



Mount Analysis Report

Trylon Project # 219148

November 28, 2022

Project Information	
Client	Smartlink
Carrier Name	AT&T Mobility
Carrier Site ID	FDA Building
Carrier Site Name	FDA Building
PACE Number	MRWSH048313, MRWSH048275
PTN Number	2251A12PQN, 2251A12Q6D
FA Number	10106301
Site Address	5100 Paint Branch Parkway, College Park, MD 20740
Site Coordinates	38.9768000, -76.9266000
Structure Type	Building
Structure Height	85.3 ft
Mount Type	Tripod Mounts
Mount Elevation	91.0 / 99.0 ft

STRUCTURE RATING =	58.9%	PASS
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Analysis Performed by:

Mike Moore, P.E.

Reviewed and Approved by:

Cliff Abernathy, P.E.



I HEARBY CERTIFY THAT THESE DOCUMENTS
WERE PREPARED OR APPROVED BY ME, AND
THAT I AM A DULY LICENSED PROFESSIONAL
ENGINEER UNDER THE LAWS OF THE STATE
OF MARYLAND, LICENSE #: 46944, EXP: 7.15.23

Mount Analysis Report

Subject: Analysis of the Existing Tripod Mounts at 91.0 / 99.0 ft Elevation

Dear Smartlink,

We have been provided with RF information, photos and sketches of the structure for the above referenced sites. AT&T Mobility is proposing to change the equipment configuration on the Existing mounting hardware.

A revised antenna, coax and miscellaneous equipment schematic have been provided to us. We have been asked to evaluate this information to determine whether the mounting apparatus is adequate to safely support the proposed loading change.

RISA 3D (Version 17), a commercially available analysis software package, was used to create a three-dimensional model of the antenna mounting system and calculate member stresses for various loading cases.

1. Source Data

Document Type	Source	Reference	Date
Construction Drawings	Trylon	Site Name: FDA Building	October 14, 2022
RFDS	AT&T Mobility	RFDS ID: 4484151	November 11, 2022
Mount Analysis Report	Trylon	Project No. 196950 R1	April 14, 2022

2. Analysis Criteria

Adopted Codes and Site Parameters	
Building Code / Local Code	2018 IBC
Code Standard	TIA-222-H
Design Wind Speed (mph)	113
Design Wind Speed with Ice (mph)	40
Design Ice Thickness (in)	1.00
Risk Category	II
Exposure Category	B
Topographic Factor, K_{zt}	1.00
Seismic Response Acceleration, S_s (g)	0.132
Seismic Response Acceleration, S_1 (g)	0.043

3. Final Loading Configuration

Mount CL (ft)	Equipment CL (ft)	Qty.	Manufacturer	Model	Carrier
99.0	99.0	1	Nokia	AEQU	AT&T Mobility
		1	Nokia	AEQK	
		2	Commscope	NNHH-65A-R4	
		1	Nokia	AHCA	
		1	Nokia	AHNA	
		1	Nokia	AHLBA	
		1	Nokia	AHFIB	
		1	Commscope	SIMFQ-WCS-AMT-R40	
		1	Raycap	DC9-48-60-24-PC16-EV	
		1	Nokia	AEQU	
91.0	91.0	1	Nokia	AEQK	
		2	Commscope	NNHH-65A-R4	
		2	Commscope	NNHH-65A-R4-UPM	
		2	Nokia	AHCA	
		2	Nokia	AHNA	
		2	Nokia	AHLBA	
		2	Nokia	AHFIB	
		1	Commscope	SIMFQ-WCS-AMT-R40	
		2	Raycap	DC9-48-60-24-PC16-EV	

4. Standard Conditions for Providing Structural Consulting Services on Existing Structures

- 1) Mounting hardware is analyzed to the best of our ability using all information that is provided or can be obtained during fieldwork (if authorized by client). If the existing conditions are not as we have represented in this analysis, we should be contacted to evaluate the significance of the deviation and revise the assessment accordingly.
- 2) The structural analysis has been performed assuming that hardware is in “like new” condition. No allowance was made for excessive corrosion, damaged or missing structural members, loose bolts, misaligned parts, or any reduction in strength due to the age or fatigue of the product.
- 3) The structural analysis provided is an assessment of the primary load carrying capacity of the hardware. We provide a limited scope of service. In some cases, we cannot verify the capacity of every weld, plate, connection detail, etc. In some cases, structural fabrication details are unknown at the time of our analysis, and the detailed field measurement of some of the required details may not be possible. In instances where we cannot perform connection capacity calculations, it is assumed that the existing manufactured connections develop the full capacity of the primary members being connected.
- 4) We cannot be held responsible for mounting hardware that is installed improperly or hardware that is loose or has a tendency of working loose over the lifetime of the mounting hardware. Our analysis has been performed assuming fully tightened connections, and proper installation and symmetry of the mounting hardware per manufacturer’s instructions.
- 5) The structural analysis has been performed using information currently provided by the client and potentially field verified. We have been provided with a mounting arrangement for all telecommunications equipment, including antennas RRH’s, TMA’s, RRU’s, diplexers, surge protection devices, etc. Our analysis has been based upon a particular mounting arrangement. We are not responsible for deviations in the mounting arrangement that may occur over time. If deviations in equipment type or mounting arrangements are proposed, then we should be contacted to revise the recommendations of this structural report.
- 6) We cannot be held responsible for temporary and unbalanced loads on mounting hardware. Our analysis is based on a particular mounting arrangement or as-built field condition. We are not responsible for the methods and means of how the mounting arrangement is accomplished by the contractor. These methods and means may include rigging of equipment or hardware to lift and locate, temporary hanging of equipment in locations other than the final arrangement, movement and tie off of tower riggers, personnel, and their equipment, etc.
- 7) Steel grade and strength is unknown and cannot be field tested. We cannot be held responsible for equipment manufactured from inferior steel or bolts. Our analysis assumes that standard structural grade steel has been used by the equipment manufacturer for all assembled parts of the mounting apparatus. Acceptable steels and connection components are specified by the American Institute of Steel Construction. It is assumed all welded connections are performed in the shop under the latest American Welding Society Code. No field welds are permitted or assumed for the existing premanufactured equipment.
- 8) Steel grades have been assumed as follows, unless noted otherwise:

Assumed Steel Grades	
Channel, Solid Round, Angle, Plate	ASTM A36 (GR 36)
HSS (Rectangular)	ASTM 500 (GR B-46)
Pipe	ASTM A53 (GR 35)
Connection Bolts	ASTM A325
U-Bolts, Threaded Rods	SAE J429 Gr. 2

5. Analysis Results

Mount CL (ft.)	Component	% Capacity	Pass/Fail	Notes
91.0 / 99.0	Mast Pipe(s)	37.2	Pass	1
	Diagonal Angle(s)	41.8	Pass	
	Tray Angle(s)	58.9	Pass	
	Plate(s)	41.1	Pass	

Structure Rating (max from all components) =	58.9%
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Notes:

1) See additional documentation in "Appendix A – Additional Calculations" for calculations supporting the % capacity consumed.

6. Conclusions and Recommendations

Based on the information provided, our calculations conclude that the Existing AT&T Mobility Tripod Mounts installed at 91.0 / 99.0 ft. elevation have sufficient capacity to carry the final loading configuration and can resist overturning due to the final loading configuration provided the ballast frame loading listed below.

Ballast Frame Tray Loading (Per Sector)		
Tray Location	Minimum Weight (lbs)	Minimum CMU Blocks (37 lbs per Block)
Side Tray	222	6
TOTAL PER FRAME:	666	18

Total Ballast Frame Roof Pressure (Per Sector) =	28.5 psf
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The evaluation of the supporting building structure is outside of the scope of work of this report. Therefore, Trylon is not responsible for providing calculations for the supporting building structure or commenting on its current capacity due to the loading from carrier equipment. Should any concerns arise related to the installation of the carrier loading on the building, please contact Smartlink.

APPENDIX

ADDITIONAL CALCULATIONS

TIA LOAD CALCULATOR 2.2

PROJECT DATA		
Job Code:	196950	
Carrier Site ID:	219148	
Carrier Site Name:	FDA Building	

CODES AND STANDARDS		
Building Code:	2018 IBC	
Local Building Code:	-	
Design Standard:	TIA-222-H	

STRUCTURE DETAILS		
Mount Type:	Pipe	--
Mount Elevation:	99.0	ft.
Number of Sectors:	3	--
Structure Type:	Building	--
Structure Height:	85.3	ft.

ANALYSIS CRITERIA		
Structure Risk Category:	II	--
Exposure Category:	B	--
Site Class:	D - Default	--
Ground Elevation:	50.56	ft.

TOPOGRAPHIC DATA		
Topographic Category:	1.00	--
Topographic Feature:	N/A	--
Crest Point Elevation:	0.00	ft.
Base Point Elevation:	0.00	ft.
Crest to Mid-Height (L/2):	0.00	ft.
Distance from Crest (x):	0.00	ft.
Base Topo Factor (K_{zt}):	1.00	--
Mount Topo Factor (K_{zt}):	1.00	--

WIND PARAMETERS		
Design Wind Speed:	113	mph
Wind Escalation Factor (K_s):	1.00	--
Velocity Coefficient (K_z):	0.99	--
Directionality Factor (K_d):	0.95	--
Gust Effect Factor (G_h):	1.00	--
Shielding Factor (K_a):	0.90	--
Velocity Pressure (q_z):	30.54	psf
Ground Elevation Factor (K_e):	1.00	--

ICE PARAMETERS		
Design Ice Wind Speed:	40	mph
Design Ice Thickness (t_i):	1.00	in
Importance Factor (I_i):	1.00	--
Ice Velocity Pressure (q_{zi}):	4.34	psf
Mount Ice Thickness (t_{iz}):	1.12	in

WIND STRUCTURE CALCULATIONS		
Flat Member Pressure:	54.98	psf
Round Member Pressure:	32.99	psf
Ice Wind Pressure:	4.68	psf

SEISMIC PARAMETERS		
Importance Factor (I_e):	1.00	--
Short Period Accel. (S_s):	0.13	g
1 Second Accel. (S_1):	0.04	g
Short Period Des. (S_{DS}):	0.14	g
1 Second Des. (S_{D1}):	0.07	g
Short Period Coeff. (F_a):	1.60	--
1 Second Coeff. (F_v):	2.40	--
Response Coefficient (C_s):	0.07	--
Amplification Factor (A_s):	1.20	--

LOAD COMBINATIONS [LRFD]

#	Description
1	1.4DL
2	1.2DL + 1WL 0 AZI
3	1.2DL + 1WL 30 AZI
4	1.2DL + 1WL 45 AZI
5	1.2DL + 1WL 60 AZI
6	1.2DL + 1WL 90 AZI
7	1.2DL + 1WL 120 AZI
8	1.2DL + 1WL 135 AZI
9	1.2DL + 1WL 150 AZI
10	1.2DL + 1WL 180 AZI
11	1.2DL + 1WL 210 AZI
12	1.2DL + 1WL 225 AZI
13	1.2DL + 1WL 240 AZI
14	1.2DL + 1WL 270 AZI
15	1.2DL + 1WL 300 AZI
16	1.2DL + 1WL 315 AZI
17	1.2DL + 1WL 330 AZI
18	0.9DL + 1WL 0 AZI
19	0.9DL + 1WL 30 AZI
20	0.9DL + 1WL 45 AZI
21	0.9DL + 1WL 60 AZI
22	0.9DL + 1WL 90 AZI
23	0.9DL + 1WL 120 AZI
24	0.9DL + 1WL 135 AZI
25	0.9DL + 1WL 150 AZI
26	0.9DL + 1WL 180 AZI
27	0.9DL + 1WL 210 AZI
28	0.9DL + 1WL 225 AZI
29	0.9DL + 1WL 240 AZI
30	0.9DL + 1WL 270 AZI
31	0.9DL + 1WL 300 AZI
32	0.9DL + 1WL 315 AZI
33	0.9DL + 1WL 330 AZI
34	1.2DL + 1DLi + 1WLi 0 AZI
35	1.2DL + 1DLi + 1WLi 30 AZI
36	1.2DL + 1DLi + 1WLi 45 AZI
37	1.2DL + 1DLi + 1WLi 60 AZI
38	1.2DL + 1DLi + 1WLi 90 AZI
39	1.2DL + 1DLi + 1WLi 120 AZI
40	1.2DL + 1DLi + 1WLi 135 AZI
41	1.2DL + 1DLi + 1WLi 150 AZI

#	Description
42	1.2DL + 1DLi + 1WLi 180 AZI
43	1.2DL + 1DLi + 1WLi 210 AZI
44	1.2DL + 1DLi + 1WLi 225 AZI
45	1.2DL + 1DLi + 1WLi 240 AZI
46	1.2DL + 1DLi + 1WLi 270 AZI
47	1.2DL + 1DLi + 1WLi 300 AZI
48	1.2DL + 1DLi + 1WLi 315 AZI
49	1.2DL + 1DLi + 1WLi 330 AZI
50	(1.2+0.2Sds) + 1.0E 0 AZI
51	(1.2+0.2Sds) + 1.0E 30 AZI
52	(1.2+0.2Sds) + 1.0E 45 AZI
53	(1.2+0.2Sds) + 1.0E 60 AZI
54	(1.2+0.2Sds) + 1.0E 90 AZI
55	(1.2+0.2Sds) + 1.0E 120 AZI
56	(1.2+0.2Sds) + 1.0E 135 AZI
57	(1.2+0.2Sds) + 1.0E 150 AZI
58	(1.2+0.2Sds) + 1.0E 180 AZI
59	(1.2+0.2Sds) + 1.0E 210 AZI
60	(1.2+0.2Sds) + 1.0E 225 AZI
61	(1.2+0.2Sds) + 1.0E 240 AZI
62	(1.2+0.2Sds) + 1.0E 270 AZI
63	(1.2+0.2Sds) + 1.0E 300 AZI
64	(1.2+0.2Sds) + 1.0E 315 AZI
65	(1.2+0.2Sds) + 1.0E 330 AZI
66	(0.9-0.2Sds) + 1.0E 0 AZI
67	(0.9-0.2Sds) + 1.0E 30 AZI
68	(0.9-0.2Sds) + 1.0E 45 AZI
69	(0.9-0.2Sds) + 1.0E 60 AZI
70	(0.9-0.2Sds) + 1.0E 90 AZI
71	(0.9-0.2Sds) + 1.0E 120 AZI
72	(0.9-0.2Sds) + 1.0E 135 AZI
73	(0.9-0.2Sds) + 1.0E 150 AZI
74	(0.9-0.2Sds) + 1.0E 180 AZI
75	(0.9-0.2Sds) + 1.0E 210 AZI
76	(0.9-0.2Sds) + 1.0E 225 AZI
77	(0.9-0.2Sds) + 1.0E 240 AZI
78	(0.9-0.2Sds) + 1.0E 270 AZI
79	(0.9-0.2Sds) + 1.0E 300 AZI
80	(0.9-0.2Sds) + 1.0E 315 AZI
81	(0.9-0.2Sds) + 1.0E 330 AZI
82-88	1.2D + 1.5 Lv1

#	Description
89	1.2D + 1.5Lm + 1.0Wm 0 AZI - MP1
90	1.2D + 1.5Lm + 1.0Wm 30 AZI - MP1
91	1.2D + 1.5Lm + 1.0Wm 45 AZI - MP1
92	1.2D + 1.5Lm + 1.0Wm 60 AZI - MP1
93	1.2D + 1.5Lm + 1.0Wm 90 AZI - MP1
94	1.2D + 1.5Lm + 1.0Wm 120 AZI - MP1
95	1.2D + 1.5Lm + 1.0Wm 135 AZI - MP1
96	1.2D + 1.5Lm + 1.0Wm 150 AZI - MP1
97	1.2D + 1.5Lm + 1.0Wm 180 AZI - MP1
98	1.2D + 1.5Lm + 1.0Wm 210 AZI - MP1
99	1.2D + 1.5Lm + 1.0Wm 225 AZI - MP1
100	1.2D + 1.5Lm + 1.0Wm 240 AZI - MP1
101	1.2D + 1.5Lm + 1.0Wm 270 AZI - MP1
102	1.2D + 1.5Lm + 1.0Wm 300 AZI - MP1
103	1.2D + 1.5Lm + 1.0Wm 315 AZI - MP1
104	1.2D + 1.5Lm + 1.0Wm 330 AZI - MP1
105	1.2D + 1.5Lm + 1.0Wm 0 AZI - MP2
106	1.2D + 1.5Lm + 1.0Wm 30 AZI - MP2
107	1.2D + 1.5Lm + 1.0Wm 45 AZI - MP2
108	1.2D + 1.5Lm + 1.0Wm 60 AZI - MP2
109	1.2D + 1.5Lm + 1.0Wm 90 AZI - MP2
110	1.2D + 1.5Lm + 1.0Wm 120 AZI - MP2
111	1.2D + 1.5Lm + 1.0Wm 135 AZI - MP2
112	1.2D + 1.5Lm + 1.0Wm 150 AZI - MP2
113	1.2D + 1.5Lm + 1.0Wm 180 AZI - MP2
114	1.2D + 1.5Lm + 1.0Wm 210 AZI - MP2
115	1.2D + 1.5Lm + 1.0Wm 225 AZI - MP2
116	1.2D + 1.5Lm + 1.0Wm 240 AZI - MP2
117	1.2D + 1.5Lm + 1.0Wm 270 AZI - MP2
118	1.2D + 1.5Lm + 1.0Wm 300 AZI - MP2
119	1.2D + 1.5Lm + 1.0Wm 315 AZI - MP2
120	1.2D + 1.5Lm + 1.0Wm 330 AZI - MP2

#	Description
121	1.2D + 1.5Lm + 1.0Wm 0 AZI - MP3
122	1.2D + 1.5Lm + 1.0Wm 30 AZI - MP3
123	1.2D + 1.5Lm + 1.0Wm 45 AZI - MP3
124	1.2D + 1.5Lm + 1.0Wm 60 AZI - MP3
125	1.2D + 1.5Lm + 1.0Wm 90 AZI - MP3
126	1.2D + 1.5Lm + 1.0Wm 120 AZI - MP3
127	1.2D + 1.5Lm + 1.0Wm 135 AZI - MP3
128	1.2D + 1.5Lm + 1.0Wm 150 AZI - MP3
129	1.2D + 1.5Lm + 1.0Wm 180 AZI - MP3
130	1.2D + 1.5Lm + 1.0Wm 210 AZI - MP3
131	1.2D + 1.5Lm + 1.0Wm 225 AZI - MP3
132	1.2D + 1.5Lm + 1.0Wm 240 AZI - MP3
133	1.2D + 1.5Lm + 1.0Wm 270 AZI - MP3
134	1.2D + 1.5Lm + 1.0Wm 300 AZI - MP3
135	1.2D + 1.5Lm + 1.0Wm 315 AZI - MP3
136	1.2D + 1.5Lm + 1.0Wm 330 AZI - MP3
137	1.2D + 1.5Lm + 1.0Wm 0 AZI - MP4
138	1.2D + 1.5Lm + 1.0Wm 30 AZI - MP4
139	1.2D + 1.5Lm + 1.0Wm 45 AZI - MP4
140	1.2D + 1.5Lm + 1.0Wm 60 AZI - MP4
141	1.2D + 1.5Lm + 1.0Wm 90 AZI - MP4
142	1.2D + 1.5Lm + 1.0Wm 120 AZI - MP4
143	1.2D + 1.5Lm + 1.0Wm 135 AZI - MP4
144	1.2D + 1.5Lm + 1.0Wm 150 AZI - MP4
145	1.2D + 1.5Lm + 1.0Wm 180 AZI - MP4
146	1.2D + 1.5Lm + 1.0Wm 210 AZI - MP4
147	1.2D + 1.5Lm + 1.0Wm 225 AZI - MP4
148	1.2D + 1.5Lm + 1.0Wm 240 AZI - MP4
149	1.2D + 1.5Lm + 1.0Wm 270 AZI - MP4
150	1.2D + 1.5Lm + 1.0Wm 300 AZI - MP4
151	1.2D + 1.5Lm + 1.0Wm 315 AZI - MP4
152	1.2D + 1.5Lm + 1.0Wm 330 AZI - MP4

*This page shows an example of maintenance loads for (4) pipes, the number of mount pipe LCs may vary per site

EQUIPMENT LOADING

[illegible]

EQUIPMENT LOADING [CONT.]

<i>Appurtenance Name</i>	<i>Qty.</i>	<i>Elevation [ft]</i>	<i>--</i>	<i>EPA_N (ft2)</i>	<i>EPA_T (ft2)</i>	<i>Weight (lbs)</i>
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
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			No Ice			
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			No Ice			
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			No Ice			
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			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			

EQUIPMENT WIND CALCULATIONS

[illegible]

EQUIPMENT LATERAL WIND FORCE CALCULATIONS

[illegible]

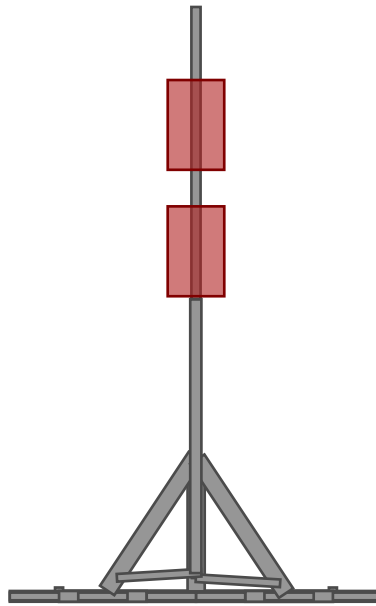
EQUIPMENT LATERAL WIND FORCE CALCULATIONS [CONT.]

<i>Appurtenance Name</i>	<i>Qty.</i>	<i>--</i>	<i>0° 180°</i>	<i>30° 210°</i>	<i>60° 240°</i>	<i>90° 270°</i>	<i>120° 300°</i>	<i>150° 330°</i>
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
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EQUIPMENT SEISMIC FORCE CALCULATIONS

[illegible]

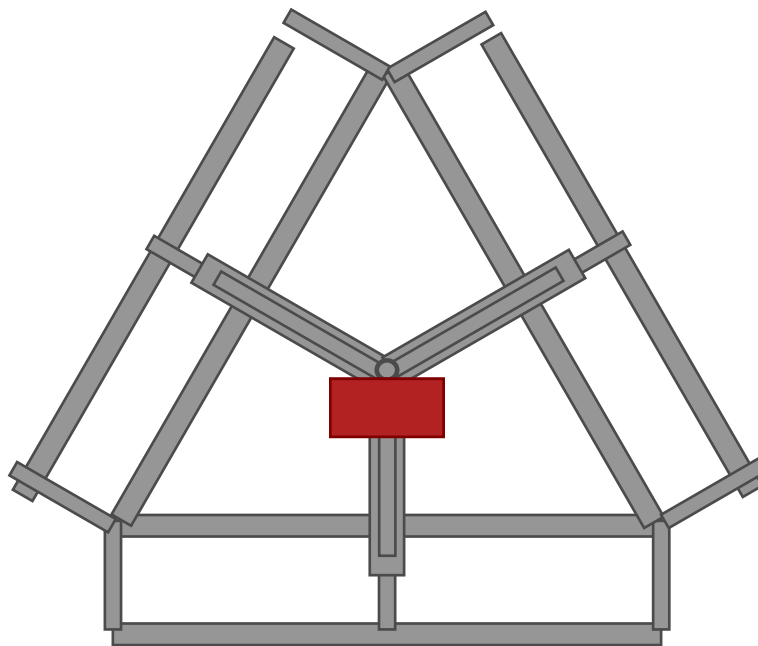
ELEVATION VIEW

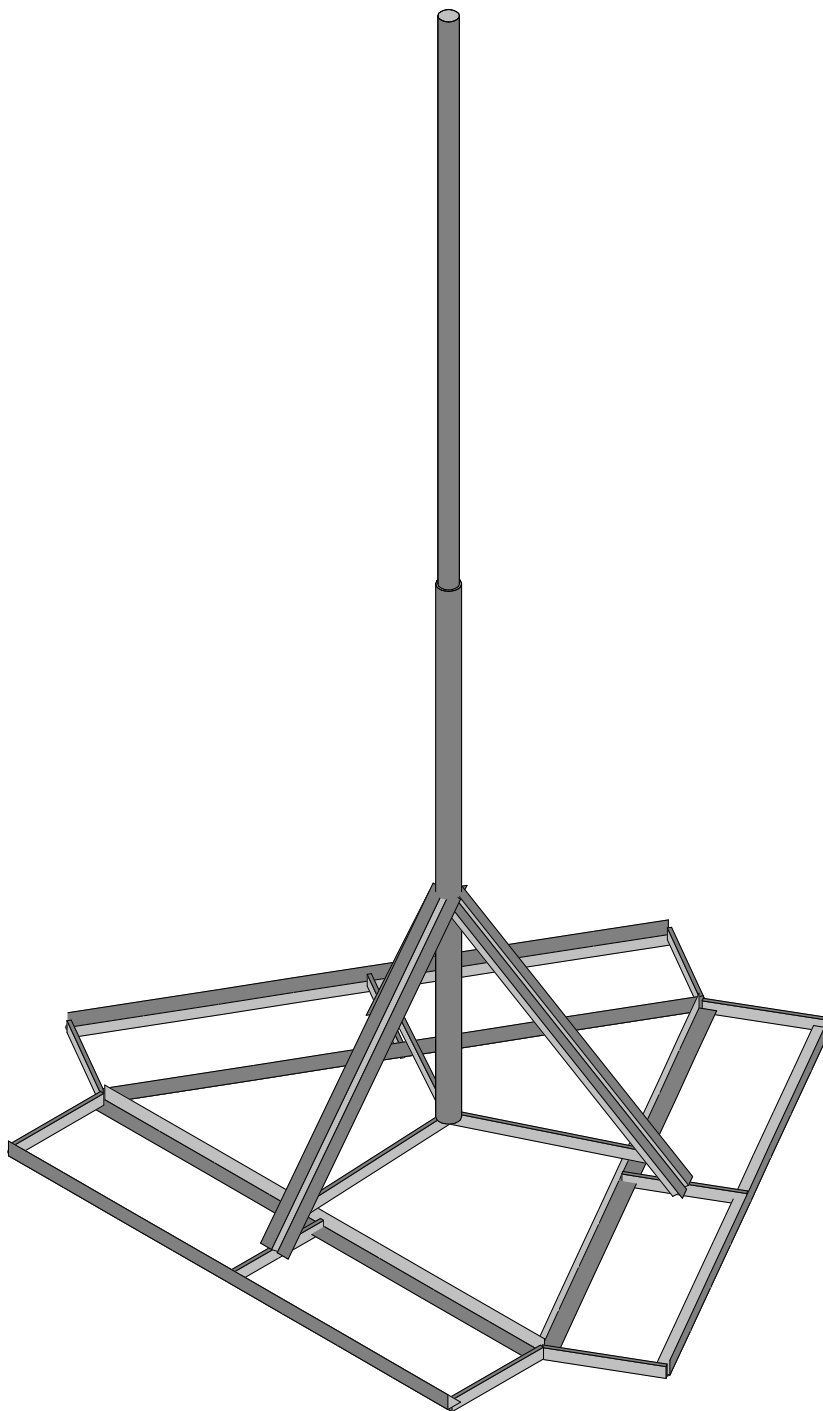
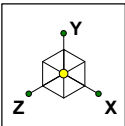


MP2

*Elevation View Shows Alpha Sector Only

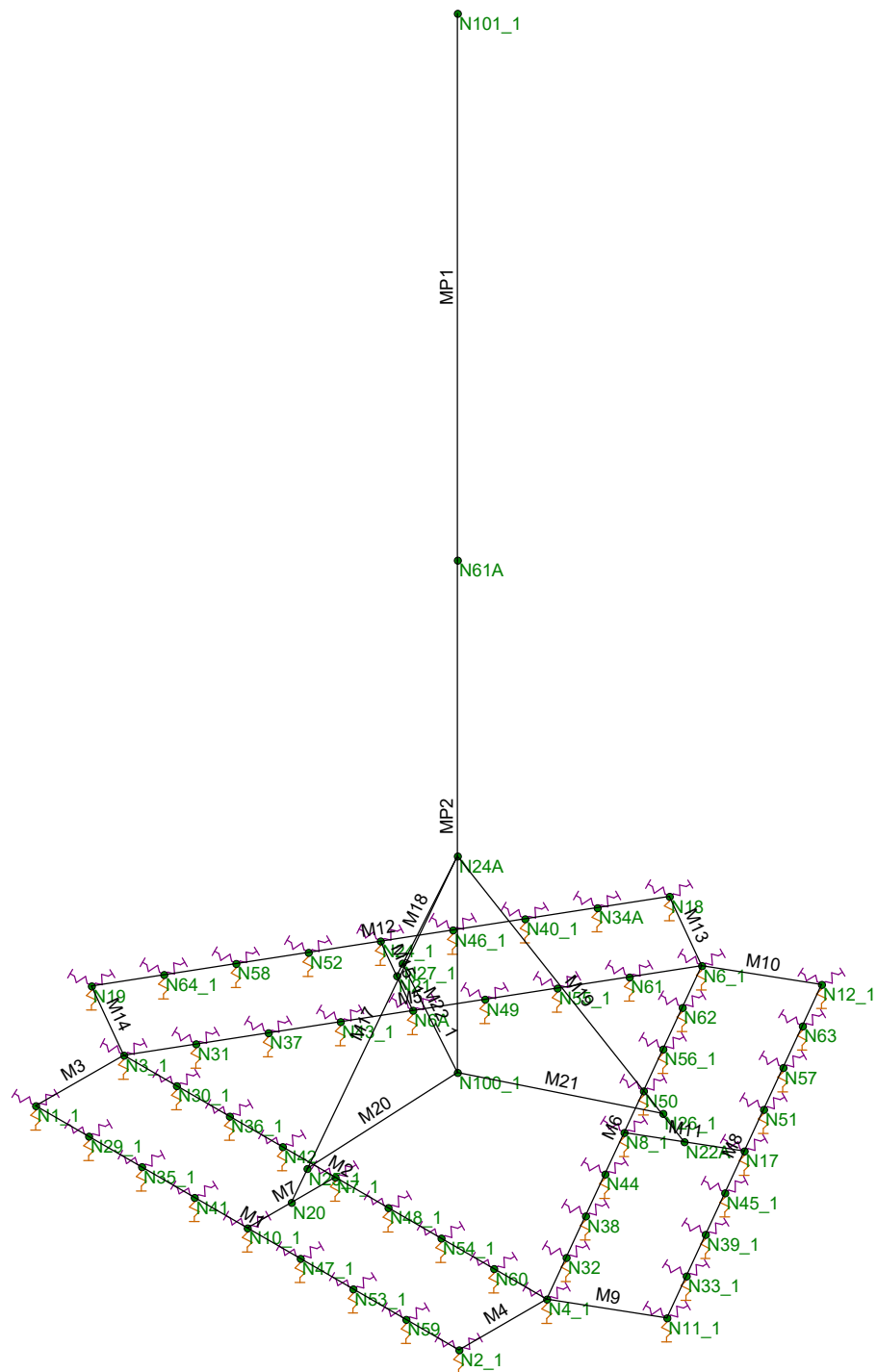
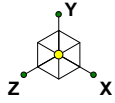
PLAN VIEW





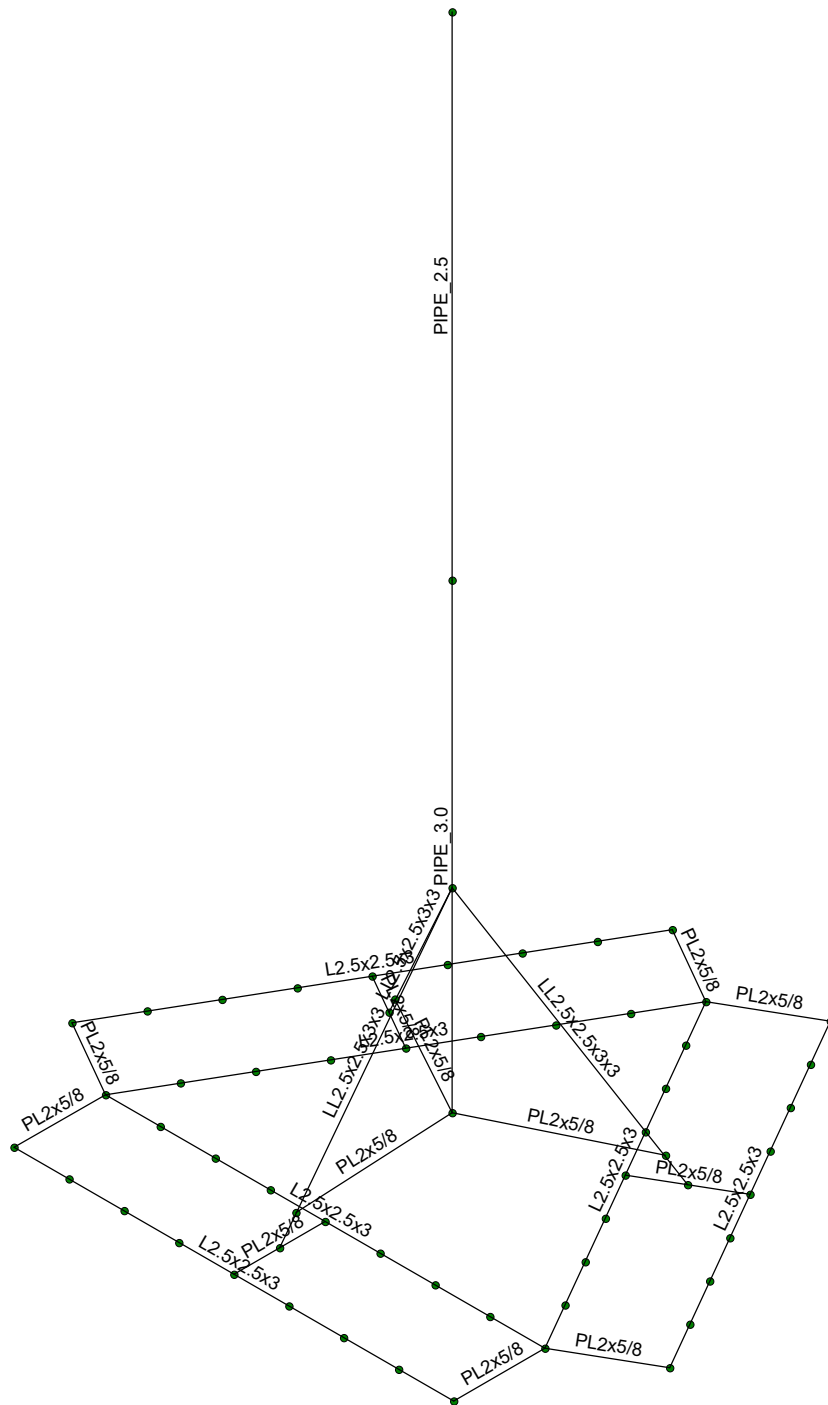
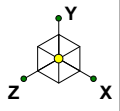
Envelope Only Solution

Trylon	10106301 FDA Building	SK - 1
AM		Nov 28, 2022 at 11:05 AM
219148		FDA Building.r3d



Envelope Only Solution

Trylon	10106301 FDA Building	SK - 2
AM		Nov 28, 2022 at 11:05 AM
219148		FDA Building.r3d



Envelope Only Solution

Trylon

AM

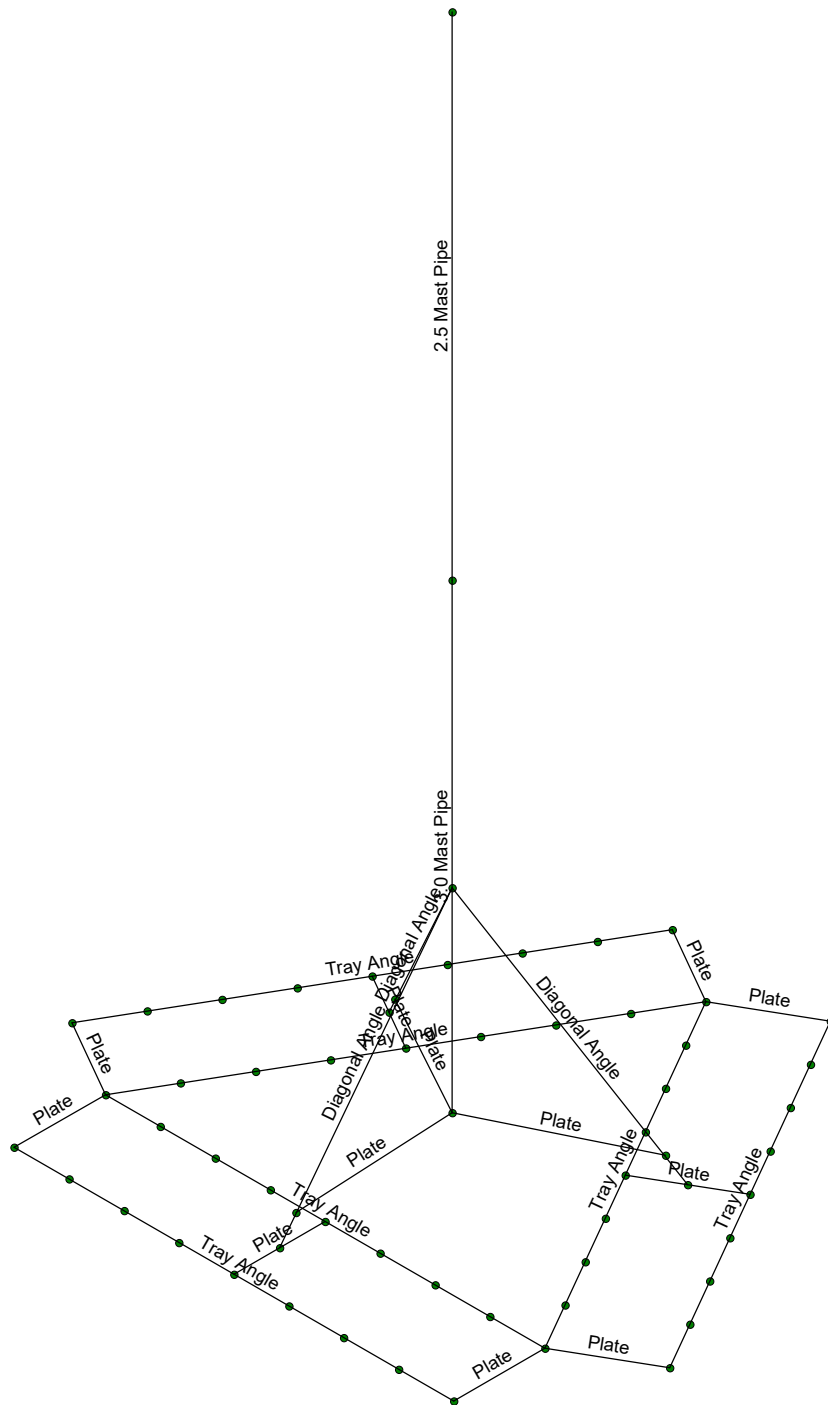
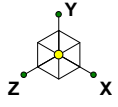
219148

10106301 FDA Building

SK - 3

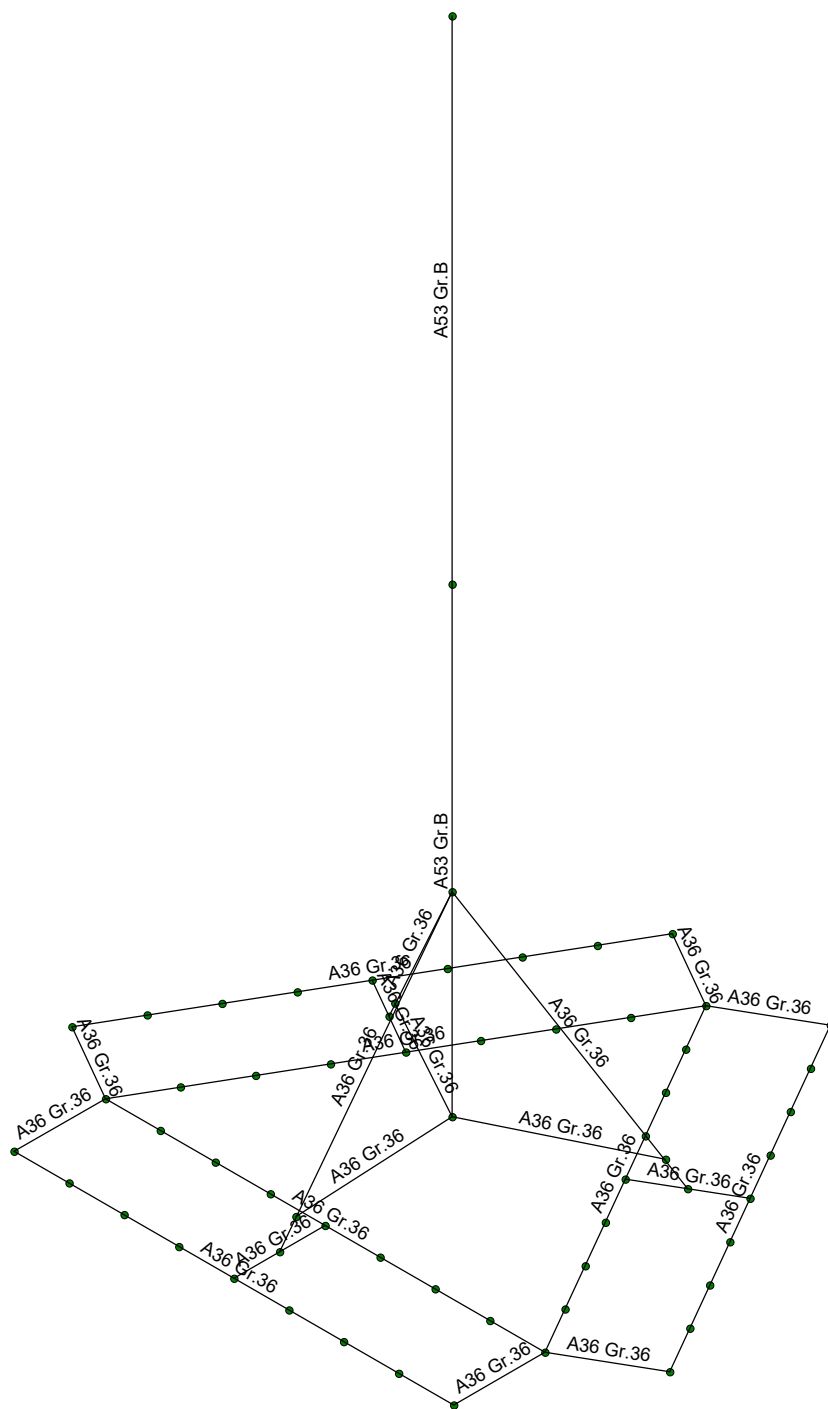
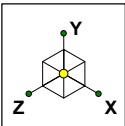
Nov 28, 2022 at 11:05 AM

FDA Building.r3d



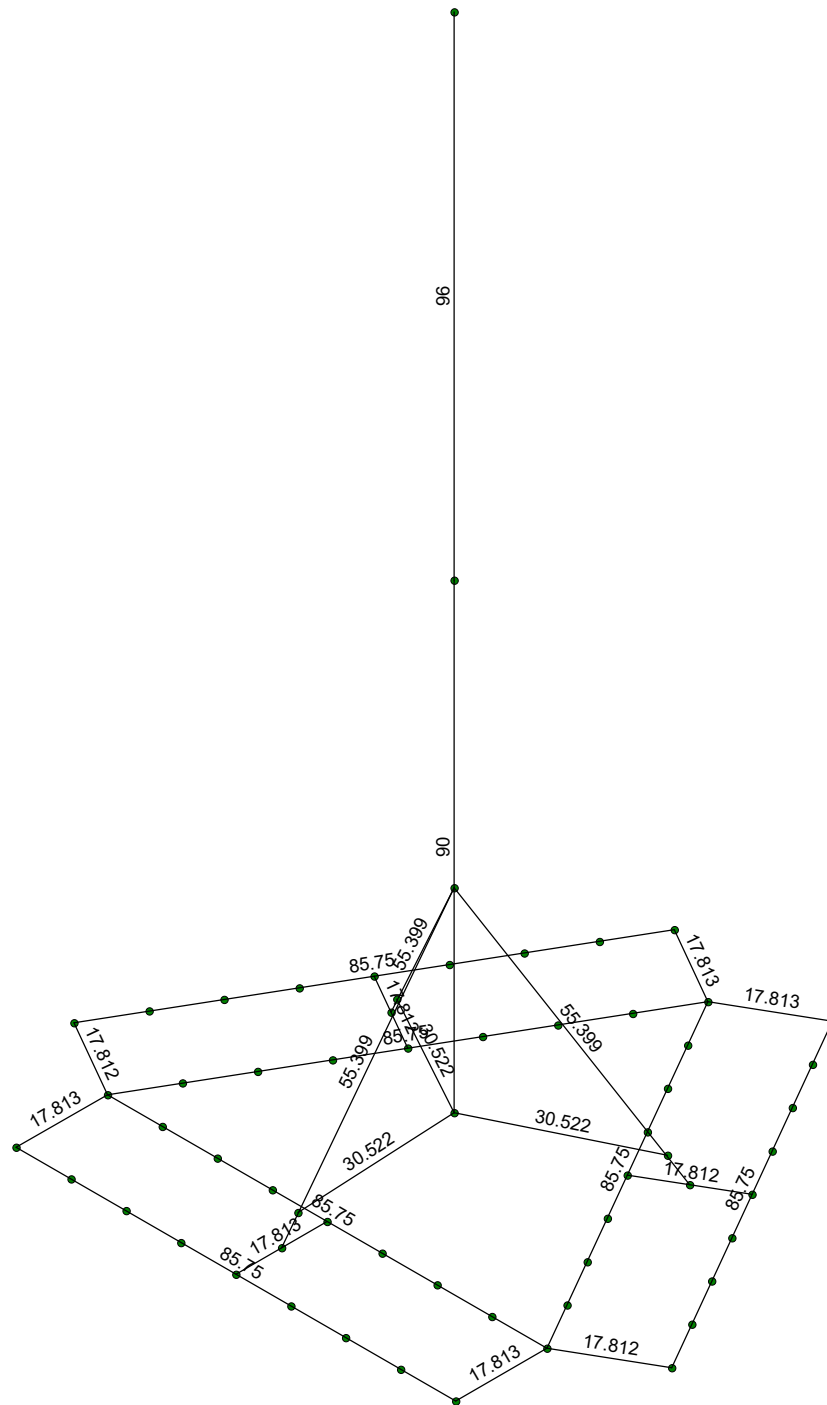
Envelope Only Solution

Trylon	10106301 FDA Building	SK - 4
AM		Nov 28, 2022 at 11:05 AM
219148		FDA Building.r3d

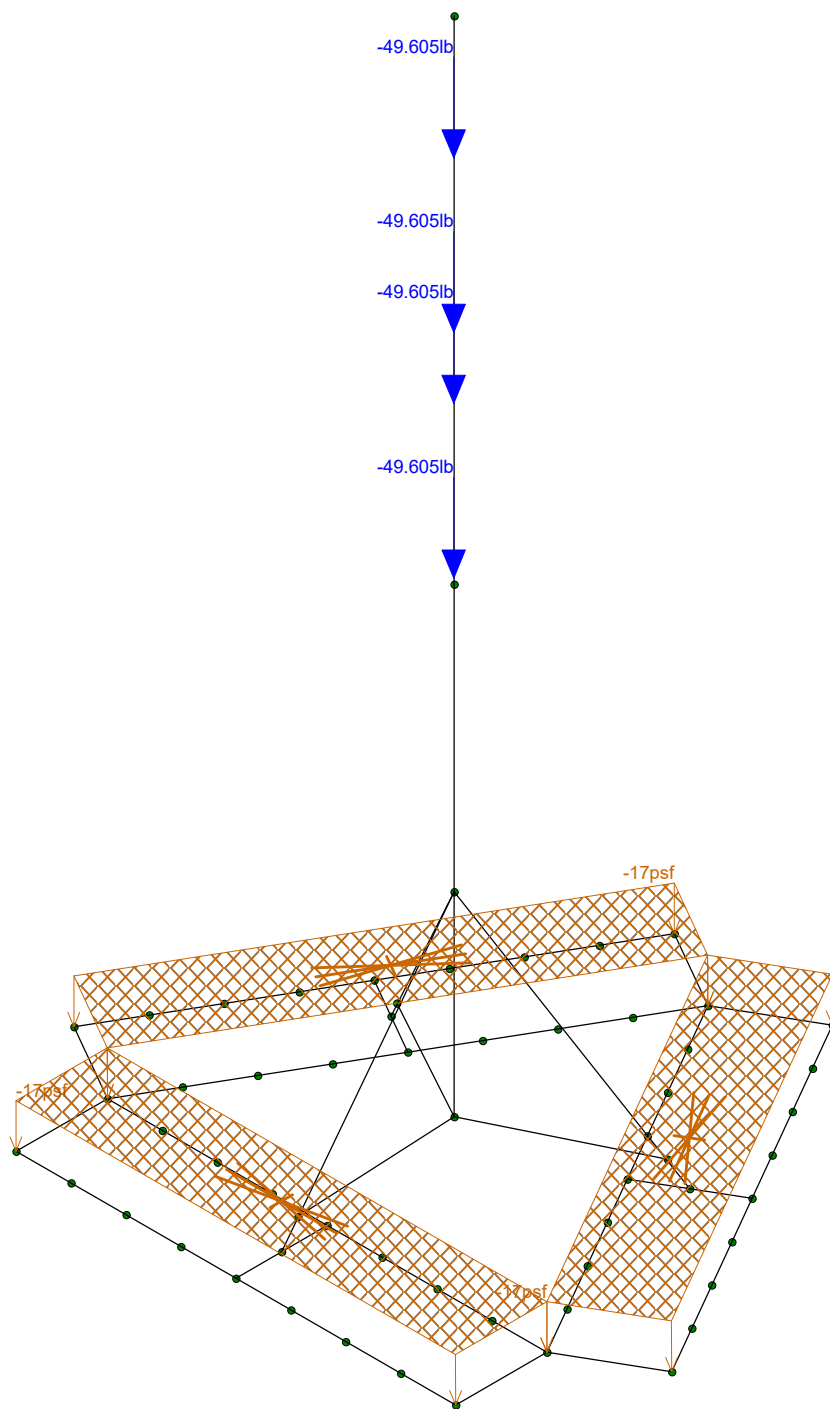
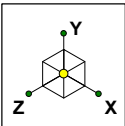


Envelope Only Solution

Trylon	10106301 FDA Building	SK - 5
AM		Nov 28, 2022 at 11:05 AM
219148		FDA Building.r3d

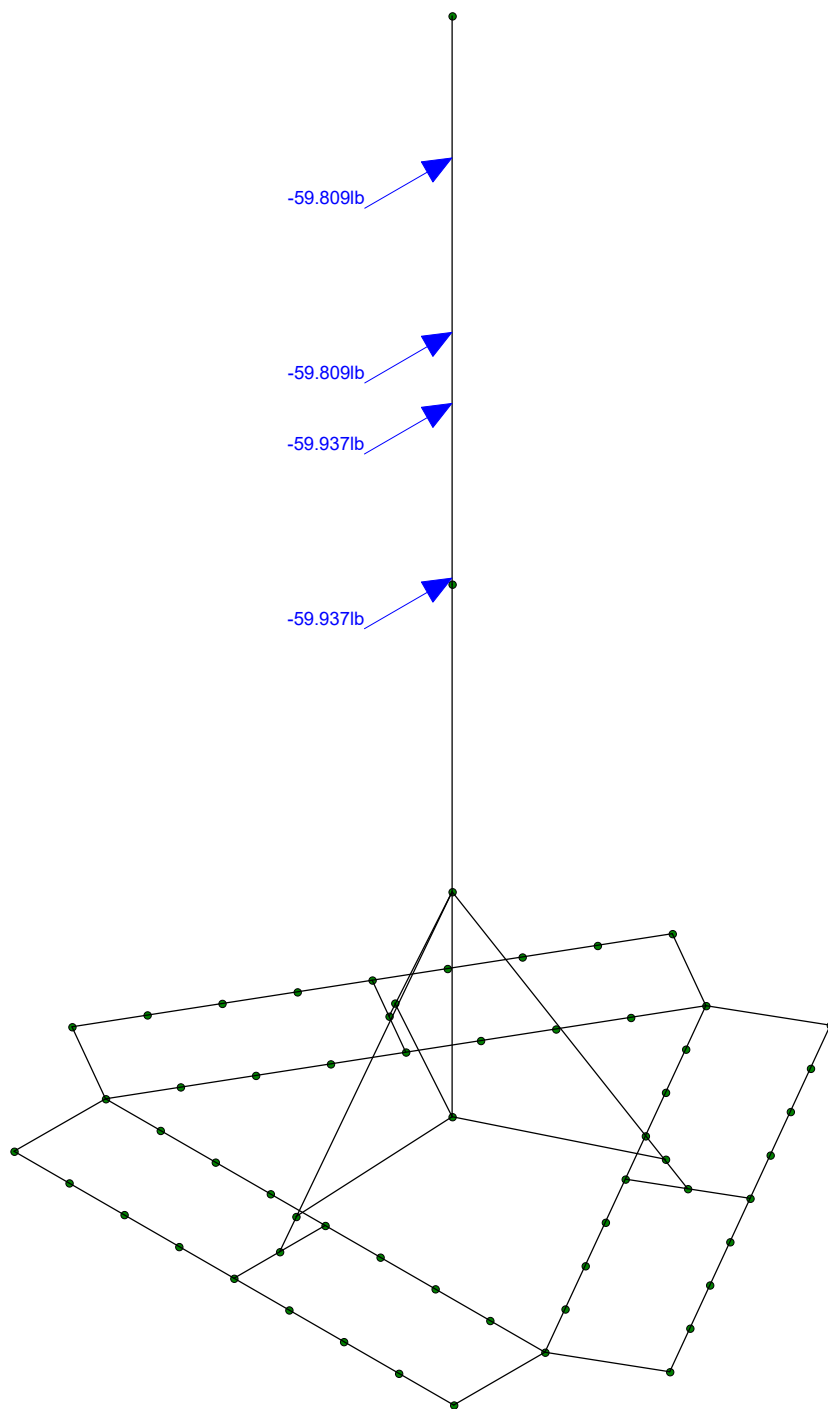
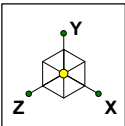


Trylon	10106301 FDA Building	SK - 6
AM		Nov 28, 2022 at 11:05 AM
219148		FDA Building.r3d



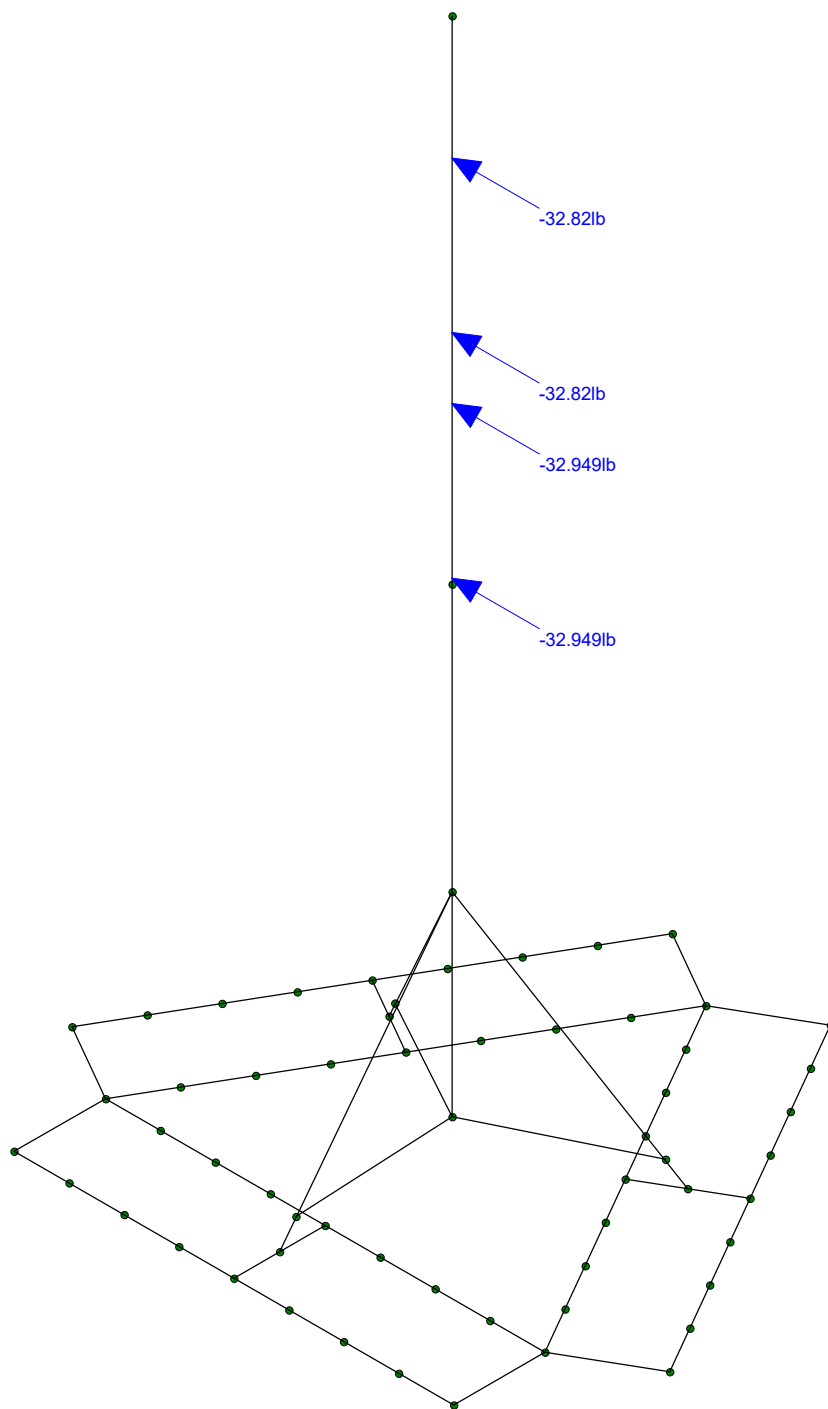
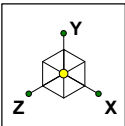
Loads: BLC 1, Self Weight
Envelope Only Solution

Trylon	10106301 FDA Building	SK - 7
AM		Nov 28, 2022 at 11:05 AM
219148		FDA Building.r3d



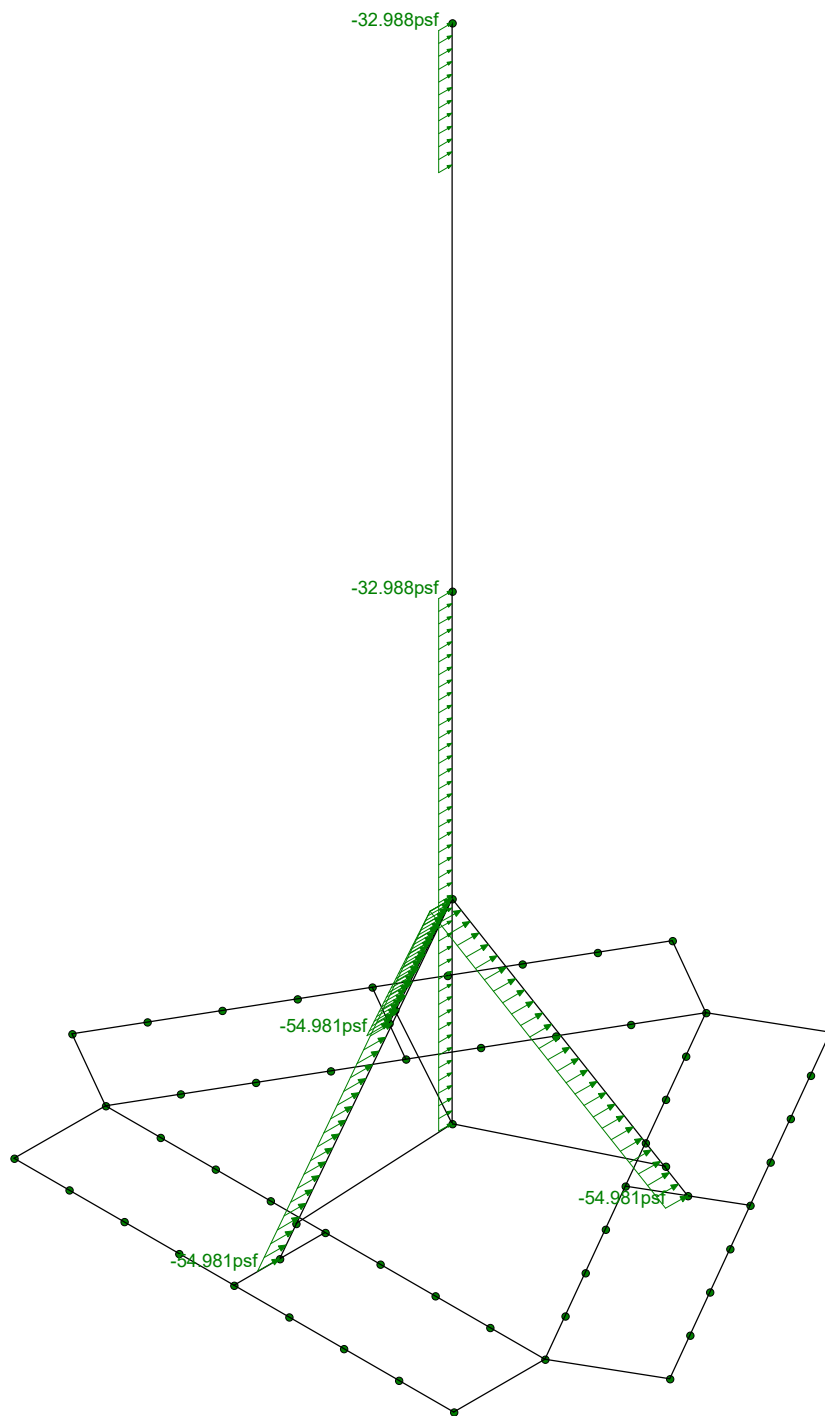
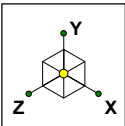
Loads: BLC 4, Wind Load 0 AZI
Envelope Only Solution

Trylon	10106301 FDA Building	SK - 8
AM		Nov 28, 2022 at 11:05 AM
219148		FDA Building.r3d



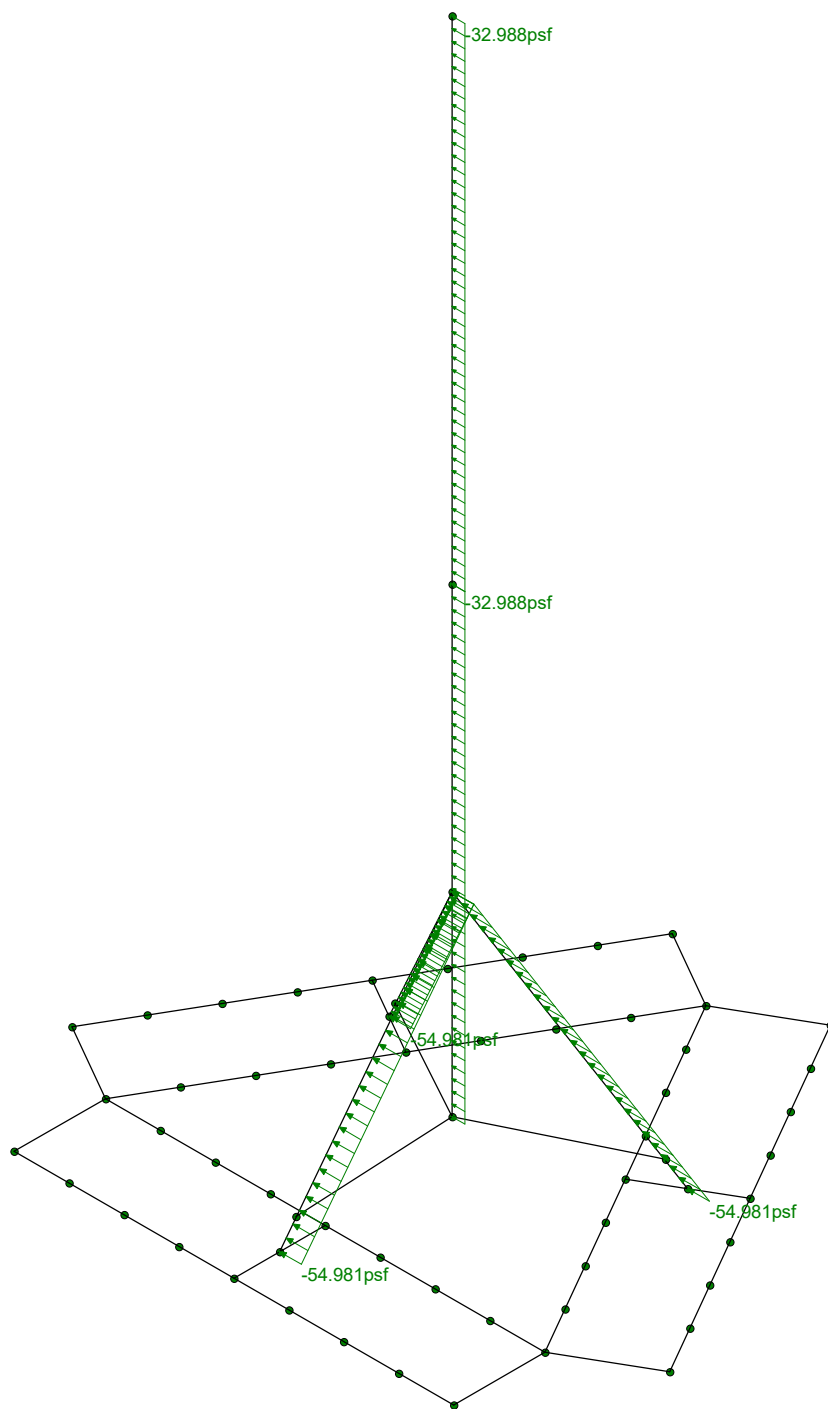
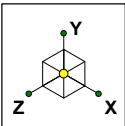
Loads: BLC 8, Wind Load 90 AZI
Envelope Only Solution

Trylon	10106301 FDA Building	SK - 9
AM		Nov 28, 2022 at 11:05 AM
219148		FDA Building.r3d



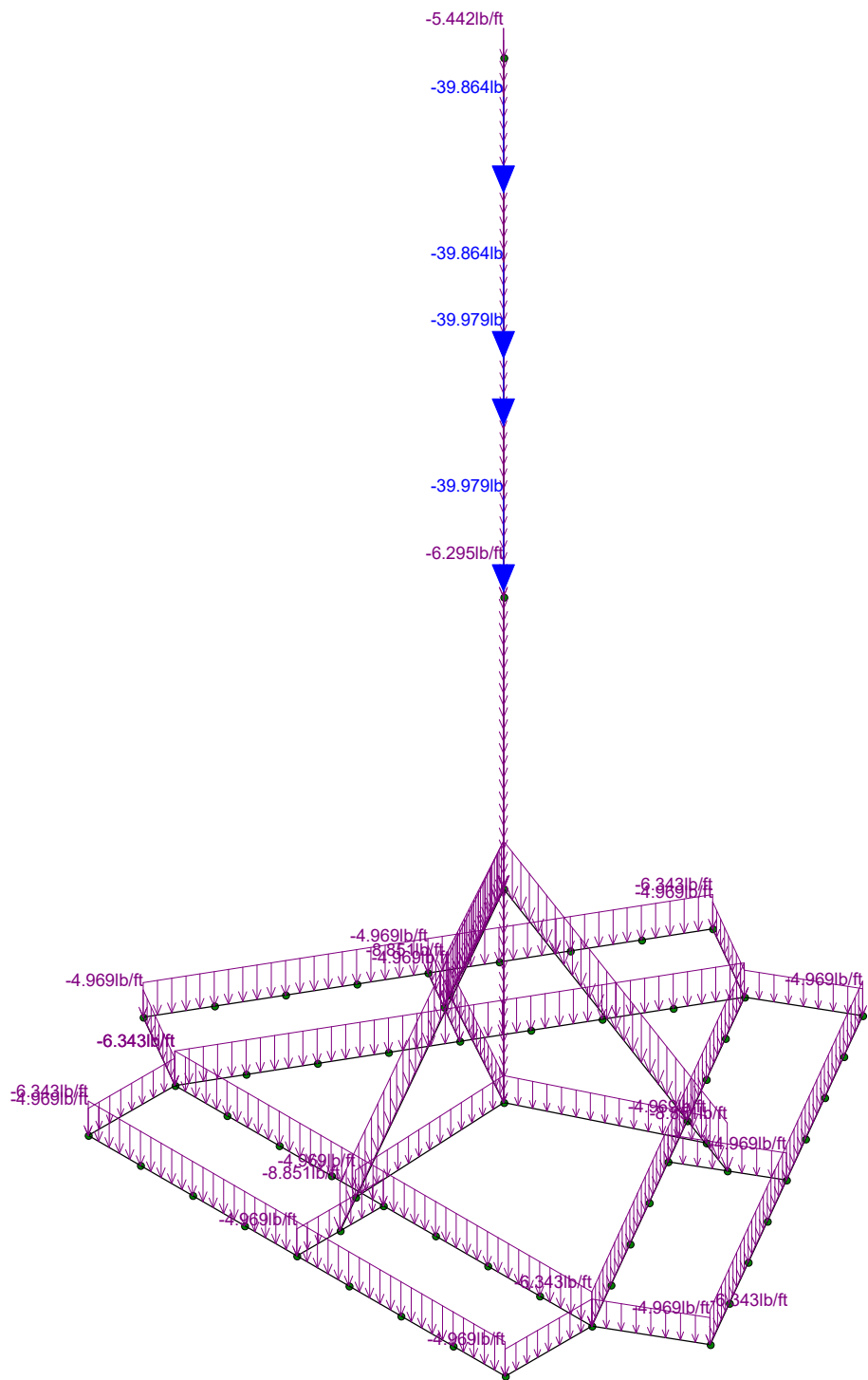
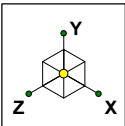
Loads: BLC 2, Structure Wind Z
Envelope Only Solution

Trylon	10106301 FDA Building	SK - 12
AM		Nov 28, 2022 at 11:15 AM
219148		FDA Building.r3d



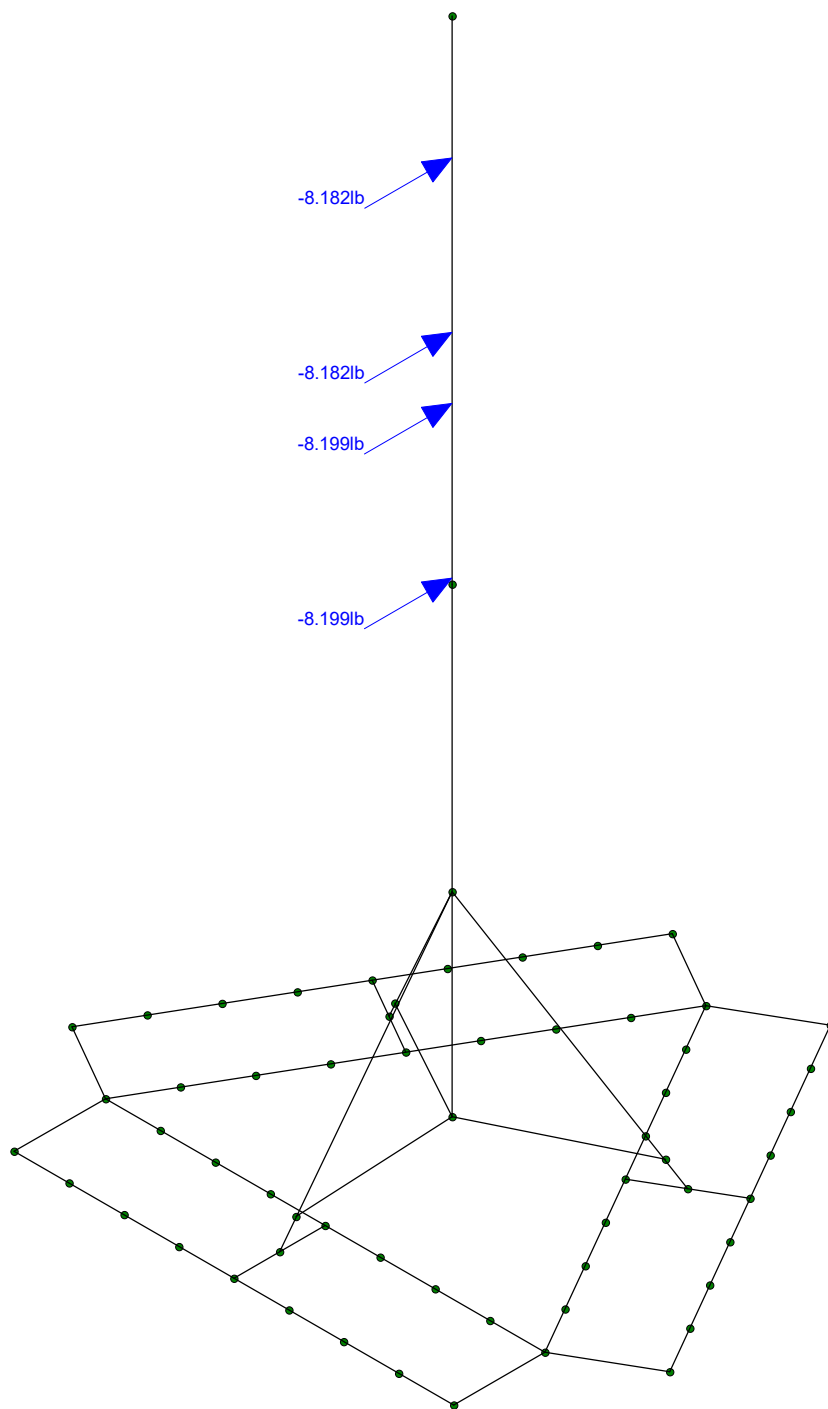
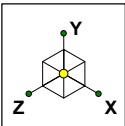
Loads: BLC 3, Structure Wind X
Envelope Only Solution

Trylon	10106301 FDA Building	SK - 13
AM		Nov 28, 2022 at 11:15 AM
219148		FDA Building.r3d



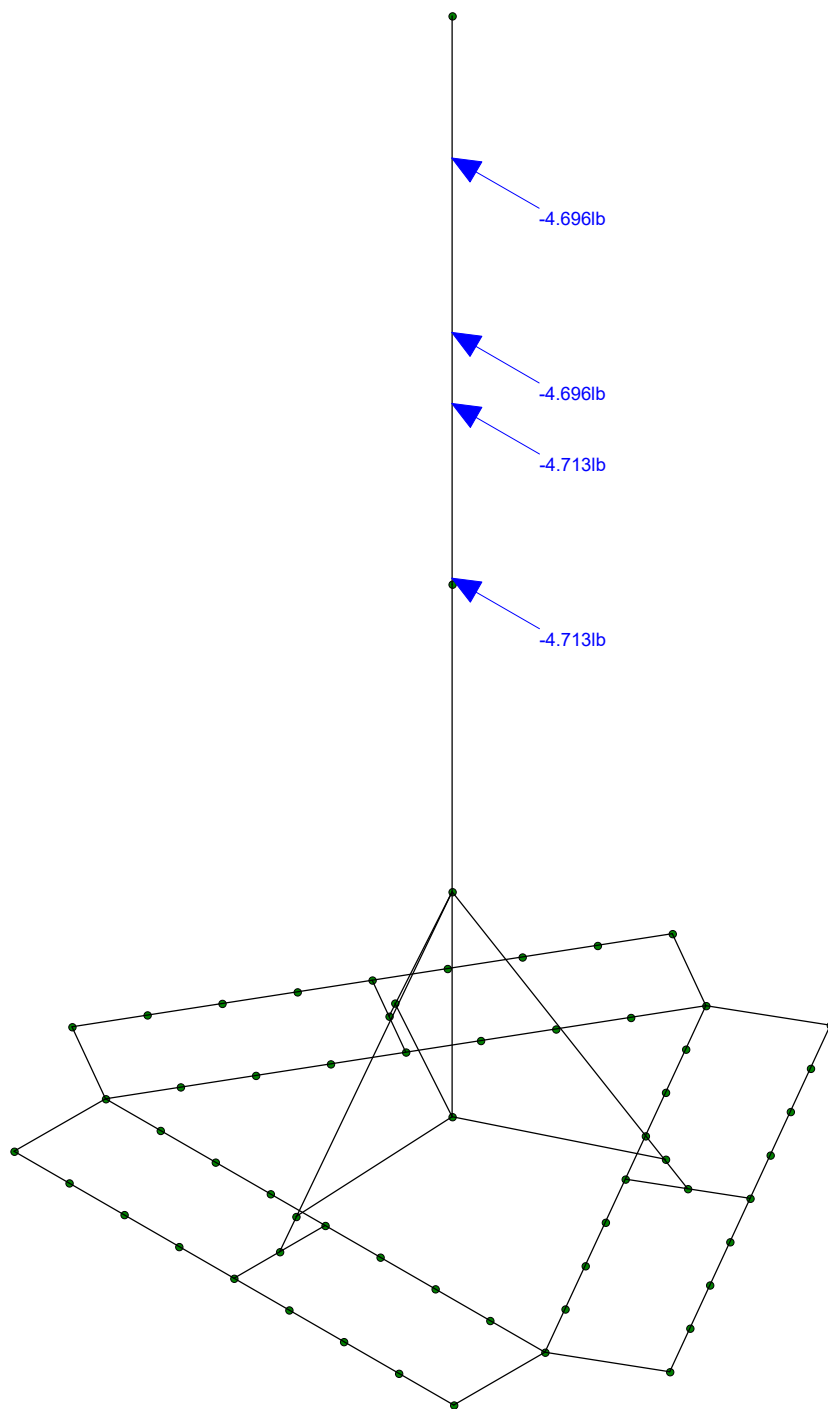
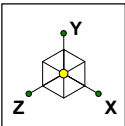
Loads: BLC 12, Ice Weight
Envelope Only Solution

Trylon	10106301 FDA Building	SK - 14
AM		Nov 28, 2022 at 11:15 AM
219148		FDA Building.r3d



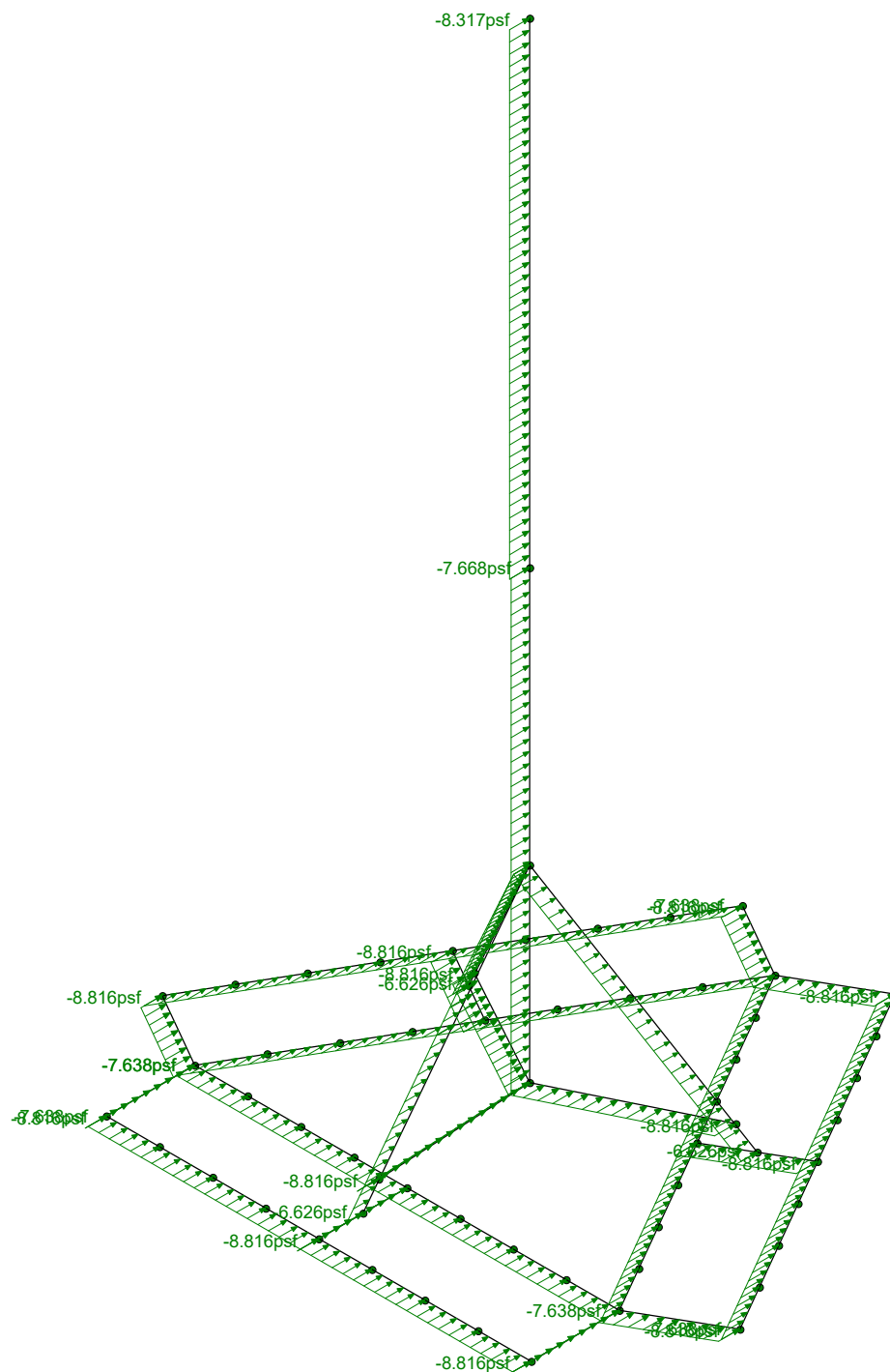
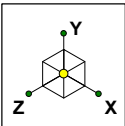
Loads: BLC 15, Ice Wind Load 0 AZI
Envelope Only Solution

Trylon	10106301 FDA Building	SK - 15
AM		Nov 28, 2022 at 11:15 AM
219148		FDA Building.r3d



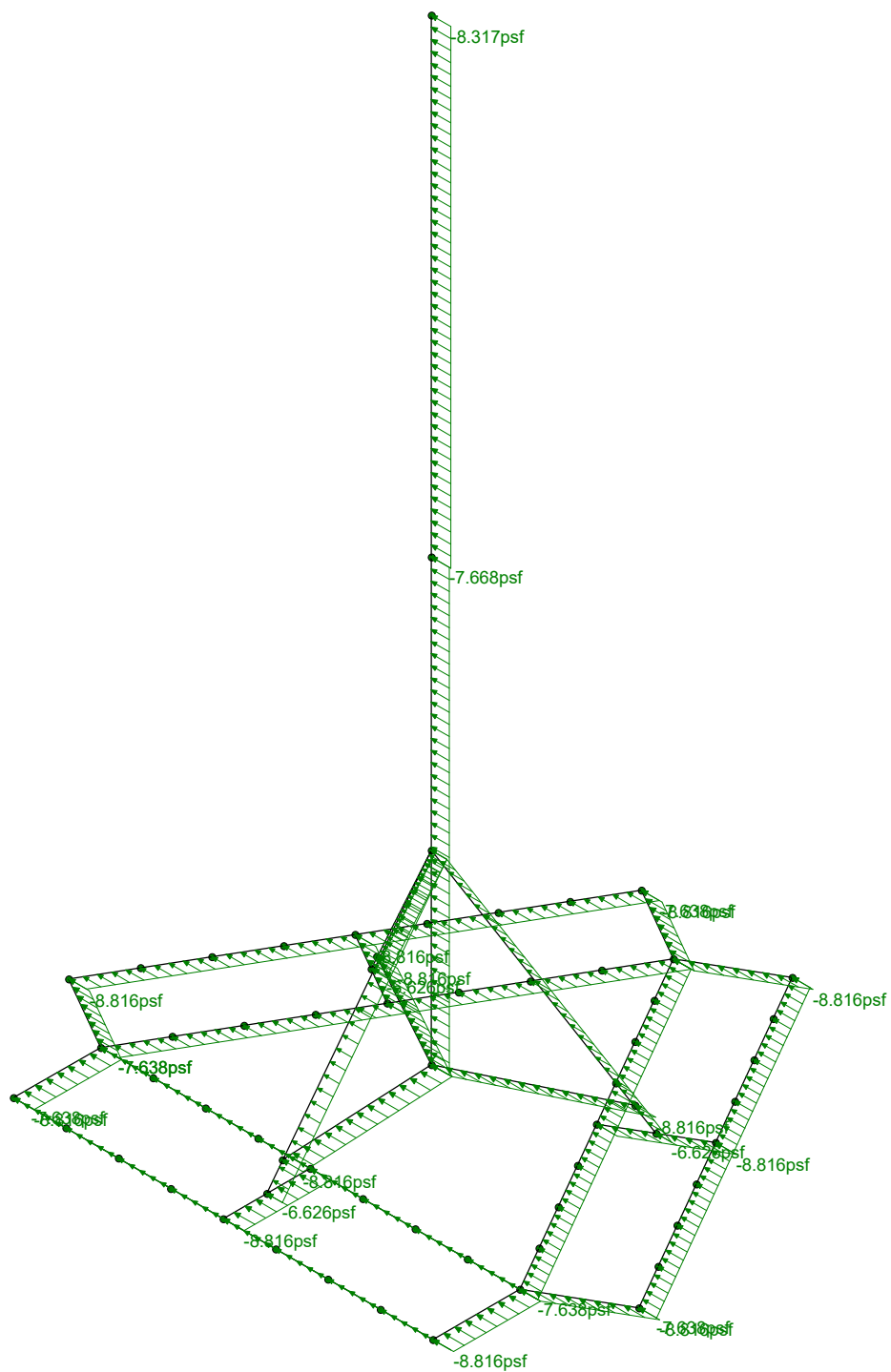
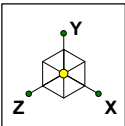
Loads: BLC 19, Ice Wind Load 90 AZI
Envelope Only Solution

Trylon	10106301 FDA Building	SK - 16
AM		Nov 28, 2022 at 11:15 AM
219148		FDA Building.r3d



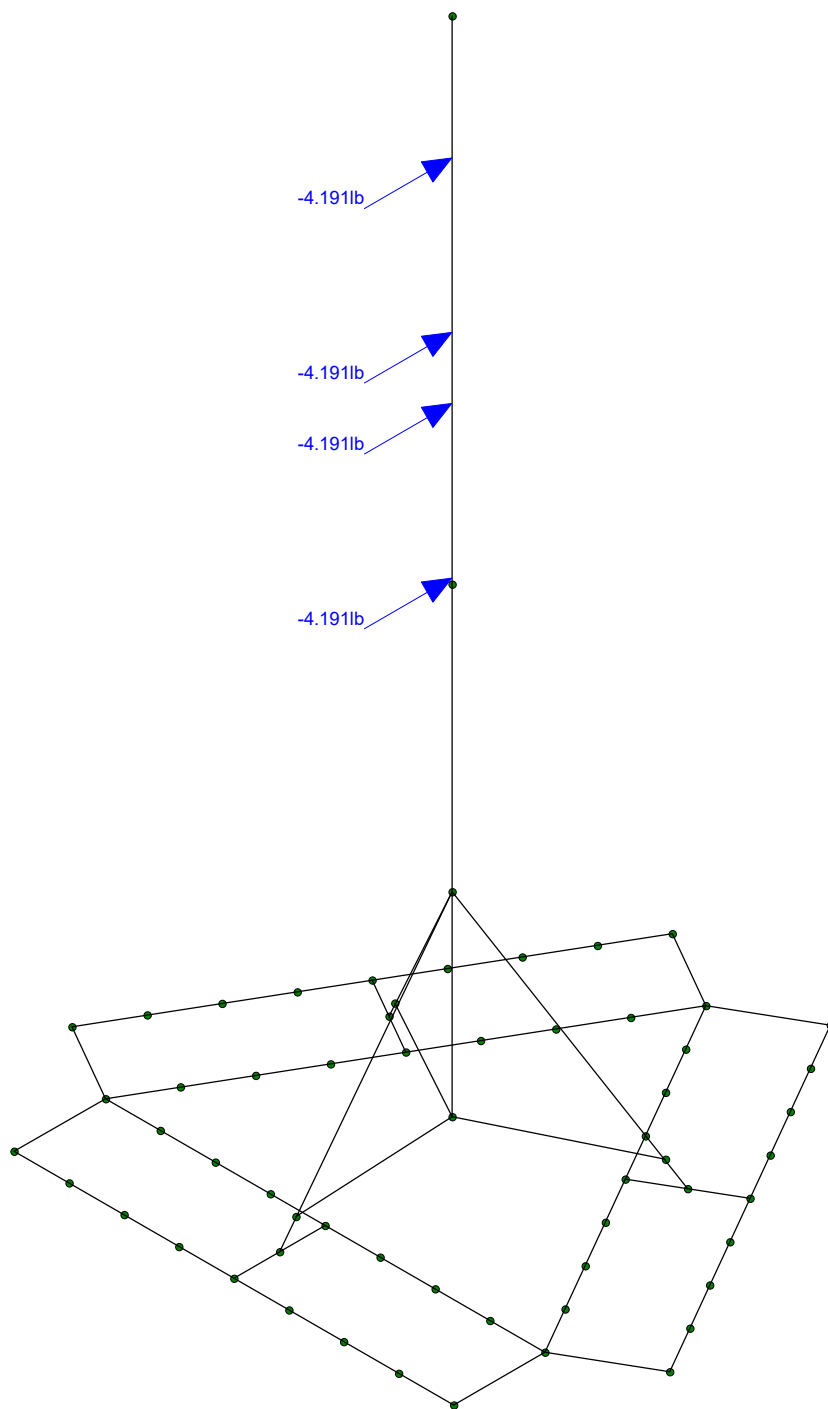
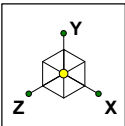
Loads: BLC 13, Ice Structure Wind Z
Envelope Only Solution

Trylon	10106301 FDA Building	SK - 17
AM		Nov 28, 2022 at 11:15 AM
219148		FDA Building.r3d



Loads: BLC 14, Ice Structure Wind X
Envelope Only Solution

Trylon	10106301 FDA Building	SK - 18
AM		Nov 28, 2022 at 11:15 AM
219148		FDA Building.r3d



Loads: BLC 23, Seismic Load Z
Envelope Only Solution

Trylon

AM

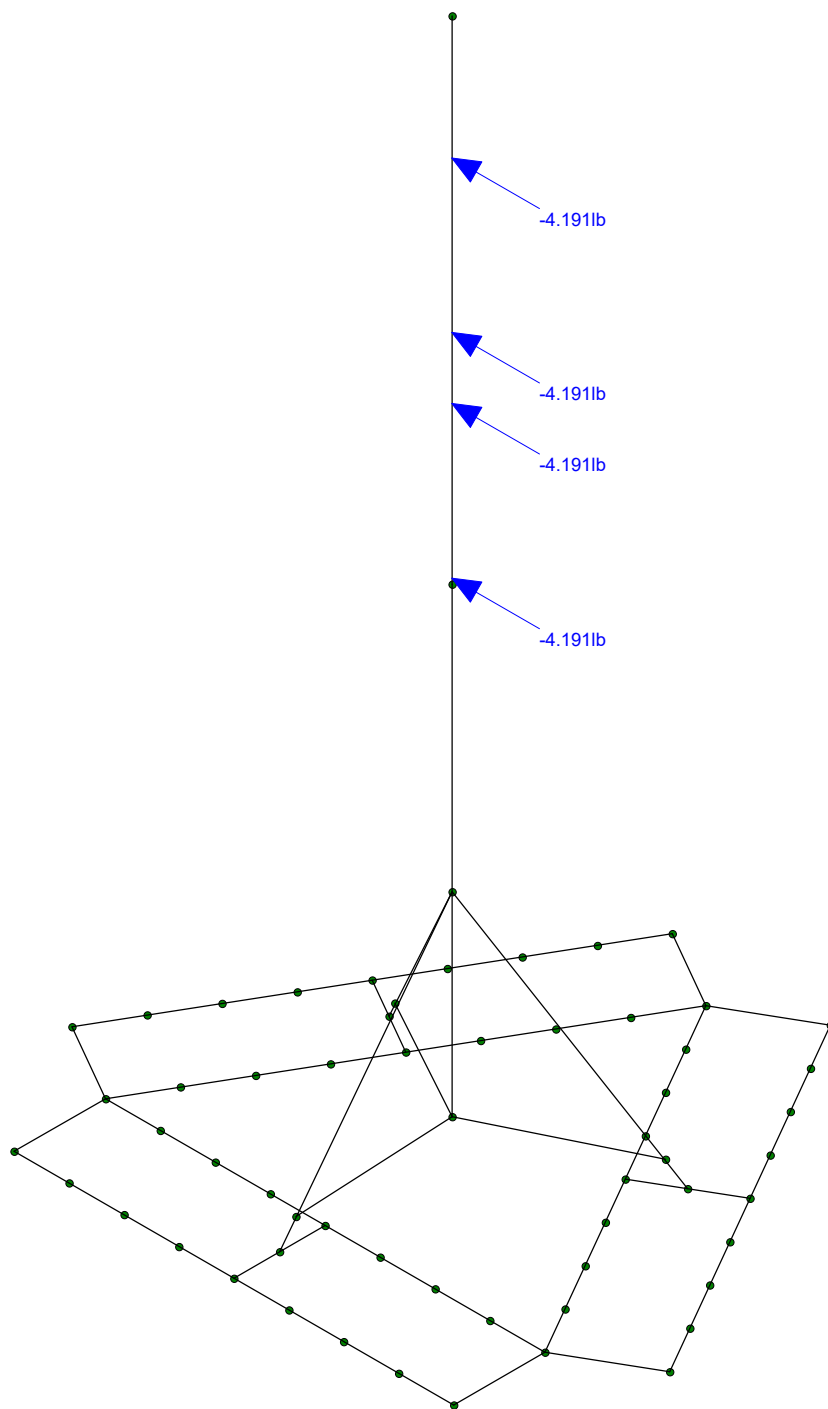
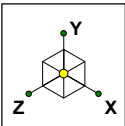
219148

10106301 FDA Building

SK - 19

Nov 28, 2022 at 11:16 AM

FDA Building.r3d



Loads: BLC 24, Seismic Load X
Envelope Only Solution

Trylon	10106301 FDA Building	SK - 20
AM		Nov 28, 2022 at 11:16 AM
219148		FDA Building.r3d

(Global) Model Settings

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Increase Nailing Capacity for Wind?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automatically Iterate Stiffness for Walls?	Yes
Max Iterations for Wall Stiffness	3
Gravity Acceleration (in/sec^2)	386.4
Wall Mesh Size (in)	24
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 15th(360-16): LRFD
Adjust Stiffness?	Yes(Iterative)
RISACONNECTION Code	AISC 15th(360-16): LRFD
Cold Formed Steel Code	AISI S100-16: LRFD
Wood Code	AWC NDS-15: ASD
Wood Temperature	< 100F
Concrete Code	ACI 318-14
Masonry Code	ACI 530-13: Strength
Aluminum Code	AA ADM1-10: LRFD - Building
Stainless Steel Code	AISC 14th(360-10): LRFD
Adjust Stiffness?	Yes(Iterative)

Number of Shear Regions	4
Region Spacing Increment (in)	4
Biaxial Column Method	Exact Integration
Parame Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections?	Yes
Use Cracked Sections Slab?	Yes
Bad Framing Warnings?	No
Unused Force Warnings?	Yes
Min 1 Bar Diam. Spacing?	No
Concrete Rebar Set	REBAR_SET_ASTMA615
Min % Steel for Column	1
Max % Steel for Column	8

(Global) Model Settings, Continued

Seismic Code	ASCE 7-10
Seismic Base Elevation (in)	Not Entered
Add Base Weight?	Yes
Ct X	.02
Ct Z	.02
T X (sec)	Not Entered
T Z (sec)	Not Entered
R X	3
R Z	3
Ct Exp. X	.75
Ct Exp. Z	.75
SD1	1
SDS	1
S1	1
TL (sec)	5
Risk Cat	I or II
Drift Cat	Other
Om Z	1
Om X	1
Cd Z	1
Cd X	1
Rho Z	1
Rho X	1

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E...	Density[lb/f...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	490	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	490	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	490	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	490	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	490	50	1.4	65	1.3
8	A500 Gr.C RND	29000	11154	.3	.65	527	46	1.4	62	1.3
9	A500 Gr.C RECT	29000	11154	.3	.65	527	50	1.4	62	1.3
10	A913 Gr.65	29000	11154	.3	.65	490	65	1.1	80	1.1
11	FRP	2800	450	.5	.44	114	7	1	7	1.1

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Tray Angle	L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical	.901	.535	.535	.011
2	Plate	PL2x5/8	Beam	RECT	A36 Gr.36	Typical	1.25	.041	.417	.131
3	Diagonal Angle	LL2.5x2.5x3x3	HBrace	Double Angle (3/...	A36 Gr.36	Typical	1.8	2.46	1.07	.023
4	2.5 Mast Pipe	PIPE_2.5	Column	Pipe	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
5	3.0 Mast Pipe	PIPE_3.0	Column	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69

Joint Boundary Conditions

	Joint 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_1	S.027	CS100	S.027			
2	N3_1	S.027	CS100	S.027			
3	N2_1	S.027	CS100	S.027			
4	N4_1	S.027	CS100	S.027			
5	N6_1	S.027	CS100	S.027			

Joint Boundary Conditions (Continued)

	Joint 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]
6	N11_1	S.027	CS100	S.027			
7	N12_1	S.027	CS100	S.027			
8	N18	S.027	CS100	S.027			
9	N19	S.027	CS100	S.027			
10	N10_1	S.027	CS100	S.027			
11	N7_1	S.027	CS100	S.027			
12	N8_1	S.027	CS100	S.027			
13	N17	S.027	CS100	S.027			
14	N6A	S.027	CS100	S.027			
15	N24_1	S.027	CS100	S.027			
16	N100_1						
17	N101_1						
18	N29_1	S.027	CS100	S.027			
19	N30_1	S.027	CS100	S.027			
20	N31	S.027	CS100	S.027			
21	N32	S.027	CS100	S.027			
22	N33_1	S.027	CS100	S.027			
23	N34A	S.027	CS100	S.027			
24	N35_1	S.027	CS100	S.027			
25	N36_1	S.027	CS100	S.027			
26	N37	S.027	CS100	S.027			
27	N38	S.027	CS100	S.027			
28	N39_1	S.027	CS100	S.027			
29	N40_1	S.027	CS100	S.027			
30	N41	S.027	CS100	S.027			
31	N42	S.027	CS100	S.027			
32	N43_1	S.027	CS100	S.027			
33	N44	S.027	CS100	S.027			
34	N45_1	S.027	CS100	S.027			
35	N46_1	S.027	CS100	S.027			
36	N47_1	S.027	CS100	S.027			
37	N48_1	S.027	CS100	S.027			
38	N49	S.027	CS100	S.027			
39	N50	S.027	CS100	S.027			
40	N51	S.027	CS100	S.027			
41	N52	S.027	CS100	S.027			
42	N53_1	S.027	CS100	S.027			
43	N54_1	S.027	CS100	S.027			
44	N55_1	S.027	CS100	S.027			
45	N56_1	S.027	CS100	S.027			
46	N57	S.027	CS100	S.027			
47	N58	S.027	CS100	S.027			
48	N59	S.027	CS100	S.027			
49	N60	S.027	CS100	S.027			
50	N61	S.027	CS100	S.027			
51	N62	S.027	CS100	S.027			
52	N63	S.027	CS100	S.027			
53	N64_1	S.027	CS100	S.027			
54	N20						
55	N21						
56	N22A						

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(...)	Section/Shape	Type	Design List	Material	Design R...
1	M1	N1 1	N2 1		270	Tray Angle	Beam	Single Angle	A36 Gr....	Typical
2	M2	N3 1	N4 1			Tray Angle	Beam	Single Angle	A36 Gr....	Typical
3	M3	N1 1	N3 1			Plate	Beam	RECT	A36 Gr....	Typical
4	M4	N2 1	N4 1			Plate	Beam	RECT	A36 Gr....	Typical
5	M5	N3 1	N6 1		270	Tray Angle	Beam	Single Angle	A36 Gr....	Typical
6	M6	N4 1	N6 1			Tray Angle	Beam	Single Angle	A36 Gr....	Typical
7	M7	N10 1	N7 1			Plate	Beam	RECT	A36 Gr....	Typical
8	M8	N11 1	N12 1		270	Tray Angle	Beam	Single Angle	A36 Gr....	Typical
9	M9	N11 1	N4 1			Plate	Beam	RECT	A36 Gr....	Typical
10	M10	N12 1	N6 1			Plate	Beam	RECT	A36 Gr....	Typical
11	M11	N17	N8 1			Plate	Beam	RECT	A36 Gr....	Typical
12	M12	N18	N19		270	Tray Angle	Beam	Single Angle	A36 Gr....	Typical
13	M13	N18	N6 1			Plate	Beam	RECT	A36 Gr....	Typical
14	M14	N19	N3 1			Plate	Beam	RECT	A36 Gr....	Typical
15	M15 1	N24 1	N6A			Plate	Beam	RECT	A36 Gr....	Typical
16	M17	N20	N24A			Diagonal Angle	HBrace	Double Ang..	A36 Gr....	Typical
17	M18	N21	N24A			Diagonal Angle	HBrace	Double Ang..	A36 Gr....	Typical
18	M19	N22A	N24A			Diagonal Angle	HBrace	Double Ang..	A36 Gr....	Typical
19	M20	N25 1	N100 1			Plate	Beam	RECT	A36 Gr....	Typical
20	M21	N26 1	N100 1			Plate	Beam	RECT	A36 Gr....	Typical
21	M22 1	N27 1	N100 1			Plate	Beam	RECT	A36 Gr....	Typical
22	MP2	N61A	N100 1			3.0 Mast Pipe	Column	Pipe	A53 Gr.B	Typical
23	MP1	N101_1	N61A			2.5 Mast Pipe	Column	Pipe	A53 Gr.B	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat..	Analysis Off...	Inactive	Seismic...
1	M1						Yes				None
2	M2						Yes				None
3	M3						Yes				None
4	M4						Yes				None
5	M5						Yes				None
6	M6						Yes				None
7	M7						Yes				None
8	M8						Yes				None
9	M9						Yes				None
10	M10						Yes				None
11	M11						Yes				None
12	M12						Yes				None
13	M13						Yes				None
14	M14						Yes				None
15	M15 1						Yes				None
16	M17						Yes	** NA **			None
17	M18						Yes	** NA **			None
18	M19						Yes	** NA **			None
19	M20						Yes	Default			None
20	M21						Yes	Default			None
21	M22 1						Yes	Default			None
22	MP2						Yes	** NA **			None
23	MP1						Yes	** NA **			None

Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torqu...	Kyy	Kzz	Cb	Function
1	M1	Tray Angle	85.75	Segment	Segment	Lbyy	Segment	Segme...				Lateral
2	M2	Tray Angle	85.75	Segment	Segment	Lbyy	Segment	Segme...				Lateral
3	M3	Plate	17.813			Lbyy						Lateral
4	M4	Plate	17.813			Lbyy						Lateral
5	M5	Tray Angle	85.75	Segment	Segment	Lbyy	Segment	Segme...				Lateral
6	M6	Tray Angle	85.75	Segment	Segment	Lbyy	Segment	Segme...				Lateral
7	M7	Plate	17.813			Lbyy						Lateral
8	M8	Tray Angle	85.75	Segment	Segment	Lbyy	Segment	Segme...				Lateral
9	M9	Plate	17.812			Lbyy						Lateral
10	M10	Plate	17.813			Lbyy						Lateral
11	M11	Plate	17.812			Lbyy						Lateral
12	M12	Tray Angle	85.75	Segment	Segment	Lbyy	Segment	Segme...				Lateral
13	M13	Plate	17.813			Lbyy						Lateral
14	M14	Plate	17.812			Lbyy						Lateral
15	M15 1	Plate	17.812			Lbyy						Lateral
16	M17	Diagonal An...	55.399			Lbyy						Lateral
17	M18	Diagonal An...	55.399			Lbyy						Lateral
18	M19	Diagonal An...	55.399			Lbyy						Lateral
19	M20	Plate	30.522			Lbyy						Lateral
20	M21	Plate	30.522			Lbyy						Lateral
21	M22 1	Plate	30.522			Lbyy						Lateral
22	MP2	3.0 Mast Pipe	90	44	44	44	44	44				Lateral
23	MP1	2.5 Mast Pipe	96	44	44	44	44	44				Lateral

Joint Loads and Enforced Displacements

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

Member Point Loads (BLC 1 : Self Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Y	-49.605	24
2	MP1	Y	-49.605	53.5
3	MP1	Y	-49.605	65.5
4	MP1	Y	-49.605	95.03

Member Point Loads (BLC 4 : Wind Load 0 AZI)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-59.809	24
2	MP1	Z	-59.809	53.5
3	MP1	Z	-59.937	65.5
4	MP1	Z	-59.937	95.03
5	MP1	X	0	24
6	MP1	X	0	53.5
7	MP1	X	0	65.5
8	MP1	X	0	95.03

Member Point Loads (BLC 5 : Wind Load 30 AZI)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-45.953	24
2	MP1	Z	-45.953	53.5
3	MP1	Z	-46.064	65.5
4	MP1	Z	-46.064	95.03
5	MP1	X	-26.531	24

Member Point Loads (BLC 5 : Wind Load 30 AZI) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
6	MP1	X	-26.531	53.5
7	MP1	X	-26.595	65.5
8	MP1	X	-26.595	95.03

Member Point Loads (BLC 6 : Wind Load 45 AZI)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
1	MP1	Z	-32.749	24
2	MP1	Z	-32.749	53.5
3	MP1	Z	-32.84	65.5
4	MP1	Z	-32.84	95.03
5	MP1	X	-32.749	24
6	MP1	X	-32.749	53.5
7	MP1	X	-32.84	65.5
8	MP1	X	-32.84	95.03

Member Point Loads (BLC 7 : Wind Load 60 AZI)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
1	MP1	Z	-19.784	24
2	MP1	Z	-19.784	53.5
3	MP1	Z	-19.848	65.5
4	MP1	Z	-19.848	95.03
5	MP1	X	-34.266	24
6	MP1	X	-34.266	53.5
7	MP1	X	-34.378	65.5
8	MP1	X	-34.378	95.03

Member Point Loads (BLC 8 : Wind Load 90 AZI)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
1	MP1	Z	0	24
2	MP1	Z	0	53.5
3	MP1	Z	0	65.5
4	MP1	Z	0	95.03
5	MP1	X	-32.82	24
6	MP1	X	-32.82	53.5
7	MP1	X	-32.949	65.5
8	MP1	X	-32.949	95.03

Member Point Loads (BLC 9 : Wind Load 120 AZI)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
1	MP1	Z	19.784	24
2	MP1	Z	19.784	53.5
3	MP1	Z	19.848	65.5
4	MP1	Z	19.848	95.03
5	MP1	X	-34.266	24
6	MP1	X	-34.266	53.5
7	MP1	X	-34.378	65.5
8	MP1	X	-34.378	95.03

Member Point Loads (BLC 10 : Wind Load 135 AZI)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
1	MP1	Z	32.749	24
2	MP1	Z	32.749	53.5
3	MP1	Z	32.84	65.5
4	MP1	Z	32.84	95.03

Member Point Loads (BLC 10 : Wind Load 135 AZI) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
5	MP1	X	-32.749	24
6	MP1	X	-32.749	53.5
7	MP1	X	-32.84	65.5
8	MP1	X	-32.84	95.03

Member Point Loads (BLC 11 : Wind Load 150 AZI)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
1	MP1	Z	45.953	24
2	MP1	Z	45.953	53.5
3	MP1	Z	46.064	65.5
4	MP1	Z	46.064	95.03
5	MP1	X	-26.531	24
6	MP1	X	-26.531	53.5
7	MP1	X	-26.595	65.5
8	MP1	X	-26.595	95.03

Member Point Loads (BLC 12 : Ice Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
1	MP1	Y	-39.864	24
2	MP1	Y	-39.864	53.5
3	MP1	Y	-39.979	65.5
4	MP1	Y	-39.979	95.03

Member Point Loads (BLC 15 : Ice Wind Load 0 AZI)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
1	MP1	Z	-8.182	24
2	MP1	Z	-8.182	53.5
3	MP1	Z	-8.199	65.5
4	MP1	Z	-8.199	95.03
5	MP1	X	0	24
6	MP1	X	0	53.5
7	MP1	X	0	65.5
8	MP1	X	0	95.03

Member Point Loads (BLC 16 : Ice Wind Load 30 AZI)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
1	MP1	Z	-6.331	24
2	MP1	Z	-6.331	53.5
3	MP1	Z	-6.346	65.5
4	MP1	Z	-6.346	95.03
5	MP1	X	-3.655	24
6	MP1	X	-3.655	53.5
7	MP1	X	-3.664	65.5
8	MP1	X	-3.664	95.03

Member Point Loads (BLC 17 : Ice Wind Load 45 AZI)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
1	MP1	Z	-4.553	24
2	MP1	Z	-4.553	53.5
3	MP1	Z	-4.565	65.5
4	MP1	Z	-4.565	95.03
5	MP1	X	-4.553	24
6	MP1	X	-4.553	53.5
7	MP1	X	-4.565	65.5

Member Point Loads (BLC 17 : Ice Wind Load 45 AZI) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
8	MP1	X	-4.565	95.03

Member Point Loads (BLC 18 : Ice Wind Load 60 AZI)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
1	MP1	Z	-2.784	24
2	MP1	Z	-2.784	53.5
3	MP1	Z	-2.792	65.5
4	MP1	Z	-2.792	95.03
5	MP1	X	-4.822	24
6	MP1	X	-4.822	53.5
7	MP1	X	-4.836	65.5
8	MP1	X	-4.836	95.03

Member Point Loads (BLC 19 : Ice Wind Load 90 AZI)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
1	MP1	Z	0	24
2	MP1	Z	0	53.5
3	MP1	Z	0	65.5
4	MP1	Z	0	95.03
5	MP1	X	-4.696	24
6	MP1	X	-4.696	53.5
7	MP1	X	-4.713	65.5
8	MP1	X	-4.713	95.03

Member Point Loads (BLC 20 : Ice Wind Load 120 AZI)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
1	MP1	Z	2.784	24
2	MP1	Z	2.784	53.5
3	MP1	Z	2.792	65.5
4	MP1	Z	2.792	95.03
5	MP1	X	-4.822	24
6	MP1	X	-4.822	53.5
7	MP1	X	-4.836	65.5
8	MP1	X	-4.836	95.03

Member Point Loads (BLC 21 : Ice Wind Load 135 AZI)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
1	MP1	Z	4.553	24
2	MP1	Z	4.553	53.5
3	MP1	Z	4.565	65.5
4	MP1	Z	4.565	95.03
5	MP1	X	-4.553	24
6	MP1	X	-4.553	53.5
7	MP1	X	-4.565	65.5
8	MP1	X	-4.565	95.03

Member Point Loads (BLC 22 : Ice Wind Load 150 AZI)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
1	MP1	Z	6.331	24
2	MP1	Z	6.331	53.5
3	MP1	Z	6.346	65.5
4	MP1	Z	6.346	95.03
5	MP1	X	-3.655	24
6	MP1	X	-3.655	53.5

Member Point Loads (BLC 22 : Ice Wind Load 150 AZI) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
7	MP1	X	-3.664	65.5
8	MP1	X	-3.664	95.03

Member Point Loads (BLC 23 : Seismic Load Z)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-4.191	24
2	MP1	Z	-4.191	53.5
3	MP1	Z	-4.191	65.5
4	MP1	Z	-4.191	95.03

Member Point Loads (BLC 24 : Seismic Load X)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-4.191	24
2	MP1	X	-4.191	53.5
3	MP1	X	-4.191	65.5
4	MP1	X	-4.191	95.03

Member Distributed Loads (BLC 2 : Structure Wind Z)

	Member Label	Direction	Start Magnitude[lb/ft,F,psf]	End Magnitude[lb/ft,F,psf]	Start Location[in...]	End Location[in...]
1	M1	SZ	0	0	0	%100
2	M2	SZ	0	0	0	%100
3	M3	SZ	0	0	0	%100
4	M4	SZ	0	0	0	%100
5	M5	SZ	0	0	0	%100
6	M6	SZ	0	0	0	%100
7	M7	SZ	0	0	0	%100
8	M8	SZ	0	0	0	%100
9	M9	SZ	0	0	0	%100
10	M10	SZ	0	0	0	%100
11	M11	SZ	0	0	0	%100
12	M12	SZ	0	0	0	%100
13	M13	SZ	0	0	0	%100
14	M14	SZ	0	0	0	%100
15	M15 1	SZ	0	0	0	%100
16	M17	SZ	-54.981	-54.981	0	%100
17	M18	SZ	-54.981	-54.981	0	%100
18	M19	SZ	-54.981	-54.981	0	%100
19	M20	SZ	0	0	0	%100
20	M21	SZ	0	0	0	%100
21	M22 1	SZ	0	0	0	%100
22	MP2	SZ	-32.988	-32.988	0	%100
23	MP1	SZ	-32.988	-32.988	0	24

Member Distributed Loads (BLC 3 : Structure Wind X)

	Member Label	Direction	Start Magnitude[lb/ft,F,psf]	End Magnitude[lb/ft,F,psf]	Start Location[in...]	End Location[in...]
1	M1	SX	0	0	0	%100
2	M2	SX	0	0	0	%100
3	M3	SX	0	0	0	%100
4	M4	SX	0	0	0	%100
5	M5	SX	0	0	0	%100
6	M6	SX	0	0	0	%100
7	M7	SX	0	0	0	%100
8	M8	SX	0	0	0	%100
9	M9	SX	0	0	0	%100

Member Distributed Loads (BLC 3 : Structure Wind X) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft.F.psf]	End Magnitude[lb/ft.F.psf]	Start Location[in...	End Location[in...
10	M10	SX	0	0	0	%100
11	M11	SX	0	0	0	%100
12	M12	SX	0	0	0	%100
13	M13	SX	0	0	0	%100
14	M14	SX	0	0	0	%100
15	M15 1	SX	0	0	0	%100
16	M17	SX	-54.981	-54.981	0	%100
17	M18	SX	-54.981	-54.981	0	%100
18	M19	SX	-54.981	-54.981	0	%100
19	M20	SX	0	0	0	%100
20	M21	SX	0	0	0	%100
21	M22 1	SX	0	0	0	%100
22	MP2	SX	-32.988	-32.988	0	%100
23	MP1	SX	-32.988	-32.988	0	%100

Member Distributed Loads (BLC 12 : Ice Weight)

	Member Label	Direction	Start Magnitude[lb/ft.F.psf]	End Magnitude[lb/ft.F.psf]	Start Location[in...	End Location[in...
1	M1	Y	-6.343	-6.343	0	%100
2	M2	Y	-6.343	-6.343	0	%100
3	M3	Y	-4.969	-4.969	0	%100
4	M4	Y	-4.969	-4.969	0	%100
5	M5	Y	-6.343	-6.343	0	%100
6	M6	Y	-6.343	-6.343	0	%100
7	M7	Y	-4.969	-4.969	0	%100
8	M8	Y	-6.343	-6.343	0	%100
9	M9	Y	-4.969	-4.969	0	%100
10	M10	Y	-4.969	-4.969	0	%100
11	M11	Y	-4.969	-4.969	0	%100
12	M12	Y	-6.343	-6.343	0	%100
13	M13	Y	-4.969	-4.969	0	%100
14	M14	Y	-4.969	-4.969	0	%100
15	M15 1	Y	-4.969	-4.969	0	%100
16	M17	Y	-8.851	-8.851	0	%100
17	M18	Y	-8.851	-8.851	0	%100
18	M19	Y	-8.851	-8.851	0	%100
19	M20	Y	-4.969	-4.969	0	%100
20	M21	Y	-4.969	-4.969	0	%100
21	M22 1	Y	-4.969	-4.969	0	%100
22	MP2	Y	-6.295	-6.295	0	%100
23	MP1	Y	-5.442	-5.442	0	%100

Member Distributed Loads (BLC 13 : Ice Structure Wind Z)

	Member Label	Direction	Start Magnitude[lb/ft.F.psf]	End Magnitude[lb/ft.F.psf]	Start Location[in...	End Location[in...
1	M1	SZ	-7.638	-7.638	0	%100
2	M2	SZ	-7.638	-7.638	0	%100
3	M3	SZ	-8.816	-8.816	0	%100
4	M4	SZ	-8.816	-8.816	0	%100
5	M5	SZ	-7.638	-7.638	0	%100
6	M6	SZ	-7.638	-7.638	0	%100
7	M7	SZ	-8.816	-8.816	0	%100
8	M8	SZ	-7.638	-7.638	0	%100
9	M9	SZ	-8.816	-8.816	0	%100
10	M10	SZ	-8.816	-8.816	0	%100
11	M11	SZ	-8.816	-8.816	0	%100
12	M12	SZ	-7.638	-7.638	0	%100
13	M13	SZ	-8.816	-8.816	0	%100

Member Distributed Loads (BLC 13 : Ice Structure Wind Z) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft.F.psf]	End Magnitude[lb/ft.F.psf]	Start Location[in...	End Location[in...
14	M14	SZ	-8.816	-8.816	0	%100
15	M15 1	SZ	-8.816	-8.816	0	%100
16	M17	SZ	-6.626	-6.626	0	%100
17	M18	SZ	-6.626	-6.626	0	%100
18	M19	SZ	-6.626	-6.626	0	%100
19	M20	SZ	-8.816	-8.816	0	%100
20	M21	SZ	-8.816	-8.816	0	%100
21	M22 1	SZ	-8.816	-8.816	0	%100
22	MP2	SZ	-7.668	-7.668	0	%100
23	MP1	SZ	-8.317	-8.317	0	%100

Member Distributed Loads (BLC 14 : Ice Structure Wind X)

	Member Label	Direction	Start Magnitude[lb/ft.F.psf]	End Magnitude[lb/ft.F.psf]	Start Location[in...	End Location[in...
1	M1	SX	-7.638	-7.638	0	%100
2	M2	SX	-7.638	-7.638	0	%100
3	M3	SX	-8.816	-8.816	0	%100
4	M4	SX	-8.816	-8.816	0	%100
5	M5	SX	-7.638	-7.638	0	%100
6	M6	SX	-7.638	-7.638	0	%100
7	M7	SX	-8.816	-8.816	0	%100
8	M8	SX	-7.638	-7.638	0	%100
9	M9	SX	-8.816	-8.816	0	%100
10	M10	SX	-8.816	-8.816	0	%100
11	M11	SX	-8.816	-8.816	0	%100
12	M12	SX	-7.638	-7.638	0	%100
13	M13	SX	-8.816	-8.816	0	%100
14	M14	SX	-8.816	-8.816	0	%100
15	M15 1	SX	-8.816	-8.816	0	%100
16	M17	SX	-6.626	-6.626	0	%100
17	M18	SX	-6.626	-6.626	0	%100
18	M19	SX	-6.626	-6.626	0	%100
19	M20	SX	-8.816	-8.816	0	%100
20	M21	SX	-8.816	-8.816	0	%100
21	M22 1	SX	-8.816	-8.816	0	%100
22	MP2	SX	-7.668	-7.668	0	%100
23	MP1	SX	-8.317	-8.317	0	%100

Member Distributed Loads (BLC 25 : BLC 1 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb/ft.F.psf]	End Magnitude[lb/ft.F.psf]	Start Location[in...	End Location[in...
1	M1	Y	-14.844	-14.844	2.665e-15	85.75
2	M2	Y	-14.844	-14.844	2.665e-15	85.75
3	M6	Y	-14.844	-14.844	1.592e-7	85.75
4	M8	Y	-14.844	-14.844	0	85.75
5	M5	Y	-14.844	-14.844	0	85.75
6	M12	Y	-14.844	-14.844	4.687e-7	85.75

Member Area Loads (BLC 1 : Self Weight)

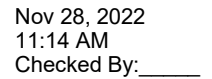
	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	N1 1	N3 1	N4 1	N2 1	Y	Two Way	-20
2	N4 1	N11 1	N12 1	N6 1	Y	Two Way	-20
3	N18	N6 1	N3 1	N19	Y	Two Way	-20

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed Area(Me...	Surface(P...
1	Self Weight	DL		-1			4		3
2	Structure Wind Z	WLZ						23	
3	Structure Wind X	WLX						23	
4	Wind Load 0 AZI	WLZ					8		
5	Wind Load 30 AZI	None					8		
6	Wind Load 45 AZI	None					8		
7	Wind Load 60 AZI	None					8		
8	Wind Load 90 AZI	WLX					8		
9	Wind Load 120 AZI	None					8		
10	Wind Load 135 AZI	None					8		
11	Wind Load 150 AZI	None					8		
12	Ice Weight	OL1					4	23	
13	Ice Structure Wind Z	OL2						23	
14	Ice Structure Wind X	OL3						23	
15	Ice Wind Load 0 AZI	OL2					8		
16	Ice Wind Load 30 AZI	None					8		
17	Ice Wind Load 45 AZI	None					8		
18	Ice Wind Load 60 AZI	None					8		
19	Ice Wind Load 90 AZI	OL3					8		
20	Ice Wind Load 120 AZI	None					8		
21	Ice Wind Load 135 AZI	None					8		
22	Ice Wind Load 150 AZI	None					8		
23	Seismic Load Z	ELZ			-.084		4		
24	Seismic Load X	ELX	-.084				4		
25	BLC 1 Transient Area L...	None						6	

Load Combinations

	Description	So..P...	S...	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..
1	1.4DL	Yes	Y	DL	1.4															
2	1.2DL + 1WL 0 AZI	Yes	Y	DL	1.2	2	1	3	4	1										
3	1.2DL + 1WL 30 AZI	Yes	Y	DL	1.2	2	.866	3	.5	5	1									
4	1.2DL + 1WL 45 AZI	Yes	Y	DL	1.2	2	.707	3	.707	6	1									
5	1.2DL + 1WL 60 AZI	Yes	Y	DL	1.2	2	.5	3	.866	7	1									
6	1.2DL + 1WL 90 AZI	Yes	Y	DL	1.2	2		3	1	8	1									
7	1.2DL + 1WL 120 AZI	Yes	Y	DL	1.2	2	-.5	3	.866	9	1									
8	1.2DL + 1WL 135 AZI	Yes	Y	DL	1.2	2	-.707	3	.707	10	1									
9	1.2DL + 1WL 150 AZI	Yes	Y	DL	1.2	2	-.866	3	.5	11	1									
10	1.2DL + 1WL 180 AZI	Yes	Y	DL	1.2	2	-1	3		4	-1									
11	1.2DL + 1WL 210 AZI	Yes	Y	DL	1.2	2	-.866	3	-.5	5	-1									
12	1.2DL + 1WL 225 AZI	Yes	Y	DL	1.2	2	-.707	3	-.707	6	-1									
13	1.2DL + 1WL 240 AZI	Yes	Y	DL	1.2	2	-.5	3	-.866	7	-1									
14	1.2DL + 1WL 270 AZI	Yes	Y	DL	1.2	2		3	-1	8	-1									
15	1.2DL + 1WL 300 AZI	Yes	Y	DL	1.2	2	.5	3	-.866	9	-1									
16	1.2DL + 1WL 315 AZI	Yes	Y	DL	1.2	2	.707	3	-.707	10	-1									
17	1.2DL + 1WL 330 AZI	Yes	Y	DL	1.2	2	.866	3	-.5	11	-1									
18	0.9DL + 1WL 0 AZI	Yes	Y	DL	.9	2	1	3	4	1										
19	0.9DL + 1WL 30 AZI	Yes	Y	DL	.9	2	.866	3	.5	5	1									
20	0.9DL + 1WL 45 AZI	Yes	Y	DL	.9	2	.707	3	.707	6	1									
21	0.9DL + 1WL 60 AZI	Yes	Y	DL	.9	2	.5	3	.866	7	1									
22	0.9DL + 1WL 90 AZI	Yes	Y	DL	.9	2		3	1	8	1									
23	0.9DL + 1WL 120 AZI	Yes	Y	DL	.9	2	-.5	3	.866	9	1									
24	0.9DL + 1WL 135 AZI	Yes	Y	DL	.9	2	-.707	3	.707	10	1									
25	0.9DL + 1WL 150 AZI	Yes	Y	DL	.9	2	-.866	3	.5	11	1									
26	0.9DL + 1WL 180 AZI	Yes	Y	DL	.9	2	-1	3		4	-1									



RISA-3D Version 17.0.4 [C:\.....\MAs\AT&T\FDA Building\RISA_TNX\FDA Building.r3d] Page 13

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N1 1	max	8.496	6	56.729	26	11.464	18	0	81	0	81	0	81
2		min	-8.495	14	0	2	-10.937	26	0	1	0	1	0	1
3	N3 1	max	9.721	22	276.123	24	11.465	18	0	81	0	81	0	81
4		min	-9.716	30	0	2	-10.936	26	0	1	0	1	0	1
5	N2 1	max	8.495	6	56.729	26	11.464	18	0	81	0	81	0	81
6		min	-8.496	14	0	2	-10.937	26	0	1	0	1	0	1
7	N4 1	max	9.716	22	276.123	28	11.465	18	0	81	0	81	0	81
8		min	-9.721	30	0	2	-10.936	26	0	1	0	1	0	1
9	N6 1	max	10.216	22	280.332	18	11.455	18	0	81	0	81	0	81
10		min	-10.216	30	0	3	-10.912	26	0	1	0	1	0	1
11	N11 1	max	9.58	22	37.503	16	10.072	2	0	81	0	81	0	81
12		min	-9.396	30	0	2	-10.197	10	0	1	0	1	0	1
13	N12 1	max	10.071	22	72.14	18	10.07	2	0	81	0	81	0	81
14		min	-9.894	14	0	2	-10.191	10	0	1	0	1	0	1
15	N18	max	9.894	6	72.139	18	10.07	2	0	81	0	81	0	81
16		min	-10.071	30	0	2	-10.191	10	0	1	0	1	0	1
17	N19	max	9.396	22	37.503	4	10.072	2	0	81	0	81	0	81
18		min	-9.58	30	0	2	-10.197	10	0	1	0	1	0	1
19	N10 1	max	8.494	6	590.822	26	13.053	18	0	81	0	81	0	81
20		min	-8.494	14	0	2	-14.836	26	0	1	0	1	0	1
21	N7 1	max	9.716	22	393.881	10	13.05	18	0	81	0	81	0	81
22		min	-9.716	30	0	2	-14.836	26	0	1	0	1	0	1
23	N8 1	max	11.032	6	362.028	15	12.366	18	0	81	0	81	0	81
24		min	-12.295	14	0	2	-11.461	10	0	1	0	1	0	1
25	N17	max	10.91	6	484.709	17	11.061	2	0	81	0	81	0	81
26		min	-12.053	14	0	4	-10.737	10	0	1	0	1	0	1
27	N6A	max	12.295	6	362.027	5	12.366	18	0	81	0	81	0	81
28		min	-11.032	14	0	2	-11.461	10	0	1	0	1	0	1
29	N24 1	max	12.053	6	484.709	3	11.061	2	0	81	0	81	0	81
30		min	-10.91	14	0	10	-10.737	10	0	1	0	1	0	1
31	N29 1	max	8.495	6	47.357	14	11.927	18	0	81	0	81	0	81
32		min	-8.495	14	0	2	-12.08	26	0	1	0	1	0	1
33	N30 1	max	9.72	22	144.672	8	11.868	18	0	81	0	81	0	81
34		min	-9.716	30	0	2	-12.055	26	0	1	0	1	0	1
35	N31	max	10.409	22	177.442	8	11.682	18	0	81	0	81	0	81
36		min	-10.003	30	0	2	-11.279	26	0	1	0	1	0	1
37	N32	max	10.003	22	177.442	12	11.682	18	0	81	0	81	0	81
38		min	-10.409	30	0	2	-11.279	26	0	1	0	1	0	1
39	N33 1	max	9.883	22	49.389	4	10.521	2	0	81	0	81	0	81
40		min	-10.113	14	0	2	-10.345	10	0	1	0	1	0	1
41	N34A	max	10.628	22	35.682	33	10.248	2	0	81	0	81	0	81
42		min	-10.284	30	0	2	-10.292	10	0	1	0	1	0	1
43	N35 1	max	8.495	6	26.643	34	12.42	18	0	81	0	81	0	81
44		min	-8.495	14	0	2	-13.317	26	0	1	0	1	0	1
45	N36 1	max	9.719	22	80.872	8	12.387	18	0	81	0	81	0	81
46		min	-9.716	30	0	2	-13.304	26	0	1	0	1	0	1
47	N37	max	11.249	22	99.841	7	11.985	18	0	81	0	81	0	81
48		min	-10.447	14	0	2	-11.425	10	0	1	0	1	0	1
49	N38	max	10.447	6	99.841	13	11.985	18	0	81	0	81	0	81
50		min	-11.249	30	0	2	-11.425	10	0	1	0	1	0	1
51	N39 1	max	10.266	22	114.794	27	10.848	2	0	81	0	81	0	81
52		min	-10.972	14	0	2	-10.506	10	0	1	0	1	0	1
53	N40 1	max	11.294	6	113.759	18	10.536	2	0	81	0	81	0	81
54		min	-10.53	30	0	2	-10.47	10	0	1	0	1	0	1
55	N41	max	8.495	6	370.281	24	12.854	18	0	81	0	81	0	81
56		min	-8.494	14	0	2	-14.356	26	0	1	0	1	0	1

Envelope Joint Reactions (Continued)

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
57	N42	max	9.717	22	124.815	10	12.845	18	0	81	0	81	0	81
58		min	-9.716	30	0	2	-14.367	26	0	1	0	1	0	1
59	N43 1	max	11.954	6	125.502	4	12.262	18	0	81	0	81	0	81
60		min	-10.821	14	0	2	-11.477	10	0	1	0	1	0	1
61	N44	max	10.821	6	125.502	16	12.262	18	0	81	0	81	0	81
62		min	-11.954	14	0	2	-11.477	10	0	1	0	1	0	1
63	N45 1	max	10.673	6	328.332	29	11.033	2	0	81	0	81	0	81
64		min	-11.702	14	0	2	-10.657	10	0	1	0	1	0	1
65	N46 1	max	11.831	6	260.404	2	10.85	2	0	81	0	81	0	81
66		min	-10.801	14	0	10	-10.654	10	0	1	0	1	0	1
67	N47 1	max	8.494	6	370.281	28	12.854	18	0	81	0	81	0	81
68		min	-8.495	14	0	2	-14.356	26	0	1	0	1	0	1
69	N48 1	max	9.716	22	124.815	10	12.845	18	0	81	0	81	0	81
70		min	-9.717	30	0	2	-14.367	26	0	1	0	1	0	1
71	N49	max	12.049	6	159.564	3	12.184	18	0	81	0	81	0	81
72		min	-11.052	14	0	2	-11.361	10	0	1	0	1	0	1
73	N50	max	11.052	6	159.564	17	12.184	18	0	81	0	81	0	81
74		min	-12.049	14	0	2	-11.361	10	0	1	0	1	0	1
75	N51	max	10.801	6	260.404	2	10.85	2	0	81	0	81	0	81
76		min	-11.831	14	0	4	-10.654	10	0	1	0	1	0	1
77	N52	max	11.702	6	328.332	23	11.033	2	0	81	0	81	0	81
78		min	-10.673	14	0	2	-10.657	10	0	1	0	1	0	1
79	N53 1	max	8.495	6	26.643	34	12.42	18	0	81	0	81	0	81
80		min	-8.495	14	0	2	-13.317	26	0	1	0	1	0	1
81	N54 1	max	9.716	22	80.872	12	12.387	18	0	81	0	81	0	81
82		min	-9.719	30	0	2	-13.304	26	0	1	0	1	0	1
83	N55 1	max	11.462	6	44.615	3	11.866	18	0	81	0	81	0	81
84		min	-10.92	14	0	2	-11.178	10	0	1	0	1	0	1
85	N56 1	max	10.92	6	44.615	17	11.866	18	0	81	0	81	0	81
86		min	-11.462	14	0	2	-11.178	10	0	1	0	1	0	1
87	N57	max	10.53	22	113.759	18	10.536	2	0	81	0	81	0	81
88		min	-11.294	14	0	2	-10.47	10	0	1	0	1	0	1
89	N58	max	10.972	6	114.795	25	10.848	2	0	81	0	81	0	81
90		min	-10.266	30	0	2	-10.506	10	0	1	0	1	0	1
91	N59	max	8.495	6	47.357	6	11.927	18	0	81	0	81	0	81
92		min	-8.495	14	0	2	-12.08	26	0	1	0	1	0	1
93	N60	max	9.716	22	144.672	12	11.868	18	0	81	0	81	0	81
94		min	-9.72	30	0	2	-12.055	26	0	1	0	1	0	1
95	N61	max	10.773	6	142.06	2	11.579	18	0	81	0	81	0	81
96		min	-10.619	14	0	6	-10.996	10	0	1	0	1	0	1
97	N62	max	10.619	6	142.061	2	11.579	18	0	81	0	81	0	81
98		min	-10.773	14	0	5	-10.996	10	0	1	0	1	0	1
99	N63	max	10.284	22	35.683	19	10.248	2	0	81	0	81	0	81
100		min	-10.628	30	0	2	-10.292	10	0	1	0	1	0	1
101	N64 1	max	10.113	6	49.389	16	10.521	2	0	81	0	81	0	81
102		min	-9.883	30	0	2	-10.345	10	0	1	0	1	0	1
103	Totals:	max	518.175	22	2233.753	49	587.047	18						
104		min	-518.175	14	1078.52	66	-587.047	10						

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

Member	Shape	Code Check	Loc[in]	LC	Shear C...	Lo.....	LC	phi*...	phi*...	phi*...	phi*...	Eqn
1	M2 L2.5x2...	.589	42.875	18	.053	42...z	25	2780...	2919...	.872...	1971....	H2-1
2	M6 L2.5x2...	.498	42.875	24	.058	42...z	18	2780...	2919...	.872...	1971....	H2-1
3	M5 L2.5x2...	.498	42.875	28	.058	42...y	18	2780...	2919...	.872...	1971....	H2-1
4	M8 L2.5x2...	.496	42.875	18	.082	42...z	18	2780...	2919...	.872...	1971....	H2-1

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

	Member	Shape	Code Check	Loc[in]	LC	Shear C...	Lo.....	LC	phi*...	phi*...	phi*...	phi*...	Eqn
5	M12	L2.5x2...	.496	42.875	18	.082	42...z	18	2780...	2919...	872....	1971....	H2-1
6	M17	LL2.5x...	.418	55.399	10	.024	55...z	29	4430...	58320	3954...	2177....	H1-...
7	M18	LL2.5x...	.415	55.399	27	.030	55...z	18	4430...	58320	3954...	2177....	H1-...
8	M19	LL2.5x...	.415	55.399	25	.030	55...z	18	4430...	58320	3954...	2177....	H1-...
9	M1	L2.5x2...	.413	42.875	18	.076	42...z	24	2780...	2919...	872....	1971....	H2-1
10	M7	PL2x5/8	.411	8.906	25	.508	0 y	24	2424...	40500	527....	1687.5...	H1-...
11	M11	PL2x5/8	.397	8.906	33	.625	0 y	18	2424...	40500	527....	1687.5...	H1-...
12	M15_1	PL2x5/8	.397	8.906	19	.625	0 y	18	2424...	40500	527....	1687.5...	H1-...
13	MP2	PIPE_...	.372	51.563	2	.016	51...	18	6067...	65205	5748...	5748...1	H1-...
14	MP1	PIPE_...	.252	96	2	.017	96	2	4543...	50715	3596...	3596...1	H1-...
15	M3	PL2x5/8	.247	17.813	26	.173	17...y	27	2424...	40500	527....	1687.5...	H1-...
16	M4	PL2x5/8	.247	17.813	26	.173	17...y	25	2424...	40500	527....	1687.5...	H1-...
17	M10	PL2x5/8	.209	17.813	33	.152	17...y	29	2424...	40500	527....	1687.5...	H1-...
18	M13	PL2x5/8	.209	17.813	19	.152	17...y	23	2424...	40500	527....	1687.5...	H1-...
19	M14	PL2x5/8	.165	0	22	.198	17...y	18	2424...	40500	527....	1687.5...	H1-...
20	M9	PL2x5/8	.165	0	30	.198	17...y	18	2424...	40500	527....	1687.5...	H1-...
21	M20	PL2x5/8	.028	30.522	46	.002	30...y	34	9867...	40500	527....	1687.5...	H1-...
22	M21	PL2x5/8	.026	30.522	43	.002	30...y	40	9867...	40500	527....	1687.5...	H1-...
23	M22_1	PL2x5/8	.026	30.522	41	.002	30...y	44	9867...	40500	527....	1687.5...	H1-...

Roof Pressure Check	
Client	Smartlink
Site	FDA Building
Date	11/28/2022

Dead Load per RISA 3D	
1237.1	lbs

Ballast Area (Triangular)		
W	120.0	in
D	104.0	in
Area	43.3	ft ²

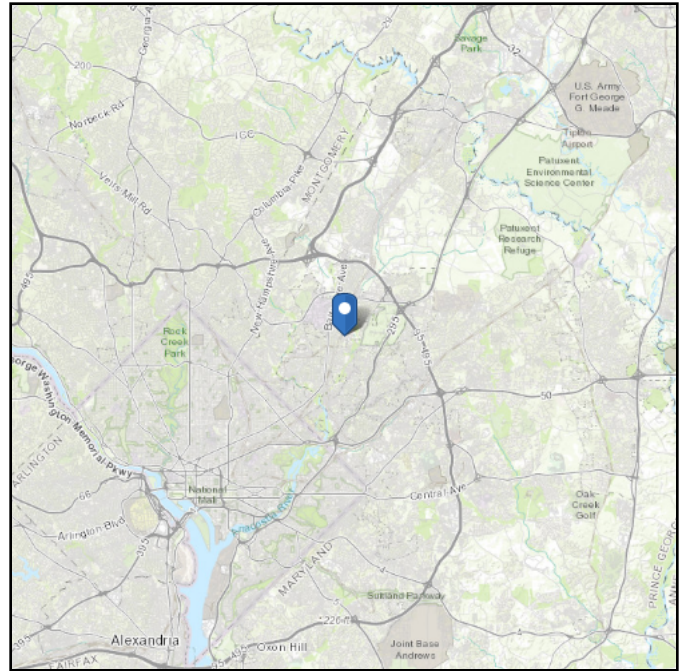
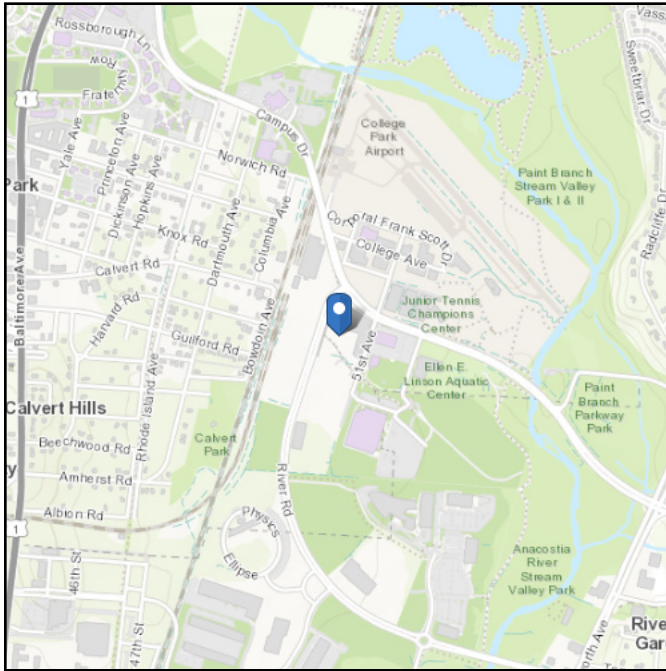
Rooftop Pressure		
Ballast	28.5	psf

ASCE 7 Hazards Report

Address:
No Address at This
Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 50.56 ft (NAVD 88)
Latitude: 38.9768
Longitude: -76.9266



Wind

Results:

Wind Speed	113 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	89 Vmph
100-year MRI	95 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Mon Apr 04 2022

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

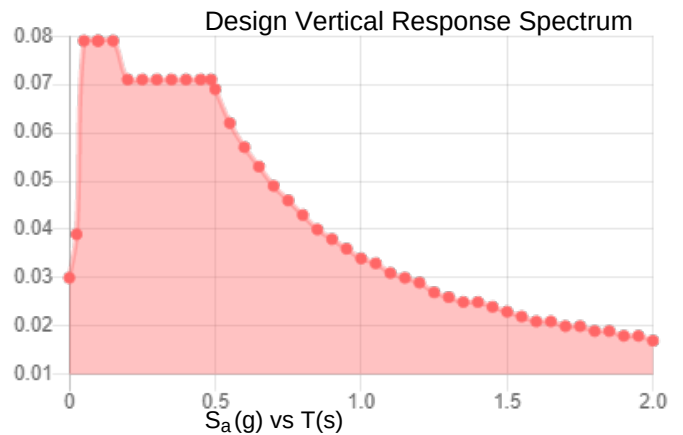
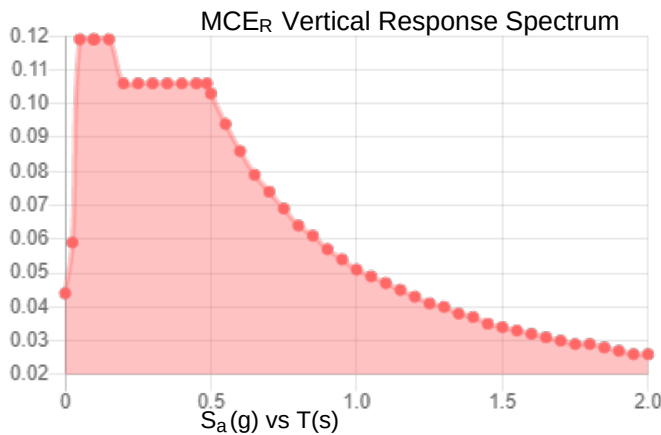
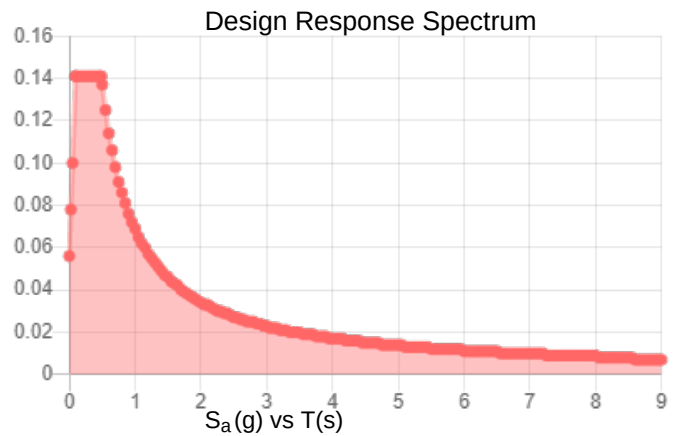
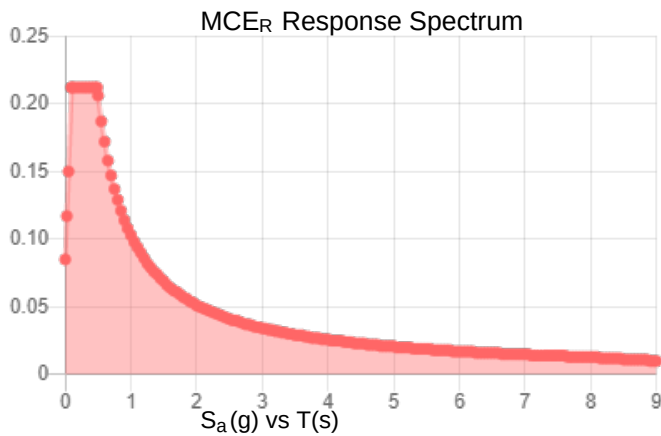
Site is not in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2.

Site Soil Class: D - Stiff Soil

Results:

S_S :	0.132	S_{D1} :	0.069
S_1 :	0.043	T_L :	8
F_a :	1.6	PGA :	0.068
F_v :	2.4	PGA _M :	0.109
S_{MS} :	0.212	F_{PGA} :	1.6
S_{M1} :	0.103	I_e :	1
S_{DS} :	0.141	C_v :	0.7

Seismic Design Category B



Data Accessed: Mon Apr 04 2022

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness: 1.00 in.
Concurrent Temperature: 15 F
Gust Speed 40 mph

Data Source: Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8

Date Accessed: Mon Apr 04 2022

Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Snow

Results:

Ground Snow Load, p_g : 25 lb/ft²
Elevation: 50.6 ft

Data Source: ASCE/SEI 7-16, Table 7.2-8

Date Accessed: Mon Apr 04 2022

Values provided are ground snow loads. In areas designated "case study required," extreme local variations in ground snow loads preclude mapping at this scale. Site-specific case studies are required to establish ground snow loads at elevations not covered.

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