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Part

Job Title

Ref

By EMEL MULET Date 16-Dec-14 Chd

Client

File Staad Administración.std Date/Time 29-Dec-2014 10:42

Job Information

	Engineer	Checked	Approved
Name:	EMEL MULET		
Date:	16-Dec-14		

Structure Type	SPACE FRAME
----------------	-------------

Number of Nodes	31	Highest Node	72
Number of Elements	38	Highest Beam	83

Number of Basic Load Cases	4
Number of Combination Load Cases	51

Included in this printout are data for:

All	The Whole Structure
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Included in this printout are results for load cases:

Type	L/C	Name
Primary	1	SISMO X
Primary	2	SISMO Z
Primary	3	CARGA VIVA
Primary	4	CARGA MUERTA
Combination	5	1.2 CM + 1.6 CV
Combination	6	1.2 CM + CV + (SX/R + 0,30 SZ/R)
Combination	7	1.2 CM + CV - (SX/R - 0,30 SZ/R)
Combination	8	1.2 CM + CV + (SX/R - 0,30 SZ/R)
Combination	9	1.2 CM + CV - (SX/R + 0,30 SZ/R)
Combination	10	1.2 CM + CV + (0.3 SX/R + SZ/R)
Combination	11	1.2 CM + CV - (0.3 SX/R - SZ/R)
Combination	12	1.2 CM + CV + (0.3 SX/R - SZ/R)
Combination	13	1.2 CM + CV - (0.3 SX/R + SZ/R)
Combination	14	0.9 CM + (SX/R + 0,30 SZ/R)
Combination	15	0.9 CM - (SX/R - 0,30 SZ/R)
Combination	16	0.9 CM + (SX/R - 0,30 SZ/R)
Combination	17	0.9 CM - (SX/R + 0,30 SZ/R)
Combination	18	0.9 CM + (0.3 SX/R + SZ/R)
Combination	19	0.9 CM - (0.3 SX/R - SZ/R)
Combination	20	0.9 CM + (0.3 SX/R - SZ/R)
Combination	21	0.9 CM - (0.3 SX/R + SZ/R)
Combination	22	CM + CV
Combination	23	CM + 0,75 CV + 0.75 (0.7)(SX + 0,3 SZ)/R
Combination	24	CM + 0,75 CV - 0.75 (0.7)(SX - 0,3 SZ)/R
Combination	25	CM + 0,75 CV + 0.75 (0.7)(SX - 0,3 SZ)/R
Combination	26	CM + 0,75 CV - 0.75 (0.7)(SX + 0,3 SZ)/R
Combination	27	CM + 0,75 CV + 0.75 (0.7)(0,3 SX + SZ)/R
Combination	28	CM + 0,75 CV - 0.75 (0.7)(0,3 SX - SZ)/R



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Job Information Cont...

Type	L/C	Name
Combination	29	CM + 0,75 CV + 0,75 (0,7)(0,3 SX - SZ)/R
Combination	30	CM + 0,75 CV - 0,75 (0,7)(0,3 SX + SZ)/R
Combination	31	0,6 CM + 0,700 (SX + 0,3 SZ)/R
Combination	32	0,6 CM - 0,700 (SX - 0,3 SZ)/R
Combination	33	0,6 CM + 0,700 (SX - 0,3 SZ)/R
Combination	34	0,6 CM - 0,700 (SX + 0,3 SZ)/R
Combination	35	0,6 CM + 0,700 (0,3 SX + SZ)/R
Combination	36	0,6 CM - 0,700 (0,3 SX - SZ)/R
Combination	37	0,6 CM - 0,700 (0,3 SX + SZ)/R
Combination	38	0,6 CM + 0,700 (0,3 SX - SZ)/R
Combination	39	1,2 CM + 1,6 CV
Combination	40	1,2 CM + CV + (SX/R + 0,30 SZ/R)
Combination	41	1,2 CM + CV - (SX/R - 0,30 SZ/R)
Combination	42	1,2 CM + CV + (SX/R - 0,30 SZ/R)
Combination	43	1,2 CM + CV - (SX/R + 0,30 SZ/R)
Combination	44	1,2 CM + CV + (0,3 SX/R + SZ/R)
Combination	45	1,2 CM + CV - (0,3 SX/R - SZ/R)
Combination	46	1,2 CM + CV + (0,3 SX/R - SZ/R)
Combination	47	1,2 CM + CV - (0,3 SX/R + SZ/R)
Combination	48	0,9 CM + (SX/R + 0,30 SZ/R)
Combination	49	0,9 CM - (SX/R - 0,30 SZ/R)
Combination	50	0,9 CM + (SX/R - 0,30 SZ/R)
Combination	51	0,9 CM - (SX/R + 0,30 SZ/R)
Combination	52	0,9 CM + (0,3 SX/R + SZ/R)
Combination	53	0,9 CM - (0,3 SX/R - SZ/R)
Combination	54	0,9 CM + (0,3 SX/R - SZ/R)
Combination	55	0,9 CM - (0,3 SX/R + SZ/R)



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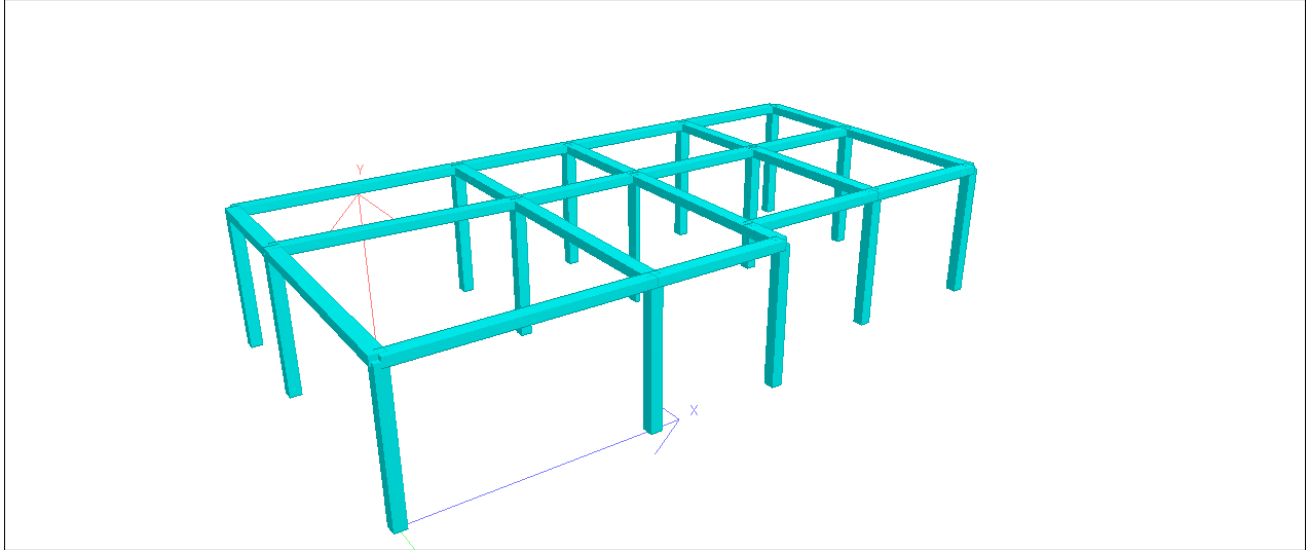
Job Title

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3D Rendered View (Input data was modified after picture taken)

Section Properties

Prop	Section	Area (cm ²)	I _{yy} (cm ⁴)	I _{zz} (cm ⁴)	J (cm ⁴)	Material
1	Rect 0.25x0.25	625.000	32.6E+3	32.6E+3	54.9E+3	CONCRETE
2	Rect 0.12x0.30	360.000	27E+3	4.32E+3	12.9E+3	CONCRETE
3	Rect 0.20x0.30	600.000	45E+3	20E+3	47E+3	CONCRETE

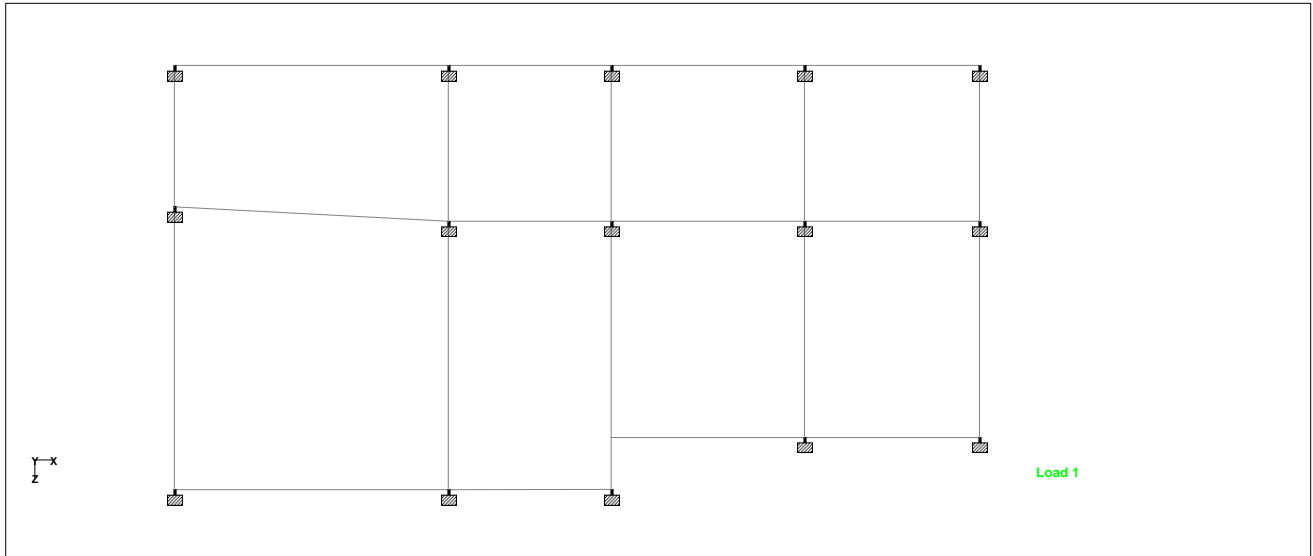
Materials

Mat	Name	E (kN/mm ²)	v	Density (kg/m ³)	α (/°C)
1	STEEL	205.000	0.300	7.83E+3	12E -6
2	STAINLESSSTEEL	197.930	0.300	7.83E+3	18E -6
3	ALUMINUM	68.948	0.330	2.71E+3	23E -6
4	CONCRETE	21.718	0.170	2.4E+3	10E -6



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By	EMEL MULET	Date 16-Dec-14 Chd
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Whole Structure (Input data was modified after picture taken)

Basic Load Cases

Number	Name
1	SISMO X
2	SISMO Z
3	CARGA VIVA
4	CARGA MUERTA

Combination Load Cases

Comb.	Combination L/C Name	Primary	Primary L/C Name	Factor		
5	1.2 CM + 1.6 CV	4	CARGA MUERTA	1.20		
		3	CARGA VIVA	1.60		
6	1.2 CM + CV + (SX/R + 0,30 SZ/R)	4	CARGA MUERTA	1.20		
		3	CARGA VIVA	1.00		
		1	SISMO X	0.22		
		2	SISMO Z	0.07		
		7	1.2 CM + CV - (SX/R - 0,30 SZ/R)	4	CARGA MUERTA	1.20
7	1.2 CM + CV - (SX/R - 0,30 SZ/R)	3	CARGA VIVA	1.00		
		1	SISMO X	-0.22		
		2	SISMO Z	0.07		
		8	1.2 CM + CV + (SX/R - 0,30 SZ/R)	4	CARGA MUERTA	1.20
		8	1.2 CM + CV + (SX/R - 0,30 SZ/R)	3	CARGA VIVA	1.00
1	SISMO X			0.22		
2	SISMO Z			-0.07		
9	1.2 CM + CV - (SX/R + 0,30 SZ/R)			4	CARGA MUERTA	1.20
9	1.2 CM + CV - (SX/R + 0,30 SZ/R)			3	CARGA VIVA	1.00



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Combination Load Cases Cont...

Comb.	Combination L/C Name	Primary	Primary L/C Name	Factor
		1	SISMO X	-0.22
		2	SISMO Z	-0.07
10	1.2 CM + CV + (0.3 SX/R + SZ/R)	4	CARGA MUERTA	1.20
		3	CARGA VIVA	1.00
		1	SISMO X	0.07
		2	SISMO Z	0.22
11	1.2 CM + CV - (0.3 SX/R - SZ/R)	4	CARGA MUERTA	1.20
		3	CARGA VIVA	1.00
		1	SISMO X	-0.07
		2	SISMO Z	0.22
12	1.2 CM + CV + (0.3 SX/R - SZ/R)	4	CARGA MUERTA	1.20
		3	CARGA VIVA	1.00
		1	SISMO X	0.07
		2	SISMO Z	-0.22
13	1.2 CM + CV - (0.3 SX/R + SZ/R)	4	CARGA MUERTA	1.20
		3	CARGA VIVA	1.00
		1	SISMO X	-0.07
		2	SISMO Z	-0.22
14	0.9 CM + (SX/R + 0,30 SZ/R)	4	CARGA MUERTA	0.90
		1	SISMO X	0.22
		2	SISMO Z	0.07
15	0.9 CM - (SX/R - 0,30 SZ/R)	4	CARGA MUERTA	0.90
		1	SISMO X	-0.22
		2	SISMO Z	0.07
16	0.9 CM + (SX/R - 0,30 SZ/R)	4	CARGA MUERTA	0.90
		1	SISMO X	0.22
		2	SISMO Z	-0.07
17	0.9 CM - (SX/R + 0,30 SZ/R)	4	CARGA MUERTA	0.90
		1	SISMO X	-0.22
		2	SISMO Z	-0.07
18	0.9 CM + (0.3 SX/R + SZ/R)	4	CARGA MUERTA	0.90
		1	SISMO X	0.07
		2	SISMO Z	0.22
19	0.9 CM - (0.3 SX/R - SZ/R)	4	CARGA MUERTA	0.90
		1	SISMO X	-0.07
		2	SISMO Z	0.22
20	0.9 CM + (0.3 SX/R - SZ/R)	4	CARGA MUERTA	0.90
		1	SISMO X	0.07
		2	SISMO Z	-0.22
21	0.9 CM - (0.3 SX/R + SZ/R)	4	CARGA MUERTA	0.90
		1	SISMO X	-0.07
		2	SISMO Z	-0.22
22	CM + CV	4	CARGA MUERTA	1.00
		3	CARGA VIVA	1.00
23	CM + 0,75 CV + 0.75 (0.7)(SX + 0,3 SZ)/R	4	CARGA MUERTA	1.00



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Combination Load Cases Cont...

Comb.	Combination L/C Name	Primary	Primary L/C Name	Factor
		3	CARGA VIVA	0.75
		1	SISMO X	0.12
		2	SISMO Z	0.04
24	CM + 0,75 CV - 0.75 (0.7)(SX - 0,3 SZ)/R	4	CARGA MUERTA	1.00
		3	CARGA VIVA	0.75
		1	SISMO X	-0.12
		2	SISMO Z	0.04
25	CM + 0,75 CV + 0.75 (0.7)(SX - 0,3 SZ)/R	4	CARGA MUERTA	1.00
		3	CARGA VIVA	0.75
		1	SISMO X	0.12
		2	SISMO Z	-0.04
26	CM + 0,75 CV - 0.75 (0.7)(SX + 0,3 SZ)/R	4	CARGA MUERTA	1.00
		3	CARGA VIVA	0.75
		1	SISMO X	-0.12
		2	SISMO Z	-0.04
27	CM + 0,75 CV + 0.75 (0.7)(0,3 SX + SZ)/R	4	CARGA MUERTA	1.00
		3	CARGA VIVA	0.75
		1	SISMO X	0.04
		2	SISMO Z	0.12
28	CM + 0,75 CV - 0.75 (0.7)(0.3 SX - SZ)/R	4	CARGA MUERTA	1.00
		3	CARGA VIVA	0.75
		1	SISMO X	-0.04
		2	SISMO Z	0.12
29	CM + 0,75 CV + 0.75 (0.7)(0.3 SX - SZ)/R	4	CARGA MUERTA	1.00
		3	CARGA VIVA	0.75
		1	SISMO X	0.04
		2	SISMO Z	-0.12
30	CM + 0,75 CV - 0.75 (0.7)(0.3 SX + SZ)/R	4	CARGA MUERTA	1.00
		3	CARGA VIVA	0.75
		1	SISMO X	-0.04
		2	SISMO Z	-0.12
31	0.6 CM + 0.700 (SX + 0.3 SZ)/R	4	CARGA MUERTA	0.60
		1	SISMO X	0.16
		2	SISMO Z	0.05
32	0.6 CM - 0.700 (SX - 0.3 SZ)/R	4	CARGA MUERTA	0.60
		1	SISMO X	-0.16
		2	SISMO Z	0.05
33	0.6 CM + 0.700 (SX - 0.3 SZ)/R	4	CARGA MUERTA	0.60
		1	SISMO X	0.16
		2	SISMO Z	-0.05
34	0.6 CM - 0.700 (SX + 0.3 SZ)/R	4	CARGA MUERTA	0.60
		1	SISMO X	-0.16
		2	SISMO Z	-0.05
35	0.6 CM + 0.700 (0.3 SX + SZ)/R	4	CARGA MUERTA	0.60
		1	SISMO X	0.05



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Combination Load Cases Cont...

Comb.	Combination L/C Name	Primary	Primary L/C Name	Factor
		2	SISMO Z	0.16
36	0.6 CM - 0.700 (0.3 SX - SZ)/R	4	CARGA MUERTA	0.60
		1	SISMO X	-0.05
		2	SISMO Z	0.16
37	0.6 CM - 0.700 (0.3 SX + SZ)/R	4	CARGA MUERTA	0.60
		1	SISMO X	-0.05
		2	SISMO Z	-0.16
38	0.6 CM + 0.700 (0.3 SX - SZ)/R	4	CARGA MUERTA	0.60
		1	SISMO X	0.05
		2	SISMO Z	-0.16
39	1.2 CM + 1.6 CV	4	CARGA MUERTA	1.20
		3	CARGA VIVA	1.60
40	1.2 CM + CV + (SX/R + 0,30 SZ/R)	4	CARGA MUERTA	1.20
		3	CARGA VIVA	1.00
		1	SISMO X	0.22
		2	SISMO Z	0.07
41	1.2 CM + CV - (SX/R - 0,30 SZ/R)	4	CARGA MUERTA	1.20
		3	CARGA VIVA	1.00
		1	SISMO X	-0.22
		2	SISMO Z	0.07
42	1.2 CM + CV + (SX/R - 0,30 SZ/R)	4	CARGA MUERTA	1.20
		3	CARGA VIVA	1.00
		1	SISMO X	0.22
		2	SISMO Z	-0.07
43	1.2 CM + CV - (SX/R + 0,30 SZ/R)	4	CARGA MUERTA	1.20
		3	CARGA VIVA	1.00
		1	SISMO X	-0.22
		2	SISMO Z	-0.07
44	1.2 CM + CV + (0.3 SX/R + SZ/R)	4	CARGA MUERTA	1.20
		3	CARGA VIVA	1.00
		1	SISMO X	0.07
		2	SISMO Z	0.22
45	1.2 CM + CV - (0.3 SX/R - SZ/R)	4	CARGA MUERTA	1.20
		3	CARGA VIVA	1.00
		1	SISMO X	-0.07
		2	SISMO Z	0.22
46	1.2 CM + CV + (0.3 SX/R - SZ/R)	4	CARGA MUERTA	1.20
		3	CARGA VIVA	1.00
		1	SISMO X	0.07
		2	SISMO Z	-0.22
47	1.2 CM + CV - (0.3 SX/R + SZ/R)	4	CARGA MUERTA	1.20
		3	CARGA VIVA	1.00
		1	SISMO X	-0.07
		2	SISMO Z	-0.22
48	0.9 CM + (SX/R + 0,30 SZ/R)	4	CARGA MUERTA	0.90



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Combination Load Cases Cont...

Comb.	Combination L/C Name	Primary	Primary L/C Name	Factor
		1	SISMO X	0.22
		2	SISMO Z	0.07
49	0.9 CM - (SX/R - 0,30 SZ/R)	4	CARGA MUERTA	0.90
		1	SISMO X	-0.22
		2	SISMO Z	0.07
50	0.9 CM + (SX/R - 0,30 SZ/R)	4	CARGA MUERTA	0.90
		1	SISMO X	0.22
		2	SISMO Z	-0.07
51	0.9 CM - (SX/R + 0,30 SZ/R)	4	CARGA MUERTA	0.90
		1	SISMO X	-0.22
		2	SISMO Z	-0.07
52	0.9 CM + (0.3 SX/R + SZ/R)	4	CARGA MUERTA	0.90
		1	SISMO X	0.07
		2	SISMO Z	0.22
53	0.9 CM - (0.3 SX/R - SZ/R)	4	CARGA MUERTA	0.90
		1	SISMO X	-0.07
		2	SISMO Z	0.22
54	0.9 CM + (0.3 SX/R - SZ/R)	4	CARGA MUERTA	0.90
		1	SISMO X	0.07
		2	SISMO Z	-0.22
55	0.9 CM - (0.3 SX/R + SZ/R)	4	CARGA MUERTA	0.90
		1	SISMO X	-0.07
		2	SISMO Z	-0.22

Reaction Summary

	Node	L/C	Horizontal	Vertical	Horizontal	Moment		
			FX (kN)	FY (kN)	FZ (kN)	MX (kNm)	MY (kNm)	MZ (kNm)
Max FX	71	9:1.2 CM + CV	8.743	34.159	2.417	3.555	0.073	-11.619
Min FX	65	1:SISMO X	-15.009	-5.733	0.209	0.386	-0.308	27.374
Max FY	60	5:1.2 CM + 1.6	-4.102	52.424	0.846	1.153	-0.010	4.500
Min FY	70	2:SISMO Z	-1.018	-9.723	-12.527	-24.552	0.658	1.823
Max FZ	62	13:1.2 CM + C'	0.391	36.292	4.478	7.150	-0.005	-0.498
Min FZ	60	2:SISMO Z	0.083	5.798	-15.634	-27.841	0.645	-0.206
Max MX	60	13:1.2 CM + C'	-2.778	47.450	4.356	7.387	-0.126	2.341
Min MX	60	2:SISMO Z	0.083	5.798	-15.634	-27.841	0.645	-0.206
Max MY	58	2:SISMO Z	0.671	3.011	-7.988	-17.485	0.897	-1.399
Min MY	59	1:SISMO X	-9.097	-4.006	-0.765	-1.493	-0.664	19.673
Max MZ	65	1:SISMO X	-15.009	-5.733	0.209	0.386	-0.308	27.374
Min MZ	71	9:1.2 CM + CV	8.743	34.159	2.417	3.555	0.073	-11.619