

**DISEÑO ESTRUCTURAL Y ARQUITECTÓNICO DE CUBIERTA PARA CANCHA
DE INSTITUCION EDUCATIVA SAN JUAN (CORREGIMIENTO DE IPIALES)**

**JOSE LUIS IBARRA LOPEZ
COD. 04091092**



**UNIVERSIDAD DEL CAUCA
FACULTAD DE INGENIERÍA CIVIL
PROGRAMA DE INGENIERÍA CIVIL
POPAYÁN
2016**

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DE INSTITUCION EDUCATIVA SAN JUAN (CORREGIMIENTO DE IPIALES)**

**Director:
Ing. JULIO CESAR DIAGO FRANCO**

**TRABAJO DE GRADO
MODALIDAD: TRABAJO SOCIAL
PARA OBTENER EL TÍTULO DE INGENIEROCIVIL**

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1. UBICACIÓN

La institución educativa San Juan Ipiales está ubicada en el corregimiento de San Juan, Departamento de Nariño en Colombia en zona rural a 74 kilómetros de Pasto en la vía que conduce a la ciudad de Ipiales.



2. OBJETIVOS

2.1 OBJETIVO GENERAL

Realizar el diseño arquitectónico y estructural y la cubierta multifuncional de la cancha en la institución San Juan ubicado en el Municipio de Ipiales, Departamento de Nariño.

2.2 OBJETIVOS ESPECIFICOS

- Hacer el levantamiento del terreno.
- Plantear la ubicación de la cubierta con sus planos en planta y respectivas fachadas.
- Realizar el diseño estructural.
- Elaborar los planos estructurales del proyecto
- Diseño arquitectónico de gradería para la cancha deportiva
- Diseñar las cimentaciones para la estructura.
- Calcular las cantidades de obra
- Cumplir con el cronograma planteado en este anteproyecto.

3. METODOLOGÍA

Coordinadamente entre el director de trabajo social se determinan las siguientes actividades que se realizarán dentro del desarrollo del presente trabajo de grado.

- Revisión bibliográfica
- Trabajo de campo
- Diseño estructural
- Planos estructurales
- Diseño de la gradería de la cancha
- Diseño de cimentaciones de la estructura
- Cálculo de cantidades de obras
- Sustentar el trabajo

4. DESARROLLO DEL PROYECTO

MEMORIA ESTRUCTURAL CUBIERTA COLEGIOMUNICIPIO DE IPIALES - NARIÑO

A. PARAMETROS SISMICOS DE DISEÑO

Municipio: Ipiales

1. PERFILES DE SUELO

TIPO DE PERFIL: E

$$A_a = 0.25$$

$$F_a = 1.00$$

$$A_v = 0.25$$

$$F_v = 2.60$$

2. COEFICIENTE DE IMPORTANCIA

GRUPO III: Estructuras de ocupación especial

$$I = 1.25$$

3. ESPECTRO DE DISEÑO

Zona de amenaza sísmica = ALTA

Período Fundamental: $T_a = C_t h^\alpha$

$$C_t = 0.047$$

$$\alpha = 0.80$$

$$h = 7.00 \text{ m}$$

$$T_a = 0.27 \text{ seg}$$

Espectro de aceleraciones:

$$S_a = 2.5A_a F_a I \quad \text{si } T_a < T_c; \quad T_c = 0.48A_v F_v / (A_a F_a)$$

$$S_a = 1.2A_v F_v I / T_a \quad \text{si } T_c < T_a < T_L; \quad T_L = 2.4F_v$$

$$S_a = 1.2A_v F_v T_L I / T_a^2 \quad \text{si } T_a > T_L$$

$$T_c = 0.48(0.25)(2.60) / (0.25 \times 1.00) = 1.25 \text{ seg} > T_a$$

Por tanto:

$$\text{Aceleración de diseño } S_a = 2.5(0.30)(1.2)(1.25) = 1.13$$

4. Disipación de Energía: DES

Clasificación de la Estructura: Estructura de acero

Tipo: Cercha no dúctil

Coeficiente básico: $R_o = 1.5$
 Reducción por irregularidades:
 Irregularidad en planta: $\phi_p = 1.0$ (sistemas paralelos)
 Irregularidad en altura: $\phi_a = 1.0$
 Redundancia sísmica: $\phi_r = 1.0$
 Coeficiente de disipación: $R = R_o \phi_p \phi_a \phi_r = 1.5(1.0)(1.0)(1.0)$
 $= 1.5$

5. PESO DEL EDIFICIO

$W = 35 \text{ kg/m}^2 \times 20 \times 30 = 21 \text{ Ton}$
 $S_a = 1.13$

Cortante basal: $V = WS_a = 24 \text{ Ton}$

6. TORSION ACCIDENTAL

Dirección	X	Y
Dimensión del Edificio, L, (m)	20.0	30.0
Excentricidad Accidental, de, (m)	1.00	1.50

B. CARGAS

1. FUERZA SISMICA REDUCIDA

$E = F/R = 24000/1.5 = 16000 \text{ Kg}$

Considerando que hay 6 pórticos idénticos, la fuerza sísmica para cada uno de ellos será de:

$E = 16000/6 = 2700 \text{ Kg}$

2. CARGA MUERTA

Peso cercha: 23 kg/m^2
 Peso correas: 5 kg/m^2
 Peso Tejas: 7 kg/m^2

Peso Carga Muerta: 35 kg/m^2

3. CARGA VIVA

Pendiente de Cubierta:
 $\theta = \arctan(9.46 - 6.77) / 10 = 15.1^\circ > 15^\circ$

Carga Viva Cubierta: 35 kg/m²

4. CARGA DE VIENTO CUBIERTA

Geometría:

- Altura Media de la Estructura (h) (m): 7
- Dimensión Horizontal de la Estructura (Paralela al Viento) (L) (m): 20
- Dimensión Horizontal de la Estructura (Normal al Viento) (B) (m): 30
- Ángulo de Inclinación de la Cubierta (Barlovento): 15

Periodo del Edificio (T) (seg): 0.27

Clasificación de la Estructura:

- ESTRUCTURA: RIGIDA
- EDIFICIO: Abierto
- EDIFICIO: Bajo
- FLUJO DE VIENTO: Libre
- TIPO DE CUBIERTA: Dos Aguas

Velocidad de Viento Básica (Según Mapa) (V) (m/s): 28

Uso de la Estructura (grupo): Auditorio

Tipo de Región de la Estructura (Clase): Región sin huracanes

Factor de Importancia (I): 0.77

Rugosidad de Terreno: Rugosidad B

Categoría de Exposición: B

Coefficiente de Exposición de Presión por Velocidad (K_h): 0.7

Se toma una presión de viento a succión de 40 kg/m², como carga crítica.

5. CARGA DE GRANIZO (G)

Cargade 50 kg/cm²

C. COMBINACIONES DE CARGAS

- D
- D+L
- D+G
- $D+0.75L+0.75G$
- D+W
- $D+0.7E$
- $D-0.7E$
- $D+0.75W+0.75L$
- $D+0.75W+0.75L+0.75G$
- $D+0.75(0.7E)+0.75L+0.75G$
- $D-0.75(0.7E)+0.75L+0.75G$
- $0.6D+W$
- $0.6D+0.7E$
- $0.6D-0.7E$

PARAMETROS		SIST. METRICO	
: Modulo Elasticidad (E)		: Kg/cm2	:
: Coordenadas		: mt	:
: Dimensiones (B,H)		: cm	:
: Inercia (I)	: mt4	:	:
: Area (A)		: mt2	:
: Fuerzas y Cortantes	: Kg	:	:
: Momentos		: Kg-mt	:
: Cargas Distribuidas		: Kg/mt	:
: Desplazamientos	: cm	:	:
: Rotaciones		: Radianes	:

Kg = Kilogramos cm = centimetros

mt = Metros

[GEOMETRIA]

# MIEMBROS	# NUDOS	# RESTRIC. NUDOS	E [Kg/cm2]
123	62	4	2000000

COORDENADAS DE NUDOS

NUDOS #	X [mt]	Y [mt]
1	0.00	0.00
2	0.60	0.00
3	0.00	1.00
4	0.67	1.00
5	0.00	2.00
6	0.73	2.00
7	0.00	3.00
8	0.80	3.00
9	0.00	4.00
10	0.87	4.00
11	0.00	5.00
12	0.93	5.00
13	0.00	6.00
14	1.00	6.00
15	0.00	6.77
16	1.07	7.05
17	2.12	6.30
18	1.90	7.28
19	3.27	6.61
20	3.05	7.59
21	4.42	6.92
22	4.20	7.90
23	5.57	7.23
24	5.35	8.21
25	6.72	7.54
26	6.50	8.52
27	7.87	7.85
28	7.65	8.83
29	9.02	8.16
30	8.80	9.14
31	10.00	8.16
32	10.00	9.46
33	10.98	8.16

NUDOS #	X [mt]	Y [mt]
34	11.20	9.14
35	12.13	7.85
36	12.35	8.83
37	13.28	7.54
38	13.50	8.52
39	14.43	7.23
40	14.65	8.21
41	15.58	6.92
42	15.80	7.90
43	16.73	6.61
44	16.95	7.59
45	17.88	6.30
46	18.15	7.28
47	18.93	7.05
48	19.00	6.00
49	20.00	6.77
50	19.07	5.00
51	20.00	6.00
52	20.00	5.00
53	19.13	4.00
54	20.00	4.00
55	19.20	3.00
56	20.00	3.00
57	19.27	2.00
58	20.00	2.00
59	19.34	1.00
60	20.00	1.00
61	19.40	0.00
62	20.00	0.00

TIPOS DE SECCIONES

TIPO #	PROPIEDADES (I,A)
1	0.00000000 - 0.00155200
2	0.00000000 - 0.00038200
3	0.00000000 - 0.00092200

INFORMACION DE MIEMBROS, ORIENTACIONES Y PROPIEDADES

MIEMB #	J	K	TIPOInerc [mt4]	Area [mt2]	Longit	SEN	COS	
1	1	3	1	0.00000000	0.00155200	1.00	1.000	0.000
2	3	5	1	0.00000000	0.00155200	1.00	1.000	0.000
3	5	7	1	0.00000000	0.00155200	1.00	1.000	0.000
4	7	9	1	0.00000000	0.00155200	1.00	1.000	0.000
5	9	11	1	0.00000000	0.00155200	1.00	1.000	0.000
6	11	13	1	0.00000000	0.00155200	1.00	1.000	0.000
7	13	15	1	0.00000000	0.00155200	0.77	1.000	0.000
8	15	16	1	0.00000000	0.00155200	1.11	0.253	0.967
9	16	18	1	0.00000000	0.00155200	0.86	0.267	0.964
10	18	20	1	0.00000000	0.00155200	1.19	0.260	0.966
11	20	22	1	0.00000000	0.00155200	1.19	0.260	0.966
12	22	24	1	0.00000000	0.00155200	1.19	0.260	0.966
13	24	26	1	0.00000000	0.00155200	1.19	0.260	0.966
14	26	28	1	0.00000000	0.00155200	1.19	0.260	0.966
15	28	30	1	0.00000000	0.00155200	1.19	0.260	0.966
16	30	32	1	0.00000000	0.00155200	1.24	0.258	0.966
17	32	34	1	0.00000000	0.00155200	1.24	-0.258	0.966
18	34	36	1	0.00000000	0.00155200	1.19	-0.260	0.966
19	36	38	1	0.00000000	0.00155200	1.19	-0.260	0.966

MIEMB #	J	K	TIPOInerc [mt4]	Area [mt2]	Longit	SEN	COS	
20	38	40	1	0.00000000	0.00155200	1.19	-0.260	0.966
21	40	42	1	0.00000000	0.00155200	1.19	-0.260	0.966
22	42	44	1	0.00000000	0.00155200	1.19	-0.260	0.966
23	44	46	1	0.00000000	0.00155200	1.24	-0.250	0.968
24	46	47	1	0.00000000	0.00155200	0.81	-0.283	0.959
25	47	49	1	0.00000000	0.00155200	1.11	-0.253	0.967
26	49	51	1	0.00000000	0.00155200	0.77	-1.000	0.000
27	51	52	1	0.00000000	0.00155200	1.00	-1.000	0.000
28	52	54	1	0.00000000	0.00155200	1.00	-1.000	0.000
29	54	56	1	0.00000000	0.00155200	1.00	-1.000	0.000
30	56	58	1	0.00000000	0.00155200	1.00	-1.000	0.000
31	58	60	1	0.00000000	0.00155200	1.00	-1.000	0.000
32	60	62	1	0.00000000	0.00155200	1.00	-1.000	0.000
33	2	4	1	0.00000000	0.00155200	1.00	0.998	0.070
34	4	6	1	0.00000000	0.00155200	1.00	0.998	0.060
35	6	8	1	0.00000000	0.00155200	1.00	0.998	0.070
36	8	10	1	0.00000000	0.00155200	1.00	0.998	0.070
37	10	12	1	0.00000000	0.00155200	1.00	0.998	0.060
38	12	14	1	0.00000000	0.00155200	1.00	0.998	0.070
39	14	17	1	0.00000000	0.00155200	1.16	0.259	0.966
40	17	19	1	0.00000000	0.00155200	1.19	0.260	0.966
41	19	21	1	0.00000000	0.00155200	1.19	0.260	0.966
42	21	23	1	0.00000000	0.00155200	1.19	0.260	0.966
43	23	25	1	0.00000000	0.00155200	1.19	0.260	0.966
44	25	27	1	0.00000000	0.00155200	1.19	0.260	0.966
45	27	29	1	0.00000000	0.00155200	1.19	0.260	0.966
46	29	31	1	0.00000000	0.00155200	0.98	0.000	1.000
47	31	33	1	0.00000000	0.00155200	0.98	0.000	1.000
48	33	35	1	0.00000000	0.00155200	1.19	-0.260	0.966
49	35	37	1	0.00000000	0.00155200	1.19	-0.260	0.966
50	37	39	1	0.00000000	0.00155200	1.19	-0.260	0.966
51	39	41	1	0.00000000	0.00155200	1.19	-0.260	0.966
52	41	43	1	0.00000000	0.00155200	1.19	-0.260	0.966
53	43	45	1	0.00000000	0.00155200	1.19	-0.260	0.966
54	45	48	1	0.00000000	0.00155200	1.16	-0.259	0.966
55	48	50	1	0.00000000	0.00155200	1.00	-0.998	0.070
56	50	53	1	0.00000000	0.00155200	1.00	-0.998	0.060
57	53	55	1	0.00000000	0.00155200	1.00	-0.998	0.070
58	55	57	1	0.00000000	0.00155200	1.00	-0.998	0.070
59	57	59	1	0.00000000	0.00155200	1.00	-0.998	0.070
60	59	61	1	0.00000000	0.00155200	1.00	-0.998	0.060
61	12	17	1	0.00000000	0.00155200	1.76	0.738	0.675
62	45	50	1	0.00000000	0.00155200	1.76	-0.738	0.675
63	1	2	2	0.00000000	0.00038200	0.60	0.000	1.000
64	3	4	2	0.00000000	0.00038200	0.67	0.000	1.000
65	5	6	2	0.00000000	0.00038200	0.73	0.000	1.000
66	7	8	2	0.00000000	0.00038200	0.80	0.000	1.000
67	9	10	2	0.00000000	0.00038200	0.87	0.000	1.000
68	11	12	2	0.00000000	0.00038200	0.93	0.000	1.000
69	13	14	2	0.00000000	0.00038200	1.00	0.000	1.000
70	14	16	2	0.00000000	0.00038200	1.05	0.998	0.067
71	17	18	2	0.00000000	0.00038200	1.00	0.976	-0.219
72	19	20	2	0.00000000	0.00038200	1.00	0.976	-0.219
73	21	22	2	0.00000000	0.00038200	1.00	0.976	-0.219
74	23	24	2	0.00000000	0.00038200	1.00	0.976	-0.219
75	25	26	2	0.00000000	0.00038200	1.00	0.976	-0.219
76	27	28	2	0.00000000	0.00038200	1.00	0.976	-0.219
77	29	30	2	0.00000000	0.00038200	1.00	0.976	-0.219
78	31	32	2	0.00000000	0.00038200	1.30	1.000	0.000
79	33	34	2	0.00000000	0.00038200	1.00	0.976	0.219
80	35	36	2	0.00000000	0.00038200	1.00	0.976	0.219

MIEMB #	J	K	TIPO	Inerc [mt4]	Area [mt2]	Longit	SEN	COS
81	37	38	2	0.00000000	0.00038200	1.00	0.976	0.219
82	39	40	2	0.00000000	0.00038200	1.00	0.976	0.219
83	41	42	2	0.00000000	0.00038200	1.00	0.976	0.219
84	43	44	2	0.00000000	0.00038200	1.00	0.976	0.219
85	45	46	2	0.00000000	0.00038200	1.02	0.964	0.266
86	47	48	2	0.00000000	0.00038200	1.05	-0.998	0.067
87	48	51	2	0.00000000	0.00038200	1.00	0.000	1.000
88	50	52	2	0.00000000	0.00038200	0.93	0.000	1.000
89	53	54	2	0.00000000	0.00038200	0.87	0.000	1.000
90	55	56	2	0.00000000	0.00038200	0.80	0.000	1.000
91	57	58	2	0.00000000	0.00038200	0.73	0.000	1.000
92	59	60	2	0.00000000	0.00038200	0.66	0.000	1.000
93	61	62	2	0.00000000	0.00038200	0.60	0.000	1.000
94	2	3	3	0.00000000	0.00092200	1.17	0.857	-0.514
95	4	5	3	0.00000000	0.00092200	1.20	0.831	-0.557
96	6	7	3	0.00000000	0.00092200	1.24	0.808	-0.590
97	8	9	3	0.00000000	0.00092200	1.28	0.781	-0.625
98	10	11	3	0.00000000	0.00092200	1.33	0.754	-0.656
99	12	13	3	0.00000000	0.00092200	1.37	0.732	-0.681
100	14	15	3	0.00000000	0.00092200	1.26	0.610	-0.792
101	16	17	3	0.00000000	0.00092200	1.29	-0.581	0.814
102	17	20	3	0.00000000	0.00092200	1.59	0.811	0.585
103	20	21	3	0.00000000	0.00092200	1.53	-0.439	0.898
104	22	23	3	0.00000000	0.00092200	1.53	-0.439	0.898
105	24	25	3	0.00000000	0.00092200	1.53	-0.439	0.898
106	26	27	3	0.00000000	0.00092200	1.53	-0.439	0.898
107	28	29	3	0.00000000	0.00092200	1.53	-0.439	0.898
108	29	32	3	0.00000000	0.00092200	1.63	0.799	0.602
109	32	33	3	0.00000000	0.00092200	1.63	-0.799	0.602
110	33	36	3	0.00000000	0.00092200	1.53	0.439	0.898
111	35	38	3	0.00000000	0.00092200	1.53	0.439	0.898
112	37	40	3	0.00000000	0.00092200	1.53	0.439	0.898
113	39	42	3	0.00000000	0.00092200	1.53	0.439	0.898
114	41	44	3	0.00000000	0.00092200	1.53	0.439	0.898
115	44	45	3	0.00000000	0.00092200	1.59	-0.811	0.585
116	45	47	3	0.00000000	0.00092200	1.29	0.581	0.814
117	48	49	3	0.00000000	0.00092200	1.26	0.610	0.792
118	50	51	3	0.00000000	0.00092200	1.37	0.732	0.681
119	52	53	3	0.00000000	0.00092200	1.33	-0.754	-0.656
120	54	55	3	0.00000000	0.00092200	1.28	-0.781	-0.625
121	56	57	3	0.00000000	0.00092200	1.24	-0.808	-0.590
122	58	59	3	0.00000000	0.00092200	1.20	-0.835	-0.551
123	60	61	3	0.00000000	0.00092200	1.17	-0.857	-0.514

NUDOS RESTRINGIDOS

NUDOS #	X Desp.	Y Desp.	Z Rot.
1	1	1	1
2	1	1	1
61	1	1	1
62	1	1	1

CUBIERTA POLIDEPORTIVO

```

                **+*****+*****+**
              **+**      *****      **+**
            **+***      * * * *      **+***
          **+*****+**      **+*****+**      **+*****+**
        **+*****+**      **+*****+**      **+*****+**
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**      **      **      **      **      **
#*#      **      **      **      **      **

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CASO -->[CARGA MUERTA (D)]

FUERZAS EN LOS NUDOS

NUDOS #	Horiz F.	Vert F.	Momento	=====
15	0	0	125	0
16	0	0	250	0
18	0	0	250	0
20	0	0	250	0
22	0	0	250	0
24	0	0	250	0
26	0	0	250	0
28	0	0	250	0
30	0	0	250	0
32	0	0	250	0
34	0	0	250	0
36	0	0	250	0
38	0	0	250	0
40	0	0	250	0
42	0	0	250	0
44	0	0	250	0
46	0	0	250	0
47	0	0	250	0
49	0	0	125	0

DESPLAZAMIENTOS DE NUDOS

NUDOS #	X Desp.	Y Desp.	Z Rot.
1	0.000000	0.000000	0.000000
2	0.000000	0.000000	0.000000
3	-0.044047	0.011788	0.000451
4	-0.053004	-0.002762	0.000460
5	-0.103936	0.018092	0.000451
6	-0.112918	-0.000864	0.000439
7	-0.157599	0.019876	0.000370
8	-0.166419	0.004638	0.000341
9	-0.196833	0.017942	0.000212
10	-0.205654	0.014282	0.000217
11	-0.216737	0.012888	-0.000044
12	-0.225993	0.028259	-0.000244
13	-0.186567	0.005019	-0.000492
14	-0.174734	0.037448	-0.000498
15	-0.130095	0.001371	-0.000593
16	-0.112462	0.046256	-0.000550
17	-0.157889	0.111408	-0.000750
18	-0.093249	0.100292	-0.000736
19	-0.133692	0.221232	-0.000896
20	-0.059094	0.204485	-0.000930
21	-0.108333	0.335368	-0.000919
22	-0.029555	0.331920	-0.000945
23	-0.077167	0.452572	-0.000850
24	-0.006767	0.447750	-0.000810
25	-0.047941	0.548331	-0.000669
26	0.008116	0.543473	-0.000627
27	-0.023275	0.617147	-0.000463
28	0.014621	0.613110	-0.000428
29	-0.005112	0.656039	-0.000128
30	0.013444	0.655016	-0.000141
31	-0.000589	0.650142	0.000000

	NUDOS #	X Desp.	Y Desp.	Z Rot.
	=====	=====	=====	=====
	32	-0.000625	0.650141	0.000000
	33	0.003933	0.655958	0.000129
	34	-0.014664	0.654926	0.000142
	35	0.022107	0.616974	0.000464
	36	-0.015817	0.612951	0.000429
	37	0.046768	0.548095	0.000669
38	-0.009284	0.543258	0.000627	
	39	0.075971	0.452317	0.000850
	40	0.005621	0.447526	0.000810
	41	0.107091	0.335154	0.000919
	42	0.028422	0.331750	0.000945
	43	0.132371	0.221152	0.000893
	44	0.057960	0.204447	0.000922
	45	0.156375	0.111887	0.000750
	46	0.091701	0.098090	0.000732
	47	0.110926	0.046351	0.000560
	48	0.173340	0.037549	0.000500
	49	0.128594	0.001311	0.000593
	50	0.224858	0.028354	0.000246
	51	0.185213	0.004955	0.000494
	52	0.215605	0.012830	0.000046
	53	0.204678	0.014357	-0.000216
	54	0.195860	0.017890	-0.000210
	55	0.165583	0.004692	-0.000340
	56	0.156766	0.019831	-0.000369
	57	0.112197	-0.000832	-0.000437
	58	0.103379	0.018056	-0.000448
	59	0.052927	-0.002199	-0.000453
	60	0.044084	0.011776	-0.000446
	61	0.000000	0.000000	0.000000
	62	0.000000	0.000000	0.000000

ACCIONES EN NUDOS DE MIEMBROS

	MIEMBRO	NUDO	Axial F.	Cort F.	Momento
	=====	=====	=====	=====	=====
	1	1	-3659	-0	0
		3	-3659	-0	-0
	2	3	-1957	-0	0
		5	-1957	-0	-0
	3	5	-554	-0	0
		7	-554	-0	-0
	4	7	600	-0	0
		9	600	-0	-0
	5	9	1569	-0	0
		11	1569	-0	-0
	6	11	2443	0	-0
		13	2443	0	-0
	7	13	1470	0	-0
		15	1470	0	0
	8	15	1599	-0	0
		16	1599	-0	-0
	9	16	1472	0	-0
		18	1472	0	-0
	10	18	1527	0	-0
		20	1527	0	0
	11	20	-1211	0	-0
		22	-1211	0	0
	12	22	-2123	0	-0
		24	-2123	0	0

MIEMBRO	NUDO	Axial F.	Cort F.	Momento
=====	=====	=====	=====	=====
13	24	-2748	0	-0
	26	-2748	0	0
14	26	-3087	0	-0
	28	-3087	0	0
15	28	-3139	0	-0
	30	-3139	0	0
16	30	-3084	-0	0
	32	-3084	-0	-0
17	32	-3082	0	-0
	34	-3082	0	0
18	34	-3137	-0	0
	36	-3137	-0	-0
19	36	-3083	-0	0
	38	-3083	-0	-0
20	38	-2743	-0	0
	40	-2743	-0	-0
21	40	-2116	-0	0
	42	-2116	-0	-0
22	42	-1202	-0	0
	44	-1202	-0	-0
23	44	1519	-0	0
	46	1519	-0	-0
24	46	1453	-0	0
	47	1453	-0	-0
25	47	1597	0	-0
	49	1597	0	0
26	49	1469	-0	0
	51	1469	-0	-0
27	51	2444	-0	-0
	52	2444	-0	-0
28	52	1571	0	-0
	54	1571	0	0
29	54	603	0	-0
	56	603	0	0
30	56	-551	0	-0
	58	-551	0	0
31	58	-1949	0	-0
	60	-1949	0	0
32	60	-3655	0	-0
	62	-3655	0	0
33	2	-293	-0	0
	4	-293	-0	-0
34	4	-1699	-0	0
	6	-1699	-0	-0
35	6	-2857	-0	0
	8	-2857	-0	-0
36	8	-3827	-0	0
	10	-3827	-0	-0
37	10	-4700	-0	0
	12	-4700	-0	-0
38	12	-1730	0	-0
	14	-1730	0	0
39	14	-767	0	-0
	17	-767	0	-0
40	17	-1361	0	-0
	19	-1361	0	0
41	19	-1361	0	-0
	21	-1361	0	0
42	21	-108	0	-0
	23	-108	0	0

MIEMBRO	NUDO	Axial F.	Cort F.	Momento
=====	=====	=====	=====	=====
43	23	859	0	-0
	25	859	0	0
44	25	1539	0	-0
	27	1539	0	0
45	27	1932	0	-0
	29	1932	0	0
46	29	1432	-0	0
	31	1432	-0	-0
47	31	1432	0	-0
	33	1432	0	0
48	33	1929	-0	0
	35	1929	-0	-0
49	35	1533	-0	0
	37	1533	-0	-0
50	37	852	-0	0
	39	852	-0	-0
51	39	-117	-0	0
	41	-117	-0	-0
52	41	-1371	-0	0
	43	-1371	-0	-0
53	43	-1372	-0	0
	45	-1372	-0	-0
54	45	-762	-0	-0
	48	-762	-0	-0
55	48	-1726	-0	0
	50	-1726	-0	-0
56	50	-4704	0	-0
	53	-4704	0	0
57	53	-3831	0	-0
	55	-3831	0	0
58	55	-2860	0	-0
	57	-2860	0	0
59	57	-1704	0	-0
	59	-1704	0	0
60	59	-302	0	-0
	61	-302	0	0
61	12	-2703	0	-0
	17	-2703	0	0
62	45	-2708	-0	0
	50	-2708	-0	-0
63	1	0	0	0
	2	0	0	0
64	3	-1021	0	-0
	4	-1021	0	0
65	5	-940	0	-0
	6	-940	0	0
66	7	-842	0	-0
	8	-842	0	0
67	9	-775	0	-0
	10	-775	0	0
68	11	-760	0	-0
	12	-760	0	-0
69	13	904	-0	0
	14	904	-0	-0
70	14	-337	0	-0
	16	-337	0	0
71	17	-252	-0	0
	18	-252	-0	-0
72	19	-0	-0	0
	20	-0	-0	-0

MIEMBRO	NUDO	Axial F.	Cort F.	Momento
=====	=====	=====	=====	=====
73	21	-1057	-0	0
	22	-1057	-0	-0
74	23	-815	-0	0
	24	-815	-0	-0
75	25	-573	-0	0
	26	-573	-0	-0
76	27	-332	-0	0
	28	-332	-0	-0
77	29	-233	0	-0
	30	-233	0	0
78	31	0	0	-0
	32	0	0	0
79	33	-233	-0	0
	34	-233	-0	-0
80	35	-333	0	-0
	36	-333	0	0
81	37	-575	0	-0
	38	-575	0	0
82	39	-817	0	-0
	40	-817	0	0
83	41	-1058	0	-0
	42	-1058	0	0
84	43	-0	0	-0
	44	-0	0	0
85	45	-291	0	-0
	46	-291	0	0
86	47	-336	-0	0
	48	-336	-0	-0
87	48	907	0	-0
	51	907	0	0
88	50	-760	-0	-0
	52	-760	-0	-0
89	53	-774	-0	0
	54	-774	-0	-0
90	55	-842	-0	0
	56	-842	-0	-0
91	57	-923	-0	0
	58	-923	-0	-0
92	59	-1024	-0	0
	60	-1024	-0	-0
93	61	0	0	0
	62	0	0	0
94	2	1985	-0	0
	3	1985	-0	-0
95	4	1689	0	-0
	5	1689	0	0
96	6	1429	0	-0
	7	1429	0	0
97	8	1240	0	-0
	9	1240	0	0
98	10	1158	0	-0
	11	1158	0	-0
99	12	-1328	-0	-0
	13	-1328	-0	-0
100	14	-1952	-0	0
	15	-1952	-0	-0
101	16	129	-0	0
	17	129	-0	-0
102	17	-2055	0	-0
	20	-2055	0	-0

MIEMBRO	NUDO	Axial F.	Cort F.	Momento
=====	=====	=====	=====	=====
103	20	1604	-0	0
	21	1604	-0	-0
104	22	1238	-0	0
	23	1238	-0	-0
105	24	871	-0	0
	25	871	-0	-0
106	26	504	-0	0
	27	504	-0	0
107	28	137	0	0
	29	137	0	0
108	29	839	-0	0
	32	839	-0	-0
109	32	837	0	-0
	33	837	0	0
110	33	139	-0	0
	36	139	-0	0
111	35	506	0	0
	38	506	0	0
112	37	873	0	-0
	40	873	0	0
113	39	1240	0	-0
	42	1240	0	0
114	41	1607	0	-0
	44	1607	0	0
115	44	-2033	-0	-0
	45	-2033	-0	-0
116	45	158	0	-0
	47	158	0	0
117	48	-1950	0	-0
	49	-1950	0	0
118	50	-1332	0	0
	51	-1332	0	0
119	52	1158	-0	-0
	53	1158	-0	-0
120	54	1240	-0	0
	55	1240	-0	-0
121	56	1428	-0	0
	57	1428	-0	-0
122	58	1675	-0	0
	59	1675	-0	-0
123	60	1990	0	-0
	61	1990	0	0

REACCIONES

NUDOS #	Horiz F.	Vert F.	Momento
=====	=====	=====	=====
1	-0	3659	0
2	-1042	-1410	0
61	1042	-1405	-0
62	0	3655	-0

CASO -->[CARGA VIVA (L)]

FUERZAS EN LOS NUDOS

NUDOS #	Horiz F.	Vert F.	Momento
=====	=====	=====	=====
15	0	125	0
16	0	250	0
18	0	250	0
20	0	250	0
22	0	250	0
24	0	250	0
26	0	250	0
28	0	250	0
30	0	250	0
32	0	250	0
34	0	250	0
36	0	250	0
38	0	250	0
40	0	250	0
42	0	250	0
44	0	250	0
46	0	250	0
47	0	250	0
49	0	125	0

DESPLAZAMIENTOS DE NUDOS

NUDOS #	X Desp.	Y Desp.	Z Rot.
=====	=====	=====	=====
1	0.000000	0.000000	0.000000
2	0.000000	0.000000	0.000000
3	-0.044047	0.011788	0.000451
4	-0.053004	-0.002762	0.000460
5	-0.103936	0.018092	0.000451
6	-0.112918	-0.000864	0.000439
7	-0.157599	0.019876	0.000370
8	-0.166419	0.004638	0.000341
9	-0.196833	0.017942	0.000212
10	-0.205654	0.014282	0.000217
11	-0.216737	0.012888	-0.000044
12	-0.225993	0.028259	-0.000244
13	-0.186567	0.005019	-0.000492
14	-0.174734	0.037448	-0.000498
15	-0.130095	0.001371	-0.000593
16	-0.112462	0.046256	-0.000550
17	-0.157889	0.111408	-0.000750
18	-0.093249	0.100292	-0.000736
19	-0.133692	0.221232	-0.000896
20	-0.059094	0.204485	-0.000930
21	-0.108333	0.335368	-0.000919
22	-0.029555	0.331920	-0.000945
23	-0.077167	0.452572	-0.000850
24	-0.006767	0.447750	-0.000810
25	-0.047941	0.548331	-0.000669
26	0.008116	0.543473	-0.000627
27	-0.023275	0.617147	-0.000463
28	0.014621	0.613110	-0.000428
29	-0.005112	0.656039	-0.000128
30	0.013444	0.655016	-0.000141
31	-0.000589	0.650142	0.000000
32	-0.000625	0.650141	0.000000
33	0.003933	0.655958	0.000129

NUDOS #	X Desp.	Y Desp.	Z Rot.
=====	=====	=====	=====
34	-0.014664	0.654926	0.000142
35	0.022107	0.616974	0.000464
36	-0.015817	0.612951	0.000429
37	0.046768	0.548095	0.000669
38	-0.009284	0.543258	0.000627
39	0.075971	0.452317	0.000850
40	0.005621	0.447526	0.000810
41	0.107091	0.335154	0.000919
42	0.028422	0.331750	0.000945
43	0.132371	0.221152	0.000893
44	0.057960	0.204447	0.000922
45	0.156375	0.111887	0.000750
46	0.091701	0.098090	0.000732
47	0.110926	0.046351	0.000560
48	0.173340	0.037549	0.000500
49	0.128594	0.001311	0.000593
50	0.224858	0.028354	0.000246
51	0.185213	0.004955	0.000494
52	0.215605	0.012830	0.000046
53	0.204678	0.014357	-0.000216
54	0.195860	0.017890	-0.000210
55	0.165583	0.004692	-0.000340
56	0.156766	0.019831	-0.000369
57	0.112197	-0.000832	-0.000437
58	0.103379	0.018056	-0.000448
59	0.052927	-0.002199	-0.000453
60	0.044084	0.011776	-0.000446
61	0.000000	0.000000	0.000000
62	0.000000	0.000000	0.000000

ACCIONES EN NUDOS DE MIEMBROS

MIEMBRO	NUDO	Axial F.	Cort F.	Momento
=====	=====	=====	=====	=====
1	1	-3659	-0	0
	3	-3659	-0	-0
2	3	-1957	-0	0
	5	-1957	-0	-0
3	5	-554	-0	0
	7	-554	-0	-0
4	7	600	-0	0
	9	600	-0	-0
5	9	1569	-0	0
	11	1569	-0	-0
6	11	2443	0	-0
	13	2443	0	-0
7	13	1470	0	-0
	15	1470	0	0
8	15	1599	-0	0
	16	1599	-0	-0
9	16	1472	0	-0
	18	1472	0	-0
10	18	1527	0	-0
	20	1527	0	0
11	20	-1211	0	-0
	22	-1211	0	0
12	22	-2123	0	-0
	24	-2123	0	0
13	24	-2748	0	-0
	26	-2748	0	0

MIEMBRO =====	NUDO =====	Axial F. =====	Cort F. =====	Momento =====
14	26	-3087	0	-0
	28	-3087	0	0
15	28	-3139	0	-0
	30	-3139	0	0
16	30	-3084	-0	0
	32	-3084	-0	-0
17	32	-3082	0	-0
	34	-3082	0	0
18	34	-3137	-0	0
	36	-3137	-0	-0
19	36	-3083	-0	0
	38	-3083	-0	-0
20	38	-2743	-0	0
	40	-2743	-0	-0
21	40	-2116	-0	0
	42	-2116	-0	-0
22	42	-1202	-0	0
	44	-1202	-0	-0
23	44	1519	-0	0
	46	1519	-0	-0
24	46	1453	-0	0
	47	1453	-0	-0
25	47	1597	0	-0
	49	1597	0	0
26	49	1469	-0	0
	51	1469	-0	-0
27	51	2444	-0	-0
	52	2444	-0	-0
28	52	1571	0	-0
	54	1571	0	0
29	54	603	0	-0
	56	603	0	0
30	56	-551	0	-0
	58	-551	0	0
31	58	-1949	0	-0
	60	-1949	0	0
32	60	-3655	0	-0
	62	-3655	0	0
33	2	-293	-0	0
	4	-293	-0	-0
34	4	-1699	-0	0
	6	-1699	-0	-0
35	6	-2857	-0	0
	8	-2857	-0	-0
36	8	-3827	-0	0
	10	-3827	-0	-0
37	10	-4700	-0	0
	12	-4700	-0	-0
38	12	-1730	0	-0
	14	-1730	0	0
39	14	-767	0	-0
	17	-767	0	-0
40	17	-1361	0	-0
	19	-1361	0	0
41	19	-1361	0	-0
	21	-1361	0	0
42	21	-108	0	-0
	23	-108	0	0
43	23	859	0	-0
	25	859	0	0

MIEMBRO =====	NUDO =====	Axial F. =====	Cort F. =====	Momento =====
44	25	1539	0	-0
	27	1539	0	0
45	27	1932	0	-0
	29	1932	0	0
46	29	1432	-0	0
	31	1432	-0	-0
47	31	1432	0	-0
	33	1432	0	0
48	33	1929	-0	0
	35	1929	-0	-0
49	35	1533	-0	0
	37	1533	-0	-0
50	37	852	-0	0
	39	852	-0	-0
51	39	-117	-0	0
	41	-117	-0	-0
52	41	-1371	-0	0
	43	-1371	-0	-0
53	43	-1372	-0	0
	45	-1372	-0	-0
54	45	-762	-0	-0
	48	-762	-0	-0
55	48	-1726	-0	0
	50	-1726	-0	-0
56	50	-4704	0	-0
	53	-4704	0	0
57	53	-3831	0	-0
	55	-3831	0	0
58	55	-2860	0	-0
	57	-2860	0	0
59	57	-1704	0	-0
	59	-1704	0	0
60	59	-302	0	-0
	61	-302	0	0
61	12	-2703	0	-0
	17	-2703	0	0
62	45	-2708	-0	0
	50	-2708	-0	-0
63	1	0	0	0
	2	0	0	0
64	3	-1021	0	-0
	4	-1021	0	0
65	5	-940	0	-0
	6	-940	0	0
66	7	-842	0	-0
	8	-842	0	0
67	9	-775	0	-0
	10	-775	0	0
68	11	-760	0	-0
	12	-760	0	-0
69	13	904	-0	0
	14	904	-0	-0
70	14	-337	0	-0
	16	-337	0	0
71	17	-252	-0	0
	18	-252	-0	-0
72	19	-0	-0	0
	20	-0	-0	-0
73	21	-1057	-0	0
	22	-1057	-0	-0

MIEMBRO =====	NUDO =====	Axial F. =====	Cort F. =====	Momento =====
74	23	-815	-0	0
	24	-815	-0	-0
75	25	-573	-0	0
	26	-573	-0	-0
76	27	-332	-0	0
	28	-332	-0	-0
77	29	-233	0	-0
	30	-233	0	0
78	31	0	0	-0
	32	0	0	0
79	33	-233	-0	0
	34	-233	-0	-0
80	35	-333	0	-0
	36	-333	0	0
81	37	-575	0	-0
	38	-575	0	0
82	39	-817	0	-0
	40	-817	0	0
83	41	-1058	0	-0
	42	-1058	0	0
84	43	-0	0	-0
	44	-0	0	0
85	45	-291	0	-0
	46	-291	0	0
86	47	-336	-0	0
	48	-336	-0	-0
87	48	907	0	-0
	51	907	0	0
88	50	-760	-0	-0
	52	-760	-0	-0
89	53	-774	-0	0
	54	-774	-0	-0
90	55	-842	-0	0
	56	-842	-0	-0
91	57	-923	-0	0
	58	-923	-0	-0
92	59	-1024	-0	0
	60	-1024	-0	-0
93	61	0	0	0
	62	0	0	0
94	2	1985	-0	0
	3	1985	-0	-0
95	4	1689	0	-0
	5	1689	0	0
96	6	1429	0	-0
	7	1429	0	0
97	8	1240	0	-0
	9	1240	0	0
98	10	1158	0	-0
	11	1158	0	-0
99	12	-1328	-0	-0
	13	-1328	-0	-0
100	14	-1952	-0	0
	15	-1952	-0	-0
101	16	129	-0	0
	17	129	-0	-0
102	17	-2055	0	-0
	20	-2055	0	-0
103	20	1604	-0	0
	21	1604	-0	-0

MIEMBRO =====	NUDO =====	Axial F. =====	Cort F. =====	Momento =====
104	22	1238	-0	0
	23	1238	-0	-0
105	24	871	-0	0
	25	871	-0	-0
106	26	504	-0	0
	27	504	-0	0
107	28	137	0	0
	29	137	0	0
108	29	839	-0	0
	32	839	-0	-0
109	32	837	0	-0
	33	837	0	0
110	33	139	-0	0
	36	139	-0	0
111	35	506	0	0
	38	506	0	0
112	37	873	0	-0
	40	873	0	0
113	39	1240	0	-0
	42	1240	0	0
114	41	1607	0	-0
	44	1607	0	0
115	44	-2033	-0	-0
	45	-2033	-0	-0
116	45	158	0	-0
	47	158	0	0
117	48	-1950	0	-0
	49	-1950	0	0
118	50	-1332	0	0
	51	-1332	0	0
119	52	1158	-0	-0
	53	1158	-0	-0
120	54	1240	-0	0
	55	1240	-0	-0
121	56	1428	-0	0
	57	1428	-0	-0
122	58	1675	-0	0
	59	1675	-0	-0
123	60	1990	0	-0
	61	1990	0	0

REACCIONES

NUDOS # =====	Horiz F. =====	Vert F. =====	Momento =====
1	-0	3659	0
2	-1042	-1410	0
61	1042	-1405	-0
62	0	3655	-0

CASO -->[CARGA DE VIENTO (W)]

FUERZAS EN LOS NUDOS

NUDOS # =====	Horiz F. =====	Vert F. =====	Momento =====
15	0	-145	0
16	0	-290	0
18	0	-290	0
20	0	-290	0
22	0	-290	0
24	0	-290	0
26	0	-290	0
28	0	-290	0
30	0	-290	0
32	0	-290	0
34	0	-290	0
36	0	-290	0
38	0	-290	0
40	0	-290	0
42	0	-290	0
44	0	-290	0
46	0	-290	0
47	0	-290	0
49	0	-145	0

DESPLAZAMIENTOS DE NUDOS

NUDOS # =====	X Desp. =====	Y Desp. =====	Z Rot. =====
1	0.000000	0.000000	0.000000
2	0.000000	0.000000	0.000000
3	0.051095	-0.013674	-0.000523
4	0.061484	0.003203	-0.000533
5	0.120566	-0.020987	-0.000523
6	0.130985	0.001003	-0.000509
7	0.182815	-0.023056	-0.000429
8	0.193047	-0.005380	-0.000396
9	0.228327	-0.020812	-0.000245
10	0.238559	-0.016567	-0.000252
11	0.251415	-0.014950	0.000051
12	0.262151	-0.032780	0.000283
13	0.216417	-0.005822	0.000570
14	0.202691	-0.043440	0.000578
15	0.150910	-0.001590	0.000688
16	0.130455	-0.053657	0.000638
17	0.183150	-0.129234	0.000870
18	0.108168	-0.116339	0.000854
19	0.155082	-0.256629	0.001039
20	0.068549	-0.237203	0.001079
21	0.125666	-0.389028	0.001066
22	0.034283	-0.385028	0.001097
23	0.089513	-0.524984	0.000986
24	0.007849	-0.519390	0.000939
25	0.055611	-0.636064	0.000776
26	-0.009415	-0.630429	0.000727
27	0.026999	-0.715891	0.000537
28	-0.016961	-0.711208	0.000497
29	0.005929	-0.761006	0.000148
30	-0.015595	-0.759819	0.000164
31	0.000683	-0.754165	-0.000000
32	0.000725	-0.754164	-0.000000
33	-0.004563	-0.760912	-0.000149

NUDOS #	X Desp.	Y Desp.	Z Rot.
=====	=====	=====	=====
34	0.017010	-0.759714	-0.000164
35	-0.025644	-0.715690	-0.000538
36	0.018348	-0.711024	-0.000497
37	-0.054252	-0.635791	-0.000776
38	0.010769	-0.630180	-0.000727
39	-0.088127	-0.524688	-0.000986
40	-0.006521	-0.519130	-0.000939
41	-0.124226	-0.388779	-0.001066
42	-0.032970	-0.384830	-0.001097
43	-0.153551	-0.256536	-0.001036
44	-0.067234	-0.237159	-0.001069
45	-0.181395	-0.129789	-0.000870
46	-0.106374	-0.113784	-0.000849
47	-0.128675	-0.053767	-0.000650
48	-0.201075	-0.043557	-0.000580
49	-0.149170	-0.001521	-0.000688
50	-0.260835	-0.032890	-0.000286
51	-0.214847	-0.005748	-0.000573
52	-0.250102	-0.014882	-0.000053
53	-0.237427	-0.016654	0.000250
54	-0.227198	-0.020752	0.000244
55	-0.192077	-0.005442	0.000395
56	-0.181848	-0.023004	0.000428
57	-0.130148	0.000965	0.000507
58	-0.119920	-0.020945	0.000520
59	-0.061396	0.002551	0.000525
60	-0.051137	-0.013661	0.000517
61	0.000000	0.000000	0.000000
62	0.000000	0.000000	0.000000

ACCIONES EN NUDOS DE MIEMBROS

MIEMBRO	NUDO	Axial F.	Cort F.	Momento
=====	=====	=====	=====	=====
1	1	4245	0	-0
	3	4245	0	0
2	3	2270	0	-0
	5	2270	0	0
3	5	642	0	-0
	7	642	0	0
4	7	-696	0	-0
	9	-696	0	0
5	9	-1820	0	-0
	11	-1820	0	0
6	11	-2833	-0	0
	13	-2833	-0	0
7	13	-1706	-0	0
	15	-1706	-0	-0
8	15	-1854	0	-0
	16	-1854	0	0
9	16	-1708	-0	0
	18	-1708	-0	0
10	18	-1771	-0	0
	20	-1771	-0	-0
11	20	1405	-0	0
	22	1405	-0	-0
12	22	2462	-0	0
	24	2462	-0	-0
13	24	3188	-0	0
	26	3188	-0	-0

MIEMBRO =====	NUDO =====	Axial F. =====	Cort F. =====	Momento =====
14	26	3580	-0	0
	28	3580	-0	-0
15	28	3641	-0	0
	30	3641	-0	-0
16	30	3577	0	-0
	32	3577	0	0
17	32	3575	-0	0
	34	3575	-0	-0
18	34	3639	0	-0
	36	3639	0	0
19	36	3577	0	-0
	38	3577	0	0
20	38	3182	0	-0
	40	3182	0	0
21	40	2454	0	-0
	42	2454	0	0
22	42	1395	0	-0
	44	1395	0	0
23	44	-1762	0	-0
	46	-1762	0	0
24	46	-1685	0	-0
	47	-1685	0	0
25	47	-1852	-0	0
	49	-1852	-0	-0
26	49	-1704	0	-0
	51	-1704	0	0
27	51	-2835	0	0
	52	-2835	0	0
28	52	-1822	-0	0
	54	-1822	-0	-0
29	54	-699	-0	0
	56	-699	-0	-0
30	56	639	-0	0
	58	639	-0	-0
31	58	2261	-0	0
	60	2261	-0	-0
32	60	4240	-0	0
	62	4240	-0	-0
33	2	340	0	-0
	4	340	0	0
34	4	1970	0	-0
	6	1970	0	0
35	6	3314	0	-0
	8	3314	0	0
36	8	4440	0	-0
	10	4440	0	0
37	10	5452	0	-0
	12	5452	0	0
38	12	2007	-0	0
	14	2007	-0	-0
39	14	890	-0	0
	17	890	-0	0
40	17	1579	-0	0
	19	1579	-0	-0
41	19	1578	-0	0
	21	1578	-0	-0
42	21	125	-0	0
	23	125	-0	-0
43	23	-996	-0	0
	25	-996	-0	-0

MIEMBRO =====	NUDO =====	Axial F. =====	Cort F. =====	Momento =====
44	25	-1785	-0	0
	27	-1785	-0	-0
45	27	-2241	-0	0
	29	-2241	-0	-0
46	29	-1662	0	-0
	31	-1662	0	0
47	31	-1662	-0	0
	33	-1662	-0	-0
48	33	-2237	0	-0
	35	-2237	0	0
49	35	-1779	0	-0
	37	-1779	0	0
50	37	-988	0	-0
	39	-988	0	0
51	39	135	0	-0
	41	135	0	0
52	41	1591	0	-0
	43	1591	0	0
53	43	1591	0	-0
	45	1591	0	0
54	45	884	0	0
	48	884	0	0
55	48	2003	0	-0
	50	2003	0	0
56	50	5456	-0	0
	53	5456	-0	-0
57	53	4444	-0	0
	55	4444	-0	-0
58	55	3318	-0	0
	57	3318	-0	-0
59	57	1977	-0	0
	59	1977	-0	-0
60	59	350	-0	0
	61	350	-0	-0
61	12	3136	-0	0
	17	3136	-0	-0
62	45	3141	0	-0
	50	3141	0	0
63	1	0	0	0
	2	0	0	0
64	3	1185	-0	0
	4	1185	-0	-0
65	5	1091	-0	0
	6	1091	-0	-0
66	7	977	-0	0
	8	977	-0	-0
67	9	899	-0	0
	10	899	-0	-0
68	11	882	-0	0
	12	882	-0	0
69	13	-1049	0	-0
	14	-1049	0	0
70	14	391	-0	0
	16	391	-0	-0
71	17	292	0	-0
	18	292	0	0
72	19	0	0	-0
	20	0	0	0
73	21	1226	0	-0
	22	1226	0	0

MIEMBRO =====	NUDO =====	Axial F. =====	Cort F. =====	Momento =====
74	23	945	0	-0
	24	945	0	0
75	25	665	0	-0
	26	665	0	0
76	27	385	0	-0
	28	385	0	0
77	29	271	-0	0
	30	271	-0	-0
78	31	-0	-0	0
	32	-0	-0	-0
79	33	271	0	-0
	34	271	0	0
80	35	387	-0	0
	36	387	-0	-0
81	37	667	-0	0
	38	667	-0	-0
82	39	947	-0	0
	40	947	-0	-0
83	41	1227	-0	0
	42	1227	-0	-0
84	43	0	-0	0
	44	0	-0	-0
85	45	338	-0	0
	46	338	-0	-0
86	47	390	0	-0
	48	390	0	0
87	48	-1052	-0	0
	51	-1052	-0	-0
88	50	882	0	0
	52	882	0	0
89	53	898	0	-0
	54	898	0	0
90	55	977	0	-0
	56	977	0	0
91	57	1070	0	-0
	58	1070	0	0
92	59	1187	0	-0
	60	1187	0	0
93	61	0	0	0
	62	0	0	0
94	2	-2303	0	-0
	3	-2303	0	0
95	4	-1959	-0	0
	5	-1959	-0	-0
96	6	-1657	-0	0
	7	-1657	-0	-0
97	8	-1438	-0	0
	9	-1438	-0	-0
98	10	-1344	-0	0
	11	-1344	-0	0
99	12	1540	0	0
	13	1540	0	0
100	14	2264	0	-0
	15	2264	0	0
101	16	-150	0	-0
	17	-150	0	0
102	17	2384	-0	0
	20	2384	-0	0
103	20	-1861	0	-0
	21	-1861	0	0

MIEMBRO =====	NUDO =====	Axial F. =====	Cort F. =====	Momento =====
104	22	-1436	0	-0
	23	-1436	0	0
105	24	-1010	0	-0
	25	-1010	0	0
106	26	-584	0	-0
	27	-584	0	-0
107	28	-159	-0	-0
	29	-159	-0	-0
108	29	-974	0	-0
	32	-974	0	0
109	32	-971	-0	0
	33	-971	-0	-0
110	33	-162	0	-0
	36	-162	0	-0
111	35	-587	-0	-0
	38	-587	-0	-0
112	37	-1013	-0	0
	40	-1013	-0	-0
113	39	-1438	-0	0
	42	-1438	-0	-0
114	41	-1864	-0	0
	44	-1864	-0	-0
115	44	2358	0	0
	45	2358	0	0
116	45	-184	-0	0
	47	-184	-0	-0
117	48	2262	-0	0
	49	2262	-0	-0
118	50	1545	-0	-0
	51	1545	-0	-0
119	52	-1343	0	0
	53	-1343	0	0
120	54	-1438	0	-0
	55	-1438	0	0
121	56	-1657	0	-0
	57	-1657	0	0
122	58	-1943	0	-0
	59	-1943	0	0
123	60	-2308	-0	0
	61	-2308	-0	-0

REACCIONES

NUDOS # =====	Horiz F. =====	Vert F. =====	Momento =====
1	0	-4245	-0
2	1209	1635	-0
61	-1209	1629	0
62	-0	-4240	0

CASO --> [FUERZA SISMICA REDUCIDA (E)]

FUERZAS EN LOS NUDOS

NUDOS #	Horiz F.	Vert F.	Momento
=====	=====	=====	=====
15	1090	0	0
32	1090	0	0
49	1090	0	0

DESPLAZAMIENTOS DE NUDOS

NUDOS #	X Desp.	Y Desp.	Z Rot.
=====	=====	=====	=====
1	0.000000	0.000000	0.000000
2	0.000000	0.000000	0.000000
3	0.097578	-0.029882	-0.001185
4	0.115115	0.024933	-0.001257
5	0.263166	-0.049026	-0.001559
6	0.280248	0.043039	-0.001582
7	0.452765	-0.059574	-0.001744
8	0.470089	0.057187	-0.001738
9	0.647171	-0.062820	-0.001743
10	0.664494	0.065483	-0.001755
11	0.832658	-0.059939	-0.001566
12	0.850169	0.065966	-0.001402
13	0.971656	-0.051732	-0.001106
14	0.967502	0.071315	-0.001099
15	1.037736	-0.046260	-0.001015
16	1.062540	0.091474	-0.001037
17	1.004937	0.186073	-0.000745
18	1.072600	0.170494	-0.000693
19	1.033707	0.232018	-0.000302
20	1.070618	0.223732	-0.000278
21	1.053086	0.243123	-0.000045
22	1.062290	0.233298	0.000012
23	1.060603	0.220292	0.000192
24	1.049191	0.215096	0.000212
25	1.059849	0.176847	0.000350
26	1.032939	0.175130	0.000370
27	1.052443	0.118791	0.000465
28	1.015152	0.119406	0.000453
29	1.040005	0.052130	0.000503
30	0.999420	0.061240	0.000473
31	1.039992	-0.001439	0.000527
32	0.982651	-0.001439	0.000488
33	1.039979	-0.055033	0.000502
34	0.999474	-0.064125	0.000473
35	1.052338	-0.121568	0.000463
36	1.015215	-0.122139	0.000451
37	1.059632	-0.179389	0.000347
38	1.032985	-0.177607	0.000367
39	1.060242	-0.222487	0.000188
40	1.049192	-0.217204	0.000208
41	1.052548	-0.244853	-0.000049
42	1.062216	-0.234919	0.000008
43	1.032956	-0.233156	-0.000310
44	1.070437	-0.224742	-0.000293
45	1.003700	-0.185608	-0.000748
46	1.071787	-0.164942	-0.000707
47	1.061357	-0.091840	-0.001025
48	0.966483	-0.071570	-0.001096

NUDOS #	X Desp.	Y Desp.	Z Rot.
=====	=====	=====	=====
49	1.036574	0.045902	-0.001015
50	0.849593	-0.066232	-0.001399
51	0.970800	0.051390	-0.001103
52	0.832119	0.059659	-0.001565
53	0.663946	-0.065815	-0.001756
54	0.646661	0.062614	-0.001744
55	0.469403	-0.057583	-0.001740
56	0.452118	0.059455	-0.001747
57	0.279206	-0.043498	-0.001591
58	0.261921	0.049011	-0.001568
59	0.112941	-0.023749	-0.001249
60	0.096109	0.029736	-0.001170
61	0.000000	0.000000	0.000000
62	0.000000	0.000000	0.000000

ACCIONES EN NUDOS DE MIEMBROS

MIEMBRO	NUDO	Axial F.	Cort F.	Momento
=====	=====	=====	=====	=====
1	1	9275	0	-0
	3	9275	0	0
2	3	5942	0	-0
	5	5942	0	0
3	5	3274	0	-0
	7	3274	0	0
4	7	1008	0	-0
	9	1008	0	0
5	9	-894	0	-0
	11	-894	0	0
6	11	-2547	0	0
	13	-2547	0	0
7	13	-2206	-0	0
	15	-2206	-0	-0
8	15	-3051	0	-0
	16	-3051	0	0
9	16	-4111	0	0
	18	-4111	0	0
10	18	-4110	-0	0
	20	-4110	-0	0
11	20	-2744	-0	0
	22	-2744	-0	-0
12	22	-2061	-0	0
	24	-2061	-0	-0
13	24	-1379	-0	0
	26	-1379	-0	-0
14	26	-696	-0	0
	28	-696	-0	-0
15	28	-13	-0	0
	30	-13	-0	-0
16	30	-13	-0	0
	32	-13	-0	-0
17	32	26	-0	0
	34	26	-0	-0
18	34	26	-0	0
	36	26	-0	-0
19	36	709	-0	0
	38	709	-0	-0
20	38	1392	-0	0
	40	1392	-0	-0
21	40	2076	-0	0
	42	2076	-0	-0

MIEMBRO	NUDO	Axial F.	Cort F.	Momento
=====	=====	=====	=====	=====
22	42	2759	-0	0
	44	2759	-0	-0
23	44	4073	-0	-0
	46	4073	-0	-0
24	46	4073	0	-0
	47	4073	0	-0
25	47	3058	0	-0
	49	3058	0	0
26	49	2212	-0	0
	51	2212	-0	-0
27	51	2567	0	-0
	52	2567	0	-0
28	52	917	0	-0
	54	917	0	0
29	54	-980	0	-0
	56	-980	0	0
30	56	-3242	0	-0
	58	-3242	0	0
31	58	-5983	0	-0
	60	-5983	0	0
32	60	-9230	0	-0
	62	-9230	0	0
33	2	-5212	0	-0
	4	-5212	0	0
34	4	-2536	0	-0
	6	-2536	0	0
35	6	-265	0	-0
	8	-265	0	0
36	8	1641	0	-0
	10	1641	0	0
37	10	3296	0	-0
	12	3296	0	0
38	12	885	-0	0
	14	885	-0	-0
39	14	1732	0	-0
	17	1732	0	0
40	17	4123	-0	0
	19	4123	-0	-0
41	19	4123	-0	0
	21	4123	-0	0
42	21	3440	-0	0
	23	3440	-0	-0
43	23	2757	-0	0
	25	2757	-0	-0
44	25	2074	-0	0
	27	2074	-0	-0
45	27	1392	-0	0
	29	1392	-0	-0
46	29	-4	-0	0
	31	-4	-0	-0
47	31	-4	-0	0
	33	-4	-0	-0
48	33	-1403	-0	0
	35	-1403	-0	-0
49	35	-2087	-0	0
	37	-2087	-0	-0
50	37	-2770	-0	0
	39	-2770	-0	-0
51	39	-3453	-0	0
	41	-3453	-0	-0

MIEMBRO	NUDO	Axial F.	Cort F.	Momento
=====	=====	=====	=====	=====
52	41	-4137	-0	-0
	43	-4137	-0	-0
53	43	-4136	-0	0
	45	-4136	-0	-0
54	45	-1725	0	-0
	48	-1725	0	0
55	48	-879	-0	0
	50	-879	-0	-0
56	50	-3316	0	-0
	53	-3316	0	0
57	53	-1664	0	-0
	55	-1664	0	0
58	55	238	0	-0
	57	238	0	0
59	57	2505	0	-0
	59	2505	0	0
60	59	5250	0	-0
	61	5250	0	0
61	12	2802	0	0
	17	2802	0	0
62	45	-2818	0	-0
	50	-2818	0	-0
63	1	0	0	0
	2	0	0	0
64	3	2000	-0	0
	4	2000	-0	-0
65	5	1788	-0	0
	6	1788	-0	-0
66	7	1654	-0	0
	8	1654	-0	-0
67	9	1521	-0	0
	10	1521	-0	-0
68	11	1438	-0	0
	12	1438	-0	-0
69	13	-317	0	-0
	14	-317	0	0
70	14	-1001	-0	0
	16	-1001	-0	-0
71	17	29	-0	0
	18	29	-0	-0
72	19	-0	0	-0
	20	-0	0	0
73	21	576	0	-0
	22	576	0	0
74	23	576	0	-0
	24	576	0	0
75	25	576	0	-0
	26	576	0	0
76	27	576	0	-0
	28	576	0	0
77	29	0	0	-0
	30	0	0	0
78	31	-0	0	-0
	32	-0	0	0
79	33	-0	0	-0
	34	-0	0	0
80	35	-576	0	-0
	36	-576	0	0
81	37	-576	0	-0
	38	-576	0	0

MIEMBRO	NUDO	Axial F.	Cort F.	Momento
=====	=====	=====	=====	=====
82	39	-576	0	-0
	40	-576	0	0
83	41	-576	0	-0
	42	-576	0	0
84	43	-0	0	-0
	44	-0	0	0
85	45	-138	-0	0
	46	-138	-0	-0
86	47	1010	-0	0
	48	1010	-0	-0
87	48	330	0	-0
	51	330	0	0
88	50	-1435	-0	0
	52	-1435	-0	-0
89	53	-1518	-0	0
	54	-1518	-0	-0
90	55	-1651	-0	0
	56	-1651	-0	-0
91	57	-1809	-0	0
	58	-1809	-0	-0
92	59	-1948	-0	0
	60	-1948	-0	-0
93	61	0	0	0
	62	0	0	0
94	2	-3887	0	-0
	3	-3887	0	0
95	4	-3212	-0	-0
	5	-3212	-0	-0
96	6	-2806	-0	0
	7	-2806	-0	-0
97	8	-2435	-0	0
	9	-2435	-0	-0
98	10	-2192	-0	0
	11	-2192	-0	-0
99	12	466	-0	0
	13	466	-0	0
100	14	2350	0	-0
	15	2350	0	0
101	16	1159	-0	0
	17	1159	-0	0
102	17	912	-0	0
	20	912	-0	0
103	20	-874	0	0
	21	-874	0	0
104	22	-874	0	-0
	23	-874	0	0
105	24	-874	0	-0
	25	-874	0	0
106	26	-874	0	-0
	27	-874	0	0
107	28	-874	0	-0
	29	-874	0	0
108	29	935	0	-0
	32	935	0	0
109	32	-939	0	-0
	33	-939	0	0
110	33	875	0	-0
	36	875	0	0
111	35	875	0	-0
	38	875	0	0

MIEMBRO	NUDO	Axial F.	Cort F.	Momento
=====	=====	=====	=====	=====
112	37	875	0	-0
	40	875	0	0
113	39	875	0	-0
	42	875	0	0
114	41	875	-0	-0
	44	875	-0	-0
115	44	-845	-0	-0
	45	-845	-0	-0
116	45	-1084	-0	-0
	47	-1084	-0	-0
117	48	-2357	0	-0
	49	-2357	0	0
118	50	-484	-0	0
	51	-484	-0	0
119	52	2187	-0	0
	53	2187	-0	-0
120	54	2430	-0	0
	55	2430	-0	-0
121	56	2800	-0	0
	57	2800	-0	-0
122	58	3284	-0	0
	59	3284	-0	0
123	60	3787	0	-0
	61	3787	0	0

REACCIONES

NUDOS #	Horiz F.	Vert F.	Momento
=====	=====	=====	=====
1	0	-9275	-0
2	1636	8532	-0
61	1634	-8487	-0
62	0	9230	-0

CASO -->[CARGADE GRANIZO (G)]

FUERZAS EN LOS NUDOS

NUDOS #	Horiz F.	Vert F.	Momento
=====	=====	=====	=====
15	0	180	0
16	0	360	0
18	0	360	0
20	0	360	0
22	0	360	0
24	0	360	0
26	0	360	0
28	0	360	0
30	0	360	0
32	0	360	0
34	0	360	0
36	0	360	0
38	0	360	0
40	0	360	0
42	0	360	0
44	0	360	0
46	0	360	0
47	0	360	0
49	0	180	0

DESPLAZAMIENTOS DE NUDOS

NUDOS #	X Desp.	Y Desp.	Z Rot.
=====	=====	=====	=====
1	0.000000	0.000000	0.000000
2	0.000000	0.000000	0.000000
3	-0.063428	0.016975	0.000649
4	-0.076325	-0.003977	0.000662
5	-0.149668	0.026053	0.000649
6	-0.162602	-0.001245	0.000632
7	-0.226942	0.028621	0.000533
8	-0.239644	0.006679	0.000492
9	-0.283440	0.025836	0.000305
10	-0.296142	0.020566	0.000313
11	-0.312101	0.018559	-0.000063
12	-0.325429	0.040693	-0.000351
13	-0.268655	0.007227	-0.000708
14	-0.251616	0.053925	-0.000717
15	-0.187337	0.001974	-0.000854
16	-0.161944	0.066609	-0.000793
17	-0.227359	0.160428	-0.001080
18	-0.134277	0.144421	-0.001060
19	-0.192516	0.318574	-0.001290
20	-0.085095	0.294459	-0.001340
21	-0.155998	0.482931	-0.001323
22	-0.042558	0.477965	-0.001361
23	-0.111119	0.651705	-0.001224
24	-0.009744	0.644760	-0.001166
25	-0.069034	0.789598	-0.000963
26	0.011688	0.782602	-0.000902
27	-0.033515	0.888692	-0.000667
28	0.021056	0.882880	-0.000617
29	-0.007360	0.944697	-0.000184
30	0.019360	0.943224	-0.000203
31	-0.000848	0.936205	0.000001
32	-0.000900	0.936204	0.000001

NUDOS #	X Desp.	Y Desp.	Z Rot.
=====	=====	=====	=====
33	0.005665	0.944580	0.000185
34	-0.021116	0.943094	0.000204
35	0.031835	0.888443	0.000668
36	-0.022776	0.882650	0.000617
37	0.067347	0.789257	0.000964
38	-0.013368	0.782292	0.000903
39	0.109399	0.651337	0.001224
40	0.008096	0.644437	0.001166
41	0.154212	0.482622	0.001323
42	0.040928	0.477720	0.001361
43	0.190616	0.318458	0.001286
44	0.083463	0.294404	0.001328
45	0.225181	0.161117	0.001080
46	0.132051	0.141249	0.001054
47	0.159735	0.066745	0.000807
48	0.249611	0.054070	0.000720
49	0.185177	0.001888	0.000854
50	0.323796	0.040829	0.000354
51	0.266707	0.007135	0.000711
52	0.310472	0.018475	0.000066
53	0.294737	0.020674	-0.000311
54	0.282040	0.025761	-0.000303
55	0.238440	0.006756	-0.000490
56	0.225743	0.028557	-0.000531
57	0.161563	-0.001198	-0.000629
58	0.148866	0.026001	-0.000645
59	0.076215	-0.003167	-0.000652
60	0.063481	0.016958	-0.000642
61	0.000000	0.000000	0.000000
62	0.000000	0.000000	0.000000

ACCIONES EN NUDOS DE MIEMBROS

MIEMBRO	NUDO	Axial F.	Cort F.	Momento
=====	=====	=====	=====	=====
1	1	-5269	-0	0
	3	-5269	-0	-0
2	3	-2818	-0	0
	5	-2818	-0	-0
3	5	-797	-0	0
	7	-797	-0	-0
4	7	865	-0	0
	9	865	-0	-0
5	9	2259	-0	0
	11	2259	-0	-0
6	11	3517	0	-0
	13	3517	0	-0
7	13	2117	0	-0
	15	2117	0	0
8	15	2302	-0	0
	16	2302	-0	-0
9	16	2120	0	-0
	18	2120	0	-0
10	18	2198	0	-0
	20	2198	0	0
11	20	-1744	0	-0
	22	-1744	0	0
12	22	-3057	0	-0
	24	-3057	0	0
13	24	-3957	0	-0
	26	-3957	0	0

MIEMBRO =====	NUDO =====	Axial F. =====	Cort F. =====	Momento =====
14	26	-4445	0	-0
	28	-4445	0	0
15	28	-4520	0	-0
	30	-4520	0	0
16	30	-4440	-0	0
	32	-4440	-0	-0
17	32	-4438	0	-0
	34	-4438	0	0
18	34	-4518	-0	0
	36	-4518	-0	-0
19	36	-4440	-0	0
	38	-4440	-0	-0
20	38	-3950	-0	0
	40	-3950	-0	-0
21	40	-3047	-0	0
	42	-3047	-0	-0
22	42	-1731	-0	0
	44	-1731	-0	-0
23	44	2188	-0	0
	46	2188	-0	-0
24	46	2092	-0	0
	47	2092	-0	-0
25	47	2300	0	-0
	49	2300	0	0
26	49	2115	-0	0
	51	2115	-0	-0
27	51	3520	-0	-0
	52	3520	-0	-0
28	52	2262	0	-0
	54	2262	0	0
29	54	868	0	-0
	56	868	0	0
30	56	-793	0	-0
	58	-793	0	0
31	58	-2807	0	-0
	60	-2807	0	0
32	60	-5264	0	-0
	62	-5264	0	0
33	2	-422	-0	0
	4	-422	-0	-0
34	4	-2446	-0	0
	6	-2446	-0	-0
35	6	-4113	-0	0
	8	-4113	-0	-0
36	8	-5511	-0	0
	10	-5511	-0	-0
37	10	-6768	-0	0
	12	-6768	-0	-0
38	12	-2491	0	-0
	14	-2491	0	0
39	14	-1104	0	-0
	17	-1104	0	-0
40	17	-1960	0	-0
	19	-1960	0	0
41	19	-1960	0	-0
	21	-1960	0	0
42	21	-155	0	-0
	23	-155	0	0
43	23	1237	0	-0
	25	1237	0	0

MIEMBRO =====	NUDO =====	Axial F. =====	Cort F. =====	Momento =====
44	25	2216	0	-0
	27	2216	0	0
45	27	2783	0	-0
	29	2783	0	0
46	29	2063	-0	0
	31	2063	-0	-0
47	31	2063	0	-0
	33	2063	0	0
48	33	2777	-0	0
	35	2777	-0	-0
49	35	2208	-0	0
	37	2208	-0	-0
50	37	1226	-0	0
	39	1226	-0	-0
51	39	-168	-0	0
	41	-168	-0	-0
52	41	-1975	-0	0
	43	-1975	-0	-0
53	43	-1975	-0	0
	45	-1975	-0	-0
54	45	-1097	-0	-0
	48	-1097	-0	-0
55	48	-2486	-0	0
	50	-2486	-0	-0
56	50	-6773	0	-0
	53	-6773	0	0
57	53	-5516	0	-0
	55	-5516	0	0
58	55	-4119	0	-0
	57	-4119	0	0
59	57	-2454	0	-0
	59	-2454	0	0
60	59	-435	0	-0
	61	-435	0	0
61	12	-3893	0	-0
	17	-3893	0	0
62	45	-3900	-0	0
	50	-3900	-0	-0
63	1	0	0	0
	2	0	0	0
64	3	-1471	0	-0
	4	-1471	0	0
65	5	-1354	0	-0
	6	-1354	0	0
66	7	-1213	0	-0
	8	-1213	0	0
67	9	-1115	0	-0
	10	-1115	0	0
68	11	-1095	0	-0
	12	-1095	0	-0
69	13	1302	-0	0
	14	1302	-0	-0
70	14	-486	0	-0
	16	-486	0	0
71	17	-363	-0	0
	18	-363	-0	-0
72	19	-0	-0	0
	20	-0	-0	-0
73	21	-1522	-0	0
	22	-1522	-0	-0

MIEMBRO =====	NUDO =====	Axial F. =====	Cort F. =====	Momento =====
74	23	-1174	-0	0
	24	-1174	-0	-0
75	25	-826	-0	0
	26	-826	-0	-0
76	27	-478	-0	0
	28	-478	-0	-0
77	29	-336	0	-0
	30	-336	0	0
78	31	0	0	-0
	32	0	0	0
79	33	-336	-0	0
	34	-336	-0	-0
80	35	-480	0	-0
	36	-480	0	0
81	37	-828	0	-0
	38	-828	0	0
82	39	-1176	0	-0
	40	-1176	0	0
83	41	-1524	0	-0
	42	-1524	0	0
84	43	-0	0	-0
	44	-0	0	0
85	45	-420	0	-0
	46	-420	0	0
86	47	-484	-0	0
	48	-484	-0	-0
87	48	1306	0	-0
	51	1306	0	0
88	50	-1095	-0	-0
	52	-1095	-0	-0
89	53	-1115	-0	0
	54	-1115	-0	-0
90	55	-1213	-0	0
	56	-1213	-0	-0
91	57	-1329	-0	0
	58	-1329	-0	-0
92	59	-1474	-0	0
	60	-1474	-0	-0
93	61	0	0	0
	62	0	0	0
94	2	2858	-0	0
	3	2858	-0	-0
95	4	2432	0	-0
	5	2432	0	0
96	6	2057	0	-0
	7	2057	0	0
97	8	1786	0	-0
	9	1786	0	0
98	10	1668	0	-0
	11	1668	0	-0
99	12	-1912	-0	-0
	13	-1912	-0	-0
100	14	-2810	-0	0
	15	-2810	-0	-0
101	16	186	-0	0
	17	186	-0	-0
102	17	-2960	0	-0
	20	-2960	0	-0
103	20	2310	-0	0
	21	2310	-0	-0

MIEMBRO =====	NUDO =====	Axial F. =====	Cort F. =====	Momento =====
104	22	1782	-0	0
	23	1782	-0	-0
105	24	1254	-0	0
	25	1254	-0	-0
106	26	726	-0	0
	27	726	-0	0
107	28	197	0	0
	29	197	0	0
108	29	1209	-0	0
	32	1209	-0	-0
109	32	1205	0	-0
	33	1205	0	0
110	33	201	-0	0
	36	201	-0	0
111	35	729	0	0
	38	729	0	0
112	37	1257	0	-0
	40	1257	0	0
113	39	1785	0	-0
	42	1785	0	0
114	41	2314	0	-0
	44	2314	0	0
115	44	-2927	-0	-0
	45	-2927	-0	-0
116	45	228	0	-0
	47	228	0	0
117	48	-2808	0	-0
	49	-2808	0	0
118	50	-1918	0	0
	51	-1918	0	0
119	52	1668	-0	-0
	53	1668	-0	-0
120	54	1785	-0	0
	55	1785	-0	-0
121	56	2057	-0	0
	57	2057	-0	-0
122	58	2412	-0	0
	59	2412	-0	-0
123	60	2865	0	-0
	61	2865	0	0

REACCIONES

NUDOS # =====	Horiz F. =====	Vert F. =====	Momento =====
1	-0	5269	0
2	-1500	-2030	0
61	1500	-2023	-0
62	0	5264	-0

ENVOLVENTES

1. D
2. D+L
3. D+G
4. D+0.75L+0.75G
5. D+W
6. D+0.7E
7. D-0.7E
8. D+0.75W+0.75L
9. D+0.75W+0.75L+0.75G
10. D+0.75(0.7E)+0.75L+0.75G
11. D-0.75(0.7E)+0.75L+0.75G
12. 0.6D+W
13. 0.6D+0.7E
14. 0.6D-0.7E

ENVOLVENTES CORDON EXTERIOR

=====									
	MIEMBRO #:		1	SECCION :NO RECTANGULAR LONG :				1.00	
NUDO 1	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO 3	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	4297	Min	-15271		Min	-15271	Max 4297	
=====									
	MIEMBRO #:		2	SECCION :NO RECTANGULAR LONG :				1.00	
NUDO 3	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO 5	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	2986	Min	-8687		Min	-8687	Max 2986	
=====									
	MIEMBRO #:		3	SECCION :NO RECTANGULAR LONG :				1.00	
NUDO 5	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO 7	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	1960	Min	-3302		Min	-3302	Max 1960	
=====									
	MIEMBRO #:		4	SECCION :NO RECTANGULAR LONG :				1.00	
NUDO 7	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO 9	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	2233	Min	-345		Min	-345	Max 2233	
=====									
	MIEMBRO #:		5	SECCION :NO RECTANGULAR LONG :				1.00	
NUDO 9	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO11	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	4913	Min	-878		Min	-878	Max 4913	
=====									
	MIEMBRO #:		6	SECCION :NO RECTANGULAR LONG :				1.00	
NUDO11	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO13	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	8263	Min	-1368		Min	-1368	Max 8263	
=====									
	MIEMBRO #:		7	SECCION :NO RECTANGULAR LONG :				0.77	
NUDO13	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO15	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	5331	Min	-823		Min	-823	Max 5331	
=====									

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	MIEMBRO #:		8	SECCION :NO RECTANGULAR LONG :				1.11	
NUDO15	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO16	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	6141	Min	-1177		Min	-1177	Max 6141	
=====									
	MIEMBRO #:		9	SECCION :NO RECTANGULAR LONG :				0.86	
NUDO16	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO18	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	6346	Min	-1994		Min	-1994	Max 6346	
=====									
	MIEMBRO #:		10	SECCION :NO RECTANGULAR LONG :				1.19	
NUDO18	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO20	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	6499	Min	-1961		Min	-1961	Max 6499	
=====									
	MIEMBRO #:		11	SECCION :NO RECTANGULAR LONG :				1.19	
NUDO20	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO22	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	1195	Min	-4882		Min	-4882	Max 1195	
=====									
	MIEMBRO #:		12	SECCION :NO RECTANGULAR LONG :				1.19	
NUDO22	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO24	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	1189	Min	-7100		Min	-7100	Max 1189	
=====									
	MIEMBRO #:		13	SECCION :NO RECTANGULAR LONG :				1.19	
NUDO24	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO26	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	1539	Min	-8507		Min	-8507	Max 1539	
=====									
	MIEMBRO #:		14	SECCION :NO RECTANGULAR LONG :				1.19	
NUDO26	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO28	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	1729	Min	-9104		Min	-9104	Max 1729	
=====									
	MIEMBRO #:		15	SECCION :NO RECTANGULAR LONG :				1.19	
NUDO28	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO 30	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	1758	Min	-8890		Min	-8890	Max 1758	
=====									
	MIEMBRO #:		16	SECCION :NO RECTANGULAR LONG :				1.24	
NUDO30	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO32	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	1727	Min	-8734		Min	-8734	Max 1727	
=====									
	MIEMBRO #:		17	SECCION :NO RECTANGULAR LONG :				1.24	
NUDO32	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO34	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	1726	Min	-8736		Min	-8736	Max 1726	
=====									

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	MIEMBRO #: 18			SECCION :NO RECTANGULAR LONG : 1.19					
NUDO34	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO36	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	1757	Min	-8892		Min	-8892	Max 1757	
=====									
	MIEMBRO #: 19			SECCION :NO RECTANGULAR LONG : 1.19					
NUDO36	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO38	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	1727	Min	-9102		Min	-9102	Max 1727	
=====									
	MIEMBRO #: 20			SECCION :NO RECTANGULAR LONG : 1.19					
NUDO38	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO40	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	1536	Min	-8500		Min	-8500	Max 1536	
=====									
	MIEMBRO #: 21			SECCION :NO RECTANGULAR LONG : 1.19					
NUDO40	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO42	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	1185	Min	-7088		Min	-7088	Max 1185	
=====									
	MIEMBRO #: 22			SECCION :NO RECTANGULAR LONG : 1.19					
NUDO42	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO44	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	1210	Min	-4865		Min	-4865	Max 1210	
=====									
	MIEMBRO #: 23			SECCION :NO RECTANGULAR LONG : 1.24					
NUDO44	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO46	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	6459	Min	-1940		Min	-1940	Max 6459	
=====									
	MIEMBRO #: 24			SECCION :NO RECTANGULAR LONG : 0.81					
NUDO46	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO47	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	6271	Min	-1979		Min	-1979	Max 6271	
=====									
	MIEMBRO #: 25			SECCION :NO RECTANGULAR LONG : 1.11					
NUDO47	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO49	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	6140	Min	-1182		Min	-1182	Max 6140	
=====									
	MIEMBRO #: 26			SECCION :NO RECTANGULAR LONG : 0.77					
NUDO49	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO51	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	5329	Min	-823		Min	-823	Max 5329	
=====									
	MIEMBRO #: 27			SECCION :NO RECTANGULAR LONG : 1.00					
NUDO51	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO52	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	8278	Min	-1369		Min	-1369	Max 8278	
=====									

=====									
	MIEMBRO #:		28	SECCION :NO RECTANGULAR LONG :				1.00	
NUDO52	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO54	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	4931	Min	-880		Min	-880	Max 4931	
=====									
	MIEMBRO #:		29	SECCION :NO RECTANGULAR LONG :				1.00	
NUDO54	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO56	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	2225	Min	-337		Min	-337	Max 2225	
=====									
	MIEMBRO #:		30	SECCION :NO RECTANGULAR LONG :				1.00	
NUDO56	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO58	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	1939	Min	-3277		Min	-3277	Max 1939	
=====									
	MIEMBRO #:		31	SECCION :NO RECTANGULAR LONG :				1.00	
NUDO58	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO60	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	3018	Min	-8687		Min	-8687	Max 3018	
=====									
	MIEMBRO #:		32	SECCION :NO RECTANGULAR LONG :				1.00	
NUDO60	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO62	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	4268	Min	-15237		Min	-15237	Max 4268	
=====									

ENVOLVENTES CORDON INTERIOR

=====									
	MIEMBRO #:		33	SECCION :NO RECTANGULAR LONG :				1.00	
NUDO 2	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO 4	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	3473	Min	-3942		Min	-3942	Max 3473	
=====									
	MIEMBRO #:		34	SECCION :NO RECTANGULAR LONG :				1.00	
NUDO 4	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO 6	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	951	Min	-6151		Min	-6151	Max 951	
=====									
	MIEMBRO #:		35	SECCION :NO RECTANGULAR LONG :				1.00	
NUDO 6	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO 8	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	1600	Min	-8225		Min	-8225	Max 1600	
=====									
	MIEMBRO #:		36	SECCION :NO RECTANGULAR LONG :				1.00	
NUDO 8	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO10	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	2143	Min	-11701		Min	-11701	Max 2143	
=====									


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                MIEMBRO #: 37                SECCION :NO RECTANGULAR LONG : 1.00
NUDO10  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  NUDO12
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    2632  Min   -15049          Min   -15049  Max    2632
=====
                MIEMBRO #: 38                SECCION :NO RECTANGULAR LONG : 1.00
NUDO12  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  NUDO14
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    969  Min   -5365          Min   -5365  Max    969
=====
                MIEMBRO #: 39                SECCION :NO RECTANGULAR LONG : 1.16
NUDO14  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  NUDO17
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    752  Min   -3088          Min   -3088  Max    752
=====
                MIEMBRO #: 40                SECCION :NO RECTANGULAR LONG : 1.19
NUDO17  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  NUDO19
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    2070  Min   -6036          Min   -6036  Max    2070
=====
                MIEMBRO #: 41                SECCION :NO RECTANGULAR LONG : 1.19
NUDO19  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  NUDO21
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    2070  Min   -6036          Min   -6036  Max    2070
=====
                MIEMBRO #: 42                SECCION :NO RECTANGULAR LONG : 1.19
NUDO21  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  NUDO23
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    2343  Min   -2516          Min   -2516  Max    2343
=====
                MIEMBRO #: 43                SECCION :NO RECTANGULAR LONG : 1.19
NUDO23  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  NUDO25
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    3892  Min   -1415          Min   -1415  Max    3892
=====
                MIEMBRO #: 44                SECCION :NO RECTANGULAR LONG : 1.19
NUDO25  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  NUDO27
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    5454  Min    -862          Min    -862  Max    5454
=====
                MIEMBRO #: 45                SECCION :NO RECTANGULAR LONG : 1.19
NUDO27  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  NUDO29
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    6206  Min   -1082          Min   -1082  Max    6206
=====
                MIEMBRO #: 46                SECCION :NO RECTANGULAR LONG : 0.98
NUDO29  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  NUDO31
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    4056  Min    -802          Min    -802  Max    4056
=====

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	MIEMBRO #:		47	SECCION :NO RECTANGULAR LONG :				0.98	
NUDO31	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO33	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	4056	Min	-802		Min	-802	Max 4056	
=====									
	MIEMBRO #:		48	SECCION :NO RECTANGULAR LONG :				1.19	
NUDO33	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO35	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	6202	Min	-1080		Min	-1080	Max 6202	
=====									
	MIEMBRO #:		49	SECCION :NO RECTANGULAR LONG :				1.19	
NUDO35	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO37	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	5445	Min	-859		Min	-859	Max 5445	
=====									
	MIEMBRO #:		50	SECCION :NO RECTANGULAR LONG :				1.19	
NUDO37	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO39	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	3878	Min	-1428		Min	-1428	Max 3878	
=====									
	MIEMBRO #:		51	SECCION :NO RECTANGULAR LONG :				1.19	
NUDO39	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO41	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	2347	Min	-2534		Min	-2534	Max 2347	
=====									
	MIEMBRO #:		52	SECCION :NO RECTANGULAR LONG :				1.19	
NUDO41	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO43	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	2073	Min	-6074		Min	-6074	Max 2073	
=====									
	MIEMBRO #:		53	SECCION :NO RECTANGULAR LONG :				1.19	
NUDO43	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO45	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	2073	Min	-6074		Min	-6074	Max 2073	
=====									
	MIEMBRO #:		54	SECCION :NO RECTANGULAR LONG :				1.16	
NUDO45	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO48	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	750	Min	-3071		Min	-3071	Max 750	
=====									
	MIEMBRO #:		55	SECCION :NO RECTANGULAR LONG :				1.00	
NUDO48	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO50	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	967	Min	-5351		Min	-5351	Max 967	
=====									
	MIEMBRO #:		56	SECCION :NO RECTANGULAR LONG :				1.00	
NUDO50	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO53	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	2634	Min	-15068		Min	-15068	Max 2634	
=====									

=====								
	MIEMBRO #:		57		SECCION :NO RECTANGULAR LONG :		1.00	
NUDO53	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO55
=====	=====	=====	=====	=====	=====	=====	=====	=====
Fu	Max	2145	Min	-11723		Min	-11723	Max 2145
=====								
	MIEMBRO #:		58		SECCION :NO RECTANGULAR LONG :		1.00	
NUDO55	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO57
=====	=====	=====	=====	=====	=====	=====	=====	=====
Fu	Max	1602	Min	-8221		Min	-8221	Max 1602
=====								
	MIEMBRO #:		59		SECCION :NO RECTANGULAR LONG :		1.00	
NUDO57	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO59
=====	=====	=====	=====	=====	=====	=====	=====	=====
Fu	Max	954	Min	-6150		Min	-6150	Max 954
=====								
	MIEMBRO #:		60		SECCION :NO RECTANGULAR LONG :		1.00	
NUDO59	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO61
=====	=====	=====	=====	=====	=====	=====	=====	=====
Fu	Max	3493	Min	-3977		Min	-3977	Max 3493
=====								
	MIEMBRO #:		61		SECCION :NO RECTANGULAR LONG :		1.76	
NUDO12	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO17
=====	=====	=====	=====	=====	=====	=====	=====	=====
Fu	Max	1514	Min	-9135		Min	-9135	Max 1514
=====								
	MIEMBRO #:		62		SECCION :NO RECTANGULAR LONG :		1.76	
NUDO45	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO50
=====	=====	=====	=====	=====	=====	=====	=====	=====
Fu	Max	1516	Min	-9157		Min	-9157	Max 1516
=====								

ENVOLVENTES DE PARALES

=====								
	MIEMBRO #:		63		SECCION :NO RECTANGULAR LONG :		0.60	
NUDO 1	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO 2
=====	=====	=====	=====	=====	=====	=====	=====	=====
Fu	Max	0	Min	0		Min	0	Max 0
=====								
	MIEMBRO #:		64		SECCION :NO RECTANGULAR LONG :		0.67	
NUDO 3	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO 4
=====	=====	=====	=====	=====	=====	=====	=====	=====
Fu	Max	787	Min	-3950		Min	-3950	Max 787
=====								
	MIEMBRO #:		65		SECCION :NO RECTANGULAR LONG :		0.73	
NUDO 5	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO 6
=====	=====	=====	=====	=====	=====	=====	=====	=====
Fu	Max	687	Min	-3608		Min	-3608	Max 687
=====								

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	MIEMBRO #: 66		SECCION :NO RECTANGULAR LONG : 0.80					
NUDO 7	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO 8
=====	=====	=====	=====	=====	=====	=====	=====	=====
Fu	Max	653	Min	-3261		Min	-3261	Max 653
=====								
	MIEMBRO #: 67		SECCION :NO RECTANGULAR LONG : 0.87					
NUDO 9	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO10
=====	=====	=====	=====	=====	=====	=====	=====	=====
Fu	Max	600	Min	-2998		Min	-2998	Max 600
=====								
	MIEMBRO #: 68		SECCION :NO RECTANGULAR LONG : 0.93					
NUDO11	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO12
=====	=====	=====	=====	=====	=====	=====	=====	=====
Fu	Max	551	Min	-2914		Min	-2914	Max 551
=====								
	MIEMBRO #: 69		SECCION :NO RECTANGULAR LONG : 1.00					
NUDO13	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO14
=====	=====	=====	=====	=====	=====	=====	=====	=====
Fu	Max	2727	Min	-506		Min	-506	Max 2727
=====								
	MIEMBRO #: 70		SECCION :NO RECTANGULAR LONG : 1.05					
NUDO14	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO16
=====	=====	=====	=====	=====	=====	=====	=====	=====
Fu	Max	499	Min	-1485		Min	-1485	Max 499
=====								
	MIEMBRO #: 71		SECCION :NO RECTANGULAR LONG : 1.00					
NUDO17	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO18
=====	=====	=====	=====	=====	=====	=====	=====	=====
Fu	Max	141	Min	-728		Min	-728	Max 141
=====								
	MIEMBRO #: 72		SECCION :NO RECTANGULAR LONG : 1.00					
NUDO19	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO20
=====	=====	=====	=====	=====	=====	=====	=====	=====
Fu	Max	0	Min	-0		Min	-0	Max 0
=====								
	MIEMBRO #: 73		SECCION :NO RECTANGULAR LONG : 1.00					
NUDO21	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO22
=====	=====	=====	=====	=====	=====	=====	=====	=====
Fu	Max	592	Min	-3295		Min	-3295	Max 592
=====								
	MIEMBRO #: 74		SECCION :NO RECTANGULAR LONG : 1.00					
NUDO23	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO24
=====	=====	=====	=====	=====	=====	=====	=====	=====
Fu	Max	456	Min	-2612		Min	-2612	Max 456
=====								
	MIEMBRO #: 75		SECCION :NO RECTANGULAR LONG : 1.00					
NUDO25	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO26
=====	=====	=====	=====	=====	=====	=====	=====	=====
Fu	Max	321	Min	-1928		Min	-1928	Max 321
=====								

=====									
	MIEMBRO #: 76			SECCION :NO RECTANGULAR LONG : 1.00					
NUDO27	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO28	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	204	Min	-1244		Min	-1244	Max 204	
=====									
	MIEMBRO #: 77			SECCION :NO RECTANGULAR LONG : 1.00					
NUDO29	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO30	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	131	Min	-660		Min	-660	Max 131	
=====									
	MIEMBRO #: 78			SECCION :NO RECTANGULAR LONG : 1.30					
NUDO31	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO32	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	0	Min	-0		Min	-0	Max 0	
=====									
	MIEMBRO #: 79			SECCION :NO RECTANGULAR LONG : 1.00					
NUDO33	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO34	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	131	Min	-660		Min	-660	Max 131	
=====									
	MIEMBRO #: 80			SECCION :NO RECTANGULAR LONG : 1.00					
NUDO35	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO36	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	203	Min	-1249		Min	-1249	Max 203	
=====									
	MIEMBRO #: 81			SECCION :NO RECTANGULAR LONG : 1.00					
NUDO37	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO38	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	322	Min	-1932		Min	-1932	Max 322	
=====									
	MIEMBRO #: 82			SECCION :NO RECTANGULAR LONG : 1.00					
NUDO39	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO40	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	457	Min	-2616		Min	-2616	Max 457	
=====									
	MIEMBRO #: 83			SECCION :NO RECTANGULAR LONG : 1.00					
NUDO41	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO42	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	593	Min	-3300		Min	-3300	Max 593	
=====									
	MIEMBRO #: 84			SECCION :NO RECTANGULAR LONG : 1.00					
NUDO43	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO44	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	0	Min	-0		Min	-0	Max 0	
=====									
	MIEMBRO #: 85			SECCION :NO RECTANGULAR LONG : 1.02					
NUDO45	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO46	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	163	Min	-898		Min	-898	Max 163	
=====									

=====									
	MIEMBRO #: 86		SECCION :NO RECTANGULAR LONG :				1.05		
NUDO47	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO48	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	505	Min	-1487		Min	-1487	Max 505	
=====									
	MIEMBRO #: 87		SECCION :NO RECTANGULAR LONG :				1.00		
NUDO48	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO51	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	2742	Min	-508		Min	-508	Max 2742	
=====									
	MIEMBRO #: 88		SECCION :NO RECTANGULAR LONG :				0.93		
NUDO50	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO52	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	549	Min	-2912		Min	-2912	Max 549	
=====									
	MIEMBRO #: 89		SECCION :NO RECTANGULAR LONG :				0.87		
NUDO53	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO54	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	598	Min	-2996		Min	-2996	Max 598	
=====									
	MIEMBRO #: 90		SECCION :NO RECTANGULAR LONG :				0.80		
NUDO55	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO56	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	650	Min	-3258		Min	-3258	Max 650	
=====									
	MIEMBRO #: 91		SECCION :NO RECTANGULAR LONG :				0.73		
NUDO57	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO58	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	713	Min	-3570		Min	-3570	Max 713	
=====									
	MIEMBRO #: 92		SECCION :NO RECTANGULAR LONG :				0.66		
NUDO59	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO60	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	750	Min	-3930		Min	-3930	Max 750	
=====									
	MIEMBRO #: 93		SECCION :NO RECTANGULAR LONG :				0.60		
NUDO 61	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO 62	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	0	Min	0		Min	0	Max 0	
=====									

ENVOLVENTES DE DIAGONALES

=====									
	MIEMBRO #: 94		SECCION :NO RECTANGULAR LONG :				1.17		
NUDO 2	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO 3	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	7678	Min	-1530		Min	-1530	Max 7678	
=====									

=====								
	MIEMBRO #: 95		SECCION :NO RECTANGULAR LONG : 1.20					
NUDO 4	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO 5
=====	=====	=====	=====	=====	=====	=====	=====	=====
Fu	Max	6482	Min	-1235		Min	-1235	Max 6482
=====								
	MIEMBRO #: 96		SECCION :NO RECTANGULAR LONG : 1.24					
NUDO 6	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO 7
=====	=====	=====	=====	=====	=====	=====	=====	=====
Fu	Max	5530	Min	-1107		Min	-1107	Max 5530
=====								
	MIEMBRO #: 97		SECCION :NO RECTANGULAR LONG : 1.28					
NUDO 8	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO 9
=====	=====	=====	=====	=====	=====	=====	=====	=====
Fu	Max	4800	Min	-961		Min	-961	Max 4800
=====								
	MIEMBRO #: 98		SECCION :NO RECTANGULAR LONG : 1.33					
NUDO10	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO11
=====	=====	=====	=====	=====	=====	=====	=====	=====
Fu	Max	4440	Min	-839		Min	-839	Max 4440
=====								
	MIEMBRO #: 99		SECCION :NO RECTANGULAR LONG : 1.37					
NUDO12	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO13
=====	=====	=====	=====	=====	=====	=====	=====	=====
Fu	Max	743	Min	-4004		Min	-4004	Max 743
=====								
	MIEMBRO #:100		SECCION :NO RECTANGULAR LONG : 1.26					
NUDO14	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO15
=====	=====	=====	=====	=====	=====	=====	=====	=====
Fu	Max	1093	Min	-6769		Min	-6769	Max 1093
=====								
	MIEMBRO #:101		SECCION :NO RECTANGULAR LONG : 1.29					
NUDO16	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO17
=====	=====	=====	=====	=====	=====	=====	=====	=====
Fu	Max	980	Min	-734		Min	-734	Max 980
=====								
	MIEMBRO #:102		SECCION :NO RECTANGULAR LONG : 1.59					
NUDO17	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO20
=====	=====	=====	=====	=====	=====	=====	=====	=====
Fu	Max	1151	Min	-6300		Min	-6300	Max 1151
=====								
	MIEMBRO #:103		SECCION :NO RECTANGULAR LONG : 1.53					
NUDO20	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO21
=====	=====	=====	=====	=====	=====	=====	=====	=====
Fu	Max	5004	Min	-898		Min	-898	Max 5004
=====								
	MIEMBRO #:104		SECCION :NO RECTANGULAR LONG : 1.53					
NUDO22	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO23
=====	=====	=====	=====	=====	=====	=====	=====	=====
Fu	Max	3965	Min	-693		Min	-693	Max 3965
=====								

=====									
	MIEMBRO #:105		SECCION :NO RECTANGULAR LONG :				1.53		
NUDO24	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO25	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	2927	Min	-488		Min	-488	Max 2927	
=====									
	MIEMBRO #:106		SECCION :NO RECTANGULAR LONG :				1.53		
NUDO26	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO7	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	1889	Min	-310		Min	-310	Max 1889	
=====									
	MIEMBRO #:107		SECCION :NO RECTANGULAR LONG :				1.53		
NUDO28	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO29	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	851	Min	-530		Min	-530	Max 851	
=====									
	MIEMBRO #:108		SECCION :NO RECTANGULAR LONG :				1.63		
NUDO29	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO32	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	2871	Min	-470		Min	-470	Max 2871	
=====									
	MIEMBRO #:109		SECCION :NO RECTANGULAR LONG :				1.63		
NUDO32	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO33	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	2866	Min	-469		Min	-469	Max 2866	
=====									
	MIEMBRO #:110		SECCION :NO RECTANGULAR LONG :				1.53		
NUDO33	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO36	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	858	Min	-529		Min	-529	Max 858	
=====									
	MIEMBRO #:111		SECCION :NO RECTANGULAR LONG :				1.53		
NUDO35	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO38	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	1896	Min	-309		Min	-309	Max 1896	
=====									
	MIEMBRO #:112		SECCION :NO RECTANGULAR LONG :				1.53		
NUDO37	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO40	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	2934	Min	-489		Min	-489	Max 2934	
=====									
	MIEMBRO #:113		SECCION :NO RECTANGULAR LONG :				1.53		
NUDO39	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO42	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	3972	Min	-694		Min	-694	Max 3972	
=====									
	MIEMBRO #:114		SECCION :NO RECTANGULAR LONG :				1.53		
NUDO41	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO44	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	5010	Min	-900		Min	-900	Max 5010	
=====									

=====									
	MIEMBRO #:115		SECCION :NO RECTANGULAR LONG :				1.59		
NUDO44	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO45	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	1138	Min	-6200		Min	-6200	Max 1138	
=====									
	MIEMBRO #:116		SECCION :NO RECTANGULAR LONG :				1.29		
NUDO45	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO47	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	1023	Min	-664		Min	-664	Max 1023	
=====									
	MIEMBRO #:117		SECCION :NO RECTANGULAR LONG :				1.26		
NUDO48	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO49	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	1092	Min	-6767		Min	-6767	Max 1092	
=====									
	MIEMBRO #:118		SECCION :NO RECTANGULAR LONG :				1.37		
NUDO50	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO51	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	746	Min	-4026		Min	-4026	Max 746	
=====									
	MIEMBRO #:119		SECCION :NO RECTANGULAR LONG :				1.33		
NUDO52	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO53	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	4436	Min	-836		Min	-836	Max 4436	
=====									
	MIEMBRO #:120		SECCION :NO RECTANGULAR LONG :				1.28		
NUDO54	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO55	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	4796	Min	-957		Min	-957	Max 4796	
=====									
	MIEMBRO #:121		SECCION :NO RECTANGULAR LONG :				1.24		
NUDO56	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO57	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	5526	Min	-1103		Min	-1103	Max 5526	
=====									
	MIEMBRO #:122		SECCION :NO RECTANGULAR LONG :				1.20		
NUDO58	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO59	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	6482	Min	-1294		Min	-1294	Max 6482	
=====									
	MIEMBRO #:123		SECCION :NO RECTANGULAR LONG :				1.17		
NUDO60	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	NUDO61	
=====	=====	=====	=====	=====	=====	=====	=====	=====	
Fu	Max	7638	Min	-1457		Min	-1457	Max 7638	
=====									

# MIEMBROS	# NUDOS	# NUDOS RESTR.	E [Kg/cm2]	TERMAL C.
104	68	7	2000000	0

COORDENADAS NUDOS

NUDOS #	X [mt]	Y [mt]
1	0.00	0.00
2	0.00	5.00
3	0.00	6.00
4	1.00	5.00
5	1.00	6.00
6	2.00	5.00
7	2.00	6.00
8	3.00	5.00
9	3.00	6.00
10	4.00	5.00
11	4.00	6.00
12	5.00	5.00
13	5.00	6.00
14	6.00	0.00
15	6.00	5.00
16	6.00	6.00
17	7.00	5.00
18	7.00	6.00
19	8.00	5.00
20	8.00	6.00
21	9.00	5.00
22	9.00	6.00
23	10.00	5.00
24	10.00	6.00
25	11.00	5.00
26	11.00	6.00
27	12.00	0.00
28	12.00	5.00
29	12.00	6.00
30	13.00	5.00
31	13.00	6.00
32	14.00	5.00
33	14.00	6.00
34	15.00	5.00
35	15.00	6.00
36	16.00	5.00
37	16.00	6.00
38	17.00	5.00
39	17.00	6.00
40	18.00	0.00
41	18.00	5.00
42	18.00	6.00
43	19.00	5.00
44	19.00	6.00
45	20.00	5.00
46	20.00	6.00
47	21.00	5.00
48	21.00	6.00
49	22.00	5.00
50	22.00	6.00

NUDOS #	X [mt]	Y [mt]
51	23.00	5.00
52	23.00	6.00
53	24.00	0.00
54	24.00	5.00
55	24.00	6.00
56	25.00	5.00
57	25.00	6.00
58	26.00	5.00
59	26.00	6.00
60	27.00	5.00
61	27.00	6.00
62	28.00	5.00
63	28.00	6.00
64	29.00	5.00
65	29.00	6.00
66	30.00	0.00
67	30.00	5.00
68	30.00	6.00

TIPOS DE SECCIONES

TIPO #	PROPIEDADES (I,A)
1	0.00000000 - 0.00092200
2	0.00000000 - 0.00043800
3	0.00004470 - 0.00310400
4	0.00000183 - 0.00116400

MIEMB #	J	K	TIPO	Inerc [mt4]	Area [mt2]	Longit	SEN	COS
1	2	4	1	0.00000000	0.00092200	1.00	0.000	1.000
2	4	6	1	0.00000000	0.00092200	1.00	0.000	1.000
3	6	8	1	0.00000000	0.00092200	1.00	0.000	1.000
4	8	10	1	0.00000000	0.00092200	1.00	0.000	1.000
5	10	12	1	0.00000000	0.00092200	1.00	0.000	1.000
6	12	15	1	0.00000000	0.00092200	1.00	0.000	1.000
7	15	17	1	0.00000000	0.00092200	1.00	0.000	1.000
8	17	19	1	0.00000000	0.00092200	1.00	0.000	1.000
9	19	21	1	0.00000000	0.00092200	1.00	0.000	1.000
10	21	23	1	0.00000000	0.00092200	1.00	0.000	1.000
11	23	25	1	0.00000000	0.00092200	1.00	0.000	1.000
12	25	28	1	0.00000000	0.00092200	1.00	0.000	1.000
13	28	30	1	0.00000000	0.00092200	1.00	0.000	1.000
14	30	32	1	0.00000000	0.00092200	1.00	0.000	1.000
15	32	34	1	0.00000000	0.00092200	1.00	0.000	1.000
16	34	36	1	0.00000000	0.00092200	1.00	0.000	1.000
17	36	38	1	0.00000000	0.00092200	1.00	0.000	1.000
18	38	41	1	0.00000000	0.00092200	1.00	0.000	1.000
19	41	43	1	0.00000000	0.00092200	1.00	0.000	1.000
20	43	45	1	0.00000000	0.00092200	1.00	0.000	1.000
21	45	47	1	0.00000000	0.00092200	1.00	0.000	1.000
22	47	49	1	0.00000000	0.00092200	1.00	0.000	1.000
23	49	51	1	0.00000000	0.00092200	1.00	0.000	1.000
24	51	54	1	0.00000000	0.00092200	1.00	0.000	1.000
25	54	56	1	0.00000000	0.00092200	1.00	0.000	1.000
26	56	58	1	0.00000000	0.00092200	1.00	0.000	1.000
27	58	60	1	0.00000000	0.00092200	1.00	0.000	1.000
28	60	62	1	0.00000000	0.00092200	1.00	0.000	1.000
29	62	64	1	0.00000000	0.00092200	1.00	0.000	1.000

MIEMB #	J	K	TIPOInerc [mt4]	Area [mt2]	Longit	SEN	COS	
30	64	67	1	0.00000000	0.00092200	1.00	0.000	1.000
31	3	5	1	0.00000000	0.00092200	1.00	0.000	1.000
32	5	7	1	0.00000000	0.00092200	1.00	0.000	1.000
33	7	9	1	0.00000000	0.00092200	1.00	0.000	1.000
34	9	11	1	0.00000000	0.00092200	1.00	0.000	1.000
35	11	13	1	0.00000000	0.00092200	1.00	0.000	1.000
36	13	16	1	0.00000000	0.00092200	1.00	0.000	1.000
37	16	18	1	0.00000000	0.00092200	1.00	0.000	1.000
38	18	20	1	0.00000000	0.00092200	1.00	0.000	1.000
39	20	22	1	0.00000000	0.00092200	1.00	0.000	1.000
40	22	24	1	0.00000000	0.00092200	1.00	0.000	1.000
41	24	26	1	0.00000000	0.00092200	1.00	0.000	1.000
42	26	29	1	0.00000000	0.00092200	1.00	0.000	1.000
43	29	31	1	0.00000000	0.00092200	1.00	0.000	1.000
44	31	33	1	0.00000000	0.00092200	1.00	0.000	1.000
45	33	35	1	0.00000000	0.00092200	1.00	0.000	1.000
46	35	37	1	0.00000000	0.00092200	1.00	0.000	1.000
47	37	39	1	0.00000000	0.00092200	1.00	0.000	1.000
48	39	42	1	0.00000000	0.00092200	1.00	0.000	1.000
49	42	44	1	0.00000000	0.00092200	1.00	0.000	1.000
50	44	46	1	0.00000000	0.00092200	1.00	0.000	1.000
51	46	48	1	0.00000000	0.00092200	1.00	0.000	1.000
52	48	50	1	0.00000000	0.00092200	1.00	0.000	1.000
53	50	52	1	0.00000000	0.00092200	1.00	0.000	1.000
54	52	55	1	0.00000000	0.00092200	1.00	0.000	1.000
55	55	57	1	0.00000000	0.00092200	1.00	0.000	1.000
56	57	59	1	0.00000000	0.00092200	1.00	0.000	1.000
57	59	61	1	0.00000000	0.00092200	1.00	0.000	1.000
58	61	63	1	0.00000000	0.00092200	1.00	0.000	1.000
59	63	65	1	0.00000000	0.00092200	1.00	0.000	1.000
60	65	68	1	0.00000000	0.00092200	1.00	0.000	1.000
61	3	4	2	0.00000000	0.00043800	1.41	-0.707	0.707
62	5	6	2	0.00000000	0.00043800	1.41	-0.707	0.707
63	7	8	2	0.00000000	0.00043800	1.41	-0.707	0.707
64	8	11	2	0.00000000	0.00043800	1.41	0.707	0.707
65	10	13	2	0.00000000	0.00043800	1.41	0.707	0.707
66	12	16	2	0.00000000	0.00043800	1.41	0.707	0.707
67	16	17	2	0.00000000	0.00043800	1.41	-0.707	0.707
68	18	19	2	0.00000000	0.00043800	1.41	-0.707	0.707
69	20	21	2	0.00000000	0.00043800	1.41	-0.707	0.707
70	21	24	2	0.00000000	0.00043800	1.41	0.707	0.707
71	23	26	2	0.00000000	0.00043800	1.41	0.707	0.707
72	25	29	2	0.00000000	0.00043800	1.41	0.707	0.707
73	29	30	2	0.00000000	0.00043800	1.41	-0.707	0.707
74	31	32	2	0.00000000	0.00043800	1.41	-0.707	0.707
75	33	34	2	0.00000000	0.00043800	1.41	-0.707	0.707
76	34	37	2	0.00000000	0.00043800	1.41	0.707	0.707
77	36	39	2	0.00000000	0.00043800	1.41	0.707	0.707
78	38	42	2	0.00000000	0.00043800	1.41	0.707	0.707
79	42	43	2	0.00000000	0.00043800	1.41	-0.707	0.707
80	44	45	2	0.00000000	0.00043800	1.41	-0.707	0.707
81	46	47	2	0.00000000	0.00043800	1.41	-0.707	0.707
82	47	50	2	0.00000000	0.00043800	1.41	0.707	0.707
83	49	52	2	0.00000000	0.00043800	1.41	0.707	0.707
84	51	55	2	0.00000000	0.00043800	1.41	0.707	0.707
85	55	56	2	0.00000000	0.00043800	1.41	-0.707	0.707
86	57	58	2	0.00000000	0.00043800	1.41	-0.707	0.707
87	59	60	2	0.00000000	0.00043800	1.41	-0.707	0.707
88	60	63	2	0.00000000	0.00043800	1.41	0.707	0.707
89	62	65	2	0.00000000	0.00043800	1.41	0.707	0.707
90	64	68	2	0.00000000	0.00043800	1.41	0.707	0.707

CASO --> [FUERZA SISMICA REDUCIDA (E)]

FUERZAS EN LOS NUDOS

NUDOS #	Horiz F.	Vert F.	Momento
=====	=====	=====	=====
2	667	0	0
3	667	0	0
15	667	0	0
16	667	0	0
28	667	0	0
29	667	0	0
41	667	0	0
42	667	0	0
54	667	0	0
55	667	0	0
67	667	0	0
68	667	0	0

DESPLAZAMIENTOS DE NUDOS

NUDOS #	X Desp.	Y Desp.	Z Rot.
=====	=====	=====	=====
1	0.000000	0.000000	0.000000
2	0.447226	-0.000005	-0.001856
3	0.646592	-0.000006	-0.002062
4	0.441534	0.205038	-0.000952
5	0.644975	-0.086891	0.000911
6	0.435838	0.122238	0.000449
7	0.643361	-0.224186	-0.000900
8	0.430139	-0.010982	-0.000082
9	0.641750	-0.013078	-0.002719
10	0.424434	-0.144292	0.000412
11	0.640139	0.199001	-0.000919
12	0.418725	-0.218189	-0.001050
13	0.638532	0.069798	0.000813
14	0.000000	0.000000	0.000000
15	0.413014	-0.000001	-0.002029
16	0.636927	-0.000001	-0.002344
17	0.400183	0.236723	-0.001047
18	0.634775	-0.124439	0.001266
19	0.387349	0.122978	0.000646
20	0.632627	-0.306295	-0.001028
21	0.374511	-0.048201	-0.000045
22	0.630483	-0.052408	-0.003305
23	0.361665	-0.217121	0.000515
24	0.628340	0.205607	-0.001111
25	0.348815	-0.304380	-0.001354
26	0.626200	0.047404	0.000971
27	0.000000	0.000000	0.000000
28	0.335961	-0.029148	-0.002487
29	0.624064	-0.029148	-0.003078
30	0.335973	0.258923	-0.001443
31	0.624056	-0.120833	0.001054
32	0.335982	0.167230	0.000474
33	0.624051	-0.288732	-0.001284
34	0.335987	-0.000690	-0.000189
35	0.624051	-0.000823	-0.003677
36	0.335982	-0.167722	0.000467
37	0.624051	0.287352	-0.001290
38	0.335974	-0.258923	-0.001445

NUDOS #	X Desp.	Y Desp.	Z Rot.
=====	=====	=====	=====
39	0.624056	0.120341	0.001048
40	0.000000	0.000000	0.000000
41	0.335961	0.029148	-0.002487
42	0.624064	0.029148	-0.003078
43	0.348815	0.304379	-0.001353
44	0.626200	-0.047770	0.000976
45	0.361665	0.216754	0.000520
46	0.628340	-0.206743	-0.001107
47	0.374512	0.047064	-0.000042
48	0.630483	0.051154	-0.003305
49	0.387350	-0.123927	0.000640
50	0.632627	0.305158	-0.001029
51	0.400184	-0.236723	-0.001052
52	0.634776	0.123489	0.001261
53	0.000000	0.000000	0.000000
54	0.413015	0.000001	-0.002029
55	0.636928	0.000001	-0.002344
56	0.418727	0.218188	-0.001049
57	0.638533	-0.070158	0.000820
58	0.424435	0.143931	0.000420
59	0.640141	-0.200716	-0.000912
60	0.430141	0.009267	-0.000078
61	0.641752	0.011097	-0.002720
62	0.435840	-0.123420	0.000441
63	0.643363	0.222471	-0.000903
64	0.441536	-0.205039	-0.000957
65	0.644978	0.085710	0.000903
66	0.000000	0.000000	0.000000
67	0.447229	0.000005	-0.001856
68	0.646595	0.000006	-0.002062

ACCIONES EN NUDOS DE MIEMBROS

MIEMBRO	NUDO	Axial F.	Cort F.	Momento
=====	=====	=====	=====	=====
1	2	-1050	0	-0
	4	-1050	0	0
2	4	-1050	-0	0
	6	-1050	-0	-0
3	6	-1051	-0	0
	8	-1051	-0	-0
4	8	-1052	-0	0
	10	-1052	-0	-0
5	10	-1053	-0	0
	12	-1053	-0	-0
6	12	-1053	0	-0
	15	-1053	0	0
7	15	-2366	0	-0
	17	-2366	0	0
8	17	-2367	-0	0
	19	-2367	-0	-0
9	19	-2367	-0	0
	21	-2367	-0	-0
10	21	-2369	-0	0
	23	-2369	-0	-0
11	23	-2370	-0	0
	25	-2370	-0	-0
12	25	-2370	0	-0
	28	-2370	0	0
13	28	2	0	-0
	30	2	0	0

MIEMBRO	NUDO	Axial F.	Cort F.	Momento
=====	=====	=====	=====	=====
14	30	2	-0	0
	32	2	-0	-0
15	32	1	-0	0
	34	1	-0	-0
16	34	-1	-0	0
	36	-1	-0	-0
17	36	-2	-0	0
	38	-2	-0	-0
18	38	-2	0	-0
	41	-2	0	0
19	41	2370	0	-0
	43	2370	0	0
20	43	2370	-0	0
	45	2370	-0	-0
21	45	2369	-0	0
	47	2369	-0	-0
22	47	2367	-0	0
	49	2367	-0	-0
23	49	2367	-0	0
	51	2367	-0	-0
24	51	2366	0	-0
	54	2366	0	0
25	54	1053	0	-0
	56	1053	0	0
26	56	1053	-0	0
	58	1053	-0	-0
27	58	1052	-0	0
	60	1052	-0	-0
28	60	1051	-0	0
	62	1051	-0	-0
29	62	1050	-0	0
	64	1050	-0	-0
30	64	1050	0	-0
	67	1050	0	0
31	3	-298	-0	0
	5	-298	-0	-0
32	5	-298	-0	0
	7	-298	-0	-0
33	7	-297	0	-0
	9	-297	0	-0
34	9	-297	0	-0
	11	-297	0	0
35	11	-296	-0	0
	13	-296	-0	-0
36	13	-296	-0	0
	16	-296	-0	-0
37	16	-397	-0	0
	18	-397	-0	-0
38	18	-396	-0	0
	20	-396	-0	-0
39	20	-395	0	-0
	22	-395	0	-0
40	22	-395	0	-0
	24	-395	0	0
41	24	-394	-0	0
	26	-394	-0	-0
42	26	-394	-0	0
	29	-394	-0	-0
43	29	-2	-0	0
	31	-2	-0	-0

MIEMBRO	NUDO	Axial F.	Cort F.	Momento
=====	=====	=====	=====	=====
44	31	-1	-0	0
	33	-1	-0	-0
45	33	0	0	-0
	35	0	0	-0
46	35	0	0	-0
	37	0	0	0
47	37	1	-0	0
	39	1	-0	-0
48	39	1	-0	0
	42	1	-0	-0
49	42	394	-0	0
	44	394	-0	-0
50	44	395	-0	0
	46	395	-0	-0
51	46	395	0	-0
	48	395	0	0
52	48	395	0	0
	50	395	0	0
53	50	396	-0	0
	52	396	-0	-0
54	52	397	-0	0
	55	397	-0	-0
55	55	296	-0	0
	57	296	-0	-0
56	57	296	-0	0
	59	296	-0	-0
57	59	297	0	-0
	61	297	0	0
58	61	297	0	0
	63	297	0	0
59	63	298	-0	0
	65	298	-0	-0
60	65	298	-0	0
	68	298	-0	-0
61	3	-1	0	-0
	4	-1	0	0
62	5	-0	0	-0
	6	-0	0	0
63	7	-1	0	-0
	8	-1	0	0
64	8	1	0	-0
	11	1	0	0
65	10	0	0	-0
	13	0	0	0
66	12	1	0	-0
	16	1	0	0
67	16	-1	0	-0
	17	-1	0	0
68	18	-0	0	-0
	19	-0	0	0
69	20	-1	0	-0
	21	-1	0	0
70	21	1	0	-0
	24	1	0	0
71	23	0	0	-0
	26	0	0	0
72	25	1	0	-0
	29	1	0	0
73	29	-1	0	-0
	30	-1	0	0

MIEMBRO	NUDO	Axial F.	Cort F.	Momento
=====	=====	=====	=====	=====
74	31	-0	0	-0
	32	-0	0	0
75	33	-1	0	-0
	34	-1	0	0
76	34	1	0	-0
	37	1	0	0
77	36	0	0	-0
	39	0	0	0
78	38	1	0	-0
	42	1	0	0
79	42	-1	0	-0
	43	-1	0	0
80	44	-0	0	-0
	45	-0	0	0
81	46	-1	0	-0
	47	-1	0	0
82	47	1	0	-0
	50	1	0	0
83	49	0	0	-0
	52	0	0	0
84	51	1	0	-0
	55	1	0	0
85	55	-1	0	-0
	56	-1	0	0
86	57	-0	0	-0
	58	-0	0	0
87	59	-1	0	-0
	60	-1	0	0
88	60	1	0	-0
	63	1	0	0
89	62	0	0	-0
	65	0	0	0
90	64	1	0	-0
	68	1	0	0
91	1	1	-14	-296
	2	1	-14	-368
92	2	1	368	-368
	3	1	368	0
93	14	0	-81	-161
	15	0	-81	-565
94	15	0	565	-565
	16	0	565	0
95	27	3619	-245	168
	28	3619	-245	-1058
96	28	0	1058	-1058
	29	0	1058	1
97	40	-3619	-245	168
	41	-3619	-245	-1058
98	41	-0	1058	-1058
	42	-0	1058	1
99	53	-0	-81	-161
	54	-0	-81	-565
100	54	-0	565	-565
	55	-0	565	0
101	66	-1	-14	-296
	67	-1	-14	-368
102	67	-1	368	-368
	68	-1	368	0
103	27	5653	0	0
	41	5653	0	0

MIEMBRO	NUDO	Axial F.	Cort F.	Momento
	104	28	-5653	0
		40	-5653	0

REACCIONES

NUDOS #	Horiz F.	Vert F.	Momento
1	-14	-1	-296
14	-81	-0	-161
27	4098	-7238	168
40	4098	7238	168
53	-81	0	-161
66	-14	1	-296
68	0	0	0

ENVOLVENTES

ENVOLVENTES VIGAS DE ARRIOSTRAMIENTO

```

=====
MIEMBRO #: 1SECCION :NO RECTANGULAR LONG : 1.00
=====
Nudo 2  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo 4
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      0      Min      -1050      Min      -1050      Max      0
=====
MIEMBRO #: 2SECCION :NO RECTANGULAR LONG : 1.00
=====
Nudo 4  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo 6
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      0      Min      -1050      Min      -1050      Max      0
=====
MIEMBRO #: 3SECCION :NO RECTANGULAR LONG : 1.00
=====
Nudo 6  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo 8
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      0      Min      -1051      Min      -1051      Max      0
=====
MIEMBRO #: 4SECCION :NO RECTANGULAR LONG : 1.00
=====
Nudo 8  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo10
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      0      Min      -1052      Min      -1052      Max      0
=====
MIEMBRO #: 5SECCION :NO RECTANGULAR LONG : 1.00
=====
Nudo10  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo12
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      0      Min      -1053      Min      -1053      Max      0
=====
MIEMBRO #: 6SECCION :NO RECTANGULAR LONG : 1.00
=====
Nudo12  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo15
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      0      Min      -1053      Min      -1053      Max      0
=====
MIEMBRO #: 7SECCION :NO RECTANGULAR LONG : 1.00
=====
Nudo15  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo17
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      0      Min      -2366      Min      -2366      Max      0
=====

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=====
MIEMBRO #: 8SECCION :NO RECTANGULAR LONG : 1.00
Nudo17  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo19
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      0  Min    -2367      Min    -2367  Max      0
=====
MIEMBRO #: 9SECCION :NO RECTANGULAR LONG : 1.00
Nudo19  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo21
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      0  Min    -2367      Min    -2367  Max      0
=====
MIEMBRO #: 10          SECCION :NO RECTANGULAR LONG : 1.00
Nudo21  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo23
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      0  Min    -2369      Min    -2369  Max      0
=====
MIEMBRO #: 11          SECCION :NO RECTANGULAR LONG : 1.00
Nudo23  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo25
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      0  Min    -2370      Min    -2370  Max      0
=====
MIEMBRO #: 12          SECCION :NO RECTANGULAR LONG : 1.00
Nudo25  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo28
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      0  Min    -2370      Min    -2370  Max      0
=====
MIEMBRO #: 13          SECCION :NO RECTANGULAR LONG : 1.00
Nudo28  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo30
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      2  Min      0      Min      0  Max      2
=====
MIEMBRO #: 14          SECCION :NO RECTANGULAR LONG : 1.00
Nudo30  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo32
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      2  Min      0      Min      0  Max      2
=====
MIEMBRO #: 15          SECCION :NO RECTANGULAR LONG : 1.00
Nudo32  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo34
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      1  Min      0      Min      0  Max      1
=====
MIEMBRO #: 16          SECCION :NO RECTANGULAR LONG : 1.00
Nudo34  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo36
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      0  Min     -1      Min     -1  Max      0
=====
MIEMBRO #: 17          SECCION :NO RECTANGULAR LONG : 1.00
Nudo36  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo38
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      0  Min     -2      Min     -2  Max      0
=====

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MIEMBRO #: 18          SECCION :NO RECTANGULAR LONG : 1.00
Nudo38  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo41
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      0    Min      -2      Min      -2    Max      0
=====
MIEMBRO #: 19          SECCION :NO RECTANGULAR LONG : 1.00
Nudo41  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo43
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max     2370  Min      0      Min      0    Max     2370
=====
MIEMBRO #: 20          SECCION :NO RECTANGULAR LONG : 1.00
Nudo43  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo45
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max     2370  Min      0      Min      0    Max     2370
=====
MIEMBRO #: 21          SECCION :NO RECTANGULAR LONG : 1.00
Nudo45  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo47
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max     2369  Min      0      Min      0    Max     2369
=====
MIEMBRO #: 22          SECCION :NO RECTANGULAR LONG : 1.00
Nudo47  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo49
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max     2367  Min      0      Min      0    Max     2367
=====
MIEMBRO #: 23          SECCION :NO RECTANGULAR LONG : 1.00
Nudo49  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo51
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max     2367  Min      0      Min      0    Max     2367
=====
MIEMBRO #: 24          SECCION :NO RECTANGULAR LONG : 1.00
Nudo51  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo54
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max     2366  Min      0      Min      0    Max     2366
=====
MIEMBRO #: 25          SECCION :NO RECTANGULAR LONG : 1.00
Nudo54  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo56
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max     1053  Min      0      Min      0    Max     1053
=====
MIEMBRO #: 26          SECCION :NO RECTANGULAR LONG : 1.00
Nudo56  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo58
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max     1053  Min      0      Min      0    Max     1053
=====
MIEMBRO #: 27          SECCION :NO RECTANGULAR LONG : 1.00
Nudo58  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo60
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max     1052  Min      0      Min      0    Max     1052
=====

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MIEMBRO #: 28          SECCION :NO RECTANGULAR LONG : 1.00
Nudo60  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo62
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    1051  Min    0          Min    0          Max    1051
=====
MIEMBRO #: 29          SECCION :NO RECTANGULAR LONG : 1.00
Nudo62  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo64
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    1050  Min    0          Min    0          Max    1050
=====
MIEMBRO #: 30          SECCION :NO RECTANGULAR LONG : 1.00
Nudo64  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo67
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    1050  Min    0          Min    0          Max    1050
=====
MIEMBRO #: 31          SECCION :NO RECTANGULAR LONG : 1.00
Nudo 3   Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo 5
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    0      Min   -298          Min   -298          Max    0
=====
MIEMBRO #: 32          SECCION :NO RECTANGULAR LONG : 1.00
Nudo 5   Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo 7
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    0      Min   -298          Min   -298          Max    0
=====
MIEMBRO #: 33          SECCION :NO RECTANGULAR LONG : 1.00
Nudo 7   Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo 9
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    0      Min   -297          Min   -297          Max    0
=====
MIEMBRO #: 34          SECCION :NO RECTANGULAR LONG : 1.00
Nudo 9   Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo11
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    0      Min   -297          Min   -297          Max    0
=====
MIEMBRO #: 35          SECCION :NO RECTANGULAR LONG : 1.00
Nudo11  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo13
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    0      Min   -296          Min   -296          Max    0
=====
MIEMBRO #: 36          SECCION :NO RECTANGULAR LONG : 1.00
Nudo13  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo16
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    0      Min   -296          Min   -296          Max    0
=====
MIEMBRO #: 37          SECCION :NO RECTANGULAR LONG : 1.00
Nudo16  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo18
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    0      Min   -397          Min   -397          Max    0
=====

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MIEMBRO #: 38          SECCION :NO RECTANGULAR LONG : 1.00
Nudo18  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo20
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      0  Min      -396      Min      -396  Max      0
=====
MIEMBRO #: 39          SECCION :NO RECTANGULAR LONG : 1.00
Nudo20  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo22
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      0  Min      -395      Min      -395  Max      0
=====
MIEMBRO #: 40          SECCION :NO RECTANGULAR LONG : 1.00
Nudo22  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo24
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      0  Min      -395      Min      -395  Max      0
=====
MIEMBRO #: 41          SECCION :NO RECTANGULAR LONG : 1.00
Nudo24  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo26
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      0  Min      -394      Min      -394  Max      0
=====
MIEMBRO #: 42          SECCION :NO RECTANGULAR LONG : 1.00
Nudo26  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo29
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      0  Min      -394      Min      -394  Max      0
=====
MIEMBRO #: 43          SECCION :NO RECTANGULAR LONG : 1.00
Nudo29  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo31
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      0  Min      -2      Min      -2  Max      0
=====
MIEMBRO #: 44          SECCION :NO RECTANGULAR LONG : 1.00
Nudo31  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo33
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      0  Min      -1      Min      -1  Max      0
=====
MIEMBRO #: 45          SECCION :NO RECTANGULAR LONG : 1.00
Nudo33  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo35
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      0  Min      0      Min      0  Max      0
=====
MIEMBRO #: 46          SECCION :NO RECTANGULAR LONG : 1.00
Nudo35  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo37
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      0  Min      0      Min      0  Max      0
=====
MIEMBRO #: 47          SECCION :NO RECTANGULAR LONG : 1.00
Nudo37  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo39
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      1  Min      0      Min      0  Max      1
=====

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MIEMBRO #: 48          SECCION :NO RECTANGULAR LONG : 1.00
Nudo39  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo42
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    1    Min    0          Min    0    Max    1
=====
MIEMBRO #: 49          SECCION :NO RECTANGULAR LONG : 1.00
Nudo42  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo44
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    394  Min    0          Min    0    Max    394
=====
MIEMBRO #: 50          SECCION :NO RECTANGULAR LONG : 1.00
Nudo44  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo46
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    395  Min    0          Min    0    Max    395
=====
MIEMBRO #: 51          SECCION :NO RECTANGULAR LONG : 1.00
Nudo46  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo48
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    395  Min    0          Min    0    Max    395
=====
MIEMBRO #: 52          SECCION :NO RECTANGULAR LONG : 1.00
Nudo48  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo50
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    395  Min    0          Min    0    Max    395
=====
MIEMBRO #: 53          SECCION :NO RECTANGULAR LONG : 1.00
Nudo50  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo52
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    396  Min    0          Min    0    Max    396
=====
MIEMBRO #: 54          SECCION :NO RECTANGULAR LONG : 1.00
Nudo52  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo55
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    397  Min    0          Min    0    Max    397
=====
MIEMBRO #: 55          SECCION :NO RECTANGULAR LONG : 1.00
Nudo55  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo57
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    296  Min    0          Min    0    Max    296
=====
MIEMBRO #: 56          SECCION :NO RECTANGULAR LONG : 1.00
Nudo57  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo59
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    296  Min    0          Min    0    Max    296
=====
MIEMBRO #: 57          SECCION :NO RECTANGULAR LONG : 1.00
Nudo59  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo61
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    297  Min    0          Min    0    Max    297
=====

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MIEMBRO #: 58          SECCION :NO RECTANGULAR LONG : 1.00
Nudo61  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo63
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    297  Min    0          Min    0      Max    297
=====
MIEMBRO #: 59          SECCION :NO RECTANGULAR LONG : 1.00
Nudo63  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo65
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    298  Min    0          Min    0      Max    298
=====
MIEMBRO #: 60          SECCION :NO RECTANGULAR LONG : 1.00
Nudo65  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo68
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    298  Min    0          Min    0      Max    298
=====
MIEMBRO #: 61          SECCION :NO RECTANGULAR LONG : 1.41
Nudo 3  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo 4
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    0    Min   -1          Min   -1      Max    0
=====
MIEMBRO #: 62          SECCION :NO RECTANGULAR LONG : 1.41
Nudo 5  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo 6
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    0    Min   -0          Min   -0      Max    0
=====
MIEMBRO #: 63          SECCION :NO RECTANGULAR LONG : 1.41
Nudo 7  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo 8
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    0    Min   -1          Min   -1      Max    0
=====
MIEMBRO #: 64          SECCION :NO RECTANGULAR LONG : 1.41
Nudo 8  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo11
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    1    Min    0          Min    0      Max    1
=====
MIEMBRO #: 65          SECCION :NO RECTANGULAR LONG : 1.41
Nudo10  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo13
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    0    Min    0          Min    0      Max    0
=====
MIEMBRO #: 66          SECCION :NO RECTANGULAR LONG : 1.41
Nudo12  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo16
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    1    Min    0          Min    0      Max    1
=====
MIEMBRO #: 67          SECCION :NO RECTANGULAR LONG : 1.41
Nudo16  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo17
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    0    Min   -1          Min   -1      Max    0
=====

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MIEMBRO #: 68          SECCION :NO RECTANGULAR LONG : 1.41
Nudo18  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo19
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      0  Min      -0      Min      -0  Max      0
=====
MIEMBRO #: 69          SECCION :NO RECTANGULAR LONG : 1.41
Nudo20  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo21
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      0  Min      -1      Min      -1  Max      0
=====
MIEMBRO #: 70          SECCION :NO RECTANGULAR LONG : 1.41
Nudo21  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo24
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      1  Min      0      Min      0  Max      1
=====
MIEMBRO #: 71          SECCION :NO RECTANGULAR LONG : 1.41
Nudo23  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo26
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      0  Min      0      Min      0  Max      0
=====
MIEMBRO #: 72          SECCION :NO RECTANGULAR LONG : 1.41
Nudo25  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo29
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      1  Min      0      Min      0  Max      1
=====
MIEMBRO #: 73          SECCION :NO RECTANGULAR LONG : 1.41
Nudo29  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo30
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      0  Min      -1     Min      -1  Max      0
=====
MIEMBRO #: 74          SECCION :NO RECTANGULAR LONG : 1.41
Nudo31  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo32
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      0  Min      -0     Min      -0  Max      0
=====
MIEMBRO #: 75          SECCION :NO RECTANGULAR LONG : 1.41
Nudo33  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo34
=====  =====  =====  =====  =====  =====  =====  =====  =====
=====
MIEMBRO #: 76          SECCION :NO RECTANGULAR LONG : 1.41
Nudo34  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo37
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      1  Min      0      Min      0  Max      1
=====
MIEMBRO #: 77          SECCION :NO RECTANGULAR LONG : 1.41
Nudo36  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo39
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      0  Min      0      Min      0  Max      0
=====
=====

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MIEMBRO #: 78          SECCION :NO RECTANGULAR LONG : 1.41
Nudo38  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo42
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      1  Min      0      Min      0  Max      1
=====
MIEMBRO #: 79          SECCION :NO RECTANGULAR LONG : 1.41
Nudo42  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo43
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      0  Min     -1      Min     -1  Max      0
=====
MIEMBRO #: 80          SECCION :NO RECTANGULAR LONG : 1.41
Nudo44  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo45
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      0  Min     -0      Min     -0  Max      0
=====
MIEMBRO #: 81          SECCION :NO RECTANGULAR LONG : 1.41
Nudo46  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo47
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      0  Min     -1      Min     -1  Max      0
=====
MIEMBRO #: 82          SECCION :NO RECTANGULAR LONG : 1.41
Nudo47  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo50
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      1  Min      0      Min      0  Max      1
=====
MIEMBRO #: 83          SECCION :NO RECTANGULAR LONG : 1.41
Nudo49  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo52
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      0  Min      0      Min      0  Max      0
=====
MIEMBRO #: 84          SECCION :NO RECTANGULAR LONG : 1.41
Nudo51  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo55
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      1  Min      0      Min      0  Max      1
=====
MIEMBRO #: 85          SECCION :NO RECTANGULAR LONG : 1.41
Nudo55  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo56
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      0  Min     -1      Min     -1  Max      0
=====
MIEMBRO #: 86          SECCION :NO RECTANGULAR LONG : 1.41
Nudo57  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo58
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      0  Min     -0      Min     -0  Max      0
=====
MIEMBRO #: 87          SECCION :NO RECTANGULAR LONG : 1.41
Nudo59  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo60
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      0  Min     -1      Min     -1  Max      0
=====

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MIEMBRO #: 88 SECCION :NO RECTANGULAR LONG : 1.41									
Nudo60	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	Nudo63	
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
Fu	Max	1	Min	0		Min	0	Max	1
=====									
MIEMBRO #: 89 SECCION :NO RECTANGULAR LONG : 1.41									
Nudo62	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	Nudo65	
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
Fu	Max	0	Min	0		Min	0	Max	0
=====									
MIEMBRO #: 90 SECCION :NO RECTANGULAR LONG : 1.41									
Nudo64	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	Nudo68	
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
Fu	Max	1	Min	0		Min	0	Max	1
=====									

ENVOLVENTE COLUMNAS

=====									
MIEMBRO #: 91 SECCION :NO RECTANGULAR LONG : 5.00									
Nudo 1	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	Nudo 2	
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
Fu	Max	1	Min	0		Min	0	Max	1
Mu-	296	305	314	323	332	341	350	359	368
Mu+	0	0	0	0	0	0	0	0	0
Vu	14	14	14	14	14	14	14	14	14
=====									
MIEMBRO #: 92 SECCION :NO RECTANGULAR LONG : 1.00									
Nudo 2	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	Nudo 3	
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
Fu	Max	1	Min	0		Min	0	Max	1
Mu-	368	322	276	230	184	138	92	46	0
Mu+	0	0	0	0	0	0	0	0	0
Vu	368	368	368	368	368	368	368	368	368
=====									
MIEMBRO #: 93 SECCION :NO RECTANGULAR LONG : 5.00									
Nudo14	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	Nudo15	
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
Fu	Max	0	Min	0		Min	0	Max	0
Mu-	161	211	262	312	363	413	464	514	565
Mu+	0	0	0	0	0	0	0	0	0
Vu	81	81	81	81	81	81	81	81	81
=====									
MIEMBRO #: 94 SECCION :NO RECTANGULAR LONG : 1.00									
Nudo15	Sec.1	Sec.2	Sec.3	Sec.4	Sec.5	Sec.6	Sec.7	Nudo16	
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
Fu	Max	0	Min	0		Min	0	Max	0
Mu-	565	494	423	353	282	211	141	70	0
Mu+	0	0	0	0	0	0	0	0	0
Vu	565	565	565	565	565	565	565	565	565
=====									

```

=====
MIEMBRO #: 95          SECCION :NO RECTANGULAR LONG : 5.00

Nudo27  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo28
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    3619  Min    0      Min    0      Max    3619
Mu-     0      0      138    291    445    598    751    904    1058
Mu+     168    15     0      0      0      0      0      0      0
Vu      245    245    245    245    245    245    245    245    245
=====

```

```

=====
MIEMBRO #: 96          SECCION :NO RECTANGULAR LONG : 1.00

Nudo28  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo29
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    0      Min    0      Min    0      Max    0
Mu-     1058   925    793    661    529    396    264    132    0
Mu+     0      0      0      0      0      0      0      0      1
Vu      1058   1058   1058   1058   1058   1058   1058   1058   1058
=====

```

```

=====
MIEMBRO #: 97          SECCION :NO RECTANGULAR LONG : 5.00

Nudo40  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo41
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    0      Min   -3619  Min   -3619  Max    0
Mu-     0      0      138    291    445    598    751    904    1058
Mu+     168    15     0      0      0      0      0      0      0
Vu      245    245    245    245    245    245    245    245    245
=====

```

```

=====
MIEMBRO #: 98          SECCION :NO RECTANGULAR LONG : 1.00

Nudo41  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo42
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    0      Min    -0     Min    -0     Max    0
Mu-     1058   925    793    661    529    396    264    132    0
Mu+     0      0      0      0      0      0      0      0      1
Vu      1058   1058   1058   1058   1058   1058   1058   1058   1058
=====

```

```

=====
MIEMBRO #: 99          SECCION :NO RECTANGULAR LONG : 5.00

Nudo53  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo54
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    0      Min    -0     Min    -0     Max    0
Mu-     161    211    262    312    363    413    464    514    565
Mu+     0      0      0      0      0      0      0      0      0
Vu      81     81     81     81     81     81     81     81     81
=====

```

```

=====
MIEMBRO #:100         SECCION :NO RECTANGULAR LONG : 1.00

Nudo54  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo55
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    0      Min    -0     Min    -0     Max    0
Mu-     565    494    423    353    282    211    141    70     0
Mu+     0      0      0      0      0      0      0      0      0
Vu      565    565    565    565    565    565    565    565    565
=====

```

```

=====
MIEMBRO #:101         SECCION :NO RECTANGULAR LONG : 5.00

Nudo66  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo67
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max    0      Min    -1     Min    -1     Max    0
Mu-     296    305    314    323    332    341    350    359    368
Mu+     0      0      0      0      0      0      0      0      0
Vu      14     14     14     14     14     14     14     14     14
=====

```

```

=====
MIEMBRO #:102          SECCION :NO RECTANGULAR LONG : 1.00
Nudo67  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo68
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      0      Min      -1      Min      -1      Max      0
Mu-     368     322     276     230     184     138     92     46     0
Mu+     0       0       0       0       0       0       0       0       0
Vu      368     368     368     368     368     368     368     368     368
=====

```

ENVOLVENTES DIAGONALES

```

=====
MIEMBRO #:103          SECCION :NO RECTANGULAR LONG : 7.81
Nudo 27  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo 41
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      5653   Min      0      Min      0      Max      5653
=====

```

```

=====
MIEMBRO #:104          SECCION :NO RECTANGULAR LONG : 7.81
Nudo 28  Sec.1  Sec.2  Sec.3  Sec.4  Sec.5  Sec.6  Sec.7  Nudo 40
=====  =====  =====  =====  =====  =====  =====  =====  =====
Fu      Max      0      Min     -5653   Min     -5653   Max      0
=====

```

ANALISIS DE LOS ELEMENTOS DE LA CUBIERTA

A continuación se resumen los valores discriminando la clase de elemento (Cordón exterior, Cordón interior, Parales y Diagonales)

- CORDON EXTERIOR

ELEM	FUERZA (Kg)	LONGITUD (mts)
1	-15271	1
2	-8687	1
3	-3302	1
4	2233	1
5	4913	1
6	8263	1
7	5331	0.77
8	6141	1.11
9	6346	0.86
10	6499	1.19
11	-4882	1.19
12	-7100	1.19
13	-8507	1.19
14	-9104	1.19
15	-8890	1.19
16	-8734	1.24

ELEM	FUERZA (Kg)	LONGITUD (mts)
17	-8736	1.24
18	-8892	1.19
19	-9102	1.19
20	-8500	1.19
21	-7088	1.19
22	-4865	1.19
23	6459	1.24
24	6271	0.81
25	6140	1.11
26	5329	0.77
27	8278	1
28	4931	1
29	2225	1
30	-3277	1
31	-8687	1
32	-15237	1

LONGITUD DEL CORDON EXTERIOR: 34.24 mts

- CORDON INTERIOR

ELEM	FUERZA	LONGITUD
	(Kg)	(mts)
33	-3942	1
34	-6151	1
35	-8225	1
36	-11701	1
37	-15049	1
38	-5365	1
39	-3088	1.16
40	-6036	1.19
41	-6036	1.19
42	-2516	1.19
43	3892	1.19
44	5454	1.19
45	6206	1.19
46	4056	0.98
47	4056	0.98

ELEM	FUERZA	LONGITUD
	(Kg)	(mts)
48	6202	1.19
49	5445	1.19
50	3878	1.19
51	-2534	1.19
52	-6074	1.19
53	-6074	1.19
54	-3071	1.16
55	-5351	1
56	-15068	1
57	-11723	1
58	-8221	1
59	-6150	1
60	-3979	1
61	-9135	1.76
62	-9135	1.76

LONGITUD CORDON INTERIOR: 34.08 mts

- PARALES

ELEM	FUERZA	LONGITUD
	(Kg)	(mts)
63	0	0.6
64	-3950	0.67
65	-3608	0.73
66	-3261	0.8
67	-2998	0.87
68	-2914	0.93
69	2727	1
70	-1485	1.06
71	-728	1
72	0	1
73	-3295	1
74	-2612	1
75	-1928	1
76	-1244	1
77	-660	1

ELEM	FUERZA	LONGITUD
	(Kg)	(mts)
78	0	1.3
79	-660	1
80	-1249	1
81	-1932	1
82	-2616	1
83	-3300	1
84	0	1
85	-898	1.02
86	-1487	1.06
87	2742	1
88	-2912	0.93
89	-2996	0.87
90	-3258	0.8
91	-3570	0.73
92	3930	0.66
93	0	0.6

LONGITUD DE PARALES: 28.63 mts

- DIAGONALES

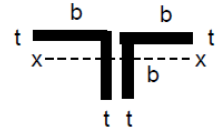
ELEM	FUERZA	LONGITUD
	(Kg)	(mts)
94	7678	1.17
95	6482	1.2
96	5530	1.24
97	4800	1.28
98	4440	1.32
99	-4004	1.37
100	-6769	1.26
101	980	1.29
102	-6300	1.59
103	5044	1.53
104	3965	1.53
105	2927	1.53
106	1889	1.53
107	851	1.53
108	2871	1.63

ELEM	FUERZA	LONGITUD
	(Kg)	(mts)
109	2866	1.63
110	858	1.53
111	1896	1.53
112	2934	1.53
113	3972	1.53
114	5010	1.53
115	-6200	1.59
116	1023	1.29
117	-6767	1.26
118	-4026	1.37
119	4436	1.33
120	4796	1.28
121	5526	1.24
122	6482	1.2
123	7638	1.17

LONGITUD DE DIAGONALES: 42.01 mts

**CARGAS ADMISIBLES EN COMPRESION (TONELADAS)
PERFILES ANGULARES DOBLES**

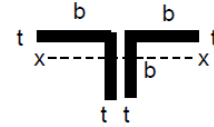
Fy = 2500 Kg/cm² Cc = 126



b (plg)	3/4 x 3/4	1 x 1		1 1/4 x 1 1/4			1 1/2 x 1 1/2		
t (plg)	1/8	1/8	3/16	1/8	3/16	1/4	1/8	3/16	1/4
W (kg/m)	1.74	2.38	3.44	3.00	4.40	5.70	3.66	5.34	6.96
A (cm ²)	2.22	3.03	4.38	3.82	5.61	7.26	4.66	6.80	8.87
Rx (cm)	0.57	0.77	0.75	0.98	0.96	0.94	1.18	1.16	1.14
KL (cm)	C. ADMS	CARGA ADMISIBLE		CARGA ADMISIBLE			CARGA ADMISIBLE		
0	3.33	4.55	6.57	5.73	8.42	10.89	6.99	10.20	13.31
10	3.20	4.42	6.38	5.61	8.23	10.65	6.87	10.02	13.07
20	3.02	4.25	6.14	5.46	8.00	10.34	6.72	9.80	12.78
30	2.79	4.05	5.84	5.28	7.73	9.98	6.55	9.55	12.44
40	2.53	3.82	5.49	5.07	7.42	9.56	6.36	9.26	12.05
50	2.23	3.56	5.11	4.84	7.07	9.09	6.15	8.94	11.62
60	1.89	3.28	4.68	4.58	6.68	8.58	5.91	8.59	11.15
70	1.51	2.96	4.21	4.31	6.27	8.02	5.66	8.21	10.64
80	1.16	2.62	3.69	4.01	5.82	10.26	5.38	7.80	10.09
90	0.92	2.25	3.14	3.69	5.33	8.10	5.09	7.37	9.51
100	0.74	1.86	2.56	3.35	4.82	6.56	4.79	6.91	8.89
110	0.61	1.54	2.12	2.99	4.27	5.43	4.46	6.42	8.24
120		1.29	1.78	2.61	3.68	4.56	4.12	5.90	7.55
130		1.10	1.52	2.23	3.14	3.88	3.76	5.36	6.82
140		0.95	1.31	1.92	2.71	3.35	3.38	4.79	6.05
150		0.83	1.14	1.67	2.36	2.92	2.98	4.20	5.28
160				1.47	2.07	2.56	2.61	3.69	4.64
170				1.30	1.83	2.27	2.32	3.27	4.11
180				1.16	1.64	2.03	2.07	2.91	3.66
190				1.04	1.47	1.82	1.85	2.61	3.29
200							1.67	2.36	2.97
210							1.52	2.14	2.69
220							1.38	1.95	2.45
230							1.27	1.78	2.24

CARGAS ADMISIBLES EN COMPRESION (TONELADAS)
PERFILES ANGULARES DOBLES

Fy = 2500 Kg/cm² Cc = 126



b (plg)	2 x 2			2 1/2 x 2 1/2			3 x 3		
t (plg)	1/8	3/16	1/4	3/16	1/4	5/16	1/4	5/16	3/8
W (kg/m)	4.90	7.24	9.48	9.12	12.18	14.86	14.56	18.12	21.38
A (cm ²)	6.24	9.22	12.08	11.62	15.52	18.93	18.55	23.08	27.24
Rx (cm)	1.59	1.57	1.55	1.98	1.95	1.93	2.36	2.34	2.32
KL (cm)	CARGA ADMISIBLE			CARGA ADMISIBLE			CARGA ADMISIBLE		
0	9.36	13.83	18.12	17.43	23.28	28.40	27.83	34.62	40.86
10	9.24	13.66	17.89	17.26	23.05	28.11	27.60	34.34	40.52
20	9.11	13.45	17.62	17.06	22.79	27.79	27.35	34.02	40.14
30	8.95	13.22	17.31	16.85	22.49	27.42	27.07	33.67	39.73
40	8.78	12.96	16.96	16.61	22.17	27.02	26.77	33.29	39.27
50	8.59	12.68	16.58	16.35	21.81	26.58	26.44	32.88	38.78
60	8.39	12.37	16.17	16.06	21.43	26.11	26.09	32.43	38.25
70	8.17	12.03	15.73	15.76	21.02	25.60	25.71	31.96	37.68
80	7.93	11.68	15.25	15.44	20.59	25.06	25.32	31.46	37.09
90	7.68	11.30	14.75	15.11	20.13	24.50	24.90	30.94	36.46
100	7.42	10.91	14.22	14.75	19.65	23.90	24.46	30.39	35.80
110	7.15	10.49	13.67	14.38	19.14	23.27	24.00	29.81	35.11
120	6.86	10.05	13.08	13.99	18.61	22.62	23.53	29.21	34.39
130	6.55	9.60	12.47	13.59	18.06	21.94	23.03	28.59	33.64
140	6.24	9.12	11.84	13.17	17.49	21.23	22.52	27.94	32.87
150	5.91	8.63	11.17	12.73	16.90	20.50	21.98	27.27	32.06
160	5.57	8.11	10.48	12.28	16.28	19.73	21.43	26.57	31.23
170	5.21	7.57	9.76	11.81	15.65	18.95	20.87	25.86	30.37
180	4.85	7.01	9.01	11.33	14.99	18.13	20.28	25.12	29.49
190	4.46	6.43	8.23	10.83	14.31	17.29	19.68	24.36	28.58
200	4.06	5.83	7.44	10.31	13.61	16.42	19.06	23.58	27.64
210	3.68	5.29	6.75	9.78	12.88	15.52	18.42	22.77	26.67
220	3.36	4.82	6.15	9.23	12.13	14.59	17.76	21.94	25.68
230	3.07	4.41	5.63	8.66	11.36	13.63	17.09	21.09	24.66
240	2.82	4.05	5.17	8.08	10.57	12.64	16.40	20.22	23.62
250	2.60	3.73	4.76	7.48	9.75	11.66	15.69	19.32	22.54
260	2.40	3.45	4.40	6.91	9.02	10.78	14.96	18.40	21.44
270	2.23	3.20	4.08	6.41	8.36	9.99	14.21	17.46	20.30
280	2.07	2.97	3.80	5.96	7.78	9.29	13.44	16.49	19.14
290	1.93	2.77	3.54	5.56	7.25	8.66	12.65	15.49	17.94
300	1.81	2.59	3.31	5.19	6.77	8.09	11.84	14.49	16.76
310	1.69	2.43		4.86	6.34	7.58	11.09	13.57	15.70
320				4.56	5.95	7.11	10.41	12.73	14.73
330				4.29	5.60	6.69	9.79	11.97	13.85
340				4.04	5.27	6.30	9.22	11.28	13.05
350				3.81	4.98	5.95	8.70	10.64	12.32
360				3.61	4.70	5.62	8.22	10.06	11.64
370				3.41	4.45	5.32	7.79	9.52	11.02
380				3.24	4.22	5.04	7.38	9.03	10.45
390				3.07	4.01	4.79	7.01	8.57	9.92
400							6.66	8.15	9.43
410							6.34	7.76	8.97
420							6.04	7.39	8.55
430							5.76	7.05	8.16
440							5.51	6.73	7.79
450							5.26	6.44	7.45

DISEÑO DE LOS ELEMENTOS DE LA CERCHA

- **CORDONES EXTERIOR E INTERIOR:**

Se escogela sección de 2(2 1/2" x 1/4"). La capacidad resistente es de 19650 kg (19.65 Ton).

- **PARALES:**

Se escoge la sección de 2(1 1/4" x 1/8"). La capacidad resistente es de 3350 kg (3.35 Ton).

- **DIAGONALES:**

Se escoge la sección de 2(2" x 3/16"). La capacidad resistente es de 8110 kg (8.11 Ton).

DISEÑO DE LOS ELEMENTOS DE LA VIGA DE ARRIOSTRAMIENTO

- **ELEMENTOS DE LA VIGA DE ARRIOSTRAMIENTO:**

CORDONES EXTERIOR E INTERIOR:

Se escoge la sección de 2(2" x 3/16"). La capacidad resistente es de 10910 kg (10.91 Ton).

PARALES Y DIAGONALES:

Se escoge la sección de 2(1" x 3/16"). La capacidad resistente es de 4421 kg (4.21 Ton).

- **ARRIOSTRAMIENTOS CONCENTRICOS:**

Se escoge un perfil tubular rectangular de sección 100x100x3.8, medidas dadas en milímetros. La capacidad resistente es de 5714 kg (5.71 Ton).

DISEÑO DE LA CORREA

Se utilizó el programa de ACESCO denominado ARQUIMET. La sección del perlin escogido es PHR C 254 x 67 x 18, de espesor 1.5 mm y resistencia la fluencia 3500 kg/cm².

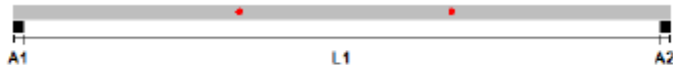
<h1>Memorias de Cálculo</h1>	PROGRAMA DE DISEÑO Y CALCULO ESTRUCTURAL ARQUIMET 2.0	
	Proyecto: _____	Fecha: _____
	Ingeniero: _____	Firma: _____

Elementos calculados con el programa de diseño Arquimet 2.0 de ACESCO

REPORTE DE CORREAS

PHR C con atiesador 254 x 67 x 18 (1.50 mm)
con $F_y = 35.15 \text{ Kg/mm}^2$ cada 1.15 m con arriostamiento cada $L/3$.


SECCION LONGITUDINAL



L1	6.00 m
A1	0.10 m
A2	0.10 m

CONFIGURACION	
TIPO DE CARGA	DISTRIBUIDA
Carga muerta	7.00 Kg/m ²
Peso propio correa	4.78 Kg/m
Carga viva	36.00 Kg/m ²
Carga granizo	60.00 Kg/m ²
Viento compresión (Perpendicular)	0.00 Kg/m ²
Viento succión (Perpendicular)	40.00 Kg/m ²
Pendiente sección transversal	15.1° = 26.9820%

SECCION TRANSVERSAL



L = 1.15 m

NORMA: AISI S100-07. Pág. 1

DISEÑO DE LA CIMENTACION

Reacciones en los apoyos:

CARGA	R1 (kg)	R2 (kg)
D	3659	-1410
L	3659	-1410
W	-4245	1635
E	-9275	8532
G	5269	-2030

COMBINACION	R1 (kg)	R2 (kg)	N (kg)	M (kg-m)	e = M/N (m)
D	3659	-1410	2249	1521	0.68
D+L	7318	-2820	4498	3041	0.68
D+G	8928	-3440	5488	3710	0.68
D+0.75L+0.75G	10355	-3990	6365	4304	0.68
D+W	-586	225	-361	-243	0.67
D+0.7E	-2834	4562	1729	-2219	1.28
D-0.7E	10152	-7382	2769	5260	1.90
D+0.75W+0.75L	3220	-1241	1978	1338	0.68
D+0.75W+0.75L+0.75G	7171	-2764	4408	2981	0.68
D+0.53E+0.75L+0.75G	5439	532	5971	1472	0.25
D-0.53E+0.75L+0.75G	15271	-8512	6759	7135	1.06
0.6D+W	-2050	789	-1261	-852	0.68
0.6D+0.7E	-4297	5126	829	-2827	3.41

Debido a la gran excentricidad en todos los casos se utilizarán cajones prismáticos de sección cuadrada.

Ancho del cajón: B = 1.50 m

Coefficiente de Empuje pasivo: $K_p = 3$

$g = 1800 \text{ kg/m}^3$

$$H \text{ min} = [6M / (gKp B)]^{(1/3)}$$

$$H \text{ min} = [6 \cdot 7135 / (1800 \cdot 3 \cdot 1.5)]^{(1/3)}$$

$$H \text{ min} = 1.74 \text{ m}$$

Se toma una profundidad de 1.80 m

$$\text{Peso del cajón: } 2300 \cdot 1.8 \cdot 1.5 \cdot 1.5 = 9315 \text{ kg}$$

$$\text{Reacción de la estructura: } 6759 \text{ kg}$$

$$\text{Peso Total: } 16704 \text{ kg}$$

$$\text{Presión en el suelo. } 16704 / (150)^2 = 0.70 \text{ kg/cm}^2$$

5. PLANOS

En este documento se presentaran los planos estructurales de la gradería, cubierta y del sistema de cerchas a utilizar en la cancha múltiple bajo los requerimientos de la NSR-10, cuyos planos constan de:

- Planta de distribución.
- Planta de cimentación
- Detalles de la cimentación.
- Planta de vigas
- Detalles de vigas
- Planta de cubierta
- Detalles de la cubierta.
- Fachada principal
- Fachadas laterales

6. CANTIDADES DE OBRA

6.1 CANTIDADES DE ACERO MARCOS

Elemento	Cantidad m	Peso/metro Kg/m	P total kg	# marco	P total kg
Cordón exterior	34.24	12.18	417	6	2502
Cordón interior	34.08	12.18	415	6	2490
Parales	28.63	3.00	85	6	510
Diagonales	42.01	7.24	304	6	1824

6.2 CANTIDADES DE ACERO ARRIOSTRAMIENTOS

Elemento	Cantidad m	Peso/metro Kg/m	P total kg	# marco	P total kg
Cordón exterior	30.00	7.24	217	2	434
Cordón interior	30.00	7.24	217	2	434
Celosía	67.30	3.44	232	2	464
Arriostramientos	15.62	11.26	176	2	352

6.3 CANTIDADES ACERO PEDESTAL

Item	Long. m	# barras	Peso/mkg/m	Peso kg	# pedest	P total kg
Barra #6	1.7	10	2.24 kg	38	12	456
Barra #3	0.265	6	0.56kg	0.89	12	10.68

6.4 CANTIDADES ACERO VIGA DE AMARRE

Item	Long. m	# barras	Peso/m kg/m	Peso kg	# mt viga	P total kg
Barra #5	1	6	1.55 kg	9.3	90	837
Barra #3	0.95	6	0.56kg	3.19	90	288

6.5 CANTIDADES CORREAS

Item	Long. mts	Peso x mt	Cant metros	Peso total kg
Correas	1	4.78kg	600	2868
Barras#4 arrios	1	0.994kg	508	505

6.6 CANTIDADES CONCRETO

Item	m ³	cant	Cant m ³
Vigas de amarre	0.088	90	7.92
Pedestal	0.57	12	6.84
Caissons	4.05	12	48.6

6.7 CANTIDADES TEJA

Item	m ²	cant	Peso teja	Peso total
Teja thermoacustic	582	135	16.20	2187

7. CONCLUSIONES

Se realizó el análisis utilizando un programa matricial para pórtico plano con el acompañamiento del director el Ingeniero Julio Cesar Diago Franco y se determinó emplear la siguiente estructura:

- Caissons de forma prismática de 1.5 m x 1.5 m de 1.80 m de profundidad que soportan los pedestales y vigas de amarre.
- Cercha con perfiles dobles de 2" x 1/4" para cordones superior e inferior y celosía en perfiles dobles de 1 1/4" x 1/8" y 2" x 3/16" para parales y diagonales respectivamente.
- Vigas de arriostramiento con perfiles dobles de 2" x 3/16" y celosía en tubo de 1" x 3/16". Se colocan, además, arriostramientos concéntricos tubulares de 100 mm x 100 mm y espesor de 3.8 mm.
- Correas PHR 254x67x18 de espesor 1.5 mm
- Teja de cubierta termo acústica.

Realizando este trabajo social se logró ampliar los conocimientos adquiridos durante la academia y la importancia del ingeniero civil en la sociedad. El trabajo anterior es una excelente aplicación de los conocimientos adquiridos en el Departamento de Estructuras donde se integran las siguientes asignaturas:

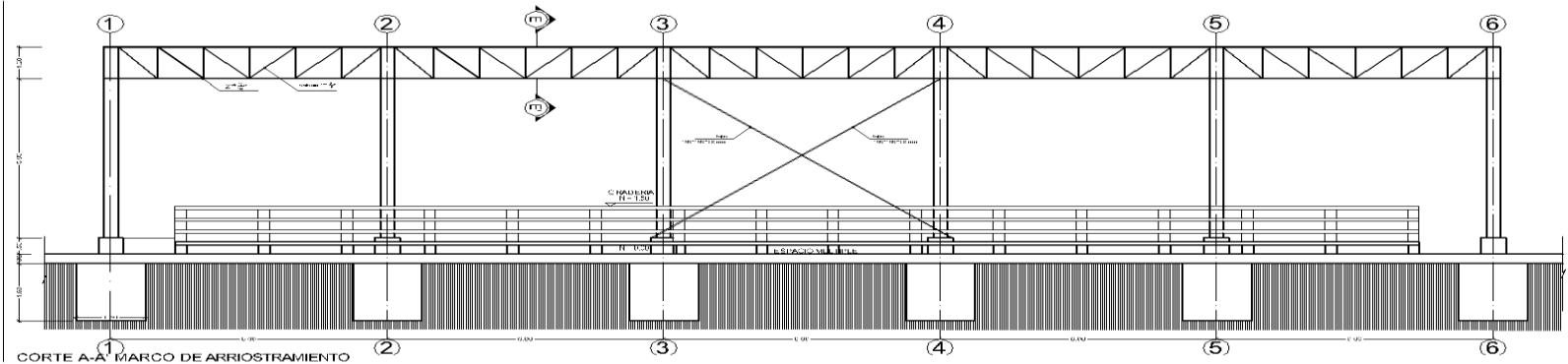
- Análisis Estructural
- Estructuras Metálicas
- Concreto Armado

El trabajo si llega a ser ejecutado la institución docente tendrá una importante obra de infraestructura que cumplirá múltiples propósitos: Aula máxima, instalación deportiva, centro de reuniones, centro comunitario, entre otros.

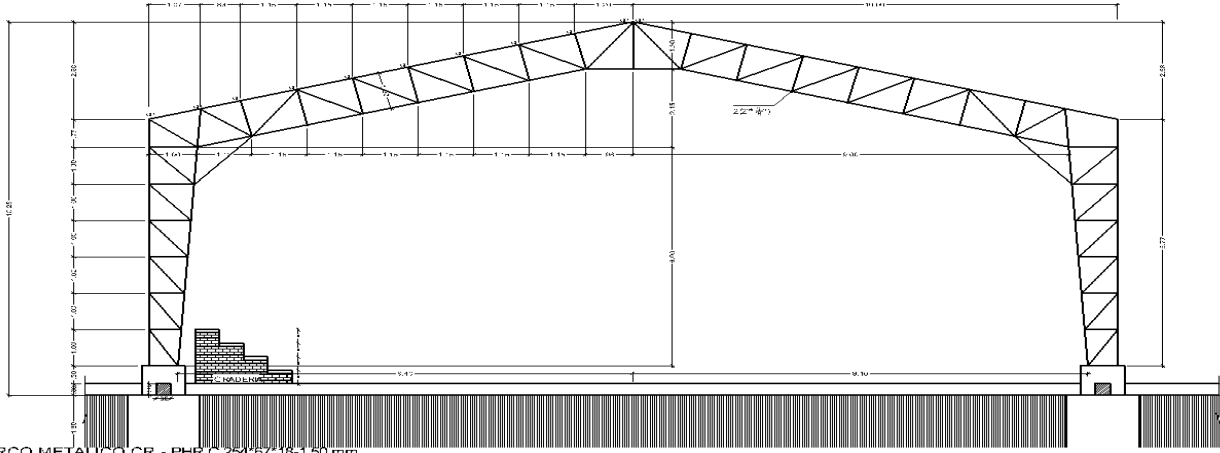
El proyecto en sí mismo se constituye en un insumo para solicitar apoyo a las instituciones departamental y municipal para impulsar la construcción de la cubierta en diferentes etapas dependiendo de su costo.

Este trabajo es parte de la proyección social de la universidad y el aporte que como estudiante puedo concretar al finalizar mi carrera universitaria.

CORTE A-A MARCO ARRIOSTRAMIENTO

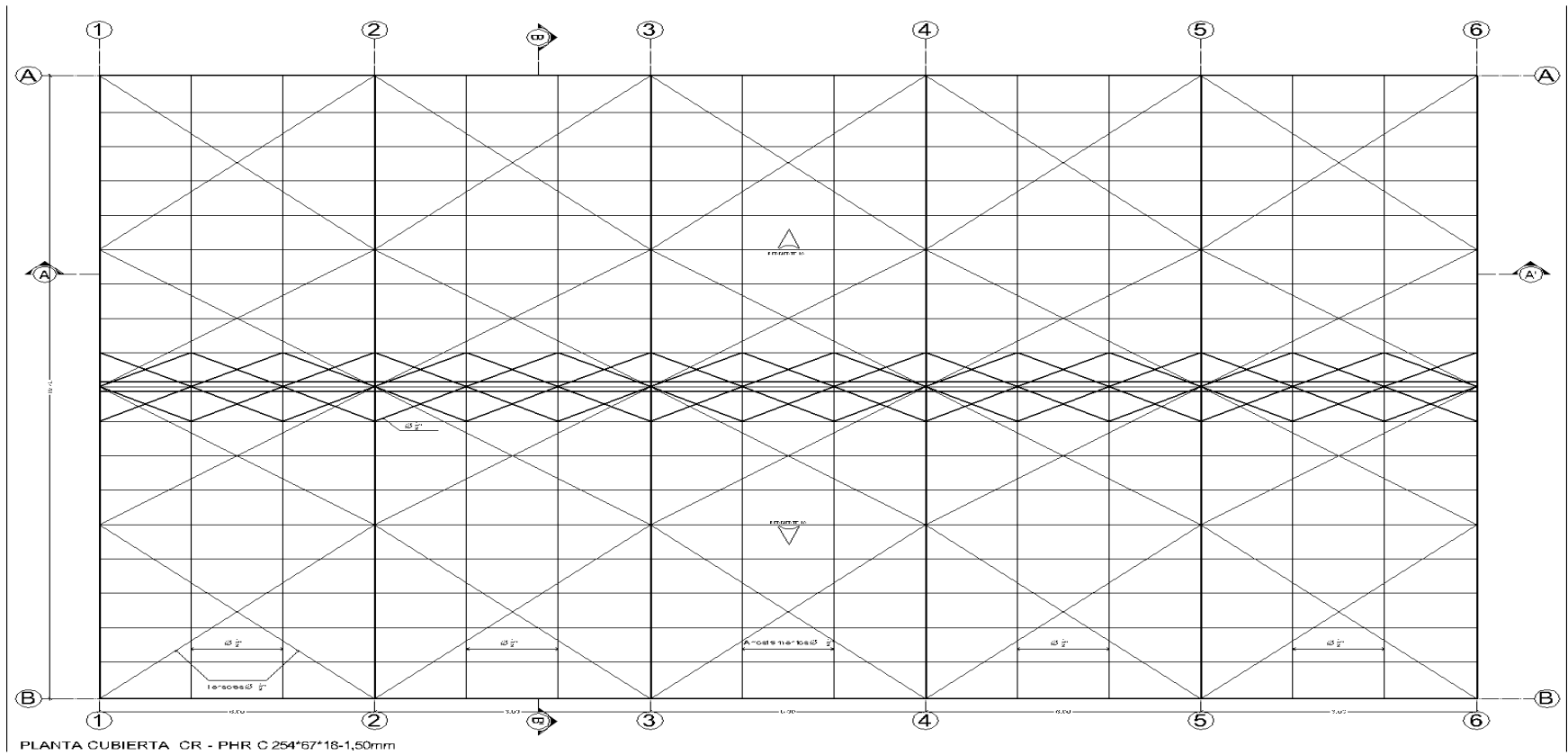


CORTE B-B MARCO METALICO

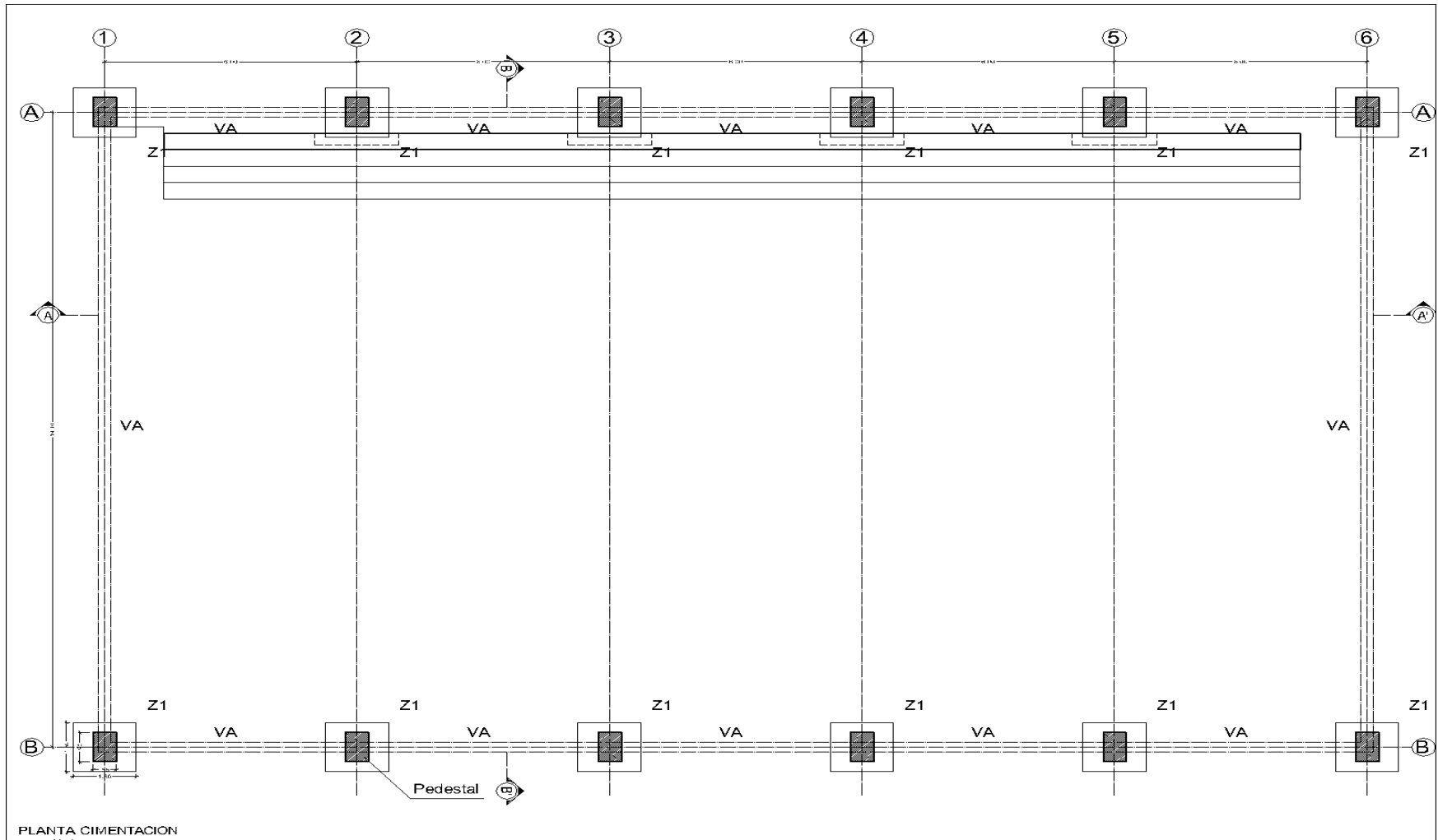


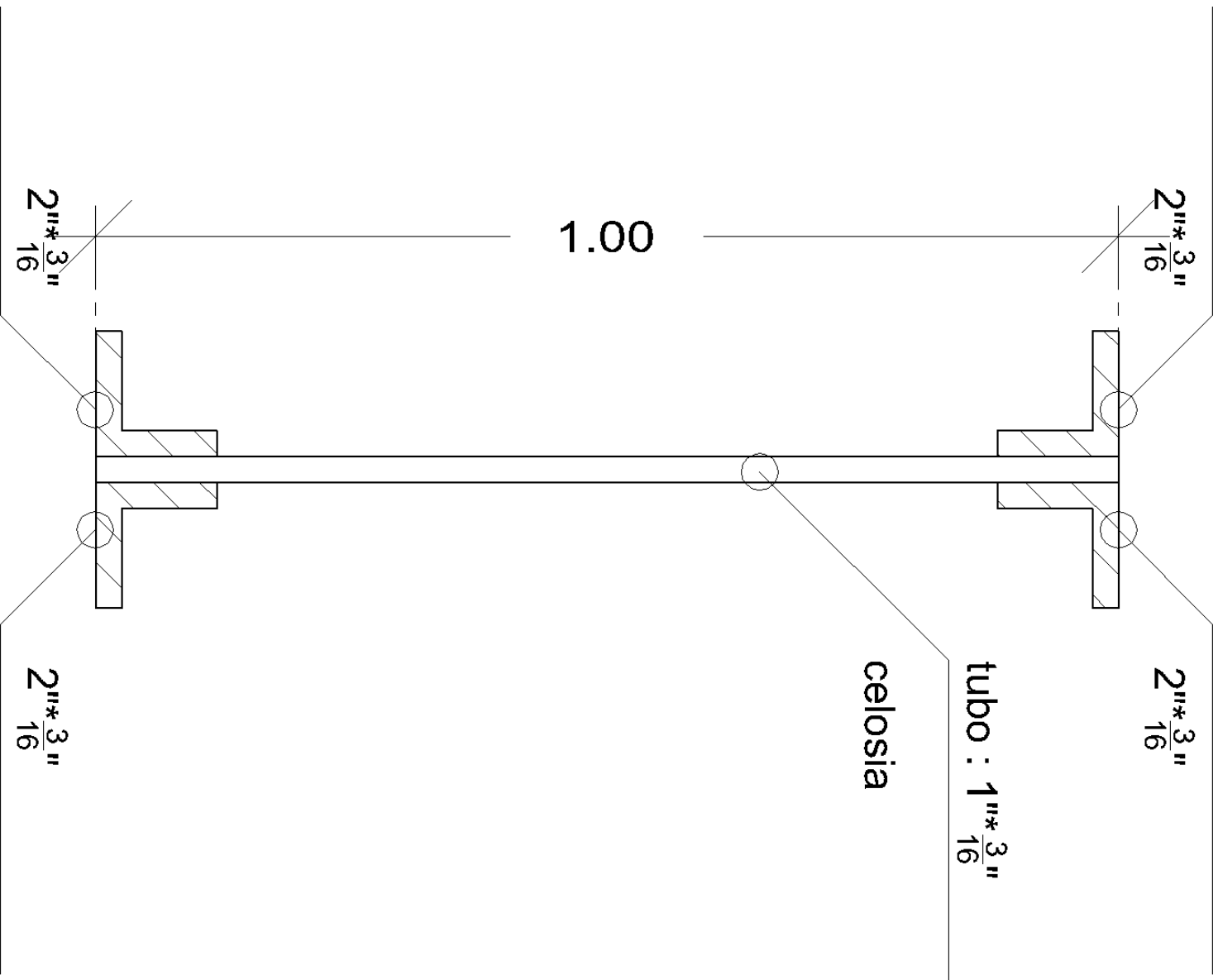
CORTE B-B' MARCO METALICO CR - PHR C 254'67' 18-1,50 mm

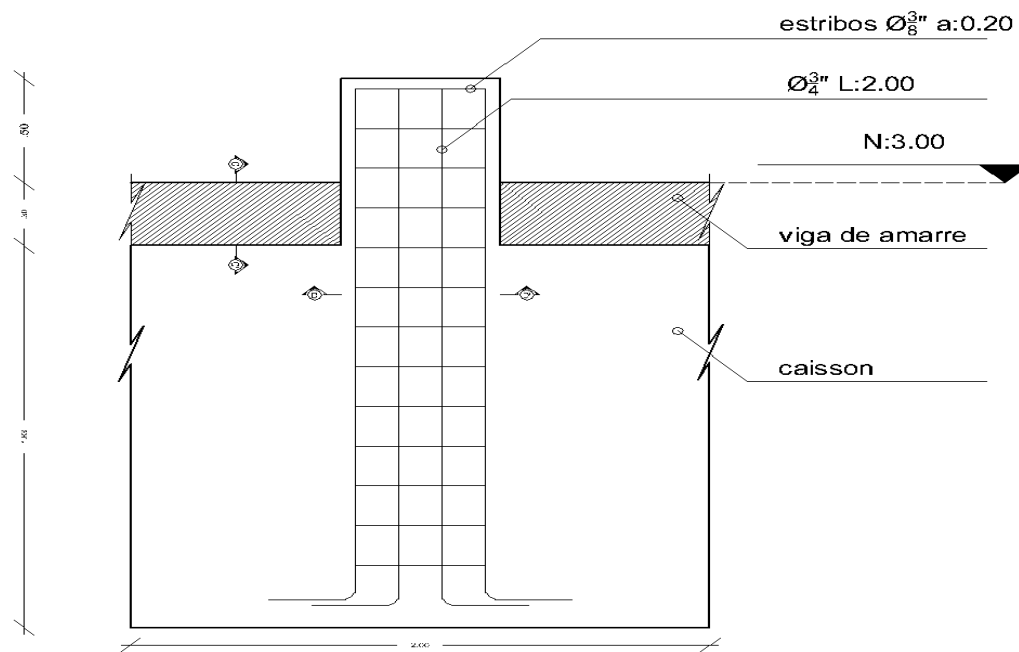
PLANTA CUBIERTA



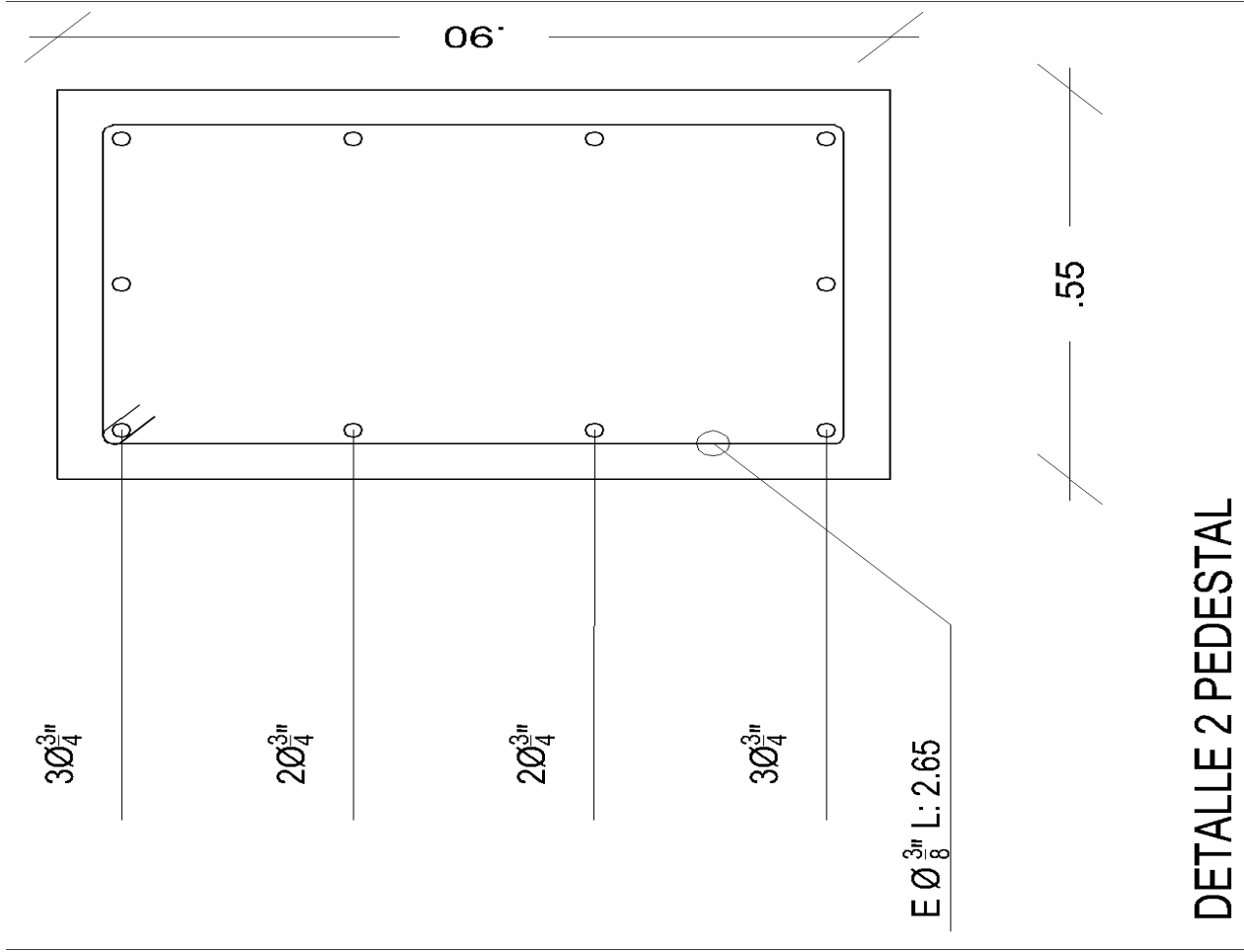
PLANTA CIMENTACION





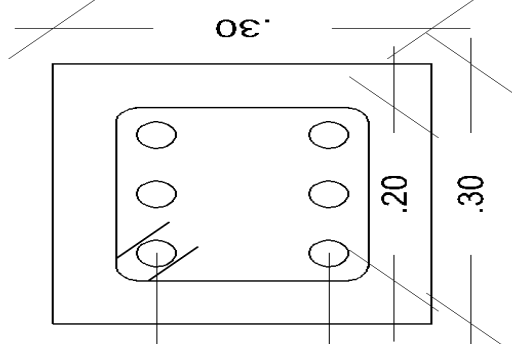


DETALLE 1 CAISSON Y VIGA DE AMARRE



$3\text{Ø}\frac{5}{8}$ "

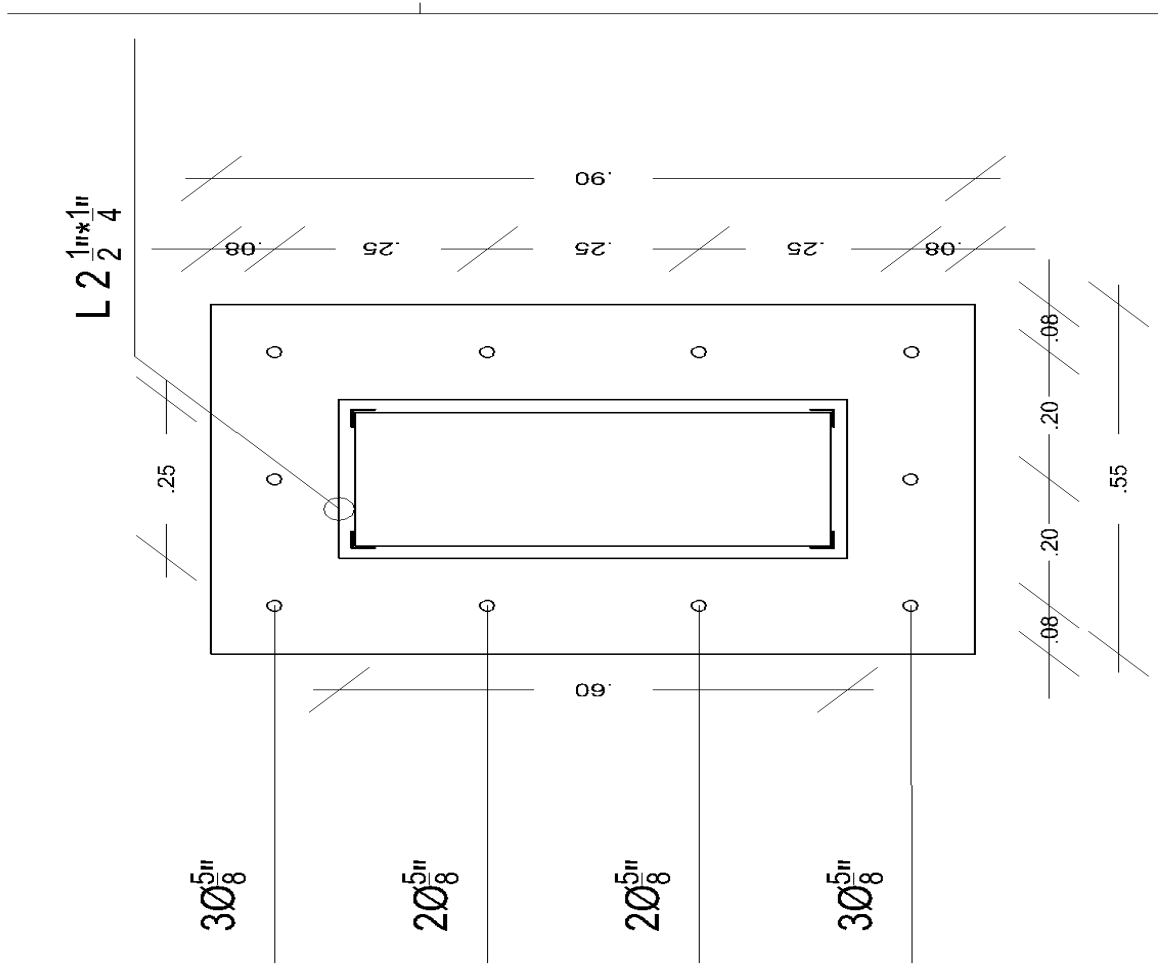
$3\text{Ø}\frac{5}{8}$ "



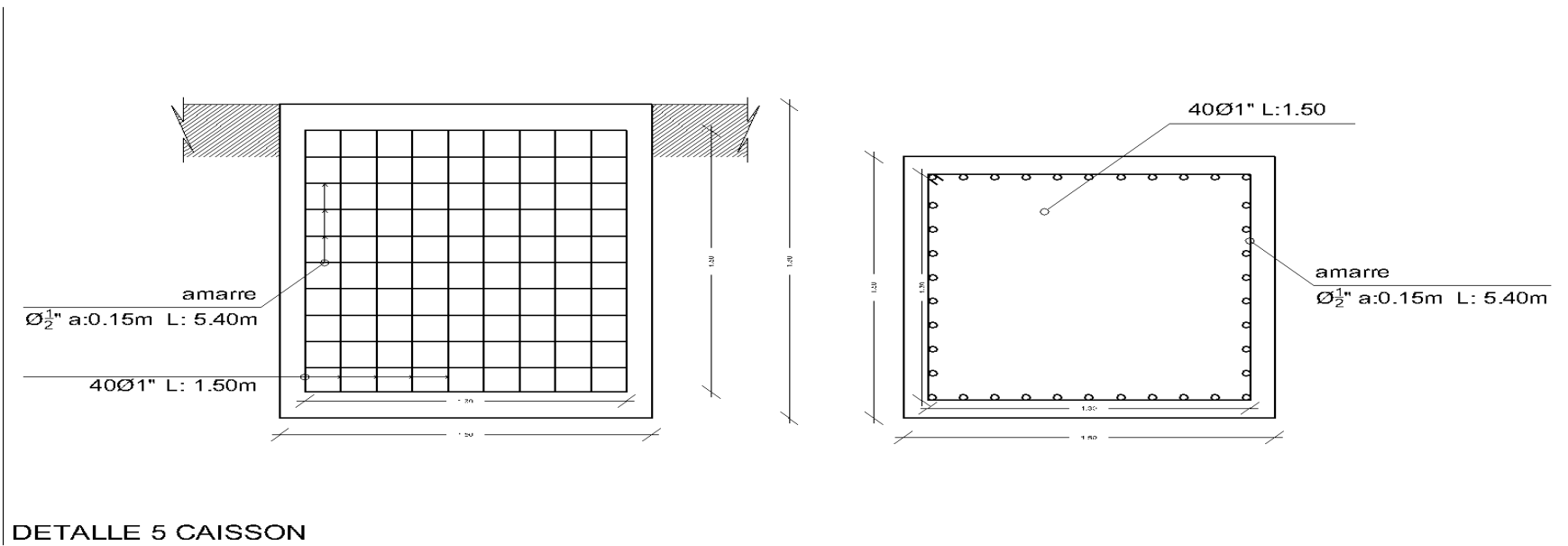
E $\text{Ø}\frac{3}{8}$ " a 0.15 L: 0.95

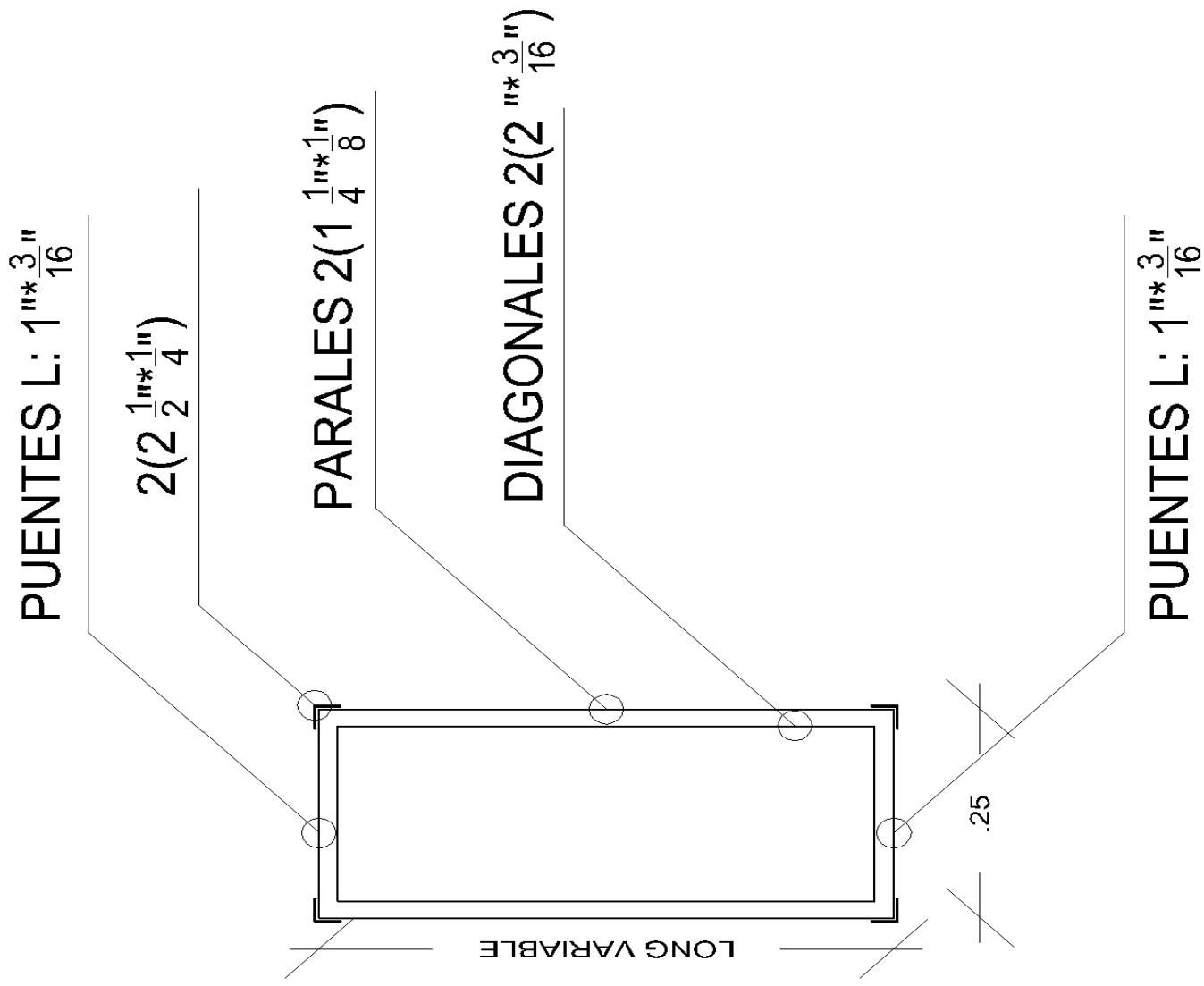
DETALLE 3 VIGA DE AMARRE

DETALLE 4



DETALLE 5





DETALLE 7

