HART GAUGLER + ASSOCIATES

Cooper's Hawk Winery & Restaurant

Lee Summit, MO

Structural Calculations

08/19/2021

HGA Job No. 221130

12801 N. Central Expressway • Suite 1400 • Dallas, TX 75243 • Voice 972-239-5111

General Assumptions

Within this calculation package contains a summary of the design completed by HGA.

Gravity:

- Used typical loads as mentioned on the general notes.
- Beams and columns were designed using LRFD in RamSS

Lateral:

- Three X-braces and a moment frame were utilized to resist wind. Frames were analyzed in RAM Frame (Seismic does not control)
- Braces were considered tension only.
- Diaphragms have been analyzed to carry forces through various jogs in the building and the deck attachment has been accounted for to transfer said forces
- Tubes between joists at the perimeter carry the forces into the braced frames.

Foundation:

- RamSS was used for the design of gravity footings based on the reactions produced by the program.
- Reactions for the lateral elements of the job were pulled from RamSS and analyzed in ENERCALC.
- The footings below the braced frame columns were assumed to take the bearing loads. While the grade beam/cont footing between columns was assumed to take the moment induced by uplift/overturning and resist it.

Misc.

- Out of plane tubes, and collectors were analyzed in Risa
- Masonry wall at the service yard was analyzed in ENERCALC

Hazards by Location

Search Information

Address: Lee's Summit, MO, USA

Coordinates: 38.9108408, -94.3821724

Elevation: 1038 ft

Timestamp: 2021-07-19T16:10:00.082Z

Hazard Type: Snow

ASCE 7-16		ASCE 7-10		ASCE 7-05	
Ground Snow Load	20 lb/sqft	Ground Snow Load	20 lb/sqft	Ground Snow Load	20 lb/sqft

The results indicated here DO NOT reflect any state or local amendments to the values or any delineation lines made during the building code adoption process. Users should confirm any output obtained from this tool with the local Authority Having Jurisdiction before proceeding with design.

Disclaimer

Hazard loads are interpolated from data provided in ASCE 7 and rounded up to the nearest whole integer.

While the information presented on this website is believed to be correct, ATC and its sponsors and contributors assume no responsibility or liability for its accuracy. The material presented in the report should not be used or relied upon for any specific application without competent examination and verification of its accuracy, suitability and applicability by engineers or other licensed professionals. ATC does not intend that the use of this information replace the sound judgment of such competent professionals, having experience and knowledge in the field of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the results of the report provided by this website. Users of the information from this website assume all liability arising from such use. Use of the output of this website does not imply approval by the governing building code bodies responsible for building code approval and interpretation for the building site described by latitude/longitude location in the report.

Hazards by Location

Search Information

Address: Lee's Summit, MO, USA

Coordinates: 38.9108408, -94.3821724

Elevation: 1038 ft

Timestamp: 2021-07-19T16:09:23.009Z

Hazard Type: Wind

ASCE 7-16

MRI 10-Year	76 mph
MRI 25-Year	83 mph
MRI 50-Year	88 mph
MRI 100-Year	94 mph
Risk Category I	103 mph
Risk Category II	109 mph
Risk Category III	117 mph
Risk Category IV	122 mph

ASCE 7-10

MRI 10-Year	76 mph
MRI 25-Year	84 mph
MRI 50-Year	90 mph
MRI 100-Year	96 mph
Risk Category I	105 mph
Risk Category II	115 mph
Risk Category III-IV	120 mph

ASCE 7-05

ASCE 7-05 Wind Speed	90 mph

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Disclaimer

Hazard loads are interpolated from data provided in ASCE 7 and rounded up to the nearest whole integer. Per ASCE 7, islands and coastal areas outside the last contour should use the last wind speed contour of the coastal area – in some cases, this website will extrapolate past the last wind speed contour and therefore, provide a wind speed that is slightly higher. NOTE: For queries near wind-borne debris region boundaries, the resulting determination is sensitive to rounding which may affect whether or not it is considered to be within a wind-borne debris region.

Mountainous terrain, gorges, ocean promontories, and special wind regions shall be examined for unusual wind conditions.

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Hazards by Location

Search Information

Address: Lee's Summit, MO, USA

Coordinates: 38.9108408, -94.3821724

Elevation: 1038 ft

Timestamp: 2021-08-05T14:32:56.278Z

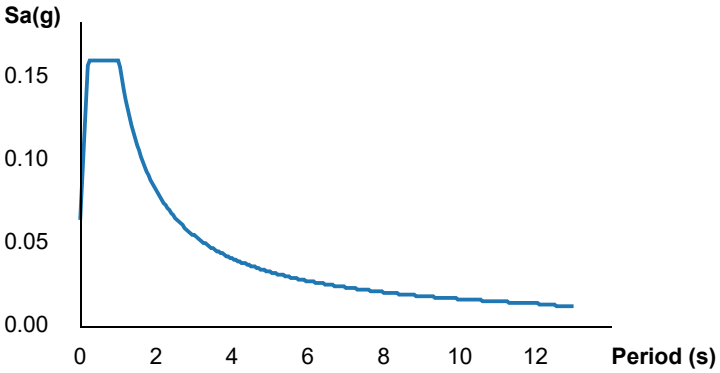
Hazard Type: Seismic

Reference Document: ASCE7-16

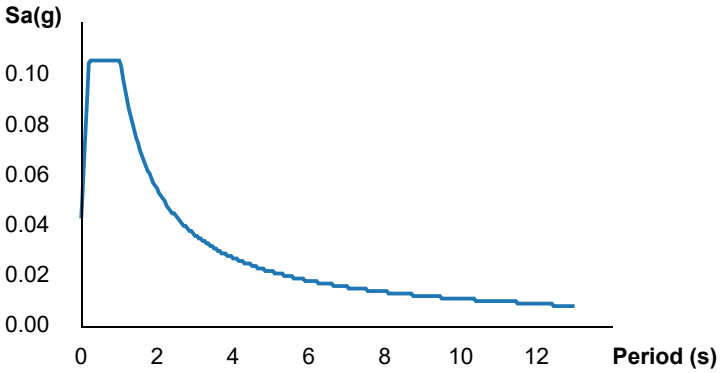
Risk Category: III

Site Class: D

MCER Horizontal Response Spectrum



Design Horizontal Response Spectrum



Basic Parameters

Name	Value	Description
S_S	0.1	MCE_R ground motion (period=0.2s)
S_1	0.068	MCE_R ground motion (period=1.0s)
S_{MS}	0.16	Site-modified spectral acceleration value
S_{M1}	0.164	Site-modified spectral acceleration value
S_{DS}	0.106	Numeric seismic design value at 0.2s SA
S_{D1}	0.109	Numeric seismic design value at 1.0s SA

Additional Information

Name	Value	Description
SDC	B	Seismic design category
F_a	1.6	Site amplification factor at 0.2s
F_v	2.4	Site amplification factor at 1.0s

CR_S	0.927	Coefficient of risk (0.2s)
CR_1	0.876	Coefficient of risk (1.0s)
PGA	0.047	MCE_G peak ground acceleration
F_{PGA}	1.6	Site amplification factor at PGA
PGA_M	0.075	Site modified peak ground acceleration
T_L	12	Long-period transition period (s)
SsRT	0.1	Probabilistic risk-targeted ground motion (0.2s)
SsUH	0.108	Factored uniform-hazard spectral acceleration (2% probability of exceedance in 50 years)
SsD	1.5	Factored deterministic acceleration value (0.2s)
S1RT	0.068	Probabilistic risk-targeted ground motion (1.0s)
S1UH	0.078	Factored uniform-hazard spectral acceleration (2% probability of exceedance in 50 years)
S1D	0.6	Factored deterministic acceleration value (1.0s)
PGAd	0.5	Factored deterministic acceleration value (PGA)

The results indicated here DO NOT reflect any state or local amendments to the values or any delineation lines made during the building code adoption process. Users should confirm any output obtained from this tool with the local Authority Having Jurisdiction before proceeding with design.

Disclaimer

Hazard loads are provided by the U.S. Geological Survey Seismic Design Web Services.

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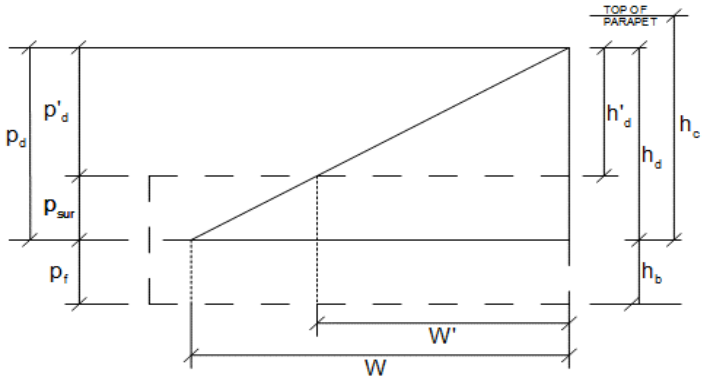
Design Snow Pressures per ASCE 7-10

Project Name: Cooper's Hawk
Project Number: 221130
Title of Run: Snow Loads
Date: 7/22/2021

ASCE 7-10 Design Values:

ASCE 7-10 Reference		Value	Source
7.2	Ground snow load	20.0	Figure 7-1
1.5	Risk Category	III	Table 1.5-1
1.5	Importance Factor, I_S	1.1	Table 1.5-2
7.3.1	Exposure Factor, C_e	1.0	Table 7-2
7.3.2	Thermal Factor, C_t	1.00	Table 7-3
7.4	Roof Slope Factor, C_s	1.0	Figure 7-2
	Is reduction allowable?	Y	Per city official
	Can drift sit on reduced?	N	Per city official
7.3	Flat Roof Snow Load, p_f	15.4 psf	7.3-1
7.3.4	Minimum Snow Load, p_m	22.0 psf	
7.4	Sloped Roof Snow Load, p_s	15.4 psf	7.4-1, Figure 7-5, Balanced
7.10	Rain-on-Snow Surcharge	5.0 psf	
	Total Snow Load	**22.0 psf**	
7.7.1	Snow density, γ	16.6 pcf	7.7-1
7.7.1	Balanced Snow Depth, h_b	0.93 ft	
	Surcharge Snow Load	0.0 psf	
7.7.1	Surcharge Snow Depth, h_{sur}	0.00 ft	7.3.4, 7.4, 7.10, 7.7.1



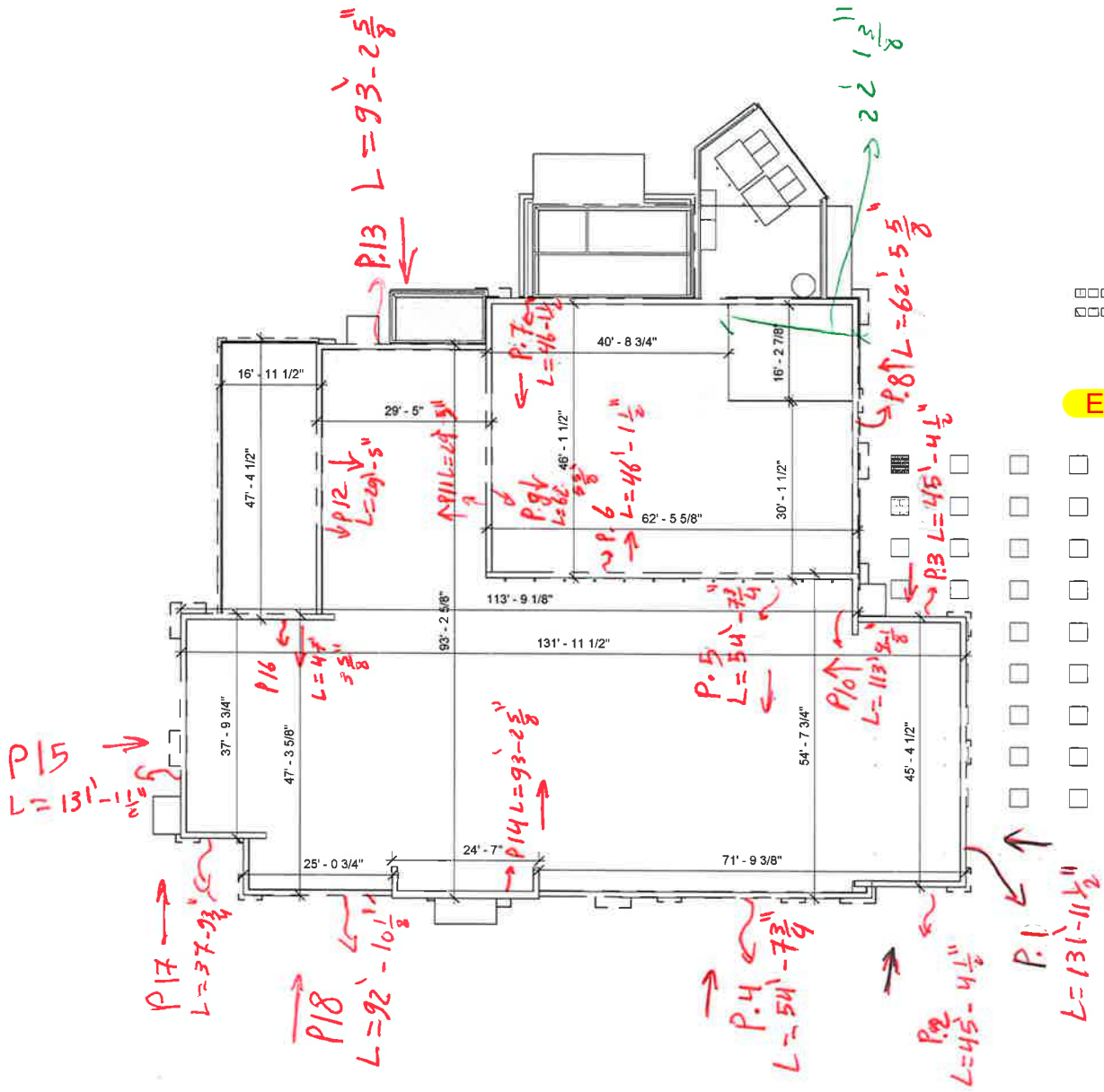
Location	Parapet (ft)	Length, l_u	Low Roof?	h_d	h_c	h_c/h_b	Ignore?	Drift Height (ft)	Drift Weight, p_d (psf)	Drift Weight, p_d' (psf)	Width, W (ft)	Max Snow Load (psf)	Width, W' (ft)	Max Rounded Drift Weight, pd' (psf)
Parapet 1 (H=21ft) (1 to 12_M-G)	4.50	131.96	No	2.72	3.57	3.85	No	2.72	45.1	45.1	10.87	67.1	10.87	75
Parapet 2 (H=21ft) (1-2_M to G)	4.50	45.38	No	1.57	3.57	3.85	No	1.57	26.0	26.0	6.27	48.0	6.27	55
Parapet 3 (H=21ft) (1-2_G to M)	4.50	45.38	No	1.57	3.57	3.85	No	1.57	26.0	26.0	6.27	48.0	6.27	55
Parapet 4 (H=19ft) (2-8_M to F)	2.50	54.65	No	1.74	1.57	1.69	No	1.57	26.1	26.1	4.84	48.1	4.84	55
Parapet 5 (H=23ft) (2-8_M to F)	6.50	54.65	No	1.74	5.57	6.01	No	1.74	28.9	28.9	6.96	50.9	6.96	60
Parapet 6 (H=23ft) (5-8_F to A)	6.50	46.13	No	1.58	5.57	6.01	No	1.58	26.3	26.3	6.33	48.3	6.33	55
Parapet 7 (H=23ft) (5-8_A ro F)	6.50	46.13	No	1.58	5.57	6.01	No	1.58	26.3	26.3	6.33	48.3	6.33	55
Parapet 8 (H=23ft) (3 to 8_A-F))	6.50	62.47	No	1.87	5.57	6.01	No	1.87	31.0	31.0	7.48	53.0	7.48	60
Parapet 9 (H=23ft) (8 to 3_A - F)	6.50	62.47	No	1.87	5.57	6.01	No	1.87	31.0	31.0	7.48	53.0	7.48	60
Parapet 10 (H=23ft)(3 to 12_ G-F)	6.50	113.76	No	2.53	5.57	6.01	No	2.53	42.0	42.0	10.13	64.0	10.13	70
Parapet 11 (H=23ft) (8 to 10_B-F))	6.50	29.42	No	1.20	5.57	6.01	No	1.20	20.0	20.0	4.82	42.0	4.82	50
Parapet 12 (H=19ft) (10 to 8_B-F)	2.50	29.42	No	1.20	1.57	1.69	No	1.20	20.0	20.0	4.82	42.0	4.82	50
Parapet 13 (H=19ft) (8-10_B to N)	2.50	93.22	No	2.30	1.57	1.69	No	1.57	26.1	26.1	8.44	48.1	8.44	55
Parapet 14 (H=21ft) (8-9_ N to B)	4.50	93.22	No	2.30	3.57	3.85	No	2.30	38.1	38.1	9.19	60.1	9.19	70
Parapet 15 (H=21ft) (12 to 1_K-G)	4.50	131.96	No	2.72	3.57	3.85	No	2.72	45.1	45.1	10.87	67.1	10.87	75
Parapet 16 (H=21ft) (12-10_G to K)	4.50	47.30	No	1.60	3.57	3.85	No	1.60	26.6	26.6	6.42	48.6	6.42	55
Parapet 17 (H=21ft) (12-10.4_K to G)	4.50	37.81	No	1.41	3.57	3.85	No	1.41	23.4	23.4	5.63	45.4	5.63	55
Parapet 18 (H=19ft) (11-9_N to B)	2.50	92.84	No	2.29	1.57	1.69	No	1.57	26.1	26.1	8.41	48.1	8.41	55
Low Roof 1 (H=23ft to L =16.5ft) (A to B.8)(B.8 to F)	6.50	16.24	Yes	1.44	5.57	6.01	No	1.44	23.9	23.9	5.77	45.9	5.77	55
Low Roof 2 (H=23ft to L =16.5ft) (3 to 5) (5 to 8	6.50	22.11	Yes	1.44	5.57	6.01	No	1.44	23.9	23.9	5.77	45.9	5.77	55
Low Roof 3 (H=19ft to L=11.5ft) (10 to 11.4)	7.50	16.96	Yes	1.44	6.57	7.08	No	1.44	23.9	23.9	5.77	45.9	5.77	55
Low Roof 4 (H=21ft to L=11.5ft) (G to A.9)	9.50	47.38	Yes	2.14	8.57	9.24	No	2.14	35.5	35.5	8.57	57.5	8.57	65

North

West

East

South



Floor Map

RAM Steel 17.02.01.23
DataBase: #221130#
Building Code: IBC

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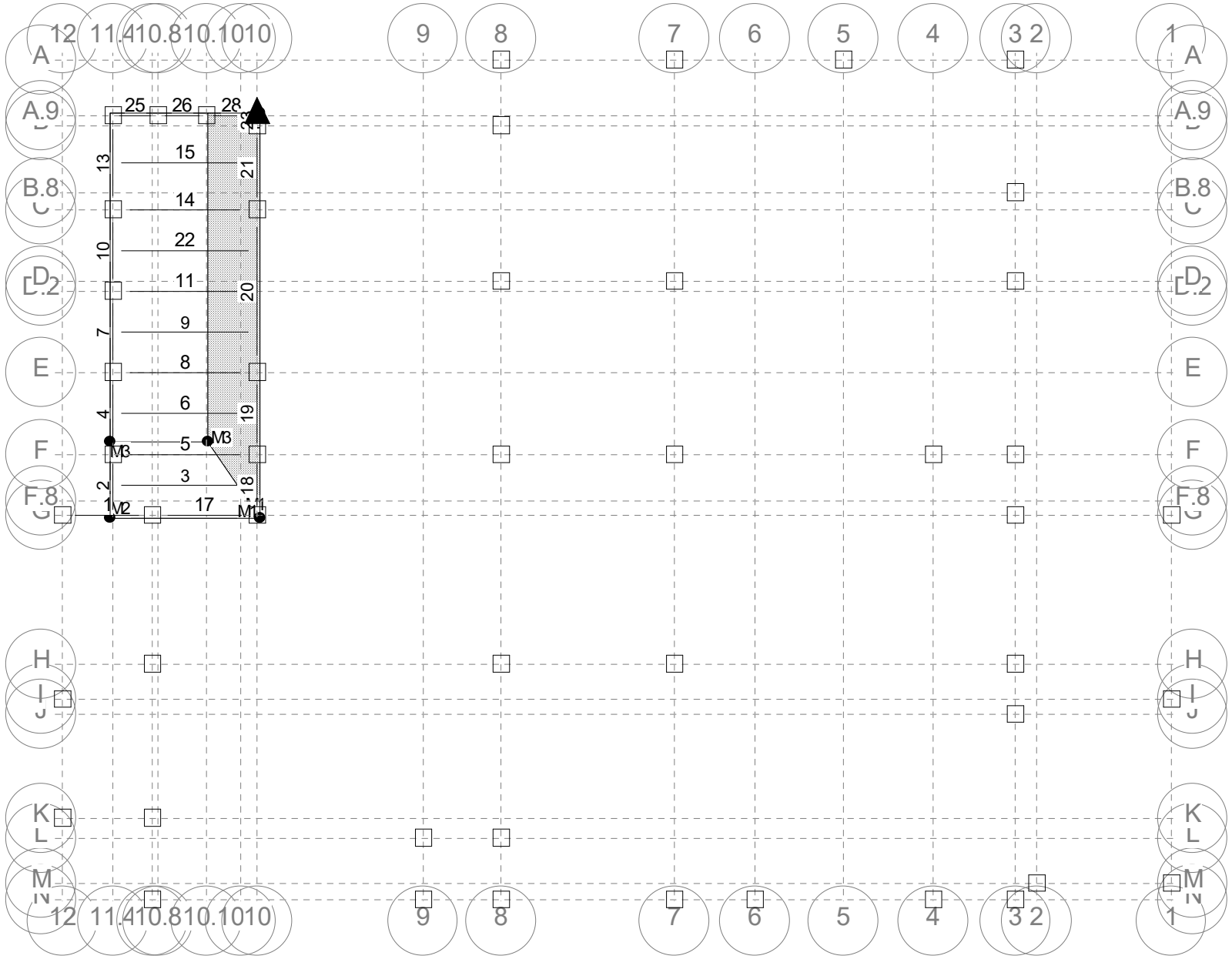
Steel Code: AISC 360-16 LRFD

Floor Type: 11.5 Roof

Beam Numbers



Snow Loads

	Label	Type	Magnitude 1 psf	Magnitude 2 psf	Magnitude 3 psf
	LR 3	Drift	55.000	55.000	22.000
	LR 4	Drift	65.000	65.000	22.000
	Roof Snow Load	Constant	22.000	---	---

Floor Map

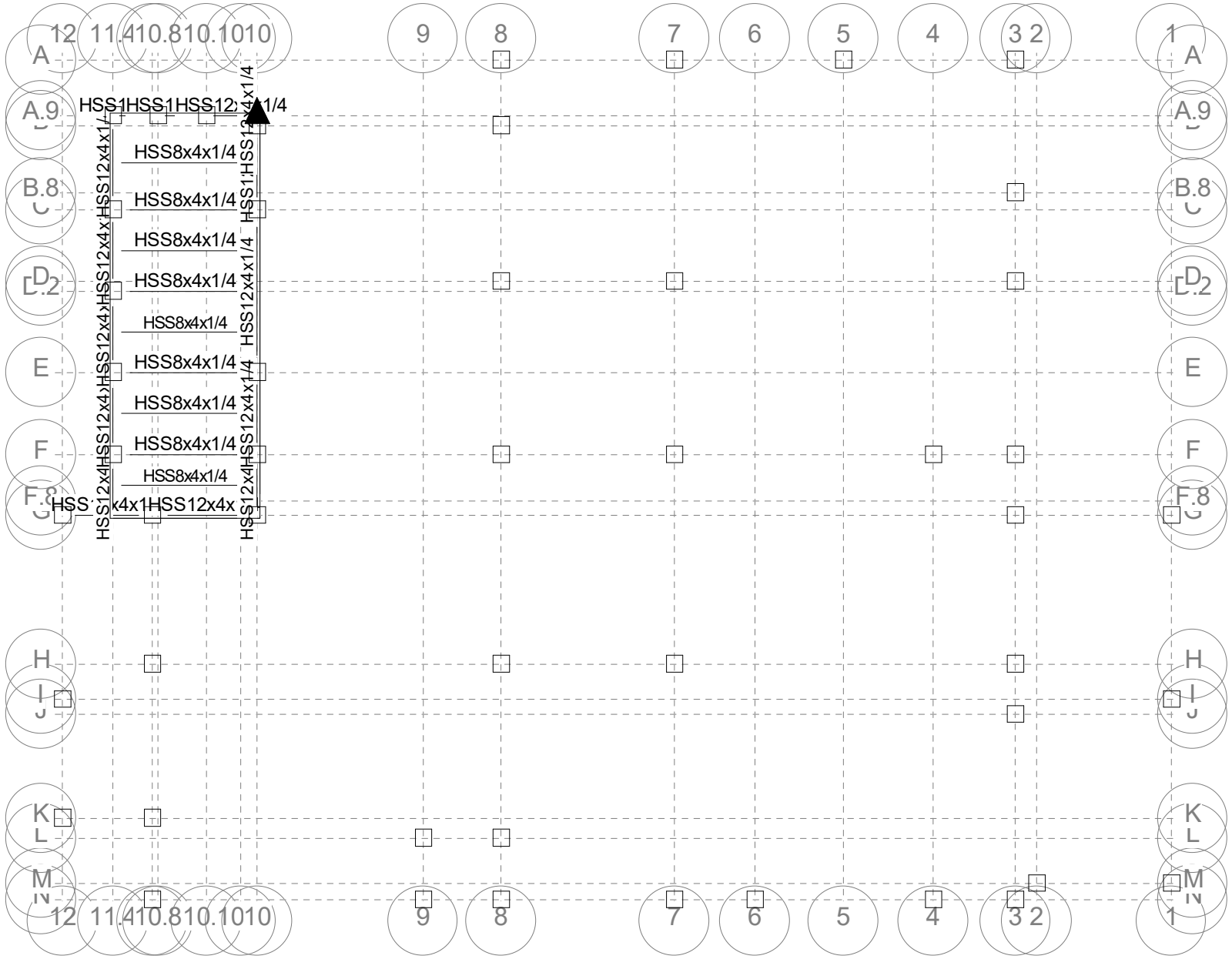
RAM Structural System
Bentley

RAM Steel 17.02.01.23
DataBase: #221130#
Building Code: IBC

08/16/21 15:03:26
Steel Code: AISC 360-16 LRFD

Floor Type: 11.5 Roof

Beam Designs



Surface Loads

	Label	DL psf	CDL psf	LL psf	Reduction Type	PLL psf	CLL psf	Mass DL psf
	Roof	20.0	0.0	20.0	Roof	0.0	0.0	0.0

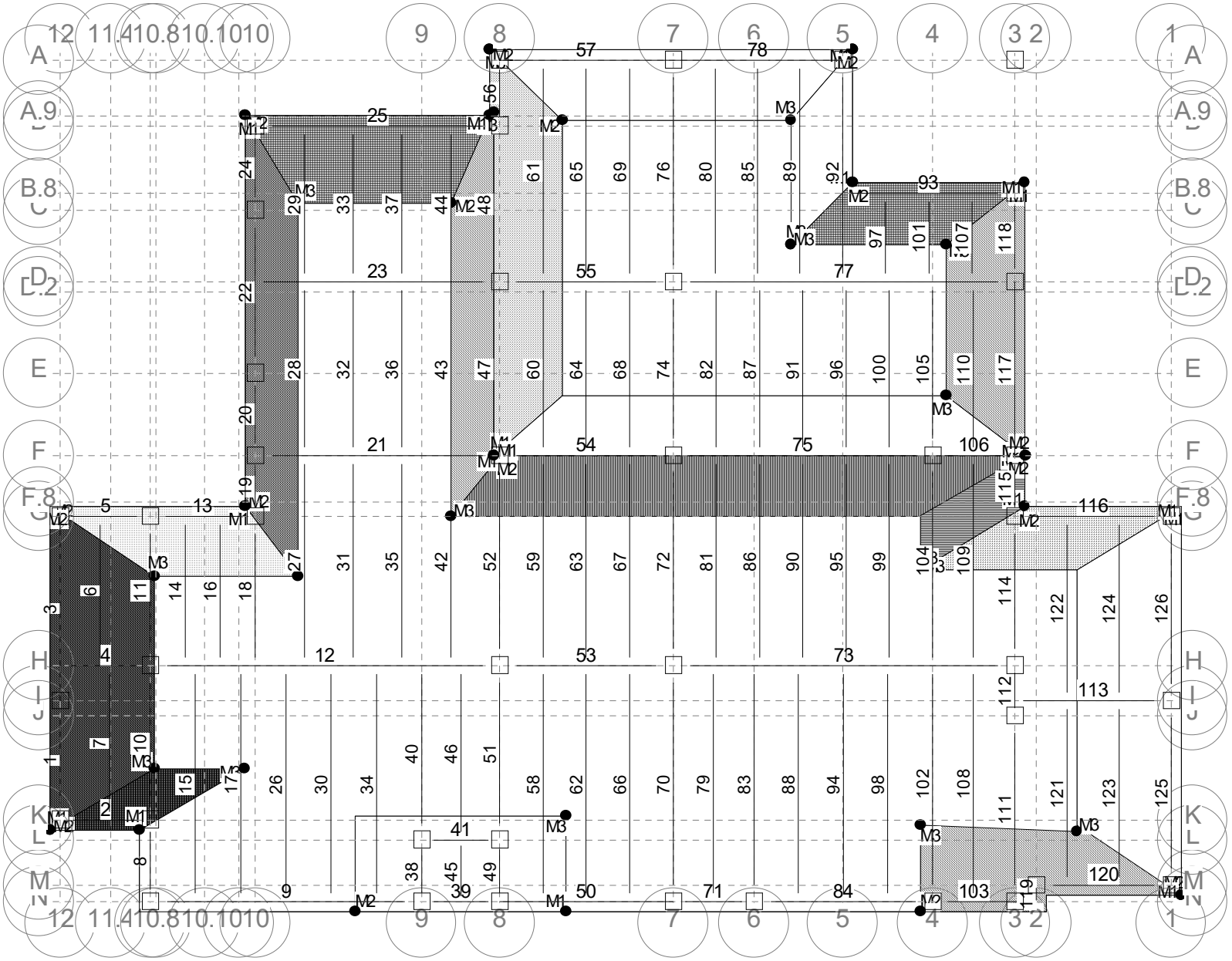
Floor Map

RAM Steel 17.02.01.23
DataBase: #221130#
Building Code: IBC

08/16/21 15:03:26
Steel Code: AISC 360-16 LRFD

Floor Type: Roof

Beam Numbers



Snow Loads

Label	Type	Magnitude 1 psf	Magnitude 2 psf	Magnitude 3 psf
P.1	Drift	75.000	75.000	22.000
P.14	Drift	70.000	70.000	22.000
P.2	Drift	55.000	55.000	22.000
P.3	Drift	55.000	55.000	22.000
P.5	Drift	60.000	60.000	22.000
P.10	Drift	70.000	70.000	22.000
P.11	Drift	50.000	50.000	22.000
P.13	Drift	55.000	55.000	22.000
P.12	Drift	50.000	50.000	22.000
P.16	Drift	55.000	55.000	22.000
P.15	Drift	75.000	75.000	22.000
P.17	Drift	55.000	55.000	22.000
Roof Snow Load	Constant	22.000	---	---
P.9	Drift	60.000	60.000	22.000
P.6	Drift	55.000	55.000	22.000
P.7	Drift	55.000	55.000	22.000
LR 2	Drift	55.000	55.000	22.000
P.8	Drift	60.000	60.000	22.000
LR 1	Drift	55.000	55.000	22.000
Roof Snow Load	Constant	22.000	---	---

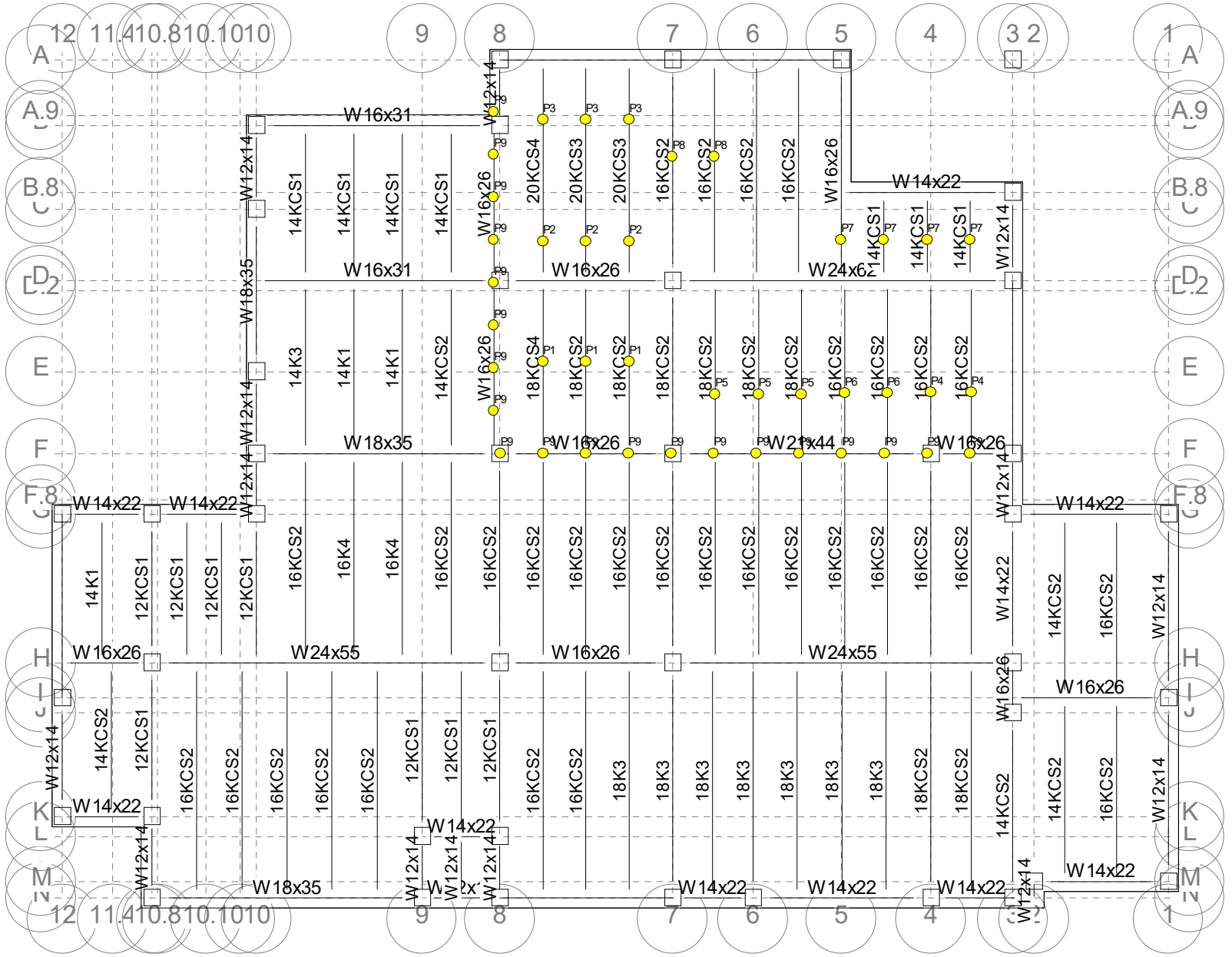
Floor Map

RAM Steel 17.02.01.23
DataBase: #221130#
Building Code: IBC

08/16/21 15:03:26
Steel Code: AISC 360-16 LRFD

Floor Type: Roof

Beam Designs



Surface Loads

	Label	DL psf	CDL psf	LL psf	Reduction Type	PLL psf	CLL psf	Mass DL psf
	Roof	20.0	0.0	20.0	Roof	0.0	0.0	0.0

Point Loads

	Label	DL kips	CDL kips	LL kips	Reduction Type	PLL kips	CLL kips	Mass DL kips
P1	RTU - 1	1.990	0.000	0.000	Unreducible	0.000	0.000	0.000
P2	RTU - 2	1.990	0.000	0.000	Unreducible	0.000	0.000	0.000
P3	RTU - 3	2.030	0.000	0.000	Unreducible	0.000	0.000	0.000
P4	RTU - 4	0.820	0.000	0.000	Unreducible	0.000	0.000	0.000
P5	RTU - 5	2.130	0.000	0.000	Unreducible	0.000	0.000	0.000
P6	RTU - 6	0.820	0.000	0.000	Unreducible	0.000	0.000	0.000
P7	MAU -1	1.910	0.000	0.000	Unreducible	0.000	0.000	0.000
P8	MAU -2	0.980	0.000	0.000	Unreducible	0.000	0.000	0.000
P9	Screen Wall Load	1.500	0.000	0.000	Unreducible	0.000	0.000	0.000

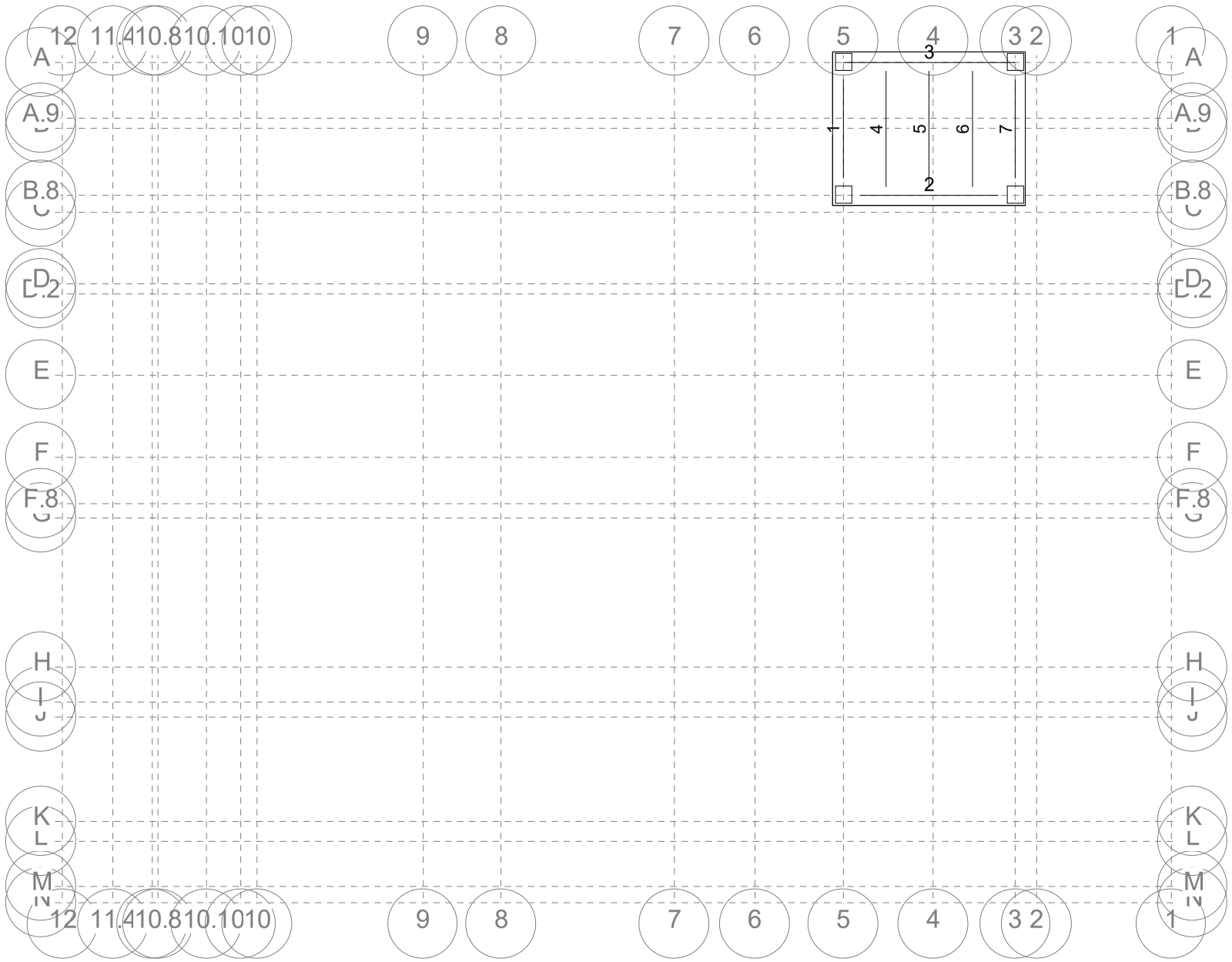
Floor Map

RAM Steel 17.02.01.23
DataBase: #221130#
Building Code: IBC

08/16/21 15:03:26
Steel Code: AISC 360-16 LRFD

Floor Type: 23ft Roof

Beam Numbers



Snow Loads

	Label	Type	Magnitude 1 psf	Magnitude 2 psf	Magnitude 3 psf
	Roof Snow Load	Constant	22.000	---	---

Floor Map

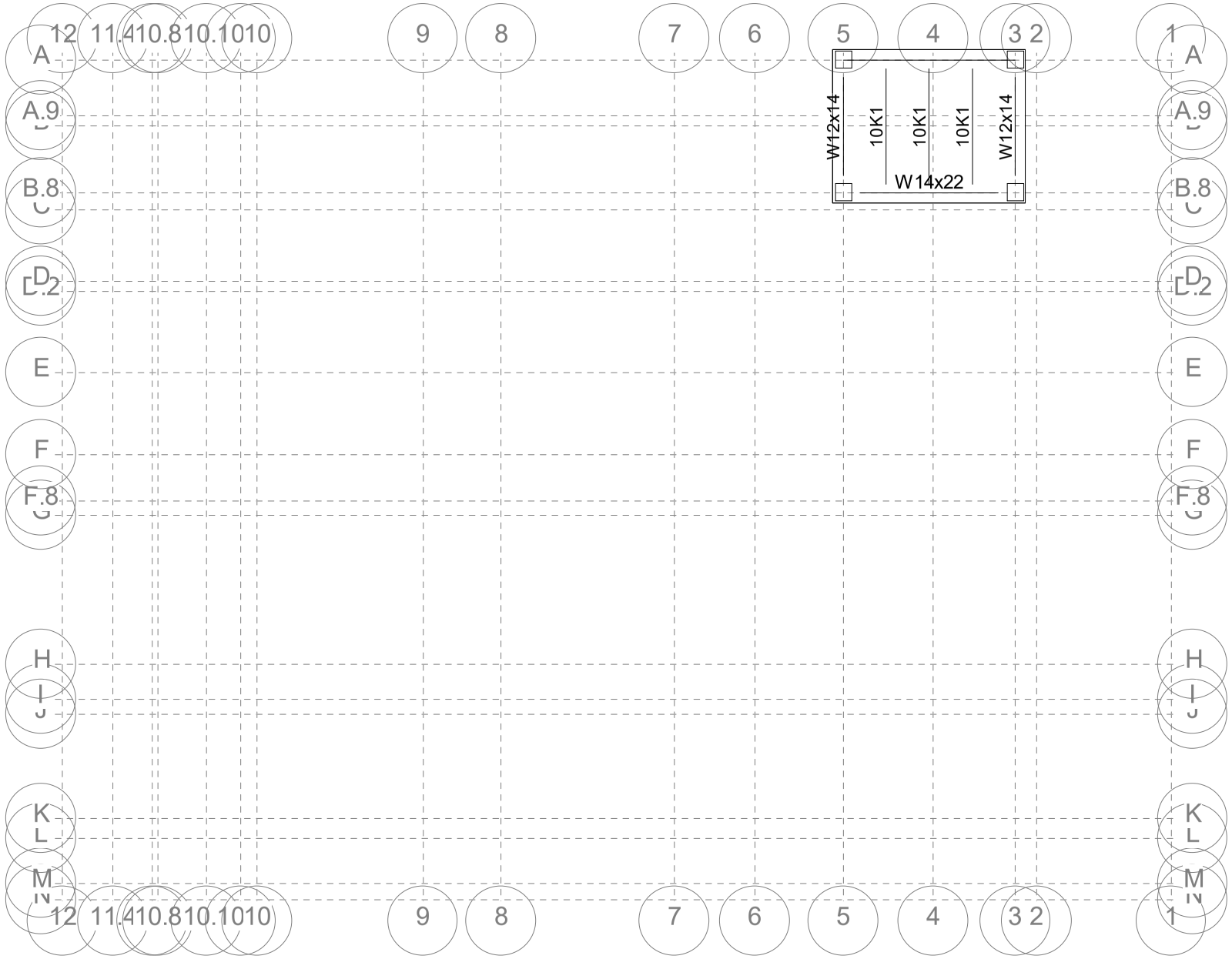
RAM Structural System
Bentley

RAM Steel 17.02.01.23
DataBase: #221130#
Building Code: IBC

08/16/21 15:03:26
Steel Code: AISC 360-16 LRFD

Floor Type: 23ft Roof

Beam Designs



Surface Loads

	Label	DL psf	CDL psf	LL psf	Reduction Type	PLL psf	CLL psf	Mass DL psf
	Roof	20.0	0.0	20.0	Roof	0.0	0.0	0.0

Beam Summary

RAM Structural System
Bentley

RAM Steel 17.02.01.23
DataBase: #221130#
Building Code: IBC

08/16/21 15:03:26
Steel Code: AISC 360-16 LRFD

STEEL BEAM DESIGN SUMMARY:

Demand/Capacity Limits for: Strength: 1.000 Deflection: 1.000

Floor Type: 23ft Roof

Bm #	Length ft	+Mu kip-ft	-Mu kip-ft	ΦMn kip-ft	Fy ksi	Beam Size	Studs
1	15.50	7.1	0.0	65.3	50.0	W12X14 u	
2	20.13	28.1	0.0	124.5	50.0	W14X22 u	
7	15.50	7.1	0.0	65.3	50.0	W12X14 u	

Floor Type: Roof

Bm #	Length ft	+Mu kip-ft	-Mu kip-ft	ΦMn kip-ft	Fy ksi	Beam Size	Studs
1	13.88	12.9	0.0	65.3	50.0	W12X14 u	
2	10.52	14.2	0.0	124.5	50.0	W14X22 u	
4	10.52	22.2	0.0	165.8	50.0	W16X26 u	
5	10.52	14.0	0.0	124.5	50.0	W14X22 u	
8	9.58	2.8	0.0	65.3	50.0	W12X14 u	
9	31.71	123.0	0.0	245.9	50.0	W18X35 u	
12	40.79	316.5	0.0	502.5	50.0	W24X55	
13	12.29	13.8	0.0	121.8	50.0	W14X22 u	
19	7.08	2.3	0.0	65.3	50.0	W12X14 u	
20	9.63	4.2	0.0	65.3	50.0	W12X14 u	
21	28.50	145.8	0.0	234.3	50.0	W18X35 u	
22	19.00	87.9	0.0	249.4	50.0	W18X35 u	
23	28.50	132.1	0.0	188.5	50.0	W16X31	
24	9.83	4.6	0.0	65.3	50.0	W12X14 u	
25	28.50	89.4	0.0	186.7	50.0	W16X31 u	
38	7.25	3.4	0.0	65.3	50.0	W12X14 u	
39	9.08	6.1	0.0	65.3	50.0	W12X14 u	
41	9.08	10.4	0.0	124.5	50.0	W14X22 u	
45	7.25	3.2	0.0	65.3	50.0	W12X14 u	
47	20.25	51.3	0.0	165.8	50.0	W16X26 u	
48	18.21	36.6	0.0	165.8	50.0	W16X26 u	
49	7.25	3.4	0.0	65.3	50.0	W12X14 u	
53	20.21	81.9	0.0	165.8	50.0	W16X26 u	
54	20.21	124.3	0.0	165.8	50.0	W16X26 u	
55	20.21	133.9	0.0	165.8	50.0	W16X26 u	
56	7.67	3.9	0.0	65.3	50.0	W12X14 u	
71	9.42	10.1	0.0	124.5	50.0	W14X22 u	
73	39.88	324.7	0.0	502.5	50.0	W24X55	
75	30.25	269.8	0.0	357.8	50.0	W21X44	
77	39.88	409.8	0.0	573.8	50.0	W24X62	
84	20.83	49.7	0.0	124.5	50.0	W14X22 u	
92	25.88	115.9	0.0	165.8	50.0	W16X26	

Bm #	Length	+Mu	-Mu	ΦMn	Fy	Beam Size	Studs
93	20.12	39.9	0.0	124.5	50.0	W14X22 u	
103	9.63	13.4	-1.1	109.9	50.0	W14X22 u	
	2.46	0.0	-1.1				
106	9.63	28.7	0.0	165.8	50.0	W16X26 u	
112	5.87	13.5	0.0	165.8	50.0	W16X26 u	
113	18.21	67.2	0.0	153.5	50.0	W16X26 u	
114	17.38	14.0	0.0	124.5	50.0	W14X22 u	
115	7.08	2.8	0.0	65.3	50.0	W12X14 u	
116	18.21	40.2	0.0	109.1	50.0	W14X22 u	
118	10.38	5.5	0.0	65.3	50.0	W12X14 u	
119	1.96	0.1	0.0	65.3	50.0	W12X14 u	
120	15.75	34.3	0.0	117.9	50.0	W14X22 u	
125	21.50	31.9	0.0	65.3	50.0	W12X14 u	
126	21.50	31.9	0.0	65.3	50.0	W12X14 u	

Floor Type: 11.5 Roof

Bm #	Length ft	+Mu kip-ft	-Mu kip-ft	ΦMn kip-ft	Fy ksi	Beam Size	Studs
1	10.52	6.5	0.0	88.3	46.0	HSS12X4X1/4 u	
2	7.08	5.9	0.0	88.3	46.0	HSS12X4X1/4 u	
3	16.85	13.1	0.0	45.9	46.0	HSS8X4X1/4 u	
4	9.63	7.0	0.0	88.3	46.0	HSS12X4X1/4 u	
5	16.85	11.5	0.0	45.9	46.0	HSS8X4X1/4 u	
6	16.85	11.6	0.0	45.9	46.0	HSS8X4X1/4 u	
7	9.50	6.8	0.0	88.3	46.0	HSS12X4X1/4 u	
8	16.85	11.5	0.0	45.9	46.0	HSS8X4X1/4 u	
9	16.85	11.4	0.0	45.9	46.0	HSS8X4X1/4 u	
10	9.50	6.8	0.0	88.3	46.0	HSS12X4X1/4 u	
11	16.85	11.4	0.0	45.9	46.0	HSS8X4X1/4 u	
13	11.00	9.0	0.0	88.3	46.0	HSS12X4X1/4 u	
14	16.85	12.3	0.0	45.9	46.0	HSS8X4X1/4 u	
15	16.85	13.1	0.0	45.9	46.0	HSS8X4X1/4 u	
17	12.29	5.2	0.0	88.3	46.0	HSS12X4X1/4 u	
18	7.08	6.0	0.0	88.3	46.0	HSS12X4X1/4 u	
19	9.63	8.5	0.0	88.3	46.0	HSS12X4X1/4 u	
20	19.00	33.0	0.0	88.3	46.0	HSS12X4X1/4 u	
21	9.83	9.6	0.0	88.3	46.0	HSS12X4X1/4 u	
22	16.85	11.4	0.0	45.9	46.0	HSS8X4X1/4 u	
23	1.17	0.0	-1.1	96.0	50.0	HSS12X4X1/4 u	
25	5.23	0.7	0.0	88.3	46.0	HSS12X4X1/4 u	
26	5.67	0.8	0.0	88.3	46.0	HSS12X4X1/4 u	
28	5.96	1.3	0.0	88.3	46.0	HSS12X4X1/4 u	

* after Size denotes beam failed stress/capacity criteria.
# after Size denotes beam failed deflection criteria.

u after Size denotes this size has been assigned by the User.

JOIST SELECTION SUMMARY:

Demand/Capacity Limits for: Strength: 1.000 Deflection: 1.000

Floor Type: 23ft Roof

Standard Joists:

Joist #	Length	WDL	WLL	WTL	Joist	
4	15.50	100.6	110.7	211.3	10K1	
5	15.50	100.6	110.7	211.3	10K1	
6	15.50	100.6	110.7	211.3	10K1	

Floor Type: Roof

Standard Joists:

Joist #	Length	WDL	WLL	WTL	Joist	
6	17.38	105.2	262.3	367.6	14K1	
28	20.25	114.0	141.9	255.9	14K3	u
31	24.46	114.0	125.4	239.4	16K4	u
32	20.25	114.0	125.4	239.4	14K1	
35	24.46	114.0	125.4	239.4	16K4	u
36	20.25	114.0	125.4	239.4	14K1	
66	27.58	101.0	111.1	212.2	18K3	u
70	27.58	97.6	107.4	205.0	18K3	u
79	27.58	94.2	103.6	197.8	18K3	u
83	27.58	99.2	109.1	208.3	18K3	u
88	27.58	104.2	114.6	218.7	18K3	
94	27.58	104.2	114.6	218.7	18K3	
98	27.58	104.2	119.9	224.1	18K3	

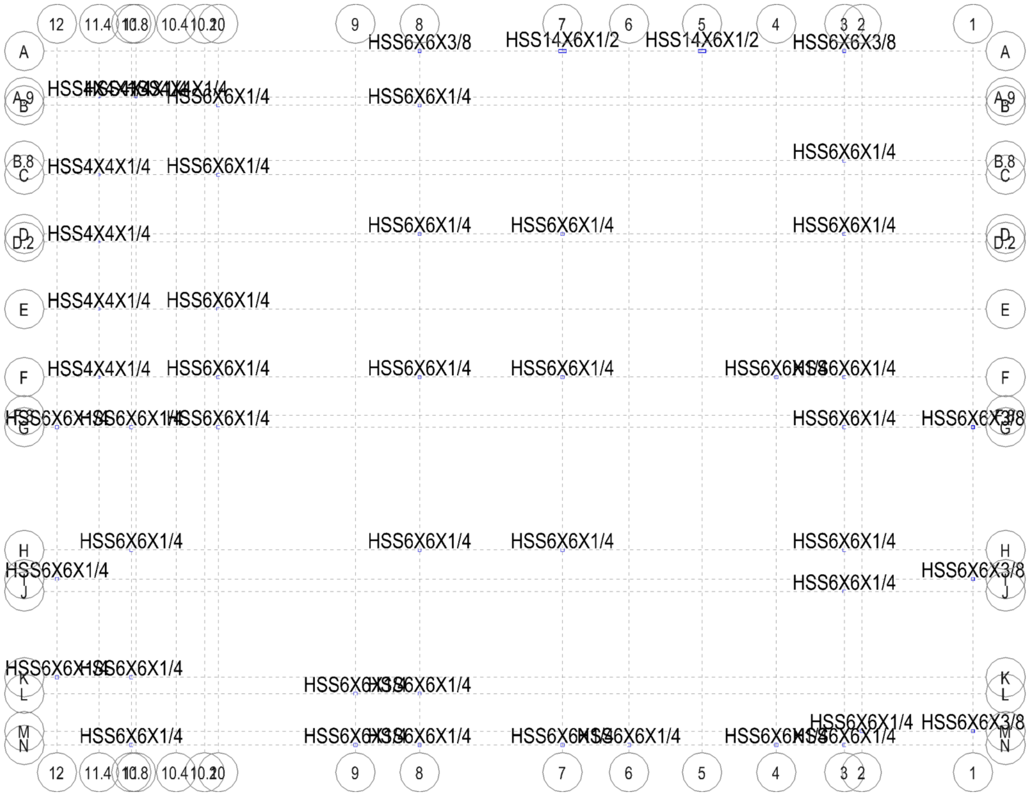
Constant Shear Joists:

Joist #	Length	Wmax	Pmax	Vmax	Mmax	Joist	
7	18.00	362.9	0.0	3.1	14.1	14KCS2	
10	18.00	308.5	0.0	2.3	9.7	12KCS1	
11	17.38	347.2	0.0	2.4	9.3	12KCS1	
14	17.38	287.7	0.0	1.8	7.0	12KCS1	
15	27.58	265.8	0.0	3.1	22.0	16KCS2	u
16	17.38	287.2	0.0	1.8	7.0	12KCS1	
17	27.58	228.9	0.0	3.1	21.2	16KCS2	u
18	17.38	299.4	0.0	2.1	8.3	12KCS1	
26	27.58	222.0	0.0	3.1	21.1	16KCS2	u
27	24.46	256.0	0.0	3.1	18.5	16KCS2	u
29	18.21	405.6	0.0	2.9	11.5	14KCS1	
30	27.58	246.6	0.0	3.2	21.3	16KCS2	u
33	18.21	405.6	0.0	2.8	11.1	14KCS1	
34	27.58	416.2	0.0	3.9	22.8	16KCS2	
37	18.21	405.6	0.0	2.8	11.1	14KCS1	

Joist #	Length	Wmax	Pmax	Vmax	Mmax	Joist	
40	20.33	264.3	0.0	2.2	10.7	12KCS1	
42	24.46	362.8	0.0	3.5	18.8	16KCS2	
43	20.25	334.4	0.0	3.3	16.1	14KCS2	
44	18.21	376.3	0.0	2.8	12.0	14KCS1	
46	20.33	244.3	0.0	2.0	9.9	12KCS1	
51	20.33	258.0	0.0	2.1	10.4	12KCS1	
52	24.46	421.3	0.0	3.5	17.9	16KCS2	
58	27.58	405.2	0.0	3.8	21.8	16KCS2	
59	24.46	404.1	0.0	3.2	16.7	16KCS2	u
60	20.25	462.3	2.0	5.4	32.2	18KCS4	u
61	25.88	415.6	2.0	7.1	42.2	20KCS4	u
62	27.58	243.1	0.0	3.1	20.4	16KCS2	u
63	24.46	404.2	0.0	3.2	16.7	16KCS2	u
64	20.25	378.9	2.0	3.7	22.7	18KCS2	u
65	25.88	354.7	2.0	5.3	31.7	20KCS3	u
67	24.46	404.2	0.0	3.2	16.7	16KCS2	u
68	20.25	378.9	2.0	3.6	21.5	18KCS2	u
69	25.88	354.7	2.0	5.0	30.2	20KCS3	u
72	24.46	403.7	0.0	3.2	16.7	16KCS2	u
74	20.25	378.5	0.0	2.7	11.6	18KCS2	u
76	25.88	350.7	1.0	3.7	24.2	16KCS2	
80	25.88	346.7	1.0	3.7	24.0	16KCS2	
81	24.46	403.3	0.0	3.2	16.6	16KCS2	u
82	20.25	378.1	2.1	4.1	20.4	18KCS2	
85	25.88	346.7	0.0	3.1	17.8	16KCS2	u
86	24.46	403.3	0.0	3.2	16.6	16KCS2	u
87	20.25	378.1	2.1	4.1	20.4	18KCS2	
89	25.88	346.7	0.0	3.4	20.1	16KCS2	u
90	24.46	403.3	0.0	3.2	16.6	16KCS2	u
91	20.25	378.1	2.1	4.1	20.4	18KCS2	
95	24.46	403.3	0.0	3.2	16.6	16KCS2	u
96	20.25	378.1	0.8	3.2	14.7	16KCS2	u
97	10.38	349.9	1.9	2.3	8.1	14KCS1	u
99	24.46	403.3	0.0	3.2	16.5	16KCS2	u
100	20.25	378.1	0.8	3.2	14.7	16KCS2	u
101	10.38	349.9	1.9	2.3	8.2	14KCS1	u
102	27.58	316.9	0.0	3.3	20.8	18KCS2	u
104	24.46	394.2	0.0	3.2	17.1	16KCS2	u
105	20.25	369.5	0.8	3.1	14.7	16KCS2	u
107	10.38	349.4	1.9	2.5	8.7	14KCS1	
108	27.58	348.5	0.0	3.4	20.3	18KCS2	u
109	24.46	385.0	0.0	3.5	18.6	16KCS2	
110	20.25	360.9	0.8	3.4	16.9	16KCS2	
111	21.71	365.4	0.0	2.9	14.6	14KCS2	
121	21.50	414.8	0.0	3.4	16.2	14KCS2	

Joist #	Length	Wmax	Pmax	Vmax	Mmax	Joist	
122	21.50	423.3	0.0	3.3	16.0	14KCS2	
123	21.50	420.1	0.0	4.2	22.2	16KCS2	*u
124	21.50	421.0	0.0	4.2	22.2	16KCS2	*u

* after Size denotes joist is inadequate.
u after Size denotes this size has been assigned by the User.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HSS4X4X1/4
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HSS4X4X1/4
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Column Load Summary

RAM Structural System
Bentley

RAM Steel 17.02.01.23
DataBase: #221130#
Building Code: IBC

08/16/21 15:15:05
Steel Code: AISC360-16 LRFD

UNFACTORED COLUMN LOADS:

Units: kips

Column Line 12-K

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
16.5 ft Roof	1	5.00	1.3	0.1	3.1	0.0	1.4	4.5
Patio	1	11.50	1.3	0.3	3.1	0.0	1.6	4.7

Column Line 12-I

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
16.5 ft Roof	2	5.00	2.6	0.1	6.2	0.0	2.7	8.9
Patio	2	11.50	2.6	0.3	6.2	0.0	2.9	9.1

Column Line 12-G

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
16.5 ft Roof	3	5.00	2.0	0.1	4.5	0.0	2.1	6.6
Patio	3	11.50	2.4	0.3	4.9	0.0	2.7	7.6

Column Line 11.4-F

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
Patio	4	11.50	2.0	0.1	2.3	0.0	2.1	4.4

Column Line 11.4-E

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
Patio	5	11.50	2.2	0.1	1.9	0.0	2.3	4.3

Column Line 11.4-D.2

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
Patio	6	11.50	2.2	0.1	1.9	0.0	2.3	4.3

Column Line 11.4-C

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
Patio	7	11.50	2.3	0.1	2.1	0.0	2.5	4.6

Column Line 11.4-A.9

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
Patio	8	11.50	0.9	0.1	0.8	0.0	1.1	1.8

Column Line 11-N

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
16.5 ft Roof	4	5.00	5.0	0.1	5.1	0.0	5.1	10.2
Patio	9	11.50	5.0	0.3	5.1	0.0	5.3	10.4

Column Line 11-K

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
16.5 ft Roof	5	5.00	2.1	0.1	3.3	0.0	2.2	5.5
Patio	10	11.50	2.1	0.3	3.3	0.0	2.4	5.7

Column Line 11-H

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
16.5 ft Roof	6	5.00	12.5	0.1	14.3	0.0	12.6	26.9
Patio	11	11.50	12.5	0.3	14.3	0.0	12.8	27.1

Column Line 11-G

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
16.5 ft Roof	7	5.00	2.5	0.1	4.3	0.0	2.6	6.9
Patio	12	11.50	3.5	0.3	5.9	0.0	3.8	9.7

Column Line 10.8-A.9

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
Patio	48	11.50	0.5	0.1	0.4	0.0	0.6	1.0

Column Line 10.4-A.9

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
Patio	50	11.50	0.5	0.1	0.5	0.0	0.6	1.1

Column Line 10-G

Column Load Summary

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
16.5 ft Roof	8	5.00	2.2	0.1	3.3	0.0	2.2	5.5
Patio	13	11.50	3.0	0.3	4.8	0.0	3.3	8.1

Column Line 10-F

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
16.5 ft Roof	9	5.00	6.5	0.1	7.5	0.0	6.5	14.1
Patio	14	11.50	8.4	0.3	10.3	0.0	8.7	19.0

Column Line 10-E

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
16.5 ft Roof	10	5.00	3.8	0.1	4.8	0.0	3.8	8.6
Patio	15	11.50	7.1	0.3	8.8	0.0	7.4	16.2

Column Line 10-C

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
16.5 ft Roof	11	5.00	4.4	0.1	5.5	0.0	4.5	9.9
Patio	16	11.50	7.7	0.3	9.6	0.0	8.0	17.6

Column Line 10-B

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
16.5 ft Roof	12	5.00	3.4	0.1	5.4	0.0	3.5	8.9
Patio	17	11.50	4.4	0.3	6.7	0.0	4.7	11.5

See Column Loads Report for applied moments.

Column Line 9-N

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
16.5 ft Roof	13	5.00	5.3	0.1	7.4	0.0	5.4	12.8
Patio	18	11.50	5.3	0.3	7.4	0.0	5.6	13.0

Column Line 9-L

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
16.5 ft Roof	14	5.00	2.2	0.1	2.9	0.0	2.2	5.1
Patio	19	11.50	2.2	0.3	2.9	0.0	2.5	5.3

Column Load Summary

Column Line 8-N

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
16.5 ft Roof	15	5.00	3.4	0.1	5.4	0.0	3.4	8.8
Patio	20	11.50	3.4	0.3	5.4	0.0	3.6	9.0

Column Line 8-L

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
16.5 ft Roof	16	5.00	2.1	0.1	2.8	0.0	2.2	5.0
Patio	21	11.50	2.1	0.3	2.8	0.0	2.4	5.2

Column Line 8-H

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
16.5 ft Roof	17	5.00	16.2	0.1	16.7	0.0	16.2	33.0
Patio	22	11.50	16.2	0.3	16.7	0.0	16.4	33.2

Column Line 8-F

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
16.5 ft Roof	18	5.00	19.3	0.1	18.6	0.0	19.4	38.0
Patio	23	11.50	19.3	0.3	18.6	0.0	19.6	38.2

Column Line 8-D

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
16.5 ft Roof	19	5.00	21.6	0.1	18.3	0.0	21.7	40.1
Patio	24	11.50	21.6	0.3	18.3	0.0	21.9	40.3

Column Line 8-B

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
16.5 ft Roof	20	5.00	7.9	0.1	6.8	0.0	7.9	14.7
Patio	25	11.50	7.9	0.3	6.8	0.0	8.2	15.0

Column Line 8-A

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
16.5 ft Roof	21	5.00	6.0	0.1	4.9	0.0	6.2	11.1
Patio	26	11.50	6.0	0.4	4.9	0.0	6.4	11.4

Column Load Summary

Column Line 7-N

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
16.5 ft Roof	22	5.00	4.8	0.1	5.2	0.0	4.9	10.1
Patio	27	11.50	4.8	0.3	5.2	0.0	5.1	10.3

Column Line 7-H

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
16.5 ft Roof	23	5.00	17.0	0.1	17.7	0.0	17.1	34.8
Patio	28	11.50	17.0	0.3	17.7	0.0	17.3	35.0

Column Line 7-F

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
16.5 ft Roof	24	5.00	24.3	0.1	18.5	0.0	24.4	42.8
Patio	29	11.50	24.3	0.3	18.5	0.0	24.6	43.0

Column Line 7-D

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
16.5 ft Roof	25	5.00	25.6	0.1	18.3	0.0	25.7	44.0
Patio	30	11.50	25.6	0.3	18.3	0.0	25.9	44.2

Column Line 7-A

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
16.5 ft Roof	26	5.00	10.2	0.3	9.2	0.0	10.5	19.6
Patio	31	11.50	10.2	1.0	9.2	0.0	11.1	20.3

Column Line 6-N

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
16.5 ft Roof	27	5.00	4.9	0.1	5.0	0.0	5.0	9.9
Patio	32	11.50	4.9	0.3	5.0	0.0	5.2	10.2

Column Line 5-B.8

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
23ft Roof	1	6.50	2.3	0.1	2.2	0.0	2.4	4.6

Column Line 5-A

Column Load Summary

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
23ft Roof	2	6.50	2.5	0.4	2.2	0.0	2.9	5.1
16.5 ft Roof	28	5.00	8.8	0.7	9.6	0.0	9.5	19.1
Patio	33	11.50	8.8	1.3	9.6	0.0	10.2	19.7

Column Line 4-N

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
16.5 ft Roof	29	5.00	4.9	0.1	6.0	-0.1	4.9	11.0
Patio	34	11.50	4.9	0.3	6.0	-0.1	5.1	11.2

Column Line 4-F

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
16.5 ft Roof	30	5.00	18.7	0.1	14.8	0.0	18.7	33.5
Patio	35	11.50	18.7	0.3	14.8	0.0	18.9	33.7

Column Line 3-N

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
16.5 ft Roof	31	5.00	2.2	0.1	3.5	0.0	2.3	5.8
Patio	36	11.50	2.2	0.3	3.5	0.0	2.5	6.0

Column Line 3-J

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
16.5 ft Roof	32	5.00	3.6	0.1	4.6	0.0	3.7	8.3
Patio	37	11.50	3.6	0.3	4.6	0.0	3.9	8.5

Column Line 3-H

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
16.5 ft Roof	33	5.00	12.6	0.1	13.3	0.0	12.7	26.0
Patio	38	11.50	12.6	0.3	13.3	0.0	12.9	26.2

Column Line 3-G

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
16.5 ft Roof	34	5.00	3.1	0.1	5.0	0.0	3.2	8.2
Patio	39	11.50	3.1	0.3	5.0	0.0	3.4	8.4

Column Line 3-F

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
16.5 ft Roof	35	5.00	3.5	0.1	4.8	0.0	3.6	8.4
Patio	40	11.50	3.5	0.3	4.8	0.0	3.8	8.6

Column Line 3-D

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
16.5 ft Roof	36	5.00	15.0	0.1	12.6	0.0	15.1	27.7
Patio	41	11.50	15.0	0.3	12.6	0.0	15.3	27.9

Column Line 3-B.8

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
23ft Roof	3	6.50	2.3	0.1	2.2	0.0	2.4	4.6
16.5 ft Roof	37	5.00	5.3	0.2	5.2	0.0	5.5	10.8
Patio	42	11.50	5.3	0.4	5.2	0.0	5.7	11.0

Column Line 3-A

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
23ft Roof	4	6.50	2.5	0.2	2.2	0.0	2.7	4.8
16.5 ft Roof	38	5.00	2.5	0.3	2.2	0.0	2.8	5.0
Patio	43	11.50	2.5	0.6	2.2	0.0	3.1	5.3

Column Line 2-M

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
16.5 ft Roof	39	5.00	1.9	0.1	3.2	0.0	2.0	5.2
Patio	44	11.50	1.9	0.3	3.2	0.0	2.2	5.4

Column Line 1-M

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
16.5 ft Roof	40	5.00	2.5	0.1	5.6	0.0	2.7	8.3
Patio	45	11.50	2.5	0.4	5.6	0.0	2.9	8.6

Column Line 1-I

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
16.5 ft Roof	41	5.00	5.0	0.1	10.7	0.0	5.1	15.8
Patio	46	11.50	5.0	0.4	10.7	0.0	5.4	16.1

Column Line 1-G

Level	Col#	Length	Dead	Self	+Live	-Live	MinTot	MaxTot
16.5 ft Roof	42	5.00	2.8	0.1	6.0	0.0	2.9	9.0
Patio	47	11.50	2.8	0.4	6.0	0.0	3.2	9.2

Gravity Column Design Summary

RAM Steel 17.02.01.23
DataBase: #221130#
Building Code: IBC

08/16/21 15:14:39
Steel Code: AISC360-16 LRFD

DEMAND/CAPACITY LIMIT FOR STRENGTH : 1.000

Column Line 12-K

Level	Pu	Mux	Muy	LC	Interaction Eq.	Angle	Fy	Size
16.5 ft Roof	6.7	1.3	-1.7	1	0.10 Eq H1-1b	0.0	46	HSS6X6X1/4
Patio	6.9	0.9	-1.2	1	0.08 Eq H1-1b	0.0	46	HSS6X6X1/4

Column Line 11.4-F

Level	Pu	Mux	Muy	LC	Interaction Eq.	Angle	Fy	Size
Patio	5.4	1.0	0.4	6	0.12 Eq H1-1b	0.0	46	HSS4X4X1/4

Column Line 11.4-E

Level	Pu	Mux	Muy	LC	Interaction Eq.	Angle	Fy	Size
Patio	5.1	1.0	0.3	6	0.11 Eq H1-1b	0.0	46	HSS4X4X1/4

Column Line 11.4-D.2

Level	Pu	Mux	Muy	LC	Interaction Eq.	Angle	Fy	Size
Patio	5.1	1.0	0.3	6	0.11 Eq H1-1b	0.0	46	HSS4X4X1/4

Column Line 11.4-C

Level	Pu	Mux	Muy	LC	Interaction Eq.	Angle	Fy	Size
Patio	5.5	1.1	-0.4	10	0.12 Eq H1-1b	0.0	46	HSS4X4X1/4

Column Line 11.4-A.9

Level	Pu	Mux	Muy	LC	Interaction Eq.	Angle	Fy	Size
Patio	2.5	0.2	0.7	1	0.07 Eq H1-1b	0.0	46	HSS4X4X1/4

Column Line 11-N

Level	Pu	Mux	Muy	LC	Interaction Eq.	Angle	Fy	Size
16.5 ft Roof	14.3	6.0	-0.5	1	0.22 Eq H1-1b	0.0	46	HSS6X6X1/4
Patio	14.6	4.2	-0.4	1	0.17 Eq H1-1b	0.0	46	HSS6X6X1/4

Column Line 11-K

Level	Pu	Mux	Muy	LC	Interaction Eq.	Angle	Fy	Size
16.5 ft Roof	7.2	-1.5	-1.3	10	0.10 Eq H1-1b	0.0	46	HSS6X6X1/4
Patio	7.5	-1.1	-0.9	10	0.08 Eq H1-1b	0.0	46	HSS6X6X1/4

Column Line 11-H

Level	Pu	Mux	Muy	LC	Interaction Eq.	Angle	Fy	Size
16.5 ft Roof	32.5	11.8	0.9	14	0.54 Eq H1-1a	0.0	46	HSS6X6X1/4
Patio	38.2	7.1	-0.0	1	0.45 Eq H1-1a	0.0	46	HSS6X6X1/4

Column Line 11-G

Level	Pu	Mux	Muy	LC	Interaction Eq.	Angle	Fy	Size
16.5 ft Roof	7.9	1.3	1.6	8	0.09 Eq H1-1b	0.0	46	HSS6X6X1/4
Patio	12.8	0.0	0.0	1	0.08 Eq Axial	0.0	46	HSS6X6X1/4

Column Line 10.8-A.9

Level	Pu	Mux	Muy	LC	Interaction Eq.	Angle	Fy	Size
Patio	1.0	0.0	0.0	1	0.02 Eq Axial	0.0	46	HSS4X4X1/4

Column Line 10.4-A.9

Level	Pu	Mux	Muy	LC	Interaction Eq.	Angle	Fy	Size
Patio	1.2	0.0	0.0	1	0.02 Eq Axial	0.0	46	HSS4X4X1/4

Column Line 10-G

Level	Pu	Mux	Muy	LC	Interaction Eq.	Angle	Fy	Size
16.5 ft Roof	7.1	-1.6	1.2	6	0.09 Eq H1-1b	0.0	46	HSS6X6X1/4
Patio	11.7	0.0	0.0	1	0.07 Eq Axial	0.0	46	HSS6X6X1/4

Column Line 10-F

Level	Pu	Mux	Muy	LC	Interaction Eq.	Angle	Fy	Size
16.5 ft Roof	19.0	7.7	-0.6	10	0.26 Eq H1-1b	0.0	46	HSS6X6X1/4
Patio	25.7	0.0	0.0	1	0.16 Eq Axial	0.0	46	HSS6X6X1/4

Column Line 10-E

Level	Pu	Mux	Muy	LC	Interaction Eq.	Angle	Fy	Size
16.5 ft Roof	11.0	-1.0	-4.5	11	0.17 Eq H1-1b	0.0	46	HSS6X6X1/4
Patio	21.8	0.0	0.0	1	0.13 Eq Axial	0.0	46	HSS6X6X1/4

Column Line 10-C

Level	Pu	Mux	Muy	LC	Interaction Eq.	Angle	Fy	Size
16.5 ft Roof	12.8	-1.1	5.3	6	0.20 Eq H1-1b	0.0	46	HSS6X6X1/4
Patio	23.8	0.0	0.0	1	0.15 Eq Axial	0.0	46	HSS6X6X1/4

Column Line 10-B

Level	Pu	Mux	Muy	LC	Interaction Eq.	Angle	Fy	Size
16.5 ft Roof	12.8	4.9	0.9	1	0.18 Eq H1-1b	0.0	46	HSS6X6X1/4
Patio	15.8	0.0	0.0	1	0.10 Eq Axial	0.0	46	HSS6X6X1/4

Column Line 9-N

Level	Pu	Mux	Muy	LC	Interaction Eq.	Angle	Fy	Size
16.5 ft Roof	17.0	-6.4	-0.9	12	0.25 Eq H1-1b	0.0	46	HSS6X6X1/4
Patio	17.3	-4.5	-0.7	12	0.20 Eq H1-1b	0.0	46	HSS6X6X1/4

Column Line 9-L

Level	Pu	Mux	Muy	LC	Interaction Eq.	Angle	Fy	Size
16.5 ft Roof	6.0	1.1	-1.2	10	0.08 Eq H1-1b	0.0	46	HSS6X6X1/4
Patio	6.3	0.8	-0.8	10	0.06 Eq H1-1b	0.0	46	HSS6X6X1/4

Column Line 8-L

Level	Pu	Mux	Muy	LC	Interaction Eq.	Angle	Fy	Size
16.5 ft Roof	5.9	-1.1	-1.2	10	0.08 Eq H1-1b	0.0	46	HSS6X6X1/4
Patio	6.2	-0.8	-0.8	10	0.06 Eq H1-1b	0.0	46	HSS6X6X1/4

Column Line 8-H

Level	Pu	Mux	Muy	LC	Interaction Eq.	Angle	Fy	Size
16.5 ft Roof	37.3	-10.0	-1.3	16	0.54 Eq H1-1a	0.0	46	HSS6X6X1/4
Patio	46.5	-4.7	-0.4	1	0.46 Eq H1-1a	0.0	46	HSS6X6X1/4

Column Line 8-F

Level	Pu	Mux	Muy	LC	Interaction Eq.	Angle	Fy	Size
16.5 ft Roof	42.5	-8.2	2.3	12	0.56 Eq H1-1a	0.0	46	HSS6X6X1/4
Patio	53.3	-2.4	1.6	1	0.49 Eq H1-1a	0.0	46	HSS6X6X1/4

Column Line 8-D

Level	Pu	Mux	Muy	LC	Interaction Eq.	Angle	Fy	Size
16.5 ft Roof	43.6	-10.3	0.0	12	0.56 Eq H1-1a	0.0	46	HSS6X6X1/4
Patio	55.7	-3.4	0.0	1	0.49 Eq H1-1a	0.0	46	HSS6X6X1/4

Column Line 8-B

Level	Pu	Mux	Muy	LC	Interaction Eq.	Angle	Fy	Size
16.5 ft Roof	20.4	-8.1	-1.2	1	0.32 Eq H1-1b	0.0	46	HSS6X6X1/4
Patio	20.7	-5.7	-0.8	1	0.25 Eq H1-1b	0.0	46	HSS6X6X1/4

Column Line 7-H

Level	Pu	Mux	Muy	LC	Interaction Eq.	Angle	Fy	Size
16.5 ft Roof	39.4	10.9	1.1	14	0.57 Eq H1-1a	0.0	46	HSS6X6X1/4
Patio	49.0	5.3	0.1	1	0.49 Eq H1-1a	0.0	46	HSS6X6X1/4

Column Line 7-F

Level	Pu	Mux	Muy	LC	Interaction Eq.	Angle	Fy	Size
16.5 ft Roof	46.8	9.0	1.6	14	0.59 Eq H1-1a	0.0	46	HSS6X6X1/4
Patio	59.0	3.3	0.3	1	0.52 Eq H1-1a	0.0	46	HSS6X6X1/4

Column Line 7-D

Level	Pu	Mux	Muy	LC	Interaction Eq.	Angle	Fy	Size
16.5 ft Roof	49.7	10.6	-1.5	17	0.65 Eq H1-1a	0.0	46	HSS6X6X1/4

Patio	60.4	4.7	-0.4	1	0.57 Eq H1-1a	0.0	46	HSS6X6X1/4

Column Line 6-N

Level	Pu	Mux	Muy	LC	Interaction Eq.	Angle	Fy	Size
16.5 ft Roof	12.6	2.9	-1.9	8	0.17 Eq H1-1b	0.0	46	HSS6X6X1/4
Patio	12.8	2.0	-1.3	8	0.13 Eq H1-1b	0.0	46	HSS6X6X1/4

Column Line 5-B.8

Level	Pu	Mux	Muy	LC	Interaction Eq.	Angle	Fy	Size
23ft Roof	6.4	1.8	-0.8	1	0.12 Eq H1-1b	0.0	46	HSS5X5X1/4

Column Line 4-N

Level	Pu	Mux	Muy	LC	Interaction Eq.	Angle	Fy	Size
16.5 ft Roof	13.4	-3.0	-2.2	12	0.18 Eq H1-1b	0.0	46	HSS6X6X1/4
Patio	13.6	-2.1	-1.5	12	0.14 Eq H1-1b	0.0	46	HSS6X6X1/4

Column Line 4-F

Level	Pu	Mux	Muy	LC	Interaction Eq.	Angle	Fy	Size
16.5 ft Roof	40.2	-12.9	1.3	15	0.63 Eq H1-1a	0.0	46	HSS6X6X1/4
Patio	46.4	-7.9	0.1	1	0.53 Eq H1-1a	0.0	46	HSS6X6X1/4

Column Line 3-N

Level	Pu	Mux	Muy	LC	Interaction Eq.	Angle	Fy	Size
16.5 ft Roof	8.3	0.0	0.0	1	0.06 Eq Axial	0.0	46	HSS6X6X1/4
Patio	8.6	0.0	0.0	1	0.06 Eq Axial	0.0	46	HSS6X6X1/4

Column Line 3-J

Level	Pu	Mux	Muy	LC	Interaction Eq.	Angle	Fy	Size
16.5 ft Roof	9.5	0.0	-3.0	10	0.11 Eq H1-1b	0.0	46	HSS6X6X1/4
Patio	9.8	0.0	-2.1	10	0.09 Eq H1-1b	0.0	46	HSS6X6X1/4

Column Line 3-H

Level	Pu	Mux	Muy	LC	Interaction Eq.	Angle	Fy	Size
16.5 ft Roof	34.7	-13.4	1.2	6	0.60 Eq H1-1a	0.0	46	HSS6X6X1/4
Patio	36.7	-9.3	0.3	1	0.50 Eq H1-1a	0.0	46	HSS6X6X1/4

Column Line 3-G

Level	Pu	Mux	Muy	LC	Interaction Eq.	Angle	Fy	Size
16.5 ft Roof	10.7	3.0	1.5	6	0.16 Eq H1-1b	0.0	46	HSS6X6X1/4
Patio	11.0	2.1	1.1	6	0.12 Eq H1-1b	0.0	46	HSS6X6X1/4

Column Line 3-B.8

Level	Pu	Mux	Muy	LC	Interaction Eq.	Angle	Fy	Size
23ft Roof	6.4	-2.1	-0.8	1	0.09 Eq H1-1b	0.0	46	HSS6X6X1/4
16.5 ft Roof	15.0	0.0	0.0	1	0.11 Eq Axial	0.0	46	HSS6X6X1/4
Patio	15.3	0.0	0.0	1	0.11 Eq Axial	0.0	46	HSS6X6X1/4

Column Line 2-M

Level	Pu	Mux	Muy	LC	Interaction Eq.	Angle	Fy	Size
16.5 ft Roof	7.6	3.3	0.1	1	0.12 Eq H1-1b	0.0	46	HSS6X6X1/4
Patio	7.8	2.3	0.1	1	0.09 Eq H1-1b	0.0	46	HSS6X6X1/4

Column Line 1-M

Level	Pu	Mux	Muy	LC	Interaction Eq.	Angle	Fy	Size
16.5 ft Roof	12.2	-2.8	-2.7	1	0.13 Eq H1-1b	0.0	46	HSS6X6X3/8
Patio	12.5	-2.0	-1.9	1	0.10 Eq H1-1b	0.0	46	HSS6X6X3/8

Column Line 1-I

Level	Pu	Mux	Muy	LC	Interaction Eq.	Angle	Fy	Size
16.5 ft Roof	18.5	-5.1	-2.1	10	0.18 Eq H1-1b	0.0	46	HSS6X6X3/8
Patio	18.9	-3.6	-1.5	10	0.14 Eq H1-1b	0.0	46	HSS6X6X3/8

Column Line 1-G

Level	Pu	Mux	Muy	LC	Interaction Eq.	Angle	Fy	Size
16.5 ft Roof	13.2	-3.3	2.7	1	0.14 Eq H1-1b	0.0	46	HSS6X6X3/8
Patio	13.5	-2.3	1.9	1	0.11 Eq H1-1b	0.0	46	HSS6X6X3/8

Base Plate Design Summary

RAM Steel 17.02.01.23
DataBase: #221130#
Building Code: IBC

08/16/21 17:57:01
Steel Code: AISC360-16 LRFD

BASE PLATES:

Design Code: AISC360-16 LRFD

Plate Fy (ksi)	36.000
Minimum Dimension From Face of Column to Edge of Plate (in)	1.000
Minimum Dimension From Side of Column to Edge of Plate (in)	1.000
Increment of Plate Dimensions (in)	0.250
Increment of Plate Thickness (in)	0.125
Minimum Footing Dimension Parallel to Web (ft)	10.00
Minimum Footing Dimension Perpendicular to Web (ft)	10.00
Keep Base Plate Square:	N

Column Line	Column Size	Fy (ksi)	N (in)	B (in)	tp (in)
12-K	HSS6X6X1/4	36	8.00	8.00	0.125
11.4-F	HSS4X4X1/4	36	6.00	6.00	0.125
11.4-E	HSS4X4X1/4	36	6.00	6.00	0.125
11.4-D.2	HSS4X4X1/4	36	6.00	6.00	0.125
11.4-C	HSS4X4X1/4	36	6.00	6.00	0.125
11.4-A.9	HSS4X4X1/4	36	6.00	6.00	0.125
11-N	HSS6X6X1/4	36	8.00	8.00	0.250
11-K	HSS6X6X1/4	36	8.00	8.00	0.125
11-H	HSS6X6X1/4	36	8.00	8.00	0.250
11-G	HSS6X6X1/4	36	8.00	8.00	0.250
10.8-A.9	HSS4X4X1/4	36	6.00	6.00	0.125
10.4-A.9	HSS4X4X1/4	36	6.00	6.00	0.125
10-G	HSS6X6X1/4	36	8.00	8.00	0.125
10-F	HSS6X6X1/4	36	8.00	8.00	0.250
10-E	HSS6X6X1/4	36	8.00	8.00	0.250
10-C	HSS6X6X1/4	36	8.00	8.00	0.250
10-B	HSS6X6X1/4	36	8.00	8.00	0.250
9-N	HSS6X6X1/4	36	8.00	8.00	0.250
9-L	HSS6X6X1/4	36	8.00	8.00	0.125
8-L	HSS6X6X1/4	36	8.00	8.00	0.125
8-H	HSS6X6X1/4	36	8.00	8.00	0.250
8-F	HSS6X6X1/4	36	8.00	8.00	0.375
8-D	HSS6X6X1/4	36	8.00	8.00	0.375
8-B	HSS6X6X1/4	36	8.00	8.00	0.250
7-H	HSS6X6X1/4	36	8.00	8.00	0.375
7-F	HSS6X6X1/4	36	8.00	8.00	0.375
7-D	HSS6X6X1/4	36	8.00	8.00	0.375
6-N	HSS6X6X1/4	36	8.00	8.00	0.250
4-N	HSS6X6X1/4	36	8.00	8.00	0.250
4-F	HSS6X6X1/4	36	8.00	8.00	0.250
3-N	HSS6X6X1/4	36	8.00	8.00	0.125
3-J	HSS6X6X1/4	36	8.00	8.00	0.125
3-H	HSS6X6X1/4	36	8.00	8.00	0.250

3-G	HSS6X6X1/4	36	8.00	8.00	0.125
3-B.8	HSS6X6X1/4	36	8.00	8.00	0.250
2-M	HSS6X6X1/4	36	8.00	8.00	0.125
1-M	HSS6X6X3/8	36	8.00	8.00	0.250
1-I	HSS6X6X3/8	36	8.00	8.00	0.250
1-G	HSS6X6X3/8	36	8.00	8.00	0.250

HART GAUGLER + ASSOCIATES

Project Info:

Cooper's Hawk
ASCE 7-16 Wind Design Pressures
Chapter 27 (MWFRS) Part 1
Wind Design Summary Sheet

Project #: 221130
By: AL
Date: 7/27/21
Page: 1 of 2

ASCE 7-16 Design Values

Reference		*Value*	
Table 1.5-1, Pg. 4	Risk Category	III	
Table 1.5-, Pg. 5	Importance Factor, I_w:	1.0	
Figures 26.5-1A, B, C or D, Pg. 250-257	Ultimate Design Wind Speed, V_{ult}:	117 mph	
	Nominal Design Wind Speed, V_{asd}:	91 mph	For IBC 1603.1.4
Section 26.7.3, Pg. 266	Exposure Category	C	
Section 26.12, Pg. 270	Enclosure Classification	Enclosed	
Table 26.13-1, Pg. 271	Internal Pressure Coef., GC_{pi}	± 0.18	
Table 26.6-1, Pg. 266	Wind Directionality Factor, K_d	0.85	Buildings
Figure 26.8-1, Pg. 267	Topographic Factor, K_{zt}	1.00	
		N	Assumed Value
Table26.9-1, Pg. 268	Gound Elevation Factor, K_e	43.0 ft	Elevation above Sea Level
		1.00	

Building Plan Dimensions

Building Width	129.60 ft	Width should be X component
Building Length	98.17 ft	Length should be Y component
Mean Roof Height	16.50 ft	
Typical Parapet Height	23.00 ft	From Ground
Roof Slope Type	Mono Slope	
Roof Slope	1.00°	
	1.00°	
Calculation Gust Factor (Y/N)	N	
Calculation Gust Factor	0.85	Assumed Value
	0.85	
	0.80	

Main Wind Force Resisting System Design Wind Pressures

(MWFRS) Wall Pressure

Height	Windward		Leeward		Side		Internal
	Y-Dir.	X-Dir.	Y-Dir.	X-Dir.	Y-Dir.	X-Dir.	
0 ft to 15 ft	17.2 psf	17.2 psf	-11.0 psf	-9.5 psf	-15.3 psf	-15.3 psf	4.6 psf
17 ft	17.5 psf	17.5 psf	-11.0 psf	-9.5 psf	-15.3 psf	-15.3 psf	4.6 psf

(MWFRS) Parapet Pressure	
Windward	41.3 psf
Leeward	27.5 psf

Roof Pressure Normal to Ridge

Wind Dir.	Windward		Leeward	
	Y-Dir.	X-Dir.	Y-Dir.	X-Dir.
Case 1	-20.0 psf	-20.0 psf	-11.2 psf	-11.2 psf
Case 2	-8.6 psf	-8.6 psf		

Roof Pressure Parrallel to Ridge

	0 to h/2	h/2 to h	h to 2h	>2h
Y-Dir.	-24.3 psf	-24.3 psf	-15.6 psf	-11.2 psf
X-Dir.	-24.3 psf	-24.3 psf	-15.6 psf	-11.2 psf

HART GAUGLER + ASSOCIATES

Project Info:

Cooper's Hawk	
ASCE 7-16 Wind Design Pressures	
Chapter 27 (MWFRS) Part 1	
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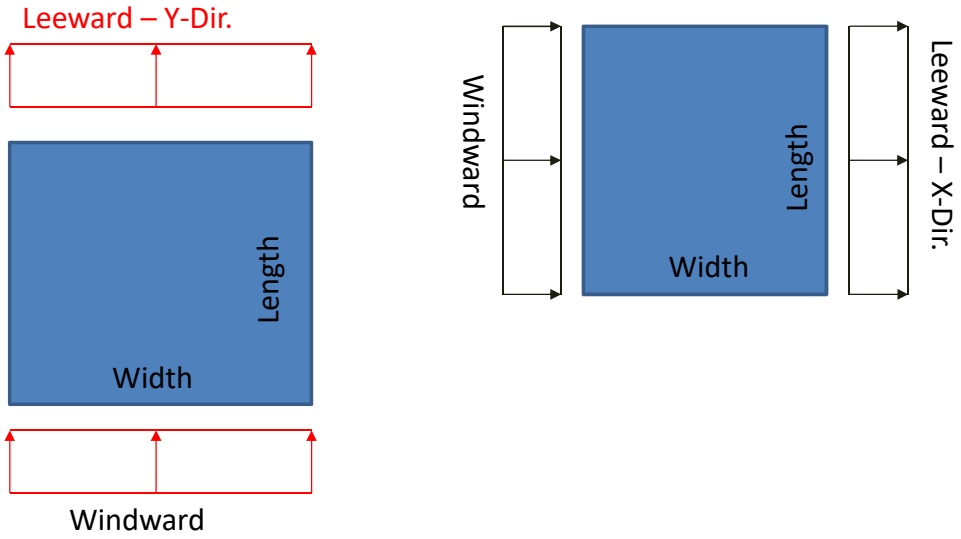
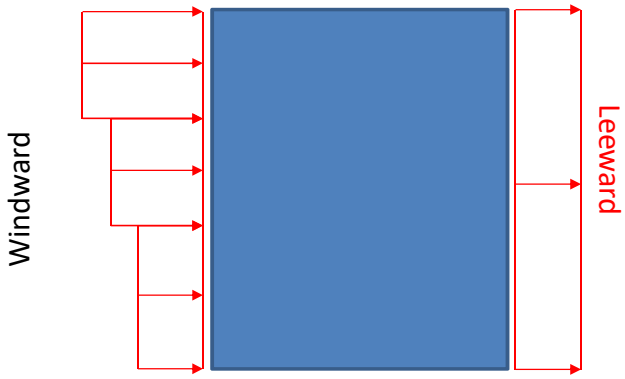
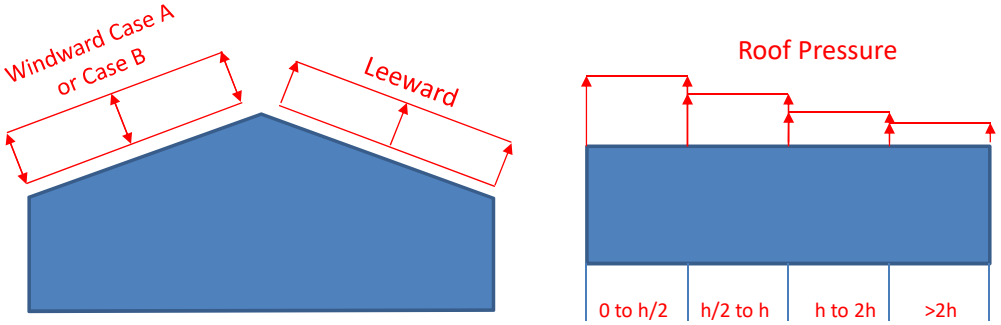
Wall Pressure Diagram





Roof Pressure Diagram



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Project Info:

Cooper's Hawk	
ASCE 7-16 Wind Design Pressures	
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Main Wind Force Resisting System - Coefficients and Calculations

Eq. 26.10-1, Pg. 268 $q=0.00256*k_d*k_{zt}*k_e*k_z*V^2$

Eq. 27.3-1, Pg. 274 $P=qGC_P-q_i(G_PC_{pi})$

Wall Pressure Coefficients

Figure 27.4-1 (Pg. 264)

Height	K_z	q_z	Windward	Leeward		Side Wall
				Y-Dir.	X-Dir.	
0 ft to 15 ft	0.85	**25.3 psf**	0.8	-0.50	-0.44	-0.7
17 ft	0.87	**25.8 psf**	0.8	-0.50	-0.44	-0.7

Gust Factor	G
Y-Dir.	0.85
X-Dir.	0.85

Wall Pressures

Height	Windward		Leeward		Side		Internal
	Y-Dir.	X-Dir.	Y-Dir.	X-Dir.	Y-Dir.	X-Dir.	
0 ft to 15 ft	**17.2 psf**	**17.2 psf**	**-11.0 psf**	**-9.5 psf**	**-15.3 psf**	**-15.3 psf**	**4.6 psf**
17 ft	**17.5 psf**	**17.5 psf**	**-11.0 psf**	**-9.5 psf**	**-15.3 psf**	**-15.3 psf**	**4.6 psf**

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Project Info:

Cooper's Hawk
ASCE 7-16 Wind Design Pressures
Chapter 27 (MWFRS) Part 1
Wind Design Calculations

Project #: 221130
By: AL
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MWFRS Parapet Design Pressures

Section 27.3.4

Eq. 27.3-3, Pg. 274 $P=q_z*GC_{pn}$

Parapet Coefficients				
			GC_{pn}	
z	K_z	q_z	Windward	Leeward
23.00 ft	0.924	**27.5 psf**	1.5	1

Parapet Pressure		
Height	Windward	Leeward
23.00 ft	**41.3 psf**	**27.5 psf**

MWFRS Roof Design Pressures

Roof Pressure Coefficients Normal to Ridge							
Figure 27.4-1 (Pg. 264)							
Height			Wind Dir.	Windward		Leeward	
z	K_z	q_z		Y-Dir	X-Dir.	Y-Dir	X-Dir.
16.50 ft	0.865	**25.8 psf**	Case 1	-0.70	-0.70	-0.30	-0.30
			Case 2	-0.18	-0.18		

Roof Pressure Coefficients Parallel to Ridge							
Figure 27.4-1 (Pg. 264)							
z	K_z	q_z		0 to h/2	h/2 to h	h to 2h	>2h
0.85 ft	0.85	**25.8 psf**	Y-Dir.	-0.90	-0.90	-0.50	-0.30
			X-Dir.	-0.90	-0.90	-0.50	-0.30

	G
Gust Factor	
Y-Dir. Case 1	0.85
X-Dir. Case 2	0.85

Roof Pressure Normal to Ridge				
Wind Dir.	Windward		Leeward	
	Y-Dir	X-Dir.	Y-Dir	X-Dir.
Case 1	**-20.0 psf**	**-20.0 psf**	**-11.2 psf**	**-11.2 psf**
Case 2	**-8.6 psf**	**-8.6 psf**		

Roof Pressure Normal to Ridge				
	0 to h/2	h/2 to h	h to 2h	>2h
Y-Dir.	**-24.3 psf**	**-24.3 psf**	**-15.6 psf**	**-11.2 psf**
X-Dir.	**-24.3 psf**	**-24.3 psf**	**-15.6 psf**	**-11.2 psf**

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Project Info:

Cooper's Hawk
ASCE 7-16 Wind Design Pressures
Chapter 27 (MWFRS) Part 1
Wind Design Summary Sheet

Project #: 221130
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ASCE 7-16 Design Values

Reference		*Value*	
Table 1.5-1, Pg. 4	Risk Category	III	
Table 1.5-, Pg. 5	Importance Factor, I_w:	1.0	
Figures 26.5-1A, B, C or D, Pg. 250-257	Ultimate Design Wind Speed, V_{ult}:	117 mph	
	Nominal Design Wind Speed, V_{asd}:	91 mph	For IBC 1603.1.4
Section 26.7.3, Pg. 266	Exposure Category	C	
Section 26.12, Pg. 270	Enclosure Classification	Enclosed	
Table 26.13-1, Pg. 271	Internal Pressure Coef., GC_{pi}	± 0.18	
Table 26.6-1, Pg. 266	Wind Directionality Factor, K_d	0.85	Buildings
Figure 26.8-1, Pg. 267	Topographic Factor, K_{zt}	1.00	
		N	Assumed Value
Table26.9-1, Pg. 268	Gound Elevation Factor, K_e	43.0 ft	Elevation above Sea Level
		1.00	

Building Plan Dimensions

Building Width	129.60 ft	Width should be X component
Building Length	98.17 ft	Length should be Y component
Mean Roof Height	16.50 ft	
Typical Parapet Height	21.00 ft	From Ground
Roof Slope Type	Mono Slope	
Roof Slope	1.00°	
	1.00°	
Calculation Gust Factor (Y/N)	N	
Calculation Gust Factor	0.85	Assumed Value
	0.85	
	0.80	

Main Wind Force Resisting System Design Wind Pressures

(MWFRS) Wall Pressure

Height	Windward		Leeward		Side		Internal
	Y-Dir.	X-Dir.	Y-Dir.	X-Dir.	Y-Dir.	X-Dir.	
0 ft to 15 ft	17.2 psf	17.2 psf	-11.0 psf	-9.5 psf	-15.3 psf	-15.3 psf	4.6 psf
17 ft	17.5 psf	17.5 psf	-11.0 psf	-9.5 psf	-15.3 psf	-15.3 psf	4.6 psf

(MWFRS) Parapet Pressure	
Windward	40.6 psf
Leeward	27.0 psf

Roof Pressure Normal to Ridge

Wind Dir.	Windward		Leeward	
	Y-Dir.	X-Dir.	Y-Dir.	X-Dir.
Case 1	-20.0 psf	-20.0 psf	-11.2 psf	-11.2 psf
Case 2	-8.6 psf	-8.6 psf		

Roof Pressure Parrallel to Ridge

	0 to h/2	h/2 to h	h to 2h	>2h
Y-Dir.	-24.3 psf	-24.3 psf	-15.6 psf	-11.2 psf
X-Dir.	-24.3 psf	-24.3 psf	-15.6 psf	-11.2 psf

HART GAUGLER + ASSOCIATES

Project Info:

Cooper's Hawk	
ASCE 7-16 Wind Design Pressures	
Chapter 27 (MWFRS) Part 1	
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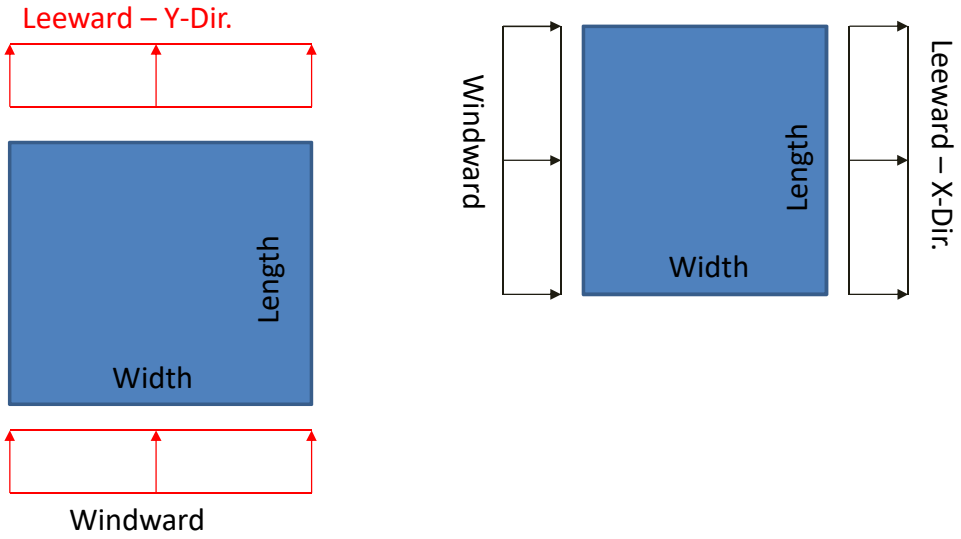
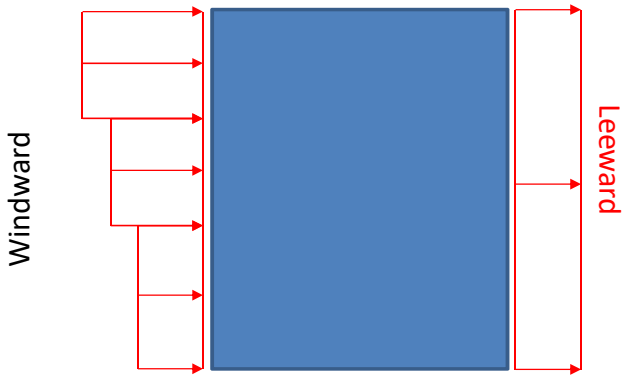
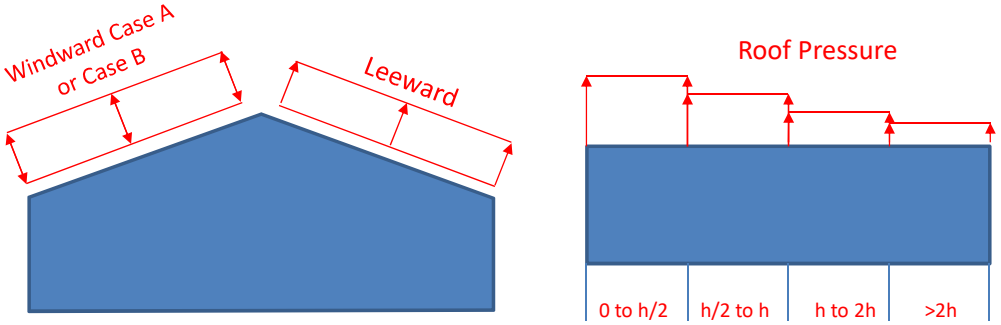
Wall Pressure Diagram





Roof Pressure Diagram



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Project Info:

Cooper's Hawk	
ASCE 7-16 Wind Design Pressures	
Chapter 27 (MWFRS) Part 1	
Wind Design Calculations	

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Main Wind Force Resisting System - Coefficients and Calculations

Eq. 26.10-1, Pg. 268 $q=0.00256*k_d*k_{zt}*k_e*k_z*V^2$

Eq. 27.3-1, Pg. 274 $P=qGC_P-q_i(G_PC_{pi})$

Wall Pressure Coefficients

Figure 27.4-1 (Pg. 264)

Height	K_z	q_z	Windward	Leeward		Side Wall
				Y-Dir.	X-Dir.	
0 ft to 15 ft	0.85	**25.3 psf**	0.8	-0.50	-0.44	-0.7
17 ft	0.87	**25.8 psf**	0.8	-0.50	-0.44	-0.7

Gust Factor	G
Y-Dir.	0.85
X-Dir.	0.85

Wall Pressures

Height	Windward		Leeward		Side		Internal
	Y-Dir.	X-Dir.	Y-Dir.	X-Dir.	Y-Dir.	X-Dir.	
0 ft to 15 ft	**17.2 psf**	**17.2 psf**	**-11.0 psf**	**-9.5 psf**	**-15.3 psf**	**-15.3 psf**	**4.6 psf**
17 ft	**17.5 psf**	**17.5 psf**	**-11.0 psf**	**-9.5 psf**	**-15.3 psf**	**-15.3 psf**	**4.6 psf**

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Project Info:

Cooper's Hawk
ASCE 7-16 Wind Design Pressures
Chapter 27 (MWFRS) Part 1
Wind Design Calculations

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MWFRS Parapet Design Pressures

Section 27.3.4

Eq. 27.3-3, Pg. 274 $P=q_z*GC_{pn}$

Parapet Coefficients				
			GC_{pn}	
z	K_z	q_z	Windward	Leeward
21.00 ft	0.908	**27.0 psf**	1.5	1

Parapet Pressure		
Height	Windward	Leeward
21.00 ft	**40.6 psf**	**27.0 psf**

MWFRS Roof Design Pressures

Roof Pressure Coefficients Normal to Ridge							
Figure 27.4-1 (Pg. 264)							
Height			Wind Dir.	Windward		Leeward	
z	K_z	q_z		Y-Dir	X-Dir.	Y-Dir	X-Dir.
16.50 ft	0.865	**25.8 psf**	Case 1	-0.70	-0.70	-0.30	-0.30
			Case 2	-0.18	-0.18		

Roof Pressure Coefficients Parallel to Ridge							
Figure 27.4-1 (Pg. 264)							
z	K_z	q_z		0 to h/2	h/2 to h	h to 2h	>2h
0.85 ft	0.85	**25.8 psf**	Y-Dir.	-0.90	-0.90	-0.50	-0.30
			X-Dir.	-0.90	-0.90	-0.50	-0.30

Gust Factor	G
Y-Dir. Case 1	0.85
X-Dir. Case 2	0.85

Roof Pressure Normal to Ridge				
Wind Dir.	Windward		Leeward	
	Y-Dir	X-Dir.	Y-Dir	X-Dir.
Case 1	**-20.0 psf**	**-20.0 psf**	**-11.2 psf**	**-11.2 psf**
Case 2	**-8.6 psf**	**-8.6 psf**		

Roof Pressure Normal to Ridge				
	0 to h/2	h/2 to h	h to 2h	>2h
Y-Dir.	**-24.3 psf**	**-24.3 psf**	**-15.6 psf**	**-11.2 psf**
X-Dir.	**-24.3 psf**	**-24.3 psf**	**-15.6 psf**	**-11.2 psf**

HART GAUGLER + ASSOCIATES

Project Info:

Cooper's Hawk
ASCE 7-16 Wind Design Pressures
Chapter 27 (MWFRS) Part 1
Wind Design Summary Sheet

Project #: 221130
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ASCE 7-16 Design Values

Reference		*Value*	
Table 1.5-1, Pg. 4	Risk Category	III	
Table 1.5-, Pg. 5	Importance Factor, I_w:	1.0	
Figures 26.5-1A, B, C or D, Pg. 250-257	Ultimate Design Wind Speed, V_{ult}:	117 mph	
	Nominal Design Wind Speed, V_{asd}:	91 mph	For IBC 1603.1.4
Section 26.7.3, Pg. 266	Exposure Category	C	
Section 26.12, Pg. 270	Enclosure Classification	Enclosed	
Table 26.13-1, Pg. 271	Internal Pressure Coef., GC_{pi}	± 0.18	
Table 26.6-1, Pg. 266	Wind Directionality Factor, K_d	0.85	Buildings
Figure 26.8-1, Pg. 267	Topographic Factor, K_{zt}	1.00	
		N	Assumed Value
Table26.9-1, Pg. 268	Gound Elevation Factor, K_e	43.0 ft	Elevation above Sea Level
		1.00	

Building Plan Dimensions

Building Width	129.60 ft	Width should be X component
Building Length	98.17 ft	Length should be Y component
Mean Roof Height	16.50 ft	
Typical Parapet Height	19.00 ft	From Ground
Roof Slope Type	Mono Slope	
Roof Slope	1.00°	
	1.00°	
Calculation Gust Factor (Y/N)	N	
Calculation Gust Factor	0.85	Assumed Value
	0.85	
	0.80	

Main Wind Force Resisting System Design Wind Pressures

(MWFRS) Wall Pressure

Height	Windward		Leeward		Side		Internal
	Y-Dir.	X-Dir.	Y-Dir.	X-Dir.	Y-Dir.	X-Dir.	
0 ft to 15 ft	17.2 psf	17.2 psf	-11.0 psf	-9.5 psf	-15.3 psf	-15.3 psf	4.6 psf
17 ft	17.5 psf	17.5 psf	-11.0 psf	-9.5 psf	-15.3 psf	-15.3 psf	4.6 psf

(MWFRS) Parapet Pressure	
Windward	39.8 psf
Leeward	26.5 psf

Roof Pressure Normal to Ridge

Wind Dir.	Windward		Leeward	
	Y-Dir.	X-Dir.	Y-Dir.	X-Dir.
Case 1	-20.0 psf	-20.0 psf	-11.2 psf	-11.2 psf
Case 2	-8.6 psf	-8.6 psf		

Roof Pressure Parrallel to Ridge

	0 to h/2	h/2 to h	h to 2h	>2h
Y-Dir.	-24.3 psf	-24.3 psf	-15.6 psf	-11.2 psf
X-Dir.	-24.3 psf	-24.3 psf	-15.6 psf	-11.2 psf

HART GAUGLER + ASSOCIATES

Project Info:

Cooper's Hawk	
ASCE 7-16 Wind Design Pressures	
Chapter 27 (MWFRS) Part 1	
Wind Design Summary Sheet	

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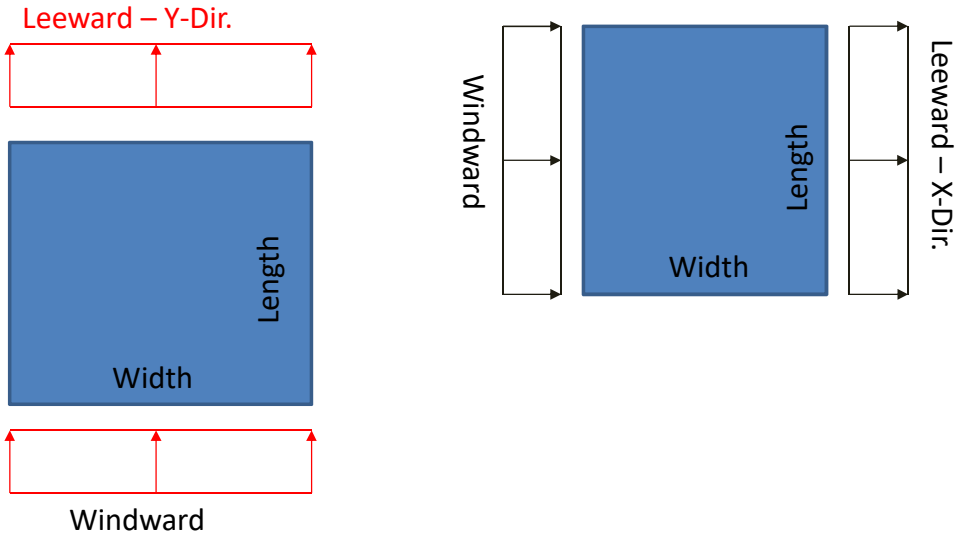
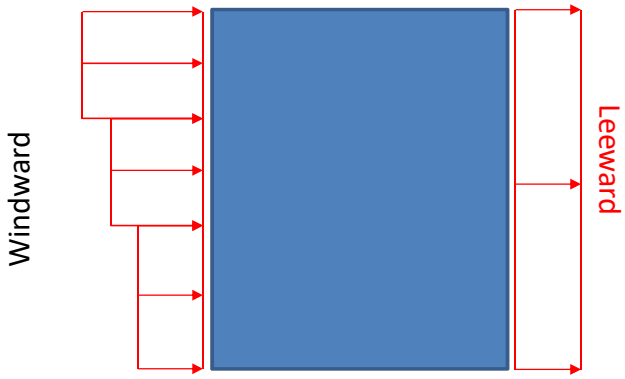
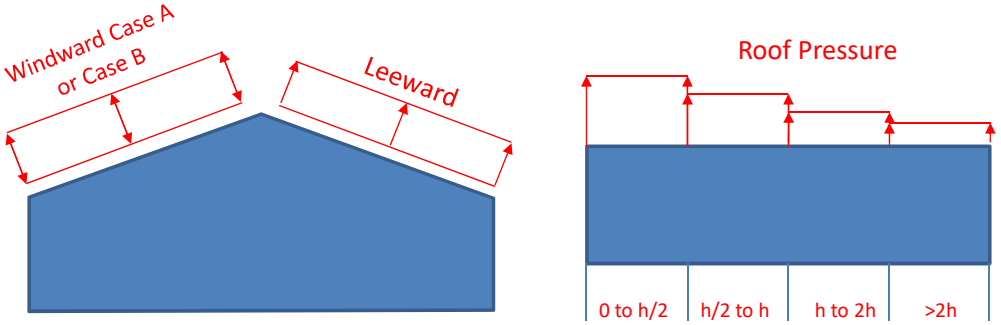
Wall Pressure Diagram





Roof Pressure Diagram



HART GAUGLER + ASSOCIATES

Project Info:

Cooper's Hawk	
ASCE 7-16 Wind Design Pressures	
Chapter 27 (MWFRS) Part 1	
Wind Design Calculations	

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Main Wind Force Resisting System - Coefficients and Calculations

Eq. 26.10-1, Pg. 268 $q=0.00256*k_d*k_{zt}*k_e*k_z*V^2$

Eq. 27.3-1, Pg. 274 $P=qGC_P-q_i(G_PC_{pi})$

Wall Pressure Coefficients

Figure 27.4-1 (Pg. 264)

Height	K_z	q_z	Windward	Leeward		Side Wall
				Y-Dir.	X-Dir.	
0 ft to 15 ft	0.85	**25.3 psf**	0.8	-0.50	-0.44	-0.7
17 ft	0.87	**25.8 psf**	0.8	-0.50	-0.44	-0.7

Gust Factor	G
Y-Dir.	0.85
X-Dir.	0.85

Wall Pressures

Height	Windward		Leeward		Side		Internal
	Y-Dir.	X-Dir.	Y-Dir.	X-Dir.	Y-Dir.	X-Dir.	
0 ft to 15 ft	**17.2 psf**	**17.2 psf**	**-11.0 psf**	**-9.5 psf**	**-15.3 psf**	**-15.3 psf**	**4.6 psf**
17 ft	**17.5 psf**	**17.5 psf**	**-11.0 psf**	**-9.5 psf**	**-15.3 psf**	**-15.3 psf**	**4.6 psf**

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Project Info:

Cooper's Hawk
ASCE 7-16 Wind Design Pressures
Chapter 27 (MWFRS) Part 1
Wind Design Calculations

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MWFRS Parapet Design Pressures

Section 27.3.4

Eq. 27.3-3, Pg. 274 $P=q_z*GC_{pn}$

Parapet Coefficients				
			GC_{pn}	
z	K_z	q_z	Windward	Leeward
19.00 ft	0.89	**26.5 psf**	1.5	1

Parapet Pressure		
Height	Windward	Leeward
19.00 ft	**39.8 psf**	**26.5 psf**

MWFRS Roof Design Pressures

Roof Pressure Coefficients Normal to Ridge							
Figure 27.4-1 (Pg. 264)							
Height			Wind Dir.	Windward		Leeward	
z	K_z	q_z		Y-Dir	X-Dir.	Y-Dir	X-Dir.
16.50 ft	0.865	**25.8 psf**	Case 1	-0.70	-0.70	-0.30	-0.30
			Case 2	-0.18	-0.18		

Roof Pressure Coefficients Parallel to Ridge							
Figure 27.4-1 (Pg. 264)							
z	K_z	q_z		0 to h/2	h/2 to h	h to 2h	>2h
0.85 ft	0.85	**25.8 psf**	Y-Dir.	-0.90	-0.90	-0.50	-0.30
			X-Dir.	-0.90	-0.90	-0.50	-0.30

	G
Gust Factor	
Y-Dir. Case 1	0.85
X-Dir. Case 2	0.85

Roof Pressure Normal to Ridge				
Wind Dir.	Windward		Leeward	
	Y-Dir	X-Dir.	Y-Dir	X-Dir.
Case 1	**-20.0 psf**	**-20.0 psf**	**-11.2 psf**	**-11.2 psf**
Case 2	**-8.6 psf**	**-8.6 psf**		

Roof Pressure Normal to Ridge				
	0 to h/2	h/2 to h	h to 2h	>2h
Y-Dir.	**-24.3 psf**	**-24.3 psf**	**-15.6 psf**	**-11.2 psf**
X-Dir.	**-24.3 psf**	**-24.3 psf**	**-15.6 psf**	**-11.2 psf**

HART GAUGLER + ASSOCIATES

Project Info:

Cooper's Hawk(USED)

Project & Building Properties Parameters

ASCE 7-16 Wind Design Pressures

Wind Design Summary Sheet

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By: AI

Date: 7/29/21

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ASCE 7-10 Design Values

Reference		***Value***	
Table 1.5-1	Risk Category	III	
Figures 26.5-1A, B, C or D, Pg. 250-257	Basic Wind Speed, V_{ult}	117 mph	
	Nominal Design Wind Speed, V	91 mph	For IBC
Section 26.7.3	Exposure Category	C	
Section 26.13	Building Enclosure Classification	Enclosed	
Table 26.13-1	Internal Pressure Coef., Gc_{pi}	± 0.18	
Section 26.13	Parapet Enclosure Classification	Enclosed	
Table 26.13-1	Internal Pressure Coef., Gc_{pi}	0.18	
Table 26.6-1, Pg. 266	Wind Directionality Factor, K_d	0.85	Buildings
Figure 26.8-1, Pg. 268	Topographic Factor, K_{zt}	1.00	
Table26.9-1, Pg. 268		N	Assumed Value
	Ground Elevation Factor, K_e	1000.0 ft	Elevation above Sea Level
		1.00	

HART GAUGLER + ASSOCIATES

Project Info:

Cooper's Hawk - Lee Summit
Chapter 30 (C&C) Part 1 - Wall Pressures (H≤60 ft)
ASCE 7-16 Wind Design Pressures
Wind Design Calculation

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By: AI
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ASCE 7-10 Design Values

Reference		*Value*	
Table 1.5-1	Risk Category	III	
Figures 26.5-1A, B, C or D, Pg. 250-257	Basic Wind Speed, V_{ult}	117	
	Nominal Design Wind Speed, V	91 mph	For IBC
Section 26.7.3	Exposure Category	C	
Section 26.13	Building Enclosure Classification	Enclosed	
Table 26.13-1	Internal Pressure Coef., GC_{pi}	± 0.18	
Table 26.6-1, Pg. 266	Wind Directionality Factor, K_d	0.85	Buildings
Figure 26.8-1, Pg. 268	Topographic Factor, K_{zt}	1.00	
Table26.9-1, Pg. 268		N	Assumed Value
	Ground Elevation Factor, K_e	1000.0 ft	Elevation above Sea Level
		1.00	

Building Dimensions

Building Width	129.60 ft	Width should be X component
Building Length	98.17 ft	Length should be Y component
Roof Slope	0.25 on 12	1.19 °
Mean Roof Height	17.50 ft	

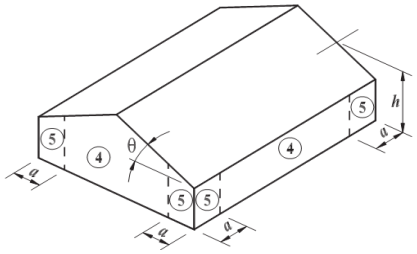
Component & Cladding Design Wind Pressures Wall Pressure

Effective Area	10 ft^2			100 ft^2			500 ft^2		
Height	All Zones	Wall zone 4	Wall zone 5	All Zones	Wall zone 4	Wall zone 5	All Zones	Wall zone 4	Wall zone 5
	Positive	Negative	Negative	Positive	Negative	Negative	Positive	Negative	Negative
0ft -15ft	27.3 psf	-29.6 psf	-36.5 psf	23.3 psf	-25.6 psf	-28.4 psf	20.5 psf	-22.8 psf	-22.8 psf
17 ft	28.1 psf	-30.5 psf	-37.5 psf	24.0 psf	-26.4 psf	-29.2 psf	21.1 psf	-23.5 psf	-23.5 psf

Note #6 Figure 30.3-1, Pg. 335

Wall Edge Distances for C&C		
Wall Edge Distance		
Lesser of:	0.1*Least Building Dim. =	9.82 ft
or	0.4*Building Height =	7.00 ft
No less than:	.04*Least Building Dim. =	3.93 ft
or	Minimum =	3.00 ft
Then,	**Edge Distance, a =**	***7.00 ft***

Figure 30.3-1



Section 30.3

Wall Pressures Coefficient				
Wall Pressure Reduced by 10% Note 5 - Figure 30.3-1				
Wall Zones / Direction		Effective Area (ft^2)		
		10 ft^2	100 ft^2	500 ft^2
All Zones	Positive	1.08	0.92	0.81
Zone 4	Negative	-1.17	-1.01	-0.90
Zone 5	Negative	-1.44	-1.12	-0.90

Eq. 26.10-1 $q=0.00256*k_d*k_{zt}*k_e*k_z*V^2$

Eq. 30.3-1 $P=q_h(GC_p-GC_{pi})$

Component & Cladding Wall Pressure Coefficients		
Height	K_z	q_h
0ft -15ft	0.85	**25.3 psf**
17 ft	0.87	**26.1 psf**

Figure 30.3-1, Pg. 335

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Project Info:	**Chapter 30 (C&C) Part 1 - θ ≤ 7° - Gable Roof (H≤60 ft)**	**Project #:**	
	ASCE 7-16 Wind Design Pressures	**By:**	
	Wind Design Summary Sheet	**Date:**	
		Page:	1 of 2

ASCE 7-10 Design Values

Reference		***Value***	
Table 1.5-1	Risk Category	III	
Figures 26.5-1A, B, C or D, Pg. 250-257	Basic Wind Speed, V_{ult}	117	
	Nominal Design Wind Speed, V	91 mph	For IBC
Section 26.7.3	Exposure Category	C	
Section 26.13	Building Enclosure Classification	Enclosed	
Table 26.13-1	Internal Pressure Coef., GC_{pi}	± 0.18	
Section 26.13	Parapet Enclosure Classification	Enclosed	
Table 26.13-1	Internal Pressure Coef., GC_{pi}	0.18	
Table 26.6-1, Pg. 266	Wind Directionality Factor, K_d	0.85	Buildings
Figure 26.8-1, Pg. 268	Topographic Factor, K_{zt}	1.00	
Table26.9-1, Pg. 268		N	Assumed Value
	Ground Elevation Factor, K_e	1000.0 ft	Elevation above Sea Level
		1.00	

Building Plan Dimensions

Building Width	130.00 ft	Width should be X component
Building Length	98.00 ft	Length should be Y component
Mean Roof Height	16.50 ft	
Typical Parapet Height	23.00 ft	From Ground

Component & Cladding Design Wind Pressures

Roof Pressures				***Roof Overhang Pressures***			
Positive Pressures	All Roof Zones	10 ft^2	**12.4 psf**	Negative Pressures	Roof Zone 1'	10 ft^2	**-48.4 psf**
		99 ft^2	**9.8 psf**			50 ft^2	**-46.6 psf**
		100 ft^2	**9.8 psf**			100 ft^2	**-45.9 psf**
						150 ft^2	**-52.5 psf**
Negative Pressures	Roof Zone 1'	100 ft^2	**-27.8 psf**			500 ft^2	**-30.4 psf**
		99 ft^2	**0.0 psf**		Roof Zone 1	10 ft^2	**-48.4 psf**
		1000 ft^2	**-14.9 psf**			50 ft^2	**-46.6 psf**
	Roof Zone 1	10 ft^2	**-48.4 psf**			100 ft^2	**-45.9 psf**
		100 ft^2	**-37.8 psf**			150 ft^2	**-42.0 psf**
		500 ft^2	**-30.4 psf**			500 ft^2	**-30.4 psf**
	Roof Zone 2	10 ft^2	**-63.9 psf**		Roof Zone 2	10 ft^2	**-63.9 psf**
		100 ft^2	**-50.3 psf**			150 ft^2	**-42.5 psf**
		500 ft^2	**-40.7 psf**			500 ft^2	**-33.0 psf**
	Roof Zone 3	10 ft^2	**-87.1 psf**		Roof Zone 3	10 ft^2	**-87.1 psf**
		100 ft^2	**-59.8 psf**			150 ft^2	**-49.6 psf**
		500 ft^2	**-40.7 psf**			500 ft^2	**-33.0 psf**

Eq. 26.10-1 $q=0.00256*k_d*k_{zt}*k_e*k_z*V^2$

Eq. 30.3-1 $P=q_h(GC_p-GC_{pi})$

Height	K_z	q_z
17 ft	0.87	**25.8 psf**

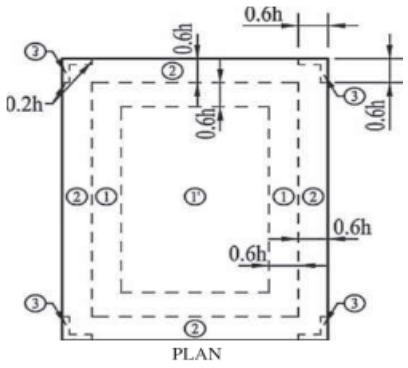
HART GAUGLER + ASSOCIATES

Project Info:

0	
Chapter 30 (C&C) Part 1 - θ ≤ 7° - Gable Roof (H≤60 ft)	
ASCE 7-16 Wind Design Pressures	
Wind Design Calculations	

Project #:	0
By:	0
Date:	1/0/00
Page:	2 of 2

Roof Edge Distances		
Zone 1	Depth	**9.90 ft**
Zone 1'	Depth	**9.90 ft**
Zone 2	Depth	**9.90 ft**
Zone 3	Depth	**3.30 ft**
	Length	**9.90 ft**
Controlling Case	Case A	



Edge Distance for Application Wall Pressures

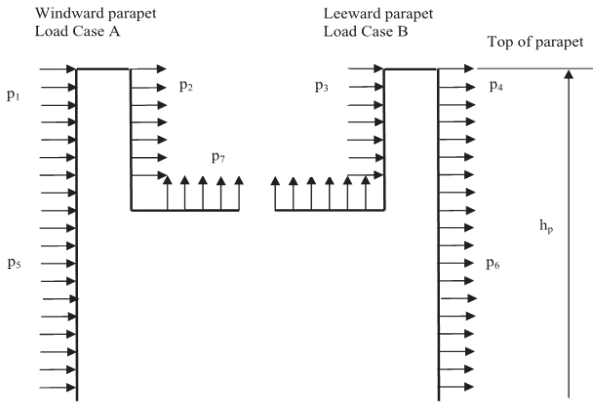
Figure 30.3-2A, Pg. 336

Zone 1	=0.6*h	9.90 ft
Zone 1'	=0.6*h	9.90 ft
Zone 2	=0.6*h	9.90 ft
Zone 3	=0.6*h	3.30 ft
	=0.2*h	9.90 ft

Edge Zone Roof Conditions			Min(L,b)		Max(L,b)				
	Case A	39.6	98.00 ft			TRUE	=2.4*h > min(L,b)		
	Case B	19.8	98.00 ft	39.6		FALSE	=1.2*h ≤ min(L,b) < 2.4*h		
	Case C	19.8	98.00 ft	19.8	130.00 ft	FALSE	=1.2*h > min(L,b) & 1.2*h < max(L,b)		
	Case D			19.8	130.00 ft	FALSE	=1.24*h > max(L,b)		
Roof Diagram Case	Case A								

Component Cladding Parapet Pressures				
Roof Zones / Direction		Effective Area (ft^2)		
		10	61	500
Edge Field	Load Case A	**98.0 psf**	**83.1 psf**	**65.8 psf**
	Load Case B	**69.4 psf**	**59.1 psf**	**47.1 psf**
Typical Field	Load Case A	**98.0 psf**	**83.1 psf**	**65.8 psf**
	Load Case B	**61.9 psf**	**55.1 psf**	**47.1 psf**

Figure 30.8-1



Eq. 26.10-1 $q=0.00256*k_d*k_{zt}*k_e*k_z*V^2$

Eq. 30.8-1 $P=q_h(GC_p-GC_{pi})$

Height	K_z	q_z
23.00 ft	0.924	**27.52**

Parapet Edge Distances for C&C		
Wall Edge Distance		
Lesser of:	0.1*Least Building Dim. =	9.80 ft

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Project Info:

Chapter 30 (C&C) Part 1 - 7° < θ ≤ 20° - Gable Roof (H≤60 ft)
ASCE 7-16 Wind Design Pressures
Wind Design Summary Sheet

Project #:
By:
Date:
Page: 1 of 2

ASCE 7-10 Design Values

Reference		***Value***	
Table 1.5-1	Risk Category	III	
Figures 26.5-1A, B, C or D, Pg. 250-257	Basic Wind Speed, V_{ult}	117	
	Nominal Design Wind Speed, V	91 mph	For IBC
Section 26.7.3	Exposure Category	C	
Section 26.13	Building Enclosure Classification	Enclosed	
Table 26.13-1	Internal Pressure Coef., GC_{pi}	± 0.18	
Section 26.13	Parapet Enclosure Classification	Enclosed	
Table 26.13-1	Internal Pressure Coef., GC_{pi}	0.18	`
Table 26.6-1, Pg. 266	Wind Directionality Factor, K_d	0.85	Buildings
Figure 26.8-1, Pg. 268	Topographic Factor, K_{zt}	1.00	
Table26.9-1, Pg. 268		N	Assumed Value
	Ground Elevation Factor, K_e	1000.0 ft	Elevation above Sea Level
		1.00	

Building Plan Dimensions

Building Width	200.00 ft	Width should be X component
Building Length	70.00 ft	Length should be Y component
Mean Roof Height	32.00 ft	
Roof Slope	2.50 on 12	11.77 °
Typical Parapet Height	36.00 ft	From Ground

Gable Roof Slopes - Component & Cladding Design Wind Pressures

Roof Pressures

Positive Pressures	All Roof Zones	2 ft^2	26.0 psf
		99 ft^2	17.1 psf
		100 ft^2	14.2 psf
Negative Pressures	Roof Zone 1	20 ft^2	-64.4 psf
		50 ft^2	-39.2 psf
		100 ft^2	-20.1 psf
	Roof Zone 2e	20 ft^2	-64.4 psf
		50 ft^2	-39.2 psf
		100 ft^2	-20.1 psf
	Roof Zone 2n	10 ft^2	-94.0 psf
		150 ft^2	-44.2 psf
		250 ft^2	-34.9 psf
	Roof Zone 2r	10 ft^2	-94.0 psf
		150 ft^2	-44.2 psf
		250 ft^2	-34.9 psf
	Roof Zone 3e	10 ft^2	-94.0 psf
		150 ft^2	-44.2 psf
		250 ft^2	-34.9 psf
	Roof Zone 3r	10 ft^2	-111.7 psf
		50 ft^2	-74.5 psf
		100 ft^2	-58.5 psf

Roof Overhang Pressures

Negative Pressures	Roof Zone 1	20 ft^2	-79.2 psf
		50 ft^2	-62.4 psf
		100 ft^2	-49.6 psf
	Roof Zone 2e	20 ft^2	-79.2 psf
		50 ft^2	-62.4 psf
		100 ft^2	-49.6 psf
	Roof Zone 2n	10 ft^2	-108.7 psf
		50 ft^2	-86.6 psf
		250 ft^2	-64.4 psf
	Roof Zone 2r	10 ft^2	-108.7 psf
		50 ft^2	-86.6 psf
		250 ft^2	-64.4 psf
	Roof Zone 3e	10 ft^2	-126.5 psf
		50 ft^2	-88.1 psf
		250 ft^2	-49.6 psf
	Roof Zone 3r	10 ft^2	-144.2 psf
		50 ft^2	-94.6 psf
		100 ft^2	-73.3 psf

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Project Info:	**Chapter 30 (C&C) Part 1 - 7° < θ ≤ 20° - Gable Roof (H≤60 ft)**	**Project #:**	**0**
	ASCE 7-16 Wind Design Pressures	**By:**	0
	Wind Design Calculations	**Date:**	1/0/00
		Page:	2 of 2

Eq. 26.10-1 $q=0.00256*k_d*k_{zt}*k_e*k_z*V^2$

Eq. 30.3-1 $P=q_h(GC_p-GC_{pi})$

Height	K_z	q_z
32 ft	0.99	**29.5 psf**

Edge Distances for C&C		
Wall Edge Distance		
Lesser of:	0.1*Least Building Dim. =	7.00 ft
or	0.4*Building Height =	12.80 ft
No less than:	0.04*Least Building Dim. =	2.80 ft
or	Minimum =	3.00 ft
Then,	**Edge Distance, a =**	***7.00 ft***

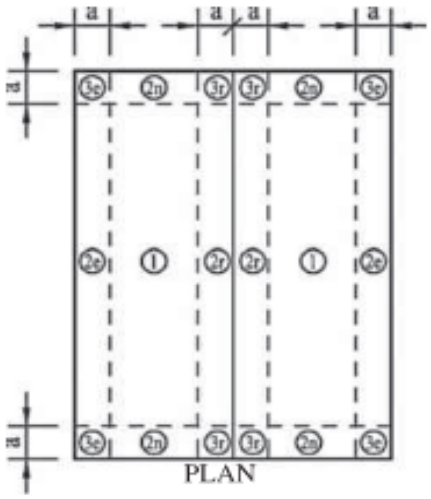
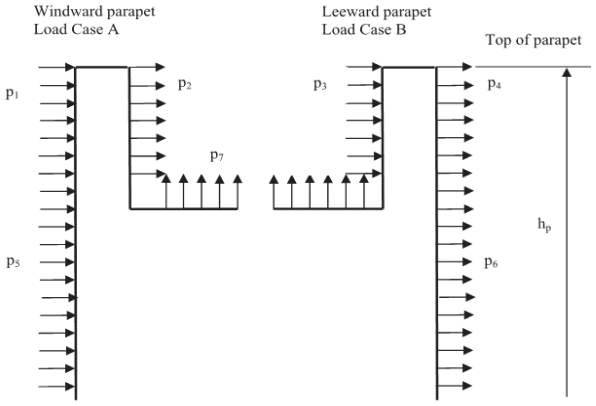


Figure 30.8-1

Gable Roof Slopes - Component Cladding Overhang Pressures				
Roof Zones / Direction		Effective Area (ft^2)		
		10	50	500
Edge Field	Load Case A	**110.8 psf**	**95.9 psf**	**74.4 psf**
	Load Case B	**83.5 psf**	**72.4 psf**	**56.3 psf**
Typical Field	Load Case A	**110.8 psf**	**95.9 psf**	**74.4 psf**
	Load Case B	**74.4 psf**	**67.0 psf**	**56.3 psf**



Eq. 26.10-1 $q=0.00256*k_d*k_{zt}*k_e*k_z*V^2$

Eq. 30.8-1 $P=q_h(GC_p-GC_{pi})$

Height	K_z	q_z
36.00 ft	1.016	**30.26**

Wind Load Calculations

Project#	221130
Date	7/27/2021
By:	Al

Code Used	ASCE 7 - 16
	IBC 2018

Parameters:

Risk Cat.	III	
Wind Speed(Mph)	117	
kd	0.85	Table 26-6-1, Pg 266
Exposure Cat.	C	26.7.2, Pg 266
Kzt	1	26.8.2, Pg 268
Ke	1	26.10, Pg 268
G (Gust)	0.85	26.11, Pg 269
Enclosure Cat.	Enclosed	
GCpi (Internal Pressure)	± 0.18	Table 26-13-1, Pg 271
Kz Values	0.85	Elevation (11.5ft)
	0.865	Elevation (16.5ft)
	0.924	Elevation (23ft)
qz(lb/ft2)	25.319	Elevation (11.5ft)
	25.766	Elevation (16.5ft)
	27.523	Elevation (23ft)

Width(X-Direction)(ft)	129.6042
Length(Y-Direction)(ft)	98.1667

External Pressure q(GCp)-qi(CGpi) 27.3-1

Elevation		qz(lb/ft^2)	G	Cp		P(lb/ft^2)
			West to East			
		25.319	0.85	0.8	WW	17.200
		25.319	0.85	-0.7	SW	-15.100
		25.319	0.85	-0.436	LW	-9.400
			North to South			
		25.319	0.85	0.8	WW	17.200
		25.319	0.85	-0.7	SW	-15.100
		25.319	0.85	-0.5	LW	-10.800
Elevation	16.5ft Mean Roof Height	qz(lb/ft^2)	G	Cp		P(lb/ft^2)
			West to East			
		25.766	0.85	0.8	WW	17.500
		25.766	0.85	-0.7	SW	-15.300
		25.766	0.85	-0.436	LW	-9.500
			North to South			
		25.766	0.85	0.8	WW	17.500
		25.766	0.85	-0.7	SW	-15.300
		25.766	0.85	-0.5	LW	-11.000
Elevation	23ft	qz(lb/ft^2)	G	Cp		P(lb/ft^2)
			West to East			
		27.523	0.85	0.8	WW	18.700
		27.523	0.85	-0.7	SW	-16.400
		27.523	0.85	-0.436	LW	-10.200
			North to South			
		27.523	0.85	0.8	WW	18.700
		27.523	0.85	-0.7	SW	-16.400
		27.523	0.85	-0.5	LW	-11.700

Summary

Elevation	11.5ft	
P	(lb/ft^2)	
WW	17.20	
SW	13.08	
LW	10.80	N to S
LW	9.4	W to E

Elevation	16.5ft	
P	(lb/ft^2)	
WW	17.50	
SW	15.30	
LW	11.00	N to S
LW	9.50	W to E

Elevation	23ft	
P	(lb/ft^2)	
WW	18.70	
SW	16.40	
LW	11.70	N to S
LW	10.2	W to E

Parapet

Pp	qp(GCpm)	(lb/ft^2)	GCpm	
			WW	1.5
			LW	-1.0

Parapet Elevations	ft	Kz	q	Parapet Wind Load P(lb/ft^2)		P(lb/ft^2)	
Parapet #1	23	0.924	27.5	41.3	WW	27.5	LW
Parapet #2	21	0.908	27.0	40.6	WW	27.0	LW
Parapet #3	19	0.89	26.5	39.8	WW	26.5	LW

Wind Load Calculations for Frames

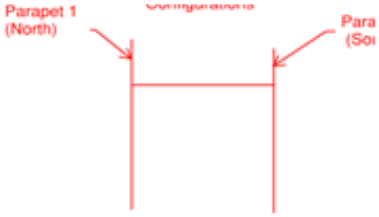
North to South & South to North

LW	WW(Load for Main Height) kip/ft2	0.0152	
LW	LW(load for Main Height) kip/ft2	0.0095	
LW			
	WW(Parapet) kip/ft2	0.0359	
WW	LW(Parapet) kip/ft2	0.0239	
LW			
	Parapet Height 1(ft)	6.5	
	Parapet Height 2(ft)	6.5	
	Main Length (ft)	8.25	16.5/2
	Force(ww)	0.3588	
	Force(LW)	0.2337	
	Total Force (kip/ft)	0.5925	

West to East & East to West

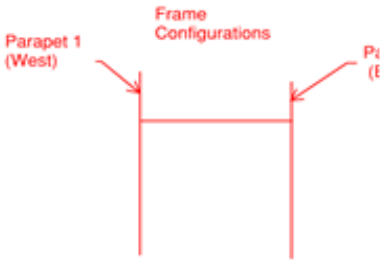
	WW(Load for Main Height) kip/ft2	0.0152	
	LW(load for Main Height) kip/ft2	0.0083	
	WW(Parapet) kip/ft2	0.0359	
	LW(Parapet) kip/ft2	0.0239	
WW	Parapet Height 1(ft)	6.5	
LW	Parapet Height 2(ft)	6.5	
	Main Length (ft)	8.25	16.5/2
	Force(ww)	0.3588	
	Force(LW)	0.2238	
	Total Force (kip/ft)	0.5826	

Frame 1	N --> S & S --> N	Mean Roof Height(ft)	16.5	Parapet Height 1(ft)	21
		WW(kip/ft^2)	0.0175	WW(kip/ft^2)	0.0406
		LW(kip/ft^2)	0.011	LW(kip/ft^2)	0.027
				Parapet Height 2(ft)	21
		Parapet 1 Height(ft)	4.5	WW(kip/ft^2)	0.0406
		Parapet 2 Height(ft)	4.5	LW(kip/ft^2)	0.027
		Force (kip/ft) (N to S)	0.5393		
		Force (kip/ft) (S to N)	0.5393		
		Force for Both sides(kip/ft)	0.5393		
Frame 2	N --> S & S --> N	Mean Roof Height(ft)	16.5	Parapet Height 1(ft)	23
		WW(kip/ft^2)	0.0175	WW(kip/ft^2)	0.0413
		LW(kip/ft^2)	0.011	LW(kip/ft^2)	0.0275
				Parapet Height 2(ft)	23
		Parapet 1 Height(ft)	6.5	WW(kip/ft^2)	0.0413
		Parapet 2 Height(ft)	6.5	LW(kip/ft^2)	0.0275
		Force (kip/ft) (N to S)	0.6823		
		Force (kip/ft) (S to N)	0.6823		
		Force for Both sides(kip/ft)	0.6823		
Frame 3	N --> S & S --> N	Mean Roof Height(ft)	16.5	Parapet Height 1(ft)	19
		WW(kip/ft^2)	0.0175	WW(kip/ft^2)	0.0398
		LW(kip/ft^2)	0.011	LW(kip/ft^2)	0.0265
				Parapet Height 2(ft)	21
		Parapet 1 Height(ft)	2.5	WW(kip/ft^2)	0.0406
		Parapet 2 Height(ft)	4.5	LW(kip/ft^2)	0.027
		Force (kip/ft) (N to S)	0.4561		
		Force (kip/ft) (S to N)	0.4841		
		Force for Both sides(kip/ft)	0.4841		

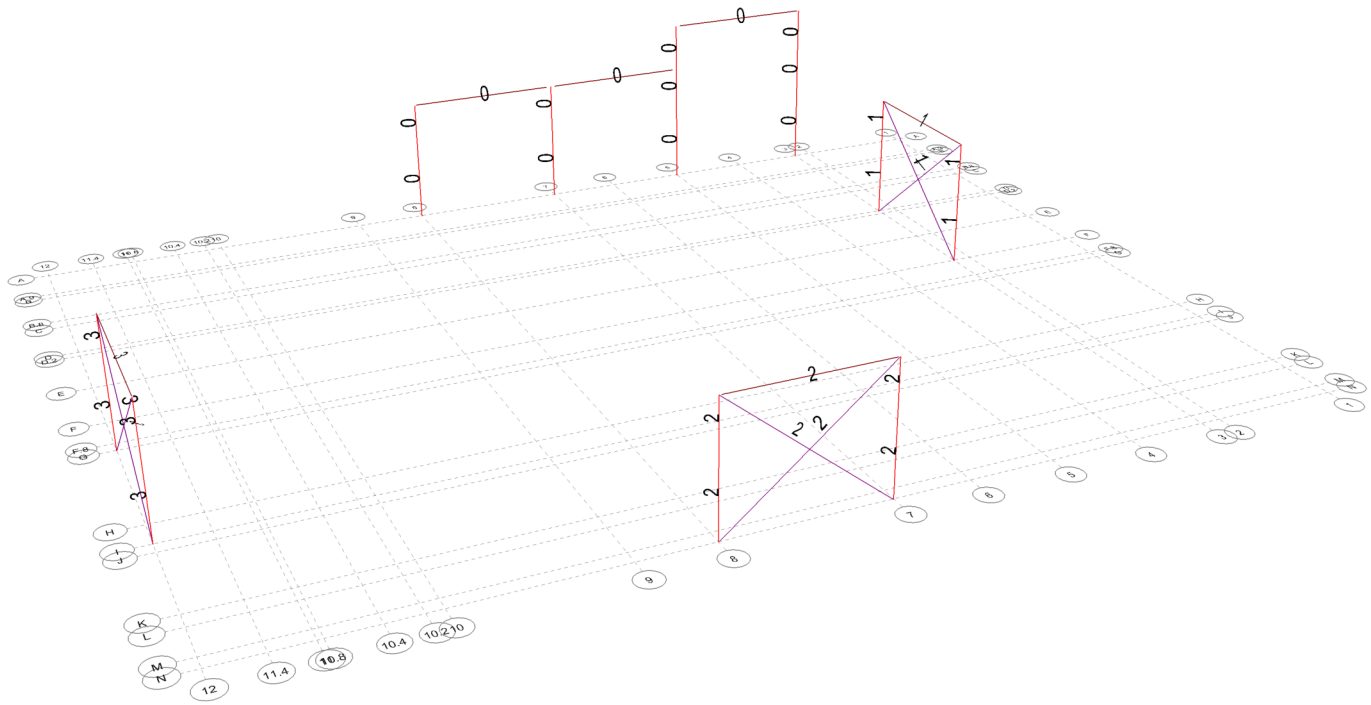


Note: Make sure to edit the heights accordingly with the provided frames if a double check required for the data provided!!!

Frame 4	N --> S & S --> N	Mean Roof Height(ft)	16.5	Parapet Height 1(ft)	21
		WW(kip/ft^2)	0.0175	WW(kip/ft^2)	0.0406
		LW(kip/ft^2)	0.011	LW(kip/ft^2)	0.027
				Parapet Height 2(ft)	19
		Parapet 1 Height(ft)	4.5	WW(kip/ft^2)	0.0398
		Parapet 2 Height(ft)	2.5	LW(kip/ft^2)	0.0265
		Force (kip/ft) (N to S)	0.4841		
		Force (kip/ft) (S to N)	0.4561		
		Force for Both sides(kip/ft)	0.4841		
Frame 1	W --> E & E --> W	Mean Roof Height(ft)	16.5	Parapet Height 1(ft)	23
		WW(kip/ft^2)	0.0175	WW(kip/ft^2)	0.0413
		LW(kip/ft^2)	0.0095	LW(kip/ft^2)	0.0275
				Parapet Height 2(ft)	23
		Parapet 1 Height(ft)	6.5	WW(kip/ft^2)	0.0413
		Parapet 2 Height(ft)	6.5	LW(kip/ft^2)	0.0275
		Force (kip/ft) (W to E)	0.67		
		Force (kip/ft) (E to W)	0.67		
		Force for Both sides(kip/ft)	0.67		
Frame 2	W --> E & E --> W	Mean Roof Height(ft)	16.5	Parapet Height 1(ft)	21
		WW(kip/ft^2)	0.0175	WW(kip/ft^2)	0.0406
		LW(kip/ft^2)	0.0095	LW(kip/ft^2)	0.027
				Parapet Height 2(ft)	21
		Parapet 1 Height(ft)	4.5	WW(kip/ft^2)	0.0406
		Parapet 2 Height(ft)	4.5	LW(kip/ft^2)	0.027
		Force (kip/ft) (W to E)	0.53		
		Force (kip/ft) (E to W)	0.527		
		Force for Both sides(kip/ft)	0.527		



Note: Make sure to edit the heights accordingly with the provided frames if a double check required for the data provided!!!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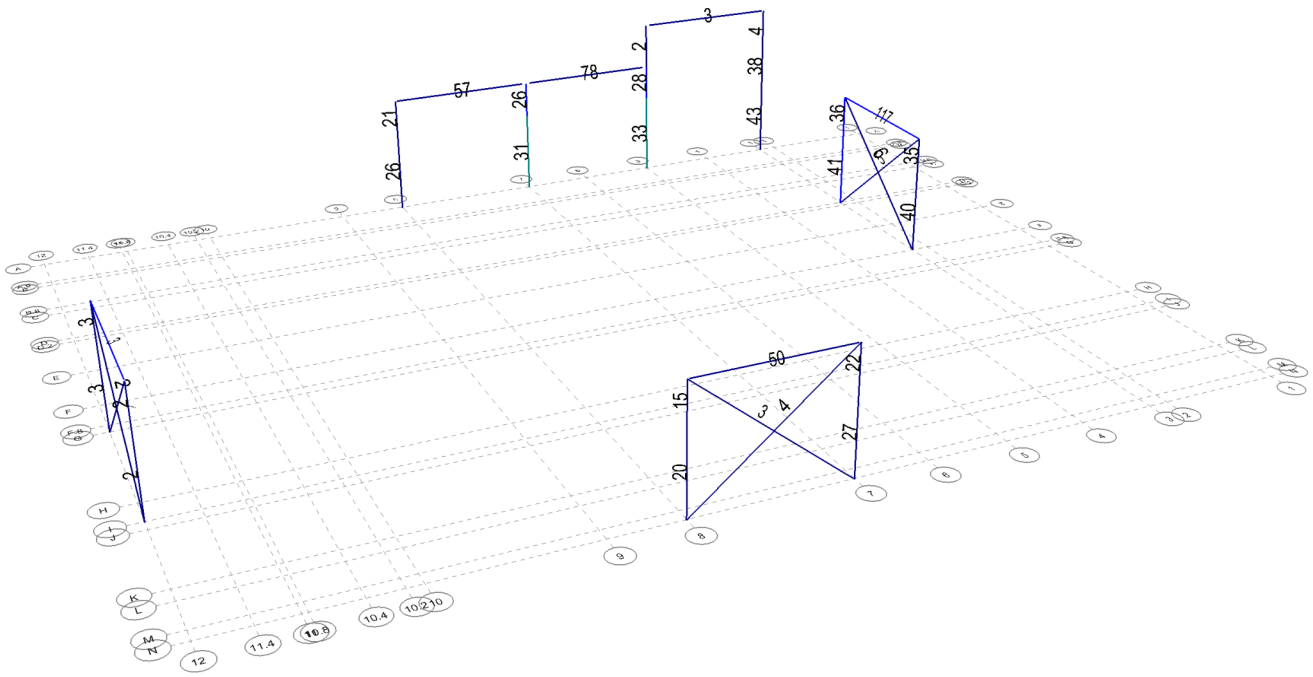
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10

Nodal Loads

NODAL LOAD CASES:

Label	Type		Locked
N to S	Wind	RAMUSERNODAL_W	No
S to N	Wind	RAMUSERNODAL_W	No
W to E	Wind	RAMUSERNODAL_W	No
E to W	Wind	RAMUSERNODAL_W	No

NODAL LOAD DEFINITION:

Label	Fx	Fy	Fz	Mxx	Myy	Mzz
	kips	kips	kips	kip-ft	kip-ft	kip-ft
W-A-E	34.00	0.00	0.00	0.00	0.00	0.00
E-A-W	-34.00	0.00	0.00	0.00	0.00	0.00
W-N-E	27.60	0.00	0.00	0.00	0.00	0.00
E-N-W	-27.60	0.00	0.00	0.00	0.00	0.00
N-12-S	0.00	-36.50	0.00	0.00	0.00	0.00
S-12-N	0.00	36.50	0.00	0.00	0.00	0.00
N-3-S	0.00	-42.43	0.00	0.00	0.00	0.00
S-3-N	0.00	42.43	0.00	0.00	0.00	0.00

APPLIED NODAL LOADS:

Load Case: N to S RAMUSERNODAL_W

Level: 16.5 ft Roof

Nodal Load	Node	X	Y	Z
		ft	ft	ft
N-12-S	4	0.000	44.958	16.500
N-3-S	11	111.396	72.292	16.500

Load Case: S to N RAMUSERNODAL_W

Level: 16.5 ft Roof

Nodal Load	Node	X	Y	Z
		ft	ft	ft
S-12-N	3	0.000	23.458	16.500
S-3-N	10	111.396	52.042	16.500

Load Case: W to E RAMUSERNODAL_W

Level: 16.5 ft Roof

Nodal Load	Node	X	Y	Z
		ft	ft	ft
W-N-E	5	51.313	0.000	16.500
W-A-E	6	51.313	98.167	16.500

Load Case: E to W RAMUSERNODAL_W

Nodal Loads

Level: 16.5 ft Roof

Nodal Load	Node	X ft	Y ft	Z ft
E-N-W	7	71.521	0.000	16.500
E-A-W	9	91.271	98.167	16.500

Load Combinations

RAM Structural System RAM Frame 17.02.01.23
Bentley DataBase: #221130# 08/16/21 16:08:23

LOAD CASE DEFINITIONS:

D	DeadLoad	RAMUSER
Sp	PosSnowLoad	RAMUSER
W1	N to S	RAMUSERNODAL_W
W2	S to N	RAMUSERNODAL_W
W3	W to E	RAMUSERNODAL_W
W4	E to W	RAMUSERNODAL_W

USER DEFINED LOAD COMBINATIONS:

1	*	1.400 D
2	*	1.200 D + 1.000 W1
3	*	1.200 D + 1.000 W2
4	*	1.200 D + 1.000 W3
5	*	1.200 D + 1.000 W4
6	*	1.200 D - 1.000 W1
7	*	1.200 D - 1.000 W2
8	*	1.200 D - 1.000 W3
9	*	1.200 D - 1.000 W4
10	*	0.900 D + 1.000 W1
11	*	0.900 D + 1.000 W2
12	*	0.900 D + 1.000 W3
13	*	0.900 D + 1.000 W4
14	*	0.900 D - 1.000 W1
15	*	0.900 D - 1.000 W2
16	*	0.900 D - 1.000 W3
17	*	0.900 D - 1.000 W4
18	*	1.400 D
19	*	1.200 D + 1.600 Sp
20	*	1.200 D + 1.600 Sp + 0.500 W1
21	*	1.200 D + 1.600 Sp + 0.500 W2
22	*	1.200 D + 1.600 Sp + 0.500 W3
23	*	1.200 D + 1.600 Sp + 0.500 W4
24	*	1.200 D + 0.500 Sp + 1.000 W1
25	*	1.200 D + 0.500 Sp + 1.000 W2
26	*	1.200 D + 0.500 Sp + 1.000 W3
27	*	1.200 D + 0.500 Sp + 1.000 W4
28	*	1.200 D + 1.000 W1
29	*	1.200 D + 1.000 W2
30	*	1.200 D + 1.000 W3
31	*	1.200 D + 1.000 W4
32	*	0.900 D + 1.000 W1
33	*	0.900 D + 1.000 W2
34	*	0.900 D + 1.000 W3
35	*	0.900 D + 1.000 W4

* = Load combination currently selected to use

Member Force Summary

RAM Frame 17.02.01.23
DataBase: #221130#
Building Code: IBC

08/16/21 16:08:23

CRITERIA:

Rigid End Zones: Ignore Effects
Member Force Output: At Face of Joint
P-Delta: Yes Scale Factor: 1.00
Ground Level: Base
Mesh Criteria :
Max. Distance Between Nodes on Mesh Line (ft) : 4.00
Merge Node Tolerance (in) : 0.0100
Geometry Tolerance (in) : 0.0050
Walls Out-of-plane Stiffness Not Included in Analysis.
Sign considered for Dynamic Load Case Results.
Rigid Links Included at Fixed Beam-to-Wall Locations
Eigenvalue Analysis : Eigen Vectors (Subspace Iteration)

LOAD CASE DEFINITIONS:

D	DeadLoad	RAMUSER
Sp	PosSnowLoad	RAMUSER
W1	N to S	RAMUSERNODAL_W
W2	S to N	RAMUSERNODAL_W
W3	W to E	RAMUSERNODAL_W
W4	E to W	RAMUSERNODAL_W

Frame #0:

Level: 23ft Roof

Steel Column:

#	LoadC	@	P kips	Mmajor kip-ft	Mminor kip-ft	Vmajor kips	Vminor kips	Tors kip-ft
2	D	T	3.10	4.93	0.00	-0.03	0.00	-0.00
		B	3.10	4.77	0.00	-0.03	-0.00	-0.00
	Sp	T	2.43	5.29	0.00	-0.02	0.00	-0.00
		B	2.43	5.18	0.00	-0.02	-0.00	-0.00
	W1	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00
	W2	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00
	W3	T	-1.45	-20.39	0.00	-0.79	0.00	-0.00
		B	-1.45	-24.36	0.00	-0.79	-0.00	-0.00
	W4	T	1.47	20.73	0.00	0.80	0.00	-0.00
		B	1.47	24.75	0.00	0.80	-0.00	-0.00
4	D	T	2.44	-0.48	0.00	0.03	0.00	-0.00
		B	2.44	-0.30	0.00	0.03	-0.00	-0.00
	Sp	T	1.94	-0.36	0.00	0.02	0.00	-0.00
		B	1.94	-0.24	0.00	0.02	-0.00	-0.00
	W1	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00

#	LoadC	@	P	Mmajor	Mminor	Vmajor	Vminor	Tors
	W2	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00
	W3	T	1.45	-8.70	0.00	0.80	0.00	-0.00
		B	1.45	-4.11	0.00	0.80	-0.00	-0.00
	W4	T	-1.47	8.82	0.00	-0.81	0.00	-0.00
		B	-1.47	4.16	0.00	-0.81	-0.00	-0.00

Steel Beam:

#	LoadC	@	P	Mmajor	Mminor	Vmajor	Vminor	Tors
			kips	kip-ft	kip-ft	kips	kips	kip-ft
3	D	i	0.03	-3.77	0.00	2.00	0.00	-0.00
		j	0.03	-0.11	0.00	-1.58	0.00	-0.00
	Sp	i	0.02	-4.26	0.00	1.78	0.00	-0.00
		j	0.02	-0.05	0.00	-1.30	0.00	-0.00
	W1	i	0.00	0.00	0.00	0.00	0.00	-0.00
		j	0.00	0.00	0.00	0.00	0.00	-0.00
	W2	i	0.00	0.00	0.00	0.00	0.00	-0.00
		j	0.00	0.00	0.00	0.00	0.00	-0.00
	W3	i	0.79	18.96	0.00	-1.45	0.00	-0.00
		j	0.79	-8.93	0.00	-1.45	0.00	-0.00
	W4	i	-0.81	-19.28	0.00	1.47	0.00	-0.00
		j	-0.81	9.05	0.00	1.47	0.00	-0.00

Level: 16.5 ft Roof

Steel Column:

#	LoadC	@	P	Mmajor	Mminor	Vmajor	Vminor	Tors
			kips	kip-ft	kip-ft	kips	kips	kip-ft
21	D	T	5.02	2.06	0.00	-0.21	0.00	-0.00
		B	5.02	1.17	0.00	-0.21	-0.00	-0.00
	Sp	T	4.00	1.56	0.00	-0.16	0.00	-0.00
		B	4.00	0.88	0.00	-0.16	-0.00	-0.00
	W1	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00
	W2	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00
	W3	T	-3.08	-15.56	0.00	2.05	0.00	-0.00
		B	-3.08	-6.84	0.00	2.05	-0.00	-0.00
	W4	T	3.02	15.13	0.00	-1.99	0.00	-0.00
		B	3.02	6.66	0.00	-1.99	-0.00	-0.00
26	D	T	12.43	-4.03	0.00	0.31	0.00	-0.00
		B	12.43	-2.73	0.00	0.31	-0.00	-0.00
	Sp	T	10.71	-0.84	0.00	0.01	0.00	-0.00
		B	10.71	-0.79	0.00	0.01	-0.00	-0.00

#	LoadC	@	P	Mmajor	Mminor	Vmajor	Vminor	Tors
	W1	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00
	W2	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00
	W3	T	-5.24	-111.61	0.00	16.21	0.00	-0.00
		B	-5.24	-42.64	0.00	16.21	-0.00	-0.00
	W4	T	5.33	110.85	0.00	-16.09	0.00	-0.00
		B	5.33	42.39	0.00	-16.09	-0.00	-0.00
28	D	T	8.87	0.46	0.00	-0.13	0.00	-0.00
		B	8.87	-0.09	0.00	-0.13	-0.00	-0.00
	Sp	T	9.20	-2.00	0.00	0.12	0.00	-0.00
		B	9.20	-1.47	0.00	0.12	-0.00	-0.00
	W1	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00
	W2	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00
	W3	T	6.88	-99.62	0.00	15.00	0.00	-0.00
		B	6.88	-35.81	0.00	15.00	-0.00	-0.00
	W4	T	-6.89	100.65	0.00	-15.17	0.00	-0.00
		B	-6.89	36.13	0.00	-15.17	-0.00	-0.00
38	D	T	2.57	-0.30	0.00	0.03	0.00	-0.00
		B	2.57	-0.15	0.00	0.03	-0.00	-0.00
	Sp	T	1.94	-0.24	0.00	0.02	0.00	-0.00
		B	1.94	-0.12	0.00	0.02	-0.00	-0.00
	W1	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00
	W2	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00
	W3	T	1.45	-4.11	0.00	0.82	0.00	-0.00
		B	1.45	-0.01	0.00	0.82	-0.00	-0.00
	W4	T	-1.47	4.16	0.00	-0.83	0.00	-0.00
		B	-1.47	0.01	0.00	-0.83	-0.00	-0.00

Steel Beam:

#	LoadC	@	P	Mmajor	Mminor	Vmajor	Vminor	Tors
			kips	kip-ft	kip-ft	kips	kips	kip-ft
57	D	i	0.21	-1.15	0.00	4.23	0.00	-0.00
		j	0.21	-21.36	0.00	-6.46	0.00	-0.00
	Sp	i	0.16	-0.80	0.00	3.48	0.00	-0.00
		j	0.16	-17.73	0.00	-4.73	0.00	-0.00
	W1	i	0.00	0.00	0.00	0.00	0.00	-0.00
		j	0.00	0.00	0.00	0.00	0.00	-0.00
	W2	i	0.00	0.00	0.00	0.00	0.00	-0.00

#	LoadC	@	P	Mmajor	Mminor	Vmajor	Vminor	Tors
		j	0.00	0.00	0.00	0.00	0.00	-0.00
	W3	i	31.97	16.32	0.00	-3.08	0.00	-0.00
		j	31.97	-43.38	0.00	-3.08	0.00	-0.00
	W4	i	1.98	-15.86	0.00	3.02	0.00	-0.00
		j	1.98	42.71	0.00	3.02	0.00	-0.00
78	D	i	-0.10	-18.68	0.00	3.77	0.00	-0.00
		j	-0.10	-3.13	0.00	-1.80	0.00	-0.00
	Sp	i	0.15	-17.29	0.00	4.04	0.00	-0.00
		j	0.15	-5.55	0.00	-2.90	0.00	-0.00
	W1	i	0.00	0.00	0.00	0.00	0.00	-0.00
		j	0.00	0.00	0.00	0.00	0.00	-0.00
	W2	i	0.00	0.00	0.00	0.00	0.00	-0.00
		j	0.00	0.00	0.00	0.00	0.00	-0.00
	W3	i	15.77	73.67	0.00	-8.32	0.00	-0.00
		j	15.77	-81.00	0.00	-8.32	0.00	-0.00
	W4	i	18.05	-73.51	0.00	8.35	0.00	-0.00
		j	18.05	81.73	0.00	8.35	0.00	-0.00

Level: Patio

Steel Column:

#	LoadC	@	P	Mmajor	Mminor	Vmajor	Vminor	Tors
			kips	kip-ft	kip-ft	kips	kips	kip-ft
26	D	T	5.31	1.17	0.00	-0.21	0.00	-0.00
		B	5.31	-1.23	0.00	-0.21	-0.00	-0.00
	Sp	T	4.00	0.88	0.00	-0.16	0.00	-0.00
		B	4.00	-0.94	0.00	-0.16	-0.00	-0.00
	W1	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00
	W2	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00
	W3	T	-3.08	-6.84	0.00	2.06	0.00	-0.00
		B	-3.08	16.90	0.00	2.06	-0.00	-0.00
	W4	T	3.02	6.66	0.00	-2.01	0.00	-0.00
		B	3.02	-16.42	0.00	-2.01	-0.00	-0.00
31	D	T	13.11	-2.73	0.00	0.31	0.00	-0.00
		B	13.11	0.79	0.00	0.31	-0.00	-0.00
	Sp	T	10.71	-0.79	0.00	0.01	0.00	-0.00
		B	10.71	-0.65	0.00	0.01	-0.00	-0.00
	W1	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00
	W2	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00

Member Force Summary

#	LoadC	@	P	Mmajor	Mminor	Vmajor	Vminor	Tors
	W3	T	-5.24	-42.64	0.00	16.22	0.00	-0.00
		B	-5.24	143.89	0.00	16.22	-0.00	-0.00
	W4	T	5.33	42.39	0.00	-16.10	0.00	-0.00
		B	5.33	-142.76	0.00	-16.10	-0.00	-0.00
33	D	T	9.54	-0.09	0.00	-0.13	0.00	-0.00
		B	9.54	-1.57	0.00	-0.13	-0.00	-0.00
	Sp	T	9.20	-1.47	0.00	0.12	0.00	-0.00
		B	9.20	-0.04	0.00	0.12	-0.00	-0.00
	W1	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00
	W2	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00
	W3	T	6.88	-35.81	0.00	15.00	0.00	-0.00
		B	6.88	136.75	0.00	15.00	-0.00	-0.00
	W4	T	-6.89	36.13	0.00	-15.17	0.00	-0.00
		B	-6.89	-138.34	0.00	-15.17	-0.00	-0.00
43	D	T	2.87	-0.15	0.00	0.03	0.00	-0.00
		B	2.87	0.21	0.00	0.03	-0.00	-0.00
	Sp	T	1.94	-0.12	0.00	0.02	0.00	-0.00
		B	1.94	0.13	0.00	0.02	-0.00	-0.00
	W1	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00
	W2	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00
	W3	T	1.45	-0.01	0.00	0.82	0.00	-0.00
		B	1.45	9.36	0.00	0.82	-0.00	-0.00
	W4	T	-1.47	0.01	0.00	-0.83	0.00	-0.00
		B	-1.47	-9.49	0.00	-0.83	-0.00	-0.00

Frame #1:

Level: 16.5 ft Roof

Steel Column:

#	LoadC	@	P	Mmajor	Mminor	Vmajor	Vminor	Tors
			kips	kip-ft	kip-ft	kips	kips	kip-ft
35	D	T	3.57	0.48	0.00	-0.03	0.00	-0.00
		B	3.57	0.35	0.00	-0.03	-0.00	-0.00
	Sp	T	4.79	0.90	0.00	-0.06	0.00	-0.00
		B	4.79	0.66	0.00	-0.06	-0.00	-0.00
	W1	T	34.58	1.08	0.00	-0.06	0.00	-0.00
		B	34.58	0.80	0.00	-0.06	-0.00	-0.00
	W2	T	-0.12	-1.28	0.00	0.08	0.00	-0.00
		B	-0.12	-0.94	0.00	0.08	-0.00	-0.00

Member Force Summary

#	LoadC	@	P	Mmajor	Mminor	Vmajor	Vminor	Tors
	W3	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00
	W4	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00
36	D	T	15.11	-0.48	0.00	0.03	0.00	-0.00
		B	15.11	-0.35	0.00	0.03	-0.00	-0.00
	Sp	T	12.62	-0.90	0.00	0.06	0.00	-0.00
		B	12.62	-0.66	0.00	0.06	-0.00	-0.00
	W1	T	-0.12	1.28	0.00	-0.08	0.00	-0.00
		B	-0.12	0.94	0.00	-0.08	-0.00	-0.00
	W2	T	34.58	-1.08	0.00	0.06	0.00	-0.00
		B	34.58	-0.80	0.00	0.06	-0.00	-0.00
	W3	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00
	W4	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00

Steel Beam:

#	LoadC	@	P	Mmajor	Mminor	Vmajor	Vminor	Tors
			kips	kip-ft	kip-ft	kips	kips	kip-ft
117	D	i	0.03	-0.25	0.00	0.97	0.00	-0.00
		j	0.03	-0.25	0.00	-0.97	0.00	-0.00
	Sp	i	0.06	-0.48	0.00	1.84	0.00	-0.00
		j	0.06	-0.48	0.00	-1.83	0.00	-0.00
	W1	i	42.36	-1.09	0.00	0.12	0.00	-0.00
		j	42.36	1.30	0.00	0.12	0.00	-0.00
	W2	i	42.36	1.30	0.00	-0.12	0.00	-0.00
		j	42.36	-1.09	0.00	-0.12	0.00	-0.00
	W3	i	0.00	0.00	0.00	0.00	0.00	-0.00
		j	0.00	0.00	0.00	0.00	0.00	-0.00
	W4	i	0.00	0.00	0.00	0.00	0.00	-0.00
		j	0.00	0.00	0.00	0.00	0.00	-0.00

Steel Brace:

#	LoadC	@	P	Mmajor	Mminor	Vmajor	Vminor	Tors
			kips	kip-ft	kip-ft	kips	kips	kip-ft
5	D	T	0.00	0.00	-0.00	0.00	0.00	-0.00
		B	0.00	-0.00	0.00	0.00	-0.00	-0.00
	Sp	T	0.00	0.00	-0.00	0.00	0.00	-0.00
		B	0.00	-0.00	0.00	0.00	-0.00	-0.00
	W1	T	-54.56	0.00	-0.00	-0.00	0.00	-0.00
		B	-54.56	-0.00	0.00	-0.00	-0.00	-0.00
	W2	T	0.00	0.00	-0.00	0.00	0.00	-0.00

#	LoadC	@	P	Mmajor	Mminor	Vmajor	Vminor	Tors
		B	0.00	-0.00	0.00	0.00	-0.00	-0.00
	W3	T	-0.00	0.00	-0.00	0.00	0.00	-0.00
		B	-0.00	-0.00	0.00	-0.00	-0.00	-0.00
	W4	T	-0.00	0.00	-0.00	0.00	0.00	-0.00
		B	-0.00	-0.00	0.00	-0.00	-0.00	-0.00
6	D	T	0.00	0.00	-0.00	-0.00	0.00	-0.00
		B	0.00	-0.00	0.00	-0.00	-0.00	-0.00
	Sp	T	0.00	0.00	-0.00	-0.00	0.00	-0.00
		B	0.00	-0.00	0.00	-0.00	-0.00	-0.00
	W1	T	0.00	0.00	-0.00	0.00	0.00	-0.00
		B	0.00	-0.00	0.00	0.00	-0.00	-0.00
	W2	T	-54.56	0.00	-0.00	-0.00	0.00	-0.00
		B	-54.56	-0.00	0.00	-0.00	-0.00	-0.00
	W3	T	-0.00	0.00	-0.00	0.00	0.00	-0.00
		B	-0.00	-0.00	0.00	-0.00	-0.00	-0.00
	W4	T	-0.00	0.00	-0.00	0.00	0.00	-0.00
		B	-0.00	-0.00	0.00	-0.00	-0.00	-0.00

Level: Patio

Steel Column:

#	LoadC	@	P	Mmajor	Mminor	Vmajor	Vminor	Tors
			kips	kip-ft	kip-ft	kips	kips	kip-ft
40	D	T	3.78	0.35	0.00	-0.03	0.00	-0.00
		B	3.78	0.00	0.00	-0.03	-0.00	-0.00
	Sp	T	4.79	0.66	0.00	-0.06	0.00	-0.00
		B	4.79	0.00	0.00	-0.06	-0.00	-0.00
	W1	T	34.58	0.80	0.00	-0.07	0.00	-0.00
		B	34.58	0.00	0.00	-0.07	-0.00	-0.00
	W2	T	-0.12	-0.94	0.00	0.08	0.00	-0.00
		B	-0.12	-0.00	0.00	0.08	-0.00	-0.00
	W3	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00
	W4	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00
41	D	T	15.32	-0.35	0.00	0.03	0.00	-0.00
		B	15.32	-0.00	0.00	0.03	-0.00	-0.00
	Sp	T	12.62	-0.66	0.00	0.06	0.00	-0.00
		B	12.62	-0.00	0.00	0.06	-0.00	-0.00
	W1	T	-0.12	0.94	0.00	-0.08	0.00	-0.00
		B	-0.12	0.00	0.00	-0.08	-0.00	-0.00
	W2	T	34.58	-0.80	0.00	0.07	0.00	-0.00
		B	34.58	-0.00	0.00	0.07	-0.00	-0.00

#	LoadC	@	P	Mmajor	Mminor	Vmajor	Vminor	Tors
	W3	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00
	W4	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00

Frame #2:

Level: 16.5 ft Roof

Steel Column:

#	LoadC	@	P	Mmajor	Mminor	Vmajor	Vminor	Tors
			kips	kip-ft	kip-ft	kips	kips	kip-ft
15	D	T	3.44	0.00	0.00	0.00	0.00	-0.00
		B	3.44	-0.00	0.00	0.00	-0.00	-0.00
	Sp	T	5.37	-0.00	0.00	-0.00	0.00	-0.00
		B	5.37	0.00	0.00	-0.00	-0.00	-0.00
	W1	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00
	W2	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00
	W3	T	-0.00	-0.00	0.00	-0.00	0.00	-0.00
		B	-0.00	-0.00	0.00	-0.00	-0.00	-0.00
	W4	T	22.54	-0.00	0.00	0.00	0.00	-0.00
		B	22.54	0.00	0.00	0.00	-0.00	-0.00
22	D	T	4.89	0.00	0.00	0.00	0.00	-0.00
		B	4.89	-0.00	0.00	0.00	-0.00	-0.00
	Sp	T	5.24	0.00	0.00	0.00	0.00	-0.00
		B	5.24	-0.00	0.00	0.00	-0.00	-0.00
	W1	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00
	W2	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00
	W3	T	22.54	0.00	0.00	-0.00	0.00	-0.00
		B	22.54	-0.00	0.00	-0.00	-0.00	-0.00
	W4	T	-0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	0.00	-0.00	-0.00

Steel Beam:

#	LoadC	@	P	Mmajor	Mminor	Vmajor	Vminor	Tors
			kips	kip-ft	kip-ft	kips	kips	kip-ft
50	D	i	-0.00	0.00	-0.00	2.59	0.00	-0.00
		j	-0.00	-0.00	0.00	-2.59	-0.00	-0.00
	Sp	i	-0.00	0.00	-0.00	3.61	0.00	-0.00
		j	-0.00	-0.00	0.00	-2.93	-0.00	-0.00
	W1	i	0.00	0.00	-0.00	0.00	0.00	-0.00

#	LoadC	@	P	Mmajor	Mminor	Vmajor	Vminor	Tors
		j	-0.00	-0.00	0.00	-0.00	-0.00	-0.00
	W2	i	0.00	0.00	-0.00	0.00	0.00	-0.00
		j	-0.00	-0.00	0.00	-0.00	-0.00	-0.00
	W3	i	27.60	0.00	-0.00	-0.00	0.00	-0.00
		j	27.60	-0.00	0.00	-0.00	-0.00	-0.00
	W4	i	27.60	0.00	-0.00	0.00	0.00	-0.00
		j	27.60	-0.00	0.00	0.00	-0.00	-0.00

Steel Brace:

#	LoadC	@	P	Mmajor	Mminor	Vmajor	Vminor	Tors
			kips	kip-ft	kip-ft	kips	kips	kip-ft
3	D	T	0.00	0.00	-0.00	0.00	0.00	-0.00
		B	0.00	-0.00	0.00	-0.00	-0.00	-0.00
	Sp	T	0.00	0.00	-0.00	0.00	0.00	-0.00
		B	0.00	-0.00	0.00	-0.00	-0.00	-0.00
	W1	T	-0.00	0.00	-0.00	0.00	0.00	-0.00
		B	-0.00	-0.00	0.00	-0.00	-0.00	-0.00
	W2	T	-0.00	0.00	-0.00	0.00	0.00	-0.00
		B	-0.00	-0.00	0.00	-0.00	-0.00	-0.00
	W3	T	0.00	0.00	-0.00	0.00	0.00	-0.00
		B	0.00	-0.00	0.00	-0.00	-0.00	-0.00
	W4	T	-35.64	0.00	-0.00	0.00	0.00	-0.00
		B	-35.64	-0.00	0.00	-0.00	-0.00	-0.00
4	D	T	0.00	0.00	-0.00	0.00	0.00	-0.00
		B	0.00	-0.00	0.00	-0.00	-0.00	-0.00
	Sp	T	0.00	0.00	-0.00	0.00	0.00	-0.00
		B	0.00	-0.00	0.00	-0.00	-0.00	-0.00
	W1	T	-0.00	0.00	-0.00	0.00	0.00	-0.00
		B	-0.00	-0.00	0.00	-0.00	-0.00	-0.00
	W2	T	-0.00	0.00	-0.00	0.00	0.00	-0.00
		B	-0.00	-0.00	0.00	-0.00	-0.00	-0.00
	W3	T	-35.64	0.00	-0.00	0.00	0.00	-0.00
		B	-35.64	-0.00	0.00	-0.00	-0.00	-0.00
	W4	T	0.00	0.00	-0.00	0.00	0.00	-0.00
		B	0.00	-0.00	0.00	-0.00	-0.00	-0.00

Level: Patio

Steel Column:

#	LoadC	@	P	Mmajor	Mminor	Vmajor	Vminor	Tors
			kips	kip-ft	kip-ft	kips	kips	kip-ft
20	D	T	3.65	-0.00	0.00	0.00	0.00	-0.00
		B	3.65	-0.00	0.00	0.00	-0.00	-0.00
	Sp	T	5.37	-0.00	0.00	0.00	0.00	-0.00

#	LoadC	@	P	Mmajor	Mminor	Vmajor	Vminor	Tors
		B	5.37	-0.00	0.00	0.00	-0.00	-0.00
	W1	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00
	W2	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00
	W3	T	-0.00	-0.00	0.00	0.00	0.00	-0.00
		B	-0.00	-0.00	0.00	0.00	-0.00	-0.00
	W4	T	22.54	0.00	0.00	-0.00	0.00	-0.00
		B	22.54	0.00	0.00	-0.00	-0.00	-0.00
27	D	T	5.10	-0.00	0.00	-0.00	0.00	-0.00
		B	5.10	0.00	0.00	-0.00	-0.00	-0.00
	Sp	T	5.24	0.00	0.00	0.00	0.00	-0.00
		B	5.24	-0.00	0.00	0.00	-0.00	-0.00
	W1	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00
	W2	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00
	W3	T	22.54	-0.00	0.00	0.00	0.00	-0.00
		B	22.54	-0.00	0.00	0.00	-0.00	-0.00
	W4	T	-0.00	0.00	0.00	-0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00

Frame #3:

Level: 16.5 ft Roof

Steel Column:

#	LoadC	@	P	Mmajor	Mminor	Vmajor	Vminor	Tors
			kips	kip-ft	kip-ft	kips	kips	kip-ft
2	D	T	2.70	0.00	-0.00	-0.00	-0.00	-0.00
		B	2.70	0.00	-0.00	-0.00	-0.00	-0.00
	Sp	T	6.23	0.00	-0.00	-0.00	0.00	-0.00
		B	6.23	0.00	-0.00	-0.00	0.00	-0.00
	W1	T	28.02	-0.00	0.00	0.00	0.00	-0.00
		B	28.02	0.00	0.00	0.00	0.00	-0.00
	W2	T	-0.00	0.00	0.00	-0.00	-0.00	-0.00
		B	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
	W3	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00
	W4	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00
3	D	T	2.09	0.00	0.00	-0.00	-0.00	-0.00
		B	2.09	0.00	0.00	-0.00	-0.00	-0.00
	Sp	T	4.46	0.00	0.00	-0.00	-0.00	-0.00

#	LoadC	@	P	Mmajor	Mminor	Vmajor	Vminor	Tors
		B	4.46	0.00	0.00	-0.00	-0.00	-0.00
	W1	T	-0.00	0.00	-0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	0.00	0.00	-0.00
	W2	T	28.02	0.00	-0.00	-0.00	-0.00	-0.00
		B	28.02	-0.00	-0.00	-0.00	-0.00	-0.00
	W3	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00
	W4	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00

Steel Beam:

#	LoadC	@	P	Mmajor	Mminor	Vmajor	Vminor	Tors
			kips	kip-ft	kip-ft	kips	kips	kip-ft
3	D	i	-0.00	0.00	-0.00	1.95	0.00	0.00
		j	-0.00	-0.00	0.00	-1.25	0.00	0.00
	Sp	i	-0.00	0.00	-0.00	4.40	0.00	0.00
		j	-0.00	-0.00	0.00	-2.94	0.00	0.00
	W1	i	36.51	0.00	-0.00	0.00	-0.00	-0.00
		j	36.51	-0.00	0.00	0.00	-0.00	-0.00
	W2	i	36.51	0.00	-0.00	-0.00	-0.00	-0.00
		j	36.51	-0.00	0.00	-0.00	-0.00	-0.00
	W3	i	0.00	0.00	-0.00	0.00	0.00	-0.00
		j	-0.00	-0.00	0.00	-0.00	-0.00	-0.00
	W4	i	0.00	0.00	-0.00	0.00	0.00	-0.00
		j	-0.00	-0.00	0.00	-0.00	-0.00	-0.00

Steel Brace:

#	LoadC	@	P	Mmajor	Mminor	Vmajor	Vminor	Tors
			kips	kip-ft	kip-ft	kips	kips	kip-ft
1	D	T	0.00	0.00	-0.00	0.00	-0.00	-0.00
		B	0.00	-0.00	0.00	0.00	-0.00	-0.00
	Sp	T	0.00	0.00	-0.00	0.00	-0.00	-0.00
		B	0.00	-0.00	0.00	0.00	-0.00	-0.00
	W1	T	-46.02	0.00	-0.00	0.00	-0.00	-0.00
		B	-46.02	-0.00	0.00	0.00	-0.00	-0.00
	W2	T	0.00	0.00	-0.00	-0.00	0.00	-0.00
		B	0.00	-0.00	0.00	-0.00	0.00	-0.00
	W3	T	-0.00	0.00	-0.00	0.00	0.00	-0.00
		B	-0.00	-0.00	0.00	-0.00	-0.00	-0.00
	W4	T	-0.00	0.00	-0.00	0.00	0.00	-0.00
		B	-0.00	-0.00	0.00	-0.00	-0.00	-0.00
2	D	T	0.00	0.00	-0.00	0.00	0.00	-0.00
		B	0.00	-0.00	0.00	0.00	0.00	-0.00

#	LoadC	@	P	Mmajor	Mminor	Vmajor	Vminor	Tors
	Sp	T	0.00	0.00	-0.00	0.00	0.00	-0.00
		B	0.00	-0.00	0.00	0.00	0.00	-0.00
	W1	T	0.00	0.00	-0.00	-0.00	0.00	-0.00
		B	0.00	-0.00	0.00	-0.00	0.00	-0.00
	W2	T	-46.02	0.00	-0.00	0.00	-0.00	-0.00
		B	-46.02	-0.00	0.00	0.00	-0.00	-0.00
	W3	T	-0.00	0.00	-0.00	0.00	0.00	-0.00
		B	-0.00	-0.00	0.00	-0.00	-0.00	-0.00
	W4	T	-0.00	0.00	-0.00	0.00	0.00	-0.00
		B	-0.00	-0.00	0.00	-0.00	-0.00	-0.00

Level: Patio

Steel Column:

#	LoadC	@	P	Mmajor	Mminor	Vmajor	Vminor	Tors
			kips	kip-ft	kip-ft	kips	kips	kip-ft
2	D	T	2.90	0.00	-0.00	-0.00	-0.00	-0.00
		B	2.90	0.00	-0.00	-0.00	-0.00	-0.00
	Sp	T	6.23	0.00	-0.00	-0.00	0.00	-0.00
		B	6.23	0.00	-0.00	-0.00	0.00	-0.00
	W1	T	28.02	0.00	0.00	-0.00	0.00	-0.00
		B	28.02	0.00	0.00	-0.00	0.00	-0.00
	W2	T	-0.00	-0.00	-0.00	0.00	-0.00	-0.00
		B	-0.00	-0.00	-0.00	0.00	-0.00	-0.00
	W3	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00
	W4	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00
3	D	T	2.67	0.00	0.00	-0.00	-0.00	-0.00
		B	2.67	0.00	0.00	-0.00	-0.00	-0.00
	Sp	T	4.91	0.00	0.00	-0.00	0.00	-0.00
		B	4.91	0.00	0.00	-0.00	0.00	-0.00
	W1	T	-0.00	0.00	0.00	-0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	0.00	-0.00
	W2	T	28.02	-0.00	-0.00	0.00	-0.00	-0.00
		B	28.02	-0.00	-0.00	0.00	-0.00	-0.00
	W3	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00
	W4	T	0.00	0.00	0.00	0.00	0.00	-0.00
		B	-0.00	0.00	0.00	-0.00	-0.00	-0.00

Nodal Displacements

CRITERIA:

Rigid End Zones: Ignore Effects
Member Force Output: At Face of Joint
P-Delta: Yes Scale Factor: 1.00
Ground Level: Base
Mesh Criteria :
Max. Distance Between Nodes on Mesh Line (ft) : 4.00
Merge Node Tolerance (in) : 0.0100
Geometry Tolerance (in) : 0.0050
Walls Out-of-plane Stiffness Not Included in Analysis.
Sign considered for Dynamic Load Case Results.
Rigid Links Included at Fixed Beam-to-Wall Locations
Eigenvalue Analysis : Eigen Vectors (Subspace Iteration)

LOAD CASES:

D	DeadLoad	RAMUSER
Sp	PosSnowLoad	RAMUSER
W1	N to S	RAMUSERNODAL_W
W2	S to N	RAMUSERNODAL_W
W3	W to E	RAMUSERNODAL_W
W4	E to W	RAMUSERNODAL_W

USER DEFINED LOAD COMBINATIONS:

1	*	1.400 D
2	*	1.200 D + 1.000 W1
3	*	1.200 D + 1.000 W2
4	*	1.200 D + 1.000 W3
5	*	1.200 D + 1.000 W4
6	*	1.200 D - 1.000 W1
7	*	1.200 D - 1.000 W2
8	*	1.200 D - 1.000 W3
9	*	1.200 D - 1.000 W4
10	*	0.900 D + 1.000 W1
11	*	0.900 D + 1.000 W2
12	*	0.900 D + 1.000 W3
13	*	0.900 D + 1.000 W4
14	*	0.900 D - 1.000 W1
15	*	0.900 D - 1.000 W2
16	*	0.900 D - 1.000 W3
17	*	0.900 D - 1.000 W4
18	*	1.400 D
19	*	1.200 D + 1.600 Sp
20	*	1.200 D + 1.600 Sp + 0.500 W1
21	*	1.200 D + 1.600 Sp + 0.500 W2
22	*	1.200 D + 1.600 Sp + 0.500 W3
23	*	1.200 D + 1.600 Sp + 0.500 W4

24 * 1.200 D + 0.500 Sp + 1.000 W1
25 * 1.200 D + 0.500 Sp + 1.000 W2
26 * 1.200 D + 0.500 Sp + 1.000 W3
27 * 1.200 D + 0.500 Sp + 1.000 W4
28 * 1.200 D + 1.000 W1
29 * 1.200 D + 1.000 W2
30 * 1.200 D + 1.000 W3
31 * 1.200 D + 1.000 W4
32 * 0.900 D + 1.000 W1
33 * 0.900 D + 1.000 W2
34 * 0.900 D + 1.000 W3
35 * 0.900 D + 1.000 W4
* = Load combination currently selected to use

Note: Nodal Displacements for Live Load Cases are based on Unreduced Live Loads.

Frame #0

Level: 23ft Roof

Node	LdC	Disp X in	Disp Y in	Disp Z in	Theta X (rad)	Theta Y (rad)	Theta Z (rad)
1	1	-0.01464	0.00000	-0.00587	0.00000	0.00040	0.00000
	2	-0.01254	0.00000	-0.00503	0.00000	0.00034	0.00000
	3	-0.01254	0.00000	-0.00503	0.00000	0.00034	0.00000
	4	1.23475	0.00000	-0.00753	0.00000	0.00119	0.00000
	5	-1.27604	0.00000	-0.00252	0.00000	-0.00052	0.00000
	6	-0.01254	0.00000	-0.00503	0.00000	0.00034	0.00000
	7	-0.01254	0.00000	-0.00503	0.00000	0.00034	0.00000
	8	-1.25984	0.00000	-0.00252	0.00000	-0.00050	0.00000
	9	1.25095	0.00000	-0.00753	0.00000	0.00120	0.00000
	10	-0.00941	0.00000	-0.00377	0.00000	0.00026	0.00000
	11	-0.00941	0.00000	-0.00377	0.00000	0.00026	0.00000
	12	1.23788	0.00000	-0.00628	0.00000	0.00110	0.00000
	13	-1.27290	0.00000	-0.00127	0.00000	-0.00060	0.00000
	14	-0.00941	0.00000	-0.00377	0.00000	0.00026	0.00000
	15	-0.00941	0.00000	-0.00377	0.00000	0.00026	0.00000
	16	-1.25670	0.00000	-0.00127	0.00000	-0.00059	0.00000
	17	1.25409	0.00000	-0.00627	0.00000	0.00112	0.00000
	18	-0.01464	0.00000	-0.00587	0.00000	0.00040	0.00000
	19	-0.03675	0.00000	-0.01148	0.00000	0.00067	0.00000
	20	-0.03675	0.00000	-0.01148	0.00000	0.00067	0.00000
	21	-0.03675	0.00000	-0.01148	0.00000	0.00067	0.00000
	22	0.58690	0.00000	-0.01273	0.00000	0.00109	0.00000
	23	-0.66849	0.00000	-0.01023	0.00000	0.00024	0.00000
	24	-0.02011	0.00000	-0.00704	0.00000	0.00045	0.00000
	25	-0.02011	0.00000	-0.00704	0.00000	0.00045	0.00000

Node	LdC	Disp X	Disp Y	Disp Z	Theta X	Theta Y	Theta Z
	26	1.22718	0.00000	-0.00955	0.00000	0.00129	0.00000
	27	-1.28360	0.00000	-0.00454	0.00000	-0.00041	0.00000
	28	-0.01254	0.00000	-0.00503	0.00000	0.00034	0.00000
	29	-0.01254	0.00000	-0.00503	0.00000	0.00034	0.00000
	30	1.23475	0.00000	-0.00753	0.00000	0.00119	0.00000
	31	-1.27604	0.00000	-0.00252	0.00000	-0.00052	0.00000
	32	-0.00941	0.00000	-0.00377	0.00000	0.00026	0.00000
	33	-0.00941	0.00000	-0.00377	0.00000	0.00026	0.00000
	34	1.23788	0.00000	-0.00628	0.00000	0.00110	0.00000
	35	-1.27290	0.00000	-0.00127	0.00000	-0.00060	0.00000
2	1	-0.01467	0.00000	-0.00472	0.00000	-0.00059	0.00000
	2	-0.01257	0.00000	-0.00404	0.00000	-0.00051	0.00000
	3	-0.01257	0.00000	-0.00404	0.00000	-0.00051	0.00000
	4	1.23416	0.00000	-0.00586	0.00000	-0.00052	0.00000
	5	-1.27550	0.00000	-0.00220	0.00000	-0.00049	0.00000
	6	-0.01257	0.00000	-0.00404	0.00000	-0.00051	0.00000
	7	-0.01257	0.00000	-0.00404	0.00000	-0.00051	0.00000
	8	-1.25930	0.00000	-0.00223	0.00000	-0.00049	0.00000
	9	1.25035	0.00000	-0.00589	0.00000	-0.00052	0.00000
	10	-0.00943	0.00000	-0.00303	0.00000	-0.00038	0.00000
	11	-0.00943	0.00000	-0.00303	0.00000	-0.00038	0.00000
	12	1.23730	0.00000	-0.00485	0.00000	-0.00039	0.00000
	13	-1.27235	0.00000	-0.00119	0.00000	-0.00036	0.00000
	14	-0.00943	0.00000	-0.00303	0.00000	-0.00038	0.00000
	15	-0.00943	0.00000	-0.00303	0.00000	-0.00038	0.00000
	16	-1.25616	0.00000	-0.00122	0.00000	-0.00037	0.00000
	17	1.25350	0.00000	-0.00488	0.00000	-0.00039	0.00000
	18	-0.01467	0.00000	-0.00472	0.00000	-0.00059	0.00000
	19	-0.03680	0.00000	-0.00793	0.00000	-0.00108	0.00000
	20	-0.03680	0.00000	-0.00793	0.00000	-0.00108	0.00000
	21	-0.03680	0.00000	-0.00793	0.00000	-0.00108	0.00000
	22	0.58657	0.00000	-0.00884	0.00000	-0.00108	0.00000
	23	-0.66826	0.00000	-0.00701	0.00000	-0.00107	0.00000
	24	-0.02014	0.00000	-0.00526	0.00000	-0.00068	0.00000
	25	-0.02014	0.00000	-0.00526	0.00000	-0.00068	0.00000
	26	1.22659	0.00000	-0.00707	0.00000	-0.00070	0.00000
	27	-1.28307	0.00000	-0.00342	0.00000	-0.00067	0.00000
	28	-0.01257	0.00000	-0.00404	0.00000	-0.00051	0.00000
	29	-0.01257	0.00000	-0.00404	0.00000	-0.00051	0.00000
	30	1.23416	0.00000	-0.00586	0.00000	-0.00052	0.00000
	31	-1.27550	0.00000	-0.00220	0.00000	-0.00049	0.00000
	32	-0.00943	0.00000	-0.00303	0.00000	-0.00038	0.00000
	33	-0.00943	0.00000	-0.00303	0.00000	-0.00038	0.00000
	34	1.23730	0.00000	-0.00485	0.00000	-0.00039	0.00000
	35	-1.27235	0.00000	-0.00119	0.00000	-0.00036	0.00000

Nodal Displacements

Level: 16.5 ft Roof

Node	LdC	Disp X in	Disp Y in	Disp Z in	Theta X (rad)	Theta Y (rad)	Theta Z (rad)
6	1	-0.02438	0.00000	-0.00659	0.00000	0.00143	0.00000
	2	-0.02090	0.00000	-0.00564	0.00000	0.00123	0.00000
	3	-0.02090	0.00000	-0.00564	0.00000	0.00123	0.00000
	4	1.12713	0.00000	-0.00287	0.00000	0.00098	0.00000
	5	-1.13534	0.00000	-0.00837	0.00000	0.00148	0.00000
	6	-0.02090	0.00000	-0.00564	0.00000	0.00123	0.00000
	7	-0.02090	0.00000	-0.00564	0.00000	0.00123	0.00000
	8	-1.16892	0.00000	-0.00842	0.00000	0.00147	0.00000
	9	1.09355	0.00000	-0.00292	0.00000	0.00097	0.00000
	10	-0.01567	0.00000	-0.00423	0.00000	0.00092	0.00000
	11	-0.01567	0.00000	-0.00423	0.00000	0.00092	0.00000
	12	1.13235	0.00000	-0.00146	0.00000	0.00067	0.00000
	13	-1.13012	0.00000	-0.00696	0.00000	0.00118	0.00000
	14	-0.01567	0.00000	-0.00423	0.00000	0.00092	0.00000
	15	-0.01567	0.00000	-0.00423	0.00000	0.00092	0.00000
	16	-1.16370	0.00000	-0.00701	0.00000	0.00117	0.00000
	17	1.09878	0.00000	-0.00151	0.00000	0.00066	0.00000
	18	-0.02438	0.00000	-0.00659	0.00000	0.00143	0.00000
	19	-0.04371	0.00000	-0.01140	0.00000	0.00245	0.00000
	20	-0.04371	0.00000	-0.01140	0.00000	0.00245	0.00000
	21	-0.04371	0.00000	-0.01140	0.00000	0.00245	0.00000
	22	0.53031	0.00000	-0.01002	0.00000	0.00233	0.00000
	23	-0.60093	0.00000	-0.01276	0.00000	0.00258	0.00000
	24	-0.02802	0.00000	-0.00744	0.00000	0.00161	0.00000
	25	-0.02802	0.00000	-0.00744	0.00000	0.00161	0.00000
	26	1.12000	0.00000	-0.00467	0.00000	0.00136	0.00000
	27	-1.14247	0.00000	-0.01017	0.00000	0.00187	0.00000
	28	-0.02090	0.00000	-0.00564	0.00000	0.00123	0.00000
	29	-0.02090	0.00000	-0.00564	0.00000	0.00123	0.00000
	30	1.12713	0.00000	-0.00287	0.00000	0.00098	0.00000
	31	-1.13534	0.00000	-0.00837	0.00000	0.00148	0.00000
	32	-0.01567	0.00000	-0.00423	0.00000	0.00092	0.00000
	33	-0.01567	0.00000	-0.00423	0.00000	0.00092	0.00000
	34	1.13235	0.00000	-0.00146	0.00000	0.00067	0.00000
	35	-1.13012	0.00000	-0.00696	0.00000	0.00118	0.00000
8	1	-0.02458	0.00000	-0.00717	0.00000	-0.00049	0.00000
	2	-0.02107	0.00000	-0.00615	0.00000	-0.00042	0.00000
	3	-0.02107	0.00000	-0.00615	0.00000	-0.00042	0.00000
	4	1.10430	0.00000	-0.00406	0.00000	0.00163	0.00000
	5	-1.13692	0.00000	-0.00826	0.00000	-0.00245	0.00000
	6	-0.02107	0.00000	-0.00615	0.00000	-0.00042	0.00000
	7	-0.02107	0.00000	-0.00615	0.00000	-0.00042	0.00000
	8	-1.14644	0.00000	-0.00823	0.00000	-0.00248	0.00000

Node	LdC	Disp X	Disp Y	Disp Z	Theta X	Theta Y	Theta Z
	9	1.09478	0.00000	-0.00403	0.00000	0.00160	0.00000
	10	-0.01580	0.00000	-0.00461	0.00000	-0.00032	0.00000
	11	-0.01580	0.00000	-0.00461	0.00000	-0.00032	0.00000
	12	1.10957	0.00000	-0.00253	0.00000	0.00174	0.00000
	13	-1.13165	0.00000	-0.00673	0.00000	-0.00234	0.00000
	14	-0.01580	0.00000	-0.00461	0.00000	-0.00032	0.00000
	15	-0.01580	0.00000	-0.00461	0.00000	-0.00032	0.00000
	16	-1.14118	0.00000	-0.00669	0.00000	-0.00237	0.00000
	17	1.10004	0.00000	-0.00249	0.00000	0.00171	0.00000
	18	-0.02458	0.00000	-0.00717	0.00000	-0.00049	0.00000
	19	-0.04406	0.00000	-0.01295	0.00000	-0.00067	0.00000
	20	-0.04406	0.00000	-0.01295	0.00000	-0.00067	0.00000
	21	-0.04406	0.00000	-0.01295	0.00000	-0.00067	0.00000
	22	0.51862	0.00000	-0.01191	0.00000	0.00036	0.00000
	23	-0.60199	0.00000	-0.01401	0.00000	-0.00168	0.00000
	24	-0.02826	0.00000	-0.00827	0.00000	-0.00050	0.00000
	25	-0.02826	0.00000	-0.00827	0.00000	-0.00050	0.00000
	26	1.09711	0.00000	-0.00619	0.00000	0.00155	0.00000
	27	-1.14411	0.00000	-0.01039	0.00000	-0.00253	0.00000
	28	-0.02107	0.00000	-0.00615	0.00000	-0.00042	0.00000
	29	-0.02107	0.00000	-0.00615	0.00000	-0.00042	0.00000
	30	1.10430	0.00000	-0.00406	0.00000	0.00163	0.00000
	31	-1.13692	0.00000	-0.00826	0.00000	-0.00245	0.00000
	32	-0.01580	0.00000	-0.00461	0.00000	-0.00032	0.00000
	33	-0.01580	0.00000	-0.00461	0.00000	-0.00032	0.00000
	34	1.10957	0.00000	-0.00253	0.00000	0.00174	0.00000
	35	-1.13165	0.00000	-0.00673	0.00000	-0.00234	0.00000
9	1	-0.02449	0.00000	-0.00519	0.00000	-0.00014	0.00000
	2	-0.02099	0.00000	-0.00445	0.00000	-0.00012	0.00000
	3	-0.02099	0.00000	-0.00445	0.00000	-0.00012	0.00000
	4	1.09346	0.00000	-0.00718	0.00000	0.00252	0.00000
	5	-1.14934	0.00000	-0.00171	0.00000	-0.00281	0.00000
	6	-0.02099	0.00000	-0.00445	0.00000	-0.00012	0.00000
	7	-0.02099	0.00000	-0.00445	0.00000	-0.00012	0.00000
	8	-1.13544	0.00000	-0.00172	0.00000	-0.00276	0.00000
	9	1.10736	0.00000	-0.00718	0.00000	0.00256	0.00000
	10	-0.01574	0.00000	-0.00334	0.00000	-0.00009	0.00000
	11	-0.01574	0.00000	-0.00334	0.00000	-0.00009	0.00000
	12	1.09870	0.00000	-0.00607	0.00000	0.00255	0.00000
	13	-1.14409	0.00000	-0.00060	0.00000	-0.00278	0.00000
	14	-0.01574	0.00000	-0.00334	0.00000	-0.00009	0.00000
	15	-0.01574	0.00000	-0.00334	0.00000	-0.00009	0.00000
	16	-1.13019	0.00000	-0.00061	0.00000	-0.00273	0.00000
	17	1.11261	0.00000	-0.00607	0.00000	0.00259	0.00000
	18	-0.02449	0.00000	-0.00519	0.00000	-0.00014	0.00000

Node	LdC	Disp X	Disp Y	Disp Z	Theta X	Theta Y	Theta Z
	19	-0.04414	0.00000	-0.01029	0.00000	-0.00047	0.00000
	20	-0.04414	0.00000	-0.01029	0.00000	-0.00047	0.00000
	21	-0.04414	0.00000	-0.01029	0.00000	-0.00047	0.00000
	22	0.51308	0.00000	-0.01166	0.00000	0.00085	0.00000
	23	-0.60832	0.00000	-0.00892	0.00000	-0.00181	0.00000
	24	-0.02823	0.00000	-0.00627	0.00000	-0.00023	0.00000
	25	-0.02823	0.00000	-0.00627	0.00000	-0.00023	0.00000
	26	1.08622	0.00000	-0.00900	0.00000	0.00241	0.00000
	27	-1.15658	0.00000	-0.00354	0.00000	-0.00292	0.00000
	28	-0.02099	0.00000	-0.00445	0.00000	-0.00012	0.00000
	29	-0.02099	0.00000	-0.00445	0.00000	-0.00012	0.00000
	30	1.09346	0.00000	-0.00718	0.00000	0.00252	0.00000
	31	-1.14934	0.00000	-0.00171	0.00000	-0.00281	0.00000
	32	-0.01574	0.00000	-0.00334	0.00000	-0.00009	0.00000
	33	-0.01574	0.00000	-0.00334	0.00000	-0.00009	0.00000
	34	1.09870	0.00000	-0.00607	0.00000	0.00255	0.00000
	35	-1.14409	0.00000	-0.00060	0.00000	-0.00278	0.00000
12	1	0.01184	0.00000	-0.00350	0.00000	-0.00013	0.00000
	2	0.01015	0.00000	-0.00300	0.00000	-0.00011	0.00000
	3	0.01015	0.00000	-0.00300	0.00000	-0.00011	0.00000
	4	1.01543	0.00000	-0.00431	0.00000	0.00535	0.00000
	5	-1.00826	0.00000	-0.00168	0.00000	-0.00565	0.00000
	6	0.01015	0.00000	-0.00300	0.00000	-0.00011	0.00000
	7	0.01015	0.00000	-0.00300	0.00000	-0.00011	0.00000
	8	-0.99513	0.00000	-0.00170	0.00000	-0.00558	0.00000
	9	1.02855	0.00000	-0.00433	0.00000	0.00542	0.00000
	10	0.00761	0.00000	-0.00225	0.00000	-0.00008	0.00000
	11	0.00761	0.00000	-0.00225	0.00000	-0.00008	0.00000
	12	1.01289	0.00000	-0.00355	0.00000	0.00538	0.00000
	13	-1.01079	0.00000	-0.00093	0.00000	-0.00562	0.00000
	14	0.00761	0.00000	-0.00225	0.00000	-0.00008	0.00000
	15	0.00761	0.00000	-0.00225	0.00000	-0.00008	0.00000
	16	-0.99766	0.00000	-0.00095	0.00000	-0.00555	0.00000
	17	1.02602	0.00000	-0.00358	0.00000	0.00545	0.00000
	18	0.01184	0.00000	-0.00350	0.00000	-0.00013	0.00000
	19	0.01360	0.00000	-0.00579	0.00000	-0.00028	0.00000
	20	0.01360	0.00000	-0.00579	0.00000	-0.00028	0.00000
	21	0.01360	0.00000	-0.00579	0.00000	-0.00028	0.00000
	22	0.51624	0.00000	-0.00645	0.00000	0.00245	0.00000
	23	-0.49560	0.00000	-0.00513	0.00000	-0.00305	0.00000
	24	0.01123	0.00000	-0.00388	0.00000	-0.00016	0.00000
	25	0.01123	0.00000	-0.00388	0.00000	-0.00016	0.00000
	26	1.01650	0.00000	-0.00518	0.00000	0.00530	0.00000
	27	-1.00718	0.00000	-0.00255	0.00000	-0.00570	0.00000
	28	0.01015	0.00000	-0.00300	0.00000	-0.00011	0.00000

Nodal Displacements

Node	LdC	Disp X	Disp Y	Disp Z	Theta X	Theta Y	Theta Z
	29	0.01015	0.00000	-0.00300	0.00000	-0.00011	0.00000
	30	1.01543	0.00000	-0.00431	0.00000	0.00535	0.00000
	31	-1.00826	0.00000	-0.00168	0.00000	-0.00565	0.00000
	32	0.00761	0.00000	-0.00225	0.00000	-0.00008	0.00000
	33	0.00761	0.00000	-0.00225	0.00000	-0.00008	0.00000
	34	1.01289	0.00000	-0.00355	0.00000	0.00538	0.00000
	35	-1.01079	0.00000	-0.00093	0.00000	-0.00562	0.00000

Level: Patio

Node	LdC	Disp X in	Disp Y in	Disp Z in	Theta X (rad)	Theta Y (rad)	Theta Z (rad)
16	1	-0.06060	0.00000	-0.00467	0.00000	-0.00006	0.00000
	2	-0.05194	0.00000	-0.00400	0.00000	-0.00005	0.00000
	3	-0.05194	0.00000	-0.00400	0.00000	-0.00005	0.00000
	4	0.85055	0.00000	-0.00207	0.00000	0.00722	0.00000
	5	-0.92847	0.00000	-0.00590	0.00000	-0.00711	0.00000
	6	-0.05194	0.00000	-0.00400	0.00000	-0.00005	0.00000
	7	-0.05194	0.00000	-0.00400	0.00000	-0.00005	0.00000
	8	-0.95443	0.00000	-0.00594	0.00000	-0.00732	0.00000
	9	0.82459	0.00000	-0.00210	0.00000	0.00701	0.00000
	10	-0.03896	0.00000	-0.00300	0.00000	-0.00004	0.00000
	11	-0.03896	0.00000	-0.00300	0.00000	-0.00004	0.00000
	12	0.86354	0.00000	-0.00107	0.00000	0.00723	0.00000
	13	-0.91549	0.00000	-0.00490	0.00000	-0.00709	0.00000
	14	-0.03896	0.00000	-0.00300	0.00000	-0.00004	0.00000
	15	-0.03896	0.00000	-0.00300	0.00000	-0.00004	0.00000
	16	-0.94145	0.00000	-0.00494	0.00000	-0.00731	0.00000
	17	0.83758	0.00000	-0.00110	0.00000	0.00702	0.00000
	18	-0.06060	0.00000	-0.00467	0.00000	-0.00006	0.00000
	19	-0.10538	0.00000	-0.00802	0.00000	-0.00011	0.00000
	20	-0.10538	0.00000	-0.00802	0.00000	-0.00011	0.00000
	21	-0.10538	0.00000	-0.00802	0.00000	-0.00011	0.00000
	22	0.34586	0.00000	-0.00705	0.00000	0.00353	0.00000
	23	-0.54365	0.00000	-0.00896	0.00000	-0.00364	0.00000
	24	-0.06864	0.00000	-0.00526	0.00000	-0.00007	0.00000
	25	-0.06864	0.00000	-0.00526	0.00000	-0.00007	0.00000
	26	0.83385	0.00000	-0.00332	0.00000	0.00720	0.00000
	27	-0.94517	0.00000	-0.00715	0.00000	-0.00713	0.00000
	28	-0.05194	0.00000	-0.00400	0.00000	-0.00005	0.00000
	29	-0.05194	0.00000	-0.00400	0.00000	-0.00005	0.00000
	30	0.85055	0.00000	-0.00207	0.00000	0.00722	0.00000
	31	-0.92847	0.00000	-0.00590	0.00000	-0.00711	0.00000
	32	-0.03896	0.00000	-0.00300	0.00000	-0.00004	0.00000
	33	-0.03896	0.00000	-0.00300	0.00000	-0.00004	0.00000
	34	0.86354	0.00000	-0.00107	0.00000	0.00723	0.00000

Node	LdC	Disp X	Disp Y	Disp Z	Theta X	Theta Y	Theta Z
	35	-0.91549	0.00000	-0.00490	0.00000	-0.00709	0.00000
18	1	-0.00482	0.00000	-0.00508	0.00000	-0.00019	0.00000
	2	-0.00413	0.00000	-0.00435	0.00000	-0.00016	0.00000
	3	-0.00413	0.00000	-0.00435	0.00000	-0.00016	0.00000
	4	0.81216	0.00000	-0.00290	0.00000	0.00703	0.00000
	5	-0.81380	0.00000	-0.00583	0.00000	-0.00729	0.00000
	6	-0.00413	0.00000	-0.00435	0.00000	-0.00016	0.00000
	7	-0.00413	0.00000	-0.00435	0.00000	-0.00016	0.00000
	8	-0.82043	0.00000	-0.00580	0.00000	-0.00736	0.00000
	9	0.80553	0.00000	-0.00288	0.00000	0.00696	0.00000
	10	-0.00310	0.00000	-0.00326	0.00000	-0.00012	0.00000
	11	-0.00310	0.00000	-0.00326	0.00000	-0.00012	0.00000
	12	0.81319	0.00000	-0.00181	0.00000	0.00707	0.00000
	13	-0.81277	0.00000	-0.00474	0.00000	-0.00725	0.00000
	14	-0.00310	0.00000	-0.00326	0.00000	-0.00012	0.00000
	15	-0.00310	0.00000	-0.00326	0.00000	-0.00012	0.00000
	16	-0.81939	0.00000	-0.00471	0.00000	-0.00731	0.00000
	17	0.80657	0.00000	-0.00179	0.00000	0.00701	0.00000
	18	-0.00482	0.00000	-0.00508	0.00000	-0.00019	0.00000
	19	-0.01498	0.00000	-0.00909	0.00000	-0.00033	0.00000
	20	-0.01498	0.00000	-0.00909	0.00000	-0.00033	0.00000
	21	-0.01498	0.00000	-0.00909	0.00000	-0.00033	0.00000
	22	0.39317	0.00000	-0.00837	0.00000	0.00327	0.00000
	23	-0.41981	0.00000	-0.00983	0.00000	-0.00389	0.00000
	24	-0.00752	0.00000	-0.00583	0.00000	-0.00022	0.00000
	25	-0.00752	0.00000	-0.00583	0.00000	-0.00022	0.00000
	26	0.80877	0.00000	-0.00438	0.00000	0.00698	0.00000
	27	-0.81719	0.00000	-0.00731	0.00000	-0.00735	0.00000
	28	-0.00413	0.00000	-0.00435	0.00000	-0.00016	0.00000
	29	-0.00413	0.00000	-0.00435	0.00000	-0.00016	0.00000
	30	0.81216	0.00000	-0.00290	0.00000	0.00703	0.00000
	31	-0.81380	0.00000	-0.00583	0.00000	-0.00729	0.00000
	32	-0.00310	0.00000	-0.00326	0.00000	-0.00012	0.00000
	33	-0.00310	0.00000	-0.00326	0.00000	-0.00012	0.00000
	34	0.81319	0.00000	-0.00181	0.00000	0.00707	0.00000
	35	-0.81277	0.00000	-0.00474	0.00000	-0.00725	0.00000
19	1	-0.01489	0.00000	-0.00369	0.00000	-0.00016	0.00000
	2	-0.01276	0.00000	-0.00317	0.00000	-0.00014	0.00000
	3	-0.01276	0.00000	-0.00317	0.00000	-0.00014	0.00000
	4	0.77802	0.00000	-0.00507	0.00000	0.00703	0.00000
	5	-0.81307	0.00000	-0.00126	0.00000	-0.00740	0.00000
	6	-0.01276	0.00000	-0.00317	0.00000	-0.00014	0.00000
	7	-0.01276	0.00000	-0.00317	0.00000	-0.00014	0.00000
	8	-0.80355	0.00000	-0.00126	0.00000	-0.00731	0.00000
	9	0.78755	0.00000	-0.00507	0.00000	0.00712	0.00000

Node	LdC	Disp X	Disp Y	Disp Z	Theta X	Theta Y	Theta Z
	10	-0.00957	0.00000	-0.00238	0.00000	-0.00011	0.00000
	11	-0.00957	0.00000	-0.00238	0.00000	-0.00011	0.00000
	12	0.78122	0.00000	-0.00428	0.00000	0.00706	0.00000
	13	-0.80988	0.00000	-0.00047	0.00000	-0.00736	0.00000
	14	-0.00957	0.00000	-0.00238	0.00000	-0.00011	0.00000
	15	-0.00957	0.00000	-0.00238	0.00000	-0.00011	0.00000
	16	-0.80036	0.00000	-0.00047	0.00000	-0.00727	0.00000
	17	0.79074	0.00000	-0.00428	0.00000	0.00715	0.00000
	18	-0.01489	0.00000	-0.00369	0.00000	-0.00016	0.00000
	19	-0.02071	0.00000	-0.00724	0.00000	-0.00031	0.00000
	20	-0.02071	0.00000	-0.00724	0.00000	-0.00031	0.00000
	21	-0.02071	0.00000	-0.00724	0.00000	-0.00031	0.00000
	22	0.37468	0.00000	-0.00819	0.00000	0.00327	0.00000
	23	-0.42086	0.00000	-0.00629	0.00000	-0.00394	0.00000
	24	-0.01525	0.00000	-0.00444	0.00000	-0.00019	0.00000
	25	-0.01525	0.00000	-0.00444	0.00000	-0.00019	0.00000
	26	0.77554	0.00000	-0.00634	0.00000	0.00697	0.00000
	27	-0.81555	0.00000	-0.00253	0.00000	-0.00745	0.00000
	28	-0.01276	0.00000	-0.00317	0.00000	-0.00014	0.00000
	29	-0.01276	0.00000	-0.00317	0.00000	-0.00014	0.00000
	30	0.77802	0.00000	-0.00507	0.00000	0.00703	0.00000
	31	-0.81307	0.00000	-0.00126	0.00000	-0.00740	0.00000
	32	-0.00957	0.00000	-0.00238	0.00000	-0.00011	0.00000
	33	-0.00957	0.00000	-0.00238	0.00000	-0.00011	0.00000
	34	0.78122	0.00000	-0.00428	0.00000	0.00706	0.00000
	35	-0.80988	0.00000	-0.00047	0.00000	-0.00736	0.00000
22	1	0.01302	0.00000	-0.00252	0.00000	0.00007	0.00000
	2	0.01116	0.00000	-0.00216	0.00000	0.00006	0.00000
	3	0.01116	0.00000	-0.00216	0.00000	0.00006	0.00000
	4	0.63583	0.00000	-0.00307	0.00000	0.00682	0.00000
	5	-0.62169	0.00000	-0.00124	0.00000	-0.00679	0.00000
	6	0.01116	0.00000	-0.00216	0.00000	0.00006	0.00000
	7	0.01116	0.00000	-0.00216	0.00000	0.00006	0.00000
	8	-0.61352	0.00000	-0.00125	0.00000	-0.00670	0.00000
	9	0.64401	0.00000	-0.00308	0.00000	0.00690	0.00000
	10	0.00837	0.00000	-0.00162	0.00000	0.00004	0.00000
	11	0.00837	0.00000	-0.00162	0.00000	0.00004	0.00000
	12	0.63304	0.00000	-0.00253	0.00000	0.00680	0.00000
	13	-0.62448	0.00000	-0.00070	0.00000	-0.00680	0.00000
	14	0.00837	0.00000	-0.00162	0.00000	0.00004	0.00000
	15	0.00837	0.00000	-0.00162	0.00000	0.00004	0.00000
	16	-0.61631	0.00000	-0.00071	0.00000	-0.00672	0.00000
	17	0.64122	0.00000	-0.00254	0.00000	0.00689	0.00000
	18	0.01302	0.00000	-0.00252	0.00000	0.00007	0.00000
	19	0.01880	0.00000	-0.00411	0.00000	0.00007	0.00000

Nodal Displacements

Node	LdC	Disp X	Disp Y	Disp Z	Theta X	Theta Y	Theta Z
	20	0.01880	0.00000	-0.00411	0.00000	0.00007	0.00000
	21	0.01880	0.00000	-0.00411	0.00000	0.00007	0.00000
	22	0.33113	0.00000	-0.00456	0.00000	0.00345	0.00000
	23	-0.29763	0.00000	-0.00365	0.00000	-0.00336	0.00000
	24	0.01354	0.00000	-0.00277	0.00000	0.00006	0.00000
	25	0.01354	0.00000	-0.00277	0.00000	0.00006	0.00000
	26	0.63822	0.00000	-0.00368	0.00000	0.00682	0.00000
	27	-0.61930	0.00000	-0.00185	0.00000	-0.00679	0.00000
	28	0.01116	0.00000	-0.00216	0.00000	0.00006	0.00000
	29	0.01116	0.00000	-0.00216	0.00000	0.00006	0.00000
	30	0.63583	0.00000	-0.00307	0.00000	0.00682	0.00000
	31	-0.62169	0.00000	-0.00124	0.00000	-0.00679	0.00000
	32	0.00837	0.00000	-0.00162	0.00000	0.00004	0.00000
	33	0.00837	0.00000	-0.00162	0.00000	0.00004	0.00000
	34	0.63304	0.00000	-0.00253	0.00000	0.00680	0.00000
	35	-0.62448	0.00000	-0.00070	0.00000	-0.00680	0.00000

Frame #1

Level: 16.5 ft Roof

Node	LdC	Disp X in	Disp Y in	Disp Z in	Theta X (rad)	Theta Y (rad)	Theta Z (rad)
10	1	0.00000	0.01717	-0.00678	-0.00075	0.00000	0.00000
	2	0.00000	-0.24771	-0.05087	-0.00041	0.00000	0.00000
	3	0.00000	0.32337	-0.00565	-0.00092	0.00000	0.00000
	4	0.00000	0.01472	-0.00581	-0.00065	0.00000	0.00000
	5	0.00000	0.01472	-0.00581	-0.00065	0.00000	0.00000
	6	0.00000	0.27715	0.03925	-0.00089	0.00000	0.00000
	7	0.00000	-0.29393	-0.00597	-0.00037	0.00000	0.00000
	8	0.00000	0.01472	-0.00581	-0.00065	0.00000	0.00000
	9	0.00000	0.01472	-0.00581	-0.00065	0.00000	0.00000
	10	0.00000	-0.25139	-0.04942	-0.00024	0.00000	0.00000
	11	0.00000	0.31969	-0.00420	-0.00076	0.00000	0.00000
	12	0.00000	0.01104	-0.00436	-0.00048	0.00000	0.00000
	13	0.00000	0.01104	-0.00436	-0.00048	0.00000	0.00000
	14	0.00000	0.27347	0.04070	-0.00072	0.00000	0.00000
	15	0.00000	-0.29761	-0.00452	-0.00021	0.00000	0.00000
	16	0.00000	0.01104	-0.00436	-0.00048	0.00000	0.00000
	17	0.00000	0.01104	-0.00436	-0.00048	0.00000	0.00000
	18	0.00000	0.01717	-0.00678	-0.00075	0.00000	0.00000
	19	0.00000	0.02815	-0.01579	-0.00215	0.00000	0.00000
	20	0.00000	-0.10307	-0.03832	-0.00203	0.00000	0.00000
	21	0.00000	0.18247	-0.01571	-0.00229	0.00000	0.00000
	22	0.00000	0.02815	-0.01579	-0.00215	0.00000	0.00000
	23	0.00000	0.02815	-0.01579	-0.00215	0.00000	0.00000

Node	LdC	Disp X	Disp Y	Disp Z	Theta X	Theta Y	Theta Z
	24	0.00000	-0.24352	-0.05399	-0.00088	0.00000	0.00000
	25	0.00000	0.32756	-0.00877	-0.00139	0.00000	0.00000
	26	0.00000	0.01891	-0.00893	-0.00112	0.00000	0.00000
	27	0.00000	0.01891	-0.00893	-0.00112	0.00000	0.00000
	28	0.00000	-0.24771	-0.05087	-0.00041	0.00000	0.00000
	29	0.00000	0.32337	-0.00565	-0.00092	0.00000	0.00000
	30	0.00000	0.01472	-0.00581	-0.00065	0.00000	0.00000
	31	0.00000	0.01472	-0.00581	-0.00065	0.00000	0.00000
	32	0.00000	-0.25139	-0.04942	-0.00024	0.00000	0.00000
	33	0.00000	0.31969	-0.00420	-0.00076	0.00000	0.00000
	34	0.00000	0.01104	-0.00436	-0.00048	0.00000	0.00000
	35	0.00000	0.01104	-0.00436	-0.00048	0.00000	0.00000
11	1	0.00000	0.01713	-0.02783	0.00058	0.00000	0.00000
	2	0.00000	-0.29397	-0.02370	0.00077	0.00000	0.00000
	3	0.00000	0.27711	-0.06892	0.00026	0.00000	0.00000
	4	0.00000	0.01468	-0.02386	0.00050	0.00000	0.00000
	5	0.00000	0.01468	-0.02386	0.00050	0.00000	0.00000
	6	0.00000	0.32333	-0.02401	0.00022	0.00000	0.00000
	7	0.00000	-0.24775	0.02120	0.00074	0.00000	0.00000
	8	0.00000	0.01468	-0.02386	0.00050	0.00000	0.00000
	9	0.00000	0.01468	-0.02386	0.00050	0.00000	0.00000
	10	0.00000	-0.29764	-0.01773	0.00065	0.00000	0.00000
	11	0.00000	0.27344	-0.06295	0.00013	0.00000	0.00000
	12	0.00000	0.01101	-0.01789	0.00037	0.00000	0.00000
	13	0.00000	0.01101	-0.01789	0.00037	0.00000	0.00000
	14	0.00000	0.31966	-0.01805	0.00010	0.00000	0.00000
	15	0.00000	-0.25142	0.02717	0.00061	0.00000	0.00000
	16	0.00000	0.01101	-0.01789	0.00037	0.00000	0.00000
	17	0.00000	0.01101	-0.01789	0.00037	0.00000	0.00000
	18	0.00000	0.01713	-0.02783	0.00058	0.00000	0.00000
	19	0.00000	0.02801	-0.05016	0.00187	0.00000	0.00000
	20	0.00000	-0.12632	-0.05008	0.00201	0.00000	0.00000
	21	0.00000	0.15922	-0.07269	0.00175	0.00000	0.00000
	22	0.00000	0.02801	-0.05016	0.00187	0.00000	0.00000
	23	0.00000	0.02801	-0.05016	0.00187	0.00000	0.00000
	24	0.00000	-0.28980	-0.03192	0.00120	0.00000	0.00000
	25	0.00000	0.28128	-0.07714	0.00069	0.00000	0.00000
	26	0.00000	0.01884	-0.03208	0.00093	0.00000	0.00000
	27	0.00000	0.01884	-0.03208	0.00093	0.00000	0.00000
	28	0.00000	-0.29397	-0.02370	0.00077	0.00000	0.00000
	29	0.00000	0.27711	-0.06892	0.00026	0.00000	0.00000
	30	0.00000	0.01468	-0.02386	0.00050	0.00000	0.00000
	31	0.00000	0.01468	-0.02386	0.00050	0.00000	0.00000
	32	0.00000	-0.29764	-0.01773	0.00065	0.00000	0.00000
	33	0.00000	0.27344	-0.06295	0.00013	0.00000	0.00000

Node	LdC	Disp X	Disp Y	Disp Z	Theta X	Theta Y	Theta Z
	34	0.00000	0.01101	-0.01789	0.00037	0.00000	0.00000
	35	0.00000	0.01101	-0.01789	0.00037	0.00000	0.00000

Level: Patio

Node	LdC	Disp X in	Disp Y in	Disp Z in	Theta X (rad)	Theta Y (rad)	Theta Z (rad)
20	1	0.00000	-0.01164	-0.00480	-0.00024	0.00000	0.00000
	2	0.00000	-0.23152	-0.03552	0.00087	0.00000	0.00000
	3	0.00000	0.25086	-0.00401	-0.00147	0.00000	0.00000
	4	0.00000	-0.00998	-0.00412	-0.00021	0.00000	0.00000
	5	0.00000	-0.00998	-0.00412	-0.00021	0.00000	0.00000
	6	0.00000	0.21156	0.02729	-0.00128	0.00000	0.00000
	7	0.00000	-0.27081	-0.00423	0.00105	0.00000	0.00000
	8	0.00000	-0.00998	-0.00412	-0.00021	0.00000	0.00000
	9	0.00000	-0.00998	-0.00412	-0.00021	0.00000	0.00000
	10	0.00000	-0.22902	-0.03449	0.00092	0.00000	0.00000
	11	0.00000	0.25335	-0.00298	-0.00141	0.00000	0.00000
	12	0.00000	-0.00748	-0.00309	-0.00015	0.00000	0.00000
	13	0.00000	-0.00748	-0.00309	-0.00015	0.00000	0.00000
	14	0.00000	0.21406	0.02832	-0.00123	0.00000	0.00000
	15	0.00000	-0.26832	-0.00320	0.00110	0.00000	0.00000
	16	0.00000	-0.00748	-0.00309	-0.00015	0.00000	0.00000
	17	0.00000	-0.00748	-0.00309	-0.00015	0.00000	0.00000
	18	0.00000	-0.01164	-0.00480	-0.00024	0.00000	0.00000
	19	0.00000	-0.05163	-0.01107	-0.00061	0.00000	0.00000
	20	0.00000	-0.16240	-0.02678	-0.00007	0.00000	0.00000
	21	0.00000	0.07878	-0.01102	-0.00124	0.00000	0.00000
	22	0.00000	-0.05163	-0.01107	-0.00061	0.00000	0.00000
	23	0.00000	-0.05163	-0.01107	-0.00061	0.00000	0.00000
	24	0.00000	-0.24454	-0.03770	0.00074	0.00000	0.00000
	25	0.00000	0.23784	-0.00618	-0.00159	0.00000	0.00000
	26	0.00000	-0.02299	-0.00629	-0.00033	0.00000	0.00000
	27	0.00000	-0.02299	-0.00629	-0.00033	0.00000	0.00000
	28	0.00000	-0.23152	-0.03552	0.00087	0.00000	0.00000
	29	0.00000	0.25086	-0.00401	-0.00147	0.00000	0.00000
	30	0.00000	-0.00998	-0.00412	-0.00021	0.00000	0.00000
	31	0.00000	-0.00998	-0.00412	-0.00021	0.00000	0.00000
	32	0.00000	-0.22902	-0.03449	0.00092	0.00000	0.00000
	33	0.00000	0.25335	-0.00298	-0.00141	0.00000	0.00000
	34	0.00000	-0.00748	-0.00309	-0.00015	0.00000	0.00000
	35	0.00000	-0.00748	-0.00309	-0.00015	0.00000	0.00000
21	1	0.00000	0.03554	-0.01948	0.00007	0.00000	0.00000
	2	0.00000	-0.23037	-0.01659	0.00132	0.00000	0.00000
	3	0.00000	0.25201	-0.04810	-0.00101	0.00000	0.00000
	4	0.00000	0.03047	-0.01669	0.00006	0.00000	0.00000

Nodal Displacements

Node	LdC	Disp X	Disp Y	Disp Z	Theta X	Theta Y	Theta Z
	5	0.00000	0.03047	-0.01669	0.00006	0.00000	0.00000
	6	0.00000	0.29130	-0.01680	-0.00120	0.00000	0.00000
	7	0.00000	-0.19108	0.01471	0.00113	0.00000	0.00000
	8	0.00000	0.03047	-0.01669	0.00006	0.00000	0.00000
	9	0.00000	0.03047	-0.01669	0.00006	0.00000	0.00000
	10	0.00000	-0.23799	-0.01241	0.00130	0.00000	0.00000
	11	0.00000	0.24439	-0.04393	-0.00103	0.00000	0.00000
	12	0.00000	0.02285	-0.01252	0.00004	0.00000	0.00000
	13	0.00000	0.02285	-0.01252	0.00004	0.00000	0.00000
	14	0.00000	0.28368	-0.01263	-0.00122	0.00000	0.00000
	15	0.00000	-0.19869	0.01888	0.00112	0.00000	0.00000
	16	0.00000	0.02285	-0.01252	0.00004	0.00000	0.00000
	17	0.00000	0.02285	-0.01252	0.00004	0.00000	0.00000
	18	0.00000	0.03554	-0.01948	0.00007	0.00000	0.00000
	19	0.00000	0.09077	-0.03503	0.00032	0.00000	0.00000
	20	0.00000	-0.03965	-0.03497	0.00095	0.00000	0.00000
	21	0.00000	0.20154	-0.05073	-0.00021	0.00000	0.00000
	22	0.00000	0.09077	-0.03503	0.00032	0.00000	0.00000
	23	0.00000	0.09077	-0.03503	0.00032	0.00000	0.00000
	24	0.00000	-0.21153	-0.02231	0.00140	0.00000	0.00000
	25	0.00000	0.27085	-0.05383	-0.00093	0.00000	0.00000
	26	0.00000	0.04931	-0.02242	0.00014	0.00000	0.00000
	27	0.00000	0.04931	-0.02242	0.00014	0.00000	0.00000
	28	0.00000	-0.23037	-0.01659	0.00132	0.00000	0.00000
	29	0.00000	0.25201	-0.04810	-0.00101	0.00000	0.00000
	30	0.00000	0.03047	-0.01669	0.00006	0.00000	0.00000
	31	0.00000	0.03047	-0.01669	0.00006	0.00000	0.00000
	32	0.00000	-0.23799	-0.01241	0.00130	0.00000	0.00000
	33	0.00000	0.24439	-0.04393	-0.00103	0.00000	0.00000
	34	0.00000	0.02285	-0.01252	0.00004	0.00000	0.00000
	35	0.00000	0.02285	-0.01252	0.00004	0.00000	0.00000

Frame #2

Level: 16.5 ft Roof

Node	LdC	Disp X in	Disp Y in	Disp Z in	Theta X (rad)	Theta Y (rad)	Theta Z (rad)
5	1	0.00108	0.00000	-0.00654	0.00000	0.00001	0.00000
	2	0.00093	0.00000	-0.00561	0.00000	0.00000	0.00000
	3	0.00093	0.00000	-0.00561	0.00000	0.00000	0.00000
	4	0.20236	0.00000	-0.00561	0.00000	0.00102	0.00000
	5	-0.17046	0.00000	-0.03498	0.00000	-0.00086	0.00000
	6	0.00093	0.00000	-0.00561	0.00000	0.00000	0.00000
	7	0.00093	0.00000	-0.00561	0.00000	0.00000	0.00000
	8	-0.20051	0.00000	-0.00561	0.00000	-0.00101	0.00000

Nodal Displacements

Node	LdC	Disp X	Disp Y	Disp Z	Theta X	Theta Y	Theta Z
	9	0.17231	0.00000	0.02376	0.00000	0.00087	0.00000
	10	0.00069	0.00000	-0.00421	0.00000	0.00000	0.00000
	11	0.00069	0.00000	-0.00421	0.00000	0.00000	0.00000
	12	0.20213	0.00000	-0.00421	0.00000	0.00102	0.00000
	13	-0.17069	0.00000	-0.03358	0.00000	-0.00086	0.00000
	14	0.00069	0.00000	-0.00421	0.00000	0.00000	0.00000
	15	0.00069	0.00000	-0.00421	0.00000	0.00000	0.00000
	16	-0.20074	0.00000	-0.00421	0.00000	-0.00101	0.00000
	17	0.17207	0.00000	0.02516	0.00000	0.00087	0.00000
	18	0.00108	0.00000	-0.00654	0.00000	0.00001	0.00000
	19	0.00082	0.00000	-0.01681	0.00000	0.00000	0.00000
	20	0.00082	0.00000	-0.01681	0.00000	0.00000	0.00000
	21	0.00082	0.00000	-0.01681	0.00000	0.00000	0.00000
	22	0.10154	0.00000	-0.01681	0.00000	0.00051	0.00000
	23	-0.08487	0.00000	-0.03149	0.00000	-0.00043	0.00000
	24	0.00089	0.00000	-0.00911	0.00000	0.00000	0.00000
	25	0.00089	0.00000	-0.00911	0.00000	0.00000	0.00000
	26	0.20233	0.00000	-0.00911	0.00000	0.00102	0.00000
	27	-0.17049	0.00000	-0.03848	0.00000	-0.00086	0.00000
	28	0.00093	0.00000	-0.00561	0.00000	0.00000	0.00000
	29	0.00093	0.00000	-0.00561	0.00000	0.00000	0.00000
	30	0.20236	0.00000	-0.00561	0.00000	0.00102	0.00000
	31	-0.17046	0.00000	-0.03498	0.00000	-0.00086	0.00000
	32	0.00069	0.00000	-0.00421	0.00000	0.00000	0.00000
	33	0.00069	0.00000	-0.00421	0.00000	0.00000	0.00000
	34	0.20213	0.00000	-0.00421	0.00000	0.00102	0.00000
	35	-0.17069	0.00000	-0.03358	0.00000	-0.00086	0.00000
7	1	0.00108	0.00000	-0.00919	0.00000	0.00001	0.00000
	2	0.00093	0.00000	-0.00788	0.00000	0.00000	0.00000
	3	0.00093	0.00000	-0.00788	0.00000	0.00000	0.00000
	4	0.17231	0.00000	-0.03725	0.00000	0.00087	0.00000
	5	-0.20051	0.00000	-0.00788	0.00000	-0.00101	0.00000
	6	0.00093	0.00000	-0.00788	0.00000	0.00000	0.00000
	7	0.00093	0.00000	-0.00788	0.00000	0.00000	0.00000
	8	-0.17046	0.00000	0.02150	0.00000	-0.00086	0.00000
	9	0.20236	0.00000	-0.00788	0.00000	0.00102	0.00000
	10	0.00069	0.00000	-0.00591	0.00000	0.00000	0.00000
	11	0.00069	0.00000	-0.00591	0.00000	0.00000	0.00000
	12	0.17207	0.00000	-0.03528	0.00000	0.00087	0.00000
	13	-0.20074	0.00000	-0.00591	0.00000	-0.00101	0.00000
	14	0.00069	0.00000	-0.00591	0.00000	0.00000	0.00000
	15	0.00069	0.00000	-0.00591	0.00000	0.00000	0.00000
	16	-0.17069	0.00000	0.02346	0.00000	-0.00086	0.00000
	17	0.20213	0.00000	-0.00591	0.00000	0.00102	0.00000
	18	0.00108	0.00000	-0.00919	0.00000	0.00001	0.00000

Node	LdC	Disp X	Disp Y	Disp Z	Theta X	Theta Y	Theta Z
	19	0.00082	0.00000	-0.01881	0.00000	0.00000	0.00000
	20	0.00082	0.00000	-0.01881	0.00000	0.00000	0.00000
	21	0.00082	0.00000	-0.01881	0.00000	0.00000	0.00000
	22	0.08651	0.00000	-0.03350	0.00000	0.00044	0.00000
	23	-0.09990	0.00000	-0.01881	0.00000	-0.00050	0.00000
	24	0.00089	0.00000	-0.01129	0.00000	0.00000	0.00000
	25	0.00089	0.00000	-0.01129	0.00000	0.00000	0.00000
	26	0.17227	0.00000	-0.04066	0.00000	0.00087	0.00000
	27	-0.20055	0.00000	-0.01129	0.00000	-0.00101	0.00000
	28	0.00093	0.00000	-0.00788	0.00000	0.00000	0.00000
	29	0.00093	0.00000	-0.00788	0.00000	0.00000	0.00000
	30	0.17231	0.00000	-0.03725	0.00000	0.00087	0.00000
	31	-0.20051	0.00000	-0.00788	0.00000	-0.00101	0.00000
	32	0.00069	0.00000	-0.00591	0.00000	0.00000	0.00000
	33	0.00069	0.00000	-0.00591	0.00000	0.00000	0.00000
	34	0.17207	0.00000	-0.03528	0.00000	0.00087	0.00000
	35	-0.20074	0.00000	-0.00591	0.00000	-0.00101	0.00000

Level: Patio

Node	LdC	Disp X in	Disp Y in	Disp Z in	Theta X (rad)	Theta Y (rad)	Theta Z (rad)
15	1	0.00075	0.00000	-0.00464	0.00000	0.00001	0.00000
	2	0.00064	0.00000	-0.00398	0.00000	0.00000	0.00000
	3	0.00064	0.00000	-0.00398	0.00000	0.00000	0.00000
	4	0.14114	0.00000	-0.00398	0.00000	0.00102	0.00000
	5	-0.11889	0.00000	-0.02445	0.00000	-0.00086	0.00000
	6	0.00064	0.00000	-0.00398	0.00000	0.00000	0.00000
	7	0.00064	0.00000	-0.00398	0.00000	0.00000	0.00000
	8	-0.13985	0.00000	-0.00398	0.00000	-0.00101	0.00000
	9	0.12018	0.00000	0.01649	0.00000	0.00087	0.00000
	10	0.00048	0.00000	-0.00298	0.00000	0.00000	0.00000
	11	0.00048	0.00000	-0.00298	0.00000	0.00000	0.00000
	12	0.14098	0.00000	-0.00298	0.00000	0.00102	0.00000
	13	-0.11905	0.00000	-0.02345	0.00000	-0.00086	0.00000
	14	0.00048	0.00000	-0.00298	0.00000	0.00000	0.00000
	15	0.00048	0.00000	-0.00298	0.00000	0.00000	0.00000
	16	-0.14001	0.00000	-0.00298	0.00000	-0.00101	0.00000
	17	0.12002	0.00000	0.01749	0.00000	0.00087	0.00000
	18	0.00075	0.00000	-0.00464	0.00000	0.00001	0.00000
	19	0.00057	0.00000	-0.01178	0.00000	0.00000	0.00000
	20	0.00057	0.00000	-0.01178	0.00000	0.00000	0.00000
	21	0.00057	0.00000	-0.01178	0.00000	0.00000	0.00000
	22	0.07082	0.00000	-0.01178	0.00000	0.00051	0.00000
	23	-0.05920	0.00000	-0.02202	0.00000	-0.00043	0.00000
	24	0.00062	0.00000	-0.00642	0.00000	0.00000	0.00000

Node	LdC	Disp X	Disp Y	Disp Z	Theta X	Theta Y	Theta Z
	25	0.00062	0.00000	-0.00642	0.00000	0.00000	0.00000
	26	0.14112	0.00000	-0.00642	0.00000	0.00102	0.00000
	27	-0.11891	0.00000	-0.02689	0.00000	-0.00086	0.00000
	28	0.00064	0.00000	-0.00398	0.00000	0.00000	0.00000
	29	0.00064	0.00000	-0.00398	0.00000	0.00000	0.00000
	30	0.14114	0.00000	-0.00398	0.00000	0.00102	0.00000
	31	-0.11889	0.00000	-0.02445	0.00000	-0.00086	0.00000
	32	0.00048	0.00000	-0.00298	0.00000	0.00000	0.00000
	33	0.00048	0.00000	-0.00298	0.00000	0.00000	0.00000
	34	0.14098	0.00000	-0.00298	0.00000	0.00102	0.00000
	35	-0.11905	0.00000	-0.02345	0.00000	-0.00086	0.00000
17	1	0.00075	0.00000	-0.00648	0.00000	0.00001	0.00000
	2	0.00064	0.00000	-0.00556	0.00000	0.00000	0.00000
	3	0.00064	0.00000	-0.00556	0.00000	0.00000	0.00000
	4	0.12018	0.00000	-0.02603	0.00000	0.00087	0.00000
	5	-0.13985	0.00000	-0.00556	0.00000	-0.00101	0.00000
	6	0.00064	0.00000	-0.00556	0.00000	0.00000	0.00000
	7	0.00064	0.00000	-0.00556	0.00000	0.00000	0.00000
	8	-0.11889	0.00000	0.01491	0.00000	-0.00086	0.00000
	9	0.14114	0.00000	-0.00556	0.00000	0.00102	0.00000
	10	0.00048	0.00000	-0.00417	0.00000	0.00000	0.00000
	11	0.00048	0.00000	-0.00417	0.00000	0.00000	0.00000
	12	0.12002	0.00000	-0.02464	0.00000	0.00087	0.00000
	13	-0.14001	0.00000	-0.00417	0.00000	-0.00101	0.00000
	14	0.00048	0.00000	-0.00417	0.00000	0.00000	0.00000
	15	0.00048	0.00000	-0.00417	0.00000	0.00000	0.00000
	16	-0.11905	0.00000	0.01630	0.00000	-0.00086	0.00000
	17	0.14098	0.00000	-0.00417	0.00000	0.00102	0.00000
	18	0.00075	0.00000	-0.00648	0.00000	0.00001	0.00000
	19	0.00057	0.00000	-0.01318	0.00000	0.00000	0.00000
	20	0.00057	0.00000	-0.01318	0.00000	0.00000	0.00000
	21	0.00057	0.00000	-0.01318	0.00000	0.00000	0.00000
	22	0.06034	0.00000	-0.02341	0.00000	0.00044	0.00000
	23	-0.06968	0.00000	-0.01318	0.00000	-0.00050	0.00000
	24	0.00062	0.00000	-0.00794	0.00000	0.00000	0.00000
	25	0.00062	0.00000	-0.00794	0.00000	0.00000	0.00000
	26	0.12016	0.00000	-0.02841	0.00000	0.00087	0.00000
	27	-0.13988	0.00000	-0.00794	0.00000	-0.00101	0.00000
	28	0.00064	0.00000	-0.00556	0.00000	0.00000	0.00000
	29	0.00064	0.00000	-0.00556	0.00000	0.00000	0.00000
	30	0.12018	0.00000	-0.02603	0.00000	0.00087	0.00000
	31	-0.13985	0.00000	-0.00556	0.00000	-0.00101	0.00000
	32	0.00048	0.00000	-0.00417	0.00000	0.00000	0.00000
	33	0.00048	0.00000	-0.00417	0.00000	0.00000	0.00000
	34	0.12002	0.00000	-0.02464	0.00000	0.00087	0.00000

Node	LdC	Disp X	Disp Y	Disp Z	Theta X	Theta Y	Theta Z
	35	-0.14001	0.00000	-0.00417	0.00000	-0.00101	0.00000

Frame #3

Level: 16.5 ft Roof

Node	LdC	Disp X in	Disp Y in	Disp Z in	Theta X (rad)	Theta Y (rad)	Theta Z (rad)
3	1	-0.00000	-0.00024	-0.00519	0.00000	-0.00000	0.00000
	2	-0.00000	-0.22128	-0.04095	0.00112	-0.00000	0.00000
	3	0.00000	0.26315	-0.00444	-0.00133	0.00000	0.00000
	4	-0.00000	-0.00021	-0.00444	0.00000	-0.00000	0.00000
	5	-0.00000	-0.00021	-0.00444	0.00000	-0.00000	0.00000
	6	0.00000	0.22087	0.03206	-0.00111	0.00000	0.00000
	7	-0.00000	-0.26357	-0.00444	0.00133	-0.00000	0.00000
	8	-0.00000	-0.00021	-0.00444	0.00000	-0.00000	0.00000
	9	-0.00000	-0.00021	-0.00444	0.00000	-0.00000	0.00000
	10	-0.00000	-0.22123	-0.03984	0.00112	-0.00000	0.00000
	11	0.00000	0.26321	-0.00333	-0.00133	0.00000	0.00000
	12	-0.00000	-0.00016	-0.00333	0.00000	-0.00000	0.00000
	13	-0.00000	-0.00016	-0.00333	0.00000	-0.00000	0.00000
	14	0.00000	0.22092	0.03318	-0.00111	0.00000	0.00000
	15	-0.00000	-0.26352	-0.00333	0.00133	-0.00000	0.00000
	16	-0.00000	-0.00016	-0.00333	0.00000	-0.00000	0.00000
	17	-0.00000	-0.00016	-0.00333	0.00000	-0.00000	0.00000
	18	-0.00000	-0.00024	-0.00519	0.00000	-0.00000	0.00000
	19	-0.00000	-0.00137	-0.01742	0.00001	-0.00000	0.00000
	20	-0.00000	-0.11191	-0.03568	0.00056	-0.00000	0.00000
	21	0.00000	0.13031	-0.01742	-0.00066	0.00000	0.00000
	22	-0.00000	-0.00137	-0.01742	0.00001	-0.00000	0.00000
	23	-0.00000	-0.00137	-0.01742	0.00001	-0.00000	0.00000
	24	-0.00000	-0.22165	-0.04501	0.00112	-0.00000	0.00000
	25	0.00000	0.26279	-0.00850	-0.00132	0.00000	0.00000
	26	-0.00000	-0.00057	-0.00850	0.00000	-0.00000	0.00000
	27	-0.00000	-0.00057	-0.00850	0.00000	-0.00000	0.00000
	28	-0.00000	-0.22128	-0.04095	0.00112	-0.00000	0.00000
	29	0.00000	0.26315	-0.00444	-0.00133	0.00000	0.00000
	30	-0.00000	-0.00021	-0.00444	0.00000	-0.00000	0.00000
	31	-0.00000	-0.00021	-0.00444	0.00000	-0.00000	0.00000
	32	-0.00000	-0.22123	-0.03984	0.00112	-0.00000	0.00000
	33	0.00000	0.26321	-0.00333	-0.00133	0.00000	0.00000
	34	-0.00000	-0.00016	-0.00333	0.00000	-0.00000	0.00000
	35	-0.00000	-0.00016	-0.00333	0.00000	-0.00000	0.00000
4	1	-0.00000	-0.00024	-0.00455	0.00000	-0.00000	0.00000
	2	-0.00000	-0.26357	-0.00390	0.00133	-0.00000	0.00000
	3	0.00000	0.22087	-0.04041	-0.00111	0.00000	0.00000

Nodal Displacements

Node	LdC	Disp X	Disp Y	Disp Z	Theta X	Theta Y	Theta Z
	4	-0.00000	-0.00021	-0.00390	0.00000	-0.00000	0.00000
	5	-0.00000	-0.00021	-0.00390	0.00000	-0.00000	0.00000
	6	0.00000	0.26315	-0.00390	-0.00133	0.00000	0.00000
	7	-0.00000	-0.22128	0.03261	0.00112	-0.00000	0.00000
	8	-0.00000	-0.00021	-0.00390	0.00000	-0.00000	0.00000
	9	-0.00000	-0.00021	-0.00390	0.00000	-0.00000	0.00000
	10	-0.00000	-0.26352	-0.00292	0.00133	-0.00000	0.00000
	11	0.00000	0.22092	-0.03943	-0.00111	0.00000	0.00000
	12	-0.00000	-0.00016	-0.00292	0.00000	-0.00000	0.00000
	13	-0.00000	-0.00016	-0.00292	0.00000	-0.00000	0.00000
	14	0.00000	0.26321	-0.00292	-0.00133	0.00000	0.00000
	15	-0.00000	-0.22123	0.03359	0.00112	-0.00000	0.00000
	16	-0.00000	-0.00016	-0.00292	0.00000	-0.00000	0.00000
	17	-0.00000	-0.00016	-0.00292	0.00000	-0.00000	0.00000
	18	-0.00000	-0.00024	-0.00455	0.00000	-0.00000	0.00000
	19	-0.00000	-0.00137	-0.01386	0.00001	-0.00000	0.00000
	20	-0.00000	-0.13305	-0.01386	0.00067	-0.00000	0.00000
	21	0.00000	0.10917	-0.03211	-0.00055	0.00000	0.00000
	22	-0.00000	-0.00137	-0.01386	0.00001	-0.00000	0.00000
	23	-0.00000	-0.00137	-0.01386	0.00001	-0.00000	0.00000
	24	-0.00000	-0.26394	-0.00701	0.00133	-0.00000	0.00000
	25	0.00000	0.22050	-0.04352	-0.00111	0.00000	0.00000
	26	-0.00000	-0.00057	-0.00701	0.00000	-0.00000	0.00000
	27	-0.00000	-0.00057	-0.00701	0.00000	-0.00000	0.00000
	28	-0.00000	-0.26357	-0.00390	0.00133	-0.00000	0.00000
	29	0.00000	0.22087	-0.04041	-0.00111	0.00000	0.00000
	30	-0.00000	-0.00021	-0.00390	0.00000	-0.00000	0.00000
	31	-0.00000	-0.00021	-0.00390	0.00000	-0.00000	0.00000
	32	-0.00000	-0.26352	-0.00292	0.00133	-0.00000	0.00000
	33	0.00000	0.22092	-0.03943	-0.00111	0.00000	0.00000
	34	-0.00000	-0.00016	-0.00292	0.00000	-0.00000	0.00000
	35	-0.00000	-0.00016	-0.00292	0.00000	-0.00000	0.00000

Level: Patio

Node	LdC	Disp X in	Disp Y in	Disp Z in	Theta X (rad)	Theta Y (rad)	Theta Z (rad)
13	1	-0.00000	-0.00017	-0.00369	0.00000	-0.00000	0.00000
	2	-0.00000	-0.15434	-0.02861	0.00112	-0.00000	0.00000
	3	0.00000	0.18355	-0.00317	-0.00133	0.00000	0.00000
	4	-0.00000	-0.00015	-0.00317	0.00000	-0.00000	0.00000
	5	-0.00000	-0.00015	-0.00317	0.00000	-0.00000	0.00000
	6	0.00000	0.15405	0.02228	-0.00111	0.00000	0.00000
	7	-0.00000	-0.18384	-0.00317	0.00133	-0.00000	0.00000
	8	-0.00000	-0.00015	-0.00317	0.00000	-0.00000	0.00000
	9	-0.00000	-0.00015	-0.00317	0.00000	-0.00000	0.00000

Node	LdC	Disp X	Disp Y	Disp Z	Theta X	Theta Y	Theta Z
	10	-0.00000	-0.15431	-0.02782	0.00112	-0.00000	0.00000
	11	0.00000	0.18358	-0.00237	-0.00133	0.00000	0.00000
	12	-0.00000	-0.00011	-0.00237	0.00000	-0.00000	0.00000
	13	-0.00000	-0.00011	-0.00237	0.00000	-0.00000	0.00000
	14	0.00000	0.15409	0.02307	-0.00111	0.00000	0.00000
	15	-0.00000	-0.18380	-0.00237	0.00133	-0.00000	0.00000
	16	-0.00000	-0.00011	-0.00237	0.00000	-0.00000	0.00000
	17	-0.00000	-0.00011	-0.00237	0.00000	-0.00000	0.00000
	18	-0.00000	-0.00017	-0.00369	0.00000	-0.00000	0.00000
	19	-0.00000	-0.00095	-0.01221	0.00001	-0.00000	0.00000
	20	-0.00000	-0.07805	-0.02493	0.00056	-0.00000	0.00000
	21	0.00000	0.09089	-0.01221	-0.00066	0.00000	0.00000
	22	-0.00000	-0.00095	-0.01221	0.00001	-0.00000	0.00000
	23	-0.00000	-0.00095	-0.01221	0.00001	-0.00000	0.00000
	24	-0.00000	-0.15459	-0.03144	0.00112	-0.00000	0.00000
	25	0.00000	0.18329	-0.00599	-0.00133	0.00000	0.00000
	26	-0.00000	-0.00040	-0.00599	0.00000	-0.00000	0.00000
	27	-0.00000	-0.00040	-0.00599	0.00000	-0.00000	0.00000
	28	-0.00000	-0.15434	-0.02861	0.00112	-0.00000	0.00000
	29	0.00000	0.18355	-0.00317	-0.00133	0.00000	0.00000
	30	-0.00000	-0.00015	-0.00317	0.00000	-0.00000	0.00000
	31	-0.00000	-0.00015	-0.00317	0.00000	-0.00000	0.00000
	32	-0.00000	-0.15431	-0.02782	0.00112	-0.00000	0.00000
	33	0.00000	0.18358	-0.00237	-0.00133	0.00000	0.00000
	34	-0.00000	-0.00011	-0.00237	0.00000	-0.00000	0.00000
	35	-0.00000	-0.00011	-0.00237	0.00000	-0.00000	0.00000
14	1	-0.00000	-0.00017	-0.00339	0.00000	-0.00000	0.00000
	2	-0.00000	-0.18384	-0.00291	0.00133	-0.00000	0.00000
	3	0.00000	0.15405	-0.02836	-0.00111	0.00000	0.00000
	4	-0.00000	-0.00015	-0.00291	0.00000	-0.00000	0.00000
	5	-0.00000	-0.00015	-0.00291	0.00000	-0.00000	0.00000
	6	0.00000	0.18355	-0.00291	-0.00133	0.00000	0.00000
	7	-0.00000	-0.15434	0.02254	0.00112	-0.00000	0.00000
	8	-0.00000	-0.00015	-0.00291	0.00000	-0.00000	0.00000
	9	-0.00000	-0.00015	-0.00291	0.00000	-0.00000	0.00000
	10	-0.00000	-0.18380	-0.00218	0.00133	-0.00000	0.00000
	11	0.00000	0.15409	-0.02763	-0.00111	0.00000	0.00000
	12	-0.00000	-0.00011	-0.00218	0.00000	-0.00000	0.00000
	13	-0.00000	-0.00011	-0.00218	0.00000	-0.00000	0.00000
	14	0.00000	0.18358	-0.00218	-0.00133	0.00000	0.00000
	15	-0.00000	-0.15431	0.02326	0.00112	-0.00000	0.00000
	16	-0.00000	-0.00011	-0.00218	0.00000	-0.00000	0.00000
	17	-0.00000	-0.00011	-0.00218	0.00000	-0.00000	0.00000
	18	-0.00000	-0.00017	-0.00339	0.00000	-0.00000	0.00000
	19	-0.00000	-0.00095	-0.01005	0.00001	-0.00000	0.00000

Nodal Displacements

Node	LdC	Disp X	Disp Y	Disp Z	Theta X	Theta Y	Theta Z
	20	-0.00000	-0.09280	-0.01005	0.00067	-0.00000	0.00000
	21	0.00000	0.07614	-0.02277	-0.00055	0.00000	0.00000
	22	-0.00000	-0.00095	-0.01005	0.00001	-0.00000	0.00000
	23	-0.00000	-0.00095	-0.01005	0.00001	-0.00000	0.00000
	24	-0.00000	-0.18409	-0.00514	0.00133	-0.00000	0.00000
	25	0.00000	0.15380	-0.03059	-0.00111	0.00000	0.00000
	26	-0.00000	-0.00040	-0.00514	0.00000	-0.00000	0.00000
	27	-0.00000	-0.00040	-0.00514	0.00000	-0.00000	0.00000
	28	-0.00000	-0.18384	-0.00291	0.00133	-0.00000	0.00000
	29	0.00000	0.15405	-0.02836	-0.00111	0.00000	0.00000
	30	-0.00000	-0.00015	-0.00291	0.00000	-0.00000	0.00000
	31	-0.00000	-0.00015	-0.00291	0.00000	-0.00000	0.00000
	32	-0.00000	-0.18380	-0.00218	0.00133	-0.00000	0.00000
	33	0.00000	0.15409	-0.02763	-0.00111	0.00000	0.00000
	34	-0.00000	-0.00011	-0.00218	0.00000	-0.00000	0.00000
	35	-0.00000	-0.00011	-0.00218	0.00000	-0.00000	0.00000

Steel Code Check Criteria

MEMBER CODE CHECK CRITERIA - GLOBAL:

B1 and B2 Criteria

B1 Factor Not Applied
B2 Factor Not Applied

K-Factor:	Columns	Beams	Braces
Kx:	1.000	1.000	1.000
Ky:	1.000	1.000	1.000

Compression Flange Bracing:

Columns:

Deck Braces Column
Knee Brace Does Not Brace Column
Max Angle for which Beam Braces Column: 60.00 deg

Beams / Horiz Braces:

Top Flange Not Continuously Braced
Bottom Flange Not Continuously Braced
Do Not Consider Point of Inflection as Brace Point

Column Design Moments:

Percent of Gravity Load Moments to include in design of steel columns:

Dead Load:	100.00 %
Live Load:	100.00 %
Roof Load:	100.00 %

Axial Slenderness Limits

Check KL/r exceeds 200 for Compression Members
Check L/r exceeds 300 for Tension Members (excludes rods)

MEMBER CODE CHECK CRITERIA - ASSIGNED

Frame #0:

Level: 23ft Roof

Steel Column:

#	K-Factor		Flange Bracing		Unbraced Length		
	Kx	Ky	Major	Minor	Lx	Ly	Lby
2	1.00	1.00	Global	Global	Global	Global	Global
4	1.00	1.00	Global	Global	Global	Global	Global

Steel Beam:

#	K-Factor		Flange Bracing		Unbraced Length			RBS
	Kx	Ky	Major	Minor	Lx	Ly	Lby	
3	1.00	1.00	Global	Global	Global	Global	Global	N

Level: 16.5 ft Roof

Steel Column:

#	K-Factor		Flange Bracing		Unbraced Length		
	Kx	Ky	Major	Minor	Lx	Ly	Lby
21	1.00	1.00	Global	Global	Global	Global	Global
26	1.00	1.00	Global	Global	Global	Global	Global
28	1.00	1.00	Global	Global	Global	Global	Global
38	1.00	1.00	Global	Global	Global	Global	Global

Steel Beam:

#	K-Factor		Flange Bracing		Unbraced Length			RBS
	Kx	Ky	Major	Minor	Lx	Ly	Lby	
57	1.00	1.00	Global	Global	Global	Global	Global	N
78	1.00	1.00	Global	Global	Global	Global	Global	N

Level: Patio

Steel Column:

#	K-Factor		Flange Bracing		Unbraced Length		
	Kx	Ky	Major	Minor	Lx	Ly	Lby
26	1.00	1.00	Global	Global	Global	Global	Global
31	1.00	1.00	Global	Global	Global	Global	Global
33	1.00	1.00	Global	Global	Global	Global	Global
43	1.00	1.00	Global	Global	Global	Global	Global

Frame #1:

Level: 16.5 ft Roof

Steel Column:

#	K-Factor		Flange Bracing		Unbraced Length		
	Kx	Ky	Major	Minor	Lx	Ly	Lby
35	1.00	1.00	Global	Global	Global	Global	Global
36	1.00	1.00	Global	Global	Global	Global	Global

Steel Beam:

#	K-Factor		Flange Bracing		Unbraced Length			RBS
	Kx	Ky	Major	Minor	Lx	Ly	Lby	
117	1.00	1.00	Global	Global	Global	Global	Global	N

Steel Brace:

#	K-Factor		Unbraced Length		
	Kx	Ky	Lx	Ly	Lby
5	Global	Global	Global	Global	Global
6	Global	Global	Global	Global	Global

Level: Patio

Steel Column:

#	K-Factor		Flange Bracing		Unbraced Length		
	Kx	Ky	Major	Minor	Lx	Ly	Lby
40	1.00	1.00	Global	Global	Global	Global	Global
41	1.00	1.00	Global	Global	Global	Global	Global

Frame #2:

Level: 16.5 ft Roof

Steel Column:

#	K-Factor		Flange Bracing		Unbraced Length		
	Kx	Ky	Major	Minor	Lx	Ly	Lby
15	1.00	1.00	Global	Global	Global	Global	Global
22	1.00	1.00	Global	Global	Global	Global	Global

Steel Beam:

#	K-Factor		Flange Bracing		Unbraced Length			RBS
	Kx	Ky	Major	Minor	Lx	Ly	Lby	
50	1.00	1.00	Global	Global	Global	Global	Global	N

Steel Brace:

#	K-Factor		Unbraced Length		
	Kx	Ky	Lx	Ly	Lby
3	Global	Global	Global	Global	Global
4	Global	Global	Global	Global	Global

Level: Patio

Steel Column:

#	K-Factor		Flange Bracing		Unbraced Length		
	Kx	Ky	Major	Minor	Lx	Ly	Lby
20	1.00	1.00	Global	Global	Global	Global	Global
27	1.00	1.00	Global	Global	Global	Global	Global

Frame #3:

Level: 16.5 ft Roof

Steel Column:

#	K-Factor		Flange Bracing		Unbraced Length		
	Kx	Ky	Major	Minor	Lx	Ly	Lby
2	1.00	1.00	Global	Global	Global	Global	Global
3	1.00	1.00	Global	Global	Global	Global	Global

Steel Beam:

#	K-Factor		Flange Bracing		Unbraced Length			RBS
	Kx	Ky	Major	Minor	Lx	Ly	Lby	
3	1.00	1.00	Global	Global	Global	Global	Global	N

Steel Brace:

#	K-Factor		Unbraced Length		
	Kx	Ky	Lx	Ly	Lby
1	Global	Global	Global	Global	Global
2	Global	Global	Global	Global	Global

Level: Patio

Steel Column:

#	K-Factor		Flange Bracing		Unbraced Length		
	Kx	**Ky**	**Major**	**Minor**	**Lx**	**Ly**	**Lby**
2	1.00	1.00	Global	Global	Global	Global	Global
3	1.00	1.00	Global	Global	Global	Global	Global

JOINT CODE CHECK CRITERIA

Material Properties

Web plate Fy (ksi):	36.00
Stiffner plate Fy (ksi):	36.00

Geometry

Maximum angle between a beam and column to assume the beam frames into column flange:	45.0
One diagonal stiffener designed if the difference in beam depths at a joint is less than (in):	4.00

Design Force

Use actual beam forces
Consider axial load in beam

Optimization

Stiffners

Optimize each stiffner at joint	
Minimum Thickness:	Per Code
Minimum Width:	Max Beam Flange Width at Joint
Thickness Increment (in):	0.125
Width Increment (in):	0.125
Clip (cope) dimension (in):	0.750

Web Plates

Maximum Thickness:	Same as Column Web
Minimum Thickness (in):	0.250
Thickness Increment (in):	0.125

CJP groove weld plate to column.
No web plate plug weld.

Code Check Summary

RAM Frame 17.02.01.23
DataBase: #221130#
Building Code: IBC

08/16/21 16:14:16
Steel Code: AISC360-16 LRFD

CRITERIA:

Rigid End Zones: Ignore Effects
Member Force Output: At Face of Joint
P-Delta: Yes Scale Factor: 1.00
Ground Level: Base
Mesh Criteria :
Max. Distance Between Nodes on Mesh Line (ft) : 4.00
Merge Node Tolerance (in) : 0.0100
Geometry Tolerance (in) : 0.0050
Walls Out-of-plane Stiffness Not Included in Analysis.
Sign considered for Dynamic Load Case Results.
Rigid Links Included at Fixed Beam-to-Wall Locations
Eigenvalue Analysis : Eigen Vectors (Subspace Iteration)

LOAD COMBINATION CRITERIA:

Live Load factor f1 (0.5 or 1.0)	0.500
Sds (for Ev)	0.500

LOAD CASE DEFINITIONS:

D	DeadLoad	RAMUSER
Sp	PosSnowLoad	RAMUSER
W1	N to S	RAMUSERNODAL_W
W2	S to N	RAMUSERNODAL_W
W3	W to E	RAMUSERNODAL_W
W4	E to W	RAMUSERNODAL_W

LOAD COMBINATIONS: IBC 2018 / ASCE 7-16 LRFD

1	*	1.400 D
2	*	1.200 D + 1.600 Sp
3	*	1.200 D + 1.600 Sp + 0.500 W1
4	*	1.200 D + 1.600 Sp + 0.500 W2
5	*	1.200 D + 1.600 Sp + 0.500 W3
6	*	1.200 D + 1.600 Sp + 0.500 W4
7	*	1.200 D + 0.500 Sp + 1.000 W1
8	*	1.200 D + 0.500 Sp + 1.000 W2
9	*	1.200 D + 0.500 Sp + 1.000 W3
10	*	1.200 D + 0.500 Sp + 1.000 W4
11	*	1.200 D + 1.000 W1
12	*	1.200 D + 1.000 W2
13	*	1.200 D + 1.000 W3
14	*	1.200 D + 1.000 W4
15	*	0.900 D + 1.000 W1
16	*	0.900 D + 1.000 W2
17	*	0.900 D + 1.000 W3
18	*	0.900 D + 1.000 W4

USER DEFINED LOAD COMBINATIONS:

19	*	1.400 D
20	*	1.200 D + 1.000 W1
21	*	1.200 D + 1.000 W2
22	*	1.200 D + 1.000 W3
23	*	1.200 D + 1.000 W4
24	*	0.900 D + 1.000 W1
25	*	0.900 D + 1.000 W2
26	*	0.900 D + 1.000 W3
27	*	0.900 D + 1.000 W4

* = Load combination currently selected to use

Frame #0:

Level: 23ft Roof

Col. #	Pu kip	Mux kip-ft	Muy kip-ft	Vux kip	Vuy kip	LC	Interact.	Fy ksi	Size
2	6.40	33.07	0.00	-0.84	0.00	10	0.14 H1-1b	46	HSS14X6X1/2
4	5.35	-9.46	0.00	0.85	0.00	9	0.20 H1-1b	46	HSS6X6X3/8

Beam #	Pu kip	Mux kip-ft	Muy kip-ft	Vux kip	Vuy kip	LC	Interact.	Fy ksi	Size
3	-0.76	-25.93	0.00	5.98	0.00	10	0.09 H1-1b	50	W18X40

Level: 16.5 ft Roof

Col. #	Pu kip	Mux kip-ft	Muy kip-ft	Vux kip	Vuy kip	LC	Interact.	Fy ksi	Size
21	11.04	18.38	0.00	-2.32	0.00	10	0.37 H1-1b	46	HSS6X6X3/8
26	15.03	-116.86	0.00	16.59	0.00	9	0.48 H1-1b	46	HSS14X6X1/2
28	22.12	-100.07	0.00	-15.32	0.00	9	0.42 H1-1b	46	HSS14X6X1/2
38	5.50	-4.59	0.00	0.87	0.00	9	0.11 H1-1b	46	HSS6X6X3/8

Beam #	Pu kip	Mux kip-ft	Muy kip-ft	Vux kip	Vuy kip	LC	Interact.	Fy ksi	Size
57	32.30	-77.86	0.00	-16.86	0.00	9	0.30 H1-3a(H1-1b)	50	W18X40
78	18.01	-104.54	0.00	15.15	0.00	10	0.38 H1-3a(H1-1b)	50	W18X40

Level: Patio

Col. #	Pu kip	Mux kip-ft	Muy kip-ft	Vux kip	Vuy kip	LC	Interact.	Fy ksi	Size
26	11.40	-18.36	0.00	-2.34	0.00	10	0.37 H1-1b	46	HSS6X6X3/8
31	26.41	-142.14	0.00	16.59	0.00	10	0.59 H1-1b	46	HSS14X6X1/2
33	9.16	-140.24	0.00	-15.33	0.00	10	0.56 H1-1b	46	HSS14X6X1/2

Col.	Pu	Mux	Muy	Vux	Vuy	LC	Interact.	Fy	Size
43	5.86	9.68	0.00	0.86	0.00	9	0.20 H1-1b	46	HSS6X6X3/8

Frame #1:

Level: 16.5 ft Roof

Col.	Pu	Mux	Muy	Vux	Vuy	LC	Interact.	Fy	Size
#	kip	kip-ft	kip-ft	kip	kip			ksi	
35	41.26	2.10	0.00	-0.16	0.00	7	0.36 H1-1a	46	HSS6X6X1/4
36	59.03	-2.10	0.00	0.16	0.00	8	0.49 H1-1a	46	HSS6X6X1/4

Beam	Pu	Mux	Muy	Vux	Vuy	LC	Interact.	Fy	Size
#	kip	kip-ft	kip-ft	kip	kip			ksi	
117	42.42	9.85	0.00	4.16	0.00	7	0.49 H1-1a	50	W16X26

Brace	Pu	Mux	Muy	Vux	Vuy	LC	Interact.	Fy	Size
#	kip	kip-ft	kip-ft	kip	kip			ksi	
5	-54.56	0.00	0.00	0.00	0.00	46	0.39 Axial	46	HSS4X4X1/4
6	-54.56	0.00	0.00	-0.00	0.00	47	0.39 Axial	46	HSS4X4X1/4

Level: Patio

Col.	Pu	Mux	Muy	Vux	Vuy	LC	Interact.	Fy	Size
#	kip	kip-ft	kip-ft	kip	kip			ksi	
40	41.51	1.54	0.00	-0.16	0.00	7	0.35 H1-1a	46	HSS6X6X1/4
41	59.28	-1.54	0.00	0.16	0.00	8	0.48 H1-1a	46	HSS6X6X1/4

Frame #2:

Level: 16.5 ft Roof

Col.	Pu	Mux	Muy	Vux	Vuy	LC	Interact.	Fy	Size
#	kip	kip-ft	kip-ft	kip	kip			ksi	
15	29.36	0.00	0.00	-0.00	0.00	10	0.22 H1-1a	46	HSS6X6X1/4
22	31.04	-0.00	0.00	0.00	0.00	9	0.23 H1-1a	46	HSS6X6X1/4

Beam	Pu	Mux	Muy	Vux	Vuy	LC	Interact.	Fy	Size
#	kip	kip-ft	kip-ft	kip	kip			ksi	
50	27.60	30.19	0.00	8.89	0.00	9	0.39 H1-3b	50	W16X26

Brace	Pu	Mux	Muy	Vux	Vuy	LC	Interact.	Fy	Size
#	kip	kip-ft	kip-ft	kip	kip			ksi	
3	-35.64	0.00	0.00	0.00	0.00	49	0.26 Axial	46	HSS4X4X1/4
4	-35.64	0.00	0.00	0.00	0.00	48	0.26 Axial	46	HSS4X4X1/4

Level: Patio

Col.	Pu	Mux	Muy	Vux	Vuy	LC	Interact.	Fy	Size
#	kip	kip-ft	kip-ft	kip	kip			ksi	
20	29.61	0.00	0.00	0.00	0.00	10	0.22 H1-1a	46	HSS6X6X1/4

Col.	Pu	Mux	Muy	Vux	Vuy	LC	Interact.	Fy	Size
27	31.28	-0.00	0.00	-0.00	0.00	9	0.23 H1-1a	46	HSS6X6X1/4

Frame #3:

Level: 16.5 ft Roof

Col. #	Pu kip	Mux kip-ft	Muy kip-ft	Vux kip	Vuy kip	LC	Interact.	Fy ksi	Size
2	34.37	0.00	0.00	-0.00	-0.00	7	0.26 H1-1a	46	HSS6X6X1/4
3	32.76	-0.00	0.00	0.00	0.00	8	0.24 H1-1a	46	HSS6X6X1/4

Beam #	Pu kip	Mux kip-ft	Muy kip-ft	Vux kip	Vuy kip	LC	Interact.	Fy ksi	Size
3	36.51	18.92	0.00	9.37	0.00	7	0.49 H1-3b	50	W16X26

Brace #	Pu kip	Mux kip-ft	Muy kip-ft	Vux kip	Vuy kip	LC	Interact.	Fy ksi	Size
1	-46.02	0.00	0.00	0.00	-0.00	46	0.33 Axial	46	HSS4X4X1/4
2	-46.02	0.00	0.00	0.00	0.00	47	0.33 Axial	46	HSS4X4X1/4

Level: Patio

Col. #	Pu kip	Mux kip-ft	Muy kip-ft	Vux kip	Vuy kip	LC	Interact.	Fy ksi	Size
2	34.62	0.00	0.00	0.00	-0.00	7	0.26 H1-1a	46	HSS6X6X1/4
3	33.68	-0.00	0.00	-0.00	0.00	8	0.25 H1-1a	46	HSS6X6X1/4

Color Legend

Green	Pass
Red	Fail

Frames Summary

Deflectio Limit(in)	L/400*0.6*0.7	1.179		Deflectio Limit(in)	L/400*0.6*0.7	1.6429	For tower
Mean Roof Height(ft)	16.5			Height(ft)	23		

X - Axis	Y - Axis	Type	Frame Number	Column Sizes		Beam Sizes	Bracing size	Max Deflection(in)	Status	Strength
A	3-8	Moment Frame	0	A_3	HSS 6X6X3/	A_3-5 W18X40	None	1.1139	1.1689	FAIL
				A_5	HSS 14X6X	A_5-7 W18X40			1.2826	PASS
				A_7	HSS 14X6X	A_ 7-8 W18X40				
				A_8	HSS 6X6X3/8					

X - Axis	Y - Axis	Type	Frame Number	Column Sizes		Beam Sizes	Bracing size	Max Deflection(in)	Status	Strength
D-F	3	X-Brace	1	D_3	HSS 6X6X1/	D-F_3 W16X26	HSS 4X4X1/4	0.308	0.308	FAIL
				F_3	HSS 6X6X1/4					

X - Axis	Y - Axis	Type	Frame Number	Column Sizes		Beam Sizes	Bracing size	Max Deflection(in)	Status	Strength
N	7-8	X-Brace	2	N_7	HSS 6X6X1/	N_7-8 W16X26	HSS 4X4X1/4	0.1758	0.1758	FAIL
				N_8	HSS 6X6X1/4					

X - Axis	Y - Axis	Type	Frame Number	Column Sizes		Beam Sizes	Bracing size	Max Deflection(in)	Status	Strength
G-I	12	X-Brace	3	G_12	HSS 6X6X1/	G-I_12 W16X26	HSS 4X4X1/4	0.2276	0.2276	FAIL
				I_12	HSS 6X6X1/4					

Load Combinations

Legend

D	Dead Load
Rfp	Positive Roof live Load
W1	N to S
W2	S to N
W3	W to E
W4	E to W
SP	Positive Snow Load

1.400 D
1.200 D + 1.600 Rfp
1.200 D + 1.600 Rfp + 0.500 W1
1.200 D + 1.600 Rfp + 0.500 W2
1.200 D + 1.600 Rfp + 0.500 W3
1.200 D + 1.600 Rfp + 0.500 W4
1.200 D + 1.600 Rfp - 0.500 W1
1.200 D + 1.600 Rfp - 0.500 W2
1.200 D + 1.600 Rfp - 0.500 W3
1.200 D + 1.600 Rfp - 0.500 W4
1.200 D + 0.500 Rfp + 1.000 W1
1.200 D + 0.500 Rfp + 1.000 W2
1.200 D + 0.500 Rfp + 1.000 W3
1.200 D + 0.500 Rfp + 1.000 W4
1.200 D + 0.500 Rfp - 1.000 W1
1.200 D + 0.500 Rfp - 1.000 W2
1.200 D + 0.500 Rfp - 1.000 W3
1.200 D + 0.500 Rfp - 1.000 W4
1.200 D + 1.000 W1
1.200 D + 1.000 W2
1.200 D + 1.000 W3
1.200 D + 1.000 W4
1.200 D - 1.000 W1
1.200 D - 1.000 W2
1.200 D - 1.000 W3
1.200 D - 1.000 W4
0.900 D + 1.000 W1
0.900 D + 1.000 W2
0.900 D + 1.000 W3
0.900 D + 1.000 W4
0.900 D - 1.000 W1
0.900 D - 1.000 W2
0.900 D - 1.000 W3
0.900 D - 1.000 W4
1.2D + 0.5 Rfp

1.400 D
1.200 D + 1.600 Sp
1.200 D + 1.600 Sp + 0.500 W1
1.200 D + 1.600 Sp + 0.500 W2
1.200 D + 1.600 Sp + 0.500 W3
1.200 D + 1.600 Sp + 0.500 W4
1.200 D + 0.500 Sp + 1.000 W1
1.200 D + 0.500 Sp + 1.000 W2
1.200 D + 0.500 Sp + 1.000 W3
1.200 D + 0.500 Sp + 1.000 W4
1.200 D + 1.000 W1
1.200 D + 1.000 W2
1.200 D + 1.000 W3
1.200 D + 1.000 W4
0.900 D + 1.000 W1
0.900 D + 1.000 W2
0.900 D + 1.000 W3
0.900 D + 1.000 W4

Vulcraft Deck Diaphragm Shear & Stiffness

Per SDI DDM03

In accordance with 2015 IBC Section 2210 ANSI/SDI RD-1.0, NC1.0 & C-2011

Calculation Generated on 7/29/2021 Using Calculator V1.1

NUCOR® VULCRAFT GROUP

Input Design Criteria

Unit System	**Imperial**	Deck to Support Attachment Type	**5/8" Visible Dia. Arc Spot**
Design Method	**LRFD**		
Deck Option	**Roof Deck**	Support Member	**A572 GR50**
Deck Type	**1.5B-36**	Perpendicular Attachment Pattern	**36 / 5**
Deck Gage	**22**	Sidelap Attachment Type	**#10 Screw**
Deck Grade	**Grade 33**	Table Generator Formatting:	
Number of Spans	**3**	Tables Generated Based on	**Num. of Sidelap Attachments per Span**
MWFRS Net Wind Uplift (psf)	**18.00**	Start Number of Sidelap Attachments per Span at	**3**
		Start Table at Span of (ft.)	**5.00**
		Spans Increment at (ft.)	**0.50**

Please refer to the Vulcraft Deck Catalog for product availability.

The vertical gravity load capacity of the deck based on bending stress and applicable deflection criteria must be checked seperately.

Use selected support attachment type for both prependicular attachment and parallel attachment of steel deck.

Num. of Sidelap Attachments per Span	LRFD Seismic Diaphragm Shear Strength (plf)						
	Span (ft. - in.)						
	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"
3	526	486	450	420	389	362	338
4	577	534	497	464	435	408	381
5	625	581	541	506	475	448	423
6	670	624	583	547	514	485	459
7	711	665	623	586	552	521	494
8	750	703	661	622	587	556	527
9	785	738	696	657	621	589	560

↔

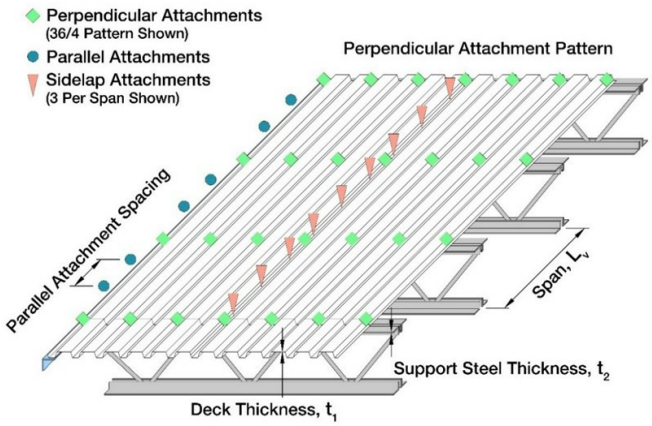
Num. of Sidelap Attachments per Span	Parallel Attachment Spacing to Chords and Collectors (in. o.c.)						
	Span (ft. - in.)						
	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"
3	30	33	36	33	36	36	36
4	30	33	36	33	36	36	36
5	30	33	36	33	36	36	36
6	30	33	36	33	36	36	36
7	30	33	36	33	36	36	36
8	30	33	36	33	36	36	36
9	30	28	31	33	36	36	36

Num. of Sidelap Attachments per Span	LRFD Diaphragm Shear Strength & Wind Uplift Interaction (plf)						
	Span (ft. - in.)						
	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"
3	670	618	573	534	496	461	430
4	735	680	632	590	553	520	486
5	796	739	689	645	605	570	538
6	852	794	742	696	655	618	584
7	905	846	793	745	702	663	628
8	954	895	841	792	748	708	671
9	999	940	886	836	791	750	712

↔

Num. of Sidelap Attachments per Span	Parallel Attachment Spacing to Chords and Collectors (in. o.c.)						
	Span (ft. - in.)						
	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"
3	30	33	36	33	36	36	36
4	30	33	36	33	36	36	36
5	30	33	36	33	36	36	36
6	30	33	36	33	36	36	36
7	30	33	36	33	36	36	36
8	30	33	36	33	36	36	36
9	30	28	31	33	36	36	36

Num. of Sidelap Attachments per Span	Diaphragm Shear Stiffness, G' (Kip/in)						
	Span (ft. - in.)						
	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"
3	19	20	21	22	23	24	25
4	19	20	22	23	24	25	26
5	19	21	22	23	24	26	27
6	19	21	22	24	25	26	27
7	20	21	22	24	25	26	27
8	20	21	23	24	25	27	28
9	20	21	23	24	26	27	28



Vulcraft Deck Diaphragm Shear & Stiffness

Per SDI DDM03

In accordance with 2015 IBC Section 2210 ANSI/SDI RD-1.0, NC1.0 & C-2011

Calculation Generated on 7/29/2021 Using Calculator V1.1

NUCOR® VULCRAFT GROUP

Input Design Criteria

Unit System	**Imperial**	Deck to Support Attachment Type	**5/8" Visible Dia. Arc Spot**
Design Method	**LRFD**		
Deck Option	**Roof Deck**	Support Member	**A572 GR50**
Deck Type	**1.5B-36**	Perpendicular Attachment Pattern	**36 / 7**
Deck Gage	**22**	Sidelap Attachment Type	**#10 Screw**
Deck Grade	**Grade 33**	Table Generator Formatting:	
Number of Spans	**3**	Tables Generated Based on	**Num. of Sidelap Attachments per Span**
MWFRS Net Wind Uplift (psf)	**18.00**	Start Number of Sidelap Attachments per Span at	**3**
		Start Table at Span of (ft.)	**5.00**
		Spans Increment at (ft.)	**0.50**

Please refer to the Vulcraft Deck Catalog for product availability.

The vertical gravity load capacity of the deck based on bending stress and applicable deflection criteria must be checked seperately.

Use selected support attachment type for both prependicular attachment and parallel attachment of steel deck.

Num. of Sidelap Attachments per Span	LRFD Seismic Diaphragm Shear Strength (plf)						
	Span (ft. - in.)						
	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"
3	578	528	482	443	410	381	356
4	637	585	540	497	460	427	399
5	695	639	591	549	509	474	443
6	750	691	640	596	557	520	486
7	803	742	688	641	600	564	530
8	854	791	735	686	642	604	570
9	903	838	780	729	684	643	607

↔

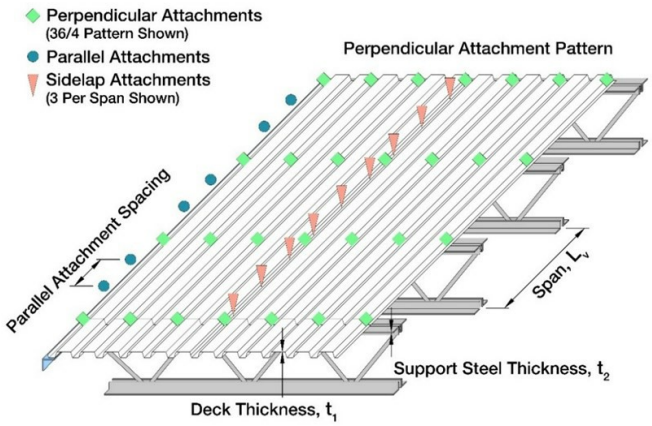
Num. of Sidelap Attachments per Span	Parallel Attachment Spacing to Chords and Collectors (in. o.c.)						
	Span (ft. - in.)						
	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"
3	30	33	36	33	36	36	36
4	30	33	36	33	36	36	36
5	30	33	36	33	36	36	36
6	30	33	36	33	36	36	36
7	30	33	36	33	36	36	36
8	30	33	36	33	36	36	36
9	26	28	31	33	36	36	36

Num. of Sidelap Attachments per Span	LRFD Diaphragm Shear Strength & Wind Uplift Interaction (plf)						
	Span (ft. - in.)						
	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"
3	735	672	613	564	521	485	453
4	811	745	687	632	585	544	508
5	884	813	752	699	648	603	564
6	955	880	815	759	709	662	619
7	1022	944	876	816	764	718	675
8	1087	1006	935	873	818	769	725
9	1150	1066	992	928	870	819	729

↔

Num. of Sidelap Attachments per Span	Parallel Attachment Spacing to Chords and Collectors (in. o.c.)						
	Span (ft. - in.)						
	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"
3	30	33	36	33	36	36	36
4	30	33	36	33	36	36	36
5	30	33	36	33	36	36	36
6	30	33	36	33	36	36	36
7	30	33	36	33	36	36	36
8	30	33	36	33	36	36	36
9	26	28	31	33	36	36	36

Num. of Sidelap Attachments per Span	Diaphragm Shear Stiffness, G' (Kip/in)						
	Span (ft. - in.)						
	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"
3	64	65	65	65	65	64	64
4	66	67	68	68	68	68	68
5	68	70	71	71	71	71	71
6	70	72	73	74	74	74	74
7	72	73	75	76	77	77	77
8	73	75	77	78	79	79	79
9	74	76	78	79	80	81	81



Project#	221130
Date	7/27/2021
By	AI
Code:	ASCE 7-16
	IBC 2018
	AISE 360-16(15th Edition) LRFD

Types	Frame #	Wind Load(kip)	Span of Frame(ft)	Actual Distance Between Joists(ft)	Dia Shear(lb/ft)	Dia Shear Strength(psf)	State
Moment	0	34	40	5.021	850	815	NG
					850	742	NG

Coll. L(ft)	New Shear(l	Column Dir	Defl. Limit(	Deflection(	Unity Chec	Shear Check	Perp. Attach. Pattern	Shear Dia ALL.	
28.5	496.35	W16X31	0.95	0.915	0.81	0.14	36/5 @6 Sidelap	742	klp
Klp	0.496								

Types	Frame #	Wind Load(kip)	Span of Frame(ft)	Actual Distance Between Joists(ft)	Dia Shear(lb/ft)	Dia Shear Strength(psf)	State
X-brace	1	42.43	20.25	4.8125	2095.31	815	NG
					2095.31	742	NG

Coll. L(ft)	New Shear(l	Column Dir	Defl. Limit(	Deflection(	Unity Chec	Shear Check	Perp. Attach. Pattern	Shear Dia ALL.	
10.375	696.05	W12x14	0.346	0.03	0.35	0.04	36/5 @6 Sidelap	742	klp
7.0833		W12X14	0.236	0.007	0.19	0.03			
17.375		W14X22	0.579	0.129	0.35	0.05			
5.875		W16X26	0.196	0.006	0.17	0.08			
Klp	0.696		L*12/360						

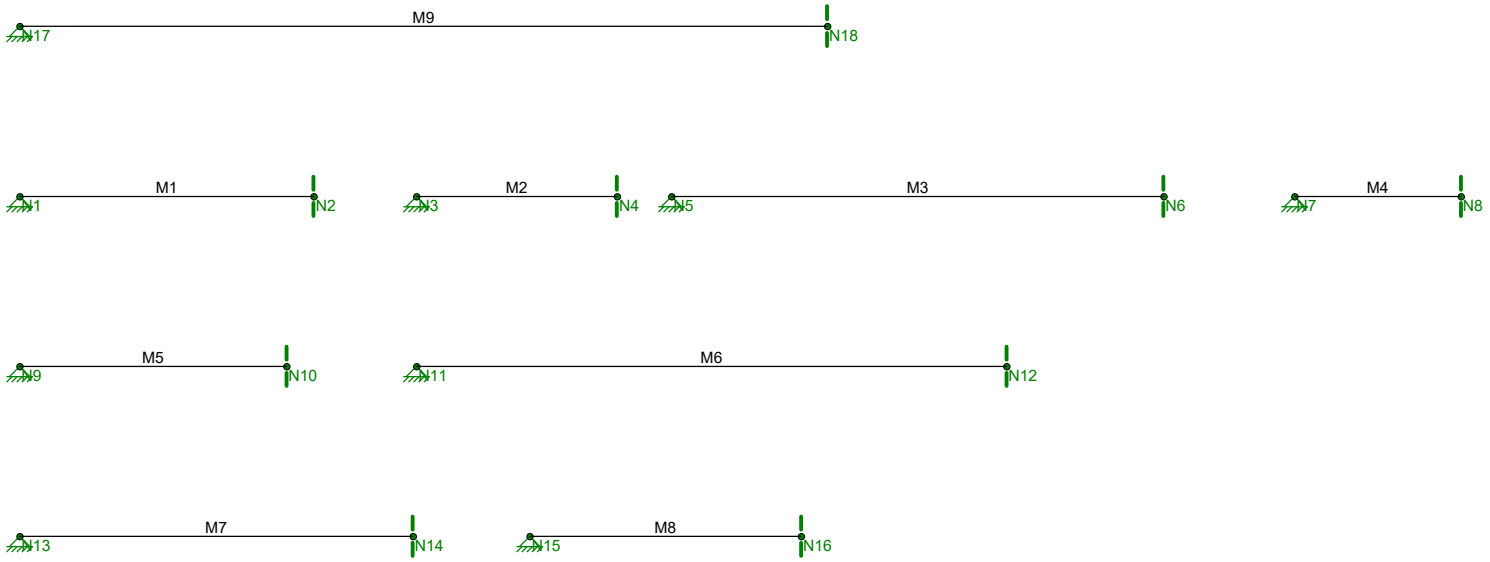
Types	Frame #	Wind Load(kip)	Span of Frame(ft)	Actual Distance Between Joists(ft)	Dia Shear(lb/ft)	Dia Shear Strength(psf)	State
X-brace	2	27.6	20.2083	5.021	1365.78	815	NG
					1365.78	742	NG

Coll. L(ft)	New Shear(l	Column Dir	Defl. Limit(	Deflection(	Unity Chec	Shear Check	Perp. Attach. Pattern	Shear Dia ALL.	
9.417	546.98	W14X22	0.314	0.019	0.2	0.03	36/5 @6 Sidelap	742	klp
20.8333		W14X22	0.694	0.527	0.98	0.09			
Klp	0.547		L*12/360						

Types	Frame #	Wind Load(kip)	Span of Frame(ft)	Actual Distance Between Joists(ft)	Dia Shear(lb/ft)	Dia Shear Strength(psf)	State
X-brace	3	36.5	21.5	4.7292	1697.67	815	NG
					1697.67	742	NG

Coll. L(ft)	New Shear(l	Column Dir	Defl. Limit(	Deflection(	Unity Chec	Shear Check	Perp. Attach. Pattern	Shear Dia ALL.	
13.875	811.86	W12X14	0.463	0.123	0.78	0.06	36/7 @6 Sidelap	815	klp
9.5833		W12X14	0.319	0.015	0.31	0.02			
			L*12/360						
Klp	0.812								

LRFD, Roof Deck , 1.5B-36, 22 - Deck Gage , 33 - Deck Grade , 3 - Spans , 18 psf -Net Wind Upleft , A572 GR50 - Support member , 36/7 , #10 Screw - Sidelap Att. , @6ft	815 plf	@6 sidelap
LRFD, Roof Deck , 1.5B-36, 22 - Deck Gage , 33 - Deck Grade , 3 - Spans , 18 psf -Net Wind Upleft , A572 GR50 - Support member , 36/5 , #10 Screw - Sidelap Att. , @6ft	742 plf	@6 sidelap



Envelope Only Solution

	CH Lee Summit - Collectors	SK - 2
		Aug 17, 2021 at 11:47 AM
221130		221130 Beam Collector.r2d

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E5 F)	Density[k/ft^3]	Yield[ksi]
1	A36 Gr.36	29000	11154	.3	.65	.49	36
2	A572 Gr.50	29000	11154	.3	.65	.49	50
3	A992	29000	11154	.3	.65	.49	50
4	A500 Gr.B RND	29000	11154	.3	.65	.527	42
5	A500 Gr.B Rect	29000	11154	.3	.65	.527	46
6	A53 Gr.B	29000	11154	.3	.65	.49	35
7	A1085	29000	11154	.3	.65	.49	50

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	I (90,270) [i...	I (0,180) [in4]
1	HR1A	W10X33	Beam	None	A36 Gr.36	Typical	9.71	36.6	171

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Temp [F]
1	N1	0	30	0
2	N2	10.375	30	0
3	N3	14	30	0
4	N4	21.0833	30	0
5	N5	23	30	0
6	N6	40.375	30	0
7	N7	45	30	0
8	N8	50.875	30	0
9	N9	0	24	0
10	N10	9.417	24	0
11	N11	14	24	0
12	N12	34.8333	24	0
13	N13	0	18	0
14	N14	13.875	18	0
15	N15	18	18	0
16	N16	27.583	18	0
17	N17	0	36	0
18	N18	28.5	36	0

Joint Loads and Enforced Displacements

Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/f...
No Data to Print ...			

Member Point Loads (BLC 2 : Dead Load)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M4	Y	-2.848	1.75
2	M5	Y	-1.299	4.708
3	M6	Y	-1.437	5.208
4	M6	Y	-1.437	10.417
5	M6	Y	-1.437	15.625
6	M9	Y	-1.038	5.7

Member Point Loads (BLC 2 : Dead Load) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
7	M9	Y	-1.038	11.4
8	M9	Y	-1.038	17.1
9	M9	Y	-.977	22.8
10	M9	Y	-3.517	27.833

Member Point Loads (BLC 3 : Snow Load)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M4	Y	-4.592	1.75
2	M5	Y	-1.753	4.708
3	M6	Y	-1.939	5.208
4	M6	Y	-1.939	10.417
5	M6	Y	-1.957	15.625
6	M9	Y	-1.977	5.7
7	M9	Y	-1.931	11.4
8	M9	Y	-1.931	17.1
9	M9	Y	-1.957	22.8
10	M9	Y	-2.057	27.833

Member Distributed Loads (BLC 2 : Dead Load)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M1	Y	-.088	-.088	0	%100
2	M2	Y	0	0	0	%100
3	M2	Y	0	0	0	%100
4	M2	Y	0	0	0	%100
5	M2	Y	0	0	0	%100
6	M2	Y	0	0	0	%100
7	M2	Y	0	0	0	%100
8	M2	Y	-.086	-.086	0	%100
9	M3	Y	-.123	-.123	0	%100
10	M4	Y	0	0	0	%100
11	M4	Y	0	0	0	%100
12	M4	Y	0	0	0	%100
13	M4	Y	-.135	-.135	0	%100
14	M5	Y	0	0	0	%100
15	M5	Y	0	0	0	%100
16	M5	Y	-.046	-.046	0	%100
17	M6	Y	-.046	-.046	0	%100
18	M7	Y	-.096	-.096	0	%100
19	M8	Y	-.091	-.091	0	%100
20	M9	Y	-.05	-.05	0	28.5

Member Distributed Loads (BLC 3 : Snow Load)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M1	Y	0	0	0	%100
2	M1	Y	0	0	0	%100
3	M1	Y	0	0	0	%100
4	M1	Y	0	0	0	%100
5	M1	Y	0	0	0	%100
6	M1	Y	0	0	0	%100

Member Distributed Loads (BLC 3 : Snow Load) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
7	M1	Y	-.197	-.197	0	%100
8	M2	Y	-.226	-.226	0	%100
9	M3	Y	-.15	-.288	0	%100
10	M4	Y	0	0	0	%100
11	M4	Y	0	0	0	%100
12	M4	Y	0	0	0	%100
13	M4	Y	-.147	-.147	0	%100
14	M5	Y	-.032	-.032	0	%100
15	M6	Y	-.032	-.032	0	19.458
16	M7	Y	-.268	-.268	0	%100
17	M8	Y	-.103	-.103	0	%100
18	M6	Y	-.064	-.064	19.458	%100
19	M9	Y	-.063	-.063	0	26.79
20	M9	Y	-.045	-.045	26.79	28.5

Member Distributed Loads (BLC 4 : Wind Load X)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M1	X	-.696	-.696	0	%100
2	M2	X	-.696	-.696	0	%100
3	M3	X	-.696	-.696	0	%100
4	M4	X	-.696	-.696	0	%100
5	M5	X	-.547	-.547	0	%100
6	M6	X	-.547	-.547	0	%100
7	M7	X	-.812	-.812	0	%100
8	M8	X	-.812	-.812	0	%100
9	M9	X	-.496	-.496	0	%100

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Joint	Point	Distributed
1	Self-Weight	DL		-1			
2	Dead Load	DL				10	20
3	Snow Load	SL				10	20
4	Wind Load X	WLX					9

Load Combinations

	Description	Sol...	PD...	SR...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...
1	1.4DL	Yes	Y		DL	1.4																		
2	1.2DL+1.6...	Yes	Y		DL	1.2	LL	1.6	LLS	1.6	RLL	.5												
3	1.2DL+1.6...	Yes	Y		DL	1.2	LL	1.6	LLS	1.6	SL	.5	SLN	.5										
4	1.2DL+1.6...	Yes	Y		DL	1.2	LL	1.6	LLS	1.6	RL	.5												
5	1.2DL+1.6...	Yes	Y		DL	1.2	RLL	1.6	LL	.5	LLS	1												
6	1.2DL+1.6...	Yes	Y		DL	1.2	RLL	1.6	W...	.5														
7	1.2DL+1.6...	Yes	Y		DL	1.2	SL	1.6	SLN	1.6	LL	.5	LLS	1										
8	1.2DL+1.6...	Yes	Y		DL	1.2	SL	1.6	SLN	1.6	W...	.5												
9	1.2DL+1.6...	Yes	Y		DL	1.2	RL	1.6	LL	.5	LLS	1												
10	1.2DL+1.6...	Yes	Y		DL	1.2	RL	1.6	W...	.5														
11	1.2DL+1.0...	Yes	Y		DL	1.2	W...	1	LL	.5	LLS	1	RLL	.5										
12	1.2DL+1.0...	Yes	Y		DL	1.2	W...	1	LL	.5	LLS	1	SL	.5	SLN	.5								

Load Combinations (Continued)

	Description	Sol...	PD...	SR...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...
13	1.2DL+1.0...	Yes	Y		DL	1.2	W...	1	LL	.5	LLS	1	RL	.5										
14	0.9DL+1.0...	Yes	Y		DL	.9	W...	1																
15	(SL)1.0DL	Yes	Y		DL	1																		
16	(SL)1.0DL...	Yes	Y		DL	1	LL	1	LLS	1														
17	(SL)1.0DL...	Yes	Y		DL	1	RLL	1																
18	(SL)1.0DL...	Yes	Y		DL	1	SL	1	SLN	1														
19	(SL)1.0DL...	Yes	Y		DL	1	RL	1																
20	(SL)1.0DL...	Yes	Y		DL	1	LL	.75	LLS	.75	RLL	.75												
21	(SL)1.0DL...	Yes	Y		DL	1	LL	.75	LLS	.75	SL	.75	SLN	.75										
22	(SL)1.0DL...	Yes	Y		DL	1	LL	.75	LLS	.75	RL	.75												
23	(SL)1.0DL...	Yes	Y		DL	1	W...	.6																
24	(SL)1.0DL...	Yes	Y		DL	1	W...	.45	LL	.75	LLS	.75	RLL	.75										
25	(SL)1.0DL...	Yes	Y		DL	1	W...	.45	LL	.75	LLS	.75	SL	.75	SLN	.75								
26	(SL)1.0DL...	Yes	Y		DL	1	W...	.45	LL	.75	LLS	.75	RL	.75										
27	(SL)0.6DL...	Yes	Y		DL	.6	W...	.6																

Load Combination Design

	Description	ASIF	CD	Service	Hot Rolled	Cold Formed	Wood	Concrete	Masonry	Aluminum	Stainless
1	1.4DL				Yes	Yes		Yes	Yes	Yes	Yes
2	1.2DL+1.6LL+...				Yes	Yes		Yes	Yes	Yes	Yes
3	1.2DL+1.6LL+...				Yes	Yes		Yes	Yes	Yes	Yes
4	1.2DL+1.6LL+...				Yes	Yes		Yes	Yes	Yes	Yes
5	1.2DL+1.6RR...				Yes	Yes		Yes	Yes	Yes	Yes
6	1.2DL+1.6RLL...				Yes	Yes		Yes	Yes	Yes	Yes
7	1.2DL+1.6SL+...				Yes	Yes		Yes	Yes	Yes	Yes
8	1.2DL+1.6SL+...				Yes	Yes		Yes	Yes	Yes	Yes
9	1.2DL+1.6RL+...				Yes	Yes		Yes	Yes	Yes	Yes
10	1.2DL+1.6RL+...				Yes	Yes		Yes	Yes	Yes	Yes
11	1.2DL+1.0WL...				Yes	Yes		Yes	Yes	Yes	Yes
12	1.2DL+1.0WL...				Yes	Yes		Yes	Yes	Yes	Yes
13	1.2DL+1.0WL...				Yes	Yes		Yes	Yes	Yes	Yes
14	0.9DL+1.0WLX				Yes	Yes		Yes	Yes	Yes	Yes
15	(SL)1.0DL		.9	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
16	(SL)1.0DL+1.0...			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
17	(SL)1.0DL+1.0...		1.25	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
18	(SL)1.0DL+1.0...		1.15	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
19	(SL)1.0DL+1.0...		1.15	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
20	(SL)1.0DL+0.7...		1.25	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
21	(SL)1.0DL+0.7...		1.15	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
22	(SL)1.0DL+0.7...		1.15	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
23	(SL)1.0DL+0.6...		1.6	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
24	(SL)1.0DL+0.4...		1.6	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
25	(SL)1.0DL+0.4...		1.6	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
26	(SL)1.0DL+0.4...		1.6	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
27	(SL)0.6DL+0.6...		1.6	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Envelope Joint Reactions

	Joint		X [k]	LC	Y [k]	LC	Moment [k-ft]	LC
1	N2	max	0	27	2.271	8	0	27
2		min	0	1	.318	27	0	1
3	N6	max	0	27	4.876	8	0	27
4		min	0	1	.756	27	0	1
5	N8	max	0	27	4.465	8	0	27
6		min	0	1	.793	27	0	1
7	N1	max	7.221	14	2.271	8	0	27
8		min	0	1	.318	27	0	1
9	N3	max	4.93	14	1.706	8	0	27
10		min	0	1	.213	27	0	1
11	N5	max	12.093	14	4.237	8	0	27
12		min	0	1	.756	27	0	1
13	N7	max	4.089	14	8.817	8	0	27
14		min	0	1	1.484	27	0	1
15	N4	max	0	27	1.706	8	0	27
16		min	0	1	.213	27	0	1
17	N9	max	5.151	14	2.808	8	0	27
18		min	0	1	.582	27	0	1
19	N10	max	0	27	2.807	8	0	27
20		min	0	1	.582	27	0	1
21	N11	max	11.396	14	8.634	8	0	27
22		min	0	1	1.719	27	0	1
23	N12	max	0	27	8.714	8	0	27
24		min	0	1	1.719	27	0	1
25	N13	max	11.267	14	3.892	8	0	27
26		min	0	1	.459	27	0	1
27	N14	max	0	27	3.892	8	0	27
28		min	0	1	.459	27	0	1
29	N15	max	7.781	14	1.394	8	0	27
30		min	0	1	.302	27	0	1
31	N16	max	0	27	1.394	8	0	27
32		min	0	1	.302	27	0	1
33	N17	max	14.136	14	11.72	8	0	27
34		min	0	1	1.981	27	0	1
35	N18	max	0	27	18.771	8	0	27
36		min	0	1	3.97	27	0	1
37	Totals:	max	78.064	14	94.377	8		
38		min	0	1	16.925	27		

Envelope Joint Displacements

	Joint		X [in]	LC	Y [in]	LC	Rotation [rad]	LC
1	N1	max	0	27	0	27	-1.598e-04	27
2		min	0	1	0	1	-1.142e-03	7
3	N2	max	0	22	0	27	1.142e-03	8
4		min	-.004	11	0	1	1.598e-04	27
5	N3	max	0	27	0	27	-4.987e-05	27
6		min	0	1	0	1	-3.998e-04	7
7	N4	max	0	22	0	27	3.998e-04	8
8		min	-.002	11	0	1	4.987e-05	27

Envelope Joint Displacements (Continued)

	Joint		X [in]	LC	Y [in]	LC	Rotation [rad]	LC
9	N5	max	0	27	0	27	-4.747e-04	27
10		min	0	1	0	1	-2.818e-03	7
11	N6	max	0	22	0	27	2.902e-03	8
12		min	-.007	11	0	1	4.747e-04	27
13	N7	max	0	27	0	27	-7.464e-05	27
14		min	0	1	0	1	-4.45e-04	7
15	N8	max	0	22	0	27	3.154e-04	8
16		min	0	11	0	1	5.406e-05	27
17	N9	max	0	27	0	27	-1.433e-04	27
18		min	0	1	0	1	-7.189e-04	7
19	N10	max	0	22	0	27	7.188e-04	8
20		min	-.002	11	0	1	1.433e-04	27
21	N11	max	0	27	0	27	-1.843e-03	27
22		min	0	1	0	1	-9.433e-03	7
23	N12	max	0	22	0	27	9.442e-03	8
24		min	-.008	11	0	1	1.843e-03	27
25	N13	max	0	27	0	27	-4.123e-04	27
26		min	0	1	0	1	-3.499e-03	7
27	N14	max	0	22	0	27	3.499e-03	8
28		min	-.008	11	0	1	4.123e-04	27
29	N15	max	0	27	0	27	-1.297e-04	27
30		min	0	1	0	1	-5.98e-04	7
31	N16	max	0	22	0	27	5.98e-04	8
32		min	-.004	11	0	1	1.297e-04	27
33	N17	max	0	27	0	27	-2.036e-03	27
34		min	0	1	0	1	-1.219e-02	7
35	N18	max	0	22	0	27	1.247e-02	8
36		min	-.009	11	0	1	2.114e-03	27

Envelope Member Section Forces

	Member	Sec		Axial[k]	LC	Shear[k]	LC	Moment[k-ft]	LC
1	M1	1	max	7.221	14	2.271	7	0	1
2			min	0	1	.318	27	0	1
3		2	max	5.416	14	1.136	7	-.619	27
4			min	0	1	.159	27	-4.418	7
5		3	max	3.61	14	0	1	-.825	27
6			min	0	1	0	1	-5.89	7
7		4	max	1.805	14	-.159	27	-.619	27
8			min	0	1	-1.136	7	-4.418	7
9		5	max	0	27	-.318	27	0	1
10			min	0	1	-2.271	7	0	1
11	M2	1	max	4.93	14	1.706	7	0	1
12			min	0	1	.213	27	0	1
13		2	max	3.697	14	.853	7	-.283	27
14			min	0	1	.106	27	-2.266	7
15		3	max	2.465	14	0	1	-.377	27
16			min	0	1	0	1	-3.022	7
17		4	max	1.232	14	-.106	27	-.283	27
18			min	0	1	-.853	7	-2.266	7
19		5	max	0	27	-.213	27	0	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	Shear[k]	LC	Moment[k-ft]	LC
20			min	0	1	-1.706	7	0	1
21	M3	1	max	12.093	14	4.237	7	0	1
22			min	0	1	.756	27	0	1
23		2	max	9.07	14	2.318	7	-2.464	27
24			min	0	1	.378	27	-14.324	7
25		3	max	6.046	14	.16	7	-3.285	27
26			min	0	1	0	1	-19.793	7
27		4	max	3.023	14	-.378	27	-2.464	27
28			min	0	1	-2.238	7	-15.365	7
29		5	max	0	27	-.756	27	0	1
30			min	0	1	-4.876	7	0	1
31	M4	1	max	4.089	14	8.817	7	0	1
32			min	0	1	1.484	27	0	1
33		2	max	3.067	14	8.188	7	-2.075	27
34			min	0	1	1.342	27	-12.488	7
35		3	max	2.044	14	-.509	27	-1.912	27
36			min	0	1	-3.207	7	-11.268	7
37		4	max	1.022	14	-.651	27	-1.06	27
38			min	0	1	-3.836	7	-6.096	7
39		5	max	0	27	-.793	27	0	1
40			min	0	1	-4.465	7	0	1
41	M5	1	max	5.151	14	2.808	7	0	1
42			min	0	1	.582	27	0	1
43		2	max	3.863	14	2.495	7	-1.257	27
44			min	0	1	.486	27	-6.242	7
45		3	max	2.576	14	-.39	27	-2.288	27
46			min	0	1	-2.182	7	-11.745	7
47		4	max	1.288	14	-.486	27	-1.257	27
48			min	0	1	-2.494	7	-6.241	7
49		5	max	0	27	-.582	27	0	1
50			min	0	1	-2.807	7	0	1
51	M6	1	max	11.396	14	8.634	7	0	1
52			min	0	1	1.719	27	0	1
53		2	max	8.547	14	3.115	7	-8.398	27
54			min	0	1	.644	27	-43.165	7
55		3	max	5.698	14	2.423	7	-11.197	27
56			min	0	1	.431	27	-57.587	7
57		4	max	2.849	14	-.644	27	-8.398	27
58			min	0	1	-3.096	7	-43.266	7
59		5	max	0	27	-1.719	27	0	1
60			min	0	1	-8.714	7	0	1
61	M7	1	max	11.267	14	3.892	7	0	1
62			min	0	1	.459	27	0	1
63		2	max	8.45	14	1.946	7	-1.193	27
64			min	0	1	.229	27	-10.125	7
65		3	max	5.633	14	0	1	-1.59	27
66			min	0	1	0	1	-13.5	7
67		4	max	2.817	14	-.229	27	-1.193	27
68			min	0	1	-1.946	7	-10.125	7
69		5	max	0	27	-.459	27	0	1
70			min	0	1	-3.892	7	0	1
71	M8	1	max	7.781	14	1.394	7	0	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	Shear[k]	LC	Moment[k-ft]	LC
72			min	0	1	.302	27	0	1
73		2	max	5.836	14	.697	7	-.543	27
74			min	0	1	.151	27	-2.505	7
75		3	max	3.891	14	0	1	-.724	27
76			min	0	1	0	1	-3.34	7
77		4	max	1.945	14	-.151	27	-.543	27
78			min	0	1	-.697	7	-2.505	7
79		5	max	0	27	-.302	27	0	1
80			min	0	1	-1.394	7	0	1
81	M9	1	max	14.136	14	11.72	7	0	1
82			min	0	1	1.981	27	0	1
83		2	max	10.602	14	5.9	7	-11.991	27
84			min	0	1	1.011	27	-72.194	7
85		3	max	7.068	14	.153	7	-16.188	27
86			min	0	1	.042	27	-96.847	7
87		4	max	3.534	14	-.927	27	-12.59	27
88			min	0	1	-5.593	7	-74.378	7
89		5	max	0	27	-3.97	27	0	1
90			min	0	1	-18.771	7	0	1

Envelope Maximum Member Section Forces

	Member		Axial[k]	Loc[ft]	LC	Shear[k]	Loc[ft]	LC	Moment[k-ft]	Loc[ft]	LC
1	M1	max	7.221	0	14	2.271	0	7	0	0	1
2		min	0	0	1	-2.271	10.375	7	-5.89	5.188	7
3	M2	max	4.93	0	14	1.706	0	7	0	0	1
4		min	0	0	1	-1.706	7.083	7	-3.022	3.542	7
5	M3	max	12.093	0	14	4.237	0	7	0	0	1
6		min	0	0	1	-4.876	17.375	7	-19.816	9.049	7
7	M4	max	4.089	0	14	8.817	0	7	0	0	1
8		min	0	0	1	-4.465	5.875	7	-14.707	1.775	7
9	M5	max	5.151	0	14	2.808	0	7	0	0	1
10		min	0	0	1	-2.807	9.417	7	-11.745	4.708	7
11	M6	max	11.396	0	14	8.634	0	7	0	0	1
12		min	0	0	1	-8.714	20.833	7	-57.587	10.417	7
13	M7	max	11.267	0	14	3.892	0	7	0	0	1
14		min	0	0	1	-3.892	13.875	7	-13.5	6.938	7
15	M8	max	7.781	0	14	1.394	0	7	0	0	1
16		min	0	0	1	-1.394	9.583	7	-3.34	4.791	7
17	M9	max	14.136	0	14	11.72	0	7	0	0	1
18		min	0	0	1	-18.771	28.5	7	-96.905	15.141	7

Envelope Member End Reactions

	Member	Membe...		Axial[k]	LC	Shear[k]	LC	Moment[k-ft]	LC
1	M1	I	max	7.221	14	2.271	7	0	1
2			min	0	1	.318	27	0	1
3		J	max	0	27	-.318	27	0	1
4			min	0	1	-2.271	7	0	1
5	M2	I	max	4.93	14	1.706	7	0	1
6			min	0	1	.213	27	0	1

Envelope Member End Reactions (Continued)

	Member	Membe...		Axial[k]	LC	Shear[k]	LC	Moment[k-ft]	LC
7		J	max	0	27	-.213	27	0	1
8			min	0	1	-1.706	7	0	1
9	M3	I	max	12.093	14	4.237	7	0	1
10			min	0	1	.756	27	0	1
11		J	max	0	27	-.756	27	0	1
12			min	0	1	-4.876	7	0	1
13	M4	I	max	4.089	14	8.817	7	0	1
14			min	0	1	1.484	27	0	1
15		J	max	0	27	-.793	27	0	1
16			min	0	1	-4.465	7	0	1
17	M5	I	max	5.151	14	2.808	7	0	1
18			min	0	1	.582	27	0	1
19		J	max	0	27	-.582	27	0	1
20			min	0	1	-2.807	7	0	1
21	M6	I	max	11.396	14	8.634	7	0	1
22			min	0	1	1.719	27	0	1
23		J	max	0	27	-1.719	27	0	1
24			min	0	1	-8.714	7	0	1
25	M7	I	max	11.267	14	3.892	7	0	1
26			min	0	1	.459	27	0	1
27		J	max	0	27	-.459	27	0	1
28			min	0	1	-3.892	7	0	1
29	M8	I	max	7.781	14	1.394	7	0	1
30			min	0	1	.302	27	0	1
31		J	max	0	27	-.302	27	0	1
32			min	0	1	-1.394	7	0	1
33	M9	I	max	14.136	14	11.72	7	0	1
34			min	0	1	1.981	27	0	1
35		J	max	0	27	-3.97	27	0	1
36			min	0	1	-18.771	7	0	1

Envelope Member Section Stresses

	Member	Sec		Axial[ksi]	LC	Shear[ksi]	LC	Top Bending[k...	LC	Bottom Bendin...	LC
1	M1	1	max	1.736	14	.954	7	0	1	0	1
2			min	0	1	.134	27	0	1	0	1
3		2	max	1.302	14	.477	7	3.56	7	-.498	27
4			min	0	1	.067	27	.498	27	-3.56	7
5		3	max	.868	14	0	1	4.747	7	-.665	27
6			min	0	1	0	1	.665	27	-4.747	7
7		4	max	.434	14	-.067	27	3.56	7	-.498	27
8			min	0	1	-.477	7	.498	27	-3.56	7
9		5	max	0	27	-.134	27	0	1	0	1
10			min	0	1	-.954	7	0	1	0	1
11	M2	1	max	1.185	14	.717	7	0	1	0	1
12			min	0	1	.089	27	0	1	0	1
13		2	max	.889	14	.358	7	1.826	7	-.228	27
14			min	0	1	.045	27	.228	27	-1.826	7
15		3	max	.593	14	0	1	2.435	7	-.304	27
16			min	0	1	0	1	.304	27	-2.435	7
17		4	max	.296	14	-.045	27	1.826	7	-.228	27

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	Shear[ksi]	LC	Top Bending[k...	LC	Bottom Bendin...	LC
18			min	0	1	-.358	7	.228	27	-1.826	7
19		5	max	0	27	-.089	27	0	1	0	1
20			min	0	1	-.717	7	0	1	0	1
21	M3	1	max	1.863	14	1.345	7	0	1	0	1
22			min	0	1	.24	27	0	1	0	1
23		2	max	1.397	14	.736	7	5.917	7	-1.018	27
24			min	0	1	.12	27	1.018	27	-5.917	7
25		3	max	.932	14	.051	7	8.176	7	-1.357	27
26			min	0	1	0	1	1.357	27	-8.176	7
27		4	max	.466	14	-.12	27	6.347	7	-1.018	27
28			min	0	1	-.71	7	1.018	27	-6.347	7
29		5	max	0	27	-.24	27	0	1	0	1
30			min	0	1	-1.548	7	0	1	0	1
31	M4	1	max	.532	14	2.246	7	0	1	0	1
32			min	0	1	.378	27	0	1	0	1
33		2	max	.399	14	2.086	7	3.908	7	-.649	27
34			min	0	1	.342	27	.649	27	-3.908	7
35		3	max	.266	14	-.13	27	3.526	7	-.598	27
36			min	0	1	-.817	7	.598	27	-3.526	7
37		4	max	.133	14	-.166	27	1.908	7	-.332	27
38			min	0	1	-.977	7	.332	27	-1.908	7
39		5	max	0	27	-.202	27	0	1	0	1
40			min	0	1	-1.138	7	0	1	0	1
41	M5	1	max	.794	14	.891	7	0	1	0	1
42			min	0	1	.185	27	0	1	0	1
43		2	max	.595	14	.792	7	2.578	7	-.519	27
44			min	0	1	.154	27	.519	27	-2.578	7
45		3	max	.397	14	-.124	27	4.852	7	-.945	27
46			min	0	1	-.692	7	.945	27	-4.852	7
47		4	max	.198	14	-.154	27	2.578	7	-.519	27
48			min	0	1	-.792	7	.519	27	-2.578	7
49		5	max	0	27	-.185	27	0	1	0	1
50			min	0	1	-.891	7	0	1	0	1
51	M6	1	max	1.756	14	2.74	7	0	1	0	1
52			min	0	1	.545	27	0	1	0	1
53		2	max	1.317	14	.989	7	17.83	7	-3.469	27
54			min	0	1	.204	27	3.469	27	-17.83	7
55		3	max	.878	14	.769	7	23.787	7	-4.625	27
56			min	0	1	.137	27	4.625	27	-23.787	7
57		4	max	.439	14	-.204	27	17.872	7	-3.469	27
58			min	0	1	-.983	7	3.469	27	-17.872	7
59		5	max	0	27	-.545	27	0	1	0	1
60			min	0	1	-2.766	7	0	1	0	1
61	M7	1	max	2.708	14	1.635	7	0	1	0	1
62			min	0	1	.193	27	0	1	0	1
63		2	max	2.031	14	.818	7	8.159	7	-.961	27
64			min	0	1	.096	27	.961	27	-8.159	7
65		3	max	1.354	14	0	1	10.879	7	-1.282	27
66			min	0	1	0	1	1.282	27	-10.879	7
67		4	max	.677	14	-.096	27	8.159	7	-.961	27
68			min	0	1	-.818	7	.961	27	-8.159	7
69		5	max	0	27	-.193	27	0	1	0	1

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	Shear[ksi]	LC	Top Bending[k...	LC	Bottom Bendin...	LC
70			min	0	1	-1.635	7	0	1	0	1
71	M8	1	max	1.871	14	.586	7	0	1	0	1
72			min	0	1	.127	27	0	1	0	1
73		2	max	1.403	14	.293	7	2.019	7	-.438	27
74			min	0	1	.064	27	.438	27	-2.019	7
75		3	max	.935	14	0	1	2.692	7	-.584	27
76			min	0	1	0	1	.584	27	-2.692	7
77		4	max	.468	14	-.064	27	2.019	7	-.438	27
78			min	0	1	-.293	7	.438	27	-2.019	7
79		5	max	0	27	-.127	27	0	1	0	1
80			min	0	1	-.586	7	0	1	0	1
81	M9	1	max	1.548	14	2.68	7	0	1	0	1
82			min	0	1	.453	27	0	1	0	1
83		2	max	1.161	14	1.349	7	18.366	7	-3.051	27
84			min	0	1	.231	27	3.051	27	-18.366	7
85		3	max	.774	14	.035	7	24.638	7	-4.118	27
86			min	0	1	.01	27	4.118	27	-24.638	7
87		4	max	.387	14	-.212	27	18.922	7	-3.203	27
88			min	0	1	-1.279	7	3.203	27	-18.922	7
89		5	max	0	27	-.908	27	0	1	0	1
90			min	0	1	-4.293	7	0	1	0	1

Envelope Member Section Deflections Service

	Member	Sec		x [in]	LC	y [in]	LC	L/y' Ratio	LC
1	M1	1	max	0	27	0	15	NC	15
2			min	0	15	0	15	NC	15
3		2	max	0	22	-.004	27	NC	15
4			min	0	23	-.022	18	5756.84	18
5		3	max	0	22	-.006	27	NC	15
6			min	-.001	23	-.03	18	4101.749	18
7		4	max	0	22	-.004	27	NC	15
8			min	-.002	23	-.022	18	5756.84	18
9		5	max	0	22	0	15	NC	15
10			min	-.002	23	0	15	NC	15
11	M2	1	max	0	27	0	15	NC	15
12			min	0	15	0	15	NC	15
13		2	max	0	22	0	27	NC	15
14			min	0	23	-.005	18	NC	15
15		3	max	0	22	-.001	27	NC	15
16			min	0	23	-.007	18	NC	15
17		4	max	0	22	0	27	NC	15
18			min	0	23	-.005	18	NC	15
19		5	max	0	22	0	15	NC	15
20			min	-.001	23	0	15	NC	15
21	M3	1	max	0	27	0	15	NC	15
22			min	0	15	0	15	NC	15
23		2	max	0	22	-.022	27	9460.621	27
24			min	-.001	23	-.091	18	2280.94	18
25		3	max	0	22	-.031	27	6740.692	27
26			min	-.002	23	-.129	18	1611.661	18

Envelope Member Section Deflections Service (Continued)

	Member	Sec		x [in]	LC	y [in]	LC	L/y' Ratio	LC
27		4	max	0	22	-.022	27	9460.621	27
28			min	-.003	23	-.093	18	2243.334	18
29		5	max	0	22	0	15	NC	15
30			min	-.004	23	0	15	NC	15
31	M4	1	max	0	27	0	15	NC	15
32			min	0	15	0	15	NC	15
33		2	max	0	22	-.001	27	NC	15
34			min	0	23	-.005	18	NC	15
35		3	max	0	22	-.001	27	NC	15
36			min	0	23	-.006	18	NC	15
37		4	max	0	22	0	27	NC	15
38			min	0	23	-.004	18	NC	15
39		5	max	0	22	0	15	NC	15
40			min	0	23	0	15	NC	15
41	M5	1	max	0	27	0	15	NC	15
42			min	0	15	0	15	NC	15
43		2	max	0	22	-.004	27	NC	15
44			min	0	23	-.013	18	8614.827	18
45		3	max	0	22	-.005	27	NC	15
46			min	0	23	-.019	18	5957.68	18
47		4	max	0	22	-.004	27	NC	15
48			min	0	23	-.013	18	8615.243	18
49		5	max	0	22	0	15	NC	15
50			min	0	23	0	15	NC	15
51	M6	1	max	0	27	0	15	NC	15
52			min	0	15	0	15	NC	15
53		2	max	0	22	-.103	27	2416.761	27
54			min	-.001	23	-.374	18	667.894	18
55		3	max	0	22	-.146	27	1718.152	27
56			min	-.002	23	-.527	18	474.647	18
57		4	max	0	22	-.103	27	2416.747	27
58			min	-.003	23	-.375	18	667.555	18
59		5	max	0	22	0	15	NC	15
60			min	-.005	23	0	15	NC	15
61	M7	1	max	0	27	0	15	NC	15
62			min	0	15	0	15	NC	15
63		2	max	0	22	-.015	27	NC	27
64			min	-.001	23	-.087	18	1904.04	18
65		3	max	0	22	-.021	27	7762.003	27
66			min	-.002	23	-.123	18	1356.629	18
67		4	max	0	22	-.015	27	NC	27
68			min	-.003	23	-.087	18	1904.04	18
69		5	max	0	22	0	15	NC	15
70			min	-.005	23	0	15	NC	15
71	M8	1	max	0	27	0	15	NC	15
72			min	0	15	0	15	NC	15
73		2	max	0	22	-.003	27	NC	15
74			min	0	23	-.011	18	NC	15
75		3	max	0	22	-.005	27	NC	15
76			min	-.001	23	-.015	18	7480.627	18
77		4	max	0	22	-.003	27	NC	15
78			min	-.002	23	-.011	18	NC	15

Envelope Member Section Deflections Service (Continued)

	Member	Sec		x [in]	LC	y [in]	LC	L/y' Ratio	LC
79		5	max	0	22	0	15	NC	15
80			min	-.002	23	0	15	NC	15
81	M9	1	max	0	27	0	15	NC	15
82			min	0	15	0	15	NC	15
83		2	max	0	22	-.156	27	2191.609	27
84			min	-.001	23	-.649	18	527.105	18
85		3	max	0	22	-.22	27	1551.229	27
86			min	-.003	23	-.915	18	373.809	18
87		4	max	0	22	-.159	27	2157.063	27
88			min	-.004	23	-.656	18	521.725	18
89		5	max	0	22	0	15	NC	15
90			min	-.005	23	0	15	NC	15

Envelope Member Section Deflections Strength

	Member	Sec		x [in]	LC	y [in]	LC	L/y' Ratio	LC
1	M1	1	max	0	14	0	1	NC	1
2			min	0	1	0	1	NC	1
3		2	max	0	9	-.007	14	NC	1
4			min	0	11	-.032	7	3933.858	7
5		3	max	0	9	-.009	14	NC	2
6			min	-.002	11	-.044	7	2802.874	7
7		4	max	0	9	-.007	14	NC	1
8			min	-.003	11	-.032	7	3933.858	7
9		5	max	0	9	0	1	NC	1
10			min	-.004	11	0	1	NC	1
11	M2	1	max	0	14	0	1	NC	1
12			min	0	1	0	1	NC	1
13		2	max	0	9	-.001	14	NC	1
14			min	0	11	-.008	7	NC	1
15		3	max	0	9	-.002	14	NC	1
16			min	0	11	-.011	7	8003.294	7
17		4	max	0	9	-.001	14	NC	1
18			min	-.001	11	-.008	7	NC	1
19		5	max	0	9	0	1	NC	1
20			min	-.002	11	0	1	NC	1
21	M3	1	max	0	14	0	1	NC	1
22			min	0	1	0	1	NC	1
23		2	max	0	9	-.033	14	6307.081	14
24			min	-.002	11	-.132	7	1584.792	7
25		3	max	0	9	-.046	14	4493.795	14
26			min	-.003	11	-.186	7	1118.74	7
27		4	max	0	9	-.033	14	6307.081	14
28			min	-.005	11	-.134	7	1555.799	7
29		5	max	0	9	0	1	NC	1
30			min	-.007	11	0	1	NC	1
31	M4	1	max	0	14	0	1	NC	1
32			min	0	1	0	1	NC	1
33		2	max	0	9	-.002	14	NC	1
34			min	0	11	-.007	7	NC	1
35		3	max	0	9	-.002	14	NC	1

Envelope Member Section Deflections Strength (Continued)

	Member	Sec		x [in]	LC	y [in]	LC	L/y' Ratio	LC
36			min	0	11	-.008	7	8383.729	7
37		4	max	0	9	-.001	14	NC	1
38			min	0	11	-.005	7	NC	1
39		5	max	0	9	0	1	NC	1
40			min	0	11	0	1	NC	1
41	M5	1	max	0	14	0	1	NC	1
42			min	0	1	0	1	NC	1
43		2	max	0	9	-.006	14	NC	1
44			min	0	11	-.019	7	6097.813	7
45		3	max	0	9	-.008	14	NC	2
46			min	0	11	-.027	7	4215.522	7
47		4	max	0	9	-.006	14	NC	1
48			min	-.001	11	-.019	7	6098.111	7
49		5	max	0	9	0	1	NC	1
50			min	-.002	11	0	1	NC	1
51	M6	1	max	0	14	0	1	NC	1
52			min	0	1	0	1	NC	1
53		2	max	0	9	-.155	14	1611.174	14
54			min	-.002	11	-.53	7	471.756	7
55		3	max	0	9	-.218	14	1145.435	14
56			min	-.004	11	-.746	7	335.243	7
57		4	max	0	9	-.155	14	1611.165	14
58			min	-.006	11	-.53	7	471.486	7
59		5	max	0	9	0	1	NC	1
60			min	-.008	11	0	1	NC	1
61	M7	1	max	0	14	0	1	NC	1
62			min	0	1	0	1	NC	1
63		2	max	0	9	-.023	14	7262.693	14
64			min	-.002	11	-.13	7	1283.495	7
65		3	max	0	9	-.032	14	5174.669	14
66			min	-.004	11	-.182	7	914.49	7
67		4	max	0	9	-.023	14	7262.693	14
68			min	-.006	11	-.13	7	1283.495	7
69		5	max	0	9	0	1	NC	1
70			min	-.008	11	0	1	NC	1
71	M8	1	max	0	14	0	1	NC	1
72			min	0	1	0	1	NC	1
73		2	max	0	9	-.005	14	NC	1
74			min	0	11	-.015	7	7510.486	7
75		3	max	0	9	-.007	14	NC	1
76			min	-.002	11	-.021	7	5351.221	7
77		4	max	0	9	-.005	14	NC	1
78			min	-.003	11	-.015	7	7510.486	7
79		5	max	0	9	0	1	NC	1
80			min	-.004	11	0	1	NC	1
81	M9	1	max	0	14	0	1	NC	1
82			min	0	1	0	1	NC	1
83		2	max	0	9	-.234	14	1461.072	14
84			min	-.002	11	-.934	7	366.132	7
85		3	max	0	9	-.331	14	1034.153	14
86			min	-.005	11	-1.317	7	259.707	7
87		4	max	0	9	-.238	14	1438.042	14

Envelope Member Section Deflections Strength (Continued)

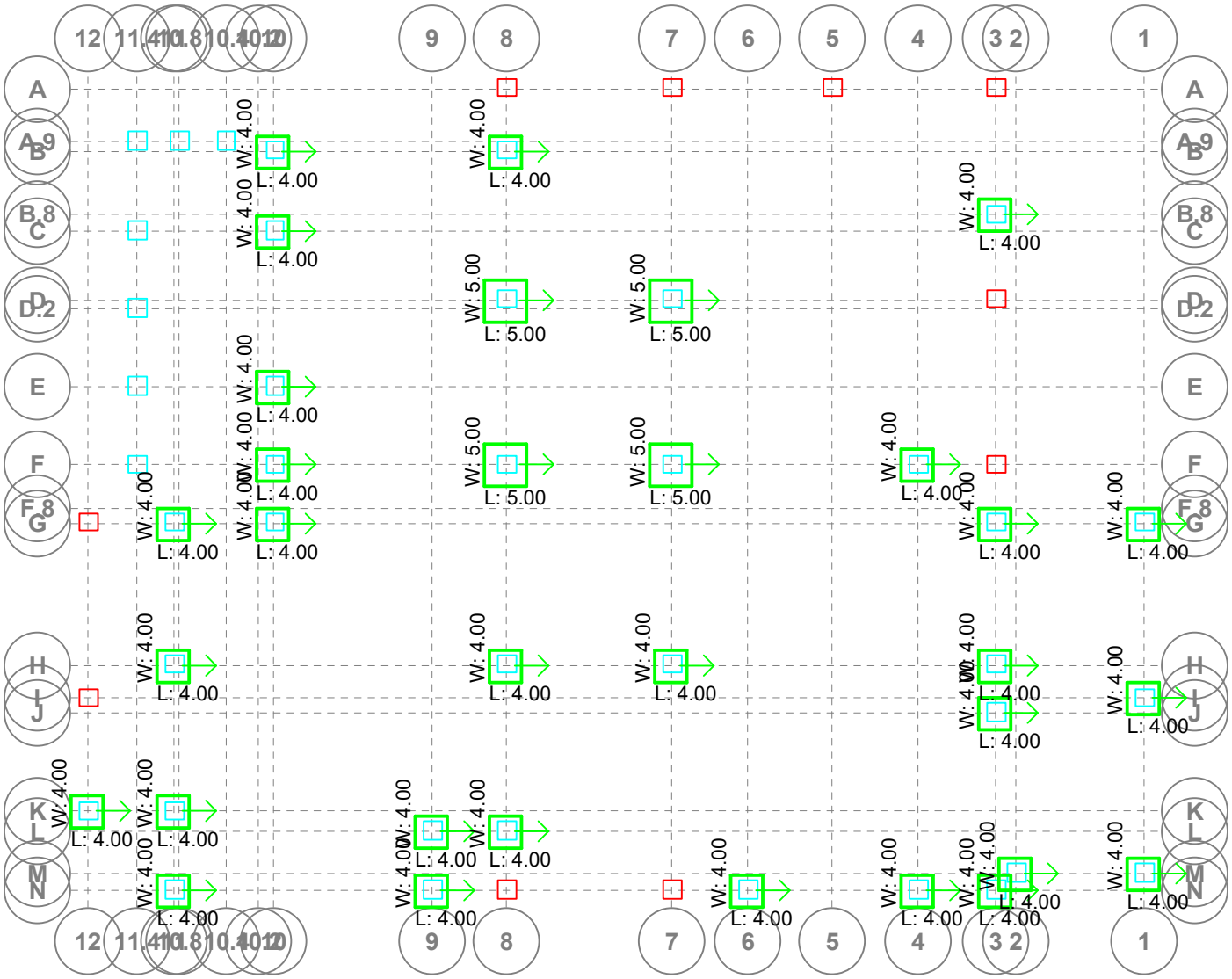
	Member	Sec		x [in]	LC	y [in]	LC	L/y' Ratio	LC
88			min	-.007	11	-.943	7	362.623	7
89		5	max	0	9	0	1	NC	1
90			min	-.009	11	0	1	NC	1

Envelope Beam Deflections

	Member Label	Span		Location [ft]	y' [in]	(n) L'/y' Ratio	LC
1	M1	1	max	.108	-.001	NC	18
2		1	min	5.188	-.044	2802	7
3	M2	1	max	5.165	-.001	NC	27
4		1	min	3.542	-.011	8003	7
5	M3	1	max	.181	-.001	NC	27
6		1	min	8.688	-.186	1118	7
7	M4	1	max	.367	-.001	NC	3
8		1	min	2.693	-.008	8308	7
9	M5	1	max	8.828	-.001	NC	27
10		1	min	4.708	-.027	4215	7
11	M6	1	max	.217	-.005	NC	27
12		1	min	10.417	-.746	335	7
13	M7	1	max	.145	-.001	NC	14
14		1	min	6.938	-.182	914	7
15	M8	1	max	.2	-.001	NC	18
16		1	min	4.791	-.021	5351	7
17	M9	1	max	.297	-.007	NC	27
18		1	min	14.25	-1.317	259	7

Envelope AISC 15th(360-16): LRFD Steel Code Checks

	Member	Shape	Code Check	Loc[ft]	LC	Shear ...	Loc[ft]	LC	phi*Pnc ...	phi*Pnt [k]	phi*Mn [...	Cb	Eqn
1	M1	W12X14	.352	4.863	8	.035	0	8	25.711	187.2	18.637	1	H1-1b
2	M2	W12X14	.192	0	14	.027	7.083	8	25.711	187.2	18.637	1	H1-1b*
3	M3	W14X22	.349	8.688	8	.052	17.375	8	76.263	292.05	60.169	1	H1-1b
4	M4	W16X26	.171	1.775	8	.083	0	8	104.48	345.6	89.352	1	H1-1b
5	M5	W14X22	.204	4.708	8	.030	0	8	76.263	292.05	60.169	1	H1-1b
6	M6	W14X22	.976	10.417	8	.092	20.833	8	76.263	292.05	60.169	1	H1-1b
7	M7	W12X14	.780	6.648	8	.061	0	8	25.711	187.2	18.637	1	H1-1b
8	M8	W12X14	.307	1.098	12	.022	0	8	25.711	187.2	18.637	1	H1-1a
9	M9	W16X31	.810	14.547	8	.143	28.5	8	135.094	410.85	121.525	1	H1-1b


12
11.4
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N
W: 4.00
L: 4.00
W: 5.00
L: 5.00

Load Combinations

LOAD CASE DEFINITIONS:

D	DeadLoad	RAMUSER
Lp	PosLiveLoad	RAMUSER
Sp	PosSnowLoad	RAMUSER
Sn	NegRoofLiveLoad	RAMUSER
W1	N to S	RAMUSERNODAL_W
W2	S to N	RAMUSERNODAL_W
W3	W to E	RAMUSERNODAL_W
W4	E to W	RAMUSERNODAL_W

CONCRETE COMBINATION CRITERIA:

Combination Code:	IBC 2018 / ASCE 7-16
Roof Live Load:	Snow
Live Load factor f1 (0.5 or 1.0)	0.500
Sds (for Ev)	0.500

GENERATED CONCRETE LOAD COMBINATIONS:

1	*	1.400 D
2	*	1.200 D + 1.600 Lp + 0.500 Sp
3	*	1.200 D + 1.600 Lp
4	*	1.200 D + 0.500 Lp + 1.600 Sp
5	*	1.200 D + 1.600 Sp
6	*	1.200 D + 1.600 Sn
7	*	1.200 D + 1.600 Sp + 0.500 W1
8	*	1.200 D + 1.600 Sp + 0.500 W2
9	*	1.200 D + 1.600 Sp + 0.500 W3
10	*	1.200 D + 1.600 Sp + 0.500 W4
11	*	1.200 D + 1.600 Sn + 0.500 W1
12	*	1.200 D + 1.600 Sn + 0.500 W2
13	*	1.200 D + 1.600 Sn + 0.500 W3
14	*	1.200 D + 1.600 Sn + 0.500 W4
15	*	1.200 D + 0.500 Lp + 0.500 Sp + 1.000 W1
16	*	1.200 D + 0.500 Lp + 0.500 Sp + 1.000 W2
17	*	1.200 D + 0.500 Lp + 0.500 Sp + 1.000 W3
18	*	1.200 D + 0.500 Lp + 0.500 Sp + 1.000 W4
19	*	1.200 D + 0.500 Lp + 1.000 W1
20	*	1.200 D + 0.500 Lp + 1.000 W2
21	*	1.200 D + 0.500 Lp + 1.000 W3
22	*	1.200 D + 0.500 Lp + 1.000 W4
23	*	1.200 D + 0.500 Sp + 1.000 W1
24	*	1.200 D + 0.500 Sp + 1.000 W2
25	*	1.200 D + 0.500 Sp + 1.000 W3
26	*	1.200 D + 0.500 Sp + 1.000 W4
27	*	1.200 D + 0.500 Sn + 1.000 W1
28	*	1.200 D + 0.500 Sn + 1.000 W2

29	*	1.200 D + 0.500 Sn + 1.000 W3
30	*	1.200 D + 0.500 Sn + 1.000 W4
31	*	1.200 D + 1.000 W1
32	*	1.200 D + 1.000 W2
33	*	1.200 D + 1.000 W3
34	*	1.200 D + 1.000 W4
35	*	0.900 D + 1.000 W1
36	*	0.900 D + 1.000 W2
37	*	0.900 D + 1.000 W3
38	*	0.900 D + 1.000 W4

SOIL COMBINATION CRITERIA:

Combination Code:	IBC 2018 / ASCE 7-16
Roof Live Load:	Snow
Sds (for Ev)	0.500

GENERATED SOIL LOAD COMBINATIONS:

39	*	1.000 D
40	*	1.000 D + 1.000 Lp
41	*	1.000 D + 1.000 Sp
42	*	1.000 D + 1.000 Sn
43	*	1.000 D + 0.750 Lp + 0.750 Sp
44	*	1.000 D + 0.600 W1
45	*	1.000 D + 0.600 W2
46	*	1.000 D + 0.600 W3
47	*	1.000 D + 0.600 W4
48	*	1.000 D + 0.750 Lp + 0.750 Sp + 0.450 W1
49	*	1.000 D + 0.750 Lp + 0.750 Sp + 0.450 W2
50	*	1.000 D + 0.750 Lp + 0.750 Sp + 0.450 W3
51	*	1.000 D + 0.750 Lp + 0.750 Sp + 0.450 W4
52	*	1.000 D + 0.750 Lp + 0.450 W1
53	*	1.000 D + 0.750 Lp + 0.450 W2
54	*	1.000 D + 0.750 Lp + 0.450 W3
55	*	1.000 D + 0.750 Lp + 0.450 W4
56	*	1.000 D + 0.750 Sp + 0.450 W1
57	*	1.000 D + 0.750 Sp + 0.450 W2
58	*	1.000 D + 0.750 Sp + 0.450 W3
59	*	1.000 D + 0.750 Sp + 0.450 W4
60	*	1.000 D + 0.750 Sn + 0.450 W1
61	*	1.000 D + 0.750 Sn + 0.450 W2
62	*	1.000 D + 0.750 Sn + 0.450 W3
63	*	1.000 D + 0.750 Sn + 0.450 W4
64	*	0.600 D + 0.600 W1
65	*	0.600 D + 0.600 W2
66	*	0.600 D + 0.600 W3
67	*	0.600 D + 0.600 W4

* = Load combination currently selected to use

Load Combination Forces

RAM Structural System
Bentley
RAM Foundation v17.02.01.23
DataBase: #221130#
Date: 08/16/21 16:53:47

Foundation Number: 1

CONCRETE LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psw+sr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(12 - K)	1	0.00	0.00	2.28	9.85	0.00	0.00	0.00
	2	0.00	0.00	3.51	8.45	0.00	0.00	0.00
	3	0.00	0.00	1.95	8.45	0.00	0.00	0.00
	4	0.00	0.00	6.95	8.45	0.00	0.00	0.00
	5	0.00	0.00	6.95	8.45	0.00	0.00	0.00
	6	0.00	0.00	1.95	8.45	0.00	0.00	0.00

SOIL LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(12 - K)	39	0.00	0.00	1.63	3.84	0.00	0.00	0.00
	40	0.00	0.00	1.63	3.84	0.00	0.00	0.00
	41	0.00	0.00	4.75	3.84	0.00	0.00	0.00
	42	0.00	0.00	1.63	3.84	0.00	0.00	0.00
	43	0.00	0.00	3.97	3.84	0.00	0.00	0.00

Foundation Number: 9

CONCRETE LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psw+sr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(11 - N)	1	0.00	0.00	7.43	9.85	0.00	0.00	0.00
	2	0.00	0.00	8.93	8.45	0.00	0.00	0.00
	3	0.00	0.00	6.37	8.45	0.00	0.00	0.00
	4	0.00	0.00	14.57	8.45	0.00	0.00	0.00
	5	0.00	0.00	14.57	8.45	0.00	0.00	0.00
	6	0.00	0.00	6.37	8.45	0.00	0.00	0.00

SOIL LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(11 - N)	39	0.00	0.00	5.30	3.84	0.00	0.00	0.00
	40	0.00	0.00	5.30	3.84	0.00	0.00	0.00
	41	0.00	0.00	10.43	3.84	0.00	0.00	0.00
	42	0.00	0.00	5.30	3.84	0.00	0.00	0.00
	43	0.00	0.00	9.15	3.84	0.00	0.00	0.00

Foundation Number: 10

CONCRETE LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psw+sr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(11 - K)	1	0.00	0.00	3.31	9.85	0.00	0.00	0.00
	2	0.00	0.00	4.49	8.45	0.00	0.00	0.00
	3	0.00	0.00	2.84	8.45	0.00	0.00	0.00
	4	0.00	0.00	8.14	8.45	0.00	0.00	0.00
	5	0.00	0.00	8.14	8.45	0.00	0.00	0.00
	6	0.00	0.00	2.84	8.45	0.00	0.00	0.00

SOIL LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(11 - K)	39	0.00	0.00	2.37	3.84	0.00	0.00	0.00
	40	0.00	0.00	2.37	3.84	0.00	0.00	0.00
	41	0.00	0.00	5.68	3.84	0.00	0.00	0.00
	42	0.00	0.00	2.37	3.84	0.00	0.00	0.00
	43	0.00	0.00	4.85	3.84	0.00	0.00	0.00

Foundation Number: 11

CONCRETE LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psw+sr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(11 - H)	1	0.00	0.00	17.89	9.85	0.00	0.00	0.00
	2	0.00	0.00	22.49	8.45	0.00	0.00	0.00
	3	0.00	0.00	15.34	8.45	0.00	0.00	0.00
	4	0.00	0.00	38.23	8.45	0.00	0.00	0.00
	5	0.00	0.00	38.23	8.45	0.00	0.00	0.00
	6	0.00	0.00	15.34	8.45	0.00	0.00	0.00

SOIL LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(11 - H)	39	0.00	0.00	12.78	3.84	0.00	0.00	0.00
	40	0.00	0.00	12.78	3.84	0.00	0.00	0.00
	41	0.00	0.00	27.09	3.84	0.00	0.00	0.00
	42	0.00	0.00	12.78	3.84	0.00	0.00	0.00
	43	0.00	0.00	23.51	3.84	0.00	0.00	0.00

Load Combination Forces

Foundation Number: 12

CONCRETE LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psw+sr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(11 - G)	1	0.00	0.00	5.26	9.85	0.00	0.00	0.00
	2	0.00	0.00	7.48	8.45	0.00	0.00	0.00
	3	0.00	0.00	4.51	8.45	0.00	0.00	0.00
	4	0.00	0.00	14.01	8.45	0.00	0.00	0.00
	5	0.00	0.00	14.01	8.45	0.00	0.00	0.00
	6	0.00	0.00	4.51	8.45	0.00	0.00	0.00

SOIL LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(11 - G)	39	0.00	0.00	3.76	3.84	0.00	0.00	0.00
	40	0.00	0.00	3.76	3.84	0.00	0.00	0.00
	41	0.00	0.00	9.69	3.84	0.00	0.00	0.00
	42	0.00	0.00	3.76	3.84	0.00	0.00	0.00
	43	0.00	0.00	8.21	3.84	0.00	0.00	0.00

Load Combination Forces

Foundation Number: 15

CONCRETE LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psw+sr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(10 - G)	1	0.00	0.00	4.67	9.85	0.00	0.00	0.00
	2	0.00	0.00	6.40	8.45	0.00	0.00	0.00
	3	0.00	0.00	4.00	8.45	0.00	0.00	0.00
	4	0.00	0.00	11.67	8.45	0.00	0.00	0.00
	5	0.00	0.00	11.67	8.45	0.00	0.00	0.00
	6	0.00	0.00	4.00	8.45	0.00	0.00	0.00

SOIL LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(10 - G)	39	0.00	0.00	3.34	3.84	0.00	0.00	0.00
	40	0.00	0.00	3.34	3.84	0.00	0.00	0.00
	41	0.00	0.00	8.13	3.84	0.00	0.00	0.00
	42	0.00	0.00	3.34	3.84	0.00	0.00	0.00
	43	0.00	0.00	6.93	3.84	0.00	0.00	0.00

Foundation Number: 16

CONCRETE LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psw+sr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(10 - F)	1	0.00	0.00	12.21	9.85	0.00	0.00	0.00
	2	0.00	0.00	15.60	8.45	0.00	0.00	0.00
	3	0.00	0.00	10.46	8.45	0.00	0.00	0.00
	4	0.00	0.00	26.90	8.45	0.00	0.00	0.00
	5	0.00	0.00	26.90	8.45	0.00	0.00	0.00
	6	0.00	0.00	10.46	8.45	0.00	0.00	0.00

SOIL LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(10 - F)	39	0.00	0.00	8.72	3.84	0.00	0.00	0.00
	40	0.00	0.00	8.72	3.84	0.00	0.00	0.00
	41	0.00	0.00	18.99	3.84	0.00	0.00	0.00
	42	0.00	0.00	8.72	3.84	0.00	0.00	0.00
	43	0.00	0.00	16.42	3.84	0.00	0.00	0.00

Load Combination Forces

Foundation Number: 17

CONCRETE LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psw+sr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(10 - E)	1	0.00	0.00	10.30	9.85	0.00	0.00	0.00
	2	0.00	0.00	13.23	8.45	0.00	0.00	0.00
	3	0.00	0.00	8.83	8.45	0.00	0.00	0.00
	4	0.00	0.00	22.93	8.45	0.00	0.00	0.00
	5	0.00	0.00	22.93	8.45	0.00	0.00	0.00
	6	0.00	0.00	8.83	8.45	0.00	0.00	0.00

SOIL LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(10 - E)	39	0.00	0.00	7.36	3.84	0.00	0.00	0.00
	40	0.00	0.00	7.36	3.84	0.00	0.00	0.00
	41	0.00	0.00	16.17	3.84	0.00	0.00	0.00
	42	0.00	0.00	7.36	3.84	0.00	0.00	0.00
	43	0.00	0.00	13.97	3.84	0.00	0.00	0.00

Foundation Number: 18

CONCRETE LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psw+sr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(10 - C)	1	0.00	0.00	11.22	9.85	0.00	0.00	0.00
	2	0.00	0.00	14.43	8.45	0.00	0.00	0.00
	3	0.00	0.00	9.62	8.45	0.00	0.00	0.00
	4	0.00	0.00	25.01	8.45	0.00	0.00	0.00
	5	0.00	0.00	25.01	8.45	0.00	0.00	0.00
	6	0.00	0.00	9.62	8.45	0.00	0.00	0.00

SOIL LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(10 - C)	39	0.00	0.00	8.01	3.84	0.00	0.00	0.00
	40	0.00	0.00	8.01	3.84	0.00	0.00	0.00
	41	0.00	0.00	17.64	3.84	0.00	0.00	0.00
	42	0.00	0.00	8.01	3.84	0.00	0.00	0.00
	43	0.00	0.00	15.23	3.84	0.00	0.00	0.00

Load Combination Forces

Foundation Number: 19

CONCRETE LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psw+sr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(10 - B)	1	0.00	0.00	6.63	9.85	0.00	0.00	0.00
	2	0.00	0.00	9.05	8.45	0.00	0.00	0.00
	3	0.00	0.00	5.68	8.45	0.00	0.00	0.00
	4	0.00	0.00	16.45	8.45	0.00	0.00	0.00
	5	0.00	0.00	16.45	8.45	0.00	0.00	0.00
	6	0.00	0.00	5.68	8.45	0.00	0.00	0.00

SOIL LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(10 - B)	39	0.00	0.00	4.74	3.84	0.00	0.00	0.00
	40	0.00	0.00	4.74	3.84	0.00	0.00	0.00
	41	0.00	0.00	11.46	3.84	0.00	0.00	0.00
	42	0.00	0.00	4.74	3.84	0.00	0.00	0.00
	43	0.00	0.00	9.78	3.84	0.00	0.00	0.00

Foundation Number: 20

CONCRETE LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psw+sr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(9 - N)	1	0.00	0.00	7.90	9.85	0.00	0.00	0.00
	2	0.00	0.00	10.46	8.45	0.00	0.00	0.00
	3	0.00	0.00	6.77	8.45	0.00	0.00	0.00
	4	0.00	0.00	18.57	8.45	0.00	0.00	0.00
	5	0.00	0.00	18.57	8.45	0.00	0.00	0.00
	6	0.00	0.00	6.77	8.45	0.00	0.00	0.00

SOIL LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(9 - N)	39	0.00	0.00	5.64	3.84	0.00	0.00	0.00
	40	0.00	0.00	5.64	3.84	0.00	0.00	0.00
	41	0.00	0.00	13.02	3.84	0.00	0.00	0.00
	42	0.00	0.00	5.64	3.84	0.00	0.00	0.00
	43	0.00	0.00	11.17	3.84	0.00	0.00	0.00

Foundation Number: 21

CONCRETE LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psw+sr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(9 - L)	1	0.00	0.00	3.43	9.85	0.00	0.00	0.00
	2	0.00	0.00	4.38	8.45	0.00	0.00	0.00
	3	0.00	0.00	2.94	8.45	0.00	0.00	0.00
	4	0.00	0.00	7.53	8.45	0.00	0.00	0.00
	5	0.00	0.00	7.53	8.45	0.00	0.00	0.00
	6	0.00	0.00	2.94	8.45	0.00	0.00	0.00

SOIL LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(9 - L)	39	0.00	0.00	2.45	3.84	0.00	0.00	0.00
	40	0.00	0.00	2.45	3.84	0.00	0.00	0.00
	41	0.00	0.00	5.32	3.84	0.00	0.00	0.00
	42	0.00	0.00	2.45	3.84	0.00	0.00	0.00
	43	0.00	0.00	4.60	3.84	0.00	0.00	0.00

Load Combination Forces

Foundation Number: 23

CONCRETE LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psw+sr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(8 - L)	1	0.00	0.00	3.39	9.85	0.00	0.00	0.00
	2	0.00	0.00	4.32	8.45	0.00	0.00	0.00
	3	0.00	0.00	2.91	8.45	0.00	0.00	0.00
	4	0.00	0.00	7.42	8.45	0.00	0.00	0.00
	5	0.00	0.00	7.42	8.45	0.00	0.00	0.00
	6	0.00	0.00	2.91	8.45	0.00	0.00	0.00

SOIL LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(8 - L)	39	0.00	0.00	2.42	3.84	0.00	0.00	0.00
	40	0.00	0.00	2.42	3.84	0.00	0.00	0.00
	41	0.00	0.00	5.24	3.84	0.00	0.00	0.00
	42	0.00	0.00	2.42	3.84	0.00	0.00	0.00
	43	0.00	0.00	4.54	3.84	0.00	0.00	0.00

Load Combination Forces

Foundation Number: 24

CONCRETE LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psw+sr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(8 - H)	1	0.00	0.00	23.02	9.85	0.00	0.00	0.00
	2	0.00	0.00	28.10	8.45	0.00	0.00	0.00
	3	0.00	0.00	19.73	8.45	0.00	0.00	0.00
	4	0.00	0.00	46.52	8.45	0.00	0.00	0.00
	5	0.00	0.00	46.52	8.45	0.00	0.00	0.00
	6	0.00	0.00	19.73	8.45	0.00	0.00	0.00

SOIL LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(8 - H)	39	0.00	0.00	16.45	3.84	0.00	0.00	0.00
	40	0.00	0.00	16.45	3.84	0.00	0.00	0.00
	41	0.00	0.00	33.18	3.84	0.00	0.00	0.00
	42	0.00	0.00	16.45	3.84	0.00	0.00	0.00
	43	0.00	0.00	29.00	3.84	0.00	0.00	0.00

Foundation Number: 25

CONCRETE LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psw+sr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(8 - F)	1	0.00	0.00	27.42	15.40	0.00	0.00	0.00
	2	0.00	0.00	32.81	13.20	0.00	0.00	0.00
	3	0.00	0.00	23.50	13.20	0.00	0.00	0.00
	4	0.00	0.00	53.27	13.20	0.00	0.00	0.00
	5	0.00	0.00	53.27	13.20	0.00	0.00	0.00
	6	0.00	0.00	23.50	13.20	0.00	0.00	0.00

SOIL LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(8 - F)	39	0.00	0.00	19.59	6.00	0.00	0.00	0.00
	40	0.00	0.00	19.59	6.00	0.00	0.00	0.00
	41	0.00	0.00	38.19	6.00	0.00	0.00	0.00
	42	0.00	0.00	19.59	6.00	0.00	0.00	0.00
	43	0.00	0.00	33.54	6.00	0.00	0.00	0.00

Load Combination Forces

Foundation Number: 26

CONCRETE LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psw+sr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(8 - D)	1	0.00	0.00	30.69	15.40	0.00	0.00	0.00
	2	0.00	0.00	35.48	13.20	0.00	0.00	0.00
	3	0.00	0.00	26.31	13.20	0.00	0.00	0.00
	4	0.00	0.00	55.66	13.20	0.00	0.00	0.00
	5	0.00	0.00	55.66	13.20	0.00	0.00	0.00
	6	0.00	0.00	26.31	13.20	0.00	0.00	0.00

SOIL LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(8 - D)	39	0.00	0.00	21.92	6.00	0.00	0.00	0.00
	40	0.00	0.00	21.92	6.00	0.00	0.00	0.00
	41	0.00	0.00	40.27	6.00	0.00	0.00	0.00
	42	0.00	0.00	21.92	6.00	0.00	0.00	0.00
	43	0.00	0.00	35.68	6.00	0.00	0.00	0.00

Load Combination Forces

Foundation Number: 27

CONCRETE LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psw+sr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(8 - B)	1	0.00	0.00	11.42	9.85	0.00	0.00	0.00
	2	0.00	0.00	13.18	8.45	0.00	0.00	0.00
	3	0.00	0.00	9.78	8.45	0.00	0.00	0.00
	4	0.00	0.00	20.67	8.45	0.00	0.00	0.00
	5	0.00	0.00	20.67	8.45	0.00	0.00	0.00
	6	0.00	0.00	9.78	8.45	0.00	0.00	0.00

SOIL LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(8 - B)	39	0.00	0.00	8.15	3.84	0.00	0.00	0.00
	40	0.00	0.00	8.15	3.84	0.00	0.00	0.00
	41	0.00	0.00	14.95	3.84	0.00	0.00	0.00
	42	0.00	0.00	8.15	3.84	0.00	0.00	0.00
	43	0.00	0.00	13.25	3.84	0.00	0.00	0.00

Load Combination Forces

Foundation Number: 30

CONCRETE LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psw+sr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(7 - H)	1	0.00	0.00	24.21	9.85	0.00	0.00	0.00
	2	0.00	0.00	29.59	8.45	0.00	0.00	0.00
	3	0.00	0.00	20.75	8.45	0.00	0.00	0.00
	4	0.00	0.00	49.05	8.45	0.00	0.00	0.00
	5	0.00	0.00	49.05	8.45	0.00	0.00	0.00
	6	0.00	0.00	20.75	8.45	0.00	0.00	0.00

SOIL LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(7 - H)	39	0.00	0.00	17.29	3.84	0.00	0.00	0.00
	40	0.00	0.00	17.29	3.84	0.00	0.00	0.00
	41	0.00	0.00	34.98	3.84	0.00	0.00	0.00
	42	0.00	0.00	17.29	3.84	0.00	0.00	0.00
	43	0.00	0.00	30.56	3.84	0.00	0.00	0.00

Load Combination Forces

Foundation Number: 31

CONCRETE LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psw+sr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(7 - F)	1	0.00	0.00	34.39	15.40	0.00	0.00	0.00
	2	0.00	0.00	38.72	13.20	0.00	0.00	0.00
	3	0.00	0.00	29.48	13.20	0.00	0.00	0.00
	4	0.00	0.00	59.04	13.20	0.00	0.00	0.00
	5	0.00	0.00	59.04	13.20	0.00	0.00	0.00
	6	0.00	0.00	29.48	13.20	0.00	0.00	0.00

SOIL LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(7 - F)	39	0.00	0.00	24.57	6.00	0.00	0.00	0.00
	40	0.00	0.00	24.57	6.00	0.00	0.00	0.00
	41	0.00	0.00	43.04	6.00	0.00	0.00	0.00
	42	0.00	0.00	24.57	6.00	0.00	0.00	0.00
	43	0.00	0.00	38.42	6.00	0.00	0.00	0.00

Load Combination Forces

Foundation Number: 32

CONCRETE LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psw+sr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(7 - D)	1	0.00	0.00	36.25	15.40	0.00	0.00	0.00
	2	0.00	0.00	40.24	13.20	0.00	0.00	0.00
	3	0.00	0.00	31.08	13.20	0.00	0.00	0.00
	4	0.00	0.00	60.40	13.20	0.00	0.00	0.00
	5	0.00	0.00	60.40	13.20	0.00	0.00	0.00
	6	0.00	0.00	31.08	13.20	0.00	0.00	0.00

SOIL LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(7 - D)	39	0.00	0.00	25.90	6.00	0.00	0.00	0.00
	40	0.00	0.00	25.90	6.00	0.00	0.00	0.00
	41	0.00	0.00	44.23	6.00	0.00	0.00	0.00
	42	0.00	0.00	25.90	6.00	0.00	0.00	0.00
	43	0.00	0.00	39.64	6.00	0.00	0.00	0.00

Foundation Number: 34

CONCRETE LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psw+sr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(6 - N)	1	0.00	0.00	7.22	9.85	0.00	0.00	0.00
	2	0.00	0.00	8.69	8.45	0.00	0.00	0.00
	3	0.00	0.00	6.19	8.45	0.00	0.00	0.00
	4	0.00	0.00	14.18	8.45	0.00	0.00	0.00
	5	0.00	0.00	14.18	8.45	0.00	0.00	0.00
	6	0.00	0.00	6.19	8.45	0.00	0.00	0.00

SOIL LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(6 - N)	39	0.00	0.00	5.16	3.84	0.00	0.00	0.00
	40	0.00	0.00	5.16	3.84	0.00	0.00	0.00
	41	0.00	0.00	10.15	3.84	0.00	0.00	0.00
	42	0.00	0.00	5.16	3.84	0.00	0.00	0.00
	43	0.00	0.00	8.90	3.84	0.00	0.00	0.00

Foundation Number: 36

CONCRETE LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psw+sr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(4 - N)	1	0.00	0.00	7.23	9.85	0.00	0.00	0.00
	2	0.00	0.00	9.19	8.45	0.00	0.00	0.00
	3	0.00	0.00	6.20	8.45	0.00	0.00	0.00
	4	0.00	0.00	15.79	8.45	0.00	0.00	0.00
	5	0.00	0.00	15.79	8.45	0.00	0.00	0.00
	6	0.00	0.00	6.12	8.45	0.00	0.00	0.00

SOIL LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(4 - N)	39	0.00	0.00	5.16	3.84	0.00	0.00	0.00
	40	0.00	0.00	5.16	3.84	0.00	0.00	0.00
	41	0.00	0.00	11.16	3.84	0.00	0.00	0.00
	42	0.00	0.00	5.11	3.84	0.00	0.00	0.00
	43	0.00	0.00	9.66	3.84	0.00	0.00	0.00

Foundation Number: 37

CONCRETE LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psw+sr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(4 - F)	1	0.00	0.00	26.53	9.85	0.00	0.00	0.00
	2	0.00	0.00	30.14	8.45	0.00	0.00	0.00
	3	0.00	0.00	22.74	8.45	0.00	0.00	0.00
	4	0.00	0.00	46.41	8.45	0.00	0.00	0.00
	5	0.00	0.00	46.41	8.45	0.00	0.00	0.00
	6	0.00	0.00	22.74	8.45	0.00	0.00	0.00

SOIL LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(4 - F)	39	0.00	0.00	18.95	3.84	0.00	0.00	0.00
	40	0.00	0.00	18.95	3.84	0.00	0.00	0.00
	41	0.00	0.00	33.75	3.84	0.00	0.00	0.00
	42	0.00	0.00	18.95	3.84	0.00	0.00	0.00
	43	0.00	0.00	30.05	3.84	0.00	0.00	0.00

Foundation Number: 38

CONCRETE LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psw+sr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(3 - N)	1	0.00	0.00	3.49	9.85	0.00	0.00	0.00
	2	0.00	0.00	4.74	8.45	0.00	0.00	0.00
	3	0.00	0.00	2.99	8.45	0.00	0.00	0.00
	4	0.00	0.00	8.59	8.45	0.00	0.00	0.00
	5	0.00	0.00	8.59	8.45	0.00	0.00	0.00
	6	0.00	0.00	2.99	8.45	0.00	0.00	0.00

SOIL LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(3 - N)	39	0.00	0.00	2.49	3.84	0.00	0.00	0.00
	40	0.00	0.00	2.49	3.84	0.00	0.00	0.00
	41	0.00	0.00	5.99	3.84	0.00	0.00	0.00
	42	0.00	0.00	2.49	3.84	0.00	0.00	0.00
	43	0.00	0.00	5.12	3.84	0.00	0.00	0.00

Foundation Number: 39

CONCRETE LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psw+sr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(3 - J)	1	0.00	0.00	5.42	9.85	0.00	0.00	0.00
	2	0.00	0.00	6.95	8.45	0.00	0.00	0.00
	3	0.00	0.00	4.64	8.45	0.00	0.00	0.00
	4	0.00	0.00	12.02	8.45	0.00	0.00	0.00
	5	0.00	0.00	12.02	8.45	0.00	0.00	0.00
	6	0.00	0.00	4.64	8.45	0.00	0.00	0.00

SOIL LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(3 - J)	39	0.00	0.00	3.87	3.84	0.00	0.00	0.00
	40	0.00	0.00	3.87	3.84	0.00	0.00	0.00
	41	0.00	0.00	8.48	3.84	0.00	0.00	0.00
	42	0.00	0.00	3.87	3.84	0.00	0.00	0.00
	43	0.00	0.00	7.33	3.84	0.00	0.00	0.00

Load Combination Forces

Foundation Number: 40

CONCRETE LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psw+sr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(3 - H)	1	0.00	0.00	18.06	9.85	0.00	0.00	0.00
	2	0.00	0.00	22.11	8.45	0.00	0.00	0.00
	3	0.00	0.00	15.48	8.45	0.00	0.00	0.00
	4	0.00	0.00	36.70	8.45	0.00	0.00	0.00
	5	0.00	0.00	36.70	8.45	0.00	0.00	0.00
	6	0.00	0.00	15.48	8.45	0.00	0.00	0.00

SOIL LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(3 - H)	39	0.00	0.00	12.90	3.84	0.00	0.00	0.00
	40	0.00	0.00	12.90	3.84	0.00	0.00	0.00
	41	0.00	0.00	26.16	3.84	0.00	0.00	0.00
	42	0.00	0.00	12.90	3.84	0.00	0.00	0.00
	43	0.00	0.00	22.84	3.84	0.00	0.00	0.00

Foundation Number: 41

CONCRETE LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psw+sr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(3 - G)	1	0.00	0.00	4.80	9.85	0.00	0.00	0.00
	2	0.00	0.00	6.62	8.45	0.00	0.00	0.00
	3	0.00	0.00	4.12	8.45	0.00	0.00	0.00
	4	0.00	0.00	12.14	8.45	0.00	0.00	0.00
	5	0.00	0.00	12.14	8.45	0.00	0.00	0.00
	6	0.00	0.00	4.12	8.45	0.00	0.00	0.00

SOIL LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(3 - G)	39	0.00	0.00	3.43	3.84	0.00	0.00	0.00
	40	0.00	0.00	3.43	3.84	0.00	0.00	0.00
	41	0.00	0.00	8.44	3.84	0.00	0.00	0.00
	42	0.00	0.00	3.43	3.84	0.00	0.00	0.00
	43	0.00	0.00	7.19	3.84	0.00	0.00	0.00

Foundation Number: 44

CONCRETE LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psw+sr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(3 - B.8)	1	0.00	0.00	8.04	9.85	0.00	0.00	0.00
	2	0.00	0.00	9.52	8.45	0.00	0.00	0.00
	3	0.00	0.00	6.90	8.45	0.00	0.00	0.00
	4	0.00	0.00	15.29	8.45	0.00	0.00	0.00
	5	0.00	0.00	15.29	8.45	0.00	0.00	0.00
	6	0.00	0.00	6.90	8.45	0.00	0.00	0.00

SOIL LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(3 - B.8)	39	0.00	0.00	5.75	3.84	0.00	0.00	0.00
	40	0.00	0.00	5.75	3.84	0.00	0.00	0.00
	41	0.00	0.00	11.00	3.84	0.00	0.00	0.00
	42	0.00	0.00	5.75	3.84	0.00	0.00	0.00
	43	0.00	0.00	9.68	3.84	0.00	0.00	0.00

Load Combination Forces

Foundation Number: 46

CONCRETE LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psw+sr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(2 - M)	1	0.00	0.00	3.08	9.85	0.00	0.00	0.00
	2	0.00	0.00	4.25	8.45	0.00	0.00	0.00
	3	0.00	0.00	2.64	8.45	0.00	0.00	0.00
	4	0.00	0.00	7.80	8.45	0.00	0.00	0.00
	5	0.00	0.00	7.80	8.45	0.00	0.00	0.00
	6	0.00	0.00	2.64	8.45	0.00	0.00	0.00

SOIL LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(2 - M)	39	0.00	0.00	2.20	3.84	0.00	0.00	0.00
	40	0.00	0.00	2.20	3.84	0.00	0.00	0.00
	41	0.00	0.00	5.43	3.84	0.00	0.00	0.00
	42	0.00	0.00	2.20	3.84	0.00	0.00	0.00
	43	0.00	0.00	4.62	3.84	0.00	0.00	0.00

Foundation Number: 47

CONCRETE LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psw+sr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(1 - M)	1	0.00	0.00	4.13	9.85	0.00	0.00	0.00
	2	0.00	0.00	6.35	8.45	0.00	0.00	0.00
	3	0.00	0.00	3.54	8.45	0.00	0.00	0.00
	4	0.00	0.00	12.52	8.45	0.00	0.00	0.00
	5	0.00	0.00	12.52	8.45	0.00	0.00	0.00
	6	0.00	0.00	3.54	8.45	0.00	0.00	0.00

SOIL LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(1 - M)	39	0.00	0.00	2.95	3.84	0.00	0.00	0.00
	40	0.00	0.00	2.95	3.84	0.00	0.00	0.00
	41	0.00	0.00	8.56	3.84	0.00	0.00	0.00
	42	0.00	0.00	2.95	3.84	0.00	0.00	0.00
	43	0.00	0.00	7.16	3.84	0.00	0.00	0.00

Foundation Number: 48

CONCRETE LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psw+sr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(1 - I)	1	0.00	0.00	7.55	9.85	0.00	0.00	0.00
	2	0.00	0.00	11.81	8.45	0.00	0.00	0.00
	3	0.00	0.00	6.47	8.45	0.00	0.00	0.00
	4	0.00	0.00	23.55	8.45	0.00	0.00	0.00
	5	0.00	0.00	23.55	8.45	0.00	0.00	0.00
	6	0.00	0.00	6.47	8.45	0.00	0.00	0.00

SOIL LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(1 - I)	39	0.00	0.00	5.39	3.84	0.00	0.00	0.00
	40	0.00	0.00	5.39	3.84	0.00	0.00	0.00
	41	0.00	0.00	16.07	3.84	0.00	0.00	0.00
	42	0.00	0.00	5.39	3.84	0.00	0.00	0.00
	43	0.00	0.00	13.40	3.84	0.00	0.00	0.00

Load Combination Forces

Foundation Number: 49

CONCRETE LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psw+sr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(1 - G)	1	0.00	0.00	4.49	9.85	0.00	0.00	0.00
	2	0.00	0.00	6.87	8.45	0.00	0.00	0.00
	3	0.00	0.00	3.85	8.45	0.00	0.00	0.00
	4	0.00	0.00	13.51	8.45	0.00	0.00	0.00
	5	0.00	0.00	13.51	8.45	0.00	0.00	0.00
	6	0.00	0.00	3.85	8.45	0.00	0.00	0.00

SOIL LOAD COMBINATION FORCES

Location	Ld Co #	Vmaj kip	Vmin kip	P kip	Psr kip	Mmaj kip-ft	Mmin kip-ft	Torsion kip-ft
(1 - G)	39	0.00	0.00	3.21	3.84	0.00	0.00	0.00
	40	0.00	0.00	3.21	3.84	0.00	0.00	0.00
	41	0.00	0.00	9.25	3.84	0.00	0.00	0.00
	42	0.00	0.00	3.21	3.84	0.00	0.00	0.00
	43	0.00	0.00	7.74	3.84	0.00	0.00	0.00

Spread Footing Design Summary

RAM Foundation v17.02.01.23
DataBase: #221130#
Building Code: IBC

Date: 08/16/21 16:53:47
Design Code: ACI318-14

Grid	Orientation Col/Foot	Dimensions (ft) Length	Width	Thick	f'c/fy ksi	Bottom Reinforcement Parallel to Length	Parallel to Width	Top Reinforcement Parallel to Length	Parallel to Width
(12 - K)	0.00/ 0.00	4.00	4.00	1.33	3.00/60.00	10-#4	10-#4	None	None
(11 - N)	0.00/ 0.00	4.00	4.00	1.33	3.00/60.00	10-#4	10-#4	None	None
(11 - K)	0.00/ 0.00	4.00	4.00	1.33	3.00/60.00	10-#4	10-#4	None	None
(11 - H)	0.00/ 0.00	4.00	4.00	1.33	3.00/60.00	10-#4	10-#4	None	None
(11 - G)	0.00/ 0.00	4.00	4.00	1.33	3.00/60.00	10-#4	10-#4	None	None
(10 - G)	0.00/ 0.00	4.00	4.00	1.33	3.00/60.00	10-#4	10-#4	None	None
(10 - F)	0.00/ 0.00	4.00	4.00	1.33	3.00/60.00	10-#4	10-#4	None	None
(10 - E)	0.00/ 0.00	4.00	4.00	1.33	3.00/60.00	10-#4	10-#4	None	None
(10 - C)	0.00/ 0.00	4.00	4.00	1.33	3.00/60.00	10-#4	10-#4	None	None
(10 - B)	0.00/ 0.00	4.00	4.00	1.33	3.00/60.00	10-#4	10-#4	None	None
(9 - N)	0.00/ 0.00	4.00	4.00	1.33	3.00/60.00	10-#4	10-#4	None	None
(9 - L)	0.00/ 0.00	4.00	4.00	1.33	3.00/60.00	10-#4	10-#4	None	None
(8 - L)	0.00/ 0.00	4.00	4.00	1.33	3.00/60.00	10-#4	10-#4	None	None
(8 - H)	0.00/ 0.00	4.00	4.00	1.33	3.00/60.00	10-#4	10-#4	None	None
(8 - F)	0.00/ 0.00	5.00	5.00	1.33	3.00/60.00	9-#4	9-#4	None	None
(8 - D)	0.00/ 0.00	5.00	5.00	1.33	3.00/60.00	9-#4	9-#4	None	None
(8 - B)	0.00/ 0.00	4.00	4.00	1.33	3.00/60.00	10-#4	10-#4	None	None
(7 - H)	0.00/ 0.00	4.00	4.00	1.33	3.00/60.00	10-#4	10-#4	None	None
(7 - F)	0.00/ 0.00	5.00	5.00	1.33	3.00/60.00	9-#4	9-#4	None	None
(7 - D)	0.00/ 0.00	5.00	5.00	1.33	3.00/60.00	9-#4	9-#4	None	None
(6 - N)	0.00/ 0.00	4.00	4.00	1.33	3.00/60.00	10-#4	10-#4	None	None
(4 - N)	0.00/ 0.00	4.00	4.00	1.33	3.00/60.00	10-#4	10-#4	None	None
(4 - F)	0.00/ 0.00	4.00	4.00	1.33	3.00/60.00	10-#4	10-#4	None	None
(3 - N)	0.00/ 0.00	4.00	4.00	1.33	3.00/60.00	10-#4	10-#4	None	None
(3 - J)	0.00/ 0.00	4.00	4.00	1.33	3.00/60.00	10-#4	10-#4	None	None
(3 - H)	0.00/ 0.00	4.00	4.00	1.33	3.00/60.00	10-#4	10-#4	None	None
(3 - G)	0.00/ 0.00	4.00	4.00	1.33	3.00/60.00	10-#4	10-#4	None	None
(3 - B.8)	0.00/ 0.00	4.00	4.00	1.33	3.00/60.00	10-#4	10-#4	None	None
(2 - M)	0.00/ 0.00	4.00	4.00	1.33	3.00/60.00	10-#4	10-#4	None	None
(1 - M)	0.00/ 0.00	4.00	4.00	1.33	3.00/60.00	10-#4	10-#4	None	None

(1 - I)	0.00/ 0.00	4.00	4.00	1.33	3.00/60.00	10-#4	10-#4	None	None
(1 - G)	0.00/ 0.00	4.00	4.00	1.33	3.00/60.00	10-#4	10-#4	None	None

Note: Number between () in reinforcement is quantity of bars in center strip of rectangular footing

Project	221130		
Date	7/29/2021		
By	AI		
Code	ASCE 7-16		
	IBC 2018		
	AISE 360-16(15th Edition)		

Title	Out of Plane Tubes

Name	X-Location	Y-Location	Length(ft)	Top Flange Height(ft-in)		Tube Height(ft-in)		Stud Height(ft-in)		Stud Load(psf)	Stud Load(lb/ft)	
OPT-1	1	M-I	21.5	117ft-5 31/32		110ft-6 1/2in		121ft-0in		20	209.16	
		I-G		17.497	ft	10.542	ft	21	ft		0.2092	kip/ft

Width of TA of tube(ft) 8.749

Column Length(ft) 17.497

Summary OPT-1	
Stud L. (kip/ft)	0.2092
Wind Load(kip/ft)	
Zone 4 (kip/ft)	0.224
Zone 5 (kip/ft)	0.2423
a-value (ft)	7

Results OPT-1					
Tubes size	HSS10X6X5		Deflection Tube Gravity(in)	0.3403	Good
Column Size	HSS6X6X4		Deflection Tube Wind(in)	0.6305	Good
Allowable Deflection Tube (Gravity Dir.(in))	L/360*0.7	1.0238	Deflection Column(in)	0.3397	Good
Allowable Deflection Tube (Wind Dir.(in))	L/360*0.7	1.0238	Code Check Beam	0.38	
Allowable Deflection Column(in)	L/400	0.5249	Column	0.04,0.29	

Max Colunm Def. in frame

Area Effective(ft^2)			C&C Wind Pressures(psf)		Wind Load(lb/ft)			
Ae(1)	L*L/3	154.083	+VE AllZones	23.2	202.977	0.203	Kip/ft	a-value(ft) 7
Ae(2)	Trib.Area	188.093	Zone 4	-25.6	-223.974	0.224	Kip/ft	
			Zone 5	-27.7	-242.347	0.2423	Kip/ft	

Note: Both out of plane tubes have same length and same elevation so the values are applicable for BOTH!!!!

Used Ae(ft^2)			Max Pressure(psf)	Wind Load(kip/ft)
154.083		Conservative	27.7	0.2423

Name	X-Location	Y-Location	Length(ft)	Top Flange Height(ft-in)		Tube Height(ft-in)		Stud Height(ft-in)		Stud Load(psf)	Stud Load(lb/ft)	
OPT-2	7-6	M-N	9.417	117ft-6 17/32in		110ft-6 1/2in		119ft-0in		20	169.16	
				17.544	ft	10.542	ft	19	ft		0.169	kip/ft

Width of TA of tube(ft) 8.772

Column Length(ft) 17.544

Summary OPT-2	
Stud L. (kip/ft)	0.169
Wind Load(kip/ft)	
Zone 4 (kip/ft)	0.2509
Zone 5 (kip/ft)	0.2947
a-value (ft)	7.02

Results OPT-2					
Tubes size	HSS10X6X5		Deflection Tube Gravity(in)	0.0112	Good
Column Size	HSS6X6X4		Deflection Tube Wind(in)	0.4958	Good
Allowable Deflection Tube (Gravity Dir.(in))	L/360*0.6	0.5232	Deflection Column(in)	0.5072	Good
Allowable Deflection Tube (Wind Dir.(in))	L/360*0.6	0.5232	Code Check Beam	0.08	
Allowable Deflection Column(in)	L/400	0.5263	Column	0.17,0.44	

Max Colunm Def. in frame

Area Effective(ft^2)			C&C Wind Pressures(psf)		Wind Load(lb/ft)			
Ae(1)	L*L/3	29.56	+VE AllZones	26.2	229.826	0.2298	Kip/ft	a-value(ft) 7.02
Ae(2)	Trib.Area	82.606	Zone 4	-28.6	-250.879	0.2509	Kip/ft	
			Zone 5	-33.6	-294.739	0.2947	Kip/ft	

Used Ae(ft^2)			Max Pressure(psf)	Wind Load(kip/ft)
29.56		Conservative	33.6	0.2947

Name	X-Location	Y-Location	Length(ft)	Top Flange Height(ft-in)		Tube Height(ft-in)		Stud Height(ft-in)		Stud Load(psf)	Stud Load(lb/ft)	
OPT-3	6-4	M-N	20.833	117ft-6 17/32in		110ft-6 1/2in		119ft-0in		20	169.16	
				17.544	ft	10.542	ft	19	ft		0.169	kip/ft

Width of TA of tube(ft) 8.772

Column Length(ft) 17.544

Summary OPT-3	
Stud L. (kip/ft)	0.169
Wind Load(kip/ft)	
Zone 4 (kip/ft)	0.2254
Zone 5 (kip/ft)	0.2447
a-value (ft)	7.02

Results OPT-3					
Tubes size	HSS10X6X5		Deflection Tube Gravity(in)	0.2513	Good
Column Size	HSS6X6X4		Deflection Tube Wind(in)	0.8819	Good
Allowable Deflection Tube (Gravity Dir.(in))	L/360*0.7	0.992	Deflection Column(in)	0.5072	Good
Allowable Deflection Tube (Wind Dir.(in))	L/360*0.7	0.992	Code Check Beam	0.33	
Allowable Deflection Column(in)	L/400	0.5263	Column	0.44,0.45	

Max Colunm Def. in frame

Area Effective(ft^2)			C&C Wind Pressures(psf)		Wind Load(lb/ft)			
Ae(1)	L*L/3	144.671	+VE AllZones	23.4	205.265	0.2053	Kip/ft	a-value(ft) 7.02
Ae(2)	Trib.Area	182.747	Zone 4	-25.7	-225.44	0.2254	Kip/ft	
			Zone 5	-27.9	-244.739	0.2447	Kip/ft	

Used Ae(ft^2)			Max Pressure(psf)	Wind Load(kip/ft)
144.671		Conservative	27.9	0.2447

Name	X-Location	Y-Location	Length(ft)	Top Flange Height(ft-in)		Tube Height(ft-in)		Stud Height(ft-in)		Stud Load(psf)	Stud Load(lb/ft)	
OPT-4	4-3	M-N	9.625	117ft-6 17/32in		110ft-6 1/2in		119ft-0in		20	169.16	
				17.544	ft	10.542	ft	19	ft		0.169	kip/ft

Width of TA of tube(ft) 8.772

Column Length(ft) 17.544

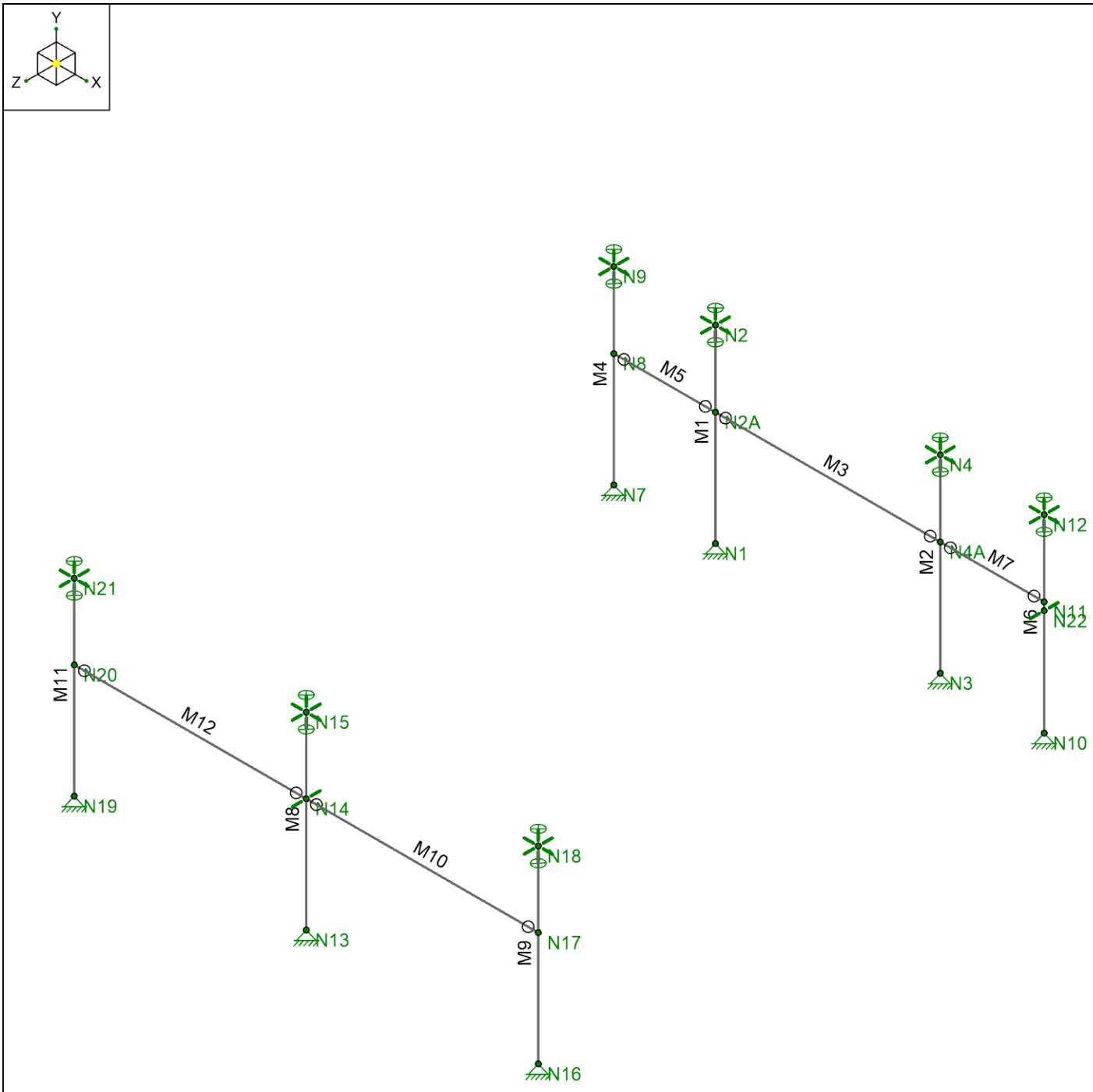
Summary OPT-4	
Stud L. (kip/ft)	0.169
Wind Load(kip/ft)	
Zone 4 (kip/ft)	0.25
Zone 5 (kip/ft)	0.2939
a-value (ft)	7.02

Results OPT-4					
Tubes size	HSS10X6X5		Deflection Tube Gravity(in)	0.0121	Good
Column Size	HSS6X6X4		Deflection Tube Wind(in)	0.4944	Good
Allowable Deflection Tube (Gravity Dir.(in))	L/360*0.6	0.5347	Deflection Column(in)	0.5072	Good
Allowable Deflection Tube (Wind Dir.(in))	L/360*0.6	0.5347	Code Check Beam	0.08	
Allowable Deflection Column(in)	L/400	0.5263	Column	0.45,0.04	

Max Colunm Def. in frame

Area Effective(ft^2)			C&C Wind Pressures(psf)		Wind Load(lb/ft)			
Ae(1)	L*L/3	30.88	+VE AllZones	26.1	228.949	0.2289	Kip/ft	a-value(ft) 7.02
Ae(2)	Trib.Area	84.431	Zone 4	-28.5	-250.002	0.25	Kip/ft	
			Zone 5	-33.5	-293.862	0.2939	Kip/ft	

Used Ae(ft^2)			Max Pressure(psf)	Wind Load(kip/ft)
30.88		Conservative	33.5	0.2939



HGA	Cooper's Hawk Lee Summit - OOP Tubes	SK-3
AI		Aug 17, 2021 at 11:43 AM
221130		221130 Out of Plane Tubes.r3d

Nodes

	Label	X [ft]	Y [ft]	Z [ft]	Temp [deg F]	Detach From Dia…
1	N1	9.417	0	0		
2	N2A	9.417	10.542	0		
3	N2	9.417	17.544	0		
4	N3	30.25	0	0		
5	N4A	30.25	10.542	0		
6	N4	30.25	17.544	0		
7	N7	0	0	0		
8	N8	0	10.542	0		
9	N9	0	17.544	0		
10	N10	39.875	0	0		
11	N11	39.875	10.542	0		
12	N12	39.875	17.544	0		
13	N13	21.5	0	50		
14	N14	21.5	10.542	50		
15	N15	21.5	17.497	50		
16	N16	43	0	50		
17	N17	43	10.542	50		
18	N18	43	17.497	50		
19	N19	0	0	50		
20	N20	0	10.542	50		
21	N21	0	17.497	50		
22	N22	39.875	9.8334	0		

Boundary Conditions

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
1	N22			Reaction			
2	N1	Reaction	Reaction	Reaction			
3	N3	Reaction	Reaction	Reaction			
4	N2	Reaction	Reaction	Reaction		Reaction	
5	N4	Reaction	Reaction	Reaction		Reaction	
6	N7	Reaction	Reaction	Reaction			
7	N9	Reaction	Reaction	Reaction		Reaction	
8	N10	Reaction	Reaction	Reaction			
9	N12	Reaction	Reaction	Reaction		Reaction	
10	N13	Reaction	Reaction	Reaction			
11	N15	Reaction	Reaction	Reaction		Reaction	
12	N16	Reaction	Reaction	Reaction			
13	N18	Reaction	Reaction	Reaction		Reaction	
14	N19	Reaction	Reaction	Reaction			
15	N21	Reaction	Reaction	Reaction		Reaction	
16	N14			Reaction			

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. C…	Density [k…	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.…	29000	11154	0.3	0.65	0.527	42	1.4	58	1.3
5	A500 Gr.…	29000	11154	0.3	0.65	0.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2
7	A1085	29000	11154	0.3	0.65	0.49	50	1.4	65	1.3
8	A913 Gr.65	29000	11154	0.3	0.65	0.49	65	1.1	80	1.1

Cold Formed Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff…	Density [k/ft³]	Yield [ksi]	Fu [ksi]
1	A653 SS Gr33	29500	11346	0.3	0.65	0.49	33	45
2	A653 SS Gr…	29500	11346	0.3	0.65	0.49	50	65

General Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e…	Density [k/ft³]
1	gen_Conc3NW	3155	1372	0.15	0.6	0.145
2	gen_Conc4NW	3644	1584	0.15	0.6	0.145
3	gen_Conc3LW	2085	906	0.15	0.6	0.11
4	gen_Conc4LW	2408	1047	0.15	0.6	0.11
5	gen_Alum	10100	4077	0.3	1.29	0.173
6	gen_Steel	29000	11154	0.3	0.65	0.49
7	gen_Plywood	1800	38	0	0.3	0.035
8	RIGID	1e+06		0.3	0	0

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
1	Column	HSS6X6X6	Column	None	A500 Gr.…	Typical	7.58	39.5	39.5	64.6
2	Beam w B…	HSS12X6…	Beam	None	A500 Gr.…	Typical	11.8	72.9	215	178
3	Beam 1	HSS10X6…	Beam	None	A500 Gr.…	Typical	10.4	61.8	137	139

Cold Formed Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
1	CF1A	8CU1.25…	Beam	None	A653 SS…	Typical	0.581	0.057	4.41	0.00063

General Section Sets

	Label	Shape	Type	Material	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
1	GEN1A	RE4X4	Beam	gen_Conc3NW	16	21.333	21.333	31.573
2	RIGID		None	RIGID	1e+06	1e+06	1e+06	1e+06

Hot Rolled Member Properties

	Label	Shape	Length [ft]	Lb y-y [ft]	Lb z-z [ft]	Lcomp t…	Lcomp…	L-Torqu…	K y-y	K z-z	Cb	Function
1	M1	Column	17.544									Lateral
2	M2	Column	17.544									Lateral
3	M3	Beam 1	20.833									Lateral
4	M4	Column	17.544									Lateral
5	M5	Beam 1	9.417									Lateral
6	M6	Column	17.544									Lateral
7	M7	Beam 1	9.625			Lbyy						Lateral
8	M8	Column	17.497									Lateral
9	M9	Column	17.497									Lateral
10	M10	Beam w…	21.5									Lateral
11	M11	Column	17.497									Lateral
12	M12	Beam w…	21.5									Lateral

Design Size and Code Check Parameters

	Label	Max Depth [in]	Min Depth [in]	Max Width [in]	Min Width [in]	Max Bending…	Max Shear Chk
1	Typical					1	1

Basic Load Cases

	BLC Desc…	Category	X Gravity	Y Gravity	Z Gravity	Nodal	Point	Distributed	Area(Me…	Surface(P…
1	DL	DL		-1				5		
2	WL	WLZ						7		

Load Combinations

	De…	So…	PD…	SR…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…
1	IB…	Yes	Y		DL	1.4																		
2	IB…	Yes	Y		DL	1.2	LL	1.6	LLS	1.6														
3	IB…	Yes	Y		DL	1.2	WLX	0.5																
4	IB…	Yes	Y		DL	1.2	WLZ	0.5																
5	IB…	Yes	Y		DL	1.2	WLX	1	LL	0.5	LLS	1												

Load Combinations (Continued)

	De…	So…	PD…	SR…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…
6	IB…	Yes	Y		DL	1.2	WLZ	1	LL	0.5	LLS	1												
7	IB…	Yes	Y		DL	0.9	WLX	1																
8	IB…	Yes	Y		DL	0.9	WLZ	1																
9	IB…	Yes	Y		DL	1																		
10	IB…	Yes	Y		DL	1	LL	1	LLS	1														
11	IB…	Yes	Y		DL	1	WLX	0.6																
12	IB…	Yes	Y		DL	1	WLZ	0.6																
13	IB…	Yes	Y		DL	1	WLX	0.45	LL	0.75	LLS	0.75												
14	IB…	Yes	Y		DL	1	WLZ	0.45	LL	0.75	LLS	0.75												
15	IB…	Yes	Y		DL	0.6	WLX	0.6																
16	IB…	Yes	Y		DL	0.6	WLZ	0.6																

Load Combination Design

	Descript…	ASIF		Service	Hot Rolled	Cold Fo…	Wood	Concrete	Masonry	Aluminum	Stainless	Connec…
1	IBC 16-1				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	IBC 16-…				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	IBC 16-…				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	IBC 16-…				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	IBC 16-…				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	IBC 16-…				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	IBC 16-…				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	IBC 16-…				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9	IBC 16-8		0.9	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10	IBC 16-9			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
11	IBC 16-…		1.6	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
12	IBC 16-…		1.6	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
13	IBC 16-…		1.6	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
14	IBC 16-…		1.6	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
15	IBC 16-…		1.6	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
16	IBC 16-…		1.6	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Node Reactions

No Data to Print...

Node Deflections

No Data to Print...

Node Reactions

	Node…		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N22	max	0	16	0	16	1.483	8	0	16	0	16	0	16
2		min	0	1	0	1	0	1	0	1	0	1	0	1
3	N1	max	0	16	2.099	1	1.4647	8	0	16	0	16	0	16
4		min	0	1	0.8996	15	0	1	0	1	0	1	0	1
5	N3	max	0	16	2.1111	1	1.4344	8	0	16	0	16	0	16
6		min	0	1	0.9048	15	0	1	0	1	0	1	0	1
7	N2	max	0	16	2.988	1	2.4091	6	0	16	0	16	0	16
8		min	0	1	1.2806	15	0	1	0	1	0	1	0	1
9	N4	max	0	16	3.0062	1	2.4662	6	0	16	0	16	0	16
10		min	0	1	1.2884	15	0	1	0	1	0	1	0	1
11	N7	max	0	16	0.8881	1	0.6203	8	0	16	0	16	0	16
12		min	0	1	0.3806	15	0	1	0	1	0	1	0	1
13	N9	max	0	1	1.1648	1	0.7677	6	0	16	0	16	0	16
14		min	0	15	0.4992	15	0	1	0	1	0	1	0	1
15	N10	max	0	16	0.9002	1	0.0292	8	0	16	0	16	0	16
16		min	0	1	0.3858	15	0	1	0	1	0	1	0	1
17	N12	max	0	16	1.183	1	0	15	0	16	0	16	0	16

Node Reactions (Continued)

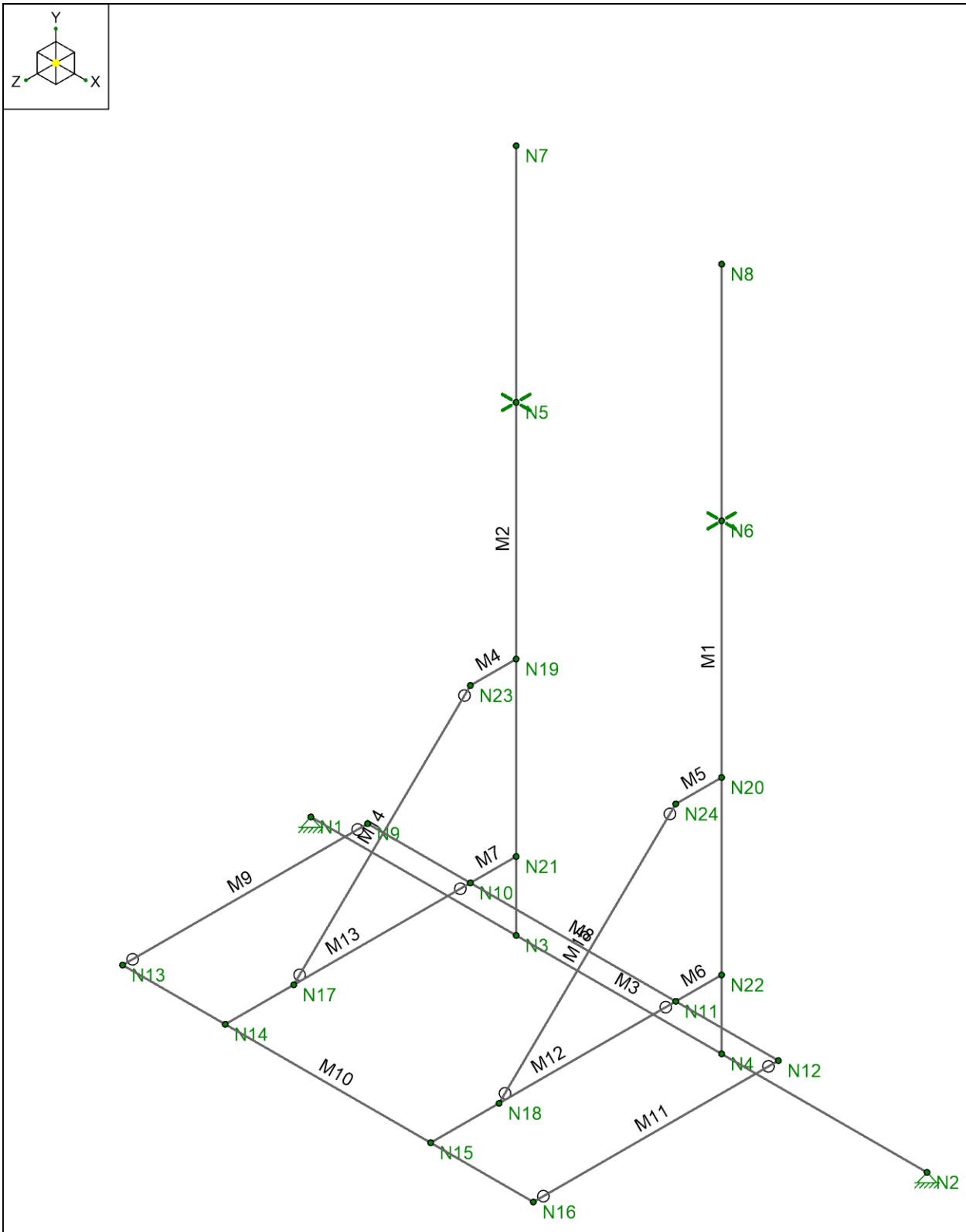
	Node…		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
18		min	0	1	0.507	15	-0.0977	8	0	1	0	1	0	1
19	N13	max	0	16	6.2405	1	0.0584	8	0	16	0	16	0	16
20		min	0	1	2.6745	15	0	1	0	1	0	1	0	1
21	N15	max	0	16	9.2838	1	0	15	0	16	0	16	0	16
22		min	0	1	3.9788	15	-0.1332	8	0	1	0	1	0	1
23	N16	max	0	16	3.2902	1	0.9818	8	0	16	0	16	0	16
24		min	0	1	1.4101	15	0	1	0	1	0	1	0	1
25	N18	max	0	16	4.8118	1	1.626	6	0	16	0	16	0	16
26		min	0	1	2.0622	15	0	1	0	1	0	1	0	1
27	N19	max	0	16	3.2902	1	0.9818	8	0	16	0	16	0	16
28		min	0	1	1.4101	15	0	1	0	1	0	1	0	1
29	N21	max	0	16	4.8118	1	1.626	6	0	16	0	16	0	16
30		min	0	1	2.0622	15	0	1	0	1	0	1	0	1
31	N14	max	0	16	0	16	5.2843	8	0	16	0	16	0	16
32		min	0	1	0	1	0	1	0	1	0	1	0	1
33	Totals:	max	0	16	46.0687	1	20.9896	8						
34		min	0	1	19.7437	15	0	1						

Node Displacements

	Node…		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rota…	LC	Y Rota…	LC	Z Rota…	LC
1	N1	max	0	1	0	16	0	15	0	15	0	16	0	16
2		min	0	15	0	1	0	8	-8.120…	8	0	1	0	1
3	N2A	max	0	1	-0.0005	16	0	15	2.1506…	8	0	16	0	1
4		min	0	15	-0.0011	1	-0.5989	8	0	1	0	1	0	15
5	N2	max	0	1	0	16	0	15	9.5256…	8	0	16	0	1
6		min	0	15	0	1	0	6	0	1	0	1	0	15
7	N3	max	0	1	0	16	0	15	0	15	0	16	0	16
8		min	0	15	0	1	0	8	-8.041…	8	0	1	0	1
9	N4A	max	0	1	-0.0005	16	0	15	2.0181…	8	0	16	0	1
10		min	0	15	-0.0011	1	-0.5977	8	0	1	0	1	0	15
11	N4	max	0	1	0	16	0	15	9.5688…	8	0	16	0	1
12		min	0	15	0	1	0	6	0	1	0	1	0	15
13	N7	max	0	1	0	16	0	15	0	15	0	16	0	16
14		min	0	15	0	1	0	8	-3.226…	8	0	1	0	1
15	N8	max	0	1	-0.0002	16	0	15	1.112e…	8	0	16	0	1
16		min	0	15	-0.0004	1	-0.2272	8	0	1	0	1	0	15
17	N9	max	0	16	0	16	0	15	3.471e…	8	0	16	0	16
18		min	0	1	0	1	0	6	0	1	0	1	0	1
19	N10	max	0	1	0	16	0	15	0	15	0	16	0	16
20		min	0	15	0	1	0	8	-5.834…	8	0	1	0	1
21	N11	max	0	1	-0.0002	16	0.0009	8	1.9214…	8	0	16	0	1
22		min	0	15	-0.0004	1	0	1	0	1	0	1	0	15
23	N12	max	0	1	0	16	0	8	0	15	0	16	0	1
24		min	0	15	0	1	0	1	-1.090…	8	0	1	0	15
25	N13	max	0	16	0	16	0	15	0	15	0	16	0	16
26		min	0	1	0	1	0	8	-1.344…	8	0	1	0	1
27	N14	max	0	16	-0.0015	16	0	15	2.7328…	8	0	16	0	16
28		min	0	1	-0.0035	1	0	8	0	1	0	1	0	1
29	N15	max	0	16	0	16	0	8	0	15	0	16	0	16
30		min	0	1	0	1	0	1	-1.316…	8	0	1	0	1
31	N16	max	0	16	0	16	0	15	0	15	0	16	0	16
32		min	0	1	0	1	0	8	-5.426…	8	0	1	0	1
33	N17	max	0	16	-0.0008	16	0	15	1.4753…	8	0	16	0	16
34		min	0	1	-0.0018	1	-0.3986	8	0	1	0	1	0	1
35	N18	max	0	16	0	16	0	15	6.3658…	8	0	16	0	16
36		min	0	1	0	1	0	6	0	1	0	1	0	1
37	N19	max	0	16	0	16	0	15	0	15	0	16	0	16
38		min	0	1	0	1	0	8	-5.426…	8	0	1	0	1

Node Displacements (Continued)

	Node…		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rota…	LC	Y Rota…	LC	Z Rota…	LC
39	N20	max	0	16	-0.0008	16	0	15	1.4753…	8	0	16	0	16
40		min	0	1	-0.0018	1	-0.3986	8	0	1	0	1	0	1
41	N21	max	0	16	0	16	0	15	6.3658…	8	0	16	0	16
42		min	0	1	0	1	0	6	0	1	0	1	0	1
43	N22	max	0	1	-0.0002	16	0	15	1.1888…	8	0	16	0	1
44		min	0	15	-0.0004	1	0	8	0	1	0	1	0	15



Envelope Only Solution

<Licensed Company>	Lee Summit Entry Canopy	SK-2
swalker		Aug 17, 2021 at 11:42 AM
		221130-Entry Tubes.r3d

Nodes

	Label	X [ft]	Y [ft]	Z [ft]	Temp [deg F]	Detach From Dia…
1	N24	6	3.5	0.67		
2	N23	3	3.5	0.67		
3	N22	6	1	0		
4	N21	3	1	0		
5	N20	6	3.5	0		
6	N19	3	3.5	0		
7	N18	6	1	3.25		
8	N17	3	1	3.25		
9	N16	7.5	1	4.25		
10	N15	6	1	4.25		
11	N14	3	1	4.25		
12	N13	1.5	1	4.25		
13	N12	7.5	1	0.67		
14	N11	6	1	0.67		
15	N10	3	1	0.67		
16	N9	1.5	1	0.67		
17	N8	6	10	0		
18	N7	3	10	0		
19	N6	6	6.75	0		
20	N5	3	6.75	0		
21	N4	6	0	0		
22	N3	3	0	0		
23	N2	9	0	0		
24	N1	0	0	0		

Boundary Conditions

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
1	N1	Reaction	Reaction	Reaction			
2	N2	Reaction	Reaction	Reaction			
3	N6	Reaction		Reaction			
4	N5	Reaction		Reaction			

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. C…	Density [k…	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.…	29000	11154	0.3	0.65	0.527	42	1.4	58	1.3
5	A500 Gr.…	29000	11154	0.3	0.65	0.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2
7	A1085	29000	11154	0.3	0.65	0.49	50	1.25	65	1.15
8	A913 Gr.65	29000	11154	0.3	0.65	0.49	65	1.1	80	1.1

Cold Formed Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff…	Density [k/ft³]	Yield [ksi]	Fu [ksi]
1	A653 SS Gr33	29500	11346	0.3	0.65	0.49	33	45
2	A653 SS Gr…	29500	11346	0.3	0.65	0.49	50	65

General Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e…	Density [k/ft³]
1	gen_Conc3NW	3155	1372	0.15	0.6	0.145
2	gen_Conc4NW	3644	1584	0.15	0.6	0.145
3	gen_Conc3LW	2085	906	0.15	0.6	0.11
4	gen_Conc4LW	2408	1047	0.15	0.6	0.11
5	gen_Alum	10100	4077	0.3	1.29	0.173
6	gen_Steel	29000	11154	0.3	0.65	0.49

General Properties (Continued)

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e…	Density [k/ft³]
7	gen_Plywood	1800	38	0	0.3	0.035
8	RIGID	1e+06		0.3	0	0

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
1	Veri Tube	HSS6X4X6	Column	None	A500 Gr.…	Typical	6.18	14.9	28.3	32.8
2	Horiz Tube	HSS8X6X4	Beam	None	A500 Gr.…	Typical	6.17	36.4	56.6	70.3

Cold Formed Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
1	CF1	8CU1.25…	Beam	None	A653 SS…	Typical	0.581	0.057	4.41	0.00063

General Section Sets

	Label	Shape	Type	Material	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
1	GEN1	RE4X4	Beam	gen_Conc3NW	16	21.333	21.333	31.573
2	RIGID		None	RIGID	1e+06	1e+06	1e+06	1e+06

Hot Rolled Member Properties

	Label	Shape	Length [ft]	Lb y-y [ft]	Lb z-z [ft]	Lcomp t…	Lcomp…	L-Torqu…	K y-y	K z-z	Cb	Function
1	M1	Veri Tube	10			Lbyy						Lateral
2	M2	Veri Tube	10			Lbyy						Lateral
3	M3	Horiz T…	9			Lbyy						Lateral
4	M4	HSS4X…	0.67			Lbyy						Lateral
5	M5	HSS4X…	0.67			Lbyy						Lateral
6	M6	HSS4X…	0.67			Lbyy						Lateral
7	M7	HSS4X…	0.67			Lbyy						Lateral
8	M8	HSS4X…	6			Lbyy						Lateral
9	M9	HSS4X…	3.58			Lbyy						Lateral
10	M10	HSS4X…	6			Lbyy						Lateral
11	M11	HSS4X…	3.58			Lbyy						Lateral
12	M12	HSS4X…	3.58			Lbyy						Lateral
13	M13	HSS4X…	3.58			Lbyy						Lateral
14	M14	HSS4X…	3.593			Lbyy						Lateral
15	M15	HSS4X…	3.593			Lbyy						Lateral

Design Size and Code Check Parameters

	Label	Max Depth [in]	Min Depth [in]	Max Width [in]	Min Width [in]	Max Bending…	Max Shear Chk
1	Typical					1	1

Basic Load Cases

	BLC Desc…	Category	X Gravity	Y Gravity	Z Gravity	Nodal	Point	Distributed	Area(Me…	Surface(P…
1	DL	DL		-1				1	1	
2	SL	SL							1	
3	WL	WL						5	1	
4	BLC 1 Tra…	None						4		
5	BLC 2 Tra…	None						4		
6	BLC 3 Tra…	None						4		

Load Combinations

	De…	So…	PD…	SR…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…
1	IB…	Yes	Y		DL	1.4																		
2	IB…	Yes	Y		DL	1.2	LL	1.6	LLS	1.6														
3	IB…	Yes	Y		DL	1.2	LL	1.6	LLS	1.6	SL	0.5	SLN	0.5										
4	IB…	Yes	Y		DL	1.2	SL	1.6	SLN	1.6	LL	0.5	LLS	1										
5	IB…	Yes	Y		DL	1.2	WL	0.5																

Load Combinations (Continued)

	De…	So…	PD…	SR…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…
6	IB…	Yes	Y		DL	1.2	SL	1.6	SLN	1.6	WL	0.5												
7	IB…	Yes	Y		DL	1.2	WL	1	LL	0.5	LLS	1												
8	IB…	Yes	Y		DL	1.2	WL	1	LL	0.5	LLS	1	SL	0.5	SLN	0.5								
9	IB…	Yes	Y		DL	0.9	WL	1																
10	IB…	Yes	Y		DL	1																		
11	IB…	Yes	Y		DL	1	LL	1	LLS	1														
12	IB…	Yes	Y		DL	1	SL	1	SLN	1														
13	IB…	Yes	Y		DL	1	LL	0.75	LLS	0.75	SL	0.75	SLN	0.75										
14	IB…	Yes	Y		DL	1	WL	0.6																
15	IB…	Yes	Y		DL	1	WL	0.45	LL	0.75	LLS	0.75												
16	IB…	Yes	Y		DL	1	WL	0.45	LL	0.75	LLS	0.75	SL	0.75	SLN	0.75								
17	IB…	Yes	Y		DL	0.6	WL	0.6																

Load Combination Design

	Descript…	ASIF		Service	Hot Rolled	Cold Fo…	Wood	Concrete	Masonry	Aluminum	Stainless	Connec…
1	IBC 16-1				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	IBC 16-…				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	IBC 16-…				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	IBC 16-…				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	IBC 16-…				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	IBC 16-…				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	IBC 16-…				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	IBC 16-…				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9	IBC 16-6				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10	IBC 16-8		0.9	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
11	IBC 16-9			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
12	IBC 16-…		1.15	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
13	IBC 16-…		1.15	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
14	IBC 16-…		1.6	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
15	IBC 16-…		1.6	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
16	IBC 16-…		1.6	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
17	IBC 16-15		1.6	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Node Reactions

No Data to Print...

Node Deflections

No Data to Print...

Node Reactions

	Node…		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N1	max	0.9149	8	3.8415	1	1.5388	8	0	17	0	17	0	17
2		min	0.4654	17	1.8397	17	0.1319	10	0	1	0	1	0	1
3	N2	max	-0.4654	17	3.8415	1	1.5388	8	0	17	0	17	0	17
4		min	-0.9149	8	1.8397	17	0.1319	10	0	1	0	1	0	1
5	N6	max	0.079	1	0	17	0.2213	9	0	17	0	17	0	17
6		min	0.0215	17	0	1	-0.2961	4	0	1	0	1	0	1
7	N5	max	-0.0215	17	0	17	0.2214	9	0	17	0	17	0	17
8		min	-0.079	1	0	1	-0.296	4	0	1	0	1	0	1
9	Totals:	max	0	3	7.683	1	3.355	8						
10		min	0	15	3.6794	17	0	10						

Node Displacements

	Node…		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rota…	LC	Y Rota…	LC	Z Rota…	LC
1	N24	max	-0.0017	17	-0.0319	17	0.0028	4	5.9921…	8	2.9177…	1	-2.119…	17
2		min	-0.0036	1	-0.066	6	-0.0124	9	6.6999…	10	6.9779…	9	-4.527…	6

Node Displacements (Continued)

	Node…		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rota…	LC	Y Rota…	LC	Z Rota…	LC
3	N23	max	0.0036	1	-0.0319	17	0.0028	4	5.9917…	8	-6.964…	9	4.5271…	6
4		min	0.0017	17	-0.066	6	-0.0124	9	6.6989…	10	-2.917…	1	2.1196…	17
5	N22	max	-0.0013	17	-0.0292	17	-0.0003	11	6.1077…	8	3.3372…	1	2.1203…	1
6		min	-0.0041	1	-0.0624	6	-0.03	8	7.7677…	10	1.2235…	9	6.116e…	17
7	N21	max	0.0041	1	-0.0292	17	-0.0003	11	6.1074…	8	-1.219…	9	-6.116…	17
8		min	0.0013	17	-0.0624	6	-0.03	8	7.7669…	10	-3.337…	1	-2.120…	1
9	N20	max	-0.0018	17	-0.0293	17	0.0028	4	5.3074…	8	3.0213…	1	-2.055…	17
10		min	-0.006	1	-0.0625	6	-0.0125	9	3.7501…	10	5.5582…	9	-5.670…	1
11	N19	max	0.006	1	-0.0293	17	0.0028	4	5.3072…	8	-5.547…	9	5.6708…	1
12		min	0.0018	17	-0.0625	6	-0.0125	9	3.7496…	10	-3.021…	1	2.0556…	17
13	N18	max	-0.0003	17	-0.0427	17	-0.0005	11	6.8764…	8	5.3768…	1	-2.755…	11
14		min	-0.001	1	-0.0844	8	-0.0302	8	1.1737…	10	1.4989…	17	-8.641…	6
15	N17	max	0.001	1	-0.0427	17	-0.0005	11	6.8763…	8	-1.499…	17	8.6305…	6
16		min	0.0003	17	-0.0844	8	-0.0302	8	1.1737…	10	-5.377…	1	2.7531…	10
17	N16	max	0	1	-0.0488	17	-0.0035	11	7.5107…	8	2.7019…	1	-5.552…	11
18		min	0	17	-0.0961	8	-0.0329	8	1.4748…	10	7.6248…	17	-1.828…	6
19	N15	max	0	1	-0.0475	17	-0.0005	11	7.5107…	8	1.3264…	1	-3.795…	11
20		min	0	17	-0.0933	8	-0.0302	8	1.4748…	10	3.77e-05	17	-1.185…	6
21	N14	max	0	17	-0.0475	17	-0.0005	11	7.5106…	8	-3.770…	17	1.1836…	6
22		min	0	1	-0.0933	8	-0.0302	8	1.4748…	10	-1.326…	1	3.7926…	10
23	N13	max	0	17	-0.0488	17	-0.0035	11	7.5106…	8	-7.624…	17	1.8269…	6
24		min	0	1	-0.0961	8	-0.0329	8	1.4748…	10	-2.701…	1	5.5495…	10
25	N12	max	-0.0003	17	-0.0325	17	-0.0036	11	6.3873…	8	2.1578…	1	1.2651…	1
26		min	-0.0005	8	-0.0672	6	-0.033	8	8.8816…	10	6.4364…	17	-8.648…	6
27	N11	max	-0.0003	17	-0.032	17	-0.0003	11	6.3873…	8	3.5332…	1	8.5083…	1
28		min	-0.0005	8	-0.0663	6	-0.03	8	8.8816…	10	1.0291…	17	5.6735…	9
29	N10	max	0.0005	8	-0.032	17	-0.0003	11	6.3869…	8	-1.029…	17	-5.704…	9
30		min	0.0003	17	-0.0663	6	-0.03	8	8.8807…	10	-3.533…	1	-8.509…	1
31	N9	max	0.0005	8	-0.0325	17	-0.0036	11	6.3869…	8	-6.436…	17	8.6417…	6
32		min	0.0003	17	-0.0672	6	-0.033	8	8.8807…	10	-2.157…	1	-1.267…	1
33	N8	max	0.0076	1	-0.0293	17	0.0045	9	9.9227…	9	3.0213…	1	-5.841…	17
34		min	0.0023	17	-0.0626	6	-0.0061	4	-1.558…	4	5.5582…	9	-1.958…	1
35	N7	max	-0.0023	17	-0.0293	17	0.0045	9	9.9267…	9	-5.547…	9	1.9586…	1
36		min	-0.0076	1	-0.0626	6	-0.0061	4	-1.558…	4	-3.021…	1	5.8419…	17
37	N6	max	0	17	-0.0293	17	0	4	1.7953…	9	3.0213…	1	-5.841…	17
38		min	0	1	-0.0626	6	0	9	-1.558…	4	5.5582…	9	-1.958…	1
39	N5	max	0	1	-0.0293	17	0	4	1.7957…	9	-5.547…	9	1.9585…	1
40		min	0	17	-0.0626	6	0	9	-1.558…	4	-3.021…	1	5.8417…	17
41	N4	max	0.0002	8	-0.0292	17	-0.0011	11	5.7766…	8	3.9554…	1	8.0994…	6
42		min	0	17	-0.0623	6	-0.0369	8	6.6107…	10	-4.670…	8	3.7192…	17
43	N3	max	0	17	-0.0292	17	-0.0011	11	5.7765…	8	4.6703…	8	-3.719…	17
44		min	-0.0002	8	-0.0623	6	-0.0369	8	6.6103…	10	-3.955…	1	-8.099…	6
45	N2	max	0	8	0	17	0	11	5.7766…	8	-5.273…	11	2.0994…	6
46		min	0	17	0	1	0	8	6.6107…	10	-1.255…	8	9.8642…	17
47	N1	max	0	17	0	17	0	11	5.7765…	8	1.2557…	8	-9.864…	17
48		min	0	8	0	1	0	8	6.6103…	10	5.2734…	10	-2.099…	6