AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	**160 ft Guyed Tower**
ATC Site Name	:	**HAMPTON CT, CT**
ATC Asset Number	:	**10029**
Engineering Number	:	**OAA752020_C3_01**
Proposed Carrier	:	**AT&T MOBILITY**
Carrier Site Name	:	**Hampton West Central**
Carrier Site Number	:	**CTL05707**
Site Location	:	**185 Fisk Road** **Hampton, CT 06247-1305** **41.769900,-72.070600**
County	:	**Windham**
Date	:	**September 11, 2019**
Max Usage	:	**64%**
Result	:	**Pass**

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PROFESSIONAL ENGINEER

Authorized by "EOR"
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COA: PEC.0001553

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Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 160 ft guyed tower to reflect the change in loading by AT&T MOBILITY.

Supporting Documents

Tower Drawings	Fred A. Nudd Corporation Project #6606, dated February 17, 1999
Foundation Drawing	Fred A. Nudd Corporation Dwg #99-6606-2, dated February 17, 1999 ATC Pier Measurements, dated January 3, 2013
Geotechnical Report	GEOServices Project #21-07254, dated February 16, 2008

Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	101 mph (3-Second Gust, V_{ASD}) / 130 mph (3-Second Gust, V_{ULT})
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
Code:	ANSI/TIA-222-G / 2015 IBC / 2018 Connecticut State Building Code
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	Ss = 0.17, S_1 = 0.06
Site Class:	D - Stiff Soil

Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

Existing and Reserved Equipment

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
162.0	9	Allgon 7120.16.05.00 / A-800-110-13I-0-N	Sector Frames	(9) 1 1/4" Coax	SPRINT NEXTEL
155.0	3	Commscope NNVV-65B-R4	Sector Frames	(4) 1 1/4" Hybriflex Cable (6) 1 5/8" Coax	
	3	RFS APXVTM14-ALU-I20			
	3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield			
	3	Alcatel-Lucent 1900 MHz 4X45 RRH			
	6	Alcatel-Lucent RRH2x50-08			
142.0	3	Amphenol Antel BXA-70063-6CF-EDIN-X	Sector Frames	(12) 1 5/8" Coax	VERIZON WIRELESS
	6	Amphenol Antel LPA-80080-4CF-EDIN-0			
	6	RFS FD9R6004/2C-3L			
	3	Amphenol Antel BXA-171085-8BF-EDIN-X			
130.0	3	Allgon 7770.00	Sector Frames	(1) 0.39" Fiber Trunk (2) 0.78" 8 AWG 6 (12) 1 1/4" Coax	AT&T MOBILITY
	6	Powerwave Allgon LGP17201			
	6	Powerwave Allgon LGP13519			
	1	Raycap DC6-48-60-18-8F(32.8 lbs)			
75.0	1	Lucent KS-24019	Leg	(1) 7/8" Coax	VERIZON WIRELESS

Equipment to be Removed

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
130.0	3	Ericsson RRUS-11	-	-	AT&T MOBILITY
	1	Powerwave Allgon P65-17-XLH-RR			
	2	KMW AM-X-CD-17-65-00T-RET (96" Height)			
	3	Allgon 7770.00			

Proposed Equipment

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
130.0	1	Raycap DC6-48-60-18-8F(32.8 lbs)	Sector Frames	(1) 0.39" Cable (1) 0.79" Fiber	AT&T MOBILITY
	3	Ericsson Radio 8843 - B2 + B66A			
	2	Ericsson RRUS 4478 B14			
	3	Ericsson RRUS 4449 B5, B12			
	3	CCI HPA65R-BU8A			
	3	CCI DMP65R-BU8D			

[1] Contracted elevations are shown for appurtenances within contracted installation tolerances. Appurtenances outside of contract limits are shown at installed elevations.

Install proposed lines stacked on top of existing AT&T MOBILITY coax.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Legs	64%	Pass
Diagonals	59%	Pass
Horizontals	57%	Pass
Guys	47%	Pass

Foundations

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Base Axial (kips)	-	-	143.7	51%
Anchor 1 Uplift (kips)	52.5	70.9	31.5	44%
Anchor 1 Shear (kips)	63.2	85.3	39.8	47%

*** The design reactions are factored by 1.35 per ANSI/TIA-222-G, Sec. 15.5.1**

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required. The guy anchor reactions resulting from this analysis are acceptable when compared to those shown on the original structure drawings, therefore no modification or reinforcement of the foundation will be required.

Deflection, Twist and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Twist (°)	Sway (Rotation) (°)
130.0	Raycap DC6-48-60-18-8F(32.8 lbs)	AT&T MOBILITY	0.057	0.002	0.047
	Ericsson Radio 8843 - B2 + B66A				
	Ericsson RRUS 4478 B14				
	Ericsson RRUS 4449 B5, B12				
	CCI HPA65R-BU8A				
	CCI DMP65R-BU8D				

***Deflection, Twist and Sway was evaluated considering a design wind speed of 60 mph (3-Second Gust) per ANSI/TIA-222-G**

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Standard Conditions

All engineering services performed by A.T. Engineering Service, PLLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

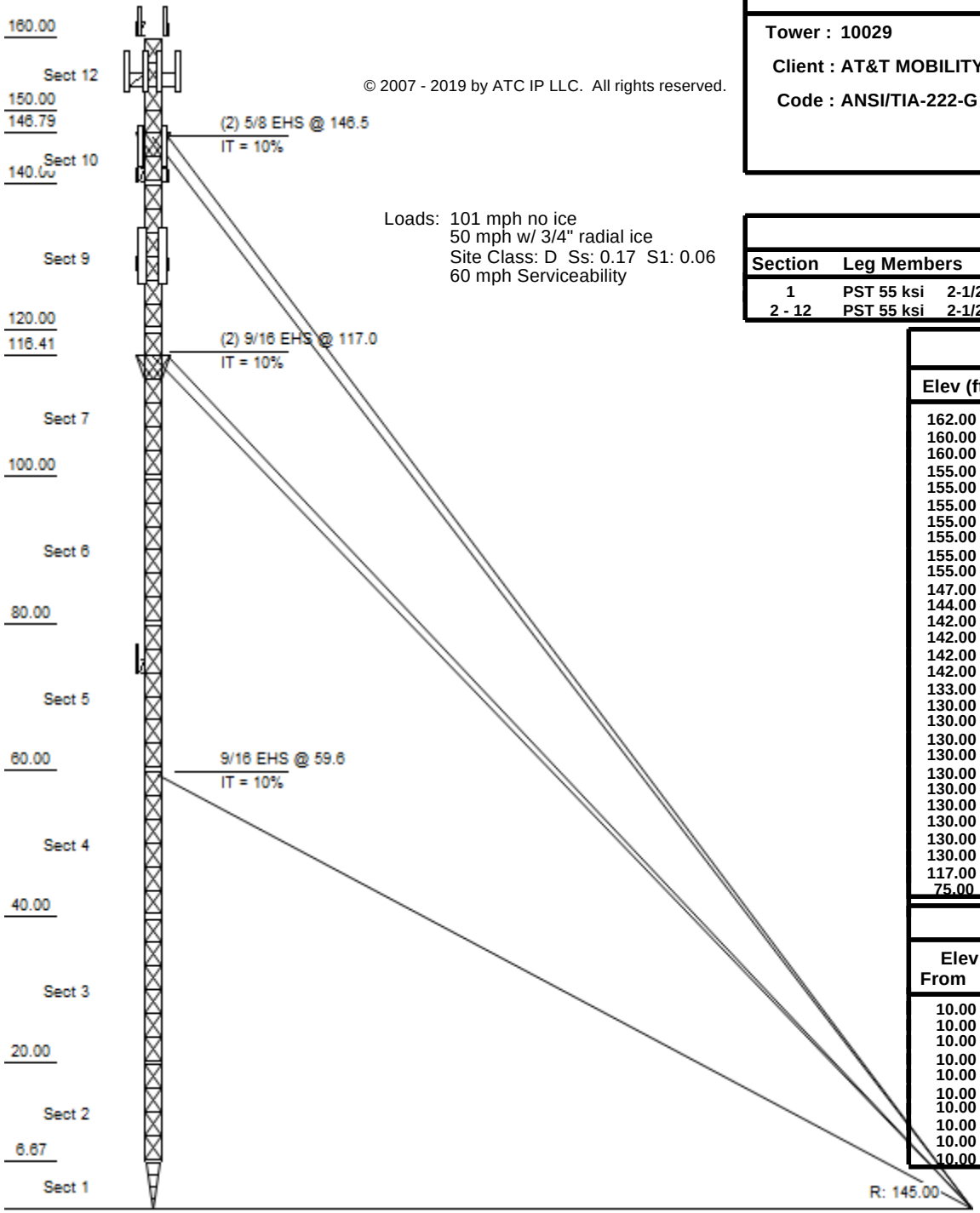
- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

All assets of American Tower Corporation, its affiliates and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

Unless explicitly agreed by both the client and A.T. Engineering Service, PLLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.



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Loads: 101 mph no ice
50 mph w/ 3/4" radial ice
Site Class: D Ss: 0.17 S1: 0.06
60 mph Serviceability

Job Information

Tower : 10029 Location : HAMPTON CT, CT Base Width : 3.50 ft

Client : AT&T MOBILITY

Code : ANSI/TIA-222-G Tower Ht : 160.00 ft

Shape : Triangle

Sections Properties

Section	Leg Members		Diagonal Members	Horizontal Members
1	PST 55 ksi	2-1/2" DIA PIPE		SAE 36 ksi 2.5X2.5X0.25
2 - 12	PST 55 ksi	2-1/2" DIA PIPE	SOL 36 ksi 5/8" SOLID	SAE 36 ksi 1.5X1.5X0.1875

Discrete Appurtenance

Elev (ft)	Type	Qty	Description
162.00	Panel	9	Allgon 7120.16.05.00 / A-800-1
160.00	Mounting Frame	3	Flat Light Sector Frames
160.00	Straight Arm	3	Delta Mount
155.00	Mounting Frame	3	VFA10-HD3L4NP Sector Frame
155.00	Straight Arm	3	Delta Mount
155.00	Panel	3	Commscope NNVV-65B-R4
155.00	Panel	3	RFS APXVTM14-ALU-I20
155.00		3	Alcatel-Lucent TD-RRH8x20-25 w
155.00		3	Alcatel-Lucent 1900 MHz 4X45 R
155.00		6	Alcatel-Lucent RRH2x50-08
147.00	Other	1	Torque Arms
144.00	Mounting Frame	3	Flat Light Sector Frames
142.00	Panel	3	Amphenol Antel BXA-70063-6CF-E
142.00	Panel	6	Amphenol Antel LPA-80080-4CF-E
142.00	Panel	3	Amphenol Antel BXA-171085-8BF-
142.00		6	RFS FD9R6004/2C-3L
133.00	Mounting Frame	3	Flat Light Sector Frames
130.00	Panel	3	CCI DMP65R-BU8D
130.00	Panel	3	CCI HPA65R-BU8A
130.00	Panel	3	Allgon 7770.00
130.00		3	Ericsson RRUS 4449 B5, B12
130.00		2	Ericsson RRUS 4478 B14
130.00		6	Powerwave Allgon LGP17201
130.00		3	Ericsson Radio 8843 - B2 + B66
130.00		1	Raycap DC6-48-60-18-8F(32.8 lb
130.00		1	Raycap DC6-48-60-18-8F(32.8 lb
130.00		6	Powerwave Allgon LGP13519
117.00	Other	1	Torque Arms
75.00	Whip	1	Lucent KS-24019

Linear Appurtenance

Elev (ft) From	To	Qty	Description
10.00	162.00	9	1 1/4" Coax
10.00	155.00	6	1 5/8" Coax
10.00	155.00	4	1 1/4" Hybriflex Cab
10.00	142.00	12	1 5/8" Coax
10.00	130.00	12	1 1/4" Coax
10.00	130.00	1	0.79" (20.1mm) Fiber
10.00	130.00	2	0.78" (19.7mm) 8 AWG
10.00	130.00	1	0.39" (9.8mm) Cable
10.00	130.00	1	0.39" (10mm) Fiber T
10.00	75.00	1	7/8" Coax

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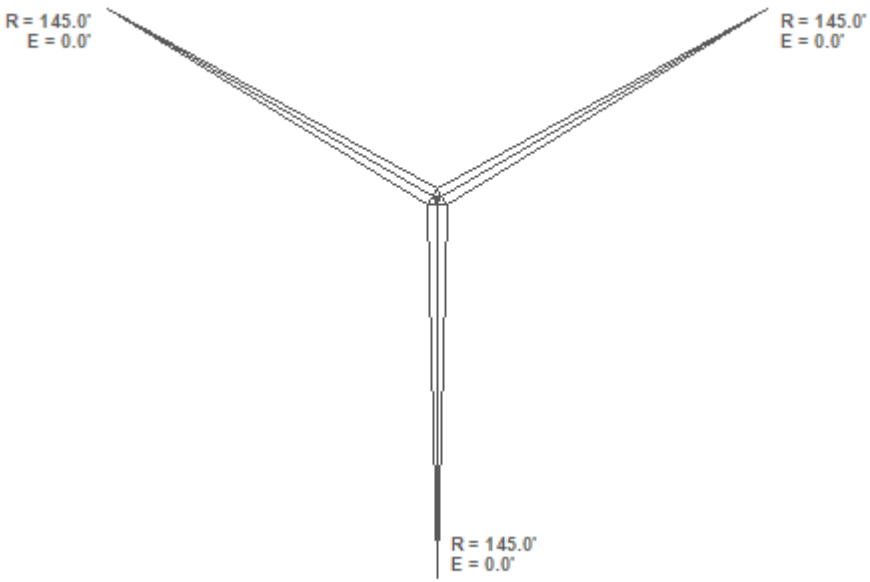
Job Information

Tower : 10029 Location : HAMPTON CT, CT Base Width : 3.50 ft

Client : AT&T MOBILITY

Code : ANSI/TIA-222-G Tower Ht : 160.00 ft

Shape : Triangle



Guy Anchor Design Loads

Radius (ft)	Drop (ft)	Azimuth (°)	Uplift (kip)	Shear (kip)
145.00	0.00	0	31.45	39.81
145.00	0.00	240	31.42	39.82
145.00	0.00	120	31.42	39.82

Global Base Foundation Design Loads

Vertical (kip)	Horizontal (kip)
143.73	1.87

Site Number:	**10029**	**Code:**	**ANSI/TIA-222-G**	© 2007 - 2019 by ATC IP LLC. All rights reserved.
Site Name:	**HAMPTON CT, CT**	**Engineering Number:**	**OAA752020_C3_01**	9/11/2019 8:45:53 AM
Customer:	**AT&T MOBILITY**			

Analysis Parameters

Location:	**Windham County, CT**	**Height (ft):**	**160**
Code:	**ANSI/TIA-222-G**	**Base Elevation (ft):**	**0.00**
Shape:	**Triangle**	**Bottom Face Width (ft):**	**3.50**
Tower Manufacturer:	**Nudd Corporation**	**Top Face Width (ft):**	**3.50**
Tower Type:	**Guyed**		
Kd:			
Ke:			

Ice & Wind Parameters

Structure Class:	**II**	**Design Windspeed Without Ice:**	**101 mph**
Exposure Category:	**B**	**Design Windspeed With Ice:**	**50 mph**
Topographic Category:	**1**	**Operational Windspeed:**	**60 mph**
Crest Height:	**0 ft**	**Design Ice Thickness:**	**0.75 in**

Seismic Parameters

Analysis Method:	**Equivalent Modal Analysis & Equivalent Lateral Force Methods**				
Site Class:	**D - Stiff Soil**				
Period Based on Rayleigh Method (sec):	**0.63**				
T_L (sec):	**6**	**p:**	**1**	**C_S:**	**0.063**
S_S :	**0.172**	**S_1 :**	**0.062**	**C_S, Max:**	**0.063**
F_a :	**1.600**	**F_V :**	**2.400**	**C_S, Min:**	**0.030**
S_{ds} :	**0.183**	**S_{d1} :**	**0.099**		

Load Cases

1.2D + 1.6W Normal	**101 mph Normal with No Ice**
1.2D + 1.6W 60 deg	**101 mph 60 degree with No Ice**
1.2D + 1.6W 90 deg	**101 mph 90 degree with No Ice**
1.2D + 1.6W 120 deg	**101 mph 120 degree with No Ice**
1.2D + 1.6W 180 deg	**101 mph 180 degree with No Ice**
1.2D + 1.6W 210 deg	**101 mph 210 degree with No Ice**
1.2D + 1.6W 240 deg	**101 mph 240 degree with No Ice**
1.2D + 1.6W 300 deg	**101 mph 300 degree with No Ice**
1.2D + 1.6W 330 deg	**101 mph 330 degree with No Ice**
1.2D + 1.0Di + 1.0Wi Normal	**50 mph Normal with 0.75 in Radial Ice**
1.2D + 1.0Di + 1.0Wi 60 deg	**50 mph 60 deg with 0.75 in Radial Ice**
1.2D + 1.0Di + 1.0Wi 90 deg	**50 mph 90 deg with 0.75 in Radial Ice**
1.2D + 1.0Di + 1.0Wi 120 deg	**50 mph 120 deg with 0.75 in Radial Ice**
1.2D + 1.0Di + 1.0Wi 180 deg	**50 mph 180 deg with 0.75 in Radial Ice**
1.2D + 1.0Di + 1.0Wi 210 deg	**50 mph 210 deg with 0.75 in Radial Ice**
1.2D + 1.0Di + 1.0Wi 240 deg	**50 mph 240 deg with 0.75 in Radial Ice**
1.2D + 1.0Di + 1.0Wi 300 deg	**50 mph 300 deg with 0.75 in Radial Ice**
1.2D + 1.0Di + 1.0Wi 330 deg	**50 mph 330 deg with 0.75 in Radial Ice**
(1.2 + 0.2Sds) * DL + E Normal	**Seismic Normal**

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Analysis Parameters

(1.2 + 0.2Sds) * DL + E 60 deg	Seismic 60 deg
(1.2 + 0.2Sds) * DL + E 90 deg	Seismic 90 deg
(1.2 + 0.2Sds) * DL + E 120 deg	Seismic 120 deg
(1.2 + 0.2Sds) * DL + E 180 deg	Seismic 180 deg
(1.2 + 0.2Sds) * DL + E 210 deg	Seismic 210 deg
(1.2 + 0.2Sds) * DL + E 240 deg	Seismic 240 deg
(1.2 + 0.2Sds) * DL + E 300 deg	Seismic 300 deg
(1.2 + 0.2Sds) * DL + E 330 deg	Seismic 330 deg
1.0D + 1.0W Service Normal	Serviceability - 60 mph Wind Normal
1.0D + 1.0W Service 60 deg	Serviceability - 60 mph Wind 60 deg
1.0D + 1.0W Service 90 deg	Serviceability - 60 mph Wind 90 deg
1.0D + 1.0W Service 120 deg	Serviceability - 60 mph Wind 120 deg
1.0D + 1.0W Service 180 deg	Serviceability - 60 mph Wind 180 deg
1.0D + 1.0W Service 210 deg	Serviceability - 60 mph Wind 210 deg
1.0D + 1.0W Service 240 deg	Serviceability - 60 mph Wind 240 deg
1.0D + 1.0W Service 300 deg	Serviceability - 60 mph Wind 300 deg
1.0D + 1.0W Service 330 deg	Serviceability - 60 mph Wind 330 deg

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Tower Loading

Discrete Appurtenance Properties 1.2D + 1.6W

Elevation (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K_a	Orient. Factor	Vert. Ecc.(ft)	M_u (lb-ft)	Q_z (psf)	F_a (WL) (lb)	P_a(DL) (lb)
162.0	Allgon 7120.16.05.00	9	15	5.3	4.3	7.9	11.4	0.80	0.70	0.0	0.0	25.18	918	166
160.0	Delta Mount	3	150	6.3	0.0	0.0	0.0	0.75	0.67	0.0	0.0	25.09	324	540
160.0	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	25.09	921	1440
155.0	Alcatel-Lucent	6	53	1.7	1.3	13.0	9.8	0.80	0.50	0.0	0.0	24.86	138	381
155.0	Alcatel-Lucent 1900	3	60	2.3	2.1	11.1	10.7	0.80	0.67	0.0	0.0	24.86	126	216
155.0	Alcatel-Lucent TD-	3	70	4.1	2.2	18.6	6.7	0.80	0.61	0.0	0.0	24.86	200	252
155.0	Delta Mount	3	150	6.3	0.0	0.0	0.0	0.75	0.67	0.0	0.0	24.86	321	540
155.0	RFS APXVTM14-ALU-	3	56	6.3	4.7	12.6	6.3	0.80	0.66	0.0	0.0	24.86	340	202
155.0	Commscope NNVV-	3	77	12.3	6.0	19.6	7.8	0.80	0.64	0.0	0.0	24.86	637	279
155.0	VFA10-HD3L4NP	3	500	29.3	0.0	0.0	0.0	0.75	0.75	0.0	0.0	24.86	1672	1800
147.0	Torque Arms	1	500	15.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	24.49	500	600
144.0	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	24.34	893	1440
142.0	RFS FD9R6004/2C-3L	6	3	0.3	0.5	6.5	1.5	0.80	0.50	0.0	0.0	24.25	25	19
142.0	Amphenol Antel BXA-	3	11	2.9	4.0	6.1	4.1	0.80	0.67	2.0	313.0	24.34	157	38
142.0	Amphenol Antel LPA-	6	12	5.4	3.9	5.5	13.2	0.80	0.62	2.0	1064.1	24.34	532	86
142.0	Amphenol Antel BXA-	3	17	7.6	5.9	11.2	5.2	0.80	0.66	2.0	794.0	24.34	397	61
133.0	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	23.80	873	1440
130.0	Powerwave Allgon	6	5	0.3	0.4	7.9	2.7	0.80	0.50	3.0	67.6	23.80	23	38
130.0	Raycap DC6-48-60-	1	33	1.5	2.0	11.0	11.0	0.80	1.00	3.0	114.2	23.80	38	39
130.0	Raycap DC6-48-60-	1	33	1.5	2.0	11.0	11.0	0.80	1.00	3.0	114.2	23.80	38	39
130.0	Ericsson Radio 8843	3	72	1.6	1.3	13.2	10.9	0.80	0.50	0.0	0.0	23.64	64	259
130.0	Powerwave Allgon	6	31	1.7	1.2	14.4	3.7	0.80	0.50	3.0	389.2	23.80	130	223
130.0	Ericsson RRUS 4478	2	60	1.8	1.4	13.4	7.7	0.80	0.50	0.0	0.0	23.64	47	144
130.0	Ericsson RRUS 4449	3	71	2.0	1.5	13.2	9.4	0.80	0.50	0.0	0.0	23.64	76	256
130.0	Allgon 7770.00	3	35	5.5	4.6	11.0	5.0	0.80	0.65	3.0	834.6	23.80	278	126
130.0	CCI HPA65R-BU8A	3	54	11.2	8.0	11.7	7.6	0.80	0.71	0.0	0.0	23.64	615	194
130.0	CCI DMP65R-BU8D	3	96	17.9	8.0	20.7	7.7	0.80	0.63	0.0	0.0	23.64	869	345
117.0	Torque Arms	1	500	15.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	22.94	468	600
75.00	Lucent KS-24019	1	4	0.9	2.2	3.5	3.2	1.00	1.00	2.0	50.4	20.36	25	5
	Totals	97	9807	649.6									11645	11768

Discrete Appurtenance Properties 1.2D + 1.0Di + 1.0Wi

Elevation (ft)	Description	Qty	Ice Wt (lb)	Ice EPA (sf)	Length (ft)	Width (in)	Depth (in)	K_a	Orient. Factor	Vert. Ecc.(ft)	M_u (lb-ft)	Q_z (psf)	F_a (WL) (lb)	P_a(DL) (lb)
162.0	Allgon 7120.16.05.00	9	169	4.9	4.3	7.9	11.4	0.80	0.70	0.0	0.0	6.17	129	1551
160.0	Delta Mount	3	224	8.8	0.0	0.0	0.0	0.75	0.67	0.0	0.0	6.15	69	761
160.0	Flat Light Sector	3	703	33.1	0.0	0.0	0.0	0.75	0.67	0.0	0.0	6.15	261	2348
155.0	Alcatel-Lucent	6	112	2.6	1.3	13.0	9.8	0.80	0.50	0.0	0.0	6.09	32	738
155.0	Alcatel-Lucent 1900	3	141	3.4	2.1	11.1	10.7	0.80	0.67	0.0	0.0	6.09	28	459
155.0	Alcatel-Lucent TD-	3	165	5.4	2.2	18.6	6.7	0.80	0.61	0.0	0.0	6.09	41	537
155.0	Delta Mount	3	224	8.8	0.0	0.0	0.0	0.75	0.67	0.0	0.0	6.09	68	761
155.0	RFS APXVTM14-ALU-	3	195	8.5	4.7	12.6	6.3	0.80	0.66	0.0	0.0	6.09	70	618
155.0	Commscope NNVV-	3	330	15.1	6.0	19.6	7.8	0.80	0.64	0.0	0.0	6.09	120	1036
155.0	VFA10-HD3L4NP	3	1053	46.7	0.0	0.0	0.0	0.75	0.75	0.0	0.0	6.09	409	3460
147.0	Torque Arms	1	847	25.4	0.0	0.0	0.0	1.00	1.00	0.0	0.0	6.00	130	947
144.0	Flat Light Sector	3	700	33.0	0.0	0.0	0.0	0.75	0.67	0.0	0.0	5.97	252	2341
142.0	RFS FD9R6004/2C-3L	6	11	0.7	0.5	6.5	1.5	0.80	0.50	0.0	0.0	5.94	8	67
142.0	Amphenol Antel BXA-	3	76	4.6	4.0	6.1	4.1	0.80	0.67	2.0	74.9	5.97	37	234
142.0	Amphenol Antel LPA-	6	127	7.3	3.9	5.5	13.2	0.80	0.62	2.0	218.8	5.97	109	777
142.0	Amphenol Antel BXA-	3	165	10.3	5.9	11.2	5.2	0.80	0.66	2.0	165.8	5.97	83	504
133.0	Flat Light Sector	3	697	32.8	0.0	0.0	0.0	0.75	0.67	0.0	0.0	5.83	245	2332

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Tower Loading

130.0	Powerwave Allgon	6	15	0.7	0.4	7.9	2.7	0.80	0.50	3.0	24.0	5.83	8	94
130.0	Raycap DC6-48-60-	1	94	2.2	2.0	11.0	11.0	0.80	1.00	3.0	25.7	5.83	9	100
130.0	Raycap DC6-48-60-	1	94	2.2	2.0	11.0	11.0	0.80	1.00	3.0	25.7	5.83	9	100
130.0	Ericsson Radio 8843	3	133	2.5	1.3	13.2	10.9	0.80	0.50	0.0	0.0	5.79	15	441
130.0	Powerwave Allgon	6	69	2.5	1.2	14.4	3.7	0.80	0.50	3.0	89.6	5.83	30	449
130.0	Ericsson RRUS 4478	2	115	2.7	1.4	13.4	7.7	0.80	0.50	0.0	0.0	5.79	11	253
130.0	Ericsson RRUS 4449	3	135	2.9	1.5	13.2	9.4	0.80	0.50	0.0	0.0	5.79	17	447
130.0	Allgon 7770.00	3	168	6.5	4.6	11.0	5.0	0.80	0.65	3.0	151.9	5.83	51	524
130.0	CCI HPA65R-BU8A	3	283	14.4	8.0	11.7	7.6	0.80	0.71	0.0	0.0	5.79	121	883
130.0	CCI DMP65R-BU8D	3	431	21.5	8.0	20.7	7.7	0.80	0.63	0.0	0.0	5.79	160	1352
117.0	Torque Arms	1	838	25.1	0.0	0.0	0.0	1.00	1.00	0.0	0.0	5.62	120	938
75.00	Lucent KS-24019	1	27	1.8	2.2	3.5	3.2	1.00	1.00	2.0	15.6	4.99	8	28
	Totals	97	23118	963.1									2649	25080

Discrete Appurtenance Properties 1.0D + 1.0W Service

Elevation (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K_a	Orient. Factor	Vert. Ecc.(ft)	M_u (lb-ft)	Q_z (psf)	F_a (WL) (lb)	P_a (DL) (lb)
162.0	Allgon 7120.16.05.00	9	15	5.3	4.3	7.9	11.4	0.80	0.70	0.0	0.0	8.89	203	139
160.0	Delta Mount	3	150	6.3	0.0	0.0	0.0	0.75	0.67	0.0	0.0	8.85	71	450
160.0	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	8.85	203	1200
155.0	Alcatel-Lucent	6	53	1.7	1.3	13.0	9.8	0.80	0.50	0.0	0.0	8.77	30	317
155.0	Alcatel-Lucent 1900	3	60	2.3	2.1	11.1	10.7	0.80	0.67	0.0	0.0	8.77	28	180
155.0	Alcatel-Lucent TD-	3	70	4.1	2.2	18.6	6.7	0.80	0.61	0.0	0.0	8.77	44	210
155.0	Delta Mount	3	150	6.3	0.0	0.0	0.0	0.75	0.67	0.0	0.0	8.77	71	450
155.0	RFS APXVTM14-ALU-	3	56	6.3	4.7	12.6	6.3	0.80	0.66	0.0	0.0	8.77	75	169
155.0	Commscope NNVV-	3	77	12.3	6.0	19.6	7.8	0.80	0.64	0.0	0.0	8.77	141	232
155.0	VFA10-HD3L4NP	3	500	29.3	0.0	0.0	0.0	0.75	0.75	0.0	0.0	8.77	369	1500
147.0	Torque Arms	1	500	15.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	8.64	110	500
144.0	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	8.59	197	1200
142.0	RFS FD9R6004/2C-3L	6	3	0.3	0.5	6.5	1.5	0.80	0.50	0.0	0.0	8.56	5	16
142.0	Amphenol Antel BXA-	3	11	2.9	4.0	6.1	4.1	0.80	0.67	2.0	69.0	8.59	35	32
142.0	Amphenol Antel LPA-	6	12	5.4	3.9	5.5	13.2	0.80	0.62	2.0	234.7	8.59	117	72
142.0	Amphenol Antel BXA-	3	17	7.6	5.9	11.2	5.2	0.80	0.66	2.0	175.1	8.59	88	51
133.0	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	8.40	193	1200
130.0	Powerwave Allgon	6	5	0.3	0.4	7.9	2.7	0.80	0.50	3.0	14.9	8.40	5	32
130.0	Raycap DC6-48-60-	1	33	1.5	2.0	11.0	11.0	0.80	1.00	3.0	25.2	8.40	8	33
130.0	Raycap DC6-48-60-	1	33	1.5	2.0	11.0	11.0	0.80	1.00	3.0	25.2	8.40	8	33
130.0	Ericsson Radio 8843	3	72	1.6	1.3	13.2	10.9	0.80	0.50	0.0	0.0	8.34	14	216
130.0	Powerwave Allgon	6	31	1.7	1.2	14.4	3.7	0.80	0.50	3.0	85.8	8.40	29	186
130.0	Ericsson RRUS 4478	2	60	1.8	1.4	13.4	7.7	0.80	0.50	0.0	0.0	8.34	10	120
130.0	Ericsson RRUS 4449	3	71	2.0	1.5	13.2	9.4	0.80	0.50	0.0	0.0	8.34	17	213
130.0	Allgon 7770.00	3	35	5.5	4.6	11.0	5.0	0.80	0.65	3.0	184.1	8.40	61	105
130.0	CCI HPA65R-BU8A	3	54	11.2	8.0	11.7	7.6	0.80	0.71	0.0	0.0	8.34	136	162
130.0	CCI DMP65R-BU8D	3	96	17.9	8.0	20.7	7.7	0.80	0.63	0.0	0.0	8.34	192	287
117.0	Torque Arms	1	500	15.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	8.10	103	500
75.00	Lucent KS-24019	1	4	0.9	2.2	3.5	3.2	1.00	1.00	2.0	11.1	7.18	6	4
	Totals	97	9807	649.6									2568	9807

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Tower Loading

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Description	Qty	Width (in)	Weight (lb/ft)	Pct In Block	Spread On Faces	Bundling Arrangement	Cluster Dia (in)	Out Of Zone	Spacing (in)	Orientation Factor	Ka Override
10.00	162.0	1 1/4" Coax	9	1.55	0.63	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
10.00	155.0	1 1/4" Hybriflex	4	1.54	1.00	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
10.00	155.0	1 5/8" Coax	6	1.98	0.82	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
10.00	142.0	1 5/8" Coax	12	1.98	0.82	33	Lin App	Block	0.00	N	1.00	1.00	0.00
10.00	130.0	0.39" (10mm) Fiber	1	0.39	0.06	100	Lin App	Individual	0.00	N	1.00	1.00	0.01
10.00	130.0	0.39" (9.8mm)	1	0.39	0.07	100	Lin App	Individual	0.00	N	1.00	1.00	0.01
10.00	130.0	0.78" (19.7mm) 8	2	0.78	0.59	100	Lin App	Individual	0.00	N	1.00	1.00	0.01
10.00	130.0	0.79" (20.1mm)	1	0.79	0.40	100	Lin App	Individual	0.00	N	1.00	1.00	0.01
10.00	130.0	1 1/4" Coax	12	1.55	0.63	50	Lin App	Block	0.00	N	1.00	1.00	0.00
10.00	75.00	7/8" Coax	1	1.09	0.33	100	Lin App	Individual	0.00	N	1.00	1.00	0.00

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Section Forces

LoadCase 1.2D + 1.6W Normal — 101 mph Normal with No Ice

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
12	155.00	24.86	1.223	6.201	0.000	0.199	2.60	1.00	1.00	0.0	4.83	12.55	0.00	505	0	424	466	890
11	148.40	24.55	0.408	2.007	0.000	0.201	2.59	1.00	1.00	0.0	1.58	4.08	0.00	181	0	136	206	342
10	143.40	24.32	1.223	4.194	0.000	0.213	2.55	1.00	1.00	0.0	3.67	9.37	0.00	424	0	310	485	795
9	130.00	23.64	2.853	12.401	0.000	0.204	2.58	1.00	1.00	0.0	10.07	26.01	0.00	1487	0	836	2107	2943
8	118.21	23.01	0.408	2.188	0.000	0.194	2.62	1.00	1.00	0.0	1.68	4.39	0.00	278	0	137	428	565
7	108.21	22.44	2.445	10.214	0.000	0.206	2.58	1.00	1.00	0.0	8.40	21.62	0.00	1320	0	660	1910	2570
6	90.00	21.29	2.853	12.401	0.000	0.204	2.58	1.00	1.00	0.0	10.07	26.01	0.00	1599	0	753	2208	2961
5	70.00	19.81	2.853	12.401	0.000	0.204	2.58	1.00	1.00	0.0	10.07	26.01	0.00	1605	0	701	2082	2783
4	50.00	17.99	2.853	12.401	0.000	0.204	2.58	1.00	1.00	0.0	10.07	26.01	0.00	1606	0	637	1899	2535
3	30.00	15.55	2.853	12.401	0.000	0.204	2.58	1.00	1.00	0.0	10.07	26.01	0.00	1606	0	550	1641	2191
2	13.33	15.54	2.038	8.267	0.000	0.207	2.57	1.00	1.00	0.0	6.85	17.64	0.00	942	0	373	820	1193
1	3.33	15.54	1.521	3.338	0.000	0.366	2.13	1.00	1.00	0.0	3.60	7.68	0.00	267	0	162	0	162
														11822	0			19932

LoadCase 1.2D + 1.6W 60 deg — 101 mph 60 degree with No Ice

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
12	155.00	24.86	1.223	6.201	0.000	0.199	2.60	0.80	1.00	0.0	4.58	11.92	0.00	505	0	403	466	869
11	148.40	24.55	0.408	2.007	0.000	0.201	2.59	0.80	1.00	0.0	1.49	3.87	0.00	181	0	129	206	335
10	143.40	24.32	1.223	4.194	0.000	0.213	2.55	0.80	1.00	0.0	3.43	8.75	0.00	424	0	289	485	774
9	130.00	23.64	2.853	12.401	0.000	0.204	2.58	0.80	1.00	0.0	9.50	24.54	0.00	1487	0	789	2107	2896
8	118.21	23.01	0.408	2.188	0.000	0.194	2.62	0.80	1.00	0.0	1.59	4.17	0.00	278	0	131	428	559
7	108.21	22.44	2.445	10.214	0.000	0.206	2.58	0.80	1.00	0.0	7.91	20.36	0.00	1320	0	621	1910	2532
6	90.00	21.29	2.853	12.401	0.000	0.204	2.58	0.80	1.00	0.0	9.50	24.54	0.00	1599	0	710	2208	2919
5	70.00	19.81	2.853	12.401	0.000	0.204	2.58	0.80	1.00	0.0	9.50	24.54	0.00	1605	0	661	2082	2743
4	50.00	17.99	2.853	12.401	0.000	0.204	2.58	0.80	1.00	0.0	9.50	24.54	0.00	1606	0	601	1899	2499
3	30.00	15.55	2.853	12.401	0.000	0.204	2.58	0.80	1.00	0.0	9.50	24.54	0.00	1606	0	519	1641	2160
2	13.33	15.54	2.038	8.267	0.000	0.207	2.57	0.80	1.00	0.0	6.45	16.59	0.00	942	0	351	820	1170
1	3.33	15.54	1.521	3.338	0.000	0.366	2.13	0.80	1.00	0.0	3.29	7.03	0.00	267	0	149	0	149
														11822	0			19604

LoadCase 1.2D + 1.6W 90 deg — 101 mph 90 degree with No Ice

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
12	155.00	24.86	1.223	6.201	0.000	0.199	2.60	0.85	1.00	0.0	4.64	12.08	0.00	505	0	408	466	874
11	148.40	24.55	0.408	2.007	0.000	0.201	2.59	0.85	1.00	0.0	1.51	3.92	0.00	181	0	131	206	337
10	143.40	24.32	1.223	4.194	0.000	0.213	2.55	0.85	1.00	0.0	3.49	8.90	0.00	424	0	294	485	780
9	130.00	23.64	2.853	12.401	0.000	0.204	2.58	0.85	1.00	0.0	9.64	24.91	0.00	1487	0	801	2107	2908
8	118.21	23.01	0.408	2.188	0.000	0.194	2.62	0.85	1.00	0.0	1.62	4.23	0.00	278	0	132	428	560
7	108.21	22.44	2.445	10.214	0.000	0.206	2.58	0.85	1.00	0.0	8.03	20.68	0.00	1320	0	631	1910	2541
6	90.00	21.29	2.853	12.401	0.000	0.204	2.58	0.85	1.00	0.0	9.64	24.91	0.00	1599	0	721	2208	2929

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Section Forces

5	70.00	19.81	2.853	12.401	0.000	0.204	2.58	0.85	1.00	0.0	9.64	24.91	0.00	1605	0	671	2082	2753
4	50.00	17.99	2.853	12.401	0.000	0.204	2.58	0.85	1.00	0.0	9.64	24.91	0.00	1606	0	610	1899	2508
3	30.00	15.55	2.853	12.401	0.000	0.204	2.58	0.85	1.00	0.0	9.64	24.91	0.00	1606	0	527	1641	2168
2	13.33	15.54	2.038	8.267	0.000	0.207	2.57	0.85	1.00	0.0	6.55	16.86	0.00	942	0	356	820	1176
1	3.33	15.54	1.521	3.338	0.000	0.366	2.13	0.85	1.00	0.0	3.37	7.19	0.00	267	0	152	0	152
														11822	0			19686

LoadCase 1.2D + 1.6W 120 deg — **101 mph 120 degree with No Ice**

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
12	155.00	24.86	1.223	6.201	0.000	0.199	2.60	1.00	1.00	0.0	4.83	12.55	0.00	505	0	424	466	890
11	148.40	24.55	0.408	2.007	0.000	0.201	2.59	1.00	1.00	0.0	1.58	4.08	0.00	181	0	136	206	342
10	143.40	24.32	1.223	4.194	0.000	0.213	2.55	1.00	1.00	0.0	3.67	9.37	0.00	424	0	310	485	795
9	130.00	23.64	2.853	12.401	0.000	0.204	2.58	1.00	1.00	0.0	10.07	26.01	0.00	1487	0	836	2107	2943
8	118.21	23.01	0.408	2.188	0.000	0.194	2.62	1.00	1.00	0.0	1.68	4.39	0.00	278	0	137	428	565
7	108.21	22.44	2.445	10.214	0.000	0.206	2.58	1.00	1.00	0.0	8.40	21.62	0.00	1320	0	660	1910	2570
6	90.00	21.29	2.853	12.401	0.000	0.204	2.58	1.00	1.00	0.0	10.07	26.01	0.00	1599	0	753	2208	2961
5	70.00	19.81	2.853	12.401	0.000	0.204	2.58	1.00	1.00	0.0	10.07	26.01	0.00	1605	0	701	2082	2783
4	50.00	17.99	2.853	12.401	0.000	0.204	2.58	1.00	1.00	0.0	10.07	26.01	0.00	1606	0	637	1899	2535
3	30.00	15.55	2.853	12.401	0.000	0.204	2.58	1.00	1.00	0.0	10.07	26.01	0.00	1606	0	550	1641	2191
2	13.33	15.54	2.038	8.267	0.000	0.207	2.57	1.00	1.00	0.0	6.85	17.64	0.00	942	0	373	820	1193
1	3.33	15.54	1.521	3.338	0.000	0.366	2.13	1.00	1.00	0.0	3.60	7.68	0.00	267	0	162	0	162
														11822	0			19932

LoadCase 1.2D + 1.6W 180 deg — **101 mph 180 degree with No Ice**

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
12	155.00	24.86	1.223	6.201	0.000	0.199	2.60	0.80	1.00	0.0	4.58	11.92	0.00	505	0	403	466	869
11	148.40	24.55	0.408	2.007	0.000	0.201	2.59	0.80	1.00	0.0	1.49	3.87	0.00	181	0	129	206	335
10	143.40	24.32	1.223	4.194	0.000	0.213	2.55	0.80	1.00	0.0	3.43	8.75	0.00	424	0	289	485	774
9	130.00	23.64	2.853	12.401	0.000	0.204	2.58	0.80	1.00	0.0	9.50	24.54	0.00	1487	0	789	2107	2896
8	118.21	23.01	0.408	2.188	0.000	0.194	2.62	0.80	1.00	0.0	1.59	4.17	0.00	278	0	131	428	559
7	108.21	22.44	2.445	10.214	0.000	0.206	2.58	0.80	1.00	0.0	7.91	20.36	0.00	1320	0	621	1910	2532
6	90.00	21.29	2.853	12.401	0.000	0.204	2.58	0.80	1.00	0.0	9.50	24.54	0.00	1599	0	710	2208	2919
5	70.00	19.81	2.853	12.401	0.000	0.204	2.58	0.80	1.00	0.0	9.50	24.54	0.00	1605	0	661	2082	2743
4	50.00	17.99	2.853	12.401	0.000	0.204	2.58	0.80	1.00	0.0	9.50	24.54	0.00	1606	0	601	1899	2499
3	30.00	15.55	2.853	12.401	0.000	0.204	2.58	0.80	1.00	0.0	9.50	24.54	0.00	1606	0	519	1641	2160
2	13.33	15.54	2.038	8.267	0.000	0.207	2.57	0.80	1.00	0.0	6.45	16.59	0.00	942	0	351	820	1170
1	3.33	15.54	1.521	3.338	0.000	0.366	2.13	0.80	1.00	0.0	3.29	7.03	0.00	267	0	149	0	149
														11822	0			19604

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Section Forces

LoadCase 1.2D + 1.6W 210 deg

101 mph 210 degree with No Ice

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
12	155.00	24.86	1.223	6.201	0.000	0.199	2.60	0.85	1.00	0.0	4.64	12.08	0.00	505	0	408	466	874
11	148.40	24.55	0.408	2.007	0.000	0.201	2.59	0.85	1.00	0.0	1.51	3.92	0.00	181	0	131	206	337
10	143.40	24.32	1.223	4.194	0.000	0.213	2.55	0.85	1.00	0.0	3.49	8.90	0.00	424	0	294	485	780
9	130.00	23.64	2.853	12.401	0.000	0.204	2.58	0.85	1.00	0.0	9.64	24.91	0.00	1487	0	801	2107	2908
8	118.21	23.01	0.408	2.188	0.000	0.194	2.62	0.85	1.00	0.0	1.62	4.23	0.00	278	0	132	428	560
7	108.21	22.44	2.445	10.214	0.000	0.206	2.58	0.85	1.00	0.0	8.03	20.68	0.00	1320	0	631	1910	2541
6	90.00	21.29	2.853	12.401	0.000	0.204	2.58	0.85	1.00	0.0	9.64	24.91	0.00	1599	0	721	2208	2929
5	70.00	19.81	2.853	12.401	0.000	0.204	2.58	0.85	1.00	0.0	9.64	24.91	0.00	1605	0	671	2082	2753
4	50.00	17.99	2.853	12.401	0.000	0.204	2.58	0.85	1.00	0.0	9.64	24.91	0.00	1606	0	610	1899	2508
3	30.00	15.55	2.853	12.401	0.000	0.204	2.58	0.85	1.00	0.0	9.64	24.91	0.00	1606	0	527	1641	2168
2	13.33	15.54	2.038	8.267	0.000	0.207	2.57	0.85	1.00	0.0	6.55	16.86	0.00	942	0	356	820	1176
1	3.33	15.54	1.521	3.338	0.000	0.366	2.13	0.85	1.00	0.0	3.37	7.19	0.00	267	0	152	0	152
														11822	0			19686

LoadCase 1.2D + 1.6W 240 deg

101 mph 240 degree with No Ice

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
12	155.00	24.86	1.223	6.201	0.000	0.199	2.60	1.00	1.00	0.0	4.83	12.55	0.00	505	0	424	466	890
11	148.40	24.55	0.408	2.007	0.000	0.201	2.59	1.00	1.00	0.0	1.58	4.08	0.00	181	0	136	206	342
10	143.40	24.32	1.223	4.194	0.000	0.213	2.55	1.00	1.00	0.0	3.67	9.37	0.00	424	0	310	485	795
9	130.00	23.64	2.853	12.401	0.000	0.204	2.58	1.00	1.00	0.0	10.07	26.01	0.00	1487	0	836	2107	2943
8	118.21	23.01	0.408	2.188	0.000	0.194	2.62	1.00	1.00	0.0	1.68	4.39	0.00	278	0	137	428	565
7	108.21	22.44	2.445	10.214	0.000	0.206	2.58	1.00	1.00	0.0	8.40	21.62	0.00	1320	0	660	1910	2570
6	90.00	21.29	2.853	12.401	0.000	0.204	2.58	1.00	1.00	0.0	10.07	26.01	0.00	1599	0	753	2208	2961
5	70.00	19.81	2.853	12.401	0.000	0.204	2.58	1.00	1.00	0.0	10.07	26.01	0.00	1605	0	701	2082	2783
4	50.00	17.99	2.853	12.401	0.000	0.204	2.58	1.00	1.00	0.0	10.07	26.01	0.00	1606	0	637	1899	2535
3	30.00	15.55	2.853	12.401	0.000	0.204	2.58	1.00	1.00	0.0	10.07	26.01	0.00	1606	0	550	1641	2191
2	13.33	15.54	2.038	8.267	0.000	0.207	2.57	1.00	1.00	0.0	6.85	17.64	0.00	942	0	373	820	1193
1	3.33	15.54	1.521	3.338	0.000	0.366	2.13	1.00	1.00	0.0	3.60	7.68	0.00	267	0	162	0	162
														11822	0			19932

LoadCase 1.2D + 1.6W 300 deg

101 mph 300 degree with No Ice

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
12	155.00	24.86	1.223	6.201	0.000	0.199	2.60	0.80	1.00	0.0	4.58	11.92	0.00	505	0	403	466	869
11	148.40	24.55	0.408	2.007	0.000	0.201	2.59	0.80	1.00	0.0	1.49	3.87	0.00	181	0	129	206	335
10	143.40	24.32	1.223	4.194	0.000	0.213	2.55	0.80	1.00	0.0	3.43	8.75	0.00	424	0	289	485	774
9	130.00	23.64	2.853	12.401	0.000	0.204	2.58	0.80	1.00	0.0	9.50	24.54	0.00	1487	0	789	2107	2896
8	118.21	23.01	0.408	2.188	0.000	0.194	2.62	0.80	1.00	0.0	1.59	4.17	0.00	278	0	131	428	559
7	108.21	22.44	2.445	10.214	0.000	0.206	2.58	0.80	1.00	0.0	7.91	20.36	0.00	1320	0	621	1910	2532
6	90.00	21.29	2.853	12.401	0.000	0.204	2.58	0.80	1.00	0.0	9.50	24.54	0.00	1599	0	710	2208	2919

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Section Forces

5	70.00	19.81	2.853	12.401	0.000	0.204	2.58	0.80	1.00	0.0	9.50	24.54	0.00	1605	0	661	2082	2743	
4	50.00	17.99	2.853	12.401	0.000	0.204	2.58	0.80	1.00	0.0	9.50	24.54	0.00	1606	0	601	1899	2499	
3	30.00	15.55	2.853	12.401	0.000	0.204	2.58	0.80	1.00	0.0	9.50	24.54	0.00	1606	0	519	1641	2160	
2	13.33	15.54	2.038	8.267	0.000	0.207	2.57	0.80	1.00	0.0	6.45	16.59	0.00	942	0	351	820	1170	
1	3.33	15.54	1.521	3.338	0.000	0.366	2.13	0.80	1.00	0.0	3.29	7.03	0.00	267	0	149	0	149	
														11822	0			19604	

LoadCase 1.2D + 1.6W 330 deg **101 mph 330 degree with No Ice**

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)	
12	155.00	24.86	1.223	6.201	0.000	0.199	2.60	0.85	1.00	0.0	4.64	12.08	0.00	505	0	408	466	874	
11	148.40	24.55	0.408	2.007	0.000	0.201	2.59	0.85	1.00	0.0	1.51	3.92	0.00	181	0	131	206	337	
10	143.40	24.32	1.223	4.194	0.000	0.213	2.55	0.85	1.00	0.0	3.49	8.90	0.00	424	0	294	485	780	
9	130.00	23.64	2.853	12.401	0.000	0.204	2.58	0.85	1.00	0.0	9.64	24.91	0.00	1487	0	801	2107	2908	
8	118.21	23.01	0.408	2.188	0.000	0.194	2.62	0.85	1.00	0.0	1.62	4.23	0.00	278	0	132	428	560	
7	108.21	22.44	2.445	10.214	0.000	0.206	2.58	0.85	1.00	0.0	8.03	20.68	0.00	1320	0	631	1910	2541	
6	90.00	21.29	2.853	12.401	0.000	0.204	2.58	0.85	1.00	0.0	9.64	24.91	0.00	1599	0	721	2208	2929	
5	70.00	19.81	2.853	12.401	0.000	0.204	2.58	0.85	1.00	0.0	9.64	24.91	0.00	1605	0	671	2082	2753	
4	50.00	17.99	2.853	12.401	0.000	0.204	2.58	0.85	1.00	0.0	9.64	24.91	0.00	1606	0	610	1899	2508	
3	30.00	15.55	2.853	12.401	0.000	0.204	2.58	0.85	1.00	0.0	9.64	24.91	0.00	1606	0	527	1641	2168	
2	13.33	15.54	2.038	8.267	0.000	0.207	2.57	0.85	1.00	0.0	6.55	16.86	0.00	942	0	356	820	1176	
1	3.33	15.54	1.521	3.338	0.000	0.366	2.13	0.85	1.00	0.0	3.37	7.19	0.00	267	0	152	0	152	
														11822	0			19686	

LoadCase 1.2D + 1.0Di + 1.0Wi Normal **50 mph Normal with 0.75 in Radial Ice**

Gust Response Factor (Gh): 0.85 **Ice Dead Load Factor** 1.00 **Ice Importance Factor :** 1.00

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)	
12	155.00	6.09	1.223	23.415	17.21	0.611	1.80	1.00	1.00	1.8	18.86	33.90	17.21	2456	1951	176	145	321	
11	148.40	6.02	0.408	7.647	5.640	0.623	1.79	1.00	1.00	1.7	6.23	11.16	5.64	932	751	57	61	118	
10	143.40	5.96	1.223	16.667	12.47	0.654	1.78	1.00	1.00	1.7	14.24	25.36	12.47	2124	1701	128	123	252	
9	130.00	5.79	2.853	47.233	34.83	0.622	1.79	1.00	1.00	1.7	38.76	69.46	34.83	7463	5976	342	472	814	
8	118.21	5.64	0.408	7.916	5.728	0.577	1.82	1.00	1.00	1.7	6.20	11.28	5.73	1416	1138	54	100	145	**
7	108.21	5.50	2.445	38.734	28.52	0.624	1.79	1.00	1.00	1.7	31.94	57.21	28.52	6617	5296	267	394	648	**
6	90.00	5.22	2.853	45.975	33.57	0.608	1.80	1.00	1.00	1.7	37.39	67.28	33.57	7858	6260	298	471	748	**
5	70.00	4.86	2.853	45.142	32.74	0.599	1.80	1.00	1.00	1.6	36.50	65.87	32.74	7733	6128	272	453	695	**
4	50.00	4.41	2.853	44.059	31.65	0.586	1.81	1.00	1.00	1.6	35.36	64.10	31.66	7486	5880	240	420	630	**
3	30.00	3.81	2.853	42.482	30.08	0.569	1.83	1.00	1.00	1.5	33.73	61.62	30.08	7095	5489	200	369	543	**
2	13.33	3.81	2.038	27.025	18.75	0.549	1.84	1.00	1.00	1.4	21.37	39.42	18.76	3647	2705	128	185	312	
1	3.33	3.81	1.521	7.749	4.411	0.635	1.79	1.00	1.00	1.2	7.46	13.33	4.41	533	266	43	0	43	
														55362	43540			5267	

** = Section Force Exceeds Solidity Ratio Criteria

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Section Forces

LoadCase 1.2D + 1.0Di + 1.0Wi 60 deg — 50 mph 60 deg with 0.75 in Radial Ice

Gust Response Factor (Gh): 0.85 **Ice Dead Load Factor** 1.00 **Ice Importance Factor :** 1.00

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)	
12	155.00	6.09	1.223	23.415	17.21	0.611	1.80	0.80	1.00	1.8	18.62	33.46	17.21	2456	1951	173	145	318	
11	148.40	6.02	0.408	7.647	5.640	0.623	1.79	0.80	1.00	1.7	6.15	11.01	5.64	932	751	56	61	117	
10	143.40	5.96	1.223	16.667	12.47	0.654	1.78	0.80	1.00	1.7	14.00	24.93	12.47	2124	1701	126	123	249	
9	130.00	5.79	2.853	47.233	34.83	0.622	1.79	0.80	1.00	1.7	38.19	68.44	34.83	7463	5976	337	472	809	
8	118.21	5.64	0.408	7.916	5.728	0.577	1.82	0.80	1.00	1.7	6.12	11.14	5.73	1416	1138	53	100	145	**
7	108.21	5.50	2.445	38.734	28.52	0.624	1.79	0.80	1.00	1.7	31.45	56.34	28.52	6617	5296	263	394	648	**
6	90.00	5.22	2.853	45.975	33.57	0.608	1.80	0.80	1.00	1.7	36.82	66.25	33.57	7858	6260	294	471	748	**
5	70.00	4.86	2.853	45.142	32.74	0.599	1.80	0.80	1.00	1.6	35.93	64.85	32.74	7733	6128	268	453	695	**
4	50.00	4.41	2.853	44.059	31.65	0.586	1.81	0.80	1.00	1.6	34.78	63.07	31.66	7486	5880	236	420	630	**
3	30.00	3.81	2.853	42.482	30.08	0.569	1.83	0.80	1.00	1.5	33.16	60.58	30.08	7095	5489	196	369	543	**
2	13.33	3.81	2.038	27.025	18.75	0.549	1.84	0.80	1.00	1.4	20.97	38.66	18.76	3647	2705	125	185	310	
1	3.33	3.81	1.521	7.749	4.411	0.635	1.79	0.80	1.00	1.2	7.16	12.79	4.41	533	266	41	0	41	
														55362	43540			5253	

** = Section Force Exceeds Solidity Ratio Criteria

LoadCase 1.2D + 1.0Di + 1.0Wi 90 deg — 50 mph 90 deg with 0.75 in Radial Ice

Gust Response Factor (Gh): 0.85 **Ice Dead Load Factor** 1.00 **Ice Importance Factor :** 1.00

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)	
12	155.00	6.09	1.223	23.415	17.21	0.611	1.80	0.85	1.00	1.8	18.68	33.57	17.21	2456	1951	174	145	319	
11	148.40	6.02	0.408	7.647	5.640	0.623	1.79	0.85	1.00	1.7	6.17	11.05	5.64	932	751	57	61	117	
10	143.40	5.96	1.223	16.667	12.47	0.654	1.78	0.85	1.00	1.7	14.06	25.04	12.47	2124	1701	127	123	250	
9	130.00	5.79	2.853	47.233	34.83	0.622	1.79	0.85	1.00	1.7	38.33	68.70	34.83	7463	5976	338	472	810	
8	118.21	5.64	0.408	7.916	5.728	0.577	1.82	0.85	1.00	1.7	6.14	11.17	5.73	1416	1138	54	100	145	**
7	108.21	5.50	2.445	38.734	28.52	0.624	1.79	0.85	1.00	1.7	31.58	56.56	28.52	6617	5296	264	394	648	**
6	90.00	5.22	2.853	45.975	33.57	0.608	1.80	0.85	1.00	1.7	36.96	66.51	33.57	7858	6260	295	471	748	**
5	70.00	4.86	2.853	45.142	32.74	0.599	1.80	0.85	1.00	1.6	36.07	65.10	32.74	7733	6128	269	453	695	**
4	50.00	4.41	2.853	44.059	31.65	0.586	1.81	0.85	1.00	1.6	34.93	63.33	31.66	7486	5880	237	420	630	**
3	30.00	3.81	2.853	42.482	30.08	0.569	1.83	0.85	1.00	1.5	33.30	60.84	30.08	7095	5489	197	369	543	**
2	13.33	3.81	2.038	27.025	18.75	0.549	1.84	0.85	1.00	1.4	21.07	38.85	18.76	3647	2705	126	185	310	
1	3.33	3.81	1.521	7.749	4.411	0.635	1.79	0.85	1.00	1.2	7.23	12.92	4.41	533	266	42	0	42	
														55362	43540			5256	

** = Section Force Exceeds Solidity Ratio Criteria

LoadCase 1.2D + 1.0Di + 1.0Wi 120 deg — 50 mph 120 deg with 0.75 in Radial Ice

Gust Response Factor (Gh): 0.85 **Ice Dead Load Factor** 1.00 **Ice Importance Factor :** 1.00

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)	
12	155.00	6.09	1.223	23.415	17.21	0.611	1.80	1.00	1.00	1.8	18.86	33.90	17.21	2456	1951	176	145	321	
11	148.40	6.02	0.408	7.647	5.640	0.623	1.79	1.00	1.00	1.7	6.23	11.16	5.64	932	751	57	61	118	
10	143.40	5.96	1.223	16.667	12.47	0.654	1.78	1.00	1.00	1.7	14.24	25.36	12.47	2124	1701	128	123	252	
9	130.00	5.79	2.853	47.233	34.83	0.622	1.79	1.00	1.00	1.7	38.76	69.46	34.83	7463	5976	342	472	814	
8	118.21	5.64	0.408	7.916	5.728	0.577	1.82	1.00	1.00	1.7	6.20	11.28	5.73	1416	1138	54	100	145	**
7	108.21	5.50	2.445	38.734	28.52	0.624	1.79	1.00	1.00	1.7	31.94	57.21	28.52	6617	5296	267	394	648	**
6	90.00	5.22	2.853	45.975	33.57	0.608	1.80	1.00	1.00	1.7	37.39	67.28	33.57	7858	6260	298	471	748	**

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Section Forces

5	70.00	4.86	2.853	45.142	32.74	0.599	1.80	1.00	1.00	1.6	36.50	65.87	32.74	7733	6128	272	453	695	**
4	50.00	4.41	2.853	44.059	31.65	0.586	1.81	1.00	1.00	1.6	35.36	64.10	31.66	7486	5880	240	420	630	**
3	30.00	3.81	2.853	42.482	30.08	0.569	1.83	1.00	1.00	1.5	33.73	61.62	30.08	7095	5489	200	369	543	**
2	13.33	3.81	2.038	27.025	18.75	0.549	1.84	1.00	1.00	1.4	21.37	39.42	18.76	3647	2705	128	185	312	
1	3.33	3.81	1.521	7.749	4.411	0.635	1.79	1.00	1.00	1.2	7.46	13.33	4.41	533	266	43	0	43	
														55362	43540			5267	

** = Section Force Exceeds Solidity Ratio Criteria

LoadCase 1.2D + 1.0Di + 1.0Wi 180 deg — 50 mph 180 deg with 0.75 in Radial Ice

Gust Response Factor (Gh): 0.85 **Ice Dead Load Factor** 1.00 **Ice Importance Factor :** 1.00

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)	
12	155.00	6.09	1.223	23.415	17.21	0.611	1.80	0.80	1.00	1.8	18.62	33.46	17.21	2456	1951	173	145	318	
11	148.40	6.02	0.408	7.647	5.640	0.623	1.79	0.80	1.00	1.7	6.15	11.01	5.64	932	751	56	61	117	
10	143.40	5.96	1.223	16.667	12.47	0.654	1.78	0.80	1.00	1.7	14.00	24.93	12.47	2124	1701	126	123	249	
9	130.00	5.79	2.853	47.233	34.83	0.622	1.79	0.80	1.00	1.7	38.19	68.44	34.83	7463	5976	337	472	809	
8	118.21	5.64	0.408	7.916	5.728	0.577	1.82	0.80	1.00	1.7	6.12	11.14	5.73	1416	1138	53	100	145	**
7	108.21	5.50	2.445	38.734	28.52	0.624	1.79	0.80	1.00	1.7	31.45	56.34	28.52	6617	5296	263	394	648	**
6	90.00	5.22	2.853	45.975	33.57	0.608	1.80	0.80	1.00	1.7	36.82	66.25	33.57	7858	6260	294	471	748	**
5	70.00	4.86	2.853	45.142	32.74	0.599	1.80	0.80	1.00	1.6	35.93	64.85	32.74	7733	6128	268	453	695	**
4	50.00	4.41	2.853	44.059	31.65	0.586	1.81	0.80	1.00	1.6	34.78	63.07	31.66	7486	5880	236	420	630	**
3	30.00	3.81	2.853	42.482	30.08	0.569	1.83	0.80	1.00	1.5	33.16	60.58	30.08	7095	5489	196	369	543	**
2	13.33	3.81	2.038	27.025	18.75	0.549	1.84	0.80	1.00	1.4	20.97	38.66	18.76	3647	2705	125	185	310	
1	3.33	3.81	1.521	7.749	4.411	0.635	1.79	0.80	1.00	1.2	7.16	12.79	4.41	533	266	41	0	41	
														55362	43540			5253	

** = Section Force Exceeds Solidity Ratio Criteria

LoadCase 1.2D + 1.0Di + 1.0Wi 210 deg — 50 mph 210 deg with 0.75 in Radial Ice

Gust Response Factor (Gh): 0.85 **Ice Dead Load Factor** 1.00 **Ice Importance Factor :** 1.00

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)	
12	155.00	6.09	1.223	23.415	17.21	0.611	1.80	0.85	1.00	1.8	18.68	33.57	17.21	2456	1951	174	145	319	
11	148.40	6.02	0.408	7.647	5.640	0.623	1.79	0.85	1.00	1.7	6.17	11.05	5.64	932	751	57	61	117	
10	143.40	5.96	1.223	16.667	12.47	0.654	1.78	0.85	1.00	1.7	14.06	25.04	12.47	2124	1701	127	123	250	
9	130.00	5.79	2.853	47.233	34.83	0.622	1.79	0.85	1.00	1.7	38.33	68.70	34.83	7463	5976	338	472	810	
8	118.21	5.64	0.408	7.916	5.728	0.577	1.82	0.85	1.00	1.7	6.14	11.17	5.73	1416	1138	54	100	145	**
7	108.21	5.50	2.445	38.734	28.52	0.624	1.79	0.85	1.00	1.7	31.58	56.56	28.52	6617	5296	264	394	648	**
6	90.00	5.22	2.853	45.975	33.57	0.608	1.80	0.85	1.00	1.7	36.96	66.51	33.57	7858	6260	295	471	748	**
5	70.00	4.86	2.853	45.142	32.74	0.599	1.80	0.85	1.00	1.6	36.07	65.10	32.74	7733	6128	269	453	695	**
4	50.00	4.41	2.853	44.059	31.65	0.586	1.81	0.85	1.00	1.6	34.93	63.33	31.66	7486	5880	237	420	630	**
3	30.00	3.81	2.853	42.482	30.08	0.569	1.83	0.85	1.00	1.5	33.30	60.84	30.08	7095	5489	197	369	543	**
2	13.33	3.81	2.038	27.025	18.75	0.549	1.84	0.85	1.00	1.4	21.07	38.85	18.76	3647	2705	126	185	310	
1	3.33	3.81	1.521	7.749	4.411	0.635	1.79	0.85	1.00	1.2	7.23	12.92	4.41	533	266	42	0	42	
														55362	43540			5256	

** = Section Force Exceeds Solidity Ratio Criteria

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Section Forces

LoadCase 1.2D + 1.0Di + 1.0Wi 240 deg — 50 mph 240 deg with 0.75 in Radial Ice

Gust Response Factor (Gh): 0.85 Ice Dead Load Factor : 1.00 Ice Importance Factor : 1.00

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)	
12	155.00	6.09	1.223	23.415	17.21	0.611	1.80	1.00	1.00	1.8	18.86	33.90	17.21	2456	1951	176	145	321	
11	148.40	6.02	0.408	7.647	5.640	0.623	1.79	1.00	1.00	1.7	6.23	11.16	5.64	932	751	57	61	118	
10	143.40	5.96	1.223	16.667	12.47	0.654	1.78	1.00	1.00	1.7	14.24	25.36	12.47	2124	1701	128	123	252	
9	130.00	5.79	2.853	47.233	34.83	0.622	1.79	1.00	1.00	1.7	38.76	69.46	34.83	7463	5976	342	472	814	
8	118.21	5.64	0.408	7.916	5.728	0.577	1.82	1.00	1.00	1.7	6.20	11.28	5.73	1416	1138	54	100	145	**
7	108.21	5.50	2.445	38.734	28.52	0.624	1.79	1.00	1.00	1.7	31.94	57.21	28.52	6617	5296	267	394	648	**
6	90.00	5.22	2.853	45.975	33.57	0.608	1.80	1.00	1.00	1.7	37.39	67.28	33.57	7858	6260	298	471	748	**
5	70.00	4.86	2.853	45.142	32.74	0.599	1.80	1.00	1.00	1.6	36.50	65.87	32.74	7733	6128	272	453	695	**
4	50.00	4.41	2.853	44.059	31.65	0.586	1.81	1.00	1.00	1.6	35.36	64.10	31.66	7486	5880	240	420	630	**
3	30.00	3.81	2.853	42.482	30.08	0.569	1.83	1.00	1.00	1.5	33.73	61.62	30.08	7095	5489	200	369	543	**
2	13.33	3.81	2.038	27.025	18.75	0.549	1.84	1.00	1.00	1.4	21.37	39.42	18.76	3647	2705	128	185	312	
1	3.33	3.81	1.521	7.749	4.411	0.635	1.79	1.00	1.00	1.2	7.46	13.33	4.41	533	266	43	0	43	
														55362	43540			5267	

** = Section Force Exceeds Solidity Ratio Criteria

LoadCase 1.2D + 1.0Di + 1.0Wi 300 deg — 50 mph 300 deg with 0.75 in Radial Ice

Gust Response Factor (Gh): 0.85 Ice Dead Load Factor : 1.00 Ice Importance Factor : 1.00

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)	
12	155.00	6.09	1.223	23.415	17.21	0.611	1.80	0.80	1.00	1.8	18.62	33.46	17.21	2456	1951	173	145	318	
11	148.40	6.02	0.408	7.647	5.640	0.623	1.79	0.80	1.00	1.7	6.15	11.01	5.64	932	751	56	61	117	
10	143.40	5.96	1.223	16.667	12.47	0.654	1.78	0.80	1.00	1.7	14.00	24.93	12.47	2124	1701	126	123	249	
9	130.00	5.79	2.853	47.233	34.83	0.622	1.79	0.80	1.00	1.7	38.19	68.44	34.83	7463	5976	337	472	809	
8	118.21	5.64	0.408	7.916	5.728	0.577	1.82	0.80	1.00	1.7	6.12	11.14	5.73	1416	1138	53	100	145	**
7	108.21	5.50	2.445	38.734	28.52	0.624	1.79	0.80	1.00	1.7	31.45	56.34	28.52	6617	5296	263	394	648	**
6	90.00	5.22	2.853	45.975	33.57	0.608	1.80	0.80	1.00	1.7	36.82	66.25	33.57	7858	6260	294	471	748	**
5	70.00	4.86	2.853	45.142	32.74	0.599	1.80	0.80	1.00	1.6	35.93	64.85	32.74	7733	6128	268	453	695	**
4	50.00	4.41	2.853	44.059	31.65	0.586	1.81	0.80	1.00	1.6	34.78	63.07	31.66	7486	5880	236	420	630	**
3	30.00	3.81	2.853	42.482	30.08	0.569	1.83	0.80	1.00	1.5	33.16	60.58	30.08	7095	5489	196	369	543	**
2	13.33	3.81	2.038	27.025	18.75	0.549	1.84	0.80	1.00	1.4	20.97	38.66	18.76	3647	2705	125	185	310	
1	3.33	3.81	1.521	7.749	4.411	0.635	1.79	0.80	1.00	1.2	7.16	12.79	4.41	533	266	41	0	41	
														55362	43540			5253	

** = Section Force Exceeds Solidity Ratio Criteria

LoadCase 1.2D + 1.0Di + 1.0Wi 330 deg — 50 mph 330 deg with 0.75 in Radial Ice

Gust Response Factor (Gh): 0.85 Ice Dead Load Factor : 1.00 Ice Importance Factor : 1.00

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)	
12	155.00	6.09	1.223	23.415	17.21	0.611	1.80	0.85	1.00	1.8	18.68	33.57	17.21	2456	1951	174	145	319	
11	148.40	6.02	0.408	7.647	5.640	0.623	1.79	0.85	1.00	1.7	6.17	11.05	5.64	932	751	57	61	117	
10	143.40	5.96	1.223	16.667	12.47	0.654	1.78	0.85	1.00	1.7	14.06	25.04	12.47	2124	1701	127	123	250	
9	130.00	5.79	2.853	47.233	34.83	0.622	1.79	0.85	1.00	1.7	38.33	68.70	34.83	7463	5976	338	472	810	
8	118.21	5.64	0.408	7.916	5.728	0.577	1.82	0.85	1.00	1.7	6.14	11.17	5.73	1416	1138	54	100	145	**
7	108.21	5.50	2.445	38.734	28.52	0.624	1.79	0.85	1.00	1.7	31.58	56.56	28.52	6617	5296	264	394	648	**
6	90.00	5.22	2.853	45.975	33.57	0.608	1.80	0.85	1.00	1.7	36.96	66.51	33.57	7858	6260	295	471	748	**

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Section Forces

5	70.00	4.86	2.853	45.142	32.74	0.599	1.80	0.85	1.00	1.6	36.07	65.10	32.74	7733	6128	269	453	695	**
4	50.00	4.41	2.853	44.059	31.65	0.586	1.81	0.85	1.00	1.6	34.93	63.33	31.66	7486	5880	237	420	630	**
3	30.00	3.81	2.853	42.482	30.08	0.569	1.83	0.85	1.00	1.5	33.30	60.84	30.08	7095	5489	197	369	543	**
2	13.33	3.81	2.038	27.025	18.75	0.549	1.84	0.85	1.00	1.4	21.07	38.85	18.76	3647	2705	126	185	310	
1	3.33	3.81	1.521	7.749	4.411	0.635	1.79	0.85	1.00	1.2	7.23	12.92	4.41	533	266	42	0	42	
														55362	43540			5256	

** = Section Force Exceeds Solidity Ratio Criteria

LoadCase 1.0D + 1.0W Service Normal — Serviceability - 60 mph Wind Normal

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
12	155.00	8.77	1.223	6.201	0.000	0.199	2.60	1.00	1.00	0.0	4.83	12.55	0.00	421	0	94	103	196
11	148.40	8.67	0.408	2.007	0.000	0.201	2.59	1.00	1.00	0.0	1.58	4.08	0.00	151	0	30	45	75
10	143.40	8.58	1.223	4.194	0.000	0.213	2.55	1.00	1.00	0.0	3.67	9.37	0.00	353	0	68	107	175
9	130.00	8.34	2.853	12.401	0.000	0.204	2.58	1.00	1.00	0.0	10.07	26.01	0.00	1239	0	185	465	649
8	118.21	8.12	0.408	2.188	0.000	0.194	2.62	1.00	1.00	0.0	1.68	4.39	0.00	232	0	30	94	125
7	108.21	7.92	2.445	10.214	0.000	0.206	2.58	1.00	1.00	0.0	8.40	21.62	0.00	1100	0	146	421	567
6	90.00	7.51	2.853	12.401	0.000	0.204	2.58	1.00	1.00	0.0	10.07	26.01	0.00	1332	0	166	487	653
5	70.00	6.99	2.853	12.401	0.000	0.204	2.58	1.00	1.00	0.0	10.07	26.01	0.00	1337	0	155	459	614
4	50.00	6.35	2.853	12.401	0.000	0.204	2.58	1.00	1.00	0.0	10.07	26.01	0.00	1339	0	140	419	559
3	30.00	5.49	2.853	12.401	0.000	0.204	2.58	1.00	1.00	0.0	10.07	26.01	0.00	1339	0	121	362	483
2	13.33	5.48	2.038	8.267	0.000	0.207	2.57	1.00	1.00	0.0	6.85	17.64	0.00	785	0	82	181	263
1	3.33	5.48	1.521	3.338	0.000	0.366	2.13	1.00	1.00	0.0	3.60	7.68	0.00	223	0	36	0	36
														9851	0			4396

** = Section Force Exceeds Solidity Ratio Criteria

LoadCase 1.0D + 1.0W Service 60 deg — Serviceability - 60 mph Wind 60 deg

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
12	155.00	8.77	1.223	6.201	0.000	0.199	2.60	0.80	1.00	0.0	4.58	11.92	0.00	421	0	89	103	192
11	148.40	8.67	0.408	2.007	0.000	0.201	2.59	0.80	1.00	0.0	1.49	3.87	0.00	151	0	29	45	74
10	143.40	8.58	1.223	4.194	0.000	0.213	2.55	0.80	1.00	0.0	3.43	8.75	0.00	353	0	64	107	171
9	130.00	8.34	2.853	12.401	0.000	0.204	2.58	0.80	1.00	0.0	9.50	24.54	0.00	1239	0	174	465	639
8	118.21	8.12	0.408	2.188	0.000	0.194	2.62	0.80	1.00	0.0	1.59	4.17	0.00	232	0	29	94	123
7	108.21	7.92	2.445	10.214	0.000	0.206	2.58	0.80	1.00	0.0	7.91	20.36	0.00	1100	0	137	421	558
6	90.00	7.51	2.853	12.401	0.000	0.204	2.58	0.80	1.00	0.0	9.50	24.54	0.00	1332	0	157	487	644
5	70.00	6.99	2.853	12.401	0.000	0.204	2.58	0.80	1.00	0.0	9.50	24.54	0.00	1337	0	146	459	605
4	50.00	6.35	2.853	12.401	0.000	0.204	2.58	0.80	1.00	0.0	9.50	24.54	0.00	1339	0	132	419	551
3	30.00	5.49	2.853	12.401	0.000	0.204	2.58	0.80	1.00	0.0	9.50	24.54	0.00	1339	0	114	362	476
2	13.33	5.48	2.038	8.267	0.000	0.207	2.57	0.80	1.00	0.0	6.45	16.59	0.00	785	0	77	181	258
1	3.33	5.48	1.521	3.338	0.000	0.366	2.13	0.80	1.00	0.0	3.29	7.03	0.00	223	0	33	0	33
														9851	0			4324

** = Section Force Exceeds Solidity Ratio Criteria

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Section Forces

LoadCase 1.0D + 1.0W Service 90 deg — Serviceability - 60 mph Wind 90 deg

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
12	155.00	8.77	1.223	6.201	0.000	0.199	2.60	0.85	1.00	0.0	4.64	12.08	0.00	421	0	90	103	193
11	148.40	8.67	0.408	2.007	0.000	0.201	2.59	0.85	1.00	0.0	1.51	3.92	0.00	151	0	29	45	74
10	143.40	8.58	1.223	4.194	0.000	0.213	2.55	0.85	1.00	0.0	3.49	8.90	0.00	353	0	65	107	172
9	130.00	8.34	2.853	12.401	0.000	0.204	2.58	0.85	1.00	0.0	9.64	24.91	0.00	1239	0	177	465	641
8	118.21	8.12	0.408	2.188	0.000	0.194	2.62	0.85	1.00	0.0	1.62	4.23	0.00	232	0	29	94	124
7	108.21	7.92	2.445	10.214	0.000	0.206	2.58	0.85	1.00	0.0	8.03	20.68	0.00	1100	0	139	421	561
6	90.00	7.51	2.853	12.401	0.000	0.204	2.58	0.85	1.00	0.0	9.64	24.91	0.00	1332	0	159	487	646
5	70.00	6.99	2.853	12.401	0.000	0.204	2.58	0.85	1.00	0.0	9.64	24.91	0.00	1337	0	148	459	607
4	50.00	6.35	2.853	12.401	0.000	0.204	2.58	0.85	1.00	0.0	9.64	24.91	0.00	1339	0	134	419	553
3	30.00	5.49	2.853	12.401	0.000	0.204	2.58	0.85	1.00	0.0	9.64	24.91	0.00	1339	0	116	362	478
2	13.33	5.48	2.038	8.267	0.000	0.207	2.57	0.85	1.00	0.0	6.55	16.86	0.00	785	0	79	181	259
1	3.33	5.48	1.521	3.338	0.000	0.366	2.13	0.85	1.00	0.0	3.37	7.19	0.00	223	0	34	0	34
														9851	0			4342

** = Section Force Exceeds Solidity Ratio Criteria

LoadCase 1.0D + 1.0W Service 120 deg — Serviceability - 60 mph Wind 120 deg

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
12	155.00	8.77	1.223	6.201	0.000	0.199	2.60	1.00	1.00	0.0	4.83	12.55	0.00	421	0	94	103	196
11	148.40	8.67	0.408	2.007	0.000	0.201	2.59	1.00	1.00	0.0	1.58	4.08	0.00	151	0	30	45	75
10	143.40	8.58	1.223	4.194	0.000	0.213	2.55	1.00	1.00	0.0	3.67	9.37	0.00	353	0	68	107	175
9	130.00	8.34	2.853	12.401	0.000	0.204	2.58	1.00	1.00	0.0	10.07	26.01	0.00	1239	0	185	465	649
8	118.21	8.12	0.408	2.188	0.000	0.194	2.62	1.00	1.00	0.0	1.68	4.39	0.00	232	0	30	94	125
7	108.21	7.92	2.445	10.214	0.000	0.206	2.58	1.00	1.00	0.0	8.40	21.62	0.00	1100	0	146	421	567
6	90.00	7.51	2.853	12.401	0.000	0.204	2.58	1.00	1.00	0.0	10.07	26.01	0.00	1332	0	166	487	653
5	70.00	6.99	2.853	12.401	0.000	0.204	2.58	1.00	1.00	0.0	10.07	26.01	0.00	1337	0	155	459	614
4	50.00	6.35	2.853	12.401	0.000	0.204	2.58	1.00	1.00	0.0	10.07	26.01	0.00	1339	0	140	419	559
3	30.00	5.49	2.853	12.401	0.000	0.204	2.58	1.00	1.00	0.0	10.07	26.01	0.00	1339	0	121	362	483
2	13.33	5.48	2.038	8.267	0.000	0.207	2.57	1.00	1.00	0.0	6.85	17.64	0.00	785	0	82	181	263
1	3.33	5.48	1.521	3.338	0.000	0.366	2.13	1.00	1.00	0.0	3.60	7.68	0.00	223	0	36	0	36
														9851	0			4396

** = Section Force Exceeds Solidity Ratio Criteria

LoadCase 1.0D + 1.0W Service 180 deg — Serviceability - 60 mph Wind 180 deg

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
12	155.00	8.77	1.223	6.201	0.000	0.199	2.60	0.80	1.00	0.0	4.58	11.92	0.00	421	0	89	103	192
11	148.40	8.67	0.408	2.007	0.000	0.201	2.59	0.80	1.00	0.0	1.49	3.87	0.00	151	0	29	45	74
10	143.40	8.58	1.223	4.194	0.000	0.213	2.55	0.80	1.00	0.0	3.43	8.75	0.00	353	0	64	107	171
9	130.00	8.34	2.853	12.401	0.000	0.204	2.58	0.80	1.00	0.0	9.50	24.54	0.00	1239	0	174	465	639
8	118.21	8.12	0.408	2.188	0.000	0.194	2.62	0.80	1.00	0.0	1.59	4.17	0.00	232	0	29	94	123
7	108.21	7.92	2.445	10.214	0.000	0.206	2.58	0.80	1.00	0.0	7.91	20.36	0.00	1100	0	137	421	558
6	90.00	7.51	2.853	12.401	0.000	0.204	2.58	0.80	1.00	0.0	9.50	24.54	0.00	1332	0	157	487	644

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Section Forces

5	70.00	6.99	2.853	12.401	0.000	0.204	2.58	0.80	1.00	0.0	9.50	24.54	0.00	1337	0	146	459	605
4	50.00	6.35	2.853	12.401	0.000	0.204	2.58	0.80	1.00	0.0	9.50	24.54	0.00	1339	0	132	419	551
3	30.00	5.49	2.853	12.401	0.000	0.204	2.58	0.80	1.00	0.0	9.50	24.54	0.00	1339	0	114	362	476
2	13.33	5.48	2.038	8.267	0.000	0.207	2.57	0.80	1.00	0.0	6.45	16.59	0.00	785	0	77	181	258
1	3.33	5.48	1.521	3.338	0.000	0.366	2.13	0.80	1.00	0.0	3.29	7.03	0.00	223	0	33	0	33
														9851	0			4324

** = Section Force Exceeds Solidity Ratio Criteria

LoadCase 1.0D + 1.0W Service 210 deg — Serviceability - 60 mph Wind 210 deg

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
12	155.00	8.77	1.223	6.201	0.000	0.199	2.60	0.85	1.00	0.0	4.64	12.08	0.00	421	0	90	103	193
11	148.40	8.67	0.408	2.007	0.000	0.201	2.59	0.85	1.00	0.0	1.51	3.92	0.00	151	0	29	45	74
10	143.40	8.58	1.223	4.194	0.000	0.213	2.55	0.85	1.00	0.0	3.49	8.90	0.00	353	0	65	107	172
9	130.00	8.34	2.853	12.401	0.000	0.204	2.58	0.85	1.00	0.0	9.64	24.91	0.00	1239	0	177	465	641
8	118.21	8.12	0.408	2.188	0.000	0.194	2.62	0.85	1.00	0.0	1.62	4.23	0.00	232	0	29	94	124
7	108.21	7.92	2.445	10.214	0.000	0.206	2.58	0.85	1.00	0.0	8.03	20.68	0.00	1100	0	139	421	561
6	90.00	7.51	2.853	12.401	0.000	0.204	2.58	0.85	1.00	0.0	9.64	24.91	0.00	1332	0	159	487	646
5	70.00	6.99	2.853	12.401	0.000	0.204	2.58	0.85	1.00	0.0	9.64	24.91	0.00	1337	0	148	459	607
4	50.00	6.35	2.853	12.401	0.000	0.204	2.58	0.85	1.00	0.0	9.64	24.91	0.00	1339	0	134	419	553
3	30.00	5.49	2.853	12.401	0.000	0.204	2.58	0.85	1.00	0.0	9.64	24.91	0.00	1339	0	116	362	478
2	13.33	5.48	2.038	8.267	0.000	0.207	2.57	0.85	1.00	0.0	6.55	16.86	0.00	785	0	79	181	259
1	3.33	5.48	1.521	3.338	0.000	0.366	2.13	0.85	1.00	0.0	3.37	7.19	0.00	223	0	34	0	34
														9851	0			4342

** = Section Force Exceeds Solidity Ratio Criteria

LoadCase 1.0D + 1.0W Service 240 deg — Serviceability - 60 mph Wind 240 deg

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
12	155.00	8.77	1.223	6.201	0.000	0.199	2.60	1.00	1.00	0.0	4.83	12.55	0.00	421	0	94	103	196
11	148.40	8.67	0.408	2.007	0.000	0.201	2.59	1.00	1.00	0.0	1.58	4.08	0.00	151	0	30	45	75
10	143.40	8.58	1.223	4.194	0.000	0.213	2.55	1.00	1.00	0.0	3.67	9.37	0.00	353	0	68	107	175
9	130.00	8.34	2.853	12.401	0.000	0.204	2.58	1.00	1.00	0.0	10.07	26.01	0.00	1239	0	185	465	649
8	118.21	8.12	0.408	2.188	0.000	0.194	2.62	1.00	1.00	0.0	1.68	4.39	0.00	232	0	30	94	125
7	108.21	7.92	2.445	10.214	0.000	0.206	2.58	1.00	1.00	0.0	8.40	21.62	0.00	1100	0	146	421	567
6	90.00	7.51	2.853	12.401	0.000	0.204	2.58	1.00	1.00	0.0	10.07	26.01	0.00	1332	0	166	487	653
5	70.00	6.99	2.853	12.401	0.000	0.204	2.58	1.00	1.00	0.0	10.07	26.01	0.00	1337	0	155	459	614
4	50.00	6.35	2.853	12.401	0.000	0.204	2.58	1.00	1.00	0.0	10.07	26.01	0.00	1339	0	140	419	559
3	30.00	5.49	2.853	12.401	0.000	0.204	2.58	1.00	1.00	0.0	10.07	26.01	0.00	1339	0	121	362	483
2	13.33	5.48	2.038	8.267	0.000	0.207	2.57	1.00	1.00	0.0	6.85	17.64	0.00	785	0	82	181	263
1	3.33	5.48	1.521	3.338	0.000	0.366	2.13	1.00	1.00	0.0	3.60	7.68	0.00	223	0	36	0	36
														9851	0			4396

** = Section Force Exceeds Solidity Ratio Criteria

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Section Forces

LoadCase 1.0D + 1.0W Service 300 deg — Serviceability - 60 mph Wind 300 deg

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
12	155.00	8.77	1.223	6.201	0.000	0.199	2.60	0.80	1.00	0.0	4.58	11.92	0.00	421	0	89	103	192
11	148.40	8.67	0.408	2.007	0.000	0.201	2.59	0.80	1.00	0.0	1.49	3.87	0.00	151	0	29	45	74
10	143.40	8.58	1.223	4.194	0.000	0.213	2.55	0.80	1.00	0.0	3.43	8.75	0.00	353	0	64	107	171
9	130.00	8.34	2.853	12.401	0.000	0.204	2.58	0.80	1.00	0.0	9.50	24.54	0.00	1239	0	174	465	639
8	118.21	8.12	0.408	2.188	0.000	0.194	2.62	0.80	1.00	0.0	1.59	4.17	0.00	232	0	29	94	123
7	108.21	7.92	2.445	10.214	0.000	0.206	2.58	0.80	1.00	0.0	7.91	20.36	0.00	1100	0	137	421	558
6	90.00	7.51	2.853	12.401	0.000	0.204	2.58	0.80	1.00	0.0	9.50	24.54	0.00	1332	0	157	487	644
5	70.00	6.99	2.853	12.401	0.000	0.204	2.58	0.80	1.00	0.0	9.50	24.54	0.00	1337	0	146	459	605
4	50.00	6.35	2.853	12.401	0.000	0.204	2.58	0.80	1.00	0.0	9.50	24.54	0.00	1339	0	132	419	551
3	30.00	5.49	2.853	12.401	0.000	0.204	2.58	0.80	1.00	0.0	9.50	24.54	0.00	1339	0	114	362	476
2	13.33	5.48	2.038	8.267	0.000	0.207	2.57	0.80	1.00	0.0	6.45	16.59	0.00	785	0	77	181	258
1	3.33	5.48	1.521	3.338	0.000	0.366	2.13	0.80	1.00	0.0	3.29	7.03	0.00	223	0	33	0	33
														9851	0			4324

** = Section Force Exceeds Solidity Ratio Criteria

LoadCase 1.0D + 1.0W Service 330 deg — Serviceability - 60 mph Wind 330 deg

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
12	155.00	8.77	1.223	6.201	0.000	0.199	2.60	0.85	1.00	0.0	4.64	12.08	0.00	421	0	90	103	193
11	148.40	8.67	0.408	2.007	0.000	0.201	2.59	0.85	1.00	0.0	1.51	3.92	0.00	151	0	29	45	74
10	143.40	8.58	1.223	4.194	0.000	0.213	2.55	0.85	1.00	0.0	3.49	8.90	0.00	353	0	65	107	172
9	130.00	8.34	2.853	12.401	0.000	0.204	2.58	0.85	1.00	0.0	9.64	24.91	0.00	1239	0	177	465	641
8	118.21	8.12	0.408	2.188	0.000	0.194	2.62	0.85	1.00	0.0	1.62	4.23	0.00	232	0	29	94	124
7	108.21	7.92	2.445	10.214	0.000	0.206	2.58	0.85	1.00	0.0	8.03	20.68	0.00	1100	0	139	421	561
6	90.00	7.51	2.853	12.401	0.000	0.204	2.58	0.85	1.00	0.0	9.64	24.91	0.00	1332	0	159	487	646
5	70.00	6.99	2.853	12.401	0.000	0.204	2.58	0.85	1.00	0.0	9.64	24.91	0.00	1337	0	148	459	607
4	50.00	6.35	2.853	12.401	0.000	0.204	2.58	0.85	1.00	0.0	9.64	24.91	0.00	1339	0	134	419	553
3	30.00	5.49	2.853	12.401	0.000	0.204	2.58	0.85	1.00	0.0	9.64	24.91	0.00	1339	0	116	362	478
2	13.33	5.48	2.038	8.267	0.000	0.207	2.57	0.85	1.00	0.0	6.55	16.86	0.00	785	0	79	181	259
1	3.33	5.48	1.521	3.338	0.000	0.366	2.13	0.85	1.00	0.0	3.37	7.19	0.00	223	0	34	0	34
														9851	0			4342

** = Section Force Exceeds Solidity Ratio Criteria

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Equivalent Lateral Force Method

(Based on ASCE7-10 Chapters 11, 12 & 15)

Spectral Response Acceleration for Short Period (S_s):	0.17
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Long-Period Transition Period (T_L - Seconds):	6
Importance Factor (I_e):	1.00
Site Coefficient F_a:	1.60
Site Coefficient F_v:	2.40
Response Modification Coefficient (R):	2.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.18
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Seismic Response Coefficient (C_s):	0.06
Upper Limit C_s:	0.06
Lower Limit C_s:	0.03
Period based on Rayleigh Method (sec):	0.63
Redundancy Factor (p):	1.00
Seismic Force Distribution Exponent (k):	1.07
Total Unfactored Dead Load:	19.66 k
Seismic Base Shear (E):	1.24 k

LoadCase (1.2 + 0.2Sds) * DL + E **Seismic**

Section	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
12	155.00	421	90,610	0.030	37	521
11	148.40	151	31,065	0.010	13	187
10	143.40	353	69,931	0.023	29	436
9	130.00	1,239	221,226	0.073	91	1,533
8	118.21	232	37,377	0.012	15	287
7	108.21	1,100	161,543	0.053	66	1,361
6	90.00	1,332	160,716	0.053	66	1,647
5	70.00	1,337	123,429	0.041	51	1,654
4	50.00	1,339	86,359	0.029	35	1,656
3	30.00	1,339	50,120	0.017	21	1,656
2	13.33	785	12,395	0.004	5	971
1	3.33	223	802	0.000	0	275
Allgon 7120.16.05.00 / A-800-110-13I-0-N	162.00	139	31,273	0.010	13	171
Delta Mount	160.00	450	100,200	0.033	41	557
Flat Light Sector Frames	160.00	1,200	267,201	0.088	109	1,484
Alcatel-Lucent RRH2x50-08	155.00	317	68,325	0.023	28	393
Alcatel-Lucent 1900 MHz 4X45 RRH	155.00	180	38,747	0.013	16	223
Alcatel-Lucent TD-RRH8x20-25 w/ Solar	155.00	210	45,205	0.015	19	260
Delta Mount	155.00	450	96,869	0.032	40	557
RFS APXVTM14-ALU-I20	155.00	169	36,293	0.012	15	209
Commscope NNVV-65B-R4	155.00	232	49,984	0.017	20	287
VFA10-HD3L4NP Sector Frame	155.00	1,500	322,896	0.107	132	1,855
Torque Arms	147.00	500	101,725	0.034	42	618
Flat Light Sector Frames	144.00	1,200	238,837	0.079	98	1,484

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Equivalent Lateral Force Method

RFS FD9R6004/2C-3L	142.00	16	3,059	0.001	1	19
Amphenol Antel BXA-171085-8BF-EDIN-X	142.00	32	6,177	0.002	3	39
Amphenol Antel LPA-80080-4CF-EDIN-0	142.00	72	14,118	0.005	6	89
Amphenol Antel BXA-70063-6CF-EDIN-X	142.00	51	10,000	0.003	4	63
Flat Light Sector Frames	133.00	1,200	219,454	0.073	90	1,484
Powerwave Allgon LGP13519	130.00	32	5,676	0.002	2	39
Raycap DC6-48-60-18-8F(32.8 lbs)	130.00	33	5,854	0.002	2	41
Raycap DC6-48-60-18-8F(32.8 lbs)	130.00	33	5,854	0.002	2	41
Ericsson Radio 8843 - B2 + B66A	130.00	216	38,500	0.013	16	267
Powerwave Allgon LGP17201	130.00	186	33,199	0.011	14	230
Ericsson RRUS 4478 B14	130.00	120	21,383	0.007	9	148
Ericsson RRUS 4449 B5, B12	130.00	213	38,018	0.013	16	263
Allgon 7770.00	130.00	105	18,741	0.006	8	130
CCI HPA65R-BU8A	130.00	162	28,915	0.010	12	200
CCI DMP65R-BU8D	130.00	287	51,244	0.017	21	355
Torque Arms	117.00	500	79,770	0.026	33	618
Lucent KS-24019	75.00	4	397	0.000	0	5
		19,658	3,023,491	1.000	1,238	24,311

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Equivalent Modal Analysis Method

(Based on ASCE7-10 Chapters 11, 12 & 15 and ANSI/TIA-G, section 2.7)

Spectral Response Acceleration for Short Period (S_s):	0.17
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Importance Factor (I_e):	1.00
Site Coefficient F_a:	1.60
Site Coefficient F_v:	2.40
Response Modification Coefficient (R):	2.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.18
Desing Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	0.63
Redundancy Factor (p):	1.00

LoadCase (1.2 + 0.2Sds) * DL + E Seismic

Section	Height Above Base (ft)	Weight (lb)	a	b	c	S_{az}	Horizontal Force (lb)	Vertical Force (lb)
12	155.00	421	1.774	1.422	0.933	0.387	65	521
11	148.40	151	1.626	0.861	0.706	0.314	19	187
10	143.40	353	1.518	0.547	0.565	0.268	38	436
9	130.00	1,239	1.248	0.054	0.292	0.176	87	1,533
8	118.21	232	1.032	-0.101	0.148	0.129	12	287
7	108.21	1,100	0.864	-0.120	0.074	0.105	46	1,361
6	90.00	1,332	0.598	-0.052	0.014	0.082	44	1,647
5	70.00	1,337	0.362	0.030	0.008	0.063	34	1,654
4	50.00	1,339	0.185	0.065	0.025	0.042	23	1,656
3	30.00	1,339	0.066	0.072	0.041	0.025	13	1,656
2	13.33	785	0.013	0.059	0.034	0.014	4	971
1	3.33	223	0.001	0.022	0.012	0.005	0	275
Allgon 7120.16.05.00 / A-800-110-	162.00	139	1.938	2.240	1.232	0.479	27	171
Delta Mount	160.00	450	1.890	1.980	1.140	0.452	81	557
Flat Light Sector Frames	160.00	1,200	1.890	1.980	1.140	0.452	217	1,484
Alcatel-Lucent RRH2x50-08	155.00	317	1.774	1.422	0.933	0.387	49	393
Alcatel-Lucent 1900 MHz 4X45	155.00	180	1.774	1.422	0.933	0.387	28	223
Alcatel-Lucent TD-RRH8x20-25	155.00	210	1.774	1.422	0.933	0.387	33	260
Delta Mount	155.00	450	1.774	1.422	0.933	0.387	70	557
RFS APXVTM14-ALU-I20	155.00	169	1.774	1.422	0.933	0.387	26	209
Commscope NNVV-65B-R4	155.00	232	1.774	1.422	0.933	0.387	36	287
VFA10-HD3L4NP Sector Frame	155.00	1,500	1.774	1.422	0.933	0.387	232	1,855
Torque Arms	147.00	500	1.595	0.764	0.664	0.301	60	618
Flat Light Sector Frames	144.00	1,200	1.531	0.580	0.580	0.273	131	1,484
RFS FD9R6004/2C-3L	142.00	16	1.489	0.474	0.529	0.256	2	19
Amphenol Antel BXA-171085-	142.00	32	1.489	0.474	0.529	0.256	3	39
Amphenol Antel LPA-80080-4CF-	142.00	72	1.489	0.474	0.529	0.256	7	89
Amphenol Antel BXA-70063-6CF-	142.00	51	1.489	0.474	0.529	0.256	5	63
Flat Light Sector Frames	133.00	1,200	1.306	0.129	0.341	0.193	92	1,484
Powerwave Allgon LGP13519	130.00	32	1.248	0.054	0.292	0.176	2	39
Raycap DC6-48-60-18-8F(32.8 lbs)	130.00	33	1.248	0.054	0.292	0.176	2	41
Raycap DC6-48-60-18-8F(32.8 lbs)	130.00	33	1.248	0.054	0.292	0.176	2	41
Ericsson Radio 8843 - B2 + B66A	130.00	216	1.248	0.054	0.292	0.176	15	267
Powerwave Allgon LGP17201	130.00	186	1.248	0.054	0.292	0.176	13	230
Ericsson RRUS 4478 B14	130.00	120	1.248	0.054	0.292	0.176	8	148
Ericsson RRUS 4449 B5, B12	130.00	213	1.248	0.054	0.292	0.176	15	263
Allgon 7770.00	130.00	105	1.248	0.054	0.292	0.176	7	130
CCI HPA65R-BU8A	130.00	162	1.248	0.054	0.292	0.176	11	200
CCI DMP65R-BU8D	130.00	287	1.248	0.054	0.292	0.176	20	355

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Equivalent Modal Analysis Method

Torque Arms	117.00	500	1.011	-0.107	0.137	0.125	25	618
Lucent KS-24019	75.00	4	0.415	0.013	0.006	0.068	0	5
		19,658	51.709	22.827	19.657	9.448	1,608	24,311

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Force/Stress Summary

Section: 1 Section 1 Bot Elev (ft): 0.00 Height (ft): 6.667

Max Compression Member		Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG	PST - 2-1/2" DIA PIP	-51.59	1.2D + 1.0Di + 1.0Wi	1.64	100	100	100	13.5	55.0	83.11	0	0	0.00	0.00	62	Member X
HORIZ	SAE - 2.5X2.5X0.25	-0.36	1.2D + 1.0Di + 1.0Wi	2.477	100	100	100	39.4	36.0	35.54	0	0	0.00	0.00	1	Member Z
DIAG		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00		

Max Tension Member		Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls
LEG		0.00		0	0	0.00	0	0	0.00	0.00		0	
HORIZ	SAE - 2.5X2.5X0.25	4.28	1.2D + 1.0Di + 1.0Wi	36	58	38.56	0	0	0.00	0.00	0.00	11	Member
DIAG		0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	

Section: 2 Section 2 Bot Elev (ft): 6.67 Height (ft): 13.333

Max Compression Member		Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG	PST - 2-1/2" DIA PIP	-51.08	1.2D + 1.0Di + 1.0Wi	3.21	100	100	100	26.4	55.0	79.74	0	0	0.00	0.00	64	Member X
HORIZ	SAE - 1.5X1.5X0.1875	-0.33	1.2D + 1.0Di + 1.0Wi	3.500	100	100	100	93.2	36.0	10.87	0	0	0.00	0.00	3	Member Z
DIAG	SOL - 5/8" SOLID	-1.99	1.2D + 1.6W Normal	4.748	50	50	50	164.4	36.0	2.57	0	0	0.00	0.00		Member X

Max Tension Member		Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls
LEG		0.00		0	0	0.00	0	0	0.00	0.00		0	
HORIZ	SAE - 1.5X1.5X0.1875	6.20	1.2D + 1.0Di + 1.0Wi	36	58	17.17	0	0	0.00	0.00	0.00	36	Member
DIAG	SOL - 5/8" SOLID	0.75	1.2D + 1.0Di + 1.0Wi	36	58	9.94	0	0	0.00	0.00	0.00	7	Member

Section: 3 Section 3-9 Bot Elev (ft): 20.00 Height (ft): 20.000

Max Compression Member		Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG	PST - 2-1/2" DIA PIP	-50.94	1.2D + 1.0Di + 1.0Wi	3.21	100	100	100	26.4	55.0	79.74	0	0	0.00	0.00	63	Member X
HORIZ	SAE - 1.5X1.5X0.1875	-0.12	1.2D + 1.0Di + 1.0Wi	3.500	100	100	100	93.2	36.0	10.87	0	0	0.00	0.00	1	Member Z
DIAG	SOL - 5/8" SOLID	-1.60	1.2D + 1.6W Normal	4.748	50	50	50	164.4	36.0	2.57	0	0	0.00	0.00		Member X

Max Tension Member		Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls
LEG		0.00		0	0	0.00	0	0	0.00	0.00		0	
HORIZ	SAE - 1.5X1.5X0.1875	3.44	1.2D + 1.0Di + 1.0Wi	36	58	17.17	0	0	0.00	0.00	0.00	20	Member
DIAG	SOL - 5/8" SOLID	0.39	1.2D + 1.0Di + 1.0Wi	36	58	9.94	0	0	0.00	0.00	0.00	3	Member

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Force/Stress Summary

Section: 4 Section 3-9 Bot Elev (ft): 40.00 Height (ft): 20.000

Max Compression Member		Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG	PST - 2-1/2" DIA PIP	-47.85	1.2D + 1.0Di + 1.0Wi	3.21	100	100	100	26.4	55.0	79.74	0	0	0.00	0.00	60	Member X
HORIZ	SAE - 1.5X1.5X0.1875	-1.93	1.2D + 1.6W 90 deg	3.500	100	100	100	93.2	36.0	10.87	0	0	0.00	0.00	17	Member Z
DIAG	SOL - 5/8" SOLID	-0.52	1.2D + 1.6W Normal	4.748	50	50	50	164.4	36.0	2.57	0	0	0.00	0.00		Member X

Max Tension Member		Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls
LEG		0.00		0	0	0.00	0	0	0.00	0.00		0	
HORIZ	SAE - 1.5X1.5X0.1875	5.17	1.2D + 1.6W Normal	36	58	17.17	0	0	0.00	0.00	0.00	30	Member
DIAG	SOL - 5/8" SOLID	2.74	1.2D + 1.6W 90 deg	36	58	9.94	0	0	0.00	0.00	0.00	27	Member

Section: 5 Section 3-9 Bot Elev (ft): 60.00 Height (ft): 20.000

Max Compression Member		Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG	PST - 2-1/2" DIA PIP	-39.66	1.2D + 1.0Di + 1.0Wi	0.38	100	100	100	3.1	55.0	84.28	0	0	0.00	0.00	47	Member X
HORIZ	SAE - 1.5X1.5X0.1875	-1.95	1.2D + 1.6W 90 deg	3.500	100	100	100	93.2	36.0	10.87	0	0	0.00	0.00	17	Member Z
DIAG	SOL - 5/8" SOLID	-2.52	1.2D + 1.6W Normal	4.748	50	50	50	164.4	36.0	2.57	0	0	0.00	0.00		Member X

Max Tension Member		Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls
LEG		0.00		0	0	0.00	0	0	0.00	0.00		0	
HORIZ	SAE - 1.5X1.5X0.1875	3.13	1.2D + 1.0Di + 1.0Wi	36	58	17.17	0	0	0.00	0.00	0.00	18	Member
DIAG	SOL - 5/8" SOLID	2.99	1.2D + 1.6W 90 deg	36	58	9.94	0	0	0.00	0.00	0.00	30	Member

Section: 6 Section 3-9 Bot Elev (ft): 80.00 Height (ft): 20.000

Max Compression Member		Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG	PST - 2-1/2" DIA PIP	-38.29	1.2D + 1.0Di + 1.0Wi	0.38	100	100	100	3.1	55.0	84.28	0	0	0.00	0.00	45	Member X
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG	SOL - 5/8" SOLID	-1.10	1.2D + 1.6W Normal	4.748	50	50	50	164.4	36.0	2.57	0	0	0.00	0.00		Member X

Max Tension Member		Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls
LEG		0.00		0	0	0.00	0	0	0.00	0.00		0	
HORIZ	SAE - 1.5X1.5X0.1875	3.04	1.2D + 1.0Di + 1.0Wi	36	58	17.17	0	0	0.00	0.00	0.00	17	Member
DIAG		0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	

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Force/Stress Summary

Section: 7 Section 8 Bot Elev (ft): 100.0 Height (ft): 16.415

Max Compression Member		Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG	PST - 2-1/2" DIA PIP	-40.61	1.2D + 1.6W Normal	3.21	100	100	100	26.4	55.0	79.74	0	0	0.00	0.00	50	Member X
HORIZ	SAE - 1.5X1.5X0.1875	-3.18	1.2D + 1.6W Normal	3.500	100	100	100	93.2	36.0	10.87	0	0	0.00	0.00	29	Member Z
DIAG	SOL - 5/8" SOLID	-1.24	1.2D + 1.6W Normal	4.748	50	50	50	164.3	36.0	2.57	0	0	0.00	0.00		Member X

Max Tension Member		Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls
LEG	PST - 2-1/2" DIA PIP	8.59	1.2D + 1.6W 60 deg	55	70	84.35	0	0	0.00	0.00		10	Member
HORIZ	SAE - 1.5X1.5X0.1875	6.10	1.2D + 1.6W 60 deg	36	58	17.17	0	0	0.00	0.00	0.00	35	Member
DIAG	SOL - 5/8" SOLID	3.61	1.2D + 1.6W 90 deg	36	58	9.94	0	0	0.00	0.00	0.00	36	Member

Section: 8 Section 8 Bot Elev (ft): 116.4 Height (ft): 3.585

Max Compression Member		Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG	PST - 2-1/2" DIA PIP	-40.39	1.2D + 1.6W Normal	3.21	100	100	100	26.4	55.0	79.74	0	0	0.00	0.00	50	Member X
HORIZ	SAE - 1.5X1.5X0.1875	-1.70	1.2D + 1.6W Normal	3.500	100	100	100	93.2	36.0	10.87	0	0	0.00	0.00	15	Member Z
DIAG	SOL - 5/8" SOLID	-0.63	1.2D + 1.6W Normal	4.749	50	50	50	164.4	36.0	2.57	0	0	0.00	0.00		Member X

Max Tension Member		Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls
LEG	PST - 2-1/2" DIA PIP	5.25	1.2D + 1.6W 180 deg	55	70	84.35	0	0	0.00	0.00		6	Member
HORIZ	SAE - 1.5X1.5X0.1875	1.08	1.2D + 1.0Di + 1.0Wi	36	58	17.17	0	0	0.00	0.00	0.00	6	Member
DIAG	SOL - 5/8" SOLID	4.28	1.2D + 1.6W 90 deg	36	58	9.94	0	0	0.00	0.00	0.00	43	Member

Section: 9 Section 3-9 Bot Elev (ft): 120.0 Height (ft): 20.000

Max Compression Member		Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG	PST - 2-1/2" DIA PIP	-34.82	1.2D + 1.6W Normal	3.21	100	100	100	26.4	55.0	79.74	0	0	0.00	0.00	43	Member X
HORIZ	SAE - 1.5X1.5X0.1875	-2.52	1.2D + 1.6W 120 deg	3.500	100	100	100	93.2	36.0	10.87	0	0	0.00	0.00	23	Member Z
DIAG	SOL - 5/8" SOLID	-0.39	1.2D + 1.6W Normal	4.748	50	50	50	164.4	36.0	2.57	0	0	0.00	0.00		Member X

Max Tension Member		Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls
LEG	PST - 2-1/2" DIA PIP	5.30	1.2D + 1.6W 180 deg	55	70	84.35	0	0	0.00	0.00		6	Member
HORIZ	SAE - 1.5X1.5X0.1875	1.81	1.2D + 1.0Di + 1.0Wi	36	58	17.17	0	0	0.00	0.00	0.00	10	Member
DIAG	SOL - 5/8" SOLID	3.83	1.2D + 1.6W 90 deg	36	58	9.94	0	0	0.00	0.00	0.00	38	Member

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Force/Stress Summary

Section: 10 Section 9 Bot Elev (ft): 140.0 Height (ft): 6.792

Max Compression Member		Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG	PST - 2-1/2" DIA PIP	-23.15	1.2D + 1.6W Normal	3.21	100	100	100	26.4	55.0	79.74	0	0	0.00	0.00	29	Member X
HORIZ	SAE - 1.5X1.5X0.1875	-6.20	1.2D + 1.6W Normal	3.500	100	100	100	93.2	36.0	10.87	0	0	0.00	0.00	57	Member Z
DIAG	SOL - 5/8" SOLID	-0.27	1.2D + 1.6W Normal	4.748	50	50	50	164.3	36.0	2.57	0	0	0.00	0.00		Member X

Max Tension Member		Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls
LEG	PST - 2-1/2" DIA PIP	19.17	1.2D + 1.6W 60 deg	55	70	84.35	0	0	0.00	0.00		22	Member
HORIZ	SAE - 1.5X1.5X0.1875	6.39	1.2D + 1.6W 60 deg	36	58	17.17	0	0	0.00	0.00	0.00	37	Member
DIAG	SOL - 5/8" SOLID	1.69	1.2D + 1.6W 90 deg	36	58	9.94	0	0	0.00	0.00	0.00	16	Member

Section: 11 Section 9 Bot Elev (ft): 146.7 Height (ft): 3.208

Max Compression Member		Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG	PST - 2-1/2" DIA PIP	-25.61	1.2D + 1.6W 120 deg	3.21	100	100	100	26.4	55.0	79.74	0	0	0.00	0.00	32	Member X
HORIZ	SAE - 1.5X1.5X0.1875	-4.23	1.2D + 1.6W 90 deg	3.500	100	100	100	93.2	36.0	10.87	0	0	0.00	0.00	38	Member Z
DIAG	SOL - 5/8" SOLID	-0.44	1.2D + 1.6W Normal	4.748	50	50	50	164.3	36.0	2.57	0	0	0.00	0.00		Member X

Max Tension Member		Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls
LEG	PST - 2-1/2" DIA PIP	14.57	1.2D + 1.6W 60 deg	55	70	84.35	0	0	0.00	0.00		17	Member
HORIZ	SAE - 1.5X1.5X0.1875	0.69	1.2D + 1.6W 180 deg	36	58	17.17	0	0	0.00	0.00	0.00	4	Member
DIAG	SOL - 5/8" SOLID	5.61	1.2D + 1.6W 90 deg	36	58	9.94	0	0	0.00	0.00	0.00	56	Member

Section: 12 Section 9 Bot Elev (ft): 150.0 Height (ft): 10.000

Max Compression Member		Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG	PST - 2-1/2" DIA PIP	-18.86	1.2D + 1.6W Normal	3.21	100	100	100	26.4	55.0	79.74	0	0	0.00	0.00	23	Member X
HORIZ	SAE - 1.5X1.5X0.1875	-4.13	1.2D + 1.6W 90 deg	3.500	100	100	100	93.2	36.0	10.87	0	0	0.00	0.00	38	Member Z
DIAG	SOL - 5/8" SOLID	-1.58	1.2D + 1.6W Normal	4.748	50	50	50	164.4	36.0	2.57	0	0	0.00	0.00		Member X

Max Tension Member		Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls
LEG	PST - 2-1/2" DIA PIP	7.56	1.2D + 1.6W 60 deg	55	70	84.35	0	0	0.00	0.00		8	Member
HORIZ	SAE - 1.5X1.5X0.1875	0.60	1.2D + 1.6W 60 deg	36	58	17.17	0	0	0.00	0.00	0.00	3	Member
DIAG	SOL - 5/8" SOLID	5.92	1.2D + 1.6W 90 deg	36	58	9.94	0	0	0.00	0.00	0.00	59	Member

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Detailed Reactions

Load Case	Radius (ft)	Elevation (ft)	Azimuth (deg)	Node	FX (kip)	FY (kip)	FZ (kip)	(-) = Uplift (+) = Down
1.2D + 1.6W Normal	0.00	00.00		1	0.00	77.99	-1.87	
	145.00	00.00	0	A1	0.00	-0.99	1.03	
	145.00	00.00	240	A1a	-27.75	-25.60	-16.91	
	145.00	00.00	120	A1b	27.75	-25.60	-16.91	
1.2D + 1.6W 60 deg	0.00	00.00		1	-1.58	70.88	-0.92	
	145.00	00.00	0	A1	-0.69	-7.04	8.49	
	145.00	00.00	240	A1a	-34.48	-31.42	-19.91	
	145.00	00.00	120	A1b	7.01	-7.07	-4.85	
1.2D + 1.6W 90 deg	0.00	00.00		1	-1.83	75.33	0.02	
	145.00	00.00	0	A1	-0.90	-16.59	20.77	
	145.00	00.00	240	A1a	-33.95	-30.68	-19.15	
	145.00	00.00	120	A1b	2.22	-2.48	-1.65	
1.2D + 1.6W 120 deg	0.00	00.00		1	-1.62	77.92	0.94	
	145.00	00.00	0	A1	-0.77	-25.58	32.49	
	145.00	00.00	240	A1a	-28.53	-25.55	-15.58	
	145.00	00.00	120	A1b	0.89	-1.00	-0.52	
1.2D + 1.6W 180 deg	0.00	00.00		1	0.00	70.91	1.84	
	145.00	00.00	0	A1	0.00	-31.45	39.81	
	145.00	00.00	240	A1a	-7.70	-7.05	-3.65	
	145.00	00.00	120	A1b	7.70	-7.05	-3.65	
1.2D + 1.6W 210 deg	0.00	00.00		1	0.93	75.37	1.58	
	145.00	00.00	0	A1	0.39	-30.72	38.97	
	145.00	00.00	240	A1a	-2.54	-2.48	-1.10	
	145.00	00.00	120	A1b	18.45	-16.59	-9.61	
1.2D + 1.6W 240 deg	0.00	00.00		1	1.62	77.92	0.94	
	145.00	00.00	0	A1	0.77	-25.58	32.49	
	145.00	00.00	240	A1a	-0.89	-1.00	-0.52	
	145.00	00.00	120	A1b	28.53	-25.55	-15.58	
1.2D + 1.6W 300 deg	0.00	00.00		1	1.58	70.88	-0.92	
	145.00	00.00	0	A1	0.69	-7.04	8.49	
	145.00	00.00	240	A1a	-7.01	-7.07	-4.85	
	145.00	00.00	120	A1b	34.48	-31.42	-19.91	
1.2D + 1.6W 330 deg	0.00	00.00		1	0.90	75.40	-1.60	
	145.00	00.00	0	A1	0.32	-2.48	2.74	
	145.00	00.00	240	A1a	-17.54	-16.63	-11.17	
	145.00	00.00	120	A1b	33.56	-30.72	-19.82	
1.2D + 1.0Di + 1.0Wi Normal	0.00	00.00		1	0.00	143.73	-0.47	
	145.00	00.00	0	A1	0.00	-11.87	17.22	
	145.00	00.00	240	A1a	-22.64	-18.70	-13.84	
	145.00	00.00	120	A1b	22.64	-18.70	-13.84	
1.2D + 1.0Di + 1.0Wi 60 deg	0.00	00.00		1	-0.33	142.82	-0.19	
	145.00	00.00	0	A1	-0.66	-13.98	19.93	
	145.00	00.00	240	A1a	-25.41	-20.84	-14.67	
	145.00	00.00	120	A1b	16.93	-13.99	-10.53	
1.2D + 1.0Di + 1.0Wi 90 deg	0.00	00.00		1	-0.43	143.20	0.05	
	145.00	00.00	0	A1	-0.83	-16.32	23.19	
	145.00	00.00	240	A1a	-24.98	-20.28	-14.06	
	145.00	00.00	120	A1b	15.27	-12.38	-9.17	

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1.2D + 1.0Di + 1.0Wi 120 deg	0.00	00.00		1	-0.41	143.72	0.22
	145.00	00.00	0	A1	-0.66	-18.71	26.56
	145.00	00.00	240	A1a	-23.32	-18.70	-12.70
	145.00	00.00	120	A1b	14.88	-11.86	-8.59
1.2D + 1.0Di + 1.0Wi 180 deg	0.00	00.00		1	0.00	142.81	0.39
	145.00	00.00	0	A1	0.00	-20.84	29.35
	145.00	00.00	240	A1a	-17.58	-13.98	-9.39
	145.00	00.00	120	A1b	17.58	-13.98	-9.39
1.2D + 1.0Di + 1.0Wi 210 deg	0.00	00.00		1	0.26	143.20	0.35
	145.00	00.00	0	A1	0.31	-20.28	28.66
	145.00	00.00	240	A1a	-15.58	-12.38	-8.64
	145.00	00.00	120	A1b	20.49	-16.31	-10.88
1.2D + 1.0Di + 1.0Wi 240 deg	0.00	00.00		1	0.41	143.72	0.22
	145.00	00.00	0	A1	0.66	-18.71	26.56
	145.00	00.00	240	A1a	-14.88	-11.86	-8.59
	145.00	00.00	120	A1b	23.32	-18.70	-12.70
1.2D + 1.0Di + 1.0Wi 300 deg	0.00	00.00		1	0.33	142.82	-0.19
	145.00	00.00	0	A1	0.66	-13.98	19.93
	145.00	00.00	240	A1a	-16.93	-13.99	-10.53
	145.00	00.00	120	A1b	25.41	-20.84	-14.67
1.2D + 1.0Di + 1.0Wi 330 deg	0.00	00.00		1	0.17	143.20	-0.40
	145.00	00.00	0	A1	0.31	-12.37	17.81
	145.00	00.00	240	A1a	-19.67	-16.32	-12.31
	145.00	00.00	120	A1b	24.67	-20.28	-14.60
(1.2 + 0.2Sds) * DL + E Normal M1	0.00	00.00		1	0.00	54.89	-0.01
	145.00	00.00	0	A1	0.00	-8.87	11.62
	145.00	00.00	240	A1a	-11.08	-9.95	-6.39
	145.00	00.00	120	A1b	11.08	-9.95	-6.39
(1.2 + 0.2Sds) * DL + E Normal M2	0.00	00.00		1	0.00	54.92	-0.01
	145.00	00.00	0	A1	0.00	-8.58	11.37
	145.00	00.00	240	A1a	-11.20	-10.11	-6.46
	145.00	00.00	120	A1b	11.20	-10.11	-6.46
(1.2 + 0.2Sds) * DL + E 60 deg M1	0.00	00.00		1	-0.01	54.89	0.00
	145.00	00.00	0	A1	0.00	-9.23	12.01
	145.00	00.00	240	A1a	-11.41	-10.31	-6.59
	145.00	00.00	120	A1b	10.40	-9.23	-6.00
(1.2 + 0.2Sds) * DL + E 60 deg M2	0.00	00.00		1	-0.01	54.91	-0.01
	145.00	00.00	0	A1	0.00	-9.09	11.89
	145.00	00.00	240	A1a	-11.63	-10.60	-6.71
	145.00	00.00	120	A1b	10.30	-9.09	-5.95
(1.2 + 0.2Sds) * DL + E 90 deg M1	0.00	00.00		1	-0.01	54.89	0.00
	145.00	00.00	0	A1	0.00	-9.59	12.40
	145.00	00.00	240	A1a	-11.32	-10.21	-6.54
	145.00	00.00	120	A1b	10.15	-8.96	-5.86
(1.2 + 0.2Sds) * DL + E 90 deg M2	0.00	00.00		1	-0.01	54.91	0.00
	145.00	00.00	0	A1	0.00	-9.60	12.41
	145.00	00.00	240	A1a	-11.52	-10.48	-6.65
	145.00	00.00	120	A1b	9.97	-8.71	-5.75
(1.2 + 0.2Sds) * DL + E 120 deg M1	0.00	00.00		1	-0.01	54.89	0.00
	145.00	00.00	0	A1	0.00	-9.95	12.79
	145.00	00.00	240	A1a	-11.08	-9.95	-6.39
	145.00	00.00	120	A1b	10.06	-8.87	-5.81

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(1.2 + 0.2Sds) * DL + E 120 deg M2	0.00	00.00		1	-0.01	54.92	0.00
	145.00	00.00	0	A1	0.00	-10.11	12.93
	145.00	00.00	240	A1a	-11.19	-10.11	-6.46
	145.00	00.00	120	A1b	9.85	-8.58	-5.69
(1.2 + 0.2Sds) * DL + E 180 deg M1	0.00	00.00		1	0.00	54.89	0.01
	145.00	00.00	0	A1	0.00	-10.31	13.18
	145.00	00.00	240	A1a	-10.40	-9.23	-6.00
	145.00	00.00	120	A1b	10.40	-9.23	-6.00
(1.2 + 0.2Sds) * DL + E 180 deg M2	0.00	00.00		1	0.00	54.91	0.01
	145.00	00.00	0	A1	0.00	-10.62	13.44
	145.00	00.00	240	A1a	-10.29	-9.09	-5.94
	145.00	00.00	120	A1b	10.29	-9.09	-5.94
(1.2 + 0.2Sds) * DL + E 210 deg M1	0.00	00.00		1	0.00	54.89	0.01
	145.00	00.00	0	A1	0.00	-10.21	13.07
	145.00	00.00	240	A1a	-10.15	-8.96	-5.86
	145.00	00.00	120	A1b	10.74	-9.59	-6.20
(1.2 + 0.2Sds) * DL + E 210 deg M2	0.00	00.00		1	0.01	54.91	0.01
	145.00	00.00	0	A1	0.00	-10.47	13.29
	145.00	00.00	240	A1a	-9.98	-8.73	-5.76
	145.00	00.00	120	A1b	10.74	-9.59	-6.20
(1.2 + 0.2Sds) * DL + E 240 deg M1	0.00	00.00		1	0.01	54.89	0.00
	145.00	00.00	0	A1	0.00	-9.95	12.79
	145.00	00.00	240	A1a	-10.06	-8.87	-5.81
	145.00	00.00	120	A1b	11.08	-9.95	-6.39
(1.2 + 0.2Sds) * DL + E 240 deg M2	0.00	00.00		1	0.01	54.92	0.00
	145.00	00.00	0	A1	0.00	-10.11	12.93
	145.00	00.00	240	A1a	-9.85	-8.58	-5.69
	145.00	00.00	120	A1b	11.19	-10.11	-6.46
(1.2 + 0.2Sds) * DL + E 300 deg M1	0.00	00.00		1	0.01	54.89	0.00
	145.00	00.00	0	A1	0.00	-9.23	12.01
	145.00	00.00	240	A1a	-10.40	-9.23	-6.00
	145.00	00.00	120	A1b	11.41	-10.31	-6.59
(1.2 + 0.2Sds) * DL + E 300 deg M2	0.00	00.00		1	0.01	54.91	-0.01
	145.00	00.00	0	A1	0.00	-9.09	11.89
	145.00	00.00	240	A1a	-10.30	-9.09	-5.95
	145.00	00.00	120	A1b	11.63	-10.60	-6.71
(1.2 + 0.2Sds) * DL + E 330 deg M1	0.00	00.00		1	0.00	54.89	-0.01
	145.00	00.00	0	A1	0.00	-8.96	11.72
	145.00	00.00	240	A1a	-10.74	-9.59	-6.20
	145.00	00.00	120	A1b	11.32	-10.21	-6.54
(1.2 + 0.2Sds) * DL + E 330 deg M2	0.00	00.00		1	0.01	54.91	-0.01
	145.00	00.00	0	A1	0.00	-8.73	11.52
	145.00	00.00	240	A1a	-10.74	-9.59	-6.20
	145.00	00.00	120	A1b	11.51	-10.47	-6.65
1.0D + 1.0W Service Normal	0.00	00.00		1	0.00	51.21	-0.44
	145.00	00.00	0	A1	0.00	-6.25	8.14
	145.00	00.00	240	A1a	-12.92	-11.63	-7.64
	145.00	00.00	120	A1b	12.92	-11.63	-7.64
1.0D + 1.0W Service 60 deg	0.00	00.00		1	-0.37	51.19	-0.21
	145.00	00.00	0	A1	-0.15	-8.08	10.43
	145.00	00.00	240	A1a	-14.94	-13.42	-8.62
	145.00	00.00	120	A1b	8.95	-8.09	-5.34
1.0D + 1.0W Service 90 deg	0.00	00.00		1	-0.43	51.18	0.00

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	145.00	00.00	0	A1	-0.19	-9.85	12.70
	145.00	00.00	240	A1a	-14.45	-12.93	-8.26
	145.00	00.00	120	A1b	7.55	-6.77	-4.44
1.0D + 1.0W Service 120 deg	0.00	00.00		1	-0.38	51.21	0.22
	145.00	00.00	0	A1	-0.15	-11.63	15.01
	145.00	00.00	240	A1a	-13.07	-11.63	-7.37
	145.00	00.00	120	A1b	7.05	-6.26	-4.07
1.0D + 1.0W Service 180 deg	0.00	00.00		1	0.00	51.19	0.42
	145.00	00.00	0	A1	0.00	-13.43	17.25
	145.00	00.00	240	A1a	-9.11	-8.08	-5.08
	145.00	00.00	120	A1b	9.11	-8.08	-5.08
1.0D + 1.0W Service 210 deg	0.00	00.00		1	0.22	51.18	0.37
	145.00	00.00	0	A1	0.07	-12.94	16.65
	145.00	00.00	240	A1a	-7.62	-6.76	-4.32
	145.00	00.00	120	A1b	11.09	-9.84	-6.18
1.0D + 1.0W Service 240 deg	0.00	00.00		1	0.38	51.21	0.22
	145.00	00.00	0	A1	0.15	-11.63	15.01
	145.00	00.00	240	A1a	-7.05	-6.26	-4.07
	145.00	00.00	120	A1b	13.07	-11.63	-7.37
1.0D + 1.0W Service 300 deg	0.00	00.00		1	0.37	51.19	-0.21
	145.00	00.00	0	A1	0.15	-8.08	10.43
	145.00	00.00	240	A1a	-8.95	-8.09	-5.34
	145.00	00.00	120	A1b	14.94	-13.42	-8.62
1.0D + 1.0W Service 330 deg	0.00	00.00		1	0.21	51.18	-0.38
	145.00	00.00	0	A1	0.07	-6.76	8.76
	145.00	00.00	240	A1a	-10.90	-9.85	-6.51
	145.00	00.00	120	A1b	14.38	-12.93	-8.39

Maximum Reactions Summary

	Base	Anch1
Vertical (kip)	143.73	-31.45
Horizontal (kip)	1.87	39.82

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Guy Anchor Design Loads

Radius (ft)	Drop (ft)	Azimuth (°)	Uplift (kip)	Shear (kip)
145.00	0.00	0	31.45	39.81
145.00	0.00	240	31.42	39.82
145.00	0.00	120	31.42	39.82

Maximum Cable Forces Summary

Load Case	Elevation (ft)	Cable	Anchor Node	Tower Node	Allow Tension (kip)	Applied Tension (kip)	Use %
1.2D + 1.6W 60 deg	59.62	9/16 EHS	A1a	27b	21.00	9.93	47
1.2D + 1.6W 60 deg	116.41	9/16 EHS	A1a	T2a	21.00	9.01	43
1.2D + 1.6W 60 deg	146.79	5/8 EHS	A1a	T3a	25.44	11.89	47

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Deflections and Rotations

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
101 mph Normal with No Ice	76.42	0.393	0.0009	0.1541	0.1541
101 mph Normal with No Ice	116.41	0.434	0.0045	0.1562	0.1562
101 mph Normal with No Ice	130.00	0.511	0.0008	0.3533	0.3533
101 mph Normal with No Ice	133.21	0.528	0.0002	0.3047	0.3047
101 mph Normal with No Ice	143.58	0.588	0.0034	0.4115	0.4115
101 mph Normal with No Ice	146.79	0.608	0.0071	0.4089	0.4089
101 mph Normal with No Ice	156.42	0.701	0.0041	0.5304	0.5304
101 mph Normal with No Ice	160.00	0.732	0.0028	0.5509	0.5509
101 mph 60 degree with No Ice	76.42	0.272	0.0040	0.1139	0.1139
101 mph 60 degree with No Ice	116.41	0.304	0.0099	0.1072	0.1072
101 mph 60 degree with No Ice	130.00	0.352	0.0056	0.1974	0.1975
101 mph 60 degree with No Ice	133.21	0.364	0.0057	0.2160	0.2161
101 mph 60 degree with No Ice	143.58	0.405	0.0103	0.2249	0.2250
101 mph 60 degree with No Ice	146.79	0.419	0.0140	0.3311	0.3312
101 mph 60 degree with No Ice	156.42	0.491	0.0066	0.4079	0.4080
101 mph 60 degree with No Ice	160.00	0.515	0.0053	0.4300	0.4300
101 mph 90 degree with No Ice	76.42	0.351	-0.1506	0.1456	0.2108
101 mph 90 degree with No Ice	116.41	0.394	0.0516	0.1328	0.1397
101 mph 90 degree with No Ice	130.00	0.454	-0.0340	0.2203	0.2229
101 mph 90 degree with No Ice	133.21	0.468	-0.0315	0.2741	0.2759
101 mph 90 degree with No Ice	143.58	0.517	-0.0165	0.2246	0.2258
101 mph 90 degree with No Ice	146.79	0.534	-0.0141	0.3765	0.3774
101 mph 90 degree with No Ice	156.42	0.616	-0.1550	0.4573	0.4826
101 mph 90 degree with No Ice	160.00	0.643	-0.1674	0.4915	0.5192
101 mph 120 degree with No Ice	76.42	0.398	-0.0004	0.1542	0.1542
101 mph 120 degree with No Ice	116.41	0.438	0.0031	0.1457	0.1457
101 mph 120 degree with No Ice	130.00	0.511	-0.0046	0.2720	0.2721
101 mph 120 degree with No Ice	133.21	0.527	-0.0052	0.3023	0.3024
101 mph 120 degree with No Ice	143.58	0.583	-0.0024	0.2996	0.2996
101 mph 120 degree with No Ice	146.79	0.602	0.0020	0.4067	0.4067
101 mph 120 degree with No Ice	156.42	0.691	-0.0011	0.5065	0.5065
101 mph 120 degree with No Ice	160.00	0.721	-0.0024	0.5273	0.5274
101 mph 180 degree with No Ice	76.42	0.269	0.0008	0.1133	0.1133
101 mph 180 degree with No Ice	116.41	0.302	0.0061	0.1117	0.1117
101 mph 180 degree with No Ice	130.00	0.352	0.0001	0.2698	0.2698
101 mph 180 degree with No Ice	133.21	0.364	0.0002	0.2113	0.2113
101 mph 180 degree with No Ice	143.58	0.407	0.0038	0.3247	0.3247
101 mph 180 degree with No Ice	146.79	0.422	0.0078	0.3255	0.3255
101 mph 180 degree with No Ice	156.42	0.497	0.0012	0.4239	0.4239
101 mph 180 degree with No Ice	160.00	0.522	0.0000	0.4457	0.4457
101 mph 210 degree with No Ice	76.42	0.347	-0.1477	0.1466	0.2081
101 mph 210 degree with No Ice	116.41	0.391	0.0550	0.1392	0.1468
101 mph 210 degree with No Ice	130.00	0.453	-0.0273	0.2969	0.2982
101 mph 210 degree with No Ice	133.21	0.468	-0.0248	0.2726	0.2738
101 mph 210 degree with No Ice	143.58	0.520	-0.0156	0.3348	0.3351
101 mph 210 degree with No Ice	146.79	0.538	-0.0204	0.3748	0.3753
101 mph 210 degree with No Ice	156.42	0.622	-0.1537	0.4757	0.4981
101 mph 210 degree with No Ice	160.00	0.651	-0.1648	0.5094	0.5342
101 mph 240 degree with No Ice	76.42	0.398	0.0022	0.1542	0.1542
101 mph 240 degree with No Ice	116.41	0.438	0.0058	0.1457	0.1457
101 mph 240 degree with No Ice	130.00	0.511	0.0064	0.2720	0.2721
101 mph 240 degree with No Ice	133.21	0.527	0.0057	0.3023	0.3024
101 mph 240 degree with No Ice	143.58	0.583	0.0092	0.2996	0.2996
101 mph 240 degree with No Ice	146.79	0.602	0.0123	0.4067	0.4067
101 mph 240 degree with No Ice	156.42	0.691	0.0095	0.5065	0.5065

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101 mph 240 degree with No Ice	160.00	0.721	0.0082	0.5273	0.5274
101 mph 300 degree with No Ice	76.42	0.272	-0.0040	0.1139	0.1139
101 mph 300 degree with No Ice	116.41	0.304	-0.0099	0.1072	0.1072
101 mph 300 degree with No Ice	130.00	0.352	-0.0056	0.1974	0.1975
101 mph 300 degree with No Ice	133.21	0.364	-0.0057	0.2160	0.2161
101 mph 300 degree with No Ice	143.58	0.405	-0.0103	0.2249	0.2250
101 mph 300 degree with No Ice	146.79	0.419	-0.0140	0.3311	0.3312
101 mph 300 degree with No Ice	156.42	0.491	-0.0041	0.4079	0.4080
101 mph 300 degree with No Ice	160.00	0.515	-0.0053	0.4300	0.4300
101 mph 330 degree with No Ice	76.42	0.345	-0.1533	0.1468	0.2125
101 mph 330 degree with No Ice	116.41	0.390	0.0505	0.1453	0.1512
101 mph 330 degree with No Ice	130.00	0.454	-0.0358	0.3185	0.3206
101 mph 330 degree with No Ice	133.21	0.469	-0.0336	0.2767	0.2787
101 mph 330 degree with No Ice	143.58	0.523	-0.0261	0.3605	0.3614
101 mph 330 degree with No Ice	146.79	0.541	-0.0306	0.3808	0.3819
101 mph 330 degree with No Ice	156.42	0.627	-0.1562	0.4830	0.5076
101 mph 330 degree with No Ice	160.00	0.656	-0.1699	0.5172	0.5442
50 mph Normal with 0.75 in Radial Ice	76.42	0.084	0.0005	0.0140	0.0140
50 mph Normal with 0.75 in Radial Ice	116.41	0.067	0.0015	0.0300	0.0300
50 mph Normal with 0.75 in Radial Ice	130.00	0.067	0.0001	0.0147	0.0147
50 mph Normal with 0.75 in Radial Ice	133.21	0.068	0.0001	0.0018	0.0018
50 mph Normal with 0.75 in Radial Ice	143.58	0.069	0.0011	0.0218	0.0218
50 mph Normal with 0.75 in Radial Ice	146.79	0.069	0.0022	0.0196	0.0196
50 mph Normal with 0.75 in Radial Ice	156.42	0.076	0.0004	0.0426	0.0426
50 mph Normal with 0.75 in Radial Ice	160.00	0.079	0.0004	0.0560	0.0560
50 mph 60 deg with 0.75 in Radial Ice	76.42	0.089	0.0002	0.0262	0.0262
50 mph 60 deg with 0.75 in Radial Ice	116.41	0.089	0.0016	0.0021	0.0025
50 mph 60 deg with 0.75 in Radial Ice	130.00	0.097	0.0002	0.0333	0.0333
50 mph 60 deg with 0.75 in Radial Ice	133.21	0.099	0.0003	0.0365	0.0365
50 mph 60 deg with 0.75 in Radial Ice	143.58	0.105	0.0014	0.0380	0.0380
50 mph 60 deg with 0.75 in Radial Ice	146.79	0.108	0.0025	0.0518	0.0518
50 mph 60 deg with 0.75 in Radial Ice	156.42	0.120	0.0007	0.0735	0.0735
50 mph 60 deg with 0.75 in Radial Ice	160.00	0.125	0.0006	0.0872	0.0872
50 mph 90 deg with 0.75 in Radial Ice	76.42	0.087	0.0238	0.0209	0.0311
50 mph 90 deg with 0.75 in Radial Ice	116.41	0.078	0.0177	0.0263	0.0303
50 mph 90 deg with 0.75 in Radial Ice	130.00	0.082	0.0155	0.0210	0.0261
50 mph 90 deg with 0.75 in Radial Ice	133.21	0.084	0.0154	0.0266	0.0307
50 mph 90 deg with 0.75 in Radial Ice	143.58	0.087	0.0163	0.0239	0.0278
50 mph 90 deg with 0.75 in Radial Ice	146.79	0.089	0.0176	0.0389	0.0412
50 mph 90 deg with 0.75 in Radial Ice	156.42	0.098	0.0154	0.0566	0.0587
50 mph 90 deg with 0.75 in Radial Ice	160.00	0.102	0.0154	0.0695	0.0710
50 mph 120 deg with 0.75 in Radial Ice	76.42	0.087	-0.0013	0.0133	0.0135
50 mph 120 deg with 0.75 in Radial Ice	116.41	0.069	0.0008	0.0337	0.0337
50 mph 120 deg with 0.75 in Radial Ice	130.00	0.068	-0.0006	0.0118	0.0118
50 mph 120 deg with 0.75 in Radial Ice	133.21	0.068	-0.0005	0.0007	0.0010
50 mph 120 deg with 0.75 in Radial Ice	143.58	0.068	0.0006	0.0195	0.0195
50 mph 120 deg with 0.75 in Radial Ice	146.79	0.068	0.0018	0.0180	0.0180
50 mph 120 deg with 0.75 in Radial Ice	156.42	0.074	-0.0001	0.0365	0.0366
50 mph 120 deg with 0.75 in Radial Ice	160.00	0.076	-0.0001	0.0499	0.0499
50 mph 180 deg with 0.75 in Radial Ice	76.42	0.088	0.0002	0.0263	0.0263
50 mph 180 deg with 0.75 in Radial Ice	116.41	0.089	0.0015	0.0036	0.0036
50 mph 180 deg with 0.75 in Radial Ice	130.00	0.097	0.0000	0.0488	0.0488
50 mph 180 deg with 0.75 in Radial Ice	133.21	0.099	0.0001	0.0362	0.0362
50 mph 180 deg with 0.75 in Radial Ice	143.58	0.106	0.0011	0.0594	0.0594
50 mph 180 deg with 0.75 in Radial Ice	146.79	0.109	0.0021	0.0516	0.0516
50 mph 180 deg with 0.75 in Radial Ice	156.42	0.122	0.0004	0.0777	0.0777
50 mph 180 deg with 0.75 in Radial Ice	160.00	0.127	0.0004	0.0914	0.0914
50 mph 210 deg with 0.75 in Radial Ice	76.42	0.087	0.0242	0.0209	0.0314
50 mph 210 deg with 0.75 in Radial Ice	116.41	0.078	0.0179	0.0258	0.0301
50 mph 210 deg with 0.75 in Radial Ice	130.00	0.082	0.0156	0.0385	0.0415
50 mph 210 deg with 0.75 in Radial Ice	133.21	0.084	0.0156	0.0263	0.0305
50 mph 210 deg with 0.75 in Radial Ice	143.58	0.088	0.0164	0.0480	0.0501

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50 mph 210 deg with 0.75 in Radial Ice	146.79	0.090	0.0176	0.0390	0.0414
50 mph 210 deg with 0.75 in Radial Ice	156.42	0.100	0.0156	0.0615	0.0635
50 mph 210 deg with 0.75 in Radial Ice	160.00	0.104	0.0156	0.0742	0.0757
50 mph 240 deg with 0.75 in Radial Ice	76.42	0.087	0.0022	0.0133	0.0135
50 mph 240 deg with 0.75 in Radial Ice	116.41	0.069	0.0023	0.0337	0.0337
50 mph 240 deg with 0.75 in Radial Ice	130.00	0.068	0.0007	0.0118	0.0118
50 mph 240 deg with 0.75 in Radial Ice	133.21	0.068	0.0007	0.0007	0.0010
50 mph 240 deg with 0.75 in Radial Ice	143.58	0.068	0.0017	0.0195	0.0195
50 mph 240 deg with 0.75 in Radial Ice	146.79	0.068	0.0028	0.0180	0.0180
50 mph 240 deg with 0.75 in Radial Ice	156.42	0.074	0.0009	0.0365	0.0366
50 mph 240 deg with 0.75 in Radial Ice	160.00	0.076	0.0009	0.0499	0.0499
50 mph 300 deg with 0.75 in Radial Ice	76.42	0.089	-0.0002	0.0262	0.0262
50 mph 300 deg with 0.75 in Radial Ice	116.41	0.089	-0.0016	0.0021	0.0025
50 mph 300 deg with 0.75 in Radial Ice	130.00	0.097	-0.0002	0.0333	0.0333
50 mph 300 deg with 0.75 in Radial Ice	133.21	0.099	-0.0003	0.0365	0.0365
50 mph 300 deg with 0.75 in Radial Ice	143.58	0.105	-0.0014	0.0380	0.0380
50 mph 300 deg with 0.75 in Radial Ice	146.79	0.108	-0.0025	0.0518	0.0518
50 mph 300 deg with 0.75 in Radial Ice	156.42	0.120	-0.0007	0.0735	0.0735
50 mph 300 deg with 0.75 in Radial Ice	160.00	0.125	-0.0006	0.0872	0.0872
50 mph 330 deg with 0.75 in Radial Ice	76.42	0.086	0.0233	0.0209	0.0308
50 mph 330 deg with 0.75 in Radial Ice	116.41	0.078	0.0174	0.0242	0.0284
50 mph 330 deg with 0.75 in Radial Ice	130.00	0.082	0.0151	0.0264	0.0304
50 mph 330 deg with 0.75 in Radial Ice	133.21	0.084	0.0151	0.0265	0.0304
50 mph 330 deg with 0.75 in Radial Ice	143.58	0.088	0.0159	0.0320	0.0350
50 mph 330 deg with 0.75 in Radial Ice	146.79	0.089	0.0171	0.0388	0.0412
50 mph 330 deg with 0.75 in Radial Ice	156.42	0.099	0.0151	0.0600	0.0619
50 mph 330 deg with 0.75 in Radial Ice	160.00	0.103	0.0150	0.0730	0.0744
Seismic Normal M1	76.42	0.003	0.0000	0.0045	0.0045
Seismic Normal M1	116.41	0.008	0.0002	0.0140	0.0140
Seismic Normal M1	130.00	0.013	0.0001	0.0220	0.0220
Seismic Normal M1	133.21	0.014	0.0000	0.0231	0.0231
Seismic Normal M1	143.58	0.018	0.0002	0.0258	0.0258
Seismic Normal M1	146.79	0.020	0.0005	0.0310	0.0310
Seismic Normal M1	156.42	0.026	0.0001	0.0357	0.0357
Seismic Normal M1	160.00	0.028	0.0001	0.0390	0.0390
Seismic Normal M2	76.42	0.000	0.0001	0.0030	0.0030
Seismic Normal M2	116.41	0.008	0.0003	0.0275	0.0275
Seismic Normal M2	130.00	0.017	0.0002	0.0436	0.0436
Seismic Normal M2	133.21	0.019	0.0001	0.0464	0.0464
Seismic Normal M2	143.58	0.029	0.0004	0.0542	0.0542
Seismic Normal M2	146.79	0.032	0.0008	0.0627	0.0627
Seismic Normal M2	156.42	0.044	0.0001	0.0719	0.0719
Seismic Normal M2	160.00	0.048	0.0002	0.0780	0.0780
Seismic 60 deg M1	76.42	0.003	0.0000	0.0048	0.0048
Seismic 60 deg M1	116.41	0.008	0.0002	0.0139	0.0139
Seismic 60 deg M1	130.00	0.012	0.0000	0.0216	0.0216
Seismic 60 deg M1	133.21	0.014	0.0000	0.0226	0.0226
Seismic 60 deg M1	143.58	0.018	0.0002	0.0265	0.0265
Seismic 60 deg M1	146.79	0.019	0.0005	0.0293	0.0293
Seismic 60 deg M1	156.42	0.025	0.0001	0.0352	0.0352
Seismic 60 deg M1	160.00	0.027	0.0001	0.0384	0.0384
Seismic 60 deg M2	76.42	0.001	0.0001	0.0031	0.0031
Seismic 60 deg M2	116.41	0.008	0.0003	0.0267	0.0267
Seismic 60 deg M2	130.00	0.016	0.0001	0.0419	0.0419
Seismic 60 deg M2	133.21	0.019	0.0001	0.0446	0.0446
Seismic 60 deg M2	143.58	0.027	0.0004	0.0536	0.0536
Seismic 60 deg M2	146.79	0.030	0.0008	0.0590	0.0590
Seismic 60 deg M2	156.42	0.042	0.0002	0.0699	0.0699
Seismic 60 deg M2	160.00	0.046	0.0002	0.0759	0.0759
Seismic 90 deg M1	76.42	0.003	0.0000	0.0047	0.0047
Seismic 90 deg M1	116.41	0.008	0.0002	0.0140	0.0140
Seismic 90 deg M1	130.00	0.013	0.0000	0.0218	0.0218

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Seismic 90 deg M1	133.21	0.014	0.0000	0.0228	0.0228
Seismic 90 deg M1	143.58	0.018	0.0003	0.0263	0.0263
Seismic 90 deg M1	146.79	0.020	0.0006	0.0304	0.0304
Seismic 90 deg M1	156.42	0.025	0.0001	0.0355	0.0355
Seismic 90 deg M1	160.00	0.028	0.0001	0.0388	0.0388
Seismic 90 deg M2	76.42	0.001	0.0001	0.0032	0.0032
Seismic 90 deg M2	116.41	0.008	0.0003	0.0273	0.0273
Seismic 90 deg M2	130.00	0.017	0.0002	0.0430	0.0430
Seismic 90 deg M2	133.21	0.019	0.0002	0.0457	0.0457
Seismic 90 deg M2	143.58	0.028	0.0005	0.0540	0.0540
Seismic 90 deg M2	146.79	0.031	0.0010	0.0614	0.0614
Seismic 90 deg M2	156.42	0.043	0.0003	0.0712	0.0712
Seismic 90 deg M2	160.00	0.048	0.0003	0.0774	0.0774
Seismic 120 deg M1	76.42	0.003	0.0000	0.0045	0.0045
Seismic 120 deg M1	116.41	0.008	0.0002	0.0140	0.0140
Seismic 120 deg M1	130.00	0.013	0.0001	0.0220	0.0220
Seismic 120 deg M1	133.21	0.014	0.0000	0.0231	0.0231
Seismic 120 deg M1	143.58	0.018	0.0002	0.0258	0.0258
Seismic 120 deg M1	146.79	0.020	0.0005	0.0310	0.0310
Seismic 120 deg M1	156.42	0.026	0.0001	0.0357	0.0357
Seismic 120 deg M1	160.00	0.028	0.0001	0.0390	0.0390
Seismic 120 deg M2	76.42	0.000	0.0001	0.0030	0.0030
Seismic 120 deg M2	116.41	0.008	0.0003	0.0275	0.0275
Seismic 120 deg M2	130.00	0.017	0.0002	0.0436	0.0436
Seismic 120 deg M2	133.21	0.019	0.0001	0.0464	0.0464
Seismic 120 deg M2	143.58	0.029	0.0004	0.0542	0.0542
Seismic 120 deg M2	146.79	0.032	0.0008	0.0627	0.0627
Seismic 120 deg M2	156.42	0.044	0.0001	0.0719	0.0719
Seismic 120 deg M2	160.00	0.048	0.0002	0.0780	0.0780
Seismic 180 deg M1	76.42	0.003	0.0000	0.0048	0.0048
Seismic 180 deg M1	116.41	0.008	0.0002	0.0139	0.0139
Seismic 180 deg M1	130.00	0.012	0.0000	0.0216	0.0216
Seismic 180 deg M1	133.21	0.014	0.0000	0.0226	0.0226
Seismic 180 deg M1	143.58	0.018	0.0002	0.0265	0.0265
Seismic 180 deg M1	146.79	0.019	0.0005	0.0293	0.0293
Seismic 180 deg M1	156.42	0.025	0.0001	0.0352	0.0352
Seismic 180 deg M1	160.00	0.027	0.0001	0.0384	0.0384
Seismic 180 deg M2	76.42	0.000	0.0001	0.0033	0.0033
Seismic 180 deg M2	116.41	0.008	0.0003	0.0270	0.0270
Seismic 180 deg M2	130.00	0.016	0.0001	0.0423	0.0423
Seismic 180 deg M2	133.21	0.019	0.0001	0.0450	0.0450
Seismic 180 deg M2	143.58	0.028	0.0004	0.0540	0.0540
Seismic 180 deg M2	146.79	0.031	0.0008	0.0594	0.0594
Seismic 180 deg M2	156.42	0.042	0.0002	0.0704	0.0704
Seismic 180 deg M2	160.00	0.047	0.0002	0.0765	0.0765
Seismic 210 deg M1	76.42	0.003	0.0000	0.0047	0.0047
Seismic 210 deg M1	116.41	0.008	0.0002	0.0140	0.0140
Seismic 210 deg M1	130.00	0.013	0.0000	0.0218	0.0218
Seismic 210 deg M1	133.21	0.014	0.0000	0.0228	0.0228
Seismic 210 deg M1	143.58	0.018	0.0003	0.0263	0.0263
Seismic 210 deg M1	146.79	0.020	0.0006	0.0304	0.0304
Seismic 210 deg M1	156.42	0.025	0.0001	0.0355	0.0355
Seismic 210 deg M1	160.00	0.028	0.0001	0.0388	0.0388
Seismic 210 deg M2	76.42	0.001	0.0000	0.0031	0.0031
Seismic 210 deg M2	116.41	0.008	0.0003	0.0270	0.0270
Seismic 210 deg M2	130.00	0.016	0.0002	0.0425	0.0425
Seismic 210 deg M2	133.21	0.019	0.0002	0.0453	0.0453
Seismic 210 deg M2	143.58	0.028	0.0005	0.0536	0.0536
Seismic 210 deg M2	146.79	0.031	0.0010	0.0609	0.0609
Seismic 210 deg M2	156.42	0.042	0.0003	0.0706	0.0706
Seismic 210 deg M2	160.00	0.047	0.0003	0.0767	0.0767
Seismic 240 deg M1	76.42	0.003	0.0000	0.0045	0.0045

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Seismic 240 deg M1	116.41	0.008	-0.0002	0.0140	0.0140
Seismic 240 deg M1	130.00	0.013	0.0001	0.0220	0.0220
Seismic 240 deg M1	133.21	0.014	0.0000	0.0231	0.0231
Seismic 240 deg M1	143.58	0.018	-0.0002	0.0258	0.0258
Seismic 240 deg M1	146.79	0.020	-0.0005	0.0310	0.0310
Seismic 240 deg M1	156.42	0.026	-0.0001	0.0357	0.0357
Seismic 240 deg M1	160.00	0.028	-0.0001	0.0390	0.0390
Seismic 240 deg M2	76.42	0.000	0.0001	0.0030	0.0030
Seismic 240 deg M2	116.41	0.008	-0.0003	0.0275	0.0275
Seismic 240 deg M2	130.00	0.017	0.0002	0.0436	0.0436
Seismic 240 deg M2	133.21	0.019	0.0001	0.0464	0.0464
Seismic 240 deg M2	143.58	0.029	-0.0004	0.0542	0.0542
Seismic 240 deg M2	146.79	0.032	-0.0008	0.0627	0.0627
Seismic 240 deg M2	156.42	0.044	-0.0001	0.0719	0.0719
Seismic 240 deg M2	160.00	0.048	-0.0002	0.0780	0.0780
Seismic 300 deg M1	76.42	0.003	0.0000	0.0048	0.0048
Seismic 300 deg M1	116.41	0.008	-0.0002	0.0139	0.0139
Seismic 300 deg M1	130.00	0.012	0.0000	0.0216	0.0216
Seismic 300 deg M1	133.21	0.014	0.0000	0.0226	0.0226
Seismic 300 deg M1	143.58	0.018	-0.0002	0.0265	0.0265
Seismic 300 deg M1	146.79	0.019	-0.0005	0.0293	0.0293
Seismic 300 deg M1	156.42	0.025	-0.0001	0.0352	0.0352
Seismic 300 deg M1	160.00	0.027	-0.0001	0.0384	0.0384
Seismic 300 deg M2	76.42	0.001	0.0001	0.0031	0.0031
Seismic 300 deg M2	116.41	0.008	-0.0003	0.0267	0.0267
Seismic 300 deg M2	130.00	0.016	0.0001	0.0419	0.0419
Seismic 300 deg M2	133.21	0.019	0.0001	0.0446	0.0446
Seismic 300 deg M2	143.58	0.027	-0.0004	0.0536	0.0536
Seismic 300 deg M2	146.79	0.030	-0.0008	0.0590	0.0590
Seismic 300 deg M2	156.42	0.042	-0.0002	0.0699	0.0699
Seismic 300 deg M2	160.00	0.046	-0.0002	0.0759	0.0759
Seismic 330 deg M1	76.42	0.003	0.0000	0.0047	0.0047
Seismic 330 deg M1	116.41	0.008	0.0002	0.0140	0.0140
Seismic 330 deg M1	130.00	0.013	0.0000	0.0218	0.0218
Seismic 330 deg M1	133.21	0.014	0.0000	0.0228	0.0228
Seismic 330 deg M1	143.58	0.018	0.0003	0.0263	0.0263
Seismic 330 deg M1	146.79	0.020	0.0006	0.0304	0.0304
Seismic 330 deg M1	156.42	0.025	0.0001	0.0355	0.0355
Seismic 330 deg M1	160.00	0.028	0.0001	0.0388	0.0388
Seismic 330 deg M2	76.42	0.001	0.0000	0.0031	0.0031
Seismic 330 deg M2	116.41	0.008	0.0003	0.0270	0.0270
Seismic 330 deg M2	130.00	0.016	0.0002	0.0425	0.0425
Seismic 330 deg M2	133.21	0.019	0.0002	0.0453	0.0453
Seismic 330 deg M2	143.58	0.028	0.0005	0.0536	0.0536
Seismic 330 deg M2	146.79	0.031	0.0010	0.0609	0.0609
Seismic 330 deg M2	156.42	0.042	0.0003	0.0706	0.0706
Seismic 330 deg M2	160.00	0.047	0.0003	0.0767	0.0767
Serviceability - 60 mph Wind Normal	76.42	0.049	0.0002	0.0136	0.0136
Serviceability - 60 mph Wind Normal	116.41	0.046	0.0010	0.0007	0.0013
Serviceability - 60 mph Wind Normal	130.00	0.052	0.0000	0.0408	0.0408
Serviceability - 60 mph Wind Normal	133.21	0.054	0.0000	0.0275	0.0275
Serviceability - 60 mph Wind Normal	143.58	0.059	0.0008	0.0517	0.0517
Serviceability - 60 mph Wind Normal	146.79	0.062	0.0016	0.0466	0.0466
Serviceability - 60 mph Wind Normal	156.42	0.073	0.0003	0.0685	0.0685
Serviceability - 60 mph Wind Normal	160.00	0.077	0.0003	0.0816	0.0816
Serviceability - 60 mph Wind 60 deg	76.42	0.049	0.0002	0.0174	0.0174
Serviceability - 60 mph Wind 60 deg	116.41	0.050	0.0011	0.0063	0.0063
Serviceability - 60 mph Wind 60 deg	130.00	0.057	0.0001	0.0319	0.0319
Serviceability - 60 mph Wind 60 deg	133.21	0.059	0.0001	0.0355	0.0355
Serviceability - 60 mph Wind 60 deg	143.58	0.066	0.0009	0.0385	0.0385
Serviceability - 60 mph Wind 60 deg	146.79	0.068	0.0017	0.0529	0.0529
Serviceability - 60 mph Wind 60 deg	156.42	0.080	0.0004	0.0720	0.0720

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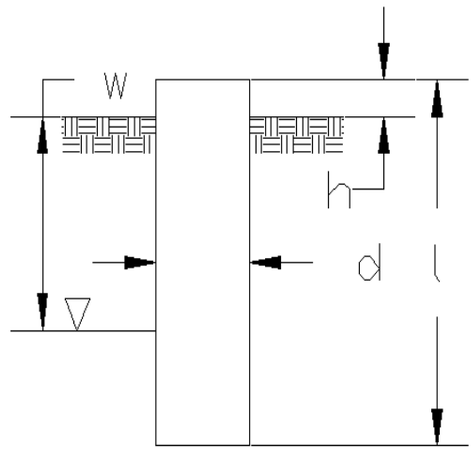
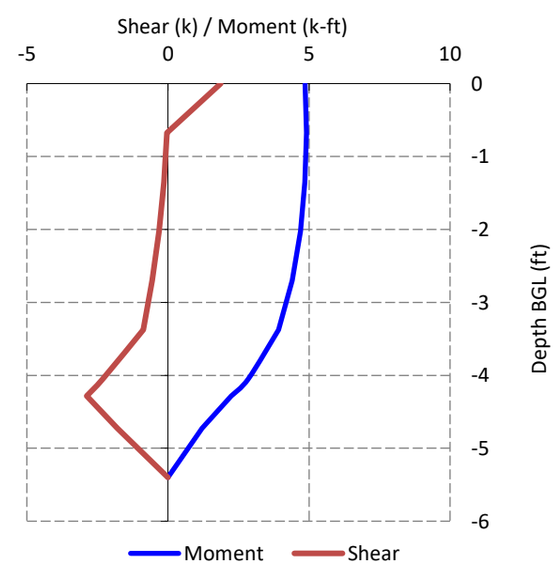
Serviceability - 60 mph Wind 60 deg	160.00	0.085	0.0004	0.0851	0.0851
Serviceability - 60 mph Wind 90 deg	76.42	0.049	0.0038	0.0157	0.0161
Serviceability - 60 mph Wind 90 deg	116.41	0.048	0.0036	0.0041	0.0054
Serviceability - 60 mph Wind 90 deg	130.00	0.054	0.0023	0.0215	0.0216
Serviceability - 60 mph Wind 90 deg	133.21	0.056	0.0023	0.0328	0.0329
Serviceability - 60 mph Wind 90 deg	143.58	0.062	0.0032	0.0237	0.0238
Serviceability - 60 mph Wind 90 deg	146.79	0.064	0.0041	0.0510	0.0511
Serviceability - 60 mph Wind 90 deg	156.42	0.075	0.0026	0.0678	0.0679
Serviceability - 60 mph Wind 90 deg	160.00	0.080	0.0026	0.0809	0.0809
Serviceability - 60 mph Wind 120 deg	76.42	0.049	0.0002	0.0137	0.0137
Serviceability - 60 mph Wind 120 deg	116.41	0.046	0.0010	0.0008	0.0012
Serviceability - 60 mph Wind 120 deg	130.00	0.052	0.0000	0.0256	0.0256
Serviceability - 60 mph Wind 120 deg	133.21	0.054	0.0000	0.0288	0.0288
Serviceability - 60 mph Wind 120 deg	143.58	0.059	0.0007	0.0309	0.0309
Serviceability - 60 mph Wind 120 deg	146.79	0.061	0.0016	0.0481	0.0481
Serviceability - 60 mph Wind 120 deg	156.42	0.072	0.0003	0.0653	0.0653
Serviceability - 60 mph Wind 120 deg	160.00	0.076	0.0003	0.0784	0.0784
Serviceability - 60 mph Wind 180 deg	76.42	0.049	0.0002	0.0174	0.0174
Serviceability - 60 mph Wind 180 deg	116.41	0.049	0.0010	0.0073	0.0073
Serviceability - 60 mph Wind 180 deg	130.00	0.057	0.0000	0.0474	0.0474
Serviceability - 60 mph Wind 180 deg	133.21	0.059	0.0000	0.0341	0.0341
Serviceability - 60 mph Wind 180 deg	143.58	0.066	0.0008	0.0599	0.0599
Serviceability - 60 mph Wind 180 deg	146.79	0.069	0.0015	0.0513	0.0513
Serviceability - 60 mph Wind 180 deg	156.42	0.081	0.0003	0.0751	0.0751
Serviceability - 60 mph Wind 180 deg	160.00	0.086	0.0003	0.0882	0.0882
Serviceability - 60 mph Wind 210 deg	76.42	0.048	0.0038	0.0156	0.0160
Serviceability - 60 mph Wind 210 deg	116.41	0.047	0.0036	0.0052	0.0062
Serviceability - 60 mph Wind 210 deg	130.00	0.054	0.0024	0.0405	0.0406
Serviceability - 60 mph Wind 210 deg	133.21	0.056	0.0024	0.0313	0.0313
Serviceability - 60 mph Wind 210 deg	143.58	0.062	0.0032	0.0510	0.0511
Serviceability - 60 mph Wind 210 deg	146.79	0.065	0.0041	0.0497	0.0497
Serviceability - 60 mph Wind 210 deg	156.42	0.076	0.0026	0.0711	0.0711
Serviceability - 60 mph Wind 210 deg	160.00	0.081	0.0027	0.0841	0.0841
Serviceability - 60 mph Wind 240 deg	76.42	0.049	0.0002	0.0137	0.0137
Serviceability - 60 mph Wind 240 deg	116.41	0.046	0.0011	0.0008	0.0012
Serviceability - 60 mph Wind 240 deg	130.00	0.052	0.0001	0.0256	0.0256
Serviceability - 60 mph Wind 240 deg	133.21	0.054	0.0001	0.0288	0.0288
Serviceability - 60 mph Wind 240 deg	143.58	0.059	0.0008	0.0309	0.0309
Serviceability - 60 mph Wind 240 deg	146.79	0.061	0.0016	0.0481	0.0481
Serviceability - 60 mph Wind 240 deg	156.42	0.072	0.0003	0.0653	0.0653
Serviceability - 60 mph Wind 240 deg	160.00	0.076	0.0003	0.0784	0.0784
Serviceability - 60 mph Wind 300 deg	76.42	0.049	-0.0002	0.0174	0.0174
Serviceability - 60 mph Wind 300 deg	116.41	0.050	-0.0011	0.0063	0.0063
Serviceability - 60 mph Wind 300 deg	130.00	0.057	-0.0001	0.0319	0.0319
Serviceability - 60 mph Wind 300 deg	133.21	0.059	-0.0001	0.0355	0.0355
Serviceability - 60 mph Wind 300 deg	143.58	0.066	-0.0009	0.0385	0.0385
Serviceability - 60 mph Wind 300 deg	146.79	0.068	-0.0017	0.0529	0.0529
Serviceability - 60 mph Wind 300 deg	156.42	0.080	-0.0004	0.0720	0.0720
Serviceability - 60 mph Wind 300 deg	160.00	0.085	-0.0004	0.0851	0.0851
Serviceability - 60 mph Wind 330 deg	76.42	0.048	0.0037	0.0156	0.0160
Serviceability - 60 mph Wind 330 deg	116.41	0.047	0.0035	0.0045	0.0056
Serviceability - 60 mph Wind 330 deg	130.00	0.054	0.0022	0.0391	0.0392
Serviceability - 60 mph Wind 330 deg	133.21	0.056	0.0023	0.0316	0.0316
Serviceability - 60 mph Wind 330 deg	143.58	0.062	0.0031	0.0481	0.0482
Serviceability - 60 mph Wind 330 deg	146.79	0.065	0.0040	0.0496	0.0496
Serviceability - 60 mph Wind 330 deg	156.42	0.076	0.0025	0.0710	0.0710
Serviceability - 60 mph Wind 330 deg	160.00	0.081	0.0026	0.0840	0.0840

Site Name: Hampton CT, CT
Site Number: 10029
Tower Type: GT
Design Base Loads (Factored) - Analysis per TIA-222-G Standards

Pier Foundation Analysis

Foundation Analysis Parameters		
Analyze or Design a Foundation?	Analyze	-
Foundation Mapped:	Y	-
Moment (M):	0.0	k-ft
Shear/Leg (V):	1.9	k
Axial Load (P):	143.7	k
Uplift/Leg (U):	0.0	k
Diameter of Caisson (d):	5.8	ft
Caisson Embedment (L-h):	5.4	ft
Caisson Height Above Ground (h):	2.6	ft
Depth Below Ground Surface to Water Table (w):	4	ft
Unit Weight of Concrete:	150	pcf
Unit Weight of Water:	62.4	pcf
Tension/Compression Skin Friction Factor:	1	-
Pullout Angle:	30	°



Depth (ft) Top	Depth (ft) Bottom	γ_{Soil} (pcf)	Cu (psf)	ϕ (degree)	Ultimate Skin Friction (psf)	Ultimate Bearing Pressure (psf)
0	3	105	0	0	0	0
3	8	120	0	35	0	15000

Soil Strength Capacities		
Required Embedment:	#N/A	ft
Volume of Concrete:	211.4	ft^3
Buoyant Weight of Concrete:	29.4	k
Average Soil Unit Weight:	89.5	pcf
Skin Friction Resistance:	0.0	k
Compressive Bearing Resistance:	396.3	k
Pullout Weight (Minus Concrete Weight):	18.6	k
Nominal Uplift Capacity per Leg ($\phi_s T_n$):	0.0	k
Nominal Compressive Capacity per Leg ($\phi_s P_n$):	237.8	k
T_u:	0.0	k
$T_u/\phi_s T_n$:	0%	Pass
P_u:	151.3	k
$P_u/\phi_s P_n$:	64%	Pass
Total Lateral Resistance:	58.6	k
Inflection Point (Below Ground Surface):	4.3	ft
Moment At Inflection Point (M_D):	12.9	k-ft
Nominal Moment Capacity ($\phi_s M_n$):	32.9	k-ft
ϕ_s:	0.75	-
$M_D/\phi_s M_n$:	39%	Pass