-0.02	1.32	1.15	-0.01	-0.03
42	13	21	0.46	-1.86	-0.14	2.01	1.43	-0.16	-0.10
43	21	29	-0.24	0.11	0.02	-0.18	-0.09	0.03	0.02
44	6	14	1.00	-1.98	0.06	2.28	1.38	0.11	-0.00
45	14	22	0.31	-2.75	-0.07	3.01	2.08	-0.04	-0.09
46	22	30	-0.26	0.48	0.03	-0.71	-0.40	0.03	0.03
47	7	15	-4.00	-2.72	-0.01	3.71	1.33	0.11	-0.12
48	15	23	-1.01	-3.70	0.18	4.21	2.63	0.32	0.01
49	23	31	-0.17	1.78	0.01	-2.66	-1.43	0.01	0.02
50	8	16	-1.54	-0.37	0.01	0.37	0.31	0.01	0.01
51	16	24	-0.62	-0.21	0.13	0.20	0.18	0.13	0.12
52	24	32	0.72	0.48	-0.00	-0.68	-0.43	-0.01	-0.00
53	33	34	-0.16	0.00	0.05	-0.03	0.02	0.04	0.04
54	34	35	0.02	0.00	0.09	-0.00	0.00	0.07	0.07
55	36	37	0.00	0.00	0.02	-0.00	0.00	0.02	0.02

56	30	33	-0.01	0.10	0.00	0.08	-0.27	0.00	-0.00
57	31	34	0.03	-0.24	0.00	0.73	-0.29	0.00	-0.00
58	34	36	0.07	-0.07	0.00	0.18	-0.06	0.00	-0.00
59	32	35	0.17	0.02	-0.00	0.04	-0.08	-0.00	-0.00
60	35	37	0.08	0.01	-0.00	0.01	-0.02	0.00	-0.00
61	37	38	0.06	0.00	0.00	0.00	-0.01	0.00	-0.00
62	29	33	-0.22	-0.03	0.00	-0.01	0.08	0.00	-0.00
63	33	36	-0.15	-0.05	0.00	0.15	-0.04	0.00	-0.00
64	36	38	-0.04	-0.04	-0.00	0.08	0.01	0.00	-0.00

DIMENSIONAMIENTO DE ARMADURAS

Esfuerzos de cálculo y armadura vertical del muro frontal

Nudo Nº	Canto (m)	Ancho (m)	Recu. (m)	(1)+(2)+(3) Nd (t/m)	(1)+(2)+(3) Md (txm/m)	(1)+(2)+(4) Nd (t/m)	(1)+(2)+(4) Md (txm/m)	Aint. (cm²/m)	Aext. (cm²/m)
8	0.25	1.00	0.05	2.09	-0.57	0.84	-0.26	1.13	1.13
7	0.25	1.00	0.05	2.09	-0.33	0.84	-0.24	1.13	1.13
6	1.05	1.00	0.05	18.35	6.03	7.48	3.20	4.72	4.72
5	1.05	1.00	0.05	38.44	8.63	16.97	4.89	4.72	4.72
4	1.05	1.00	0.05	57.71	5.91	26.58	3.46	4.72	4.72
3	1.05	1.00	0.05	74.13	-6.68	35.13	-3.60	4.72	4.72
2	1.05	1.00	0.05	87.14	-34.44	42.10	-19.21	9.74	4.72
1	1.05	1.00	0.05	97.34	-86.09	47.68	-48.26	20.34	4.72
16	0.25	1.00	0.05	8.56	-0.77	2.75	-0.33	1.22	1.13
15	0.25	1.00	0.05	8.56	-0.43	2.75	-0.26	1.13	1.13
14	1.05	1.00	0.05	31.99	3.72	11.89	3.03	4.72	4.72
13	1.05	1.00	0.05	46.32	7.83	19.40	4.49	4.72	4.72
12	1.05	1.00	0.05	62.34	4.22	28.17	2.53	4.72	4.72
11	1.05	1.00	0.05	78.57	-8.66	37.15	-4.71	4.72	4.72
10	1.05	1.00	0.05	94.00	-38.45	45.76	-19.78	9.96	4.72
9	1.05	1.00	0.05	106.02	-87.49	52.48	-49.05	20.68	4.72
24	1.05	1.00	0.05	27.62	-5.05	9.14	-1.76	4.72	4.72
23	1.05	1.00	0.05	27.62	3.44	9.14	1.68	4.72	4.72
22	1.05	1.00	0.05	62.65	-2.47	21.41	-1.52	4.72	4.72
21	1.05	1.00	0.05	56.91	-2.75	21.15	-1.39	4.72	4.72
20	1.05	1.00	0.05	66.52	-19.26	28.37	-10.71	5.97	4.72
19	1.05	1.00	0.05	86.83	-34.30	40.81	-19.16	9.71	4.72
18	1.05	1.00	0.05	120.64	-57.03	60.32	-31.94	13.53	4.72
17	1.05	1.00	0.05	158.36	-106.21	81.78	-59.61	25.28	4.72

Esfuerzos de cálculo y armadura horizontal del muro frontal

Nudo Nº	Canto (m)	Ancho (m)	Recu. (m)	(2):Emp.tierras+Fx Nd (t/m)	Md (txm/m)	Aint. (cm²/m)	Aext. (cm²/m)
1	1.05	1.00	0.05	0.00	-0.00	8.40	8.40
9	1.05	1.00	0.05	-0.00	0.00	8.40	8.40
17	1.05	1.00	0.05	-0.00	-0.00	8.40	8.40

2	1.05	1.00	0.05	0.16	-0.15	8.40	8.40
10	1.05	1.00	0.05	-2.24	-2.53	8.40	8.40
18	1.05	1.00	0.05	-2.24	1.01	8.40	8.40
3	1.05	1.00	0.05	-1.86	1.11	8.40	8.40
11	1.05	1.00	0.05	-4.45	-0.09	8.40	8.40
19	1.05	1.00	0.05	-4.45	-0.85	8.40	8.40
4	1.05	1.00	0.05	-4.34	2.57	8.40	8.40
12	1.05	1.00	0.05	-5.60	1.83	8.40	8.40
20	1.05	1.00	0.05	-5.60	-2.25	8.40	8.40
5	1.05	1.00	0.05	-6.41	3.63	8.40	8.40
13	1.05	1.00	0.05	-5.98	1.92	8.40	8.40
21	1.05	1.00	0.05	-5.98	-2.65	8.40	8.40
6	1.05	1.00	0.05	-9.54	4.53	8.40	8.40
14	1.05	1.00	0.05	-6.40	3.12	8.40	8.40
22	1.05	1.00	0.05	-6.40	-3.97	8.40	8.40
7	1.05	1.00	0.05	-17.03	5.60	8.40	8.40
15	1.05	1.00	0.05	-10.15	4.68	8.40	8.40
23	1.05	1.00	0.05	-10.15	-6.41	8.40	8.40
8	0.30	1.00	0.05	-8.40	0.21	2.40	2.40
16	0.30	1.00	0.05	-7.70	0.87	2.40	2.40
24	0.30	1.00	0.05	-7.70	-1.05	2.40	2.40

Esfuerzos de cálculo y armadura vertical en la aleta

				(1)+(2)+(3)		(1)+(2)+(4)			
Nudo Nº	Canto (m)	Ancho (m)	Recu. (m)	Nd (t/m)	Md (txm/m)	Nd (t/m)	Md (txm/m)	Aint. (cm²/m)	Aext. (cm²/m)
31	0.30	1.00	0.05	1.33	-0.01	0.27	-0.74	1.35	1.35
30	0.30	1.00	0.05	3.79	-0.62	-2.47	-1.54	1.89	1.35
29	0.30	1.00	0.05	3.25	-0.87	-8.08	-1.71	2.07	1.35
28	0.30	1.00	0.05	1.09	-2.95	-21.75	-5.17	4.88	1.35
27	0.30	1.00	0.05	-6.92	-3.73	-38.18	-6.66	6.35	1.35
26	0.30	1.00	0.05	-16.80	-4.00	-57.94	-7.13	6.81	1.35
25	0.30	1.00	0.05	-25.42	-2.63	-75.44	-4.70	4.42	1.35
34	0.30	1.00	0.05	0.65	-0.13	-0.01	-0.20	1.35	1.35
33	0.30	1.00	0.05	1.22	-0.36	-0.37	-0.49	1.35	1.35
36	0.30	1.00	0.05	0.74	-0.01	0.53	-0.01	1.35	1.35

Esfuerzos de cálculo y armadura horizontal en la aleta

				(2)+Temp.tierras+Fx			
Nudo Nº	Canto (m)	Ancho (m)	Recu. (m)	Nd (t/m)	Md (txm/m)	Aint. (cm²/m)	Aext. (cm²/m)
17	0.30	1.00	0.05	-0.00	-0.00	2.40	2.40
25	0.30	1.00	0.05	-0.00	-0.00	2.40	2.40
18	0.30	1.00	0.05	3.17	-0.16	2.40	2.40
26	0.30	1.00	0.05	3.17	-0.07	2.40	2.40
19	0.30	1.00	0.05	-0.53	-0.94	2.40	2.40
27	0.30	1.00	0.05	-0.53	0.42	2.40	2.40
20	0.30	1.00	0.05	-2.20	-1.85	2.40	2.40
28	0.30	1.00	0.05	-2.20	1.03	2.40	2.40
21	0.30	1.00	0.05	2.75	-2.67	2.96	2.40
29	0.30	1.00	0.05	2.75	1.59	2.96	2.40
22	0.30	1.00	0.05	-4.37	-3.56	3.38	2.40
30	0.30	1.00	0.05	-4.12	-2.32	2.66	2.40
33	0.30	1.00	0.05	-4.12	0.85	2.66	2.40
23	0.30	1.00	0.05	-3.55	-4.39	4.13	2.40
31	0.30	1.00	0.05	-2.30	-2.71	3.00	2.40
34	0.30	1.00	0.05	-1.99	-0.70	2.40	2.40
36	0.30	1.00	0.05	-1.99	0.52	2.40	2.40
24	0.30	1.00	0.05	-2.45	-4.96	4.68	2.40
32	0.30	1.00	0.05	0.21	-3.15	3.34	2.40
35	0.30	1.00	0.05	0.53	-0.88	2.40	2.40
37	0.30	1.00	0.05	0.38	0.01	2.40	2.40
38	0.30	1.00	0.05	0.38	-0.00	2.40	2.40

Esfuerzos de cálculo y armadura en zapata

Puntera :

Flexión: Md = 17.66 txm/m ; Asup.= 15.00 cm²/m ; Ainf.= 0.00 cm²/m
Comprobación a cortante ...: Vcu= 64.55 t ; Vd = 6.36 t
Vd < Vcu ..... No es necesaria armadura transversal por cortante

Talón :

Borde empotrado en muro frontal ..... ; Mxd = 3.68 txm/m
Borde empotrado en aleta ..... ; Myd = -0.97 txm/m
Borde libre ..... ; Myd = 1.91 txm/m
Centro del talón ..... ; Mxd = -1.54 txm/m ; Myd = 2.29 txm/m
Armaduras ..... ; Asup.= 7.50 cm²/m ; Ainf.= 7.50 cm²/m

SALIDA RESULTADOS SAP 90

STRUCTURAL ANALYSIS PROGRAMS

VERSION 5.40

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REPOSICION 303+620. 3 VANOS 14+17+14 FILE=303620

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
1								
	MAX & MIN							
	1	.000			-.035			10.79
		.000	6.193	-3.834		2.527	-2.081	
		1.167	3.190	1.640		1.600	.326	
		2.333	.187	3.610		.672	1.652	
		2.333			-.035			10.79
	MAX							
	2	.000			1.970			17.86
		.000	19.184	-3.541		2.113	-1.525	
		1.167	10.488	2.015		1.557	.093	
		2.333	1.933	5.391		1.000	1.524	
		2.333			1.970			17.86
	MIN							
	2	.000			1.177			9.44
		.000	5.950	-5.071		1.494	-2.079	
		1.167	-2.294	1.603		.937	.018	
		2.333	-10.737	3.295		.381	.989	
		2.333			1.177			9.44
	MAX							
	3	.000			2.982			17.93
		.000	19.199	-3.560		2.228	-1.751	
		1.167	10.503	2.014		1.672	-.000	
		2.333	1.948	5.408		1.115	1.564	
		2.333			2.982			17.93
	MIN							
	3	.000			2.190			9.51
		.000	5.965	-5.089		1.609	-2.306	
		1.167	-2.279	1.603		1.052	-.075	
		2.333	-10.722	3.312		.496	1.029	
		2.333			2.190			9.51
	MAX							
	4	.000			2.250			22.604
		.000	27.851	-3.354		2.294	-1.361	
		1.167	15.360	2.265		1.737	.118	
		2.333	3.104	6.586		1.181	1.718	
		2.333			2.250			22.604
	MIN							
	4	.000			.928			8.574
		.000	5.795	-5.904		1.261	-2.285	
		1.167	-5.944	1.579		.705	-.007	
		2.333	-18.014	3.092		.148	.827	
		2.333			.928			8.574
	MAX & MIN							
	5	.000			.037			10.709
		.000	6.079	-3.788		.007	-.011	
		1.167	3.076	1.552		.007	-.004	
		2.333	.073	3.388		.007	.004	
		2.333			.037			10.709
	MAX & MIN							
	6	.000			-.001			11.421

REPOSICION 303+620. 3 VANOS 14+17+14 FILE=303620

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	6.330	-3.996		-.000	.000	
		1.167	3.327	1.637		-.000	.000	
		2.333	.324	3.767		-.000	-.000	
		2.333			-.001			11.421
	MAX							
	ALL	.000			2.982			22.604
		.000	27.851	-3.354		2.527	.000	
		1.167	15.360	2.265		1.737	.326	
		2.333	3.104	6.586		1.181	1.718	
		2.333			2.982			22.604
	MIN							
	ALL	.000			-.035			8.574
		.000	5.795	-5.904		-.000	-2.306	
		1.167	-5.944	1.552		-.000	-.075	
		2.333	-18.014	3.092		-.000	-.000	
		2.333			-.035			8.574
2								
	MAX & MIN							
	1	.000			-3.156			5.684
		.000	3.910	.291		2.098	-1.414	
		1.167	.907	3.101		1.171	.493	
		2.333	-2.096	2.407		.243	1.318	
		2.333			-3.156			5.684
	MAX							
	2	.000			-.504			10.888
		.000	15.974	1.116		1.663	-.914	
		1.167	7.333	4.036		1.107	.313	
		2.333	-.978	3.750		.550	1.258	
		2.333			-.504			10.888
	MIN							
	2	.000			-1.764			3.383
		.000	3.120	.043		1.155	-1.292	
		1.167	-5.073	2.984		.598	.244	
		2.333	-13.595	2.119		.042	.753	
		2.333			-1.764			3.383
	MAX							
	3	.000			.141			10.956
		.000	15.985	1.102		1.702	-.988	
		1.167	7.343	4.035		1.145	.284	
		2.333	-.968	3.762		.589	1.273	
		2.333			.141			10.956
	MIN							
	3	.000			-1.119			3.451
		.000	3.131	.030		1.193	-1.366	
		1.167	-5.062	2.983		.637	.215	
		2.333	-13.584	2.131		.080	.768	
		2.333			-1.119			3.451
	MAX							
	4	.000			-.043			14.387
		.000	24.021	1.661		1.811	-.799	
		1.167	11.621	4.660		1.254	.340	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE=303620

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		2.333	-.229	4.651		.698	1.441	
		2.333			-.043			14.387
	MIN							
	4	.000			-2.143			1.879
		.000	2.599	-.126		.963	-1.429	
		1.167	-9.055	2.907		.406	.225	
		2.333	-21.256	1.933		-.150	.600	
		2.333			-2.143			1.879
	MAX & MIN							
	5	.000			.013			5.918
		.000	3.884	.053		.005	-.006	
		1.167	.881	2.832		.005	-.000	
		2.333	-2.122	2.108		.005	.005	
		2.333			.013			5.918
	MAX & MIN							
	6	.000			-.000			6.272
		.000	4.007	.181		-.000	.000	
		1.167	1.004	3.103		-.000	.000	
		2.333	-1.999	2.522		-.000	-.000	
		2.333			-.000			6.272
	MAX							
	ALL	.000			.141			14.387
		.000	24.021	1.661		2.098	.000	
		1.167	11.621	4.660		1.254	.493	
		2.333	-.229	4.651		.698	1.441	
		2.333			.141			14.387
	MIN							
	ALL	.000			-3.156			1.879
		.000	2.599	-.126		-.000	-1.429	
		1.167	-9.055	2.832		-.000	-.000	
		2.333	-21.256	1.933		-.150	-.000	
		2.333			-3.156			1.879
3								
	MAX & MIN							
	1	.000			-5.700			2.753
		.000	3.100	1.423		1.930	-1.060	
		1.167	.097	3.287		1.003	.651	
		2.333	-2.906	1.648		.075	1.280	
		2.333			-5.700			2.753
	MAX							
	2	.000			-1.875			6.814
		.000	14.927	2.454		1.506	-.624	
		1.167	6.289	4.373		.950	.475	
		2.333	-1.964	2.816		.393	1.239	
		2.333			-1.875			6.814
	MIN							
	2	.000			-4.221			.004
		.000	2.200	1.245		.998	-.938	
		1.167	-5.990	3.101		.442	.352	
		2.333	-14.562	1.302		-.115	.678	
		2.333			-4.221			.004

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		MAX							
		3	.000			-1.356			6.883
			.000	14.938	2.440		1.507	-.641	
			1.167	6.300	4.371		.951	.459	
			2.333	-1.953	2.828		.394	1.224	
			2.333			-1.356			6.883
		MIN							
		3	.000			-3.702			.073
			.000	2.211	1.230		.999	-.956	
			1.167	-5.979	3.100		.443	.336	
			2.333	-14.551	1.314		-.114	.663	
			2.333			-3.702			.073
		MAX							
		4	.000			-.988			9.559
			.000	22.817	3.137		1.653	-.526	
			1.167	10.422	5.098		1.096	.521	
			2.333	-1.331	3.603		.540	1.442	
			2.333			-.988			9.559
		MIN							
		4	.000			-4.897			-1.791
			.000	1.605	1.121		.806	-1.051	
			1.167	-10.043	2.978		.249	.316	
			2.333	-22.328	1.079		-.307	.508	
			2.333			-4.897			-1.791
		MAX & MIN							
		5	.000			-.008			3.231
			.000	3.100	.982		.006	-.005	
			1.167	.097	2.847		.006	.001	
			2.333	-2.906	1.209		.006	.008	
			2.333			-.008			3.231
		MAX & MIN							
		6	.000			.000			3.308
			.000	3.197	1.310		-.000	.000	
			1.167	.194	3.287		-.000	.000	
			2.333	-2.809	1.762		-.000	-.000	
			2.333			.000			3.308
		MAX							
		ALL	.000			.000			9.559
			.000	22.817	3.137		1.930	.000	
			1.167	10.422	5.098		1.096	.651	
			2.333	-1.331	3.603		.540	1.442	
			2.333			.000			9.559
		MIN							
		ALL	.000			-5.700			-1.791
			.000	1.605	.982		-.000	-1.060	
			1.167	-10.043	2.847		-.000	.000	
			2.333	-22.328	1.079		-.307	-.000	
4						-5.700			-1.791
		MAX & MIN							
		1	.000			-7.816			1.693

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			2.333			.001			2.220
		MAX							
		ALL	.000			.001			7.602
			.000	21.869	3.108		1.753	.000	
			1.167	9.484	3.960		.970	.800	
			2.333	-2.177	1.389		.413	1.465	
			2.333			.001			7.602
		MIN							
		ALL	.000			-7.816			-2.979
			.000	.819	.703		-.000	-.733	
			1.167	-10.820	1.845		-.000	.000	
			2.333	-23.179	-.607		-.435	-.000	
			2.333			-7.816			-2.979
5									
		MAX & MIN							
		1	.000			-9.514			1.747
			.000	1.956	-.002		1.573	-.378	
			1.167	-1.047	.528		.646	.917	
			2.333	-4.050	-2.446		-.282	1.129	
			2.333			-9.514			1.747
		MAX							
		2	.000			-3.415			5.098
			.000	13.483	.743		1.268	-.197	
			1.167	4.884	.989		.711	.753	
			2.333	-3.293	-2.137		.155	1.239	
			2.333			-3.415			5.098
		MIN							
		2	.000			-8.122			-1.290
			.000	.865	-.310		.752	-.384	
			1.167	-7.343	.195		.196	.495	
			2.333	-15.968	-2.928		-.361	.537	
			2.333			-8.122			-1.290
		MAX							
		3	.000			-2.894			5.193
			.000	13.495	.725		1.249	-.192	
			1.167	4.897	.985		.693	.736	
			2.333	-3.281	-2.125		.136	1.201	
			2.333			-2.894			5.193
		MIN							
		3	.000			-7.601			-1.195
			.000	.878	-.328		.734	-.379	
			1.167	-7.330	.191		.178	.478	
			2.333	-15.955	-2.917		-.379	.499	
			2.333			-7.601			-1.195
		MAX							
		4	.000			-1.635			7.460
			.000	21.177	1.230		1.416	-.139	
			1.167	8.848	1.297		.860	.848	
			2.333	-2.779	-1.919		.303	1.496	
			2.333			-1.635			7.460

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		MIN							
		4	.000			-9.481			-3.187
			.000	.148	-.525		.558	-.451	
			1.167	-11.530	-.026		.001	.418	
			2.333	-23.904	-3.238		-.555	.324	
			2.333			-9.481			-3.187
		MAX & MIN							
		5	.000			-.110			2.685
			.000	2.009	-.858		.024	-.020	
			1.167	-.994	-.266		.024	.008	
			2.333	-3.997	-3.178		.024	.037	
			2.333			-.110			2.685
		MAX & MIN							
		6	.000			.003			2.217
			.000	2.049	-.110		-.001	.000	
			1.167	-.954	.529		-.001	-.000	
			2.333	-3.957	-2.337		-.001	-.001	
			2.333			.003			2.217
		MAX							
		ALL	.000			.003			7.460
			.000	21.177	1.230		1.573	.000	
			1.167	8.848	1.297		.860	.917	
			2.333	-2.779	-1.919		.303	1.496	
			2.333			.003			7.460
		MIN							
		ALL	.000			-9.514			-3.187
			.000	.148	-.858		-.001	-.451	
			1.167	-11.530	-.266		-.001	-.000	
			2.333	-23.904	-3.238		-.555	-.001	
			2.333			-9.514			-3.187
6									
		MAX & MIN							
		1	.000			-10.806			1.690
			.000	2.001	-2.909		1.399	-.115	
			1.167	-1.002	-2.326		.472	.977	
			2.333	-4.005	-5.247		-.456	.986	
			2.333			-10.806			1.690
		MAX							
		2	.000			-3.776			5.038
			.000	13.524	-2.698		1.147	-.062	
			1.167	4.960	-2.235		.590	.888	
			2.333	-3.218	-5.166		.034	1.235	
			2.333			-3.776			5.038
		MIN							
		2	.000			-9.628			-1.677
			.000	.896	-3.405		.657	-.129	
			1.167	-7.311	-2.756		.100	.509	
			2.333	-15.938	-5.945		-.456	.432	
			2.333			-9.628			-1.677
		MAX							
		3	.000			-3.223			5.174

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			.000	13.543	-2.728		1.129	-.063	
			1.167	4.980	-2.242		.572	.866	
			2.333	-3.199	-5.150		.016	1.192	
			2.333			-3.223			5.174
		MIN							
	3		.000			-9.075			-1.542
			.000	.916	-3.435		.639	-.129	
			1.167	-7.292	-2.763		.082	.488	
			2.333	-15.918	-5.929		-.474	.389	
			2.333			-9.075			-1.542
		MAX							
	4		.000			-1.563			7.544
			.000	21.232	-2.602		1.288	-.044	
			1.167	8.962	-2.187		.732	1.030	
			2.333	-2.668	-5.095		.175	1.531	
			2.333			-1.563			7.544
		MIN							
	4		.000			-11.316			-3.648
			.000	.186	-3.781		.472	-.154	
			1.167	-11.491	-3.057		-.085	.399	
			2.333	-23.867	-6.393		-.641	.193	
			2.333			-11.316			-3.648
		MAX & MIN							
	5		.000			-.228			2.961
			.000	2.075	-4.053		.044	-.036	
			1.167	-.928	-3.384		.044	.015	
			2.333	-3.931	-6.218		.044	.066	
			2.333			-.228			2.961
		MAX & MIN							
	6		.000			.005			2.037
			.000	2.086	-2.995		-.001	.001	
			1.167	-.917	-2.313		-.001	-.000	
			2.333	-3.920	-5.134		-.001	-.002	
			2.333			.005			2.037
		MAX							
		ALL	.000			.005			7.544
			.000	21.232	-2.602		1.399	.001	
			1.167	8.962	-2.187		.732	1.030	
			2.333	-2.668	-5.095		.175	1.531	
			2.333			.005			7.544
		MIN							
		ALL	.000			-11.316			-3.648
			.000	.186	-4.053		-.001	-.154	
			1.167	-11.491	-3.384		-.085	-.000	
			2.333	-23.867	-6.393		-.641	-.002	
			2.333			-11.316			-3.648
7	----------								
		MAX & MIN							
	1		.000			-11.863			-1.768
			.000	3.603	-4.991		1.383	-.014	
			1.063	.868	-2.616		.539	1.007	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			2.125	-1.867	-3.147		-.306	1.131	
			2.125			-11.863			-1.768
		MAX							
	2		.000			-4.278			1.211
			.000	15.347	-4.675		.932	.397	
			1.063	7.203	-2.487		.425	.932	
			2.125	-.673	-3.104		-.081	.969	
			2.125			-4.278			1.211
		MIN							
	2		.000			-10.587			-5.726
			.000	2.457	-5.577		.749	-.099	
			1.063	-5.279	-3.107		.242	.523	
			2.125	-13.333	-3.939		-.264	.607	
			2.125			-10.587			-5.726
		MAX							
	3		.000			-3.721			1.349
			.000	15.389	-4.718		.939	.368	
			1.063	7.244	-2.486		.432	.910	
			2.125	-.631	-3.060		-.075	.955	
			2.125			-3.721			1.349
		MIN							
	3		.000			-10.031			-5.588
			.000	2.499	-5.620		.756	-.128	
			1.063	-5.238	-3.106		.249	.501	
			2.125	-13.292	-3.894		-.258	.592	
			2.125			-10.031			-5.588
		MAX							
	4		.000			-1.888			3.513
			.000	23.280	-4.590		.992	.609	
			1.063	11.530	-2.416		.486	1.083	
			2.125	.227	-2.982		-.021	1.088	
			2.125			-1.888			3.513
		MIN							
	4		.000			-12.404			-8.049
			.000	1.797	-6.094		.688	-.218	
			1.063	-9.274	-3.450		.181	.402	
			2.125	-20.874	-4.374		-.326	.484	
			2.125			-12.404			-8.049
		MAX & MIN							
	5		.000			-.335			-1.512
			.000	4.780	-6.978		.046	-.064	
			1.063	1.408	-3.690		.046	-.015	
			2.125	-1.964	-3.986		.046	.034	
			2.125			-.335			-1.512
		MAX & MIN							
	6		.000			.008			-1.556
			.000	3.617	-4.991		-.001	.002	
			1.063	.882	-2.601		-.001	.000	
			2.125	-1.853	-3.116		-.001	-.001	
			2.125			.008			-1.556

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		MAX							
		ALL	.000			.008			3.513
			.000	23.280	-4.590		1.383	.609	
			1.063	11.530	-2.416		.539	1.083	
			2.125	.227	-2.982		.046	1.131	
			2.125			.008			3.513
		MIN							
		ALL	.000			-12.404			-8.049
			.000	1.797	-6.978		-.001	-.218	
			1.063	-9.274	-3.690		-.001	-.015	
			2.125	-20.874	-4.374		-.326	-.001	
			2.125			-12.404			-8.049
8	----------								
		MAX & MIN							
	1		.000			-12.850			-1.672
			.000	3.738	-2.557		1.242	.250	
			1.063	1.003	-.038		.397	1.121	
			2.125	-1.731	-.424		-.447	1.094	
			2.125			-12.850			-1.672
		MAX							
	2		.000			-5.011			1.374
			.000	15.466	-2.152		.862	.495	
			1.063	7.315	.337		.355	.936	
			2.125	-.530	.119		-.152	.959	
			2.125			-5.011			1.374
		MIN							
	2		.000			-11.163			-5.606
			.000	2.669	-2.903		.664	.060	
			1.063	-5.075	-.366		.158	.607	
			2.125	-13.128	-.807		-.349	.615	
			2.125			-11.163			-5.606
		MAX							
	3		.000			-4.491			1.505
			.000	15.497	-2.177		.877	.462	
			1.063	7.345	.344		.370	.919	
			2.125	-.500	.159		-.137	.958	
			2.125			-4.491			1.505
		MIN							
	3		.000			-10.643			-5.476
			.000	2.699	-2.929		.680	.027	
			1.063	-5.044	-.359		.173	.590	
			2.125	-13.098	-.767		-.334	.615	
			2.125			-10.643			-5.476
		MAX							
	4		.000			-2.678			3.725
			.000	23.367	-1.964		.926	.678	
			1.063	11.604	.592		.419	1.050	
			2.125	.353	.575		-.087	1.085	
			2.125			-2.678			3.725
		MIN							
	4		.000			-12.930			-7.909

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			.000	2.038	-3.216		.597	-.048	
			1.063	-9.045	-.580		.091	.501	
			2.125	-20.644	-.969		-.416	.912	
			2.125			-12.930			-7.909
		MAX & MIN							
	5		.000			-.441			-2.008
			.000	5.071	-3.413		.028	-.039	
			1.063	1.699	.183		.028	-.010	
			2.125	-1.673	.197		.028	.020	
			2.125			-.441			-2.008
		MAX & MIN							
	6		.000			.010			-1.578
			.000	3.744	-2.561		-.001	.001	
			1.063	1.009	-.036		-.001	.000	
			2.125	-1.726	-.417		-.001	-.000	
			2.125			.010			-1.578
		MAX							
		ALL	.000			.010			3.725
			.000	23.367	-1.964		1.242	.678	
			1.063	11.604	.592		.419	1.121	
			2.125	.353	.575		.028	1.094	
			2.125			.010			3.725
		MIN							
		ALL	.000			-12.930			-7.909
			.000	2.038	-3.413		-.001	-.048	
			1.063	-9.045	-.580		-.001	-.010	
			2.125	-20.644	-.969		-.447	-.000	
			2.125			-12.930			-7.909
9	----------								
		MAX & MIN							
	1		.000			-13.533			-.896
			.000	3.377	-.334		1.082	.477	
			1.063	.642	1.800		.237	1.178	
			2.125	-2.093	1.029		-.607	.981	
			2.125			-13.533			-.896
		MAX							
	2		.000			-5.630			2.097
			.000	15.017	.404		.785	.585	
			1.063	6.862	2.563		.278	.954	
			2.125	-.949	1.931		-.229	.933	
			2.125			-5.630			2.097
		MIN							
	2		.000			-11.586			-4.474
			.000	2.321	-.650		.597	.183	
			1.063	-5.426	1.541		.090	.650	
			2.125	-13.520	.754		-.416	.579	
			2.125			-11.586			-4.474
		MAX							
	3		.000			-5.180			2.186
			.000	15.035	.392		.814	.543	
			1.063	6.880	2.570		.307	.943	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	2.125	-.931	1.958		-.200	.953	
	2.125			-5.180			2.186
MIN							
3	.000			-11.137			-4.385
	.000	2.339	-.663		.626	.141	
	1.063	-5.408	1.548		.120	.639	
	2.125	-13.501	.780		-.387	.599	
	2.125			-11.137			-4.385
MAX							
4	.000			-3.368			4.317
	.000	22.828	.852		.846	.750	
	1.063	11.060	3.081		.340	1.055	
	2.125	-.135	2.597		-.167	1.068	
	2.125			-3.368			4.317
MIN							
4	.000			-13.296			-6.635
	.000	1.668	-.906		.534	.080	
	1.063	-9.421	1.378		.027	.548	
	2.125	-21.086	.635		-.480	.478	
	2.125			-13.296			-6.635
MAX & MIN							
5	.000			-.505			-1.283
	.000	4.598	.224		.013	-.019	
	1.063	1.226	3.318		.013	-.005	
	2.125	-2.147	2.829		.013	.008	
	2.125			-.505			-1.283
MAX & MIN							
6	.000			.012			-.860
	.000	3.379	-.337		-.000	.000	
	1.063	.644	1.800		-.000	.000	
	2.125	-2.091	1.032		-.000	-.000	
	2.125			.012			-.860
MAX							
ALL	.000			.012			4.317
	.000	22.828	.852		1.082	.750	
	1.063	11.060	3.318		.340	1.178	
	2.125	-.135	2.829		.013	1.068	
	2.125			.012			4.317
MIN							
ALL	.000			-13.533			-6.635
	.000	1.668	-.906		-.000	-.019	
	1.063	-9.421	1.378		-.000	-.005	
	2.125	-21.086	.635		-.607	-.000	
	2.125			-13.533			-6.635
10 ----------							
MAX & MIN							
1	.000			-13.874			-.271
	.000	2.954	1.017		.924	.671	
	1.063	.219	2.703		.079	1.203	
	2.125	-2.516	1.483		-.766	.838	
	2.125			-13.874			-.271

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	1.063	10.425	5.015		.271	1.203	
	2.125	-.703	3.673		.004	1.043	
	2.125			.013			4.670
MIN							
ALL	.000			-13.874			-5.432
	.000	1.218	.542		.000	-.007	
	1.063	-9.874	2.401		-.036	-.003	
	2.125	-21.611	1.104		-.766	.000	
	2.125			-13.874			-5.432
21 ----------							
MAX & MIN							
1	.000			-.423			18.905
	.000	21.576	.165		3.526	-3.881	
	1.167	18.237	23.390		3.526	.232	
	2.333	14.898	42.718		3.526	4.346	
	2.333			-.423			18.905
MAX							
2	.000			.557			31.180
	.000	30.589	2.710		3.226	-2.611	
	1.167	26.830	31.737		3.226	.031	
	2.333	23.071	59.643		3.226	3.709	
	2.333			.557			31.180
MIN							
2	.000			.173			14.887
	.000	20.428	-.655		1.902	-3.743	
	1.167	17.089	22.502		1.902	-.070	
	2.333	13.750	40.505		1.902	2.532	
	2.333			.173			14.887
MAX							
3	.000			1.005			31.344
	.000	30.633	2.661		3.363	-2.888	
	1.167	26.874	31.740		3.363	-.086	
	2.333	23.115	59.699		3.363	3.752	
	2.333			1.005			31.344
MIN							
3	.000			.621			15.050
	.000	20.473	-.704		2.039	-4.020	
	1.167	17.134	22.505		2.039	-.187	
	2.333	13.795	40.560		2.039	2.576	
	2.333			.621			15.050
MAX							
4	.000			.670			39.427
	.000	36.620	4.390		3.609	-2.273	
	1.167	32.581	37.312		3.609	.070	
	2.333	28.542	70.964		3.609	4.137	
	2.333			.670			39.427
MIN							
4	.000			.031			12.271
	.000	19.686	-1.219		1.403	-4.158	
	1.167	16.347	21.920		1.403	-.098	
	2.333	13.008	39.066		1.403	2.177	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
MAX							
2	.000			-6.098			2.646
	.000	14.489	1.979		.717	.662	
	1.063	6.332	3.685		.210	.963	
	2.125	-1.438	2.528		-.297	.899	
	2.125			-6.098			2.646
MIN							
2	.000			-11.891			-3.415
	.000	1.902	.737		.533	.278	
	1.063	-5.848	2.515		.026	.673	
	2.125	-13.983	1.238		-.481	.530	
	2.125			-11.891			-3.415
MAX							
3	.000			-5.760			2.677
	.000	14.495	1.978		.764	.606	
	1.063	6.338	3.691		.258	.957	
	2.125	-1.433	2.539		-.249	.943	
	2.125			-5.760			2.677
MIN							
3	.000			-11.552			-3.384
	.000	1.907	.736		.580	.222	
	1.063	-5.842	2.520		.073	.668	
	2.125	-13.978	1.249		-.434	.575	
	2.125			-11.552			-3.384
MAX							
4	.000			-3.903			4.670
	.000	22.197	2.612		.778	.816	
	1.063	10.425	4.351		.271	1.054	
	2.125	-.703	3.254		-.235	1.043	
	2.125			-3.903			4.670
MIN							
4	.000			-13.557			-5.432
	.000	1.218	.542		.471	.177	
	1.063	-9.874	2.401		-.036	.572	
	2.125	-21.611	1.104		-.543	.429	
	2.125			-13.557			-5.432
MAX & MIN							
5	.000			-.532			-.408
	.000	3.796	2.773		.004	-.007	
	1.063	.424	5.015		.004	-.003	
	2.125	-2.949	3.673		.004	.001	
	2.125			-.532			-.408
MAX & MIN							
6	.000			.013			-.262
	.000	2.955	1.017		.000	.000	
	1.063	.220	2.703		.000	.000	
	2.125	-2.515	1.484		.000	.000	
	2.125			.013			-.262
MAX							
ALL	.000			.013			4.670
	.000	22.197	2.773		.924	.816	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	1.063	10.425	5.015		.271	1.203	
	2.125	-.703	3.673		.004	1.043	
	2.125			.013			4.670
MIN							
ALL	.000			-13.874			-5.432
	.000	1.218	.542		.000	-.007	
	1.063	-9.874	2.401		-.036	-.003	
	2.125	-21.611	1.104		-.766	.000	
	2.125			-13.874			-5.432
21 ----------							
MAX & MIN							
1	.000			-.423			18.905
	.000	21.576	.165		3.526	-3.881	
	1.167	18.237	23.390		3.526	.232	
	2.333	14.898	42.718		3.526	4.346	
	2.333			-.423			18.905
MAX							
2	.000			.557			31.180
	.000	30.589	2.710		3.226	-2.611	
	1.167	26.830	31.737		3.226	.031	
	2.333	23.071	59.643		3.226	3.709	
	2.333			.557			31.180
MIN							
2	.000			.173			14.887
	.000	20.428	-.655		1.902	-3.743	
	1.167	17.089	22.502		1.902	-.070	
	2.333	13.750	40.505		1.902	2.532	
	2.333			.173			14.887
MAX							
3	.000			1.005			31.344
	.000	30.633	2.661		3.363	-2.888	
	1.167	26.874	31.740		3.363	-.086	
	2.333	23.115	59.699		3.363	3.752	
	2.333			1.005			31.344
MIN							
3	.000			.621			15.050
	.000	20.473	-.704		2.039	-4.020	
	1.167	17.134	22.505		2.039	-.187	
	2.333	13.795	40.560		2.039	2.576	
	2.333			.621			15.050
MAX							
4	.000			.670			39.427
	.000	36.620	4.390		3.609	-2.273	
	1.167	32.581	37.312		3.609	.070	
	2.333	28.542	70.964		3.609	4.137	
	2.333			.670			39.427
MIN							
4	.000			.031			12.271
	.000	19.686	-1.219		1.403	-4.158	
	1.167	16.347	21.920		1.403	-.098	
	2.333	13.008	39.066		1.403	2.177	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	2.333			.031			12.271
MAX & MIN							
5	.000			.017			18.865
	.000	20.301	-.175		.010	-.016	
	1.167	16.962	21.562		.010	-.004	
	2.333	13.623	39.403		.010	.007	
	2.333			.017			18.865
MAX & MIN							
6	.000			-.000			20.372
	.000	22.015	-.263		-.000	.000	
	1.167	18.676	23.473		-.000	.000	
	2.333	15.337	43.314		-.000	-.000	
	2.333			-.000			20.372
MAX							
ALL	.000			1.005			39.427
	.000	36.620	4.390		3.609	.000	
	1.167	32.581	37.312		3.609	.232	
	2.333	28.542	70.964		3.609	4.346	
	2.333			1.005			39.427
MIN							
ALL	.000			-.423			12.271
	.000	19.686	-1.219		-.000	-4.158	
	1.167	16.347	21.562		-.000	-.187	
	2.333	13.008	39.066		-.000	-.000	
	2.333			-.423			12.271
22 ----------							
MAX & MIN							
1	.000			-4.005			7.107
	.000	10.700	41.529		3.123	-3.032	
	1.167	7.361	52.065		3.123	.611	
	2.333	4.022	58.705		3.123	4.255	
	2.333			-4.005			7.107
MAX							
2	.000			-.737			15.874
	.000	16.844	58.120		2.836	-1.808	
	1.167	13.085	71.503		2.836	.427	
	2.333	9.355	82.786		2.836	3.682	
	2.333			-.737			15.874
MIN							
2	.000			-2.403			2.266
	.000	8.159	39.891		1.491	-2.834	
	1.167	4.820	49.670		1.491	.291	
	2.333	1.452	55.010		1.491	2.391	
	2.333			-2.403			2.266
MAX							
3	.000			.007			16.042
	.000	16.892	58.047		2.866	-1.883	
	1.167	13.133	71.486		2.866	.387	
	2.333	9.402	82.824		2.866	3.677	
	2.333			.007			16.042

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		MIN							
	3		.000			-1.659			2.433
			.000	8.206	39.819		1.521	-2.909	
			1.167	4.867	49.653		1.521	.251	
			2.333	1.500	55.048		1.521	2.385	
			2.333			-1.659			2.433
		MAX							
	4		.000			-.119			21.779
			.000	20.964	69.173		3.224	-1.492	
			1.167	16.925	84.482		3.224	.479	
			2.333	12.933	98.887		3.224	4.152	
			2.333			-.119			21.779
		MIN							
	4		.000			-2.895			-.902
			.000	6.488	38.792		.982	-3.203	
			1.167	3.149	48.093		.982	.253	
			2.333	-.238	52.594		.982	1.999	
			2.333			-2.895			-.902
		MAX & MIN							
	5		.000			.026			8.029
			.000	9.540	37.272		.007	-.009	
			1.167	6.201	46.455		.007	-.000	
			2.333	2.862	51.743		.007	.008	
			2.333			.026			8.029
		MAX & MIN							
	6		.000			-.001			8.585
			.000	11.162	41.004		-.000	.000	
			1.167	7.823	52.078		-.000	.000	
			2.333	4.484	59.257		-.000	-.000	
			2.333			-.001			8.585
		MAX							
	ALL		.000			.026			21.779
			.000	20.964	69.173		3.224	.000	
			1.167	16.925	84.482		3.224	.611	
			2.333	12.933	98.887		3.224	4.255	
			2.333			.026			21.779
		MIN							
	ALL		.000			-4.005			-.902
			.000	6.488	37.272		-.000	-3.203	
			1.167	3.149	46.455		-.000	-.000	
			2.333	-.238	51.743		-.000	-.000	
			2.333			-4.005			-.902
23	----------								
		MAX & MIN							
	1		.000			-7.301			2.462
			.000	.623	58.960		2.657	-2.107	
			1.167	-2.716	57.740		2.657	.992	
			2.333	-6.055	52.624		2.657	4.091	
			2.333			-7.301			2.462
		MAX							
	2		.000			-2.033			9.355

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			.000	4.634	82.654		2.474	-1.156	
			1.167	.875	80.888		2.474	.787	
			2.333	-2.526	76.462		2.474	3.619	
			2.333			-2.033			9.355
		MIN							
	2		.000			-5.156			-2.676
			.000	-3.302	55.733		1.131	-2.046	
			1.167	-6.641	53.778		1.131	.523	
			2.333	-10.337	47.361		1.131	2.202	
			2.333			-5.156			-2.676
		MAX							
	3		.000			-1.150			9.522
			.000	4.683	82.566		2.450	-1.155	
			1.167	.924	80.857		2.450	.760	
			2.333	-2.477	76.488		2.450	3.564	
			2.333			-1.150			9.522
		MIN							
	3		.000			-4.273			-2.509
			.000	-3.253	55.645		1.107	-2.045	
			1.167	-6.592	53.747		1.107	.496	
			2.333	-10.289	47.387		1.107	2.147	
			2.333			-4.273			-2.509
		MAX							
	4		.000			-.848			14.006
			.000	7.331	98.458		2.861	-.880	
			1.167	3.292	96.355		2.861	.885	
			2.333	-.152	92.415		2.861	4.132	
			2.333			-.848			14.006
		MIN							
	4		.000			-6.053			-6.045
			.000	-5.897	53.591		.623	-2.364	
			1.167	-9.236	51.172		.623	.445	
			2.333	-13.170	43.913		.623	1.771	
			2.333			-6.053			-6.045
		MAX & MIN							
	5		.000			.028			3.825
			.000	-.497	50.926		.010	-.009	
			1.167	-3.836	48.398		.010	.002	
			2.333	-7.175	41.976		.010	.014	
			2.333			.028			3.825
		MAX & MIN							
	6		.000			-.001			3.928
			.000	1.103	58.397		-.000	.000	
			1.167	-2.236	57.736		-.000	.000	
			2.333	-5.575	53.179		-.000	-.000	
			2.333			-.001			3.928
		MAX							
	ALL		.000			.028			14.006
			.000	7.331	98.458		2.861	.000	
			1.167	3.292	96.355		2.861	.992	
			2.333	-.152	92.415		2.861	4.132	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			2.333			.028			14.006
		MIN							
	ALL		.000			-7.301			-6.045
			.000	-5.897	50.926		-.000	-2.364	
			1.167	-9.236	48.398		-.000	.000	
			2.333	-13.170	41.976		-.000	-.000	
			2.333			-7.301			-6.045
24	----------								
		MAX & MIN							
	1		.000			-10.097			1.529
			.000	-9.279	53.287		2.190	-1.242	
			1.167	-12.618	40.514		2.190	1.313	
			2.333	-15.957	23.846		2.190	3.868	
			2.333			-10.097			1.529
		MAX							
	2		.000			-3.090			7.405
			.000	-6.688	76.898		2.162	-.617	
			1.167	-10.175	59.789		2.162	1.094	
			2.333	-13.514	40.726		2.162	3.563	
			2.333			-3.090			7.405
		MIN							
	2		.000			-7.736			-3.092
			.000	-15.398	48.461		.819	-1.373	
			1.167	-19.008	34.946		.819	.698	
			2.333	-22.767	17.011		.819	2.013	
			2.333			-7.736			-3.092
		MAX							
	3		.000			-2.116			7.574
			.000	-6.640	76.801		2.117	-.593	
			1.167	-10.127	59.747		2.117	1.066	
			2.333	-13.466	40.740		2.117	3.482	
			2.333			-2.116			7.574
		MIN							
	3		.000			-6.762			-2.923
			.000	-15.350	48.364		.774	-1.350	
			1.167	-18.961	34.904		.774	.669	
			2.333	-22.720	17.025		.774	1.932	
			2.333			-6.762			-2.923
		MAX							
	4		.000			-1.329			11.380
			.000	-4.944	92.673		2.548	-.383	
			1.167	-8.530	72.692		2.548	1.240	
			2.333	-11.869	52.052		2.548	4.124	
			2.333			-1.329			11.380
		MIN							
	4		.000			-9.072			-6.116
			.000	-19.460	45.279		.311	-1.643	
			1.167	-23.252	31.287		.311	.579	
			2.333	-27.291	12.527		.311	1.941	
			2.333			-9.072			-6.116

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		MAX & MIN							
	5		.000			.019			3.229
			.000	-10.370	41.488		.021	-.018	
			1.167	-13.709	27.442		.021	.007	
			2.333	-17.048	9.500		.021	.031	
			2.333			.019			3.229
		MAX & MIN							
	6		.000			-.000			2.995
			.000	-8.791	52.709		-.000	.000	
			1.167	-12.130	40.505		-.000	-.000	
			2.333	-15.469	24.405		-.000	-.001	
			2.333			-.000			2.995
		MAX							
	ALL		.000			.019			11.380
			.000	-4.944	92.673		2.548	.000	
			1.167	-8.530	72.692		2.548	1.313	
			2.333	-11.869	52.052		2.548	4.124	
			2.333			.019			11.380
		MIN							
	ALL		.000			-10.097			-6.116
			.000	-19.460	41.488		-.000	-1.643	
			1.167	-23.252	27.442		-.000	-.000	
			2.333	-27.291	9.500		-.000	-.001	
			2.333			-10.097			-6.116
25	----------								
		MAX & MIN							
	1		.000			-12.382			3.914
			.000	-19.255	24.256		1.722	-.443	
			1.167	-22.594	-.156		1.722	1.566	
			2.333	-25.933	-28.463		1.722	3.575	
			2.333			-12.382			3.914
		MAX							
	2		.000			-3.876			10.024
			.000	-17.595	40.804		1.870	-.149	
			1.167	-20.934	9.840		1.870	1.368	
			2.333	-24.273	-22.146		1.870	3.500	
			2.333			-3.876			10.024
		MIN							
	2		.000			-10.008			-.660
			.000	-27.742	17.818		.526	-.762	
			1.167	-31.501	-7.265		.526	.824	
			2.333	-35.260	-36.621		.526	1.797	
			2.333			-10.008			-.660
		MAX							
	3		.000			-2.826			10.217
			.000	-17.561	40.705		1.817	-.122	
			1.167	-20.900	9.780		1.817	1.334	
			2.333	-24.239	-22.167		1.817	3.404	
			2.333			-2.826			10.217
		MIN							
	3		.000			-8.958			-.468

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	.000	-27.708	17.719		.473	-.734	
	1.167	-31.467	-7.324		.473	.789	
	2.333	-35.226	-36.642		.473	1.700	
	2.333			-8.958			-.468
MAX							
4	.000			-1.553			14.222
	.000	-16.518	51.924		2.257	.042	
	1.167	-19.857	16.556		2.257	1.568	
	2.333	-23.196	-17.917		2.257	4.119	
	2.333			-1.553			14.222
MIN							
4	.000			-11.773			-3.586
	.000	-33.430	13.613		.018	-.980	
	1.167	-37.469	-11.951		.018	.661	
	2.333	-41.508	-42.042		.018	1.280	
	2.333			-11.773			-3.586
MAX & MIN							
5	.000			-.031			6.221
	.000	-20.341	8.702		.050	-.041	
	1.167	-23.680	-16.977		.050	.018	
	2.333	-27.019	-46.552		.050	.076	
	2.333			-.031			6.221
MAX & MIN							
6	.000			.001			5.335
	.000	-18.733	23.645		-.001	.001	
	1.167	-22.072	-.158		-.001	-.000	
	2.333	-25.411	-27.857		-.001	-.002	
	2.333			.001			5.335
MAX							
ALL	.000			.001			14.222
	.000	-16.518	51.924		2.257	.042	
	1.167	-19.857	16.556		2.257	1.568	
	2.333	-23.196	-17.917		2.257	4.119	
	2.333			.001			14.222
MIN							
ALL	.000			-12.382			-3.586
	.000	-33.430	8.702		-.001	-.980	
	1.167	-37.469	-16.977		-.001	-.000	
	2.333	-41.508	-46.552		-.001	-.002	
	2.333			-12.382			-3.586
26 ----------							
MAX & MIN							
1	.000			-14.184			9.660
	.000	-23.806	-32.586		1.252	.237	
	1.167	-27.145	-62.308		1.252	1.698	
	2.333	-30.484	-95.925		1.252	3.158	
	2.333			-14.184			9.660
MAX							
Z	.000			-4.433			17.023
	.000	-22.603	-27.520		1.568	.209	
	1.167	-25.942	-60.533		1.568	1.662	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	2.333	-29.281	-93.509		1.568	3.446	
	2.333			-4.433			17.023
MIN							
Z	.000			-11.920			4.479
	.000	-32.670	-40.661		.254	-.144	
	1.167	-36.429	-71.949		.254	.855	
	2.333	-40.188	-111.345		.254	1.501	
	2.333			-11.920			4.479
MAX							
3	.000			-3.313			17.337
	.000	-22.597	-27.656		1.515	.224	
	1.167	-25.936	-60.662		1.515	1.615	
	2.333	-29.275	-93.631		1.515	3.336	
	2.333			-3.313			17.337
MIN							
3	.000			-10.800			4.793
	.000	-32.663	-40.797		.200	-.129	
	1.167	-36.422	-72.079		.200	.808	
	2.333	-40.181	-111.467		.200	1.391	
	2.333			-10.800			4.793
MAX							
4	.000			-1.597			22.504
	.000	-22.024	-24.082		1.948	.320	
	1.167	-25.363	-59.551		1.948	1.965	
	2.333	-28.702	-92.360		1.948	4.161	
	2.333			-1.597			22.504
MIN							
4	.000			-14.076			1.596
	.000	-38.802	-45.984		-.243	-.269	
	1.167	-42.841	-78.578		-.243	.620	
	2.333	-46.880	-122.087		-.243	.919	
	2.333			-14.076			1.596
MAX & MIN							
5	.000			-.265			14.358
	.000	-25.879	-52.101		.118	-.090	
	1.167	-29.218	-84.242		.118	.048	
	2.333	-32.557	-120.278		.118	.186	
	2.333			-.265			14.358
MAX & MIN							
6	.000			.006			10.747
	.000	-23.119	-33.178		-.003	.002	
	1.167	-26.458	-62.098		-.003	-.001	
	2.333	-29.797	-94.913		-.003	-.004	
	2.333			.006			10.747
MAX							
ALL	.000			.006			22.504
	.000	-22.024	-24.082		1.948	.320	
	1.167	-25.363	-59.551		1.948	1.965	
	2.333	-28.702	-92.360		1.948	4.161	
	2.333			.006			22.504

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
MIN							
ALL	.000			-14.184			1.596
	.000	-38.802	-52.101		-.243	-.269	
	1.167	-42.841	-84.242		-.243	-.001	
	2.333	-46.880	-122.087		-.243	-.004	
	2.333			-14.184			1.596
27 ----------							
MAX & MIN							
1	.000			-15.519			-11.000
	.000	28.503	-94.833		1.465	.268	
	1.063	25.462	-66.164		1.465	1.824	
	2.125	22.421	-40.725		1.465	3.381	
	2.125			-15.519			-11.000
MAX							
2	.000			-5.013			-6.507
	.000	37.555	-90.242		1.147	1.082	
	1.063	34.131	-63.450		1.147	1.786	
	2.125	30.708	-37.376		1.147	2.692	
	2.125			-5.013			-6.507
MIN							
2	.000			-13.082			-20.524
	.000	26.327	-109.863		.646	-.025	
	1.063	23.286	-77.073		.646	.923	
	2.125	20.245	-50.683		.646	1.872	
	2.125			-13.082			-20.524
MAX							
3	.000			-3.853			-6.047
	.000	37.891	-90.560		1.158	1.022	
	1.063	34.468	-63.410		1.158	1.738	
	2.125	31.045	-36.979		1.158	2.657	
	2.125			-3.853			-6.047
MIN							
3	.000			-11.921			-20.063
	.000	26.664	-110.181		.657	-.085	
	1.063	23.623	-77.033		.657	.876	
	2.125	20.582	-50.285		.657	1.836	
	2.125			-11.921			-20.063
MAX							
4	.000			-1.966			-2.375
	.000	44.512	-88.457		1.312	1.569	
	1.063	40.833	-61.936		1.312	2.104	
	2.125	37.155	-34.458		1.312	2.978	
	2.125			-1.966			-2.375
MIN							
4	.000			-15.413			-25.735
	.000	25.799	-121.158		.476	-.276	
	1.063	22.758	-84.640		.476	.667	
	2.125	19.717	-56.636		.476	1.610	
	2.125			-15.413			-25.735
MAX & MIN							
5	.000			-1.226			-12.242

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	.000	40.356	-133.522		.129	-.186	
	1.063	36.678	-92.598		.129	-.049	
	2.125	33.000	-55.581		.129	.088	
	2.125			-1.226			-12.242
MAX & MIN							
6	.000			.029			-10.593
	.000	28.278	-94.358		-.003	.004	
	1.063	25.237	-65.928		-.003	.001	
	2.125	22.196	-40.729		-.003	-.002	
	2.125			.029			-10.593
MAX							
ALL	.000			.029			-2.375
	.000	44.512	-88.457		1.465	1.569	
	1.063	40.833	-61.936		1.465	2.104	
	2.125	37.155	-34.458		1.465	3.381	
	2.125			.029			-2.375
MIN							
ALL	.000			-15.519			-25.735
	.000	25.799	-133.522		-.003	-.276	
	1.063	22.758	-92.598		-.003	-.049	
	2.125	19.717	-56.636		-.003	-.002	
	2.125			-15.519			-25.735
28 ----------							
MAX & MIN							
1	.000			-16.770			-5.333
	.000	25.461	-35.428		1.066	.938	
	1.063	22.420	-9.991		1.066	2.070	
	2.125	19.379	12.214		1.066	3.203	
	2.125			-16.770			-5.333
MAX							
2	.000			-5.828			-.088
	.000	34.397	-29.993		.931	1.334	
	1.063	30.974	-1.738		.931	1.794	
	2.125	27.550	25.696		.931	2.617	
	2.125			-5.828			-.088
MIN							
2	.000			-13.872			-14.057
	.000	23.296	-42.704		.424	.377	
	1.063	20.255	-16.922		.424	1.101	
	2.125	17.214	5.559		.424	1.825	
	2.125			-13.872			-14.057
MAX							
3	.000			-4.671			.359
	.000	34.563	-30.033		.959	1.268	
	1.063	31.140	-1.602		.959	1.759	
	2.125	27.716	26.009		.959	2.611	
	2.125			-4.671			.359
MIN							
3	.000			-12.714			-13.609
	.000	23.462	-42.744		.452	.312	
	1.063	20.421	-16.785		.452	1.066	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			2.125	17.380	5.872		.452	1.820	
			2.125			-12.714			-13.609
	MAX								
	4		.000			-2.794			4.569
			.000	40.863	-26.836		1.097	1.749	
			1.063	37.185	3.838		1.097	2.034	
			2.125	33.506	35.298		1.097	2.922	
			2.125			-2.794			4.569
	MIN								
	4		.000			-16.200			-18.712
			.000	22.361	-48.021		.253	.155	
			1.063	19.320	-21.468		.253	.879	
			2.125	16.279	1.736		.253	1.603	
			2.125			-16.200			-18.712
	MAX & MIN								
	5		.000			-1.462			-7.226
			.000	39.804	-47.851		.061	-.086	
			1.063	36.125	-7.514		.061	-.021	
			2.125	32.447	28.915		.061	.043	
			2.125			-1.462			-7.226
	MAX & MIN								
	6		.000			.034			-5.274
			.000	25.407	-35.367		-.001	.002	
			1.063	22.367	-9.987		-.001	.001	
			2.125	19.326	12.162		-.001	-.001	
			2.125			.034			-5.274
	MAX								
	ALL		.000			.034			4.569
			.000	40.863	-26.836		1.097	1.749	
			1.063	37.185	3.838		1.097	2.070	
			2.125	33.506	35.298		1.097	3.203	
			2.125			.034			4.569
	MIN								
	ALL		.000			-16.770			-18.712
			.000	22.361	-48.021		-.001	-.086	
			1.063	19.320	-21.468		-.001	-.021	
			2.125	16.279	1.736		-.001	-.001	
			2.125			-16.770			-18.712
29	----------								
	MAX & MIN								
	1		.000			-17.635			-1.804
			.000	16.436	12.950		.640	1.507	
			1.063	13.395	28.798		.640	2.187	
			2.125	10.355	41.415		.640	2.867	
			2.125			-17.635			-1.804
	MAX								
	2		.000			-6.539			3.316
			.000	23.361	27.338		.729	1.591	
			1.063	19.938	45.311		.729	1.843	
			2.125	16.514	61.881		.729	2.519	
			2.125			-6.539			3.316

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	MIN								
	2		.000			-14.441			-8.918
			.000	13.748	6.720		.228	.684	
			1.063	10.707	23.335		.228	1.193	
			2.125	7.666	36.465		.228	1.703	
			2.125			-14.441			-8.918
	MAX								
	3		.000			-5.440			3.599
			.000	23.443	27.361		.793	1.501	
			1.063	20.020	45.421		.793	1.820	
			2.125	16.597	62.080		.793	2.564	
			2.125			-5.440			3.599
	MIN								
	3		.000			-13.342			-8.634
			.000	13.830	6.743		.292	.593	
			1.063	10.790	23.445		.292	1.171	
			2.125	7.749	36.663		.292	1.749	
			2.125			-13.342			-8.634
	MAX								
	4		.000			-3.565			7.479
			.000	28.253	36.764		.895	1.978	
			1.063	24.575	56.445		.895	2.058	
			2.125	20.896	75.945		.895	2.845	
			2.125			-3.565			7.479
	MIN								
	4		.000			-16.736			-12.910
			.000	12.231	2.400		.061	.466	
			1.063	9.191	19.819		.061	.975	
			2.125	6.150	33.584		.061	1.485	
			2.125			-16.736			-12.910
	MAX & MIN								
	5		.000			-1.521			-3.127
			.000	28.726	30.340		.025	-.036	
			1.063	25.047	58.907		.025	-.009	
			2.125	21.369	83.566		.025	.017	
			2.125			-1.521			-3.127
	MAX & MIN								
	6		.000			.036			-1.804
			.000	16.427	12.949		-.001	.001	
			1.063	13.387	28.788		-.001	.000	
			2.125	10.346	41.395		-.001	-.000	
			2.125			.036			-1.804
	MAX								
	ALL		.000			.036			7.479
			.000	28.726	36.764		.895	1.978	
			1.063	25.047	58.907		.895	2.187	
			2.125	21.369	83.566		.895	2.867	
			2.125			.036			7.479
	MIN								
	ALL		.000			-17.635			-12.910
			.000	12.231	2.400		-.001	-.036	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			1.063	9.191	19.819		-.001	-.009	
			2.125	6.150	33.584		-.001	-.000	
			2.125			-17.635			-12.910
30	----------								
	MAX & MIN								
	1		.000			-18.073			-.443
			.000	7.502	41.600		.213	2.014	
			1.063	4.461	47.955		.213	2.240	
			2.125	1.420	51.079		.213	2.467	
			2.125			-18.073			-.443
	MAX								
	2		.000			-7.294			4.664
			.000	12.309	62.454		.580	1.793	
			1.063	8.885	69.135		.580	1.890	
			2.125	5.693	74.124		.580	2.467	
			2.125			-7.294			4.664
	MIN								
	2		.000			-15.041			-6.168
			.000	4.237	36.687		.083	.918	
			1.063	1.196	44.020		.083	1.270	
			2.125	-2.076	47.494		.083	1.622	
			2.125			-15.041			-6.168
	MAX								
	3		.000			-6.442			4.760
			.000	12.326	62.513		.716	1.656	
			1.063	8.903	69.212		.716	1.898	
			2.125	5.711	74.219		.716	2.619	
			2.125			-6.442			4.760
	MIN								
	3		.000			-14.189			-6.072
			.000	4.254	36.745		.218	.781	
			1.063	1.213	44.097		.218	1.278	
			2.125	-2.059	47.589		.218	1.774	
			2.125			-14.189			-6.072
	MAX								
	4		.000			-4.398			8.322
			.000	15.613	76.400		.746	2.159	
			1.063	11.935	83.404		.746	2.086	
			2.125	8.642	89.742		.746	2.813	
			2.125			-4.398			8.322
	MIN								
	4		.000			-17.311			-9.732
			.000	2.160	33.455		-.083	.701	
			1.063	-.881	41.546		-.083	1.053	
			2.125	-4.307	45.359		-.083	1.405	
			2.125			-17.311			-9.732
	MAX & MIN								
	5		.000			-1.535			-.806
			.000	12.102	84.097		.007	-.013	
			1.063	8.424	95.002		.007	-.005	
			2.125	4.746	101.998		.007	.002	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			2.125			-1.535			-.806
	MAX & MIN								
	6		.000			.036			-.445
			.000	7.500	41.597		-.000	.000	
			1.063	4.459	47.950		-.000	.000	
			2.125	1.418	51.073		-.000	.000	
			2.125			.036			-.445
	MAX								
	ALL		.000			.036			8.322
			.000	15.613	84.097		.746	2.159	
			1.063	11.935	95.002		.746	2.240	
			2.125	8.642	101.998		.746	2.813	
			2.125			.036			8.322
	MIN								
	ALL		.000			-18.073			-9.732
			.000	2.160	33.455		-.083	-.013	
			1.063	-.881	41.546		-.083	-.005	
			2.125	-4.307	45.359		-.083	.000	
			2.125			-18.073			-9.732
41	----------								
	MAX & MIN								
	1		.000			.022			-1.497
			.000	17.023	8.519		3.925	-4.248	
			1.167	13.374	26.250		3.925	.331	
			2.333	9.725	39.725		3.925	4.911	
			2.333			.022			-1.497
	MAX								
	2		.000			.147			6.108
			.000	34.305	12.360		3.249	-2.298	
			1.167	23.835	40.053		3.249	.257	
			2.333	16.051	56.578		3.249	3.989	
			2.333			.147			6.108
	MIN								
	2		.000			.096			-10.545
			.000	14.835	8.268		1.790	-3.476	
			1.167	7.371	25.329		1.790	.185	
			2.333	-4.380	36.778		1.790	2.667	
			2.333			.096			-10.545
	MAX								
	3		.000			.221			6.280
			.000	34.301	12.358		3.183	-2.225	
			1.167	23.831	40.046		3.183	.253	
			2.333	16.046	56.565		3.183	3.908	
			2.333			.221			6.280
	MIN								
	3		.000			.169			-10.373
			.000	14.830	8.266		1.724	-3.404	
			1.167	7.367	25.321		1.724	.180	
			2.333	-4.384	36.765		1.724	2.586	
			2.333			.169			-10.373

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	MAX							
	4	.000			.163			11.237
		.000	45.831	14.924		3.669	-1.937	
		1.167	30.814	49.262		3.669	.284	
		2.333	20.272	67.826		3.669	4.468	
		2.333			.163			11.237
	MIN							
	4	.000			.078			-16.518
		.000	13.380	8.103		1.238	-3.901	
		1.167	3.374	24.722		1.238	.164	
		2.333	-13.778	34.826		1.238	2.265	
		2.333			.078			-16.518
	MAX & MIN							
	5	.000			.006			.000
		.000	15.663	7.927		.000	.000	
		1.167	12.013	24.072		.000	.000	
		2.333	8.364	35.958		.000	.000	
		2.333			.006			.000
	MAX & MIN							
	6	.000			-.000			.000
		.000	17.023	8.519		.000	.000	
		1.167	13.374	26.250		.000	.000	
		2.333	9.725	39.725		.000	.000	
		2.333			-.000			.000
	MAX							
	ALL	.000			.221			11.237
		.000	45.831	14.924		3.925	.000	
		1.167	30.814	49.262		3.925	.331	
		2.333	20.272	67.826		3.925	4.911	
		2.333			.221			11.237
	MIN							
	ALL	.000			-.000			-16.518
		.000	13.380	7.927		.000	-4.248	
		1.167	3.374	24.072		.000	.000	
		2.333	-13.778	34.826		.000	.000	
		2.333			-.000			-16.518
42	----------							
	MAX & MIN							
	1	.000			.019			-1.718
		.000	10.711	51.519		3.786	-3.722	
		1.167	7.061	61.886		3.786	.695	
		2.333	3.412	67.996		3.786	5.112	
		2.333			.019			-1.718
	MAX							
	2	.000			.853			5.335
		.000	28.705	72.219		3.266	-1.968	
		1.167	17.915	89.087		3.266	.543	
		2.333	9.467	95.985		3.266	4.284	
		2.333			.853			5.335
	MIN							
	2	.000			.532			-10.049

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		2.333			-.001			-15.540
43	----------							
	MAX & MIN							
	1	.000			.009			-1.752
		.000	-.219	72.143		3.217	-2.586	
		1.167	-3.868	69.759		3.217	1.167	
		2.333	-7.517	63.118		3.217	4.920	
		2.333			.009			-1.752
	MAX							
	2	.000			1.243			4.550
		.000	15.617	101.218		2.925	-1.319	
		1.167	4.902	101.935		2.925	.950	
		2.333	-3.436	91.680		2.925	4.292	
		2.333			1.243			4.550
	MIN							
	2	.000			.762			-8.086
		.000	-5.138	68.288		1.303	-2.393	
		1.167	-13.731	64.974		1.303	.636	
		2.333	-24.558	57.397		1.303	2.591	
		2.333			.762			-8.086
	MAX							
	3	.000			1.920			4.745
		.000	15.611	101.187		2.851	-1.252	
		1.167	4.896	101.897		2.851	.931	
		2.333	-3.443	91.635		2.851	4.187	
		2.333			1.920			4.745
	MIN							
	3	.000			1.439			-7.892
		.000	-5.144	68.257		1.230	-2.326	
		1.167	-13.737	64.935		1.230	.617	
		2.333	-24.565	57.351		1.230	2.406	
		2.333			1.439			-7.892
	MAX							
	4	.000			1.390			8.803
		.000	26.181	120.632		3.392	-.986	
		1.167	10.755	123.424		3.392	1.066	
		2.333	-.709	110.768		3.392	4.906	
		2.333			1.390			8.803
	MIN							
	4	.000			.589			-12.258
		.000	-8.411	65.749		.689	-2.775	
		1.167	-20.299	61.822		.689	.542	
		2.333	-35.912	53.628		.689	2.070	
		2.333			.589			-12.258
	MAX & MIN							
	5	.000			.076			.000
		.000	-2.118	63.047		.000	.000	
		1.167	-5.767	58.448		.000	.000	
		2.333	-9.417	49.590		.000	.000	
		2.333			.076			.000

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	8.128	49.558		1.644	-3.199	
		1.167	-.584	59.039		1.644	.386	
		2.333	-11.442	64.259		1.644	2.739	
		2.333			.532			-10.049
	MAX							
	3	.000			1.313			5.531
		.000	28.699	72.203		3.193	-1.891	
		1.167	17.909	89.065		3.193	.534	
		2.333	9.461	95.955		3.193	4.189	
		2.333			1.313			5.531
	MIN							
	3	.000			.992			-9.854
		.000	8.122	49.542		1.571	-3.122	
		1.167	-.590	59.016		1.571	.377	
		2.333	-11.448	64.230		1.571	2.644	
		2.333			.992			-9.854
	MAX							
	4	.000			.954			10.101
		.000	40.707	86.034		3.733	-1.586	
		1.167	25.156	107.244		3.733	.603	
		2.333	13.510	114.674		3.733	4.842	
		2.333			.954			10.101
	MIN							
	4	.000			.419			-15.540
		.000	6.412	48.266		1.030	-3.639	
		1.167	-5.675	57.163		1.030	.341	
		2.333	-21.338	61.798		1.030	2.268	
		2.333			.419			-15.540
	MAX & MIN							
	5	.000			.036			.000
		.000	8.908	46.891		.000	.000	
		1.167	5.259	55.155		.000	.000	
		2.333	1.610	59.161		.000	.000	
		2.333			.036			.000
	MAX & MIN							
	6	.000			-.001			.000
		.000	10.711	51.519		.000	.000	
		1.167	7.061	61.886		.000	.000	
		2.333	3.412	67.996		.000	.000	
		2.333			-.001			.000
	MAX							
	ALL	.000			1.313			10.101
		.000	40.707	86.034		3.786	.000	
		1.167	25.156	107.244		3.786	.695	
		2.333	13.510	114.674		3.786	5.112	
		2.333			1.313			10.101
	MIN							
	ALL	.000			-.001			-15.540
		.000	6.412	46.891		.000	-3.722	
		1.167	-5.675	55.155		.000	.000	
		2.333	-21.338	59.161		.000	.000	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

FRAME ELEMENT FORCES (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	MAX & MIN							
	6	.000			-.002			.000
		.000	-.219	72.143		.000	.000	
		1.167	-3.868	69.759		.000	.000	
		2.333	-7.517	63.118		.000	.000	
		2.333			-.002			.000
	MAX							
	ALL	.000			1.920			8.803
		.000	26.181	120.632		3.392	.000	
		1.167	10.755	123.424		3.392	1.167	
		2.333	-.709	110.768		3.392	4.920	
		2.333			1.920			8.803
	MIN							
	ALL	.000			-.002			-12.258
		.000	-8.411	63.047		.000	-2.775	
		1.167	-20.299	58.448		.000	.000	
		2.333	-35.912	49.590		.000	.000	
		2.333			-.002			-12.258
44	----------							
	MAX & MIN							
	1	.000			.002			-1.796
		.000	-11.806	65.111		2.653	-1.545	
		1.167	-15.455	49.209		2.653	1.550	
		2.333	-19.104	29.049		2.653	4.646	
		2.333			.002			-1.796
	MAX							
	2	.000			1.420			3.740
		.000	1.872	93.999		2.586	-.729	
		1.167	-8.666	76.793		2.586	1.302	
		2.333	-16.795	49.403		2.586	4.248	
		2.333			1.420			3.740
	MIN							
	2	.000			.841			-6.631
		.000	-19.189	59.368		.966	-1.643	
		1.167	-27.689	42.499		.966	.832	
		2.333	-38.390	21.361		.966	2.393	
		2.333			.841			-6.631
	MAX							
	3	.000			2.200			3.922
		.000	1.866	93.953		2.512	-.671	
		1.167	-8.672	76.740		2.512	1.274	
		2.333	-16.802	49.342		2.512	4.134	
		2.333			2.200			3.922
	MIN							
	3	.000			1.622			-6.449
		.000	-19.196	59.322		.893	-1.586	
		1.167	-27.696	42.446		.893	.804	
		2.333	-38.397	21.300		.893	2.278	
		2.333			1.622			-6.449
	MAX							
	4	.000			1.586			7.437

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING *QUICK* TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	10.997	113.304		3.052	-.443	
		1.167	-4.133	95.237		3.052	1.475	
		2.333	-15.249	63.033		3.052	4.917	
		2.333			1.586			7.437
	MIN							
	4	.000			.622			-9.848
		.000	-24.106	55.586		.353	-1.968	
		1.167	-35.839	38.080		.353	.691	
		2.333	-51.241	16.297		.353	1.825	
		2.333			.622			-9.848
	MAX & MIN							
	5	.000			.163			.000
		.000	-13.797	51.578		.000	.000	
		1.167	-17.447	33.352		.000	.000	
		2.333	-21.096	10.869		.000	.000	
		2.333			.163			.000
	MAX & MIN							
	6	.000			-.004			.000
		.000	-11.806	65.111		.000	.000	
		1.167	-15.455	49.209		.000	.000	
		2.333	-19.104	29.049		.000	.000	
		2.333			-.004			.000
	MAX							
	ALL	.000			2.200			7.437
		.000	10.997	113.304		3.052	.000	
		1.167	-4.133	95.237		3.052	1.550	
		2.333	-15.249	63.033		3.052	4.917	
		2.333			2.200			7.437
	MIN							
	ALL	.000			-.004			-9.848
		.000	-24.106	51.578		.000	-1.968	
		1.167	-35.839	33.352		.000	.000	
		2.333	-51.241	10.869		.000	.000	
		2.333			-.004			-9.848
45	----------							
	MAX & MIN							
	1	.000			-.005			-1.909
		.000	-23.583	31.150		2.094	-.586	
		1.167	-27.233	1.508		2.094	1.857	
		2.333	-30.882	-32.392		2.094	4.300	
		2.333			-.005			-1.909
	MAX							
	2	.000			1.538			6.349
		.000	-11.741	51.841		2.243	-.190	
		1.167	-22.018	18.148		2.243	1.616	
		2.333	-29.859	-24.550		2.243	4.162	
		2.333			1.538			6.349
	MIN							
	2	.000			.795			-6.898
		.000	-33.320	23.497		.635	-.930	
		1.167	-41.644	-7.097		.635	.981	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING *QUICK* TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		2.333	-52.136	-41.973		.635	2.152	
		2.333			.795			-6.898
	MAX							
	3	.000			2.367			6.486
		.000	-11.748	51.781		2.170	-.143	
		1.167	-22.025	18.080		2.170	1.577	
		2.333	-29.866	-24.625		2.170	4.038	
		2.333			2.367			6.486
	MIN							
	3	.000			1.624			-6.762
		.000	-33.327	23.438		.562	-.883	
		1.167	-41.651	-7.164		.562	.943	
		2.333	-52.143	-42.049		.562	2.028	
		2.333			1.624			-6.762
	MAX							
	4	.000			1.739			11.710
		.000	-3.839	65.693		2.706	.043	
		1.167	-18.534	29.308		2.706	1.847	
		2.333	-29.170	-19.246		2.706	4.086	
		2.333			1.739			11.710
	MIN							
	4	.000			.501			-10.369
		.000	-39.804	18.453		.026	-1.191	
		1.167	-51.244	-12.766		.026	.790	
		2.333	-66.299	-48.285		.026	1.537	
		2.333			.501			-10.369
	MAX & MIN							
	5	.000			.398			.000
		.000	-25.579	13.148		.000	.000	
		1.167	-29.228	-18.823		.000	.000	
		2.333	-32.877	-55.051		.000	.000	
		2.333			.398			.000
	MAX & MIN							
	6	.000			-.009			.000
		.000	-23.583	31.150		.000	.000	
		1.167	-27.233	1.508		.000	.000	
		2.333	-30.882	-32.392		.000	.000	
		2.333			-.009			.000
	MAX							
	ALL	.000			2.367			11.710
		.000	-3.839	65.693		2.706	.043	
		1.167	-18.534	29.308		2.706	1.857	
		2.333	-29.170	-19.246		2.706	4.886	
		2.333			2.367			11.710
	MIN							
	ALL	.000			-.009			-10.369
		.000	-39.804	13.148		.000	-1.191	
		1.167	-51.244	-18.823		.000	.000	
		2.333	-66.299	-55.051		.000	.000	
		2.333			-.009			-10.369

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING *QUICK* TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	-47.554	-20.432		.000	.000	
		1.167	-51.203	-78.040		.000	.000	
		2.333	-54.853	-139.906		.000	.000	
		2.333			-.026			.000
	MAX							
	ALL	.000			2.709			19.534
		.000	-33.789	-3.512		2.472	.454	
		1.167	-46.756	-73.898		2.472	2.361	
		2.333	-54.344	-138.029		2.472	5.126	
		2.333			2.709			19.534
	MIN							
	ALL	.000			-.026			-16.303
		.000	-73.600	-42.202		-.403	-.407	
		1.167	-83.454	-102.620		-.403	.000	
		2.333	-97.131	-188.414		-.403	.000	
		2.333			-.026			-16.303
47	----------							
	MAX & MIN							
	1	.000			.065			.651
		.000	55.210	-139.501		1.905	.080	
		1.063	51.886	-82.606		1.905	2.104	
		2.125	48.563	-29.243		1.905	4.128	
		2.125			.065			.651
	MAX							
	2	.000			2.376			9.195
		.000	80.204	-134.377		1.477	1.223	
		1.063	71.428	-79.141		1.477	2.061	
		2.125	64.256	-20.655		1.477	3.216	
		2.125			2.376			9.195
	MIN							
	2	.000			.385			-16.530
		.000	53.652	-168.699		.789	-.168	
		1.063	49.278	-99.019		.789	1.056	
		2.125	40.920	-37.774		.789	2.280	
		2.125			.385			-16.530
	MAX							
	3	.000			3.334			10.290
		.000	80.135	-134.136		1.479	1.161	
		1.063	71.359	-78.974		1.479	2.001	
		2.125	64.187	-20.561		1.479	3.159	
		2.125			3.334			10.290
	MIN							
	3	.000			1.343			-15.436
		.000	53.583	-168.458		.791	-.230	
		1.063	49.209	-98.851		.791	.996	
		2.125	40.850	-37.680		.791	2.223	
		2.125			1.343			-15.436
	MAX							
	4	.000			2.958			17.983
		.000	96.937	-131.203		1.706	1.840	
		1.063	84.525	-76.999		1.706	2.434	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING *QUICK* TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	-47.554	-20.432		.000	.000	
		1.167	-51.203	-78.040		.000	.000	
		2.333	-54.853	-139.906		.000	.000	
		2.333			-.026			.000
	MAX							
	ALL	.000			2.709			19.534
		.000	-33.789	-3.512		2.472	.454	
		1.167	-46.756	-73.898		2.472	2.361	
		2.333	-54.344	-138.029		2.472	5.126	
		2.333			2.709			19.534
	MIN							
	ALL	.000			-.026			-16.303
		.000	-73.600	-42.202		-.403	-.407	
		1.167	-83.454	-102.620		-.403	.000	
		2.333	-97.131	-188.414		-.403	.000	
		2.333			-.026			-16.303
47	----------							
	MAX & MIN							
	1	.000			.065			.651
		.000	55.210	-139.501		1.905	.080	
		1.063	51.886	-82.606		1.905	2.104	
		2.125	48.563	-29.243		1.905	4.128	
		2.125			.065			.651
	MAX							
	2	.000			2.376			9.195
		.000	80.204	-134.377		1.477	1.223	
		1.063	71.428	-79.141		1.477	2.061	
		2.125	64.256	-20.655		1.477	3.216	
		2.125			2.376			9.195
	MIN							
	2	.000			.385			-16.530
		.000	53.652	-168.699		.789	-.168	
		1.063	49.278	-99.019		.789	1.056	
		2.125	40.920	-37.774		.789	2.280	
		2.125			.385			-16.530
	MAX							
	3	.000			3.334			10.290
		.000	80.135	-134.136		1.479	1.161	
		1.063	71.359	-78.974		1.479	2.001	
		2.125	64.187	-20.561		1.479	3.159	
		2.125			3.334			10.290
	MIN							
	3	.000			1.343			-15.436
		.000	53.583	-168.458		.791	-.230	
		1.063	49.209	-98.851		.791	.996	
		2.125	40.850	-37.680		.791	2.223	
		2.125			1.343			-15.436
	MAX							
	4	.000			2.958			17.983
		.000	96.937	-131.203		1.706	1.840	
		1.063	84.525	-76.999		1.706	2.434	
		2.125						
	MAX & MIN							
	5	.000			.398			.000
		.000	-25.579	13.148		.000	.000	
		1.167	-29.228	-18.823		.000	.000	
		2.333	-32.877	-55.051		.000	.000	
		2.333			.398			.000
	MAX & MIN							
	6	.000			-.009			.000
		.000	-23.583	31.150		.000	.000	
		1.167	-27.233	1.508		.000	.000	
		2.333	-30.882	-32.392		.000	.000	
		2.333			-.009			.000
	MAX							
	ALL	.000			2.367			11.710
		.000	-3.839	65.693		2.706	.043	
		1.167	-18.534	29.308		2.706	1.857	
		2.333	-29.170	-19.246		2.706	4.886	
		2.333			2.367			11.710
	MIN							
	ALL	.000			-.009			-10.369
		.000	-39.804	13.148		.000	-1.191	
		1.167	-51.244	-18.823		.000	.000	
		2.333	-66.299	-55.051		.000	.000	
		2.333			-.009			-10.369

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			2.125	74.788	-15.024		1.706	3.557	
			2.125			2.958			17.983
	MIN								
	4		.000			-.360			-24.893
			.000	52.683	-108.406		.559	-.478	
			1.063	47.609	-110.128		.559	.759	
			2.125	35.894	-43.556		.559	1.996	
			2.125			-.360			-24.893
	MAX & MIN								
	5		.000			-2.799			.000
			.000	84.226	-209.692		.000	.000	
			1.063	80.265	-122.306		.000	.000	
			2.125	76.304	-39.129		.000	.000	
			2.125			-2.799			.000
	MAX & MIN								
	6		.000			.066			.000
			.000	55.210	-139.501		.000	.000	
			1.063	51.886	-82.606		.000	.000	
			2.125	48.563	-29.243		.000	.000	
			2.125			.066			.000
	MAX								
	ALL		.000			3.334			17.983
			.000	96.937	-131.203		1.905	1.840	
			1.063	84.525	-76.999		1.905	2.434	
			2.125	76.304	-15.024		1.905	4.128	
			2.125			3.334			17.983
	MIN								
	ALL		.000			-2.799			-24.893
			.000	52.683	-209.692		.000	-.478	
			1.063	47.609	-122.306		.000	.000	
			2.125	35.894	-43.556		.000	.000	
			2.125			-2.799			-24.893
48	----------								
	MAX & MIN								
	1		.000			.050			.178
			.000	30.948	-41.078		1.294	1.084	
			1.063	27.625	-9.962		1.294	2.459	
			2.125	24.301	17.624		1.294	3.833	
			2.125			.050			.178
	MAX								
	2		.000			2.217			6.194
			.000	51.657	-34.608		1.083	1.586	
			1.063	42.145	4.472		1.083	2.109	
			2.125	34.387	35.344		1.083	3.067	
			2.125			2.217			6.194
	MIN								
	2		.000			.800			-11.650
			.000	29.802	-50.134		.478	.472	
			1.063	22.455	-18.118		.478	1.293	
			2.125	13.146	10.340		.478	2.115	
			2.125			.800			-11.650

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	MAX								
	3		.000			3.270			6.842
			.000	51.637	-34.495		1.082	1.534	
			1.063	42.126	4.565		1.082	2.057	
			2.125	34.367	35.416		1.082	3.014	
			2.125			3.270			6.842
	MIN								
	3		.000			1.853			-11.002
			.000	29.783	-50.021		.477	.420	
			1.063	22.436	-18.026		.477	1.241	
			2.125	13.127	10.412		.477	2.061	
			2.125			1.853			-11.002
	MAX								
	4		.000			2.608			11.981
			.000	65.482	-30.407		1.285	2.071	
			1.063	51.845	14.003		1.285	2.392	
			2.125	41.129	47.086		1.285	3.436	
			2.125			2.608			11.981
	MIN								
	4		.000			.246			-17.759
			.000	29.058	-56.283		.277	.215	
			1.063	19.029	-23.649		.277	1.032	
			2.125	5.728	5.412		.277	1.849	
			2.125			.246			-17.759
	MAX & MIN								
	5		.000			-2.113			.000
			.000	48.625	-55.734		.000	.000	
			1.063	44.664	-6.174		.000	.000	
			2.125	40.703	39.177		.000	.000	
			2.125			-2.113			.000
	MAX & MIN								
	6		.000			.050			.000
			.000	30.948	-41.078		.000	.000	
			1.063	27.625	-9.962		.000	.000	
			2.125	24.301	17.624		.000	.000	
			2.125			.050			.000
	MAX								
	ALL		.000			3.270			11.981
			.000	65.482	-30.407		1.294	2.071	
			1.063	51.845	14.003		1.294	2.459	
			2.125	41.129	47.086		1.294	3.833	
			2.125			3.270			11.981
	MIN								
	ALL		.000			-2.113			-17.759
			.000	29.058	-56.283		.000	.000	
			1.063	19.029	-23.649		.000	.000	
			2.125	5.728	5.412		.000	.000	
			2.125			-2.113			-17.759
49	----------								
	MAX & MIN								
	1		.000			.045			.059

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			.000	19.887	15.889		.779	1.763	
			1.063	16.564	35.254		.779	2.591	
			2.125	13.240	51.087		.779	3.418	
			2.125			.045			.059
	MAX								
	2		.000			2.498			5.645
			.000	38.726	33.263		.771	1.961	
			1.063	29.080	59.402		.771	2.146	
			2.125	21.232	76.527		.771	2.850	
			2.125			2.498			5.645
	MIN								
	2		.000			1.282			-8.908
			.000	17.503	8.544		.168	.879	
			1.063	9.893	28.857		.168	1.374	
			2.125	.360	45.628		.168	1.870	
			2.125			1.282			-8.908
	MAX								
	3		.000			3.813			6.011
			.000	38.708	33.338		.771	1.909	
			1.063	29.062	59.458		.771	2.094	
			2.125	21.215	76.564		.771	2.798	
			2.125			3.813			6.011
	MIN								
	3		.000			2.597			-8.542
			.000	17.485	8.619		.167	.827	
			1.063	9.875	28.913		.167	1.322	
			2.125	.343	45.665		.167	1.817	
			2.125			2.597			-8.542
	MAX								
	4		.000			2.819			10.361
			.000	51.303	44.770		.973	2.424	
			1.063	37.441	75.444		.973	2.402	
			2.125	26.578	93.449		.973	3.243	
			2.125			2.819			10.361
	MIN								
	4		.000			.793			-13.895
			.000	15.931	3.572		-.033	.621	
			1.063	5.463	24.536		-.033	1.115	
			2.125	-8.209	41.951		-.033	1.609	
			2.125			.793			-13.895
	MAX & MIN								
	5		.000			-1.867			.000
			.000	35.602	36.274		.000	.000	
			1.063	31.641	71.997		.000	.000	
			2.125	27.680	103.512		.000	.000	
			2.125			-1.867			.000
	MAX & MIN								
	6		.000			.044			.000
			.000	19.887	15.889		.000	.000	
			1.063	16.564	35.254		.000	.000	
			2.125	13.240	51.087		.000	.000	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			2.125			.044			.000
	MAX								
	ALL		.000			3.813			10.361
			.000	51.303	44.770		.973	2.424	
			1.063	37.441	75.444		.973	2.591	
			2.125	27.680	103.512		.973	3.418	
			2.125			3.813			10.361
	MIN								
	ALL		.000			-1.867			-13.895
			.000	15.931	3.572		-.033	.000	
			1.063	5.463	24.536		-.033	.000	
			2.125	-8.209	41.951		-.033	.000	
			2.125			-1.867			-13.895
50	----------								
	MAX & MIN								
	1		.000			.043			.013
			.000	8.840	50.715		.260	2.377	
			1.063	5.516	58.342		.260	2.653	
			2.125	2.193	62.437		.260	2.929	
			2.125			.043			.013
	MAX								
	2		.000			3.533			5.328
			.000	25.669	76.105		.459	2.295	
			1.063	15.979	88.102		.459	2.152	
			2.125	8.129	90.718		.459	2.592	
			2.125			3.533			5.328
	MIN								
	2		.000			2.389			-6.579
			.000	4.793	45.219		-.146	1.247	
			1.063	-2.976	53.767		-.146	1.412	
			2.125	-12.629	58.768		-.146	1.578	
			2.125			2.389			-6.579
	MAX								
	3		.000			5.565			5.447
			.000	25.652	76.142		.459	2.243	
			1.063	15.961	88.121		.459	2.100	
			2.125	8.111	90.718		.459	2.539	
			2.125			5.565			5.447
	MIN								
	3		.000			4.421			-6.460
			.000	4.776	45.257		-.146	1.195	
			1.063	-2.994	53.786		-.146	1.360	
			2.125	-12.647	58.768		-.146	1.525	
			2.125			4.421			-6.460
	MAX								
	4		.000			3.828			9.192
			.000	36.907	92.993		.661	2.735	
			1.063	22.972	107.923		.661	2.386	
			2.125	12.104	109.572		.661	3.008	
			2.125			3.828			9.192

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		MIN							
	4		.000			1.920			-10.654
			.000	2.114	41.518		-.348	.988	
			1.063	-8.621	50.698		-.348	1.153	
			2.125	-22.492	56.322		-.348	1.319	
			2.125			1.920			-10.654
		MAX & MIN							
	5		.000			-1.786			.000
			.000	14.328	102.560		.000	.000	
			1.063	10.367	115.679		.000	.000	
			2.125	6.406	124.590		.000	.000	
			2.125			-1.786			.000
		MAX & MIN							
	6		.000			.042			.000
			.000	8.840	50.715		.000	.000	
			1.063	5.516	58.342		.000	.000	
			2.125	2.193	62.437		.000	.000	
			2.125			.042			.000
		MAX							
		ALL	.000			5.565			9.192
			.000	36.907	102.560		.661	2.735	
			1.063	22.972	115.679		.661	2.653	
			2.125	12.104	124.590		.661	3.008	
			2.125			5.565			9.192
		MIN							
		ALL	.000			-1.786			-10.654
			.000	2.114	41.518		-.348	.000	
			1.063	-8.621	50.698		-.348	.000	
			2.125	-22.492	56.322		-.348	.000	
			2.125			-1.786			-10.654
61	----------								
		MAX & MIN							
	1		.000			.497			-21.839
			.000	22.454	-.691		3.544	-3.915	
			1.167	19.115	23.557		3.544	.220	
			2.333	15.776	43.911		3.544	4.354	
			2.333			.497			-21.839
		MAX							
	2		.000			1.143			-17.489
			.000	45.232	.111		2.640	-1.596	
			1.167	35.067	38.028		2.640	.356	
			2.333	27.206	66.918		2.640	3.358	
			2.333			1.143			-17.489
		MIN							
	2		.000			.820			-42.607
			.000	21.680	-4.831		1.316	-2.696	
			1.167	14.783	22.740		1.316	.268	
			2.333	5.100	42.190		1.316	2.193	
			2.333			.820			-39.021
		MAX							
	3		.000			1.579			-17.316

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			.000	45.176	.161		2.383	-1.183	
			1.167	35.010	38.012		2.383	.469	
			2.333	27.150	66.836		2.383	3.172	
			2.333			1.579			-17.316
		MIN							
	3		.000			1.256			-42.434
			.000	21.624	-4.781		1.059	-2.283	
			1.167	14.727	22.724		1.059	.382	
			2.333	5.043	42.108		1.059	2.007	
			2.333			1.256			-38.847
		MAX							
	4		.000			1.248			-14.537
			.000	60.406	.663		3.019	-1.258	
			1.167	45.689	47.678		3.019	.385	
			2.333	34.814	82.246		3.019	3.779	
			2.333			1.248			-14.537
		MIN							
	4		.000			.710			-54.400
			.000	21.152	-7.574		.813	-3.091	
			1.167	11.884	22.198		.813	.240	
			2.333	-2.030	41.032		.813	1.838	
			2.333			.710			-50.422
		MAX & MIN							
	5		.000			.017			-18.865
			.000	20.301	-.175		-.010	.016	
			1.167	16.962	21.562		-.010	.004	
			2.333	13.623	39.403		-.010	-.007	
			2.333			.017			-18.865
		MAX & MIN							
	6		.000			-.000			-20.372
			.000	22.015	-.263		.000	-.000	
			1.167	18.676	23.473		.000	-.000	
			2.333	15.337	43.314		.000	.000	
			2.333			-.000			-20.372
		MAX							
		ALL	.000			1.579			-14.537
			.000	60.406	.663		3.544	.016	
			1.167	45.689	47.678		3.544	.469	
			2.333	34.814	82.246		3.544	4.354	
			2.333			1.579			-14.537
		MIN							
		ALL	.000			-.000			-56.400
			.000	20.301	-7.574		-.010	-3.915	
			1.167	11.884	21.562		-.010	-.000	
			2.333	-2.030	39.403		-.010	-.007	
			2.333			-.000			-50.422
62	----------								
		MAX & MIN							
	1		.000			4.028			-10.064
			.000	11.624	40.479		3.136	-3.052	
			1.167	8.285	52.092		3.136	.607	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			2.333	4.946	59.809		3.136	4.266	
			2.333			4.028			-10.064
		MAX							
	2		.000			4.452			-4.888
			.000	30.959	57.190		2.570	-1.405	
			1.167	21.446	77.145		2.570	.523	
			2.333	13.648	87.656		2.570	3.458	
			2.333			4.452			-4.888
		MIN							
	2		.000			2.797			-24.458
			.000	8.749	38.420		1.224	-2.417	
			1.167	.958	49.713		1.224	.386	
			2.333	-8.874	56.569		1.224	2.177	
			2.333			2.797			-21.075
		MAX							
	3		.000			5.058			-4.716
			.000	30.901	57.237		2.418	-1.203	
			1.167	21.388	77.124		2.418	.548	
			2.333	13.589	87.567		2.418	3.306	
			2.333			5.058			-4.716
		MIN							
	3		.000			3.404			-24.287
			.000	8.690	38.467		1.073	-2.215	
			1.167	.900	49.692		1.073	.411	
			2.333	-8.932	56.480		1.073	2.025	
			2.333			3.404			-20.903
		MAX							
	4		.000			4.951			-1.381
			.000	43.837	68.363		2.956	-1.090	
			1.167	30.208	93.865		2.956	.576	
			2.333	19.437	106.223		2.956	3.921	
			2.333			4.951			-1.381
		MIN							
	4		.000			2.193			-33.999
			.000	6.820	37.079		.714	-2.777	
			1.167	-3.938	48.145		.714	.348	
			2.333	-18.099	54.412		.714	1.785	
			2.333			2.193			-28.360
		MAX & MIN							
	5		.000			.026			-8.029
			.000	9.540	37.272		-.007	.009	
			1.167	6.201	46.455		-.007	.000	
			2.333	2.862	51.743		-.007	-.008	
			2.333			.026			-8.029
		MAX & MIN							
	6		.000			-.001			-8.585
			.000	11.162	41.004		.000	-.000	
			1.167	7.823	52.078		.000	.000	
			2.333	4.484	59.257		.000	.000	
			2.333			-.001			-8.585

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		MAX							
		ALL	.000			5.058			-1.381
			.000	43.837	68.363		3.136	.009	
			1.167	30.208	93.865		3.136	.607	
			2.333	19.437	106.223		3.136	4.266	
			2.333			5.058			-1.381
		MIN							
		ALL	.000			-.001			-33.999
			.000	6.820	37.079		-.007	-3.052	
			1.167	-3.938	46.455		-.007	.000	
			2.333	-18.099	51.743		-.007	-.008	
			2.333			-.001			-28.360
63	----------								
		MAX & MIN							
	1		.000			7.308			-5.394
			.000	1.583	57.833		2.661	-2.114	
			1.167	-1.756	57.731		2.661	.991	
			2.333	-5.095	53.735		2.661	4.096	
			2.333			7.308			-5.394
		MAX							
	2		.000			7.418			.080
			.000	18.233	83.127		2.364	-.995	
			1.167	8.841	86.922		2.364	.822	
			2.333	1.184	80.022		2.364	3.519	
			2.333			7.418			1.156
		MIN							
	2		.000			4.295			-16.236
			.000	-4.110	54.173		1.022	-1.877	
			1.167	-11.992	53.787		1.022	.558	
			2.333	-21.560	48.935		1.022	2.110	
			2.333			4.295			-13.297
		MAX							
	3		.000			8.027			.248
			.000	18.173	83.164		2.266	-.884	
			1.167	8.781	86.889		2.266	.818	
			2.333	1.124	79.920		2.266	3.401	
			2.333			8.027			1.324
		MIN							
	3		.000			4.903			-16.068
			.000	-4.169	54.210		.924	-1.766	
			1.167	-12.052	53.754		.924	.554	
			2.333	-21.620	48.832		.924	1.992	
			2.333			4.903			-13.129
		MAX							
	4		.000			8.329			3.784
			.000	29.321	100.031		2.751	-.720	
			1.167	15.895	106.410		2.751	.920	
			2.333	5.358	97.561		2.751	4.027	
			2.333			8.329			5.577
		MIN							
	4		.000			3.123			-23.409

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	.000	-7.916	51.775		.513	-2.189	
	1.167	-18.828	51.186		.513	.480	
	2.333	-32.548	45.749		.513	1.679	
	2.333			3.123			-18.510
MAX & MIN							
5	.000			.028			-3.825
	.000	-.497	50.926		-.010	.009	
	1.167	-3.836	48.398		-.010	-.002	
	2.333	-7.175	41.976		-.010	-.014	
	2.333			.028			-3.825
MAX & MIN							
6	.000			-.001			-3.928
	.000	1.103	58.397		.000	-.000	
	1.167	-2.236	57.736		.000	.000	
	2.333	-5.575	53.179		.000	.000	
	2.333			-.001			-3.928
MAX							
ALL	.000			8.329			3.784
	.000	29.321	100.031		2.751	.009	
	1.167	15.895	106.410		2.751	.991	
	2.333	5.358	97.561		2.751	4.096	
	2.333			8.329			5.577
MIN							
ALL	.000			-.001			-23.409
	.000	-7.916	50.926		-.010	-2.189	
	1.167	-18.828	48.398		-.010	-.002	
	2.333	-32.548	41.976		-.010	-.014	
	2.333			-.001			-18.510
64 ----------							
MAX & MIN							
1	.000			10.101			-4.460
	.000	-8.304	52.132		2.192	-1.245	
	1.167	-11.643	40.496		2.192	1.312	
	2.333	-14.982	24.965		2.192	3.870	
	2.333			10.101			-4.460
MAX							
2	.000			10.060			1.472
	.000	5.862	78.061		2.115	-.549	
	1.167	-3.363	65.859		2.115	1.108	
	2.333	-10.826	43.659		2.115	3.514	
	2.333			10.060			4.219
MIN							
2	.000			5.414			-13.220
	.000	-16.802	46.941		.773	-1.299	
	1.167	-24.577	34.983		.773	.712	
	2.333	-33.937	18.597		.773	1.973	
	2.333			5.414			-10.447
MAX							
3	.000			10.622			1.640
	.000	5.803	78.081		2.038	-.479	
	1.167	-3.421	65.812		2.038	1.089	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	2.333	-10.884	43.544		2.038	3.405	
	2.333			10.622			4.387
MIN							
3	.000			5.976			-13.052
	.000	-16.860	46.962		.696	-1.228	
	1.167	-24.635	34.936		.696	.693	
	2.333	-33.995	18.482		.696	1.865	
	2.333			5.976			-10.279
MAX							
4	.000			11.409			5.485
	.000	15.300	95.387		2.501	-.315	
	1.167	2.151	82.803		2.501	1.253	
	2.333	-8.060	56.151		2.501	4.069	
	2.333			11.409			10.065
MIN							
4	.000			3.666			-19.000
	.000	-22.473	43.521		.264	-1.564	
	1.167	-33.204	31.342		.264	.593	
	2.333	-46.579	14.380		.264	1.501	
	2.333			3.666			-14.379
MAX & MIN							
5	.000			.019			-3.229
	.000	-10.370	41.488		-.021	.018	
	1.167	-13.709	27.442		-.021	-.007	
	2.333	-17.048	9.500		-.021	-.031	
	2.333			.019			-3.229
MAX & MIN							
6	.000			-.000			-2.995
	.000	-8.791	52.709		.000	-.000	
	1.167	-12.130	40.505		.000	.000	
	2.333	-15.469	24.405		.000	.001	
	2.333			-.000			-2.995
MAX							
ALL	.000			11.409			5.485
	.000	15.300	95.387		2.501	.018	
	1.167	2.151	82.803		2.501	1.312	
	2.333	-8.060	56.151		2.501	4.069	
	2.333			11.409			10.065
MIN							
ALL	.000			-.000			-19.000
	.000	-22.473	41.488		-.021	-1.564	
	1.167	-33.204	27.442		-.021	-.007	
	2.333	-46.579	9.500		-.021	-.031	
	2.333			-.000			-14.379
65 ----------							
MAX & MIN							
1	.000			12.387			-6.756
	.000	-18.212	23.035		1.724	-.445	
	1.167	-21.551	-.160		1.724	1.567	
	2.333	-24.890	-27.250		1.724	3.578	
	2.333			12.387			-6.756

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
MAX							
2	.000			12.357			.376
	.000	-6.215	43.803		1.847	-.119	
	1.167	-15.388	15.909		1.847	1.371	
	2.333	-22.579	-20.115		1.847	3.464	
	2.333			12.357			2.998
MIN							
2	.000			6.225			-14.474
	.000	-29.442	16.447		.503	-.723	
	1.167	-37.081	-7.283		.503	.829	
	2.333	-46.282	-35.293		.503	1.778	
	2.333			6.225			-12.678
MAX							
3	.000			12.858			.563
	.000	-6.259	43.799		1.778	-.070	
	1.167	-15.432	15.853		1.778	1.339	
	2.333	-22.623	-20.223		1.778	3.352	
	2.333			12.858			3.185
MIN							
3	.000			6.726			-14.288
	.000	-29.486	16.443		.434	-.673	
	1.167	-37.125	-7.338		.434	.798	
	2.333	-46.326	-35.401		.434	1.666	
	2.333			6.726			-12.491
MAX							
4	.000			14.132			5.260
	.000	1.824	57.664		2.233	.072	
	1.167	-11.239	26.684		2.233	1.569	
	2.333	-20.998	-15.250		2.233	4.072	
	2.333			14.132			9.631
MIN							
4	.000			3.912			-19.490
	.000	-36.889	12.070		-.007	-.935	
	1.167	-47.394	-11.969		-.007	.666	
	2.333	-60.503	-40.546		-.007	1.261	
	2.333			3.912			-16.496
MAX & MIN							
5	.000			-.031			-6.221
	.000	-20.341	8.702		-.050	.041	
	1.167	-23.680	-16.977		-.050	-.018	
	2.333	-27.019	-46.552		-.050	-.076	
	2.333			-.031			-6.221
MAX & MIN							
6	.000			.001			-5.335
	.000	-18.733	23.645		.001	-.001	
	1.167	-22.072	-.158		.001	.000	
	2.333	-25.411	-27.857		.001	.002	
	2.333			.001			-5.335
MAX							
ALL	.000			14.132			5.260
	.000	1.824	57.664		2.233	.072	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	1.167	-11.239	26.684		2.233	1.569	
	2.333	-20.998	-15.250		2.233	4.072	
	2.333			14.132			9.631
MIN							
ALL	.000			-.031			-19.490
	.000	-36.889	8.702		-.050	-.935	
	1.167	-47.394	-16.977		-.050	-.018	
	2.333	-60.503	-46.552		-.050	-.076	
	2.333			-.031			-16.496
66 ----------							
MAX & MIN							
1	.000			14.202			-11.834
	.000	-22.431	-33.771		1.256	.233	
	1.167	-25.770	-61.888		1.256	1.698	
	2.333	-29.109	-93.901		1.256	3.163	
	2.333			14.202			-11.834
MAX							
2	.000			14.287			-5.514
	.000	-11.803	-24.545		1.549	.227	
	1.167	-21.303	-57.687		1.549	1.656	
	2.333	-28.502	-92.824		1.549	3.401	
	2.333			14.287			-3.481
MIN							
2	.000			6.800			-21.186
	.000	-35.273	-42.234		.234	-.094	
	1.167	-42.926	-72.901		.234	.856	
	2.333	-52.203	-115.427		.234	1.485	
	2.333			6.800			-19.931
MAX							
3	.000			14.731			-5.187
	.000	-11.778	-24.554		1.483	.256	
	1.167	-21.278	-57.667		1.483	1.608	
	2.333	-28.477	-92.774		1.483	3.277	
	2.333			14.731			-3.154
MIN							
3	.000			7.244			-20.859
	.000	-35.248	-42.243		.169	-.064	
	1.167	-42.902	-72.881		.169	.808	
	2.333	-52.178	-115.378		.169	1.360	
	2.333			7.244			-19.604
MAX							
4	.000			16.447			-.742
	.000	-4.525	-18.310		1.926	.337	
	1.167	-18.133	-54.576		1.926	1.954	
	2.333	-27.905	-91.571		1.926	4.098	
	2.333			16.447			2.645
MIN							
4	.000			3.969			-26.863
	.000	-43.642	-47.791		-.265	-.197	
	1.167	-54.172	-79.933		-.265	.621	
	2.333	-67.406	-129.244		-.265	.904	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		2.333			3.969			-24.771
	MAX & MIN							
	5	.000			-.265			-14.358
		.000	-25.879	-52.101		-.118	.090	
		1.167	-29.218	-84.242		-.118	-.048	
		2.333	-32.557	-120.278		-.118	-.186	
		2.333			-.265			-14.358
	MAX & MIN							
	6	.000			.006			-10.747
		.000	-23.119	-33.178		.003	-.002	
		1.167	-26.458	-62.098		.003	.001	
		2.333	-29.797	-94.913		.003	.004	
		2.333			.006			-10.747
	MAX							
	ALL	.000			16.447			-.742
		.000	-4.525	-18.310		1.926	.337	
		1.167	-18.133	-54.576		1.926	1.954	
		2.333	-27.905	-91.571		1.926	4.098	
		2.333			16.447			2.645
	MIN							
	ALL	.000			-.265			-26.863
		.000	-43.642	-52.101		-.265	-.197	
		1.167	-54.172	-84.242		-.265	-.048	
		2.333	-67.406	-129.244		-.265	-.186	
		2.333			-.265			-24.771
67	----------							
	MAX & MIN							
	1	.000			15.576			10.186
		.000	28.053	-93.883		1.469	.263	
		1.063	25.012	-65.693		1.469	1.824	
		2.125	21.971	-40.733		1.469	3.384	
		2.125			15.576			10.186
	MAX							
	2	.000			15.486			17.709
		.000	51.597	-92.221		1.115	1.107	
		1.063	43.204	-62.061		1.115	1.779	
		2.125	36.115	-31.688		1.115	2.635	
		2.125			15.486			17.709
	MIN							
	2	.000			7.417			-.109
		.000	27.692	-116.618		.623	-.006	
		1.063	21.394	-78.126		.623	.909	
		2.125	12.792	-48.159		.623	1.824	
		2.125			7.417			1.588
	MAX							
	3	.000			15.910			18.179
		.000	51.279	-91.739		1.101	1.065	
		1.063	42.887	-61.917		1.101	1.724	
		2.125	35.797	-31.880		1.101	2.565	
		2.125			15.910			18.179

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	MIN				7.841			.361
	3	.000						
		.000	27.375	-116.137		.610	-.047	
		1.063	21.077	-77.981		.610	.854	
		2.125	12.475	-48.352		.610	1.754	
		2.125			7.841			2.058
	MAX							
	4	.000			17.797			23.851
		.000	66.350	-90.001		1.279	1.597	
		1.063	54.390	-59.530		1.279	2.103	
		2.125	44.602	-26.548		1.279	2.914	
		2.125			17.797			23.851
	MIN							
	4	.000			4.350			-5.845
		.000	26.510	-130.664		.460	-.257	
		1.063	18.040	-86.304		.460	.653	
		2.125	5.731	-54.001		.460	1.563	
		2.125			4.350			-3.017
	MAX & MIN							
	5	.000			-1.226			12.242
		.000	40.356	-133.522		-.129	.186	
		1.063	36.678	-92.598		-.129	.049	
		2.125	33.000	-55.581		-.129	-.088	
		2.125			-1.226			12.242
	MAX & MIN							
	6	.000			.029			10.593
		.000	28.278	-94.358		.003	-.004	
		1.063	25.237	-65.928		.003	-.001	
		2.125	22.196	-40.729		.003	.002	
		2.125			.029			10.593
	MAX							
	ALL	.000			17.797			23.851
		.000	66.350	-90.001		1.469	1.597	
		1.063	54.390	-59.530		1.469	2.103	
		2.125	44.602	-26.548		1.469	3.384	
		2.125			17.797			23.851
	MIN							
	ALL	.000			-1.226			-5.845
		.000	26.510	-133.522		-.129	-.257	
		1.063	18.040	-92.598		-.129	-.001	
		2.125	5.731	-55.581		-.129	-.088	
		2.125			-1.226			-3.017
68	----------							
	MAX & MIN							
	1	.000			16.840			5.215
		.000	25.354	-35.306		1.068	.935	
		1.063	22.313	-9.983		1.068	2.070	
		2.125	19.273	12.110		1.068	3.205	
		2.125			16.840			5.215
	MAX							
	2	.000			16.217			11.772

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	47.076	-29.488		.847	1.393	
		1.063	38.787	4.377		.847	1.772	
		2.125	31.785	31.382		.847	2.501	
		2.125			16.217			11.772
	MIN							
	2	.000			8.173			-6.654
		.000	23.598	-44.523		.350	.437	
		1.063	16.974	-16.661		.350	1.073	
		2.125	8.595	6.591		.350	1.710	
		2.125			8.173			-4.492
	MAX							
	3	.000			16.622			12.210
		.000	46.882	-29.261		.819	1.370	
		1.063	38.593	4.398		.819	1.719	
		2.125	31.591	31.196		.819	2.417	
		2.125			16.622			12.210
	MIN							
	3	.000			8.579			-6.216
		.000	23.404	-44.296		.322	.413	
		1.063	16.780	-16.640		.322	1.020	
		2.125	8.401	6.406		.322	1.627	
		2.125			8.579			-4.053
	MAX							
	4	.000			18.499			17.313
		.000	61.077	-25.330		1.013	1.809	
		1.063	49.289	13.719		1.013	2.016	
		2.125	39.646	43.488		1.013	2.805	
		2.125			18.499			17.313
	MIN							
	4	.000			5.093			-13.398
		.000	21.946	-50.389		.184	.214	
		1.063	12.934	-21.344		.184	.851	
		2.125	.996	2.171		.184	1.488	
		2.125			5.093			-9.794
	MAX & MIN							
	5	.000			-1.462			7.226
		.000	39.804	-47.851		-.061	.086	
		1.063	36.125	-7.514		-.061	.021	
		2.125	32.447	28.915		-.061	-.043	
		2.125			-1.462			7.226
	MAX & MIN							
	6	.000			.034			5.274
		.000	25.407	-35.367		.001	-.002	
		1.063	22.367	-9.987		.001	-.001	
		2.125	19.326	12.162		.001	.001	
		2.125			.034			5.274
	MAX							
	ALL	.000			18.499			17.313
		.000	61.077	-25.330		1.068	1.809	
		1.063	49.289	13.719		1.068	2.070	
		2.125	39.646	43.488		1.068	3.205	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		2.125			18.499			17.313
	MIN							
	ALL	.000			-1.462			-13.398
		.000	21.946	-50.389		-.061	-.002	
		1.063	12.934	-21.344		-.061	-.001	
		2.125	.996	2.171		-.061	-.043	
		2.125			-1.462			-9.794
69	----------							
	MAX & MIN							
	1	.000			17.708			1.804
		.000	16.419	12.948		.641	1.506	
		1.063	13.378	28.777		.641	2.187	
		2.125	10.337	41.376		.641	2.867	
		2.125			17.708			1.804
	MAX							
	2	.000			16.559			7.508
		.000	35.795	28.999		.537	1.729	
		1.063	27.422	51.472		.537	1.779	
		2.125	20.367	66.147		.537	2.250	
		2.125			16.559			8.159
	MIN							
	2	.000			8.657			-9.278
		.000	12.809	6.850		.040	.821	
		1.063	5.956	23.678		.040	1.128	
		2.125	-2.422	37.014		.040	1.435	
		2.125			8.657			-7.060
	MAX							
	3	.000			16.901			7.788
		.000	35.683	29.100		.473	1.731	
		1.063	27.310	51.455		.473	1.713	
		2.125	20.256	66.011		.473	2.116	
		2.125			16.901			8.439
	MIN							
	3	.000			8.999			-8.998
		.000	12.697	6.952		-.024	.824	
		1.063	5.844	23.661		-.024	1.063	
		2.125	-2.533	36.878		-.024	1.301	
		2.125			8.999			-6.780
	MAX							
	4	.000			18.776			12.064
		.000	48.466	39.741		.702	2.116	
		1.063	36.538	66.381		.702	1.995	
		2.125	26.808	82.180		.702	2.575	
		2.125			18.776			13.150
	MIN							
	4	.000			5.605			-15.912
		.000	10.156	2.827		-.125	.603	
		1.063	.761	20.059		-.125	.910	
		2.125	-11.174	33.625		-.125	1.217	
		2.125			5.605			-12.215

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
MAX & MIN							
5	.000			-1.521			3.127
	.000	28.726	30.340		-.025	.036	
	1.063	25.047	58.907		-.025	.009	
	2.125	21.369	83.566		-.025	-.017	
	2.125			-1.521			3.127
MAX & MIN							
6	.000			.036			1.804
	.000	16.427	12.949		.001	-.001	
	1.063	13.387	28.788		.001	-.000	
	2.125	10.346	41.395		.001	.000	
	2.125			.036			1.804
MAX							
ALL	.000			18.776			12.064
	.000	48.466	39.741		.702	2.116	
	1.063	36.538	66.381		.702	2.187	
	2.125	26.808	83.566		.702	2.867	
	2.125			18.776			13.150
MIN							
ALL	.000			-1.521			-15.912
	.000	10.156	2.827		-.125	-.001	
	1.063	.761	20.059		-.125	-.000	
	2.125	-11.174	33.625		-.125	-.017	
	2.125			-1.521			-12.215
70 ----------							
MAX & MIN							
1	.000			18.148			.447
	.000	7.499	41.593		.214	2.013	
	1.063	4.458	47.945		.214	2.240	
	2.125	1.417	51.066		.214	2.467	
	2.125			18.148			.447
MAX							
2	.000			16.335			6.087
	.000	24.606	64.892		.173	2.071	
	1.063	16.198	75.251		.173	1.738	
	2.125	9.143	77.359		.173	1.881	
	2.125			16.335			8.337
MIN							
2	.000			8.588			-9.100
	.000	1.909	37.154		-.324	1.196	
	1.063	-5.081	44.334		-.324	1.116	
	2.125	-13.459	47.975		-.324	1.036	
	2.125			8.588			-6.863
MAX							
3	.000			16.429			6.181
	.000	24.560	64.895		.037	2.120	
	1.063	16.152	75.205		.037	1.643	
	2.125	9.097	77.264		.037	1.641	
	2.125			16.429			8.431
MIN							
3	.000			8.681			-9.006

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	.000	1.863	37.157		-.459	1.245	
	1.063	-5.128	44.289		-.459	1.021	
	2.125	-13.505	47.880		-.459	.797	
	2.125			8.681			-6.769
MAX							
4	.000			18.472			10.101
	.000	35.941	80.319		.339	2.437	
	1.063	23.955	93.275		.339	1.936	
	2.125	14.224	94.632		.339	2.226	
	2.125			18.472			13.851
MIN							
4	.000			5.560			-15.210
	.000	-1.888	34.089		-.489	.979	
	1.063	-11.511	41.747		-.489	.899	
	2.125	-23.446	45.660		-.489	.819	
	2.125			5.560			-11.481
MAX & MIN							
5	.000			-1.535			.806
	.000	12.102	84.097		-.007	.013	
	1.063	8.424	95.002		-.007	.005	
	2.125	4.746	101.998		-.007	-.002	
	2.125			-1.535			.806
MAX & MIN							
6	.000			.036			.445
	.000	7.500	41.597		.000	-.000	
	1.063	4.459	47.950		.000	-.000	
	2.125	1.418	51.073		.000	.000	
	2.125			.036			.445
MAX							
ALL	.000			18.472			10.101
	.000	35.941	84.097		.339	2.437	
	1.063	23.955	95.002		.339	2.240	
	2.125	14.224	101.998		.339	2.467	
	2.125			18.472			13.851
MIN							
ALL	.000			-1.535			-15.210
	.000	-1.888	34.089		-.489	-.000	
	1.063	-11.511	41.747		-.489	-.000	
	2.125	-23.446	45.660		-.489	-.002	
	2.125			-1.535			-11.481
81 ----------							
MAX & MIN							
1	.000			-.060			-12.043
	.000	6.467	-4.159		1.658	-1.869	
	1.167	3.464	1.635		1.658	.065	
	2.333	.461	3.925		1.658	2.000	
	2.333			-.060			-12.043
MAX							
2	.000			1.813			-10.555
	.000	19.428	-3.986		1.158	-.618	
	1.167	10.732	2.090		1.158	.210	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	2.333	2.510	6.735		1.158	1.505	
	2.333			1.813			-10.555
MIN							
2	.000			1.113			-18.973
	.000	6.197	-6.128		.538	-1.157	
	1.167	-2.051	1.596		.538	.146	
	2.333	-10.493	3.747		.538	.977	
	2.333			1.113			-18.973
MAX							
3	.000			2.845			-10.480
	.000	19.411	-3.967		.987	-.325	
	1.167	10.715	2.090		.987	.303	
	2.333	2.493	6.716		.987	1.399	
	2.333			2.845			-10.480
MIN							
3	.000			2.145			-18.898
	.000	6.181	-6.109		.367	-.865	
	1.167	-2.067	1.596		.367	.239	
	2.333	-10.510	3.727		.367	.871	
	2.333			2.145			-18.898
MAX							
4	.000			2.050			-9.538
	.000	28.063	-3.865		1.334	-.454	
	1.167	15.572	2.394		1.334	.230	
	2.333	3.871	8.603		1.334	1.696	
	2.333			2.050			-9.538
MIN							
4	.000			.884			-23.568
	.000	6.012	-7.436		.302	-1.353	
	1.167	-5.732	1.571		.302	.124	
	2.333	-17.801	3.623		.302	.815	
	2.333			.884			-23.568
MAX & MIN							
5	.000			.037			-10.709
	.000	6.079	-3.788		-.007	.011	
	1.167	3.076	1.552		-.007	.004	
	2.333	.073	3.388		-.007	-.004	
	2.333			.037			-10.709
MAX & MIN							
6	.000			-.001			-11.421
	.000	6.330	-3.996		.000	-.000	
	1.167	3.327	1.637		.000	.000	
	2.333	.324	3.767		.000	.000	
	2.333			-.001			-11.421
MAX							
ALL	.000			2.845			-9.538
	.000	28.063	-3.788		1.658	.011	
	1.167	15.572	2.394		1.658	.303	
	2.333	3.871	8.603		1.658	2.000	
	2.333			2.845			-9.538

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
MIN							
ALL	.000			-.060			-23.568
	.000	6.012	-7.436		-.007	-1.869	
	1.167	-5.732	1.552		-.007	.000	
	2.333	-17.801	3.388		-.007	-.004	
	2.333			-.060			-23.568
82 ----------							
MAX & MIN							
1	.000			3.115			-6.859
	.000	4.103	.070		1.182	-1.072	
	1.167	1.100	3.106		1.182	.307	
	2.333	-1.903	2.638		1.182	1.687	
	2.333			3.115			-6.859
MAX							
2	.000			3.523			-4.435
	.000	16.146	.797		.929	-.418	
	1.167	7.505	4.204		.929	.279	
	2.333	-.806	4.690		.929	1.337	
	2.333			3.523			-4.435
MIN							
2	.000			2.295			-11.940
	.000	3.293	-.202		.420	-.785	
	1.167	-4.901	2.991		.420	.209	
	2.333	-13.422	2.449		.420	.837	
	2.333			2.295			-11.940
MAX							
3	.000			4.070			-4.365
	.000	16.134	.809		.845	-.298	
	1.167	7.493	4.203		.845	.301	
	2.333	-.818	4.676		.845	1.260	
	2.333			4.070			-4.365
MIN							
3	.000			2.842			-11.869
	.000	3.281	-.190		.336	-.665	
	1.167	-4.912	2.990		.336	.231	
	2.333	-13.434	2.434		.336	.761	
	2.333			2.842			-11.869
MAX							
4	.000			3.900			-2.792
	.000	24.171	1.287		1.075	-.304	
	1.167	11.771	4.937		1.075	.307	
	2.333	-.079	6.055		1.075	1.517	
	2.333			3.900			-2.792
MIN							
4	.000			1.854			-15.300
	.000	2.748	-.379		.227	-.915	
	1.167	-8.905	2.915		.227	.190	
	2.333	-21.106	2.319		.227	.684	
	2.333			1.854			-15.300
MAX & MIN							
5	.000			.013			-5.918

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST END I	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	.000	3.884	.053		-.005	.006	
	1.167	.881	2.832		-.005	.000	
	2.333	-2.122	2.108		-.005	-.005	
	2.333			.013			-5.918
MAX & MIN							
6	.000			-.000			-6.272
	.000	4.007	.181		.000	-.000	
	1.167	1.004	3.103		.000	.000	
	2.333	-1.999	2.522		.000	.000	
	2.333			-.000			-6.272
MAX							
ALL	.000			4.070			-2.792
	.000	24.171	1.287		1.182	.006	
	1.167	11.771	4.937		1.182	.307	
	2.333	-.079	6.055		1.182	1.687	
	2.333			4.070			-2.792
MIN							
ALL	.000			-.000			-15.300
	.000	2.748	-.379		-.005	-1.072	
	1.167	-8.905	2.832		-.005	.000	
	2.333	-21.106	2.108		-.005	-.005	
	2.333			-.000			-15.300
83 ----------							
MAX & MIN							
1	.000			5.685			-3.863
	.000	3.294	1.196		1.006	-.704	
	1.167	.291	3.287		1.006	.470	
	2.333	-2.712	1.875		1.006	1.643	
	2.333			5.685			-3.863
MAX							
2	.000			5.470			-1.016
	.000	15.101	2.583		.879	-.299	
	1.167	6.463	4.541		.879	.393	
	2.333	-1.790	3.629		.879	1.395	
	2.333			5.470			-1.016
MIN							
2	.000			3.124			-7.826
	.000	2.374	.941		.370	-.610	
	1.167	-5.816	3.102		.370	.270	
	2.333	-14.388	1.628		.370	.839	
	2.333			3.124			-7.826
MAX							
3	.000			5.783			-.946
	.000	15.089	2.595		.832	-.243	
	1.167	6.451	4.539		.832	.395	
	2.333	-1.802	3.614		.832	1.341	
	2.333			5.783			-.946
MIN							
3	.000			3.438			-7.756
	.000	2.362	.954		.323	-.553	
	1.167	-5.828	3.100		.323	.271	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST END I	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	2.333	-14.400	1.612		.323	.785	
	2.333			3.438			-7.756
MAX							
4	.000			6.152			.918
	.000	22.968	3.514		1.025	-.202	
	1.167	10.573	5.378		1.025	.439	
	2.333	-1.180	4.794		1.025	1.596	
	2.333			6.152			.918
MIN							
4	.000			2.242			-10.432
	.000	1.756	.778		.178	-.719	
	1.167	-9.892	2.979		.178	.233	
	2.333	-22.176	1.459		.178	.669	
	2.333			2.242			-10.432
MAX & MIN							
5	.000			-.008			-3.231
	.000	3.100	.982		-.006	.005	
	1.167	.097	2.847		-.006	-.001	
	2.333	-2.906	1.209		-.006	-.008	
	2.333			-.008			-3.231
MAX & MIN							
6	.000			.000			-3.308
	.000	3.197	1.310		.000	-.000	
	1.167	.194	3.287		.000	.000	
	2.333	-2.809	1.762		.000	.000	
	2.333			.000			-3.308
MAX							
ALL	.000			6.152			.918
	.000	22.968	3.514		1.025	.005	
	1.167	10.573	5.378		1.025	.470	
	2.333	-1.180	4.794		1.025	1.643	
	2.333			6.152			.918
MIN							
ALL	.000			-.008			-10.432
	.000	1.756	.778		-.006	-.719	
	1.167	-9.892	2.847		-.006	-.001	
	2.333	-22.176	1.209		-.006	-.008	
	2.333			-.008			-10.432
84 ----------							
MAX & MIN							
1	.000			7.812			-2.746
	.000	2.647	1.123		.827	-.345	
	1.167	-.356	2.460		.827	.620	
	2.333	-3.359	.293		.827	1.585	
	2.333			7.812			-2.746
MAX							
2	.000			7.357			.137
	.000	14.274	2.700		.793	-.130	
	1.167	5.642	3.527		.793	.524	
	2.333	-2.556	1.539		.793	1.426	
	2.333			7.357			.137

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST END I	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
MIN							
2	.000			3.833			-6.212
	.000	1.644	.777		.284	-.379	
	1.167	-6.541	2.200		.284	.338	
	2.333	-15.157	-.017		.284	.807	
	2.333			3.833			-6.212
MAX							
3	.000			7.543			.213
	.000	14.262	2.712		.760	-.099	
	1.167	5.629	3.525		.760	.516	
	2.333	-2.568	1.522		.760	1.380	
	2.333			7.543			.213
MIN							
3	.000			4.020			-6.136
	.000	1.632	.789		.251	-.348	
	1.167	-6.553	2.198		.251	.331	
	2.333	-15.169	-.033		.251	.760	
	2.333			4.020			-6.136
MAX							
4	.000			8.376			2.121
	.000	22.020	3.759		.940	-.052	
	1.167	9.634	4.241		.940	.592	
	2.333	-2.027	2.365		.940	1.650	
	2.333			8.376			2.121
MIN							
4	.000			2.504			-8.461
	.000	.970	.554		.091	-.466	
	1.167	-10.669	2.030		.091	.283	
	2.333	-23.029	-.229		.091	.617	
	2.333			2.504			-8.461
MAX & MIN							
5	.000			-.043			-2.378
	.000	2.480	.703		-.011	.010	
	1.167	-.523	1.845		-.011	-.004	
	2.333	-3.526	-.516		-.011	-.017	
	2.333			-.043			-2.378
MAX & MIN							
6	.000			.001			-2.220
	.000	2.551	1.235		.000	-.000	
	1.167	-.452	2.460		.000	.000	
	2.333	-3.455	.181		.000	.000	
	2.333			.001			-2.220
MAX							
ALL	.000			8.376			2.121
	.000	22.020	3.759		.940	.010	
	1.167	9.634	4.241		.940	.620	
	2.333	-2.027	2.365		.940	1.650	
	2.333			8.376			2.121
MIN							
ALL	.000			-.043			-8.461
	.000	.970	.554		-.011	-.466	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST END I	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	1.167	-10.669	1.845		-.011	-.004	
	2.333	-23.029	-.516		-.011	-.017	
	2.333			-.043			-8.461
85 ----------							
MAX & MIN							
1	.000			9.515			-2.688
	.000	2.142	-.217		.647	-.018	
	1.167	-.861	.530		.647	.736	
	2.333	-3.864	-2.227		.647	1.491	
	2.333			9.515			-2.688
MAX							
2	.000			9.055			.250
	.000	13.658	1.189		.696	.040	
	1.167	5.059	1.151		.696	.647	
	2.333	-3.118	-1.605		.696	1.437	
	2.333			9.055			.250
MIN							
2	.000			4.348			-6.139
	.000	1.040	-.679		.181	-.143	
	1.167	-7.168	.187		.181	.390	
	2.333	-15.793	-2.884		.181	.741	
	2.333			4.348			-6.139
MAX							
3	.000			9.155			.345
	.000	13.645	1.202		.668	.058	
	1.167	5.046	1.149		.668	.633	
	2.333	-3.131	-1.622		.668	1.389	
	2.333			9.155			.345
MIN							
3	.000			4.448			-6.043
	.000	1.028	-.666		.153	-.124	
	1.167	-7.180	.185		.153	.376	
	2.333	-15.806	-2.901		.153	.693	
	2.333			4.448			-6.043
MAX							
4	.000			10.414			2.337
	.000	21.326	2.142		.844	.098	
	1.167	8.997	1.571		.844	.741	
	2.333	-2.630	-1.196		.844	1.689	
	2.333			10.414			2.337
MIN							
4	.000			2.568			-8.310
	.000	.298	-.972		-.014	-.206	
	1.167	-11.380	-.037		-.014	.313	
	2.333	-23.754	-3.327		-.014	.528	
	2.333			2.568			-8.310
MAX & MIN							
5	.000			-.110			-2.685
	.000	2.009	-.858		-.024	.020	
	1.167	-.994	-.266		-.024	-.008	
	2.333	-3.997	-3.178		-.024	-.037	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		2.333			-.110			-2.685
	MAX & MIN							
	6	.000			.003			-2.217
		.000	2.049	-.110		.001	-.000	
		1.167	-.954	.529		.001	.000	
		2.333	-3.957	-2.337		.001	.001	
		2.333			.003			-2.217
	MAX							
	ALL	.000			10.414			2.337
		.000	21.326	2.142		.844	.098	
		1.167	8.997	1.571		.844	.741	
		2.333	-2.630	-1.196		.844	1.689	
		2.333			10.414			2.337
	MIN							
	ALL	.000			-.110			-8.310
		.000	.298	-.972		-.024	-.206	
		1.167	-11.380	-.266		-.024	-.008	
		2.333	-23.754	-3.327		-.024	-.037	
		2.333			-.110			-8.310
86	----------							
	MAX & MIN							
	1	.000			10.811			-2.385
		.000	2.171	-3.081		.469	.245	
		1.167	-.832	-2.299		.469	.792	
		2.333	-3.835	-5.021		.469	1.339	
		2.333			10.811			-2.385
	MAX							
	2	.000			10.507			.576
		.000	13.720	-2.282		.575	.166	
		1.167	5.156	-2.241		.575	.775	
		2.333	-3.022	-4.814		.575	1.423	
		2.333			10.507			.576
	MIN							
	2	.000			4.655			-6.139
		.000	1.092	-3.817		.085	.104	
		1.167	-7.115	-2.830		.085	.398	
		2.333	-15.742	-6.334		.085	.631	
		2.333			4.655			-6.139
	MAX							
	3	.000			10.535			.715
		.000	13.702	-2.259		.549	.174	
		1.167	5.139	-2.238		.549	.753	
		2.333	-3.040	-4.832		.549	1.370	
		2.333			10.535			.715
	MIN							
	3	.000			4.683			-6.001
		.000	1.074	-3.794		.059	.113	
		1.167	-7.133	-2.827		.059	.376	
		2.333	-15.760	-6.353		.059	.577	
		2.333			4.683			-6.001

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	MAX							
	4	.000			12.195			2.821
		.000	21.390	-1.698		.716	.185	
		1.167	9.120	-2.183		.716	.916	
		2.333	-2.509	-4.689		.716	1.713	
		2.333			12.195			2.821
	MIN							
	4	.000			2.442			-8.372
		.000	.344	-4.257		-.101	.082	
		1.167	-11.333	-3.165		-.101	.288	
		2.333	-23.708	-7.224		-.101	.391	
		2.333			2.442			-8.372
	MAX & MIN							
	5	.000			-.228			-2.961
		.000	2.075	-4.053		-.044	.036	
		1.167	-.928	-3.384		-.044	-.015	
		2.333	-3.931	-6.218		-.044	-.066	
		2.333			-.228			-2.961
	MAX & MIN							
	6	.000			.005			-2.037
		.000	2.086	-2.995		.001	-.001	
		1.167	-.917	-2.313		.001	.000	
		2.333	-3.920	-5.134		.001	.002	
		2.333			.005			-2.037
	MAX							
	ALL	.000			12.195			2.821
		.000	21.390	-1.698		.716	.245	
		1.167	9.120	-2.183		.716	.916	
		2.333	-2.509	-4.689		.716	1.713	
		2.333			12.195			2.821
	MIN							
	ALL	.000			-.228			-8.372
		.000	.344	-4.257		-.101	-.001	
		1.167	-11.333	-3.384		-.101	-.015	
		2.333	-23.708	-7.224		-.101	-.066	
		2.333			-.228			-8.372
87	----------							
	MAX & MIN							
	1	.000			11.885			1.343
		.000	3.632	-4.991		.536	.292	
		1.063	.897	-2.585		.536	.862	
		2.125	-1.838	-3.085		.536	1.431	
		2.125			11.885			1.343
	MAX							
	2	.000			11.409			4.775
		.000	15.567	-4.915		.403	.598	
		1.063	7.423	-2.491		.403	.840	
		2.125	-.453	-2.160		.403	1.116	
		2.125			11.409			4.775
	MIN							
	2	.000			5.099			-2.162

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		2.125			-.335			-4.186
88	----------							
	MAX & MIN							
	1	.000			12.874			1.484
		.000	3.749	-2.565		.398	.548	
		1.063	1.014	-.034		.398	.971	
		2.125	-1.721	-.410		.398	1.394	
		2.125			12.874			1.484
	MAX							
	2	.000			11.865			4.845
		.000	15.628	-2.104		.312	.705	
		1.063	7.476	.530		.312	.834	
		2.125	-.368	1.081		.312	1.076	
		2.125			11.865			4.845
	MIN							
	2	.000			5.714			-2.135
		.000	2.831	-3.485		.118	.270	
		1.063	-4.913	-.355		.118	.502	
		2.125	-12.966	-.735		.118	.735	
		2.125			5.714			-2.135
	MAX							
	3	.000			11.808			4.974
		.000	15.596	-2.070		.298	.695	
		1.063	7.445	.530		.298	.808	
		2.125	-.400	1.047		.298	1.035	
		2.125			11.808			4.974
	MIN							
	3	.000			5.657			-2.006
		.000	2.799	-3.451		.104	.259	
		1.063	-4.945	-.355		.104	.476	
		2.125	-12.998	-.769		.104	.694	
		2.125			5.657			-2.006
	MAX							
	4	.000			13.622			7.407
		.000	23.467	-1.724		.377	.888	
		1.063	11.704	.892		.377	.950	
		2.125	.452	1.975		.377	1.201	
		2.125			13.622			7.407
	MIN							
	4	.000			3.370			-4.227
		.000	2.138	-4.026		.054	.163	
		1.063	-8.945	-.581		.054	.397	
		2.125	-20.544	-1.051		.054	.632	
		2.125			3.370			-4.227
	MAX & MIN							
	5	.000			-.441			2.008
		.000	5.071	-3.413		-.028	.039	
		1.063	1.699	.183		-.028	.010	
		2.125	-1.673	.197		-.028	-.020	
		2.125			-.441			2.008

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	MAX & MIN							
6		.000			.010			1.578
		.000	3.744	-2.561		.001	-.001	
		1.063	1.009	-.036		.001	-.000	
		2.125	-1.726	-.417		.001	.000	
		2.125			.010			1.578
	MAX							
	ALL	.000			13.622			7.407
		.000	23.467	-1.724		.398	.888	
		1.063	11.704	.892		.398	.971	
		2.125	.452	1.975		.398	1.394	
		2.125			13.622			7.407
	MIN							
	ALL	.000			-.441			-4.227
		.000	2.138	-4.026		-.028	-.001	
		1.063	-8.945	-.581		-.028	-.000	
		2.125	-20.544	-1.051		-.028	-.020	
		2.125			-.441			-4.227
89	----------							
	MAX & MIN							
1		.000			13.558			.824
		.000	3.381	-.339		.238	.776	
		1.063	.646	1.800		.238	1.028	
		2.125	-2.089	1.034		.238	1.281	
		2.125			13.558			.824
	MAX							
2		.000			12.063			3.991
		.000	15.115	.607		.191	.828	
		1.063	6.960	2.765		.191	.837	
		2.125	-.851	2.731		.191	.991	
		2.125			12.063			3.991
	MIN							
2		.000			6.106			-2.581
		.000	2.419	-.728		.005	.426	
		1.063	-5.328	1.564		.005	.532	
		2.125	-13.421	.789		.005	.637	
		2.125			6.106			-2.581
	MAX							
3		.000			11.937			4.078
		.000	15.095	.625		.162	.828	
		1.063	6.940	2.763		.162	.807	
		2.125	-.870	2.708		.162	.931	
		2.125			11.937			4.078
	MIN							
3		.000			5.981			-2.493
		.000	2.399	-.709		-.024	.426	
		1.063	-5.348	1.562		-.024	.502	
		2.125	-13.441	.766		-.024	.577	
		2.125			5.981			-2.493
	MAX							
4		.000			13.749			6.327

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	22.888	1.276		.253	.993	
		1.063	11.120	3.395		.253	.938	
		2.125	-.075	3.796		.253	1.126	
		2.125			13.749			6.327
	MIN							
4		.000			3.822			-4.625
		.000	1.728	-.948		-.057	.323	
		1.063	-9.361	1.393		-.057	.430	
		2.125	-21.026	.560		-.057	.536	
		2.125			3.822			-4.625
	MAX & MIN							
5		.000			-.505			1.283
		.000	4.598	.224		-.013	.019	
		1.063	1.226	3.318		-.013	.005	
		2.125	-2.147	2.829		-.013	-.008	
		2.125			-.505			1.283
	MAX & MIN							
6		.000			.012			.860
		.000	3.379	-.337		.000	-.000	
		1.063	.644	1.800		.000	-.000	
		2.125	-2.091	1.032		.000	.000	
		2.125			.012			.860
	MAX							
	ALL	.000			13.749			6.327
		.000	22.888	1.276		.253	.993	
		1.063	11.120	3.395		.253	1.028	
		2.125	-.075	3.796		.253	1.281	
		2.125			13.749			6.327
	MIN							
	ALL	.000			-.505			-4.625
		.000	1.728	-.948		-.057	-.000	
		1.063	-9.361	1.393		-.057	-.000	
		2.125	-21.026	.560		-.057	-.008	
		2.125			-.505			-4.625
90	----------							
	MAX & MIN							
1		.000			13.901			.253
		.000	2.955	1.016		.079	.970	
		1.063	.221	2.703		.079	1.054	
		2.125	-2.514	1.485		.079	1.138	
		2.125			13.901			.253
	MAX							
2		.000			12.003			3.250
		.000	14.522	2.398		.068	.948	
		1.063	6.365	3.887		.068	.031	
		2.125	-1.405	3.124		.068	.883	
		2.125			12.003			3.250
	MIN							
2		.000			6.210			-2.811
		.000	1.935	.796		-.116	.565	
		1.063	-5.814	2.538		-.116	.540	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		2.125	-13.950	1.290		-.116	.515	
		2.125			6.210			-2.811
	MAX							
3		.000			11.767			3.280
		.000	14.515	2.402		.021	.963	
		1.063	6.358	3.883		.021	.795	
		2.125	-1.413	3.113		.021	.798	
		2.125			11.767			3.280
	MIN							
3		.000			5.974			-2.781
		.000	1.927	.800		-.163	.580	
		1.063	-5.822	2.534		-.163	.504	
		2.125	-13.958	1.279		-.163	.429	
		2.125			5.974			-2.781
	MAX							
4		.000			13.624			5.329
		.000	22.217	3.323		.129	1.102	
		1.063	10.445	4.663		.129	.923	
		2.125	-.682	4.187		.129	1.027	
		2.125			13.624			5.329
	MIN							
4		.000			3.970			-4.774
		.000	1.238	.655		-.177	.463	
		1.063	-9.854	2.415		-.177	.438	
		2.125	-21.591	1.131		-.177	.413	
		2.125			3.970			-4.774
	MAX & MIN							
5		.000			-.532			.408
		.000	3.796	2.773		-.004	.007	
		1.063	.424	5.015		-.004	.003	
		2.125	-2.949	3.673		-.004	-.001	
		2.125			-.532			.408
	MAX & MIN							
6		.000			.013			.262
		.000	2.955	1.017		.000	-.000	
		1.063	.220	2.703		.000	.000	
		2.125	-2.515	1.484		.000	.000	
		2.125			.013			.262
	MAX							
	ALL	.000			13.901			5.329
		.000	22.217	3.323		.129	1.102	
		1.063	10.445	5.015		.129	1.054	
		2.125	-.682	4.187		.129	1.138	
		2.125			13.901			5.329
	MIN							
	ALL	.000			-.532			-4.774
		.000	1.238	.655		-.177	-.000	
		1.063	-9.854	2.415		-.177	.000	
		2.125	-21.591	1.131		-.177	-.001	
		2.125			-.532			-4.774

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
101	----------							
	MAX & MIN							
1		.000			5.070			-3.834
		.000	29.361	-10.798		-2.478	2.064	
		.750	29.361	11.223		-2.478	.205	
		1.500	29.361	33.244		-2.478	-1.654	
		1.500			5.070			-3.834
	MAX							
2		.000			4.090			-3.458
		.000	43.581	-9.670		-1.840	2.065	
		.750	43.581	17.293		-1.840	.019	
		1.500	43.581	49.979		-1.840	-1.570	
		1.500			4.090			-3.458
	MIN							
2		.000			2.039			-8.474
		.000	27.202	-15.392		-2.799	1.516	
		.750	27.202	10.530		-2.799	-.061	
		1.500	27.202	30.931		-2.799	-2.133	
		1.500			2.039			-8.474
	MAX							
3		.000			3.858			-3.476
		.000	43.707	-9.740		-2.276	2.292	
		.750	43.707	17.318		-2.276	-.081	
		1.500	43.707	50.098		-2.276	-1.996	
		1.500			3.858			-3.476
	MIN							
3		.000			1.808			-8.492
		.000	27.328	-15.462		-3.235	1.743	
		.750	27.328	10.555		-3.235	-.160	
		1.500	27.328	31.051		-3.235	-2.559	
		1.500			1.808			-8.492
	MAX							
4		.000			4.679			-3.215
		.000	53.115	-8.947		-1.482	2.269	
		.750	53.115	21.352		-1.482	.047	
		1.500	53.115	61.188		-1.482	-1.412	
		1.500			4.679			-3.215
	MIN							
4		.000			1.262			-11.576
		.000	25.817	-18.484		-3.081	1.354	
		.750	25.817	10.080		-3.081	-.086	
		1.500	25.817	29.443		-3.081	-2.350	
		1.500			1.262			-11.576
	MAX & MIN							
5		.000			-.007			-3.788
		.000	28.133	-10.709		-.021	.011	
		.750	28.133	10.391		-.021	-.004	
		1.500	28.133	31.490		-.021	-.020	
		1.500			-.007			-3.788
	MAX & MIN							
6		.000			.000			-3.996

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	30.527	-11.421		.000	-.000	
		.750	30.527	11.474		.000	.000	
		1.500	30.527	34.369		.000	.000	
		1.500			.000			-3.996
	MAX							
	ALL	.000			5.070			-3.215
		.000	53.115	-8.947		.000	2.292	
		.750	53.115	21.352		.000	.205	
		1.500	53.115	61.188		.000	.000	
		1.500			5.070			-3.215
	MIN							
	ALL	.000			-.007			-11.576
		.000	25.817	-18.484		-3.235	-.000	
		.750	25.817	10.080		-3.235	-.160	
		1.500	25.817	29.443		-3.235	-2.559	
		1.500			-.007			-11.576
102	----------							
	MAX & MIN							
	1	.000			-1.426			-3.319
		.000	-3.723	5.114		-3.120	3.066	
		.750	-3.723	2.322		-3.120	.725	
		1.500	-3.723	-.470		-3.120	-1.615	
		1.500			-1.426			-3.319
	MAX							
	2	.000			-.659			-.401
		.000	-2.813	6.877		-2.018	2.813	
		.750	-2.813	4.830		-2.018	.389	
		1.500	-2.813	2.782		-2.018	-1.562	
		1.500			-.659			-.401
	MIN							
	2	.000			-.778			-8.119
		.000	-14.445	4.945		-3.314	1.903	
		.750	-14.445	2.083		-3.314	.170	
		1.500	-14.445	-1.248		-3.314	-2.139	
		1.500			-.778			-8.119
	MAX							
	3	.000			-.583			-.431
		.000	-2.808	6.879		-2.385	2.927	
		.750	-2.808	4.835		-2.385	.228	
		1.500	-2.808	2.790		-2.385	-1.999	
		1.500			-.583			-.431
	MIN							
	3	.000			-.701			-8.150
		.000	-14.441	4.946		-3.681	2.017	
		.750	-14.441	2.088		-3.681	.009	
		1.500	-14.441	-1.240		-3.681	-2.577	
		1.500			-.701			-8.150
	MAX							
	4	.000			-.624			1.532
		.000	-2.204	8.052		-1.532	3.143	
		.750	-2.204	6.502		-1.532	.476	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		1.500	-2.204	4.953		-1.532	-1.403	
		1.500			-.624			1.532
	MIN							
	4	.000			-.821			-11.332
		.000	-21.592	4.831		-3.692	1.626	
		.750	-21.592	1.924		-3.692	.112	
		1.500	-21.592	-1.765		-3.692	-2.365	
		1.500			-.821			-11.332
	MAX & MIN							
	5	.000			.002			-3.335
		.000	-3.811	4.791		-.024	.010	
		.750	-3.811	1.933		-.024	-.008	
		1.500	-3.811	-.925		-.024	-.025	
		1.500			.002			-3.335
	MAX & MIN							
	6	.000			.000			-3.587
		.000	-3.682	5.149		.001	-.000	
		.750	-3.682	2.387		.001	.000	
		1.500	-3.682	-.374		.001	.001	
		1.500			.000			-3.587
	MAX							
	ALL	.000			.002			1.532
		.000	-2.204	8.052		.001	3.143	
		.750	-2.204	6.502		.001	.725	
		1.500	-2.204	4.953		.001	.001	
		1.500			.002			1.532
	MIN							
	ALL	.000			-1.426			-11.332
		.000	-21.592	4.791		-3.692	-.000	
		.750	-21.592	1.924		-3.692	-.008	
		1.500	-21.592	-1.765		-3.692	-2.577	
		1.500			-1.426			-11.332
103	----------							
	MAX & MIN							
	1	.000			-1.687			-.984
		.000	-5.196	2.931		-2.544	2.377	
		.750	-5.196	-.966		-2.544	.469	
		1.500	-5.196	-4.862		-2.544	-1.439	
		1.500			-1.687			-.984
	MAX							
	2	.000			-.943			2.404
		.000	-4.862	4.269		-1.336	2.196	
		.750	-4.862	.530		-1.336	.331	
		1.500	-4.862	-3.209		-1.336	-1.035	
		1.500			-.943			2.404
	MIN							
	2	.000			-.969			-4.911
		.000	-16.343	2.246		-2.532	1.377	
		.750	-16.343	-1.651		-2.532	.171	
		1.500	-16.343	-5.953		-2.532	-1.558	
		1.500			-.969			-4.911

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	MAX							
	3	.000			-.906			2.377
		.000	-4.862	4.268		-1.461	2.228	
		.750	-4.862	.529		-1.461	.270	
		1.500	-4.862	-3.210		-1.461	-1.190	
		1.500			-.906			2.377
	MIN							
	3	.000			-.932			-4.938
		.000	-16.344	2.246		-2.657	1.409	
		.750	-16.344	-1.652		-2.657	.109	
		1.500	-16.344	-5.954		-2.657	-1.714	
		1.500			-.932			-4.938
	MAX							
	4	.000			-.935			4.652
		.000	-4.640	5.153		-.885	2.492	
		.750	-4.640	1.520		-.885	.390	
		1.500	-4.640	-2.114		-.885	-.881	
		1.500			-.935			4.652
	MIN							
	4	.000			-.978			-7.540
		.000	-23.776	1.782		-2.879	1.127	
		.750	-23.776	-2.115		-2.879	.123	
		1.500	-23.776	-6.688		-2.879	-1.753	
		1.500			-.978			-7.540
	MAX & MIN							
	5	.000			-.001			-1.126
		.000	-5.223	2.687		-.022	.010	
		.750	-5.223	-1.230		-.022	-.006	
		1.500	-5.223	-5.147		-.022	-.022	
		1.500			-.001			-1.126
	MAX & MIN							
	6	.000			.000			-1.213
		.000	-5.196	2.964		.001	-.000	
		.750	-5.196	-.933		.001	.000	
		1.500	-5.196	-4.831		.001	.001	
		1.500			.000			-1.213
	MAX							
	ALL	.000			.000			4.652
		.000	-4.640	5.153		.001	2.492	
		.750	-4.640	1.520		.001	.469	
		1.500	-4.640	-2.114		.001	.001	
		1.500			.000			4.652
	MIN							
	ALL	.000			-1.687			-7.540
		.000	-23.776	1.782		-2.879	-.000	
		.750	-23.776	-2.115		-2.879	-.006	
		1.500	-23.776	-6.688		-2.879	-1.753	
		1.500			-1.687			-7.540
104	----------							
	MAX & MIN							
	1	.000			-1.678			-.302

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	-5.362	1.060		-2.116	1.983	
		.750	-5.362	-2.962		-2.116	.396	
		1.500	-5.362	-6.983		-2.116	-1.191	
		1.500			-1.678			-.302
	MAX							
	2	.000			-.980			3.127
		.000	-5.085	1.814		-.923	1.882	
		.750	-5.085	-2.145		-.923	.330	
		1.500	-5.085	-6.103		-.923	-.722	
		1.500			-.980			3.127
	MIN							
	2	.000			-.990			-3.944
		.000	-16.547	.017		-2.109	1.069	
		.750	-16.547	-4.037		-2.109	.174	
		1.500	-16.547	-8.222		-2.109	-1.230	
		1.500			-.990			-3.944
	MAX							
	3	.000			-.966			3.100
		.000	-5.086	1.807		-.943	1.866	
		.750	-5.086	-2.152		-.943	.300	
		1.500	-5.086	-6.111		-.943	-.767	
		1.500			-.966			3.100
	MIN							
	3	.000			-.976			-3.971
		.000	-16.548	.010		-2.128	1.054	
		.750	-16.548	-4.044		-2.128	.143	
		1.500	-16.548	-8.230		-2.128	-1.275	
		1.500			-.976			-3.971
	MAX							
	4	.000			-.977			5.400
		.000	-4.902	2.293		-.475	2.175	
		.750	-4.902	-1.625		-.475	.386	
		1.500	-4.902	-5.543		-.475	-.570	
		1.500			-.977			5.400
	MIN							
	4	.000			-.992			-6.385
		.000	-24.006	-.703		-2.451	.821	
		.750	-24.006	-4.779		-2.451	.125	
		1.500	-24.006	-9.075		-2.451	-1.416	
		1.500			-.992			-6.385
	MAX & MIN							
	5	.000			-.006			-.506
		.000	-5.386	.852		-.035	.018	
		.750	-5.386	-3.187		-.035	-.008	
		1.500	-5.386	-7.226		-.035	-.034	
		1.500			-.006			-.506
	MAX & MIN							
	6	.000			.000			-.527
		.000	-5.361	1.088		.001	-.000	
		.750	-5.361	-2.932		.001	.000	
		1.500	-5.361	-6.952		.001	.001	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			1.500			.000			-.527
	MAX								
	ALL		.000			.000			5.400
			.000	-4.902	2.293		.001	2.175	
			.750	-4.902	-1.625		.001	.396	
			1.500	-4.902	-5.543		.001	.001	
			1.500			.000			5.400
	MIN								
	ALL		.000			-1.678			-6.385
			.000	-24.006	-.703		-2.451	-.000	
			.750	-24.006	-4.779		-2.451	-.008	
			1.500	-24.006	-9.075		-2.451	-1.416	
			1.500			-1.678			-6.385
105	----------								
	MAX & MIN								
	1		.000			-1.675			-.072
			.000	-5.506	-.054		-1.698	1.600	
			.750	-5.506	-4.183		-1.698	.327	
			1.500	-5.506	-8.313		-1.698	-.947	
			1.500			-1.675			-.072
	MAX								
	2		.000			-.993			3.339
			.000	-5.260	.366		-.607	1.621	
			.750	-5.260	-3.736		-.607	.299	
			1.500	-5.260	-7.839		-.607	-.510	
			1.500			-.993			3.339
	MIN								
	2		.000			-1.005			-3.553
			.000	-16.719	-1.076		-1.799	.811	
			.750	-16.719	-5.253		-1.799	.150	
			1.500	-16.719	-9.581		-1.799	-1.030	
			1.500			-1.005			-3.553
	MAX								
	3		.000			-.988			3.310
			.000	-5.261	.346		-.586	1.587	
			.750	-5.261	-3.757		-.586	.281	
			1.500	-5.261	-7.860		-.586	-.512	
			1.500			-.988			3.310
	MIN								
	3		.000			-.999			-3.582
			.000	-16.719	-1.095		-1.778	.776	
			.750	-16.719	-5.273		-1.778	.132	
			1.500	-16.719	-9.602		-1.778	-1.032	
			1.500			-.999			-3.582
	MAX								
	4		.000			-.990			5.593
			.000	-5.099	.579		-.157	1.914	
			.750	-5.099	-3.507		-.157	.352	
			1.500	-5.099	-7.594		-.157	-.356	
			1.500			-.990			5.593

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	MIN								
	4		.000			-1.009			-5.893
			.000	-24.196	-1.824		-2.144	.563	
			.750	-24.196	-6.035		-2.144	.104	
			1.500	-24.196	-10.497		-2.144	-1.221	
			1.500			-1.009			-5.893
	MAX & MIN								
	5		.000			-.013			-.342
			.000	-5.534	-.306		-.067	.037	
			.750	-5.534	-4.457		-.067	-.014	
			1.500	-5.534	-8.608		-.067	-.064	
			1.500			-.013			-.342
	MAX & MIN								
	6		.000			.000			-.291
			.000	-5.503	.002		.002	-.001	
			.750	-5.503	-4.125		.002	.000	
			1.500	-5.503	-8.253		.002	.002	
			1.500			.000			-.291
	MAX								
	ALL		.000			.000			5.593
			.000	-5.099	.579		.002	1.914	
			.750	-5.099	-3.507		.002	.352	
			1.500	-5.099	-7.594		.002	.002	
			1.500			.000			5.593
	MIN								
	ALL		.000			-1.675			-5.893
			.000	-24.196	-1.824		-2.144	-.001	
			.750	-24.196	-6.035		-2.144	-.014	
			1.500	-24.196	-10.497		-2.144	-1.221	
			1.500			-1.675			-5.893
106	----------								
	MAX & MIN								
	1		.000			-1.681			-.463
			.000	-6.051	.057		-1.292	1.244	
			.750	-6.051	-4.481		-1.292	.275	
			1.500	-6.051	-9.020		-1.292	-.694	
			1.500			-1.681			-.463
	MAX								
	2		.000			-.987			3.024
			.000	-5.900	.528		-.361	1.348	
			.750	-5.900	-3.986		-.361	.239	
			1.500	-5.900	-8.496		-.361	-.336	
			1.500			-.987			3.024
	MIN								
	2		.000			-1.019			-4.012
			.000	-17.371	-.360		-1.512	.599	
			.750	-17.371	-5.013		-1.512	.132	
			1.500	-17.371	-10.192		-1.512	-.878	
			1.500			-1.019			-4.012
	MAX								
	3		.000			-.987			2.982

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			.000	-5.907	.488		-.328	1.311	
			.750	-5.907	-4.031		-.328	.226	
			1.500	-5.907	-8.546		-.328	-.324	
			1.500			-.987			2.982
	MIN								
	3		.000			-1.019			-4.053
			.000	-17.378	-.400		-1.479	.562	
			.750	-17.378	-5.058		-1.479	.119	
			1.500	-17.378	-10.242		-1.479	-.866	
			1.500			-1.019			-4.053
	MAX								
	4		.000			-.977			5.292
			.000	-5.817	.696		.073	1.616	
			.750	-5.817	-3.814		.073	.274	
			1.500	-5.817	-8.317		.073	-.178	
			1.500			-.977			5.292
	MIN								
	4		.000			-1.029			-6.435
			.000	-24.934	-.784		-1.845	.368	
			.750	-24.934	-5.526		-1.845	.095	
			1.500	-24.934	-11.144		-1.845	-1.081	
			1.500			-1.029			-6.435
	MAX & MIN								
	5		.000			-.019			-.875
			.000	-6.072	-.276		-.117	.073	
			.750	-6.072	-4.831		-.117	-.015	
			1.500	-6.072	-9.385		-.117	-.103	
			1.500			-.019			-.875
	MAX & MIN								
	6		.000			.000			-.658
			.000	-6.043	.180		.003	-.002	
			.750	-6.043	-4.352		.003	.000	
			1.500	-6.043	-8.885		.003	.002	
			1.500			.000			-.658
	MAX								
	ALL		.000			.000			5.292
			.000	-5.817	.696		.073	1.616	
			.750	-5.817	-3.814		.073	.275	
			1.500	-5.817	-8.317		.073	.002	
			1.500			.000			5.292
	MIN								
	ALL		.000			-1.681			-6.435
			.000	-24.934	-.784		-1.845	-.002	
			.750	-24.934	-5.526		-1.845	-.015	
			1.500	-24.934	-11.144		-1.845	-1.081	
			1.500			-1.681			-6.435
107	----------								
	MAX & MIN								
	1		.000			-1.839			.257
			.000	-7.608	3.458		-1.057	1.000	
			.750	-7.608	-2.248		-1.057	.207	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			1.500	-7.608	-7.954		-1.057	-.586	
			1.500			-1.839			.257
	MAX								
	2		.000			-.744			3.928
			.000	-7.377	4.177		-.470	.917	
			.750	-7.167	-1.320		-.470	.191	
			1.500	-6.957	-6.660		-.470	-.340	
			1.500			-.744			3.928
	MIN								
	2		.000			-1.337			-2.884
			.000	-19.152	3.479		-.990	.531	
			.750	-18.942	-2.787		-.990	.096	
			1.500	-18.732	-9.032		-.990	-.538	
			1.500			-1.337			-2.884
	MAX								
	3		.000			-.769			3.869
			.000	-7.398	4.174		-.468	.904	
			.750	-7.272	-1.370		-.468	.179	
			1.500	-7.146	-6.821		-.468	-.349	
			1.500			-.769			3.869
	MIN								
	3		.000			-1.362			-2.942
			.000	-19.173	3.476		-.987	.517	
			.750	-19.047	-2.838		-.987	.084	
			1.500	-18.921	-9.193		-.987	-.547	
			1.500			-1.362			-2.942
	MAX								
	4		.000			-.560			6.233
			.000	-7.300	4.614		-.273	1.055	
			.750	-7.174	-.886		-.273	.228	
			1.500	-7.048	-6.291		-.273	-.275	
			1.500			-.560			6.233
	MIN								
	4		.000			-1.549			-5.120
			.000	-26.924	3.450		-1.140	.411	
			.750	-26.798	-3.331		-1.140	.068	
			1.500	-26.672	-10.244		-1.140	-.605	
			1.500			-1.549			-5.120
	MAX & MIN								
	5		.000			-.003			-.759
			.000	-8.711	4.473		-.107	.130	
			.750	-8.711	-2.061		-.107	.049	
			1.500	-8.711	-8.594		-.107	-.031	
			1.500			-.003			-.759
	MAX & MIN								
	6		.000			.000			.143
			.000	-7.537	3.593		.003	-.003	
			.750	-7.537	-2.060		.003	-.001	
			1.500	-7.537	-7.712		.003	.001	
			1.500			.000			.143

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		MAX							
	ALL		.000			.000			6.233
			.000	-7.300	4.614		.003	1.055	
			.750	-7.167	-.886		.003	.228	
			1.500	-6.957	-6.291		.003	.001	
			1.500			.000			6.233
		MIN							
	ALL		.000			-1.839			-5.120
			.000	-26.924	3.450		-1.140	-.003	
			.750	-26.798	-3.331		-1.140	-.001	
			1.500	-26.672	-10.244		-1.140	-.605	
			1.500			-1.839			-5.120
108	----------								
	MAX & MIN								
	1		.000			-1.548			.590
			.000	-5.605	-.097		-.987	.880	
			.750	-5.605	-4.301		-.987	.140	
			1.500	-5.605	-8.505		-.987	-.600	
			1.500			-1.548			.590
		MAX							
	2		.000			-.921			4.198
			.000	-5.522	.219		-.449	.749	
			.750	-5.312	-3.942		-.449	.115	
			1.500	-5.102	-7.911		-.449	-.253	
			1.500			-.921			4.198
		MIN							
	2		.000			-.951			-2.615
			.000	-16.561	-.493		-.845	.420	
			.750	-16.351	-4.892		-.845	.065	
			1.500	-16.141	-9.474		-.845	-.519	
			1.500			-.951			-2.615
		MAX							
	3		.000			-.929			4.128
			.000	-5.511	.227		-.485	.767	
			.750	-5.385	-3.958		-.485	.106	
			1.500	-5.259	-8.014		-.485	-.289	
			1.500			-.929			4.128
		MIN							
	3		.000			-.959			-2.684
			.000	-16.550	-.486		-.882	.438	
			.750	-16.424	-4.908		-.882	.055	
			1.500	-16.298	-9.576		-.882	-.555	
			1.500			-.959			-2.684
		MAX							
	4		.000			-.910			6.427
			.000	-5.445	.425		-.315	.868	
			.750	-5.319	-3.775		-.315	.136	
			1.500	-5.193	-7.824		-.315	-.152	
			1.500			-.910			6.427
		MIN							
	4		.000			-.961			-4.926

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			1.500	-4.666	-8.216		-.365	-.258	
			1.500			-.948			3.481
		MIN							
	3		.000			-.963			-3.179
			.000	-15.960	-1.776		-.786	.289	
			.750	-15.834	-5.634		-.786	.014	
			1.500	-15.708	-9.602		-.786	-.513	
			1.500			-.963			-3.179
		MAX							
	4		.000			-.929			5.692
			.000	-4.780	-.652		-.151	.734	
			.750	-4.654	-4.449		-.151	.104	
			1.500	-4.528	-8.151		-.151	-.103	
			1.500			-.929			5.692
		MIN							
	4		.000			-.954			-5.409
			.000	-23.184	-2.417		-.853	.124	
			.750	-23.058	-6.316		-.853	.009	
			1.500	-22.932	-10.462		-.853	-.527	
			1.500			-.954			-5.409
		MAX & MIN							
	5		.000			.015			.027
			.000	-6.272	-.725		-.064	.038	
			.750	-6.272	-5.428		-.064	-.009	
			1.500	-6.272	-10.132		-.064	-.057	
			1.500			.015			.027
		MAX & MIN							
	6		.000			-.000			.080
			.000	-5.105	-.718		.001	-.001	
			.750	-5.105	-4.546		.001	.000	
			1.500	-5.105	-8.375		.001	.001	
			1.500			-.000			.080
		MAX							
	ALL		.000			.015			5.692
			.000	-4.780	-.652		.001	.734	
			.750	-4.654	-4.449		.001	.105	
			1.500	-4.510	-8.149		.001	.001	
			1.500			.015			5.692
		MIN							
	ALL		.000			-1.529			-5.409
			.000	-23.184	-2.417		-.853	-.001	
			.750	-23.058	-6.316		-.853	-.009	
			1.500	-22.932	-10.462		-.853	-.527	
			1.500			-1.529			-5.409
110	----------								
	MAX & MIN								
	1		.000			-1.531			-.012
			.000	-5.047	-.625		-.342	.311	
			.750	-5.047	-4.410		-.342	.054	
			1.500	-5.047	-8.196		-.342	-.202	
			1.500			-1.531			-.012

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			.000	-23.843	-.762		-.976	.320	
			.750	-23.717	-5.359		-.976	.052	
			1.500	-23.591	-10.429		-.976	-.595	
			1.500			-.961			-4.926
		MAX & MIN							
	5		.000			.018			.572
			.000	-7.036	.496		-.107	.073	
			.750	-7.036	-4.780		-.107	-.007	
			1.500	-7.036	-10.057		-.107	-.087	
			1.500			.018			.572
		MAX & MIN							
	6		.000			-.000			.556
			.000	-5.596	.022		.003	-.002	
			.750	-5.596	-4.175		.003	.000	
			1.500	-5.596	-8.372		.003	.002	
			1.500			-.000			.556
		MAX							
	ALL		.000			.018			6.427
			.000	-5.445	.496		.003	.880	
			.750	-5.312	-3.775		.003	.140	
			1.500	-5.102	-7.824		.003	.002	
			1.500			.018			6.427
		MIN							
	ALL		.000			-1.548			-4.926
			.000	-23.843	-.762		-.987	-.002	
			.750	-23.717	-5.359		-.987	-.007	
			1.500	-23.591	-10.429		-.987	-.600	
			1.500			-1.548			-4.926
109	----------								
	MAX & MIN								
	1		.000			-1.529			.090
			.000	-5.108	-.776		-.683	.617	
			.750	-5.108	-4.607		-.683	.105	
			1.500	-5.108	-8.438		-.683	-.406	
			1.500			-1.529			.090
		MAX							
	2		.000			-.934			3.534
			.000	-4.930	-.759		-.295	.614	
			.750	-4.720	-4.533		-.295	.082	
			1.500	-4.510	-8.149		-.295	-.195	
			1.500			-.934			3.534
		MIN							
	2		.000			-.949			-3.127
			.000	-15.972	-1.818		-.716	.247	
			.750	-15.762	-5.653		-.716	.025	
			1.500	-15.552	-9.535		-.716	-.449	
			1.500			-.949			-3.127
		MAX							
	3		.000			-.948			3.481
			.000	-4.918	-.717		-.365	.655	
			.750	-4.792	-4.514		-.365	.071	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		MAX							
	2		.000			-.943			3.266
			.000	-4.858	-.611		-.164	.481	
			.750	-4.648	-4.428		-.164	.055	
			1.500	-4.438	-7.981		-.164	-.129	
			1.500			-.943			3.266
		MIN							
	2		.000			-.951			-3.169
			.000	-15.902	-1.886		-.570	.116	
			.750	-15.692	-5.674		-.570	-.007	
			1.500	-15.482	-9.358		-.570	-.371	
			1.500			-.951			-3.169
		MAX							
	3		.000			-.961			3.239
			.000	-4.845	-.553		-.275	.558	
			.750	-4.719	-4.392		-.275	.048	
			1.500	-4.593	-8.030		-.275	-.220	
			1.500			-.961			3.239
		MIN							
	3		.000			-.969			-3.197
			.000	-15.889	-1.829		-.682	.193	
			.750	-15.763	-5.639		-.682	-.015	
			1.500	-15.637	-9.407		-.682	-.462	
			1.500			-.969			-3.197
		MAX							
	4		.000			-.940			5.379
			.000	-4.699	-.456		-.026	.602	
			.750	-4.573	-4.352		-.026	.077	
			1.500	-4.447	-7.977		-.026	-.046	
			1.500			-.940			5.379
		MIN							
	4		.000			-.953			-5.346
			.000	-23.104	-2.582		-.704	-.006	
			.750	-22.978	-6.430		-.704	-.028	
			1.500	-22.852	-10.273		-.704	-.449	
			1.500			-.953			-5.346
		MAX & MIN							
	5		.000			.009			-.056
			.000	-5.943	-.876		-.027	.016	
			.750	-5.943	-5.333		-.027	-.005	
			1.500	-5.943	-9.790		-.027	-.025	
			1.500			.009			-.056
		MAX & MIN							
	6		.000			-.000			-.015
			.000	-5.046	-.598		.001	-.000	
			.750	-5.046	-4.382		.001	.000	
			1.500	-5.046	-8.167		.001	.001	
			1.500			-.000			-.015
		MAX							
	ALL		.000			.009			5.379
			.000	-4.699	-.456		.001	.602	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			.750	-4.573	-4.352		.001	.077	
			1.500	-4.438	-7.977		.001	.001	
			1.500			.009			5.379
		MIN							
		ALL	.000			-1.531			-5.346
			.000	-23.104	-2.582		-.704	-.006	
			.750	-22.978	-6.430		-.704	-.028	
			1.500	-22.852	-10.273		-.704	-.462	
			1.500			-1.531			-5.346
111	----------								
		MAX & MIN							
		1	.000			-1.532			
			.000	-5.031	-.542		.000	.000	.000
			.750	-5.031	-4.316		.000	.000	
			1.500	-5.031	-8.089		.000	.000	
			1.500			-1.532			.000
		MAX							
		2	.000			-.916			3.122
			.000	-4.840	-.515		.047	.376	
			.750	-4.630	-4.338		.047	.112	
			1.500	-4.420	-7.876		.047	.084	
			1.500			-.916			3.122
		MIN							
		2	.000			-.921			-3.122
			.000	-15.883	-1.850		-.354	.014	
			.750	-15.673	-5.627		-.354	.048	
			1.500	-15.463	-9.267		-.354	-.154	
			1.500			-.921			-3.122
		MAX							
		3	.000			-.916			3.122
			.000	-4.827	-.454		-.056	.506	
			.750	-4.701	-4.298		-.056	.165	
			1.500	-4.575	-7.921		-.056	.060	
			1.500			-.916			3.122
		MIN							
		3	.000			-.921			-3.121
			.000	-15.871	-1.789		-.456	.144	
			.750	-15.745	-5.587		-.456	.101	
			1.500	-15.619	-9.312		-.456	-.178	
			1.500			-.921			-3.121
		MAX							
		4	.000			-.914			5.203
			.000	-4.678	-.338		.180	.497	
			.750	-4.552	-4.251		.180	.133	
			1.500	-4.426	-7.859		.180	.163	
			1.500			-.914			5.203
		MIN							
		4	.000			-.922			-5.203
			.000	-23.084	-2.563		-.487	-.107	
			.750	-22.958	-6.400		-.487	.027	
			1.500	-22.832	-10.178		-.487	-.234	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			1.500			-.922			-5.203
		MAX & MIN							
		5	.000			.007			.000
			.000	-5.898	-.815		.000	.000	
			.750	-5.898	-5.238		.000	.000	
			1.500	-5.898	-9.661		.000	.000	
			1.500			.007			.000
		MAX & MIN							
		6	.000			-.000			.000
			.000	-5.030	-.524		.000	.000	
			.750	-5.030	-4.297		.000	.000	
			1.500	-5.030	-8.069		.000	.000	
			1.500			-.000			.000
		MAX							
		ALL	.000			.007			5.203
			.000	-4.678	-.338		.180	.506	
			.750	-4.552	-4.251		.180	.165	
			1.500	-4.420	-7.859		.180	.163	
			1.500			.007			5.203
		MIN							
		ALL	.000			-1.532			-5.203
			.000	-23.084	-2.563		-.487	-.107	
			.750	-22.958	-6.400		-.487	.000	
			1.500	-22.832	-10.178		-.487	-.234	
			1.500			-1.532			-5.203
122	----------								
		MAX & MIN							
		1	.000			1.544			-3.668
			.000	7.785	14.338		-2.901	2.228	
			.750	7.785	20.177		-2.901	.052	
			1.500	7.785	26.016		-2.901	-2.124	
			1.500			1.544			-3.668
		MAX							
		2	.000			.884			-1.162
			.000	16.508	21.472		-1.377	1.646	
			.750	16.508	33.497		-1.377	-.125	
			1.500	16.508	45.878		-1.377	-1.401	
			1.500			.884			-1.162
		MIN							
		2	.000			.124			-8.119
			.000	5.537	13.727		-2.457	1.042	
			.750	5.537	19.198		-2.457	-.230	
			1.500	5.537	24.278		-2.457	-2.010	
			1.500			.124			-8.119
		MAX							
		3	.000			.515			-1.229
			.000	16.589	21.428		-1.365	1.497	
			.750	16.589	33.514		-1.365	-.265	
			1.500	16.589	45.956		-1.365	-1.532	
			1.500			.515			-1.229

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		MIN							
		3	.000			-.244			-8.186
			.000	5.619	13.683		-2.445	.892	
			.750	5.619	19.215		-2.445	-.371	
			1.500	5.619	24.356		-2.445	-2.141	
			1.500			-.244			-8.186
		MAX							
		4	.000			1.103			.484
			.000	22.354	26.218		-.968	1.868	
			.750	22.354	42.390		-.968	-.088	
			1.500	22.354	59.156		-.968	-1.220	
			1.500			1.103			.484
		MIN							
		4	.000			-.162			-11.110
			.000	4.070	13.309		-2.769	.861	
			.750	4.070	18.558		-2.769	-.264	
			1.500	4.070	23.156		-2.769	-2.236	
			1.500			-.162			-11.110
		MAX & MIN							
		5	.000			-.016			-3.964
			.000	7.831	12.625		-.003	-.004	
			.750	7.831	18.499		-.003	-.006	
			1.500	7.831	24.372		-.003	-.009	
			1.500			-.016			-3.964
		MAX & MIN							
		6	.000			.000			-4.259
			.000	8.512	13.997		.000	.000	
			.750	8.512	20.381		.000	.000	
			1.500	8.512	26.765		.000	.000	
			1.500			.000			-4.259
		MAX							
		ALL	.000			1.544			.484
			.000	22.354	26.218		.000	2.228	
			.750	22.354	42.390		.000	.052	
			1.500	22.354	59.156		.000	.000	
			1.500			1.544			.484
		MIN							
		ALL	.000			-.244			-11.110
			.000	4.070	12.625		-2.901	-.004	
			.750	4.070	18.499		-2.901	-.371	
			1.500	4.070	23.156		-2.901	-2.236	
			1.500			-.244			-11.110
123	----------								
		MAX & MIN							
		1	.000			-1.023			-4.508
			.000	.475	11.329		-6.702	5.763	
			.750	.475	11.685		-6.702	.736	
			1.500	.475	12.041		-6.702	-4.290	
			1.500			-1.023			-4.508
		MAX							
		2	.000			-.244			1.650

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			.000	7.996	19.481		-3.271	4.460	
			.750	7.996	24.813		-3.271	.190	
			1.500	7.996	29.975		-3.271	-3.060	
			1.500			-.244			1.650
		MIN							
		2	.000			-.392			-12.803
			.000	-3.156	10.654		-5.962	2.778	
			.750	-3.156	10.904		-5.962	-.189	
			1.500	-3.156	11.177		-5.962	-4.404	
			1.500			-.392			-12.803
		MAX							
		3	.000			-.060			1.492
			.000	7.998	19.485		-3.343	4.141	
			.750	7.998	24.817		-3.343	-.223	
			1.500	7.998	29.981		-3.343	-3.488	
			1.500			-.060			1.492
		MIN							
		3	.000			-.207			-12.961
			.000	-3.154	10.657		-6.034	2.459	
			.750	-3.154	10.909		-6.034	-.562	
			1.500	-3.154	11.183		-6.034	-4.831	
			1.500			-.207			-12.961
		MAX							
		4	.000			-.196			5.699
			.000	13.012	24.922		-2.254	5.070	
			.750	13.012	33.571		-2.254	.285	
			1.500	13.012	41.939		-2.254	-2.668	
			1.500			-.196			5.699
		MIN							
		4	.000			-.442			-18.388
			.000	-5.575	10.209		-6.739	2.266	
			.750	-5.575	10.391		-6.739	-.281	
			1.500	-5.575	10.609		-6.739	-4.908	
			1.500			-.442			-18.388
		MAX & MIN							
		5	.000			.005			-5.466
			.000	.272	9.910		-.015	-.010	
			.750	.272	10.114		-.015	-.021	
			1.500	.272	10.319		-.015	-.032	
			1.500			.005			-5.466
		MAX & MIN							
		6	.000			-.000			-5.897
			.000	.493	11.413		.000	.000	
			.750	.493	11.783		.000	.000	
			1.500	.493	12.152		.000	.001	
			1.500			-.000			-5.897
		MAX							
		ALL	.000			.005			5.699
			.000	13.012	24.922		.000	5.763	
			.750	13.012	33.571		.000	.736	
			1.500	13.012	41.939		.000	.001	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		1.500			.005			5.699
	MIN							
	ALL	.000			-1.023			-18.388
		.000	-5.575	9.910		-6.739	-.010	
		.750	-5.575	10.114		-6.739	-.562	
		1.500	-5.575	10.319		-6.739	-4.908	
		1.500			-1.023			-18.388
124	----------							
	MAX & MIN							
	1	.000			-1.220			-.729
		.000	-1.797	-.218		-5.840	4.924	
		.750	-1.797	-1.565		-5.840	.543	
		1.500	-1.797	-2.913		-5.840	-3.837	
		1.500			-1.220			-.729
	MAX							
	2	.000			-.565			4.629
		.000	4.404	4.177		-2.620	4.179	
		.750	4.404	4.360		-2.620	.284	
		1.500	4.404	7.401		-2.620	-2.353	
		1.500			-.565			4.629
	MIN							
	2	.000			-.625			-7.245
		.000	-5.897	-4.669		-5.331	2.511	
		.750	-5.897	-3.984		-5.331	.079	
		1.500	-5.897	-4.332		-5.331	-3.685	
		1.500			-.625			-7.245
	MAX							
	3	.000			-.474			4.476
		.000	4.402	4.177		-2.606	4.018	
		.750	4.402	4.358		-2.606	.134	
		1.500	4.402	7.398		-2.606	-2.493	
		1.500			-.474			4.476
	MIN							
	3	.000			-.535			-7.397
		.000	-5.899	-4.669		-5.317	2.350	
		.750	-5.899	-3.986		-5.317	-.071	
		1.500	-5.899	-4.335		-5.317	-3.825	
		1.500			-.535			-7.397
	MAX							
	4	.000			-.544			8.151
		.000	8.537	7.104		-1.594	4.778	
		.750	8.537	8.306		-1.594	.366	
		1.500	8.537	14.273		-1.594	-1.951	
		1.500			-.544			8.151
	MIN							
	4	.000			-.645			-11.639
		.000	-8.631	-7.640		-6.113	1.998	
		.750	-8.631	-5.600		-6.113	.024	
		1.500	-8.631	-5.281		-6.113	-4.170	
		1.500			-.645			-11.639

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT ID	LOAD ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	MAX & MIN							
	5	.000			-.004			-1.943
		.000	-1.864	-.943		-.020	-.004	
		.750	-1.864	-2.340		-.020	-.019	
		1.500	-1.864	-3.738		-.020	-.034	
		1.500			-.004			-1.943
	MAX & MIN							
	6	.000			.000			-2.074
		.000	-1.815	-.173		.000	.000	
		.750	-1.815	-1.535		.000	.000	
		1.500	-1.815	-2.896		.000	.001	
		1.500			.000			-2.074
	MAX							
	ALL	.000			.000			8.151
		.000	8.537	7.104		.000	4.924	
		.750	8.537	8.306		.000	.543	
		1.500	8.537	14.273		.000	.001	
		1.500			.000			8.151
	MIN							
	ALL	.000			-1.220			-11.639
		.000	-8.631	-7.640		-6.113	-.004	
		.750	-8.631	-5.600		-6.113	-.071	
		1.500	-8.631	-5.281		-6.113	-4.170	
		1.500			-1.220			-11.639
125	----------							
	MAX & MIN							
	1	.000			-1.211			.362
		.000	-2.138	-6.051		-4.912	4.143	
		.750	-2.138	-7.654		-4.912	.458	
		1.500	-2.138	-9.258		-4.912	-3.226	
		1.500			-1.211			.362
	MAX							
	2	.000			-.661			5.262
		.000	3.945	-3.917		-1.978	3.764	
		.750	3.945	-3.990		-1.978	.337	
		1.500	3.945	-1.031		-1.978	-1.802	
		1.500			-.661			5.262
	MIN							
	2	.000			-.684			-5.202
		.000	-6.239	-11.940		-4.687	2.097	
		.750	-6.239	-11.669		-4.687	.148	
		1.500	-6.239	-11.399		-4.687	-3.127	
		1.500			-.684			-5.202
	MAX							
	3	.000			-.625			5.112
		.000	3.946	-3.927		-1.906	3.640	
		.750	3.946	-3.999		-1.906	.267	
		1.500	3.946	-1.039		-1.906	-1.818	
		1.500			-.625			5.112
	MIN							
	3	.000			-.649			-5.352

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			.000	-6.238	-11.949		-4.616	1.973	
			.750	-6.238	-11.678		-4.616	.077	
			1.500	-6.238	-11.407		-4.616	-3.144	
			1.500			-.649			-5.352
	MAX								
		4	.000			-.652			8.490
			.000	8.004	-2.523		-.953	4.361	
			.750	8.004	-1.571		-.953	.408	
			1.500	8.004	4.432		-.953	-1.399	
			1.500			-.652			8.490
	MIN								
		4	.000			-.690			-8.949
			.000	-8.968	-15.893		-5.468	1.583	
			.750	-8.968	-14.370		-5.468	.092	
			1.500	-8.968	-12.847		-5.468	-3.608	
			1.500			-.690			-8.949
	MAX & MIN								
		5	.000			-.017			-.994
			.000	-2.190	-6.630		-.043	-.002	
			.750	-2.190	-8.273		-.043	-.035	
			1.500	-2.190	-9.916		-.043	-.067	
			1.500			-.017			-.994
	MAX & MIN								
		6	.000			.000			-.996
			.000	-2.144	-6.019		.001	.000	
			.750	-2.144	-7.627		.001	.001	
			1.500	-2.144	-9.236		.001	.002	
			1.500			.000			-.996
	MAX								
		ALL	.000			.000			8.490
			.000	8.004	-2.523		.001	4.361	
			.750	8.004	-1.571		.001	.458	
			1.500	8.004	4.432		.001	.002	
			1.500			.000			8.490
	MIN								
		ALL	.000			-1.211			-8.949
			.000	-8.968	-15.893		-5.468	-.002	
			.750	-8.968	-14.370		-5.468	-.035	
			1.500	-8.968	-12.847		-5.468	-3.608	
			1.500			-1.211			-8.949
126	----------								
	MAX & MIN								
		1	.000			-1.207			.339
			.000	-2.208	-10.697		-3.982	3.364	
			.750	-2.208	-12.353		-3.982	.377	
			1.500	-2.208	-14.009		-3.982	-2.610	
			1.500			-1.207			.339
	MAX								
		2	.000			-.692			4.487
			.000	3.792	-9.780		-1.391	3.298	
			.750	3.792	-9.574		-1.391	.336	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			1.500	3.792	-6.730		-1.391	-1.353	
			1.500			-.692			4.487
	MIN								
		2	.000			-.723			-4.686
			.000	-6.298	-16.950		-4.073	1.652	
			.750	-6.298	-16.901		-4.073	.149	
			1.500	-6.298	-16.853		-4.073	-2.686	
			1.500			-.723			-4.686
	MAX								
		3	.000			-.679			4.345
			.000	3.805	-9.824		-1.293	3.107	
			.750	3.805	-9.609		-1.293	.299	
			1.500	3.805	-6.756		-1.293	-1.318	
			1.500			-.679			4.345
	MIN								
		3	.000			-.710			-4.828
			.000	-6.285	-16.994		-3.976	1.541	
			.750	-6.285	-16.936		-3.976	.111	
			1.500	-6.285	-16.879		-3.976	-2.651	
			1.500			-.710			-4.828
	MAX								
		4	.000			-.684			7.247
			.000	7.836	-9.305		-.376	3.886	
			.750	7.836	-7.827		-.376	.407	
			1.500	7.836	-1.950		-.376	-.953	
			1.500			-.684			7.247
	MIN								
		4	.000			-.735			-8.041
			.000	-8.981	-21.255		-4.847	1.143	
			.750	-8.981	-20.039		-4.847	.095	
			1.500	-8.981	-18.822		-4.847	-3.174	
			1.500			-.735			-8.041
	MAX & MIN								
		5	.000			-.042			-1.140
			.000	-2.241	-11.600		-.118	.008	
			.750	-2.241	-13.281		-.118	-.080	
			1.500	-2.241	-14.962		-.118	-.168	
			1.500			-.042			-1.140
	MAX & MIN								
		6	.000			.001			-1.051
			.000	-2.240	-10.593		.003	-.000	
			.750	-2.240	-12.273		.003	.002	
			1.500	-2.240	-13.952		.003	.004	
			1.500			.001			-1.051
	MAX								
		ALL	.000			.001			7.247
			.000	7.836	-9.305		.003	3.886	
			.750	7.836	-7.827		.003	.407	
			1.500	7.836	-1.950		.003	.004	
			1.500			.001			7.247

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		MIN							
		ALL	.000			-1.207			-8.041
			.000	-8.981	-21.255		-4.847	-.000	
			.750	-8.981	-20.039		-4.847	-.080	
			1.500	-8.981	-18.822		-4.847	-3.174	
			1.500			-1.207			-8.041
127	----------								
	MAX & MIN								
		1	.000			-1.211			-4.585
			.000	-8.178	-14.765		-3.094	2.644	
			.750	-8.178	-20.898		-3.094	.323	
			1.500	-8.178	-27.032		-3.094	-1.997	
			1.500			-1.211			-4.585
	MAX								
		2	.000			-.661			-.157
			.000	-3.856	-13.340		-.907	2.749	
			.750	-3.856	-19.085		-.907	.321	
			1.500	-3.856	-21.977		-.907	-.960	
			1.500			-.661			-.157
	MIN								
		2	.000			-.756			-12.265
			.000	-13.795	-18.552		-3.440	1.251	
			.750	-13.795	-24.800		-3.440	.105	
			1.500	-13.795	-31.048		-3.440	-2.344	
			1.500			-.756			-12.265
	MAX								
		3	.000			-.661			-.314
			.000	-3.836	-13.513		-.805	2.649	
			.750	-3.836	-19.242		-.805	.297	
			1.500	-3.836	-22.119		-.805	-.907	
			1.500			-.661			-.314
	MIN								
		3	.000			-.756			-12.423
			.000	-13.775	-18.724		-3.338	1.152	
			.750	-13.775	-24.957		-3.338	.082	
			1.500	-13.775	-31.210		-3.338	-2.291	
			1.500			-.756			-12.423
	MAX								
		4	.000			-.628			2.782
			.000	-.798	-13.009		.046	3.278	
			.750	-.798	-18.362		.046	.399	
			1.500	-.798	-18.961		.046	-.568	
			1.500			-.628			2.782
	MIN								
		4	.000			-.786			-17.399
			.000	-17.364	-21.694		-4.175	.782	
			.750	-17.364	-27.887		-4.175	.039	
			1.500	-17.364	-34.112		-4.175	-2.874	
			1.500			-.786			-17.399
	MAX & MIN								
		5	.000			-.087			-6.425

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			.000	-7.212	-17.522		-.351	.063	
			.750	-7.212	-22.931		-.351	-.200	
			1.500	-7.212	-28.340		-.351	-.464	
			1.500			-.087			-6.425
	MAX & MIN								
		6	.000			.002			-5.980
			.000	-8.336	-14.297		.008	-.001	
			.750	-8.336	-20.549		.008	.005	
			1.500	-8.336	-26.801		.008	.011	
			1.500			.002			-5.980
	MAX								
		ALL	.000			.002			2.782
			.000	-.798	-13.009		.046	3.278	
			.750	-.798	-18.362		.046	.399	
			1.500	-.798	-18.961		.046	.011	
			1.500			.002			2.782
	MIN								
		ALL	.000			-1.211			-17.399
			.000	-17.364	-21.694		-4.175	-.001	
			.750	-17.364	-27.887		-4.175	-.200	
			1.500	-17.364	-34.112		-4.175	-2.874	
			1.500			-1.211			-17.399
128	----------								
	MAX & MIN								
		1	.000			-2.052			1.349
			.000	-66.596	12.706		-2.393	2.304	
			.750	-66.596	-37.241		-2.393	.510	
			1.500	-66.596	-87.187		-2.393	-1.285	
			1.500			-2.052			1.349
	MAX								
		2	.000			.101			8.085
			.000	-63.696	19.657		-.922	2.059	
			.750	-63.486	-30.680		-.922	.552	
			1.500	-63.276	-80.393		-.922	-.345	
			1.500			.101			8.085
		MIN							
		2	.000			-2.091			-3.761
			.000	-83.582	12.158		-2.458	1.186	
			.750	-83.372	-42.024		-2.458	.119	
			1.500	-83.162	-96.708		-2.458	-1.638	
			1.500			-2.091			-3.761
		MAX							
		3	.000			.012			7.830
			.000	-64.216	19.349		-.878	2.000	
			.750	-64.090	-31.409		-.878	.525	
			1.500	-63.964	-81.606		-.878	-.338	
			1.500			.012			7.830
		MIN							
		3	.000			-2.181			-4.016
			.000	-84.102	11.850		-2.414	1.126	
			.750	-83.976	-42.753		-2.414	.093	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST END	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			1.500	-83.850	-97.921		-2.414	-1.631	
			1.500			-2.181			-4.016
	MAX								
	4		.000			.783			11.619
			.000	-63.435	23.231		-.427	2.377	
			.750	-63.309	-28.703		-.427	.697	
			1.500	-63.183	-79.766		-.427	.036	
			1.500			.783			11.619
	MIN								
	4		.000			-2.871			-8.123
			.000	-96.577	10.733		-2.987	.921	
			.750	-96.451	-47.610		-2.987	-.023	
			1.500	-96.325	-106.957		-2.987	-2.119	
			1.500			-2.871			-8.123
	MAX & MIN								
	5		.000			-.013			-14.004
			.000	-81.625	18.005		-1.068	.340	
			.750	-81.625	-43.214		-1.068	-.461	
			1.500	-81.625	-104.433		-1.068	-1.262	
			1.500			-.013			-14.004
	MAX & MIN								
	6		.000			.000			.698
			.000	-65.612	13.627		.025	-.008	
			.750	-65.612	-35.582		.025	.011	
			1.500	-65.612	-84.790		.025	.030	
			1.500			.000			.698
	MAX								
	ALL		.000			.783			11.619
			.000	-63.435	23.231		.025	2.377	
			.750	-63.309	-28.703		.025	.697	
			1.500	-63.183	-79.766		.025	.036	
			1.500			.783			11.619
	MIN								
	ALL		.000			-2.871			-14.004
			.000	-96.577	10.733		-2.987	-.008	
			.750	-96.451	-47.610		-2.987	-.461	
			1.500	-96.325	-106.957		-2.987	-2.119	
			1.500			-2.871			-14.004
129	----------								
	MAX & MIN								
	1		.000			-1.149			5.888
			.000	-8.645	-14.171		-2.237	1.843	
			.750	-8.645	-20.655		-2.237	.165	
			1.500	-8.645	-27.138		-2.237	-1.513	
			1.500			-1.149			5.888
	MAX								
	2		.000			-.665			15.372
			.000	-4.758	-12.551		-.964	1.526	
			.750	-4.548	-19.196		-.964	.137	
			1.500	-4.338	-22.528		-.964	-.637	
			1.500			-.665			15.372

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST END	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			.750	-17.316	-26.673		-2.237	-.170	
			1.500	-17.190	-35.833		-2.237	-1.528	
			1.500			-1.149			-2.842
130	----------								
	MAX & MIN								
	1		.000			-1.103			.826
			.000	-2.166	-11.967		-1.547	1.290	
			.750	-2.166	-13.591		-1.547	.129	
			1.500	-2.166	-15.215		-1.547	-1.032	
			1.500			-1.103			.826
	MAX								
	2		.000			-.717			7.912
			.000	3.493	-12.006		-.673	1.198	
			.750	3.703	-11.432		-.673	.007	
			1.500	3.913	-8.576		-.673	-.561	
			1.500			-.717			7.912
	MIN								
	2		.000			-.762			-3.796
			.000	-5.669	-17.989		-1.589	.457	
			.750	-5.459	-17.924		-1.589	-.076	
			1.500	-5.249	-17.701		-1.589	-1.186	
			1.500			-.762			-3.796
	MAX								
	3		.000			-.767			7.570
			.000	3.421	-11.909		-.801	1.219	
			.750	3.547	-11.421		-.801	-.068	
			1.500	3.673	-8.713		-.801	-.733	
			1.500			-.767			7.570
	MIN								
	3		.000			-.812			-4.138
			.000	-5.741	-17.892		-1.718	.478	
			.750	-5.615	-17.913		-1.718	-.152	
			1.500	-5.489	-17.838		-1.718	-1.358	
			1.500			-.812			-4.138
	MAX								
	4		.000			-.702			11.718
			.000	7.081	-11.817		-.368	1.452	
			.750	7.207	-10.000		-.368	.034	
			1.500	7.333	-4.547		-.368	-.348	
			1.500			-.702			11.718
	MIN								
	4		.000			-.777			-7.795
			.000	-8.189	-21.788		-1.895	.218	
			.750	-8.063	-20.819		-1.895	-.106	
			1.500	-7.937	-19.755		-1.895	-1.390	
			1.500			-.777			-7.795
	MAX & MIN								
	5		.000			.051			1.452
			.000	-2.550	-14.231		-.123	.022	
			.750	-2.550	-16.144		-.123	-.070	
			1.500	-2.550	-18.056		-.123	-.162	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST END	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			1.500			.051			1.452
	MAX & MIN								
	6		.000			-.001			.867
			.000	-2.207	-11.845		.003	-.001	
			.750	-2.207	-13.501		.003	.002	
			1.500	-2.207	-15.156		.003	.004	
			1.500			-.001			.867
	MAX								
	ALL		.000			.051			11.718
			.000	7.081	-11.817		.003	1.452	
			.750	7.207	-10.000		.003	.129	
			1.500	7.333	-4.547		.003	.004	
			1.500			.051			11.718
	MIN								
	ALL		.000			-1.103			-7.795
			.000	-8.189	-21.788		-1.895	-.001	
			.750	-8.063	-20.819		-1.895	-.152	
			1.500	-7.937	-19.755		-1.895	-1.390	
			1.500			-1.103			-7.795
131	----------								
	MAX & MIN								
	1		.000			-1.105			.173
			.000	-2.195	-9.557		-.780	.651	
			.750	-2.195	-11.203		-.780	.066	
			1.500	-2.195	-12.849		-.780	-.519	
			1.500			-1.105			.173
	MAX								
	2		.000			-.787			5.588
			.000	3.560	-9.461		-.551	.913	
			.750	3.770	-8.727		-.551	-.186	
			1.500	3.980	-5.820		-.551	-.669	
			1.500			-.787			5.588
	MIN								
	2		.000			-.809			-4.347
			.000	-5.717	-15.838		-1.466	.156	
			.750	-5.507	-15.576		-1.466	-.263	
			1.500	-5.297	-15.156		-1.466	-1.286	
			1.500			-.809			-4.347
	MAX								
	3		.000			-.877			5.421
			.000	3.470	-9.322		-.910	1.005	
			.750	3.596	-8.687		-.910	-.363	
			1.500	3.722	-5.943		-.910	-1.115	
			1.500			-.877			5.421
	MIN								
	3		.000			-.899			-4.514
			.000	-5.807	-15.699		-1.824	.248	
			.750	-5.681	-15.536		-1.824	-.440	
			1.500	-5.555	-15.279		-1.824	-1.731	
			1.500			-.899			-4.514

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		MAX							
	4		.000			-.779			8.750
			.000	7.158	-9.040		-.247	1.168	
			.750	7.284	-6.982		-.247	-.161	
			1.500	7.410	-1.471		-.247	-.462	
			1.500			-.779			8.750
		MIN							
	4		.000			-.816			-7.808
			.000	-8.303	-19.668		-1.771	-.094	
			.750	-8.177	-18.397		-1.771	-.289	
			1.500	-8.051	-17.031		-1.771	-1.489	
			1.500			-.816			-7.808
		MAX & MIN							
	5		.000			.027			.476
			.000	-.006	-12.110		-.041	.005	
			.750	-.006	-12.115		-.041	-.026	
			1.500	-.006	-12.119		-.041	-.056	
			1.500			.027			.476
		MAX & MIN							
	6		.000			-.001			.186
			.000	-2.200	-9.526		.001	-.000	
			.750	-2.200	-11.176		.001	.001	
			1.500	-2.200	-12.826		.001	.001	
			1.500			-.001			.186
		MAX							
		ALL	.000			.027			8.750
			.000	7.158	-9.040		.001	1.168	
			.750	7.284	-6.982		.001	.066	
			1.500	7.410	-1.471		.001	.001	
			1.500			.027			8.750
		MIN							
		ALL	.000			-1.105			-7.808
			.000	-8.303	-19.668		-1.824	-.094	
			.750	-8.177	-18.397		-1.824	-.440	
			1.500	-8.051	-17.031		-1.824	-1.731	
			1.500			-1.105			-7.808
132	----------								
		MAX & MIN							
	1		.000			-1.105			.000
			.000	-2.191	-8.975		.000	.000	
			.750	-2.191	-10.618		.000	.000	
			1.500	-2.191	-12.261		.000	.000	
			1.500			-1.105			.000
		MAX							
	2		.000			-.655			4.360
			.000	3.568	-8.874		-1.115	.931	
			.750	3.778	-8.059		-1.115	-.590	
			1.500	3.988	-5.147		-1.115	-1.501	
			1.500			-.655			4.360
		MIN							
	2		.000			-.669			-4.360

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			.000	-5.712	-15.251		-2.028	.171	
			.750	-5.502	-14.970		-2.028	-.666	
			1.500	-5.292	-14.532		-2.028	-2.112	
			1.500			-.669			-4.360
		MAX							
	3		.000			-.655			4.360
			.000	3.476	-8.730		-2.163	1.299	
			.750	3.602	-8.015		-2.163	-1.008	
			1.500	3.728	-5.266		-2.163	-2.705	
			1.500			-.655			4.360
		MIN							
	3		.000			-.669			-4.360
			.000	-5.804	-15.106		-3.076	.538	
			.750	-5.678	-14.925		-3.076	-1.085	
			1.500	-5.552	-14.651		-3.076	-3.317	
			1.500			-.669			-4.360
		MAX							
	4		.000			-.650			7.267
			.000	7.163	-8.426		-.811	1.185	
			.750	7.289	-6.238		-.811	-.564	
			1.500	7.415	-.724		-.811	-1.297	
			1.500			-.650			7.267
		MIN							
	4		.000			-.672			-7.267
			.000	-8.304	-19.053		-2.332	-.083	
			.750	-8.178	-17.757		-2.332	-.692	
			1.500	-8.052	-16.366		-2.332	-2.316	
			1.500			-.672			-7.267
		MAX & MIN							
	5		.000			.021			.000
			.000	.264	-11.274		.000	.000	
			.750	.264	-11.076		.000	.000	
			1.500	.264	-10.878		.000	.000	
			1.500			.021			.000
		MAX & MIN							
	6		.000			-.000			.000
			.000	-2.193	-8.958		.000	.000	
			.750	-2.193	-10.603		.000	.000	
			1.500	-2.193	-12.248		.000	.000	
			1.500			-.000			.000
		MAX							
		ALL	.000			.021			7.267
			.000	7.163	-8.426		.000	1.299	
			.750	7.289	-6.238		.000	.000	
			1.500	7.415	-.724		.000	.000	
			1.500			.021			7.267
		MIN							
		ALL	.000			-1.105			-7.267
			.000	-8.304	-19.053		-3.076	-.083	
			.750	-8.178	-17.757		-3.076	-1.085	
			1.500	-8.052	-16.366		-3.076	-3.317	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			1.500			-1.105			-7.267
143	----------								
		MAX & MIN							
	1		.000			-2.381			4.850
			.000	-9.238	27.513		-2.879	2.124	
			.750	-9.238	20.585		-2.879	-.035	
			1.500	-9.238	13.656		-2.879	-2.194	
			1.500			-2.381			4.850
		MAX							
	2		.000			-1.642			10.482
			.000	-6.064	47.205		-1.253	1.492	
			.750	-6.064	33.857		-1.253	-.182	
			1.500	-6.064	26.816		-1.253	-1.360	
			1.500			-1.642			10.482
		MIN							
	2		.000			-2.400			2.292
			.000	-17.798	26.423		-2.334	.897	
			.750	-17.798	19.771		-2.334	-.278	
			1.500	-17.798	12.739		-2.334	-1.973	
			1.500			-2.400			2.292
		MAX							
	3		.000			-1.945			10.413
			.000	-5.978	47.111		-1.168	1.288	
			.750	-5.978	33.827		-1.168	-.322	
			1.500	-5.978	26.851		-1.168	-1.437	
			1.500			-1.945			10.413
		MIN							
	3		.000			-2.703			2.223
			.000	-17.712	26.329		-2.249	.693	
			.750	-17.712	19.741		-2.249	-.419	
			1.500	-17.712	12.774		-2.249	-2.050	
			1.500			-2.703			2.223
		MAX							
	4		.000			-1.361			14.214
			.000	-3.921	60.312		-.844	1.708	
			.750	-3.921	42.704		-.844	-.149	
			1.500	-3.921	35.609		-.844	-1.179	
			1.500			-1.361			14.214
		MIN							
	4		.000			-2.624			.565
			.000	-23.477	25.674		-2.646	.717	
			.750	-23.477	19.227		-2.646	-.310	
			1.500	-23.477	12.148		-2.646	-2.201	
			1.500			-2.624			.565
		MAX & MIN							
	5		.000			-.016			3.964
			.000	-7.831	24.372		.003	-.009	
			.750	-7.831	18.499		.003	-.006	
			1.500	-7.831	12.625		.003	-.004	
			1.500			-.016			3.964

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		MAX & MIN							
	6		.000			.000			4.259
			.000	-8.512	26.765		.000	.000	
			.750	-8.512	20.381		.000	.000	
			1.500	-8.512	13.997		.000	.000	
			1.500			.000			4.259
		MAX							
		ALL	.000			.000			14.214
			.000	-3.921	60.312		.003	2.124	
			.750	-3.921	42.704		.003	.000	
			1.500	-3.921	35.609		.003	.000	
			1.500			.000			14.214
		MIN							
		ALL	.000			-2.703			.565
			.000	-23.477	24.372		-2.879	-.009	
			.750	-23.477	18.499		-2.879	-.419	
			1.500	-23.477	12.148		-2.879	-2.201	
			1.500			-2.703			.565
144	----------								
		MAX & MIN							
	1		.000			-.884			7.287
			.000	-.511	12.263		-6.705	4.342	
			.750	-.511	11.880		-6.705	-.687	
			1.500	-.511	11.497		-6.705	-5.716	
			1.500			-.884			7.287
		MAX							
	2		.000			-.190			18.218
			.000	8.683	30.168		-2.689	2.881	
			.750	8.683	24.981		-2.689	-.854	
			1.500	8.683	27.381		-2.689	-3.398	
			1.500			-.190			18.218
		MIN							
	2		.000			-.345			1.667
			.000	-8.028	10.125		-5.380	1.574	
			.750	-8.028	11.176		-5.380	-1.177	
			1.500	-8.028	10.863		-5.380	-5.099	
			1.500			-.345			1.667
		MAX							
	3		.000			.002			18.057
			.000	8.686	30.150		-2.374	2.296	
			.750	8.686	24.965		-2.374	-1.203	
			1.500	8.686	27.367		-2.374	-3.511	
			1.500			.002			18.057
		MIN							
	3		.000			-.153			1.506
			.000	-8.025	10.107		-5.065	.989	
			.750	-8.025	11.160		-5.065	-1.526	
			1.500	-8.025	10.850		-5.065	-5.212	
			1.500			-.153			1.506
		MAX							
	4		.000			-.141			25.452

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			.000	14.812	42.108		-1.669	3.360	
			.750	14.812	33.719		-1.669	-.755	
			1.500	14.812	37.975		-1.669	-2.886	
			1.500			-.141			25.452
		MIN							
		4	.000			-.400			-2.133
			.000	-13.040	8.704		-6.154	1.182	
			.750	-13.040	10.711		-6.154	-1.294	
			1.500	-13.040	10.446		-6.154	-5.722	
			1.500			-.400			-2.133
		MAX & MIN							
		5	.000			.005			5.466
			.000	-.272	10.319		.015	-.032	
			.750	-.272	10.114		.015	-.021	
			1.500	-.272	9.910		.015	-.010	
			1.500			.005			5.466
		MAX & MIN							
		6	.000			-.000			5.897
			.000	-.493	12.152		-.000	.001	
			.750	-.493	11.783		-.000	.000	
			1.500	-.493	11.413		-.000	.000	
			1.500			-.000			5.897
		MAX							
		ALL	.000			.005			25.452
			.000	14.812	42.108		.015	4.342	
			.750	14.812	33.719		.015	.000	
			1.500	14.812	37.975		.015	.000	
			1.500			.005			25.452
		MIN							
		ALL	.000			-.884			-2.133
			.000	-13.040	8.704		-6.705	-.032	
			.750	-13.040	10.114		-6.705	-1.526	
			1.500	-13.040	9.910		-6.705	-5.722	
			1.500			-.884			-2.133
145	---	---	---	---	---	---	---	---	---
		MAX & MIN							
		1	.000			-.651			3.418
			.000	1.834	-2.880		-5.850	3.860	
			.750	1.834	-1.504		-5.850	-.527	
			1.500	1.834	-.129		-5.850	-4.915	
			1.500			-.651			3.418
		MAX							
		2	.000			-.224			11.341
			.000	11.890	7.418		-2.298	3.014	
			.750	11.890	4.400		-2.298	-.487	
			1.500	11.890	10.089		-2.298	-2.679	
			1.500			-.224			11.341
		MIN							
		2	.000			-.284			-2.251
			.000	-4.372	-11.464		-5.008	1.705	
			.750	-4.372	-3.448		-5.008	-.693	
			1.500	-4.372	-1.132		-5.008	-4.357	
			1.500			-.284			-2.251
		MAX							
		3	.000			-.133			11.187
			.000	11.888	7.416		-2.066	2.712	
			.750	11.888	4.397		-2.066	-.615	
			1.500	11.888	10.085		-2.066	-2.634	
			1.500			-.133			11.187
		MIN							
		3	.000			-.193			-2.404
			.000	-4.374	-11.466		-4.777	1.404	
			.750	-4.374	-3.452		-4.777	-.021	
			1.500	-4.374	-1.136		-4.777	-4.312	
			1.500			-.193			-2.404
		MAX							
		4	.000			-.203			16.574
			.000	18.594	14.291		-1.270	3.484	
			.750	18.594	8.345		-1.270	-.432	
			1.500	18.594	16.910		-1.270	-2.167	
			1.500			-.203			16.574
		MIN							
		4	.000			-.303			-6.078
			.000	-8.510	-17.178		-5.788	1.303	
			.750	-8.510	-4.736		-5.788	-.775	
			1.500	-8.510	-1.792		-5.788	-4.963	
			1.500			-.303			-6.078
		MAX & MIN							
		5	.000			-.004			1.943
			.000	1.864	-3.738		.020	-.034	
			.750	1.864	-2.340		.020	-.019	
			1.500	1.864	-.943		.020	-.004	
			1.500			-.004			1.943
		MAX & MIN							
		6	.000			.000			2.074
			.000	1.815	-2.896		-.000	.001	
			.750	1.815	-1.535		-.000	.000	
			1.500	1.815	-.173		-.000	.000	
			1.500			.000			2.074
		MAX							
		ALL	.000			.000			16.574
			.000	18.594	14.291		.020	3.860	
			.750	18.594	8.345		.020	.000	
			1.500	18.594	16.910		.020	.000	
			1.500			.000			16.574
		MIN							
		ALL	.000			-.651			-6.078
			.000	-8.510	-17.178		-5.850	-.034	
			.750	-8.510	-4.736		-5.850	-.821	
			1.500	-8.510	-1.792		-5.850	-4.963	
			1.500			-.651			-6.078

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
146	---	---	---	---	---	---	---	---	---
		MAX & MIN							
		1	.000			-.648			2.355
			.000	2.150	-9.214		-4.919	3.239	
			.750	2.150	-7.601		-4.919	-.450	
			1.500	2.150	-5.988		-4.919	-4.140	
			1.500			-.648			2.355
		MAX							
		2	.000			-.322			8.395
			.000	12.224	-1.036		-1.827	2.823	
			.750	12.224	-3.993		-1.827	-.320	
			1.500	12.224	2.191		-1.827	-2.158	
			1.500			-.322			8.395
		MIN							
		2	.000			-.346			-2.880
			.000	-3.943	-19.795		-4.536	1.517	
			.750	-3.943	-11.554		-4.536	-.517	
			1.500	-3.943	-7.453		-4.536	-3.830	
			1.500			-.346			-2.880
		MAX							
		3	.000			-.287			8.245
			.000	12.225	-1.031		-1.652	2.644	
			.750	12.225	-3.988		-1.652	-.368	
			1.500	12.225	2.197		-1.652	-2.075	
			1.500			-.287			8.245
		MIN							
		3	.000			-.310			-3.031
			.000	-3.942	-19.791		-4.361	1.339	
			.750	-3.942	-11.548		-4.361	-.565	
			1.500	-3.942	-7.447		-4.361	-3.747	
			1.500			-.310			-3.031
		MAX							
		4	.000			-.314			12.384
			.000	18.944	4.440		-.800	3.291	
			.750	18.944	-1.560		-.800	-.264	
			1.500	18.944	7.675		-.800	-1.644	
			1.500			-.314			12.384
		MIN							
		4	.000			-.352			-6.409
			.000	-8.001	-26.826		-5.315	1.115	
			.750	-8.001	-14.161		-5.315	-.593	
			1.500	-8.001	-8.399		-5.315	-4.430	
			1.500			-.352			-6.409
		MAX & MIN							
		5	.000			-.017			.994
			.000	2.190	-9.916		.043	-.067	
			.750	2.190	-8.273		.043	-.035	
			1.500	2.190	-6.630		.043	-.002	
			1.500			-.017			.994
		MAX & MIN							
		6	.000			.000			.996
			.000	2.144	-9.236		-.001	.002	
			.750	2.144	-7.627		-.001	.001	
			1.500	2.144	-6.019		-.001	.000	
			1.500			.000			.996
		MAX							
		ALL	.000			.000			12.384
			.000	18.944	4.440		.043	3.291	
			.750	18.944	-1.560		.043	.001	
			1.500	18.944	7.675		.043	.000	
			1.500			.000			12.384
		MIN							
		ALL	.000			-.648			-6.409
			.000	-8.001	-26.826		-5.315	-.067	
			.750	-8.001	-14.161		-5.315	-.593	
			1.500	-8.001	-8.399		-5.315	-4.430	
			1.500			-.648			-6.409
147	---	---	---	---	---	---	---	---	---
		MAX & MIN							
		1	.000			-.648			2.440
			.000	2.271	-13.896		-3.990	2.621	
			.750	2.271	-12.192		-3.990	-.371	
			1.500	2.271	-10.489		-3.990	-3.363	
			1.500			-.648			2.440
		MAX							
		2	.000			-.354			6.942
			.000	12.237	-6.776		-1.319	2.524	
			.750	12.237	-9.640		-1.319	-.224	
			1.500	12.237	-3.668		-1.319	-1.677	
			1.500			-.354			6.942
		MIN							
		2	.000			-.385			-4.313
			.000	-3.819	-25.713		-4.002	1.229	
			.750	-3.819	-17.490		-4.002	-.425	
			1.500	-3.819	-12.504		-4.002	-3.322	
			1.500			-.385			-4.313
		MAX							
		3	.000			-.341			6.802
			.000	12.250	-6.756		-1.173	2.398	
			.750	12.250	-9.610		-1.173	-.240	
			1.500	12.250	-3.629		-1.173	-1.584	
			1.500			-.341			6.802
		MIN							
		3	.000			-.372			-4.453
			.000	-3.806	-25.693		-3.856	1.103	
			.750	-3.806	-17.460		-3.856	-.441	
			1.500	-3.806	-12.465		-3.856	-3.229	
			1.500			-.372			-4.453
		MAX							
		4	.000			-.344			9.936
			.000	18.923	-1.950		-.302	2.987	
			.750	18.923	-7.828		-.302	-.170	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST END1	1-2 PLANE SHEAR	MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	MOMENT	AXIAL TORQ
MAX	1.500			.000			-.698
ALL	.000		1.781				18.453
	.750	105.835	-31.693		1.068	.011	
	1.500	105.709	24.069		1.068	.340	
MIN	.000	105.961	-81.652		1.068	1.900	
ALL	.000		-1.873				-17.129
	.750	64.628	-145.706		-2.661	-.807	
	1.500	64.541	9.774		-2.661	-2.336	
MAX 1	.000		-.538				-5.948
	.750	8.970	-19.938		-2.253	-.159	
	1.500	8.970	-13.210		-2.253	-1.848	
MAX 2	.000		-.326				3.064
	.750	19.202	-19.365		-.857	-.080	
	1.500	18.992	-9.296		-.857	-.886	
MIN 2	.000		-.419				-12.068
	.750	5.221	-28.283		-1.771	-.248	
	1.500	5.011	-17.787		-1.771	-1.519	
MAX 3	.000		-.348				2.575
	.750	19.081	-19.236		-.801	-.109	
	1.500	18.955	-9.226		-.801	-.873	
MIN 3	.000		-.440				-12.557
	.750	5.101	-28.154		-1.715	-.277	
	1.500	4.975	-17.716		-1.715	-1.506	
MAX 4	.000		-.299				7.725
	.750	25.837	-18.577		-.550	-.078	
	1.500	25.711	-6.337		-.550	-.715	

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST END1	1-2 PLANE SHEAR	MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	MOMENT	AXIAL TORQ
MAX 1	.000			.280			-.048
ALL	.000		1.002				11.480
	.750	64.628	-84.781		-.903	1.500	
	1.500	64.541	9.774		-.903	-1.231	
MIN 2	.000	65.992	-122.714		-2.270	.315	
	.750	65.782	-54.773		-2.270	-.629	
	1.500	65.572	11.046		-2.270	-2.026	
MAX 3	.000		-1.191				-9.870
	.750	89.846	-33.285		-.836	-.158	
	1.500	89.740	19.927		-.836	-1.184	
MIN 3	.000	65.291	-121.485		-2.203	.261	
	.750	65.165	-54.038		-2.203	-.633	
	1.500	65.039	11.350		-2.203	-1.979	
MAX 4	.000		-1.120				-10.370
	.750	105.961	-81.652		-.383	1.900	
	1.500	105.709	24.069		-.383	-.967	
MIN 4	.000	105.961	-81.652		-.383	1.900	
	.750	105.835	-31.693		-.383	-.014	
	1.500	105.709	24.069		-.383	-.967	
MAX 5	.000		-1.873				-17.129
	.750	64.667	-66.283		-2.661	-.807	
	1.500	64.541	9.774		-2.661	-2.292	
MIN 5	.000	81.625	-104.433		1.068	-1.262	
	.750	81.625	-43.214		1.068	-.441	
	1.500	81.625	18.005		1.068	.340	
MAX & MIN 6	.000		-.013				14.004
	.000	65.612	-84.790		-.025	.030	
	.750	65.612	-35.582		-.025	.011	
	1.500	65.612	13.627		-.025	-.008	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST END1	1-2 PLANE SHEAR	MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	MOMENT	AXIAL TORQ
MAX 1	.000			.280			-.048
ALL	.000		1.002				11.480
	.750	90.692	-84.781		-.903	1.500	
	1.500	90.482	-34.020		-.903	-1.154	
MIN 2	.000	90.272	19.623		-.903	-1.231	
	.750	65.992	-122.714		-2.270	.315	
	1.500	65.782	-54.773		-2.270	-.629	
MAX 3	.000		-1.191				-9.870
	.750	89.846	-33.285		-.836	-.158	
	1.500	89.740	19.927		-.836	-1.184	
MIN 3	.000	65.291	-121.485		-2.203	.261	
	.750	65.165	-54.038		-2.203	-.633	
	1.500	65.039	11.350		-2.203	-1.979	
MAX 4	.000		-1.120				-10.370
	.750	105.961	-81.652		-.383	1.900	
	1.500	105.709	24.069		-.383	-.967	
MIN 4	.000	105.961	-81.652		-.383	1.900	
	.750	105.835	-31.693		-.383	-.014	
	1.500	105.709	24.069		-.383	-.967	
MAX 5	.000		-1.873				-17.129
	.750	64.667	-66.283		-2.661	-.807	
	1.500	64.541	9.774		-2.661	-2.292	
MIN 5	.000	81.625	-104.433		1.068	-1.262	
	.750	81.625	-43.214		1.068	-.441	
	1.500	81.625	18.005		1.068	.340	
MAX & MIN 6	.000		-.013				14.004
	.000	65.612	-84.790		-.025	.030	
	.750	65.612	-35.582		-.025	.011	
	1.500	65.612	13.627		-.025	-.008	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST END1	1-2 PLANE SHEAR	MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	MOMENT	AXIAL TORQ
MAX 1	.000			-.302			9.936
ALL	.000		1.022				18.923
	.750	8.970	-19.938		-.857	-.080	
	1.500	8.970	-13.210		-.857	-.886	
MIN 1	.000	8.970	-26.665		-.857	1.531	
	.750	8.970	-19.938		-2.253	-.159	
	1.500	8.970	-13.210		-2.253	-1.848	
MAX & MIN 2	.000		-.538				-5.948
	.750	19.202	-19.365		-.857	-.080	
	1.500	18.992	-9.296		-.857	-.886	
MIN 2	.000	19.412	-23.399		-.857	1.138	
	.750	19.202	-19.365		-.857	-.080	
	1.500	18.992	-9.296		-.857	-.886	
MAX 3	.000		-.326				3.064
	.750	19.081	-19.236		-.801	-.109	
	1.500	18.955	-9.226		-.801	-.873	
MIN 3	.000	19.207	-23.108		-.801	1.067	
	.750	19.081	-19.236		-.801	-.109	
	1.500	18.955	-9.226		-.801	-.873	
MAX 4	.000		-.348				2.575
	.750	25.963	-20.526		-.550	-.078	
	1.500	25.711	-6.337		-.550	-.715	
MIN 4	.000	25.963	-20.526		-.550	1.343	
	.750	25.837	-18.577		-.550	-.078	
	1.500	25.711	-6.337		-.550	-.715	
MAX 5	.000		-.299				7.725
	.750	26.708	-19.039		.351	2.671	
	1.500	26.708	-5.746		.351	.063	
MIN 5	.000	26.708	-19.039		.351	.005	
	.750	26.708	-18.392		.351	.005	
	1.500	26.708	-5.746		.351	.063	
MAX & MIN 6	.000		-.002				17.821
	.000	8.336	-26.801		-.008	.011	
	.750	8.336	-20.549		-.008	.005	
	1.500	8.336	-14.297		-.008	-.001	
MAX 6	.000		-.002				5.980
	.750	19.407	-22.197		-.731	2.094	
	1.500	19.407	-19.222		-.731	-.151	
MIN 6	.000	19.407	-9.148		-.731	-1.182	
	.750	19.407	-19.222		-.731	-.151	
	1.500	19.407	-22.197		-.731	2.094	
MAX 7	.000		-.344				13.523
	.750	3.899	-28.740		-3.264	-.398	
	1.500	3.899	-18.575		-3.264	-2.664	
MIN 7	.000	3.899	-42.204		-3.264	.800	
	.750	3.899	-28.740		-3.264	-.398	
	1.500	3.899	-18.575		-3.264	-2.664	
MAX & MIN 8	.000		-.444				-.153
	.000	26.708	-19.039		.106	2.671	
	.750	26.708	-18.392		.106	-.078	
	1.500	26.708	-5.746		.106	-.802	
MAX 8	.000		-.320				17.821
	.750	8.336	-26.801		-.008	.011	
	1.500	8.336	-20.549		-.008	.005	
MIN 8	.000	8.336	-14.297		-.008	-.001	
	.750	8.336	-20.549		-.008	.005	
	1.500	8.336	-26.801		-.008	.011	
MAX 9	.000		-.002				5.980
	.750	7.212	-22.931		.351	.063	
	1.500	7.212	-17.522		.351	.063	
MIN 9	.000	7.212	-28.340		.351	-.464	
	.750	7.212	-22.931		.351	-.200	
	1.500	7.212	-17.522		.351	.063	
MAX & MIN 10	.000		-.486				-4.973
	.750	.862	-34.172		-4.116	-.473	
	1.500	.862	-21.459		-4.116	-3.272	
MIN 10	.000	.862	-52.385		-4.116	.514	
	.750	.862	-34.172		-4.116	-.473	
	1.500	.862	-21.459		-4.116	-3.272	
MAX 11	.000		-.646				-4.973
	.750	.862	-52.385		-4.116	-.464	
	1.500	.862	-34.172		-4.116	-.473	
MIN 11	.000	.862	-52.385		-4.116	-.464	
	.750	.862	-34.172		-4.116	-.473	
	1.500	.862	-21.459		-4.116	-3.272	
MAX & MIN 12	.000		.280				-.048

149 ----------

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST END1	1-2 PLANE SHEAR	MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	MOMENT	AXIAL TORQ
MAX 1	.000			-.302			9.936
ALL	.000		1.022				18.923
	.750	8.970	-19.938		-.857	-.080	
	1.500	8.970	-13.210		-.857	-.886	
MIN 1	.000	8.970	-26.665		-.857	1.531	
	.750	8.970	-19.938		-2.253	-.159	
	1.500	8.970	-13.210		-2.253	-1.848	
MAX & MIN 2	.000		-.538				-5.948
	.750	19.202	-19.365		-.857	-.080	
	1.500	18.992	-9.296		-.857	-.886	
MIN 2	.000	19.412	-23.399		-.857	1.138	
	.750	19.202	-19.365		-.857	-.080	
	1.500	18.992	-9.296		-.857	-.886	
MAX 3	.000		-.326				3.064
	.750	19.081	-19.236		-.801	-.109	
	1.500	18.955	-9.226		-.801	-.873	
MIN 3	.000	19.207	-23.108		-.801	1.067	
	.750	19.081	-19.236		-.801	-.109	
	1.500	18.955	-9.226		-.801	-.873	
MAX 4	.000		-.348				2.575
	.750	25.963	-20.526		-.550	-.078	
	1.500	25.711	-6.337		-.550	-.715	
MIN 4	.000	25.963	-20.526		-.550	1.343	
	.750	25.837	-18.577		-.550	-.078	
	1.500	25.711	-6.337		-.550	-.715	
MAX 5	.000		-.299				7.725
	.750	26.708	-19.039		.351	2.671	
	1.500	26.708	-5.746		.351	.063	
MIN 5	.000	26.708	-19.039		.351	.005	
	.750	26.708	-18.392		.351	.005	
	1.500	26.708	-5.746		.351	.063	
MAX & MIN 6	.000		-.002				17.821
	.000	8.336	-26.801		-.008	.011	
	.750	8.336	-20.549		-.008	.005	
	1.500	8.336	-14.297		-.008	-.001	
MAX 6	.000		-.002				5.980
	.750	19.407	-22.197		-.731	2.094	
	1.500	19.407	-19.222		-.731	-.151	
MIN 6	.000	19.407	-9.148		-.731	-1.182	
	.750	19.407	-19.222		-.731	-.151	
	1.500	19.407	-22.197		-.731	2.094	
MAX 7	.000		-.344				13.523
	.750	3.899	-28.740		-3.264	-.398	
	1.500	3.899	-18.575		-3.264	-2.664	
MIN 7	.000	3.899	-42.204		-3.264	.800	
	.750	3.899	-28.740		-3.264	-.398	
	1.500	3.899	-18.575		-3.264	-2.664	
MAX & MIN 8	.000		-.444				-.153
	.000	26.708	-19.039		.106	2.671	
	.750	26.708	-18.392		.106	-.078	
	1.500	26.708	-5.746		.106	-.802	
MAX 8	.000		-.320				17.821
	.750	8.336	-26.801		-.008	.011	
	1.500	8.336	-20.549		-.008	.005	
MIN 8	.000	8.336	-14.297		-.008	-.001	
	.750	8.336	-20.549		-.008	.005	
	1.500	8.336	-26.801		-.008	.011	
MAX 9	.000		-.002				5.980
	.750	7.212	-22.931		.351	.063	
	1.500	7.212	-17.522		.351	.063	
MIN 9	.000	7.212	-28.340		.351	-.464	
	.750	7.212	-22.931		.351	-.200	
	1.500	7.212	-17.522		.351	.063	
MAX & MIN 10	.000		-.486				-4.973
	.750	.862	-34.172		-4.116	-.473	
	1.500	.862	-21.459		-4.116	-3.272	
MIN 10	.000	.862	-52.385		-4.116	.514	
	.750	.862	-34.172		-4.116	-.473	
	1.500	.862	-21.459		-4.116	-3.272	
MAX 11	.000		-.646				-4.973
	.750	.862	-52.385		-4.116	-.464	
	1.500	.862	-34.172		-4.116	-.473	
MIN 11	.000	.862	-52.385		-4.116	-.464	
	.750	.862	-34.172		-4.116	-.473	
	1.500	.862	-21.459		-4.116	-3.272	
MAX & MIN 12	.000		.280				-.048

148 ----------

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST END1	1-2 PLANE SHEAR	MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	MOMENT	AXIAL TORQ
MAX 1	.000			-.302			9.936
ALL	.000		1.022				18.923
	.750	8.494	-20.199		-.315	-.007	
	1.500	8.494	-13.828		-.315	-.648	
MIN 1	.000	8.494	-26.570		-.315	2.018	
	.750	8.494	-20.199		-3.111	-.007	
	1.500	8.494	-13.828		-3.111	-2.648	
MAX & MIN 2	.000		-.646				7.376
	.750	19.343	-19.415		-.841	-.143	
	1.500	19.343	-9.339		-.841	-1.271	
MIN 2	.000	19.343	-22.291		-.841	2.199	
	.750	19.343	-19.415		-3.394	-.905	
	1.500	19.343	-9.339		-3.394	-2.753	
MAX 2	.000		-.349				13.662
	.750	3.835	-28.883		-3.394	-.380	
	1.500	3.835	-18.766		-3.394	-2.753	
MIN 2	.000	3.835	-42.299		-3.394	.905	
	.750	3.835	-28.883		-3.394	-.380	
	1.500	3.835	-18.766		-3.394	-2.753	
MAX & MIN 3	.000		-.449				-.014
	.000	7.836	-33.513		-.168	-.007	
	.750	7.836	-20.910		-.505	-.007	
	1.500	7.836	-13.705		-.505	-.773	
MIN 3	.000	7.836	-33.513		-.168	-.007	
	.750	7.836	-20.910		-.505	-.007	
	1.500	7.836	-13.705		-.505	-.773	
MAX 4	.000		-.448				-8.821
	.750	18.923	-7.428		-2.987	.002	
	1.500	18.923	1.022		.118	.008	
MIN 4	.000	18.923	-1.950		.118	2.987	
	.750	18.923	-7.428		.118	.002	
	1.500	18.923	1.022		.118	.008	
MAX 5	.000		-.448				9.936
	.750	2.240	-12.273		-.003	.002	
	1.500	2.240	-10.593		-.003	-.000	
MIN 5	.000	2.240	-13.952		-.003	.004	
	.750	2.240	-12.273		-.003	.002	
	1.500	2.240	-10.593		-.003	-.000	
MAX 6	.000		-.042				1.051
	.750	2.241	-13.781		.118	-.060	
	1.500	2.241	-11.600		.118	.008	
MIN 6	.000	2.241	-14.962		.118	-.168	
	.750	2.241	-13.781		.118	-.060	
	1.500	2.241	-11.600		.118	.008	
MAX & MIN 5	.000		-.042				1.140
	.750	3.835	-28.883		-3.394	-.380	
	1.500	3.835	-18.766		-3.394	-2.753	
MIN 5	.000	3.835	-42.299		-3.394	.905	
	.750	3.835	-28.883		-3.394	-.380	
	1.500	3.835	-18.766		-3.394	-2.753	
MAX & MIN 4	.000		-.449				-.014
	.000	7.836	-33.513		-.168	-.007	
	.750	7.836	-20.910		-.505	-.007	
	1.500	7.836	-13.705		-.505	-.773	
MIN 4	.000	7.836	-33.513		-.168	-.007	
	.750	7.836	-20.910		-.505	-.007	
	1.500	7.836	-13.705		-.505	-.773	
MAX 3	.000		-.448				-8.821
	.750	18.923	-7.428		-2.987	.002	
	1.500	18.923	1.022		.118	.008	
MIN 3	.000	18.923	-1.950		.118	2.987	
	.750	18.923	-7.428		.118	.002	
	1.500	18.923	1.022		.118	.008	
MAX 2	.000		-.448				9.936
	.750	2.240	-12.273		-.003	.002	
	1.500	2.240	-10.593		-.003	-.000	
MIN 2	.000	2.240	-13.952		-.003	.004	
	.750	2.240	-12.273		-.003	.002	
	1.500	2.240	-10.593		-.003	-.000	
MAX & MIN 1	.000		-.042				1.140
	.750	2.241	-13.781		.118	-.060	
	1.500	2.241	-11.600		.118	.008	
MIN 1	.000	2.241	-14.962		.118	-.168	
	.750	2.241	-13.781		.118	-.060	
	1.500	2.241	-11.600		.118	.008	
MAX & MIN 2	.000		-.042				1.140
	.750	3.835	-28.883		-3.394	-.380	
	1.500	3.835	-18.766		-3.394	-2.753	
MIN 2	.000	3.835	-42.299		-3.394	.905	
	.750	3.835	-28.883		-3.394	-.380	
	1.500	3.835	-18.766		-3.394	-2.753	
MAX & MIN 3	.000		-.449				-.014
	.000	7.836	-33.513		-.168	-.007	
	.750	7.836	-20.910		-.505	-.007	
	1.500	7.836	-13.705		-.505	-.773	
MIN 3	.000	7.836	-33.513		-.168	-.007	
	.750	7.836	-20.910		-.505	-.007	
	1.500	7.836	-13.705		-.505	-.773	
MAX 4	.000		-.448				-8.821
	.750	18.923	-7.428		-2.987	.002	
	1.500	18.923	1.022		.118	.008	
MIN 4	.000	18.923	-1.950		.118	2.987	
	.750	18.923	-7.428		.118	.002	
	1.500	18.923	1.022		.118	.008	
MAX 5	.000		-.448				9.936
	.750	2.240	-12.273		-.003	.002	
	1.500	2.240	-10.593		-.003	-.000	
MIN 5	.000	2.240	-13.952		-.003	.004	
	.750	2.240	-12.273		-.003	.002	
	1.500	2.240	-10.593		-.003	-.000	
MAX 6	.000		-.042				1.051
	.750	2.241	-13.781		.118	-.060	
	1.500	2.241	-11.600		.118	.008	
MIN 6	.000	2.241	-14.962		.118	-.168	
	.750	2.241	-13.781		.118	-.060	
	1.500	2.241	-11.600		.118	.008	
MAX & MIN 5	.000		-.042				1.140
	.750	3.835	-28.883		-3.394	-.380	
	1.500	3.835	-18.766		-3.394	-2.753	
MIN 5	.000	3.835	-42.299		-3.394	.905	
	.750	3.835	-28.883		-3.394	-.380	
	1.500	3.835	-18.766		-3.394	-2.753	
MAX & MIN 4	.000		-.449				-.014

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		MIN							
	4		.000			-.454			-17.494
			.000	2.662	-51.112		-2.075	.292	
			.750	2.536	-33.441		-2.075	-.308	
			1.500	2.410	-20.488		-2.075	-1.769	
			1.500			-.454			-17.494
		MAX & MIN							
	5		.000			.086			-8.303
			.000	13.840	-35.833		.343	-.428	
			.750	13.840	-25.453		.343	-.170	
			1.500	13.840	-15.073		.343	.087	
			1.500			.086			-8.303
		MAX & MIN							
	6		.000			-.002			-5.918
			.000	8.807	-26.902		-.008	.010	
			.750	8.807	-20.296		-.008	.004	
			1.500	8.807	-13.691		-.008	-.002	
			1.500			-.002			-5.918
		MAX							
		ALL	.000			.086			7.725
			.000	25.963	-20.526		.343	1.531	
			.750	25.837	-18.577		.343	.004	
			1.500	25.711	-6.337		.343	.087	
			1.500			.086			7.725
		MIN							
		ALL	.000			-.538			-17.494
			.000	2.662	-51.112		-2.253	-.428	
			.750	2.536	-33.441		-2.253	-.308	
			1.500	2.410	-20.488		-2.253	-1.848	
			1.500			-.538			-17.494
151	----------								
		MAX & MIN							
	1		.000			-.588			-.909
			.000	2.248	-15.096		-1.553	1.038	
			.750	2.248	-13.410		-1.553	-.126	
			1.500	2.248	-11.724		-1.553	-1.291	
			1.500			-.588			-.909
		MAX							
	2		.000			-.403			7.036
			.000	11.958	-9.211		-.289	.673	
			.750	11.748	-11.284		-.289	-.137	
			1.500	11.538	-5.558		-.289	-.392	
			1.500			-.403			7.036
		MIN							
	2		.000			-.448			-5.816
			.000	-2.659	-26.544		-1.200	.073	
			.750	-2.869	-18.565		-1.200	-.230	
			1.500	-3.079	-13.514		-1.200	-1.130	
			1.500			-.448			-5.816
		MAX							
	3		.000			-.454			6.697

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			1.500	2.206	-9.495		-.782	-.652	
			1.500			-.586			-.200
		MAX							
	2		.000			-.474			6.198
			.000	12.081	-6.411		.520	-.052	
			.750	11.871	-8.502		.520	-.262	
			1.500	11.661	-2.419		.520	.120	
			1.500			-.474			6.198
		MIN							
	2		.000			-.496			-4.770
			.000	-2.683	-23.539		-.390	-.656	
			.750	-2.893	-15.432		-.390	-.344	
			1.500	-3.103	-10.815		-.390	-.637	
			1.500			-.496			-4.770
		MAX							
	3		.000			-.564			6.031
			.000	11.823	-6.286		.880	-.498	
			.750	11.697	-8.539		.880	-.439	
			1.500	11.571	-2.555		.880	.213	
			1.500			-.564			6.031
		MIN							
	3		.000			-.586			-4.937
			.000	-2.941	-23.414		-.031	-1.102	
			.750	-3.067	-15.469		-.031	-.521	
			1.500	-3.193	-10.952		-.031	-.544	
			1.500			-.586			-4.937
		MAX							
	4		.000			-.466			10.014
			.000	17.978	-1.814		.823	.151	
			.750	17.852	-6.834		.823	-.233	
			1.500	17.726	1.939		.823	.371	
			1.500			-.466			10.014
		MIN							
	4		.000			-.503			-8.266
			.000	-6.630	-30.361		-.695	-.857	
			.750	-6.756	-18.383		-.695	-.370	
			1.500	-6.882	-12.055		-.695	-.891	
			1.500			-.503			-8.266
		MAX & MIN							
	5		.000			.027			-.476
			.000	.006	-12.119		.041	-.056	
			.750	.006	-12.115		.041	-.026	
			1.500	.006	-12.110		.041	.005	
			1.500			.027			-.476
		MAX & MIN							
	6		.000			-.001			-.186
			.000	2.200	-12.826		-.001	.001	
			.750	2.200	-11.176		-.001	.001	
			1.500	2.200	-9.526		-.001	-.000	
			1.500			-.001			-.186

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			.000	11.716	-9.066		-.157	.499	
			.750	11.590	-11.288		-.157	-.211	
			1.500	11.464	-5.650		-.157	-.367	
			1.500			-.454			6.697
		MIN							
	3		.000			-.499			-6.155
			.000	-2.901	-26.398		-1.068	-.100	
			.750	-3.027	-18.570		-1.068	-.305	
			1.500	-3.153	-13.606		-1.068	-1.105	
			1.500			-.499			-6.155
		MAX							
	4		.000			-.387			11.412
			.000	17.800	-4.899		.014	.876	
			.750	17.674	-9.867		.014	-.101	
			1.500	17.548	-1.670		.014	-.155	
			1.500			-.387			11.412
		MIN							
	4		.000			-.462			-10.008
			.000	-6.561	-33.787		-1.504	-.123	
			.750	-6.687	-22.003		-1.504	-.257	
			1.500	-6.813	-14.930		-1.504	-1.384	
			1.500			-.462			-10.008
		MAX & MIN							
	5		.000			.051			-1.452
			.000	2.550	-18.056		.123	-.162	
			.750	2.550	-16.144		.123	-.070	
			1.500	2.550	-14.231		.123	.022	
			1.500			.051			-1.452
		MAX & MIN							
	6		.000			-.001			-.867
			.000	2.207	-15.156		-.003	.004	
			.750	2.207	-13.501		-.003	.002	
			1.500	2.207	-11.845		-.003	-.001	
			1.500			-.001			-.867
		MAX							
		ALL	.000			.051			11.412
			.000	17.800	-4.899		.123	1.038	
			.750	17.674	-9.867		.123	.002	
			1.500	17.548	-1.670		.123	.022	
			1.500			.051			11.412
		MIN							
		ALL	.000			-.588			-10.008
			.000	-6.561	-33.787		-1.553	-.162	
			.750	-6.687	-22.003		-1.553	-.305	
			1.500	-6.813	-14.930		-1.553	-1.384	
			1.500			-.588			-10.008
152	----------								
		MAX & MIN							
	1		.000			-.586			-.200
			.000	2.206	-12.804		-.782	.521	
			.750	2.206	-11.149		-.782	-.065	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		MAX							
		ALL	.000			.027			10.014
			.000	17.978	-1.814		.880	.521	
			.750	17.852	-6.834		.880	.001	
			1.500	17.726	1.939		.880	.371	
			1.500			.027			10.014
		MIN							
		ALL	.000			-.586			-8.266
			.000	-6.630	-30.361		-.782	-1.102	
			.750	-6.756	-18.383		-.782	-.521	
			1.500	-6.882	-12.110		-.782	-.891	
			1.500			-.586			-8.266
153	----------								
		MAX & MIN							
	1		.000			-.585			.000
			.000	2.195	-12.234		.000	.000	
			.750	2.195	-10.588		.000	.000	
			1.500	2.195	-8.942		.000	.000	
			1.500			-.585			.000
		MAX							
	2		.000			-.343			4.833
			.000	12.090	-5.725		2.028	-1.503	
			.750	11.880	-7.819		2.028	-.588	
			1.500	11.670	-1.683		2.028	.931	
			1.500			-.343			4.833
		MIN							
	2		.000			-.356			-4.833
			.000	-2.687	-22.805		1.116	-2.110	
			.750	-2.897	-14.688		1.116	-.668	
			1.500	-3.107	-10.194		1.116	.171	
			1.500			-.356			-4.833
		MAX							
	3		.000			-.343			4.833
			.000	11.831	-5.606		3.075	-2.708	
			.750	11.705	-7.864		3.075	-1.006	
			1.500	11.579	-1.827		3.075	1.299	
			1.500			-.343			4.833
		MIN							
	3		.000			-.356			-4.833
			.000	-2.947	-22.686		2.164	-3.314	
			.750	-3.073	-14.732		2.164	-1.086	
			1.500	-3.199	-10.338		2.164	.538	
			1.500			-.356			-4.833
		MAX							
	4		.000			-.337			8.055
			.000	17.995	-1.065		2.331	-1.301	
			.750	17.869	-6.088		2.331	-.561	
			1.500	17.743	2.775		2.331	1.185	
			1.500			-.337			8.055
		MIN							
	4		.000			-.360			-8.055

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	.000	-6.634	-29.531		.812	-2.312	
	.750	-6.760	-17.535		.812	-.695	
	1.500	-6.886	-11.410		.812	-.083	
	1.500			-.360			-8.055
MAX & MIN							
5	.000			.021			.000
	.000	-.264	-10.878		.000	.000	
	.750	-.264	-11.076		.000	.000	
	1.500	-.264	-11.274		.000	.000	
	1.500			.021			.000
MAX & MIN							
6	.000			-.000			.000
	.000	2.193	-12.248		.000	.000	
	.750	2.193	-10.603		.000	.000	
	1.500	2.193	-8.958		.000	.000	
	1.500			-.000			.000
MAX							
ALL	.000			.021			8.055
	.000	17.995	-1.065		3.075	.000	
	.750	17.869	-6.088		3.075	.000	
	1.500	17.743	2.775		3.075	1.299	
	1.500			.021			8.055
MIN							
ALL	.000			-.585			-8.055
	.000	-6.634	-29.531		.000	-3.314	
	.750	-6.760	-17.535		.000	-1.086	
	1.500	-6.886	-11.410		.000	-.083	
	1.500			-.585			-8.055
164 ----------							
MAX & MIN							
1	.000			-5.925			4.159
	.000	-31.692	35.495		-2.381	1.721	
	.750	-31.692	11.726		-2.381	-.065	
	1.500	-31.692	-12.043		-2.381	-1.851	
	1.500			-5.925			4.159
MAX							
2	.000			-2.971			8.763
	.000	-29.418	64.801		-.333	.797	
	.750	-29.418	23.235		-.333	-.154	
	1.500	-29.418	-11.433		-.333	-.608	
	1.500			-2.971			8.763
MIN							
2	.000			-5.022			3.747
	.000	-55.422	34.154		-1.290	.236	
	.750	-55.422	11.242		-1.290	-.222	
	1.500	-55.422	-10.487		-1.290	-1.143	
	1.500			-5.022			3.747
MAX							
3	.000			-3.017			8.744
	.000	-29.276	64.663		.189	.307	
	.750	-29.276	23.203		.189	-.252	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	1.500	-29.276	-11.358		.189	-.315	
	1.500			-3.017			8.744
MIN							
3	.000			-5.068			3.727
	.000	-55.279	34.015		-.768	-.254	
	.750	-55.279	11.210		-.768	-.320	
	1.500	-55.279	-18.412		-.768	-.850	
	1.500			-5.068			3.727
MAX							
4	.000			-2.196			11.827
	.000	-27.863	84.305		.033	1.013	
	.750	-27.863	30.904		.033	-.130	
	1.500	-27.863	-11.002		.033	-.446	
	1.500			-2.196			11.827
MIN							
4	.000			-5.614			3.466
	.000	-71.203	33.226		-1.562	.079	
	.750	-71.203	10.915		-1.562	-.243	
	1.500	-71.203	-22.758		-1.562	-1.337	
	1.500			-5.614			3.466
MAX & MIN							
5	.000			-.007			3.788
	.000	-28.133	31.490		.021	-.020	
	.750	-28.133	10.391		.021	-.004	
	1.500	-28.133	-10.709		.021	.011	
	1.500			-.007			3.788
MAX & MIN							
6	.000			.000			3.996
	.000	-30.527	34.369		-.000	.000	
	.750	-30.527	11.474		-.000	.000	
	1.500	-30.527	-11.421		-.000	-.000	
	1.500			.000			3.996
MAX							
ALL	.000			.000			11.827
	.000	-27.863	84.305		.189	1.721	
	.750	-27.863	30.904		.189	.000	
	1.500	-27.863	-10.709		.189	.011	
	1.500			.000			11.827
MIN							
ALL	.000			-5.925			3.466
	.000	-71.203	31.490		-2.381	-.254	
	.750	-71.203	10.391		-2.381	-.320	
	1.500	-71.203	-22.758		-2.381	-1.851	
	1.500			-5.925			3.466
165 ----------							
MAX & MIN							
1	.000			-.476			3.855
	.000	3.642	-.278		-3.175	1.691	
	.750	3.642	2.453		-3.175	-.691	
	1.500	3.642	5.184		-3.175	-3.072	
	1.500			-.476			3.855

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
MAX							
2	.000			-.116			8.596
	.000	14.374	6.075		-.756	.777	
	.750	14.374	7.396		-.756	-.598	
	1.500	14.374	8.716		-.756	-1.395	
	1.500			-.116			8.596
MIN							
2	.000			-.237			.877
	.000	1.761	-1.085		-2.052	.200	
	.750	1.761	2.223		-2.052	-.816	
	1.500	1.761	5.032		-2.052	-2.289	
	1.500			-.237			.877
MAX							
3	.000			-.029			8.564
	.000	14.379	6.063		-.271	.276	
	.750	14.379	7.388		-.271	-.735	
	1.500	14.379	8.712		-.271	-1.169	
	1.500			-.029			8.564
MIN							
3	.000			-.151			.845
	.000	1.766	-1.096		-1.567	-.301	
	.750	1.766	2.216		-1.567	-.954	
	1.500	1.766	5.028		-1.567	-2.063	
	1.500			-.151			.845
MAX							
4	.000			-.071			11.746
	.000	21.530	10.312		-.260	1.003	
	.750	21.530	10.693		-.260	-.539	
	1.500	21.530	11.074		-.260	-1.119	
	1.500			-.071			11.746
MIN							
4	.000			-.273			-1.118
	.000	.508	-1.621		-2.420	.041	
	.750	.508	2.073		-2.420	-.903	
	1.500	.508	4.933		-2.420	-2.609	
	1.500			-.273			-1.118
MAX & MIN							
5	.000			.002			3.335
	.000	3.811	-.925		.024	-.025	
	.750	3.811	1.933		.024	-.008	
	1.500	3.811	4.791		.024	.010	
	1.500			.002			3.335
MAX & MIN							
6	.000			.000			3.587
	.000	3.682	-.374		-.001	.001	
	.750	3.682	2.387		-.001	.000	
	1.500	3.682	5.149		-.001	-.000	
	1.500			.000			3.587
MAX							
ALL	.000			.002			11.746
	.000	21.530	10.312		.024	1.691	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	.750	21.530	10.693		.024	.000	
	1.500	21.530	11.074		.024	.010	
	1.500			.002			11.746
MIN							
ALL	.000			-.476			-1.118
	.000	.508	-1.621		-3.175	-.301	
	.750	.508	1.933		-3.175	-.954	
	1.500	.508	4.791		-3.175	-3.072	
	1.500			-.476			-1.118
166 ----------							
MAX & MIN							
1	.000			-.176			1.442
	.000	5.197	-4.799		-2.570	1.465	
	.750	5.197	-.901		-2.570	-.463	
	1.500	5.197	2.996		-2.570	-2.390	
	1.500			-.176			1.442
MAX							
2	.000			-.038			5.320
	.000	16.345	-.653		-.807	.999	
	.750	16.345	2.469		-.807	-.322	
	1.500	16.345	5.591		-.807	-1.136	
	1.500			-.038			5.320
MIN							
2	.000			-.062			-1.995
	.000	4.162	-5.915		-2.004	.492	
	.750	4.162	-1.384		-2.004	-.487	
	1.500	4.162	2.834		-2.004	-1.946	
	1.500			-.062			-1.995
MAX							
3	.000			-.001			5.292
	.000	16.345	-.654		-.574	.782	
	.750	16.345	2.468		-.574	-.364	
	1.500	16.345	5.589		-.574	-1.003	
	1.500			-.001			5.292
MIN							
3	.000			-.025			-2.022
	.000	4.162	-5.916		-1.771	.275	
	.750	4.162	-1.385		-1.771	-.529	
	1.500	4.162	2.833		-1.771	-1.813	
	1.500			-.025			-2.022
MAX							
4	.000			-.029			7.895
	.000	23.777	2.121		-.352	1.183	
	.750	23.777	4.725		-.352	-.274	
	1.500	23.777	7.329		-.352	-.886	
	1.500			-.029			7.895
MIN							
4	.000			-.070			-4.297
	.000	3.472	-6.650		-2.347	.338	
	.750	3.472	-1.697		-2.347	-.548	
	1.500	3.472	2.734		-2.347	-2.236	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			1.500			-.070			-4.297
	MAX & MIN								
	5		.000			-.001			1.126
			.000	5.223	-5.147		.022	-.022	
			.750	5.223	-1.230		.022	-.006	
			1.500	5.223	2.687		.022	.010	
			1.500			-.001			1.126
	MAX & MIN								
	6		.000			.000			1.213
			.000	5.196	-4.831		-.001	.001	
			.750	5.196	-.933		-.001	.000	
			1.500	5.196	2.964		-.001	-.000	
			1.500			.000			1.213
	MAX								
	ALL		.000			.000			7.895
			.000	23.777	2.121		.022	1.465	
			.750	23.777	4.725		.022	.000	
			1.500	23.777	7.329		.022	.010	
			1.500			.000			7.895
	MIN								
	ALL		.000			-.176			-4.297
			.000	3.472	-6.650		-2.570	-.022	
			.750	3.472	-1.697		-2.570	-.548	
			1.500	3.472	2.687		-2.570	-2.390	
			1.500			-.176			-4.297
167	----------								
	MAX & MIN								
	1		.000			-.179			.752
			.000	5.359	-6.922		-2.127	1.201	
			.750	5.359	-2.902		-2.127	-.393	
			1.500	5.359	1.117		-2.127	-1.988	
			1.500			-.179			.752
	MAX								
	2		.000			-.081			4.351
			.000	16.548	-3.590		-.706	.995	
			.750	16.548	-.311		-.706	-.233	
			1.500	16.548	2.968		-.706	-.969	
			1.500			-.081			4.351
	MIN								
	2		.000			-.090			-2.721
			.000	4.372	-8.221		-1.892	.502	
			.750	4.372	-3.556		-1.892	-.393	
			1.500	4.372	.906		-1.892	-1.774	
			1.500			-.090			-2.721
	MAX								
	3		.000			-.067			4.323
			.000	16.547	-3.584		-.578	.889	
			.750	16.547	-.305		-.578	-.244	
			1.500	16.547	2.974		-.578	-.884	
			1.500			-.067			4.323

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			1.500			.000			6.243
	MIN								
	ALL		.000			-.180			-5.242
			.000	3.921	-10.488		-2.046	-.064	
			.750	3.921	-5.274		-2.046	-.384	
			1.500	3.921	-.585		-2.046	-1.856	
			1.500			-.180			-5.242
169	----------								
	MAX & MIN								
	1		.000			-.178			.854
			.000	6.036	-8.751		-1.296	.697	
			.750	6.036	-4.224		-1.296	-.274	
			1.500	6.036	.303		-1.296	-1.246	
			1.500			-.178			.854
	MAX								
	2		.000			-.094			4.451
			.000	17.392	-6.657		-.302	.803	
			.750	17.392	-2.721		-.302	-.147	
			1.500	17.392	1.215		-.302	-.574	
			1.500			-.094			4.451
	MIN								
	2		.000			-.126			-2.585
			.000	5.248	-10.283		-1.452	.280	
			.750	5.248	-5.089		-1.452	-.260	
			1.500	5.248	-.497		-1.452	-1.310	
			1.500			-.126			-2.585
	MAX								
	3		.000			-.092			4.411
			.000	17.387	-6.606		-.230	.751	
			.750	17.387	-2.674		-.230	-.145	
			1.500	17.387	1.258		-.230	-.519	
			1.500			-.092			4.411
	MIN								
	3		.000			-.124			-2.625
			.000	5.243	-10.233		-1.381	.228	
			.750	5.243	-5.042		-1.381	-.258	
			1.500	5.243	-.453		-1.381	-1.254	
			1.500			-.124			-2.625
	MAX								
	4		.000			-.083			6.792
			.000	24.943	-5.090		.136	.994	
			.750	24.943	-1.563		.136	-.111	
			1.500	24.943	1.964		.136	-.344	
			1.500			-.083			6.792
	MIN								
	4		.000			-.138			-4.935
			.000	4.703	-11.134		-1.782	.123	
			.750	4.703	-5.510		-1.782	-.299	
			1.500	4.703	-.888		-1.782	-1.569	
			1.500			-.138			-4.935

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	MIN								
	3		.000			-.076			-2.748
			.000	4.371	-8.214		-1.764	.396	
			.750	4.371	-3.550		-1.764	-.404	
			1.500	4.371	.911		-1.764	-1.689	
			1.500			-.076			-2.748
	MAX								
	4		.000			-.078			6.737
			.000	24.005	-1.341		-.256	1.172	
			.750	24.005	1.443		-.256	-.185	
			1.500	24.005	4.227		-.256	-.720	
			1.500			-.078			6.737
	MIN								
	4		.000			-.092			-5.048
			.000	3.712	-9.059		-2.232	.350	
			.750	3.712	-3.966		-2.232	-.451	
			1.500	3.712	.790		-2.232	-2.062	
			1.500			-.092			-5.048
	MAX & MIN								
	5		.000			-.006			.506
			.000	5.386	-7.226		.035	-.034	
			.750	5.386	-3.187		.035	-.008	
			1.500	5.386	.852		.035	.018	
			1.500			-.006			.506
	MAX & MIN								
	6		.000			.000			.527
			.000	5.361	-6.952		-.001	.001	
			.750	5.361	-2.932		-.001	.000	
			1.500	5.361	1.088		-.001	-.000	
			1.500			.000			.527
	MAX								
	ALL		.000			.000			6.737
			.000	24.005	-1.341		.035	1.201	
			.750	24.005	1.443		.035	.000	
			1.500	24.005	4.227		.035	.018	
			1.500			.000			6.737
	MIN								
	ALL		.000			-.179			-5.048
			.000	3.712	-9.059		-2.232	-.034	
			.750	3.712	-3.966		-2.232	-.451	
			1.500	3.712	.790		-2.232	-2.062	
			1.500			-.179			-5.048
168	----------								
	MAX & MIN								
	1		.000			-.180			.510
			.000	5.501	-8.193		-1.704	.952	
			.750	5.501	-4.068		-1.704	-.325	
			1.500	5.501	.058		-1.704	-1.603	
			1.500			-.180			.510
	MAX								
	2		.000			-.094			3.962

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			1.500			.000			6.243
	MIN								
	ALL		.000			-.180			-5.242
			.000	3.921	-10.488		-2.046	-.064	
			.750	3.921	-5.274		-2.046	-.384	
			1.500	3.921	-.585		-2.046	-1.856	
			1.500			-.180			-5.242
169	----------								
	MAX & MIN								
	1		.000			-.178			.854
			.000	6.036	-8.751		-1.296	.697	
			.750	6.036	-4.224		-1.296	-.274	
			1.500	6.036	.303		-1.296	-1.246	
			1.500			-.178			.854
	MAX								
	2		.000			-.094			4.451
			.000	17.392	-6.657		-.302	.803	
			.750	17.392	-2.721		-.302	-.147	
			1.500	17.392	1.215		-.302	-.574	
			1.500			-.094			4.451
	MIN								
	2		.000			-.126			-2.585
			.000	5.248	-10.283		-1.452	.280	
			.750	5.248	-5.089		-1.452	-.260	
			1.500	5.248	-.497		-1.452	-1.310	
			1.500			-.126			-2.585
	MAX								
	3		.000			-.092			4.411
			.000	17.387	-6.606		-.230	.751	
			.750	17.387	-2.674		-.230	-.145	
			1.500	17.387	1.258		-.230	-.519	
			1.500			-.092			4.411
	MIN								
	3		.000			-.124			-2.625
			.000	5.243	-10.233		-1.381	.228	
			.750	5.243	-5.042		-1.381	-.258	
			1.500	5.243	-.453		-1.381	-1.254	
			1.500			-.124			-2.625
	MAX								
	4		.000			-.083			6.792
			.000	24.943	-5.090		.136	.994	
			.750	24.943	-1.563		.136	-.111	
			1.500	24.943	1.964		.136	-.344	
			1.500			-.083			6.792
	MIN								
	4		.000			-.138			-4.935
			.000	4.703	-11.134		-1.782	.123	
			.750	4.703	-5.510		-1.782	-.299	
			1.500	4.703	-.888		-1.782	-1.569	
			1.500			-.138			-4.935

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		MAX & MIN							
	5		.000			-.019			.875
			.000	6.072	-9.385		.117	-.103	
			.750	6.072	-4.831		.117	-.015	
			1.500	6.072	-.276		.117	.073	
			1.500			-.019			.875
		MAX & MIN							
	6		.000			.000			.658
			.000	6.043	-8.885		-.003	.002	
			.750	6.043	-4.352		-.003	.000	
			1.500	6.043	.180		-.003	-.002	
			1.500			.000			.658
		MAX							
		ALL	.000			.000			6.792
			.000	24.943	-5.090		.136	.994	
			.750	24.943	-1.563		.136	.000	
			1.500	24.943	1.964		.136	.073	
			1.500			.000			6.792
		MIN							
		ALL	.000			-.178			-4.935
			.000	4.703	-11.134		-1.782	-.103	
			.750	4.703	-5.510		-1.782	-.299	
			1.500	4.703	-.888		-1.782	-1.569	
			1.500			-.178			-4.935
170	----------								
		MAX & MIN							
	1		.000			.067			-.030
			.000	7.466	-7.471		-1.074	.564	
			.750	7.466	-1.872		-1.074	-.242	
			1.500	7.466	3.728		-1.074	-1.047	
			1.500			.067			-.030
		MAX							
		2	.000			.265			3.335
			.000	19.595	-6.456		-.413	.454	
			.750	19.385	-.666		-.413	-.136	
			1.500	19.175	4.966		-.413	-.531	
			1.500			.265			3.335
		MIN							
		2	.000			-.328			-3.476
			.000	7.821	-9.548		-.933	.259	
			.750	7.611	-2.813		-.933	-.218	
			1.500	7.401	3.488		-.933	-.889	
			1.500			-.328			-3.476
		MAX							
		3	.000			.284			3.268
			.000	19.405	-6.295		-.366	.419	
			.750	19.279	-.616		-.366	-.136	
			1.500	19.153	4.968		-.366	-.496	
			1.500			.284			3.268
		MIN							
		3	.000			-.310			-3.544

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			.000	7.631	-9.387		-.886	.224	
			.750	7.505	-2.763		-.886	-.219	
			1.500	7.379	3.490		-.886	-.055	
			1.500			-.310			-3.544
		MAX							
		4	.000			.476			5.445
			.000	27.157	-5.285		-.214	.519	
			.750	27.031	.322		-.214	-.109	
			1.500	26.905	5.835		-.214	-.411	
			1.500			.476			5.445
		MIN							
		4	.000			-.513			-5.908
			.000	7.532	-10.438		-1.080	.194	
			.750	7.406	-3.257		-1.080	-.245	
			1.500	7.280	3.371		-1.080	-1.008	
			1.500			-.513			-5.908
		MAX & MIN							
		5	.000			-.003			.759
			.000	8.711	-8.594		.107	-.031	
			.750	8.711	-2.061		.107	.049	
			1.500	8.711	4.473		.107	.130	
			1.500			-.003			.759
		MAX & MIN							
		6	.000			.000			-.143
			.000	7.537	-7.712		-.003	.001	
			.750	7.537	-2.060		-.003	-.001	
			1.500	7.537	3.593		-.003	-.003	
			1.500			.000			-.143
		MAX							
		ALL	.000			.476			5.445
			.000	27.157	-5.285		.107	.564	
			.750	27.031	.322		.107	.049	
			1.500	26.905	5.835		.107	.130	
			1.500			.476			5.445
		MIN							
		ALL	.000			-.513			-5.908
			.000	7.466	-10.438		-1.080	-.031	
			.750	7.406	-3.257		-1.080	-.245	
			1.500	7.280	3.371		-1.080	-1.047	
			1.500			-.513			-5.908
171	----------								
		MAX & MIN							
	1		.000			-.138			-.521
			.000	5.587	-8.240		-.989	.601	
			.750	5.587	-4.050		-.989	-.141	
			1.500	5.587	.141		-.989	-.883	
			1.500			-.138			-.521
		MAX							
		2	.000			-.084			3.003
			.000	16.923	-6.552		-.349	.417	
			.750	16.713	-2.715		-.349	-.086	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			1.500	16.503	.965		-.349	-.374	
			1.500			-.084			3.003
		MIN							
		2	.000			-.113			-3.809
			.000	5.221	-9.826		-.737	.161	
			.750	5.011	-4.816		-.737	-.137	
			1.500	4.801	-.408		-.737	-.688	
			1.500			-.113			-3.809
		MAX							
		3	.000			-.090			2.934
			.000	16.763	-6.450		-.311	.384	
			.750	16.637	-2.701		-.311	-.091	
			1.500	16.511	.953		-.311	-.350	
			1.500			-.090			2.934
		MIN							
		3	.000			-.120			-3.878
			.000	5.061	-9.724		-.699	.128	
			.750	4.935	-4.802		-.699	-.142	
			1.500	4.809	-.419		-.699	-.664	
			1.500			-.120			-3.878
		MAX							
		4	.000			-.074			5.176
			.000	24.056	-5.120		-.220	.494	
			.750	23.930	-1.752		-.220	-.074	
			1.500	23.804	1.522		-.220	-.281	
			1.500			-.074			5.176
		MIN							
		4	.000			-.124			-6.178
			.000	4.554	-10.576		-.867	.066	
			.750	4.428	-5.253		-.867	-.158	
			1.500	4.302	-.766		-.867	-.806	
			1.500			-.124			-6.178
		MAX & MIN							
		5	.000			.018			-.572
			.000	7.036	-10.057		.107	-.087	
			.750	7.036	-4.780		.107	-.007	
			1.500	7.036	.496		.107	.073	
			1.500			.018			-.572
		MAX & MIN							
		6	.000			-.000			-.556
			.000	5.596	-8.372		-.003	.002	
			.750	5.596	-4.175		-.003	.000	
			1.500	5.596	.022		-.003	-.002	
			1.500			-.000			-.556
		MAX							
		ALL	.000			.018			5.176
			.000	24.056	-5.120		.107	.601	
			.750	23.930	-1.752		.107	.000	
			1.500	23.804	1.522		.107	.073	
			1.500			.018			5.176

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		MIN							
		ALL	.000			-.138			-6.178
			.000	4.554	-10.576		-.989	-.087	
			.750	4.428	-5.253		-.989	-.158	
			1.500	4.302	-.766		-.989	-.803	
			1.500			-.138			-6.178
172	----------								
		MAX & MIN							
	1		.000			-.160			-.070
			.000	5.102	-8.312		-.684	.408	
			.750	5.102	-4.486		-.684	-.105	
			1.500	5.102	-.660		-.684	-.618	
			1.500			-.160			-.070
		MAX							
		2	.000			-.108			3.401
			.000	16.329	-6.026		-.097	.263	
			.750	16.119	-2.662		-.097	-.055	
			1.500	15.909	.545		-.097	-.129	
			1.500			-.108			3.401
		MIN							
		2	.000			-.123			-3.259
			.000	4.591	-9.793		-.511	.017	
			.750	4.381	-5.160		-.511	-.114	
			1.500	4.171	-.946		-.511	-.489	
			1.500			-.123			-3.259
		MAX							
		3	.000			-.123			3.349
			.000	16.173	-5.959		-.029	.201	
			.750	16.047	-2.681		-.029	-.065	
			1.500	15.921	.504		-.029	-.088	
			1.500			-.123			3.349
		MIN							
		3	.000			-.138			-3.312
			.000	4.435	-9.726		-.442	-.045	
			.750	4.309	-5.178		-.442	-.124	
			1.500	4.183	-.988		-.442	-.447	
			1.500			-.138			-3.312
		MAX							
		4	.000			-.102			5.578
			.000	23.397	-4.308		.040	.340	
			.750	23.271	-1.480		.040	-.037	
			1.500	23.145	1.254		.040	-.010	
			1.500			-.102			5.578
		MIN							
		4	.000			-.128			-5.523
			.000	3.834	-10.586		-.649	-.070	
			.750	3.708	-5.643		-.649	-.135	
			1.500	3.582	-1.232		-.649	-.609	
			1.500			-.128			-5.523
		MAX & MIN							
		5	.000			.015			-.027

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	.000	6.272	-10.132		.064	-.057	
	.750	6.272	-5.428		.064	-.009	
	1.500	6.272	-.725		.064	.038	
	1.500			.015			-.027
MAX & MIN							
6	.000			-.000			-.080
	.000	5.105	-8.375		-.001	.001	
	.750	5.105	-4.546		-.001	.000	
	1.500	5.105	-.718		-.001	-.001	
	1.500			-.000			-.080
MAX							
ALL	.000			.015			5.578
	.000	23.397	-4.308		.064	.408	
	.750	23.271	-1.480		.064	.000	
	1.500	23.145	1.254		.064	.038	
	1.500			.015			5.578
MIN							
ALL	.000			-.160			-5.523
	.000	3.834	-10.586		-.684	-.070	
	.750	3.708	-5.643		-.684	-.135	
	1.500	3.582	-1.232		-.684	-.618	
	1.500			-.160			-5.523
173 ----------							
MAX & MIN							
1	.000			-.159			.018
	.000	5.044	-8.137		-.342	.203	
	.750	5.044	-4.354		-.342	-.054	
	1.500	5.044	-.571		-.342	-.311	
	1.500			-.159			.018
MAX							
2	.000			-.118			3.309
	.000	16.256	-5.557		.164	.100	
	.750	16.046	-2.254		.164	-.013	
	1.500	15.836	.892		.164	.109	
	1.500			-.118			3.309
MIN							
2	.000			-.126			-3.126
	.000	4.509	-9.571		-.238	-.136	
	.750	4.299	-4.986		-.238	-.076	
	1.500	4.089	-.786		-.238	-.253	
	1.500			-.126			-3.126
MAX							
3	.000			-.136			3.282
	.000	16.101	-5.507		.274	.010	
	.750	15.975	-2.289		.274	-.019	
	1.500	15.849	.835		.274	.185	
	1.500			-.136			3.282
MIN							
3	.000			-.144			-3.153
	.000	4.354	-9.521		-.128	-.226	
	.750	4.228	-5.021		-.128	-.083	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	1.500	4.102	-.844		-.128	-.177	
	1.500			-.144			-3.153
MAX							
4	.000			-.115			5.432
	.000	23.316	-3.696		.298	.177	
	.750	23.190	-.940		.298	.008	
	1.500	23.064	1.722		.298	.230	
	1.500			-.115			5.432
MIN							
4	.000			-.128			-5.294
	.000	3.738	-10.387		-.372	-.217	
	.750	3.612	-5.493		-.372	-.098	
	1.500	3.486	-1.076		-.372	-.373	
	1.500			-.128			-5.294
MAX & MIN							
5	.000			.009			.056
	.000	5.943	-9.790		.027	-.025	
	.750	5.943	-5.333		.027	-.005	
	1.500	5.943	-.876		.027	.016	
	1.500			.009			.056
MAX & MIN							
6	.000			-.000			.015
	.000	5.046	-8.167		-.001	.001	
	.750	5.046	-4.382		-.001	.000	
	1.500	5.046	-.598		-.001	-.000	
	1.500			-.000			.015
MAX							
ALL	.000			.009			5.432
	.000	23.316	-3.696		.298	.203	
	.750	23.190	-.940		.298	.008	
	1.500	23.064	1.722		.298	.230	
	1.500			.009			5.432
MIN							
ALL	.000			-.159			-5.294
	.000	3.738	-10.387		-.372	-.226	
	.750	3.612	-5.493		-.372	-.098	
	1.500	3.486	-1.076		-.372	-.373	
	1.500			-.159			-5.294
174 ----------							
MAX & MIN							
1	.000			-.158			.000
	.000	5.029	-8.049		.000	.000	
	.750	5.029	-4.277		.000	.000	
	1.500	5.029	-.506		.000	.000	
	1.500			-.158			.000
MAX							
2	.000			-.092			3.122
	.000	16.237	-5.384		.352	.082	
	.750	16.027	-2.097		.352	.112	
	1.500	15.817	1.032		.352	.376	
	1.500			-.092			3.122

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
MIN							
2	.000			-.097			-3.122
	.000	4.488	-9.468		-.045	-.152	
	.750	4.278	-4.893		-.045	.048	
	1.500	4.068	-.693		-.045	.014	
	1.500			-.097			-3.122
MAX							
3	.000			-.092			3.121
	.000	16.082	-5.339		.455	.058	
	.750	15.956	-2.137		.455	.165	
	1.500	15.830	.971		.455	.506	
	1.500			-.092			3.121
MIN							
3	.000			-.097			-3.122
	.000	4.332	-9.423		.057	-.176	
	.750	4.206	-4.933		.057	.101	
	1.500	4.080	-.754		.057	.144	
	1.500			-.097			-3.122
MAX							
4	.000			-.089			5.203
	.000	23.296	-3.482		.485	.160	
	.750	23.170	-.745		.485	.133	
	1.500	23.044	1.898		.485	.497	
	1.500			-.089			5.203
MIN							
4	.000			-.098			-5.203
	.000	3.713	-10.289		-.178	-.231	
	.750	3.587	-5.405		-.178	.026	
	1.500	3.461	-.977		-.178	-.107	
	1.500			-.098			-5.203
MAX & MIN							
5	.000			.007			.000
	.000	5.898	-9.661		.000	.000	
	.750	5.898	-5.238		.000	.000	
	1.500	5.898	-.815		.000	.000	
	1.500			.007			.000
MAX & MIN							
6	.000			-.000			.000
	.000	5.030	-8.069		.000	.000	
	.750	5.030	-4.297		.000	.000	
	1.500	5.030	-.524		.000	.000	
	1.500			-.000			.000
MAX							
ALL	.000			.007			5.203
	.000	23.296	-3.482		.485	.160	
	.750	23.170	-.745		.485	.165	
	1.500	23.044	1.898		.485	.506	
	1.500			.007			5.203
MIN							
ALL	.000			-.158			-5.203
	.000	3.713	-10.289		-.178	-.231	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT LOAD ID ENVE	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	.750	3.587	-5.405		-.178	.000	
	1.500	3.461	-.977		-.178	-.107	
	1.500			-.158			-5.203
5001 ----------							
MAX & MIN							
1	.000			-35.555			.018
	.000	7.598	-.380		-2.443	.122	
	.025	7.598	-.190		-2.443	.061	
	.050	7.598	.000		-2.443	.000	
	.050			-35.555			.018
MAX							
2	.000			-33.152			.015
	.000	6.197	-.207		-3.146	.230	
	.025	6.197	-.104		-3.146	.115	
	.050	6.197	.000		-3.146	.000	
	.050			-33.152			.015
MIN							
2	.000			-53.396			.007
	.000	3.537	-.305		-4.606	.166	
	.025	3.537	-.152		-4.606	.083	
	.050	3.537	.000		-4.606	.000	
	.050			-53.396			.007
MAX							
3	.000			-33.293			.014
	.000	6.080	-.202		-4.595	.303	
	.025	6.080	-.101		-4.595	.151	
	.050	6.080	.000		-4.595	.000	
	.050			-33.293			.014
MIN							
3	.000			-53.537			.007
	.000	3.420	-.299		-6.054	.238	
	.025	3.420	-.150		-6.054	.119	
	.050	3.420	.000		-6.054	.000	
	.050			-53.537			.007
MAX							
4	.000			-31.612			.017
	.000	6.962	-.177		-2.626	.253	
	.025	6.962	-.089		-2.626	.126	
	.050	6.962	.000		-2.626	.000	
	.050			-31.612			.017
MIN							
4	.000			-65.352			.004
	.000	2.530	-.340		-5.059	.146	
	.025	2.530	-.170		-5.059	.073	
	.050	2.530	.000		-5.059	.000	
	.050			-65.352			.004
MAX & MIN							
5	.000			-34.211			.000
	.000	.000	.000		-.058	.003	
	.025	.000	.000		-.058	.001	
	.050	.000	.000		-.058	.000	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			.050			-34.211			.000
	MAX & MIN								
	6		.000			-36.857			.000
			.000	.000	.000		.001	.000	
			.025	.000	.000		.001	.000	
			.050	.000	.000		.001	.000	
			.050			-36.857			.000
	MAX								
	ALL		.000			-31.612			.018
			.000	7.598	.000		.001	.303	
			.025	7.598	.000		.001	.151	
			.050	7.598	.000		.001	.000	
			.050			-31.612			.018
	MIN								
	ALL		.000			-65.352			.000
			.000	.000	-.380		-6.054	.000	
			.025	.000	-.190		-6.054	.000	
			.050	.000	.000		-6.054	.000	
			.050			-65.352			.000
5021	----------								
	MAX & MIN								
	1		.000			-35.555			-.018
			.000	7.598	-.380		2.443	-.122	
			.025	7.598	-.190		2.443	-.061	
			.050	7.598	.000		2.443	.000	
			.050			-35.555			-.018
	MAX								
	2		.000			-33.179			-.008
			.000	6.184	-.207		.103	.059	
			.025	6.184	-.103		.103	.030	
			.050	6.184	.000		.103	.000	
			.050			-33.179			-.008
	MIN								
	2		.000			-53.423			-.016
			.000	3.525	-.304		-1.356	-.005	
			.025	3.525	-.152		-1.356	-.003	
			.050	3.525	.000		-1.356	.000	
			.050			-53.423			-.016
	MAX								
	3		.000			-33.338			-.008
			.000	6.059	-.201		-1.450	.137	
			.025	6.059	-.100		-1.450	.068	
			.050	6.059	.000		-1.450	.000	
			.050			-33.338			-.008
	MIN								
	3		.000			-53.582			-.016
			.000	3.400	-.298		-2.910	.073	
			.025	3.400	-.149		-2.910	.036	
			.050	3.400	.000		-2.910	.000	
			.050			-53.582			-.016

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	MAX								
	4		.000			-31.639			-.006
			.000	6.950	-.177		.556	.079	
			.025	6.950	-.088		.556	.040	
			.050	6.950	.000		.556	.000	
			.050			-31.639			-.006
	MIN								
	4		.000			-65.379			-.018
			.000	2.517	-.339		-1.877	-.028	
			.025	2.517	-.170		-1.877	-.014	
			.050	2.517	.000		-1.877	.000	
			.050			-65.379			-.018
	MAX & MIN								
	5		.000			-34.211			.000
			.000	.000	.000		.058	-.003	
			.025	.000	.000		.058	-.001	
			.050	.000	.000		.058	.000	
			.050			-34.211			.000
	MAX & MIN								
	6		.000			-36.857			.000
			.000	.000	.000		-.001	.000	
			.025	.000	.000		-.001	.000	
			.050	.000	.000		-.001	.000	
			.050			-36.857			.000
	MAX								
	ALL		.000			-31.639			.000
			.000	7.598	.000		2.443	.137	
			.025	7.598	.000		2.443	.068	
			.050	7.598	.000		2.443	.000	
			.050			-31.639			.000
	MIN								
	ALL		.000			-65.379			-.018
			.000	.000	-.380		-2.910	-.122	
			.025	.000	-.190		-2.910	-.061	
			.050	.000	.000		-2.910	.000	
			.050			-65.379			-.018
5049	----------								
	MAX & MIN								
	1		.000			-359.342			1.152
			.000	2.707	-43.616		-.142	.895	
			9.500	2.707	-17.900		-.142	-.453	
			19.000	2.707	7.816		-.142	-1.802	
			19.000			-241.286			1.152
	MAX								
	2		.000			-356.538			1.028
			.000	4.167	-7.179		2.314	17.786	
			9.500	4.167	-6.110		2.314	7.927	
			19.000	4.167	17.250		2.314	29.910	
			19.000			-238.481			1.028
	MIN								
	2		.000			-414.997			.482

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			.000	-2.416	-29.470		-2.760	-14.057	
			9.500	-2.416	-30.129		-2.760	-8.431	
			19.000	-2.416	-53.079		-2.760	-34.647	
			19.000			-296.941			.482
	MAX								
	3		.000			-356.507			1.002
			.000	4.409	-8.134		2.236	18.610	
			9.500	4.409	-4.769		2.236	8.007	
			19.000	4.409	20.887		2.236	29.247	
			19.000			-238.451			1.002
	MIN								
	3		.000			-414.967			.456
			.000	-2.174	-30.425		-2.838	-13.232	
			9.500	-2.174	-28.788		-2.838	-8.350	
			19.000	-2.174	-49.442		-2.838	-35.310	
			19.000			-296.910			.456
	MAX								
	4		.000			-354.699			1.184
			.000	6.506	2.935		4.030	28.222	
			9.500	6.506	.552		4.030	13.432	
			19.000	6.506	35.321		4.030	51.713	
			19.000			-236.642			1.184
	MIN								
	4		.000			-452.131			.274
			.000	-4.465	-34.218		-4.427	-24.849	
			9.500	-4.465	-39.479		-4.427	-13.830	
			19.000	-4.465	-81.893		-4.427	-55.882	
			19.000			-334.075			.274
	MAX & MIN								
	5		.000			-420.134			.000
			.000	.000	.000		6.035	-38.054	
			9.500	.000	.000		6.035	19.279	
			19.000	.000	.000		6.035	76.612	
			19.000			-302.077			.000
	MAX & MIN								
	6		.000			-359.342			.000
			.000	.000	.000		-.142	.895	
			9.500	.000	.000		-.142	-.453	
			19.000	.000	.000		-.142	-1.802	
			19.000			-241.286			.000
	MAX								
	ALL		.000			-354.699			1.184
			.000	6.506	2.935		6.035	28.222	
			9.500	6.506	.552		6.035	19.279	
			19.000	6.506	35.321		6.035	76.612	
			19.000			-236.642			1.184
	MIN								
	ALL		.000			-452.131			.000
			.000	-4.465	-43.616		-4.427	-38.054	
			9.500	-4.465	-39.479		-4.427	-13.830	
			19.000	-4.465	-81.893		-4.427	-55.882	

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			19.000			-334.075			.000
5085	----------								
	MAX & MIN								
	1		.000			-38.160			.018
			.000	7.583	-.379		2.441	-.122	
			.025	7.583	-.190		2.441	-.061	
			.050	7.583	.000		2.441	.000	
			.050			-38.160			.018
	MAX								
	2		.000			-35.832			.016
			.000	6.176	-.206		.146	.058	
			.025	6.176	-.103		.146	.029	
			.050	6.176	.000		.146	.000	
			.050			-35.832			.016
	MIN								
	2		.000			-63.662			.008
			.000	3.516	-.304		-1.346	-.007	
			.025	3.516	-.152		-1.346	-.004	
			.050	3.516	.000		-1.346	.000	
			.050			-63.662			.008
	MAX								
	3		.000			-35.673			.016
			.000	6.051	-.200		-1.408	.135	
			.025	6.051	-.100		-1.408	.068	
			.050	6.051	.000		-1.408	.000	
			.050			-35.673			.016
	MIN								
	3		.000			-63.504			.008
			.000	3.391	-.298		-2.900	.070	
			.025	3.391	-.149		-2.900	.035	
			.050	3.391	.000		-2.900	.000	
			.050			-63.504			.008
	MAX								
	4		.000			-34.237			.018
			.000	6.941	-.176		.626	.077	
			.025	6.941	-.088		.626	.039	
			.050	6.941	.000		.626	.000	
			.050			-34.237			.018
	MIN								
	4		.000			-80.621			.005
			.000	2.509	-.339		-1.860	-.031	
			.025	2.509	-.169		-1.860	-.016	
			.050	2.509	.000		-1.860	.000	
			.050			-80.621			.005
	MAX & MIN								
	5		.000			-34.211			.000
			.000	-.000	.000		-.058	.003	
			.025	-.000	.000		-.058	.001	
			.050	-.000	.000		-.058	.000	
			.050			-34.211			.000

REPOSICION 303+620. 3 VANOS 14+17+14 FILE=303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		MAX & MIN							
	6		.000			-36.857			.000
			.000	.000	.000		.001	.000	
			.025	.000	.000		.001	.000	
			.050	.000	.000		.001	.000	
			.050			-36.857			.000
		MAX							
		ALL	.000			-34.211			.018
			.000	7.583	.000		2.441	.135	
			.025	7.583	.000		2.441	.068	
			.050	7.583	.000		2.441	.000	
			.050			-34.211			.018
		MIN							
		ALL	.000			-80.621			.000
			.000	-.000	-.379		-2.900	-.122	
			.025	-.000	-.190		-2.900	-.061	
			.050	-.000	.000		-2.900	.000	
			.050			-80.621			.000
5105	----------								
		MAX & MIN							
	1		.000			-38.160			-.018
			.000	7.583	-.379		-2.441	.122	
			.025	7.583	-.190		-2.441	.061	
			.050	7.583	.000		-2.441	.000	
			.050			-38.160			-.018
		MAX							
	2		.000			-35.859			-.007
			.000	6.188	-.207		-3.156	.232	
			.025	6.188	-.103		-3.156	.116	
			.050	6.188	.000		-3.156	.000	
			.050			-35.859			-.007
		MIN							
	2		.000			-63.689			-.015
			.000	3.528	-.304		-4.648	.167	
			.025	3.528	-.152		-4.648	.084	
			.050	3.528	.000		-4.648	.000	
			.050			-63.689			-.015
		MAX							
	3		.000			-35.718			-.006
			.000	6.071	-.201		-4.605	.305	
			.025	6.071	-.101		-4.605	.152	
			.050	6.071	.000		-4.605	.000	
			.050			-35.718			-.006
		MIN							
	3		.000			-63.548			-.014
			.000	3.411	-.299		-6.097	.240	
			.025	3.411	-.149		-6.097	.120	
			.050	3.411	.000		-6.097	.000	
			.050			-63.548			-.014
		MAX							
	4		.000			-34.264			-.004

REPOSICION 303+620. 3 VANOS 14+17+14 FILE=303620

F R A M E E L E M E N T F O R C E S (USING "QUICK" TRUCK RESPONSE CALC)

ELT	LOAD ID	ENVE	DIST END1	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
			.000	6.954	-.177		-2.642	.256	
			.025	6.954	-.088		-2.642	.128	
			.050	6.954	.000		-2.642	.000	
			.050			-34.264			-.004
		MIN							
	4		.000			-80.648			-.017
			.000	2.521	-.339		-5.129	.148	
			.025	2.521	-.170		-5.129	.074	
			.050	2.521	.000		-5.129	.000	
			.050			-80.648			-.017
		MAX & MIN							
	5		.000			-34.211			.000
			.000	-.000	.000		.058	-.003	
			.025	-.000	.000		.058	-.001	
			.050	-.000	.000		.058	.000	
			.050			-34.211			.000
		MAX & MIN							
	6		.000			-36.857			.000
			.000	.000	.000		-.001	.000	
			.025	.000	.000		-.001	.000	
			.050	.000	.000		-.001	.000	
			.050			-36.857			.000
		MAX							
		ALL	.000			-34.211			.000
			.000	7.583	.000		.058	.305	
			.025	7.583	.000		.058	.152	
			.050	7.583	.000		.058	.000	
			.050			-34.211			.000
		MIN							
		ALL	.000			-80.648			-.018
			.000	-.000	-.379		-6.097	-.003	
			.025	-.000	-.190		-6.097	-.001	
			.050	-.000	.000		-6.097	.000	
			.050			-80.648			-.018

STRUCTURAL ANALYSIS PROGRAMS

VERSION 5.40

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REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

J O I N T D I S P L A C E M E N T S

LOAD CONDITION 1 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
1	.000000	.000000	-.000182	-.000269	.001058	.000000
2	.000000	.000000	-.002723	-.000113	.000844	.000000
3	.000000	.000000	-.004180	-.000025	.000322	.000000
4	.000000	.000000	-.004296	.000021	-.000238	.000000
5	.000000	.000000	-.003242	.000053	-.000627	.000000
6	.000000	.000000	-.001699	.000084	-.000615	.000000
7	-.5045E-07	-.8031E-10	-.8754E-03	.1136E-03	-.1325E-04	.4314E-08
8	.000000	.000000	-.001531	.000093	.000569	.000000
9	.000000	.000000	-.002919	.000073	.000667	.000000
10	.000000	.000000	-.004121	.000061	.000419	.000000
11	.000000	.000000	-.004583	.000058	.000000	.000000
22	.000000	.000000	-.000593	-.000171	.001030	.000000
23	.000000	.000000	-.002849	-.000059	.000809	.000000
24	.000000	.000000	-.004200	-.000012	.000310	.000000
25	.000000	.000000	-.004265	.000010	-.000244	.000000
26	.000000	.000000	-.003174	.000026	-.000630	.000000
27	.000000	.000000	-.001584	.000055	-.000622	.000000
28	-.6034E-07	-.6205E-10	-.6886E-03	.1129E-03	-.1245E-04	.5173E-08
29	.000000	.000000	-.001404	.000061	.000575	.000000
30	.000000	.000000	-.002830	.000034	.000668	.000000
31	.000000	.000000	-.004047	.000026	.000419	.000000
32	.000000	.000000	-.004513	.000023	.000000	.000000
43	-.6323E-07	.0000E+00	-.7438E-03	.0000E+00	.9958E-03	.0000E+00
44	.000000	.000000	-.002895	.000000	.000792	.000000
45	.000000	.000000	-.004208	.000000	.000304	.000000
46	.000000	.000000	-.004256	.000000	-.000246	.000000
47	.000000	.000000	-.003153	.000000	-.000633	.000000
48	.000000	.000000	-.001534	.000000	-.000639	.000000
49	-.8193E-07	.0000E+00	-.5223E-03	.0000E+00	-.1030E-04	.0000E+00
50	.000000	.000000	-.001349	.000000	.000594	.000000
51	.000000	.000000	-.002802	.000000	.000671	.000000
52	.000000	.000000	-.004026	.000000	.000419	.000000
53	.000000	.000000	-.004494	.000000	.000000	.000000
64	.000000	.000000	-.000593	.000171	.001030	.000000
65	.000000	.000000	-.002849	.000059	.000809	.000000
66	.000000	.000000	-.004200	.000012	.000310	.000000
67	.000000	.000000	-.004265	-.000010	-.000244	.000000
68	.000000	.000000	-.003174	-.000026	-.000630	.000000
69	.000000	.000000	-.001584	-.000055	-.000622	.000000
70	-.6034E-07	.6205E-10	-.6886E-03	-.1129E-03	-.1245E-04	-.5173E-08
71	.000000	.000000	-.001404	-.000061	.000575	.000000
72	.000000	.000000	-.002830	-.000034	.000668	.000000
73	.000000	.000000	-.004047	-.000026	.000419	.000000
74	.000000	.000000	-.004513	-.000023	.000000	.000000
85	.000000	.000000	-.000182	.000269	.001058	.000000
86	.000000	.000000	-.002723	.000113	.000844	.000000
87	.000000	.000000	-.004180	.000025	.000322	.000000
88	.000000	.000000	-.004296	-.000021	-.000238	.000000
89	.000000	.000000	-.003242	-.000053	-.000627	.000000
90	.000000	.000000	-.001699	-.000084	-.000615	.000000

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

J O I N T D I S P L A C E M E N T S

LOAD CONDITION 1 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
91	-.5045E-07	.8031E-10	-.8754E-03	-.1136E-03	-.1325E-04	-.4314E-08
92	.000000	.000000	-.001531	-.000093	.000569	.000000
93	.000000	.000000	-.002919	-.000073	.000667	.000000
94	.000000	.000000	-.004121	-.000061	.000419	.000000
95	.000000	.000000	-.004583	-.000058	.000000	.000000

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

J O I N T D I S P L A C E M E N T S

LOAD CONDITION 2 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
1	-.4997E-08	-.1693E-10	-.1305E-04	-.1655E-04	.7594E-04	.6847E-10
2	-.5090E-08	.2857E-11	-.1953E-03	-.4632E-05	.6021E-04	.2656E-10
3	-.5123E-08	-.2076E-11	-.2992E-03	.1890E-05	.2275E-04	.2267E-10
4	-.5102E-08	-.9237E-11	-.3068E-03	.5325E-05	-.1743E-04	.3843E-10
5	-.4994E-08	-.2259E-10	-.2304E-03	.7626E-05	-.4527E-04	.8184E-10
6	-.4718E-08	-.4276E-10	-.1192E-03	.9922E-05	-.4434E-04	.1808E-09
7	-.4146E-08	-.6600E-11	-.5967E-04	.1203E-04	-.1136E-05	.3545E-09
8	-.3381E-08	.4607E-10	-.1065E-03	.1056E-04	.4073E-04	.1926E-09
9	-.2372E-08	.2955E-10	-.2060E-03	.9076E-05	.4782E-04	.8990E-10
10	-.1217E-08	.1663E-10	-.2922E-03	.8266E-05	.3003E-04	.3528E-10
11	.0000E+00	.1277E-10	-.3252E-03	.8019E-05	.0000E+00	.0000E+00
22	-.5153E-08	-.1209E-10	-.3887E-04	-.1058E-04	.7354E-04	.4140E-10
23	-.5170E-08	.1650E-11	-.1998E-03	-.2683E-05	.5765E-04	.1685E-10
24	-.5195E-08	-.1400E-11	-.2959E-03	.6546E-06	.2188E-04	.1555E-10
25	-.5221E-08	-.6074E-11	-.2997E-03	.2185E-05	-.1780E-04	.2811E-10
26	-.5239E-08	-.1533E-10	-.2208E-03	.3352E-05	-.4547E-04	.6462E-10
27	-.5210E-08	-.3176E-10	-.1061E-03	.5432E-05	-.4481E-04	.1616E-09
28	-.4958E-08	-.5099E-11	-.4143E-04	.9617E-05	-.1017E-05	.4251E-09
29	-.3900E-08	.3457E-10	-.9258E-04	.5857E-05	.4117E-04	.1809E-09
30	-.2638E-08	.2029E-10	-.1947E-03	.3987E-05	.4789E-04	.7434E-10
31	-.1325E-08	.1095E-10	-.2820E-03	.3347E-05	.3002E-04	.2733E-10
32	.0000E+00	.8288E-11	-.3154E-03	.3189E-05	.0000E+00	.0000E+00
43	-.5196E-08	.0000E+00	-.4832E-04	.0000E+00	.7103E-04	.0000E+00
44	-.5201E-08	.0000E+00	-.2018E-03	.0000E+00	.5644E-04	.0000E+00
45	-.5232E-08	.0000E+00	-.2952E-03	.0000E+00	.2146E-04	.0000E+00
46	-.5298E-08	.0000E+00	-.2979E-03	.0000E+00	-.1801E-04	.0000E+00
47	-.5437E-08	.0000E+00	-.2180E-03	.0000E+00	-.4569E-04	.0000E+00
48	-.5783E-08	.0000E+00	-.1013E-03	.0000E+00	-.4405E-04	.0000E+00
49	-.6733E-08	.0000E+00	-.2824E-04	.0000E+00	-.8462E-06	.0000E+00
50	-.4533E-08	.0000E+00	-.8732E-04	.0000E+00	.4255E-04	.0000E+00
51	-.2872E-08	.0000E+00	-.1915E-03	.0000E+00	.4809E-04	.0000E+00
52	-.1404E-08	.0000E+00	-.2792E-03	.0000E+00	.3006E-04	.0000E+00
53	.0000E+00	.0000E+00	-.3128E-03	.0000E+00	.0000E+00	.0000E+00
64	-.5153E-08	.1209E-10	-.3887E-04	.1058E-04	.7354E-04	-.4140E-10
65	-.5170E-08	-.1650E-11	-.1998E-03	.2683E-05	.5765E-04	-.1685E-10
66	-.5195E-08	.1400E-11	-.2959E-03	-.6546E-06	.2188E-04	-.1555E-10
67	-.5221E-08	.6074E-11	-.2997E-03	-.2185E-05	-.1780E-04	-.2811E-10
68	-.5239E-08	.1533E-10	-.2208E-03	-.3352E-05	-.4547E-04	-.6462E-10
69	-.5210E-08	.3176E-10	-.1061E-03	-.5432E-05	-.4481E-04	-.1616E-09
70	-.4958E-08	.5099E-11	-.4143E-04	-.9617E-05	-.1017E-05	-.4251E-09
71	-.3900E-08	-.3457E-10	-.9258E-04	-.5857E-05	.4117E-04	-.1809E-09
72	-.2638E-08	-.2029E-10	-.1947E-03	-.3987E-05	.4789E-04	-.7434E-10
73	-.1325E-08	-.1095E-10	-.2820E-03	-.3347E-05	.3002E-04	-.2733E-10
74	.0000E+00	-.8288E-11	-.3154E-03	-.3189E-05	.0000E+00	.0000E+00
85	-.4997E-08	.1693E-10	-.1305E-04	.1655E-04	.7594E-04	-.6847E-10
86	-.5090E-08	-.2857E-11	-.1953E-03	.4632E-05	.6021E-04	-.2656E-10
87	-.5123E-08	.2076E-11	-.2992E-03	-.1890E-05	.2275E-04	-.2267E-10
88	-.5102E-08	.9237E-11	-.3068E-03	-.5325E-05	-.1743E-04	-.3843E-10
89	-.4994E-08	.2259E-10	-.2304E-03	-.7626E-05	-.4527E-04	-.8184E-10
90	-.4718E-08	.4276E-10	-.1192E-03	-.9922E-05	-.4434E-04	-.1808E-09

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

J O I N T D I S P L A C E M E N T S

LOAD CONDITION 2 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
91	-.4146E-08	.6600E-11	-.5967E-04	-.1203E-04	-.1136E-05	-.3545E-09
92	-.3381E-08	-.4607E-10	-.1065E-03	-.1056E-04	.4073E-04	-.1926E-09
93	-.2372E-08	-.2955E-10	-.2060E-03	-.9076E-05	.4782E-04	-.8990E-10
94	-.1217E-08	-.1663E-10	-.2922E-03	-.8266E-05	.3003E-04	-.3528E-10
95	.0000E+00	-.1277E-10	-.3252E-03	-.8019E-05	.0000E+00	.0000E+00

REPOSICION 303+620. 3 VANOS 14+17+14 FILE=303620

J O I N T D I S P L A C E M E N T S

LOAD CONDITION 3 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
1	-.1040E-07	-.3528E-10	-.4879E-04	-.3222E-04	.2928E-03	.1427E-09
2	-.1059E-07	.5958E-11	-.7496E-03	.2003E-04	.2302E-03	.5532E-10
3	.000000	.000000	-.001150	.000047	.000090	.000000
4	.000000	.000000	-.001189	.000061	-.000061	.000000
5	-.1039E-07	-.4701E-10	-.9137E-03	.7017E-04	-.1656E-03	.1703E-09
6	-.9816E-08	-.8898E-10	-.5054E-03	.7893E-04	-.1630E-03	.3762E-09
7	-.8627E-08	-.1373E-10	-.2880E-03	.8684E-04	-.3376E-05	.7377E-09
8	-.7034E-08	.9586E-10	-.4654E-03	.8135E-04	.1532E-03	.4007E-09
9	-.4935E-08	.6149E-10	-.8389E-03	.7583E-04	.1793E-03	.1871E-09
10	.000000	.000000	-.001162	.000073	.000112	.000000
11	.000000	.000000	-.001286	.000072	.000000	.000000
22	-.1072E-07	-.2519E-10	-.1061E-03	-.2141E-04	.2795E-03	.8627E-10
23	-.1076E-07	.3442E-11	-.7176E-03	.6084E-05	.2200E-03	.3510E-10
24	.000000	.000000	-.001087	.000018	.000086	.000000
25	.000000	.000000	-.001112	.000024	-.000062	.000000
26	-.1090E-07	-.3189E-10	-.8256E-03	.2850E-04	-.1664E-03	.1345E-09
27	-.1084E-07	-.6609E-10	-.4044E-03	.3631E-04	-.1648E-03	.3362E-09
28	-.1032E-07	-.1061E-10	-.1677E-03	.5194E-04	-.2289E-05	.8846E-09
29	-.8116E-08	.7194E-10	-.3614E-03	.3791E-04	.1548E-03	.3764E-09
30	-.5490E-08	.4221E-10	-.7446E-03	.3093E-04	.1795E-03	.1547E-09
31	.000000	.000000	-.001072	.000029	.000112	.000000
32	.000000	.000000	-.001197	.000028	.000000	.000000
43	-.1081E-07	.0000E+00	-.1269E-03	.0000E+00	.2698E-03	.0000E+00
44	-.1082E-07	.0000E+00	-.7120E-03	.0000E+00	.2156E-03	.0000E+00
45	.000000	.000000	-.001072	.000000	.000085	.000000
46	.000000	.000000	-.001092	.000000	-.000063	.000000
47	-.1132E-07	.0000E+00	-.8023E-03	.0000E+00	-.1672E-03	.0000E+00
48	-.1203E-07	.0000E+00	-.3733E-03	.0000E+00	-.1694E-03	.0000E+00
49	-.1401E-07	.0000E+00	-.1054E-03	.0000E+00	-.1761E-05	.0000E+00
50	-.9431E-08	.0000E+00	-.3286E-03	.0000E+00	.1599E-03	.0000E+00
51	-.5975E-08	.0000E+00	-.7195E-03	.0000E+00	.1803E-03	.0000E+00
52	.000000	.000000	-.001048	.000000	.000113	.000000
53	.000000	.000000	-.001174	.000000	.000000	.000000
64	-.1072E-07	.2519E-10	-.1061E-03	.2141E-04	.2795E-03	-.8627E-10
65	-.1076E-07	-.3442E-11	-.7176E-03	-.6084E-05	.2200E-03	-.3510E-10
66	.000000	.000000	-.001087	-.000018	.000086	.000000
67	.000000	.000000	-.001112	-.000024	-.000062	.000000
68	-.1090E-07	.3189E-10	-.8256E-03	-.2850E-04	-.1664E-03	-.1345E-09
69	-.1084E-07	.6609E-10	-.4044E-03	-.3631E-04	-.1648E-03	-.3362E-09
70	-.1032E-07	.1061E-10	-.1677E-03	-.5194E-04	-.2289E-05	-.8846E-09
71	-.8116E-08	-.7194E-10	-.3614E-03	-.3791E-04	.1548E-03	-.3764E-09
72	-.5490E-08	-.4221E-10	-.7446E-03	-.3093E-04	.1795E-03	-.1547E-09
73	.000000	.000000	-.001072	-.000029	.000112	.000000
74	.000000	.000000	-.001197	-.000028	.000000	.000000
85	-.1040E-07	.3528E-10	-.4879E-04	.3222E-04	.2928E-03	-.1427E-09
86	-.1059E-07	-.5958E-11	-.7496E-03	-.2003E-04	.2302E-03	-.5532E-10
87	.000000	.000000	-.001150	-.000047	.000090	.000000
88	.000000	.000000	-.001189	-.000061	-.000061	.000000
89	-.1039E-07	.4701E-10	-.9137E-03	-.7017E-04	-.1656E-03	-.1703E-09
90	-.9816E-08	.8898E-10	-.5054E-03	-.7893E-04	-.1630E-03	-.3762E-09

REPOSICION 303+620. 3 VANOS 14+17+14 FILE=303620

J O I N T D I S P L A C E M E N T S

LOAD CONDITION 3 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
91	-.8627E-08	.1373E-10	-.2880E-03	-.8684E-04	-.3376E-05	-.7377E-09
92	-.7034E-08	-.9586E-10	-.4654E-03	-.8135E-04	.1532E-03	-.4007E-09
93	-.4935E-08	-.6149E-10	-.8389E-03	-.7583E-04	.1793E-03	-.1871E-09
94	.000000	.000000	-.001162	-.000073	.000112	.000000
95	.000000	.000000	-.001286	-.000072	.000000	.000000

REPOSICION 303+620. 3 VANOS 14+17+14 FILE=303620

J O I N T D I S P L A C E M E N T S

LOAD CONDITION 4 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
1	.1376E-03	.4252E-03	.8615E-05	-.2611E-05	-.8222E-05	.5073E-04
2	.1375E-03	.5563E-03	.4662E-04	-.1463E-04	-.8915E-05	.4961E-04
3	.1324E-03	.6795E-03	.7932E-04	-.2596E-04	-.8223E-05	.4723E-04
4	.1231E-03	.7943E-03	.1113E-03	-.3667E-04	-.8230E-05	.4363E-04
5	.1104E-03	.8978E-03	.1431E-03	-.4683E-04	-.8267E-05	.3890E-04
6	.9492E-04	.9877E-03	.1743E-03	-.5591E-04	-.7981E-05	.3327E-04
7	.000077	.001062	.000200	-.000063	-.000004	.000027
8	.000060	.001118	.000206	-.000066	-.000000	.000021
9	.000041	.001159	.000207	-.000068	.000000	.000014
10	.000021	.001184	.000207	-.000069	.000000	.000007
11	.000000	.001192	.000207	-.000069	.000000	.000000
22	.6788E-04	.4277E-03	.6752E-05	-.5121E-05	-.6449E-05	.4985E-04
23	.6762E-04	.5558E-03	.2399E-04	-.1579E-04	-.5359E-05	.4902E-04
24	.6516E-04	.6789E-03	.3994E-04	-.2654E-04	-.5187E-05	.4685E-04
25	.6067E-04	.7937E-03	.5589E-04	-.3719E-04	-.5240E-05	.4331E-04
26	.5447E-04	.8972E-03	.7211E-04	-.4785E-04	-.5358E-05	.3863E-04
27	.4686E-04	.9871E-03	.8875E-04	-.5818E-04	-.5382E-05	.3305E-04
28	.000038	.001062	.000104	-.000066	-.000003	.000027
29	.000029	.001117	.000105	-.000069	.000000	.000021
30	.000020	.001158	.000104	-.000069	.000000	.000014
31	.000010	.001183	.000104	-.000069	.000000	.000007
32	.000000	.001191	.000104	-.000069	.000000	.000000
43	-.3876E-07	.4284E-03	-.2301E-11	-.7152E-05	.8256E-11	.4963E-04
44	-.2612E-07	.5555E-03	-.2103E-10	-.1624E-04	.7572E-11	.4864E-04
45	-.1491E-07	.6786E-03	-.3659E-10	-.2668E-04	.5461E-11	.4656E-04
46	-.8778E-08	.7934E-03	-.4556E-10	-.3732E-04	.1915E-11	.4307E-04
47	-.5332E-08	.8969E-03	-.4462E-10	-.4822E-04	-.3044E-11	.3844E-04
48	-.2883E-08	.9868E-03	-.3059E-10	-.5982E-04	-.9320E-11	.3288E-04
49	.000000	.001061	.000000	-.000074	.000000	.000027
50	.000000	.001117	.000000	-.000071	.000000	.000021
51	.000000	.001158	.000000	-.000070	.000000	.000014
52	.000000	.001183	.000000	-.000069	.000000	.000007
53	.000000	.001191	.000000	-.000069	.000000	.000000
64	-.6796E-04	.4273E-03	-.6752E-05	-.5121E-05	.6449E-05	.4978E-04
65	-.6765E-04	.5553E-03	-.2399E-04	-.1579E-04	.5359E-05	.4900E-04
66	-.6518E-04	.6785E-03	-.3994E-04	-.2654E-04	.5187E-05	.4684E-04
67	-.6068E-04	.7933E-03	-.5589E-04	-.3719E-04	.5240E-05	.4331E-04
68	-.5448E-04	.8968E-03	-.7211E-04	-.4785E-04	.5358E-05	.3863E-04
69	-.4684E-04	.9866E-03	-.8875E-04	-.5818E-04	.5382E-05	.3305E-04
70	-.000038	.001061	-.000104	-.000066	.000003	.000027
71	-.000029	.001117	-.000105	-.000069	-.000000	.000021
72	-.000020	.001158	-.000104	-.000069	-.000000	.000014
73	-.000010	.001183	-.000104	-.000069	.000000	.000007
74	.000000	.001191	-.000104	-.000069	.000000	.000000
85	-.1373E-03	.4244E-03	-.8615E-05	-.2611E-05	.8222E-05	.5006E-04
86	-.1374E-03	.5551E-03	-.4662E-04	-.1463E-04	.8915E-05	.4956E-04
87	-.1324E-03	.6784E-03	-.7932E-04	-.2596E-04	.8223E-05	.4721E-04
88	-.1231E-03	.7932E-03	-.1113E-03	-.3667E-04	.8230E-05	.4363E-04
89	-.1104E-03	.8967E-03	-.1431E-03	-.4683E-04	.8267E-05	.3890E-04
90	-.9493E-04	.9866E-03	-.1743E-03	-.5591E-04	.7981E-05	.3328E-04

REPOSICION 303+620. 3 VANOS 14+17+14 FILE=303620

J O I N T D I S P L A C E M E N T S

LOAD CONDITION 4 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
91	-.000077	.001061	-.000200	-.000063	.000004	.000027
92	-.000060	.001117	-.000206	-.000066	.000000	.000021
93	-.000041	.001158	-.000207	-.000068	.000000	.000014
94	-.000021	.001183	-.000207	-.000069	.000000	.000007
95	.000000	.001191	-.000207	-.000069	.000000	.000000

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

J O I N T D I S P L A C E M E N T S

LOAD CONDITION 5 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
1	.7403E-05	.1691E-04	.2479E-05	-.7667E-06	-.2364E-05	.264/E-05
2	.7443E-05	.2370E-04	.1342E-04	-.4257E-05	-.2564E-05	.2651E-05
3	.7245E-05	.3031E-04	.2286E-04	-.7612E-05	-.2363E-05	.2578E-05
4	.6826E-05	.3666E-04	.3213E-04	-.1095E-04	-.2352E-05	.2438E-05
5	.6189E-05	.4261E-04	.4149E-04	-.1461E-04	-.2332E-05	.2224E-05
6	.5332E-05	.4796E-04	.5161E-04	-.1920E-04	-.2779E-05	.1928E-05
7	.4263E-05	.5245E-04	.6808E-04	-.2580E-04	-.4063E-05	.1504E-05
8	.3198E-05	.5520E-04	.9310E-04	-.3192E-04	-.7966E-05	.1080E-05
9	.2130E-05	.5710E-04	.1153E-03	-.3762E-04	-.5640E-05	.7121E-06
10	.1064E-05	.5823E-04	.1291E-03	-.4149E-04	-.2814E-05	.3552E-06
11	.0000E+00	.5861E-04	.1337E-03	-.4285E-04	.0000E+00	.0000E+00
22	.3683E-05	.1702E-04	.1933E-05	-.1471E-05	-.1852E-05	.2642E-05
23	.3675E-05	.2371E-04	.6882E-05	-.4534E-05	-.1536E-05	.2627E-05
24	.3570E-05	.3031E-04	.1144E-04	-.7615E-05	-.1475E-05	.2558E-05
25	.3359E-05	.3666E-04	.1592E-04	-.1066E-04	-.1449E-05	.2418E-05
26	.3042E-05	.4261E-04	.2024E-04	-.1372E-04	-.1361E-05	.2205E-05
27	.2621E-05	.4796E-04	.2426E-04	-.1717E-04	-.1428E-05	.1913E-05
28	.2102E-05	.5247E-04	.3025E-04	-.2300E-04	-.3856E-05	.1492E-05
29	.1586E-05	.5521E-04	.4522E-04	-.3070E-04	-.5405E-05	.1073E-05
30	.1060E-05	.5710E-04	.5771E-04	-.3803E-04	-.3698E-05	.7104E-06
31	.5307E-06	.5823E-04	.6509E-04	-.4270E-04	-.1808E-05	.3547E-06
32	.0000E+00	.5861E-04	.6750E-04	-.4427E-04	.0000E+00	.0000E+00
43	.0000E+00	.1706E-04	.0000E+00	-.2047E-05	.0000E+00	.2642E-05
44	.0000E+00	.2371E-04	.0000E+00	-.4654E-05	.0000E+00	.2611E-05
45	.0000E+00	.3031E-04	.0000E+00	-.7624E-05	.0000E+00	.2543E-05
46	.0000E+00	.3666E-04	.0000E+00	-.1057E-04	.0000E+00	.2403E-05
47	.0000E+00	.4261E-04	.0000E+00	-.1334E-04	.0000E+00	.2191E-05
48	.0000E+00	.4796E-04	.0000E+00	-.1541E-04	.0000E+00	.1903E-05
49	.0000E+00	.5252E-04	.0000E+00	-.1389E-04	.0000E+00	.1474E-05
50	.0000E+00	.5521E-04	.0000E+00	-.2903E-04	.0000E+00	.1067E-05
51	.0000E+00	.5710E-04	.0000E+00	-.3800E-04	.0000E+00	.7094E-06
52	.0000E+00	.5823E-04	.0000E+00	-.4304E-04	.0000E+00	.3544E-06
53	.0000E+00	.5861E-04	.0000E+00	-.4470E-04	.0000E+00	.0000E+00
64	-.3683E-05	.1702E-04	-.1933E-05	-.1471E-05	.1852E-05	.2642E-05
65	-.3675E-05	.2371E-04	-.6882E-05	-.4534E-05	.1536E-05	.2627E-05
66	-.3570E-05	.3031E-04	-.1144E-04	-.7615E-05	.1475E-05	.2558E-05
67	-.3359E-05	.3666E-04	-.1592E-04	-.1066E-04	.1449E-05	.2418E-05
68	-.3042E-05	.4261E-04	-.2024E-04	-.1372E-04	.1361E-05	.2205E-05
69	-.2621E-05	.4796E-04	-.2426E-04	-.1717E-04	.1428E-05	.1913E-05
70	-.2102E-05	.5247E-04	-.3025E-04	-.2300E-04	.3856E-05	.1492E-05
71	-.1586E-05	.5521E-04	-.4522E-04	-.3070E-04	.5405E-05	.1073E-05
72	-.1060E-05	.5710E-04	-.5771E-04	-.3803E-04	.3698E-05	.7104E-06
73	-.5307E-06	.5823E-04	-.6509E-04	-.4270E-04	.1808E-05	.3547E-06
74	.0000E+00	.5861E-04	-.6750E-04	-.4427E-04	.0000E+00	.0000E+00
85	-.7403E-05	.1691E-04	-.2479E-05	-.7667E-06	.2364E-05	.2647E-05
86	-.7443E-05	.2370E-04	-.1342E-04	-.4257E-05	.2564E-05	.2651E-05
87	-.7245E-05	.3031E-04	-.2286E-04	-.7612E-05	.2363E-05	.2578E-05
88	-.6826E-05	.3666E-04	-.3213E-04	-.1095E-04	.2352E-05	.2438E-05
89	-.6189E-05	.4261E-04	-.4149E-04	-.1461E-04	.2332E-05	.2224E-05
90	-.5332E-05	.4796E-04	-.5161E-04	-.1920E-04	.2779E-05	.1928E-05

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

J O I N T D I S P L A C E M E N T S

LOAD CONDITION 5 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
91	-.4263E-05	.5245E-04	-.6808E-04	-.2580E-04	.6063E-05	.1504E-05
92	-.3198E-05	.5520E-04	-.9310E-04	-.3192E-04	.7966E-05	.1080E-05
93	-.2130E-05	.5710E-04	-.1153E-03	-.3762E-04	.5640E-05	.7121E-06
94	-.1064E-05	.5823E-04	-.1291E-03	-.4149E-04	.2814E-05	.3552E-06
95	.0000E+00	.5861E-04	-.1337E-03	-.4285E-04	.0000E+00	.0000E+00

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

J O I N T D I S P L A C E M E N T S

LOAD CONDITION 6 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
1	.2112E-03	.5728E-06	.1481E-06	.2480E-06	-.2453E-05	-.2554E-05
2	.2154E-03	-.1862E-06	.5917E-05	.1297E-06	-.2252E-05	-.7754E-06
3	.2178E-03	-.8762E-07	.1057E-04	.6693E-07	-.1616E-05	-.2873E-06
4	.2195E-03	-.3362E-07	.1325E-04	.4271E-07	-.5827E-06	-.1192E-06
5	.2209E-03	-.1258E-07	.1301E-04	.4131E-07	.8638E-06	-.5342E-07
6	.2221E-03	-.2263E-08	.8865E-05	.4749E-07	.2752E-05	-.3147E-07
7	.2233E-03	.8466E-08	.2691E-06	-.2702E-07	.4350E-05	-.3660E-07
8	.2243E-03	.2271E-07	-.6446E-05	-.7914E-07	.1797E-05	-.7519E-07
9	.2252E-03	.4719E-07	-.7626E-05	-.5038E-07	.5466E-06	-.1575E-06
10	.2258E-03	.7678E-07	-.4802E-05	-.2213E-07	-.1939E-05	-.3235E-06
11	.2260E-03	.0000E+00	.0000E+00	.0000E+00	-.2401E-05	-.5781E-06
22	.2170E-03	.4054E-06	.5207E-06	.1575E-06	-.2433E-05	-.1498E-05
23	.2177E-03	-.1111E-06	.6068E-05	.6458E-07	-.2223E-05	-.4716E-06
24	.2187E-03	-.5358E-07	.1064E-04	.2910E-07	-.1605E-05	-.1820E-06
25	.2199E-03	-.2077E-07	.1329E-04	.2003E-07	-.5777E-06	-.7748E-07
26	.2211E-03	-.7831E-08	.1307E-04	.3154E-07	.8620E-06	-.3514E-07
27	.2222E-03	-.1455E-08	.8976E-05	.8318E-07	.2737E-05	-.2052E-07
28	.2234E-03	.5543E-08	.2192E-06	-.3624E-07	.4506E-05	-.2234E-07
29	.2246E-03	.1519E-07	-.6612E-05	-.1199E-06	.1780E-05	-.5611E-07
30	.2257E-03	.3260E-07	-.7699E-05	-.4489E-07	-.5500E-06	-.1293E-06
31	.2267E-03	.5830E-07	-.4829E-05	-.1439E-07	-.1935E-05	-.3046E-06
32	.2273E-03	.0000E+00	.0000E+00	.0000E+00	-.2395E-05	-.7208E-06
43	.2183E-03	.0000E+00	.6583E-06	.0000E+00	-.2406E-05	.0000E+00
44	.2184E-03	.0000E+00	.6119E-05	.0000E+00	-.2209E-05	.0000E+00
45	.2191E-03	.0000E+00	.1066E-04	.0000E+00	-.1600E-05	.0000E+00
46	.2200E-03	.0000E+00	.1331E-04	.0000E+00	-.5766E-06	.0000E+00
47	.2211E-03	.0000E+00	.1310E-04	.0000E+00	.8527E-06	.0000E+00
48	.2223E-03	.0000E+00	.9127E-05	.0000E+00	.2649E-05	.0000E+00
49	.2235E-03	.0000E+00	.1665E-06	.0000E+00	.5758E-05	.0000E+00
50	.2247E-03	.0000E+00	-.6813E-05	.0000E+00	.1678E-05	.0000E+00
51	.2261E-03	.0000E+00	-.7736E-05	.0000E+00	-.5676E-06	.0000E+00
52	.2277E-03	.0000E+00	-.4840E-05	.0000E+00	-.1937E-05	.0000E+00
53	.2303E-03	.0000E+00	.0000E+00	.0000E+00	-.2396E-05	.0000E+00
64	.2170E-03	-.4054E-06	.5207E-06	-.1575E-06	-.2433E-05	.1498E-05
65	.2177E-03	.1111E-06	.6068E-05	-.6458E-07	-.2223E-05	.4716E-06
66	.2187E-03	.5358E-07	.1064E-04	-.2910E-07	-.1605E-05	.1820E-06
67	.2199E-03	.2077E-07	.1329E-04	-.2003E-07	-.5777E-06	.7748E-07
68	.2211E-03	.7831E-08	.1307E-04	-.3154E-07	.8620E-06	.3514E-07
69	.2222E-03	.1455E-08	.8976E-05	-.8318E-07	.2737E-05	.2052E-07
70	.2234E-03	-.5543E-08	.2192E-06	.3624E-07	.4506E-05	.2234E-07
71	.2246E-03	-.1519E-07	-.6612E-05	.1199E-06	.1780E-05	.5611E-07
72	.2257E-03	-.3260E-07	-.7699E-05	.4489E-07	-.5500E-06	.1293E-06
73	.2267E-03	-.5830E-07	-.4829E-05	.1439E-07	-.1935E-05	.3046E-06
74	.2273E-03	.0000E+00	.0000E+00	.0000E+00	-.2395E-05	.7208E-06
85	.2112E-03	-.5728E-06	.1481E-06	-.2480E-06	-.2453E-05	.2554E-05
86	.2154E-03	.1862E-06	.5917E-05	-.1297E-06	-.2252E-05	.7754E-06
87	.2178E-03	.8762E-07	.1057E-04	-.6693E-07	-.1616E-05	.2873E-06
88	.2195E-03	.3362E-07	.1325E-04	-.4271E-07	-.5827E-06	.1192E-06
89	.2209E-03	.1258E-07	.1301E-04	-.4131E-07	.8638E-06	.5342E-07
90	.2221E-03	.2263E-08	.8865E-05	-.4749E-07	.2752E-05	.3147E-07

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

J O I N T D I S P L A C E M E N T S

LOAD CONDITION 6 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
91	.2233E-03	-.8466E-08	.2691E-06	.2702E-07	.4350E-05	.3660E-07
92	.2243E-03	-.2271E-07	-.6446E-05	.7914E-07	.1797E-05	.7519E-07
93	.2252E-03	-.4719E-07	-.7626E-05	.5038E-07	-.5466E-06	.1575E-06
94	.2258E-03	-.7678E-07	-.4802E-05	.2213E-07	-.1939E-05	.3235E-06
95	.2260E-03	.0000E+00	.0000E+00	.0000E+00	-.2401E-05	.5781E-06

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

J O I N T D I S P L A C E M E N T S

LOAD CONDITION 7 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
1	.3317E-05	.1126E-07	.1750E-04	.2959E-04	-.2760E-03	-.4538E-07
2	.3378E-05	-.1888E-08	.6668E-03	.1584E-04	-.2522E-03	-.1761E-07
3	.000003	.000000	.001184	.000009	-.000177	.000000
4	.000003	.000000	.001467	.000008	-.000055	.000000
5	.000003	.000000	.001405	.000011	.000116	.000000
6	.3131E-05	.2838E-07	.8818E-03	.1961E-04	.3367E-03	-.1200E-06
7	.2752E-05	.4380E-08	-.2495E-03	.3744E-04	.6342E-03	-.2353E-06
8	.000002	.000000	-.001973	.000038	.000938	-.000000
9	.000002	.000000	-.004007	.000031	.000911	.000000
10	.000001	.000000	-.005625	.000023	.000556	.000000
11	.000000	.000000	-.006236	.000021	.000000	.000000
22	.3420E-05	.8028E-08	.6186E-04	.1878E-04	-.2737E-03	-.2744E-07
23	.3431E-05	-.1090E-08	.6851E-03	.7818E-05	-.2489E-03	-.1117E-07
24	.000003	.000000	.001193	.000004	-.000176	.000000
25	.000003	.000000	.001475	.000003	-.000054	.000000
26	.000003	.000000	.001416	.000005	.000115	.000000
27	.3457E-05	.2108E-07	.9050E-03	.1117E-04	.3339E-03	-.1072E-06
28	.3291E-05	.3384E-08	-.1879E-03	.3742E-04	.6216E-03	-.2821E-06
29	.000003	.000000	-.001917	.000027	.000939	-.000000
30	.000002	.000000	-.003969	.000014	.000911	.000000
31	.000001	.000000	-.005600	.000005	.000556	.000000
32	.000000	.000000	-.006215	.000002	.000000	.000000
43	.3448E-05	.0000E+00	.7824E-04	.0000E+00	-.2705E-03	.0000E+00
44	.3452E-05	.0000E+00	.6914E-03	.0000E+00	-.2472E-03	.0000E+00
45	.000003	.000000	.001196	.000000	-.000175	.000000
46	.000004	.000000	.001477	.000000	-.000054	.000000
47	.000004	.000000	.001420	.000000	.000115	.000000
48	.3838E-05	.0000E+00	.9116E-03	.0000E+00	.3321E-03	.0000E+00
49	.4468E-05	.0000E+00	-.1328E-03	.0000E+00	.5616E-03	.0000E+00
50	.000003	.000000	-.001889	.000000	.000949	.000000
51	.000002	.000000	-.003958	.000000	.000913	.000000
52	.000001	.000000	-.005600	.000000	.000557	.000000
53	.000000	.000000	-.006217	.000000	.000000	.000000
64	.3420E-05	-.8028E-08	.6186E-04	-.1878E-04	-.2737E-03	.2744E-07
65	.3431E-05	.1090E-08	.6851E-03	-.7818E-05	-.2489E-03	.1117E-07
66	.000003	.000000	.001193	-.000004	-.000176	.000000
67	.000003	.000000	.001475	-.000003	-.000054	.000000
68	.000003	.000000	.001416	-.000005	.000115	.000000
69	.3457E-05	-.2108E-07	.9050E-03	-.1117E-04	.3339E-03	.1072E-06
70	.3291E-05	-.3384E-08	-.1879E-03	-.3742E-04	.6216E-03	.2821E-06
71	.000003	.000000	-.001917	-.000027	.000939	.000000
72	.000002	.000000	-.003969	-.000014	.000911	.000000
73	.000001	.000000	-.005600	-.000005	.000556	.000000
74	.000000	.000000	-.006215	-.000002	.000000	.000000
85	.3317E-05	-.1126E-07	.1750E-04	-.2959E-04	-.2760E-03	.4538E-07
86	.3378E-05	.1888E-08	.6668E-03	-.1584E-04	-.2522E-03	.1761E-07
87	.000003	.000000	.001184	-.000009	-.000177	.000000
88	.000003	.000000	.001467	-.000008	-.000055	.000000
89	.000003	.000000	.001405	-.000011	.000116	.000000
90	.3131E-05	-.2838E-07	.8818E-03	-.1961E-04	.3367E-03	.1200E-06

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

J O I N T D I S P L A C E M E N T S

LOAD CONDITION 7 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
91	.2752E-05	-.4380E-08	-.2495E-03	-.3744E-04	.6342E-03	.2353E-06
92	.000002	.000000	-.001973	-.000038	.000938	.000000
93	.000002	.000000	-.004007	-.000031	.000911	.000000
94	.000001	.000000	-.005625	-.000023	.000556	.000000
95	.000000	.000000	-.006236	-.000021	.000000	.000000

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

R E A C T I O N S A N D A P P L I E D F O R C E S

LOAD CONDITION 1 - FORCES "F" AND MOMENTS "M"

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1001	.0011	.0000	27.5062	.0000	.0001	.0000
1049	-.1133	.0000	298.1690	.0000	-.7142	.0000
1085	.0011	.0000	27.5062	.0000	.0001	.0000
TOTAL	-.1111E+00	.2216E-13	.3532E+03	-.6019E-12	-.7141E+00	-.9988E-14

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

R E A C T I O N S A N D A P P L I E D F O R C E S

LOAD CONDITION 2 - FORCES "F" AND MOMENTS "M"

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1001	.0001	.0000	1.9733	.0000	.0000	.0000
1049	-.0093	.0000	12.9284	.0000	-.0587	.0000
1085	.0001	.0000	1.9733	.0000	.0000	.0000
TOTAL	-.9130E-02	.2045E-14	.1688E+02	-.4407E-13	-.5868E-01	-.6538E-15

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

R E A C T I O N S A N D A P P L I E D F O R C E S

LOAD CONDITION 3 - FORCES "F" AND MOMENTS "M"

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1001	.0002	.0000	7.3776	.0000	.0000	.0000
1049	-.0194	.0000	48.2448	.0000	-.1221	.0000
1085	.0002	.0000	7.3776	.0000	.0000	.0000
TOTAL	-.1900E-01	.4947E-14	.6300E+02	-.1492E-12	-.1221E+00	-.2606E-14

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

R E A C T I O N S A N D A P P L I E D F O R C E S

LOAD CONDITION 4 - FORCES "F" AND MOMENTS "M"

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1001	-2.4444	-7.5976	-1.3026	.3799	-.1222	-.0177
1049	.0000	-2.7069	.0000	43.6164	.0000	-1.1518
1085	2.4400	-7.5830	1.3026	.3791	.1220	-.0175
TOTAL	-.4415E-02	-.1789E+02	.5307E-13	.4438E+02	-.2160E-03	-.1187E+01

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

R E A C T I O N S A N D A P P L I E D F O R C E S

LOAD CONDITION 5 - FORCES "F" AND MOMENTS "M"

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1001	-.1315	-.3021	-.3748	.0151	-.0066	-.0009
1049	.0000	.6042	.0000	-2.3885	.0000	-.0636
1085	.1315	-.3021	.3748	.0151	.0066	-.0009
TOTAL	.1105E-13	.3831E-12	.3297E-13	-.2358E+01	.2821E-13	-.6546E-01

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:303620

R E A C T I O N S A N D A P P L I E D F O R C E S

LOAD CONDITION 6 - FORCES "F" AND MOMENTS "M"

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1001	-3.7522	-.0102	-.0224	.0005	-.1876	.0009
1049	-.1956	.0000	-.0762	.0000	-2.0605	.0000
1085	-3.7522	.0102	-.0224	-.0005	-.1876	-.0009
TOTAL	-.7700E+01	-.4141E-13	-.1210E+00	-.1849E-13	-.2436E+01	.8307E-14

REPOSITION 303+620. 3 VANOS 14+17+14 FILE=303620

R E A C T I O N S A N D A P P L I E D F O R C E S

LOAD CONDITION 7 - FORCES "F" AND MOMENTS "M"

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1001	-.0589	-.0002	-2.6457	.0000	-.0029	.0000
1049	6.1770	.0000	60.7913	.0000	38.9489	.0000
1085	-.0589	.0002	-2.6457	-.0000	-.0029	-.0000
TOTAL	.6059E+01	-.8451E-13	.5550E+02	-.4730E-12	.3894E+02	-.3884E-13

LINEA DE ALTA VELOCIDAD

MADRID – BARCELONA – FRONTERA FRANCESA

TRAMO: LLEIDA – MARTORELL, SUBTRAMO III-A

PLATAFORMA

ESTRUCTURA E-5. PASO SUPERIOR P.K. 303+620

ANEJO DE PRUEBA DE CARGA

LINEA DE ALTA VELOCIDAD
MADRID – BARCELONA – FRONTERA FRANCESA
TRAMO: LLEIDA – MARTORELL, SUBTRAMO III A,
PLATAFORMA

ESTRUCTURA E-5. PASO SUPERIOR P.K. 303+620

ANEJO DE PRUEBA DE CARGA

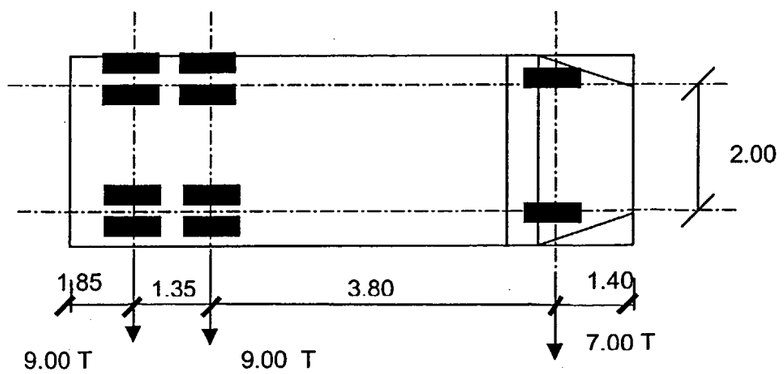
1.- GENERALIDADES

Se calculan en este Anejo los esfuerzos producidos por la acción de un tren de cargas de prueba formado por camiones tipo, que se disponen en una serie de posiciones estudiadas de modo que dan lugar a unos esfuerzos próximos al 80% de los teóricos correspondientes a la envolvente de sobrecarga de uso (sobrecarga uniforme + vehículo pesado) obtenida en el cálculo del tablero.

La estructura analizada es una losa de hormigón armado con luces de 14.00 + 17.00 +14.00 y un ancho de 7.70 m.

2.- TREN DE CARGAS

Se formará mediante camiones tipo de 25 toneladas. La distribución de ejes y pesos se refleja en el siguiente esquema:



En todas las posiciones del tren de cargas, los camiones se dispondrán en 2 hileras en pararelo, ocupando todo el ancho del tablero.

La prueba de carga consistirá en la disposición de los camiones en las situaciones siguientes:

- Posición 1: 4 camiones en vano 1
- Posición 2: 4 camiones en vano 2.

Los resultados del cálculo y los croquis de disposición de camiones se incluyen en el apartado 4 del presente Anejo.

3.- REALIZACION DE LA PRUEBA DE CARGA

En primer lugar se efectuará una detallada inspección de la obra que incluirá no sólo la estructura sino también los aparatos de apoyos y juntas.

Antes de comenzar el ensayo se anotarán las características de los vehículos a utilizar (matrícula, dimensiones y pesos por eje).

La medición de las deformaciones se efectuará en el centro de la luz del vano (con una precisión de ±0.5 mm) y para su lectura se utilizarán flexímetros.

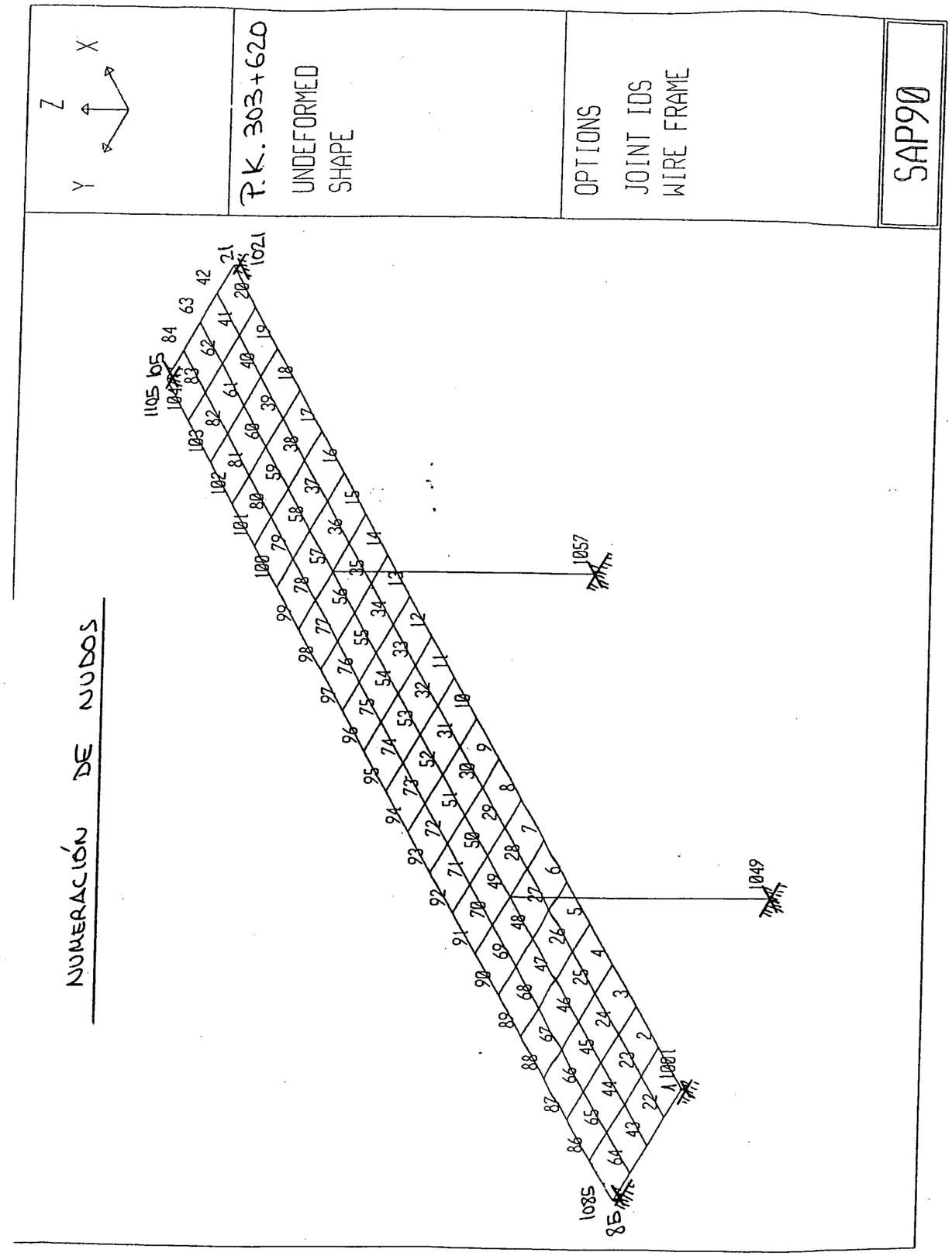
Las lecturas se realizarán en cada situación de carga de la forma siguiente:

1ª lectura:	En vacío.
2ª lectura:	A los 20 minutos de posicionar la carga.
3ª lectura:	A los 35 minutos de posicionar la carga.
	Se comprobará que las flechas obtenidas en estas dos últimas lecturas estén estabilizadas, admitiéndose una variación de +5%.
4ª lectura:	A los 15 minutos de retirar la carga.

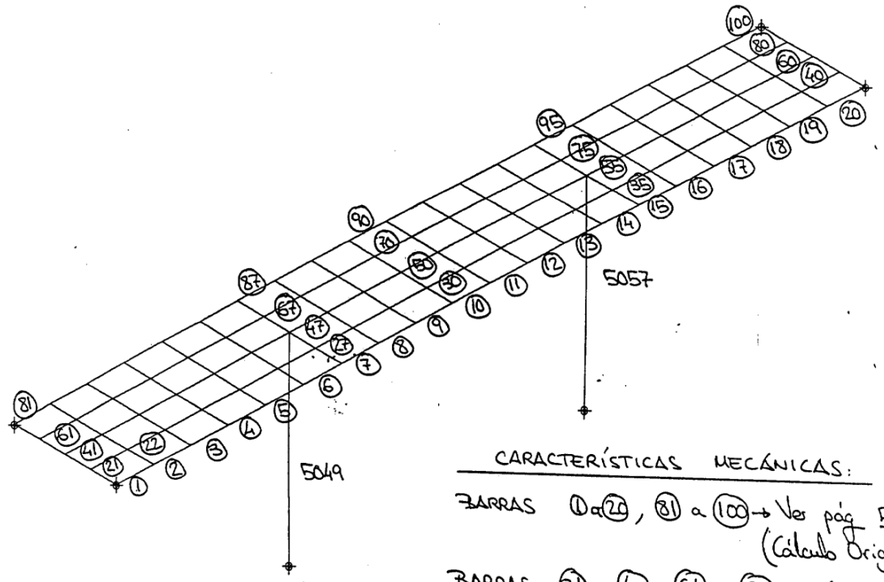
4.- CALCULO DE ESFUERZOS Y DEFORMACIONES

Se utiliza el mismo modelo de cálculo y programa que el empleado para el dimensionamiento de la estructura. Los correspondientes listados, esfuerzos y deformaciones obtenidos se acompañan a continuación.

NUMERACIÓN DE NUDOS



NUMERACIÓN DE BARRAS (LONGITUDINALES Y PILARES)



Y X

P.K. 303+620
UNDEFORMED SHAPE

OPTIONS
RESTRAINTS
WIRE FRAME

SAP90

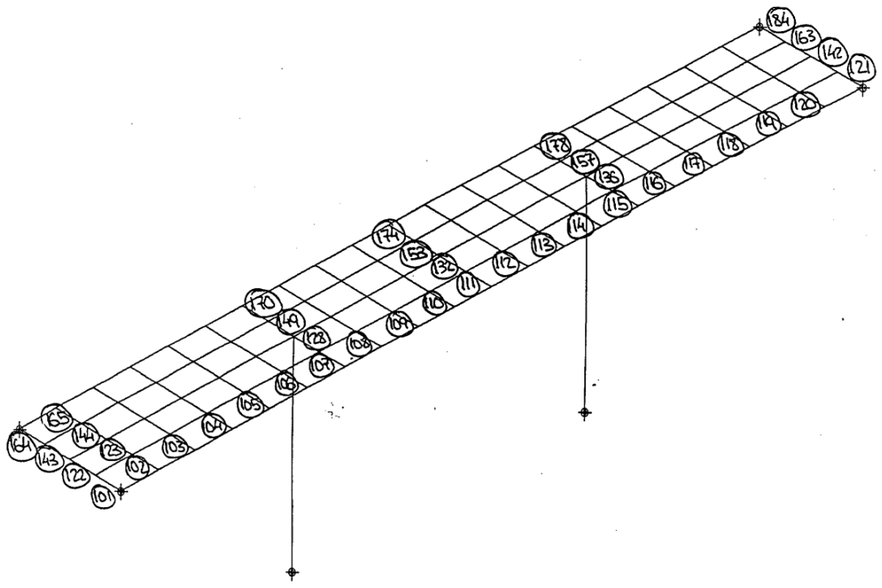
CARACTERÍSTICAS MECÁNICAS:

BARRAS 1 a 20, 81 a 100 → Ver pág 5 (Cálculo Original)

BARRAS 21 a 40, 61 a 80 → pág 6

BARRAS 41 a 60 ⟶ pág 7

NUMERACIÓN DE BARRAS (TRANSVERSALES)



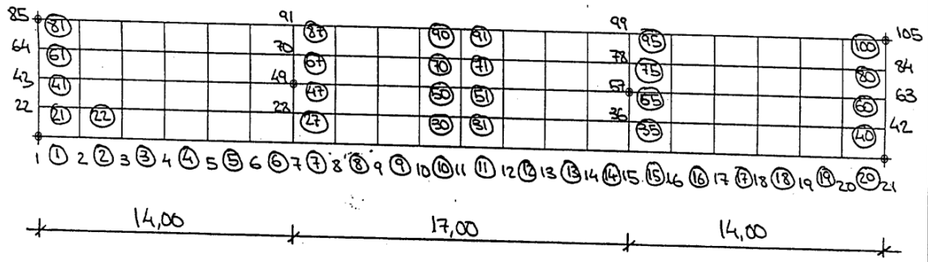
Z Y X

P.K. 303+620
UNDEFORMED SHAPE

OPTIONS
RESTRAINTS
WIRE FRAME

SAP90

PLANTA



X

P.K. 303+620

UNDEFORMED SHAPE

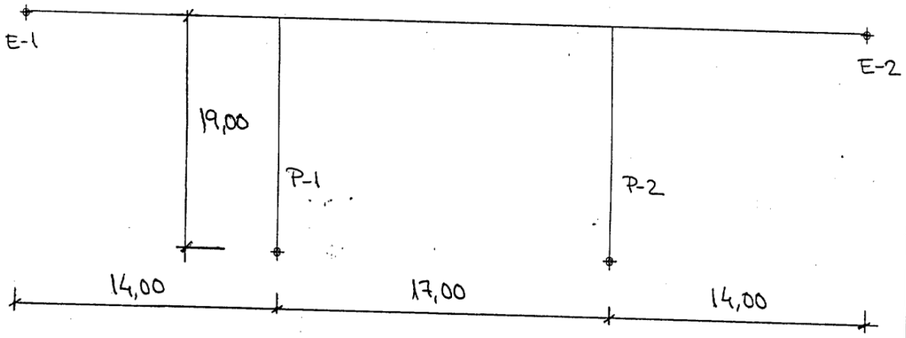
OPTIONS

RESTRAINTS

WIRE FRAME

SAP90

ALZADO



Z

X

P.K. 303+620

UNDEFORMED SHAPE

OPTIONS

RESTRAINTS

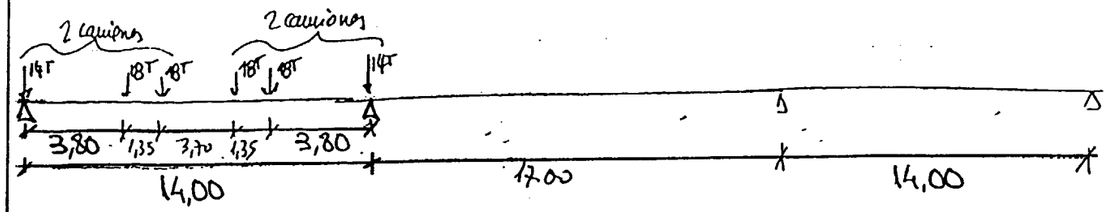
WIRE FRAME

SAP90

FIRMA:

Hoja ..... de .....

PRUEBA DE CARGA

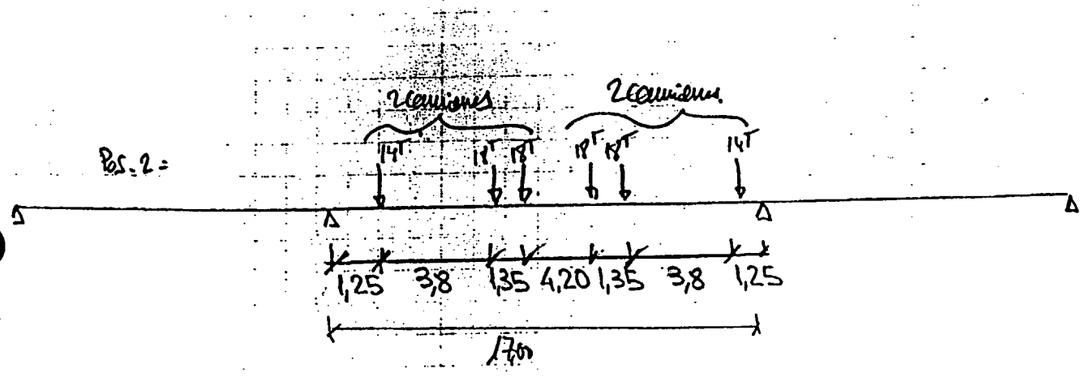


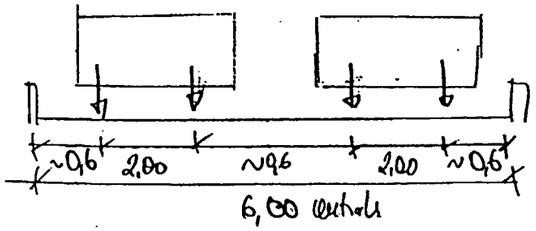
Posición 1: Centro vano 1:

Máxima sobrecarga: $0{,}4 \times 14 \times 7{,}70 + 60 = 103\ T \Rightarrow$ 4 camiones.

Posición 2: Centro de vano 2.

Máxima sobrecarga: $0{,}4 \times 17 \times 7{,}70 + 60 = 112{,}36\ T \Rightarrow$ 4 camiones.





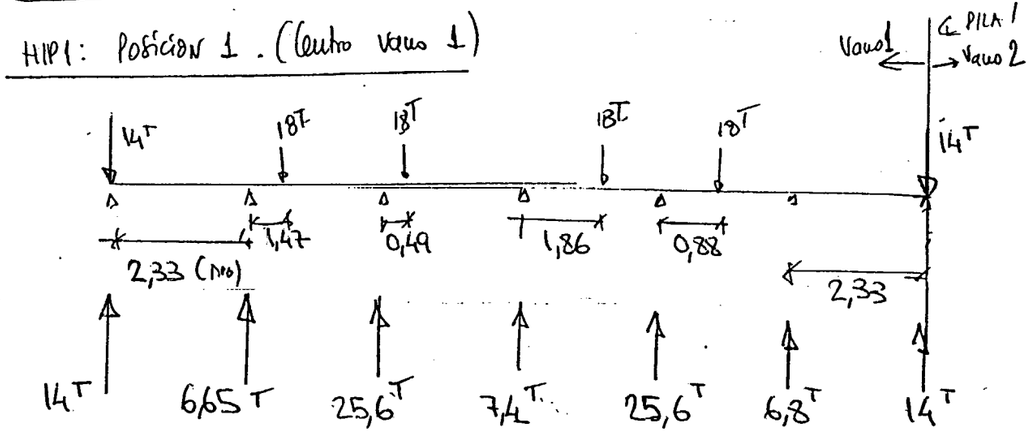
FECHA

FIRMA:

Hoja ..... de .....

Cargas en nudos

HIP 1: Posición 1. (Centro vano 1)



Nudos	Carga (TON)
22	3,5
23	1,66
24	6,4
25	1,86
26	6,4
27	1,7
28	3,5

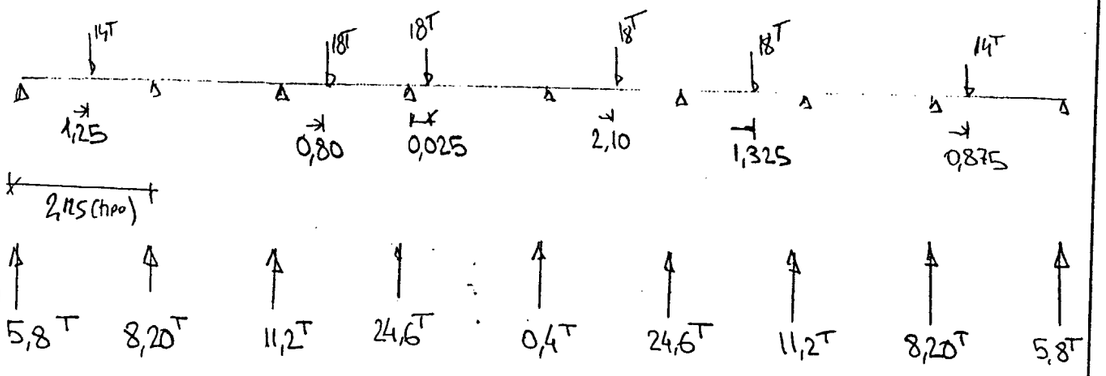
Nudo	Carga (TON)
43	7
44	3,3
45	12,8
46	3,71
47	12,8
48	3,4
49	7

Nudo	Carga (TON)
64	3,5
65	1,66
66	6,4
67	1,86
68	6,4
69	1,7
70	3,5

Σ Cargas: 100 TON

FECHA
FIRMA:
Hoja ..... de .....

HIP 2: Posición 2 (Centro vano 2)



Carga en nudos.

Nudo	25% Carga (TON)
28	1,45
29	2,05
30	2,8
31	6,15
32	0,1
33	6,15
34	2,8
35	2,05
36	1,45

Nudo	50% Carga (TON)
49	2,9
50	4,1
51	5,6
52	12,3
53	0,2
54	12,3
55	5,6
56	4,1
57	2,9

Nudo	25% Carga (TON)
70	1,45
71	2,05
72	2,8
73	6,15
74	0,1
75	6,15
76	2,8
77	2,05
78	1,45

Σ Cargas = 100 TON

FECHA
FIRMA:
Hoja . . de

A continuación se detallan los momentos flectores producidos por la sobrecarga vehicular más el carro de la Distribución, tenidos en cuenta en el Proyecto Original.

Estos esfuerzos corresponden a la hipótesis "B", módulo Bridge del Programa "SAP-90"

Centro vano 1

Barra 4	4,43 TXM
24	55,3
44	66,77
64	55,3
84	4,43
	186,23 TXM

Centro vano 2

Barra 10	4,54 TXM
30	55,23
50	66,5
70	55,23
90	4,54
	186,04 TXM

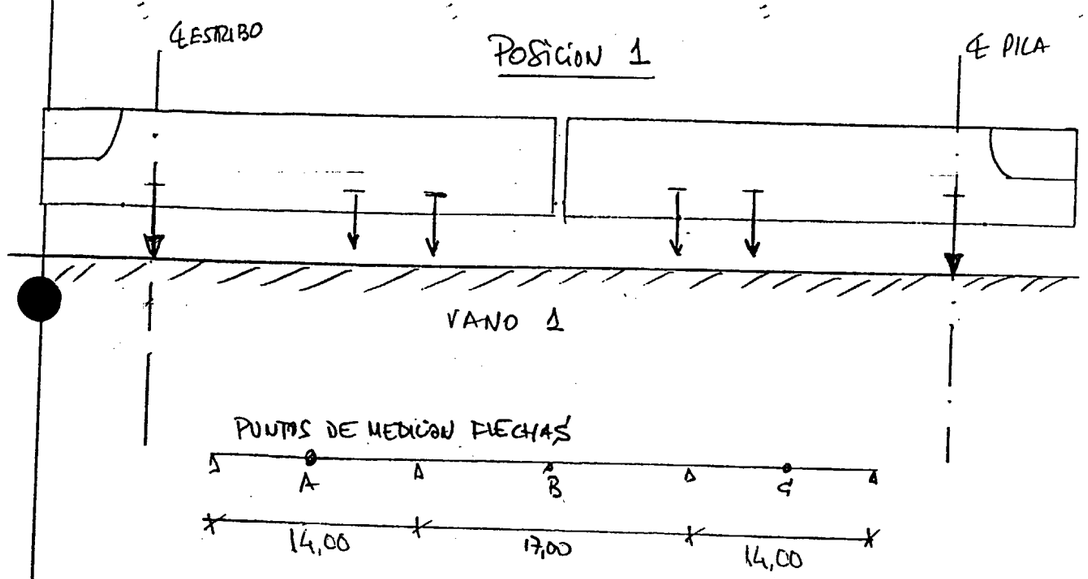
FECHA

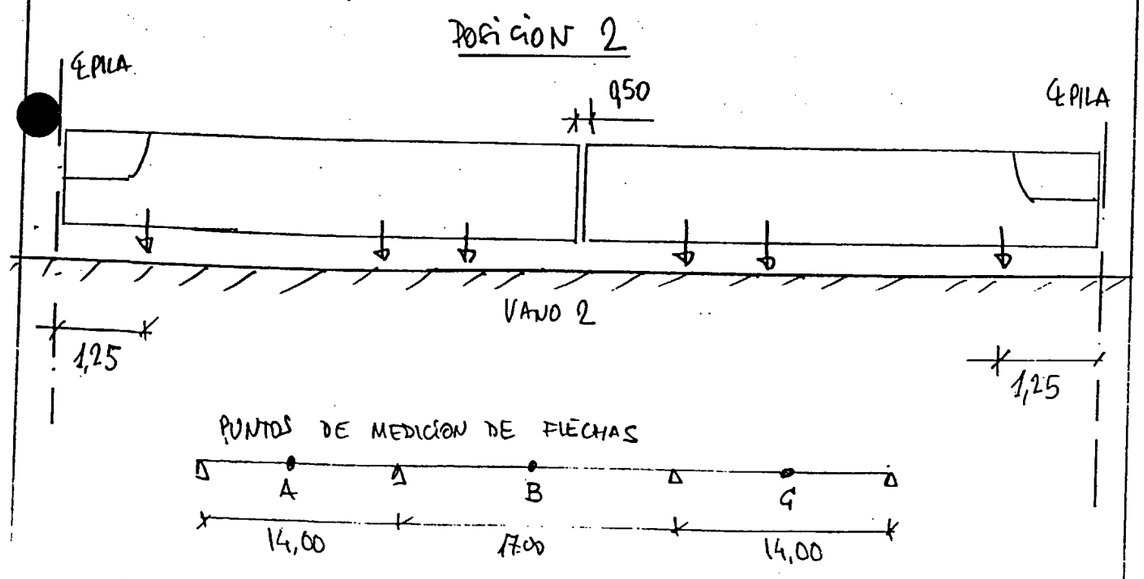
FIRMA:

Hoja ..... de ...

PRUEBA DE CARGA

CROQUIS DE DISPOSICIÓN DE CAMIONES





En las dos posiciones del tren de cargas, los 4 camiones se dispondrán en dos hileras en paralelo, ocupando todo el ancho del tablero.

C S I / S A P 9 0 - - FINITE ELEMENT ANALYSIS OF STRUCTURES PAGE 1
PROGRAM:SAP90/FILE:pcarga.SAP

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:PCARGA. PRUEBA DE CARGA.

S Y S T E M D A T A

EXECUTION CODE	0
NUMBER OF LOAD CONDITIONS	2
STEADY STATE LOAD FREQUENCY	.0000E+00
NUMBER OF EIGENVALUES	0
EIGEN CONVERGENCE TOLERANCE	.1000E-03
EIGEN CUTOFF TIME PERIOD	.0000E+00

DATOS DE ENTRADA

G E N E R A T E D J O I N T C O O R D I N A T E S

JOINT	X	Y	Z
1	.000	.000	19.000
2	2.333	.000	19.000
3	4.667	.000	19.000
4	7.000	.000	19.000
5	9.333	.000	19.000
6	11.667	.000	19.000
7	14.000	.000	19.000
8	16.125	.000	19.000
9	18.250	.000	19.000
10	20.375	.000	19.000
11	22.500	.000	19.000
12	24.625	.000	19.000
13	26.750	.000	19.000
14	28.875	.000	19.000
15	31.000	.000	19.000
16	33.333	.000	19.000
17	35.667	.000	19.000
18	38.000	.000	19.000
19	40.333	.000	19.000
20	42.667	.000	19.000
21	45.000	.000	19.000
22	.000	1.500	19.000
23	2.333	1.500	19.000
24	4.667	1.500	19.000
25	7.000	1.500	19.000
26	9.333	1.500	19.000
27	11.667	1.500	19.000
28	14.000	1.500	19.000
29	16.125	1.500	19.000
30	18.250	1.500	19.000
31	20.375	1.500	19.000
32	22.500	1.500	19.000
33	24.625	1.500	19.000
34	26.750	1.500	19.000
35	28.875	1.500	19.000
36	31.000	1.500	19.000
37	33.333	1.500	19.000
38	35.667	1.500	19.000
39	38.000	1.500	19.000
40	40.333	1.500	19.000
41	42.667	1.500	19.000
42	45.000	1.500	19.000
43	.000	3.000	19.000
44	2.333	3.000	19.000
45	4.667	3.000	19.000
46	7.000	3.000	19.000
47	9.333	3.000	19.000
48	11.667	3.000	19.000
49	14.000	3.000	19.000
50	16.125	3.000	19.000
51	18.250	3.000	19.000
52	20.375	3.000	19.000

G E N E R A T E D J O I N T C O O R D I N A T E S

JOINT	X	Y	Z
53	22.500	3.000	19.000
54	24.625	3.000	19.000
55	26.750	3.000	19.000
56	28.875	3.000	19.000
57	31.000	3.000	19.000
58	33.333	3.000	19.000
59	35.667	3.000	19.000
60	38.000	3.000	19.000
61	40.333	3.000	19.000
62	42.667	3.000	19.000
63	45.000	3.000	19.000
64	.000	4.500	19.000
65	2.333	4.500	19.000
66	4.667	4.500	19.000
67	7.000	4.500	19.000
68	9.333	4.500	19.000
69	11.667	4.500	19.000
70	14.000	4.500	19.000
71	16.125	4.500	19.000
72	18.250	4.500	19.000
73	20.375	4.500	19.000
74	22.500	4.500	19.000
75	24.625	4.500	19.000
76	26.750	4.500	19.000
77	28.875	4.500	19.000
78	31.000	4.500	19.000
79	33.333	4.500	19.000
80	35.667	4.500	19.000
81	38.000	4.500	19.000
82	40.333	4.500	19.000
83	42.667	4.500	19.000
84	45.000	4.500	19.000
85	.000	6.000	19.000
86	2.333	6.000	19.000
87	4.667	6.000	19.000
88	7.000	6.000	19.000
89	9.333	6.000	19.000
90	11.667	6.000	19.000
91	14.000	6.000	19.000
92	16.125	6.000	19.000
93	18.250	6.000	19.000
94	20.375	6.000	19.000
95	22.500	6.000	19.000
96	24.625	6.000	19.000
97	26.750	6.000	19.000
98	28.875	6.000	19.000
99	31.000	6.000	19.000
100	33.333	6.000	19.000
101	35.667	6.000	19.000
102	38.000	6.000	19.000
103	40.333	6.000	19.000
104	42.667	6.000	19.000

G E N E R A T E D J O I N T C O O R D I N A T E S

JOINT	X	Y	Z
105	45.000	6.000	19.000
1001	.000	.000	18.950
1021	45.000	.000	18.950
1049	14.000	3.000	.000
1057	31.000	3.000	.000
1085	.000	6.000	18.950
1105	45.000	6.000	18.950

R E S T R A I N T D A T A

JOINT	RX	RY	RZ	RXX	RYY	RZZ
1001	1	1	1	1	1	1
1021	1	1	1	1	1	1
1049	1	1	1	1	1	1
1057	1	1	1	1	1	1
1085	1	1	1	1	1	1
1105	1	1	1	1	1	1

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:PCARGA. PRUEBA DE CARGA.

F R A M E C O N T R O L D A T A

NUMBER OF MEMBER SECTION PROPERTIES	12
NUMBER OF SPAN LOADING PATTERNS	0
NUMBER OF MEMBER FORCE OUTPUT STATIONS	3

LOAD COND	GRAVITATIONAL MULTIPLIERS X	Y	Z	TEMPERATURE MULTIPLIERS	PRESTRESS MULTIPLIERS
1	.000	.000	.000	.000	.000
2	.000	.000	.000	.000	.000

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:PCARGA. PRUEBA DE CARGA.

S E C T I O N P R O P E R T Y D A T A

PROP ID	AREA	TORSIONAL INERTIA	MOMENTS OF INERTIA I33	I22	SHEAR AREAS A2	A3
1	.134E+01	.34060E+00	.89100E-01	.25150E+00	.107E+01	.107E+01
2	.123E+01	.28660E+00	.74000E-01	.21260E+00	.983E+00	.983E+00
3	.571E+00	.12880E+00	.63000E-02	.12250E+00	.457E+00	.457E+00
4	.100E+01	.13568E+00	.62182E-01	.11358E+00	.837E+00	.837E+00
5	.128E+01	.11001E+00	.32304E-01	.57976E+00	.107E+01	.107E+01
6	.205E+01	.40109E+00	.13142E+00	.92551E+00	.170E+01	.170E+01
7	.123E+01	.10432E+00	.30883E-01	.50656E+00	.102E+01	.102E+01
8	.196E+01	.37801E+00	.12564E+00	.80866E+00	.163E+01	.163E+01
9	.117E+01	.98640E-01	.29462E-01	.43980E+00	.974E+00	.974E+00
10	.187E+01	.35493E+00	.11986E+00	.70209E+00	.155E+01	.155E+01
11	.249E+01	.60890E+00	.13093E+01	.19075E+00	.207E+01	.207E+01
12	.800E-01	.73242E-03	.10667E-02	.26667E-03	.667E-01	.667E-01

M A T E R I A L P R O P E R T Y D A T A

PROP ID	MODULUS OF ELASTICITY	SHEAR MODULUS	WEIGHT PER UNIT LEN	MASS PER UNIT LEN	THERMAL EXPANSION
1	.3500E+07	.1346E+07	.3354E+01	.0000E+00	.0000E+00
2	.3500E+07	.1346E+07	.3073E+01	.0000E+00	.0000E+00
3	.3500E+07	.1346E+07	.1427E+01	.0000E+00	.0000E+00
4	.3500E+07	.1346E+07	.0000E+00	.0000E+00	.0000E+00
5	.3500E+07	.1346E+07	.0000E+00	.0000E+00	.0000E+00
6	.3500E+07	.1346E+07	.0000E+00	.0000E+00	.0000E+00
7	.3500E+07	.1346E+07	.0000E+00	.0000E+00	.0000E+00
8	.3500E+07	.1346E+07	.0000E+00	.0000E+00	.0000E+00
9	.3500E+07	.1346E+07	.0000E+00	.0000E+00	.0000E+00
10	.3500E+07	.1346E+07	.0000E+00	.0000E+00	.0000E+00
11	.3500E+07	.1346E+07	.6214E+01	.0000E+00	.0000E+00
12	.4300E+05	.9000E+02	.0000E+00	.0000E+00	.0000E+00

F R A M E E L E M E N T D A T A

ELT ID	JOINT END-I	JOINT END-J	LOCAL-AXIS N1	LOCAL-AXIS N2	PROPERTY-ID END-I	PROPERTY-ID END-J	VAR	REL CODES	REF TEMP	ELEMENT LENGTH
1	1	2	-2	0	3	3	0	000000	.00	2.33
2	2	3	-2	0	3	3	0	000000	.00	2.33
3	3	4	-2	0	3	3	0	000000	.00	2.33
4	4	5	-2	0	3	3	0	000000	.00	2.33
5	5	6	-2	0	3	3	0	000000	.00	2.33
6	6	7	-2	0	3	3	0	000000	.00	2.33
7	7	8	-2	0	3	3	0	000000	.00	2.13
8	8	9	-2	0	3	3	0	000000	.00	2.13
9	9	10	-2	0	3	3	0	000000	.00	2.13
10	10	11	-2	0	3	3	0	000000	.00	2.13
11	11	12	-2	0	3	3	0	000000	.00	2.13
12	12	13	-2	0	3	3	0	000000	.00	2.13
13	13	14	-2	0	3	3	0	000000	.00	2.13
14	14	15	-2	0	3	3	0	000000	.00	2.13
15	15	16	-2	0	3	3	0	000000	.00	2.33
16	16	17	-2	0	3	3	0	000000	.00	2.33
17	17	18	-2	0	3	3	0	000000	.00	2.33
18	18	19	-2	0	3	3	0	000000	.00	2.33
19	19	20	-2	0	3	3	0	000000	.00	2.33
20	20	21	-2	0	3	3	0	000000	.00	2.33
21	22	23	-2	0	2	2	0	000000	.00	2.33
22	23	24	-2	0	2	2	0	000000	.00	2.33
23	24	25	-2	0	2	2	0	000000	.00	2.33
24	25	26	-2	0	2	2	0	000000	.00	2.33
25	26	27	-2	0	2	2	0	000000	.00	2.33
26	27	28	-2	0	2	2	0	000000	.00	2.33
27	28	29	-2	0	2	2	0	000000	.00	2.13
28	29	30	-2	0	2	2	0	000000	.00	2.13
29	30	31	-2	0	2	2	0	000000	.00	2.13
30	31	32	-2	0	2	2	0	000000	.00	2.13
31	32	33	-2	0	2	2	0	000000	.00	2.13
32	33	34	-2	0	2	2	0	000000	.00	2.13
33	34	35	-2	0	2	2	0	000000	.00	2.13
34	35	36	-2	0	2	2	0	000000	.00	2.13
35	36	37	-2	0	2	2	0	000000	.00	2.33
36	37	38	-2	0	2	2	0	000000	.00	2.33
37	38	39	-2	0	2	2	0	000000	.00	2.33
38	39	40	-2	0	2	2	0	000000	.00	2.33
39	40	41	-2	0	2	2	0	000000	.00	2.33
40	41	42	-2	0	2	2	0	000000	.00	2.33
41	43	44	-2	0	1	1	0	000000	.00	2.33
42	44	45	-2	0	1	1	0	000000	.00	2.33
43	45	46	-2	0	1	1	0	000000	.00	2.33
44	46	47	-2	0	1	1	0	000000	.00	2.33
45	47	48	-2	0	1	1	0	000000	.00	2.33
46	48	49	-2	0	1	1	0	000000	.00	2.33
47	49	50	-2	0	1	1	0	000000	.00	2.13
48	50	51	-2	0	1	1	0	000000	.00	2.13
49	51	52	-2	0	1	1	0	000000	.00	2.13
50	52	53	-2	0	1	1	0	000000	.00	2.13
51	53	54	-2	0	1	1	0	000000	.00	2.13

F R A M E E L E M E N T D A T A

ELT ID	JOINT END-I	JOINT END-J	LOCAL-AXIS N1	LOCAL-AXIS N2	PROPERTY-ID END-I	PROPERTY-ID END-J	VAR	REL CODES	REF TEMP	ELEMENT LENGTH
52	54	55	-2	0	1	1	0	000000	.00	2.13
53	55	56	-2	0	1	1	0	000000	.00	2.13
54	56	57	-2	0	1	1	0	000000	.00	2.13
55	57	58	-2	0	1	1	0	000000	.00	2.33
56	58	59	-2	0	1	1	0	000000	.00	2.33
57	59	60	-2	0	1	1	0	000000	.00	2.33
58	60	61	-2	0	1	1	0	000000	.00	2.33
59	61	62	-2	0	1	1	0	000000	.00	2.33
60	62	63	-2	0	1	1	0	000000	.00	2.33
61	64	65	-2	0	2	2	0	000000	.00	2.33
62	65	66	-2	0	2	2	0	000000	.00	2.33
63	66	67	-2	0	2	2	0	000000	.00	2.33
64	67	68	-2	0	2	2	0	000000	.00	2.33
65	68	69	-2	0	2	2	0	000000	.00	2.33
66	69	70	-2	0	2	2	0	000000	.00	2.33
67	70	71	-2	0	2	2	0	000000	.00	2.13
68	71	72	-2	0	2	2	0	000000	.00	2.13
69	72	73	-2	0	2	2	0	000000	.00	2.13
70	73	74	-2	0	2	2	0	000000	.00	2.13
71	74	75	-2	0	2	2	0	000000	.00	2.13
72	75	76	-2	0	2	2	0	000000	.00	2.13
73	76	77	-2	0	2	2	0	000000	.00	2.13
74	77	78	-2	0	2	2	0	000000	.00	2.13
75	78	79	-2	0	2	2	0	000000	.00	2.33
76	79	80	-2	0	2	2	0	000000	.00	2.33
77	80	81	-2	0	2	2	0	000000	.00	2.33
78	81	82	-2	0	2	2	0	000000	.00	2.33
79	82	83	-2	0	2	2	0	000000	.00	2.33
80	83	84	-2	0	2	2	0	000000	.00	2.33
81	85	86	-2	0	3	3	0	000000	.00	2.33
82	86	87	-2	0	3	3	0	000000	.00	2.33
83	87	88	-2	0	3	3	0	000000	.00	2.33
84	88	89	-2	0	3	3	0	000000	.00	2.33
85	89	90	-2	0	3	3	0	000000	.00	2.33
86	90	91	-2	0	3	3	0	000000	.00	2.33
87	91	92	-2	0	3	3	0	000000	.00	2.13
88	92	93	-2	0	3	3	0	000000	.00	2.13
89	93	94	-2	0	3	3	0	000000	.00	2.13
90	94	95	-2	0	3	3	0	000000	.00	2.13
91	95	96	-2	0	3	3	0	000000	.00	2.13
92	96	97	-2	0	3	3	0	000000	.00	2.13
93	97	98	-2	0	3	3	0	000000	.00	2.13
94	98	99	-2	0	3	3	0	000000	.00	2.13
95	99	100	-2	0	3	3	0	000000	.00	2.33
96	100	101	-2	0	3	3	0	000000	.00	2.33
97	101	102	-2	0	3	3	0	000000	.00	2.33
98	102	103	-2	0	3	3	0	000000	.00	2.33
99	103	104	-2	0	3	3	0	000000	.00	2.33
100	104	105	-2	0	3	3	0	000000	.00	2.33
101	1	22	3	0	4	4	0	000000	.00	1.50
102	2	23	3	0	5	5	0	000000	.00	1.50

F R A M E E L E M E N T D A T A

ELT ID	JOINT END-I	JOINT END-J	LOCAL-AXIS N1	LOCAL-AXIS N2	PROPERTY-ID END-I	PROPERTY-ID END-J	VAR	REL CODES	REF TEMP	ELEMENT LENGTH
103	3	24	3	0	5	5	0	000000	.00	1.50
104	4	25	3	0	5	5	0	000000	.00	1.50
105	5	26	3	0	5	5	0	000000	.00	1.50
106	6	27	3	0	5	5	0	000000	.00	1.50
107	7	28	3	0	7	7	0	000000	.00	1.50
108	8	29	3	0	9	9	0	000000	.00	1.50
109	9	30	3	0	9	9	0	000000	.00	1.50
110	10	31	3	0	9	9	0	000000	.00	1.50
111	11	32	3	0	9	9	0	000000	.00	1.50
112	12	33	3	0	9	9	0	000000	.00	1.50
113	13	34	3	0	9	9	0	000000	.00	1.50
114	14	35	3	0	9	9	0	000000	.00	1.50
115	15	36	3	0	7	7	0	000000	.00	1.50
116	16	37	3	0	5	5	0	000000	.00	1.50
117	17	38	3	0	5	5	0	000000	.00	1.50
118	18	39	3	0	5	5	0	000000	.00	1.50
119	19	40	3	0	5	5	0	000000	.00	1.50
120	20	41	3	0	5	5	0	000000	.00	1.50
121	21	42	3	0	4	4	0	000000	.00	1.50
122	22	43	3	0	4	4	0	000000	.00	1.50
123	23	44	3	0	6	6	0	000000	.00	1.50
124	24	45	3	0	6	6	0	000000	.00	1.50
125	25	46	3	0	6	6	0	000000	.00	1.50
126	26	47	3	0	6	6	0	000000	.00	1.50
127	27	48	3	0	6	6	0	000000	.00	1.50
128	28	49	3	0	8	8	0	000000	.00	1.50
129	29	50	3	0	10	10	0	000000	.00	1.50
130	30	51	3	0	10	10	0	000000	.00	1.50
131	31	52	3	0	10	10	0	000000	.00	1.50
132	32	53	3	0	10	10	0	000000	.00	1.50
133	33	54	3	0	10	10	0	000000	.00	1.50
134	34	55	3	0	10	10	0	000000	.00	1.50
135	35	56	3	0	10	10	0	000000	.00	1.50
136	36	57	3	0	8	8	0	000000	.00	1.50
137	37	58	3	0	6	6	0	000000	.00	1.50
138	38	59	3	0	6	6	0	000000	.00	1.50
139	39	60	3	0	6	6	0	000000	.00	1.50
140	40	61	3	0	6	6	0	000000	.00	1.50
141	41	62	3	0	6	6	0	000000	.00	1.50
142	42	63	3	0	4	4	0	000000	.00	1.50
143	43	64	3	0	4	4	0	000000	.00	1.50
144	44	65	3	0	6	6	0	000000	.00	1.50
145	45	66	3	0	6	6	0	000000	.00	1.50
146	46	67	3	0	6	6	0	000000	.00	1.50
147	47	68	3	0	6	6	0	000000	.00	1.50
148	48	69	3	0	6	6	0	000000	.00	1.50
149	49	70	3	0	8	8	0	000000	.00	1.50
150	50	71	3	0	10	10	0	000000	.00	1.50
151	51	72	3	0	10	10	0	000000	.00	1.50
152	52	73	3	0	10	10	0	000000	.00	1.50
153	53	74	3	0	10	10	0	000000	.00	1.50

F R A M E E L E M E N T D A T A

ELT ID	JOINT END-I	JOINT END-J	LOCAL-AXIS N1	LOCAL-AXIS N2	PROPERTY-ID END-I	PROPERTY-ID END-J	VAR	REL CODES	REF TEMP	ELEMENT LENGTH
154	54	75	3	0	10	10	0	000000	.00	1.50
155	55	76	3	0	10	10	0	000000	.00	1.50
156	56	77	3	0	10	10	0	000000	.00	1.50
157	57	78	3	0	8	8	0	000000	.00	1.50
158	58	79	3	0	6	6	0	000000	.00	1.50
159	59	80	3	0	6	6	0	000000	.00	1.50
160	60	81	3	0	6	6	0	000000	.00	1.50
161	61	82	3	0	6	6	0	000000	.00	1.50
162	62	83	3	0	6	6	0	000000	.00	1.50
163	63	84	3	0	4	4	0	000000	.00	1.50
164	64	85	3	0	4	4	0	000000	.00	1.50
165	65	86	3	0	5	5	0	000000	.00	1.50
166	66	87	3	0	5	5	0	000000	.00	1.50
167	67	88	3	0	5	5	0	000000	.00	1.50
168	68	89	3	0	5	5	0	000000	.00	1.50
169	69	90	3	0	5	5	0	000000	.00	1.50
170	70	91	3	0	7	7	0	000000	.00	1.50
171	71	92	3	0	9	9	0	000000	.00	1.50
172	72	93	3	0	9	9	0	000000	.00	1.50
173	73	94	3	0	9	9	0	000000	.00	1.50
174	74	95	3	0	9	9	0	000000	.00	1.50
175	75	96	3	0	9	9	0	000000	.00	1.50
176	76	97	3	0	9	9	0	000000	.00	1.50
177	77	98	3	0	9	9	0	000000	.00	1.50
178	78	99	3	0	7	7	0	000000	.00	1.50
179	79	100	3	0	5	5	0	000000	.00	1.50
180	80	101	3	0	5	5	0	000000	.00	1.50
181	81	102	3	0	5	5	0	000000	.00	1.50
182	82	103	3	0	5	5	0	000000	.00	1.50
183	83	104	3	0	5	5	0	000000	.00	1.50
184	84	105	3	0	4	4	0	000000	.00	1.50
5001	1001	1	3	0	12	12	0	010010	.00	.05
5021	1021	21	3	0	12	12	0	010010	.00	.05
5049	1049	49	3	0	11	11	0	000000	.00	19.00
5057	1057	57	3	0	11	11	0	000000	.00	19.00
5085	1085	85	3	0	12	12	0	010010	.00	.05
5105	1105	105	3	0	12	12	0	010010	.00	.05

T O T A L W E I G H T S A N D M A S S E S

PROP	WEIGHT	MASS
1	150.9300	.0000
2	276.5250	.0000
3	128.4075	.0000
4	.0000	.0000
5	.0000	.0000
6	.0000	.0000
7	.0000	.0000
8	.0000	.0000
9	.0000	.0000
10	.0000	.0000
11	236.1130	.0000
12	.0000	.0000
TOTAL	791.9755	.0000

J O I N T L O A D S

JOINT	LOAD	FX	FY	FZ	MX	MY	MZ
23	1	.000E+00	.000E+00	-.166E+01	.000E+00	.000E+00	.000E+00
24	1	.000E+00	.000E+00	-.640E+01	.000E+00	.000E+00	.000E+00
25	1	.000E+00	.000E+00	-.186E+01	.000E+00	.000E+00	.000E+00
26	1	.000E+00	.000E+00	-.640E+01	.000E+00	.000E+00	.000E+00
27	1	.000E+00	.000E+00	-.170E+01	.000E+00	.000E+00	.000E+00
28	1	.000E+00	.000E+00	-.350E+01	.000E+00	.000E+00	.000E+00
22	1	.000E+00	.000E+00	-.350E+01	.000E+00	.000E+00	.000E+00
44	1	.000E+00	.000E+00	-.333E+01	.000E+00	.000E+00	.000E+00
45	1	.000E+00	.000E+00	-.128E+02	.000E+00	.000E+00	.000E+00
46	1	.000E+00	.000E+00	-.371E+01	.000E+00	.000E+00	.000E+00
47	1	.000E+00	.000E+00	-.128E+02	.000E+00	.000E+00	.000E+00
48	1	.000E+00	.000E+00	-.340E+01	.000E+00	.000E+00	.000E+00
49	1	.000E+00	.000E+00	-.700E+01	.000E+00	.000E+00	.000E+00
43	1	.000E+00	.000E+00	-.700E+01	.000E+00	.000E+00	.000E+00
65	1	.000E+00	.000E+00	-.166E+01	.000E+00	.000E+00	.000E+00
66	1	.000E+00	.000E+00	-.640E+01	.000E+00	.000E+00	.000E+00
67	1	.000E+00	.000E+00	-.186E+01	.000E+00	.000E+00	.000E+00
68	1	.000E+00	.000E+00	-.640E+01	.000E+00	.000E+00	.000E+00
69	1	.000E+00	.000E+00	-.170E+01	.000E+00	.000E+00	.000E+00
70	1	.000E+00	.000E+00	-.350E+01	.000E+00	.000E+00	.000E+00
64	1	.000E+00	.000E+00	-.350E+01	.000E+00	.000E+00	.000E+00
28	2	.000E+00	.000E+00	-.145E+01	.000E+00	.000E+00	.000E+00
29	2	.000E+00	.000E+00	-.205E+01	.000E+00	.000E+00	.000E+00
30	2	.000E+00	.000E+00	-.280E+01	.000E+00	.000E+00	.000E+00
31	2	.000E+00	.000E+00	-.615E+01	.000E+00	.000E+00	.000E+00
32	2	.000E+00	.000E+00	-.100E+00	.000E+00	.000E+00	.000E+00
33	2	.000E+00	.000E+00	-.615E+01	.000E+00	.000E+00	.000E+00
34	2	.000E+00	.000E+00	-.280E+01	.000E+00	.000E+00	.000E+00
35	2	.000E+00	.000E+00	-.205E+01	.000E+00	.000E+00	.000E+00
36	2	.000E+00	.000E+00	-.145E+01	.000E+00	.000E+00	.000E+00
49	2	.000E+00	.000E+00	-.290E+01	.000E+00	.000E+00	.000E+00
50	2	.000E+00	.000E+00	-.410E+01	.000E+00	.000E+00	.000E+00
51	2	.000E+00	.000E+00	-.560E+01	.000E+00	.000E+00	.000E+00
52	2	.000E+00	.000E+00	-.123E+02	.000E+00	.000E+00	.000E+00
53	2	.000E+00	.000E+00	-.200E+00	.000E+00	.000E+00	.000E+00
54	2	.000E+00	.000E+00	-.123E+02	.000E+00	.000E+00	.000E+00
55	2	.000E+00	.000E+00	-.560E+01	.000E+00	.000E+00	.000E+00
56	2	.000E+00	.000E+00	-.410E+01	.000E+00	.000E+00	.000E+00
57	2	.000E+00	.000E+00	-.290E+01	.000E+00	.000E+00	.000E+00
70	2	.000E+00	.000E+00	-.145E+01	.000E+00	.000E+00	.000E+00
71	2	.000E+00	.000E+00	-.205E+01	.000E+00	.000E+00	.000E+00
72	2	.000E+00	.000E+00	-.280E+01	.000E+00	.000E+00	.000E+00
73	2	.000E+00	.000E+00	-.615E+01	.000E+00	.000E+00	.000E+00
74	2	.000E+00	.000E+00	-.100E+00	.000E+00	.000E+00	.000E+00
75	2	.000E+00	.000E+00	-.615E+01	.000E+00	.000E+00	.000E+00
76	2	.000E+00	.000E+00	-.280E+01	.000E+00	.000E+00	.000E+00
77	2	.000E+00	.000E+00	-.205E+01	.000E+00	.000E+00	.000E+00
78	2	.000E+00	.000E+00	-.145E+01	.000E+00	.000E+00	.000E+00

J O I N T A N D E L E M E N T O U T P U T S E L E C T I O N

TYPE		FIRST ID	LAST ID	ID INC	CODE
1	(JOINT DISPL)	1	105	1	1
2	(JOINT REACT)	1001	1021	20	1
2	(JOINT REACT)	1085	1105	20	1
2	(JOINT REACT)	1049	1057	8	1
5	(FRAME ELEMT)	5049	5049	1	1
5	(FRAME ELEMT)	5001	5001	1	1
5	(FRAME ELEMT)	5021	5021	1	1
5	(FRAME ELEMT)	1	10	1	1
5	(FRAME ELEMT)	21	30	1	1
5	(FRAME ELEMT)	41	50	1	1
5	(FRAME ELEMT)	61	70	1	1
5	(FRAME ELEMT)	81	90	1	1

DESPLAZAMIENTOS Y REACCIONES

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:PCARGA. PRUEBA DE CARGA.

J O I N T D I S P L A C E M E N T S

LOAD CONDITION 1 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
1	-.001205	.000000	-.000312	-.000169	.000581	.000000
2	-.001205	.000000	-.001712	-.000093	.000494	.000000
3	-.001205	.000000	-.002602	-.000049	.000225	.000000
4	-.001205	.000000	-.002767	-.000024	-.000090	.000000
5	-.001205	.000000	-.002232	-.000010	-.000358	.000000
6	-.001205	.000000	-.001216	.000004	-.000474	.000000
7	-.001205	.000000	-.000204	.000014	-.000361	.000000
8	-.001205	.000000	.000407	.000010	-.000211	.000000
9	-.001205	.000000	.000725	.000005	-.000092	.000000
10	-.001204	.000000	.000819	.000003	-.000002	.000000
11	-.001204	.000000	.000751	.000001	.000061	.000000
12	-.001204	.000000	.000579	.000000	.000096	.000000
13	-.001204	.000000	.000361	-.000001	.000104	.000000
14	-.001203	.000000	.000157	-.000002	.000084	.000000
15	-.001203	.000000	.000020	-.000002	.000044	.000000
16	-.001203	.000000	-.000054	-.000001	.000021	.000000
17	-.001203	.000000	-.000087	-.000000	.000008	.000000
18	-.001203	.000000	-.000092	-.000000	-.000003	.000000
19	-.001203	.000000	-.000075	-.000001	-.000011	.000000
20	-.001203	.000000	-.000043	-.000001	-.000015	.000000
21	-.001203	.000000	-.000004	-.000002	-.000017	.000000
22	-.001205	.000000	-.000571	-.000111	.000561	.000000
23	-.001205	.000000	-.001823	-.000045	.000467	.000000
24	-.001205	.000000	-.002657	-.000021	.000215	.000000
25	-.001205	.000000	-.002793	-.000010	-.000094	.000000
26	-.001205	.000000	-.002245	-.000004	-.000360	.000000
27	-.001205	.000000	-.001207	.000007	-.000477	.000000
28	-.001205	.000000	-.000174	.000022	-.000357	.000000
29	-.001205	.000000	.000421	.000008	-.000208	.000000
30	-.001205	.000000	.000731	.000003	-.000091	.000000
31	-.001204	.000000	.000822	.000001	-.000002	.000000
32	-.001204	.000000	.000752	.000000	.000061	.000000
33	-.001204	.000000	.000579	.000000	.000096	.000000
34	-.001204	.000000	.000360	-.000001	.000104	.000000
35	-.001203	.000000	.000154	-.000002	.000084	.000000
36	-.001203	.000000	.000016	-.000002	.000042	.000000
37	-.001203	.000000	-.000054	-.000000	.000021	.000000
38	-.001203	.000000	-.000087	.000000	.000008	.000000
39	-.001203	.000000	-.000092	-.000000	-.000003	.000000
40	-.001203	.000000	-.000075	-.000000	-.000011	.000000
41	-.001203	.000000	-.000045	-.000000	-.000015	.000000
42	-.001203	.000000	-.000006	-.000001	-.000017	.000000
43	-.001205	.000000	-.000670	.000000	.000540	.000000
44	-.001205	.000000	-.001860	.000000	.000457	.000000
45	-.001205	.000000	-.002675	.000000	.000212	.000000
46	-.001205	.000000	-.002802	.000000	-.000096	.000000
47	-.001205	.000000	-.002250	.000000	-.000361	.000000
48	-.001205	.000000	-.001199	.000000	-.000483	.000000
49	-.001205	.000000	-.000136	.000000	-.000338	.000000
50	-.001205	.000000	.000428	.000000	-.000204	.000000

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:PCARGA. PRUEBA DE CARGA.

J O I N T D I S P L A C E M E N T S

LOAD CONDITION 1 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
51	-.001205	.000000	.000733	.000000	-.000090	.000000
52	-.001204	.000000	.000823	.000000	-.000001	.000000
53	-.001204	.000000	.000753	.000000	.000061	.000000
54	-.001204	.000000	.000579	.000000	.000096	.000000
55	-.001204	.000000	.000360	.000000	.000104	.000000
56	-.001203	.000000	.000151	.000000	.000085	.000000
57	-.001203	.000000	.000013	.000000	.000032	.000000
58	-.001203	.000000	-.000054	.000000	.000022	.000000
59	-.001203	.000000	-.000087	.000000	.000008	.000000
60	-.001203	.000000	-.000092	.000000	-.000003	.000000
61	-.001203	.000000	-.000076	.000000	-.000011	.000000
62	-.001203	.000000	-.000045	.000000	-.000015	.000000
63	-.001203	.000000	-.000007	.000000	-.000017	.000000
64	-.001205	.000000	-.000571	.000111	.000561	.000000
65	-.001205	.000000	-.001823	.000045	.000467	.000000
66	-.001205	.000000	-.002657	.000021	.000215	.000000
67	-.001205	.000000	-.002793	.000010	-.000094	.000000
68	-.001205	.000000	-.002245	.000004	-.000360	.000000
69	-.001205	.000000	-.001207	-.000007	-.000477	.000000
70	-.001205	.000000	-.000174	-.000022	-.000357	.000000
71	-.001205	.000000	.000421	-.000008	-.000208	.000000
72	-.001205	.000000	.000731	-.000003	-.000091	.000000
73	-.001204	.000000	.000822	-.000001	-.000002	.000000
74	-.001204	.000000	.000752	-.000000	.000061	.000000
75	-.001204	.000000	.000579	.000000	.000096	.000000
76	-.001204	.000000	.000360	.000001	.000104	.000000
77	-.001203	.000000	.000154	.000002	.000084	.000000
78	-.001203	.000000	.000016	.000002	.000042	.000000
79	-.001203	.000000	-.000054	.000000	.000021	.000000
80	-.001203	.000000	-.000087	.000000	.000008	.000000
81	-.001203	.000000	-.000092	.000000	-.000003	.000000
82	-.001203	.000000	-.000075	.000000	-.000011	.000000
83	-.001203	.000000	-.000045	.000000	-.000015	.000000
84	-.001203	.000000	-.000006	.000001	-.000017	.000000
85	-.001205	.000000	-.000312	.000169	.000581	.000000
86	-.001205	.000000	-.001712	.000093	.000494	.000000
87	-.001205	.000000	-.002602	.000049	.000225	.000000
88	-.001205	.000000	-.002767	.000024	-.000090	.000000
89	-.001205	.000000	-.002232	.000010	-.000358	.000000
90	-.001205	.000000	-.001216	-.000004	-.000474	.000000
91	-.001205	.000000	-.000204	-.000014	-.000361	.000000
92	-.001205	.000000	.000407	-.000010	-.000211	.000000
93	-.001205	.000000	.000725	-.000005	-.000092	.000000
94	-.001204	.000000	.000819	-.000003	-.000002	.000000
95	-.001204	.000000	.000751	-.000001	.000061	.000000
96	-.001204	.000000	.000579	.000000	.000096	.000000
97	-.001204	.000000	.000361	.000001	.000104	.000000
98	-.001203	.000000	.000157	.000002	.000084	.000000
99	-.001203	.000000	.000020	.000002	.000044	.000000
100	-.001203	.000000	-.000054	.000001	.000021	.000000

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:PCARGA. PRUEBA DE CARGA.

J O I N T D I S P L A C E M E N T S

LOAD CONDITION 1 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
101	-.001203	.000000	-.000087	.000000	.000008	.000000
102	-.001203	.000000	-.000092	.000000	-.000003	.000000
103	-.001203	.000000	-.000075	.000001	-.000011	.000000
104	-.001203	.000000	-.000043	.000001	-.000015	.000000
105	-.001203	.000000	-.000004	.000002	-.000017	.000000

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:PCARGA. PRUEBA DE CARGA.

J O I N T D I S P L A C E M E N T S

LOAD CONDITION 2 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
1	.1850E-05	.1763E-08	.3357E-04	.1755E-04	-.1598E-03	-.3695E-08
2	.1848E-05	.7198E-09	.4080E-03	.9697E-05	-.1459E-03	-.3629E-08
3	.1838E-05	.1825E-08	.7044E-03	.5354E-05	-.1006E-03	-.6543E-08
4	.1815E-05	.4249E-08	.8619E-03	.4119E-05	-.2789E-04	-.1391E-07
5	.1763E-05	.9292E-08	.8148E-03	.5289E-05	.7361E-04	-.3008E-07
6	.1654E-05	.1650E-07	.4942E-03	.9189E-05	.2056E-03	-.6482E-07
7	.1448E-05	.2459E-08	-.1832E-03	.1536E-04	.3762E-03	-.1230E-06
8	.000001	.000000	-.001160	.000009	.000517	.000000
9	.000001	.000000	-.002248	.000001	.000473	.000000
10	.000000	.000000	-.003063	-.000004	.000270	.000000
11	.000000	.000000	-.003352	-.000004	.000000	.000000
12	-.000000	.000000	-.003063	-.000004	-.000270	.000000
13	-.000001	.000000	-.002248	.000001	-.000473	.000000
14	-.000001	.000000	-.001160	.000009	-.000517	.000000
15	-.1448E-05	.2459E-08	-.1832E-03	.1536E-04	-.3762E-03	.1230E-06
16	-.1654E-05	.1650E-07	.4942E-03	.9189E-05	-.2056E-03	.6482E-07
17	-.1763E-05	.9292E-08	.8148E-03	.5289E-05	-.7361E-04	.3008E-07
18	-.1815E-05	.4249E-08	.8619E-03	.4119E-05	.2789E-04	.1391E-07
19	-.1838E-05	.1825E-08	.7044E-03	.5354E-05	.1006E-03	.6543E-08
20	-.1848E-05	.7198E-09	.4080E-03	.9697E-05	.1459E-03	.3629E-08
21	-.1850E-05	.1763E-08	.3357E-04	.1755E-04	.1598E-03	.3695E-08
22	.1859E-05	.1252E-08	.6045E-04	.1140E-04	-.1577E-03	-.2876E-08
23	.1860E-05	.4277E-09	.4193E-03	.4534E-05	-.1428E-03	-.2575E-08
24	.1861E-05	.1114E-08	.7100E-03	.2038E-05	-.9950E-04	-.4771E-08
25	.1862E-05	.2644E-08	.8662E-03	.1514E-05	-.2749E-04	-.1057E-07
26	.1861E-05	.6006E-08	.8207E-03	.2366E-05	.7330E-04	-.2456E-07
27	.1846E-05	.1185E-07	.5060E-03	.6226E-05	.2034E-03	-.5990E-07
28	.1755E-05	.1874E-08	-.1533E-03	.2083E-04	.3701E-03	-.1545E-06
29	.000001	.000000	-.001145	.000010	.000519	.000000
30	.000001	.000000	-.002248	.000001	.000473	.000000
31	.000000	.000000	-.003070	-.000003	.000269	.000000
32	.000000	.000000	-.003357	-.000002	.000000	.000000
33	-.000000	.000000	-.003070	-.000003	-.000269	.000000
34	-.000001	.000000	-.002248	.000001	-.000473	.000000
35	-.000001	.000000	-.001145	.000010	-.000519	.000000
36	-.1755E-05	.1874E-08	-.1533E-03	.2083E-04	-.3701E-03	.1545E-06
37	-.1846E-05	.1185E-07	.5060E-03	.6226E-05	-.2034E-03	.5990E-07
38	-.1861E-05	.6006E-08	.8207E-03	.2366E-05	-.7330E-04	.2456E-07
39	-.1862E-05	.2644E-08	.8662E-03	.1514E-05	.2749E-04	.1057E-07
40	-.1861E-05	.1114E-08	.7100E-03	.2038E-05	.9950E-04	.4771E-08
41	-.1860E-05	.4277E-09	.4193E-03	.4534E-05	.1428E-03	.2575E-08
42	-.1859E-05	.1252E-08	.6045E-04	.1140E-04	.1577E-03	.2876E-08
43	.1864E-05	.0000E+00	.7048E-04	.0000E+00	-.1555E-03	.0000E+00
44	.1866E-05	.0000E+00	.4229E-03	.0000E+00	-.1418E-03	.0000E+00
45	.1872E-05	.0000E+00	.7116E-03	.0000E+00	-.9916E-04	.0000E+00
46	.1890E-05	.0000E+00	.8674E-03	.0000E+00	-.2743E-04	.0000E+00
47	.1936E-05	.0000E+00	.8224E-03	.0000E+00	.7309E-04	.0000E+00
48	.2056E-05	.0000E+00	.5105E-03	.0000E+00	.2013E-03	.0000E+00
49	.2399E-05	.0000E+00	-.1193E-03	.0000E+00	.3438E-03	.0000E+00
50	.000002	.000000	-.001134	.000000	.000525	.000000

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:PCARGA. PRUEBA DE CARGA.

J O I N T D I S P L A C E M E N T S

LOAD CONDITION 2 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
51	.000001	.000000	-.002249	.000000	.000474	.000000
52	.000000	.000000	-.003075	.000000	.000269	.000000
53	.000000	.000000	-.003359	.000000	.000000	.000000
54	-.000000	.000000	-.003075	.000000	-.000269	.000000
55	-.000001	.000000	-.002249	.000000	-.000474	.000000
56	-.000002	.000000	-.001134	.000000	-.000525	.000000
57	-.2399E-05	.0000E+00	-.1193E-03	.0000E+00	-.3438E-03	.0000E+00
58	-.2056E-05	.0000E+00	.5105E-03	.0000E+00	-.2013E-03	.0000E+00
59	-.1936E-05	.0000E+00	.8224E-03	.0000E+00	-.7309E-04	.0000E+00
60	-.1890E-05	.0000E+00	.8674E-03	.0000E+00	.2743E-04	.0000E+00
61	-.1872E-05	.0000E+00	.7116E-03	.0000E+00	.9916E-04	.0000E+00
62	-.1866E-05	.0000E+00	.4229E-03	.0000E+00	.1418E-03	.0000E+00
63	-.1864E-05	.0000E+00	.7048E-04	.0000E+00	.1555E-03	.0000E+00
64	.1859E-05	-.1252E-08	.6045E-04	-.1140E-04	-.1577E-03	.2876E-08
65	.1860E-05	-.4277E-09	.4193E-03	-.4534E-05	-.1428E-03	.2575E-08
66	.1861E-05	-.1114E-08	.7100E-03	-.2038E-05	-.9950E-04	.4771E-08
67	.1862E-05	-.2644E-08	.8662E-03	-.1514E-05	-.2749E-04	.1057E-07
68	.1861E-05	-.6006E-08	.8207E-03	-.2366E-05	.7330E-04	.2456E-07
69	.1846E-05	-.1185E-07	.5060E-03	-.6226E-05	.2034E-03	.5990E-07
70	.1755E-05	-.1874E-08	-.1533E-03	-.2083E-04	.3701E-03	.1545E-06
71	.000001	.000000	-.001145	-.000010	.000519	.000000
72	.000001	.000000	-.002248	-.000001	.000473	.000000
73	.000000	.000000	-.003070	.000003	.000269	.000000
74	.000000	.000000	-.003357	.000002	.000000	.000000
75	-.000000	.000000	-.003070	.000003	-.000269	.000000
76	-.000001	.000000	-.002248	-.000001	-.000473	.000000
77	-.000001	.000000	-.001145	-.000010	-.000519	.000000
78	-.1755E-05	-.1874E-08	-.1533E-03	-.2083E-04	-.3701E-03	-.1545E-06
79	-.1846E-05	-.1185E-07	.5060E-03	-.6226E-05	-.2034E-03	-.5990E-07
80	-.1861E-05	-.6006E-08	.8207E-03	-.2366E-05	-.7330E-04	-.2456E-07
81	-.1862E-05	-.2644E-08	.8662E-03	-.1514E-05	.2749E-04	-.1057E-07
82	-.1861E-05	-.1114E-08	.7100E-03	-.2038E-05	.9950E-04	-.4771E-08
83	-.1860E-05	-.4277E-09	.4193E-03	-.4534E-05	.1428E-03	-.2575E-08
84	-.1859E-05	-.1252E-08	.6045E-04	-.1140E-04	.1577E-03	-.2876E-08
85	.1850E-05	-.1763E-08	.3357E-04	-.1755E-04	-.1598E-03	.3695E-08
86	.1848E-05	-.7198E-09	.4080E-03	-.9697E-05	-.1459E-03	.3629E-08
87	.1838E-05	-.1825E-08	.7044E-03	-.5354E-05	-.1006E-03	.6543E-08
88	.1815E-05	-.4249E-08	.8619E-03	-.4119E-05	-.2789E-04	.1391E-07
89	.1763E-05	-.9292E-08	.8148E-03	-.5289E-05	.7361E-04	.3008E-07
90	.1654E-05	-.1650E-07	.4942E-03	-.9189E-05	.2056E-03	.6482E-07
91	.1448E-05	-.2459E-08	-.1832E-03	-.1536E-04	.3762E-03	.1230E-06
92	.000001	.000000	-.001160	-.000009	.000517	.000000
93	.000001	.000000	-.002248	-.000001	.000473	.000000
94	.000000	.000000	-.003063	.000004	.000270	.000000
95	.000000	.000000	-.003352	.000004	.000000	.000000
96	-.000000	.000000	-.003063	.000004	-.000270	.000000
97	-.000001	.000000	-.002248	-.000001	-.000473	.000000
98	-.000001	.000000	-.001160	-.000009	-.000517	.000000
99	-.1448E-05	-.2459E-08	-.1832E-03	-.1536E-04	-.3762E-03	-.1230E-06
100	-.1654E-05	-.1650E-07	.4942E-03	-.9189E-05	-.2056E-03	-.6482E-07

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:PCARGA. PRUEBA DE CARGA.

J O I N T D I S P L A C E M E N T S

LOAD CONDITION 2 - DISPLACEMENTS "U" AND ROTATIONS "R"

JOINT	U(X)	U(Y)	U(Z)	R(X)	R(Y)	R(Z)
101	-.1763E-05	-.9292E-08	.8148E-03	-.5289E-05	-.7361E-04	-.3008E-07
102	-.1815E-05	-.4249E-08	.8619E-03	-.4119E-05	.2789E-04	-.1391E-07
103	-.1838E-05	-.1825E-08	.7044E-03	-.5354E-05	.1006E-03	-.6543E-08
104	-.1848E-05	-.7198E-09	.4080E-03	-.9697E-05	.1459E-03	-.3629E-08
105	-.1850E-05	-.1763E-08	.3357E-04	-.1755E-04	.1598E-03	-.3695E-08

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:PCARGA. PRUEBA DE CARGA.

R E A C T I O N S A N D A P P L I E D F O R C E S

LOAD CONDITION 1 - FORCES "F" AND MOMENTS "M"

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1001	.1445	.0000	21.4766	.0000	.0072	.0000
1021	.1443	.0000	.2451	.0000	.0072	.0000
1049	-2.3228	.0000	62.3620	.0000	-10.1934	.0000
1057	1.7451	.0000	-5.7304	.0000	15.4579	.0000
1085	.1445	.0000	21.4766	.0000	.0072	.0000
1105	.1443	.0000	.2451	.0000	.0072	.0000
TOTAL	-.6999E-11	.2512E-12	.1001E+03	-.3765E-11	.5293E+01	-.1063E-11

REPOSICION 303+620. 3 VANOS 14+17+14 FILE:PCARGA. PRUEBA DE CARGA.

R E A C T I O N S A N D A P P L I E D F O R C E S

LOAD CONDITION 2 - FORCES "F" AND MOMENTS "M"

JOINT	F(X)	F(Y)	F(Z)	M(X)	M(Y)	M(Z)
1001	-.0002	.0000	-2.3099	.0000	-.0000	.0000
1021	.0002	.0000	-2.3099	.0000	.0000	.0000
1049	3.7823	.0000	54.6198	.0000	23.8506	.0000
1057	-3.7823	.0000	54.6198	.0000	-23.8506	.0000
1085	-.0002	.0000	-2.3099	.0000	-.0000	.0000
1105	.0002	.0000	-2.3099	.0000	.0000	.0000
TOTAL	.4082E-14	-.3775E-15	.1000E+03	.6063E-12	-.2857E-13	.7069E-14

ESFUERZOS

F R A M E E L E M E N T F O R C E S

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
1								
	1	.000			-.101			5.601
		.000	2.813	-2.459		-.014	.026	
		1.167	2.813	.823		-.014	.009	
		2.333	2.813	4.105		-.014	-.008	
		2.333			-.101			5.601
	2	.000			-.002			-.584
		.000	-.342	.267		.001	-.001	
		1.167	-.342	-.132		.001	.000	
		2.333	-.342	-.531		.001	.001	
		2.333			-.002			-.584
2								
	1	.000			-.059			3.321
		.000	.990	1.393		-.008	.011	
		1.167	.990	2.547		-.008	.002	
		2.333	.990	3.702		-.008	-.007	
		2.333			-.059			3.321
	2	.000			-.008			-.323
		.000	-.171	-.229		.002	-.002	
		1.167	-.171	-.428		.002	.001	
		2.333	-.171	-.627		.002	.003	
		2.333			-.008			-.323
3								
	1	.000			-.034			1.835
		.000	.158	2.792		-.005	.006	
		1.167	.158	2.976		-.005	.000	
		2.333	.158	3.161		-.005	-.006	
		2.333			-.034			1.835
	2	.000			-.020			-.092
		.000	-.145	-.518		.004	-.004	
		1.167	-.145	-.687		.004	.001	
		2.333	-.145	-.857		.004	.006	
		2.333			-.020			-.092
4								
	1	.000			-.012			1.033
		.000	-.222	2.788		-.007	.006	
		1.167	-.222	2.529		-.007	-.001	
		2.333	-.222	2.270		-.007	-.009	
		2.333			-.012			1.033
	2	.000			-.044			.087
		.000	-.122	-.817		.009	-.008	
		1.167	-.122	-.959		.009	.003	
		2.333	-.122	-1.101		.009	.013	

F R A M E E L E M E N T F O R C E S

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		2.333			-.044			.087
5								
	1	.000			.021			1.066
		.000	-.876	2.117		-.012	.010	
		1.167	-.876	1.095		-.012	-.004	
		2.333	-.876	.074		-.012	-.018	
		2.333			.021			1.066
	2	.000			-.093			.290
		.000	-.099	-1.132		.019	-.016	
		1.167	-.099	-1.247		.019	.006	
		2.333	-.099	-1.362		.019	.028	
		2.333			-.093			.290
6								
	1	.000			.074			.739
		.000	-.729	-.214		-.020	.017	
		1.167	-.729	-1.064		-.020	-.006	
		2.333	-.729	-1.915		-.020	-.030	
		2.333			.074			.739
	2	.000			-.176			.459
		.000	-.026	-1.582		.033	-.027	
		1.167	-.026	-1.612		.033	.011	
		2.333	-.026	-1.642		.033	.049	
		2.333			-.176			.459
7								
	1	.000			.123			-.359
		.000	-.058	-1.496		-.021	.029	
		1.063	-.058	-1.557		-.021	.007	
		2.125	-.058	-1.618		-.021	-.016	
		2.125			.123			-.359
	2	.000			-.255			-.485
		.000	.707	-2.209		.034	-.048	
		1.063	.707	-1.459		.034	-.011	
		2.125	.707	-.708		.034	.026	
		2.125			-.255			-.485
8								
	1	.000			.170			-.363
		.000	.096	-1.343		-.013	.018	
		1.063	.096	-1.241		-.013	.004	
		2.125	.096	-1.138		-.013	-.010	
		2.125			.170			-.363
	2	.000			-.331			-.658
		.000	.926	-.532		.021	-.030	
		1.063	.926	.452		.021	-.007	

F R A M E E L E M E N T F O R C E S

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		2.125	.926	1.436		.021	.015	
		2.125			-.331			-.658
9								
	1	.000			.199			-.217
		.000	.122	-1.064		-.006	.009	
		1.063	.122	-.934		-.006	.002	
		2.125	.122	-.804		-.006	-.004	
		2.125			.199			-.217
	2	.000			-.377			-.401
		.000	.644	1.427		.010	-.015	
		1.063	.644	2.111		.010	-.004	
		2.125	.644	2.795		.010	.007	
		2.125			-.377			-.401
10								
	1	.000			.213			-.125
		.000	.137	-.793		-.002	.004	
		1.063	.137	-.648		-.002	.001	
		2.125	.137	-.502		-.002	-.001	
		2.125			.213			-.125
	2	.000			-.397			-.003
		.000	.059	2.736		.003	-.006	
		1.063	.059	2.798		.003	-.003	
		2.125	.059	2.861		.003	.000	
		2.125			-.397			-.003
21								
	1	.000			-.039			10.895
		.000	9.034	-.063		-.018	.030	
		1.167	9.034	10.477		-.018	.010	
		2.333	9.034	21.017		-.018	-.011	
		2.333			-.039			10.895
	2	.000			.001			-1.135
		.000	-1.407	-.004		.002	-.002	
		1.167	-1.407	-1.645		.002	.000	
		2.333	-1.407	-3.286		.002	.002	
		2.333			.001			-1.135
22								
	1	.000			-.061			4.015
		.000	6.641	20.148		-.010	.014	
		1.167	6.641	27.896		-.010	.002	
		2.333	6.641	35.643		-.010	-.009	
		2.333			-.061			4.015
	2	.000			.002			-.413
		.000	-1.378	-3.203		.003	-.003	

F R A M E E L E M E N T F O R C E S

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		1.167	-1.378	-4.810		.003	.001	
		2.333	-1.378	-6.417		.003	.004	
		2.333			.002			-.413
23								
	1	.000			-.069			1.839
		.000	-.870	35.370		-.007	.008	
		1.167	-.870	34.355		-.007	.000	
		2.333	-.870	33.340		-.007	-.008	
		2.333			-.069			1.839
	2	.000			.002			-.087
		.000	-1.363	-6.404		.006	-.005	
		1.167	-1.363	-7.994		.006	.002	
		2.333	-1.363	-9.584		.006	.009	
		2.333			.002			-.087
24								
	1	.000			-.069			.918
		.000	-3.231	33.226		-.010	.009	
		1.167	-3.231	29.457		-.010	-.002	
		2.333	-3.231	25.687		-.010	-.014	
		2.333			-.069			.918
	2	.000			-.001			.141
		.000	-1.356	-9.605		.014	-.012	
		1.167	-1.356	-11.187		.014	.004	
		2.333	-1.356	-12.769		.014	.021	
		2.333			-.001			.141
25								
	1	.000			-.054			1.845
		.000	-10.618	25.403		-.021	.018	
		1.167	-10.618	13.015		-.021	-.007	
		2.333	-10.618	.627		-.021	-.031	
		2.333			-.054			1.845
	2	.000			-.028			.638
		.000	-1.393	-12.813		.033	-.027	
		1.167	-1.393	-14.437		.033	.011	
		2.333	-1.393	-16.062		.033	.049	
		2.333			-.028			.638
26								
	1	.000			.032			2.530
		.000	-10.341	-1.257		-.047	.036	
		1.167	-10.341	-13.321		-.047	-.018	
		2.333	-10.341	-25.385		-.047	-.073	
		2.333			.032			2.530
	2	.000			-.168			2.415

F R A M E E L E M E N T F O R C E S

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	-1.659	-16.574		.075	-.058	
		1.167	-1.659	-18.509		.075	.030	
		2.333	-1.659	-20.445		.075	.118	
		2.333			-.168			2.415
27								
	1	.000			.397			-2.586
		.000	1.176	-19.375		-.051	.073	
		1.063	1.176	-18.125		-.051	.019	
		2.125	1.176	-16.876		-.051	-.035	
		2.125			.397			-2.586
	2	.000			-.763			-2.053
		.000	10.053	-28.794		.082	-.118	
		1.063	10.053	-18.113		.082	-.031	
		2.125	10.053	-7.431		.082	.057	
		2.125			-.763			-2.053
28								
	1	.000			.484			-.953
		.000	1.579	-15.971		-.024	.034	
		1.063	1.579	-14.294		-.024	.008	
		2.125	1.579	-12.616		-.024	-.018	
		2.125			.484			-.953
	2	.000			-.906			-1.602
		.000	10.524	-5.612		.040	-.056	
		1.063	10.524	5.570		.040	-.014	
		2.125	10.524	16.753		.040	.028	
		2.125			-.906			-1.602
29								
	1	.000			.504			-.320
		.000	1.537	-12.517		-.011	.015	
		1.063	1.537	-10.883		-.011	.004	
		2.125	1.537	-9.250		-.011	-.007	
		2.125			.504			-.320
	2	.000			-.939			-.666
		.000	7.241	17.170		.017	-.024	
		1.063	7.241	24.864		.017	-.006	
		2.125	7.241	32.558		.017	.012	
		2.125			-.939			-.666
30								
	1	.000			.508			-.133
		.000	1.541	-9.212		-.003	.006	
		1.063	1.541	-7.574		-.003	.002	
		2.125	1.541	-5.936		-.003	-.002	
		2.125			.508			-.133

F R A M E E L E M E N T F O R C E S

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
	2	.000			-.945			.107
		.000	.178	32.600		.005	-.009	
		1.063	.178	32.789		.005	-.004	
		2.125	.178	32.978		.005	.001	
		2.125			-.945			.107
41								
	1	.000			-.009			.000
		.000	5.259	5.042		.000	.000	
		1.167	5.259	11.178		.000	.000	
		2.333	5.259	17.313		.000	.000	
		2.333			-.009			.000
	2	.000			.003			.000
		.000	-1.123	-.525		.000	.000	
		1.167	-1.123	-1.836		.000	.000	
		2.333	-1.123	-3.146		.000	.000	
		2.333			.003			.000
42								
	1	.000			-.050			.000
		.000	7.047	24.476		.000	.000	
		1.167	7.047	32.698		.000	.000	
		2.333	7.047	40.919		.000	.000	
		2.333			-.050			.000
	2	.000			.014			.000
		.000	-1.523	-3.917		.000	.000	
		1.167	-1.523	-5.694		.000	.000	
		2.333	-1.523	-7.471		.000	.000	
		2.333			.014			.000
43								
	1	.000			-.083			.000
		.000	-1.869	43.287		.000	.000	
		1.167	-1.869	41.107		.000	.000	
		2.333	-1.869	38.927		.000	.000	
		2.333			-.083			.000
	2	.000			.036			.000
		.000	-1.603	-7.717		.000	.000	
		1.167	-1.603	-9.587		.000	.000	
		2.333	-1.603	-11.456		.000	.000	
		2.333			.036			.000
44								
	1	.000			-.127			.000
		.000	-3.816	39.900		.000	.000	
		1.167	-3.816	35.449		.000	.000	
		2.333	-3.816	30.997		.000	.000	

F R A M E E L E M E N T F O R C E S

ELT	LOAD	DIST	1-2 PLANE		AXIAL	1-3 PLANE		AXIAL
ID	COND	ENDI	SHEAR	MOMENT	FORCE	SHEAR	MOMENT	TORQ
		2.333			-.127			.000
	2	.000			.091			.000
		.000	-1.664	-11.494		.000	.000	
		1.167	-1.664	-13.436		.000	.000	
		2.333	-1.664	-15.377		.000	.000	
		2.333			.091			.000
45								
	1	.000			-.224			.000
		.000	-13.334	31.871		.000	.000	
		1.167	-13.334	16.315		.000	.000	
		2.333	-13.334	.759		.000	.000	
		2.333			-.224			.000
	2	.000			.243			.000
		.000	-1.638	-15.229		.000	.000	
		1.167	-1.638	-17.139		.000	.000	
		2.333	-1.638	-19.050		.000	.000	
		2.333			.243			.000
46								
	1	.000			-.500			.000
		.000	-20.983	5.101		.000	.000	
		1.167	-20.983	-19.378		.000	.000	
		2.333	-20.983	-43.858		.000	.000	
		2.333			-.500			.000
	2	.000			.689			.000
		.000	-1.250	-17.587		.000	.000	
		1.167	-1.250	-19.045		.000	.000	
		2.333	-1.250	-20.503		.000	.000	
		2.333			.689			.000
47								
	1	.000			.993			.000
		.000	3.003	-22.777		.000	.000	
		1.063	3.003	-19.586		.000	.000	
		2.125	3.003	-16.395		.000	.000	
		2.125			.993			.000
	2	.000			-1.745			.000
		.000	22.681	-50.684		.000	.000	
		1.063	22.681	-26.586		.000	.000	
		2.125	22.681	-2.488		.000	.000	
		2.125			-1.745			.000
48								
	1	.000			.725			.000
		.000	1.890	-18.755		.000	.000	
		1.063	1.890	-16.747		.000	.000	

F R A M E E L E M E N T F O R C E S

ELT	LOAD	DIST	1-2 PLANE		AXIAL	1-3 PLANE		AXIAL
ID	COND	ENDI	SHEAR	MOMENT	FORCE	SHEAR	MOMENT	TORQ
		2.125	1.890	-14.739		.000	.000	
		2.125			.725			.000
	2	.000			-1.308			.000
		.000	13.099	-6.479		.000	.000	
		1.063	13.099	7.438		.000	.000	
		2.125	13.099	21.356		.000	.000	
		2.125			-1.308			.000
49								
	1	.000			.627			.000
		.000	1.920	-15.086		.000	.000	
		1.063	1.920	-13.046		.000	.000	
		2.125	1.920	-11.006		.000	.000	
		2.125			.627			.000
	2	.000			-1.150			.000
		.000	9.031	20.538		.000	.000	
		1.063	9.031	30.134		.000	.000	
		2.125	9.031	39.729		.000	.000	
		2.125			-1.150			.000
50								
	1	.000			.592			.000
		.000	1.883	-11.103		.000	.000	
		1.063	1.883	-9.102		.000	.000	
		2.125	1.883	-7.101		.000	.000	
		2.125			.592			.000
	2	.000			-1.098			.000
		.000	-.274	39.763		.000	.000	
		1.063	-.274	39.472		.000	.000	
		2.125	-.274	39.180		.000	.000	
		2.125			-1.098			.000
61								
	1	.000			-.039			-10.895
		.000	9.034	-.063		.018	-.030	
		1.167	9.034	10.477		.018	-.010	
		2.333	9.034	21.017		.018	.011	
		2.333			-.039			-10.895
	2	.000			.001			1.135
		.000	-1.407	-.004		-.002	.002	
		1.167	-1.407	-1.645		-.002	.000	
		2.333	-1.407	-3.286		-.002	-.002	
		2.333			.001			1.135
62								
	1	.000			-.061			-4.015
		.000	6.641	20.148		.010	-.014	

F R A M E E L E M E N T F O R C E S

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		1.167	6.641	27.896		.010	-.002	
		2.333	6.641	35.643		.010	.009	
		2.333			-.061			-4.015
	2	.000			.002			.413
		.000	-1.378	-3.203		-.003	.003	
		1.167	-1.378	-4.810		-.003	-.001	
		2.333	-1.378	-6.417		-.003	-.004	
		2.333			.002			.413
63								
	1	.000			-.069			-1.839
		.000	-.870	35.370		.007	-.008	
		1.167	-.870	34.355		.007	.000	
		2.333	-.870	33.340		.007	.008	
		2.333			-.069			-1.839
	2	.000			.002			.087
		.000	-1.363	-6.404		-.006	.005	
		1.167	-1.363	-7.994		-.006	-.002	
		2.333	-1.363	-9.584		-.006	-.009	
		2.333			.002			.087
64								
	1	.000			-.069			-.918
		.000	-3.231	33.226		.010	-.009	
		1.167	-3.231	29.457		.010	.002	
		2.333	-3.231	25.687		.010	.014	
		2.333			-.069			-.918
	2	.000			-.001			-.141
		.000	-1.356	-9.605		-.014	.012	
		1.167	-1.356	-11.187		-.014	-.004	
		2.333	-1.356	-12.769		-.014	-.021	
		2.333			-.001			-.141
65								
	1	.000			-.054			-1.845
		.000	-10.618	25.403		.021	-.018	
		1.167	-10.618	13.015		.021	.007	
		2.333	-10.618	.627		.021	.031	
		2.333			-.054			-1.845
	2	.000			-.028			-.638
		.000	-1.393	-12.813		-.033	.027	
		1.167	-1.393	-14.437		-.033	-.011	
		2.333	-1.393	-16.062		-.033	-.049	
		2.333			-.028			-.638
66								
	1	.000			.032			-2.530

F R A M E E L E M E N T F O R C E S

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.000	-10.341	-1.257		.047	-.036	
		1.167	-10.341	-13.321		.047	.018	
		2.333	-10.341	-25.385		.047	.073	
		2.333			.032			-2.530
	2	.000			-.168			-2.415
		.000	-1.659	-16.574		-.075	.058	
		1.167	-1.659	-18.509		-.075	-.030	
		2.333	-1.659	-20.445		-.075	-.118	
		2.333			-.168			-2.415
67								
	1	.000			.397			2.586
		.000	1.176	-19.375		.051	-.073	
		1.063	1.176	-18.125		.051	-.019	
		2.125	1.176	-16.876		.051	.035	
		2.125			.397			2.586
	2	.000			-.763			2.053
		.000	10.053	-28.794		-.082	.118	
		1.063	10.053	-18.113		-.082	.031	
		2.125	10.053	-7.431		-.082	-.057	
		2.125			-.763			2.053
68								
	1	.000			.484			.953
		.000	1.579	-15.971		.024	-.034	
		1.063	1.579	-14.294		.024	-.008	
		2.125	1.579	-12.616		.024	.018	
		2.125			.484			.953
	2	.000			-.906			1.602
		.000	10.524	-5.612		-.040	.056	
		1.063	10.524	5.570		-.040	.014	
		2.125	10.524	16.753		-.040	-.028	
		2.125			-.906			1.602
69								
	1	.000			.504			.320
		.000	1.537	-12.517		.011	-.015	
		1.063	1.537	-10.883		.011	-.004	
		2.125	1.537	-9.250		.011	.007	
		2.125			.504			.320
	2	.000			-.939			.666
		.000	7.241	17.170		-.017	.024	
		1.063	7.241	24.864		-.017	.006	
		2.125	7.241	32.558		-.017	-.012	
		2.125			-.939			.666

F R A M E E L E M E N T F O R C E S

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
70								
	1	.000			.508			.133
		.000	1.541	-9.212		.003	-.006	
		1.063	1.541	-7.574		.003	-.002	
		2.125	1.541	-5.936		.003	.002	
		2.125			.508			.133
	2	.000			-.945			-.107
		.000	.178	32.600		-.005	.009	
		1.063	.178	32.789		-.005	.004	
		2.125	.178	32.978		-.005	-.001	
		2.125			-.945			-.107
81								
	1	.000			-.101			-5.601
		.000	2.813	-2.459		.014	-.026	
		1.167	2.813	.823		.014	-.009	
		2.333	2.813	4.105		.014	.008	
		2.333			-.101			-5.601
	2	.000			-.002			.584
		.000	-.342	.267		-.001	.001	
		1.167	-.342	-.132		-.001	.000	
		2.333	-.342	-.531		-.001	-.001	
		2.333			-.002			.584
82								
	1	.000			-.059			-3.321
		.000	.990	1.393		.008	-.011	
		1.167	.990	2.547		.008	-.002	
		2.333	.990	3.702		.008	.007	
		2.333			-.059			-3.321
	2	.000			-.008			.323
		.000	-.171	-.229		-.002	.002	
		1.167	-.171	-.428		-.002	-.001	
		2.333	-.171	-.627		-.002	-.003	
		2.333			-.008			.323
83								
	1	.000			-.034			-1.835
		.000	.158	2.792		.005	-.006	
		1.167	.158	2.976		.005	.000	
		2.333	.158	3.161		.005	.006	
		2.333			-.034			-1.835
	2	.000			-.020			.092
		.000	-.145	-.518		-.004	.004	
		1.167	-.145	-.687		-.004	-.001	
		2.333	-.145	-.857		-.004	-.006	

F R A M E E L E M E N T F O R C E S

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		2.333			-.020			.092
84								
	1	.000			-.012			-1.033
		.000	-.222	2.788		.007	-.006	
		1.167	-.222	2.529		.007	.001	
		2.333	-.222	2.270		.007	.009	
		2.333			-.012			-1.033
	2	.000			-.044			-.087
		.000	-.122	-.817		-.009	.008	
		1.167	-.122	-.959		-.009	-.003	
		2.333	-.122	-1.101		-.009	-.013	
		2.333			-.044			-.087
85								
	1	.000			.021			-1.066
		.000	-.876	2.117		.012	-.010	
		1.167	-.876	1.095		.012	.004	
		2.333	-.876	.074		.012	.018	
		2.333			.021			-1.066
	2	.000			-.093			-.290
		.000	-.099	-1.132		-.019	.016	
		1.167	-.099	-1.247		-.019	-.006	
		2.333	-.099	-1.362		-.019	-.028	
		2.333			-.093			-.290
86								
	1	.000			.074			-.739
		.000	-.729	-.214		.020	-.017	
		1.167	-.729	-1.064		.020	.006	
		2.333	-.729	-1.915		.020	.030	
		2.333			.074			-.739
	2	.000			-.176			-.459
		.000	-.026	-1.582		-.033	.027	
		1.167	-.026	-1.612		-.033	-.011	
		2.333	-.026	-1.642		-.033	-.049	
		2.333			-.176			-.459
87								
	1	.000			.123			.359
		.000	-.058	-1.496		.021	-.029	
		1.063	-.058	-1.557		.021	-.007	
		2.125	-.058	-1.618		.021	.016	
		2.125			.123			.359
	2	.000			-.255			.485
		.000	.707	-2.209		-.034	.048	
		1.063	.707	-1.459		-.034	.011	

F R A M E E L E M E N T F O R C E S

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		2.125	.707	-.708		-.034	-.026	
		2.125			-.255			.485
88								
	1	.000			.170			.363
		.000	.096	-1.343		.013	-.018	
		1.063	.096	-1.241		.013	-.004	
		2.125	.096	-1.138		.013	.010	
		2.125			.170			.363
	2	.000			-.331			.658
		.000	.926	-.532		-.021	.030	
		1.063	.926	.452		-.021	.007	
		2.125	.926	1.436		-.021	-.015	
		2.125			-.331			.658
89								
	1	.000			.199			.217
		.000	.122	-1.064		.006	-.009	
		1.063	.122	-.934		.006	-.002	
		2.125	.122	-.804		.006	.004	
		2.125			.199			.217
	2	.000			-.377			.401
		.000	.644	1.427		-.010	.015	
		1.063	.644	2.111		-.010	.004	
		2.125	.644	2.795		-.010	-.007	
		2.125			-.377			.401
90								
	1	.000			.213			.125
		.000	.137	-.793		.002	-.004	
		1.063	.137	-.648		.002	-.001	
		2.125	.137	-.502		.002	.001	
		2.125			.213			.125
	2	.000			-.397			.003
		.000	.059	2.736		-.003	.006	
		1.063	.059	2.798		-.003	.003	
		2.125	.059	2.861		-.003	-.000	
		2.125			-.397			.003
5001								
	1	.000			-21.477			.000
		.000	.000	.000		.145	-.007	
		.025	.000	.000		.145	-.004	
		.050	.000	.000		.145	.000	
		.050			-21.477			.000
	2	.000			2.310			.000
		.000	.000	.000		-.000	.000	

F R A M E E L E M E N T F O R C E S

ELT ID	LOAD COND	DIST ENDI	1-2 PLANE SHEAR	1-2 PLANE MOMENT	AXIAL FORCE	1-3 PLANE SHEAR	1-3 PLANE MOMENT	AXIAL TORQ
		.025	.000	.000		-.000	.000	
		.050	.000	.000		-.000	.000	
		.050			2.310			.000
5021								
	1	.000			-.245			.000
		.000	.000	.000		.144	-.007	
		.025	.000	.000		.144	-.004	
		.050	.000	.000		.144	.000	
		.050			-.245			.000
	2	.000			2.310			.000
		.000	.000	.000		.000	.000	
		.025	.000	.000		.000	.000	
		.050	.000	.000		.000	.000	
		.050			2.310			.000
5049								
	1	.000			-62.362			.000
		.000	.000	.000		-2.323	10.193	
		9.500	.000	.000		-2.323	-11.873	
		19.000	.000	.000		-2.323	-33.939	
		19.000			-62.362			.000
	2	.000			-54.620			.000
		.000	.000	.000		3.782	-23.851	
		9.500	.000	.000		3.782	12.082	
		19.000	.000	.000		3.782	48.014	
		19.000			-54.620			.000

5.- CONCLUSIONES

Los esfuerzos y deformaciones que se producen en las distintas posiciones del tren de cargas resultan como sigue:

Momentos flectores

Posición	Punto	M_{prueba}	$M_{cálculo}$	Relación
1	A	112.0	186.2	60.15 %
2	B	111.5	186.0	60.0 %

Debido a las dimensiones de los camiones empleados en la prueba de carga se consideran aceptables los anteriores porcentajes, comprobándose que en ningún caso se supera el 90% del valor del momento de cálculo.

Deformaciones (en mm, + gravitatorias)

POSICION	PUNTO	DEFORMACION (mm)
1	A	3
1	B	-1
1	C	0
2	A	-1
2	B	3
2	C	-1

El punto A corresponde al centro de del primer vano, el B al centro del segundo vano y el C al centro del tercer vano.

Madrid, 15 de Noviembre de 1999

Estructura E-5A (PK 303+958)

- Estructura E-5A P.K. 303+958,627

Descripción de la obra

Se trata de una estructura que tiene por objeto reponer un camino existente que queda cortado por la L.A.V. y que aparece como nueva ante la necesidad de aumentar la permeabilidad de la traza, al tratarse de una zona con fuertes desmontes, que originan una trinchera de grandes dimensiones.

La estructura se diseñó teniendo en cuenta los gálibos mínimos prescritos por el G.I.F. para el vano central; la longitud de los vanos laterales se determina en función del desmonte (3:2) y de las bermas de 4,00 m cada 10,00 m de altura. De este modo las luces resultantes son de 13,00 - 17,00 - 13,00 m, respectivamente para los tres vanos.

La sección transversal de la estructura presenta una calzada de 6,00 m y dos aceras de 1,35 m, con un total de 8,70 m.

El tablero se resuelve mediante una losa maciza armada, de canto 0,90 m, encima de la cual se extiende una capa de aglomerado asfáltico en caliente de 4 cm. Su sección transversal presenta un núcleo central de base superior 4,70 m, base inferior 3,70 m y dos alas voladas de 1,50 m.

Dicho tablero se empotra en pilas centrales únicas de sección circular de 1,00 m de diámetro, que se cimientan en zapatas de 3,00 x 3,00 m.
La estructura apoya, en sus extremos, en dos estribos de hormigón armado que transmite las cargas al terreno.

Cálculos estructurales

Los cálculos de la estructura son los mismos que aparecen en el Proyecto Original para la estructura E-8, puesto que presenta la misma geometría y no varían las características resistentes de la misma únicamente sufre variación en las cotas absolutas de sus elementos, en la ligera variación de la altura de las pilas y en la geometría de los estribos.

El desarrollo de los cálculos correspondientes al Paso Superior del P .K. 303+958,627, que se proyectó como nueva Estructura para aumentar la permeabilidad de la traza del ferrocarril de Alta Velocidad, conserva el mismo índice y contenido que el Paso Superior del P .K. 307+860 del Proyecto Original, y que transcribimos a continuación:

- Características Mecánicas de la Sección
- Cargas y Modelo de Cálculo de Tablero
- Datos de Entrada SAP-90
- Sección Transversal
- Armado Longitudinal
- Cortante
- Torsión
- Armado Transversal
- Viga de Estribo
- Comprobación Anchura Fisura
- Reacciones para Cálculo de estribos
- Cálculo de Estribos
- Salida Resultados SAP-90

Al tratarse de una estructura idéntica a la proyectada, salvo una ligera variación en la altura de las pilas, se considera que todos los cálculos que aparecen en el Proyecto Original, son válidos, a excepción de los estribos que tienen otra geometría.

Por lo tanto, únicamente se realiza el nuevo cálculo de estos elementos, a partir de las reacciones sobre los mismos, dadas en el Proyecto Original, al que nos remitimos para el resto de la estructura.