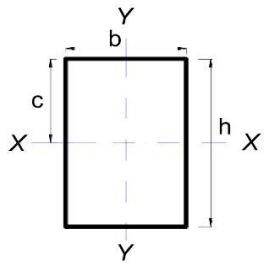
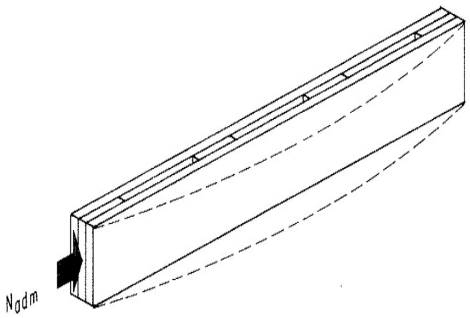
DISEÑO A COMPRESIÓN
SEGÚN EL MANUAL DE DISEÑO PARA MADERAS DEL GRUPO ANDINO

DIMENSIONES SECCIÓN TRANSVERSAL			
h=	**15**	**cm**	Altura sección
b=	**15**	**cm**	Base sección
PROPIEDADES MECÁNICAS MADERA			
E=	**95000**	**kgf/cm2**	Módulo de Elasticidad
fc=	**145**	**kgf/cm2**	Esfuerzo admisible a compresión
PROPIEDADES GEOMETRICAS SECCIÓN			
A	**225.00**	cm2	Area
Ix	**4218.75**	cm4	Inercia Eje X
Zx	**562.50**	cm3	Módulo de Sección Eje X
Iy	**4218.75**	cm4	Inercia Eje Y
Zx	**562.50**	cm3	Módulo de Sección Eje X



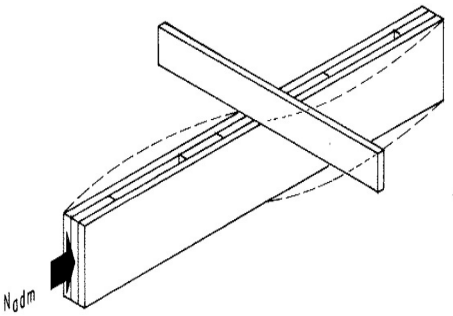
CARGA ADMISIBLE EN EL PLANO			
$L_{ef} = 0.40(L1 + L2)$			
Lef=	**320**	cm	Longitud Efectiva en el plano
$\lambda_x = \frac{L_{ef}}{d}$			
d=	**15**	cm	Lado menor
λx=	**21.33**		Esbeltez en el plano
$Ck = 0.7025 * \sqrt{\frac{E}{f_c}}$			
Ck=	**17.98**		Relacion de esbeltez
COLUMNA CORTA			
$N_{adm} = f_c * A$			
Nadm=	**0.00**	**kgf**	**0**
COLUMNA INTERMEDIA			
$N_{adm} = f_c * A * \left(1 - \frac{1}{3}\left(\frac{\lambda}{Ck}\right)^4\right)$			
Nadm=	**11078.95**	**kgf**	**Carga Admisible Columna Corta**
COLUMNA LARGA			
$N_{adm} = 0.3029 * \frac{E * A}{\lambda^2}$			
Nadm=	**9167.98**	**kgf**	**Carga Admisible Columna Corta**



CARGA ADMISIBLE FUERA DEL PLANO			
$L_{ef} = Lc$			
Lef=	**300.00**	cm	Longitud Efectiva fuera del plano
$\lambda_y = \frac{L_{ef}}{d}$			
d=	**15**	cm	Lado menor
λy=	**20.00**		Esbeltez en el plano
$Ck = 0.7025 * \sqrt{\frac{E}{f_c}}$			

DISEÑO A COMPRESIÓN
SEGÚN EL MANUAL DE DISEÑO PARA MADERAS DEL GRUPO ANDINO

Ck=	**17.98**		Relacion de esbeltez
COLUMNA CORTA			
$N_{adm} = f_c * A$			
Nadm=	**0.00**	**kgf**	**0**
COLUMNA INTERMEDIA			
$N_{adm} = f_c * A * \left(1 - \frac{1}{3}\left(\frac{\lambda}{Ck}\right)^4\right)$			
Nadm=	**0.00**	**kgf**	**0**
COLUMNA LARGA			
$N_{adm} = 0.3029 * \frac{E * A}{\lambda^2}$			
Nadm=	**10431.12**	**kgf**	**Carga Admisible Columna Larga**



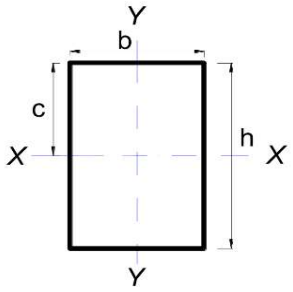
pandeo fuera del plano
(alrededor del eje Y-Y)

VERIFICACION CARGA ADMISIBLE A COMPRESION			
N=	**652.00**	**kgf**	Carga a Compresion por Combinacion de Servicio
Nadm_x=	**20246.93**	kgf	Carga admisible en el plano
Nadm_y=	**10431.12**	kgf	Carga admisible fuera del plano
Ncrit_x=	**38628.44**	kgf	Carga Critica de Pandeo en el Plano
Ncrit_y=	**43950.58**	kgf	Carga Critica de Pandeo fuera del Plano

$N < N_{crit_x}$	**Cumple**	
$N < N_{crit_y}$	**Cumple**	
$N < N_{adm_x}$	**Cumple**	
$N < N_{adm_y}$	**Cumple**	
$\frac{N}{N_{adm_x}} =$	**0.032**	**Ration en el plano**
$\frac{N}{N_{adm_y}} =$	**0.06**	**Ration fuera del plano**

DISEÑO A FLEXOCOMPRESIÓN
SEGÚN EL MANUAL DE DISEÑO PARA MADERAS DEL GRUPO ANDINO

DIMENSIONES SECCIÓN TRANSVERSAL			
h=	**15**	**cm**	Altura sección
b=	**15**	**cm**	Base sección
PROPIEDADES MECÁNICAS MADERA			
E=	**95000**	**kgf/cm2**	Módulo de Elasticidad
fc=	**145**	**kgf/cm2**	Esfuerzo admisible a compresión
fm=	**210**	**kgf/cm2**	Esfuerzo admisible a flexion
PROPIEDADES GEOMETRICAS SECCIÓN			
A	**225.00**	cm2	Area
Ix	**4218.75**	cm4	Inercia Eje X
Zx	**562.50**	cm3	Módulo de Sección Eje X
Iy	**4218.75**	cm4	Inercia Eje Y
Zy	**562.50**	cm3	Módulo de Sección Eje X



CARGA ADMISIBLE EN EL PLANO			
$L_{ef} = 0.40(L1 + L2)$			
Lef=	**240**	cm	Longitud Efectiva en el plano
$\lambda_x = \frac{L_{ef}}{d}$			
d=	**15**	cm	Lado menor
λx=	**16.00**		Esbeltez en el plano
$Ck = 0.7025 * \sqrt{\frac{E}{f_c}}$			
Ck=	**17.98**		Relacion de esbeltez

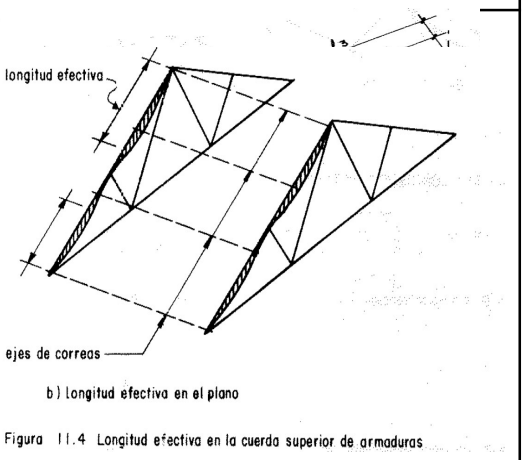
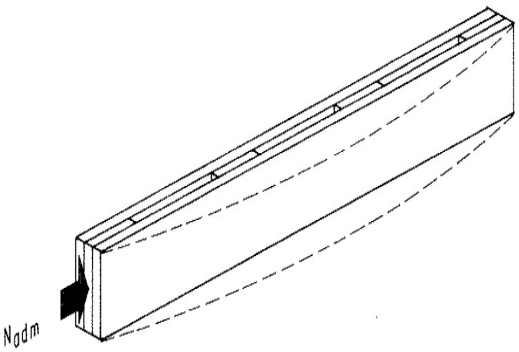


Figura 11.4 Longitud efectiva en la cuerda superior de armaduras

COLUMNA CORTA			
$N_{adm} = f_c * A$			
Nadm=	**0.00**	**kgf**	**0**
COLUMNA INTERMEDIA			
$N_{adm} = f_c * A * \left(1 - \frac{1}{3}\left(\frac{\lambda}{Ck}\right)^4\right)$			
Nadm=	**25807.70**	**kgf**	**Carga Admisible Columna Corta**
COLUMNA LARGA			
$N_{adm} = 0.3029 * \frac{E * A}{\lambda^2}$			
Nadm=	**0.00**	**kgf**	**0**



pandeo en el plano
(alrededor del eje X-X)

VERIFICACION FLEXOCOMPRESIÓN			
N=	**652.00**	**kgf**	Carga a Compresion por Combinacion de Servicio
M=	**4800.00**	**kgf.cm**	Momento Flector por Combinación de Sevicio
Nadm_x=	**25807.70**	kgf	Carga admisible en el plano
$N_{crit} = \frac{\pi^2 * E * I}{L_{ef}^2}$			

DISEÑO A FLEXOCOMPRESIÓN

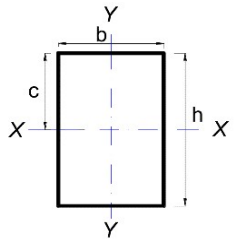
SEGÚN EL MANUAL DE DISEÑO PARA MADERAS DEL GRUPO ANDINO

$N_{crit} = \frac{\pi^2 * E_{0.05} * I_x}{L_{ef}^2}$

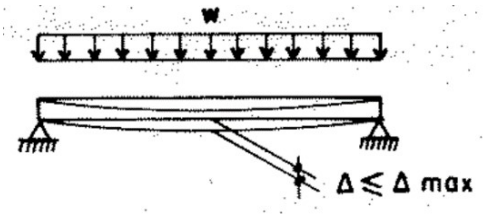
Ncrit_x=	**68672.78**	**kgf**	**Carga Critica de Pandeo en el Plano**
$k_m = \frac{1}{1 - 1.5 * \frac{N}{N_{crit}}}$			
km	**1.01**		**Factor de Amplificacion de Momento**
$\frac{N}{N_{adm}} + \frac{k_m * M}{Z_x * f_m} < 1$			**Cumple**
	0.066		**Ration flexo compresion**

DISEÑO A FLEXIÓN
SEGÚN EL MANUAL DE DISEÑO PARA MADERAS DEL GRUPO ANDINO

DIMENSIONES SECCIÓN TRANSVERSAL			
h=	**15**	**cm**	Altura sección
b=	**5**	**cm**	Base sección
PROPIEDADES MECÁNICAS MADERA			
E=	**95000**	**kgf/cm2**	Módulo de Elasticidad
fv=	**15**	**kgf/cm2**	Esfuerzo admisible a corte
fm=	**210**	**kgf/cm2**	Esfuerzo admisible a flexion
fc ⊥ =	**40**	**kgf/cm2**	Esfuerzo admisible a compresion perpendicular



LONGITUD Y DEFLEXIONES ELEMENTO			
L=	**190**	**cm**	Longitud
Δ1=	**0.0096**	**cm**	Deflexion Carga Permanete
Δ2=	**0.029**	**cm**	Deflexion Carga Sobrecarga



VERIFICACION DEFLEXIONES

$$\Delta_{adm} = \frac{L}{250}$$

Δadm1=	**0.760**	cm	Deflexion admisible Carga Permante

$$\Delta_{adm} = \frac{L}{350}$$

Δadm2=	**0.543**	cm	Deflexion admisible Carga Permante
Δ1<Δadm1		**Cumple**	
Δ1<Δadm1		**Cumple**	

TABLA 8.1. DEFLEXIONES MAXIMAS ADMISIBLES

Carga actuante	(a) con cielo raso de yeso	(b) sin cielo raso de yeso
Cargas permanentes + sobrecargas	L/300	L/250
Sobrecarga	L/350	L/350

FLEXION SENTIDO LONGITUDINAL

VERIFICACION DE ESFUERZOS A FLEXION

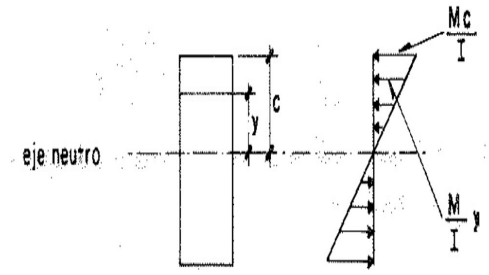
M=	**12171**	**kgf.cm**	Momento Flector por Combinación de Sevicio

$$\sigma_m = \frac{6 \cdot M}{b \cdot h^2}$$

	64.91	kgf/cm2	Esfuezo a Flexion

$$\sigma_m \leq f_m$$

σm≤fm	**Cumple**



VERIFICACION DE ESFUERZOS A CORTE

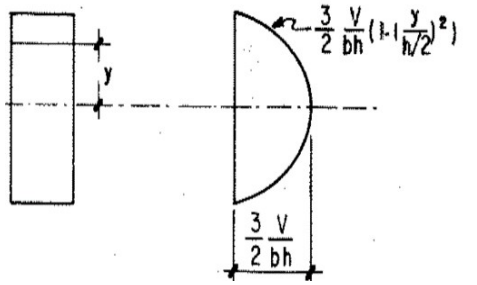
V=	**357**	**kgf**	Cortante por Combinación de Sevicio

$$\tau = \frac{3 \cdot V}{2 \cdot b \cdot h}$$

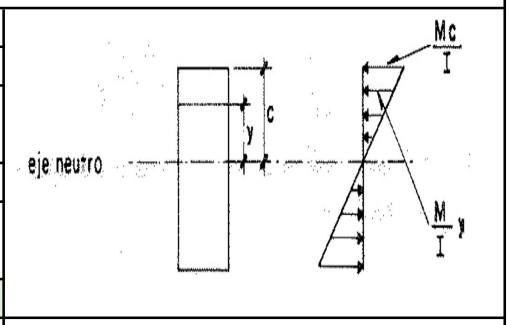
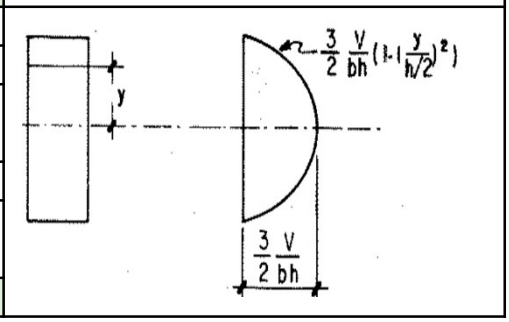
	7.14	kgf/cm2	Esfuezo a Corte

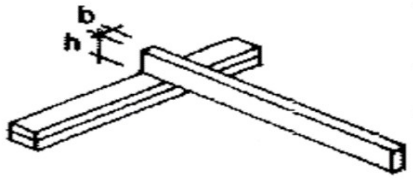
$$\tau \leq f_v$$

τ≤fv	**Cumple**



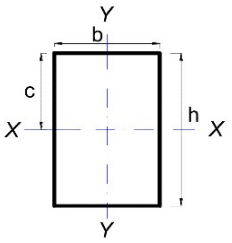
DISEÑO A FLEXIÓN
SEGÚN EL MANUAL DE DISEÑO PARA MADERAS DEL GRUPO ANDINO

FLEXION SENTIDO TRANSVERSAL				
VERIFICACION DE ESFUERZOS A FLEXION				
M=	**12171**	**kgf.cm**	Momento Flector por Combinación de Sevicio	
$\sigma_m = \frac{6 \cdot M}{b \cdot h^2}$				
	64.91	kgf/cm2	Esfuezo a Flexion	
$\sigma_m \leq f_m$				
$\sigma m \leq f m$		**Cumple**		
VERIFICACION DE ESFUERZOS A CORTE				
V=	**357**	**kgf**	Cortante por Combinación de Sevicio	
$\tau = \frac{3 \cdot V}{2 \cdot b \cdot h}$				
	7.14	kgf/cm2	Esfuezo a Corte	
$\tau \leq f_v$				
$\tau \leq f v$		**Cumple**		

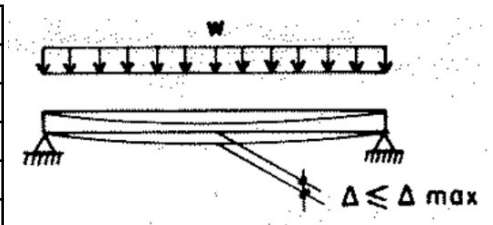
COMPRESION PRENPENDICULAR A LAS FIBRAS				
a=	**5**	cm	Base Cordon Superior	
b=	**5**	cm	Base Seccion	
R=	**357**	**kgf**	Reaccion de Apoyo por Combinación de Sevicio	
$\sigma_{c\perp} = \frac{R}{a \cdot b}$				
	14.28	kgf/cm2	Esfuezo a Compresion	
$\sigma_{c\perp} \leq f_{c\perp}$				
$\sigma c\perp \leq f c\perp$		**Cumple**		

DISEÑO A FLEXIÓN
SEGÚN EL MANUAL DE DISEÑO PARA MADERAS DEL GRUPO ANDINO

DIMENSIONES SECCIÓN TRANSVERSAL			
h=	15	cm	Altura sección
b=	5	cm	Base sección
PROPIEDADES MECÁNICAS MADERA			
E=	95000	kgf/cm2	Módulo de Elasticidad
fv=	15	kgf/cm2	Esfuerzo admisible a corte
fm=	210	kgf/cm2	Esfuerzo admisible a flexion
fc ⊥ =	40	kgf/cm2	Esfuerzo admisible a compresion perpendicular



LONGITUD Y DEFLEXIONES ELEMENTO			
L=	190	cm	Longitud
Δ1=	0.0007	cm	Deflexion Carga Permanete
Δ2=	0.0025	cm	Deflexion Carga Sobrecarga



VERIFICACION DEFLEXIONES

$$\Delta_{adm} = \frac{L}{250}$$

Δadm1=	0.760	cm	Deflexion admisible Carga Permante

$$\Delta_{adm} = \frac{L}{350}$$

Δadm2=	0.543	cm	Deflexion admisible Carga Permante
Δ1<Δadm1		**Cumple**	
Δ1<Δadm1		**Cumple**	

TABLA 8.1. DEFLEXIONES MAXIMAS ADMISIBLES

Carga actuante	(a) con cielo raso de yeso	(b) sin cielo raso de yeso
Cargas permanentes + sobrecargas	L/300	L/250
Sobrecarga	L/350	L/350

FLEXION SENTIDO LONGITUDINAL

VERIFICACION DE ESFUERZOS A FLEXION

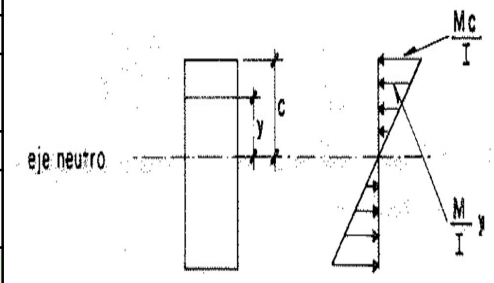
M=	2174	kgf.cm	Momento Flector por Combinación de Sevicio

$$\sigma_m = \frac{6 \cdot M}{b \cdot h^2}$$

	11.59	kgf/cm2	Esfuezo a Flexion

$$\sigma_m \leq f_m$$

σm≤fm	**Cumple**



VERIFICACION DE ESFUERZOS A CORTE

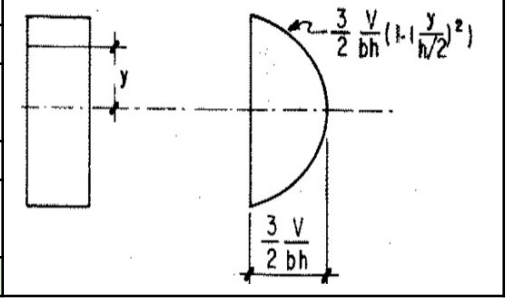
V=	86	kgf	Cortante por Combinación de Sevicio

$$\tau = \frac{3 \cdot V}{2 \cdot b \cdot h}$$

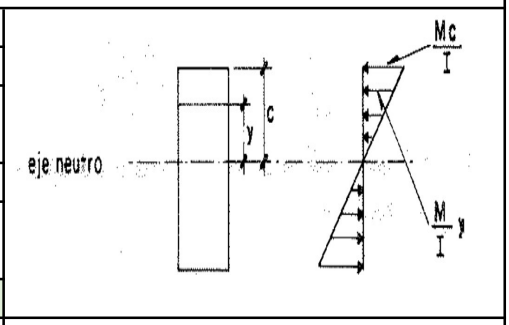
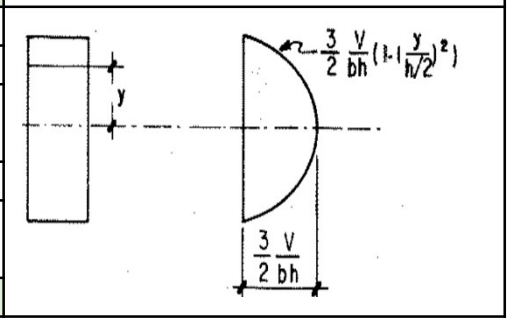
	1.72	kgf/cm2	Esfuezo a Corte

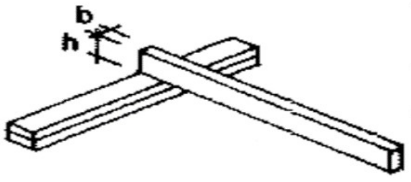
$$\tau \leq f_v$$

τ≤fv	**Cumple**



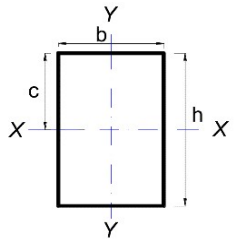
DISEÑO A FLEXIÓN
SEGÚN EL MANUAL DE DISEÑO PARA MADERAS DEL GRUPO ANDINO

FLEXION SENTIDO TRANSVERSAL				
VERIFICACION DE ESFUERZOS A FLEXION				
M=	**2174**	**kgf.cm**	Momento Flector por Combinación de Sevicio	
$\sigma_m = \frac{6 \cdot M}{b \cdot h^2}$				
	11.59	kgf/cm2	Esfuezo a Flexion	
$\sigma_m \leq f_m$				
$\sigma m \leq f m$		**Cumple**		
VERIFICACION DE ESFUERZOS A CORTE				
V=	**86**	**kgf**	Cortante por Combinación de Sevicio	
$\tau = \frac{3 \cdot V}{2 \cdot b \cdot h}$				
	1.72	kgf/cm2	Esfuezo a Corte	
$\tau \leq f_v$				
$\tau \leq f v$		**Cumple**		

COMPRESION PRENPENDICULAR A LAS FIBRAS				
a=	**5**	cm	Base Cordon Superior	
b=	**5**	cm	Base Seccion	
R=	**357**	**kgf**	Reaccion de Apoyo por Combinación de Sevicio	
$\sigma_{c\perp} = \frac{R}{a \cdot b}$				
	14.28	kgf/cm2	Esfuezo a Compresion	
$\sigma_{c\perp} \leq f_{c\perp}$				
$\sigma c\perp \leq f c\perp$		**Cumple**		

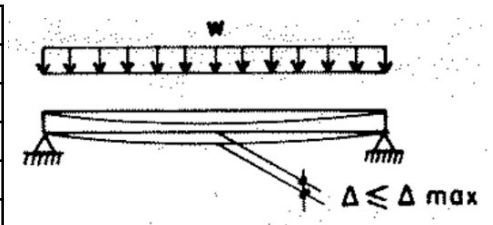
DISEÑO A FLEXIÓN
SEGÚN EL MANUAL DE DISEÑO PARA MADERAS DEL GRUPO ANDINO

DIMENSIONES SECCIÓN TRANSVERSAL			
h=	**10**	**cm**	Altura sección
b=	**5**	**cm**	Base sección



PROPIEDADES MECÁNICAS MADERA			
E=	**95000**	**kgf/cm2**	Módulo de Elasticidad
fv=	**15**	**kgf/cm2**	Esfuerzo admisible a corte
fm=	**210**	**kgf/cm2**	Esfuerzo admisible a flexion
fc ⊥ =	**40**	**kgf/cm2**	Esfuerzo admisible a compresion perpendicular

LONGITUD Y DEFLEXIONES ELEMENTO			
L=	**180**	**cm**	Longitud
Δ1=	**0.009**	**cm**	Deflexion Carga Permanete
Δ2=	**0.022**	**cm**	Deflexion Carga Sobrecarga



VERIFICACION DEFLEXIONES

$$\Delta_{adm} = \frac{L}{250}$$

Δadm1=	**0.720**	cm	Deflexion admisible Carga Permante

$$\Delta_{adm} = \frac{L}{350}$$

Δadm2=	**0.514**	cm	Deflexion admisible Carga Permante
Δ1<Δadm1		**Cumple**	
Δ1<Δadm1		**Cumple**	

TABLA 8.1. DEFLEXIONES MAXIMAS ADMISIBLES

Carga actuante	(a) con cielo raso de yeso	(b) sin cielo raso de yeso
Cargas permanentes + sobrecargas	L/300	L/250
Sobrecarga	L/350	L/350

FLEXION SENTIDO LONGITUDINAL

VERIFICACION DE ESFUERZOS A FLEXION

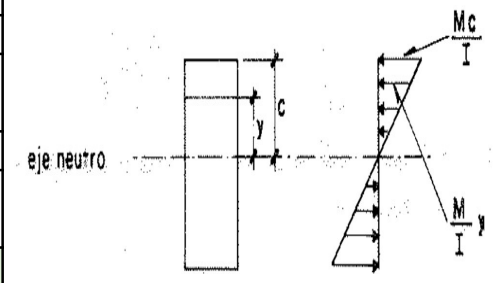
M=	**2224**	**kgf.cm**	Momento Flector por Combinación de Sevicio

$$\sigma_m = \frac{6 \cdot M}{b \cdot h^2}$$

	26.69	kgf/cm2	Esfuezo a Flexion

$$\sigma_m \leq f_m$$

σm≤fm	**Cumple**



VERIFICACION DE ESFUERZOS A CORTE

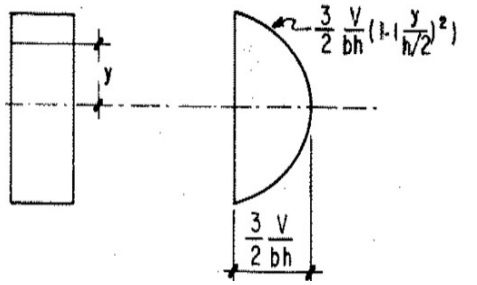
V=	**77**	**kgf**	Cortante por Combinación de Sevicio

$$\tau = \frac{3 \cdot V}{2 \cdot b \cdot h}$$

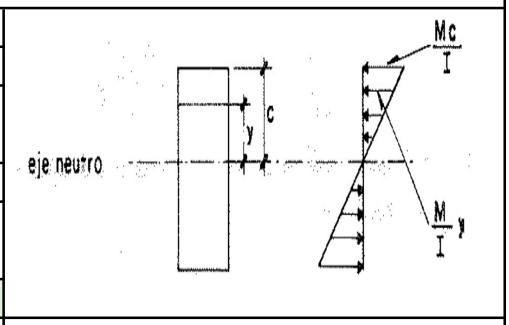
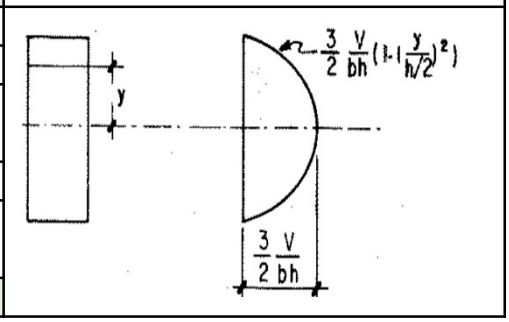
	2.31	kgf/cm2	Esfuezo a Corte

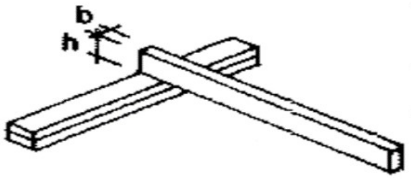
$$\tau \leq f_v$$

τ≤fv	**Cumple**

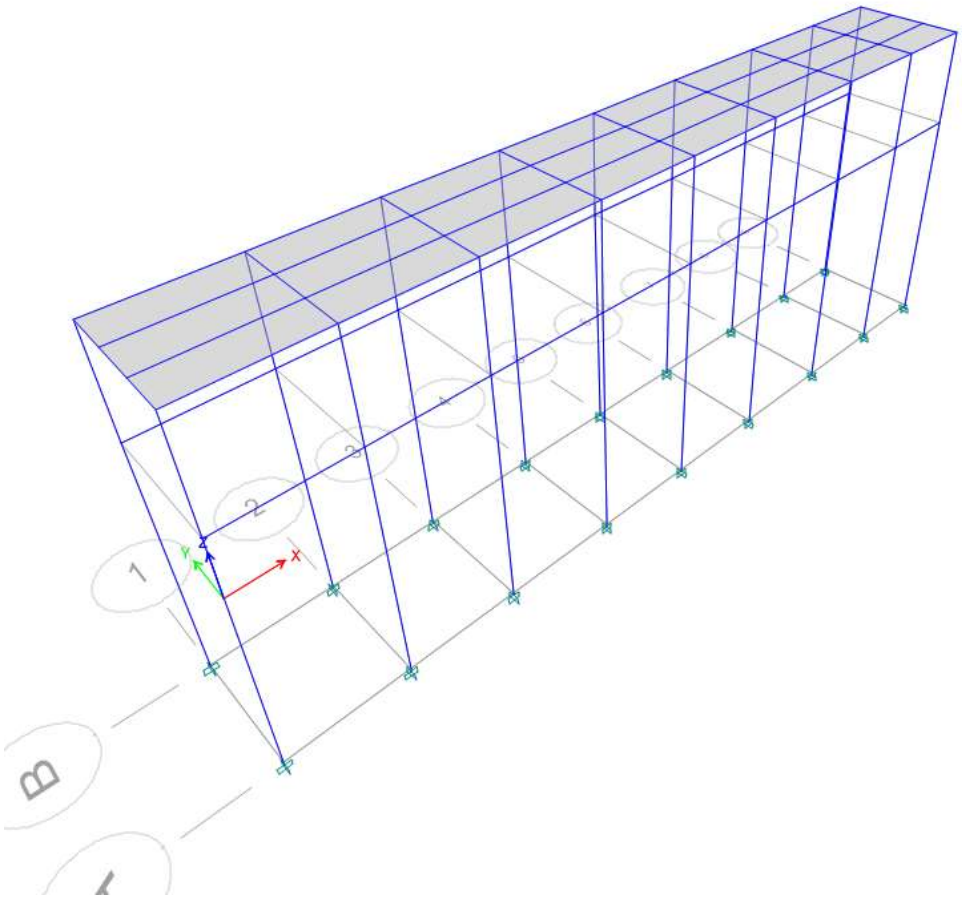


DISEÑO A FLEXIÓN
SEGÚN EL MANUAL DE DISEÑO PARA MADERAS DEL GRUPO ANDINO

FLEXION SENTIDO TRANSVERSAL				
VERIFICACION DE ESFUERZOS A FLEXION				
M=	**2224**	**kgf.cm**	Momento Flector por Combinación de Sevicio	
$\sigma_m = \frac{6 \cdot M}{b \cdot h^2}$				
	26.69	kgf/cm2	Esfuezo a Flexion	
$\sigma_m \leq f_m$				
$\sigma m \leq f m$	**Cumple**			
VERIFICACION DE ESFUERZOS A CORTE				
V=	**77**	**kgf**	Cortante por Combinación de Sevicio	
$\tau = \frac{3 \cdot V}{2 \cdot b \cdot h}$				
	2.31	kgf/cm2	Esfuezo a Corte	
$\tau \leq f_v$				
$\tau \leq f v$	**Cumple**			

COMPRESION PRENPENDICULAR A LAS FIBRAS				
a=	**5**	cm	Base Cordon Superior	
b=	**5**	cm	Base Seccion	
R=	**357**	**kgf**	Reaccion de Apoyo por Combinación de Sevicio	
$\sigma_{c\perp} = \frac{R}{a \cdot b}$				
	14.28	kgf/cm2	Esfuezo a Compresion	
$\sigma_{c\perp} \leq f_{c\perp}$				
$\sigma c\perp \leq f c\perp$	**Cumple**			

ETABS®



Project Report

Model File: modelo 1, Revision 0
29/07/2024

Table of Contents

1. Structure Data 4
   - 1.1 Story Data 4
   - 1.2 Grid Data 4
   - 1.3 Point Coordinates 4
   - 1.4 Line Connectivity 5
   - 1.5 Area Connectivity 7
   - 1.6 Mass 7
   - 1.7 Groups 8
2. Properties 9
   - 2.1 Materials 9
   - 2.2 Frame Sections 9
   - 2.3 Shell Sections 9
   - 2.4 Reinforcement Sizes 9
   - 2.5 Links 10
   - 2.6 Tendon Sections 10
3. Assignments 11
   - 3.1 Joint Assignments 11
   - 3.2 Frame Assignments 12
   - 3.3 Shell Assignments 14
4. Loads 16
   - 4.1 Load Patterns 16
   - 4.2 Load Sets 16
   - 4.3 Applied Loads 16
     - 4.3.1 Area Loads 16
   - 4.4 Functions 16
     - 4.4.1 Response Spectrum Functions 16
     - 4.4.2 Time History Functions 17
   - 4.5 Load Cases 17
   - 4.6 Load Combinations 17
5. Analysis Results 19
   - 5.1 Structure Results 19
   - 5.2 Story Results 20
   - 5.3 Point Results 25
   - 5.4 Modal Results 42

List of Tables

Table 1.1 Story Definitions 4
Table 1.2 Grid Definitions - General 4
Table 1.3 Grid Definitions - Grid Lines 4
Table 1.4 Point Bays 4
Table 1.5 Column Bays 5
Table 1.6 Beam Bays 6
Table 1.7 Floor Bays 7
Table 1.8 Mass Source Definition 7
Table 1.9 Mass Summary by Story 7
Table 1.10 Mass Summary by Group 8
Table 1.11 Group Definitions 8
Table 2.1 Material Properties - General 9
Table 2.2 Frame Section Property Definitions - Summary 9
Table 2.3 Area Section Property Definitions - Summary 9
Table 2.4 Reinforcing Bar Sizes 10
Table 2.5 Link Property Definitions - Summary 10
Table 2.6 Tendon Section Properties 10
Table 3.1 Joint Assignments - Summary 11
Table 3.2 Frame Assignments - Summary 12
Table 3.3 Area Assignments - Summary 15
Table 4.1 Load Pattern Definitions 16
Table 4.2 Shell Uniform Load Sets 16
Table 4.3 Area Load Assignments - Uniform Load Sets 16
Table 4.4 Functions - Response Spectrum - Columbia NSR-10 16
Table 4.5 Functions - Time History - User Defined 17
Table 4.6 Load Case Definitions - Summary 17
Table 4.7 Load Combination Definitions 17
Table 5.1 Base Reactions 19
Table 5.2 Story Drifts 20
Table 5.3 Story Forces 21
Table 5.4 Joint Reactions 25
Table 5.5 Modal Periods And Frequencies 42
Table 5.6 Modal Participating Mass Ratios 42
Table 5.7 Modal Load Participation Ratios 43
Table 5.8 Modal Direction Factors 43

1 Structure Data

This chapter provides model geometry information, including items such as story levels, point coordinates, and element connectivity.

1.1 Story Data

Table 1.1 - Story Definitions

Tower	Name	Height m	Master Story	Similar To	Splice Story	Color
T1	Story2	1.62	No	None	No	Magenta
T1	Story1	3.88	No	None	No	Yellow

1.2 Grid Data

Table 1.2 - Grid Definitions - General

Tower	Name	Type	Ux m	Uy m	Rz deg	Story Range	Bubble Size mm	Color
T1	G1	Cartesian	0	0	0	Default	1250	Gray6

Table 1.3 - Grid Definitions - Grid Lines

Name	Grid Line Type	ID	Ordinate m	Bubble Location	Visible
G1	X (Cartesian)	1	0	End	Yes
G1	X (Cartesian)	2	1.8	End	Yes
G1	X (Cartesian)	3	3.52	End	Yes
G1	X (Cartesian)	4	5.32	End	Yes
G1	X (Cartesian)	5	6.98	End	Yes
G1	X (Cartesian)	6	8.65	End	Yes
G1	X (Cartesian)	7	10.45	End	Yes
G1	X (Cartesian)	8	12.088	End	Yes
G1	X (Cartesian)	9	13.48	End	Yes
G1	Y (Cartesian)	A	0	Start	Yes
G1	Y (Cartesian)	B	1.9	Start	Yes

1.3 Point Coordinates

Table 1.4 - Point Bays

Label	Is Auto Point	X m	Y m	DZBelow m
1	No	0	0	0
2	No	0	1.9	0
3	No	1.8	0	0
4	No	1.8	1.9	0
5	No	3.52	0	0
6	No	3.52	1.9	0
7	No	5.32	0	0
8	No	5.32	1.9	0
9	No	6.98	0	0
10	No	6.98	1.9	0

Table 1.4 - Point Bays (continued)

Label	Is Auto Point	X m	Y m	DZBelow m
11	No	8.65	0	0
12	No	8.65	1.9	0
13	No	10.45	0	0
14	No	10.45	1.9	0
15	No	12.088	0	0
16	No	12.088	1.9	0
17	No	13.48	0	0
18	No	13.48	1.9	0
19	No	1.8	0.6333	0
20	No	0	0.6333	0
21	No	1.8	1.2667	0
22	No	0	1.2667	0
23	No	3.52	0.6333	0
24	No	3.52	1.2667	0
25	No	5.32	0.6333	0
26	No	5.32	1.2667	0
27	No	6.98	0.6333	0
28	No	6.98	1.2667	0
29	No	8.65	0.6333	0
30	No	8.65	1.2667	0
31	No	10.45	0.6333	0
32	No	10.45	1.2667	0
33	No	12.088	0.6333	0
34	No	12.088	1.2667	0
35	No	13.48	0.6333	0
36	No	13.48	1.2667	0

1.4 Line Connectivity

Table 1.5 - Column Bays

Label	PointBayI	PointBayJ	IEndStory
C1	1	1	Below
C2	2	2	Below
C3	3	3	Below
C4	4	4	Below
C5	5	5	Below
C6	6	6	Below
C7	7	7	Below
C8	8	8	Below
C9	9	9	Below
C10	10	10	Below
C11	11	11	Below
C12	12	12	Below
C13	13	13	Below
C14	14	14	Below
C15	15	15	Below

Table 1.5 - Column Bays (continued)

Label	PointBayI	PointBayJ	IEndStory
C16	16	16	Below
C17	17	17	Below
C18	18	18	Below

Table 1.6 - Beam Bays

Label	PointBayI	PointBayJ
B1	2	4
B2	4	6
B3	6	8
B4	8	10
B5	10	12
B6	12	14
B7	14	16
B8	16	18
B9	1	3
B10	3	5
B11	5	7
B12	7	9
B13	9	11
B14	11	13
B15	13	15
B16	15	17
B17	1	2
B18	3	4
B19	5	6
B20	7	8
B21	9	10
B22	11	12
B23	13	14
B24	15	16
B25	17	18
B26	20	19
B27	22	21
B28	19	23
B29	21	24
B30	23	25
B31	24	26
B32	25	27
B33	26	28
B34	27	29
B35	28	30
B36	29	31
B37	30	32
B38	31	33
B39	32	34
B40	33	35

Table 1.6 - Beam Bays (continued)

Label	PointBayI	PointBayJ
B41	34	36

1.5 Area Connectivity

Table 1.7 - Floor Bays

Label	NumPoints	PointNumber	PointBay
F1	4	1	1
F1		2	3
F1		3	4
F1		4	2
F2	4	1	3
F2		2	5
F2		3	6
F2		4	4
F3	4	1	5
F3		2	7
F3		3	8
F3		4	6
F4	4	1	7
F4		2	9
F4		3	10
F4		4	8
F5	4	1	9
F5		2	11
F5		3	12
F5		4	10
F6	4	1	11
F6		2	13
F6		3	14
F6		4	12
F7	4	1	13
F7		2	15
F7		3	16
F7		4	14
F8	4	1	15
F8		2	17
F8		3	18
F8		4	16

1.6 Mass

Table 1.8 - Mass Source Definition

Name	Is Default	Include Lateral Mass?	Include Vertical Mass?	Lump Mass?	Source Self Mass?	Source Added Mass?	Source Load Patterns?	Move Mass Centroid?
MsSrc1	Yes	Yes	No	Yes	Yes	Yes	No	No

Table 1.9 - Mass Summary by Story

Story	UX kg	UY kg	UZ kg
Story2	1189.28	1189.28	0
Story1	973.46	973.46	0
Base	589.28	589.28	0

Table 1.10 - Mass Summary by Group

Group	Self Mass kg	Self Weight tonf	Mass X kg	Mass Y kg	Mass Z kg
All	2752.02	0	2752.02	2752.02	0

1.7 Groups

Table 1.11 - Group Definitions

Name	Color	Steel Design?	Concrete Design?	Composite Design?
All	Yellow	No	No	No

2 Properties

This chapter provides property information for materials, frame sections, shell sections, and links.

2.1 Materials

Table 2.1 - Material Properties - General

Material	Type	SymType	Grade	Color	Notes
4000Psi	Concrete	Isotropic	f'c 4000 psi	Magenta	
A416Gr270	Tendon	Uniaxial	Grade 270	Gray8Dark	
A615Gr60	Rebar	Uniaxial	Grade 60	Yellow	
A992Fy50	Steel	Isotropic	Grade 50	Red	
madera	Steel	Isotropic	Grade 50	Red	

2.2 Frame Sections

Table 2.2 - Frame Section Property Definitions - Summary (Part 1 of 3)

Name	Material	Shape	Color	Area mm2	J mm4	I33 mm4	I22 mm4	As2 mm2	As3 mm2
Col madera 15x15	madera	Concrete Rectangular	Green	22500	71296875	42187500	42187500	18750	18750
madera 10x5 cm	madera	Concrete Rectangular	31218	5000	2861002.6	4166666.7	1041666.7	4166.7	4166.7
madera 15x5 cm	madera	Concrete Rectangular	16512	7500	4938850.3	14062500	1562500	6250	6250

Table 2.2 - Frame Section Property Definitions - Summary (Part 2 of 3)

Name	S33Pos mm3	S33Neg mm3	S22Pos mm3	S22Neg mm3	Z33 mm3	Z22 mm3	R33 mm	R22 mm	CG Offset 3 mm	CG Offset 2 mm	PNA Offset 3 mm
Col madera 15x15	562500	562500	562500	562500	843750	843750	43.3	43.3	0	0	0
madera 10x5 cm	83333.3	83333.3	41666.7	41666.7	125000	62500	28.9	14.4	0	0	0
madera 15x5 cm	187500	187500	62500	62500	281250	93750	43.3	14.4	0	0	0

Table 2.2 - Frame Section Property Definitions - Summary (Part 3 of 3)

Name	Area Modifier	As2 Modifier	As3 Modifier	J Modifier	I33 Modifier	I22 Modifier	Mass Modifier	Weight Modifier
Col madera 15x15	1	1	1	1	1	1	1	1
madera 10x5 cm	1	1	1	1	1	1	1	1
madera 15x5 cm	1	1	1	1	1	1	1	1

2.3 Shell Sections

Table 2.3 - Area Section Property Definitions - Summary

Name	Type	Element Type	Material	Total Thickness mm	Deck Material	Deck Depth mm
Deck1	Deck	Membrane	4000Psi	162.5	A992Fy50	75
Plank1	Slab	Membrane	4000Psi	200		
Slab1	Slab	Shell-Thin	4000Psi	200		
TEJA	Deck	Membrane	4000Psi	10		
Wall1	Wall	Shell-Thin	4000Psi	250		

2.4 Reinforcement Sizes

Table 2.4 - Reinforcing Bar Sizes

Name	Diameter mm	Area mm2
6	6	28.3
8	8	50.3
10	10	78.5
12	12	113.1
14	14	153.9
16	16	201.1
18	18	254.5
20	20	314.2
22	22	380.1
25	25	490.9
26	26	530.9
28	28	615.8
32	32	804.2
36	36	1017.9
40	40	1256.6
50	50	1963.5

2.5 Links

Table 2.5 - Link Property Definitions - Summary

Name	Type	Degrees of Freedom	Mass kg	Weight tonf	Defined Length m	Defined Area m2
Link1	Linear	U1	0	0	1	1

2.6 Tendon Sections

Table 2.6 - Tendon Section Properties

Name	Material	StrandArea mm2	Color	Notes
Tendon1	A416Gr270	98.7	Red	

3 Assignments

This chapter provides a listing of the assignments applied to the model.

3.1 Joint Assignments

Table 3.1 - Joint Assignments - Summary

Story	Label	UniqueName	Diaphragm	Restraints
Story2	1	37	From Area	
Story2	2	38	From Area	
Story2	3	39	From Area	
Story2	4	40	From Area	
Story2	5	41	From Area	
Story2	6	42	From Area	
Story2	7	43	From Area	
Story2	8	44	From Area	
Story2	9	45	From Area	
Story2	10	46	From Area	
Story2	11	47	From Area	
Story2	12	48	From Area	
Story2	13	49	From Area	
Story2	14	50	From Area	
Story2	15	51	From Area	
Story2	16	52	From Area	
Story2	17	53	From Area	
Story2	18	54	From Area	
Story2	19	55	From Area	
Story2	20	56	From Area	
Story2	21	57	From Area	
Story2	22	58	From Area	
Story2	23	59	From Area	
Story2	24	60	From Area	
Story2	25	61	From Area	
Story2	26	62	From Area	
Story2	27	63	From Area	
Story2	28	64	From Area	
Story2	29	65	From Area	
Story2	30	66	From Area	
Story2	31	67	From Area	
Story2	32	68	From Area	
Story2	33	69	From Area	
Story2	34	70	From Area	
Story2	35	71	From Area	
Story2	36	72	From Area	
Story1	1	1	From Area	
Story1	2	3	From Area	
Story1	3	5	From Area	
Story1	4	7	From Area	
Story1	5	9	From Area	
Story1	6	11	From Area	

Table 3.1 - Joint Assignments - Summary (continued)

Story	Label	UniqueName	Diaphragm	Restraints
Story1	7	13	From Area	
Story1	8	15	From Area	
Story1	9	17	From Area	
Story1	10	19	From Area	
Story1	11	21	From Area	
Story1	12	23	From Area	
Story1	13	25	From Area	
Story1	14	27	From Area	
Story1	15	29	From Area	
Story1	16	31	From Area	
Story1	17	33	From Area	
Story1	18	35	From Area	
Base	1	2	From Area	UX; UY; UZ; RX; RY; RZ
Base	2	4	From Area	UX; UY; UZ; RX; RY; RZ
Base	3	6	From Area	UX; UY; UZ; RX; RY; RZ
Base	4	8	From Area	UX; UY; UZ; RX; RY; RZ
Base	5	10	From Area	UX; UY; UZ; RX; RY; RZ
Base	6	12	From Area	UX; UY; UZ; RX; RY; RZ
Base	7	14	From Area	UX; UY; UZ; RX; RY; RZ
Base	8	16	From Area	UX; UY; UZ; RX; RY; RZ
Base	9	18	From Area	UX; UY; UZ; RX; RY; RZ
Base	10	20	From Area	UX; UY; UZ; RX; RY; RZ
Base	11	22	From Area	UX; UY; UZ; RX; RY; RZ
Base	12	24	From Area	UX; UY; UZ; RX; RY; RZ
Base	13	26	From Area	UX; UY; UZ; RX; RY; RZ
Base	14	28	From Area	UX; UY; UZ; RX; RY; RZ
Base	15	30	From Area	UX; UY; UZ; RX; RY; RZ
Base	16	32	From Area	UX; UY; UZ; RX; RY; RZ
Base	17	34	From Area	UX; UY; UZ; RX; RY; RZ
Base	18	36	From Area	UX; UY; UZ; RX; RY; RZ

3.2 Frame Assignments

Table 3.2 - Frame Assignments - Summary

Story	Label	UniqueName	Design Type	Length m	Analysis Section	Design Section	Max Station Spacing m	Min Number Stations
Story2	B1	53	Beam	1.8	madera 15x5 cm	N/A	0.5	
Story2	B2	54	Beam	1.72	madera 15x5 cm	N/A	0.5	
Story2	B3	55	Beam	1.8	madera 15x5 cm	N/A	0.5	
Story2	B4	56	Beam	1.66	madera 15x5 cm	N/A	0.5	
Story2	B5	57	Beam	1.67	madera 15x5 cm	N/A	0.5	
Story2	B6	58	Beam	1.8	madera 15x5 cm	N/A	0.5	
Story2	B7	59	Beam	1.638	madera 15x5 cm	N/A	0.5	
Story2	B8	60	Beam	1.392	madera 15x5 cm	N/A	0.5	
Story2	B9	61	Beam	1.8	madera 15x5 cm	N/A	0.5	

Table 3.2 - Frame Assignments - Summary (continued)

Story	Label	UniqueName	Design Type	Length m	Analysis Section	Design Section	Max Station Spacing m	Min Number Stations
Story2	B10	62	Beam	1.72	madera 15x5 cm	N/A	0.5	
Story2	B11	63	Beam	1.8	madera 15x5 cm	N/A	0.5	
Story2	B12	64	Beam	1.66	madera 15x5 cm	N/A	0.5	
Story2	B13	65	Beam	1.67	madera 15x5 cm	N/A	0.5	
Story2	B14	66	Beam	1.8	madera 15x5 cm	N/A	0.5	
Story2	B15	67	Beam	1.638	madera 15x5 cm	N/A	0.5	
Story2	B16	68	Beam	1.392	madera 15x5 cm	N/A	0.5	
Story2	B17	69	Beam	1.9	madera 15x5 cm	N/A	0.5	
Story2	B18	70	Beam	1.9	madera 15x5 cm	N/A	0.5	
Story2	B19	71	Beam	1.9	madera 15x5 cm	N/A	0.5	
Story2	B20	72	Beam	1.9	madera 15x5 cm	N/A	0.5	
Story2	B21	73	Beam	1.9	madera 15x5 cm	N/A	0.5	
Story2	B22	74	Beam	1.9	madera 15x5 cm	N/A	0.5	
Story2	B23	75	Beam	1.9	madera 15x5 cm	N/A	0.5	
Story2	B24	76	Beam	1.9	madera 15x5 cm	N/A	0.5	
Story2	B25	77	Beam	1.9	madera 15x5 cm	N/A	0.5	
Story2	B26	78	Beam	1.8	madera 10x5 cm	N/A	0.5	
Story2	B27	79	Beam	1.8	madera 10x5 cm	N/A	0.5	
Story2	B28	80	Beam	1.72	madera 10x5 cm	N/A	0.5	
Story2	B29	81	Beam	1.72	madera 10x5 cm	N/A	0.5	
Story2	B30	82	Beam	1.8	madera 10x5 cm	N/A	0.5	
Story2	B31	83	Beam	1.8	madera 10x5 cm	N/A	0.5	
Story2	B32	84	Beam	1.66	madera 10x5 cm	N/A	0.5	
Story2	B33	85	Beam	1.66	madera 10x5 cm	N/A	0.5	
Story2	B34	86	Beam	1.67	madera 10x5 cm	N/A	0.5	
Story2	B35	87	Beam	1.67	madera 10x5 cm	N/A	0.5	
Story2	B36	88	Beam	1.8	madera 10x5 cm	N/A	0.5	
Story2	B37	89	Beam	1.8	madera 10x5 cm	N/A	0.5	
Story2	B38	90	Beam	1.638	madera 10x5 cm	N/A	0.5	
Story2	B39	91	Beam	1.638	madera 10x5 cm	N/A	0.5	
Story2	B40	92	Beam	1.392	madera 10x5 cm	N/A	0.5	
Story2	B41	93	Beam	1.392	madera 10x5 cm	N/A	0.5	
Story2	C1	35	Column	1.62	Col madera 15x15	N/A		3
Story2	C2	36	Column	1.62	Col madera 15x15	N/A		3
Story2	C3	37	Column	1.62	Col madera 15x15	N/A		3
Story2	C4	38	Column	1.62	Col madera 15x15	N/A		3
Story2	C5	39	Column	1.62	Col madera 15x15	N/A		3
Story2	C6	40	Column	1.62	Col madera 15x15	N/A		3
Story2	C7	41	Column	1.62	Col madera 15x15	N/A		3
Story2	C8	42	Column	1.62	Col madera 15x15	N/A		3
Story2	C9	43	Column	1.62	Col madera 15x15	N/A		3
Story2	C10	44	Column	1.62	Col madera 15x15	N/A		3
Story2	C11	45	Column	1.62	Col madera 15x15	N/A		3
Story2	C12	46	Column	1.62	Col madera 15x15	N/A		3

Table 3.2 - Frame Assignments - Summary (continued)

Story	Label	UniqueName	Design Type	Length m	Analysis Section	Design Section	Max Station Spacing m	Min Number Stations
Story2	C13	47	Column	1.62	Col madera 15x15	N/A		3
Story2	C14	48	Column	1.62	Col madera 15x15	N/A		3
Story2	C15	49	Column	1.62	Col madera 15x15	N/A		3
Story2	C16	50	Column	1.62	Col madera 15x15	N/A		3
Story2	C17	51	Column	1.62	Col madera 15x15	N/A		3
Story2	C18	52	Column	1.62	Col madera 15x15	N/A		3
Story1	B1	19	Beam	1.8	madera 15x5 cm	N/A	0.5	
Story1	B2	20	Beam	1.72	madera 15x5 cm	N/A	0.5	
Story1	B3	21	Beam	1.8	madera 15x5 cm	N/A	0.5	
Story1	B4	22	Beam	1.66	madera 15x5 cm	N/A	0.5	
Story1	B5	23	Beam	1.67	madera 15x5 cm	N/A	0.5	
Story1	B6	24	Beam	1.8	madera 15x5 cm	N/A	0.5	
Story1	B7	25	Beam	1.638	madera 15x5 cm	N/A	0.5	
Story1	B8	26	Beam	1.392	madera 15x5 cm	N/A	0.5	
Story1	B9	27	Beam	1.8	madera 15x5 cm	N/A	0.5	
Story1	B10	28	Beam	1.72	madera 15x5 cm	N/A	0.5	
Story1	B11	29	Beam	1.8	madera 15x5 cm	N/A	0.5	
Story1	B12	30	Beam	1.66	madera 15x5 cm	N/A	0.5	
Story1	B13	31	Beam	1.67	madera 15x5 cm	N/A	0.5	
Story1	B14	32	Beam	1.8	madera 15x5 cm	N/A	0.5	
Story1	B15	33	Beam	1.638	madera 15x5 cm	N/A	0.5	
Story1	B16	34	Beam	1.392	madera 15x5 cm	N/A	0.5	
Story1	C1	1	Column	3.88	Col madera 15x15	N/A		3
Story1	C2	2	Column	3.88	Col madera 15x15	N/A		3
Story1	C3	3	Column	3.88	Col madera 15x15	N/A		3
Story1	C4	4	Column	3.88	Col madera 15x15	N/A		3
Story1	C5	5	Column	3.88	Col madera 15x15	N/A		3
Story1	C6	6	Column	3.88	Col madera 15x15	N/A		3
Story1	C7	7	Column	3.88	Col madera 15x15	N/A		3
Story1	C8	8	Column	3.88	Col madera 15x15	N/A		3
Story1	C9	9	Column	3.88	Col madera 15x15	N/A		3
Story1	C10	10	Column	3.88	Col madera 15x15	N/A		3
Story1	C11	11	Column	3.88	Col madera 15x15	N/A		3
Story1	C12	12	Column	3.88	Col madera 15x15	N/A		3
Story1	C13	13	Column	3.88	Col madera 15x15	N/A		3
Story1	C14	14	Column	3.88	Col madera 15x15	N/A		3
Story1	C15	15	Column	3.88	Col madera 15x15	N/A		3
Story1	C16	16	Column	3.88	Col madera 15x15	N/A		3
Story1	C17	17	Column	3.88	Col madera 15x15	N/A		3
Story1	C18	18	Column	3.88	Col madera 15x15	N/A		3

3.3 Shell Assignments

Table 3.3 - Area Assignments - Summary

Story	Label	UniqueName	Section Property	Property Type	Axis Angle deg
Story2	F1	2	TEJA	Deck	90
Story2	F2	3	TEJA	Deck	90
Story2	F3	4	TEJA	Deck	90
Story2	F4	5	TEJA	Deck	90
Story2	F5	6	TEJA	Deck	90
Story2	F6	7	TEJA	Deck	90
Story2	F7	8	TEJA	Deck	90
Story2	F8	9	TEJA	Deck	90

4 Loads

This chapter provides loading information as applied to the model.

4.1 Load Patterns

Table 4.1 - Load Pattern Definitions

Name	Is Auto Load	Type	Self Weight Multiplier
~LLRF	Yes	Other	0
Dead	No	Dead	1
Granizo	No	Snow	0
Live	No	Live	0

4.2 Load Sets

Table 4.2 - Shell Uniform Load Sets

Name	Load Pattern	Load Value kgf/m2
cubierta	Dead	39
cubierta	Live	50
cubierta	Granizo	100

4.3 Applied Loads

4.3.1 Area Loads

Table 4.3 - Area Load Assignments - Uniform Load Sets

Story	Label	UniqueName	Load Set
Story2	F1	2	cubierta
Story2	F2	3	cubierta
Story2	F3	4	cubierta
Story2	F4	5	cubierta
Story2	F5	6	cubierta
Story2	F6	7	cubierta
Story2	F7	8	cubierta
Story2	F8	9	cubierta

4.4 Functions

4.4.1 Response Spectrum Functions

Table 4.4 - Functions - Response Spectrum - Columbia NSR-10

Name	Period sec	Value	Aa	Av	Ae	Ad	Group of Use	Fa	Fv	Damping Ratio
suelo e manizales	0	0.90625	0.25	0.25	0.13	0.07	1	1.45	3	0.05
suelo e manizales	0.1	0.90625								
suelo e manizales	0.2	0.90625								
suelo e manizales	0.3	0.90625								

Table 4.4 - Functions - Response Spectrum - Columbia NSR-10 (continued)

Name	Period sec	Value	Aa	Av	Ae	Ad	Group of Use	Fa	Fv	Damping Ratio
suelo e manizales	0.4	0.90625								
suelo e manizales	0.5	0.90625								
suelo e manizales	0.6	0.90625								
suelo e manizales	0.7	0.90625								
suelo e manizales	0.8	0.90625								
suelo e manizales	0.9	0.90625								
suelo e manizales	1	0.9								
suelo e manizales	1.2	0.75								
suelo e manizales	1.5	0.6								
suelo e manizales	1.7	0.529412								
suelo e manizales	2	0.45								
suelo e manizales	2.5	0.36								
suelo e manizales	3	0.3								
suelo e manizales	3.5	0.257143								
suelo e manizales	4	0.225								
suelo e manizales	5	0.18								
suelo e manizales	8	0.10125								
suelo e manizales	11	0.053554								
suelo e manizales	15	0.0288								

4.4.2 Time History Functions

Table 4.5 - Functions - Time History - User Defined

Name	Time sec	Value
RampTH	0	0
RampTH	1	1
RampTH	4	1
UnifTH	0	1
UnifTH	1	1

4.5 Load Cases

Table 4.6 - Load Case Definitions - Summary

Name	Type
Dead	Linear Static
Live	Linear Static
Modal	Modal - Eigen
Granizo	Linear Static
SX	Response Spectrum
SY	Response Spectrum

4.6 Load Combinations

Table 4.7 - Load Combination Definitions

Name	Type	Is Auto	Load Name	SF	Notes
Ex	Linear Add	No	SX	0.5	
Ey	Linear Add	No	SY	0.5	
mayorada 1.2D-1.6L-05G	Linear Add	No	Dead	1.2	
mayorada 1.2D-1.6L-05G			Live	1.6	
mayorada 1.2D-1.6L-05G			Granizo	0.5	
mayorada 1.2D 1L -1	Linear Add	No	Dead	1.2	
mayorada 1.2D 1L -1			Live	1	
mayorada 1.2D 1L -1			Ey	-1	
mayorada 1.2D 1L -1			Ex	-0.3	
mayorada 1.2D 1L 1E	Linear Add	No	Dead	1.2	
mayorada 1.2D 1L 1E			Live	1	
mayorada 1.2D 1L 1E			Ex	1	
mayorada 1.2D 1L 1E			Ey	0.3	
mayorada 1.2D 1L -1E	Linear Add	No	Dead	1.2	
mayorada 1.2D 1L -1E			Live	1	
mayorada 1.2D 1L -1E			Ex	-1	
mayorada 1.2D 1L -1E			Ey	-0.3	
mayorada 1.2D 1L 1E-1	Linear Add	No	Dead	1.2	
mayorada 1.2D 1L 1E-1			Live	1	
mayorada 1.2D 1L 1E-1			Ey	1	
mayorada 1.2D 1L 1E-1			Ex	0.3	
mayorada 1.2D +1.6 G +1 L	Linear Add	No	Dead	1.2	
mayorada 1.2D +1.6 G +1 L			Live	1	
mayorada 1.2D +1.6 G +1 L			Granizo	1.6	
mayorada 1.4D	Linear Add	No	Dead	1.4	
servicio	Linear Add	No	Dead	1	
servicio			Live	1	

5 Analysis Results

This chapter provides analysis results.

5.1 Structure Results

Table 5.1 - Base Reactions (Part 1 of 2)

Output Case	Case Type	Step Type	FX kgf	FY kgf	FZ kgf	MX kgf-m	MY kgf-m	MZ kgf-m
Dead	LinStatic		0	0	3750.8841	3563.3399	-25593.6876	0
Live	LinStatic		0	0	1280.6	1216.57	-8631.244	0
Granizo	LinStatic		0	0	2561.2	2433.14	-17262.488	0
SX	LinRespSpec	Max	1945.5669	0	0	0	9416.9448	1848.2885
SY	LinRespSpec	Max	0	1903.0106	0	9327.0522	0	12612.9794
servicio	Combination		0	0	5031.4841	4779.9099	-34224.9316	0
mayorada 1.4D	Combination		0	0	5251.2378	4988.6759	-35831.1626	0
mayorada 1.2D-1.6L-05G	Combination		0	0	7830.6209	7439.0899	-53153.6595	0
Ex	Combination	Max	972.7834	0	0	0	4708.4724	924.1443
Ex	Combination	Min	-972.7834	0	0	0	-4708.4724	-924.1443
Ey	Combination	Max	0	951.5053	0	4663.5261	0	6306.4897
Ey	Combination	Min	0	-951.5053	0	-4663.5261	0	-6306.4897
mayorada 1.2D +1.6 G +1 L	Combination		0	0	9879.5809	9385.6019	-66963.6499	0
mayorada 1.2D 1L 1E	Combination	Max	972.7834	285.4516	5781.6609	6891.6357	-34635.1967	2816.0912
mayorada 1.2D 1L 1E	Combination	Min	-972.7834	-285.4516	5781.6609	4093.5201	-44052.1415	-2816.0912
mayorada 1.2D 1L -1E	Combination	Max	972.7834	285.4516	5781.6609	6891.6357	-34635.1967	2816.0912
mayorada 1.2D 1L -1E	Combination	Min	-972.7834	-285.4516	5781.6609	4093.5201	-44052.1415	-2816.0912
mayorada 1.2D 1L 1E-1	Combination	Max	291.835	951.5053	5781.6609	10156.104	-37931.1274	6583.733
mayorada 1.2D 1L 1E-1	Combination	Min	-291.835	-951.5053	5781.6609	829.0518	-40756.2108	-6583.733
mayorada 1.2D 1L -1	Combination	Max	291.835	951.5053	5781.6609	10156.104	-37931.1274	6583.733
mayorada 1.2D 1L -1	Combination	Min	-291.835	-951.5053	5781.6609	829.0518	-40756.2108	-6583.733

Table 5.1 - Base Reactions (Part 2 of 2)

X m	Y m	Z m
0	0	-3
0	0	-3
0	0	-3
0	0	-3
0	0	-3
0	0	-3
0	0	-3
0	0	-3
0	0	-3
0	0	-3
0	0	-3
0	0	-3
0	0	-3
0	0	-3
0	0	-3
0	0	-3
0	0	-3
0	0	-3
0	0	-3

Table 5.1 - Base Reactions (Part 2 of 2, continued)

X m	Y m	Z m
0	0	-3
0	0	-3
0	0	-3
0	0	-3
0	0	-3

5.2 Story Results

Table 5.2 - Story Drifts

Story	Output Case	Case Type	Step Type	Direction	Drift	Label	X m	Y m	Z m
Story2	Dead	LinStatic		X	1E-06	2	0	1.9	2.5
Story2	Live	LinStatic		X	3.675E-07	2	0	1.9	2.5
Story2	Granizo	LinStatic		X	1E-06	2	0	1.9	2.5
Story2	SX	LinRespSpec	Max	X	0.000204	2	0	1.9	2.5
Story2	SY	LinRespSpec	Max	Y	0.000857	2	0	1.9	2.5
Story2	servicio	Combination		X	1E-06	2	0	1.9	2.5
Story2	mayorada 1.4D	Combination		X	1E-06	2	0	1.9	2.5
Story2	mayorada 1.2D-1.6L-05G	Combination		X	2E-06	2	0	1.9	2.5
Story2	Ex	Combination	Max	X	0.000102	2	0	1.9	2.5
Story2	Ex	Combination	Min	X	0.000102	2	0	1.9	2.5
Story2	Ey	Combination	Max	Y	0.000429	2	0	1.9	2.5
Story2	Ey	Combination	Min	Y	0.000429	2	0	1.9	2.5
Story2	mayorada 1.2D +1.6 G +1 L	Combination		X	2E-06	2	0	1.9	2.5
Story2	mayorada 1.2D 1L 1E	Combination	Max	X	0.000104	2	0	1.9	2.5
Story2	mayorada 1.2D 1L 1E	Combination	Max	Y	0.000197	3	1.8	0	2.5
Story2	mayorada 1.2D 1L 1E	Combination	Min	X	0.000103	18	13.48	1.9	2.5
Story2	mayorada 1.2D 1L 1E	Combination	Min	Y	0.000197	4	1.8	1.9	2.5
Story2	mayorada 1.2D 1L -1E	Combination	Max	X	0.000104	2	0	1.9	2.5
Story2	mayorada 1.2D 1L -1E	Combination	Max	Y	0.000197	3	1.8	0	2.5
Story2	mayorada 1.2D 1L -1E	Combination	Min	X	0.000103	18	13.48	1.9	2.5
Story2	mayorada 1.2D 1L -1E	Combination	Min	Y	0.000197	4	1.8	1.9	2.5
Story2	mayorada 1.2D 1L 1E-1	Combination	Max	Y	0.00049	3	1.8	0	2.5
Story2	mayorada 1.2D 1L 1E-1	Combination	Min	Y	0.00049	4	1.8	1.9	2.5
Story2	mayorada 1.2D 1L -1	Combination	Max	Y	0.00049	3	1.8	0	2.5
Story2	mayorada 1.2D 1L -1	Combination	Min	Y	0.00049	4	1.8	1.9	2.5
Story1	Dead	LinStatic		X	1.455E-07	2	0	1.9	0.88
Story1	Live	LinStatic		X	9.82E-08	2	0	1.9	0.88
Story1	Granizo	LinStatic		X	1.964E-07	2	0	1.9	0.88
Story1	SX	LinRespSpec	Max	X	0.000441	11	8.65	0	0.88
Story1	SY	LinRespSpec	Max	Y	0.000904	1	0	0	0.88
Story1	servicio	Combination		X	2.437E-07	2	0	1.9	0.88
Story1	mayorada 1.4D	Combination		X	2.037E-07	2	0	1.9	0.88
Story1	mayorada 1.2D-1.6L-05G	Combination		X	4.299E-07	2	0	1.9	0.88
Story1	Ex	Combination	Max	X	0.00022	11	8.65	0	0.88
Story1	Ex	Combination	Min	X	0.00022	11	8.65	0	0.88

Table 5.2 - Story Drifts (continued)

Story	Output Case	Case Type	Step Type	Direction	Drift	Label	X m	Y m	Z m
Story1	Ey	Combination	Max	Y	0.000452	1	0	0	0.88
Story1	Ey	Combination	Min	Y	0.000452	1	0	0	0.88
Story1	mayorada 1.2D +1.6 G +1 L	Combination		X	1E-06	2	0	1.9	0.88
Story1	mayorada 1.2D 1L 1E	Combination	Max	X	0.000223	15	12.088	0	0.88
Story1	mayorada 1.2D 1L 1E	Combination	Max	Y	0.000163	4	1.8	1.9	0.88
Story1	mayorada 1.2D 1L 1E	Combination	Min	X	0.000223	9	6.98	0	0.88
Story1	mayorada 1.2D 1L 1E	Combination	Min	Y	0.000163	3	1.8	0	0.88
Story1	mayorada 1.2D 1L -1E	Combination	Max	X	0.000223	15	12.088	0	0.88
Story1	mayorada 1.2D 1L -1E	Combination	Max	Y	0.000163	4	1.8	1.9	0.88
Story1	mayorada 1.2D 1L -1E	Combination	Min	X	0.000223	9	6.98	0	0.88
Story1	mayorada 1.2D 1L -1E	Combination	Min	Y	0.000163	3	1.8	0	0.88
Story1	mayorada 1.2D 1L 1E-1	Combination	Max	X	7.5E-05	17	13.48	0	0.88
Story1	mayorada 1.2D 1L 1E-1	Combination	Max	Y	0.000474	4	1.8	1.9	0.88
Story1	mayorada 1.2D 1L 1E-1	Combination	Min	X	7.4E-05	2	0	1.9	0.88
Story1	mayorada 1.2D 1L 1E-1	Combination	Min	Y	0.000474	3	1.8	0	0.88
Story1	mayorada 1.2D 1L -1	Combination	Max	X	7.5E-05	17	13.48	0	0.88
Story1	mayorada 1.2D 1L -1	Combination	Max	Y	0.000474	4	1.8	1.9	0.88
Story1	mayorada 1.2D 1L -1	Combination	Min	X	7.4E-05	2	0	1.9	0.88
Story1	mayorada 1.2D 1L -1	Combination	Min	Y	0.000474	3	1.8	0	0.88

Table 5.3 - Story Forces (Part 1 of 2)

Story	Location	Output Case	Case Type	Step Type	P kgf	VX kgf	VY kgf	T kgf-m
Story2	Top	Dead	LinStatic		1942.1091	0	0	0
Story2	Bottom	Dead	LinStatic		2434.1841	0	0	0
Story2	Top	Live	LinStatic		1280.6	0	0	0
Story2	Bottom	Live	LinStatic		1280.6	0	0	0
Story2	Top	Granizo	LinStatic		2561.2	0	0	0
Story2	Bottom	Granizo	LinStatic		2561.2	0	0	0
Story2	Top	SX	LinRespSpec	Max	0	1153.1761	0	1095.5174
Story2	Bottom	SX	LinRespSpec	Max	0	1153.1761	0	1095.5174
Story2	Top	SY	LinRespSpec	Max	0	0	1199.612	7916.7835
Story2	Bottom	SY	LinRespSpec	Max	0	0	1199.612	7916.7835
Story2	Top	servicio	Combination		3222.7091	0	0	0
Story2	Bottom	servicio	Combination		3714.7841	0	0	0
Story2	Top	mayorada 1.4D	Combination		2718.9528	0	0	0
Story2	Bottom	mayorada 1.4D	Combination		3407.8578	0	0	0
Story2	Top	mayorada 1.2D-1.6L-05G	Combination		5660.0909	0	0	0
Story2	Bottom	mayorada 1.2D-1.6L-05G	Combination		6250.5809	0	0	0
Story2	Top	Ex	Combination	Max	0	576.5881	0	547.7587
Story2	Bottom	Ex	Combination	Max	0	576.5881	0	547.7587
Story2	Top	Ex	Combination	Min	0	-576.5881	0	-547.7587
Story2	Bottom	Ex	Combination	Min	0	-576.5881	0	-547.7587
Story2	Top	Ey	Combination	Max	0	0	599.806	3958.3918
Story2	Bottom	Ey	Combination	Max	0	0	599.806	3958.3918

Table 5.3 - Story Forces (Part 1 of 2, continued)

Story	Location	Output Case	Case Type	Step Type	P kgf	VX kgf	VY kgf	T kgf-m
Story2	Top	Ey	Combination	Min	0	0	-599.806	-3958.3918
Story2	Bottom	Ey	Combination	Min	0	0	-599.806	-3958.3918
Story2	Top	mayorada 1.2D +1.6 G +1 L	Combination		7709.0509	0	0	0
Story2	Bottom	mayorada 1.2D +1.6 G +1 L	Combination		8299.5409	0	0	0
Story2	Top	mayorada 1.2D 1L 1E	Combination	Max	3611.1309	576.5881	179.9418	1735.2762
Story2	Bottom	mayorada 1.2D 1L 1E	Combination	Max	4201.6209	576.5881	179.9418	1735.2762
Story2	Top	mayorada 1.2D 1L 1E	Combination	Min	3611.1309	-576.5881	-179.9418	-1735.2762
Story2	Bottom	mayorada 1.2D 1L 1E	Combination	Min	4201.6209	-576.5881	-179.9418	-1735.2762
Story2	Top	mayorada 1.2D 1L -1E	Combination	Max	3611.1309	576.5881	179.9418	1735.2762
Story2	Bottom	mayorada 1.2D 1L -1E	Combination	Max	4201.6209	576.5881	179.9418	1735.2762
Story2	Top	mayorada 1.2D 1L -1E	Combination	Min	3611.1309	-576.5881	-179.9418	-1735.2762
Story2	Bottom	mayorada 1.2D 1L -1E	Combination	Min	4201.6209	-576.5881	-179.9418	-1735.2762
Story2	Top	mayorada 1.2D 1L 1E-1	Combination	Max	3611.1309	172.9764	599.806	4122.7194
Story2	Bottom	mayorada 1.2D 1L 1E-1	Combination	Max	4201.6209	172.9764	599.806	4122.7194
Story2	Top	mayorada 1.2D 1L 1E-1	Combination	Min	3611.1309	-172.9764	-599.806	-4122.7194
Story2	Bottom	mayorada 1.2D 1L 1E-1	Combination	Min	4201.6209	-172.9764	-599.806	-4122.7194
Story2	Top	mayorada 1.2D 1L -1	Combination	Max	3611.1309	172.9764	599.806	4122.7194
Story2	Bottom	mayorada 1.2D 1L -1	Combination	Max	4201.6209	172.9764	599.806	4122.7194
Story2	Top	mayorada 1.2D 1L -1	Combination	Min	3611.1309	-172.9764	-599.806	-4122.7194
Story2	Bottom	mayorada 1.2D 1L -1	Combination	Min	4201.6209	-172.9764	-599.806	-4122.7194
Story1	Top	Dead	LinStatic		2572.3341	0	0	0
Story1	Bottom	Dead	LinStatic		3750.8841	0	0	0
Story1	Top	Live	LinStatic		1280.6	0	0	0
Story1	Bottom	Live	LinStatic		1280.6	0	0	0
Story1	Top	Granizo	LinStatic		2561.2	0	0	0
Story1	Bottom	Granizo	LinStatic		2561.2	0	0	0
Story1	Top	SX	LinRespSpec	Max	0	1945.5669	0	1848.2885
Story1	Bottom	SX	LinRespSpec	Max	0	1945.5669	0	1848.2885
Story1	Top	SY	LinRespSpec	Max	0	0	1903.0106	12612.9794
Story1	Bottom	SY	LinRespSpec	Max	0	0	1903.0106	12612.9794
Story1	Top	servicio	Combination		3852.9341	0	0	0
Story1	Bottom	servicio	Combination		5031.4841	0	0	0
Story1	Top	mayorada 1.4D	Combination		3601.2678	0	0	0
Story1	Bottom	mayorada 1.4D	Combination		5251.2378	0	0	0
Story1	Top	mayorada 1.2D-1.6L-05G	Combination		6416.3609	0	0	0
Story1	Bottom	mayorada 1.2D-1.6L-05G	Combination		7830.6209	0	0	0
Story1	Top	Ex	Combination	Max	0	972.7834	0	924.1443
Story1	Bottom	Ex	Combination	Max	0	972.7834	0	924.1443
Story1	Top	Ex	Combination	Min	0	-972.7834	0	-924.1443
Story1	Bottom	Ex	Combination	Min	0	-972.7834	0	-924.1443
Story1	Top	Ey	Combination	Max	0	0	951.5053	6306.4897
Story1	Bottom	Ey	Combination	Max	0	0	951.5053	6306.4897
Story1	Top	Ey	Combination	Min	0	0	-951.5053	-6306.4897
Story1	Bottom	Ey	Combination	Min	0	0	-951.5053	-6306.4897
Story1	Top	mayorada 1.2D +1.6 G +1 L	Combination		8465.3209	0	0	0

Table 5.3 - Story Forces (Part 1 of 2, continued)

Story	Location	Output Case	Case Type	Step Type	P kgf	VX kgf	VY kgf	T kgf-m
Story1	Bottom	mayorada 1.2D +1.6 G +1 L	Combination		9879.5809	0	0	0
Story1	Top	mayorada 1.2D 1L 1E	Combination	Max	4367.4009	972.7834	285.4516	2816.0912
Story1	Bottom	mayorada 1.2D 1L 1E	Combination	Max	5781.6609	972.7834	285.4516	2816.0912
Story1	Top	mayorada 1.2D 1L 1E	Combination	Min	4367.4009	-972.7834	-285.4516	-2816.0912
Story1	Bottom	mayorada 1.2D 1L 1E	Combination	Min	5781.6609	-972.7834	-285.4516	-2816.0912
Story1	Top	mayorada 1.2D 1L -1E	Combination	Max	4367.4009	972.7834	285.4516	2816.0912
Story1	Bottom	mayorada 1.2D 1L -1E	Combination	Max	5781.6609	972.7834	285.4516	2816.0912
Story1	Top	mayorada 1.2D 1L -1E	Combination	Min	4367.4009	-972.7834	-285.4516	-2816.0912
Story1	Bottom	mayorada 1.2D 1L -1E	Combination	Min	5781.6609	-972.7834	-285.4516	-2816.0912
Story1	Top	mayorada 1.2D 1L 1E-1	Combination	Max	4367.4009	291.835	951.5053	6583.733
Story1	Bottom	mayorada 1.2D 1L 1E-1	Combination	Max	5781.6609	291.835	951.5053	6583.733
Story1	Top	mayorada 1.2D 1L 1E-1	Combination	Min	4367.4009	-291.835	-951.5053	-6583.733
Story1	Bottom	mayorada 1.2D 1L 1E-1	Combination	Min	5781.6609	-291.835	-951.5053	-6583.733
Story1	Top	mayorada 1.2D 1L -1	Combination	Max	4367.4009	291.835	951.5053	6583.733
Story1	Bottom	mayorada 1.2D 1L -1	Combination	Max	5781.6609	291.835	951.5053	6583.733
Story1	Top	mayorada 1.2D 1L -1	Combination	Min	4367.4009	-291.835	-951.5053	-6583.733
Story1	Bottom	mayorada 1.2D 1L -1	Combination	Min	5781.6609	-291.835	-951.5053	-6583.733

Table 5.3 - Story Forces (Part 2 of 2)

Story	Location	MX kgf-m	MY kgf-m
Story2	Top	1845.0037	-13103.0938
Story2	Bottom	2312.4749	-16508.6902
Story2	Top	1216.57	-8631.244
Story2	Bottom	1216.57	-8631.244
Story2	Top	2433.14	-17262.488
Story2	Bottom	2433.14	-17262.488
Story2	Top	0	0
Story2	Bottom	0	1868.1453
Story2	Top	0	0
Story2	Bottom	1943.3714	5.104E-07
Story2	Top	3061.5737	-21734.3378
Story2	Bottom	3529.0449	-25139.9342
Story2	Top	2583.0051	-18344.3313
Story2	Bottom	3237.4649	-23112.1663
Story2	Top	5377.0864	-38164.947
Story2	Bottom	5938.0519	-42251.6627
Story2	Top	0	0
Story2	Bottom	0	934.0726
Story2	Top	0	0
Story2	Bottom	0	-934.0726
Story2	Top	0	0
Story2	Bottom	971.6857	0
Story2	Top	0	0
Story2	Bottom	-971.6857	0

Table 5.3 - Story Forces (Part 2 of 2, continued)

Story	Location	MX kgf-m	MY kgf-m
Story2	Top	7323.5984	-51974.9374
Story2	Bottom	7884.5639	-56061.6531
Story2	Top	3430.5744	-24354.9566
Story2	Bottom	4283.0456	-27507.5996
Story2	Top	3430.5744	-24354.9566
Story2	Bottom	3700.0342	-29375.7449
Story2	Top	3430.5744	-24354.9566
Story2	Bottom	4283.0456	-27507.5996
Story2	Top	3430.5744	-24354.9566
Story2	Bottom	3700.0342	-29375.7449
Story2	Top	3430.5744	-24354.9566
Story2	Bottom	4963.2256	-28161.4505
Story2	Top	3430.5744	-24354.9566
Story2	Bottom	3019.8542	-28721.8941
Story2	Top	3430.5744	-24354.9566
Story2	Bottom	4963.2256	-28161.4505
Story2	Top	3430.5744	-24354.9566
Story2	Bottom	3019.8542	-28721.8941
Story1	Top	2443.7174	-17437.074
Story1	Bottom	3563.3399	-25593.6876
Story1	Top	1216.57	-8631.244
Story1	Bottom	1216.57	-8631.244
Story1	Top	2433.14	-17262.488
Story1	Bottom	2433.14	-17262.488
Story1	Top	0	1868.1453
Story1	Bottom	0	9416.9448
Story1	Top	1943.3714	5.104E-07
Story1	Bottom	9327.0522	0
Story1	Top	3660.2874	-26068.318
Story1	Bottom	4779.9099	-34224.9316
Story1	Top	3421.2044	-24411.9036
Story1	Bottom	4988.6759	-35831.1626
Story1	Top	6095.5429	-43365.7232
Story1	Bottom	7439.0899	-53153.6595
Story1	Top	0	934.0726
Story1	Bottom	0	4708.4724
Story1	Top	0	-934.0726
Story1	Bottom	0	-4708.4724
Story1	Top	971.6857	0
Story1	Bottom	4663.5261	0
Story1	Top	-971.6857	0
Story1	Bottom	-4663.5261	0
Story1	Top	8042.0549	-57175.7136
Story1	Bottom	9385.6019	-66963.6499
Story1	Top	4440.5366	-28621.6601

Table 5.3 - Story Forces (Part 2 of 2, continued)

Story	Location	MX kgf-m	MY kgf-m
Story1	Bottom	6891.6357	-34635.1967
Story1	Top	3857.5252	-30489.8054
Story1	Bottom	4093.5201	-44052.1415
Story1	Top	4440.5366	-28621.6601
Story1	Bottom	6891.6357	-34635.1967
Story1	Top	3857.5252	-30489.8054
Story1	Bottom	4093.5201	-44052.1415
Story1	Top	5120.7166	-29275.511
Story1	Bottom	10156.104	-37931.1274
Story1	Top	3177.3452	-29835.9546
Story1	Bottom	829.0518	-40756.2108
Story1	Top	5120.7166	-29275.511
Story1	Bottom	10156.104	-37931.1274
Story1	Top	3177.3452	-29835.9546
Story1	Bottom	829.0518	-40756.2108

5.3 Point Results

Table 5.4 - Joint Reactions (Part 1 of 2)

Story	Label	Unique Name	Output Case	Case Type	Step Type	FX kgf	FY kgf	FZ kgf	MX kgf-m
Base	1	2	Dead	LinStatic		-0.1647	3.334	158.0395	-6.0663
Base	1	2	Live	LinStatic		-0.2176	2.1945	38.4102	-3.9903
Base	1	2	Granizo	LinStatic		-0.4353	4.3889	76.8204	-7.9807
Base	1	2	SX	LinRespSpec	Max	99.2193	0.1732	184.5329	0.3177
Base	1	2	SY	LinRespSpec	Max	3.8127	114.4077	227.7183	344.2226
Base	1	2	servicio	Combination		-0.3823	5.5284	196.4497	-10.0567
Base	1	2	mayorada 1.4D	Combination		-0.2305	4.6676	221.2554	-8.4928
Base	1	2	mayorada 1.2D-1.6L-05G	Combination		-0.7635	9.7064	289.5139	-17.6545
Base	1	2	Ex	Combination	Max	49.6096	0.0866	92.2664	0.1588
Base	1	2	Ex	Combination	Min	-49.6096	-0.0866	-92.2664	-0.1588
Base	1	2	Ey	Combination	Max	1.9063	57.2038	113.8592	172.1113
Base	1	2	Ey	Combination	Min	-1.9063	-57.2038	-113.8592	-172.1113
Base	1	2	mayorada 1.2D +1.6 G +1 L	Combination		-1.1117	13.2175	350.9702	-24.039
Base	1	2	mayorada 1.2D 1L 1E	Combination	Max	49.7663	23.443	354.4818	40.5223
Base	1	2	mayorada 1.2D 1L 1E	Combination	Min	-50.5968	-11.0525	101.6335	-63.0622
Base	1	2	mayorada 1.2D 1L -1E	Combination	Max	49.7663	23.443	354.4818	40.5223
Base	1	2	mayorada 1.2D 1L -1E	Combination	Min	-50.5968	-11.0525	101.6335	-63.0622
Base	1	2	mayorada 1.2D 1L 1E-1	Combination	Max	16.374	63.4251	369.5967	160.8891
Base	1	2	mayorada 1.2D 1L 1E-1	Combination	Min	-17.2045	-51.0346	86.5185	-183.4289
Base	1	2	mayorada 1.2D 1L -1	Combination	Max	16.374	63.4251	369.5967	160.8891
Base	1	2	mayorada 1.2D 1L -1	Combination	Min	-17.2045	-51.0346	86.5185	-183.4289
Base	2	4	Dead	LinStatic		-0.1647	-3.334	158.0395	6.0663
Base	2	4	Live	LinStatic		-0.2176	-2.1945	38.4102	3.9903
Base	2	4	Granizo	LinStatic		-0.4353	-4.3889	76.8204	7.9807
Base	2	4	SX	LinRespSpec	Max	99.2193	0.1732	184.5329	0.3177

Table 5.4 - Joint Reactions (Part 1 of 2, continued)

Story	Label	Unique Name	Output Case	Case Type	Step Type	FX kgf	FY kgf	FZ kgf	MX kgf-m
Base	2	4	SY	LinRespSpec	Max	3.8127	114.4077	227.7183	344.2226
Base	2	4	servicio	Combination		-0.3823	-5.5284	196.4497	10.0567
Base	2	4	mayorada 1.4D	Combination		-0.2305	-4.6676	221.2554	8.4928
Base	2	4	mayorada 1.2D-1.6L-05G	Combination		-0.7635	-9.7064	289.5139	17.6545
Base	2	4	Ex	Combination	Max	49.6096	0.0866	92.2664	0.1588
Base	2	4	Ex	Combination	Min	-49.6096	-0.0866	-92.2664	-0.1588
Base	2	4	Ey	Combination	Max	1.9063	57.2038	113.8592	172.1113
Base	2	4	Ey	Combination	Min	-1.9063	-57.2038	-113.8592	-172.1113
Base	2	4	mayorada 1.2D +1.6 G +1 L	Combination		-1.1117	-13.2175	350.9702	24.039
Base	2	4	mayorada 1.2D 1L 1E	Combination	Max	49.7663	11.0525	354.4818	63.0622
Base	2	4	mayorada 1.2D 1L 1E	Combination	Min	-50.5968	-23.443	101.6335	-40.5223
Base	2	4	mayorada 1.2D 1L -1E	Combination	Max	49.7663	11.0525	354.4818	63.0622
Base	2	4	mayorada 1.2D 1L -1E	Combination	Min	-50.5968	-23.443	101.6335	-40.5223
Base	2	4	mayorada 1.2D 1L 1E-1	Combination	Max	16.374	51.0346	369.5967	183.4289
Base	2	4	mayorada 1.2D 1L 1E-1	Combination	Min	-17.2045	-63.4251	86.5185	-160.8891
Base	2	4	mayorada 1.2D 1L -1	Combination	Max	16.374	51.0346	369.5967	183.4289
Base	2	4	mayorada 1.2D 1L -1	Combination	Min	-17.2045	-63.4251	86.5185	-160.8891
Base	3	6	Dead	LinStatic		0.1649	6.3008	234.5707	-11.5797
Base	3	6	Live	LinStatic		0.1261	4.3457	88.3251	-7.9881
Base	3	6	Granizo	LinStatic		0.2522	8.6914	176.6501	-15.9763
Base	3	6	SX	LinRespSpec	Max	109.9484	0.0322	2.8382	0.0618
Base	3	6	SY	LinRespSpec	Max	4.1783	113.0144	225.1449	338.8467
Base	3	6	servicio	Combination		0.291	10.6464	322.8958	-19.5679
Base	3	6	mayorada 1.4D	Combination		0.2309	8.8211	328.399	-16.2116
Base	3	6	mayorada 1.2D-1.6L-05G	Combination		0.5258	18.8597	511.13	-34.6649
Base	3	6	Ex	Combination	Max	54.9742	0.0161	1.4191	0.0309
Base	3	6	Ex	Combination	Min	-54.9742	-0.0161	-1.4191	-0.0309
Base	3	6	Ey	Combination	Max	2.0892	56.5072	112.5724	169.4234
Base	3	6	Ey	Combination	Min	-2.0892	-56.5072	-112.5724	-169.4234
Base	3	6	mayorada 1.2D +1.6 G +1 L	Combination		0.7276	25.8128	652.4501	-47.4459
Base	3	6	mayorada 1.2D 1L 1E	Combination	Max	55.925	28.8749	405.0008	28.9741
Base	3	6	mayorada 1.2D 1L 1E	Combination	Min	-55.277	-5.0617	334.6191	-72.7417
Base	3	6	mayorada 1.2D 1L -1E	Combination	Max	55.925	28.8749	405.0008	28.9741
Base	3	6	mayorada 1.2D 1L -1E	Combination	Min	-55.277	-5.0617	334.6191	-72.7417
Base	3	6	mayorada 1.2D 1L 1E-1	Combination	Max	18.9054	68.4186	482.8081	147.5488
Base	3	6	mayorada 1.2D 1L 1E-1	Combination	Min	-18.2574	-44.6054	256.8118	-191.3165
Base	3	6	mayorada 1.2D 1L -1	Combination	Max	18.9054	68.4186	482.8081	147.5488
Base	3	6	mayorada 1.2D 1L -1	Combination	Min	-18.2574	-44.6054	256.8118	-191.3165
Base	4	8	Dead	LinStatic		0.1649	-6.3008	234.5707	11.5797
Base	4	8	Live	LinStatic		0.1261	-4.3457	88.3251	7.9881
Base	4	8	Granizo	LinStatic		0.2522	-8.6914	176.6501	15.9763
Base	4	8	SX	LinRespSpec	Max	109.9484	0.0322	2.8382	0.0618
Base	4	8	SY	LinRespSpec	Max	4.1783	113.0144	225.1449	338.8467
Base	4	8	servicio	Combination		0.291	-10.6464	322.8958	19.5679
Base	4	8	mayorada 1.4D	Combination		0.2309	-8.8211	328.399	16.2116

Table 5.4 - Joint Reactions (Part 1 of 2, continued)

Story	Label	Unique Name	Output Case	Case Type	Step Type	FX kgf	FY kgf	FZ kgf	MX kgf-m
Base	4	8	mayorada 1.2D-1.6L-05G	Combination		0.5258	-18.8597	511.13	34.6649
Base	4	8	Ex	Combination	Max	54.9742	0.0161	1.4191	0.0309
Base	4	8	Ex	Combination	Min	-54.9742	-0.0161	-1.4191	-0.0309
Base	4	8	Ey	Combination	Max	2.0892	56.5072	112.5724	169.4234
Base	4	8	Ey	Combination	Min	-2.0892	-56.5072	-112.5724	-169.4234
Base	4	8	mayorada 1.2D +1.6 G +1 L	Combination		0.7276	-25.8128	652.4501	47.4459
Base	4	8	mayorada 1.2D 1L 1E	Combination	Max	55.925	5.0617	405.0008	72.7417
Base	4	8	mayorada 1.2D 1L 1E	Combination	Min	-55.277	-28.8749	334.6191	-28.9741
Base	4	8	mayorada 1.2D 1L -1E	Combination	Max	55.925	5.0617	405.0008	72.7417
Base	4	8	mayorada 1.2D 1L -1E	Combination	Min	-55.277	-28.8749	334.6191	-28.9741
Base	4	8	mayorada 1.2D 1L 1E-1	Combination	Max	18.9054	44.6054	482.8081	191.3165
Base	4	8	mayorada 1.2D 1L 1E-1	Combination	Min	-18.2574	-68.4186	256.8118	-147.5488
Base	4	8	mayorada 1.2D 1L -1	Combination	Max	18.9054	44.6054	482.8081	191.3165
Base	4	8	mayorada 1.2D 1L -1	Combination	Min	-18.2574	-68.4186	256.8118	-147.5488
Base	5	10	Dead	LinStatic		0.0124	6.2641	227.2793	-11.4648
Base	5	10	Live	LinStatic		-0.0019	4.3191	83.1874	-7.9048
Base	5	10	Granizo	LinStatic		-0.0037	8.6381	166.3749	-15.8095
Base	5	10	SX	LinRespSpec	Max	109.3414	0.007	14.6881	0.012
Base	5	10	SY	LinRespSpec	Max	4.1138	110.851	220.6974	332.2644
Base	5	10	servicio	Combination		0.0106	10.5831	310.4668	-19.3696
Base	5	10	mayorada 1.4D	Combination		0.0174	8.7697	318.1911	-16.0507
Base	5	10	mayorada 1.2D-1.6L-05G	Combination		0.0101	18.7464	489.0225	-34.3102
Base	5	10	Ex	Combination	Max	54.6707	0.0035	7.3441	0.006
Base	5	10	Ex	Combination	Min	-54.6707	-0.0035	-7.3441	-0.006
Base	5	10	Ey	Combination	Max	2.0569	55.4255	110.3487	166.1322
Base	5	10	Ey	Combination	Min	-2.0569	-55.4255	-110.3487	-166.1322
Base	5	10	mayorada 1.2D +1.6 G +1 L	Combination		0.0071	25.6569	622.1224	-46.9578
Base	5	10	mayorada 1.2D 1L 1E	Combination	Max	55.3008	28.4671	396.3713	28.1831
Base	5	10	mayorada 1.2D 1L 1E	Combination	Min	-55.2747	-4.7952	315.474	-71.5082
Base	5	10	mayorada 1.2D 1L -1E	Combination	Max	55.3008	28.4671	396.3713	28.1831
Base	5	10	mayorada 1.2D 1L -1E	Combination	Min	-55.2747	-4.7952	315.474	-71.5082
Base	5	10	mayorada 1.2D 1L 1E-1	Combination	Max	18.4712	67.2625	468.4746	144.4715
Base	5	10	mayorada 1.2D 1L 1E-1	Combination	Min	-18.4451	-43.5906	243.3707	-187.7965
Base	5	10	mayorada 1.2D 1L -1	Combination	Max	18.4712	67.2625	468.4746	144.4715
Base	5	10	mayorada 1.2D 1L -1	Combination	Min	-18.4451	-43.5906	243.3707	-187.7965
Base	6	12	Dead	LinStatic		0.0124	-6.2641	227.2793	11.4648
Base	6	12	Live	LinStatic		-0.0019	-4.3191	83.1874	7.9048
Base	6	12	Granizo	LinStatic		-0.0037	-8.6381	166.3749	15.8095
Base	6	12	SX	LinRespSpec	Max	109.3414	0.007	14.6881	0.012
Base	6	12	SY	LinRespSpec	Max	4.1138	110.851	220.6974	332.2644
Base	6	12	servicio	Combination		0.0106	-10.5831	310.4668	19.3696
Base	6	12	mayorada 1.4D	Combination		0.0174	-8.7697	318.1911	16.0507
Base	6	12	mayorada 1.2D-1.6L-05G	Combination		0.0101	-18.7464	489.0225	34.3102
Base	6	12	Ex	Combination	Max	54.6707	0.0035	7.3441	0.006
Base	6	12	Ex	Combination	Min	-54.6707	-0.0035	-7.3441	-0.006

Table 5.4 - Joint Reactions (Part 1 of 2, continued)

Story	Label	Unique Name	Output Case	Case Type	Step Type	FX kgf	FY kgf	FZ kgf	MX kgf-m
Base	6	12	Ey	Combination	Max	2.0569	55.4255	110.3487	166.1322
Base	6	12	Ey	Combination	Min	-2.0569	-55.4255	-110.3487	-166.1322
Base	6	12	mayorada 1.2D +1.6 G +1 L	Combination		0.0071	-25.6569	622.1224	46.9578
Base	6	12	mayorada 1.2D 1L 1E	Combination	Max	55.3008	4.7952	396.3713	71.5082
Base	6	12	mayorada 1.2D 1L 1E	Combination	Min	-55.2747	-28.4671	315.474	-28.1831
Base	6	12	mayorada 1.2D 1L -1E	Combination	Max	55.3008	4.7952	396.3713	71.5082
Base	6	12	mayorada 1.2D 1L -1E	Combination	Min	-55.2747	-28.4671	315.474	-28.1831
Base	6	12	mayorada 1.2D 1L 1E-1	Combination	Max	18.4712	43.5906	468.4746	187.7965
Base	6	12	mayorada 1.2D 1L 1E-1	Combination	Min	-18.4451	-67.2625	243.3707	-144.4715
Base	6	12	mayorada 1.2D 1L -1	Combination	Max	18.4712	43.5906	468.4746	187.7965
Base	6	12	mayorada 1.2D 1L -1	Combination	Min	-18.4451	-67.2625	243.3707	-144.4715
Base	7	14	Dead	LinStatic		0.0463	6.1749	226.3184	-11.3105
Base	7	14	Live	LinStatic		0.0452	4.2545	82.685	-7.793
Base	7	14	Granizo	LinStatic		0.0904	8.509	165.37	-15.5861
Base	7	14	SX	LinRespSpec	Max	109.7375	0.0105	25.3806	0.0181
Base	7	14	SY	LinRespSpec	Max	4.074	108.4416	214.8167	325.0627
Base	7	14	servicio	Combination		0.0914	10.4294	309.0034	-19.1035
Base	7	14	mayorada 1.4D	Combination		0.0648	8.6449	316.8457	-15.8347
Base	7	14	mayorada 1.2D-1.6L-05G	Combination		0.173	18.4716	486.563	-33.8345
Base	7	14	Ex	Combination	Max	54.8687	0.0053	12.6903	0.0091
Base	7	14	Ex	Combination	Min	-54.8687	-0.0053	-12.6903	-0.0091
Base	7	14	Ey	Combination	Max	2.037	54.2208	107.4084	162.5313
Base	7	14	Ey	Combination	Min	-2.037	-54.2208	-107.4084	-162.5313
Base	7	14	mayorada 1.2D +1.6 G +1 L	Combination		0.2452	25.2788	618.859	-46.3034
Base	7	14	mayorada 1.2D 1L 1E	Combination	Max	55.5805	27.9359	399.1799	27.4028
Base	7	14	mayorada 1.2D 1L 1E	Combination	Min	-55.3792	-4.6071	309.3542	-70.1341
Base	7	14	mayorada 1.2D 1L -1E	Combination	Max	55.5805	27.9359	399.1799	27.4028
Base	7	14	mayorada 1.2D 1L -1E	Combination	Min	-55.3792	-4.6071	309.3542	-70.1341
Base	7	14	mayorada 1.2D 1L 1E-1	Combination	Max	18.5983	65.8868	465.4825	141.1684
Base	7	14	mayorada 1.2D 1L 1E-1	Combination	Min	-18.3969	-42.558	243.0516	-183.8997
Base	7	14	mayorada 1.2D 1L -1	Combination	Max	18.5983	65.8868	465.4825	141.1684
Base	7	14	mayorada 1.2D 1L -1	Combination	Min	-18.3969	-42.558	243.0516	-183.8997
Base	8	16	Dead	LinStatic		0.0463	-6.1749	226.3184	11.3105
Base	8	16	Live	LinStatic		0.0452	-4.2545	82.685	7.793
Base	8	16	Granizo	LinStatic		0.0904	-8.509	165.37	15.5861
Base	8	16	SX	LinRespSpec	Max	109.7375	0.0105	25.3806	0.0181
Base	8	16	SY	LinRespSpec	Max	4.074	108.4416	214.8167	325.0627
Base	8	16	servicio	Combination		0.0914	-10.4294	309.0034	19.1035
Base	8	16	mayorada 1.4D	Combination		0.0648	-8.6449	316.8457	15.8347
Base	8	16	mayorada 1.2D-1.6L-05G	Combination		0.173	-18.4716	486.563	33.8345
Base	8	16	Ex	Combination	Max	54.8687	0.0053	12.6903	0.0091
Base	8	16	Ex	Combination	Min	-54.8687	-0.0053	-12.6903	-0.0091
Base	8	16	Ey	Combination	Max	2.037	54.2208	107.4084	162.5313
Base	8	16	Ey	Combination	Min	-2.037	-54.2208	-107.4084	-162.5313
Base	8	16	mayorada 1.2D +1.6 G +1 L	Combination		0.2452	-25.2788	618.859	46.3034

Table 5.4 - Joint Reactions (Part 1 of 2, continued)

Story	Label	Unique Name	Output Case	Case Type	Step Type	FX kgf	FY kgf	FZ kgf	MX kgf-m
Base	8	16	mayorada 1.2D 1L 1E	Combination	Max	55.5805	4.6071	399.1799	70.1341
Base	8	16	mayorada 1.2D 1L 1E	Combination	Min	-55.3792	-27.9359	309.3542	-27.4028
Base	8	16	mayorada 1.2D 1L -1E	Combination	Max	55.5805	4.6071	399.1799	70.1341
Base	8	16	mayorada 1.2D 1L -1E	Combination	Min	-55.3792	-27.9359	309.3542	-27.4028
Base	8	16	mayorada 1.2D 1L 1E-1	Combination	Max	18.5983	42.558	465.4825	183.8997
Base	8	16	mayorada 1.2D 1L 1E-1	Combination	Min	-18.3969	-65.8868	243.0516	-141.1684
Base	8	16	mayorada 1.2D 1L -1	Combination	Max	18.5983	42.558	465.4825	183.8997
Base	8	16	mayorada 1.2D 1L -1	Combination	Min	-18.3969	-65.8868	243.0516	-141.1684
Base	9	18	Dead	LinStatic		0.0096	5.9332	219.1611	-10.8545
Base	9	18	Live	LinStatic		0.0073	4.0792	78.0092	-7.4623
Base	9	18	Granizo	LinStatic		0.0147	8.1584	156.0184	-14.9247
Base	9	18	SX	LinRespSpec	Max	110.3851	0.0053	2.2147	0.009
Base	9	18	SY	LinRespSpec	Max	4.0483	106.1483	211.0662	318.231
Base	9	18	servicio	Combination		0.0169	10.0124	297.1702	-18.3169
Base	9	18	mayorada 1.4D	Combination		0.0134	8.3065	306.8255	-15.1963
Base	9	18	mayorada 1.2D-1.6L-05G	Combination		0.0306	17.7258	465.8171	-32.4275
Base	9	18	Ex	Combination	Max	55.1925	0.0026	1.1074	0.0045
Base	9	18	Ex	Combination	Min	-55.1925	-0.0026	-1.1074	-0.0045
Base	9	18	Ey	Combination	Max	2.0242	53.0742	105.5331	159.1155
Base	9	18	Ey	Combination	Min	-2.0242	-53.0742	-105.5331	-159.1155
Base	9	18	mayorada 1.2D +1.6 G +1 L	Combination		0.0423	24.2525	590.6318	-44.3673
Base	9	18	mayorada 1.2D 1L 1E	Combination	Max	55.8186	27.124	373.7697	27.2514
Base	9	18	mayorada 1.2D 1L 1E	Combination	Min	-55.7809	-4.7258	308.2351	-68.2269
Base	9	18	mayorada 1.2D 1L -1E	Combination	Max	55.8186	27.124	373.7697	27.2514
Base	9	18	mayorada 1.2D 1L -1E	Combination	Min	-55.7809	-4.7258	308.2351	-68.2269
Base	9	18	mayorada 1.2D 1L 1E-1	Combination	Max	18.6008	64.274	446.8677	138.6291
Base	9	18	mayorada 1.2D 1L 1E-1	Combination	Min	-18.5631	-41.8759	235.1371	-179.6046
Base	9	18	mayorada 1.2D 1L -1	Combination	Max	18.6008	64.274	446.8677	138.6291
Base	9	18	mayorada 1.2D 1L -1	Combination	Min	-18.5631	-41.8759	235.1371	-179.6046
Base	10	20	Dead	LinStatic		0.0096	-5.9332	219.1611	10.8545
Base	10	20	Live	LinStatic		0.0073	-4.0792	78.0092	7.4623
Base	10	20	Granizo	LinStatic		0.0147	-8.1584	156.0184	14.9247
Base	10	20	SX	LinRespSpec	Max	110.3851	0.0053	2.2147	0.009
Base	10	20	SY	LinRespSpec	Max	4.0483	106.1483	211.0662	318.231
Base	10	20	servicio	Combination		0.0169	-10.0124	297.1702	18.3169
Base	10	20	mayorada 1.4D	Combination		0.0134	-8.3065	306.8255	15.1963
Base	10	20	mayorada 1.2D-1.6L-05G	Combination		0.0306	-17.7258	465.8171	32.4275
Base	10	20	Ex	Combination	Max	55.1925	0.0026	1.1074	0.0045
Base	10	20	Ex	Combination	Min	-55.1925	-0.0026	-1.1074	-0.0045
Base	10	20	Ey	Combination	Max	2.0242	53.0742	105.5331	159.1155
Base	10	20	Ey	Combination	Min	-2.0242	-53.0742	-105.5331	-159.1155
Base	10	20	mayorada 1.2D +1.6 G +1 L	Combination		0.0423	-24.2525	590.6318	44.3673
Base	10	20	mayorada 1.2D 1L 1E	Combination	Max	55.8186	4.7258	373.7697	68.2269
Base	10	20	mayorada 1.2D 1L 1E	Combination	Min	-55.7809	-27.124	308.2351	-27.2514
Base	10	20	mayorada 1.2D 1L -1E	Combination	Max	55.8186	4.7258	373.7697	68.2269

Table 5.4 - Joint Reactions (Part 1 of 2, continued)

Story	Label	Unique Name	Output Case	Case Type	Step Type	FX kgf	FY kgf	FZ kgf	MX kgf-m
Base	10	20	mayorada 1.2D 1L -1E	Combination	Min	-55.7809	-27.124	308.2351	-27.2514
Base	10	20	mayorada 1.2D 1L 1E-1	Combination	Max	18.6008	41.8759	446.8677	179.6046
Base	10	20	mayorada 1.2D 1L 1E-1	Combination	Min	-18.5631	-64.274	235.1371	-138.6291
Base	10	20	mayorada 1.2D 1L -1	Combination	Max	18.6008	41.8759	446.8677	179.6046
Base	10	20	mayorada 1.2D 1L -1	Combination	Min	-18.5631	-64.274	235.1371	-138.6291
Base	11	22	Dead	LinStatic		-0.0222	6.1952	226.9157	-11.3483
Base	11	22	Live	LinStatic		-0.0247	4.2692	83.0672	-7.8204
Base	11	22	Granizo	LinStatic		-0.0494	8.5384	166.1345	-15.6408
Base	11	22	SX	LinRespSpec	Max	109.764	0.0093	24.091	0.0171
Base	11	22	SY	LinRespSpec	Max	3.978	103.9334	207.0765	311.4559
Base	11	22	servicio	Combination		-0.0469	10.4644	309.983	-19.1687
Base	11	22	mayorada 1.4D	Combination		-0.031	8.6733	317.682	-15.8876
Base	11	22	mayorada 1.2D-1.6L-05G	Combination		-0.0908	18.5341	488.2737	-33.951
Base	11	22	Ex	Combination	Max	54.882	0.0047	12.0455	0.0085
Base	11	22	Ex	Combination	Min	-54.882	-0.0047	-12.0455	-0.0085
Base	11	22	Ey	Combination	Max	1.989	51.9667	103.5383	155.728
Base	11	22	Ey	Combination	Min	-1.989	-51.9667	-103.5383	-155.728
Base	11	22	mayorada 1.2D +1.6 G +1 L	Combination		-0.1303	25.3648	621.1813	-46.4637
Base	11	22	mayorada 1.2D 1L 1E	Combination	Max	55.4274	27.2981	398.4731	25.2886
Base	11	22	mayorada 1.2D 1L 1E	Combination	Min	-55.53	-3.8912	312.2591	-68.1653
Base	11	22	mayorada 1.2D 1L -1E	Combination	Max	55.4274	27.2981	398.4731	25.2886
Base	11	22	mayorada 1.2D 1L -1E	Combination	Min	-55.53	-3.8912	312.2591	-68.1653
Base	11	22	mayorada 1.2D 1L 1E-1	Combination	Max	18.4023	63.6715	462.518	134.2922
Base	11	22	mayorada 1.2D 1L 1E-1	Combination	Min	-18.5049	-40.2647	248.2142	-177.1689
Base	11	22	mayorada 1.2D 1L -1	Combination	Max	18.4023	63.6715	462.518	134.2922
Base	11	22	mayorada 1.2D 1L -1	Combination	Min	-18.5049	-40.2647	248.2142	-177.1689
Base	12	24	Dead	LinStatic		-0.0222	-6.1952	226.9157	11.3483
Base	12	24	Live	LinStatic		-0.0247	-4.2692	83.0672	7.8204
Base	12	24	Granizo	LinStatic		-0.0494	-8.5384	166.1345	15.6408
Base	12	24	SX	LinRespSpec	Max	109.764	0.0093	24.091	0.0171
Base	12	24	SY	LinRespSpec	Max	3.978	103.9334	207.0765	311.4559
Base	12	24	servicio	Combination		-0.0469	-10.4644	309.983	19.1687
Base	12	24	mayorada 1.4D	Combination		-0.031	-8.6733	317.682	15.8876
Base	12	24	mayorada 1.2D-1.6L-05G	Combination		-0.0908	-18.5341	488.2737	33.951
Base	12	24	Ex	Combination	Max	54.882	0.0047	12.0455	0.0085
Base	12	24	Ex	Combination	Min	-54.882	-0.0047	-12.0455	-0.0085
Base	12	24	Ey	Combination	Max	1.989	51.9667	103.5383	155.728
Base	12	24	Ey	Combination	Min	-1.989	-51.9667	-103.5383	-155.728
Base	12	24	mayorada 1.2D +1.6 G +1 L	Combination		-0.1303	-25.3648	621.1813	46.4637
Base	12	24	mayorada 1.2D 1L 1E	Combination	Max	55.4274	3.8912	398.4731	68.1653
Base	12	24	mayorada 1.2D 1L 1E	Combination	Min	-55.53	-27.2981	312.2591	-25.2886
Base	12	24	mayorada 1.2D 1L -1E	Combination	Max	55.4274	3.8912	398.4731	68.1653
Base	12	24	mayorada 1.2D 1L -1E	Combination	Min	-55.53	-27.2981	312.2591	-25.2886
Base	12	24	mayorada 1.2D 1L 1E-1	Combination	Max	18.4023	40.2647	462.518	177.1689
Base	12	24	mayorada 1.2D 1L 1E-1	Combination	Min	-18.5049	-63.6715	248.2142	-134.2922

Table 5.4 - Joint Reactions (Part 1 of 2, continued)

Story	Label	Unique Name	Output Case	Case Type	Step Type	FX kgf	FY kgf	FZ kgf	MX kgf-m
Base	12	24	mayorada 1.2D 1L -1	Combination	Max	18.4023	40.2647	462.518	177.1689
Base	12	24	mayorada 1.2D 1L -1	Combination	Min	-18.5049	-63.6715	248.2142	-134.2922
Base	13	26	Dead	LinStatic		-0.0051	6.147	226.4796	-11.2638
Base	13	26	Live	LinStatic		0.0147	4.2341	82.8223	-7.759
Base	13	26	Granizo	LinStatic		0.0294	8.4683	165.6445	-15.518
Base	13	26	SX	LinRespSpec	Max	109.7597	0.0262	27.8552	0.0464
Base	13	26	SY	LinRespSpec	Max	3.9414	101.393	200.4496	303.8367
Base	13	26	servicio	Combination		0.0096	10.3811	309.3019	-19.0229
Base	13	26	mayorada 1.4D	Combination		-0.0071	8.6058	317.0714	-15.7694
Base	13	26	mayorada 1.2D-1.6L-05G	Combination		0.0321	18.3851	487.1134	-33.69
Base	13	26	Ex	Combination	Max	54.8799	0.0131	13.9276	0.0232
Base	13	26	Ex	Combination	Min	-54.8799	-0.0131	-13.9276	-0.0232
Base	13	26	Ey	Combination	Max	1.9707	50.6965	100.2248	151.9183
Base	13	26	Ey	Combination	Min	-1.9707	-50.6965	-100.2248	-151.9183
Base	13	26	mayorada 1.2D +1.6 G +1 L	Combination		0.0556	25.1597	619.6291	-46.1045
Base	13	26	mayorada 1.2D 1L 1E	Combination	Max	55.4797	26.8325	398.5929	24.3231
Base	13	26	mayorada 1.2D 1L 1E	Combination	Min	-55.4625	-3.6115	310.6027	-66.8743
Base	13	26	mayorada 1.2D 1L -1E	Combination	Max	55.4797	26.8325	398.5929	24.3231
Base	13	26	mayorada 1.2D 1L -1E	Combination	Min	-55.4625	-3.6115	310.6027	-66.8743
Base	13	26	mayorada 1.2D 1L 1E-1	Combination	Max	18.4432	62.3109	459.0009	130.6497
Base	13	26	mayorada 1.2D 1L 1E-1	Combination	Min	-18.4261	-39.0899	250.1947	-173.2009
Base	13	26	mayorada 1.2D 1L -1	Combination	Max	18.4432	62.3109	459.0009	130.6497
Base	13	26	mayorada 1.2D 1L -1	Combination	Min	-18.4261	-39.0899	250.1947	-173.2009
Base	14	28	Dead	LinStatic		-0.0051	-6.147	226.4796	11.2638
Base	14	28	Live	LinStatic		0.0147	-4.2341	82.8223	7.759
Base	14	28	Granizo	LinStatic		0.0294	-8.4683	165.6445	15.518
Base	14	28	SX	LinRespSpec	Max	109.7597	0.0262	27.8552	0.0464
Base	14	28	SY	LinRespSpec	Max	3.9414	101.393	200.4496	303.8367
Base	14	28	servicio	Combination		0.0096	-10.3811	309.3019	19.0229
Base	14	28	mayorada 1.4D	Combination		-0.0071	-8.6058	317.0714	15.7694
Base	14	28	mayorada 1.2D-1.6L-05G	Combination		0.0321	-18.3851	487.1134	33.69
Base	14	28	Ex	Combination	Max	54.8799	0.0131	13.9276	0.0232
Base	14	28	Ex	Combination	Min	-54.8799	-0.0131	-13.9276	-0.0232
Base	14	28	Ey	Combination	Max	1.9707	50.6965	100.2248	151.9183
Base	14	28	Ey	Combination	Min	-1.9707	-50.6965	-100.2248	-151.9183
Base	14	28	mayorada 1.2D +1.6 G +1 L	Combination		0.0556	-25.1597	619.6291	46.1045
Base	14	28	mayorada 1.2D 1L 1E	Combination	Max	55.4797	3.6115	398.5929	66.8743
Base	14	28	mayorada 1.2D 1L 1E	Combination	Min	-55.4625	-26.8325	310.6027	-24.3231
Base	14	28	mayorada 1.2D 1L -1E	Combination	Max	55.4797	3.6115	398.5929	66.8743
Base	14	28	mayorada 1.2D 1L -1E	Combination	Min	-55.4625	-26.8325	310.6027	-24.3231
Base	14	28	mayorada 1.2D 1L 1E-1	Combination	Max	18.4432	39.0899	459.0009	173.2009
Base	14	28	mayorada 1.2D 1L 1E-1	Combination	Min	-18.4261	-62.3109	250.1947	-130.6497
Base	14	28	mayorada 1.2D 1L -1	Combination	Max	18.4432	39.0899	459.0009	173.2009
Base	14	28	mayorada 1.2D 1L -1	Combination	Min	-18.4261	-62.3109	250.1947	-130.6497
Base	15	30	Dead	LinStatic		-0.0892	5.2231	213.1345	-9.615

Table 5.4 - Joint Reactions (Part 1 of 2, continued)

Story	Label	Unique Name	Output Case	Case Type	Step Type	FX kgf	FY kgf	FZ kgf	MX kgf-m
Base	15	30	Live	LinStatic		-0.0432	3.5644	74.4971	-6.5637
Base	15	30	Granizo	LinStatic		-0.0863	7.1287	148.9942	-13.1273
Base	15	30	SX	LinRespSpec	Max	112.4837	0.0297	87.5415	0.0593
Base	15	30	SY	LinRespSpec	Max	4.0343	98.7819	194.3301	296.3758
Base	15	30	servicio	Combination		-0.1324	8.7875	287.6316	-16.1787
Base	15	30	mayorada 1.4D	Combination		-0.1249	7.3124	298.3883	-13.4611
Base	15	30	mayorada 1.2D-1.6L-05G	Combination		-0.2193	15.5351	449.4539	-28.6036
Base	15	30	Ex	Combination	Max	56.2418	0.0149	43.7708	0.0297
Base	15	30	Ex	Combination	Min	-56.2418	-0.0149	-43.7708	-0.0297
Base	15	30	Ey	Combination	Max	2.0172	49.391	97.1651	148.1879
Base	15	30	Ey	Combination	Min	-2.0172	-49.391	-97.1651	-148.1879
Base	15	30	mayorada 1.2D +1.6 G +1 L	Combination		-0.2884	21.238	568.6493	-39.1054
Base	15	30	mayorada 1.2D 1L 1E	Combination	Max	56.6967	24.6643	403.1788	26.3843
Base	15	30	mayorada 1.2D 1L 1E	Combination	Min	-56.9972	-5	257.3383	-62.5877
Base	15	30	mayorada 1.2D 1L -1E	Combination	Max	56.6967	24.6643	403.1788	26.3843
Base	15	30	mayorada 1.2D 1L -1E	Combination	Min	-56.9972	-5	257.3383	-62.5877
Base	15	30	mayorada 1.2D 1L 1E-1	Combination	Max	18.7394	59.2275	440.5548	130.0951
Base	15	30	mayorada 1.2D 1L 1E-1	Combination	Min	-19.04	-39.5633	219.9623	-166.2985
Base	15	30	mayorada 1.2D 1L -1	Combination	Max	18.7394	59.2275	440.5548	130.0951
Base	15	30	mayorada 1.2D 1L -1	Combination	Min	-19.04	-39.5633	219.9623	-166.2985
Base	16	32	Dead	LinStatic		-0.0892	-5.2231	213.1345	9.615
Base	16	32	Live	LinStatic		-0.0432	-3.5644	74.4971	6.5637
Base	16	32	Granizo	LinStatic		-0.0863	-7.1287	148.9942	13.1273
Base	16	32	SX	LinRespSpec	Max	112.4837	0.0297	87.5415	0.0593
Base	16	32	SY	LinRespSpec	Max	4.0343	98.7819	194.3301	296.3758
Base	16	32	servicio	Combination		-0.1324	-8.7875	287.6316	16.1787
Base	16	32	mayorada 1.4D	Combination		-0.1249	-7.3124	298.3883	13.4611
Base	16	32	mayorada 1.2D-1.6L-05G	Combination		-0.2193	-15.5351	449.4539	28.6036
Base	16	32	Ex	Combination	Max	56.2418	0.0149	43.7708	0.0297
Base	16	32	Ex	Combination	Min	-56.2418	-0.0149	-43.7708	-0.0297
Base	16	32	Ey	Combination	Max	2.0172	49.391	97.1651	148.1879
Base	16	32	Ey	Combination	Min	-2.0172	-49.391	-97.1651	-148.1879
Base	16	32	mayorada 1.2D +1.6 G +1 L	Combination		-0.2884	-21.238	568.6493	39.1054
Base	16	32	mayorada 1.2D 1L 1E	Combination	Max	56.6967	5	403.1788	62.5877
Base	16	32	mayorada 1.2D 1L 1E	Combination	Min	-56.9972	-24.6643	257.3383	-26.3843
Base	16	32	mayorada 1.2D 1L -1E	Combination	Max	56.6967	5	403.1788	62.5877
Base	16	32	mayorada 1.2D 1L -1E	Combination	Min	-56.9972	-24.6643	257.3383	-26.3843
Base	16	32	mayorada 1.2D 1L 1E-1	Combination	Max	18.7394	39.5633	440.5548	166.2985
Base	16	32	mayorada 1.2D 1L 1E-1	Combination	Min	-19.04	-59.2275	219.9623	-130.0951
Base	16	32	mayorada 1.2D 1L -1	Combination	Max	18.7394	39.5633	440.5548	166.2985
Base	16	32	mayorada 1.2D 1L -1	Combination	Min	-19.04	-59.2275	219.9623	-130.0951
Base	17	34	Dead	LinStatic		0.048	2.866	143.5431	-5.1871
Base	17	34	Live	LinStatic		0.094	1.855	29.2966	-3.3525
Base	17	34	Granizo	LinStatic		0.1881	3.71	58.5931	-6.7051
Base	17	34	SX	LinRespSpec	Max	102.1444	0.1891	281.4782	0.3498

Table 5.4 - Joint Reactions (Part 1 of 2, continued)

Story	Label	Unique Name	Output Case	Case Type	Step Type	FX kgf	FY kgf	FZ kgf	MX kgf-m
Base	17	34	SY	LinRespSpec	Max	3.6107	96.1743	204.663	289.4245
Base	17	34	servicio	Combination		0.1421	4.721	172.8397	-8.5396
Base	17	34	mayorada 1.4D	Combination		0.0672	4.0124	200.9603	-7.2619
Base	17	34	mayorada 1.2D-1.6L-05G	Combination		0.3021	8.2622	248.4228	-14.9411
Base	17	34	Ex	Combination	Max	51.0722	0.0945	140.7391	0.1749
Base	17	34	Ex	Combination	Min	-51.0722	-0.0945	-140.7391	-0.1749
Base	17	34	Ey	Combination	Max	1.8053	48.0871	102.3315	144.7122
Base	17	34	Ey	Combination	Min	-1.8053	-48.0871	-102.3315	-144.7122
Base	17	34	mayorada 1.2D +1.6 G +1 L	Combination		0.4526	11.2301	295.2973	-20.3051
Base	17	34	mayorada 1.2D 1L 1E	Combination	Max	51.7654	19.8149	372.9868	34.0115
Base	17	34	mayorada 1.2D 1L 1E	Combination	Min	-51.4621	-9.2265	30.1098	-53.1656
Base	17	34	mayorada 1.2D 1L -1E	Combination	Max	51.7654	19.8149	372.9868	34.0115
Base	17	34	mayorada 1.2D 1L -1E	Combination	Min	-51.4621	-9.2265	30.1098	-53.1656
Base	17	34	mayorada 1.2D 1L 1E-1	Combination	Max	17.2786	53.4097	346.1015	135.1877
Base	17	34	mayorada 1.2D 1L 1E-1	Combination	Min	-16.9753	-42.8213	56.9951	-154.3417
Base	17	34	mayorada 1.2D 1L -1	Combination	Max	17.2786	53.4097	346.1015	135.1877
Base	17	34	mayorada 1.2D 1L -1	Combination	Min	-16.9753	-42.8213	56.9951	-154.3417
Base	18	36	Dead	LinStatic		0.048	-2.866	143.5431	5.1871
Base	18	36	Live	LinStatic		0.094	-1.855	29.2966	3.3525
Base	18	36	Granizo	LinStatic		0.1881	-3.71	58.5931	6.7051
Base	18	36	SX	LinRespSpec	Max	102.1444	0.1891	281.4782	0.3498
Base	18	36	SY	LinRespSpec	Max	3.6107	96.1743	204.663	289.4245
Base	18	36	servicio	Combination		0.1421	-4.721	172.8397	8.5396
Base	18	36	mayorada 1.4D	Combination		0.0672	-4.0124	200.9603	7.2619
Base	18	36	mayorada 1.2D-1.6L-05G	Combination		0.3021	-8.2622	248.4228	14.9411
Base	18	36	Ex	Combination	Max	51.0722	0.0945	140.7391	0.1749
Base	18	36	Ex	Combination	Min	-51.0722	-0.0945	-140.7391	-0.1749
Base	18	36	Ey	Combination	Max	1.8053	48.0871	102.3315	144.7122
Base	18	36	Ey	Combination	Min	-1.8053	-48.0871	-102.3315	-144.7122
Base	18	36	mayorada 1.2D +1.6 G +1 L	Combination		0.4526	-11.2301	295.2973	20.3051
Base	18	36	mayorada 1.2D 1L 1E	Combination	Max	51.7654	9.2265	372.9868	53.1656
Base	18	36	mayorada 1.2D 1L 1E	Combination	Min	-51.4621	-19.8149	30.1098	-34.0115
Base	18	36	mayorada 1.2D 1L -1E	Combination	Max	51.7654	9.2265	372.9868	53.1656
Base	18	36	mayorada 1.2D 1L -1E	Combination	Min	-51.4621	-19.8149	30.1098	-34.0115
Base	18	36	mayorada 1.2D 1L 1E-1	Combination	Max	17.2786	42.8213	346.1015	154.3417
Base	18	36	mayorada 1.2D 1L 1E-1	Combination	Min	-16.9753	-53.4097	56.9951	-135.1877
Base	18	36	mayorada 1.2D 1L -1	Combination	Max	17.2786	42.8213	346.1015	154.3417
Base	18	36	mayorada 1.2D 1L -1	Combination	Min	-16.9753	-53.4097	56.9951	-135.1877

Table 5.4 - Joint Reactions (Part 2 of 2)

Story	Label	Unique Name	MY kgf-m	MZ kgf-m
Base	1	2	-0.1808	0.2464
Base	1	2	-0.2595	0.1793
Base	1	2	-0.519	0.3587

Table 5.4 - Joint Reactions (Part 2 of 2, continued)

Story	Label	Unique Name	MY kgf-m	MZ kgf-m
Base	1	2	223.7439	0.0239
Base	1	2	8.4811	3.5603
Base	1	2	-0.4403	0.4257
Base	1	2	-0.2532	0.3449
Base	1	2	-0.8916	0.7619
Base	1	2	111.8719	0.012
Base	1	2	-111.8719	-0.012
Base	1	2	4.2405	1.7802
Base	1	2	-4.2405	-1.7802
Base	1	2	-1.3068	1.0489
Base	1	2	112.6676	1.021
Base	1	2	-113.6206	-0.0711
Base	1	2	112.6676	1.021
Base	1	2	-113.6206	-0.0711
Base	1	2	37.3256	2.2587
Base	1	2	-38.2786	-1.3088
Base	1	2	37.3256	2.2587
Base	1	2	-38.2786	-1.3088
Base	2	4	-0.1808	-0.2464
Base	2	4	-0.2595	-0.1793
Base	2	4	-0.519	-0.3587
Base	2	4	223.7439	0.0239
Base	2	4	8.4811	3.5603
Base	2	4	-0.4403	-0.4257
Base	2	4	-0.2532	-0.3449
Base	2	4	-0.8916	-0.7619
Base	2	4	111.8719	0.012
Base	2	4	-111.8719	-0.012
Base	2	4	4.2405	1.7802
Base	2	4	-4.2405	-1.7802
Base	2	4	-1.3068	-1.0489
Base	2	4	112.6676	0.0711
Base	2	4	-113.6206	-1.021
Base	2	4	112.6676	0.0711
Base	2	4	-113.6206	-1.021
Base	2	4	37.3256	1.3088
Base	2	4	-38.2786	-2.2587
Base	2	4	37.3256	1.3088
Base	2	4	-38.2786	-2.2587
Base	3	6	0.2352	0.1888
Base	3	6	0.1784	0.1368
Base	3	6	0.3568	0.2737
Base	3	6	237.656	0.046
Base	3	6	8.9584	3.7884
Base	3	6	0.4136	0.3256

Table 5.4 - Joint Reactions (Part 2 of 2, continued)

Story	Label	Unique Name	MY kgf-m	MZ kgf-m
Base	3	6	0.3293	0.2643
Base	3	6	0.7461	0.5823
Base	3	6	118.828	0.023
Base	3	6	-118.828	-0.023
Base	3	6	4.4792	1.8942
Base	3	6	-4.4792	-1.8942
Base	3	6	1.0315	0.8013
Base	3	6	120.6324	0.9546
Base	3	6	-119.7111	-0.2279
Base	3	6	120.6324	0.9546
Base	3	6	-119.7111	-0.2279
Base	3	6	40.5882	2.2645
Base	3	6	-39.6669	-1.5378
Base	3	6	40.5882	2.2645
Base	3	6	-39.6669	-1.5378
Base	4	8	0.2352	-0.1888
Base	4	8	0.1784	-0.1368
Base	4	8	0.3568	-0.2737
Base	4	8	237.656	0.046
Base	4	8	8.9584	3.7884
Base	4	8	0.4136	-0.3256
Base	4	8	0.3293	-0.2643
Base	4	8	0.7461	-0.5823
Base	4	8	118.828	0.023
Base	4	8	-118.828	-0.023
Base	4	8	4.4792	1.8942
Base	4	8	-4.4792	-1.8942
Base	4	8	1.0315	-0.8013
Base	4	8	120.6324	0.2279
Base	4	8	-119.7111	-0.9546
Base	4	8	120.6324	0.2279
Base	4	8	-119.7111	-0.9546
Base	4	8	40.5882	1.5378
Base	4	8	-39.6669	-2.2645
Base	4	8	40.5882	1.5378
Base	4	8	-39.6669	-2.2645
Base	5	10	0.0317	-0.0284
Base	5	10	0.009	-0.0206
Base	5	10	0.018	-0.0412
Base	5	10	236.9208	0.0299
Base	5	10	8.8814	3.8625
Base	5	10	0.0407	-0.0491
Base	5	10	0.0443	-0.0398
Base	5	10	0.0614	-0.0877
Base	5	10	118.4604	0.0149

Table 5.4 - Joint Reactions (Part 2 of 2, continued)

Story	Label	Unique Name	MY kgf-m	MZ kgf-m
Base	5	10	-118.4604	-0.0149
Base	5	10	4.4407	1.9313
Base	5	10	-4.4407	-1.9313
Base	5	10	0.0758	-0.1207
Base	5	10	119.8396	0.5396
Base	5	10	-119.7456	-0.6491
Base	5	10	119.8396	0.5396
Base	5	10	-119.7456	-0.6491
Base	5	10	40.0258	1.881
Base	5	10	-39.9318	-1.9905
Base	5	10	40.0258	1.881
Base	5	10	-39.9318	-1.9905
Base	6	12	0.0317	0.0284
Base	6	12	0.009	0.0206
Base	6	12	0.018	0.0412
Base	6	12	236.9208	0.0299
Base	6	12	8.8814	3.8625
Base	6	12	0.0407	0.0491
Base	6	12	0.0443	0.0398
Base	6	12	0.0614	0.0877
Base	6	12	118.4604	0.0149
Base	6	12	-118.4604	-0.0149
Base	6	12	4.4407	1.9313
Base	6	12	-4.4407	-1.9313
Base	6	12	0.0758	0.1207
Base	6	12	119.8396	0.6491
Base	6	12	-119.7456	-0.5396
Base	6	12	119.8396	0.6491
Base	6	12	-119.7456	-0.5396
Base	6	12	40.0258	1.9905
Base	6	12	-39.9318	-1.881
Base	6	12	40.0258	1.9905
Base	6	12	-39.9318	-1.881
Base	7	14	0.0677	-0.0233
Base	7	14	0.065	-0.0169
Base	7	14	0.1301	-0.0338
Base	7	14	237.4691	0.0351
Base	7	14	8.8373	3.9567
Base	7	14	0.1327	-0.0402
Base	7	14	0.0948	-0.0326
Base	7	14	0.2503	-0.0719
Base	7	14	118.7346	0.0175
Base	7	14	-118.7346	-0.0175
Base	7	14	4.4187	1.9783
Base	7	14	-4.4187	-1.9783

Table 5.4 - Joint Reactions (Part 2 of 2, continued)

Story	Label	Unique Name	MY kgf-m	MZ kgf-m
Base	7	14	0.3544	-0.099
Base	7	14	120.2064	0.5662
Base	7	14	-119.9139	-0.6559
Base	7	14	120.2064	0.5662
Base	7	14	-119.9139	-0.6559
Base	7	14	40.1853	1.9387
Base	7	14	-39.8928	-2.0284
Base	7	14	40.1853	1.9387
Base	7	14	-39.8928	-2.0284
Base	8	16	0.0677	0.0233
Base	8	16	0.065	0.0169
Base	8	16	0.1301	0.0338
Base	8	16	237.4691	0.0351
Base	8	16	8.8373	3.9567
Base	8	16	0.1327	0.0402
Base	8	16	0.0948	0.0326
Base	8	16	0.2503	0.0719
Base	8	16	118.7346	0.0175
Base	8	16	-118.7346	-0.0175
Base	8	16	4.4187	1.9783
Base	8	16	-4.4187	-1.9783
Base	8	16	0.3544	0.099
Base	8	16	120.2064	0.6559
Base	8	16	-119.9139	-0.5662
Base	8	16	120.2064	0.6559
Base	8	16	-119.9139	-0.5662
Base	8	16	40.1853	2.0284
Base	8	16	-39.8928	-1.9387
Base	8	16	40.1853	2.0284
Base	8	16	-39.8928	-1.9387
Base	9	18	0.0147	0.0009
Base	9	18	0.0127	0.0007
Base	9	18	0.0253	0.0013
Base	9	18	238.326	0.0376
Base	9	18	8.8107	4.0293
Base	9	18	0.0273	0.0016
Base	9	18	0.0205	0.0013
Base	9	18	0.0505	0.0028
Base	9	18	119.163	0.0188
Base	9	18	-119.163	-0.0188
Base	9	18	4.4054	2.0147
Base	9	18	-4.4054	-2.0147
Base	9	18	0.0707	0.0039
Base	9	18	120.5149	0.625
Base	9	18	-120.4544	-0.6214

Table 5.4 - Joint Reactions (Part 2 of 2, continued)

Story	Label	Unique Name	MY kgf-m	MZ kgf-m
Base	9	18	120.5149	0.625
Base	9	18	-120.4544	-0.6214
Base	9	18	40.1845	2.0221
Base	9	18	-40.124	-2.0185
Base	9	18	40.1845	2.0221
Base	9	18	-40.124	-2.0185
Base	10	20	0.0147	-0.0009
Base	10	20	0.0127	-0.0007
Base	10	20	0.0253	-0.0013
Base	10	20	238.326	0.0376
Base	10	20	8.8107	4.0293
Base	10	20	0.0273	-0.0016
Base	10	20	0.0205	-0.0013
Base	10	20	0.0505	-0.0028
Base	10	20	119.163	0.0188
Base	10	20	-119.163	-0.0188
Base	10	20	4.4054	2.0147
Base	10	20	-4.4054	-2.0147
Base	10	20	0.0707	-0.0039
Base	10	20	120.5149	0.6214
Base	10	20	-120.4544	-0.625
Base	10	20	120.5149	0.6214
Base	10	20	-120.4544	-0.625
Base	10	20	40.1845	2.0185
Base	10	20	-40.124	-2.0221
Base	10	20	40.1845	2.0185
Base	10	20	-40.124	-2.0221
Base	11	22	-0.0321	0.0234
Base	11	22	-0.0322	0.017
Base	11	22	-0.0644	0.0341
Base	11	22	237.5296	0.0337
Base	11	22	8.7253	4.103
Base	11	22	-0.0643	0.0405
Base	11	22	-0.0449	0.0328
Base	11	22	-0.1223	0.0724
Base	11	22	118.7648	0.0169
Base	11	22	-118.7648	-0.0169
Base	11	22	4.3627	2.0515
Base	11	22	-4.3627	-2.0515
Base	11	22	-0.1738	0.0997
Base	11	22	120.0029	0.6775
Base	11	22	-120.1443	-0.5871
Base	11	22	120.0029	0.6775
Base	11	22	-120.1443	-0.5871
Base	11	22	39.9214	2.1017

Table 5.4 - Joint Reactions (Part 2 of 2, continued)

Story	Label	Unique Name	MY kgf-m	MZ kgf-m
Base	11	22	-40.0628	-2.0114
Base	11	22	39.9214	2.1017
Base	11	22	-40.0628	-2.0114
Base	12	24	-0.0321	-0.0234
Base	12	24	-0.0322	-0.017
Base	12	24	-0.0644	-0.0341
Base	12	24	237.5296	0.0337
Base	12	24	8.7253	4.103
Base	12	24	-0.0643	-0.0405
Base	12	24	-0.0449	-0.0328
Base	12	24	-0.1223	-0.0724
Base	12	24	118.7648	0.0169
Base	12	24	-118.7648	-0.0169
Base	12	24	4.3627	2.0515
Base	12	24	-4.3627	-2.0515
Base	12	24	-0.1738	-0.0997
Base	12	24	120.0029	0.5871
Base	12	24	-120.1443	-0.6775
Base	12	24	120.0029	0.5871
Base	12	24	-120.1443	-0.6775
Base	12	24	39.9214	2.0114
Base	12	24	-40.0628	-2.1017
Base	12	24	39.9214	2.0114
Base	12	24	-40.0628	-2.1017
Base	13	26	-0.0173	-0.049
Base	13	26	0.0142	-0.0356
Base	13	26	0.0283	-0.0712
Base	13	26	237.5166	0.0301
Base	13	26	8.6821	4.1774
Base	13	26	-0.0031	-0.0846
Base	13	26	-0.0242	-0.0686
Base	13	26	0.0161	-0.1513
Base	13	26	118.7583	0.015
Base	13	26	-118.7583	-0.015
Base	13	26	4.3411	2.0887
Base	13	26	-4.3411	-2.0887
Base	13	26	0.0388	-0.2082
Base	13	26	120.054	0.5473
Base	13	26	-120.0671	-0.736
Base	13	26	120.054	0.5473
Base	13	26	-120.0671	-0.736
Base	13	26	39.962	1.9988
Base	13	26	-39.9751	-2.1876
Base	13	26	39.962	1.9988
Base	13	26	-39.9751	-2.1876

Table 5.4 - Joint Reactions (Part 2 of 2, continued)

Story	Label	Unique Name	MY kgf-m	MZ kgf-m
Base	14	28	-0.0173	0.049
Base	14	28	0.0142	0.0356
Base	14	28	0.0283	0.0712
Base	14	28	237.5166	0.0301
Base	14	28	8.6821	4.1774
Base	14	28	-0.0031	0.0846
Base	14	28	-0.0242	0.0686
Base	14	28	0.0161	0.1513
Base	14	28	118.7583	0.015
Base	14	28	-118.7583	-0.015
Base	14	28	4.3411	2.0887
Base	14	28	-4.3411	-2.0887
Base	14	28	0.0388	0.2082
Base	14	28	120.054	0.736
Base	14	28	-120.0671	-0.5473
Base	14	28	120.054	0.736
Base	14	28	-120.0671	-0.5473
Base	14	28	39.962	2.1876
Base	14	28	-39.9751	-1.9988
Base	14	28	39.962	2.1876
Base	14	28	-39.9751	-1.9988
Base	15	30	-0.1315	-0.3195
Base	15	30	-0.064	-0.2318
Base	15	30	-0.128	-0.4636
Base	15	30	241.0119	0.0624
Base	15	30	8.804	4.2862
Base	15	30	-0.1955	-0.5513
Base	15	30	-0.1841	-0.4473
Base	15	30	-0.3242	-0.986
Base	15	30	120.506	0.0312
Base	15	30	-120.506	-0.0312
Base	15	30	4.402	2.1431
Base	15	30	-4.402	-2.1431
Base	15	30	-0.4266	-1.3569
Base	15	30	121.6047	0.059
Base	15	30	-122.0484	-1.2893
Base	15	30	121.6047	0.059
Base	15	30	-122.0484	-1.2893
Base	15	30	40.332	1.5373
Base	15	30	-40.7756	-2.7676
Base	15	30	40.332	1.5373
Base	15	30	-40.7756	-2.7676
Base	16	32	-0.1315	0.3195
Base	16	32	-0.064	0.2318
Base	16	32	-0.128	0.4636

Table 5.4 - Joint Reactions (Part 2 of 2, continued)

Story	Label	Unique Name	MY kgf-m	MZ kgf-m
Base	16	32	241.0119	0.0624
Base	16	32	8.804	4.2862
Base	16	32	-0.1955	0.5513
Base	16	32	-0.1841	0.4473
Base	16	32	-0.3242	0.986
Base	16	32	120.506	0.0312
Base	16	32	-120.506	-0.0312
Base	16	32	4.402	2.1431
Base	16	32	-4.402	-2.1431
Base	16	32	-0.4266	1.3569
Base	16	32	121.6047	1.2893
Base	16	32	-122.0484	-0.059
Base	16	32	121.6047	1.2893
Base	16	32	-122.0484	-0.059
Base	16	32	40.332	2.7676
Base	16	32	-40.7756	-1.5373
Base	16	32	40.332	2.7676
Base	16	32	-40.7756	-1.5373
Base	17	34	0.0415	-0.3134
Base	17	34	0.1105	-0.2277
Base	17	34	0.2211	-0.4554
Base	17	34	227.6297	0.0585
Base	17	34	8.2556	4.0443
Base	17	34	0.152	-0.5411
Base	17	34	0.0581	-0.4388
Base	17	34	0.3372	-0.9681
Base	17	34	113.8149	0.0292
Base	17	34	-113.8149	-0.0292
Base	17	34	4.1278	2.0222
Base	17	34	-4.1278	-2.0222
Base	17	34	0.514	-1.3324
Base	17	34	115.2136	0.0321
Base	17	34	-114.8929	-1.2397
Base	17	34	115.2136	0.0321
Base	17	34	-114.8929	-1.2397
Base	17	34	38.4326	1.4271
Base	17	34	-38.1119	-2.6347
Base	17	34	38.4326	1.4271
Base	17	34	-38.1119	-2.6347
Base	18	36	0.0415	0.3134
Base	18	36	0.1105	0.2277
Base	18	36	0.2211	0.4554
Base	18	36	227.6297	0.0585
Base	18	36	8.2556	4.0443
Base	18	36	0.152	0.5411

Table 5.4 - Joint Reactions (Part 2 of 2, continued)

Story	Label	Unique Name	MY kgf-m	MZ kgf-m
Base	18	36	0.0581	0.4388
Base	18	36	0.3372	0.9681
Base	18	36	113.8149	0.0292
Base	18	36	-113.8149	-0.0292
Base	18	36	4.1278	2.0222
Base	18	36	-4.1278	-2.0222
Base	18	36	0.514	1.3324
Base	18	36	115.2136	1.2397
Base	18	36	-114.8929	-0.0321
Base	18	36	115.2136	1.2397
Base	18	36	-114.8929	-0.0321
Base	18	36	38.4326	2.6347
Base	18	36	-38.1119	-1.4271
Base	18	36	38.4326	2.6347
Base	18	36	-38.1119	-1.4271

5.4 Modal Results

Table 5.5 - Modal Periods And Frequencies

Case	Mode	Period sec	Frequency cyc/sec	CircFreq rad/sec	Eigenvalue rad2/sec2
Modal	1	0.134	7.455	46.8431	2194.2742
Modal	2	0.117	8.567	53.825	2897.1325
Modal	3	0.092	10.874	68.3217	4667.8543
Modal	4	0.025	40.35	253.524	64274.4178
Modal	5	0.024	41.56	261.126	68186.8101
Modal	6	0.024	42.117	264.6297	70028.8703
Modal	7	0.023	42.939	269.795	72789.3277
Modal	8	0.023	44.082	276.9744	76714.8445
Modal	9	0.022	45.344	284.9055	81171.1493
Modal	10	0.021	46.806	294.0934	86490.905
Modal	11	0.021	46.84	294.3031	86614.3191
Modal	12	0.021	48.474	304.5702	92762.9978

Table 5.6 - Modal Participating Mass Ratios (Part 1 of 2)

Case	Mode	Period sec	UX	UY	UZ	SumUX	SumUY	SumUZ	RX	RY	RZ
Modal	1	0.134	0	0.969	0	0	0.969	0	0.7597	0	0.0064
Modal	2	0.117	0	0.0057	0	0	0.9747	0	0.0036	0	0.9693
Modal	3	0.092	0.9926	0	0	0.9926	0.9747	0	0	0.6977	0
Modal	4	0.025	0	4.619E-05	0	0.9926	0.9747	0	0.0001	0	2.597E-06
Modal	5	0.024	0	0	0	0.9926	0.9747	0	0	0	0
Modal	6	0.024	0	0	0	0.9926	0.9747	0	0	0	0
Modal	7	0.023	0	0	0	0.9926	0.9747	0	0	0	0
Modal	8	0.023	0	0	0	0.9926	0.9747	0	0	7.739E-07	0
Modal	9	0.022	0	0	0	0.9926	0.9747	0	0	0	0

Table 5.6 - Modal Participating Mass Ratios (Part 1 of 2, continued)

Case	Mode	Period sec	UX	UY	UZ	SumUX	SumUY	SumUZ	RX	RY	RZ
Modal	10	0.021	0	0	0	0.9926	0.9747	0	0	2.232E-06	0
Modal	11	0.021	0	7.49E-07	0	0.9926	0.9747	0	6.526E-06	0	0.0001
Modal	12	0.021	0	0	0	0.9926	0.9747	0	0	0	0

Table 5.6 - Modal Participating Mass Ratios (Part 2 of 2)

Case	Mode	SumRX	SumRY	SumRZ
Modal	1	0.7597	0	0.0064
Modal	2	0.7633	0	0.9757
Modal	3	0.7633	0.6977	0.9757
Modal	4	0.7634	0.6977	0.9757
Modal	5	0.7634	0.6977	0.9757
Modal	6	0.7634	0.6977	0.9757
Modal	7	0.7634	0.6977	0.9757
Modal	8	0.7634	0.6977	0.9757
Modal	9	0.7634	0.6977	0.9757
Modal	10	0.7634	0.6977	0.9757
Modal	11	0.7634	0.6977	0.9758
Modal	12	0.7634	0.6977	0.9758

Table 5.7 - Modal Load Participation Ratios

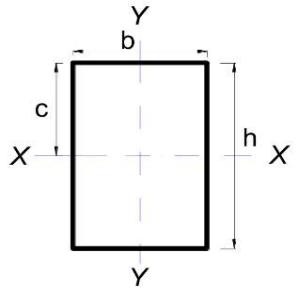
Case	ItemType	Item	Static %	Dynamic %
Modal	Acceleration	UX	99.98	99.26
Modal	Acceleration	UY	99.95	97.47
Modal	Acceleration	UZ	0	0

Table 5.8 - Modal Direction Factors

Case	Mode	Period sec	UX	UY	UZ	RZ
Modal	1	0.134	0	0.995	0	0.005
Modal	2	0.117	0	0.006	0	0.994
Modal	3	0.092	1	0	0	0
Modal	4	0.025	0	0.549	0	0.451
Modal	5	0.024	1	0	0	0
Modal	6	0.024	1	0	0	0
Modal	7	0.023	1	0	0	0
Modal	8	0.023	1	0	0	0
Modal	9	0.022	1	0	0	0
Modal	10	0.021	1	0	0	0
Modal	11	0.021	0	0	0	1
Modal	12	0.021	1	0	0	0

DISEÑO A FLEXOCOMPRESIÓN
SEGÚN EL MANUAL DE DISEÑO PARA MADERAS DEL GRUPO ANDINO

DIMENSIONES SECCIÓN TRANSVERSAL			
h=	**15**	**cm**	Altura sección
b=	**15**	**cm**	Base sección
PROPIEDADES MECÁNICAS MADERA			
E=	**95000**	**kgf/cm2**	Módulo de Elasticidad
fc=	**145**	**kgf/cm2**	Esfuerzo admisible a compresión
fm=	**210**	**kgf/cm2**	Esfuerzo admisible a flexion
PROPIEDADES GEOMETRICAS SECCIÓN			
A	**225.00**	cm2	Area
Ix	**4218.75**	cm4	Inercia Eje X
Zx	**562.50**	cm3	Módulo de Sección Eje X
Iy	**4218.75**	cm4	Inercia Eje Y
Zy	**562.50**	cm3	Módulo de Sección Eje X



CARGA ADMISIBLE EN EL PLANO			
$L_{ef} = 0.40(L1 + L2)$			
Lef=	**320**	cm	Longitud Efectiva en el plano
$\lambda_x = \frac{L_{ef}}{d}$			
d=	**15**	cm	Lado menor
λx=	**21.33**		Esbeltez en el plano
$Ck = 0.7025 * \sqrt{\frac{E}{f_c}}$			
Ck=	**17.98**		Relacion de esbeltez

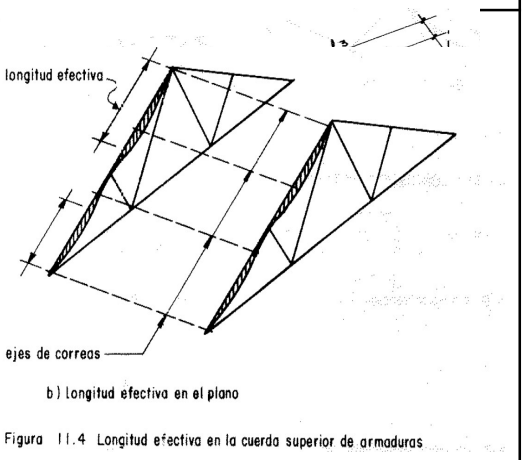
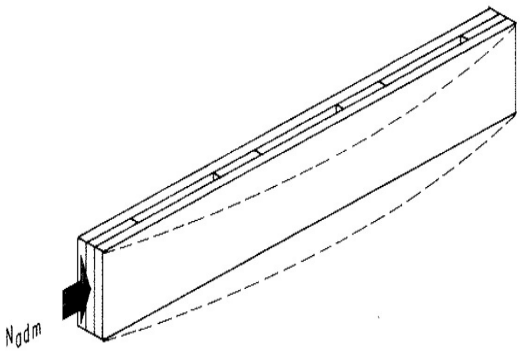


Figura 11.4 Longitud efectiva en la cuerda superior de armaduras

COLUMNA CORTA			
$N_{adm} = f_c * A$			
Nadm=	**0.00**	**kgf**	**0**
COLUMNA INTERMEDIA			
$N_{adm} = f_c * A * \left(1 - \frac{1}{3}\left(\frac{\lambda}{\mathrm{Ck}}\right)^4\right)$			
Nadm=	**11078.95**	**kgf**	**Carga Admisible Columna Corta**
COLUMNA LARGA			
$N_{adm} = 0.3029 * \frac{E * A}{\lambda^2}$			
Nadm=	**9167.98**	**kgf**	**Carga Admisible Columna Corta**



pandeo en el plano
(alrededor del eje X-X)

VERIFICACION FLEXOCOMPRESIÓN			
N=	**2064.00**	**kgf**	Carga a Compresion por Combinacion de Servicio
M=	**25893.00**	**kgf.cm**	Momento Flector por Combinación de Sevicio
Nadm_x=	**20246.93**	kgf	Carga admisible en el plano
$N_{crit} = \frac{\pi^2 * E * I}{L_{ef}^2}$			

DISEÑO A FLEXOCOMPRESIÓN

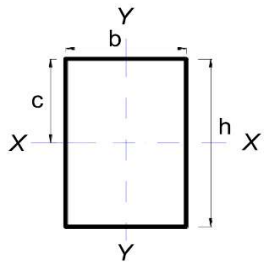
SEGÚN EL MANUAL DE DISEÑO PARA MADERAS DEL GRUPO ANDINO

$N_{crit} = \frac{\pi^2 * E_{0.05} * I_x}{L_{ef}^2}$

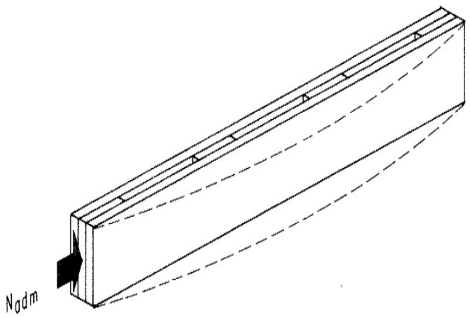
Ncrit_x=	**38628.44**	**kgf**	**Carga Critica de Pandeo en el Plano**
$k_m = \frac{1}{1 - 1.5 * \frac{N}{N_{crit}}}$			
km	**1.09**		**Factor de Amplificacion de Momento**
$\frac{N}{N_{adm}} + \frac{k_m * M}{Z_x * f_m} < 1$			**Cumple**
	0.340		**Ration flexo compresion**

DISEÑO A COMPRESIÓN
SEGÚN EL MANUAL DE DISEÑO PARA MADERAS DEL GRUPO ANDINO

DIMENSIONES SECCIÓN TRANSVERSAL			
h=	**15**	**cm**	Altura sección
b=	**15**	**cm**	Base sección
PROPIEDADES MECÁNICAS MADERA			
E=	**95000**	**kgf/cm2**	Módulo de Elasticidad
fc=	**145**	**kgf/cm2**	Esfuerzo admisible a compresión
PROPIEDADES GEOMETRICAS SECCIÓN			
A	**225.00**	cm2	Area
Ix	**4218.75**	cm4	Inercia Eje X
Zx	**562.50**	cm3	Módulo de Sección Eje X
Iy	**4218.75**	cm4	Inercia Eje Y
Zx	**562.50**	cm3	Módulo de Sección Eje X



CARGA ADMISIBLE EN EL PLANO			
$L_{ef} = 0.40(L1 + L2)$			
Lef=	**320**	cm	Longitud Efectiva en el plano
$\lambda_x = \frac{L_{ef}}{d}$			
d=	**15**	cm	Lado menor
λx=	**21.33**		Esbeltez en el plano
$Ck = 0.7025 * \sqrt{\frac{E}{f_c}}$			
Ck=	**17.98**		Relacion de esbeltez
COLUMNA CORTA			
$N_{adm} = f_c * A$			
Nadm=	**0.00**	**kgf**	**0**
COLUMNA INTERMEDIA			
$N_{adm} = f_c * A * \left(1 - \frac{1}{3}\left(\frac{\lambda}{Ck}\right)^4\right)$			
Nadm=	**11078.95**	**kgf**	**Carga Admisible Columna Corta**
COLUMNA LARGA			
$N_{adm} = 0.3029 * \frac{E * A}{\lambda^2}$			
Nadm=	**9167.98**	**kgf**	**Carga Admisible Columna Corta**



CARGA ADMISIBLE FUERA DEL PLANO			
$L_{ef} = Lc$			
Lef=	**300.00**	cm	Longitud Efectiva fuera del plano
$\lambda_y = \frac{L_{ef}}{d}$			
d=	**15**	cm	Lado menor
λy=	**20.00**		Esbeltez en el plano
$Ck = 0.7025 * \sqrt{\frac{E}{f_c}}$			

DISEÑO A COMPRESIÓN
SEGÚN EL MANUAL DE DISEÑO PARA MADERAS DEL GRUPO ANDINO

Ck=	**17.98**		Relacion de esbeltez

COLUMNA CORTA

$$N_{adm} = f_c * A$$

Nadm=	**0.00**	**kgf**	**0**

COLUMNA INTERMEDIA

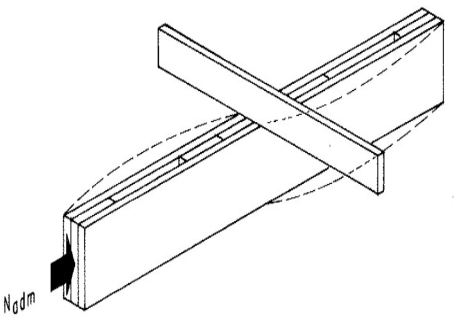
$$N_{adm} = f_c * A * \left(1 - \frac{1}{3}\left(\frac{\lambda}{Ck}\right)^4\right)$$

Nadm=	**0.00**	**kgf**	**0**

COLUMNA LARGA

$$N_{adm} = 0.3029 * \frac{E * A}{\lambda^2}$$

Nadm=	**10431.12**	**kgf**	**Carga Admisible Columna Larga**



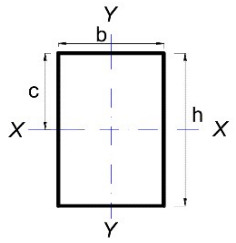
panceo fuera del plano
(alrededor del eje Y-Y)

VERIFICACION CARGA ADMISIBLE A COMPRESION			
N=	**2064.00**	**kgf**	Carga a Compresion por Combinacion de Servicio
Nadm_x=	**20246.93**	kgf	Carga admisible en el plano
Nadm_y=	**10431.12**	kgf	Carga admisible fuera del plano
Ncrit_x=	**38628.44**	kgf	Carga Critica de Pandeo en el Plano
Ncrit_y=	**43950.58**	kgf	Carga Critica de Pandeo fuera del Plano

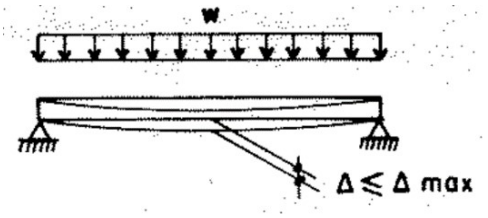
$N < N_{crit_x}$	**Cumple**	
$N < N_{crit_y}$	**Cumple**	
$N < N_{adm_x}$	**Cumple**	
$N < N_{adm_y}$	**Cumple**	
$\frac{N}{N_{adm_x}} =$	**0.102**	**Ration en el plano**
$\frac{N}{N_{adm_y}} =$	**0.20**	**Ration fuera del plano**

DISEÑO A FLEXIÓN
SEGÚN EL MANUAL DE DISEÑO PARA MADERAS DEL GRUPO ANDINO

DIMENSIONES SECCIÓN TRANSVERSAL			
h=	**15**	**cm**	Altura sección
b=	**10**	**cm**	Base sección
PROPIEDADES MECÁNICAS MADERA			
E=	**95000**	**kgf/cm2**	Módulo de Elasticidad
fv=	**15**	**kgf/cm2**	Esfuerzo admisible a corte
fm=	**210**	**kgf/cm2**	Esfuerzo admisible a flexion
fc ⊥ =	**40**	**kgf/cm2**	Esfuerzo admisible a compresion perpendicular



LONGITUD Y DEFLEXIONES ELEMENTO			
L=	**220**	**cm**	Longitud
Δ1=	**0.03**	**cm**	Deflexion Carga Permanete
Δ2=	**0.077**	**cm**	Deflexion Carga Sobrecarga



VERIFICACION DEFLEXIONES

$$\Delta_{adm} = \frac{L}{250}$$

Δadm1=	**0.880**	cm	Deflexion admisible Carga Permante

$$\Delta_{adm} = \frac{L}{350}$$

Δadm2=	**0.629**	cm	Deflexion admisible Carga Permante
Δ1<Δadm1		**Cumple**	
Δ1<Δadm1		**Cumple**	

TABLA 8.1. DEFLEXIONES MAXIMAS ADMISIBLES

Carga actuante	(a) con cielo raso de yeso	(b) sin cielo raso de yeso
Cargas permanentes + sobrecargas	L/300	L/250
Sobrecarga	L/350	L/350

FLEXION SENTIDO LONGITUDINAL

VERIFICACION DE ESFUERZOS A FLEXION

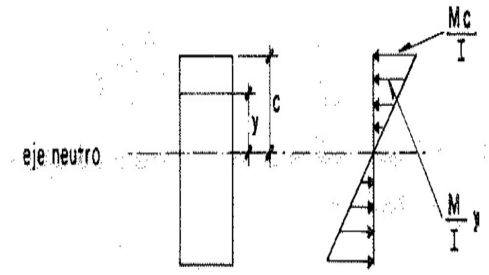
M=	**69718**	**kgf.cm**	Momento Flector por Combinación de Sevicio

$$\sigma_m = \frac{6 \cdot M}{b \cdot h^2}$$

	185.91	kgf/cm2	Esfuezo a Flexion

$$\sigma_m \leq f_m$$

σm≤fm	**Cumple**



VERIFICACION DE ESFUERZOS A CORTE

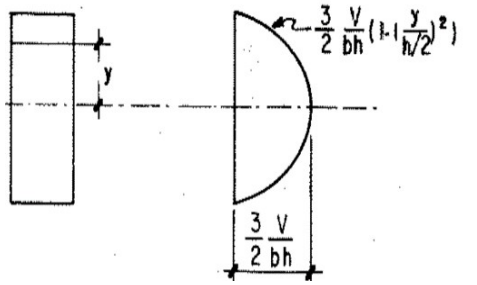
V=	**500**	**kgf**	Cortante por Combinación de Sevicio

$$\tau = \frac{3 \cdot V}{2 \cdot b \cdot h}$$

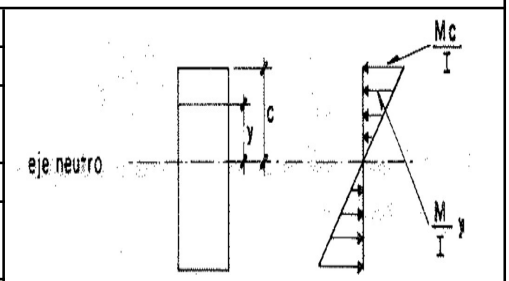
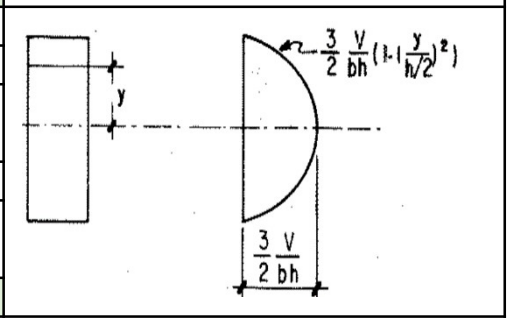
	5.00	kgf/cm2	Esfuezo a Corte

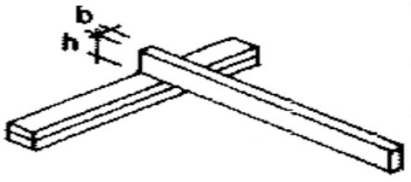
$$\tau \leq f_v$$

τ≤fv	**Cumple**



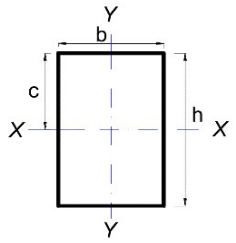
DISEÑO A FLEXIÓN
SEGÚN EL MANUAL DE DISEÑO PARA MADERAS DEL GRUPO ANDINO

FLEXION SENTIDO TRANSVERSAL				
VERIFICACION DE ESFUERZOS A FLEXION				
M=	**69718**	**kgf.cm**	Momento Flector por Combinación de Sevicio	
$\sigma_m = \frac{6 \cdot M}{b \cdot h^2}$				
	185.91	kgf/cm2	Esfuezo a Flexion	
$\sigma_m \leq f_m$				
$\sigma m \leq f m$		**Cumple**		
VERIFICACION DE ESFUERZOS A CORTE				
V=	**500**	**kgf**	Cortante por Combinación de Sevicio	
$\tau = \frac{3 \cdot V}{2 \cdot b \cdot h}$				
	5.00	kgf/cm2	Esfuezo a Corte	
$\tau \leq f_v$				
$\tau \leq f v$		**Cumple**		

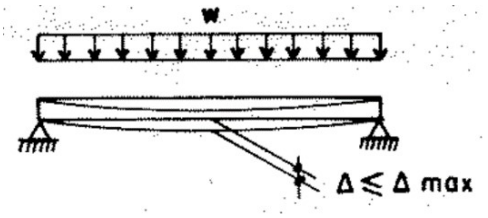
COMPRESION PRENPENDICULAR A LAS FIBRAS				
a=	**5**	cm	Base Cordon Superior	
b=	**10**	cm	Base Seccion	
R=	**500**	**kgf**	Reaccion de Apoyo por Combinación de Sevicio	
$\sigma_{c\perp} = \frac{R}{a \cdot b}$				
	10.00	kgf/cm2	Esfuezo a Compresion	
$\sigma_{c\perp} \leq f_{c\perp}$				
$\sigma c\perp \leq f c\perp$		**Cumple**		

DISEÑO A FLEXIÓN
SEGÚN EL MANUAL DE DISEÑO PARA MADERAS DEL GRUPO ANDINO

DIMENSIONES SECCIÓN TRANSVERSAL			
h=	**15**	**cm**	Altura sección
b=	**10**	**cm**	Base sección
PROPIEDADES MECÁNICAS MADERA			
E=	**95000**	**kgf/cm2**	Módulo de Elasticidad
fv=	**15**	**kgf/cm2**	Esfuerzo admisible a corte
fm=	**210**	**kgf/cm2**	Esfuerzo admisible a flexion
fc ⊥ =	**40**	**kgf/cm2**	Esfuerzo admisible a compresion perpendicular



LONGITUD Y DEFLEXIONES ELEMENTO			
L=	**220**	**cm**	Longitud
Δ1=	**0.03**	**cm**	Deflexion Carga Permanete
Δ2=	**0.077**	**cm**	Deflexion Carga Sobrecarga



VERIFICACION DEFLEXIONES

$$\Delta_{adm} = \frac{L}{250}$$

Δadm1=	**0.880**	cm	Deflexion admisible Carga Permante

$$\Delta_{adm} = \frac{L}{350}$$

Δadm2=	**0.629**	cm	Deflexion admisible Carga Permante
Δ1<Δadm1		**Cumple**	
Δ1<Δadm1		**Cumple**	

TABLA 8.1. DEFLEXIONES MAXIMAS ADMISIBLES

Carga actuante	(a) con cielo raso de yeso	(b) sin cielo raso de yeso
Cargas permanentes + sobrecargas	L/300	L/250
Sobrecarga	L/350	L/350

FLEXION SENTIDO LONGITUDINAL

VERIFICACION DE ESFUERZOS A FLEXION

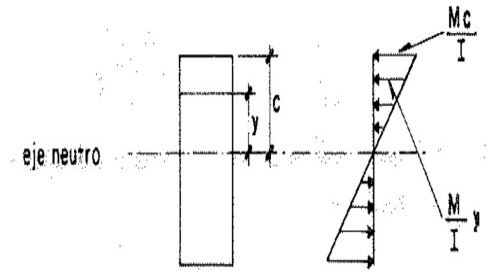
M=	**49527**	**kgf.cm**	Momento Flector por Combinación de Sevicio

$$\sigma_m = \frac{6 \cdot M}{b \cdot h^2}$$

	132.07	kgf/cm2	Esfuezo a Flexion

$$\sigma_m \leq f_m$$

σm≤fm	**Cumple**



VERIFICACION DE ESFUERZOS A CORTE

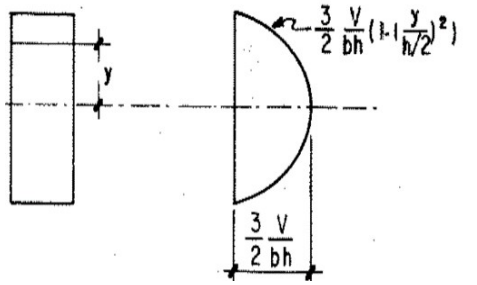
V=	**500**	**kgf**	Cortante por Combinación de Sevicio

$$\tau = \frac{3 \cdot V}{2 \cdot b \cdot h}$$

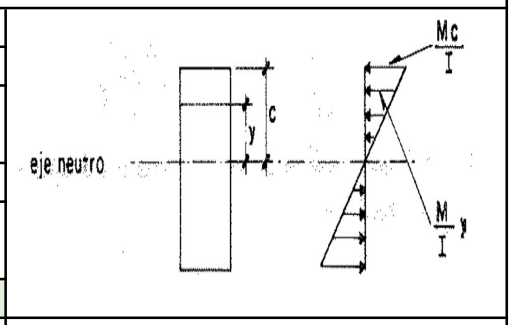
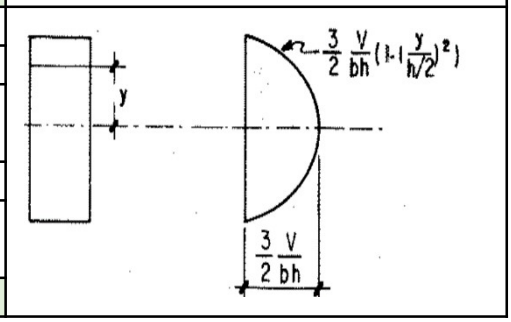
	5.00	kgf/cm2	Esfuezo a Corte

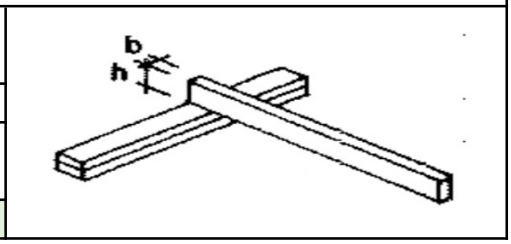
$$\tau \leq f_v$$

τ≤fv	**Cumple**



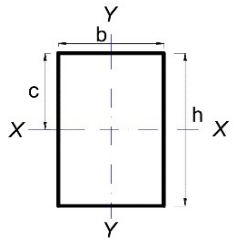
DISEÑO A FLEXIÓN
SEGÚN EL MANUAL DE DISEÑO PARA MADERAS DEL GRUPO ANDINO

FLEXION SENTIDO TRANSVERSAL				
VERIFICACION DE ESFUERZOS A FLEXION				
M=	**49527**	**kgf.cm**	Momento Flector por Combinación de Sevicio	
$\sigma_m = \frac{6 \cdot M}{b \cdot h^2}$				
	132.07	kgf/cm2	Esfuezo a Flexion	
$\sigma_m \leq f_m$				
$\sigma m \leq f m$		**Cumple**		
VERIFICACION DE ESFUERZOS A CORTE				
V=	**500**	**kgf**	Cortante por Combinación de Sevicio	
$\tau = \frac{3 \cdot V}{2 \cdot b \cdot h}$				
	5.00	kgf/cm2	Esfuezo a Corte	
$\tau \leq f_v$				
$\tau \leq f v$		**Cumple**		

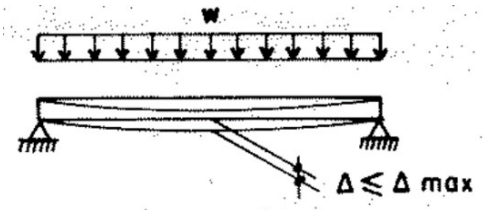
COMPRESION PRENPENDICULAR A LAS FIBRAS				
a=	**5**	cm	Base Cordon Superior	
b=	**10**	cm	Base Seccion	
R=	**500**	**kgf**	Reaccion de Apoyo por Combinación de Sevicio	
$\sigma_{c\perp} = \frac{R}{a \cdot b}$				
	10.00	kgf/cm2	Esfuezo a Compresion	
$\sigma_{c\perp} \leq f_{c\perp}$				
$\sigma c\perp \leq f c\perp$		**Cumple**		

DISEÑO A FLEXIÓN
SEGÚN EL MANUAL DE DISEÑO PARA MADERAS DEL GRUPO ANDINO

DIMENSIONES SECCIÓN TRANSVERSAL			
h=	**15**	**cm**	Altura sección
b=	**5**	**cm**	Base sección
PROPIEDADES MECÁNICAS MADERA			
E=	**95000**	**kgf/cm2**	Módulo de Elasticidad
fv=	**15**	**kgf/cm2**	Esfuerzo admisible a corte
fm=	**210**	**kgf/cm2**	Esfuerzo admisible a flexion
fc ⊥ =	**40**	**kgf/cm2**	Esfuerzo admisible a compresion perpendicular



LONGITUD Y DEFLEXIONES ELEMENTO			
L=	**220**	**cm**	Longitud
Δ1=	**0.03**	**cm**	Deflexion Carga Permanete
Δ2=	**0.087**	**cm**	Deflexion Carga Sobrecarga



VERIFICACION DEFLEXIONES

$$\Delta_{adm} = \frac{L}{250}$$

Δadm1=	**0.880**	cm	Deflexion admisible Carga Permante

$$\Delta_{adm} = \frac{L}{350}$$

Δadm2=	**0.629**	cm	Deflexion admisible Carga Permante
Δ1<Δadm1		**Cumple**	
Δ1<Δadm1		**Cumple**	

TABLA 8.1. DEFLEXIONES MAXIMAS ADMISIBLES

Carga actuante	(a) con cielo raso de yeso	(b) sin cielo raso de yeso
Cargas permanentes + sobrecargas	L/300	L/250
Sobrecarga	L/350	L/350

FLEXION SENTIDO LONGITUDINAL

VERIFICACION DE ESFUERZOS A FLEXION

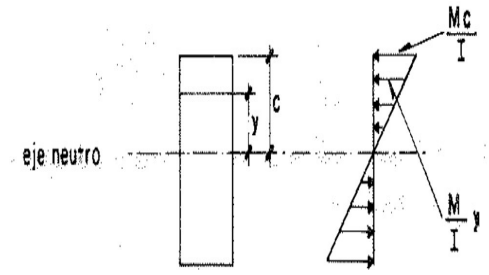
M=	**25953**	**kgf.cm**	Momento Flector por Combinación de Sevicio

$$\sigma_m = \frac{6 \cdot M}{b \cdot h^2}$$

	138.42	kgf/cm2	Esfuezo a Flexion

$$\sigma_m \leq f_m$$

σm≤fm	**Cumple**



VERIFICACION DE ESFUERZOS A CORTE

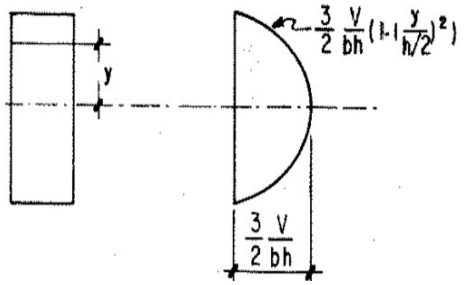
V=	**567**	**kgf**	Cortante por Combinación de Sevicio

$$\tau = \frac{3 \cdot V}{2 \cdot b \cdot h}$$

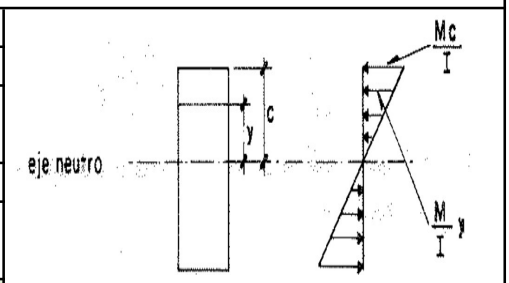
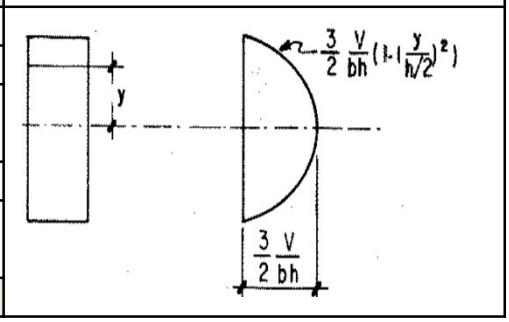
	11.34	kgf/cm2	Esfuezo a Corte

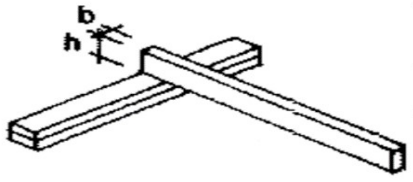
$$\tau \leq f_v$$

τ≤fv	**Cumple**



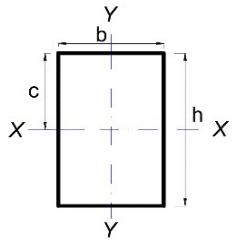
DISEÑO A FLEXIÓN
SEGÚN EL MANUAL DE DISEÑO PARA MADERAS DEL GRUPO ANDINO

FLEXION SENTIDO TRANSVERSAL				
VERIFICACION DE ESFUERZOS A FLEXION				
M=	**25953**	**kgf.cm**	Momento Flector por Combinación de Sevicio	
$\sigma_m = \frac{6 \cdot M}{b \cdot h^2}$				
	138.42	kgf/cm2	Esfuezo a Flexion	
$\sigma_m \leq f_m$				
$\sigma m \leq f m$		**Cumple**		
VERIFICACION DE ESFUERZOS A CORTE				
V=	**567**	**kgf**	Cortante por Combinación de Sevicio	
$\tau = \frac{3 \cdot V}{2 \cdot b \cdot h}$				
	11.34	kgf/cm2	Esfuezo a Corte	
$\tau \leq f_v$				
$\tau \leq f v$		**Cumple**		

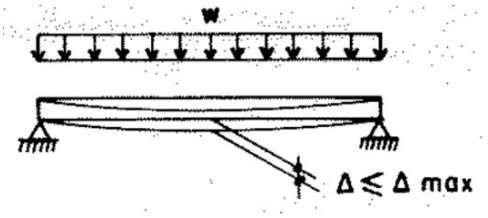
COMPRESION PRENPENDICULAR A LAS FIBRAS				
a=	**5**	cm	Base Cordon Superior	
b=	**5**	cm	Base Seccion	
R=	**567**	**kgf**	Reaccion de Apoyo por Combinación de Sevicio	
$\sigma_{c\perp} = \frac{R}{a \cdot b}$				
	22.68	kgf/cm2	Esfuezo a Compresion	
$\sigma_{c\perp} \leq f_{c\perp}$				
$\sigma c\perp \leq f c\perp$		**Cumple**		

DISEÑO A FLEXIÓN
SEGÚN EL MANUAL DE DISEÑO PARA MADERAS DEL GRUPO ANDINO

DIMENSIONES SECCIÓN TRANSVERSAL			
h=	**15**	**cm**	Altura sección
b=	**5**	**cm**	Base sección
PROPIEDADES MECÁNICAS MADERA			
E=	**95000**	**kgf/cm2**	Módulo de Elasticidad
fv=	**15**	**kgf/cm2**	Esfuerzo admisible a corte
fm=	**210**	**kgf/cm2**	Esfuerzo admisible a flexion
fc ⊥ =	**40**	**kgf/cm2**	Esfuerzo admisible a compresion perpendicular



LONGITUD Y DEFLEXIONES ELEMENTO			
L=	**220**	**cm**	Longitud
Δ1=	**0.03**	**cm**	Deflexion Carga Permanete
Δ2=	**0.082**	**cm**	Deflexion Carga Sobrecarga



VERIFICACION DEFLEXIONES

$$\Delta_{adm} = \frac{L}{250}$$

Δadm1=	**0.880**	cm	Deflexion admisible Carga Permante

$$\Delta_{adm} = \frac{L}{350}$$

Δadm2=	**0.629**	cm	Deflexion admisible Carga Permante
Δ1<Δadm1		**Cumple**	
Δ1<Δadm1		**Cumple**	

TABLA 8.1. DEFLEXIONES MAXIMAS ADMISIBLES

Carga actuante	(a) con cielo raso de yeso	(b) sin cielo raso de yeso
Cargas permanentes + sobrecargas	L/300	L/250
Sobrecarga	L/350	L/350

FLEXION SENTIDO LONGITUDINAL

VERIFICACION DE ESFUERZOS A FLEXION

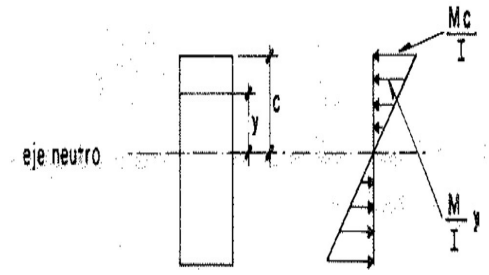
M=	**24575**	**kgf.cm**	Momento Flector por Combinación de Sevicio

$$\sigma_m = \frac{6 \cdot M}{b \cdot h^2}$$

	131.07	kgf/cm2	Esfuezo a Flexion

$$\sigma_m \leq f_m$$

σm≤fm	**Cumple**	



VERIFICACION DE ESFUERZOS A CORTE

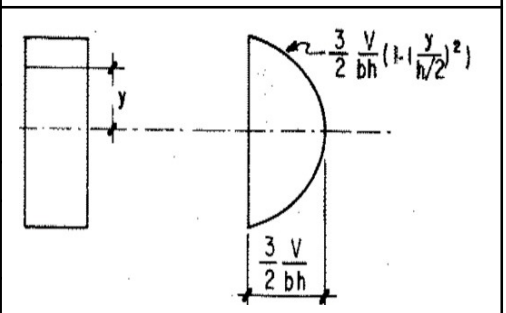
V=	**544**	**kgf**	Cortante por Combinación de Sevicio

$$\tau = \frac{3 \cdot V}{2 \cdot b \cdot h}$$

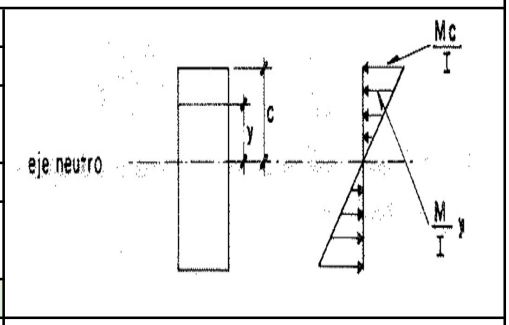
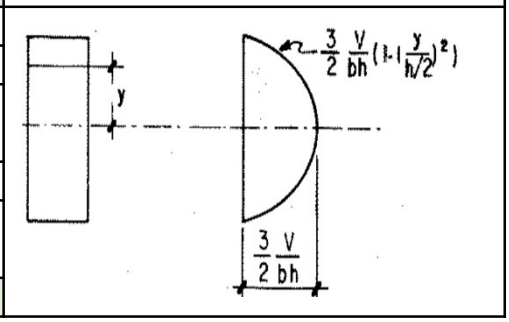
	10.88	kgf/cm2	Esfuezo a Corte

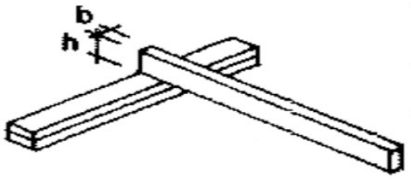
$$\tau \leq f_v$$

τ≤fv	**Cumple**	

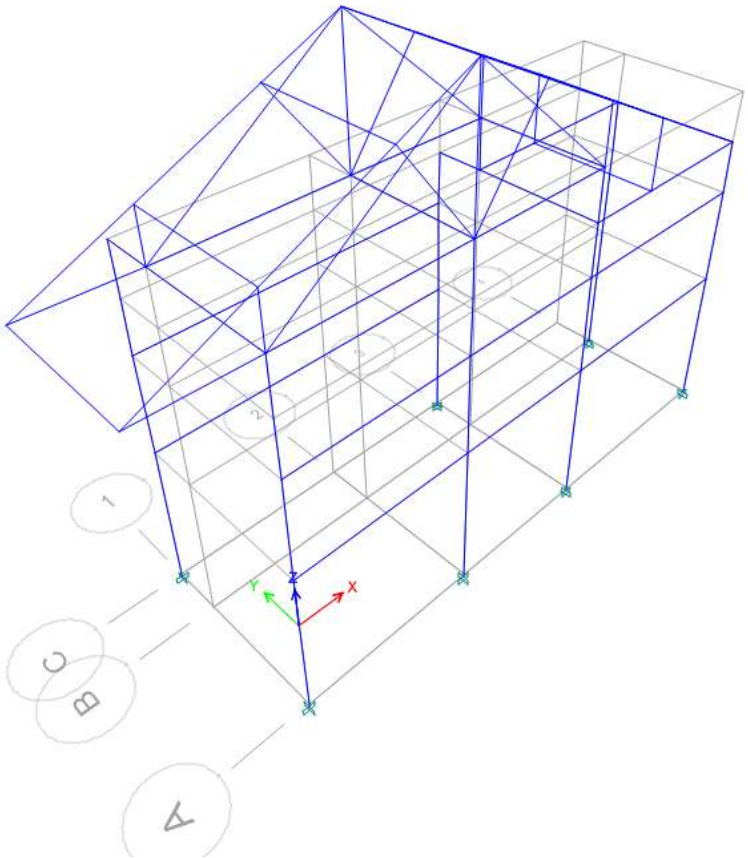


DISEÑO A FLEXIÓN
SEGÚN EL MANUAL DE DISEÑO PARA MADERAS DEL GRUPO ANDINO

FLEXION SENTIDO TRANSVERSAL				
VERIFICACION DE ESFUERZOS A FLEXION				
M=	**24575**	**kgf.cm**	Momento Flector por Combinación de Sevicio	
$\sigma_m = \frac{6 \cdot M}{b \cdot h^2}$				
	131.07	kgf/cm2	Esfuezo a Flexion	
$\sigma_m \leq f_m$				
$\sigma m \leq f m$		**Cumple**		
VERIFICACION DE ESFUERZOS A CORTE				
V=	**544**	**kgf**	Cortante por Combinación de Sevicio	
$\tau = \frac{3 \cdot V}{2 \cdot b \cdot h}$				
	10.88	kgf/cm2	Esfuezo a Corte	
$\tau \leq f_v$				
$\tau \leq f v$		**Cumple**		

COMPRESION PRENPENDICULAR A LAS FIBRAS				
a=	**5**	cm	Base Cordon Superior	
b=	**5**	cm	Base Seccion	
R=	**544**	**kgf**	Reaccion de Apoyo por Combinación de Sevicio	
$\sigma_{c\perp} = \frac{R}{a \cdot b}$				
	21.76	kgf/cm2	Esfuezo a Compresion	
$\sigma_{c\perp} \leq f_{c\perp}$				
$\sigma c\perp \leq f c\perp$		**Cumple**		

ETABS®



Project Report

Model File: modelo 1, Revision 0
29/07/2024

Table of Contents

1. Structure Data 4
   - 1.1 Story Data 4
   - 1.2 Grid Data 4
   - 1.3 Point Coordinates 4
   - 1.4 Line Connectivity 5
   - 1.5 Mass 6
   - 1.6 Groups 7
2. Properties 8
   - 2.1 Materials 8
   - 2.2 Frame Sections 8
   - 2.3 Shell Sections 9
   - 2.4 Reinforcement Sizes 9
   - 2.5 Links 10
   - 2.6 Tendon Sections 10
3. Assignments 11
   - 3.1 Joint Assignments 11
   - 3.2 Frame Assignments 12
4. Loads 15
   - 4.1 Load Patterns 15
   - 4.2 Load Sets 15
   - 4.3 Applied Loads 15
     - 4.3.1 Line Loads 15
   - 4.4 Functions 16
     - 4.4.1 Response Spectrum Functions 16
     - 4.4.2 Time History Functions 17
   - 4.5 Load Cases 17
   - 4.6 Load Combinations 17
5. Analysis Results 19
   - 5.1 Structure Results 19
   - 5.2 Story Results 20
   - 5.3 Point Results 31
   - 5.4 Modal Results 38

List of Tables

Table 1.1 Story Definitions 4
Table 1.2 Grid Definitions - General 4
Table 1.3 Grid Definitions - Grid Lines 4
Table 1.4 Point Bays 4
Table 1.5 Column Bays 5
Table 1.6 Beam Bays 5
Table 1.7 Brace Bays 6
Table 1.8 Mass Source Definition 6
Table 1.9 Mass Summary by Story 6
Table 1.10 Mass Summary by Group 7
Table 1.11 Group Definitions 7
Table 2.1 Material Properties - General 8
Table 2.2 Frame Section Property Definitions - Summary 8
Table 2.3 Area Section Property Definitions - Summary 9
Table 2.4 Reinforcing Bar Sizes 9
Table 2.5 Link Property Definitions - Summary 10
Table 2.6 Tendon Section Properties 10
Table 3.1 Joint Assignments - Summary 11
Table 3.2 Frame Assignments - Summary 12
Table 4.1 Load Pattern Definitions 15
Table 4.2 Shell Uniform Load Sets 15
Table 4.3 Frame Loads Assignments - Distributed 15
Table 4.4 Functions - Response Spectrum - Columbia NSR-10 16
Table 4.5 Functions - Time History - User Defined 17
Table 4.6 Load Case Definitions - Summary 17
Table 4.7 Load Combination Definitions 18
Table 5.1 Base Reactions 19
Table 5.2 Story Drifts 20
Table 5.3 Story Forces 23
Table 5.4 Joint Reactions 31
Table 5.5 Modal Periods And Frequencies 38
Table 5.6 Modal Participating Mass Ratios 38
Table 5.7 Modal Load Participation Ratios 39
Table 5.8 Modal Direction Factors 39

1 Structure Data

This chapter provides model geometry information, including items such as story levels, point coordinates, and element connectivity.

1.1 Story Data

Table 1.1 - Story Definitions

Tower	Name	Height m	Master Story	Similar To	Splice Story	Color
T1	Story4	0.87	Yes	None	No	Green
T1	Story3	0.9	No	Story4	No	Cyan
T1	Story2	1.72	No	Story4	No	Red
T1	Story1	2.58	No	Story4	No	Magenta

1.2 Grid Data

Table 1.2 - Grid Definitions - General

Tower	Name	Type	Ux m	Uy m	Rz deg	Story Range	Bubble Size mm	Color
T1	G1	Cartesian	0	0	0	Default	1250	Gray6

Table 1.3 - Grid Definitions - Grid Lines

Name	Grid Line Type	ID	Ordinate m	Bubble Location	Visible
G1	X (Cartesian)	1	0	End	Yes
G1	X (Cartesian)	2	3.06	End	Yes
G1	X (Cartesian)	3	5.61	End	Yes
G1	X (Cartesian)	4	9.18	End	Yes
G1	Y (Cartesian)	A	0	Start	Yes
G1	Y (Cartesian)	B	2.22	Start	Yes
G1	Y (Cartesian)	C	3.07	Start	Yes

1.3 Point Coordinates

Table 1.4 - Point Bays

Label	Is Auto Point	X m	Y m	DZBelow m
1	No	0	3.07	0
2	No	0	0	0
3	No	3.06	0	0
4	No	5.61	0	0
5	No	5.61	3.07	0
6	No	9.18	2.22	0
7	No	9.18	0	0
9	No	5.61	2.22	0
10	No	6.91	2.22	0
11	No	6.91	0	0
12	No	0	2.22	0
13	No	3.06	2.22	0

Table 1.4 - Point Bays (continued)

Label	Is Auto Point	X m	Y m	DZBelow m
16	No	3.06	0	-2.2483
17	No	-1.6248	0	-0.0284
19	No	5.61	0	-0.949
21	No	6.91	0	-0.2866
23	No	4.2522	0	-1.6409
25	No	1.8116	0	-1.6567
28	No	0	0	-0.7983
29	No	3.06	2.22	-2.2483
30	No	-1.6248	2.22	-0.0284
31	No	5.61	2.22	-0.949
32	No	6.91	2.22	-0.2866
33	No	4.2522	2.22	-1.6409
34	No	1.8116	2.22	-1.6567
35	No	0	2.22	-0.7983

1.4 Line Connectivity

Table 1.5 - Column Bays

Label	PointBayI	PointBayJ	IEndStory
C1	1	1	Below
C2	2	2	Below
C3	3	3	Below
C4	4	4	Below
C5	5	5	Below
C6	6	6	Below
C7	7	7	Below
C9	3	16	Same
C11	4	19	Same
C13	11	21	Below
C15	2	28	Same
C16	9	9	Below
C17	13	29	Same
C18	9	31	Same
C19	10	32	Below
C20	12	35	Same

Table 1.6 - Beam Bays

Label	PointBayI	PointBayJ
B1	17	30
B2	28	35
B3	2	3
B4	3	4
B5	4	7
B6	25	34
B7	1	5

Table 1.6 - Beam Bays (continued)

Label	PointBayI	PointBayJ
B8	9	5
B9	4	9
B10	9	6
B11	7	6
B12	11	10
B13	2	12
B14	12	1
B15	3	13
B17	12	13
B18	13	9
B19	17	2
B20	30	12
B21	23	33
B22	21	32
B23	16	29
B24	19	31

Table 1.7 - Brace Bays

Label	PointBayI	PointBayJ	IEndStory
D3	17	16	Same
D5	19	16	Same
D6	7	21	Below
D7	21	19	Same
D8	4	16	Same
D10	3	23	Same
D12	3	25	Same
D14	2	16	Same
D15	30	29	Same
D16	31	29	Same
D17	6	32	Below
D18	32	31	Same
D19	9	29	Same
D20	13	33	Same
D21	13	34	Same
D22	12	29	Same

1.5 Mass

Table 1.8 - Mass Source Definition

Name	Is Default	Include Lateral Mass?	Include Vertical Mass?	Lump Mass?	Source Self Mass?	Source Added Mass?	Source Load Patterns?	Move Mass Centroid?
MsSrc1	Yes	Yes	No	Yes	Yes	Yes	No	No

Table 1.9 - Mass Summary by Story

Story	UX kg	UY kg	UZ kg
Story4	860.43	860.43	0
Story3	84.5	84.5	0
Story2	234.56	234.56	0
Story1	333.79	333.79	0
Base	152.38	152.38	0

Table 1.10 - Mass Summary by Group

Group	Self Mass kg	Self Weight tonf	Mass X kg	Mass Y kg	Mass Z kg
All	1369.02	0	1369.02	1369.02	0

1.6 Groups

Table 1.11 - Group Definitions

Name	Color	Steel Design?	Concrete Design?	Composite Design?
All	Yellow	No	No	No

2 Properties

This chapter provides property information for materials, frame sections, shell sections, and links.

2.1 Materials

Table 2.1 - Material Properties - General

Material	Type	SymType	Grade	Color	Notes
4000Psi	Concrete	Isotropic	f'c 4000 psi	Magenta	
A416Gr270	Tendon	Uniaxial	Grade 270	Gray8Dark	
A615Gr60	Rebar	Uniaxial	Grade 60	Yellow	
A992Fy50	Steel	Isotropic	Grade 50	Red	
madera	Steel	Isotropic	Grade 50	Red	

2.2 Frame Sections

Table 2.2 - Frame Section Property Definitions - Summary (Part 1 of 4)

Name	Material	Shape	Color	Area mm2	J mm4	I33 mm4	I22 mm4	As2 mm2
Col madera 15x15	madera	Concrete Rectangular	Green	22500	71296875	42187500	42187500	18750
ConcBm	4000Psi	Concrete Rectangular	Cyan	187500	4745728969.6	3906250000	2197265625	156250
ConcCol	4000Psi	Concrete Rectangular	Green	140625	2785034179.7	1647949218.8	1647949218.8	117187.5
madera 10x5 cm	madera	Concrete Rectangular	31218	5000	2861002.6	4166666.7	1041666.7	4166.7
madera 15x5 cm	madera	Concrete Rectangular	16512	7500	4938850.3	14062500	1562500	6250
SteelBm	madera	Steel I/Wide Flange	Blue	7135.4	256686.7	303431532.1	9654725.6	3130
SteelCol	madera	Steel I/Wide Flange	Gray8Dark	30625	5517578.1	1506380208.3	520906575.5	6337.5

Table 2.2 - Frame Section Property Definitions - Summary (Part 2 of 4)

Name	As3 mm2	S33Pos mm3	S33Neg mm3	S22Pos mm3	S22Neg mm3	Z33 mm3	Z22 mm3	R33 mm	R22 mm
Col madera 15x15	18750	562500	562500	562500	562500	843750	843750	43.3	43.3
ConcBm	156250	15625000	15625000	11718750	11718750	23437500	17578125	144.3	108.3
ConcCol	117187.5	8789062.5	8789062.5	8789062.5	8789062.5	13183593.8	13183593.8	108.3	108.3
madera 10x5 cm	4166.7	83333.3	83333.3	41666.7	41666.7	125000	62500	28.9	14.4
madera 15x5 cm	6250	187500	187500	62500	62500	281250	93750	43.3	14.4
SteelBm	3744.1	1213726.1	1213726.1	115856.7	115856.7	1368164.1	178249.8	206.2	36.8
SteelCol	22255	6025520.8	6025520.8	2083626.3	2083626.3	6570312.5	3142578.1	221.8	130.4

Table 2.2 - Frame Section Property Definitions - Summary (Part 3 of 4)

Name	CG Offset 3 mm	CG Offset 2 mm	PNA Offset 3 mm	PNA Offset 2 mm	Area Modifier	As2 Modifier	As3 Modifier	J Modifier	I33 Modifier	I22 Modifier
Col madera 15x15	0	0	0	0	1	1	1	1	1	1
ConcBm	0	0	0	0	1	1	1	1	1	1
ConcCol	0	0	0	0	1	1	1	1	1	1
madera 10x5 cm	0	0	0	0	1	1	1	1	1	1
madera 15x5 cm	0	0	0	0	1	1	1	1	1	1
SteelBm	0	0	0	0	1	1	1	1	1	1

Table 2.2 - Frame Section Property Definitions - Summary (Part 3 of 4, continued)

Name	CG Offset 3 mm	CG Offset 2 mm	PNA Offset 3 mm	PNA Offset 2 mm	Area Modifier	As2 Modifier	As3 Modifier	J Modifier	I33 Modifier	I22 Modifier
SteelCol	0	0	0	0	1	1	1	1	1	1

Table 2.2 - Frame Section Property Definitions - Summary (Part 4 of 4)

Name	Weight Modifier
Col madera 15x15	1
ConcBm	1
ConcCol	1
madera 10x5 cm	1
madera 15x5 cm	1
SteelBm	1
SteelCol	1

2.3 Shell Sections

Table 2.3 - Area Section Property Definitions - Summary

Name	Type	Element Type	Material	Total Thickness mm	Deck Material	Deck Depth mm
Deck1	Deck	Membrane	4000Psi	162.5	A992Fy50	75
Plank1	Slab	Membrane	4000Psi	200		
Slab1	Slab	Shell-Thin	4000Psi	200		
TEJA	Deck	Membrane	4000Psi	10		
Wall1	Wall	Shell-Thin	4000Psi	250		

2.4 Reinforcement Sizes

Table 2.4 - Reinforcing Bar Sizes

Name	Diameter mm	Area mm2
6	6	28.3
8	8	50.3
10	10	78.5
12	12	113.1
14	14	153.9
16	16	201.1
18	18	254.5
20	20	314.2
22	22	380.1
25	25	490.9
26	26	530.9
28	28	615.8
32	32	804.2
36	36	1017.9
40	40	1256.6

Table 2.4 - Reinforcing Bar Sizes (continued)

Name	Diameter mm	Area mm2
50	50	1963.5

2.5 Links

Table 2.5 - Link Property Definitions - Summary

Name	Type	Degrees of Freedom	Mass kg	Weight tonf	Defined Length m	Defined Area m2
Link1	Linear	U1	0	0	1	1

2.6 Tendon Sections

Table 2.6 - Tendon Section Properties

Name	Material	StrandArea mm2	Color	Notes
Tendon1	A416Gr270	98.7	Red	

3 Assignments

This chapter provides a listing of the assignments applied to the model.

3.1 Joint Assignments

Table 3.1 - Joint Assignments - Summary

Story	Label	UniqueName	Diaphragm	Restraints
Story4	1	47	From Area	
Story4	2	49	From Area	
Story4	3	50	From Area	
Story4	4	51	From Area	
Story4	9	55	From Area	
Story4	12	52	From Area	
Story4	13	53	From Area	
Story4	16	58	From Area	
Story4	17	59	From Area	
Story4	19	61	From Area	
Story4	21	63	From Area	
Story4	23	65	From Area	
Story4	25	67	From Area	
Story4	28	70	From Area	
Story4	29	71	From Area	
Story4	30	72	From Area	
Story4	31	73	From Area	
Story4	32	74	From Area	
Story4	33	75	From Area	
Story4	34	76	From Area	
Story4	35	77	From Area	
Story3	1	37	From Area	
Story3	2	38	From Area	
Story3	3	40	From Area	
Story3	4	41	From Area	
Story3	5	39	From Area	
Story3	6	43	From Area	
Story3	7	42	From Area	
Story3	9	44	From Area	
Story3	10	45	From Area	
Story3	11	46	From Area	
Story2	1	30	From Area	
Story2	2	32	From Area	
Story2	3	33	From Area	
Story2	4	34	From Area	
Story2	5	31	From Area	
Story2	6	36	From Area	
Story2	7	35	From Area	
Story1	1	16	From Area	
Story1	2	17	From Area	
Story1	3	18	From Area	
Story1	4	19	From Area	

Table 3.1 - Joint Assignments - Summary (continued)

Story	Label	UniqueName	Diaphragm	Restraints
Story1	5	20	From Area	
Story1	6	21	From Area	
Story1	7	22	From Area	
Base	1	23	From Area	UX; UY; UZ; RX; RY; RZ
Base	2	24	From Area	UX; UY; UZ; RX; RY; RZ
Base	3	25	From Area	UX; UY; UZ; RX; RY; RZ
Base	4	26	From Area	UX; UY; UZ; RX; RY; RZ
Base	5	27	From Area	UX; UY; UZ; RX; RY; RZ
Base	6	28	From Area	UX; UY; UZ; RX; RY; RZ
Base	7	29	From Area	UX; UY; UZ; RX; RY; RZ

3.2 Frame Assignments

Table 3.2 - Frame Assignments - Summary

Story	Label	UniqueName	Design Type	Length m	Analysis Section	Design Section	Max Station Spacing m	Min Number Stations
Story4	B3	61	Beam	3.06	madera 15x5 cm	N/A	0.5	
Story4	B4	62	Beam	2.55	madera 15x5 cm	N/A	0.5	
Story4	B9	59	Beam	2.22	madera 15x5 cm	N/A	0.5	
Story4	B13	55	Beam	2.22	madera 15x5 cm	N/A	0.5	
Story4	B14	56	Beam	0.85	madera 15x5 cm	N/A	0.5	
Story4	B15	57	Beam	2.22	madera 15x5 cm	N/A	0.5	
Story4	B17	65	Beam	3.06	madera 15x5 cm	N/A	0.5	
Story4	B18	66	Beam	2.55	madera 15x5 cm	N/A	0.5	
Story4	B19	69	Beam	1.625	madera 15x5 cm	N/A		3
Story4	B20	85	Beam	1.625	madera 15x5 cm	N/A		3
Story4	B1	1	Beam	2.22	madera 15x5 cm	N/A	0.5	
Story4	B2	2	Beam	2.22	madera 15x5 cm	N/A	0.5	
Story4	B6	3	Beam	2.22	madera 15x5 cm	N/A	0.5	
Story4	B21	4	Beam	2.22	madera 15x5 cm	N/A	0.5	
Story4	B22	5	Beam	2.22	madera 15x5 cm	N/A	0.5	
Story4	B23	6	Beam	2.22	madera 15x5 cm	N/A	0.5	
Story4	B24	7	Beam	2.22	madera 15x5 cm	N/A	0.5	
Story4	C1	50	Column	0.87	Col madera 15x15	N/A		3
Story4	C2	52	Column	0.87	Col madera 15x15	N/A		3
Story4	C3	53	Column	0.87	Col madera 15x15	N/A		3
Story4	C4	54	Column	0.87	madera 10x5 cm	N/A		3
Story4	C9	68	Column	2.2483	madera 10x5 cm	N/A		3
Story4	C11	71	Column	0.949	madera 10x5 cm	N/A		3
Story4	C13	74	Column	1.1566	madera 10x5 cm	N/A		3
Story4	C15	80	Column	0.7983	madera 10x5 cm	N/A		3
Story4	C16	83	Column	0.87	madera 10x5 cm	N/A		3
Story4	C17	84	Column	2.2483	madera 10x5 cm	N/A		3
Story4	C18	87	Column	0.949	madera 10x5 cm	N/A		3
Story4	C19	89	Column	1.1566	madera 10x5 cm	N/A		3

Table 3.2 - Frame Assignments - Summary (continued)

Story	Label	UniqueName	Design Type	Length m	Analysis Section	Design Section	Max Station Spacing m	Min Number Stations
Story4	C20	95	Column	0.7983	madera 10x5 cm	N/A		3
Story4	D3	70	Brace	5.1841	madera 15x5 cm	N/A		3
Story4	D5	73	Brace	2.8619	madera 15x5 cm	N/A		3
Story4	D6	75	Brace	2.5477	madera 15x5 cm	N/A		3
Story4	D7	76	Brace	1.459	madera 15x5 cm	N/A		3
Story4	D8	77	Brace	3.3996	madera 10x5 cm	N/A		3
Story4	D10	78	Brace	2.0282	madera 10x5 cm	N/A		3
Story4	D12	79	Brace	2.0744	madera 10x5 cm	N/A		3
Story4	D14	82	Brace	3.7972	madera 10x5 cm	N/A		3
Story4	D15	86	Brace	5.1841	madera 15x5 cm	N/A		3
Story4	D16	88	Brace	2.8619	madera 15x5 cm	N/A		3
Story4	D17	90	Brace	2.5477	madera 15x5 cm	N/A		3
Story4	D18	91	Brace	1.459	madera 15x5 cm	N/A		3
Story4	D19	92	Brace	3.3996	madera 10x5 cm	N/A		3
Story4	D20	93	Brace	2.0282	madera 10x5 cm	N/A		3
Story4	D21	94	Brace	2.0744	madera 10x5 cm	N/A		3
Story4	D22	96	Brace	3.7972	madera 10x5 cm	N/A		3
Story3	B5	48	Beam	3.57	madera 15x5 cm	N/A	0.5	
Story3	B8	44	Beam	0.85	madera 15x5 cm	N/A	0.5	
Story3	B9	45	Beam	2.22	madera 15x5 cm	N/A	0.5	
Story3	B10	46	Beam	3.57	madera 15x5 cm	N/A	0.5	
Story3	B11	47	Beam	2.22	madera 15x5 cm	N/A	0.5	
Story3	B12	49	Beam	2.22	madera 15x5 cm	N/A	0.5	
Story3	C1	37	Column	0.9	Col madera 15x15	N/A		3
Story3	C2	38	Column	0.9	Col madera 15x15	N/A		3
Story3	C3	40	Column	0.9	Col madera 15x15	N/A		3
Story3	C4	41	Column	0.9	Col madera 15x15	N/A		3
Story3	C5	39	Column	0.9	Col madera 15x15	N/A		3
Story3	C6	43	Column	0.9	Col madera 15x15	N/A		3
Story3	C7	42	Column	0.9	Col madera 15x15	N/A		3
Story2	B3	27	Beam	3.06	madera 15x5 cm	N/A	0.5	
Story2	B4	28	Beam	2.55	madera 15x5 cm	N/A	0.5	
Story2	B5	29	Beam	3.57	madera 15x5 cm	N/A	0.5	
Story2	B7	26	Beam	5.61	madera 15x5 cm	N/A	0.5	
Story2	C1	30	Column	1.72	Col madera 15x15	N/A		3
Story2	C2	31	Column	1.72	Col madera 15x15	N/A		3
Story2	C3	32	Column	1.72	Col madera 15x15	N/A		3
Story2	C4	33	Column	1.72	Col madera 15x15	N/A		3
Story2	C5	35	Column	1.72	Col madera 15x15	N/A		3
Story2	C6	36	Column	1.72	Col madera 15x15	N/A		3
Story2	C7	34	Column	1.72	Col madera 15x15	N/A		3
Story1	B3	22	Beam	3.06	madera 15x5 cm	N/A	0.5	
Story1	B4	23	Beam	2.55	madera 15x5 cm	N/A	0.5	
Story1	B5	24	Beam	3.57	madera 15x5 cm	N/A	0.5	

Table 3.2 - Frame Assignments - Summary (continued)

Story	Label	UniqueName	Design Type	Length m	Analysis Section	Design Section	Max Station Spacing m	Min Number Stations
Story1	B7	21	Beam	5.61	madera 15x5 cm	N/A	0.5	
Story1	C1	14	Column	2.58	Col madera 15x15	N/A		3
Story1	C2	15	Column	2.58	Col madera 15x15	N/A		3
Story1	C3	16	Column	2.58	Col madera 15x15	N/A		3
Story1	C4	17	Column	2.58	Col madera 15x15	N/A		3
Story1	C5	18	Column	2.58	Col madera 15x15	N/A		3
Story1	C6	19	Column	2.58	Col madera 15x15	N/A		3
Story1	C7	20	Column	2.58	Col madera 15x15	N/A		3

4 Loads

This chapter provides loading information as applied to the model.

4.1 Load Patterns

Table 4.1 - Load Pattern Definitions

Name	Is Auto Load	Type	Self Weight Multiplier
~LLRF	Yes	Other	0
Dead	No	Dead	1
Granizo	No	Snow	0
Live	No	Live	0

4.2 Load Sets

Table 4.2 - Shell Uniform Load Sets

Name	Load Pattern	Load Value kgf/m2
cubierta	Dead	39
cubierta	Live	50

4.3 Applied Loads

4.3.1 Line Loads

Table 4.3 - Frame Loads Assignments - Distributed (Part 1 of 2)

UniqueName	Load Pattern	Story	Label	Load Type	Direction	Distance Type	Relative Distance A	Relative Distance B	Absolute Distance A m	Absolute Distance B m
1	Dead	Story4	B1	Force	Gravity	Relative	0	1	0	2.22
2	Dead	Story4	B2	Force	Gravity	Relative	0	1	0	2.22
3	Dead	Story4	B6	Force	Gravity	Relative	0	1	0	2.22
4	Dead	Story4	B21	Force	Gravity	Relative	0	1	0	2.22
5	Dead	Story4	B22	Force	Gravity	Relative	0	1	0	2.22
6	Dead	Story4	B23	Force	Gravity	Relative	0	1	0	2.22
7	Dead	Story4	B24	Force	Gravity	Relative	0	1	0	2.22
47	Dead	Story3	B11	Force	Gravity	Relative	0	1	0	2.22
1	Live	Story4	B1	Force	Gravity	Relative	0	1	0	2.22
2	Live	Story4	B2	Force	Gravity	Relative	0	1	0	2.22
3	Live	Story4	B6	Force	Gravity	Relative	0	1	0	2.22
4	Live	Story4	B21	Force	Gravity	Relative	0	1	0	2.22
5	Live	Story4	B22	Force	Gravity	Relative	0	1	0	2.22
6	Live	Story4	B23	Force	Gravity	Relative	0	1	0	2.22
7	Live	Story4	B24	Force	Gravity	Relative	0	1	0	2.22
47	Live	Story3	B11	Force	Gravity	Relative	0	1	0	2.22
1	Granizo	Story4	B1	Force	Gravity	Relative	0	1	0	2.22
2	Granizo	Story4	B2	Force	Gravity	Relative	0	1	0	2.22
3	Granizo	Story4	B6	Force	Gravity	Relative	0	1	0	2.22

Table 4.3 - Frame Loads Assignments - Distributed (Part 1 of 2, continued)

UniqueName	Load Pattern	Story	Label	Load Type	Direction	Distance Type	Relative Distance A	Relative Distance B	Absolute Distance A m	Absolute Distance B m
4	Granizo	Story4	B21	Force	Gravity	Relative	0	1	0	2.22
5	Granizo	Story4	B22	Force	Gravity	Relative	0	1	0	2.22
6	Granizo	Story4	B23	Force	Gravity	Relative	0	1	0	2.22
7	Granizo	Story4	B24	Force	Gravity	Relative	0	1	0	2.22
47	Granizo	Story3	B11	Force	Gravity	Relative	0	1	0	2.22

Table 4.3 - Frame Loads Assignments - Distributed (Part 2 of 2)

UniqueName	Load Pattern	Force A kgf/m	Force B kgf/m
1	Dead	90	90
2	Dead	90	90
3	Dead	90	90
4	Dead	90	90
5	Dead	90	90
6	Dead	90	90
7	Dead	90	90
47	Dead	90	90
1	Live	150	150
2	Live	150	150
3	Live	150	150
4	Live	150	150
5	Live	150	150
6	Live	150	150
7	Live	150	150
47	Live	150	150
1	Granizo	300	300
2	Granizo	300	300
3	Granizo	300	300
4	Granizo	300	300
5	Granizo	300	300
6	Granizo	300	300
7	Granizo	300	300
47	Granizo	300	300

4.4 Functions

4.4.1 Response Spectrum Functions

Table 4.4 - Functions - Response Spectrum - Columbia NSR-10

Name	Period sec	Value	Aa	Av	Ae	Ad	Group of Use	Fa	Fv	Damping Ratio
suelo e manizales	0	0.90625	0.25	0.25	0.13	0.07	1	1.45	3	0.05
suelo e manizales	0.1	0.90625								
suelo e manizales	0.2	0.90625								
suelo e manizales	0.3	0.90625								
suelo e manizales	0.4	0.90625								
suelo e manizales	0.5	0.90625								
suelo e manizales	0.6	0.90625								
suelo e manizales	0.7	0.90625								
suelo e manizales	0.8	0.90625								
suelo e manizales	0.9	0.90625								
suelo e manizales	1	0.9								
suelo e manizales	1.2	0.75								
suelo e manizales	1.5	0.6								
suelo e manizales	1.7	0.529412								
suelo e manizales	2	0.45								
suelo e manizales	2.5	0.36								
suelo e manizales	3	0.3								
suelo e manizales	3.5	0.257143								
suelo e manizales	4	0.225								
suelo e manizales	5	0.18								
suelo e manizales	8	0.10125								
suelo e manizales	11	0.053554								
suelo e manizales	15	0.0288								

4.4.2 Time History Functions

Table 4.5 - Functions - Time History - User Defined

Name	Time sec	Value
RampTH	0	0
RampTH	1	1
RampTH	4	1
UnifTH	0	1
UnifTH	1	1

4.5 Load Cases

Table 4.6 - Load Case Definitions - Summary

Name	Type
Dead	Linear Static
Live	Linear Static
Modal	Modal - Eigen
Granizo	Linear Static
SX	Response Spectrum
SY	Response Spectrum

4.6 Load Combinations

Table 4.7 - Load Combination Definitions

Name	Type	Is Auto	Load Name	SF	Notes
Ex	Linear Add	No	SX	0.5	
Ey	Linear Add	No	SY	0.5	
mayorada 1.2D-1.6G 1 L	Linear Add	No	Dead	1.2	
mayorada 1.2D-1.6G 1 L			Live	1	
mayorada 1.2D-1.6G 1 L			Granizo	1.6	
mayorada 1.2D-1.6L-0.5G	Linear Add	No	Dead	1.2	
mayorada 1.2D-1.6L-0.5G			Live	1.6	
mayorada 1.2D-1.6L-0.5G			Granizo	0.5	
mayorada 1.2D-1L 1E	Linear Add	No	Dead	1.2	
mayorada 1.2D-1L 1E			Live	1	
mayorada 1.2D-1L 1E			Ex	1	
mayorada 1.2D-1L 1E			Ey	0.3	
mayorada 1.2D-1L -E	Linear Add	No	Dead	1.2	
mayorada 1.2D-1L -E			Live	1	
mayorada 1.2D-1L -E			Ex	-1	
mayorada 1.2D-1L -E			Ey	-0.3	
mayorada 1.2D-1L Ey	Linear Add	No	Dead	1.2	
mayorada 1.2D-1L Ey			Live	1	
mayorada 1.2D-1L Ey			Ey	1	
mayorada 1.2D-1L Ey			Ex	0.3	
mayorada 1.2D-1l -Ey	Linear Add	No	Dead	1.2	
mayorada 1.2D-1l -Ey			Live	1	
mayorada 1.2D-1l -Ey			Ey	-1	
mayorada 1.2D-1l -Ey			Ex	-0.3	
mayorada 1.4D	Linear Add	No	Dead	1.4	
servicio	Linear Add	No	Dead	1	
servicio			Live	1	

5 Analysis Results

This chapter provides analysis results.

5.1 Structure Results

Table 5.1 - Base Reactions (Part 1 of 2)

Output Case	Case Type	Step Type	FX kgf	FY kgf	FZ kgf	MX kgf-m	MY kgf-m	MZ kgf-m
Dead	LinStatic		0	0	2967.4183	3369.9216	-11397.1276	0
Live	LinStatic		0	0	2664	2957.04	-9723.2605	0
Granizo	LinStatic		0	0	5328	5914.08	-19446.5211	0
SX	LinRespSpec	Max	994.5463	140.4124	0	721.677	5380.6612	2815.1127
SY	LinRespSpec	Max	140.4124	1053.5572	0	5866.4593	762.9538	3226.484
servicio	Combination		0	0	5631.4183	6326.9616	-21120.3882	0
mayorada 1.4D	Combination		0	0	4154.3856	4717.8903	-15955.9786	0
mayorada 1.2D-1.6L-0.5G	Combination		0	0	10487.3019	11732.2099	-38957.0305	0
Ex	Combination	Max	497.2732	70.2062	0	360.8385	2690.3306	1407.5564
Ex	Combination	Min	-497.2732	-70.2062	0	-360.8385	-2690.3306	-1407.5564
Ey	Combination	Max	70.2062	526.7786	0	2933.2297	381.4769	1613.242
Ey	Combination	Min	-70.2062	-526.7786	0	-2933.2297	-381.4769	-1613.242
mayorada 1.2D-1.6G 1 L	Combination		0	0	14749.7019	16463.4739	-54514.2474	0
mayorada 1.2D-1L 1E	Combination	Max	518.335	228.2398	6224.9019	8241.7533	-20595.04	1891.5289
mayorada 1.2D-1L 1E	Combination	Min	-518.335	-228.2398	6224.9019	5760.1385	-26204.5873	-1891.5289
mayorada 1.2D-1L -E	Combination	Max	518.335	228.2398	6224.9019	8241.7533	-20595.04	1891.5289
mayorada 1.2D-1L -E	Combination	Min	-518.335	-228.2398	6224.9019	5760.1385	-26204.5873	-1891.5289
mayorada 1.2D-1L Ey	Combination	Max	219.3882	547.8405	6224.9019	10042.4272	-22211.2376	2035.5089
mayorada 1.2D-1L Ey	Combination	Min	-219.3882	-547.8405	6224.9019	3959.4647	-24588.3898	-2035.5089
mayorada 1.2D-1l -Ey	Combination	Max	219.3882	547.8405	6224.9019	10042.4272	-22211.2376	2035.5089
mayorada 1.2D-1l -Ey	Combination	Min	-219.3882	-547.8405	6224.9019	3959.4647	-24588.3898	-2035.5089

Table 5.1 - Base Reactions (Part 2 of 2)

X m	Y m	Z m
0	0	-1.7
0	0	-1.7
0	0	-1.7
0	0	-1.7
0	0	-1.7
0	0	-1.7
0	0	-1.7
0	0	-1.7
0	0	-1.7
0	0	-1.7
0	0	-1.7
0	0	-1.7
0	0	-1.7
0	0	-1.7
0	0	-1.7
0	0	-1.7
0	0	-1.7
0	0	-1.7

Table 5.1 - Base Reactions (Part 2 of 2, continued)

X m	Y m	Z m
0	0	-1.7
0	0	-1.7
0	0	-1.7
0	0	-1.7
0	0	-1.7

5.2 Story Results

Table 5.2 - Story Drifts

Story	Output Case	Case Type	Step Type	Direction	Drift	Label	X m	Y m	Z m
Story4	Dead	LinStatic		X	0.00018	9	5.61	2.22	4.37
Story4	Dead	LinStatic		Y	0.000445	1	0	3.07	4.37
Story4	Live	LinStatic		X	0.000203	9	5.61	2.22	4.37
Story4	Live	LinStatic		Y	0.00056	1	0	3.07	4.37
Story4	Granizo	LinStatic		X	0.000406	9	5.61	2.22	4.37
Story4	Granizo	LinStatic		Y	0.001121	1	0	3.07	4.37
Story4	SX	LinRespSpec	Max	X	0.001058	1	0	3.07	4.37
Story4	SX	LinRespSpec	Max	Y	0.000542	1	0	3.07	4.37
Story4	SY	LinRespSpec	Max	Y	0.002355	3	3.06	0	4.37
Story4	servicio	Combination		X	0.000384	9	5.61	2.22	4.37
Story4	servicio	Combination		Y	0.001005	1	0	3.07	4.37
Story4	mayorada 1.4D	Combination		X	0.000252	9	5.61	2.22	4.37
Story4	mayorada 1.4D	Combination		Y	0.000623	1	0	3.07	4.37
Story4	mayorada 1.2D-1.6L-0.5G	Combination		X	0.000745	9	5.61	2.22	4.37
Story4	mayorada 1.2D-1.6L-0.5G	Combination		Y	0.001991	1	0	3.07	4.37
Story4	Ex	Combination	Max	X	0.000529	1	0	3.07	4.37
Story4	Ex	Combination	Max	Y	0.000271	1	0	3.07	4.37
Story4	Ex	Combination	Min	X	0.000529	1	0	3.07	4.37
Story4	Ex	Combination	Min	Y	0.000271	1	0	3.07	4.37
Story4	Ey	Combination	Max	Y	0.001177	3	3.06	0	4.37
Story4	Ey	Combination	Min	Y	0.001177	3	3.06	0	4.37
Story4	mayorada 1.2D-1.6G 1 L	Combination		X	0.00107	9	5.61	2.22	4.37
Story4	mayorada 1.2D-1.6G 1 L	Combination		Y	0.002888	1	0	3.07	4.37
Story4	mayorada 1.2D-1L 1E	Combination	Max	X	0.0004	1	0	3.07	4.37
Story4	mayorada 1.2D-1L 1E	Combination	Max	Y	0.000719	2	0	0	4.37
Story4	mayorada 1.2D-1L 1E	Combination	Min	X	0.000751	1	0	3.07	4.37
Story4	mayorada 1.2D-1L 1E	Combination	Min	Y	0.001624	1	0	3.07	4.37
Story4	mayorada 1.2D-1L -E	Combination	Max	X	0.0004	1	0	3.07	4.37
Story4	mayorada 1.2D-1L -E	Combination	Max	Y	0.000719	2	0	0	4.37
Story4	mayorada 1.2D-1L -E	Combination	Min	X	0.000751	1	0	3.07	4.37
Story4	mayorada 1.2D-1L -E	Combination	Min	Y	0.001624	1	0	3.07	4.37
Story4	mayorada 1.2D-1L Ey	Combination	Max	X	0.000343	9	5.61	2.22	4.37
Story4	mayorada 1.2D-1L Ey	Combination	Max	Y	0.001285	3	3.06	0	4.37
Story4	mayorada 1.2D-1L Ey	Combination	Min	X	0.000496	9	5.61	2.22	4.37
Story4	mayorada 1.2D-1L Ey	Combination	Min	Y	0.002038	1	0	3.07	4.37

Table 5.2 - Story Drifts (continued)

Story	Output Case	Case Type	Step Type	Direction	Drift	Label	X m	Y m	Z m
Story4	mayorada 1.2D-1l -Ey	Combination	Max	X	0.000343	9	5.61	2.22	4.37
Story4	mayorada 1.2D-1l -Ey	Combination	Max	Y	0.001285	3	3.06	0	4.37
Story4	mayorada 1.2D-1l -Ey	Combination	Min	X	0.000496	9	5.61	2.22	4.37
Story4	mayorada 1.2D-1l -Ey	Combination	Min	Y	0.002038	1	0	3.07	4.37
Story3	Dead	LinStatic		X	9.5E-05	6	9.18	2.22	3.5
Story3	Dead	LinStatic		Y	0.000272	5	5.61	3.07	3.5
Story3	Live	LinStatic		X	0.000105	6	9.18	2.22	3.5
Story3	Live	LinStatic		Y	0.000321	5	5.61	3.07	3.5
Story3	Granizo	LinStatic		X	0.00021	6	9.18	2.22	3.5
Story3	Granizo	LinStatic		Y	0.000642	5	5.61	3.07	3.5
Story3	SX	LinRespSpec	Max	X	0.001035	5	5.61	3.07	3.5
Story3	SX	LinRespSpec	Max	Y	0.000722	1	0	3.07	3.5
Story3	SY	LinRespSpec	Max	X	0.000425	5	5.61	3.07	3.5
Story3	SY	LinRespSpec	Max	Y	0.003066	3	3.06	0	3.5
Story3	servicio	Combination		X	0.0002	6	9.18	2.22	3.5
Story3	servicio	Combination		Y	0.000593	5	5.61	3.07	3.5
Story3	mayorada 1.4D	Combination		X	0.000133	6	9.18	2.22	3.5
Story3	mayorada 1.4D	Combination		Y	0.00038	5	5.61	3.07	3.5
Story3	mayorada 1.2D-1.6L-0.5G	Combination		X	0.000386	6	9.18	2.22	3.5
Story3	mayorada 1.2D-1.6L-0.5G	Combination		Y	0.001161	5	5.61	3.07	3.5
Story3	Ex	Combination	Max	X	0.000518	5	5.61	3.07	3.5
Story3	Ex	Combination	Max	Y	0.000361	1	0	3.07	3.5
Story3	Ex	Combination	Min	X	0.000518	5	5.61	3.07	3.5
Story3	Ex	Combination	Min	Y	0.000361	1	0	3.07	3.5
Story3	Ey	Combination	Max	X	0.000213	5	5.61	3.07	3.5
Story3	Ey	Combination	Max	Y	0.001533	3	3.06	0	3.5
Story3	Ey	Combination	Min	X	0.000213	5	5.61	3.07	3.5
Story3	Ey	Combination	Min	Y	0.001533	3	3.06	0	3.5
Story3	mayorada 1.2D-1.6G 1 L	Combination		X	0.000554	6	9.18	2.22	3.5
Story3	mayorada 1.2D-1.6G 1 L	Combination		Y	0.001674	5	5.61	3.07	3.5
Story3	mayorada 1.2D-1L 1E	Combination	Max	X	0.000519	5	5.61	3.07	3.5
Story3	mayorada 1.2D-1L 1E	Combination	Max	Y	0.000599	4	5.61	0	3.5
Story3	mayorada 1.2D-1L 1E	Combination	Min	X	0.000694	6	9.18	2.22	3.5
Story3	mayorada 1.2D-1L 1E	Combination	Min	Y	0.0013	1	0	3.07	3.5
Story3	mayorada 1.2D-1L -E	Combination	Max	X	0.000519	5	5.61	3.07	3.5
Story3	mayorada 1.2D-1L -E	Combination	Max	Y	0.000599	4	5.61	0	3.5
Story3	mayorada 1.2D-1L -E	Combination	Min	X	0.000694	6	9.18	2.22	3.5
Story3	mayorada 1.2D-1L -E	Combination	Min	Y	0.0013	1	0	3.07	3.5
Story3	mayorada 1.2D-1L Ey	Combination	Max	X	0.000305	5	5.61	3.07	3.5
Story3	mayorada 1.2D-1L Ey	Combination	Max	Y	0.001522	3	3.06	0	3.5
Story3	mayorada 1.2D-1L Ey	Combination	Min	X	0.000502	6	9.18	2.22	3.5
Story3	mayorada 1.2D-1L Ey	Combination	Min	Y	0.00185	1	0	3.07	3.5
Story3	mayorada 1.2D-1l -Ey	Combination	Max	X	0.000305	5	5.61	3.07	3.5
Story3	mayorada 1.2D-1l -Ey	Combination	Max	Y	0.001522	3	3.06	0	3.5
Story3	mayorada 1.2D-1l -Ey	Combination	Min	X	0.000502	6	9.18	2.22	3.5

Table 5.2 - Story Drifts (continued)

Story	Output Case	Case Type	Step Type	Direction	Drift	Label	X m	Y m	Z m
Story3	mayorada 1.2D-1l -Ey	Combination	Min	Y	0.00185	1	0	3.07	3.5
Story2	Dead	LinStatic		X	3.2E-05	5	5.61	3.07	2.6
Story2	Dead	LinStatic		Y	0.000146	2	0	0	2.6
Story2	Live	LinStatic		X	3.6E-05	1	0	3.07	2.6
Story2	Live	LinStatic		Y	0.000187	2	0	0	2.6
Story2	Granizo	LinStatic		X	7.3E-05	1	0	3.07	2.6
Story2	Granizo	LinStatic		Y	0.000373	2	0	0	2.6
Story2	SX	LinRespSpec	Max	X	0.001179	6	9.18	2.22	2.6
Story2	SX	LinRespSpec	Max	Y	0.000842	2	0	0	2.6
Story2	SY	LinRespSpec	Max	X	0.000411	6	9.18	2.22	2.6
Story2	SY	LinRespSpec	Max	Y	0.003316	3	3.06	0	2.6
Story2	servicio	Combination		X	6.8E-05	1	0	3.07	2.6
Story2	servicio	Combination		Y	0.000333	2	0	0	2.6
Story2	mayorada 1.4D	Combination		X	4.5E-05	5	5.61	3.07	2.6
Story2	mayorada 1.4D	Combination		Y	0.000205	2	0	0	2.6
Story2	mayorada 1.2D-1.6L-0.5G	Combination		X	0.000133	1	0	3.07	2.6
Story2	mayorada 1.2D-1.6L-0.5G	Combination		Y	0.000661	2	0	0	2.6
Story2	Ex	Combination	Max	X	0.00059	6	9.18	2.22	2.6
Story2	Ex	Combination	Max	Y	0.000421	2	0	0	2.6
Story2	Ex	Combination	Min	X	0.00059	6	9.18	2.22	2.6
Story2	Ex	Combination	Min	Y	0.000421	2	0	0	2.6
Story2	Ey	Combination	Max	X	0.000205	6	9.18	2.22	2.6
Story2	Ey	Combination	Max	Y	0.001658	3	3.06	0	2.6
Story2	Ey	Combination	Min	X	0.000205	6	9.18	2.22	2.6
Story2	Ey	Combination	Min	Y	0.001658	3	3.06	0	2.6
Story2	mayorada 1.2D-1.6G 1 L	Combination		X	0.000191	1	0	3.07	2.6
Story2	mayorada 1.2D-1.6G 1 L	Combination		Y	0.000959	2	0	0	2.6
Story2	mayorada 1.2D-1L 1E	Combination	Max	X	0.000616	6	9.18	2.22	2.6
Story2	mayorada 1.2D-1L 1E	Combination	Max	Y	0.000707	1	0	3.07	2.6
Story2	mayorada 1.2D-1L 1E	Combination	Min	X	0.000687	6	9.18	2.22	2.6
Story2	mayorada 1.2D-1L 1E	Combination	Min	Y	0.00117	2	0	0	2.6
Story2	mayorada 1.2D-1L -E	Combination	Max	X	0.000616	6	9.18	2.22	2.6
Story2	mayorada 1.2D-1L -E	Combination	Max	Y	0.000707	1	0	3.07	2.6
Story2	mayorada 1.2D-1L -E	Combination	Min	X	0.000687	6	9.18	2.22	2.6
Story2	mayorada 1.2D-1L -E	Combination	Min	Y	0.00117	2	0	0	2.6
Story2	mayorada 1.2D-1L Ey	Combination	Max	X	0.000347	6	9.18	2.22	2.6
Story2	mayorada 1.2D-1L Ey	Combination	Max	Y	0.001534	3	3.06	0	2.6
Story2	mayorada 1.2D-1L Ey	Combination	Min	X	0.000418	6	9.18	2.22	2.6
Story2	mayorada 1.2D-1L Ey	Combination	Min	Y	0.001852	3	3.06	0	2.6
Story2	mayorada 1.2D-1l -Ey	Combination	Max	X	0.000347	6	9.18	2.22	2.6
Story2	mayorada 1.2D-1l -Ey	Combination	Max	Y	0.001534	3	3.06	0	2.6
Story2	mayorada 1.2D-1l -Ey	Combination	Min	X	0.000418	6	9.18	2.22	2.6
Story2	mayorada 1.2D-1l -Ey	Combination	Min	Y	0.001852	3	3.06	0	2.6
Story1	Dead	LinStatic		X	2.3E-05	6	9.18	2.22	0.88
Story1	Dead	LinStatic		Y	0.000118	2	0	0	0.88

Table 5.2 - Story Drifts (continued)

Story	Output Case	Case Type	Step Type	Direction	Drift	Label	X m	Y m	Z m
Story1	Live	LinStatic		X	2.5E-05	6	9.18	2.22	0.88
Story1	Live	LinStatic		Y	0.000148	2	0	0	0.88
Story1	Granizo	LinStatic		X	5E-05	6	9.18	2.22	0.88
Story1	Granizo	LinStatic		Y	0.000296	2	0	0	0.88
Story1	SX	LinRespSpec	Max	X	0.000761	6	9.18	2.22	0.88
Story1	SX	LinRespSpec	Max	Y	0.000508	2	0	0	0.88
Story1	SY	LinRespSpec	Max	X	0.000257	6	9.18	2.22	0.88
Story1	SY	LinRespSpec	Max	Y	0.001844	3	3.06	0	0.88
Story1	servicio	Combination		X	4.8E-05	6	9.18	2.22	0.88
Story1	servicio	Combination		Y	0.000266	2	0	0	0.88
Story1	mayorada 1.4D	Combination		X	3.2E-05	6	9.18	2.22	0.88
Story1	mayorada 1.4D	Combination		Y	0.000165	2	0	0	0.88
Story1	mayorada 1.2D-1.6L-0.5G	Combination		X	9.3E-05	6	9.18	2.22	0.88
Story1	mayorada 1.2D-1.6L-0.5G	Combination		Y	0.000526	2	0	0	0.88
Story1	Ex	Combination	Max	X	0.000381	6	9.18	2.22	0.88
Story1	Ex	Combination	Max	Y	0.000254	2	0	0	0.88
Story1	Ex	Combination	Min	X	0.000381	6	9.18	2.22	0.88
Story1	Ex	Combination	Min	Y	0.000254	2	0	0	0.88
Story1	Ey	Combination	Max	X	0.000129	6	9.18	2.22	0.88
Story1	Ey	Combination	Max	Y	0.000922	3	3.06	0	0.88
Story1	Ey	Combination	Min	X	0.000129	6	9.18	2.22	0.88
Story1	Ey	Combination	Min	Y	0.000922	3	3.06	0	0.88
Story1	mayorada 1.2D-1.6G 1 L	Combination		X	0.000134	6	9.18	2.22	0.88
Story1	mayorada 1.2D-1.6G 1 L	Combination		Y	0.000763	2	0	0	0.88
Story1	mayorada 1.2D-1L 1E	Combination	Max	X	0.000472	6	9.18	2.22	0.88
Story1	mayorada 1.2D-1L 1E	Combination	Max	Y	0.000616	1	0	3.07	0.88
Story1	mayorada 1.2D-1L 1E	Combination	Min	X	0.000373	1	0	3.07	0.88
Story1	mayorada 1.2D-1L 1E	Combination	Min	Y	0.000768	2	0	0	0.88
Story1	mayorada 1.2D-1L -E	Combination	Max	X	0.000472	6	9.18	2.22	0.88
Story1	mayorada 1.2D-1L -E	Combination	Max	Y	0.000616	1	0	3.07	0.88
Story1	mayorada 1.2D-1L -E	Combination	Min	X	0.000373	1	0	3.07	0.88
Story1	mayorada 1.2D-1L -E	Combination	Min	Y	0.000768	2	0	0	0.88
Story1	mayorada 1.2D-1L Ey	Combination	Max	X	0.000296	6	9.18	2.22	0.88
Story1	mayorada 1.2D-1L Ey	Combination	Max	Y	0.000956	1	0	3.07	0.88
Story1	mayorada 1.2D-1L Ey	Combination	Min	X	0.000235	1	0	3.07	0.88
Story1	mayorada 1.2D-1L Ey	Combination	Min	Y	0.001114	2	0	0	0.88
Story1	mayorada 1.2D-1l -Ey	Combination	Max	X	0.000296	6	9.18	2.22	0.88
Story1	mayorada 1.2D-1l -Ey	Combination	Max	Y	0.000956	1	0	3.07	0.88
Story1	mayorada 1.2D-1l -Ey	Combination	Min	X	0.000235	1	0	3.07	0.88
Story1	mayorada 1.2D-1l -Ey	Combination	Min	Y	0.001114	2	0	0	0.88

Table 5.3 - Story Forces (Part 1 of 2)

Story	Location	Output Case	Case Type	Step Type	P kgf	VX kgf	VY kgf	T kgf-m
Story4	Top	Dead	LinStatic		101.9813	0	0	0
Story4	Bottom	Dead	LinStatic		1914.2776	0	0	0
Story4	Top	Live	LinStatic		0	0	0	0
Story4	Bottom	Live	LinStatic		2331	0	0	0
Story4	Top	Granizo	LinStatic		0	0	0	0
Story4	Bottom	Granizo	LinStatic		4662	0	0	0
Story4	Top	SX	LinRespSpec	Max	0	693.1481	74.7008	1529.1997
Story4	Bottom	SX	LinRespSpec	Max	0	693.1481	74.7008	1529.1997
Story4	Top	SY	LinRespSpec	Max	0	98.7839	832.467	2333.7182
Story4	Bottom	SY	LinRespSpec	Max	0	98.7839	832.467	2333.7182
Story4	Top	servicio	Combination		101.9812	0	0	0
Story4	Bottom	servicio	Combination		4245.2776	0	0	0
Story4	Top	mayorada 1.4D	Combination		142.7738	0	0	0
Story4	Bottom	mayorada 1.4D	Combination		2679.9887	0	0	0
Story4	Top	mayorada 1.2D-1.6L-0.5G	Combination		122.3775	0	0	0
Story4	Bottom	mayorada 1.2D-1.6L-0.5G	Combination		8357.7332	0	0	0
Story4	Top	Ex	Combination	Max	0	346.574	37.3504	764.5998
Story4	Bottom	Ex	Combination	Max	0	346.574	37.3504	764.5998
Story4	Top	Ex	Combination	Min	0	-346.574	-37.3504	-764.5998
Story4	Bottom	Ex	Combination	Min	0	-346.574	-37.3504	-764.5998
Story4	Top	Ey	Combination	Max	0	49.392	416.2335	1166.8591
Story4	Bottom	Ey	Combination	Max	0	49.392	416.2335	1166.8591
Story4	Top	Ey	Combination	Min	0	-49.392	-416.2335	-1166.8591
Story4	Bottom	Ey	Combination	Min	0	-49.392	-416.2335	-1166.8591
Story4	Top	mayorada 1.2D-1.6G 1 L	Combination		122.3775	0	0	0
Story4	Bottom	mayorada 1.2D-1.6G 1 L	Combination		12087.3332	0	0	0
Story4	Top	mayorada 1.2D-1L 1E	Combination	Max	122.3775	361.3916	162.2205	1114.6576
Story4	Bottom	mayorada 1.2D-1L 1E	Combination	Max	4628.1332	361.3916	162.2205	1114.6576
Story4	Top	mayorada 1.2D-1L 1E	Combination	Min	122.3775	-361.3916	-162.2205	-1114.6576
Story4	Bottom	mayorada 1.2D-1L 1E	Combination	Min	4628.1332	-361.3916	-162.2205	-1114.6576
Story4	Top	mayorada 1.2D-1L -E	Combination	Max	122.3775	361.3916	162.2205	1114.6576
Story4	Bottom	mayorada 1.2D-1L -E	Combination	Max	4628.1332	361.3916	162.2205	1114.6576
Story4	Top	mayorada 1.2D-1L -E	Combination	Min	122.3775	-361.3916	-162.2205	-1114.6576
Story4	Bottom	mayorada 1.2D-1L -E	Combination	Min	4628.1332	-361.3916	-162.2205	-1114.6576
Story4	Top	mayorada 1.2D-1L Ey	Combination	Max	122.3775	153.3642	427.4386	1396.239
Story4	Bottom	mayorada 1.2D-1L Ey	Combination	Max	4628.1332	153.3642	427.4386	1396.239
Story4	Top	mayorada 1.2D-1L Ey	Combination	Min	122.3775	-153.3642	-427.4386	-1396.239
Story4	Bottom	mayorada 1.2D-1L Ey	Combination	Min	4628.1332	-153.3642	-427.4386	-1396.239
Story4	Top	mayorada 1.2D-1l -Ey	Combination	Max	122.3775	153.3642	427.4386	1396.239
Story4	Bottom	mayorada 1.2D-1l -Ey	Combination	Max	4628.1332	153.3642	427.4386	1396.239
Story4	Top	mayorada 1.2D-1l -Ey	Combination	Min	122.3775	-153.3642	-427.4386	-1396.239
Story4	Bottom	mayorada 1.2D-1l -Ey	Combination	Min	4628.1332	-153.3642	-427.4386	-1396.239
Story3	Top	Dead	LinStatic		2193.5308	0	0	0
Story3	Bottom	Dead	LinStatic		2299.8433	0	0	0
Story3	Top	Live	LinStatic		2664	0	0	0

Table 5.3 - Story Forces (Part 1 of 2, continued)

Story	Location	Output Case	Case Type	Step Type	P kgf	VX kgf	VY kgf	T kgf-m
Story3	Bottom	Live	LinStatic		2664	0	0	0
Story3	Top	Granizo	LinStatic		5328	0	0	0
Story3	Bottom	Granizo	LinStatic		5328	0	0	0
Story3	Top	SX	LinRespSpec	Max	0	757.2992	100.4386	1904.6432
Story3	Bottom	SX	LinRespSpec	Max	0	757.2992	100.4386	1904.6432
Story3	Top	SY	LinRespSpec	Max	0	107.9643	857.5164	2504.6397
Story3	Bottom	SY	LinRespSpec	Max	0	107.9643	857.5164	2504.6397
Story3	Top	servicio	Combination		4857.5308	0	0	0
Story3	Bottom	servicio	Combination		4963.8433	0	0	0
Story3	Top	mayorada 1.4D	Combination		3070.9431	0	0	0
Story3	Bottom	mayorada 1.4D	Combination		3219.7806	0	0	0
Story3	Top	mayorada 1.2D-1.6L-0.5G	Combination		9558.6369	0	0	0
Story3	Bottom	mayorada 1.2D-1.6L-0.5G	Combination		9686.2119	0	0	0
Story3	Top	Ex	Combination	Max	0	378.6496	50.2193	952.3216
Story3	Bottom	Ex	Combination	Max	0	378.6496	50.2193	952.3216
Story3	Top	Ex	Combination	Min	0	-378.6496	-50.2193	-952.3216
Story3	Bottom	Ex	Combination	Min	0	-378.6496	-50.2193	-952.3216
Story3	Top	Ey	Combination	Max	0	53.9821	428.7582	1252.3198
Story3	Bottom	Ey	Combination	Max	0	53.9821	428.7582	1252.3198
Story3	Top	Ey	Combination	Min	0	-53.9821	-428.7582	-1252.3198
Story3	Bottom	Ey	Combination	Min	0	-53.9821	-428.7582	-1252.3198
Story3	Top	mayorada 1.2D-1.6G 1 L	Combination		13821.0369	0	0	0
Story3	Bottom	mayorada 1.2D-1.6G 1 L	Combination		13948.6119	0	0	0
Story3	Top	mayorada 1.2D-1L 1E	Combination	Max	5296.2369	394.8443	178.8468	1328.0175
Story3	Bottom	mayorada 1.2D-1L 1E	Combination	Max	5423.8119	394.8443	178.8468	1328.0175
Story3	Top	mayorada 1.2D-1L 1E	Combination	Min	5296.2369	-394.8443	-178.8468	-1328.0175
Story3	Bottom	mayorada 1.2D-1L 1E	Combination	Min	5423.8119	-394.8443	-178.8468	-1328.0175
Story3	Top	mayorada 1.2D-1L -E	Combination	Max	5296.2369	394.8443	178.8468	1328.0175
Story3	Bottom	mayorada 1.2D-1L -E	Combination	Max	5423.8119	394.8443	178.8468	1328.0175
Story3	Top	mayorada 1.2D-1L -E	Combination	Min	5296.2369	-394.8443	-178.8468	-1328.0175
Story3	Bottom	mayorada 1.2D-1L -E	Combination	Min	5423.8119	-394.8443	-178.8468	-1328.0175
Story3	Top	mayorada 1.2D-1L Ey	Combination	Max	5296.2369	167.577	443.824	1538.0163
Story3	Bottom	mayorada 1.2D-1L Ey	Combination	Max	5423.8119	167.577	443.824	1538.0163
Story3	Top	mayorada 1.2D-1L Ey	Combination	Min	5296.2369	-167.577	-443.824	-1538.0163
Story3	Bottom	mayorada 1.2D-1L Ey	Combination	Min	5423.8119	-167.577	-443.824	-1538.0163
Story3	Top	mayorada 1.2D-1l -Ey	Combination	Max	5296.2369	167.577	443.824	1538.0163
Story3	Bottom	mayorada 1.2D-1l -Ey	Combination	Max	5423.8119	167.577	443.824	1538.0163
Story3	Top	mayorada 1.2D-1l -Ey	Combination	Min	5296.2369	-167.577	-443.824	-1538.0163
Story3	Bottom	mayorada 1.2D-1l -Ey	Combination	Min	5423.8119	-167.577	-443.824	-1538.0163
Story2	Top	Dead	LinStatic		2379.662	0	0	0
Story2	Bottom	Dead	LinStatic		2582.837	0	0	0
Story2	Top	Live	LinStatic		2664	0	0	0
Story2	Bottom	Live	LinStatic		2664	0	0	0
Story2	Top	Granizo	LinStatic		5328	0	0	0

Table 5.3 - Story Forces (Part 1 of 2, continued)

Story	Location	Output Case	Case Type	Step Type	P kgf	VX kgf	VY kgf	T kgf-m
Story2	Bottom	Granizo	LinStatic		5328	0	0	0
Story2	Top	SX	LinRespSpec	Max	0	891.9626	122.6197	2429.6571
Story2	Bottom	SX	LinRespSpec	Max	0	891.9626	122.6197	2429.6571
Story2	Top	SY	LinRespSpec	Max	0	126.6093	971.7217	2910.5832
Story2	Bottom	SY	LinRespSpec	Max	0	126.6093	971.7217	2910.5832
Story2	Top	servicio	Combination		5043.662	0	0	0
Story2	Bottom	servicio	Combination		5246.837	0	0	0
Story2	Top	mayorada 1.4D	Combination		3331.5268	0	0	0
Story2	Bottom	mayorada 1.4D	Combination		3615.9718	0	0	0
Story2	Top	mayorada 1.2D-1.6L-0.5G	Combination		9781.9944	0	0	0
Story2	Bottom	mayorada 1.2D-1.6L-0.5G	Combination		10025.8044	0	0	0
Story2	Top	Ex	Combination	Max	0	445.9813	61.3098	1214.8286
Story2	Bottom	Ex	Combination	Max	0	445.9813	61.3098	1214.8286
Story2	Top	Ex	Combination	Min	0	-445.9813	-61.3098	-1214.8286
Story2	Bottom	Ex	Combination	Min	0	-445.9813	-61.3098	-1214.8286
Story2	Top	Ey	Combination	Max	0	63.3047	485.8609	1455.2916
Story2	Bottom	Ey	Combination	Max	0	63.3047	485.8609	1455.2916
Story2	Top	Ey	Combination	Min	0	-63.3047	-485.8609	-1455.2916
Story2	Bottom	Ey	Combination	Min	0	-63.3047	-485.8609	-1455.2916
Story2	Top	mayorada 1.2D-1.6G 1 L	Combination		14044.3944	0	0	0
Story2	Bottom	mayorada 1.2D-1.6G 1 L	Combination		14288.2044	0	0	0
Story2	Top	mayorada 1.2D-1L 1E	Combination	Max	5519.5944	464.9727	207.0681	1651.416
Story2	Bottom	mayorada 1.2D-1L 1E	Combination	Max	5763.4044	464.9727	207.0681	1651.416
Story2	Top	mayorada 1.2D-1L 1E	Combination	Min	5519.5944	-464.9727	-207.0681	-1651.416
Story2	Bottom	mayorada 1.2D-1L 1E	Combination	Min	5763.4044	-464.9727	-207.0681	-1651.416
Story2	Top	mayorada 1.2D-1L -E	Combination	Max	5519.5944	464.9727	207.0681	1651.416
Story2	Bottom	mayorada 1.2D-1L -E	Combination	Max	5763.4044	464.9727	207.0681	1651.416
Story2	Top	mayorada 1.2D-1L -E	Combination	Min	5519.5944	-464.9727	-207.0681	-1651.416
Story2	Bottom	mayorada 1.2D-1L -E	Combination	Min	5763.4044	-464.9727	-207.0681	-1651.416
Story2	Top	mayorada 1.2D-1L Ey	Combination	Max	5519.5944	197.0991	504.2538	1819.7401
Story2	Bottom	mayorada 1.2D-1L Ey	Combination	Max	5763.4044	197.0991	504.2538	1819.7401
Story2	Top	mayorada 1.2D-1L Ey	Combination	Min	5519.5944	-197.0991	-504.2538	-1819.7401
Story2	Bottom	mayorada 1.2D-1L Ey	Combination	Min	5763.4044	-197.0991	-504.2538	-1819.7401
Story2	Top	mayorada 1.2D-1l -Ey	Combination	Max	5519.5944	197.0991	504.2538	1819.7401
Story2	Bottom	mayorada 1.2D-1l -Ey	Combination	Max	5763.4044	197.0991	504.2538	1819.7401
Story2	Top	mayorada 1.2D-1l -Ey	Combination	Min	5519.5944	-197.0991	-504.2538	-1819.7401
Story2	Bottom	mayorada 1.2D-1l -Ey	Combination	Min	5763.4044	-197.0991	-504.2538	-1819.7401
Story1	Top	Dead	LinStatic		2662.6558	0	0	0
Story1	Bottom	Dead	LinStatic		2967.4183	0	0	0
Story1	Top	Live	LinStatic		2664	0	0	0
Story1	Bottom	Live	LinStatic		2664	0	0	0
Story1	Top	Granizo	LinStatic		5328	0	0	0
Story1	Bottom	Granizo	LinStatic		5328	0	0	0
Story1	Top	SX	LinRespSpec	Max	0	994.5463	140.4124	2815.1127

Table 5.3 - Story Forces (Part 1 of 2, continued)

Story	Location	Output Case	Case Type	Step Type	P kgf	VX kgf	VY kgf	T kgf-m
Story1	Bottom	SX	LinRespSpec	Max	0	994.5463	140.4124	2815.1127
Story1	Top	SY	LinRespSpec	Max	0	140.4124	1053.5572	3226.484
Story1	Bottom	SY	LinRespSpec	Max	0	140.4124	1053.5572	3226.484
Story1	Top	servicio	Combination		5326.6558	0	0	0
Story1	Bottom	servicio	Combination		5631.4183	0	0	0
Story1	Top	mayorada 1.4D	Combination		3727.7181	0	0	0
Story1	Bottom	mayorada 1.4D	Combination		4154.3856	0	0	0
Story1	Top	mayorada 1.2D-1.6L-0.5G	Combination		10121.5869	0	0	0
Story1	Bottom	mayorada 1.2D-1.6L-0.5G	Combination		10487.3019	0	0	0
Story1	Top	Ex	Combination	Max	0	497.2732	70.2062	1407.5564
Story1	Bottom	Ex	Combination	Max	0	497.2732	70.2062	1407.5564
Story1	Top	Ex	Combination	Min	0	-497.2732	-70.2062	-1407.5564
Story1	Bottom	Ex	Combination	Min	0	-497.2732	-70.2062	-1407.5564
Story1	Top	Ey	Combination	Max	0	70.2062	526.7786	1613.242
Story1	Bottom	Ey	Combination	Max	0	70.2062	526.7786	1613.242
Story1	Top	Ey	Combination	Min	0	-70.2062	-526.7786	-1613.242
Story1	Bottom	Ey	Combination	Min	0	-70.2062	-526.7786	-1613.242
Story1	Top	mayorada 1.2D-1.6G 1 L	Combination		14383.9869	0	0	0
Story1	Bottom	mayorada 1.2D-1.6G 1 L	Combination		14749.7019	0	0	0
Story1	Top	mayorada 1.2D-1L 1E	Combination	Max	5859.1869	518.335	228.2398	1891.5289
Story1	Bottom	mayorada 1.2D-1L 1E	Combination	Max	6224.9019	518.335	228.2398	1891.5289
Story1	Top	mayorada 1.2D-1L 1E	Combination	Min	5859.1869	-518.335	-228.2398	-1891.5289
Story1	Bottom	mayorada 1.2D-1L 1E	Combination	Min	6224.9019	-518.335	-228.2398	-1891.5289
Story1	Top	mayorada 1.2D-1L -E	Combination	Max	5859.1869	518.335	228.2398	1891.5289
Story1	Bottom	mayorada 1.2D-1L -E	Combination	Max	6224.9019	518.335	228.2398	1891.5289
Story1	Top	mayorada 1.2D-1L -E	Combination	Min	5859.1869	-518.335	-228.2398	-1891.5289
Story1	Bottom	mayorada 1.2D-1L -E	Combination	Min	6224.9019	-518.335	-228.2398	-1891.5289
Story1	Top	mayorada 1.2D-1L Ey	Combination	Max	5859.1869	219.3882	547.8405	2035.5089
Story1	Bottom	mayorada 1.2D-1L Ey	Combination	Max	6224.9019	219.3882	547.8405	2035.5089
Story1	Top	mayorada 1.2D-1L Ey	Combination	Min	5859.1869	-219.3882	-547.8405	-2035.5089
Story1	Bottom	mayorada 1.2D-1L Ey	Combination	Min	6224.9019	-219.3882	-547.8405	-2035.5089
Story1	Top	mayorada 1.2D-1l -Ey	Combination	Max	5859.1869	219.3882	547.8405	2035.5089
Story1	Bottom	mayorada 1.2D-1l -Ey	Combination	Max	6224.9019	219.3882	547.8405	2035.5089
Story1	Top	mayorada 1.2D-1l -Ey	Combination	Min	5859.1869	-219.3882	-547.8405	-2035.5089
Story1	Bottom	mayorada 1.2D-1l -Ey	Combination	Min	6224.9019	-219.3882	-547.8405	-2035.5089

Table 5.3 - Story Forces (Part 2 of 2)

Story	Location	MX kgf-m	MY kgf-m
Story4	Top	122.0371	-276.6892
Story4	Bottom	2130.337	-5502.6228
Story4	Top	0	0
Story4	Bottom	2587.41	-6666.3205
Story4	Top	0	0
Story4	Bottom	5174.82	-13332.6411

Table 5.3 - Story Forces (Part 2 of 2, continued)

Story	Location	MX kgf-m	MY kgf-m
Story4	Top	0	0
Story4	Bottom	64.9897	603.0388
Story4	Top	0	0
Story4	Bottom	724.2463	85.942
Story4	Top	122.0371	-276.6892
Story4	Bottom	4717.747	-12168.9434
Story4	Top	170.852	-387.3649
Story4	Bottom	2982.4718	-7703.6719
Story4	Top	146.4445	-332.027
Story4	Bottom	9283.6704	-23935.5808
Story4	Top	0	0
Story4	Bottom	32.4949	301.5194
Story4	Top	0	0
Story4	Bottom	-32.4949	-301.5194
Story4	Top	0	0
Story4	Bottom	362.1231	42.971
Story4	Top	0	0
Story4	Bottom	-362.1231	-42.971
Story4	Top	146.4445	-332.027
Story4	Bottom	13423.5264	-34601.6937
Story4	Top	146.4445	-332.027
Story4	Bottom	5284.9462	-12955.0572
Story4	Top	146.4445	-332.027
Story4	Bottom	5002.6826	-13583.8786
Story4	Top	146.4445	-332.027
Story4	Bottom	5284.9462	-12955.0572
Story4	Top	146.4445	-332.027
Story4	Bottom	5002.6826	-13583.8786
Story4	Top	146.4445	-332.027
Story4	Bottom	5515.686	-13136.0411
Story4	Top	146.4445	-332.027
Story4	Bottom	4771.9428	-13402.8947
Story4	Top	146.4445	-332.027
Story4	Bottom	5515.686	-13136.0411
Story4	Top	146.4445	-332.027
Story4	Bottom	4771.9428	-13402.8947
Story3	Top	2447.7569	-7909.0145
Story3	Bottom	2574.7244	-8404.7345
Story3	Top	2957.04	-9723.2605
Story3	Bottom	2957.04	-9723.2605
Story3	Top	5914.08	-19446.5211
Story3	Bottom	5914.08	-19446.5211
Story3	Top	64.9897	603.0388
Story3	Bottom	153.0179	1284.5978
Story3	Top	724.2463	85.942

Table 5.3 - Story Forces (Part 2 of 2, continued)

Story	Location	MX kgf-m	MY kgf-m
Story3	Bottom	1495.4366	183.1085
Story3	Top	5404.7969	-17632.275
Story3	Bottom	5531.7644	-18127.995
Story3	Top	3426.8596	-11072.6203
Story3	Bottom	3604.6141	-11766.6283
Story3	Top	10625.6122	-34771.2948
Story3	Bottom	10777.9732	-35366.1588
Story3	Top	32.4949	301.5194
Story3	Bottom	76.509	642.2989
Story3	Top	-32.4949	-301.5194
Story3	Bottom	-76.509	-642.2989
Story3	Top	362.1231	42.971
Story3	Bottom	747.7183	91.5542
Story3	Top	-362.1231	-42.971
Story3	Bottom	-747.7183	-91.5542
Story3	Top	15356.8762	-50328.5117
Story3	Bottom	15509.2372	-50923.3757
Story3	Top	6035.48	-18899.6672
Story3	Bottom	6347.5337	-19139.1768
Story3	Top	5753.2164	-19528.4886
Story3	Bottom	5745.8848	-20478.7071
Story3	Top	6035.48	-18899.6672
Story3	Bottom	6347.5337	-19139.1768
Story3	Top	5753.2164	-19528.4886
Story3	Bottom	5745.8848	-20478.7071
Story3	Top	6266.2198	-19080.6511
Story3	Bottom	6817.3802	-19524.698
Story3	Top	5522.4766	-19347.5047
Story3	Bottom	5276.0382	-20093.1858
Story3	Top	6266.2198	-19080.6511
Story3	Bottom	6817.3802	-19524.698
Story3	Top	5522.4766	-19347.5047
Story3	Bottom	5276.0382	-20093.1858
Story2	Top	2669.0117	-8716.711
Story2	Bottom	2911.6607	-9664.087
Story2	Top	2957.04	-9723.2605
Story2	Bottom	2957.04	-9723.2605
Story2	Top	5914.08	-19446.5211
Story2	Bottom	5914.08	-19446.5211
Story2	Top	153.0179	1284.5978
Story2	Bottom	361.5834	2817.76
Story2	Top	1495.4366	183.1085
Story2	Bottom	3162.1097	400.831
Story2	Top	5626.0517	-18439.9716
Story2	Bottom	5868.7007	-19387.3476

Table 5.3 - Story Forces (Part 2 of 2, continued)

Story	Location	MX kgf-m	MY kgf-m
Story2	Top	3736.6164	-12203.3955
Story2	Bottom	4076.325	-13529.7219
Story2	Top	10891.1181	-35740.5307
Story2	Bottom	11182.2969	-36877.3819
Story2	Top	76.509	642.2989
Story2	Bottom	180.7917	1408.88
Story2	Top	-76.509	-642.2989
Story2	Bottom	-180.7917	-1408.88
Story2	Top	747.7183	91.5542
Story2	Bottom	1581.0548	200.4155
Story2	Top	-747.7183	-91.5542
Story2	Bottom	-1581.0548	-200.4155
Story2	Top	15622.3821	-51297.7475
Story2	Bottom	15913.5609	-52434.5987
Story2	Top	6460.6785	-19513.5486
Story2	Bottom	7106.141	-19851.1603
Story2	Top	5859.0296	-20853.079
Story2	Bottom	5795.9248	-22789.1696
Story2	Top	6460.6785	-19513.5486
Story2	Bottom	7106.141	-19851.1603
Story2	Top	5859.0296	-20853.079
Story2	Bottom	5795.9248	-22789.1696
Story2	Top	6930.5251	-19899.0699
Story2	Bottom	8086.3252	-20697.0855
Story2	Top	5389.1831	-20467.5577
Story2	Bottom	4815.7405	-21943.2445
Story2	Top	6930.5251	-19899.0699
Story2	Bottom	8086.3252	-20697.0855
Story2	Top	5389.1831	-20467.5577
Story2	Bottom	4815.7405	-21943.2445
Story1	Top	3005.9481	-9976.0636
Story1	Bottom	3369.9216	-11397.1276
Story1	Top	2957.04	-9723.2605
Story1	Bottom	2957.04	-9723.2605
Story1	Top	5914.08	-19446.5211
Story1	Bottom	5914.08	-19446.5211
Story1	Top	361.5834	2817.76
Story1	Bottom	721.677	5380.6612
Story1	Top	3162.1097	400.831
Story1	Bottom	5866.4593	762.9538
Story1	Top	5962.9881	-19699.3242
Story1	Bottom	6326.9616	-21120.3882
Story1	Top	4208.3274	-13966.489
Story1	Bottom	4717.8903	-15955.9786
Story1	Top	11295.4417	-37251.7537

Table 5.3 - Story Forces (Part 2 of 2, continued)

Story	Location	MX kgf-m	MY kgf-m
Story1	Bottom	11732.2099	-38957.0305
Story1	Top	180.7917	1408.88
Story1	Bottom	360.8385	2690.3306
Story1	Top	-180.7917	-1408.88
Story1	Bottom	-360.8385	-2690.3306
Story1	Top	1581.0548	200.4155
Story1	Bottom	2933.2297	381.4769
Story1	Top	-1581.0548	-200.4155
Story1	Bottom	-2933.2297	-381.4769
Story1	Top	16026.7057	-52808.9706
Story1	Bottom	16463.4739	-54514.2474
Story1	Top	7219.2859	-20225.5322
Story1	Bottom	8241.7533	-20595.04
Story1	Top	5909.0696	-23163.5415
Story1	Bottom	5760.1385	-26204.5873
Story1	Top	7219.2859	-20225.5322
Story1	Bottom	8241.7533	-20595.04
Story1	Top	5909.0696	-23163.5415
Story1	Bottom	5760.1385	-26204.5873
Story1	Top	8199.4701	-21071.4574
Story1	Bottom	10042.4272	-22211.2376
Story1	Top	4928.8854	-22317.6164
Story1	Bottom	3959.4647	-24588.3898
Story1	Top	8199.4701	-21071.4574
Story1	Bottom	10042.4272	-22211.2376
Story1	Top	4928.8854	-22317.6164
Story1	Bottom	3959.4647	-24588.3898

5.3 Point Results

Table 5.4 - Joint Reactions (Part 1 of 2)

Story	Label	Unique Name	Output Case	Case Type	Step Type	FX kgf	FY kgf	FZ kgf	MX kgf-m
Base	1	23	Dead	LinStatic		5.6997	-26.9595	503.7919	42.7543
Base	1	23	Live	LinStatic		3.7866	-33.5085	464.1921	52.6
Base	1	23	Granizo	LinStatic		7.5733	-67.017	928.3841	105.2
Base	1	23	SX	LinRespSpec	Max	126.4486	71.6726	58.2351	224.8904
Base	1	23	SY	LinRespSpec	Max	40.5015	188.3297	310.4498	641.8056
Base	1	23	servicio	Combination		9.4864	-60.468	967.9839	95.3543
Base	1	23	mayorada 1.4D	Combination		7.9796	-37.7433	705.3086	59.8561
Base	1	23	mayorada 1.2D-1.6L-0.5G	Combination		16.685	-119.4735	1811.4496	188.0652
Base	1	23	Ex	Combination	Max	63.2243	35.8363	29.1175	112.4452
Base	1	23	Ex	Combination	Min	-63.2243	-35.8363	-29.1175	-112.4452
Base	1	23	Ey	Combination	Max	20.2508	94.1649	155.2249	320.9028
Base	1	23	Ey	Combination	Min	-20.2508	-94.1649	-155.2249	-320.9028
Base	1	23	mayorada 1.2D-1.6G 1 L	Combination		22.7436	-173.0871	2554.1569	272.2252

Table 5.4 - Joint Reactions (Part 1 of 2, continued)

Story	Label	Unique Name	Output Case	Case Type	Step Type	FX kgf	FY kgf	FZ kgf	MX kgf-m
Base	1	23	mayorada 1.2D-1L 1E	Combination	Max	79.9258	-1.7742	1144.4273	312.6212
Base	1	23	mayorada 1.2D-1L 1E	Combination	Min	-58.6732	-129.9457	993.0573	-104.8109
Base	1	23	mayorada 1.2D-1L -E	Combination	Max	79.9258	-1.7742	1144.4273	312.6212
Base	1	23	mayorada 1.2D-1L -E	Combination	Min	-58.6732	-129.9457	993.0573	-104.8109
Base	1	23	mayorada 1.2D-1L Ey	Combination	Max	49.8444	39.0558	1232.7024	458.5415
Base	1	23	mayorada 1.2D-1L Ey	Combination	Min	-28.5917	-170.7757	904.7822	-250.7312
Base	1	23	mayorada 1.2D-1l -Ey	Combination	Max	49.8444	39.0558	1232.7024	458.5415
Base	1	23	mayorada 1.2D-1l -Ey	Combination	Min	-28.5917	-170.7757	904.7822	-250.7312
Base	2	24	Dead	LinStatic		1.9678	22.9601	543.3096	-58.1594
Base	2	24	Live	LinStatic		1.0783	28.4874	543.1962	-72.7492
Base	2	24	Granizo	LinStatic		2.1566	56.9748	1086.3924	-145.4985
Base	2	24	SX	LinRespSpec	Max	146.051	73.3322	142.5512	228.7013
Base	2	24	SY	LinRespSpec	Max	23.5034	196.4159	238.2854	657.6179
Base	2	24	servicio	Combination		3.0461	51.4475	1086.5058	-130.9087
Base	2	24	mayorada 1.4D	Combination		2.7549	32.1441	760.6335	-81.4232
Base	2	24	mayorada 1.2D-1.6L-0.5G	Combination		5.165	101.6193	2064.2817	-258.9394
Base	2	24	Ex	Combination	Max	73.0255	36.6661	71.2756	114.3506
Base	2	24	Ex	Combination	Min	-73.0255	-36.6661	-71.2756	-114.3506
Base	2	24	Ey	Combination	Max	11.7517	98.2079	119.1427	328.8089
Base	2	24	Ey	Combination	Min	-11.7517	-98.2079	-119.1427	-328.8089
Base	2	24	mayorada 1.2D-1.6G 1 L	Combination		6.8903	147.1992	2933.3956	-375.3382
Base	2	24	mayorada 1.2D-1L 1E	Combination	Max	79.9907	122.168	1302.1861	70.4527
Base	2	24	mayorada 1.2D-1L 1E	Combination	Min	-73.1113	-10.089	1088.1494	-355.5339
Base	2	24	mayorada 1.2D-1L -E	Combination	Max	79.9907	122.168	1302.1861	70.4527
Base	2	24	mayorada 1.2D-1L -E	Combination	Min	-73.1113	-10.089	1088.1494	-355.5339
Base	2	24	mayorada 1.2D-1L Ey	Combination	Max	37.0991	165.2473	1335.6931	220.5736
Base	2	24	mayorada 1.2D-1L Ey	Combination	Min	-30.2197	-53.1683	1054.6424	-505.6547
Base	2	24	mayorada 1.2D-1l -Ey	Combination	Max	37.0991	165.2473	1335.6931	220.5736
Base	2	24	mayorada 1.2D-1l -Ey	Combination	Min	-30.2197	-53.1683	1054.6424	-505.6547
Base	3	25	Dead	LinStatic		1.3793	11.105	530.6064	-27.3085
Base	3	25	Live	LinStatic		1.7358	13.035	493.532	-32.9305
Base	3	25	Granizo	LinStatic		3.4717	26.0701	987.0641	-65.861
Base	3	25	SX	LinRespSpec	Max	176.5241	15.8196	169.874	55.7593
Base	3	25	SY	LinRespSpec	Max	28.4048	223.6429	191.2015	793.8189
Base	3	25	servicio	Combination		3.1152	24.1401	1024.1384	-60.239
Base	3	25	mayorada 1.4D	Combination		1.9311	15.5471	742.849	-38.232
Base	3	25	mayorada 1.2D-1.6L-0.5G	Combination		6.1684	47.2171	1919.911	-118.3895
Base	3	25	Ex	Combination	Max	88.262	7.9098	84.937	27.8797
Base	3	25	Ex	Combination	Min	-88.262	-7.9098	-84.937	-27.8797
Base	3	25	Ey	Combination	Max	14.2024	111.8215	95.6007	396.9095
Base	3	25	Ey	Combination	Min	-14.2024	-111.8215	-95.6007	-396.9095
Base	3	25	mayorada 1.2D-1.6G 1 L	Combination		8.9457	68.0732	2709.5623	-171.0783
Base	3	25	mayorada 1.2D-1L 1E	Combination	Max	95.9138	67.8173	1243.877	81.2518
Base	3	25	mayorada 1.2D-1L 1E	Combination	Min	-89.1317	-15.0951	1016.6425	-212.6533
Base	3	25	mayorada 1.2D-1L -E	Combination	Max	95.9138	67.8173	1243.877	81.2518

Table 5.4 - Joint Reactions (Part 1 of 2, continued)

Story	Label	Unique Name	Output Case	Case Type	Step Type	FX kgf	FY kgf	FZ kgf	MX kgf-m
Base	3	25	mayorada 1.2D-1L -E	Combination	Min	-89.1317	-15.0951	1016.6425	-212.6533
Base	3	25	mayorada 1.2D-1L Ey	Combination	Max	44.0721	140.5555	1251.3416	339.5726
Base	3	25	mayorada 1.2D-1L Ey	Combination	Min	-37.29	-87.8333	1009.1779	-470.9741
Base	3	25	mayorada 1.2D-1l -Ey	Combination	Max	44.0721	140.5555	1251.3416	339.5726
Base	3	25	mayorada 1.2D-1l -Ey	Combination	Min	-37.29	-87.8333	1009.1779	-470.9741
Base	4	26	Dead	LinStatic		2.7217	18.8343	439.6912	-38.9548
Base	4	26	Live	LinStatic		2.3554	22.0178	365.44	-46.0046
Base	4	26	Granizo	LinStatic		4.7108	44.0355	730.88	-92.0093
Base	4	26	SX	LinRespSpec	Max	178.4956	52.3172	138.7226	156.8243
Base	4	26	SY	LinRespSpec	Max	28.812	169.733	272.2488	516.2647
Base	4	26	servicio	Combination		5.0771	40.8521	805.1311	-84.9595
Base	4	26	mayorada 1.4D	Combination		3.8104	26.368	615.5676	-54.5367
Base	4	26	mayorada 1.2D-1.6L-0.5G	Combination		9.39	79.8474	1477.7733	-166.3578
Base	4	26	Ex	Combination	Max	89.2478	26.1586	69.3613	78.4121
Base	4	26	Ex	Combination	Min	-89.2478	-26.1586	-69.3613	-78.4121
Base	4	26	Ey	Combination	Max	14.406	84.8665	136.1244	258.1323
Base	4	26	Ey	Combination	Min	-14.406	-84.8665	-136.1244	-258.1323
Base	4	26	mayorada 1.2D-1.6G 1 L	Combination		13.1586	115.0758	2062.4773	-239.9653
Base	4	26	mayorada 1.2D-1L 1E	Combination	Max	99.191	96.2375	1003.268	63.1014
Base	4	26	mayorada 1.2D-1L 1E	Combination	Min	-87.9482	-6.9996	782.8707	-248.6023
Base	4	26	mayorada 1.2D-1L -E	Combination	Max	99.191	96.2375	1003.268	63.1014
Base	4	26	mayorada 1.2D-1L -E	Combination	Min	-87.9482	-6.9996	782.8707	-248.6023
Base	4	26	mayorada 1.2D-1L Ey	Combination	Max	46.8018	137.333	1050.0022	188.9056
Base	4	26	mayorada 1.2D-1L Ey	Combination	Min	-35.5589	-48.0951	736.1366	-374.4064
Base	4	26	mayorada 1.2D-1l -Ey	Combination	Max	46.8018	137.333	1050.0022	188.9056
Base	4	26	mayorada 1.2D-1l -Ey	Combination	Min	-35.5589	-48.0951	736.1366	-374.4064
Base	5	27	Dead	LinStatic		-1.2662	-27.5498	393.7229	41.4916
Base	5	27	Live	LinStatic		1.3511	-31.9788	322.0775	47.6337
Base	5	27	Granizo	LinStatic		2.7023	-63.9577	644.1549	95.2675
Base	5	27	SX	LinRespSpec	Max	128.3364	72.3384	147.923	190.8169
Base	5	27	SY	LinRespSpec	Max	46.4823	177.2396	379.2226	530.8228
Base	5	27	servicio	Combination		0.0849	-59.5287	715.8004	89.1253
Base	5	27	mayorada 1.4D	Combination		-1.7727	-38.5697	551.2121	58.0882
Base	5	27	mayorada 1.2D-1.6L-0.5G	Combination		1.9935	-116.2048	1309.8689	173.6376
Base	5	27	Ex	Combination	Max	64.1682	36.1692	73.9615	95.4084
Base	5	27	Ex	Combination	Min	-64.1682	-36.1692	-73.9615	-95.4084
Base	5	27	Ey	Combination	Max	23.2412	88.6198	189.6113	265.4114
Base	5	27	Ey	Combination	Min	-23.2412	-88.6198	-189.6113	-265.4114
Base	5	27	mayorada 1.2D-1.6G 1 L	Combination		4.1553	-167.3709	1825.1928	249.8516
Base	5	27	mayorada 1.2D-1L 1E	Combination	Max	70.9722	-2.2835	925.3898	272.4555
Base	5	27	mayorada 1.2D-1L 1E	Combination	Min	-71.3089	-127.7938	663.7001	-77.6082
Base	5	27	mayorada 1.2D-1L -E	Combination	Max	70.9722	-2.2835	925.3898	272.4555
Base	5	27	mayorada 1.2D-1L -E	Combination	Min	-71.3089	-127.7938	663.7001	-77.6082
Base	5	27	mayorada 1.2D-1L Ey	Combination	Max	42.3233	34.4319	1006.3447	391.4576
Base	5	27	mayorada 1.2D-1L Ey	Combination	Min	-42.6599	-164.5092	582.7452	-196.6103

Table 5.4 - Joint Reactions (Part 1 of 2, continued)

Story	Label	Unique Name	Output Case	Case Type	Step Type	FX kgf	FY kgf	FZ kgf	MX kgf-m
Base	5	27	mayorada 1.2D-1l -Ey	Combination	Max	42.3233	34.4319	1006.3447	391.4576
Base	5	27	mayorada 1.2D-1l -Ey	Combination	Min	-42.6599	-164.5092	582.7452	-196.6103
Base	6	28	Dead	LinStatic		-10.4725	-7.3999	296.7366	12.198
Base	6	28	Live	LinStatic		-11.5072	-11.7786	270.12	19.5794
Base	6	28	Granizo	LinStatic		-23.0144	-23.5571	540.24	39.1589
Base	6	28	SX	LinRespSpec	Max	118.4547	63.5987	98.4779	184.2876
Base	6	28	SY	LinRespSpec	Max	38.0528	64.631	149.9379	187.722
Base	6	28	servicio	Combination		-21.9796	-19.1785	566.8566	31.7774
Base	6	28	mayorada 1.4D	Combination		-14.6614	-10.3599	415.4312	17.0772
Base	6	28	mayorada 1.2D-1.6L-0.5G	Combination		-42.4857	-39.5042	1058.3959	65.5441
Base	6	28	Ex	Combination	Max	59.2274	31.7994	49.2389	92.1438
Base	6	28	Ex	Combination	Min	-59.2274	-31.7994	-49.2389	-92.1438
Base	6	28	Ey	Combination	Max	19.0264	32.3155	74.9689	93.861
Base	6	28	Ey	Combination	Min	-19.0264	-32.3155	-74.9689	-93.861
Base	6	28	mayorada 1.2D-1.6G 1 L	Combination		-60.8972	-58.3499	1490.5879	96.8712
Base	6	28	mayorada 1.2D-1L 1E	Combination	Max	40.8611	20.8356	697.9335	154.5191
Base	6	28	mayorada 1.2D-1L 1E	Combination	Min	-89.0094	-62.1525	554.4743	-86.0851
Base	6	28	mayorada 1.2D-1L -E	Combination	Max	40.8611	20.8356	697.9335	154.5191
Base	6	28	mayorada 1.2D-1L -E	Combination	Min	-89.0094	-62.1525	554.4743	-86.0851
Base	6	28	mayorada 1.2D-1L Ey	Combination	Max	12.7205	21.1969	715.9445	155.7212
Base	6	28	mayorada 1.2D-1L Ey	Combination	Min	-60.8687	-62.5138	536.4633	-87.2871
Base	6	28	mayorada 1.2D-1l -Ey	Combination	Max	12.7205	21.1969	715.9445	155.7212
Base	6	28	mayorada 1.2D-1l -Ey	Combination	Min	-60.8687	-62.5138	536.4633	-87.2871
Base	7	29	Dead	LinStatic		-0.0299	9.0098	259.5597	-16.2251
Base	7	29	Live	LinStatic		1.1999	13.7257	205.4422	-24.6027
Base	7	29	Granizo	LinStatic		2.3998	27.4514	410.8845	-49.2053
Base	7	29	SX	LinRespSpec	Max	144.841	67.413	452.3067	189.8447
Base	7	29	SY	LinRespSpec	Max	23.4275	66.1888	148.9922	190.672
Base	7	29	servicio	Combination		1.17	22.7355	465.002	-40.8277
Base	7	29	mayorada 1.4D	Combination		-0.0419	12.6137	363.3836	-22.7151
Base	7	29	mayorada 1.2D-1.6L-0.5G	Combination		3.0838	46.4986	845.6215	-83.437
Base	7	29	Ex	Combination	Max	72.4205	33.7065	226.1534	94.9223
Base	7	29	Ex	Combination	Min	-72.4205	-33.7065	-226.1534	-94.9223
Base	7	29	Ey	Combination	Max	11.7138	33.0944	74.4961	95.336
Base	7	29	Ey	Combination	Min	-11.7138	-33.0944	-74.4961	-95.336
Base	7	29	mayorada 1.2D-1.6G 1 L	Combination		5.0036	68.4597	1174.3291	-122.8013
Base	7	29	mayorada 1.2D-1L 1E	Combination	Max	77.0986	68.1723	765.4161	79.4504
Base	7	29	mayorada 1.2D-1L 1E	Combination	Min	-74.7707	-19.0974	268.4117	-167.5959
Base	7	29	mayorada 1.2D-1L -E	Combination	Max	77.0986	68.1723	765.4161	79.4504
Base	7	29	mayorada 1.2D-1L -E	Combination	Min	-74.7707	-19.0974	268.4117	-167.5959
Base	7	29	mayorada 1.2D-1L Ey	Combination	Max	34.6039	67.7438	659.256	79.74
Base	7	29	mayorada 1.2D-1L Ey	Combination	Min	-32.2759	-18.6689	374.5718	-167.8854
Base	7	29	mayorada 1.2D-1l -Ey	Combination	Max	34.6039	67.7438	659.256	79.74
Base	7	29	mayorada 1.2D-1l -Ey	Combination	Min	-32.2759	-18.6689	374.5718	-167.8854

Table 5.4 - Joint Reactions (Part 2 of 2)

Story	Label	Unique Name	MY kgf-m	MZ kgf-m
Base	1	23	9.8721	2.1007
Base	1	23	8.876	1.8581
Base	1	23	17.752	3.7163
Base	1	23	307.4402	17.3902
Base	1	23	105.497	6.6279
Base	1	23	18.7481	3.9588
Base	1	23	13.821	2.941
Base	1	23	34.9241	7.352
Base	1	23	153.7201	8.6951
Base	1	23	-153.7201	-8.6951
Base	1	23	52.7485	3.3139
Base	1	23	-52.7485	-3.3139
Base	1	23	49.1257	10.325
Base	1	23	190.2672	14.0682
Base	1	23	-148.8221	-5.3103
Base	1	23	190.2672	14.0682
Base	1	23	-148.8221	-5.3103
Base	1	23	119.5871	10.3014
Base	1	23	-78.142	-1.5435
Base	1	23	119.5871	10.3014
Base	1	23	-78.142	-1.5435
Base	2	24	3.3029	-4.092
Base	2	24	2.5565	-4.9553
Base	2	24	5.113	-9.9106
Base	2	24	282.9456	46.104
Base	2	24	45.5588	25.2669
Base	2	24	5.8594	-9.0473
Base	2	24	4.6241	-5.7288
Base	2	24	10.6104	-17.7942
Base	2	24	141.4728	23.052
Base	2	24	-141.4728	-23.052
Base	2	24	22.7794	12.6334
Base	2	24	-22.7794	-12.6334
Base	2	24	14.7008	-25.7227
Base	2	24	154.8266	16.9763
Base	2	24	-141.7866	-36.7078
Base	2	24	154.8266	16.9763
Base	2	24	-141.7866	-36.7078
Base	2	24	71.7412	9.6833
Base	2	24	-58.7012	-29.4148
Base	2	24	71.7412	9.6833
Base	2	24	-58.7012	-29.4148
Base	3	25	2.7785	-2.2204
Base	3	25	3.1027	-2.9353
Base	3	25	6.2054	-5.8707

Table 5.4 - Joint Reactions (Part 2 of 2, continued)

Story	Label	Unique Name	MY kgf-m	MZ kgf-m
Base	3	25	309.0909	39.8257
Base	3	25	49.7623	34.0746
Base	3	25	5.8812	-5.1557
Base	3	25	3.8899	-3.1085
Base	3	25	11.4013	-10.2963
Base	3	25	154.5454	19.9129
Base	3	25	-154.5454	-19.9129
Base	3	25	24.8811	17.0373
Base	3	25	-24.8811	-17.0373
Base	3	25	16.3656	-14.9928
Base	3	25	168.4467	19.4243
Base	3	25	-155.5728	-30.6238
Base	3	25	168.4467	19.4243
Base	3	25	-155.5728	-30.6238
Base	3	25	77.6817	17.4114
Base	3	25	-64.8078	-28.6109
Base	3	25	77.6817	17.4114
Base	3	25	-64.8078	-28.6109
Base	4	26	3.9091	-0.7121
Base	4	26	3.6168	-0.8303
Base	4	26	7.2336	-1.6606
Base	4	26	310.5551	21.9519
Base	4	26	50.0722	66.1351
Base	4	26	7.5259	-1.5424
Base	4	26	5.4728	-0.9969
Base	4	26	14.0946	-3.0133
Base	4	26	155.2775	10.976
Base	4	26	-155.2775	-10.976
Base	4	26	25.0361	33.0675
Base	4	26	-25.0361	-33.0675
Base	4	26	19.8815	-4.3418
Base	4	26	171.0961	19.2114
Base	4	26	-154.4806	-22.5811
Base	4	26	171.0961	19.2114
Base	4	26	-154.4806	-22.5811
Base	4	26	79.9271	34.6755
Base	4	26	-63.3116	-38.0452
Base	4	26	79.9271	34.6755
Base	4	26	-63.3116	-38.0452
Base	5	27	3.8822	-2.3079
Base	5	27	6.8758	-2.107
Base	5	27	13.7517	-4.2139
Base	5	27	308.951	25.9151
Base	5	27	110.4199	6.6045

Table 5.4 - Joint Reactions (Part 2 of 2, continued)

Story	Label	Unique Name	MY kgf-m	MZ kgf-m
Base	5	27	10.7581	-4.4148
Base	5	27	5.4351	-3.231
Base	5	27	22.5358	-8.2475
Base	5	27	154.4755	12.9575
Base	5	27	-154.4755	-12.9575
Base	5	27	55.2099	3.3022
Base	5	27	-55.2099	-3.3022
Base	5	27	33.5371	-11.6187
Base	5	27	182.573	9.0718
Base	5	27	-159.504	-18.8246
Base	5	27	182.573	9.0718
Base	5	27	-159.504	-18.8246
Base	5	27	113.0871	2.3131
Base	5	27	-90.0181	-12.0659
Base	5	27	113.0871	2.3131
Base	5	27	-90.0181	-12.0659
Base	6	28	-16.5122	-0.0635
Base	6	28	-18.084	0.1122
Base	6	28	-36.1679	0.2244
Base	6	28	350.3345	13.8876
Base	6	28	116.7472	43.2962
Base	6	28	-34.5961	0.0487
Base	6	28	-23.117	-0.0889
Base	6	28	-66.8329	0.2155
Base	6	28	175.1672	6.9438
Base	6	28	-175.1672	-6.9438
Base	6	28	58.3736	21.6481
Base	6	28	-58.3736	-21.6481
Base	6	28	-95.7672	0.395
Base	6	28	154.7808	13.4742
Base	6	28	-230.5779	-13.4022
Base	6	28	154.7808	13.4742
Base	6	28	-230.5779	-13.4022
Base	6	28	73.0252	23.7672
Base	6	28	-148.8224	-23.6953
Base	6	28	73.0252	23.7672
Base	6	28	-148.8224	-23.6953
Base	7	29	1.5482	-2.209
Base	7	29	2.6379	-2.7957
Base	7	29	5.2757	-5.5915
Base	7	29	281.4009	13.3441
Base	7	29	45.4029	50.8091
Base	7	29	4.1861	-5.0048
Base	7	29	2.1675	-3.0926

Table 5.4 - Joint Reactions (Part 2 of 2, continued)

Story	Label	Unique Name	MY kgf-m	MZ kgf-m
Base	7	29	8.7163	-9.9197
Base	7	29	140.7004	6.6721
Base	7	29	-140.7004	-6.6721
Base	7	29	22.7014	25.4046
Base	7	29	-22.7014	-25.4046
Base	7	29	12.9369	-14.3929
Base	7	29	152.0066	8.8469
Base	7	29	-143.0151	-19.74
Base	7	29	152.0066	8.8469
Base	7	29	-143.0151	-19.74
Base	7	29	69.4073	21.9596
Base	7	29	-60.4158	-32.8528
Base	7	29	69.4073	21.9596
Base	7	29	-60.4158	-32.8528

5.4 Modal Results

Table 5.5 - Modal Periods And Frequencies

Case	Mode	Period sec	Frequency cyc/sec	CircFreq rad/sec	Eigenvalue rad2/sec2
Modal	1	0.234	4.272	26.844	720.6004
Modal	2	0.141	7.067	44.4042	1971.7304
Modal	3	0.122	8.188	51.4453	2646.6202
Modal	4	0.1	9.951	62.5213	3908.9115
Modal	5	0.079	12.608	79.2195	6275.7275
Modal	6	0.07	14.275	89.6941	8045.0229
Modal	7	0.038	26.083	163.8845	26858.1397
Modal	8	0.033	30.254	190.0912	36134.6751
Modal	9	0.031	32.321	203.0806	41241.7168
Modal	10	0.03	33.765	212.1515	45008.2429
Modal	11	0.027	37.219	233.8543	54687.8528
Modal	12	0.025	39.333	247.1342	61075.3167

Table 5.6 - Modal Participating Mass Ratios (Part 1 of 2)

Case	Mode	Period sec	UX	UY	UZ	SumUX	SumUY	SumUZ	RX	RY	RZ
Modal	1	0.234	0.0022	0.7525	0	0.0022	0.7525	0	0.4083	0.0011	0.0816
Modal	2	0.141	0.5751	0.016	0	0.5773	0.7685	0	0.0027	0.214	0.2215
Modal	3	0.122	0.2901	0.0035	0	0.8674	0.772	0	0.0003	0.0966	0.3962
Modal	4	0.1	0.004	0.1275	0	0.8714	0.8995	0	0.0049	0.0009	0.0661
Modal	5	0.079	0.0222	0.0077	0	0.8936	0.9071	0	0.0025	0.0026	0.1078
Modal	6	0.07	0.022	0.0077	0	0.9156	0.9149	0	0.0076	0.0011	0.011
Modal	7	0.038	0.0349	7.839E-06	0	0.9505	0.9149	0	3.282E-06	0.141	0.0134
Modal	8	0.033	0	3.275E-05	0	0.9505	0.9149	0	0.0002	6.575E-06	0.0029
Modal	9	0.031	2.001E-06	0.0414	0	0.9505	0.9563	0	0.3005	1.282E-05	1.826E-05
Modal	10	0.03	0	1.877E-05	0	0.9505	0.9563	0	0.0013	5.358E-06	0.0121

Table 5.6 - Modal Participating Mass Ratios (Part 1 of 2, continued)

Case	Mode	Period sec	UX	UY	UZ	SumUX	SumUY	SumUZ	RX	RY	RZ
Modal	11	0.027	0	0.0191	0	0.9505	0.9754	0	0.1274	6.188E-06	0.0332
Modal	12	0.025	0.0002	0.0005	0	0.9507	0.9759	0	0.0046	0.0021	0.0001

Table 5.6 - Modal Participating Mass Ratios (Part 2 of 2)

Case	Mode	SumRX	SumRY	SumRZ
Modal	1	0.4083	0.0011	0.0816
Modal	2	0.4111	0.2151	0.3031
Modal	3	0.4113	0.3118	0.6993
Modal	4	0.4162	0.3126	0.7654
Modal	5	0.4188	0.3153	0.8732
Modal	6	0.4264	0.3164	0.8843
Modal	7	0.4264	0.4574	0.8977
Modal	8	0.4266	0.4574	0.9006
Modal	9	0.7271	0.4574	0.9006
Modal	10	0.7284	0.4574	0.9127
Modal	11	0.8558	0.4574	0.9459
Modal	12	0.8604	0.4595	0.9461

Table 5.7 - Modal Load Participation Ratios

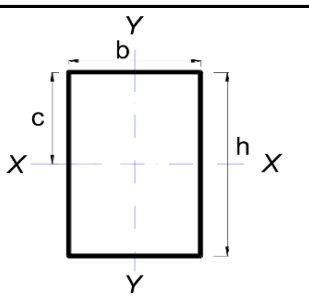
Case	ItemType	Item	Static %	Dynamic %
Modal	Acceleration	UX	99.89	95.07
Modal	Acceleration	UY	99.99	97.59
Modal	Acceleration	UZ	0	0

Table 5.8 - Modal Direction Factors

Case	Mode	Period sec	UX	UY	UZ	RZ
Modal	1	0.234	0.003	0.98	0	0.017
Modal	2	0.141	0.743	0.032	0	0.225
Modal	3	0.122	0.57	0.037	0	0.392
Modal	4	0.1	0.012	0.87	0	0.118
Modal	5	0.079	0.059	0.313	0	0.628
Modal	6	0.07	0.057	0.346	0	0.598
Modal	7	0.038	0.375	0	0	0.625
Modal	8	0.033	0.007	0.247	0	0.746
Modal	9	0.031	0	0.982	0	0.018
Modal	10	0.03	0.002	0.071	0	0.927
Modal	11	0.027	0	0.86	0	0.14
Modal	12	0.025	0.138	0.137	0	0.725

DISEÑO A COMPRESIÓN
SEGÚN EL MANUAL DE DISEÑO PARA MADERAS DEL GRUPO ANDINO

DIMENSIONES SECCIÓN TRANSVERSAL			
h=	**15**	**cm**	Altura sección
b=	**5**	**cm**	Base sección
PROPIEDADES MECÁNICAS MADERA			
E=	**95000**	**kgf/cm2**	Módulo de Elasticidad
fc=	**145**	**kgf/cm2**	Esfuerzo admisible a compresión
PROPIEDADES GEOMETRICAS SECCIÓN			
A	**75.00**	cm2	Area
Ix	**1406.25**	cm4	Inercia Eje X
Zx	**187.50**	cm3	Módulo de Sección Eje X
Iy	**156.25**	cm4	Inercia Eje Y
Zx	**62.50**	cm3	Módulo de Sección Eje X



DIMENSIONES GEOMETRIA CERCHA			
L1	**181.4**	**cm**	Longitud Cordon superior 1
L2	**115.5**	**cm**	Longitud Cordon superior 2
Lc	**150**	**cm**	Distancia entre correas

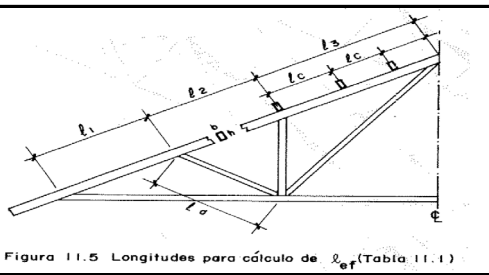
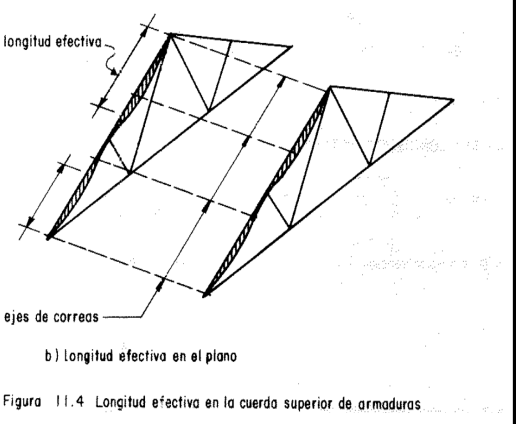


Figura 11.5 Longitudes para cálculo de ℓ_{ef} (Tabla 11.1)

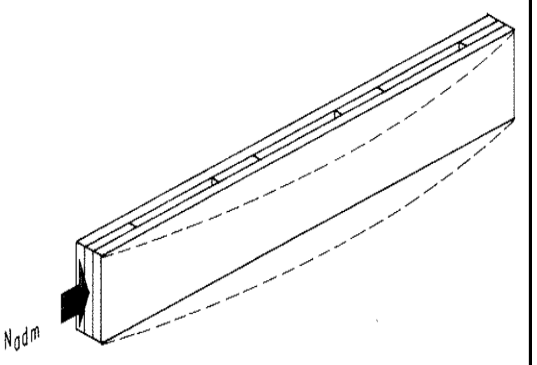
CARGA ADMISIBLE EN EL PLANO			
$L_{ef} = 0.40(L1 + L2)$			
Lef=	**118.76**	cm	Longitud Efectiva en el plano
$\lambda_x = \frac{L_{ef}}{d}$			
d=	**15**	cm	Lado menor
λx=	**7.92**		Esbeltez en el plano
$Ck = 0.7025 * \sqrt{\frac{E}{f_c}}$			
Ck=	**17.98**		Relacion de esbeltez



b) Longitud efectiva en el plano

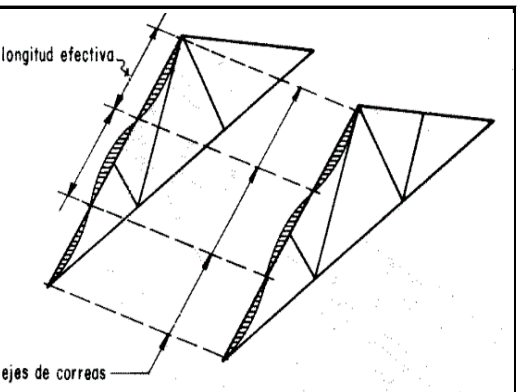
Figura 11.4 Longitud efectiva en la cuerda superior de armaduras

COLUMNA CORTA			
$N_{adm} = f_c * A$			
Nadm=	**10875.00**	**kgf**	**Carga Admisible Columna Corta**
COLUMNA INTERMEDIA			
$N_{adm} = f_c * A * \left(1 - \frac{1}{3}\left(\frac{\lambda}{Ck}\right)^4\right)$			
Nadm=	**0.00**	**kgf**	**0**
COLUMNA LARGA			
$N_{adm} = 0.3029 * \frac{E * A}{\lambda^2}$			
Nadm=	**0.00**	**kgf**	**0**



pandeo en el plano
(alrededor del eje X-X)

CARGA ADMISIBLE FUERA DEL PLANO			
$L_{ef} = Lc$			
Lef=	**150.00**	cm	Longitud Efectiva fuera del plano
$\lambda_y = \frac{L_{ef}}{d}$			
d=	**5**	cm	Lado menor
λy=	**30.00**		Esbeltez en el plano
$Ck = 0.7025 * \sqrt{\frac{E}{f_c}}$			

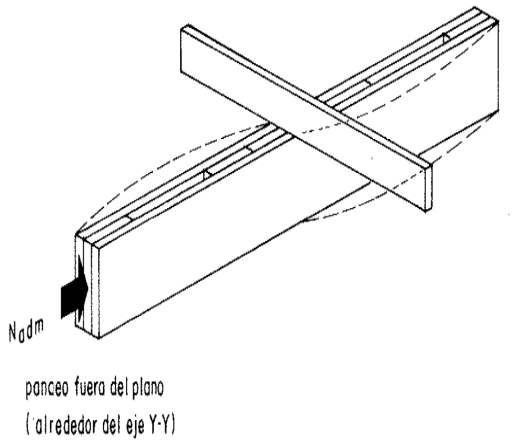


a) Longitud efectiva fuera del plano

DISEÑO A COMPRESIÓN

SEGÚN EL MANUAL DE DISEÑO PARA MADERAS DEL GRUPO ANDINO

Ck=	**17.98**		Relacion de esbeltez
COLUMNA CORTA			
$N_{adm} = f_c * A$			
Nadm=	**0.00**	**kgf**	**0**
COLUMNA INTERMEDIA			
$N_{adm} = f_c * A * \left(1 - \frac{1}{3}\left(\frac{\lambda}{\mathrm{Ck}}\right)^4\right)$			
Nadm=	**0.00**	**kgf**	**0**
COLUMNA LARGA			
$N_{adm} = 0.3029 * \frac{E * A}{\lambda^2}$			
Nadm=	**4636.05**	**kgf**	**Carga Admisible Columna Larga**

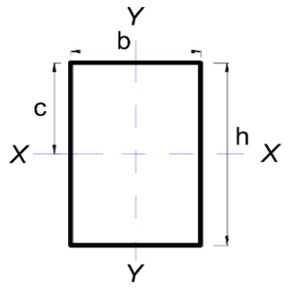


VERIFICACION CARGA ADMISIBLE A COMPRESION			
N=	**1123.79**	**kgf**	Carga a Compresion por Combinacion de Servicio
Nadm_x=	**10875.00**	kgf	Carga admisible en el plano
Nadm_y=	**4636.05**	kgf	Carga admisible fuera del plano
Ncrit_x=	**93485.77**	kgf	Carga Critica de Pandeo en el Plano
Ncrit_y=	**6511.20**	kgf	Carga Critica de Pandeo fuera del Plano

$N < N_{crit_x}$	**Cumple**	
$N < N_{crit_y}$	**Cumple**	
$N < N_{adm_x}$	**Cumple**	
$N < N_{adm_y}$	**Cumple**	
$\frac{N}{N_{adm_x}} =$	**0.103**	**Ration en el plano**
$\frac{N}{N_{adm_y}} =$	**0.24**	**Ration fuera del plano**

DISEÑO A FLEXOCOMPRESIÓN
SEGÚN EL MANUAL DE DISEÑO PARA MADERAS DEL GRUPO ANDINO

DIMENSIONES SECCIÓN TRANSVERSAL			
h=	**15**	**cm**	Altura sección
b=	**5**	**cm**	Base sección
PROPIEDADES MECÁNICAS MADERA			
E=	**95000**	**kgf/cm2**	Módulo de Elasticidad
fc=	**145**	**kgf/cm2**	Esfuerzo admisible a compresión
fm=	**210**	**kgf/cm2**	Esfuerzo admisible a flexion
PROPIEDADES GEOMETRICAS SECCIÓN			
A	**75.00**	cm2	Area
Ix	**1406.25**	cm4	Inercia Eje X
Zx	**187.50**	cm3	Módulo de Sección Eje X
Iy	**156.25**	cm4	Inercia Eje Y
Zy	**62.50**	cm3	Módulo de Sección Eje X



DIMENSIONES GEOMETRIA CERCHA			
L1	**181.4**	**cm**	Longitud Cordon superior 1
L2	**115.5**	**cm**	Longitud Cordon superior 2
Lc	**150**	**cm**	Distancia entre correas

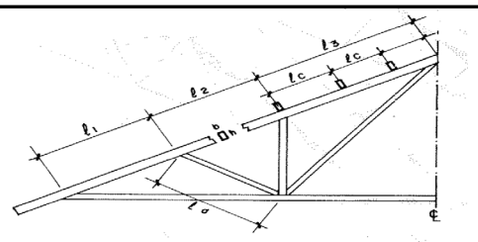
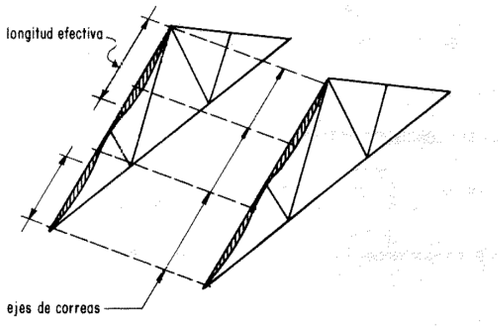


Figura 11.5 Longitudes para cálculo de ℓ_{ef} (Tabla 11.1)

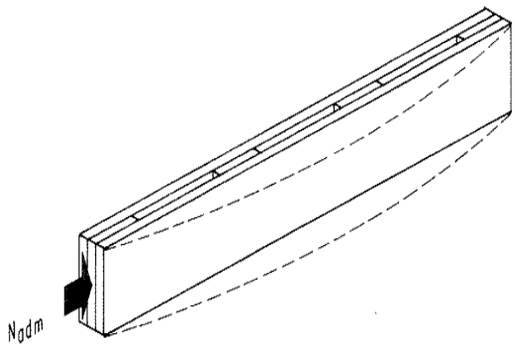
CARGA ADMISIBLE EN EL PLANO			
$L_{ef} = 0.40(L1 + L2)$			
Lef=	**118.76**	cm	Longitud Efectiva en el plano
$\lambda_x = \frac{L_{ef}}{d}$			
d=	**15**	cm	Lado menor
λx=	**7.92**		Esbeltez en el plano
$Ck = 0.7025 * \sqrt{\frac{E}{f_c}}$			
Ck=	**17.98**		Relacion de esbeltez



b) Longitud efectiva en el plano

Figura 11.4 Longitud efectiva en la cuerda superior de armaduras

COLUMNA CORTA			
$N_{adm} = f_c * A$			
Nadm=	**10875.00**	**kgf**	**Carga Admisible Columna Corta**
COLUMNA INTERMEDIA			
$N_{adm} = f_c * A * \left(1 - \frac{1}{3}\left(\frac{\lambda}{Ck}\right)^4\right)$			
Nadm=	**0.00**	**kgf**	**0**
COLUMNA LARGA			
$N_{adm} = 0.3029 * \frac{E * A}{\lambda^2}$			
Nadm=	**0.00**	**kgf**	**0**



pandeo en el plano
(alrededor del eje X-X)

VERIFICACION FLEXOCOMPRESIÓN			
N=	**1123.79**	**kgf**	Carga a Compresion por Combinacion de Servicio
M=	**98.05**	**kgf.cm**	Momento Flector por Combinación de Sevicio
Nadm_x=	**10875.00**	kgf	Carga admisible en el plano

DISEÑO A FLEXOCOMPRESIÓN
SEGÚN EL MANUAL DE DISEÑO PARA MADERAS DEL GRUPO ANDINO

$$N_{crit} = \frac{\pi^2 * E * I}{Lef^2}$$

Ncrit_x=	**93485.77**	**kgf**	**Carga Critica de Pandeo en el Plano**

$$k_m = \frac{1}{1 - 1.5 * \frac{N}{N_{crit}}}$$

km	**1.02**		**Factor de Amplificacion de Momento**

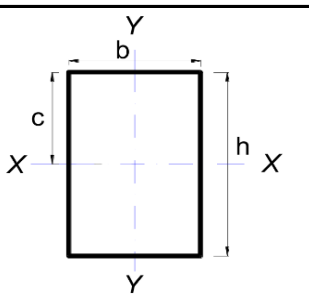
$$\frac{N}{N_{adm}} + \frac{k_m * M}{Z_x * f_m} < 1$$

Cumple

0.106	**Ration flexo compresion**

DISEÑO A COMPRESIÓN
SEGÚN EL MANUAL DE DISEÑO PARA MADERAS DEL GRUPO ANDINO

DIMENSIONES SECCIÓN TRANSVERSAL			
h=	**15**	**cm**	Altura sección
b=	**5**	**cm**	Base sección
PROPIEDADES MECÁNICAS MADERA			
E=	**95000**	**kgf/cm2**	Módulo de Elasticidad
fc=	**145**	**kgf/cm2**	Esfuerzo admisible a compresión
PROPIEDADES GEOMETRICAS SECCIÓN			
A	**75.00**	cm2	Area
Ix	**1406.25**	cm4	Inercia Eje X
Zx	**187.50**	cm3	Módulo de Sección Eje X
Iy	**156.25**	cm4	Inercia Eje Y
Zx	**62.50**	cm3	Módulo de Sección Eje X



DIMENSIONES GEOMETRIA CERCHA			
L1	**163.1**	**cm**	Longitud Cordon superior 1
L2	**92**	**cm**	Longitud Cordon superior 2
Lc	**153**	**cm**	Distancia entre correas

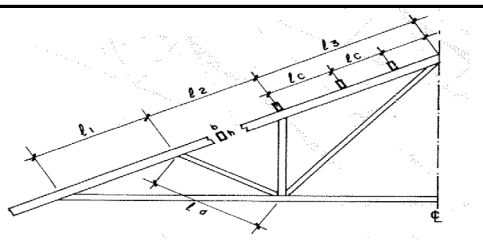
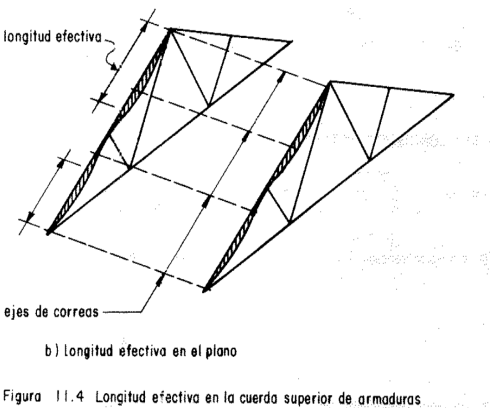


Figura 11.5 Longitudes para cálculo de ℓ_{ef} (Tabla 11.1)

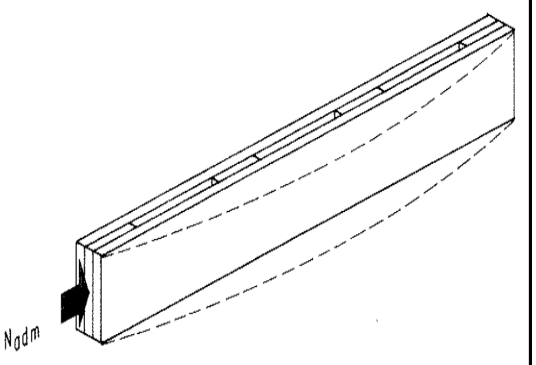
CARGA ADMISIBLE EN EL PLANO			
$L_{ef} = 0.40(L1 + L2)$			
Lef=	**102.04**	cm	Longitud Efectiva en el plano
$\lambda_x = \frac{L_{ef}}{d}$			
d=	**15**	cm	Lado menor
λx=	**6.80**		Esbeltez en el plano
$Ck = 0.7025 * \sqrt{\frac{E}{f_c}}$			
Ck=	**17.98**		Relacion de esbeltez



b) Longitud efectiva en el plano

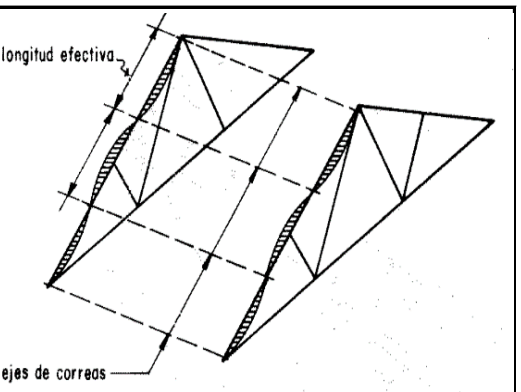
Figura 11.4 Longitud efectiva en la cuerda superior de armaduras

COLUMNA CORTA			
$N_{adm} = f_c * A$			
Nadm=	**10875.00**	**kgf**	**Carga Admisible Columna Corta**
COLUMNA INTERMEDIA			
$N_{adm} = f_c * A * \left(1 - \frac{1}{3}\left(\frac{\lambda}{Ck}\right)^4\right)$			
Nadm=	**0.00**	**kgf**	**0**
COLUMNA LARGA			
$N_{adm} = 0.3029 * \frac{E * A}{\lambda^2}$			
Nadm=	**0.00**	**kgf**	**0**



pandeo en el plano
(alrededor del eje X-X)

CARGA ADMISIBLE FUERA DEL PLANO			
$L_{ef} = Lc$			
Lef=	**153.00**	cm	Longitud Efectiva fuera del plano
$\lambda_y = \frac{L_{ef}}{d}$			
d=	**5**	cm	Lado menor
λy=	**30.60**		Esbeltez en el plano
$Ck = 0.7025 * \sqrt{\frac{E}{f_c}}$			



a) Longitud efectiva fuera del plano

DISEÑO A COMPRESIÓN

SEGÚN EL MANUAL DE DISEÑO PARA MADERAS DEL GRUPO ANDINO

Ck=	**17.98**		Relacion de esbeltez

COLUMNA CORTA

$$N_{adm} = f_c * A$$

Nadm=	**0.00**	**kgf**	**0**

COLUMNA INTERMEDIA

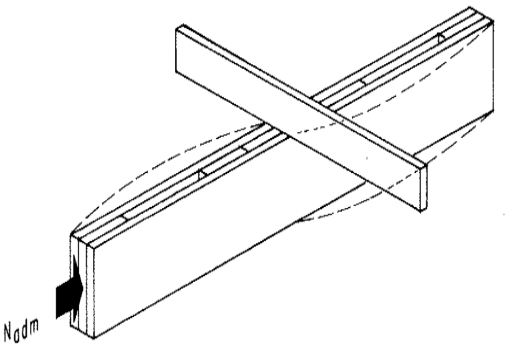
$$N_{adm} = f_c * A * \left(1 - \frac{1}{3}\left(\frac{\lambda}{\mathrm{Ck}}\right)^4\right)$$

Nadm=	**0.00**	**kgf**	**0**

COLUMNA LARGA

$$N_{adm} = 0.3029 * \frac{E * A}{\lambda^2}$$

Nadm=	**4456.03**	**kgf**	**Carga Admisible Columna Larga**



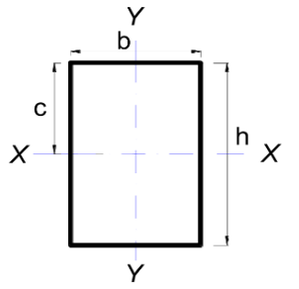
panceo fuera del plano
(alrededor del eje Y-Y)

VERIFICACION CARGA ADMISIBLE A COMPRESION			
N=	**899.82**	**kgf**	Carga a Compresion por Combinacion de Servicio
Nadm_x=	**10875.00**	kgf	Carga admisible en el plano
Nadm_y=	**4456.03**	kgf	Carga admisible fuera del plano
Ncrit_x=	**126632.44**	kgf	Carga Critica de Pandeo en el Plano
Ncrit_y=	**6258.36**	kgf	Carga Critica de Pandeo fuera del Plano

$N < N_{crit_x}$	**Cumple**	
$N < N_{crit_y}$	**Cumple**	
$N < N_{adm_x}$	**Cumple**	
$N < N_{adm_y}$	**Cumple**	
$\frac{N}{N_{adm_x}} =$	**0.083**	**Ration en el plano**
$\frac{N}{N_{adm_y}} =$	**0.20**	**Ration fuera del plano**

DISEÑO A FLEXOCOMPRESIÓN
SEGÚN EL MANUAL DE DISEÑO PARA MADERAS DEL GRUPO ANDINO

DIMENSIONES SECCIÓN TRANSVERSAL			
h=	**15**	**cm**	Altura sección
b=	**5**	**cm**	Base sección
PROPIEDADES MECÁNICAS MADERA			
E=	**95000**	**kgf/cm2**	Módulo de Elasticidad
fc=	**145**	**kgf/cm2**	Esfuerzo admisible a compresión
fm=	**210**	**kgf/cm2**	Esfuerzo admisible a flexion
PROPIEDADES GEOMETRICAS SECCIÓN			
A	**75.00**	cm2	Area
Ix	**1406.25**	cm4	Inercia Eje X
Zx	**187.50**	cm3	Módulo de Sección Eje X
Iy	**156.25**	cm4	Inercia Eje Y
Zy	**62.50**	cm3	Módulo de Sección Eje X



DIMENSIONES GEOMETRIA CERCHA			
L1	**163.1**	**cm**	Longitud Cordon superior 1
L2	**92**	**cm**	Longitud Cordon superior 2
Lc	**153**	**cm**	Distancia entre correas

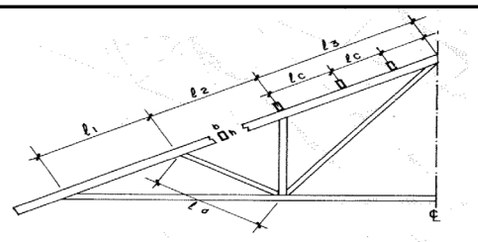
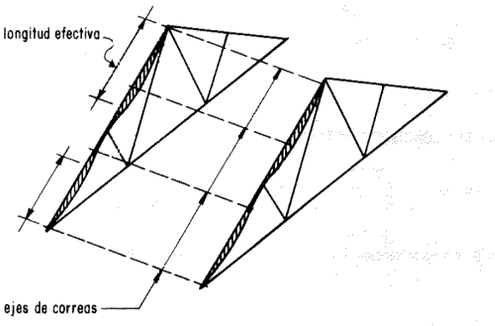


Figura 11.5 Longitudes para cálculo de ℓ_{ef} (Tabla 11.1)

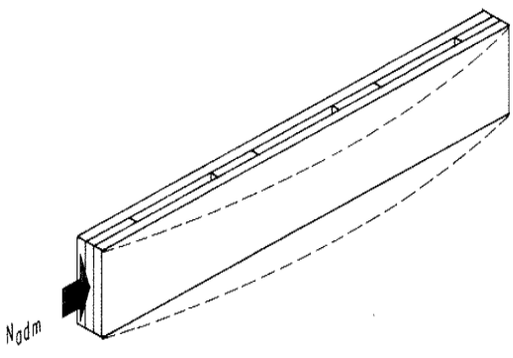
CARGA ADMISIBLE EN EL PLANO			
$L_{ef} = 0.40(L1 + L2)$			
Lef=	**102.04**	cm	Longitud Efectiva en el plano
$\lambda_x = \frac{L_{ef}}{d}$			
d=	**15**	cm	Lado menor
λx=	**6.80**		Esbeltez en el plano
$Ck = 0.7025 * \sqrt{\frac{E}{f_c}}$			
Ck=	**17.98**		Relacion de esbeltez



b) Longitud efectiva en el plano

Figura 11.4 Longitud efectiva en la cuerda superior de armaduras

COLUMNA CORTA			
$N_{adm} = f_c * A$			
Nadm=	**10875.00**	**kgf**	**Carga Admisible Columna Corta**
COLUMNA INTERMEDIA			
$N_{adm} = f_c * A * \left(1 - \frac{1}{3}\left(\frac{\lambda}{Ck}\right)^4\right)$			
Nadm=	**0.00**	**kgf**	**0**
COLUMNA LARGA			
$N_{adm} = 0.3029 * \frac{E * A}{\lambda^2}$			
Nadm=	**0.00**	**kgf**	**0**



pandeo en el plano
(alrededor del eje X-X)

VERIFICACION FLEXOCOMPRESIÓN			
N=	**899.82**	**kgf**	Carga a Compresion por Combinacion de Servicio
M=	**77.45**	**kgf.cm**	Momento Flector por Combinación de Sevicio
Nadm_x=	**10875.00**	kgf	Carga admisible en el plano

DISEÑO A FLEXOCOMPRESIÓN
SEGÚN EL MANUAL DE DISEÑO PARA MADERAS DEL GRUPO ANDINO

$$N_{crit} = \frac{\pi^2 * E * I}{Lef^2}$$

Ncrit_x=	**126632.44**	**kgf**	**Carga Critica de Pandeo en el Plano**

$$k_m = \frac{1}{1 - 1.5 * \frac{N}{N_{crit}}}$$

km	**1.01**		**Factor de Amplificacion de Momento**

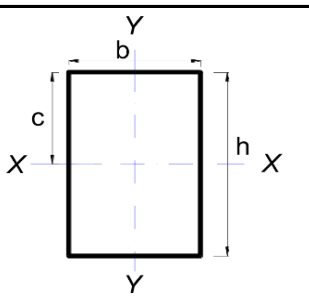
$$\frac{N}{N_{adm}} + \frac{k_m * M}{Z_x * f_m} < 1$$

Cumple

0.085	**Ration flexo compresion**

DISEÑO A COMPRESIÓN
SEGÚN EL MANUAL DE DISEÑO PARA MADERAS DEL GRUPO ANDINO

DIMENSIONES SECCIÓN TRANSVERSAL			
h=	**15**	**cm**	Altura sección
b=	**5**	**cm**	Base sección
PROPIEDADES MECÁNICAS MADERA			
E=	**95000**	**kgf/cm2**	Módulo de Elasticidad
fc=	**145**	**kgf/cm2**	Esfuerzo admisible a compresión
PROPIEDADES GEOMETRICAS SECCIÓN			
A	**75.00**	cm2	Area
Ix	**1406.25**	cm4	Inercia Eje X
Zx	**187.50**	cm3	Módulo de Sección Eje X
Iy	**156.25**	cm4	Inercia Eje Y
Zx	**62.50**	cm3	Módulo de Sección Eje X



DIMENSIONES GEOMETRIA CERCHA			
L1	**125**	**cm**	Longitud Cordon superior 1
L2	**125**	**cm**	Longitud Cordon superior 2
Lc	**125**	**cm**	Distancia entre correas

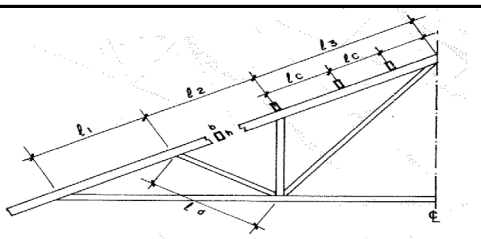
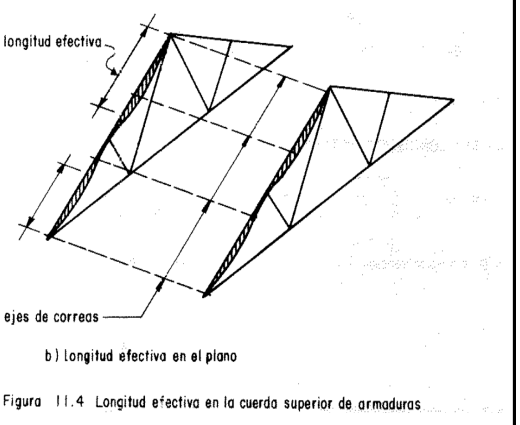


Figura 11.5 Longitudes para cálculo de ℓ_{ef} (Tabla 11.1)

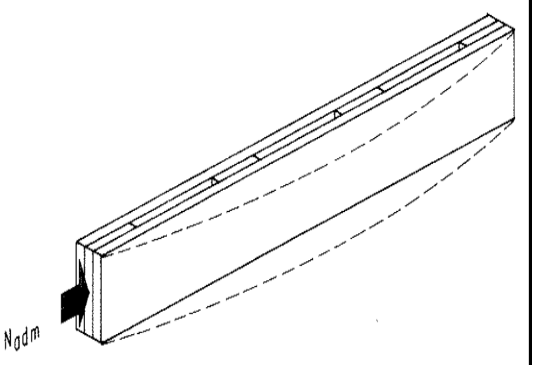
CARGA ADMISIBLE EN EL PLANO			
$L_{ef} = 0.40(L1 + L2)$			
Lef=	**100**	cm	Longitud Efectiva en el plano
$\lambda_x = \frac{L_{ef}}{d}$			
d=	**15**	cm	Lado menor
λx=	**6.67**		Esbeltez en el plano
$Ck = 0.7025 * \sqrt{\frac{E}{f_c}}$			
Ck=	**17.98**		Relacion de esbeltez



b) Longitud efectiva en el plano

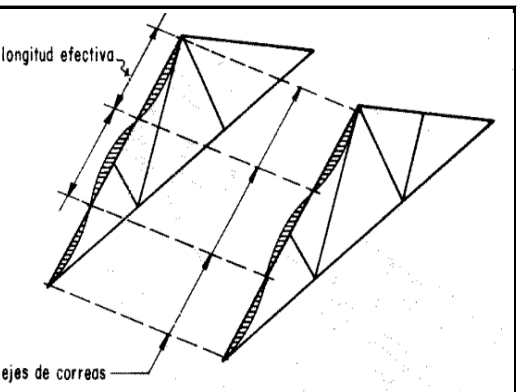
Figura 11.4 Longitud efectiva en la cuerda superior de armaduras

COLUMNA CORTA			
$N_{adm} = f_c * A$			
Nadm=	**10875.00**	**kgf**	**Carga Admisible Columna Corta**
COLUMNA INTERMEDIA			
$N_{adm} = f_c * A * \left(1 - \frac{1}{3}\left(\frac{\lambda}{Ck}\right)^4\right)$			
Nadm=	**0.00**	**kgf**	**0**
COLUMNA LARGA			
$N_{adm} = 0.3029 * \frac{E * A}{\lambda^2}$			
Nadm=	**0.00**	**kgf**	**0**



pandeo en el plano
(alrededor del eje X-X)

CARGA ADMISIBLE FUERA DEL PLANO			
$L_{ef} = Lc$			
Lef=	**125.00**	cm	Longitud Efectiva fuera del plano
$\lambda_y = \frac{L_{ef}}{d}$			
d=	**5**	cm	Lado menor
λy=	**25.00**		Esbeltez en el plano
$Ck = 0.7025 * \sqrt{\frac{E}{f_c}}$			

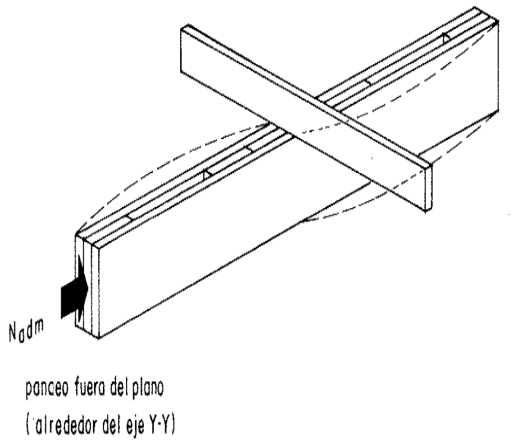


a) Longitud efectiva fuera del plano

DISEÑO A COMPRESIÓN

SEGÚN EL MANUAL DE DISEÑO PARA MADERAS DEL GRUPO ANDINO

Ck=	**17.98**		Relacion de esbeltez
COLUMNA CORTA			
$N_{adm} = f_c * A$			
Nadm=	**0.00**	**kgf**	**0**
COLUMNA INTERMEDIA			
$N_{adm} = f_c * A * \left(1 - \frac{1}{3}\left(\frac{\lambda}{\mathrm{Ck}}\right)^4\right)$			
Nadm=	**0.00**	**kgf**	**0**
COLUMNA LARGA			
$N_{adm} = 0.3029 * \frac{E * A}{\lambda^2}$			
Nadm=	**6675.92**	**kgf**	**Carga Admisible Columna Larga**

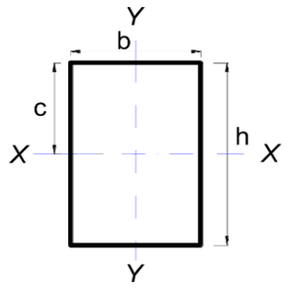


VERIFICACION CARGA ADMISIBLE A COMPRESION			
N=	**353.05**	**kgf**	Carga a Compresion por Combinacion de Servicio
Nadm_x=	**10875.00**	kgf	Carga admisible en el plano
Nadm_y=	**6675.92**	kgf	Carga admisible fuera del plano
Ncrit_x=	**131851.75**	kgf	Carga Critica de Pandeo en el Plano
Ncrit_y=	**9376.12**	kgf	Carga Critica de Pandeo fuera del Plano

$N < N_{crit_x}$	**Cumple**	
$N < N_{crit_y}$	**Cumple**	
$N < N_{adm_x}$	**Cumple**	
$N < N_{adm_y}$	**Cumple**	
$\frac{N}{N_{adm_x}} =$	**0.032**	**Ration en el plano**
$\frac{N}{N_{adm_y}} =$	**0.05**	**Ration fuera del plano**

DISEÑO A FLEXOCOMPRESIÓN
SEGÚN EL MANUAL DE DISEÑO PARA MADERAS DEL GRUPO ANDINO

DIMENSIONES SECCIÓN TRANSVERSAL			
h=	**15**	**cm**	Altura sección
b=	**5**	**cm**	Base sección
PROPIEDADES MECÁNICAS MADERA			
E=	**95000**	**kgf/cm2**	Módulo de Elasticidad
fc=	**145**	**kgf/cm2**	Esfuerzo admisible a compresión
fm=	**210**	**kgf/cm2**	Esfuerzo admisible a flexion
PROPIEDADES GEOMETRICAS SECCIÓN			
A	**75.00**	cm2	Area
Ix	**1406.25**	cm4	Inercia Eje X
Zx	**187.50**	cm3	Módulo de Sección Eje X
Iy	**156.25**	cm4	Inercia Eje Y
Zy	**62.50**	cm3	Módulo de Sección Eje X



DIMENSIONES GEOMETRIA CERCHA			
L1	**125**	**cm**	Longitud Cordon superior 1
L2	**125**	**cm**	Longitud Cordon superior 2
Lc	**125**	**cm**	Distancia entre correas

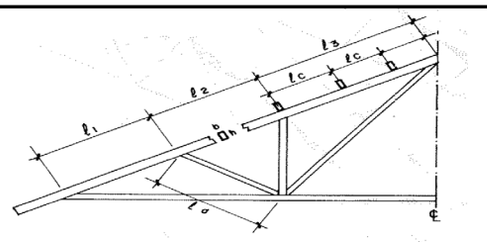
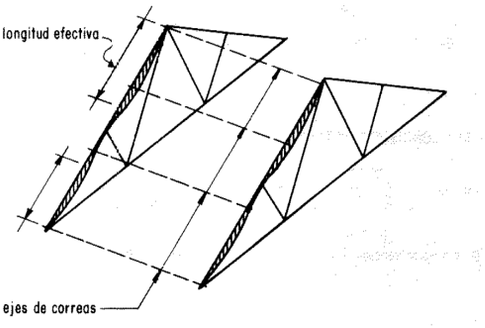


Figura 11.5 Longitudes para cálculo de ℓ_{ef} (Tabla 11.1)

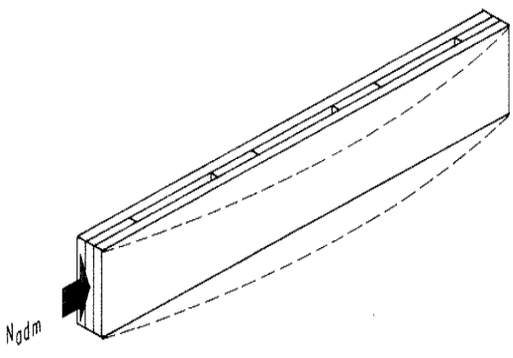
CARGA ADMISIBLE EN EL PLANO			
$L_{ef} = 0.40(L1 + L2)$			
Lef=	**100**	cm	Longitud Efectiva en el plano
$\lambda_x = \frac{L_{ef}}{d}$			
d=	**15**	cm	Lado menor
λx=	**6.67**		Esbeltez en el plano
$Ck = 0.7025 * \sqrt{\frac{E}{f_c}}$			
Ck=	**17.98**		Relacion de esbeltez



b) Longitud efectiva en el plano

Figura 11.4 Longitud efectiva en la cuerda superior de armaduras

COLUMNA CORTA			
$N_{adm} = f_c * A$			
Nadm=	**10875.00**	**kgf**	**Carga Admisible Columna Corta**
COLUMNA INTERMEDIA			
$N_{adm} = f_c * A * \left(1 - \frac{1}{3}\left(\frac{\lambda}{Ck}\right)^4\right)$			
Nadm=	**0.00**	**kgf**	**0**
COLUMNA LARGA			
$N_{adm} = 0.3029 * \frac{E * A}{\lambda^2}$			
Nadm=	**0.00**	**kgf**	**0**



pandeo en el plano
(alrededor del eje X-X)

VERIFICACION FLEXOCOMPRESIÓN			
N=	**353.05**	**kgf**	Carga a Compresion por Combinacion de Servicio
M=	**38.53**	**kgf.cm**	Momento Flector por Combinación de Sevicio
Nadm_x=	**10875.00**	kgf	Carga admisible en el plano

DISEÑO A FLEXOCOMPRESIÓN
SEGÚN EL MANUAL DE DISEÑO PARA MADERAS DEL GRUPO ANDINO

$$N_{crit} = \frac{\pi^2 * E * I}{Lef^2}$$

Ncrit_x=	**131851.75**	**kgf**	**Carga Critica de Pandeo en el Plano**

$$k_m = \frac{1}{1 - 1.5 * \frac{N}{N_{crit}}}$$

km	**1.00**		**Factor de Amplificacion de Momento**

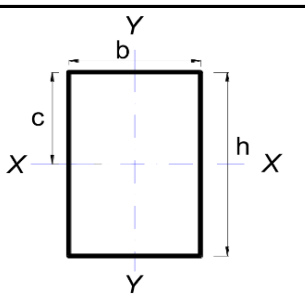
$$\frac{N}{N_{adm}} + \frac{k_m * M}{Z_x * f_m} < 1$$

Cumple

0.033	**Ration flexo compresion**

DISEÑO A COMPRESIÓN
SEGÚN EL MANUAL DE DISEÑO PARA MADERAS DEL GRUPO ANDINO

DIMENSIONES SECCIÓN TRANSVERSAL			
h=	**15**	**cm**	Altura sección
b=	**5**	**cm**	Base sección
PROPIEDADES MECÁNICAS MADERA			
E=	**95000**	**kgf/cm2**	Módulo de Elasticidad
fc=	**145**	**kgf/cm2**	Esfuerzo admisible a compresión
PROPIEDADES GEOMETRICAS SECCIÓN			
A	**75.00**	cm2	Area
Ix	**1406.25**	cm4	Inercia Eje X
Zx	**187.50**	cm3	Módulo de Sección Eje X
Iy	**156.25**	cm4	Inercia Eje Y
Zx	**62.50**	cm3	Módulo de Sección Eje X



DIMENSIONES GEOMETRIA CERCHA			
L1	**100**	**cm**	Longitud Cordon superior 1
L2	**100**	**cm**	Longitud Cordon superior 2
Lc	**100**	**cm**	Distancia entre correas

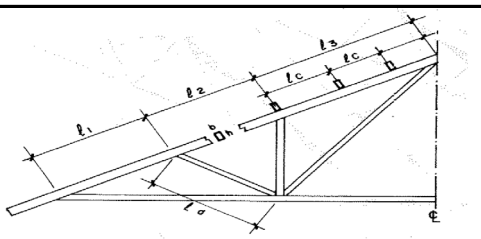
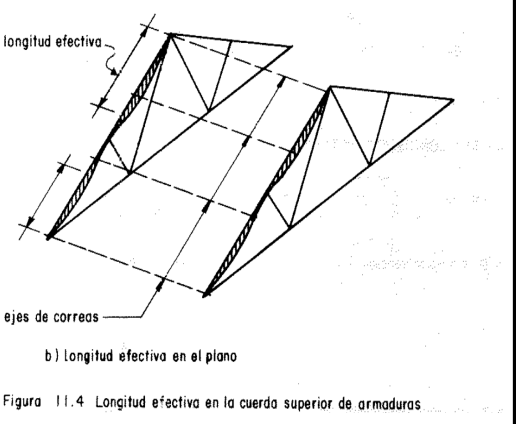


Figura 11.5 Longitudes para cálculo de ℓ_{ef} (Tabla 11.1)

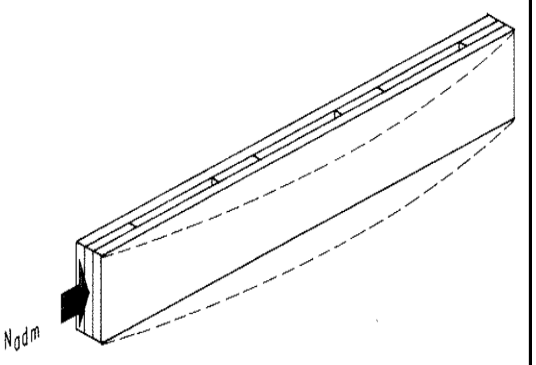
CARGA ADMISIBLE EN EL PLANO			
$L_{ef} = 0.40(L1 + L2)$			
Lef=	**80**	cm	Longitud Efectiva en el plano
$\lambda_x = \frac{L_{ef}}{d}$			
d=	**15**	cm	Lado menor
λx=	**5.33**		Esbeltez en el plano
$Ck = 0.7025 * \sqrt{\frac{E}{f_c}}$			
Ck=	**17.98**		Relacion de esbeltez



b) Longitud efectiva en el plano

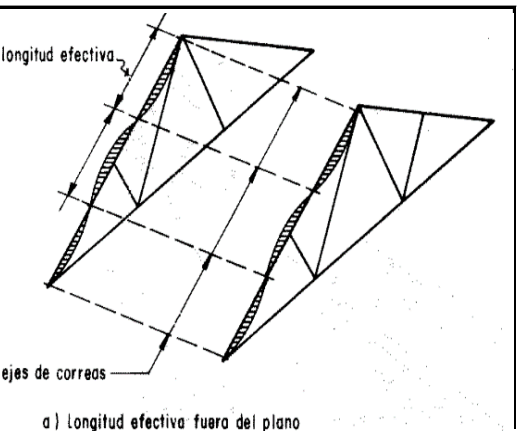
Figura 11.4 Longitud efectiva en la cuerda superior de armaduras

COLUMNA CORTA			
$N_{adm} = f_c * A$			
Nadm=	**10875.00**	**kgf**	**Carga Admisible Columna Corta**
COLUMNA INTERMEDIA			
$N_{adm} = f_c * A * \left(1 - \frac{1}{3}\left(\frac{\lambda}{Ck}\right)^4\right)$			
Nadm=	**0.00**	**kgf**	**0**
COLUMNA LARGA			
$N_{adm} = 0.3029 * \frac{E * A}{\lambda^2}$			
Nadm=	**0.00**	**kgf**	**0**



pandeo en el plano
(alrededor del eje X-X)

CARGA ADMISIBLE FUERA DEL PLANO			
$L_{ef} = Lc$			
Lef=	**100.00**	cm	Longitud Efectiva fuera del plano
$\lambda_y = \frac{L_{ef}}{d}$			
d=	**5**	cm	Lado menor
λy=	**20.00**		Esbeltez en el plano
$Ck = 0.7025 * \sqrt{\frac{E}{f_c}}$			

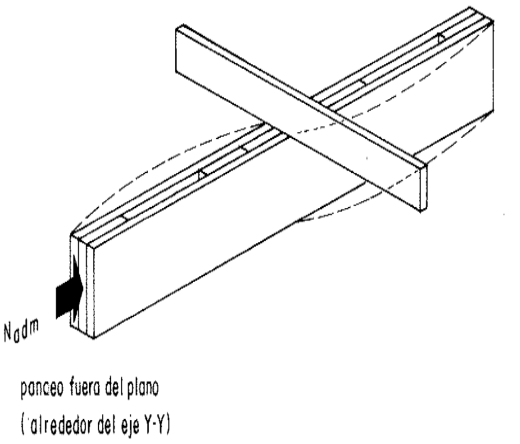


a) Longitud efectiva fuera del plano

DISEÑO A COMPRESIÓN

SEGÚN EL MANUAL DE DISEÑO PARA MADERAS DEL GRUPO ANDINO

Ck=	**17.98**		Relacion de esbeltez
COLUMNA CORTA			
$N_{adm} = f_c * A$			
Nadm=	**0.00**	**kgf**	**0**
COLUMNA INTERMEDIA			
$N_{adm} = f_c * A * \left(1 - \frac{1}{3}\left(\frac{\lambda}{\mathrm{Ck}}\right)^4\right)$			
Nadm=	**0.00**	**kgf**	**0**
COLUMNA LARGA			
$N_{adm} = 0.3029 * \frac{E * A}{\lambda^2}$			
Nadm=	**10431.12**	**kgf**	**Carga Admisible Columna Larga**



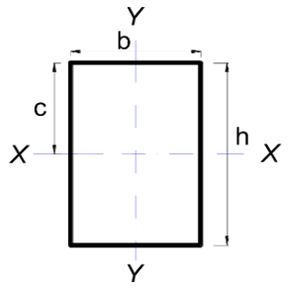
panceo fuera del plano
(alrededor del eje Y-Y)

VERIFICACION CARGA ADMISIBLE A COMPRESION			
N=	**271.34**	**kgf**	Carga a Compresion por Combinacion de Servicio
Nadm_x=	**10875.00**	kgf	Carga admisible en el plano
Nadm_y=	**10431.12**	kgf	Carga admisible fuera del plano
Ncrit_x=	**206018.35**	kgf	Carga Critica de Pandeo en el Plano
Ncrit_y=	**14650.19**	kgf	Carga Critica de Pandeo fuera del Plano

$N < N_{crit_x}$	**Cumple**	
$N < N_{crit_y}$	**Cumple**	
$N < N_{adm_x}$	**Cumple**	
$N < N_{adm_y}$	**Cumple**	
$\frac{N}{N_{adm_x}} =$	**0.025**	**Ration en el plano**
$\frac{N}{N_{adm_y}} =$	**0.03**	**Ration fuera del plano**

DISEÑO A FLEXOCOMPRESIÓN
SEGÚN EL MANUAL DE DISEÑO PARA MADERAS DEL GRUPO ANDINO

DIMENSIONES SECCIÓN TRANSVERSAL			
h=	**15**	**cm**	Altura sección
b=	**5**	**cm**	Base sección
PROPIEDADES MECÁNICAS MADERA			
E=	**95000**	**kgf/cm2**	Módulo de Elasticidad
fc=	**145**	**kgf/cm2**	Esfuerzo admisible a compresión
fm=	**210**	**kgf/cm2**	Esfuerzo admisible a flexion
PROPIEDADES GEOMETRICAS SECCIÓN			
A	**75.00**	cm2	Area
Ix	**1406.25**	cm4	Inercia Eje X
Zx	**187.50**	cm3	Módulo de Sección Eje X
Iy	**156.25**	cm4	Inercia Eje Y
Zy	**62.50**	cm3	Módulo de Sección Eje X



DIMENSIONES GEOMETRIA CERCHA			
L1	**100**	**cm**	Longitud Cordon superior 1
L2	**100**	**cm**	Longitud Cordon superior 2
Lc	**100**	**cm**	Distancia entre correas

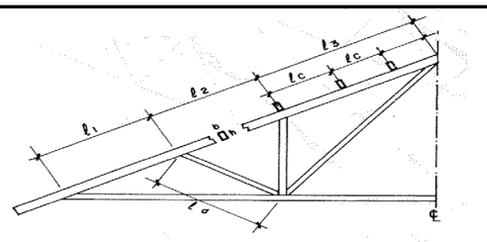
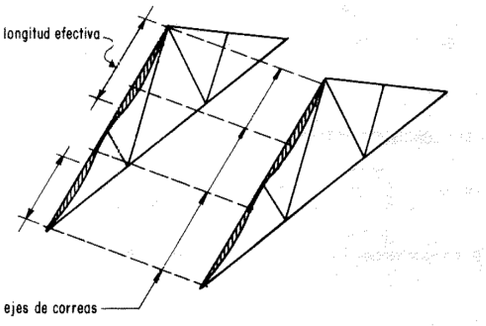


Figura 11.5 Longitudes para cálculo de ℓ_{ef} (Tabla 11.1)

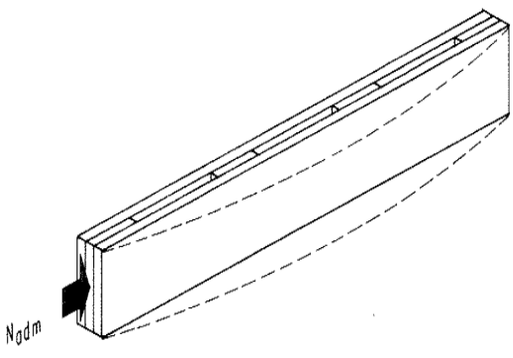
CARGA ADMISIBLE EN EL PLANO			
$L_{ef} = 0.40(L1 + L2)$			
Lef=	**80**	cm	Longitud Efectiva en el plano
$\lambda_x = \frac{L_{ef}}{d}$			
d=	**15**	cm	Lado menor
λx=	**5.33**		Esbeltez en el plano
$Ck = 0.7025 * \sqrt{\frac{E}{f_c}}$			
Ck=	**17.98**		Relacion de esbeltez



b) Longitud efectiva en el plano

Figura 11.4 Longitud efectiva en la cuerda superior de armaduras

COLUMNA CORTA			
$N_{adm} = f_c * A$			
Nadm=	**10875.00**	**kgf**	**Carga Admisible Columna Corta**
COLUMNA INTERMEDIA			
$N_{adm} = f_c * A * \left(1 - \frac{1}{3}\left(\frac{\lambda}{Ck}\right)^4\right)$			
Nadm=	**0.00**	**kgf**	**0**
COLUMNA LARGA			
$N_{adm} = 0.3029 * \frac{E * A}{\lambda^2}$			
Nadm=	**0.00**	**kgf**	**0**



pandeo en el plano
(alrededor del eje X-X)

VERIFICACION FLEXOCOMPRESIÓN			
N=	**271.34**	**kgf**	Carga a Compresion por Combinacion de Servicio
M=	**22.21**	**kgf.cm**	Momento Flector por Combinación de Sevicio
Nadm_x=	**10875.00**	kgf	Carga admisible en el plano

DISEÑO A FLEXOCOMPRESIÓN
SEGÚN EL MANUAL DE DISEÑO PARA MADERAS DEL GRUPO ANDINO

$$N_{crit} = \frac{\pi^2 * E * I}{Lef^2}$$

Ncrit_x=	**206018.35**	**kgf**	**Carga Critica de Pandeo en el Plano**

$$k_m = \frac{1}{1 - 1.5 * \frac{N}{N_{crit}}}$$

km	**1.00**		**Factor de Amplificacion de Momento**

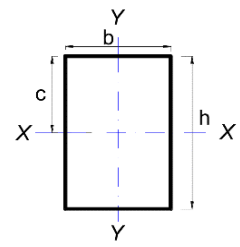
$$\frac{N}{N_{adm}} + \frac{k_m * M}{Z_x * f_m} < 1$$

Cumple

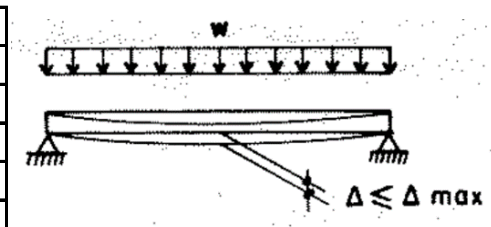
0.026	**Ration flexo compresion**

DISEÑO A FLEXIÓN
SEGÚN EL MANUAL DE DISEÑO PARA MADERAS DEL GRUPO ANDINO

DIMENSIONES SECCIÓN TRANSVERSAL			
h=	**10**	**cm**	Altura sección
b=	**5**	**cm**	Base sección
PROPIEDADES MECÁNICAS MADERA			
E=	**95000**	**kgf/cm2**	Módulo de Elasticidad
fv=	**15**	**kgf/cm2**	Esfuerzo admisible a corte
fm=	**210**	**kgf/cm2**	Esfuerzo admisible a flexion
fc ⊥ =	**40**	**kgf/cm2**	Esfuerzo admisible a compresion perpendicular



LONGITUD Y DEFLEXIONES ELEMENTO			
L=	**150**	**cm**	Longitud
Δ1=	**0.028**	**cm**	Deflexion Carga Permanete
Δ2=	**0.09**	**cm**	Deflexion Carga Sobrecarga



VERIFICACION DEFLEXIONES

$$\Delta_{adm} = \frac{L}{250}$$

Δadm1=	**0.600**	cm	Deflexion admisible Carga Permante

$$\Delta_{adm} = \frac{L}{350}$$

Δadm2=	**0.429**	cm	Deflexion admisible Carga Permante
Δ1<Δadm1		**Cumple**	
Δ1<Δadm1		**Cumple**	

TABLA 8.1. DEFLEXIONES MAXIMAS ADMISIBLES

Carga actuante	(a) con cielo raso de yeso	(b) sin cielo raso de yeso
Cargas permanentes + sobrecargas	L/300	L/250
Sobrecarga	L/350	L/350

FLEXION SENTIDO LONGITUDINAL

VERIFICACION DE ESFUERZOS A FLEXION

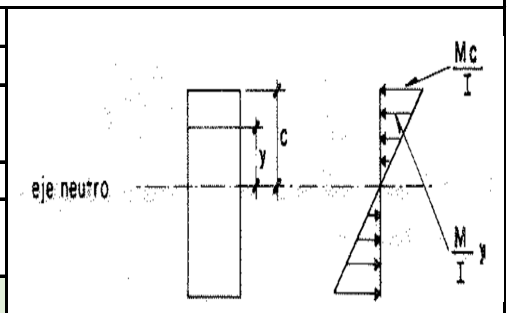
M=	**9255**	**kgf.cm**	Momento Flector por Combinación de Sevicio

$$\sigma_m = \frac{6 \cdot M}{b \cdot h^2}$$

σm	**111.06**	kgf/cm2	Esfuezo a Flexion

$$\sigma_m \leq f_m$$

σm≤fm	**Cumple**



VERIFICACION DE ESFUERZOS A CORTE

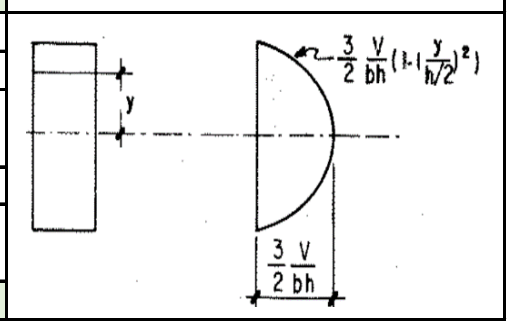
V=	**277.66**	**kgf**	Cortante por Combinación de Sevicio

$$\tau = \frac{3 \cdot V}{2 \cdot b \cdot h}$$

τ=	**8.33**	kgf/cm2	Esfuezo a Corte

$$\tau \leq f_v$$

τ≤fv	**Cumple**



FLEXION SENTIDO TRANSVERSAL

VERIFICACION DE ESFUERZOS A FLEXION

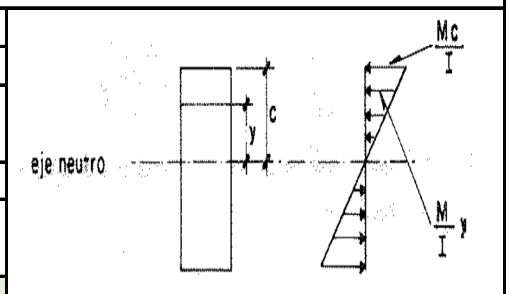
M=	**9255**	**kgf.cm**	Momento Flector por Combinación de Sevicio

$$\sigma_m = \frac{6 \cdot M}{b \cdot h^2}$$

σm	**111.06**	kgf/cm2	Esfuezo a Flexion

$$\sigma_m \leq f_m$$

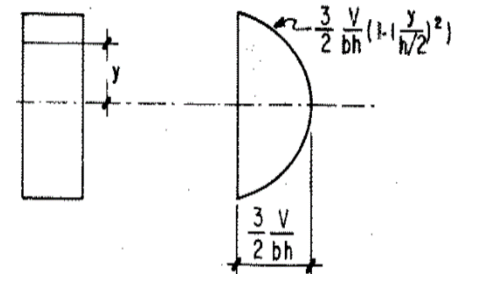
σm≤fm	**Cumple**



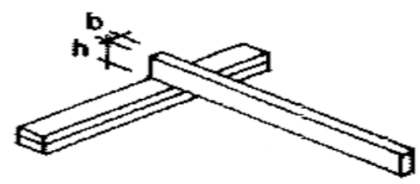
DISEÑO A FLEXIÓN

SEGÚN EL MANUAL DE DISEÑO PARA MADERAS DEL GRUPO ANDINO

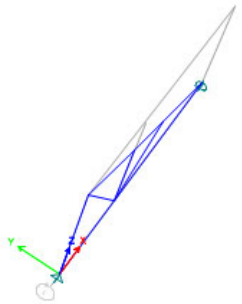
VERIFICACION DE ESFUERZOS A CORTE			
V=	277.66	kgf	Cortante por Combinación de Sevicio
$\tau = \frac{3 \cdot V}{2 \cdot b \cdot h}$			
$\tau =$	8.33	kgf/cm2	Esfuezo a Corte
$\tau \leq f_v$			
$\tau \leq fv$	Cumple		



COMPRESION PRENPENDICULAR A LAS FIBRAS			
a=	5	cm	Base Cordon Superior
b=	5	cm	Base Seccion
R=	165.65	kgf	Reaccion de Apoyo por Combinación de Sevicio
$\sigma_{c\perp} = \frac{R}{a \cdot b}$			
$\sigma c\perp$	6.63	kgf/cm2	Esfuezo a Compresion
$\sigma_{c\perp} \leq f_{c\perp}$			
$\sigma c\perp \leq fc\perp$	Cumple		



ETABS®



Project Report

Model File: modelo 1, Revision 0
20/06/2024

Table of Contents

1. Structure Data 4
   - 1.1 Story Data 4
   - 1.2 Grid Data 4
   - 1.3 Point Coordinates 4
   - 1.4 Line Connectivity 4
   - 1.5 Mass 5
   - 1.6 Groups 5
2. Properties 6
   - 2.1 Materials 6
   - 2.2 Frame Sections 6
   - 2.3 Shell Sections 7
   - 2.4 Reinforcement Sizes 7
   - 2.5 Links 7
   - 2.6 Tendon Sections 7
3. Assignments 9
   - 3.1 Joint Assignments 9
   - 3.2 Frame Assignments 9
4. Loads 10
   - 4.1 Load Patterns 10
   - 4.2 Applied Loads 10
     - 4.2.1 Line Loads 10
   - 4.3 Functions 10
     - 4.3.1 Response Spectrum Functions 10
     - 4.3.2 Time History Functions 10
   - 4.4 Load Cases 11
   - 4.5 Load Combinations 11

List of Tables

Table 1.1 Story Definitions 4
Table 1.2 Grid Definitions - General 4
Table 1.3 Grid Definitions - Grid Lines 4
Table 1.4 Point Bays 4
Table 1.5 Column Bays 4
Table 1.6 Beam Bays 4
Table 1.7 Brace Bays 4
Table 1.8 Mass Source Definition 5
Table 1.9 Group Definitions 5
Table 2.1 Material Properties - General 6
Table 2.2 Frame Section Property Definitions - Summary 6
Table 2.3 Area Section Property Definitions - Summary 7
Table 2.4 Reinforcing Bar Sizes 7
Table 2.5 Link Property Definitions - Summary 7
Table 2.6 Tendon Section Properties 8
Table 3.1 Joint Assignments - Summary 9
Table 3.2 Frame Assignments - Summary 9
Table 4.1 Load Pattern Definitions 10
Table 4.2 Frame Loads Assignments - Distributed 10
Table 4.3 Functions - Response Spectrum - User Defined 10
Table 4.4 Functions - Time History - User Defined 10
Table 4.5 Load Case Definitions - Summary 11
Table 4.6 Load Combination Definitions 11

1 Structure Data

This chapter provides model geometry information, including items such as story levels, point coordinates, and element connectivity.

1.1 Story Data

Table 1.1 - Story Definitions

Tower	Name	Height m	Master Story	Similar To	Splice Story	Color
T1	Story1	1.5	No	None	No	Green

1.2 Grid Data

Table 1.2 - Grid Definitions - General

Tower	Name	Type	Ux m	Uy m	Rz deg	Story Range	Bubble Size mm	Color
T1	G1	Cartesian	0	0	0	Default	200	Gray6

Table 1.3 - Grid Definitions - Grid Lines

Name	Grid Line Type	ID	Ordinate m	Bubble Location	Visible
G1	X (Cartesian)	1	0	End	Yes
G1	X (Cartesian)	2	1.45	End	Yes
G1	X (Cartesian)	3	4.25	End	Yes
G1	Y (Cartesian)	1	0	Start	Yes

1.3 Point Coordinates

Table 1.4 - Point Bays

Label	Is Auto Point	X m	Y m	DZBelow m
1	No	0	0	0
2	No	4.25	0	0
3	No	1.45	0	0
5	No	1.45	0	0.5118
7	No	2.5393	0	0.8962

1.4 Line Connectivity

Table 1.5 - Column Bays

Label	PointBayI	PointBayJ	IEndStory
C1	1	1	Below
C3	3	5	Below

Table 1.6 - Beam Bays

Label	PointBayI	PointBayJ
B3	1	3
B4	3	2
B5	2	7
B6	7	5
B7	5	1

Table 1.7 - Brace Bays

Label	PointBayI	PointBayJ	IEndStory
D1	3	1	Below
D3	3	7	Below

1.5 Mass

Table 1.8 - Mass Source Definition

Name	Is Default	Include Lateral Mass?	Include Vertical Mass?	Lump Mass?	Source Self Mass?	Source Added Mass?	Source Load Patterns?	Move Mass Centroid?
MsSrc1	Yes	Yes	No	Yes	Yes	Yes	No	No

1.6 Groups

Table 1.9 - Group Definitions

Name	Color	Steel Design?	Concrete Design?	Composite Design?
All	Yellow	No	No	No

2 Properties

This chapter provides property information for materials, frame sections, shell sections, and links.

2.1 Materials

Table 2.1 - Material Properties - General

Material	Type	SymType	Grade	Color	Notes
4000Psi	Concrete	Isotropic	f'c 4000 psi	Magenta	
A416Gr270	Tendon	Uniaxial	Grade 270	Gray8Dark	
A615Gr60	Rebar	Uniaxial	Grade 60	Yellow	
A992Fy50	Steel	Isotropic	Grade 50	Red	
madera	Steel	Isotropic	Grade 50	Red	

2.2 Frame Sections

Table 2.2 - Frame Section Property Definitions - Summary (Part 1 of 4)

Name	Material	Shape	Color	Area mm2	J mm4	I33 mm4	I22 mm4
ConcBm	4000Psi	Concrete Rectangular	Gray8Dark	187500	4745728969.6	3906250000	2197265625
ConcCol	4000Psi	Concrete Rectangular	Yellow	140625	2785034179.7	1647949218.8	1647949218.8
madera 10x5 cm	madera	Concrete Rectangular	31218	5000	2861002.6	4166666.7	1041666.7
madera 15x5 cm	madera	Concrete Rectangular	16512	7500	4938850.3	14062500	1562500
SteelBm	A992Fy50	Steel I/Wide Flange	Magenta	7135.4	256686.7	303431532.1	9654725.6
SteelCol	A992Fy50	Steel I/Wide Flange	Red	30625	5517578.1	1506380208.3	520906575.5

Table 2.2 - Frame Section Property Definitions - Summary (Part 2 of 4)

Name	As2 mm2	As3 mm2	S33Pos mm3	S33Neg mm3	S22Pos mm3	S22Neg mm3	Z33 mm3	Z22 mm3	R33 mm
ConcBm	156250	156250	15625000	15625000	11718750	11718750	23437500	17578125	144.3
ConcCol	117187.5	117187.5	8789062.5	8789062.5	8789062.5	8789062.5	13183593.8	13183593.8	108.3
madera 10x5 cm	4166.7	4166.7	83333.3	83333.3	41666.7	41666.7	125000	62500	28.9
madera 15x5 cm	6250	6250	187500	187500	62500	62500	281250	93750	43.3
SteelBm	3130	3744.1	1213726.1	1213726.1	115856.7	115856.7	1368164.1	178249.8	206.2
SteelCol	6337.5	22255	6025520.8	6025520.8	2083626.3	2083626.3	6570312.5	3142578.1	221.8

Table 2.2 - Frame Section Property Definitions - Summary (Part 3 of 4)

Name	Cw mm6	CG Offset 3 mm	CG Offset 2 mm	PNA Offset 3 mm	PNA Offset 2 mm	Area Modifier	As2 Modifier	As3 Modifier	J Modifier
ConcBm		0	0	0	0	1	1	1	1
ConcCol		0	0	0	0	1	1	1	1
madera 10x5 cm		0	0	0	0	1	1	1	1
madera 15x5 cm		0	0	0	0	1	1	1	1
SteelBm	573100000000	0	0	0	0	1	1	1	1
SteelCol	29380000000000	0	0	0	0	1	1	1	1

Table 2.2 - Frame Section Property Definitions - Summary (Part 4 of 4)

Name	I22 Modifier	Mass Modifier	Weight Modifier
ConcBm	1	1	1
ConcCol	1	1	1
madera 10x5 cm	1	1	1
madera 15x5 cm	1	1	1
SteelBm	1	1	1
SteelCol	1	1	1

2.3 Shell Sections

Table 2.3 - Area Section Property Definitions - Summary

Name	Type	Element Type	Material	Total Thickness mm	Deck Material	Deck Depth mm
Deck1	Deck	Membrane	4000Psi	162.5	A992Fy50	75
Plank1	Slab	Membrane	4000Psi	200		
Slab1	Slab	Shell-Thin	4000Psi	200		
TEJA	Deck	Membrane	4000Psi	10		
Wall1	Wall	Shell-Thin	4000Psi	250		

2.4 Reinforcement Sizes

Table 2.4 - Reinforcing Bar Sizes

Name	Diameter mm	Area mm2
6	6	28.3
8	8	50.3
10	10	78.5
12	12	113.1
14	14	153.9
16	16	201.1
18	18	254.5
20	20	314.2
22	22	380.1
25	25	490.9
26	26	530.9
28	28	615.8
32	32	804.2
36	36	1017.9
40	40	1256.6
50	50	1963.5

2.5 Links

Table 2.5 - Link Property Definitions - Summary

Name	Type	Degrees of Freedom	Mass kg	Weight tonf	Defined Length m	Defined Area m2
Link1	Linear	U1	0	0	1	1

2.6 Tendon Sections

Table 2.6 - Tendon Section Properties

Name	Material	StrandArea mm2	Color	Notes
Tendon1	A416Gr270	98.7	Red	

3 Assignments

This chapter provides a listing of the assignments applied to the model.

3.1 Joint Assignments

Table 3.1 - Joint Assignments - Summary

Story	Label	UniqueName	Diaphragm	Restraints
Story1	1	1	From Area	
Story1	5	6	From Area	
Story1	7	8	From Area	
Base	1	2	From Area	UX; UY; UZ
Base	2	3	From Area	UZ
Base	3	4	From Area	

3.2 Frame Assignments

Table 3.2 - Frame Assignments - Summary

Story	Label	UniqueName	Design Type	Length m	Analysis Section	Design Section	Max Station Spacing m	Min Number Stations	Releases
Story1	B5	9	Beam	1.8142	madera 15x5 cm	N/A		3	Yes
Story1	B6	10	Beam	1.1551	madera 15x5 cm	N/A		3	Yes
Story1	B7	11	Beam	1.5377	madera 15x5 cm	N/A		3	Yes
Story1	C1	1	Column	1.5	madera 15x5 cm	N/A		3	Yes
Story1	C3	5	Column	0.9882	madera 10x5 cm	N/A		3	Yes
Story1	D1	4	Brace	2.0863	madera 10x5 cm	N/A		3	Yes
Story1	D3	6	Brace	1.2454	madera 10x5 cm	N/A		3	Yes
Base	B3	7	Beam	1.45	madera 15x5 cm	N/A	0.5		Yes
Base	B4	8	Beam	2.8	madera 15x5 cm	N/A	0.5		Yes

4 Loads

This chapter provides loading information as applied to the model.

4.1 Load Patterns

Table 4.1 - Load Pattern Definitions

Name	Is Auto Load	Type	Self Weight Multiplier
~LLRF	Yes	Other	0
Dead	No	Dead	1
Live	No	Live	0

4.2 Applied Loads

4.2.1 Line Loads

Table 4.2 - Frame Loads Assignments - Distributed (Part 1 of 2)

UniqueName	Load Pattern	Story	Label	Load Type	Direction	Distance Type	Relative Distance A	Relative Distance B	Absolute Distance A m
9	Dead	Story1	B5	Force	Gravity	Relative	0	1	0
10	Dead	Story1	B6	Force	Gravity	Relative	0	1	0
11	Dead	Story1	B7	Force	Gravity	Relative	0	1	0
9	Live	Story1	B5	Force	Gravity	Relative	0	1	0
10	Live	Story1	B6	Force	Gravity	Relative	0	1	0
11	Live	Story1	B7	Force	Gravity	Relative	0	1	0

Table 4.2 - Frame Loads Assignments - Distributed (Part 2 of 2)

UniqueName	Load Pattern	Absolute Distance B m	Force A kgf/m	Force B kgf/m
9	Dead	1.8142	105	105
10	Dead	1.1551	105	105
11	Dead	1.5377	105	105
9	Live	1.8142	75	75
10	Live	1.1551	75	75
11	Live	1.5377	75	75

4.3 Functions

4.3.1 Response Spectrum Functions

Table 4.3 - Functions - Response Spectrum - User Defined

Name	Period sec	Value	Damping Ratio
UnifRS	0	1	0.05
UnifRS	1	1	

4.3.2 Time History Functions

Table 4.4 - Functions - Time History - User Defined

Name	Time sec	Value
RampTH	0	0
RampTH	1	1
RampTH	4	1
UnifTH	0	1
UnifTH	1	1

4.4 Load Cases

Table 4.5 - Load Case Definitions - Summary

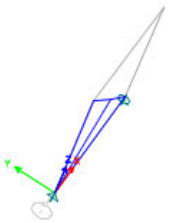
Name	Type
Dead	Linear Static
Live	Linear Static
Modal	Modal - Eigen

4.5 Load Combinations

Table 4.6 - Load Combination Definitions

Name	Type	Is Auto	Load Name	SF	Notes
mayorada 1.2D-1.6L	Linear Add	No	Dead	1.2	
mayorada 1.2D-1.6L			Live	1.6	
mayorada 1.4D	Linear Add	No	Dead	1.4	
servicio	Linear Add	No	Dead	1	
servicio			Live	1	

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Project Report

Model File: modelo 1, Revision 0
20/06/2024

Table of Contents

1. Structure Data 4
   - 1.1 Story Data 4
   - 1.2 Grid Data 4
   - 1.3 Point Coordinates 4
   - 1.4 Line Connectivity 4
   - 1.5 Mass 4
   - 1.6 Groups 5
2. Properties 6
   - 2.1 Materials 6
   - 2.2 Frame Sections 6
   - 2.3 Shell Sections 7
   - 2.4 Reinforcement Sizes 7
   - 2.5 Links 7
   - 2.6 Tendon Sections 7
3. Assignments 9
   - 3.1 Joint Assignments 9
   - 3.2 Frame Assignments 9
4. Loads 10
   - 4.1 Load Patterns 10
   - 4.2 Applied Loads 10
     - 4.2.1 Line Loads 10
   - 4.3 Functions 10
     - 4.3.1 Response Spectrum Functions 10
     - 4.3.2 Time History Functions 10
   - 4.4 Load Cases 10
   - 4.5 Load Combinations 11

List of Tables

Table 1.1 Story Definitions 4
Table 1.2 Grid Definitions - General 4
Table 1.3 Grid Definitions - Grid Lines 4
Table 1.4 Point Bays 4
Table 1.5 Column Bays 4
Table 1.6 Beam Bays 4
Table 1.7 Brace Bays 4
Table 1.8 Mass Source Definition 5
Table 1.9 Group Definitions 5
Table 2.1 Material Properties - General 6
Table 2.2 Frame Section Property Definitions - Summary 6
Table 2.3 Area Section Property Definitions - Summary 7
Table 2.4 Reinforcing Bar Sizes 7
Table 2.5 Link Property Definitions - Summary 7
Table 2.6 Tendon Section Properties 8
Table 3.1 Joint Assignments - Summary 9
Table 3.2 Frame Assignments - Summary 9
Table 4.1 Load Pattern Definitions 10
Table 4.2 Frame Loads Assignments - Distributed 10
Table 4.3 Functions - Response Spectrum - User Defined 10
Table 4.4 Functions - Time History - User Defined 10
Table 4.5 Load Case Definitions - Summary 11
Table 4.6 Load Combination Definitions 11

1 Structure Data

This chapter provides model geometry information, including items such as story levels, point coordinates, and element connectivity.

1.1 Story Data

Table 1.1 - Story Definitions

Tower	Name	Height m	Master Story	Similar To	Splice Story	Color
T1	Story1	1.6	No	None	No	Green

1.2 Grid Data

Table 1.2 - Grid Definitions - General

Tower	Name	Type	Ux m	Uy m	Rz deg	Story Range	Bubble Size mm	Color
T1	G1	Cartesian	0	0	0	Default	200	Gray6

Table 1.3 - Grid Definitions - Grid Lines

Name	Grid Line Type	ID	Ordinate m	Bubble Location	Visible
G1	X (Cartesian)	1	0	End	Yes
G1	X (Cartesian)	2	1.94	End	Yes
G1	Y (Cartesian)	1	0	Start	Yes

1.3 Point Coordinates

Table 1.4 - Point Bays

Label	Is Auto Point	X m	Y m	DZBelow m
1	No	0	0	0
2	No	1.94	0	0
3	No	0.97	0	0.8

1.4 Line Connectivity

Table 1.5 - Column Bays

Label	PointBayI	PointBayJ	IEndStory
C1	1	1	Below

Table 1.6 - Beam Bays

Label	PointBayI	PointBayJ
B1	1	2

Table 1.7 - Brace Bays

Label	PointBayI	PointBayJ	IEndStory
D2	2	3	Below
D3	3	1	Same
D10	1	3	Below

1.5 Mass

Table 1.8 - Mass Source Definition

Name	Is Default	Include Lateral Mass?	Include Vertical Mass?	Lump Mass?	Source Self Mass?	Source Added Mass?	Source Load Patterns?	Move Mass Centroid?
MsSrc1	Yes	Yes	No	Yes	Yes	Yes	No	No

1.6 Groups

Table 1.9 - Group Definitions

Name	Color	Steel Design?	Concrete Design?	Composite Design?
All	Yellow	No	No	No

2 Properties

This chapter provides property information for materials, frame sections, shell sections, and links.

2.1 Materials

Table 2.1 - Material Properties - General

Material	Type	SymType	Grade	Color	Notes
4000Psi	Concrete	Isotropic	f'c 4000 psi	Magenta	
A416Gr270	Tendon	Uniaxial	Grade 270	Gray8Dark	
A615Gr60	Rebar	Uniaxial	Grade 60	Yellow	
A992Fy50	Steel	Isotropic	Grade 50	Red	
madera	Steel	Isotropic	Grade 50	Red	

2.2 Frame Sections

Table 2.2 - Frame Section Property Definitions - Summary (Part 1 of 4)

Name	Material	Shape	Color	Area mm2	J mm4	I33 mm4	I22 mm4
ConcBm	4000Psi	Concrete Rectangular	Gray8Dark	187500	4745728969.6	3906250000	2197265625
ConcCol	4000Psi	Concrete Rectangular	Yellow	140625	2785034179.7	1647949218.8	1647949218.8
madera 10x5 cm	madera	Concrete Rectangular	31218	5000	2861002.6	4166666.7	1041666.7
madera 15x5 cm	madera	Concrete Rectangular	16512	7500	4938850.3	14062500	1562500
SteelBm	A992Fy50	Steel I/Wide Flange	Magenta	7135.4	256686.7	303431532.1	9654725.6
SteelCol	A992Fy50	Steel I/Wide Flange	Red	30625	5517578.1	1506380208.3	520906575.5

Table 2.2 - Frame Section Property Definitions - Summary (Part 2 of 4)

Name	As2 mm2	As3 mm2	S33Pos mm3	S33Neg mm3	S22Pos mm3	S22Neg mm3	Z33 mm3	Z22 mm3	R33 mm
ConcBm	156250	156250	15625000	15625000	11718750	11718750	23437500	17578125	144.3
ConcCol	117187.5	117187.5	8789062.5	8789062.5	8789062.5	8789062.5	13183593.8	13183593.8	108.3
madera 10x5 cm	4166.7	4166.7	83333.3	83333.3	41666.7	41666.7	125000	62500	28.9
madera 15x5 cm	6250	6250	187500	187500	62500	62500	281250	93750	43.3
SteelBm	3130	3744.1	1213726.1	1213726.1	115856.7	115856.7	1368164.1	178249.8	206.2
SteelCol	6337.5	22255	6025520.8	6025520.8	2083626.3	2083626.3	6570312.5	3142578.1	221.8

Table 2.2 - Frame Section Property Definitions - Summary (Part 3 of 4)

Name	Cw mm6	CG Offset 3 mm	CG Offset 2 mm	PNA Offset 3 mm	PNA Offset 2 mm	Area Modifier	As2 Modifier	As3 Modifier	J Modifier
ConcBm		0	0	0	0	1	1	1	1
ConcCol		0	0	0	0	1	1	1	1
madera 10x5 cm		0	0	0	0	1	1	1	1
madera 15x5 cm		0	0	0	0	1	1	1	1
SteelBm	573100000000	0	0	0	0	1	1	1	1
SteelCol	29380000000000	0	0	0	0	1	1	1	1

Table 2.2 - Frame Section Property Definitions - Summary (Part 4 of 4)

Name	I22 Modifier	Mass Modifier	Weight Modifier
ConcBm	1	1	1
ConcCol	1	1	1
madera 10x5 cm	1	1	1
madera 15x5 cm	1	1	1
SteelBm	1	1	1
SteelCol	1	1	1

2.3 Shell Sections

Table 2.3 - Area Section Property Definitions - Summary

Name	Type	Element Type	Material	Total Thickness mm	Deck Material	Deck Depth mm
Deck1	Deck	Membrane	4000Psi	162.5	A992Fy50	75
Plank1	Slab	Membrane	4000Psi	200		
Slab1	Slab	Shell-Thin	4000Psi	200		
TEJA	Deck	Membrane	4000Psi	10		
Wall1	Wall	Shell-Thin	4000Psi	250		

2.4 Reinforcement Sizes

Table 2.4 - Reinforcing Bar Sizes

Name	Diameter mm	Area mm2
6	6	28.3
8	8	50.3
10	10	78.5
12	12	113.1
14	14	153.9
16	16	201.1
18	18	254.5
20	20	314.2
22	22	380.1
25	25	490.9
26	26	530.9
28	28	615.8
32	32	804.2
36	36	1017.9
40	40	1256.6
50	50	1963.5

2.5 Links

Table 2.5 - Link Property Definitions - Summary

Name	Type	Degrees of Freedom	Mass kg	Weight tonf	Defined Length m	Defined Area m2
Link1	Linear	U1	0	0	1	1

2.6 Tendon Sections

Table 2.6 - Tendon Section Properties

Name	Material	StrandArea mm2	Color	Notes
Tendon1	A416Gr270	98.7	Red	

3 Assignments

This chapter provides a listing of the assignments applied to the model.

3.1 Joint Assignments

Table 3.1 - Joint Assignments - Summary

Story	Label	UniqueName	Diaphragm	Restraints
Story1	1	2	From Area	
Story1	3	4	From Area	
Base	1	1	From Area	UX; UY; UZ
Base	2	3	From Area	UZ

3.2 Frame Assignments

Table 3.2 - Frame Assignments - Summary

Story	Label	UniqueName	Design Type	Length m	Analysis Section	Design Section	Max Station Spacing m	Min Number Stations	Releases
Story1	C1	1	Column	1.6	madera 15x5 cm	N/A		3	Yes
Story1	D2	4	Brace	1.2573	madera 15x5 cm	N/A		3	Yes
Story1	D3	5	Brace	1.2573	madera 15x5 cm	N/A		3	Yes
Story1	D10	7	Brace	1.2573	madera 10x5 cm	N/A		3	Yes
Base	B1	3	Beam	1.94	madera 15x5 cm	N/A	0.5		Yes

4 Loads

This chapter provides loading information as applied to the model.

4.1 Load Patterns

Table 4.1 - Load Pattern Definitions

Name	Is Auto Load	Type	Self Weight Multiplier
Dead	No	Dead	1
Live	No	Live	0

4.2 Applied Loads

4.2.1 Line Loads

Table 4.2 - Frame Loads Assignments - Distributed (Part 1 of 2)

UniqueName	Load Pattern	Story	Label	Load Type	Direction	Distance Type	Relative Distance A	Relative Distance B	Absolute Distance A m
4	Dead	Story1	D2	Force	Gravity	Relative	0	1	0
5	Dead	Story1	D3	Force	Gravity	Relative	0	1	0
4	Live	Story1	D2	Force	Gravity	Relative	0	1	0
5	Live	Story1	D3	Force	Gravity	Relative	0	1	0

Table 4.2 - Frame Loads Assignments - Distributed (Part 2 of 2)

UniqueName	Load Pattern	Absolute Distance B m	Force A kgf/m	Force B kgf/m
4	Dead	1.2573	105	105
5	Dead	1.2573	105	105
4	Live	1.2573	75	75
5	Live	1.2573	75	75

4.3 Functions

4.3.1 Response Spectrum Functions

Table 4.3 - Functions - Response Spectrum - User Defined

Name	Period sec	Value	Damping Ratio
UnifRS	0	1	0.05
UnifRS	1	1	

4.3.2 Time History Functions

Table 4.4 - Functions - Time History - User Defined

Name	Time sec	Value
RampTH	0	0
RampTH	1	1
RampTH	4	1
UnifTH	0	1
UnifTH	1	1

4.4 Load Cases

Table 4.5 - Load Case Definitions - Summary

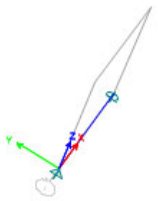
Name	Type
Dead	Linear Static
Live	Linear Static
Modal	Modal - Eigen

4.5 Load Combinations

Table 4.6 - Load Combination Definitions

Name	Type	Is Auto	Load Name	SF	Notes
mayorada 1.2D-1.6L	Linear Add	No	Dead	1.2	
mayorada 1.2D-1.6L			Live	1.6	
mayorada 1.4D	Linear Add	No	Dead	1.4	
servicio	Linear Add	No	Dead	1	
servicio			Live	1	

ETABS®



Project Report

Model File: modelo 1, Revision 0
20/06/2024

Table of Contents

1. Structure Data 4
   - 1.1 Story Data 4
   - 1.2 Grid Data 4
   - 1.3 Point Coordinates 4
   - 1.4 Line Connectivity 4
   - 1.5 Mass 4
   - 1.6 Groups 5
2. Properties 6
   - 2.1 Materials 6
   - 2.2 Frame Sections 6
   - 2.3 Shell Sections 7
   - 2.4 Reinforcement Sizes 7
   - 2.5 Links 7
   - 2.6 Tendon Sections 7
3. Assignments 9
   - 3.1 Joint Assignments 9
   - 3.2 Frame Assignments 9
4. Loads 10
   - 4.1 Load Patterns 10
   - 4.2 Applied Loads 10
     - 4.2.1 Line Loads 10
   - 4.3 Functions 10
     - 4.3.1 Response Spectrum Functions 10
     - 4.3.2 Time History Functions 10
   - 4.4 Load Cases 10
   - 4.5 Load Combinations 11
5. Analysis Results 12
   - 5.1 Structure Results 12
   - 5.2 Point Results 12

List of Tables

Table 1.1 Story Definitions 4
Table 1.2 Grid Definitions - General 4
Table 1.3 Grid Definitions - Grid Lines 4
Table 1.4 Point Bays 4
Table 1.5 Point Object Connectivity 4
Table 1.6 Beam Bays 4
Table 1.7 Mass Source Definition 4
Table 1.8 Mass Summary by Story 4
Table 1.9 Mass Summary by Group 5
Table 1.10 Group Definitions 5
Table 2.1 Material Properties - General 6
Table 2.2 Frame Section Property Definitions - Summary 6
Table 2.3 Area Section Property Definitions - Summary 7
Table 2.4 Reinforcing Bar Sizes 7
Table 2.5 Link Property Definitions - Summary 7
Table 2.6 Tendon Section Properties 8
Table 3.1 Joint Assignments - Summary 9
Table 3.2 Frame Assignments - Summary 9
Table 4.1 Load Pattern Definitions 10
Table 4.2 Frame Loads Assignments - Distributed 10
Table 4.3 Functions - Response Spectrum - User Defined 10
Table 4.4 Functions - Time History - User Defined 10
Table 4.5 Load Case Definitions - Summary 11
Table 4.6 Load Combination Definitions 11
Table 5.1 Base Reactions 12
Table 5.2 Joint Reactions 12

1 Structure Data

This chapter provides model geometry information, including items such as story levels, point coordinates, and element connectivity.

1.1 Story Data

Table 1.1 - Story Definitions

Tower	Name	Height m	Master Story	Similar To	Splice Story	Color
T1	Story1	1.5	No	None	No	Green

1.2 Grid Data

Table 1.2 - Grid Definitions - General

Tower	Name	Type	Ux m	Uy m	Rz deg	Story Range	Bubble Size mm	Color
T1	G1	Cartesian	0	0	0	Default	200	Gray6

Table 1.3 - Grid Definitions - Grid Lines

Name	Grid Line Type	ID	Ordinate m	Bubble Location	Visible
G1	X (Cartesian)	1	0	End	Yes
G1	X (Cartesian)	2	1.5	End	Yes
G1	Y (Cartesian)	1	0	Start	Yes

1.3 Point Coordinates

Table 1.4 - Point Bays

Label	Is Auto Point	X m	Y m	DZBelow m
1	No	0	0	0
2	No	1.5	0	0

Table 1.5 - Point Object Connectivity

UniqueName	Is Auto Point	Story	PointBay	IsSpecial	X m	Y m	Z m
1	No	Base	1	No	0	0	0
2	No	Base	2	No	1.5	0	0

1.4 Line Connectivity

Table 1.6 - Beam Bays

Label	PointBayI	PointBayJ
B1	1	2

1.5 Mass

Table 1.7 - Mass Source Definition

Name	Is Default	Include Lateral Mass?	Include Vertical Mass?	Lump Mass?	Source Self Mass?	Source Added Mass?	Source Load Patterns?	Move Mass Centroid?
MsSrc1	Yes	Yes	No	Yes	Yes	Yes	No	No

Table 1.8 - Mass Summary by Story

Story	UX kg	UY kg	UZ kg
Story1	0	0	0
Base	5.63	5.63	0

Table 1.9 - Mass Summary by Group

Group	Self Mass kg	Self Weight tonf	Mass X kg	Mass Y kg	Mass Z kg
All	5.63	0	5.63	5.63	0

1.6 Groups

Table 1.10 - Group Definitions

Name	Color	Steel Design?	Concrete Design?	Composite Design?
All	Yellow	No	No	No

2 Properties

This chapter provides property information for materials, frame sections, shell sections, and links.

2.1 Materials

Table 2.1 - Material Properties - General

Material	Type	SymType	Grade	Color	Notes
4000Psi	Concrete	Isotropic	f'c 4000 psi	Magenta	
A416Gr270	Tendon	Uniaxial	Grade 270	Gray8Dark	
A615Gr60	Rebar	Uniaxial	Grade 60	Yellow	
A992Fy50	Steel	Isotropic	Grade 50	Red	
madera	Steel	Isotropic	Grade 50	Red	

2.2 Frame Sections

Table 2.2 - Frame Section Property Definitions - Summary (Part 1 of 4)

Name	Material	Shape	Color	Area mm2	J mm4	I33 mm4	I22 mm4
ConcBm	4000Psi	Concrete Rectangular	Gray8Dark	187500	4745728969.6	3906250000	2197265625
ConcCol	4000Psi	Concrete Rectangular	Yellow	140625	2785034179.7	1647949218.8	1647949218.8
madera 10x5 cm	madera	Concrete Rectangular	31218	5000	2861002.6	4166666.7	1041666.7
madera 15x5 cm	madera	Concrete Rectangular	16512	7500	4938850.3	14062500	1562500
SteelBm	A992Fy50	Steel I/Wide Flange	Magenta	7135.4	256686.7	303431532.1	9654725.6
SteelCol	A992Fy50	Steel I/Wide Flange	Red	30625	5517578.1	1506380208.3	520906575.5

Table 2.2 - Frame Section Property Definitions - Summary (Part 2 of 4)

Name	As2 mm2	As3 mm2	S33Pos mm3	S33Neg mm3	S22Pos mm3	S22Neg mm3	Z33 mm3	Z22 mm3	R33 mm
ConcBm	156250	156250	15625000	15625000	11718750	11718750	23437500	17578125	144.3
ConcCol	117187.5	117187.5	8789062.5	8789062.5	8789062.5	8789062.5	13183593.8	13183593.8	108.3
madera 10x5 cm	4166.7	4166.7	83333.3	83333.3	41666.7	41666.7	125000	62500	28.9
madera 15x5 cm	6250	6250	187500	187500	62500	62500	281250	93750	43.3
SteelBm	3130	3744.1	1213726.1	1213726.1	115856.7	115856.7	1368164.1	178249.8	206.2
SteelCol	6337.5	22255	6025520.8	6025520.8	2083626.3	2083626.3	6570312.5	3142578.1	221.8

Table 2.2 - Frame Section Property Definitions - Summary (Part 3 of 4)

Name	Cw mm6	CG Offset 3 mm	CG Offset 2 mm	PNA Offset 3 mm	PNA Offset 2 mm	Area Modifier	As2 Modifier	As3 Modifier	J Modifier
ConcBm		0	0	0	0	1	1	1	1
ConcCol		0	0	0	0	1	1	1	1
madera 10x5 cm		0	0	0	0	1	1	1	1
madera 15x5 cm		0	0	0	0	1	1	1	1
SteelBm	573100000000	0	0	0	0	1	1	1	1
SteelCol	29380000000000	0	0	0	0	1	1	1	1

Table 2.2 - Frame Section Property Definitions - Summary (Part 4 of 4)

Name	I22 Modifier	Mass Modifier	Weight Modifier
ConcBm	1	1	1
ConcCol	1	1	1
madera 10x5 cm	1	1	1
madera 15x5 cm	1	1	1
SteelBm	1	1	1
SteelCol	1	1	1

2.3 Shell Sections

Table 2.3 - Area Section Property Definitions - Summary

Name	Type	Element Type	Material	Total Thickness mm	Deck Material	Deck Depth mm
Deck1	Deck	Membrane	4000Psi	162.5	A992Fy50	75
Plank1	Slab	Membrane	4000Psi	200		
Slab1	Slab	Shell-Thin	4000Psi	200		
TEJA	Deck	Membrane	4000Psi	10		
Wall1	Wall	Shell-Thin	4000Psi	250		

2.4 Reinforcement Sizes

Table 2.4 - Reinforcing Bar Sizes

Name	Diameter mm	Area mm2
6	6	28.3
8	8	50.3
10	10	78.5
12	12	113.1
14	14	153.9
16	16	201.1
18	18	254.5
20	20	314.2
22	22	380.1
25	25	490.9
26	26	530.9
28	28	615.8
32	32	804.2
36	36	1017.9
40	40	1256.6
50	50	1963.5

2.5 Links

Table 2.5 - Link Property Definitions - Summary

Name	Type	Degrees of Freedom	Mass kg	Weight tonf	Defined Length m	Defined Area m2
Link1	Linear	U1	0	0	1	1

2.6 Tendon Sections

Table 2.6 - Tendon Section Properties

Name	Material	StrandArea mm2	Color	Notes
Tendon1	A416Gr270	98.7	Red	

3 Assignments

This chapter provides a listing of the assignments applied to the model.

3.1 Joint Assignments

Table 3.1 - Joint Assignments - Summary

Story	Label	UniqueName	Diaphragm	Restraints
Base	1	1	From Area	UX; UY; UZ
Base	2	2	From Area	UZ

3.2 Frame Assignments

Table 3.2 - Frame Assignments - Summary

Story	Label	UniqueName	Design Type	Length m	Analysis Section	Design Section	Max Station Spacing m	Releases
Base	B1	1	Beam	1.5	madera 10x5 cm	N/A	0.5	Yes

4 Loads

This chapter provides loading information as applied to the model.

4.1 Load Patterns

Table 4.1 - Load Pattern Definitions

Name	Is Auto Load	Type	Self Weight Multiplier
~LLRF	Yes	Other	0
Dead	No	Dead	1
Live	No	Live	0

4.2 Applied Loads

4.2.1 Line Loads

Table 4.2 - Frame Loads Assignments - Distributed (Part 1 of 2)

UniqueName	Load Pattern	Story	Label	Load Type	Direction	Distance Type	Relative Distance A	Relative Distance B	Absolute Distance A m
1	Dead	Base	B1	Force	Gravity	Relative	0	1	0
1	Live	Base	B1	Force	Gravity	Relative	0	1	0

Table 4.2 - Frame Loads Assignments - Distributed (Part 2 of 2)

UniqueName	Load Pattern	Absolute Distance B m	Force A kgf/m	Force B kgf/m
1	Dead	1.5	156.1	156.1
1	Live	1.5	111.5	111.5

4.3 Functions

4.3.1 Response Spectrum Functions

Table 4.3 - Functions - Response Spectrum - User Defined

Name	Period sec	Value	Damping Ratio
UnifRS	0	1	0.05
UnifRS	1	1	

4.3.2 Time History Functions

Table 4.4 - Functions - Time History - User Defined

Name	Time sec	Value
RampTH	0	0
RampTH	1	1
RampTH	4	1
UnifTH	0	1
UnifTH	1	1

4.4 Load Cases

Table 4.5 - Load Case Definitions - Summary

Name	Type
Dead	Linear Static
Live	Linear Static
Modal	Modal - Eigen

4.5 Load Combinations

Table 4.6 - Load Combination Definitions

Name	Type	Is Auto	Load Name	SF	Notes
mayorada 1.2D-1.6L	Linear Add	No	Dead	1.2	
mayorada 1.2D-1.6L			Live	1.6	
mayorada 1.4D	Linear Add	No	Dead	1.4	
servicio	Linear Add	No	Dead	1	
servicio			Live	1	

5 Analysis Results

This chapter provides analysis results.

5.1 Structure Results

Table 5.1 - Base Reactions

Output Case	Case Type	FX kgf	FY kgf	FZ kgf	MX kgf-m	MY kgf-m	MZ kgf-m	X m	Y m	Z m
Dead	LinStatic	0	0	239.775	0	-179.8313	0	0	0	0
Live	LinStatic	0	0	167.25	0	-125.4375	0	0	0	0
servicio	Combination	0	0	407.025	0	-305.2688	0	0	0	0
mayorada 1.4D	Combination	0	0	335.685	0	-251.7638	0	0	0	0
mayorada 1.2D-1.6L	Combination	0	0	555.33	0	-416.4975	0	0	0	0

5.2 Point Results

Table 5.2 - Joint Reactions

Story	Label	Unique Name	Output Case	Case Type	FX kgf	FY kgf	FZ kgf	MX kgf-m	MY kgf-m	MZ kgf-m
Base	1	1	Dead	LinStatic	0	0	119.8875	0	0	0
Base	1	1	Live	LinStatic	0	0	83.625	0	0	0
Base	1	1	servicio	Combination	0	0	203.5125	0	0	0
Base	1	1	mayorada 1.4D	Combination	0	0	167.8425	0	0	0
Base	1	1	mayorada 1.2D-1.6L	Combination	0	0	277.665	0	0	0
Base	2	2	Dead	LinStatic	0	0	119.8875	0	0	0
Base	2	2	Live	LinStatic	0	0	83.625	0	0	0
Base	2	2	servicio	Combination	0	0	203.5125	0	0	0
Base	2	2	mayorada 1.4D	Combination	0	0	167.8425	0	0	0
Base	2	2	mayorada 1.2D-1.6L	Combination	0	0	277.665	0	0	0