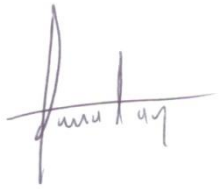
ESTRUCTURA METALICA CUBIERTA

BUENAVENTURA

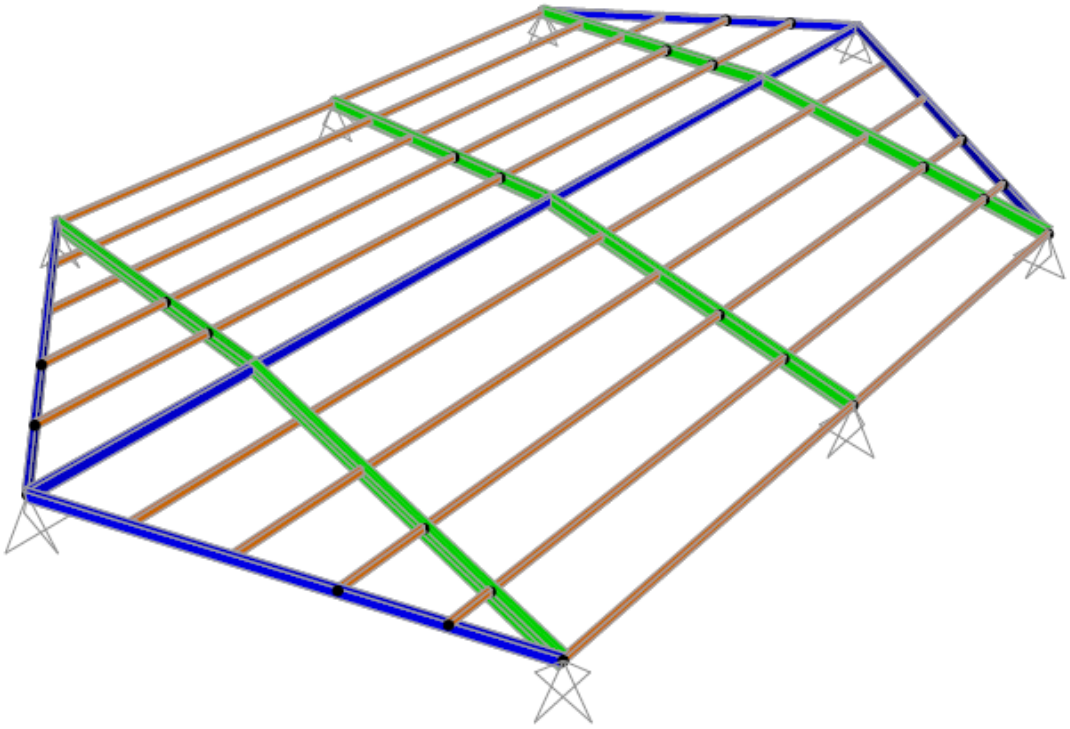
MEMORIAS DE CALCULOS ESTRUCTURALES

SEGÚN NSR-10



ING. JONATHAN FELIPE VANEGAS C.
T.P. 17202-195365 CLD

Manizales, Enero de 2022



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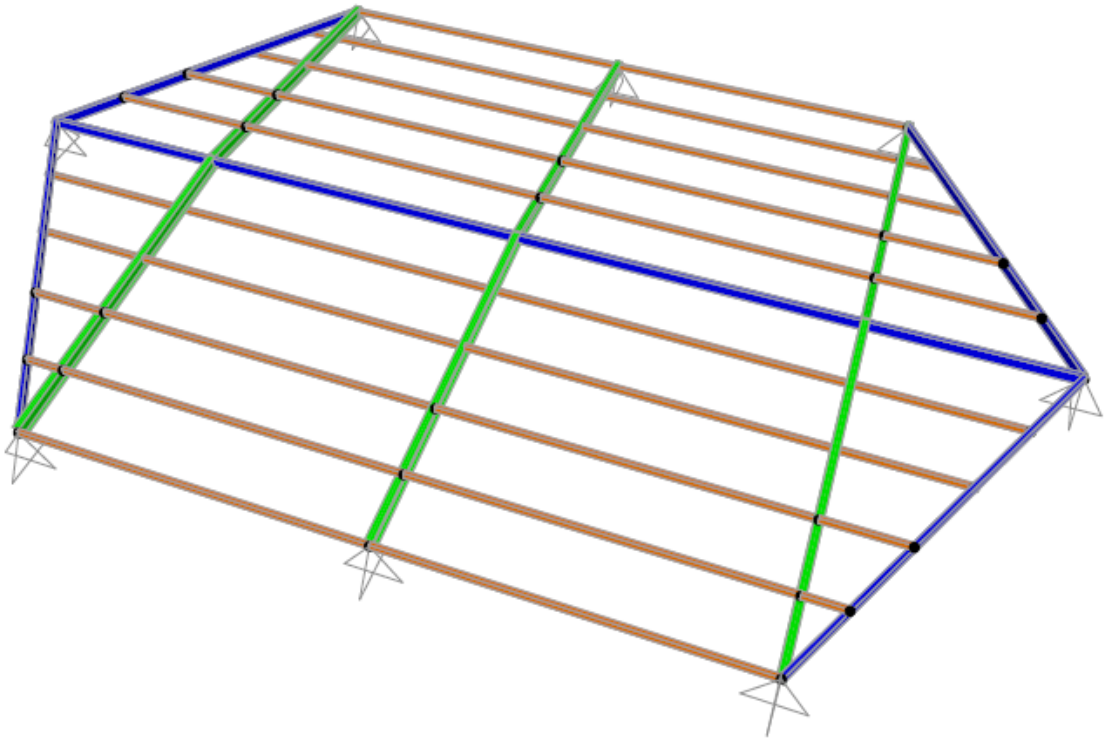

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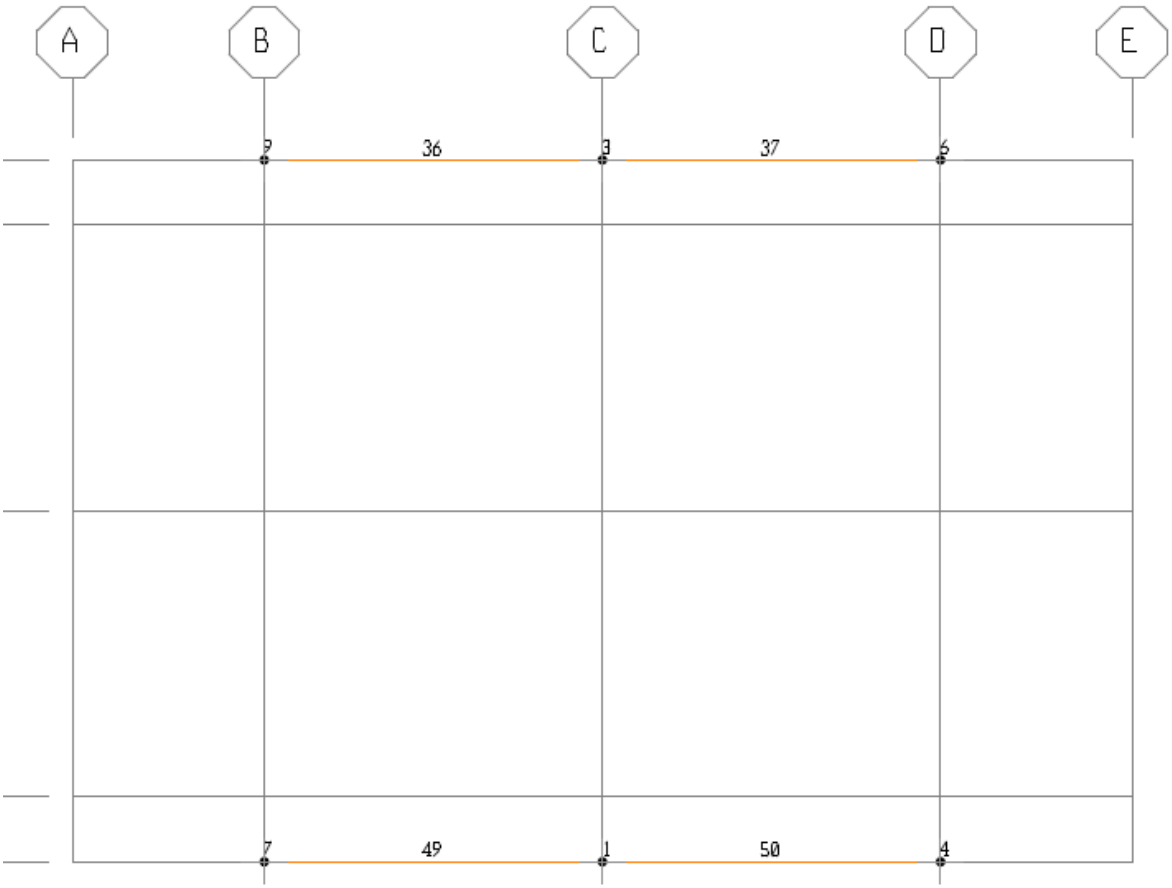
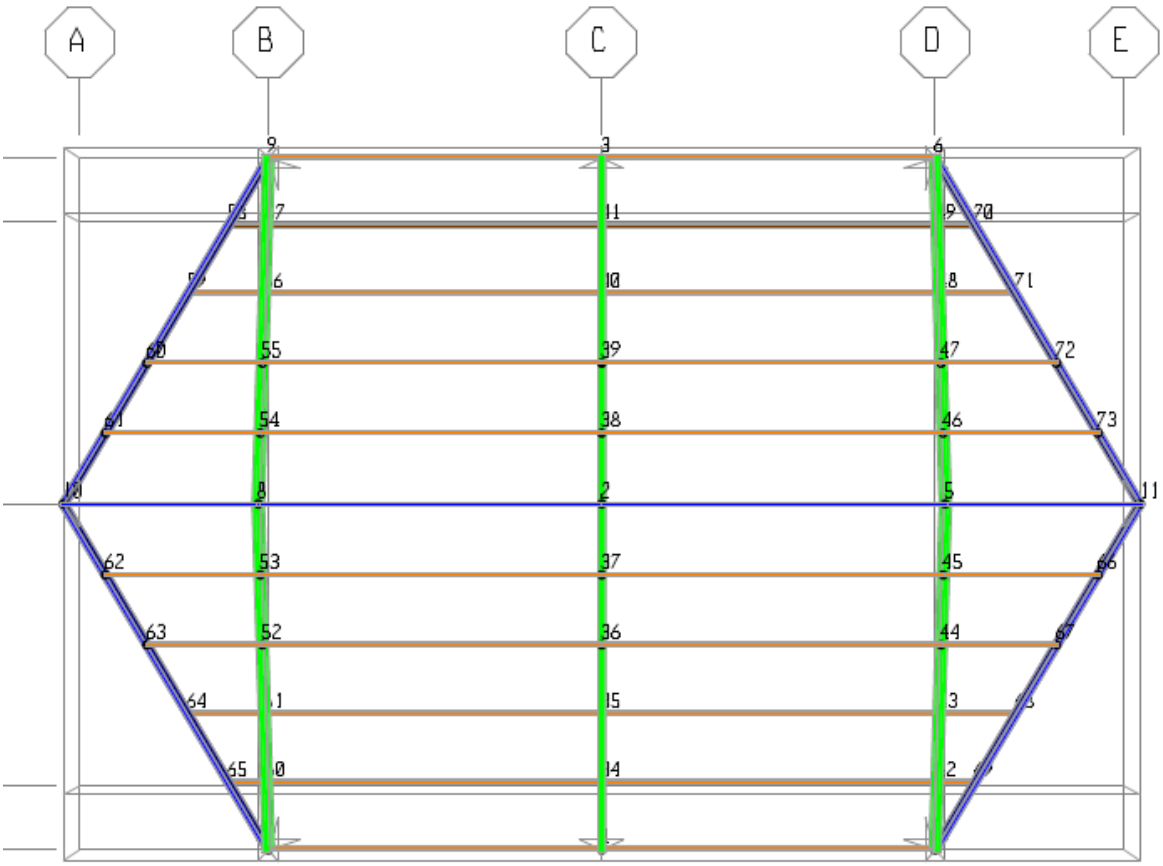


PLANTA PUNTOS DE APOYO



PLANTA CUBIERTA

CUBIERTA 31/01/2022

Evaluación de Cargas:

Peso Cubierta = Carga Muerta	CM=	Teja e Instalaciones=	35	kg/m2
Carga Viva	CV=		**50**	kg/m2

Carga de Viento W= +/- 40 Kg/m2

Cargas de Sismo:

1. ZONA DE AMENAZA SÍSMICA

Ciudad	A_a	A_v	Zona de Amenaza Sísmica
Buenaventura	0.40	0.35	Alta

2. EFECTOS LOCALES - PERFIL DE SUELO

Tipo de Perfil	Fa	Fv
E	0.90	2.60

3. COEFICIENTE DE IMPORTANCIA

Grupo de Uso	I
I	1.00

4. COEFICIENTE DE DISIPACION DE ENERGIA

Irregularidades en planta ϕp	1.0
Irregularidades en altura ϕa	1.0
Reducción por uniones soldadas	0.9
Reducción por ausencia de redundancia	0.75
Estructuras de Péndulo Invertido (DES) R_0	2.50
Coeficiente de disipación de energía R	1.6875

5. PERIODO DEL EDIFICIO

Ct	h	α	Ta=T	Sa	Sa max.	R	Cs
0.072	1.50	0.80	0.10	10.9652	**0.90**	1.6875	0.5333

Coeficiente sísmico para diseño de elementos = 1/R = 1/1.6875 = 0.5925

METODO ESTATICO DE DISEÑO:

Wt = 9922.38 Kg

Sa = 0.90

V = 9922.14 x 0.90 = 8930.14 Kg

DATOS DE ENTRADA

SAP2000 v14.2.4 2/9/22 7:15:31

Table: Active Degrees of Freedom

UX	UY	UZ	RX	RY	RZ
Yes	Yes	Yes	Yes	Yes	Yes

Table: Analysis Options

Solver	SolverProc	Force32Bit	StiffCase	GeomMod
Advanced	Auto	No	None	No

Table: Auto Combination Option Data 01 - General

DesignType	AutoGen
Steel	No

Table: Auto Seismic - User Coefficient, Part 1 of 2

LoadPat	Dir	PercentEcc	EccOverride	UserZ	C	K	WeightUsed Kgf
EX	X	0.050000	No	No	0.900000	1.000000	9922.38
EY	Y	0.050000	No	No	0.900000	1.000000	9922.38

Table: Auto Seismic - User Coefficient, Part 2 of 2

LoadPat	BaseShear Kgf
EX	8930.14
EY	8930.14

Table: Auto Seismic Loads To Joints, Part 1 of 2

LoadPat	AutoLdType	JointElem	Joint	FX Kgf	FY Kgf	FZ Kgf	MX Kgf-m
EX	USER COEFF	2	2	679.71	0.00	0.00	0.00
EX	USER COEFF	5	5	549.74	0.00	0.00	0.00
EX	USER COEFF	8	8	549.74	0.00	0.00	0.00
EX	USER COEFF	10	10	201.32	0.00	0.00	0.00
EX	USER COEFF	11	11	201.32	0.00	0.00	0.00
EX	USER COEFF	12	34	119.31	0.00	0.00	0.00
EX	USER COEFF	13	35	238.63	0.00	0.00	0.00
EX	USER COEFF	14	36	357.94	0.00	0.00	0.00
EX	USER COEFF	15	37	477.26	0.00	0.00	0.00
EX	USER COEFF	16	38	477.26	0.00	0.00	0.00
EX	USER COEFF	17	39	357.94	0.00	0.00	0.00
EX	USER COEFF	18	40	238.63	0.00	0.00	0.00
EX	USER COEFF	19	41	119.31	0.00	0.00	0.00
EX	USER COEFF	20	42	73.50	0.00	0.00	0.00
EX	USER COEFF	21	43	158.71	0.00	0.00	0.00
EX	USER COEFF	22	44	255.63	0.00	0.00	0.00
EX	USER COEFF	23	45	364.26	0.00	0.00	0.00
EX	USER COEFF	24	46	364.26	0.00	0.00	0.00
EX	USER COEFF	25	47	255.63	0.00	0.00	0.00
EX	USER COEFF	26	48	158.71	0.00	0.00	0.00
EX	USER COEFF	27	49	73.50	0.00	0.00	0.00
EX	USER COEFF	28	50	73.50	0.00	0.00	0.00
EX	USER COEFF	29	51	158.71	0.00	0.00	0.00
EX	USER COEFF	30	52	255.63	0.00	0.00	0.00
EX	USER COEFF	31	53	364.26	0.00	0.00	0.00
EX	USER COEFF	32	54	364.26	0.00	0.00	0.00
EX	USER COEFF	33	55	255.63	0.00	0.00	0.00
EX	USER COEFF	34	56	158.71	0.00	0.00	0.00
EX	USER COEFF	35	57	73.50	0.00	0.00	0.00
EX	USER COEFF	36	58	12.13	0.00	0.00	0.00
EX	USER COEFF	37	59	35.97	0.00	0.00	0.00
EX	USER COEFF	38	60	71.52	0.00	0.00	0.00
EX	USER COEFF	39	61	118.79	0.00	0.00	0.00
EX	USER COEFF	40	62	118.79	0.00	0.00	0.00
EX	USER COEFF	41	63	71.52	0.00	0.00	0.00
EX	USER COEFF	42	64	35.97	0.00	0.00	0.00
EX	USER COEFF	43	65	12.13	0.00	0.00	0.00
EX	USER COEFF	44	66	118.79	0.00	0.00	0.00
EX	USER COEFF	45	67	71.52	0.00	0.00	0.00
EX	USER COEFF	46	68	35.97	0.00	0.00	0.00
EX	USER COEFF	47	69	12.13	0.00	0.00	0.00
EX	USER COEFF	48	70	12.13	0.00	0.00	0.00

EX	USER COEFF	49	71	35.97	0.00	0.00	0.00
EX	USER COEFF	50	72	71.52	0.00	0.00	0.00
EX	USER COEFF	51	73	118.79	0.00	0.00	0.00
EY	USER COEFF	2	2	0.00	679.71	0.00	0.00
EY	USER COEFF	5	5	0.00	549.74	0.00	0.00
EY	USER COEFF	8	8	0.00	549.74	0.00	0.00
EY	USER COEFF	10	10	0.00	201.32	0.00	0.00
EY	USER COEFF	11	11	0.00	201.32	0.00	0.00
EY	USER COEFF	12	34	0.00	119.31	0.00	0.00
EY	USER COEFF	13	35	0.00	238.63	0.00	0.00
EY	USER COEFF	14	36	0.00	357.94	0.00	0.00
EY	USER COEFF	15	37	0.00	477.26	0.00	0.00
EY	USER COEFF	16	38	0.00	477.26	0.00	0.00
EY	USER COEFF	17	39	0.00	357.94	0.00	0.00
EY	USER COEFF	18	40	0.00	238.63	0.00	0.00
EY	USER COEFF	19	41	0.00	119.31	0.00	0.00
EY	USER COEFF	20	42	0.00	73.50	0.00	0.00
EY	USER COEFF	21	43	0.00	158.71	0.00	0.00
EY	USER COEFF	22	44	0.00	255.63	0.00	0.00
EY	USER COEFF	23	45	0.00	364.26	0.00	0.00
EY	USER COEFF	24	46	0.00	364.26	0.00	0.00
EY	USER COEFF	25	47	0.00	255.63	0.00	0.00
EY	USER COEFF	26	48	0.00	158.71	0.00	0.00
EY	USER COEFF	27	49	0.00	73.50	0.00	0.00
EY	USER COEFF	28	50	0.00	73.50	0.00	0.00
EY	USER COEFF	29	51	0.00	158.71	0.00	0.00
EY	USER COEFF	30	52	0.00	255.63	0.00	0.00
EY	USER COEFF	31	53	0.00	364.26	0.00	0.00
EY	USER COEFF	32	54	0.00	364.26	0.00	0.00
EY	USER COEFF	33	55	0.00	255.63	0.00	0.00
EY	USER COEFF	34	56	0.00	158.71	0.00	0.00
EY	USER COEFF	35	57	0.00	73.50	0.00	0.00
EY	USER COEFF	36	58	0.00	12.13	0.00	0.00
EY	USER COEFF	37	59	0.00	35.97	0.00	0.00
EY	USER COEFF	38	60	0.00	71.52	0.00	0.00
EY	USER COEFF	39	61	0.00	118.79	0.00	0.00
EY	USER COEFF	40	62	0.00	118.79	0.00	0.00
EY	USER COEFF	41	63	0.00	71.52	0.00	0.00
EY	USER COEFF	42	64	0.00	35.97	0.00	0.00
EY	USER COEFF	43	65	0.00	12.13	0.00	0.00
EY	USER COEFF	44	66	0.00	118.79	0.00	0.00
EY	USER COEFF	45	67	0.00	71.52	0.00	0.00
EY	USER COEFF	46	68	0.00	35.97	0.00	0.00
EY	USER COEFF	47	69	0.00	12.13	0.00	0.00
EY	USER COEFF	48	70	0.00	12.13	0.00	0.00
EY	USER COEFF	49	71	0.00	35.97	0.00	0.00
EY	USER COEFF	50	72	0.00	71.52	0.00	0.00
EY	USER COEFF	51	73	0.00	118.79	0.00	0.00

Table: Auto Seismic Loads To Joints, Part 2 of 2

LoadPat	JointElem	Joint	MY Kgf-m	MZ Kgf-m	X m	Y m	Z m
EX	2	2	0.00	0.00	9.40000	6.22500	0.60000
EX	5	5	0.00	0.00	15.40000	6.22500	0.60000
EX	8	8	0.00	0.00	3.40000	6.22500	0.60000
EX	10	10	0.00	0.00	0.00000	6.22500	0.60000
EX	11	11	0.00	0.00	18.80000	6.22500	0.60000
EX	12	34	0.00	0.00	9.40000	1.24500	0.12000
EX	13	35	0.00	0.00	9.40000	2.49000	0.24000
EX	14	36	0.00	0.00	9.40000	3.73500	0.36000
EX	15	37	0.00	0.00	9.40000	4.98000	0.48000
EX	16	38	0.00	0.00	9.40000	7.47000	0.48000
EX	17	39	0.00	0.00	9.40000	8.71500	0.36000
EX	18	40	0.00	0.00	9.40000	9.96000	0.24000
EX	19	41	0.00	0.00	9.40000	11.20500	0.12000
EX	20	42	0.00	0.00	15.40000	1.24500	0.12000
EX	21	43	0.00	0.00	15.40000	2.49000	0.24000
EX	22	44	0.00	0.00	15.40000	3.73500	0.36000
EX	23	45	0.00	0.00	15.40000	4.98000	0.48000
EX	24	46	0.00	0.00	15.40000	7.47000	0.48000
EX	25	47	0.00	0.00	15.40000	8.71500	0.36000
EX	26	48	0.00	0.00	15.40000	9.96000	0.24000
EX	27	49	0.00	0.00	15.40000	11.20500	0.12000
EX	28	50	0.00	0.00	3.40000	1.24500	0.12000
EX	29	51	0.00	0.00	3.40000	2.49000	0.24000
EX	30	52	0.00	0.00	3.40000	3.73500	0.36000
EX	31	53	0.00	0.00	3.40000	4.98000	0.48000
EX	32	54	0.00	0.00	3.40000	7.47000	0.48000
EX	33	55	0.00	0.00	3.40000	8.71500	0.36000
EX	34	56	0.00	0.00	3.40000	9.96000	0.24000
EX	35	57	0.00	0.00	3.40000	11.20500	0.12000
EX	36	58	0.00	0.00	2.72000	11.20500	0.12000
EX	37	59	0.00	0.00	2.04000	9.96000	0.24000
EX	38	60	0.00	0.00	1.36000	8.71500	0.36000
EX	39	61	0.00	0.00	0.68000	7.47000	0.48000
EX	40	62	0.00	0.00	0.68000	4.98000	0.48000
EX	41	63	0.00	0.00	1.36000	3.73500	0.36000
EX	42	64	0.00	0.00	2.04000	2.49000	0.24000
EX	43	65	0.00	0.00	2.72000	1.24500	0.12000
EX	44	66	0.00	0.00	18.12000	4.98000	0.48000
EX	45	67	0.00	0.00	17.44000	3.73500	0.36000
EX	46	68	0.00	0.00	16.76000	2.49000	0.24000

EX	47	69	0.00	0.00	16.08000	1.24500	0.12000
EX	48	70	0.00	0.00	16.08000	11.20500	0.12000
EX	49	71	0.00	0.00	16.76000	9.96000	0.24000
EX	50	72	0.00	0.00	17.44000	8.71500	0.36000
EX	51	73	0.00	0.00	18.12000	7.47000	0.48000
EY	2	2	0.00	0.00	9.40000	6.22500	0.60000
EY	5	5	0.00	0.00	15.40000	6.22500	0.60000
EY	8	8	0.00	0.00	3.40000	6.22500	0.60000
EY	10	10	0.00	0.00	0.00000	6.22500	0.60000
EY	11	11	0.00	0.00	18.80000	6.22500	0.60000
EY	12	34	0.00	0.00	9.40000	1.24500	0.12000
EY	13	35	0.00	0.00	9.40000	2.49000	0.24000
EY	14	36	0.00	0.00	9.40000	3.73500	0.36000
EY	15	37	0.00	0.00	9.40000	4.98000	0.48000
EY	16	38	0.00	0.00	9.40000	7.47000	0.48000
EY	17	39	0.00	0.00	9.40000	8.71500	0.36000
EY	18	40	0.00	0.00	9.40000	9.96000	0.24000
EY	19	41	0.00	0.00	9.40000	11.20500	0.12000
EY	20	42	0.00	0.00	15.40000	1.24500	0.12000
EY	21	43	0.00	0.00	15.40000	2.49000	0.24000
EY	22	44	0.00	0.00	15.40000	3.73500	0.36000
EY	23	45	0.00	0.00	15.40000	4.98000	0.48000
EY	24	46	0.00	0.00	15.40000	7.47000	0.48000
EY	25	47	0.00	0.00	15.40000	8.71500	0.36000
EY	26	48	0.00	0.00	15.40000	9.96000	0.24000
EY	27	49	0.00	0.00	15.40000	11.20500	0.12000
EY	28	50	0.00	0.00	3.40000	1.24500	0.12000
EY	29	51	0.00	0.00	3.40000	2.49000	0.24000
EY	30	52	0.00	0.00	3.40000	3.73500	0.36000
EY	31	53	0.00	0.00	3.40000	4.98000	0.48000
EY	32	54	0.00	0.00	3.40000	7.47000	0.48000
EY	33	55	0.00	0.00	3.40000	8.71500	0.36000
EY	34	56	0.00	0.00	3.40000	9.96000	0.24000
EY	35	57	0.00	0.00	3.40000	11.20500	0.12000
EY	36	58	0.00	0.00	2.72000	11.20500	0.12000
EY	37	59	0.00	0.00	2.04000	9.96000	0.24000
EY	38	60	0.00	0.00	1.36000	8.71500	0.36000
EY	39	61	0.00	0.00	0.68000	7.47000	0.48000
EY	40	62	0.00	0.00	0.68000	4.98000	0.48000
EY	41	63	0.00	0.00	1.36000	3.73500	0.36000
EY	42	64	0.00	0.00	2.04000	2.49000	0.24000
EY	43	65	0.00	0.00	2.72000	1.24500	0.12000
EY	44	66	0.00	0.00	18.12000	4.98000	0.48000
EY	45	67	0.00	0.00	17.44000	3.73500	0.36000
EY	46	68	0.00	0.00	16.76000	2.49000	0.24000
EY	47	69	0.00	0.00	16.08000	1.24500	0.12000
EY	48	70	0.00	0.00	16.08000	11.20500	0.12000
EY	49	71	0.00	0.00	16.76000	9.96000	0.24000
EY	50	72	0.00	0.00	17.44000	8.71500	0.36000
EY	51	73	0.00	0.00	18.12000	7.47000	0.48000

Table: Auto Wave 3 - Wave Characteristics - General

WaveChar	WaveType	KinFactor	SWaterDepth	WaveHeight	WavePeriod	WaveTheory
			m	m	Sec	
Default	From Theory	1.000000	45.00000	18.00000	12.0000	Linear

Table: Case - Modal 1 - General

Case	ModeType	MaxNumModes	MinNumModes	EigenShift	EigenCutoff	EigenTol	AutoShift
				Cyc/sec	Cyc/sec		
MODAL	Eigen	12	1	0.0000E+00	0.0000E+00	1.0000E-09	Yes

Table: Case - Static 1 - Load Assignments

Case	LoadType	LoadName	LoadSF
DEAD	Load pattern	DEAD	1.000000
Lr	Load pattern	Lr	1.000000
EX	Load pattern	EX	1.000000
EY	Load pattern	EY	1.000000
W	Load pattern	W	1.000000
W-	Load pattern	W-	1.000000

Table: Combination Definitions, Part 1 of 3

ComboName	ComboType	AutoDesign	CaseType	CaseName	ScaleFactor	SteelDesign
CIM	Linear Add	No	Linear Static	DEAD	1.000000	Deflection
CIM			Linear Static	Lr	1.000000	
COMB1	Linear Add	No	Linear Static	DEAD	1.400000	Strength
COMB2	Linear Add	No	Linear Static	DEAD	1.200000	Strength
COMB2			Linear Static	Lr	0.500000	
COMB3	Linear Add	No	Linear Static	DEAD	1.200000	Strength
COMB3			Linear Static	Lr	1.600000	
COMB3			Linear Static	W	0.500000	
COMB4	Linear Add	No	Linear Static	DEAD	1.200000	Strength

COMB4			Linear Static	Lr	0.500000		
COMB4			Linear Static	W	1.000000		
EXDIS	Linear Add	No	Linear Static	EX	0.987654	None	
EYDIS	Linear Add	No	Linear Static	EY	0.987700	None	
COMB5X	Linear Add	No	Linear Static	DEAD	1.200000	Strength	
COMB5X			Response Combo	EXDIS	1.000000		
COMB5Y	Linear Add	No	Linear Static	DEAD	1.200000	Strength	
COMB5Y			Response Combo	EYDIS	1.000000		
COMB6	Linear Add	No	Linear Static	DEAD	0.900000	Strength	
COMB6			Linear Static	W	1.000000		
COMB7X	Linear Add	No	Linear Static	DEAD	0.900000	Strength	
COMB7X			Response Combo	EXDIS	1.000000		
COMB7Y	Linear Add	No	Linear Static	DEAD	0.900000	Strength	
COMB7Y			Response Combo	EYDIS	1.000000		

Table: Combination Definitions, Part 2 of 3

ComboName	CaseName	ConcDesign	AlumDesign	ColdDesign
CIM	DEAD	None	None	None
CIM	Lr			
COMB1	DEAD	None	None	None
COMB2	DEAD	None	None	None
COMB2	Lr			
COMB3	DEAD	None	None	None
COMB3	Lr			
COMB3	W			
COMB4	DEAD	None	None	None
COMB4	Lr			
COMB4	W			
EXDIS	EX	None	None	None
EYDIS	EY	None	None	None
COMB5X	DEAD	None	None	None
COMB5X	EXDIS			
COMB5Y	DEAD	None	None	None
COMB5Y	EYDIS			
COMB6	DEAD	None	None	None
COMB6	W			
COMB7X	DEAD	None	None	None
COMB7X	EXDIS			
COMB7Y	DEAD	None	None	None
COMB7Y	EYDIS			

Table: Combination Definitions, Part 3 of 3

ComboName	CaseName	GUID	Notes
CIM	DEAD		
CIM	Lr		
COMB1	DEAD		
COMB2	DEAD		
COMB2	Lr		
COMB3	DEAD		
COMB3	Lr		
COMB3	W		
COMB4	DEAD		
COMB4	Lr		
COMB4	W		
EXDIS	EX		
EYDIS	EY		
COMB5X	DEAD		
COMB5X	EXDIS		
COMB5Y	DEAD		
COMB5Y	EYDIS		
COMB6	DEAD		
COMB6	W		
COMB7X	DEAD		
COMB7X	EXDIS		
COMB7Y	DEAD		
COMB7Y	EYDIS		

Table: Coordinate Systems

Name	Type	X	Y	Z	AboutZ	AboutY	AboutX
		m	m	m	Degrees	Degrees	Degrees
GLOBAL	Cartesian	0.00000	0.00000	0.00000	0.000	0.000	0.000

Table: Frame Auto Mesh Assignments

Frame	AutoMesh	AtJoints	AtFrames	NumSegments	MaxLength	MaxDegrees
					m	Degrees
7	Yes	Yes	No	0	0.000000	0.000
8	Yes	Yes	No	0	0.000000	0.000
9	Yes	Yes	No	0	0.000000	0.000
10	Yes	Yes	No	0	0.000000	0.000
36	Yes	Yes	No	0	0.000000	0.000
37	Yes	Yes	No	0	0.000000	0.000

49	Yes	Yes	No	0	0.000000	0.000
50	Yes	Yes	No	0	0.000000	0.000
52	Yes	Yes	No	0	0.000000	0.000
57	Yes	Yes	No	0	0.000000	0.000
62	Yes	Yes	No	0	0.000000	0.000
67	Yes	Yes	No	0	0.000000	0.000
72	Yes	Yes	No	0	0.000000	0.000
77	Yes	Yes	No	0	0.000000	0.000
83	Yes	Yes	No	0	0.000000	0.000
84	Yes	Yes	No	0	0.000000	0.000
87	Yes	Yes	No	0	0.000000	0.000
88	Yes	Yes	No	0	0.000000	0.000
91	Yes	Yes	No	0	0.000000	0.000
92	Yes	Yes	No	0	0.000000	0.000
95	Yes	Yes	No	0	0.000000	0.000
96	Yes	Yes	No	0	0.000000	0.000
99	Yes	Yes	No	0	0.000000	0.000
100	Yes	Yes	No	0	0.000000	0.000
103	Yes	Yes	No	0	0.000000	0.000
104	Yes	Yes	No	0	0.000000	0.000
107	Yes	Yes	No	0	0.000000	0.000
108	Yes	Yes	No	0	0.000000	0.000
111	Yes	Yes	No	0	0.000000	0.000
112	Yes	Yes	No	0	0.000000	0.000
119	Yes	Yes	No	0	0.000000	0.000
121	Yes	Yes	No	0	0.000000	0.000
123	Yes	Yes	No	0	0.000000	0.000
125	Yes	Yes	No	0	0.000000	0.000
126	Yes	Yes	No	0	0.000000	0.000
132	Yes	Yes	No	0	0.000000	0.000
134	Yes	Yes	No	0	0.000000	0.000
136	Yes	Yes	No	0	0.000000	0.000
138	Yes	Yes	No	0	0.000000	0.000
139	Yes	Yes	No	0	0.000000	0.000
144	Yes	Yes	No	0	0.000000	0.000
146	Yes	Yes	No	0	0.000000	0.000
148	Yes	Yes	No	0	0.000000	0.000
150	Yes	Yes	No	0	0.000000	0.000
152	Yes	Yes	No	0	0.000000	0.000
157	Yes	Yes	No	0	0.000000	0.000
159	Yes	Yes	No	0	0.000000	0.000
161	Yes	Yes	No	0	0.000000	0.000
163	Yes	Yes	No	0	0.000000	0.000
165	Yes	Yes	No	0	0.000000	0.000

Table: Frame Design Procedures

Frame	DesignProc
7	From Material
8	From Material
9	From Material
10	From Material
36	From Material
37	From Material
49	From Material
50	From Material
52	From Material
57	From Material
62	From Material
67	From Material
72	From Material
77	From Material
83	From Material
84	From Material
87	From Material
88	From Material
91	From Material
92	From Material
95	From Material
96	From Material
99	From Material
100	From Material
103	From Material
104	From Material
107	From Material
108	From Material
111	From Material
112	From Material
119	From Material
121	From Material
123	From Material
125	From Material
126	From Material
132	From Material
134	From Material
136	From Material
138	From Material
139	From Material
144	From Material
146	From Material
148	From Material
150	From Material

152 From Material
157 From Material
159 From Material
161 From Material
163 From Material
165 From Material

Table: Frame Loads - Distributed, Part 1 of 3

Frame	LoadPat	CoordSys	Type	Dir	DistType	RelDistA
7	DEAD	GLOBAL	Force	Gravity	RelDist	0.0000
7	Lr	GLOBAL	Force	Gravity	RelDist	0.0000
7	W	GLOBAL	Force	Gravity	RelDist	0.0000
8	DEAD	GLOBAL	Force	Gravity	RelDist	0.0000
8	Lr	GLOBAL	Force	Gravity	RelDist	0.0000
8	W	GLOBAL	Force	Gravity	RelDist	0.0000
9	DEAD	GLOBAL	Force	Gravity	RelDist	0.0000
9	Lr	GLOBAL	Force	Gravity	RelDist	0.0000
9	W	GLOBAL	Force	Gravity	RelDist	0.0000
10	DEAD	GLOBAL	Force	Gravity	RelDist	0.0000
10	Lr	GLOBAL	Force	Gravity	RelDist	0.0000
10	W	GLOBAL	Force	Gravity	RelDist	0.0000
36	DEAD	GLOBAL	Force	Gravity	RelDist	0.0000
36	Lr	GLOBAL	Force	Gravity	RelDist	0.0000
36	W	GLOBAL	Force	Gravity	RelDist	0.0000
37	DEAD	GLOBAL	Force	Gravity	RelDist	0.0000
37	Lr	GLOBAL	Force	Gravity	RelDist	0.0000
37	W	GLOBAL	Force	Gravity	RelDist	0.0000
49	DEAD	GLOBAL	Force	Gravity	RelDist	0.0000
49	Lr	GLOBAL	Force	Gravity	RelDist	0.0000
49	W	GLOBAL	Force	Gravity	RelDist	0.0000
50	DEAD	GLOBAL	Force	Gravity	RelDist	0.0000
50	Lr	GLOBAL	Force	Gravity	RelDist	0.0000
50	W	GLOBAL	Force	Gravity	RelDist	0.0000
83	DEAD	GLOBAL	Force	Gravity	RelDist	0.0000
83	Lr	GLOBAL	Force	Gravity	RelDist	0.0000
83	W	GLOBAL	Force	Gravity	RelDist	0.0000
84	DEAD	GLOBAL	Force	Gravity	RelDist	0.0000
84	Lr	GLOBAL	Force	Gravity	RelDist	0.0000
84	W	GLOBAL	Force	Gravity	RelDist	0.0000
87	DEAD	GLOBAL	Force	Gravity	RelDist	0.0000
87	Lr	GLOBAL	Force	Gravity	RelDist	0.0000
87	W	GLOBAL	Force	Gravity	RelDist	0.0000
88	DEAD	GLOBAL	Force	Gravity	RelDist	0.0000
88	Lr	GLOBAL	Force	Gravity	RelDist	0.0000
88	W	GLOBAL	Force	Gravity	RelDist	0.0000
91	DEAD	GLOBAL	Force	Gravity	RelDist	0.0000
91	Lr	GLOBAL	Force	Gravity	RelDist	0.0000
91	W	GLOBAL	Force	Gravity	RelDist	0.0000
92	DEAD	GLOBAL	Force	Gravity	RelDist	0.0000
92	Lr	GLOBAL	Force	Gravity	RelDist	0.0000
92	W	GLOBAL	Force	Gravity	RelDist	0.0000
95	DEAD	GLOBAL	Force	Gravity	RelDist	0.0000
95	Lr	GLOBAL	Force	Gravity	RelDist	0.0000
95	W	GLOBAL	Force	Gravity	RelDist	0.0000
96	DEAD	GLOBAL	Force	Gravity	RelDist	0.0000
96	Lr	GLOBAL	Force	Gravity	RelDist	0.0000
96	W	GLOBAL	Force	Gravity	RelDist	0.0000
99	DEAD	GLOBAL	Force	Gravity	RelDist	0.0000
99	Lr	GLOBAL	Force	Gravity	RelDist	0.0000
99	W	GLOBAL	Force	Gravity	RelDist	0.0000
100	DEAD	GLOBAL	Force	Gravity	RelDist	0.0000
100	Lr	GLOBAL	Force	Gravity	RelDist	0.0000
100	W	GLOBAL	Force	Gravity	RelDist	0.0000
103	DEAD	GLOBAL	Force	Gravity	RelDist	0.0000
103	Lr	GLOBAL	Force	Gravity	RelDist	0.0000
103	W	GLOBAL	Force	Gravity	RelDist	0.0000
104	DEAD	GLOBAL	Force	Gravity	RelDist	0.0000
104	Lr	GLOBAL	Force	Gravity	RelDist	0.0000
104	W	GLOBAL	Force	Gravity	RelDist	0.0000
107	DEAD	GLOBAL	Force	Gravity	RelDist	0.0000
107	Lr	GLOBAL	Force	Gravity	RelDist	0.0000
107	W	GLOBAL	Force	Gravity	RelDist	0.0000
108	DEAD	GLOBAL	Force	Gravity	RelDist	0.0000
108	Lr	GLOBAL	Force	Gravity	RelDist	0.0000
108	W	GLOBAL	Force	Gravity	RelDist	0.0000
111	DEAD	GLOBAL	Force	Gravity	RelDist	0.0000
111	Lr	GLOBAL	Force	Gravity	RelDist	0.0000
111	W	GLOBAL	Force	Gravity	RelDist	0.0000
112	DEAD	GLOBAL	Force	Gravity	RelDist	0.0000
112	Lr	GLOBAL	Force	Gravity	RelDist	0.0000
112	W	GLOBAL	Force	Gravity	RelDist	0.0000
119	DEAD	GLOBAL	Force	Gravity	RelDist	0.0000
119	Lr	GLOBAL	Force	Gravity	RelDist	0.0000
119	W	GLOBAL	Force	Gravity	RelDist	0.0000
121	DEAD	GLOBAL	Force	Gravity	RelDist	0.0000
121	Lr	GLOBAL	Force	Gravity	RelDist	0.0000
121	W	GLOBAL	Force	Gravity	RelDist	0.0000
123	DEAD	GLOBAL	Force	Gravity	RelDist	0.0000
123	Lr	GLOBAL	Force	Gravity	RelDist	0.0000
123	W	GLOBAL	Force	Gravity	RelDist	0.0000
125	DEAD	GLOBAL	Force	Gravity	RelDist	0.0000

125	Lr	GLOBAL	Force	Gravity	RelDist	0.0000
125	W	GLOBAL	Force	Gravity	RelDist	0.0000
132	DEAD	GLOBAL	Force	Gravity	RelDist	0.0000
132	Lr	GLOBAL	Force	Gravity	RelDist	0.0000
132	W	GLOBAL	Force	Gravity	RelDist	0.0000
134	DEAD	GLOBAL	Force	Gravity	RelDist	0.0000
134	Lr	GLOBAL	Force	Gravity	RelDist	0.0000
134	W	GLOBAL	Force	Gravity	RelDist	0.0000
136	DEAD	GLOBAL	Force	Gravity	RelDist	0.0000
136	Lr	GLOBAL	Force	Gravity	RelDist	0.0000
136	W	GLOBAL	Force	Gravity	RelDist	0.0000
138	DEAD	GLOBAL	Force	Gravity	RelDist	0.0000
138	Lr	GLOBAL	Force	Gravity	RelDist	0.0000
138	W	GLOBAL	Force	Gravity	RelDist	0.0000
144	DEAD	GLOBAL	Force	Gravity	RelDist	0.0000
144	Lr	GLOBAL	Force	Gravity	RelDist	0.0000
144	W	GLOBAL	Force	Gravity	RelDist	0.0000
146	DEAD	GLOBAL	Force	Gravity	RelDist	0.0000
146	Lr	GLOBAL	Force	Gravity	RelDist	0.0000
146	W	GLOBAL	Force	Gravity	RelDist	0.0000
148	DEAD	GLOBAL	Force	Gravity	RelDist	0.0000
148	Lr	GLOBAL	Force	Gravity	RelDist	0.0000
148	W	GLOBAL	Force	Gravity	RelDist	0.0000
150	DEAD	GLOBAL	Force	Gravity	RelDist	0.0000
150	Lr	GLOBAL	Force	Gravity	RelDist	0.0000
150	W	GLOBAL	Force	Gravity	RelDist	0.0000
157	DEAD	GLOBAL	Force	Gravity	RelDist	0.0000
157	Lr	GLOBAL	Force	Gravity	RelDist	0.0000
157	W	GLOBAL	Force	Gravity	RelDist	0.0000
159	DEAD	GLOBAL	Force	Gravity	RelDist	0.0000
159	Lr	GLOBAL	Force	Gravity	RelDist	0.0000
159	W	GLOBAL	Force	Gravity	RelDist	0.0000
161	DEAD	GLOBAL	Force	Gravity	RelDist	0.0000
161	Lr	GLOBAL	Force	Gravity	RelDist	0.0000
161	W	GLOBAL	Force	Gravity	RelDist	0.0000
163	DEAD	GLOBAL	Force	Gravity	RelDist	0.0000
163	Lr	GLOBAL	Force	Gravity	RelDist	0.0000
163	W	GLOBAL	Force	Gravity	RelDist	0.0000

Table: Frame Loads - Distributed, Part 2 of 3

Frame	LoadPat	RelDistB	AbsDistA	AbsDistB	FOverLA	FOverLB
			m	m	Kgf/m	Kgf/m
7	DEAD	1.0000	0.00000	3.40000	44.00	44.00
7	Lr	1.0000	0.00000	3.40000	63.00	63.00
7	W	1.0000	0.00000	3.40000	50.00	50.00
8	DEAD	1.0000	0.00000	6.00000	44.00	44.00
8	Lr	1.0000	0.00000	6.00000	63.00	63.00
8	W	1.0000	0.00000	6.00000	50.00	50.00
9	DEAD	1.0000	0.00000	6.00000	44.00	44.00
9	Lr	1.0000	0.00000	6.00000	63.00	63.00
9	W	1.0000	0.00000	6.00000	50.00	50.00
10	DEAD	1.0000	0.00000	3.40000	44.00	44.00
10	Lr	1.0000	0.00000	3.40000	63.00	63.00
10	W	1.0000	0.00000	3.40000	50.00	50.00
36	DEAD	1.0000	0.00000	6.00000	44.00	44.00
36	Lr	1.0000	0.00000	6.00000	63.00	63.00
36	W	1.0000	0.00000	6.00000	50.00	50.00
37	DEAD	1.0000	0.00000	6.00000	44.00	44.00
37	Lr	1.0000	0.00000	6.00000	63.00	63.00
37	W	1.0000	0.00000	6.00000	50.00	50.00
49	DEAD	1.0000	0.00000	6.00000	44.00	44.00
49	Lr	1.0000	0.00000	6.00000	63.00	63.00
49	W	1.0000	0.00000	6.00000	50.00	50.00
50	DEAD	1.0000	0.00000	6.00000	44.00	44.00
50	Lr	1.0000	0.00000	6.00000	63.00	63.00
50	W	1.0000	0.00000	6.00000	50.00	50.00
83	DEAD	1.0000	0.00000	6.00000	44.00	44.00
83	Lr	1.0000	0.00000	6.00000	63.00	63.00
83	W	1.0000	0.00000	6.00000	50.00	50.00
84	DEAD	1.0000	0.00000	6.00000	44.00	44.00
84	Lr	1.0000	0.00000	6.00000	63.00	63.00
84	W	1.0000	0.00000	6.00000	50.00	50.00
87	DEAD	1.0000	0.00000	6.00000	44.00	44.00
87	Lr	1.0000	0.00000	6.00000	63.00	63.00
87	W	1.0000	0.00000	6.00000	50.00	50.00
88	DEAD	1.0000	0.00000	6.00000	44.00	44.00
88	Lr	1.0000	0.00000	6.00000	63.00	63.00
88	W	1.0000	0.00000	6.00000	50.00	50.00
91	DEAD	1.0000	0.00000	6.00000	44.00	44.00
91	Lr	1.0000	0.00000	6.00000	63.00	63.00
91	W	1.0000	0.00000	6.00000	50.00	50.00
92	DEAD	1.0000	0.00000	6.00000	44.00	44.00
92	Lr	1.0000	0.00000	6.00000	63.00	63.00
92	W	1.0000	0.00000	6.00000	50.00	50.00
95	DEAD	1.0000	0.00000	6.00000	44.00	44.00
95	Lr	1.0000	0.00000	6.00000	63.00	63.00
95	W	1.0000	0.00000	6.00000	50.00	50.00
96	DEAD	1.0000	0.00000	6.00000	44.00	44.00
96	Lr	1.0000	0.00000	6.00000	63.00	63.00
96	W	1.0000	0.00000	6.00000	50.00	50.00
99	DEAD	1.0000	0.00000	6.00000	44.00	44.00
99	Lr	1.0000	0.00000	6.00000	63.00	63.00

99	W	1.0000	0.00000	6.00000	50.00	50.00
100	DEAD	1.0000	0.00000	6.00000	44.00	44.00
100	Lr	1.0000	0.00000	6.00000	63.00	63.00
100	W	1.0000	0.00000	6.00000	50.00	50.00
103	DEAD	1.0000	0.00000	6.00000	44.00	44.00
103	Lr	1.0000	0.00000	6.00000	63.00	63.00
103	W	1.0000	0.00000	6.00000	50.00	50.00
104	DEAD	1.0000	0.00000	6.00000	44.00	44.00
104	Lr	1.0000	0.00000	6.00000	63.00	63.00
104	W	1.0000	0.00000	6.00000	50.00	50.00
107	DEAD	1.0000	0.00000	6.00000	44.00	44.00
107	Lr	1.0000	0.00000	6.00000	63.00	63.00
107	W	1.0000	0.00000	6.00000	50.00	50.00
108	DEAD	1.0000	0.00000	6.00000	44.00	44.00
108	Lr	1.0000	0.00000	6.00000	63.00	63.00
108	W	1.0000	0.00000	6.00000	50.00	50.00
111	DEAD	1.0000	0.00000	6.00000	44.00	44.00
111	Lr	1.0000	0.00000	6.00000	63.00	63.00
111	W	1.0000	0.00000	6.00000	50.00	50.00
112	DEAD	1.0000	0.00000	6.00000	44.00	44.00
112	Lr	1.0000	0.00000	6.00000	63.00	63.00
112	W	1.0000	0.00000	6.00000	50.00	50.00
119	DEAD	1.0000	0.00000	0.68000	44.00	44.00
119	Lr	1.0000	0.00000	0.68000	63.00	63.00
119	W	1.0000	0.00000	0.68000	50.00	50.00
121	DEAD	1.0000	0.00000	1.36000	44.00	44.00
121	Lr	1.0000	0.00000	1.36000	63.00	63.00
121	W	1.0000	0.00000	1.36000	50.00	50.00
123	DEAD	1.0000	0.00000	2.04000	44.00	44.00
123	Lr	1.0000	0.00000	2.04000	63.00	63.00
123	W	1.0000	0.00000	2.04000	50.00	50.00
125	DEAD	1.0000	0.00000	2.72000	44.00	44.00
125	Lr	1.0000	0.00000	2.72000	63.00	63.00
125	W	1.0000	0.00000	2.72000	50.00	50.00
132	DEAD	1.0000	0.00000	2.72000	44.00	44.00
132	Lr	1.0000	0.00000	2.72000	63.00	63.00
132	W	1.0000	0.00000	2.72000	50.00	50.00
134	DEAD	1.0000	0.00000	2.04000	44.00	44.00
134	Lr	1.0000	0.00000	2.04000	63.00	63.00
134	W	1.0000	0.00000	2.04000	50.00	50.00
136	DEAD	1.0000	0.00000	1.36000	44.00	44.00
136	Lr	1.0000	0.00000	1.36000	63.00	63.00
136	W	1.0000	0.00000	1.36000	50.00	50.00
138	DEAD	1.0000	0.00000	0.68000	44.00	44.00
138	Lr	1.0000	0.00000	0.68000	63.00	63.00
138	W	1.0000	0.00000	0.68000	50.00	50.00
144	DEAD	1.0000	0.00000	2.72000	44.00	44.00
144	Lr	1.0000	0.00000	2.72000	63.00	63.00
144	W	1.0000	0.00000	2.72000	50.00	50.00
146	DEAD	1.0000	0.00000	2.04000	44.00	44.00
146	Lr	1.0000	0.00000	2.04000	63.00	63.00
146	W	1.0000	0.00000	2.04000	50.00	50.00
148	DEAD	1.0000	0.00000	1.36000	44.00	44.00
148	Lr	1.0000	0.00000	1.36000	63.00	63.00
148	W	1.0000	0.00000	1.36000	50.00	50.00
150	DEAD	1.0000	0.00000	0.68000	44.00	44.00
150	Lr	1.0000	0.00000	0.68000	63.00	63.00
150	W	1.0000	0.00000	0.68000	50.00	50.00
157	DEAD	1.0000	0.00000	0.68000	44.00	44.00
157	Lr	1.0000	0.00000	0.68000	63.00	63.00
157	W	1.0000	0.00000	0.68000	50.00	50.00
159	DEAD	1.0000	0.00000	1.36000	44.00	44.00
159	Lr	1.0000	0.00000	1.36000	63.00	63.00
159	W	1.0000	0.00000	1.36000	50.00	50.00
161	DEAD	1.0000	0.00000	2.04000	44.00	44.00
161	Lr	1.0000	0.00000	2.04000	63.00	63.00
161	W	1.0000	0.00000	2.04000	50.00	50.00
163	DEAD	1.0000	0.00000	2.72000	44.00	44.00
163	Lr	1.0000	0.00000	2.72000	63.00	63.00
163	W	1.0000	0.00000	2.72000	50.00	50.00

Table: Frame Loads - Distributed, Part 3 of 3

Frame	LoadPat	GUID
7	DEAD	
7	Lr	
7	W	
8	DEAD	
8	Lr	
8	W	
9	DEAD	
9	Lr	
9	W	
10	DEAD	
10	Lr	
10	W	
36	DEAD	
36	Lr	
36	W	
37	DEAD	
37	Lr	
37	W	

49	DEAD
49	Lr
49	W
50	DEAD
50	Lr
50	W
83	DEAD
83	Lr
83	W
84	DEAD
84	Lr
84	W
87	DEAD
87	Lr
87	W
88	DEAD
88	Lr
88	W
91	DEAD
91	Lr
91	W
92	DEAD
92	Lr
92	W
95	DEAD
95	Lr
95	W
96	DEAD
96	Lr
96	W
99	DEAD
99	Lr
99	W
100	DEAD
100	Lr
100	W
103	DEAD
103	Lr
103	W
104	DEAD
104	Lr
104	W
107	DEAD
107	Lr
107	W
108	DEAD
108	Lr
108	W
111	DEAD
111	Lr
111	W
112	DEAD
112	Lr
112	W
119	DEAD
119	Lr
119	W
121	DEAD
121	Lr
121	W
123	DEAD
123	Lr
123	W
125	DEAD
125	Lr
125	W
132	DEAD
132	Lr
132	W
134	DEAD
134	Lr
134	W
136	DEAD
136	Lr
136	W
138	DEAD
138	Lr
138	W
144	DEAD
144	Lr
144	W
146	DEAD
146	Lr
146	W
148	DEAD
148	Lr
148	W
150	DEAD
150	Lr
150	W
157	DEAD
157	Lr
157	W
159	DEAD
159	Lr

159	W
161	DEAD
161	Lr
161	W
163	DEAD
163	Lr
163	W

Table: Frame Output Station Assignments

Frame	StationType	MinNumSta	MaxStaSpcg m	AddAtElmInt	AddAtPtLoad
7	MaxStaSpcg		0.50000	Yes	Yes
8	MaxStaSpcg		0.50000	Yes	Yes
9	MaxStaSpcg		0.50000	Yes	Yes
10	MaxStaSpcg		0.50000	Yes	Yes
36	MaxStaSpcg		0.50000	Yes	Yes
37	MaxStaSpcg		0.50000	Yes	Yes
49	MaxStaSpcg		0.50000	Yes	Yes
50	MaxStaSpcg		0.50000	Yes	Yes
52	MinNumSta	3		Yes	Yes
57	MinNumSta	3		Yes	Yes
62	MinNumSta	3		Yes	Yes
67	MinNumSta	3		Yes	Yes
72	MinNumSta	3		Yes	Yes
77	MinNumSta	3		Yes	Yes
83	MaxStaSpcg		0.50000	Yes	Yes
84	MaxStaSpcg		0.50000	Yes	Yes
87	MaxStaSpcg		0.50000	Yes	Yes
88	MaxStaSpcg		0.50000	Yes	Yes
91	MaxStaSpcg		0.50000	Yes	Yes
92	MaxStaSpcg		0.50000	Yes	Yes
95	MaxStaSpcg		0.50000	Yes	Yes
96	MaxStaSpcg		0.50000	Yes	Yes
99	MaxStaSpcg		0.50000	Yes	Yes
100	MaxStaSpcg		0.50000	Yes	Yes
103	MaxStaSpcg		0.50000	Yes	Yes
104	MaxStaSpcg		0.50000	Yes	Yes
107	MaxStaSpcg		0.50000	Yes	Yes
108	MaxStaSpcg		0.50000	Yes	Yes
111	MaxStaSpcg		0.50000	Yes	Yes
112	MaxStaSpcg		0.50000	Yes	Yes
119	MaxStaSpcg		0.50000	Yes	Yes
121	MaxStaSpcg		0.50000	Yes	Yes
123	MaxStaSpcg		0.50000	Yes	Yes
125	MaxStaSpcg		0.50000	Yes	Yes
126	MinNumSta	3		Yes	Yes
132	MaxStaSpcg		0.50000	Yes	Yes
134	MaxStaSpcg		0.50000	Yes	Yes
136	MaxStaSpcg		0.50000	Yes	Yes
138	MaxStaSpcg		0.50000	Yes	Yes
139	MinNumSta	3		Yes	Yes
144	MaxStaSpcg		0.50000	Yes	Yes
146	MaxStaSpcg		0.50000	Yes	Yes
148	MaxStaSpcg		0.50000	Yes	Yes
150	MaxStaSpcg		0.50000	Yes	Yes
152	MinNumSta	3		Yes	Yes
157	MaxStaSpcg		0.50000	Yes	Yes
159	MaxStaSpcg		0.50000	Yes	Yes
161	MaxStaSpcg		0.50000	Yes	Yes
163	MaxStaSpcg		0.50000	Yes	Yes
165	MinNumSta	3		Yes	Yes

Table: Frame Release Assignments 1 - General, Part 1 of 2

Frame	PI	V2I	V3I	TI	M2I	M3I	PJ	V2J
7	No	No	No	No	Yes	Yes	No	No
8	No	No	No	No	Yes	Yes	No	No
9	No	No	No	No	Yes	Yes	No	No
10	No	No	No	No	Yes	Yes	No	No
36	No	No	No	No	Yes	Yes	No	No
37	No	No	No	No	Yes	Yes	No	No
49	No	No	No	No	Yes	Yes	No	No
50	No	No	No	No	Yes	Yes	No	No
83	No	No	No	No	Yes	Yes	No	No
84	No	No	No	No	Yes	Yes	No	No
87	No	No	No	No	Yes	Yes	No	No
88	No	No	No	No	Yes	Yes	No	No
91	No	No	No	No	Yes	Yes	No	No
92	No	No	No	No	Yes	Yes	No	No
95	No	No	No	No	Yes	Yes	No	No
96	No	No	No	No	Yes	Yes	No	No
99	No	No	No	No	Yes	Yes	No	No
100	No	No	No	No	Yes	Yes	No	No
103	No	No	No	No	Yes	Yes	No	No
104	No	No	No	No	Yes	Yes	No	No
107	No	No	No	No	Yes	Yes	No	No
108	No	No	No	No	Yes	Yes	No	No
111	No	No	No	No	Yes	Yes	No	No
112	No	No	No	No	Yes	Yes	No	No

119	No	No	No	No	Yes	Yes	No	No
121	No	No	No	No	Yes	Yes	No	No
123	No	No	No	No	Yes	Yes	No	No
125	No	No	No	No	Yes	Yes	No	No
132	No	No	No	No	Yes	Yes	No	No
134	No	No	No	No	Yes	Yes	No	No
136	No	No	No	No	Yes	Yes	No	No
138	No	No	No	No	Yes	Yes	No	No
144	No	No	No	No	Yes	Yes	No	No
146	No	No	No	No	Yes	Yes	No	No
148	No	No	No	No	Yes	Yes	No	No
150	No	No	No	No	Yes	Yes	No	No
157	No	No	No	No	Yes	Yes	No	No
159	No	No	No	No	Yes	Yes	No	No
161	No	No	No	No	Yes	Yes	No	No
163	No	No	No	No	Yes	Yes	No	No

Table: Frame Release Assignments 1 - General, Part 2 of 2

Frame	V3J	TJ	M2J	M3J	PartialFix
7	No	No	Yes	Yes	No
8	No	No	Yes	Yes	No
9	No	No	Yes	Yes	No
10	No	No	Yes	Yes	No
36	No	No	Yes	Yes	No
37	No	No	Yes	Yes	No
49	No	No	Yes	Yes	No
50	No	No	Yes	Yes	No
83	No	No	Yes	Yes	No
84	No	No	Yes	Yes	No
87	No	No	Yes	Yes	No
88	No	No	Yes	Yes	No
91	No	No	Yes	Yes	No
92	No	No	Yes	Yes	No
95	No	No	Yes	Yes	No
96	No	No	Yes	Yes	No
99	No	No	Yes	Yes	No
100	No	No	Yes	Yes	No
103	No	No	Yes	Yes	No
104	No	No	Yes	Yes	No
107	No	No	Yes	Yes	No
108	No	No	Yes	Yes	No
111	No	No	Yes	Yes	No
112	No	No	Yes	Yes	No
119	No	No	Yes	Yes	No
121	No	No	Yes	Yes	No
123	No	No	Yes	Yes	No
125	No	No	Yes	Yes	No
132	No	No	Yes	Yes	No
134	No	No	Yes	Yes	No
136	No	No	Yes	Yes	No
138	No	No	Yes	Yes	No
144	No	No	Yes	Yes	No
146	No	No	Yes	Yes	No
148	No	No	Yes	Yes	No
150	No	No	Yes	Yes	No
157	No	No	Yes	Yes	No
159	No	No	Yes	Yes	No
161	No	No	Yes	Yes	No
163	No	No	Yes	Yes	No

Table: Frame Section Assignments

Frame	SectionType	AutoSelect	AnalSect	DesignSect	MatProp
7	Box/Tube	N.A.	TB200	TB200	Default
8	Box/Tube	N.A.	TB200	TB200	Default
9	Box/Tube	N.A.	TB200	TB200	Default
10	Box/Tube	N.A.	TB200	TB200	Default
36	Channel	N.A.	P160	P160	Default
37	Channel	N.A.	P160	P160	Default
49	Channel	N.A.	P160	P160	Default
50	Channel	N.A.	P160	P160	Default
52	I/Wide Flange	N.A.	IPE270	IPE270	Default
57	I/Wide Flange	N.A.	IPE270	IPE270	Default
62	I/Wide Flange	N.A.	IPE270	IPE270	Default
67	I/Wide Flange	N.A.	IPE270	IPE270	Default
72	I/Wide Flange	N.A.	IPE270	IPE270	Default
77	I/Wide Flange	N.A.	IPE270	IPE270	Default
83	Channel	N.A.	P160	P160	Default
84	Channel	N.A.	P160	P160	Default
87	Channel	N.A.	P160	P160	Default
88	Channel	N.A.	P160	P160	Default
91	Channel	N.A.	P160	P160	Default
92	Channel	N.A.	P160	P160	Default
95	Channel	N.A.	P160	P160	Default
96	Channel	N.A.	P160	P160	Default
99	Channel	N.A.	P160	P160	Default
100	Channel	N.A.	P160	P160	Default
103	Channel	N.A.	P160	P160	Default

104	Channel	N.A.	P160	P160	Default
107	Channel	N.A.	P160	P160	Default
108	Channel	N.A.	P160	P160	Default
111	Channel	N.A.	P160	P160	Default
112	Channel	N.A.	P160	P160	Default
119	Channel	N.A.	P160	P160	Default
121	Channel	N.A.	P160	P160	Default
123	Channel	N.A.	P160	P160	Default
125	Channel	N.A.	P160	P160	Default
126	Box/Tube	N.A.	TB200	TB200	Default
132	Channel	N.A.	P160	P160	Default
134	Channel	N.A.	P160	P160	Default
136	Channel	N.A.	P160	P160	Default
138	Channel	N.A.	P160	P160	Default
139	Box/Tube	N.A.	TB200	TB200	Default
144	Channel	N.A.	P160	P160	Default
146	Channel	N.A.	P160	P160	Default
148	Channel	N.A.	P160	P160	Default
150	Channel	N.A.	P160	P160	Default
152	Box/Tube	N.A.	TB200	TB200	Default
157	Channel	N.A.	P160	P160	Default
159	Channel	N.A.	P160	P160	Default
161	Channel	N.A.	P160	P160	Default
163	Channel	N.A.	P160	P160	Default
165	Box/Tube	N.A.	TB200	TB200	Default

Table: Frame Section Properties 01 - General, Part 1 of 7

SectionName	Material	Shape	t3	t2	tf	tw
			m	m	m	m
IPE270	A992Fy50	I/Wide Flange	0.270000	0.135000	0.010200	0.006600
IPE300	A992Fy50	I/Wide Flange	0.300000	0.150000	0.010700	0.007100
IPE330	A992Fy50	I/Wide Flange	0.330000	0.160000	0.011500	0.007500
P160	A992Fy50	Channel	0.120000	0.060000	0.002500	0.002500
TB200	A992Fy50	Box/Tube	0.200000	0.070000	0.003000	0.003000

Table: Frame Section Properties 01 - General, Part 2 of 7

SectionName	t2b	tfb	Area	TorsConst	I33	I22	AS2
	m	m	m2	m4	m4	m4	m2
IPE270	0.135000	0.010200	0.004590	1.590E-07	0.000058	4.200E-06	0.001782
IPE300	0.150000	0.010700	0.005380	1.990E-07	0.000084	6.040E-06	0.002130
IPE330	0.160000	0.011500	0.006260	2.810E-07	0.000118	7.880E-06	0.002475
P160			0.000588	1.199E-09	1.352E-06	2.115E-07	0.000300
TB200			0.001584	3.959E-06	7.726E-06	1.479E-06	0.001200

Table: Frame Section Properties 01 - General, Part 3 of 7

SectionName	AS3	S33	S22	Z33	Z22	R33	R22
	m2	m3	m3	m3	m3	m	m
IPE270	0.002295	0.000429	0.000062	0.000484	0.000097	0.112314	0.030250
IPE300	0.002675	0.000557	0.000081	0.000628	0.000125	0.124626	0.033506
IPE330	0.003067	0.000713	0.000099	0.000804	0.000154	0.137120	0.035479
P160	0.000300	0.000023	4.799E-06	0.000026	8.640E-06	0.047980	0.018973
TB200	0.000420	0.000077	0.000042	0.000098	0.000046	0.069839	0.030553

Table: Frame Section Properties 01 - General, Part 4 of 7

SectionName	ConcCol	ConcBeam	Color	TotalWt	TotalMass	FromFile	AMod
				Kgf	Kgf-s2/m		
IPE270	No	No	Green	1351.85	137.85	Yes	1.000000
IPE300	No	No	DarkGreen	0.00	0.00	Yes	1.000000
IPE330	No	No	DarkGreen	0.00	0.00	Yes	1.000000
P160	No	No	Orange	678.79	69.22	No	1.000000
TB200	No	No	Blue	587.74	59.93	No	1.000000

Table: Frame Section Properties 01 - General, Part 5 of 7

SectionName	A2Mod	A3Mod	JMod	I2Mod	I3Mod	MMod	WMod
IPE270	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
IPE300	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
IPE330	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
P160	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
TB200	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000

Table: Frame Section Properties 01 - General, Part 6 of 7

SectionName	SectInFile	FileName	GUID
IPE270	IPE270	c:\program files (x86)\computers and structures\sap2000 14\euro.pro	
IPE300	IPE300	c:\program files (x86)\computers and structures\sap2000 14\euro.pro	
IPE330	IPE330	c:\program files (x86)\computers and structures\sap2000 14\euro.pro	

P160
TB200

Table: Frame Section Properties 01 - General, Part 7 of 7

SectionName	Notes
IPE270	Imported 03/02/2022 6:10:51 a. m. from EURO.PRO
IPE300	Imported 03/02/2022 5:54:30 a. m. from EURO.PRO
IPE330	Imported 03/02/2022 5:54:30 a. m. from EURO.PRO
P160	Added 03/02/2022 5:56:52 a. m.
TB200	Added 26/01/2022 2:52:07 p. m.

Table: Function - Power Spectral Density - User

Name	Frequency Cyc/sec	Value
UNIFPSD	0.0000E+00	1.000000
UNIFPSD	1.0000E+00	1.000000

Table: Function - Response Spectrum - User

Name	Period Sec	Accel	FuncDamp
UNIFRS	0.000000	1.000000	0.050000
UNIFRS	1.000000	1.000000	

Table: Function - Steady State - User

Name	Frequency Cyc/sec	Value
UNIFSS	0.0000E+00	1.000000
UNIFSS	1.0000E+00	1.000000

Table: Function - Time History - User

Name	Time Sec	Value
RAMPTH	0.0000	0.000000
RAMPTH	1.0000	1.000000
RAMPTH	4.0000	1.000000
UNIFTH	0.0000	1.000000
UNIFTH	1.0000	1.000000

Table: Grid Lines, Part 1 of 2

CoordSys	AxisDir	GridID	XRYZCoord m	LineType	LineColor	Visible	BubbleLoc
GLOBAL	X	A	0.00000	Primary	Gray8Dark	Yes	End
GLOBAL	X	B	3.40000	Primary	Gray8Dark	Yes	End
GLOBAL	X	C	9.40000	Primary	Gray8Dark	Yes	End
GLOBAL	X	D	15.40000	Primary	Gray8Dark	Yes	End
GLOBAL	X	E	18.80000	Primary	Gray8Dark	Yes	End
GLOBAL	Y	1	0.00000	Primary	Gray8Dark	Yes	Start
GLOBAL	Y	2	1.15000	Primary	Gray8Dark	Yes	Start
GLOBAL	Y	3	6.22500	Primary	Gray8Dark	Yes	Start
GLOBAL	Y	4	11.30000	Primary	Gray8Dark	Yes	Start
GLOBAL	Y	5	12.45000	Primary	Gray8Dark	Yes	Start
GLOBAL	Z	Z1	0.00000	Primary	Gray8Dark	Yes	End
GLOBAL	Z	Z2	0.60000	Primary	Gray8Dark	Yes	End

Table: Grid Lines, Part 2 of 2

CoordSys	AllVisible	BubbleSize m
GLOBAL	Yes	1.250000
GLOBAL		
GLOBAL		
GLOBAL		
GLOBAL		
GLOBAL		
GLOBAL		
GLOBAL		
GLOBAL		
GLOBAL		
GLOBAL		
GLOBAL		

Table: Groups 1 - Definitions, Part 1 of 3

GroupName	Selection	SectionCut	Steel	Concrete	Aluminum	ColdFormed	Stage
ALL	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table: Groups 1 - Definitions, Part 2 of 3

GroupName	Bridge	AutoSeismic	AutoWind	SelDesSteel	SelDesAlum	SelDesCold	MassWeight
ALL	Yes	No	No	No	No	No	Yes

Table: Groups 1 - Definitions, Part 3 of 3

GroupName	Color
ALL	Red

Table: Groups 3 - Masses and Weights

GroupName	SelfMass Kgf-s2/m	SelfWeight Kgf	TotalMassX Kgf-s2/m	TotalMassY Kgf-s2/m	TotalMassZ Kgf-s2/m
ALL	267.00	2618.38	267.00	267.00	267.00

Table: Joint Pattern Definitions

Pattern
Default

Table: Joint Restraint Assignments

Joint	U1	U2	U3	R1	R2	R3
1	Yes	Yes	Yes	No	No	No
3	Yes	Yes	Yes	No	No	No
4	Yes	Yes	Yes	No	No	No
6	Yes	Yes	Yes	No	No	No
7	Yes	Yes	Yes	No	No	No
9	Yes	Yes	Yes	No	No	No
10	Yes	Yes	Yes	No	No	No
11	Yes	Yes	Yes	No	No	No

Table: Load Case Definitions, Part 1 of 2

Case	Type	InitialCond	ModalCase	BaseCase	DesTypeOpt	DesignType	AutoType
DEAD	LinStatic	Zero			Prog Det	DEAD	None
MODAL	LinModal	Zero			Prog Det	OTHER	None
Lr	LinStatic	Zero			Prog Det	ROOF LIVE	None
EX	LinStatic	Zero			Prog Det	QUAKE	None
EY	LinStatic	Zero			Prog Det	QUAKE	None
W	LinStatic	Zero			Prog Det	WIND	None
W-	LinStatic	Zero			Prog Det	WIND	None

Table: Load Case Definitions, Part 2 of 2

Case	RunCase	CaseStatus	GUID	Notes
DEAD	Yes	Finished		
MODAL	No	Not Run		
Lr	Yes	Finished		
EX	Yes	Finished		
EY	Yes	Finished		
W	Yes	Finished		
W-	Yes	Finished		

Table: Load Pattern Definitions

LoadPat	DesignType	SelfWtMult	AutoLoad	GUID	Notes
DEAD	DEAD	1.000000			
Lr	ROOF LIVE	0.000000			
EX	QUAKE	0.000000	USER COEFF		
EY	QUAKE	0.000000	USER COEFF		
W	WIND	0.000000	None		
W-	WIND	0.000000	None		

Table: Masses 1 - Mass Source

MassFrom	LoadPat	Multiplier
Loads	DEAD	1.000000

Table: Material Properties 01 - General, Part 1 of 2

Material	Type	SymType	TempDepend	Color	GUID
4000Psi	Concrete	Isotropic	No	Blue	
A992Fy50	Steel	Isotropic	No	Gray8Dark	

Table: Material Properties 01 - General, Part 2 of 2

Material	Notes
4000Psi	Normalweight f'c = 4 ksi added 26/01/2022 10:49:40 a. m.
A992Fy50	ASTM A992 Fy=50 ksi added 26/01/2022 10:49:40 a. m.

Table: Material Properties 02 - Basic Mechanical Properties

Material	UnitWeight	UnitMass	E1	G12	U12	A1
	Kgf/m3	Kgf-s2/m4	Kgf/m2	Kgf/m2		1/C
4000Psi	2.4028E+03	2.4501E+02	2534563564	1056068152	0.200000	9.9000E-06
A992Fy50	7.8490E+03	8.0038E+02	2.039E+10	7841930445	0.300000	1.1700E-05

Table: Material Properties 03a - Steel Data, Part 1 of 2

Material	Fy	Fu	EffFy	EffFu	SSCurveOpt	SSHysType	SHard	SMax
	Kgf/m2	Kgf/m2	Kgf/m2	Kgf/m2				
A992Fy50	35153481.31	45699525.70	38668829.44	50269478.27	Simple	Kinematic	0.015000	0.110000

Table: Material Properties 03a - Steel Data, Part 2 of 2

Material	SRup	FinalSlope
A992Fy50	0.170000	-0.100000

Table: Material Properties 03b - Concrete Data, Part 1 of 2

Material	Fc	LtWtConc	SSCurveOpt	SSHysType	SFc	SCap	FinalSlope	FAngle
	Kgf/m2							Degrees
4000Psi	2812278.50	No	Mander	Takeda	0.002219	0.005000	-0.100000	0.000

Table: Material Properties 03b - Concrete Data, Part 2 of 2

Material	DAngle
	Degrees
4000Psi	0.000

Table: Material Properties 06 - Damping Parameters

Material	ModalRatio	VisMass	VisStiff	HysMass	HysStiff
		1/Sec	Sec	1/Sec2	
4000Psi	0.0000	0.0000	0.0000	0.0000	0.000000
A992Fy50	0.0000	0.0000	0.0000	0.0000	0.000000

DESPLAZAMIENTOS:

SAP2000 v14.2.4 2/9/22 7:19:33

Table: Joint Displacements

Joint	OutputCase	CaseType	U1	U2	U3	R1	R2	R3
			m	m	m	Radians	Radians	Radians
1	EX	LinStatic	0.000000	0.000000	0.000000	0.000000	-0.143061	-0.030038
1	EY	LinStatic	0.000000	0.000000	0.000000	-0.000225	1.413E-17	8.461E-18
2	EX	LinStatic	0.000329	0.000000	0.000000	0.000000	-0.145956	-1.625E-15
2	EY	LinStatic	-1.748E-20	0.000089	-1.358E-18	0.000248	1.551E-17	-4.943E-18
3	EX	LinStatic	0.000000	0.000000	0.000000	0.000000	-0.143061	0.030038

3	EY	LinStatic	0.000000	0.000000	0.000000	-0.000225	1.650E-17	3.633E-18
4	EX	LinStatic	0.000000	0.000000	0.000000	-0.000141	-9.786E-06	-0.016249
4	EY	LinStatic	0.000000	0.000000	0.000000	-0.000163	0.000490	0.000050
5	EX	LinStatic	0.000224	0.000000	-0.000128	1.827E-18	-0.129272	-1.624E-15
5	EY	LinStatic	-1.409E-20	0.000067	-8.467E-19	0.000183	1.239E-17	-0.000038
6	EX	LinStatic	0.000000	0.000000	0.000000	0.000141	-9.786E-06	0.016249
6	EY	LinStatic	0.000000	0.000000	0.000000	-0.000163	-0.000490	0.000050
7	EX	LinStatic	0.000000	0.000000	0.000000	0.000141	-9.786E-06	-0.016249
7	EY	LinStatic	0.000000	0.000000	0.000000	-0.000163	-0.000490	-0.000050
8	EX	LinStatic	0.000224	0.000000	0.000128	-2.282E-18	-0.129272	-1.635E-15
8	EY	LinStatic	-1.316E-20	0.000067	-1.282E-18	0.000183	1.450E-17	0.000038
9	EX	LinStatic	0.000000	0.000000	0.000000	-0.000141	-9.786E-06	0.016249
9	EY	LinStatic	0.000000	0.000000	0.000000	-0.000163	0.000490	-0.000050
10	EX	LinStatic	0.000000	0.000000	0.000000	-6.753E-17	-0.004041	-1.622E-15
10	EY	LinStatic	0.000000	0.000000	0.000000	0.000514	-1.507E-18	0.000061
11	EX	LinStatic	0.000000	0.000000	0.000000	-3.811E-17	-0.004041	-1.623E-15
11	EY	LinStatic	0.000000	0.000000	0.000000	0.000514	0.000000	-0.000061
34	EX	LinStatic	0.018964	0.000000	0.000000	0.000000	-0.143356	-0.026970
34	EY	LinStatic	-8.330E-18	0.000051	-0.000266	-0.000187	1.425E-17	7.228E-18
35	EX	LinStatic	0.030603	0.000000	0.000000	0.000000	-0.144153	-0.018701
35	EY	LinStatic	-1.362E-17	0.000092	-0.000440	-0.000083	1.460E-17	3.665E-18
36	EX	LinStatic	0.029931	0.000000	0.000000	0.000000	-0.145184	-0.008007
36	EY	LinStatic	-1.342E-17	0.000113	-0.000456	0.000059	1.508E-17	-1.172E-18
37	EX	LinStatic	0.017324	0.000000	0.000000	0.000000	-0.145835	-0.001257
37	EY	LinStatic	-7.779E-18	0.000111	-0.000292	0.000192	1.541E-17	-4.316E-18
38	EX	LinStatic	0.017324	0.000000	0.000000	0.000000	-0.145835	0.001257
38	EY	LinStatic	4.156E-18	0.000111	0.000292	0.000192	1.563E-17	-4.658E-18
39	EX	LinStatic	0.029931	0.000000	0.000000	0.000000	-0.145184	0.008007
39	EY	LinStatic	7.531E-18	0.000113	0.000456	0.000059	1.581E-17	-3.645E-18
40	EX	LinStatic	0.030603	0.000000	0.000000	0.000000	-0.144153	0.018701
40	EY	LinStatic	8.771E-18	0.000092	0.000440	-0.000083	1.606E-17	-1.013E-18
41	EX	LinStatic	0.018964	0.000000	0.000000	0.000000	-0.143356	0.026970
41	EY	LinStatic	5.936E-18	0.000051	0.000266	-0.000187	1.636E-17	2.260E-18
42	EX	LinStatic	0.018952	9.584E-06	-0.000125	-0.000066	-0.025611	-0.015601
42	EY	LinStatic	-4.167E-06	0.000037	-0.000192	-0.000135	0.000391	0.000042
43	EX	LinStatic	0.030579	0.000012	-0.000171	-0.000014	-0.051708	-0.009814
43	EY	LinStatic	-0.000012	0.000067	-0.000319	-0.000061	0.000292	0.000037
44	EX	LinStatic	0.029944	8.732E-06	-0.000168	0.000014	-0.078047	-0.001519
44	EY	LinStatic	-0.000027	0.000084	-0.000332	0.000042	0.000192	0.000033
45	EX	LinStatic	0.017093	3.940E-06	-0.000144	0.000019	-0.104044	0.003230
45	EY	LinStatic	-0.000036	0.000083	-0.000214	0.000139	0.000096	-1.199E-06
46	EX	LinStatic	0.017093	-3.940E-06	-0.000144	-0.000019	-0.104044	-0.003230
46	EY	LinStatic	0.000036	0.000083	0.000214	0.000139	-0.000096	-1.199E-06
47	EX	LinStatic	0.029944	-8.732E-06	-0.000168	-0.000014	-0.078047	0.001519
47	EY	LinStatic	0.000027	0.000084	0.000332	0.000042	-0.000192	0.000033
48	EX	LinStatic	0.030579	-0.000012	-0.000171	0.000014	-0.051708	0.009814
48	EY	LinStatic	0.000012	0.000067	0.000319	-0.000061	-0.000292	0.000037
49	EX	LinStatic	0.018952	-9.584E-06	-0.000125	0.000066	-0.025611	0.015601
49	EY	LinStatic	4.167E-06	0.000037	0.000192	-0.000135	-0.000391	0.000042
50	EX	LinStatic	0.018952	-9.584E-06	0.000125	0.000066	-0.025611	-0.015601
50	EY	LinStatic	4.167E-06	0.000037	-0.000192	-0.000135	-0.000391	-0.000042
51	EX	LinStatic	0.030579	-0.000012	0.000171	0.000014	-0.051708	-0.009814
51	EY	LinStatic	0.000012	0.000067	-0.000319	-0.000061	-0.000292	-0.000037
52	EX	LinStatic	0.029944	-8.732E-06	0.000168	-0.000014	-0.078047	-0.001519
52	EY	LinStatic	0.000027	0.000084	-0.000332	0.000042	-0.000192	-0.000033
53	EX	LinStatic	0.017093	-3.940E-06	0.000144	-0.000019	-0.104044	0.003230
53	EY	LinStatic	0.000036	0.000083	-0.000214	0.000139	-0.000096	1.199E-06
54	EX	LinStatic	0.017093	3.940E-06	0.000144	0.000019	-0.104044	-0.003230
54	EY	LinStatic	-0.000036	0.000083	0.000214	0.000139	0.000096	1.199E-06
55	EX	LinStatic	0.029944	8.732E-06	0.000168	0.000014	-0.078047	0.001519
55	EY	LinStatic	-0.000027	0.000084	0.000332	0.000042	0.000192	-0.000033
56	EX	LinStatic	0.030579	0.000012	0.000171	-0.000014	-0.051708	0.009814
56	EY	LinStatic	-0.000012	0.000067	0.000319	-0.000061	0.000292	-0.000037
57	EX	LinStatic	0.018952	9.584E-06	0.000125	-0.000066	-0.025611	0.015601
57	EY	LinStatic	-4.167E-06	0.000037	0.000192	-0.000135	0.000391	-0.000042
58	EX	LinStatic	0.018952	-0.010286	0.000609	-0.000929	-0.000352	0.013189
58	EY	LinStatic	-4.631E-06	0.000058	0.000515	-0.000129	0.000445	-0.000051
59	EX	LinStatic	0.030571	-0.016532	0.001599	-0.001480	-0.001337	0.004796
59	EY	LinStatic	-0.000015	0.000103	0.000871	0.000010	0.000343	-0.000046
60	EX	LinStatic	0.029977	-0.016141	0.002258	-0.001668	-0.002660	-0.005043
60	EY	LinStatic	-0.000036	0.000122	0.000919	0.000221	0.000202	-0.000043
61	EX	LinStatic	0.016885	-0.009017	0.001917	-0.001484	-0.004302	-0.016070
61	EY	LinStatic	-0.000053	0.000098	0.000596	0.000432	0.000066	9.212E-06
62	EX	LinStatic	0.016885	0.009017	0.001917	0.001484	-0.004302	0.016070
62	EY	LinStatic	0.000053	0.000098	-0.000596	0.000432	-0.000066	9.212E-06
63	EX	LinStatic	0.029977	0.016141	0.002258	0.001668	-0.002660	0.005043
63	EY	LinStatic	0.000036	0.000122	-0.000919	0.000221	-0.000202	-0.000043
64	EX	LinStatic	0.030571	0.016532	0.001599	0.001480	-0.001337	-0.004796
64	EY	LinStatic	0.000015	0.000103	-0.000871	0.000010	-0.000343	-0.000046
65	EX	LinStatic	0.018952	0.010286	0.000609	0.000929	-0.000352	-0.013189
65	EY	LinStatic	4.631E-06	0.000058	-0.000515	-0.000129	-0.000445	-0.000051
66	EX	LinStatic	0.016885	-0.009017	-0.001917	-0.001484	-0.004302	0.016070
66	EY	LinStatic	-0.000053	0.000098	-0.000596	0.000432	0.000066	-9.212E-06
67	EX	LinStatic	0.029977	-0.016141	-0.002258	-0.001668	-0.002660	0.005043
67	EY	LinStatic	-0.000036	0.000122	-0.000919	0.000221	0.000202	0.000043
68	EX	LinStatic	0.030571	-0.016532	-0.001599	-0.001480	-0.001337	-0.004796
68	EY	LinStatic	-0.000015	0.000103	-0.000871	0.000010	0.000343	0.000046
69	EX	LinStatic	0.018952	-0.010286	-0.000609	-0.000929	-0.000352	-0.013189
69	EY	LinStatic	-4.631E-06	0.000058	-0.000515	-0.000129	0.000445	0.000051
70	EX	LinStatic	0.018952	0.010286	-0.000609	0.000929	-0.000352	0.013189
70	EY	LinStatic	4.631E-06	0.000058	0.000515	-0.000129	-0.000445	0.000051
71	EX	LinStatic	0.030571	0.016532	-0.001599	0.001480	-0.001337	0.004796
71	EY	LinStatic	0.000015	0.000103	0.000871	0.000010	-0.000343	0.000046
72	EX	LinStatic	0.029977	0.016141	-0.002258	0.001668	-0.002660	-0.005043
72	EY	LinStatic	0.000036	0.000122	0.000919	0.000221	-0.000202	0.000043

73	EX	LinStatic	0.016885	0.009017	-0.001917	0.001484	-0.004302	-0.016070
73	EY	LinStatic	0.000053	0.000098	0.000596	0.000432	-0.000066	-9.212E-06

DISEÑO ELEMENTOS METALICOS:

SAP2000 v14.2.4 2/9/22 7:20:18

Table: Steel Design 1 - Summary Data - AISC360-05-IBC2006, Part 1 of 2

Frame	DesignSect	DesignType	Status	Ratio	RatioType
7	TB200	Beam	No Messages	0.090604	PMM
8	TB200	Beam	No Messages	0.286364	PMM
9	TB200	Beam	No Messages	0.286364	PMM
10	TB200	Beam	No Messages	0.091056	PMM
52	IPE270	Brace	No Messages	0.496176	PMM
57	IPE270	Brace	No Messages	0.496176	PMM
62	IPE270	Brace	No Messages	0.346153	PMM
67	IPE270	Brace	No Messages	0.346153	PMM
72	IPE270	Brace	No Messages	0.346153	PMM
77	IPE270	Brace	No Messages	0.346153	PMM
126	TB200	Brace	Overstressed	0.972404	PMM
139	TB200	Brace	Overstressed	0.972404	PMM
152	TB200	Brace	No Messages	0.848452	PMM
165	TB200	Brace	No Messages	0.848452	PMM

Table: Steel Design 1 - Summary Data - AISC360-05-IBC2006, Part 2 of 2

Frame	Combo	Location m	ErrMsg	WarnMsg
7	COMB3	1.45714	No Messages	No Messages
8	COMB3	3.00000	No Messages	No Messages
9	COMB3	3.00000	No Messages	No Messages
10	COMB5X	1.45714	No Messages	No Messages
52	COMB3	2.50154	No Messages	No Messages
57	COMB3	3.75231	No Messages	No Messages
62	COMB3	2.50154	No Messages	No Messages
67	COMB3	3.75231	No Messages	No Messages
72	COMB3	2.50154	No Messages	No Messages
77	COMB3	3.75231	No Messages	No Messages
126	COMB5X	7.11833	No Messages	No Messages
139	COMB5X	0.00000	No Messages	No Messages
152	COMB7X	0.00000	No Messages	No Messages
165	COMB7X	7.11833	No Messages	No Messages

DISEÑO CORREAS DE CUBIERTA CR-1:

Memorias de Cálculo

PROGRAMA DE DISENO Y CALCULO ESTRUCTURAL
ARQUIMET 2.0

Proyecto: _____ Fecha: _____

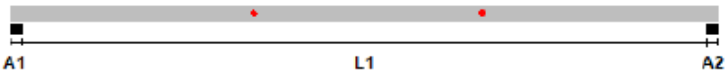
Ingeniero: _____ Firma: _____

Elementos calculados con el programa de diseño Arquimet 2.0 de ACESCO

REPORTE DE CORREAS

PHR C con atiesador 160 x 60 x 20 (2.50 mm)
con Fy = 35.15 Kgf/mm² cada 1.30 m con arriostramiento cada L/3.

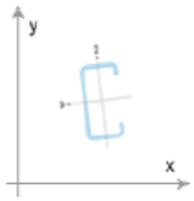
SECCION LONGITUDINAL



L1	5.85 m
A1	0.10 m
A2	0.10 m

CONFIGURACION	
TIPO DE CARGA	DISTRIBUIDA
Carga muerta	35.00 Kgf/m²
Peso propio correa	5.97 Kgf/m
Carga viva	50.00 Kgf/m²
Carga granizo	0.00 Kgf/m²
Viento compresión (Perpendicular)	40.00 Kgf/m²
Viento succión (Perpendicular)	-40.00 Kgf/m²
Pendiente sección transversal	6.843° = 12.0000%

SECCION TRANSVERSAL



L = 1.30 m

REPORTES DE DISEÑO

REPORTE FLEXION				
	Apoyos		Interiores	
Ejes locales	3	2	3	2
Resistente (Kgf.m)	1182.5135	265.6673	944.2682	265.6673
Calculado (Kgf.m)	0.0000	0.0000	843.3736	7.7690

REPORTE CORTANTE		
Ejes locales	2	3
Resistente (Kgf)	7029.3320	4308.0586
Calculado (Kgf)	565.7830	18.7298

REPORTE DEFLEXION		
Deflexiones máximas	Instantanea	Permanente
Admisible (m)	0.0220	0.0000
Calculado (m)	0.0178	0.0000

COMBINACIONES DE CARGA					
No	Muerta	Viva	Granizo	Viento compresión	Viento succión
1	1.4000	0.0000	0.0000	0.0000	0.0000
2	1.2000	0.5000	0.0000	0.0000	0.0000
3	1.2000	0.0000	0.5000	0.0000	0.0000
4	1.2000	1.6000	0.0000	0.5000	0.0000
5	1.2000	0.0000	1.6000	0.5000	0.0000
6	1.2000	1.6000	0.0000	0.0000	0.5000
7	1.2000	0.0000	1.6000	0.0000	0.5000
8	1.2000	0.5000	0.0000	0.0000	1.0000
9	1.2000	0.0000	0.5000	0.0000	1.0000
10	1.2000	0.5000	0.0000	1.0000	0.0000
11	1.2000	0.0000	0.5000	1.0000	0.0000
12	0.9000	0.0000	0.0000	0.0000	1.0000
13	0.9000	0.0000	0.0000	1.0000	0.0000

REACCIONES - EJES GLOBALES (Kgf-m)

Elementos calculados con el programa de diseño Arquimet 2.0 de ACESCO

APOYO 1		
Combinacion	Rx	Ry
Muerta	0.0000	151.5202
Viva de Cub.	0.0000	191.3618
Granizo	0.0000	0.0000
Viento Comp.	-18.4324	153.5979
Viento Succion	0.0000	0.0000
Comb. 1	-16.5965	212.1282
Comb. 2	-24.3278	277.5051
Comb. 3	-15.9398	181.8242
Comb. 4	-51.9976	564.8021
Comb. 5	-25.1560	258.6232
Comb. 6	-42.7814	488.0031
Comb. 7	-15.9398	181.8242
Comb. 8	-24.3278	277.5051
Comb. 9	-15.9398	181.8242
Comb. 10	-42.7602	431.1030
Comb. 11	-34.3722	335.4221
Comb. 12	-11.9549	136.3682
Comb. 13	-30.3873	289.9661

APOYO 2		
Combinacion	Rx	Ry
Muerta	0.0000	151.5204
Viva de Cub.	0.0000	191.3618
Granizo	0.0000	0.0000
Viento Comp.	-18.4324	153.5980
Viento Succion	0.0000	0.0000
Comb. 1	-16.5965	212.1285
Comb. 2	-24.3279	277.5054
Comb. 3	-15.9399	181.8245
Comb. 4	-51.9976	564.8023
Comb. 5	-25.1561	258.6235
Comb. 6	-42.7814	488.0034
Comb. 7	-15.9399	181.8245
Comb. 8	-24.3279	277.5054
Comb. 9	-15.9399	181.8245
Comb. 10	-42.7602	431.1034
Comb. 11	-34.3723	335.4225
Comb. 12	-11.9549	136.3683
Comb. 13	-30.3873	289.9664

FUERZAS INTERNAS - EJES LOCALES (Kgf-m) *Elementos calculados con el programa de diseño Arquimet 2.0 de ACESCO*

APOYO 1				
Combinacion	R2	R3	M2	M3
Muerta	4.8649	152.0235	0.0000	0.0000
Viva de Cub.	6.1441	191.9974	0.0000	0.0000
Granizo	0.0000	0.0000	0.0000	0.0000
Viento Comp.	0.0000	154.7000	0.0000	0.0000
Viento Succion	0.0000	0.0000	0.0000	0.0000
Comb. 1	6.8108	212.8329	0.0000	0.0000
Comb. 2	8.9100	278.4269	0.0000	0.0000
Comb. 3	5.8379	182.4282	0.0000	0.0000
Comb. 4	15.0685	566.9741	0.0000	0.0000
Comb. 5	5.8379	259.7782	0.0000	0.0000
Comb. 6	15.0685	489.6241	0.0000	0.0000
Comb. 7	5.8379	182.4282	0.0000	0.0000
Comb. 8	8.9100	278.4269	0.0000	0.0000
Comb. 9	5.8379	182.4282	0.0000	0.0000
Comb. 10	8.9100	433.1269	0.0000	0.0000
Comb. 11	5.8379	337.1281	0.0000	0.0000
Comb. 12	4.3784	136.8211	0.0000	0.0000
Comb. 13	4.3784	291.5211	0.0000	0.0000

APOYO 2				
Combinacion	R2	R3	M2	M3
Muerta	4.8649	152.0237	0.0000	0.0000
Viva de Cub.	6.1441	191.9975	0.0000	0.0000
Granizo	0.0000	0.0000	0.0000	0.0000
Viento Comp.	0.0000	154.7000	0.0000	0.0000
Viento Succion	0.0000	0.0000	0.0000	0.0000
Comb. 1	6.8109	212.8332	0.0000	0.0000
Comb. 2	8.9100	278.4272	0.0000	0.0000
Comb. 3	5.8379	182.4284	0.0000	0.0000
Comb. 4	15.0685	566.9744	0.0000	0.0000
Comb. 5	5.8379	259.7785	0.0000	0.0000
Comb. 6	15.0685	489.6244	0.0000	0.0000
Comb. 7	5.8379	182.4284	0.0000	0.0000
Comb. 8	8.9100	278.4272	0.0000	0.0000
Comb. 9	5.8379	182.4284	0.0000	0.0000
Comb. 10	8.9100	433.1272	0.0000	0.0000
Comb. 11	5.8379	337.1285	0.0000	0.0000
Comb. 12	4.3784	136.8213	0.0000	0.0000
Comb. 13	4.3784	291.5214	0.0000	0.0000

CORREAS CR-2

Memorias de Cálculo

PROGRAMA DE DISENO Y CALCULO ESTRUCTURAL
ARQUIMET 2.0

Proyecto: _____ Fecha: _____

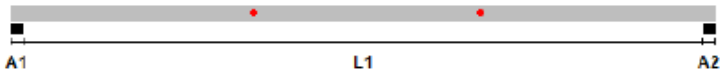
Ingeniero: _____ Firma: _____

Elementos calculados con el programa de diseño Arquimet 2.0 de ACESCO

REPORTE DE CORREAS

PHR C con atiesador 160 x 60 x 20 (2.00 mm)
con Fy = 35.15 Kgf/mm² cada 1.30 m con arriostramiento cada L/3.

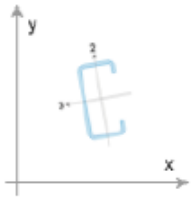
SECCION LONGITUDINAL



L1	5.40 m
A1	0.10 m
A2	0.10 m

CONFIGURACION	
TIPO DE CARGA	DISTRIBUIDA
Carga muerta	35.00 Kgf/m²
Peso propio correa	4.77 Kgf/m
Carga viva	50.00 Kgf/m²
Carga granizo	0.00 Kgf/m²
Viento compresión (Perpendicular)	40.00 Kgf/m²
Viento succión (Perpendicular)	-40.00 Kgf/m²
Pendiente sección transversal	10.204° = 18.0000%

SECCION TRANSVERSAL



L = 1.30 m

REPORTES DE DISEÑO

REPORTE FLEXION				
	Apoyos		Interiores	
Ejes locales	3	2	3	2
Resistente (Kgf.m)	951.0391	214.0945	801.9839	214.0945
Calculado (Kgf.m)	0.0000	0.0000	709.8483	9.7846

REPORTE CORTANTE		
Ejes locales	2	3
Resistente (Kgf)	4498.7725	3526.5972
Calculado (Kgf)	515.0797	25.5330

REPORTE DEFLEXION		
Deflexiones máximas	Instantanea	Permanente
Admisible (m)	0.0204	0.0000
Calculado (m)	0.0158	0.0000

COMBINACIONES DE CARGA					
No	Muerta	Viva	Granizo	Viento compresión	Viento succión
1	1.4000	0.0000	0.0000	0.0000	0.0000
2	1.2000	0.5000	0.0000	0.0000	0.0000
3	1.2000	0.0000	0.5000	0.0000	0.0000
4	1.2000	1.6000	0.0000	0.5000	0.0000
5	1.2000	0.0000	1.6000	0.5000	0.0000
6	1.2000	1.6000	0.0000	0.0000	0.5000
7	1.2000	0.0000	1.6000	0.0000	0.5000
8	1.2000	0.5000	0.0000	0.0000	1.0000
9	1.2000	0.0000	0.5000	0.0000	1.0000
10	1.2000	0.5000	0.0000	1.0000	0.0000
11	1.2000	0.0000	0.5000	1.0000	0.0000
12	0.9000	0.0000	0.0000	0.0000	1.0000
13	0.9000	0.0000	0.0000	1.0000	0.0000

REACCIONES - EJES GLOBALES (Kgf-m)

Elementos calculados con el programa de diseño Arquimet 2.0 de ACESCO

APOYO 1		
Combinacion	Rx	Ry
Muerta	0.0000	135.0668
Viva de Cub.	0.0000	174.6361
Granizo	0.0000	0.0000
Viento Comp.	-25.3329	140.7381
Viento Succion	0.0000	0.0000
Comb. 1	-24.7470	189.0963
Comb. 2	-32.6390	249.4007
Comb. 3	-21.2117	162.0826
Comb. 4	-70.4454	511.8694
Comb. 5	-33.8781	232.4517
Comb. 6	-57.7790	441.5004
Comb. 7	-21.2117	162.0826
Comb. 8	-32.6390	249.4007
Comb. 9	-21.2117	162.0826
Comb. 10	-57.9719	390.1388
Comb. 11	-46.5446	302.8207
Comb. 12	-15.9088	121.5619
Comb. 13	-41.2417	262.3001

APOYO 2		
Combinacion	Rx	Ry
Muerta	0.0000	135.0690
Viva de Cub.	0.0000	174.6362
Granizo	0.0000	0.0000
Viento Comp.	-25.3329	140.7382
Viento Succion	0.0000	0.0000
Comb. 1	-24.7470	189.0965
Comb. 2	-32.6390	249.4009
Comb. 3	-21.2117	162.0828
Comb. 4	-70.4455	511.8698
Comb. 5	-33.8782	232.4519
Comb. 6	-57.7790	441.5007
Comb. 7	-21.2117	162.0828
Comb. 8	-32.6390	249.4009
Comb. 9	-21.2117	162.0828
Comb. 10	-57.9719	390.1391
Comb. 11	-46.5447	302.8210
Comb. 12	-15.9088	121.5621
Comb. 13	-41.2417	262.3002

FUERZAS INTERNAS - EJES LOCALES (Kgf-m) *Elementos calculados con el programa de diseño Arquimet 2.0 de ACESCO*

APOYO 1				
Combinacion	R2	R3	M2	M3
Muerta	6.5311	136.0639	0.0000	0.0000
Viva de Cub.	8.4443	175.9227	0.0000	0.0000
Granizo	0.0000	0.0000	0.0000	0.0000
Viento Comp.	0.0000	142.9999	0.0000	0.0000
Viento Succion	0.0000	0.0000	0.0000	0.0000
Comb. 1	9.1435	190.4895	0.0000	0.0000
Comb. 2	12.0595	251.2380	0.0000	0.0000
Comb. 3	7.8373	163.2767	0.0000	0.0000
Comb. 4	21.3482	516.2530	0.0000	0.0000
Comb. 5	7.8373	234.7767	0.0000	0.0000
Comb. 6	21.3482	444.7530	0.0000	0.0000
Comb. 7	7.8373	163.2767	0.0000	0.0000
Comb. 8	12.0595	251.2380	0.0000	0.0000
Comb. 9	7.8373	163.2767	0.0000	0.0000
Comb. 10	12.0595	394.2380	0.0000	0.0000
Comb. 11	7.8373	306.2766	0.0000	0.0000
Comb. 12	5.8780	122.4575	0.0000	0.0000
Comb. 13	5.8780	265.4575	0.0000	0.0000

APOYO 2				
Combinacion	R2	R3	M2	M3
Muerta	6.5311	136.0641	0.0000	0.0000
Viva de Cub.	8.4443	175.9228	0.0000	0.0000
Granizo	0.0000	0.0000	0.0000	0.0000
Viento Comp.	0.0000	143.0000	0.0000	0.0000
Viento Succion	0.0000	0.0000	0.0000	0.0000
Comb. 1	9.1435	190.4897	0.0000	0.0000
Comb. 2	12.0595	251.2383	0.0000	0.0000
Comb. 3	7.8373	163.2769	0.0000	0.0000
Comb. 4	21.3482	516.2534	0.0000	0.0000
Comb. 5	7.8373	234.7769	0.0000	0.0000
Comb. 6	21.3482	444.7534	0.0000	0.0000
Comb. 7	7.8373	163.2769	0.0000	0.0000
Comb. 8	12.0595	251.2383	0.0000	0.0000
Comb. 9	7.8373	163.2769	0.0000	0.0000
Comb. 10	12.0595	394.2383	0.0000	0.0000
Comb. 11	7.8373	306.2769	0.0000	0.0000
Comb. 12	5.8780	122.4576	0.0000	0.0000
Comb. 13	5.8780	265.4576	0.0000	0.0000