AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	**160 ft Guyed Tower**
ATC Site Name	:	**Golden Gate Parkway Naples,FL**
ATC Site Number	:	**207833**
Engineering Number	:	**OAA772578_C3_01**
Proposed Carrier	:	**VERIZON WIRELESS**
Carrier Site Name	:	**Tasha**
Carrier Site Number	:	**230189**
Site Location	:	**4294 Golden Gate Parkway** **Naples, FL 34116** **26.1816, -81.6944**
County	:	**Collier**
Date	:	**January 19, 2022**
Max Usage	:	**100%**
Result	:	**Pass**

Prepared By:

Nicholas Beam
Structural Engineer

Nicholas Beam

Reviewed By:

SARAH F. RUCKER
LICENSE
No. 89162
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Sarah F. Rucker, PE on the date shown using a digital signature.

Printed copies are not considered signed and sealed and the signature must be verified on any electronic copies.

Sarah Rucker Digitally signed by Sarah Rucker
Date: 2022.01.21 14:54:40 -05'00'

COA : 9053

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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 VERIZON WIRELESS.

Supporting Documents

Tower Drawings	Structural Analysis Report by Structural Components Project #151900, dated January 22, 2016
Foundation Drawing	Mapping by ETS Job #21090190.Ins.4974, dated April 30, 2021
Geotechnical Report	Terracon Project #37105079, dated February 2, 2011
Modifications	Structural Components Job #151900, dated March 16, 2016 Cive Consulting Job #T12-145-5014, dated April 24, 2012 Structural Components Job #151900, dated June 10, 2016

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:	162 mph (3-second gust)**
Basic Wind Speed w/ Ice:	No Ice Considered
Code:	ANSI/TIA-222-H / 2018 IBC / 7th ED (2020) Florida Building Code
Exposure Category:	C
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Crest Height (H):	0 ft
Spectral Response:	Ss = 0.04, S_1 = 0.02
Site Class:	D - Stiff Soil - Default

****Wind load and Ice thickness have been reduced by applicable existing structure load modification factors in accordance with TIA-222-H, Annex S.**

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	Equipment	Mount Type	Lines	Carrier
154.0	3	Commscope ATSBT-TOP-MF-4G	Sector Frame	(18) 1 5/8" Coax	VERIZON WIRELESS
	3	Generic GPS			
	6	Ericsson RRUS 32 (50.8 lbs)			
	3	CSS X7CAP-865			
	6	JMA Wireless X7CQAP-86-865-VR0			
128.0	1	Commscope RDIDC-9181-PF-48	Sector Frame	(1) 1.60" (40.6mm) Hybrid	DISH WIRELESS L.L.C.
	3	Fujitsu TA08025-B605			
	3	Fujitsu TA08025-B604			
	3	JMA Wireless MX08FRO665-21			

Equipment to be Removed

Elev.[1] (ft)	Qty	Equipment	Mount Type	Lines	Carrier
154.0	2	Raycap RxxDC-3315-PF-48	-	(2) 1 5/8" (1.63"-41.3mm) Fiber	VERIZON WIRELESS

Proposed Equipment

Elev.[1] (ft)	Qty	Equipment	Mount Type	Lines	Carrier
154.0	2	Commscope RCMDC-6627-PF-48	Sector Frame	(2) 1 5/8" Hybriflex	VERIZON WIRELESS
	3	Ericsson AIR 6449 n77D			

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

Install proposed lines in the place of the existing VERIZON WIRELESS lines.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Legs	60%	Pass
Diagonals	100%	Pass
Horizontals	61%	Pass
Guys	95%	Pass
Leg Bolts	42%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Base Axial (kips)	88.0	30%
Anchor 1 Uplift (kips)	15.9	26%
Anchor 1 Shear (kips)	19.0	39%
Anchor 2 Uplift (kips)	25.5	90%
Anchor 2 Shear (kips)	21.1	72%

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.

Deflection, Twist and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Twist (°)	Sway (Rotation) (°)
154.0	Commscope RCMDC-6627-PF-48	VERIZON WIRELESS	0.106	0.008	0.084
	Ericsson AIR 6449 n77D				
128.0	Commscope RDIDC-9181-PF-48	DISH WIRELESS L.L.C.	0.083	0.007	0.040
	Fujitsu TA08025-B604				
	Fujitsu TA08025-B605				
	JMA Wireless MX08FRO665-21				

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

Standard Conditions

All engineering services performed by ATC Tower Services LLC 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 ATC Tower Services LLC

It is the responsibility of the client to ensure that the information provided to ATC Tower Services LLC and used in the performance of our engineering services is correct and complete.

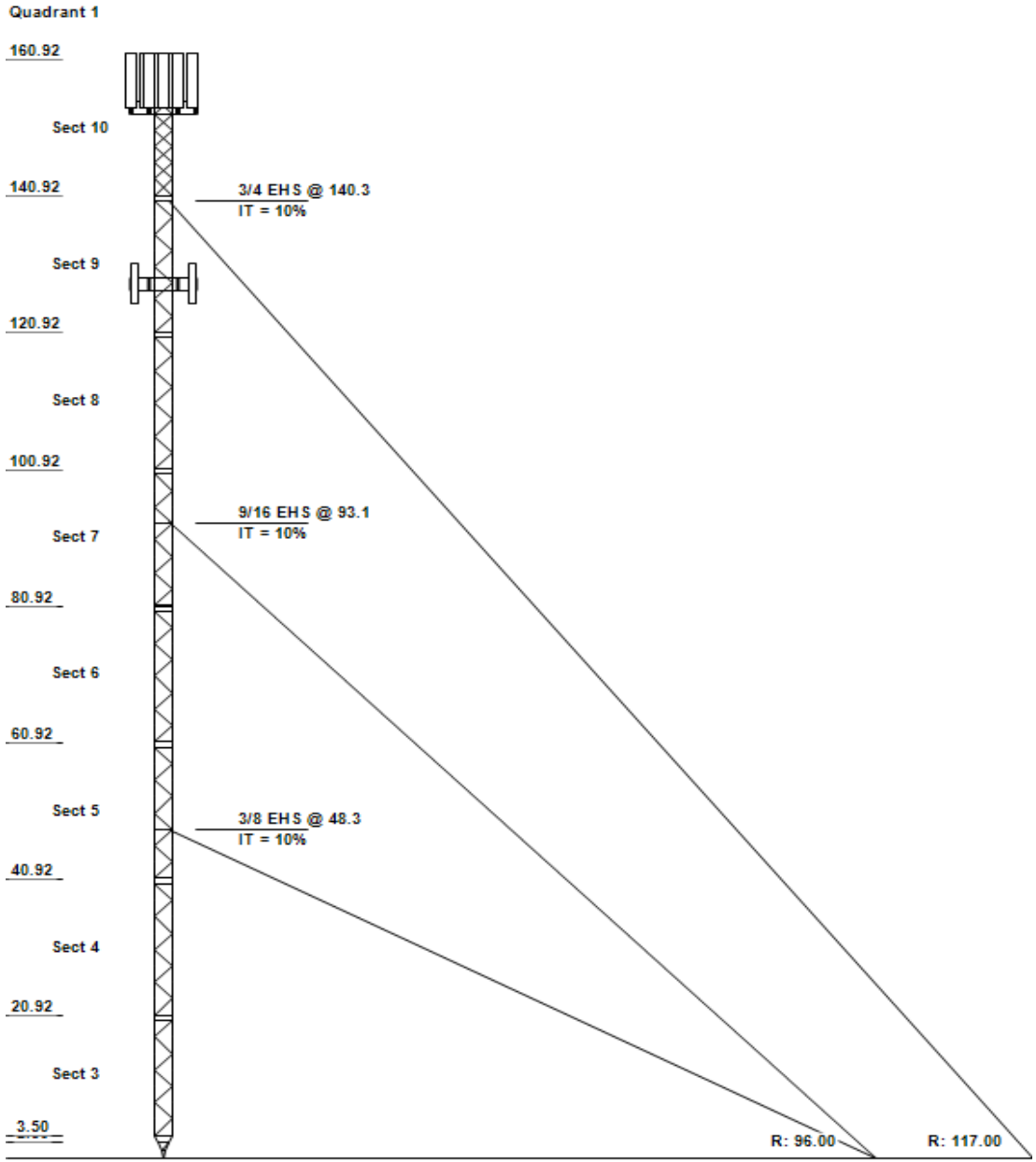
All assets of American Tower Corporation, its affiliates, and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with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

Unless explicitly agreed by both the client and ATC Tower Services LLC, 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. ATC Tower Services LLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.

JOB INFORMATION

Asset:	207833, Golden Gate Parkway Naples	Height :	160.92 ft
Client	VERIZON WIRELESS	Base Width :	3.53 ft
Code:	ANSI/TIA-222-H	Shape :	Triangle



SITE PARAMETERS

Nominal Wind : 157.90 mph wind with no ic — Exposure : C — Site Class : D

Ice Wind: 29.24 mph wind with 0.000" — Topo Method: Method 1 — Risk Cat : II

Service Wind : 60 mph Serviceability — Topo Feature : — S_s : 0.045 — S_1 : 0.022

SECTION PROPERTIES

Section	Leg Members	Diagonal Members	Horizontal Members
1	SOL 50 ksi 2 1/4" SOL	SAE 36 ksi 2X2X0.25	SAE 36 ksi 2X2X0.25
2	SOL 50 ksi 2 1/4" SOL		DAE 36 ksi 2X2X0.25
3 - 9	HPR 50 ksi 2.88x0.28	PSP 35 ksi ROHN 1 1/2X16GA	PSP 35 ksi ROHN 1 1/2X16GA
10	PX 50 ksi 2-1/2" DIA	PSP 35 ksi ROHN 1 1/2X16GA	PSP 35 ksi ROHN 1 1/2X16GA

REDUNDANT SECONDARY BRACING

Section	Sub Diag 1	Sub Horiz 1	Sub Diag 2	Sub Horiz 2	Sub Diag 3	Sub Horiz 3
1 - 10	-	-	-	-	-	-

DISCRETE APPURTENANCE

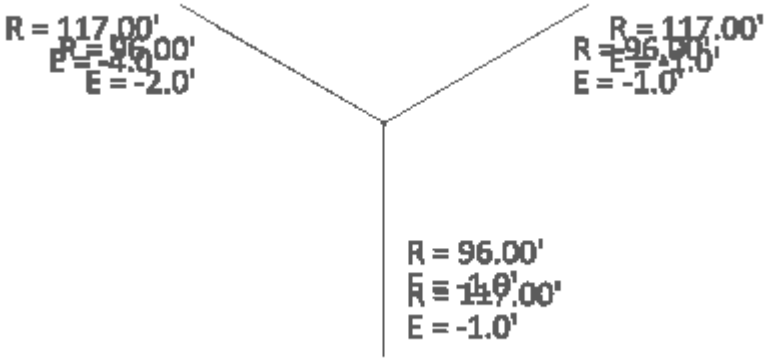
Elev (ft)	Type	Qty	Description
154.00	BOB/SSB	2	Commscope RCMDC-6627-PF-48
154.00	DIPLEXER/DUAL COUPLER	3	Commscope ATSBT-TOP-MF-4G
154.00	GPS	3	Generic GPS
154.00	PANEL	3	CSS X7CAP-865
154.00	PANEL	3	Ericsson AIR 6449 n77D
154.00	PANEL	6	JMA Wireless X7CQAP-86-865-VR0
154.00	RRU/RRH	6	Ericsson RRUS 32 (50.8 lbs)
154.00	Sector Frame	3	Generic Round Sector Frame
128.00	BOB/SSB	1	Commscope RDIDC-9181-PF-48
128.00	PANEL	3	JMA Wireless MX08FRO665-21
128.00	RRU/RRH	3	Fujitsu TA08025-B605
128.00	RRU/RRH	3	Fujitsu TA08025-B604
128.00	Sector Frame	3	Generic Flat Light Sector Fram

LINEAR APPURTENANCE

Elev (ft) From	To	Qty	Description
0.00	154.00	2	1 5/8" Hybriflex
0.00	154.00	18	1 5/8" Coax
0.00	128.00	1	1.60" (40.6mm) Hybrid

JOB INFORMATION

Asset:	207833, Golden Gate Parkway Naples	Height :	160.92 ft
Client	VERIZON WIRELESS	Base Width :	3.53 ft
Code:	ANSI/TIA-222-H	Shape :	Triangle



GUY ANCHOR DESIGN LOADS

Radius (ft)	Drop (ft)	Azimuth (o)	Uplift (kip)	Shear (kip)
96.00	-1.00	0	15.53	18.77
96.00	-1.00	120	15.54	18.78
96.00	-2.00	240	15.87	18.95
117.00	-1.00	0	25.24	21.09
117.00	-1.00	120	25.19	21.04
117.00	-4.00	240	25.54	20.90

GLOBAL BASE FOUNDATION DESIGN LOADS

Vertical (kip)	Horizontal (kip)
88.03	2.38

ANALYSIS PARAMETERS

Location:	Collier County, FL	**Height:**	160.92 ft
Type and Shape:	Guyed, Triangle	**Base Elevation:**	0.00 ft
Manufacturer:	Rohn	**Bottom Face Width:**	3.53 ft
Kd	0.85	**Top Face Width:**	3.53 ft
Ke:	1.00		

ICE & WIND PARAMETERS

Exposure Category:	C	**Design Wind Speed Without Ice:**	158 mph
Risk Category:	II	**Design Wind Speed with Ice:**	29 mph
Topographic Factor Procedure:	Method 1	**Operational Windspeed:**	60 mph
Topographic Category:	Flat	**Design Ice Thickness:**	0.00 in
Crest Height:	0 ft	**HMSL:**	10 ft

SEISMIC PARAMETERS

Analysis Method:	Equivalent Lateral Force Method				
Site Class:	D - Stiff Soil			**Period Based on Rayleigh Method (sec):**	0.57
T_L (sec):	8	**P:**	1.3	**C_s:**	0.030
S_s:	0.045	**S_1:**	0.022	**C_s Max:**	0.030
F_a:	1.600	**F_v:**	2.400	**C_s Min:**	0.030
S_{ds}:	0.048	**S_{d1}:**	0.035		

LOAD CASES

1.2D + 1.0W Normal	157.90 mph wind with no ice
1.2D + 1.0W 60°	157.90 mph wind with no ice
1.2D + 1.0W 90°	157.90 mph wind with no ice
1.2D + 1.0W 120°	157.90 mph wind with no ice
1.2D + 1.0W 180°	157.90 mph wind with no ice
1.2D + 1.0W 210°	157.90 mph wind with no ice
1.2D + 1.0W 240°	157.90 mph wind with no ice
1.2D + 1.0W 300°	157.90 mph wind with no ice
1.2D + 1.0W 330°	157.90 mph wind with no ice
1.2D + 1.0Di + 1.0Wi Normal	29.24 mph wind with 0.000" radial ice
1.2D + 1.0Di + 1.0Wi 60°	29.24 mph wind with 0.000" radial ice
1.2D + 1.0Di + 1.0Wi 90°	29.24 mph wind with 0.000" radial ice
1.2D + 1.0Di + 1.0Wi 120°	29.24 mph wind with 0.000" radial ice
1.2D + 1.0Di + 1.0Wi 180°	29.24 mph wind with 0.000" radial ice
1.2D + 1.0Di + 1.0Wi 210°	29.24 mph wind with 0.000" radial ice
1.2D + 1.0Di + 1.0Wi 240°	29.24 mph wind with 0.000" radial ice
1.2D + 1.0Di + 1.0Wi 300°	29.24 mph wind with 0.000" radial ice
1.2D + 1.0Di + 1.0Wi 330°	29.24 mph wind with 0.000" radial ice
1.2D + 1.0Ev + 1.0Eh Normal	Seismic
1.2D + 1.0Ev + 1.0Eh 60°	Seismic
1.2D + 1.0Ev + 1.0Eh 90°	Seismic
1.2D + 1.0Ev + 1.0Eh 120°	Seismic
1.2D + 1.0Ev + 1.0Eh 180°	Seismic
1.2D + 1.0Ev + 1.0Eh 210°	Seismic
1.2D + 1.0Ev + 1.0Eh 240°	Seismic
1.2D + 1.0Ev + 1.0Eh 300°	Seismic
1.2D + 1.0Ev + 1.0Eh 330°	Seismic
1.0D + 1.0W Service Normal	60 mph Wind with No Ice
1.0D + 1.0W Service 60°	60 mph Wind with No Ice
1.0D + 1.0W Service 90°	60 mph Wind with No Ice
1.0D + 1.0W Service 120°	60 mph Wind with No Ice
1.0D + 1.0W Service 180°	60 mph Wind with No Ice
1.0D + 1.0W Service 210°	60 mph Wind with No Ice
1.0D + 1.0W Service 240°	60 mph Wind with No Ice

LOAD CASES

1.0D + 1.0W Service 300°	60 mph Wind with No Ice
1.0D + 1.0W Service 330°	60 mph Wind with No Ice

TOWER LOADING

Discrete Appurtenance Properties 1.2D + 1.0W

Elev (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)
154.0	Commscope ATSBT-TOP-MF-4G	3	2	0.2	0.5	3.7	2.0	0.80	0.50	0.0	0.00	75.17	13	6
154.0	Generic GPS	3	10	0.9	1.0	9.0	6.0	0.80	0.50	0.0	0.00	75.17	69	36
154.0	Ericsson RRUS 32 (50.8 lbs)	6	51	2.7	2.2	12.1	6.7	0.80	0.67	1.0	553.92	75.27	554	366
154.0	Commscope RCMDC-6627-PF-48	2	32	3.1	1.0	29.5	16.5	0.80	0.75	0.0	0.00	75.17	238	77
154.0	Ericsson AIR 6449 n77D	3	82	4.0	2.5	15.9	8.1	0.80	0.65	0.0	0.00	75.17	401	294
154.0	CSS X7CAP-865	3	56	11.8	8.0	12.5	7.1	0.80	0.69	1.0	1,255.56	75.27	1256	202
154.0	JMA Wireless X7CQAP-86-865-VR0	6	55	13.4	8.0	14.6	7.3	0.80	0.67	1.0	2,766.11	75.27	2766	395
154.0	Generic Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.67	0.0	0.00	75.17	1387	1080
128.0	Commscope RDIDC-9181-PF-48	1	22	1.9	1.3	14.0	8.0	0.80	1.00	0.0	0.00	72.30	92	26
128.0	Fujitsu TA08025-B605	3	75	2.0	1.3	15.0	9.1	0.80	0.50	0.0	0.00	72.30	145	270
128.0	Fujitsu TA08025-B604	3	64	2.0	1.3	15.0	7.9	0.80	0.50	0.0	0.00	72.30	145	230
128.0	JMA Wireless MX08FRO665-21	3	65	12.5	6.0	20.0	8.0	0.80	0.64	0.0	0.00	72.30	1179	232
128.0	Generic Flat Light Sector Fram	3	400	17.9	0.0	0.0	0.0	0.75	0.75	0.0	0.00	72.30	1856	1440
	Totals	42	3,878	301.9									10,100	4,653

TOWER LOADING

Discrete Appurtenance Properties 1.2D + 1.0Di + 1.0Wi

Elev (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)
154.0	Commscope ATSBT-TOP-MF-4G	3	2	0.2	0.5	3.7	2.0	0.80	0.50	0.0	0.00	2.58	0	6
154.0	Generic GPS	3	10	0.9	1.0	9.0	6.0	0.80	0.50	0.0	0.00	2.58	2	36
154.0	Ericsson RRUS 32 (50.8 lbs)	6	51	2.7	2.2	12.1	6.7	0.80	0.67	1.0	19.00	2.58	19	366
154.0	Commscope RCMDC-6627-PF-48	2	32	3.1	1.0	29.5	16.5	0.80	0.75	0.0	0.00	2.58	8	77
154.0	Ericsson AIR 6449 n77D	3	82	4.0	2.5	15.9	8.1	0.80	0.65	0.0	0.00	2.58	14	294
154.0	CSS X7CAP-865	3	56	11.8	8.0	12.5	7.1	0.80	0.69	1.0	43.06	2.58	43	202
154.0	JMA Wireless X7CQAP-86-865-VR0	6	55	13.4	8.0	14.6	7.3	0.80	0.67	1.0	94.86	2.58	95	395
154.0	Generic Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.67	0.0	0.00	2.58	48	1080
128.0	Commscope RDIDC-9181-PF-48	1	22	1.9	1.3	14.0	8.0	0.80	1.00	0.0	0.00	2.48	3	26
128.0	Fujitsu TA08025-B605	3	75	2.0	1.3	15.0	9.1	0.80	0.50	0.0	0.00	2.48	5	270
128.0	Fujitsu TA08025-B604	3	64	2.0	1.3	15.0	7.9	0.80	0.50	0.0	0.00	2.48	5	230
128.0	JMA Wireless MX08FRO665-21	3	64	12.5	6.0	20.0	8.0	0.80	0.64	0.0	0.00	2.48	40	232
128.0	Generic Flat Light Sector Fram	3	400	17.9	0.0	0.0	0.0	0.75	0.75	0.0	0.00	2.48	64	1440
	Totals	42	3,878	301.9									346	4,653

TOWER LOADING

Discrete Appurtenance Properties 1.0D + 1.0W Service

Elev (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)
154.0	Commscope ATSBT-TOP-MF-4G	3	2	0.2	0.5	3.7	2.0	0.80	0.50	0.0	0.00	10.85	2	5
154.0	Generic GPS	3	10	0.9	1.0	9.0	6.0	0.80	0.50	0.0	0.00	10.85	10	30
154.0	Ericsson RRUS 32 (50.8 lbs)	6	51	2.7	2.2	12.1	6.7	0.80	0.67	1.0	79.98	10.87	80	305
154.0	Commscope RCMDC-6627-PF-48	2	32	3.1	1.0	29.5	16.5	0.80	0.75	0.0	0.00	10.85	34	64
154.0	Ericsson AIR 6449 n77D	3	82	4.0	2.5	15.9	8.1	0.80	0.65	0.0	0.00	10.85	58	245
154.0	CSS X7CAP-865	3	56	11.8	8.0	12.5	7.1	0.80	0.69	1.0	181.29	10.87	181	168
154.0	JMA Wireless X7CQAP-86-865-VR0	6	55	13.4	8.0	14.6	7.3	0.80	0.67	1.0	399.40	10.87	399	329
154.0	Generic Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.67	0.0	0.00	10.85	200	900
128.0	Commscope RDIDC-9181-PF-48	1	22	1.9	1.3	14.0	8.0	0.80	1.00	0.0	0.00	10.44	13	22
128.0	Fujitsu TA08025-B605	3	75	2.0	1.3	15.0	9.1	0.80	0.50	0.0	0.00	10.44	21	225
128.0	Fujitsu TA08025-B604	3	64	2.0	1.3	15.0	7.9	0.80	0.50	0.0	0.00	10.44	21	192
128.0	JMA Wireless MX08FRO665-21	3	65	12.5	6.0	20.0	8.0	0.80	0.64	0.0	0.00	10.44	170	194
128.0	Generic Flat Light Sector Fram	3	400	17.9	0.0	0.0	0.0	0.75	0.75	0.0	0.00	10.44	268	1200
	Totals	42	3,878	301.9									1,458	3,878

TOWER LOADING

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Description	Qty	Width (in)	Weight (lb/ft)	% In Wind	Spread On Faces	Bundling	Cluster Dia (in)	Out of Zone	Spacing (in)	Orient Factor	K_a Override
0.0	154.0	1 5/8" Coax	18	1.98	0.82	33	1	Block	0.00	N	1.00	1.00	0.00
0.0	154.0	1 5/8" Hybriflex	2	1.98	1.30	100	1	Individual	0.00	N	1.00	1.00	0.00
0.0	128.0	1.60" (40.6mm) Hybrid	1	1.60	2.34	100	2	Individual	0.00	N	1.00	1.00	0.00

SECTION FORCES

1.2D + 1.0W Normal — Gust Response Factor (Gh): 0.85
157.90 mph wind with no ice — Wind Importance Factor (Iw): 1.00

Sect #	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)
10	151	74.85	0.000	18.459	0.00	0.245	2.45	1.00	1.00	0.0	10.96	26.88	0.00	1094	0	1711	1251	2962
9	131	72.64	0.588	16.046	0.00	0.218	2.54	1.00	1.00	0.0	9.56	24.27	0.00	1320	0	1499	1899	3397
8	111	70.15	0.000	16.451	0.00	0.215	2.55	1.00	1.00	0.0	9.26	23.57	0.00	1278	0	1405	1908	3313
7	91	67.28	0.588	16.856	0.00	0.228	2.50	1.00	1.00	0.0	10.21	25.57	0.00	1339	0	1462	1829	3292
6	71	63.85	0.000	16.451	0.00	0.215	2.55	1.00	1.00	0.0	9.37	23.85	0.00	1278	0	1294	1736	3031
5	51	59.55	0.588	16.451	0.00	0.223	2.52	1.00	1.00	0.0	10.08	25.41	0.00	1324	0	1286	1619	2906
4	31	53.61	0.000	16.451	0.00	0.215	2.55	1.00	1.00	0.0	9.58	24.39	0.00	1278	0	1112	1458	2569
3	12	46.10	0.000	14.050	0.00	0.211	2.56	1.00	1.00	0.0	8.15	20.87	0.00	1102	0	818	1092	1909
2	3	46.10	0.557	0.434	0.00	0.308	2.27	1.00	1.00	0.0	0.82	1.86	0.00	161	0	73	63	136
1	1	46.10	0.919	1.085	0.00	0.554	1.84	1.00	1.00	0.0	1.70	3.12	0.00	270	0	122	117	239
														10,443	0			23,753

1.2D + 1.0W 60° — Gust Response Factor (Gh): 0.85
157.90 mph wind with no ice — Wind Importance Factor (Iw): 1.00

Sect #	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)
10	151	74.85	0.000	18.459	0.00	0.245	2.45	0.80	1.00	0.0	10.96	26.88	0.00	1094	0	1711	1251	2962
9	131	72.64	0.588	16.046	0.00	0.218	2.54	0.80	1.00	0.0	9.44	23.97	0.00	1320	0	1480	1899	3379
8	111	70.15	0.000	16.451	0.00	0.215	2.55	0.80	1.00	0.0	9.26	23.57	0.00	1278	0	1405	1908	3313
7	91	67.28	0.588	16.856	0.00	0.228	2.50	0.80	1.00	0.0	10.09	25.28	0.00	1339	0	1446	1829	3275
6	71	63.85	0.000	16.451	0.00	0.215	2.55	0.80	1.00	0.0	9.37	23.85	0.00	1278	0	1294	1736	3031
5	51	59.55	0.588	16.451	0.00	0.223	2.52	0.80	1.00	0.0	9.96	25.12	0.00	1324	0	1271	1619	2890
4	31	53.61	0.000	16.451	0.00	0.215	2.55	0.80	1.00	0.0	9.58	24.39	0.00	1278	0	1112	1458	2569
3	12	46.10	0.000	14.050	0.00	0.211	2.56	0.80	1.00	0.0	8.15	20.87	0.00	1102	0	818	1092	1909
2	3	46.10	0.557	0.434	0.00	0.308	2.27	0.80	1.00	0.0	0.71	1.61	0.00	161	0	63	63	126
1	1	46.10	0.919	1.085	0.00	0.554	1.84	0.80	1.00	0.0	1.51	2.78	0.00	270	0	109	117	226
														10,443	0			23,680

1.2D + 1.0W 90° — Gust Response Factor (Gh): 0.85
157.90 mph wind with no ice — Wind Importance Factor (Iw): 1.00

Sect #	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)
10	151	74.85	0.000	18.459	0.00	0.245	2.45	0.85	1.00	0.0	10.96	26.88	0.00	1094	0	1711	1251	2962
9	131	72.64	0.588	16.046	0.00	0.218	2.54	0.85	1.00	0.0	9.47	24.05	0.00	1320	0	1485	1899	3384
8	111	70.15	0.000	16.451	0.00	0.215	2.55	0.85	1.00	0.0	9.26	23.57	0.00	1278	0	1405	1908	3313
7	91	67.28	0.588	16.856	0.00	0.228	2.50	0.85	1.00	0.0	10.12	25.35	0.00	1339	0	1450	1829	3279
6	71	63.85	0.000	16.451	0.00	0.215	2.55	0.85	1.00	0.0	9.37	23.85	0.00	1278	0	1294	1736	3031
5	51	59.55	0.588	16.451	0.00	0.223	2.52	0.85	1.00	0.0	9.99	25.19	0.00	1324	0	1275	1619	2894
4	31	53.61	0.000	16.451	0.00	0.215	2.55	0.85	1.00	0.0	9.58	24.39	0.00	1278	0	1112	1458	2569
3	12	46.10	0.000	14.050	0.00	0.211	2.56	0.85	1.00	0.0	8.15	20.87	0.00	1102	0	818	1092	1909
2	3	46.10	0.557	0.434	0.00	0.308	2.27	0.85	1.00	0.0	0.73	1.67	0.00	161	0	65	63	128
1	1	46.10	0.919	1.085	0.00	0.554	1.84	0.85	1.00	0.0	1.56	2.87	0.00	270	0	112	117	229
														10,443	0			23,698

1.2D + 1.0W 120° — Gust Response Factor (Gh): 0.85
157.90 mph wind with no ice — Wind Importance Factor (Iw): 1.00

Sect #	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)
10	151	74.85	0.000	18.459	0.00	0.245	2.45	1.00	1.00	0.0	10.96	26.88	0.00	1094	0	1711	1251	2962
9	131	72.64	0.588	16.046	0.00	0.218	2.54	1.00	1.00	0.0	9.56	24.27	0.00	1320	0	1499	1899	3397

SECTION FORCES

Sect #	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)
8	111	70.15	0.000	16.451	0.00	0.215	2.55	1.00	1.00	0.0	9.26	23.57	0.00	1278	0	1405	1908	3313
7	91	67.28	0.588	16.856	0.00	0.228	2.50	1.00	1.00	0.0	10.21	25.57	0.00	1339	0	1462	1829	3292
6	71	63.85	0.000	16.451	0.00	0.215	2.55	1.00	1.00	0.0	9.37	23.85	0.00	1278	0	1294	1736	3031
5	51	59.55	0.588	16.451	0.00	0.223	2.52	1.00	1.00	0.0	10.08	25.41	0.00	1324	0	1286	1619	2906
4	31	53.61	0.000	16.451	0.00	0.215	2.55	1.00	1.00	0.0	9.58	24.39	0.00	1278	0	1112	1458	2569
3	12	46.10	0.000	14.050	0.00	0.211	2.56	1.00	1.00	0.0	8.15	20.87	0.00	1102	0	818	1092	1909
2	3	46.10	0.557	0.434	0.00	0.308	2.27	1.00	1.00	0.0	0.82	1.86	0.00	161	0	73	63	136
1	1	46.10	0.919	1.085	0.00	0.554	1.84	1.00	1.00	0.0	1.70	3.12	0.00	270	0	122	117	239
														10,443	0			23,753

1.2D + 1.0W 180° Gust Response Factor (Gh): 0.85
157.90 mph wind with no ice Wind Importance Factor (Iw): 1.00

Sect #	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)
10	151	74.85	0.000	18.459	0.00	0.245	2.45	0.80	1.00	0.0	10.96	26.88	0.00	1094	0	1711	1251	2962
9	131	72.64	0.588	16.046	0.00	0.218	2.54	0.80	1.00	0.0	9.44	23.97	0.00	1320	0	1480	1899	3379
8	111	70.15	0.000	16.451	0.00	0.215	2.55	0.80	1.00	0.0	9.26	23.57	0.00	1278	0	1405	1908	3313
7	91	67.28	0.588	16.856	0.00	0.228	2.50	0.80	1.00	0.0	10.09	25.28	0.00	1339	0	1446	1829	3275
6	71	63.85	0.000	16.451	0.00	0.215	2.55	0.80	1.00	0.0	9.37	23.85	0.00	1278	0	1294	1736	3031
5	51	59.55	0.588	16.451	0.00	0.223	2.52	0.80	1.00	0.0	9.96	25.12	0.00	1324	0	1271	1619	2890
4	31	53.61	0.000	16.451	0.00	0.215	2.55	0.80	1.00	0.0	9.58	24.39	0.00	1278	0	1112	1458	2569
3	12	46.10	0.000	14.050	0.00	0.211	2.56	0.80	1.00	0.0	8.15	20.87	0.00	1102	0	818	1092	1909
2	3	46.10	0.557	0.434	0.00	0.308	2.27	0.80	1.00	0.0	0.71	1.61	0.00	161	0	63	63	126
1	1	46.10	0.919	1.085	0.00	0.554	1.84	0.80	1.00	0.0	1.51	2.78	0.00	270	0	109	117	226
														10,443	0			23,680

1.2D + 1.0W 210° Gust Response Factor (Gh): 0.85
157.90 mph wind with no ice Wind Importance Factor (Iw): 1.00

Sect #	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)
10	151	74.85	0.000	18.459	0.00	0.245	2.45	0.85	1.00	0.0	10.96	26.88	0.00	1094	0	1711	1251	2962
9	131	72.64	0.588	16.046	0.00	0.218	2.54	0.85	1.00	0.0	9.47	24.05	0.00	1320	0	1485	1899	3384
8	111	70.15	0.000	16.451	0.00	0.215	2.55	0.85	1.00	0.0	9.26	23.57	0.00	1278	0	1405	1908	3313
7	91	67.28	0.588	16.856	0.00	0.228	2.50	0.85	1.00	0.0	10.12	25.35	0.00	1339	0	1450	1829	3279
6	71	63.85	0.000	16.451	0.00	0.215	2.55	0.85	1.00	0.0	9.37	23.85	0.00	1278	0	1294	1736	3031
5	51	59.55	0.588	16.451	0.00	0.223	2.52	0.85	1.00	0.0	9.99	25.19	0.00	1324	0	1275	1619	2894
4	31	53.61	0.000	16.451	0.00	0.215	2.55	0.85	1.00	0.0	9.58	24.39	0.00	1278	0	1112	1458	2569
3	12	46.10	0.000	14.050	0.00	0.211	2.56	0.85	1.00	0.0	8.15	20.87	0.00	1102	0	818	1092	1909
2	3	46.10	0.557	0.434	0.00	0.308	2.27	0.85	1.00	0.0	0.73	1.67	0.00	161	0	65	63	128
1	1	46.10	0.919	1.085	0.00	0.554	1.84	0.85	1.00	0.0	1.56	2.87	0.00	270	0	112	117	229
														10,443	0			23,698

1.2D + 1.0W 240° Gust Response Factor (Gh): 0.85
157.90 mph wind with no ice Wind Importance Factor (Iw): 1.00

Sect #	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)
10	151	74.85	0.000	18.459	0.00	0.245	2.45	1.00	1.00	0.0	10.96	26.88	0.00	1094	0	1711	1251	2962
9	131	72.64	0.588	16.046	0.00	0.218	2.54	1.00	1.00	0.0	9.56	24.27	0.00	1320	0	1499	1899	3397
8	111	70.15	0.000	16.451	0.00	0.215	2.55	1.00	1.00	0.0	9.26	23.57	0.00	1278	0	1405	1908	3313
7	91	67.28	0.588	16.856	0.00	0.228	2.50	1.00	1.00	0.0	10.21	25.57	0.00	1339	0	1462	1829	3292
6	71	63.85	0.000	16.451	0.00	0.215	2.55	1.00	1.00	0.0	9.37	23.85	0.00	1278	0	1294	1736	3031
5	51	59.55	0.588	16.451	0.00	0.223	2.52	1.00	1.00	0.0	10.08	25.41	0.00	1324	0	1286	1619	2906
4	31	53.61	0.000	16.451	0.00	0.215	2.55	1.00	1.00	0.0	9.58	24.39	0.00	1278	0	1112	1458	2569
3	12	46.10	0.000	14.050	0.00	0.211	2.56	1.00	1.00	0.0	8.15	20.87	0.00	1102	0	818	1092	1909
2	3	46.10	0.557	0.434	0.00	0.308	2.27	1.00	1.00	0.0	0.82	1.86	0.00	161	0	73	63	136
1	1	46.10	0.919	1.085	0.00	0.554	1.84	1.00	1.00	0.0	1.70	3.12	0.00	270	0	122	117	239

SECTION FORCES

Sect #	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)
														10,443	0			23,753

1.2D + 1.0W 300° Gust Response Factor (Gh): 0.85
157.90 mph wind with no ice Wind Importance Factor (Iw): 1.00

Sect #	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)
10	151	74.85	0.000	18.459	0.00	0.245	2.45	0.80	1.00	0.0	10.96	26.88	0.00	1094	0	1711	1251	2962
9	131	72.64	0.588	16.046	0.00	0.218	2.54	0.80	1.00	0.0	9.44	23.97	0.00	1320	0	1480	1899	3379
8	111	70.15	0.000	16.451	0.00	0.215	2.55	0.80	1.00	0.0	9.26	23.57	0.00	1278	0	1405	1908	3313
7	91	67.28	0.588	16.856	0.00	0.228	2.50	0.80	1.00	0.0	10.09	25.28	0.00	1339	0	1446	1829	3275
6	71	63.85	0.000	16.451	0.00	0.215	2.55	0.80	1.00	0.0	9.37	23.85	0.00	1278	0	1294	1736	3031
5	51	59.55	0.588	16.451	0.00	0.223	2.52	0.80	1.00	0.0	9.96	25.12	0.00	1324	0	1271	1619	2890
4	31	53.61	0.000	16.451	0.00	0.215	2.55	0.80	1.00	0.0	9.58	24.39	0.00	1278	0	1112	1458	2569
3	12	46.10	0.000	14.050	0.00	0.211	2.56	0.80	1.00	0.0	8.15	20.87	0.00	1102	0	818	1092	1909
2	3	46.10	0.557	0.434	0.00	0.308	2.27	0.80	1.00	0.0	0.71	1.61	0.00	161	0	63	63	126
1	1	46.10	0.919	1.085	0.00	0.554	1.84	0.80	1.00	0.0	1.51	2.78	0.00	270	0	109	117	226
														10,443	0			23,680

1.2D + 1.0W 330° Gust Response Factor (Gh): 0.85
157.90 mph wind with no ice Wind Importance Factor (Iw): 1.00

Sect #	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)
10	151	74.85	0.000	18.459	0.00	0.245	2.45	0.85	1.00	0.0	10.96	26.88	0.00	1094	0	1711	1251	2962
9	131	72.64	0.588	16.046	0.00	0.218	2.54	0.85	1.00	0.0	9.47	24.05	0.00	1320	0	1485	1899	3384
8	111	70.15	0.000	16.451	0.00	0.215	2.55	0.85	1.00	0.0	9.26	23.57	0.00	1278	0	1405	1908	3313
7	91	67.28	0.588	16.856	0.00	0.228	2.50	0.85	1.00	0.0	10.12	25.35	0.00	1339	0	1450	1829	3279
6	71	63.85	0.000	16.451	0.00	0.215	2.55	0.85	1.00	0.0	9.37	23.85	0.00	1278	0	1294	1736	3031
5	51	59.55	0.588	16.451	0.00	0.223	2.52	0.85	1.00	0.0	9.99	25.19	0.00	1324	0	1275	1619	2894
4	31	53.61	0.000	16.451	0.00	0.215	2.55	0.85	1.00	0.0	9.58	24.39	0.00	1278	0	1112	1458	2569
3	12	46.10	0.000	14.050	0.00	0.211	2.56	0.85	1.00	0.0	8.15	20.87	0.00	1102	0	818	1092	1909
2	3	46.10	0.557	0.434	0.00	0.308	2.27	0.85	1.00	0.0	0.73	1.67	0.00	161	0	65	63	128
1	1	46.10	0.919	1.085	0.00	0.554	1.84	0.85	1.00	0.0	1.56	2.87	0.00	270	0	112	117	229
														10,443	0			23,698

1.2D + 1.0Di + 1.0Wi Normal Gust Response Factor (Gh): 0.85 Ice Importance Factor: 1.00
29.24 mph wind with 0.000" radial ice Wind Importance Factor (Iw): 1.00 Ice Dead Load Factor: 1.00

Sect #	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)
10	151	2.57	0.000	18.459	0.00	0.245	2.45	1.00	1.00	0.0	11.09	27.21	0.00	1094	0	59	45	104
9	131	2.49	0.588	16.046	0.00	0.218	2.54	1.00	1.00	0.0	10.05	25.51	0.00	1320	0	54	69	123
8	111	2.41	0.000	16.451	0.00	0.215	2.55	1.00	1.00	0.0	9.71	24.72	0.00	1278	0	51	70	120
7	91	2.31	0.588	16.856	0.00	0.228	2.50	1.00	1.00	0.0	10.60	26.54	0.00	1339	0	52	66	119
6	71	2.19	0.000	16.451	0.00	0.215	2.55	1.00	1.00	0.0	9.71	24.72	0.00	1278	0	46	63	109
5	51	2.04	0.588	16.451	0.00	0.223	2.52	1.00	1.00	0.0	10.32	26.02	0.00	1324	0	45	59	104
4	31	1.84	0.000	16.451	0.00	0.215	2.55	1.00	1.00	0.0	9.71	24.72	0.00	1278	0	39	53	92
3	12	1.58	0.000	14.050	0.00	0.211	2.56	1.00	1.00	0.0	8.26	21.15	0.00	1102	0	28	40	68
2	3	1.58	0.557	0.434	0.00	0.308	2.27	1.00	1.00	0.0	0.82	1.86	0.00	161	0	2	2	5
1	1	1.58	0.919	1.085	0.00	0.554	1.84	1.00	1.00	0.0	1.70	3.12	0.00	270	0	4	4	8
														10,443	0			852

1.2D + 1.0Di + 1.0Wi 60° Gust Response Factor (Gh): 0.85 Ice Importance Factor: 1.00
29.24 mph wind with 0.000" radial ice Wind Importance Factor (Iw): 1.00 Ice Dead Load Factor: 1.00

Sect #	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)
10	151	2.57	0.000	18.459	0.00	0.245	2.45	0.80	1.00	0.0	11.09	27.21	0.00	1094	0	59	45	104

SECTION FORCES

Sect #	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)
9	131	2.49	0.588	16.046	0.00	0.218	2.54	0.80	1.00	0.0	9.93	25.21	0.00	1320	0	53	69	122
8	111	2.41	0.000	16.451	0.00	0.215	2.55	0.80	1.00	0.0	9.71	24.72	0.00	1278	0	51	70	120
7	91	2.31	0.588	16.856	0.00	0.228	2.50	0.80	1.00	0.0	10.48	26.25	0.00	1339	0	51	66	118
6	71	2.19	0.000	16.451	0.00	0.215	2.55	0.80	1.00	0.0	9.71	24.72	0.00	1278	0	46	63	109
5	51	2.04	0.588	16.451	0.00	0.223	2.52	0.80	1.00	0.0	10.20	25.73	0.00	1324	0	45	59	104
4	31	1.84	0.000	16.451	0.00	0.215	2.55	0.80	1.00	0.0	9.71	24.72	0.00	1278	0	39	53	92
3	12	1.58	0.000	14.050	0.00	0.211	2.56	0.80	1.00	0.0	8.26	21.15	0.00	1102	0	28	40	68
2	3	1.58	0.557	0.434	0.00	0.308	2.27	0.80	1.00	0.0	0.71	1.61	0.00	161	0	2	2	4
1	1	1.58	0.919	1.085	0.00	0.554	1.84	0.80	1.00	0.0	1.51	2.78	0.00	270	0	4	4	8
														10,443	0			849

1.2D + 1.0Di + 1.0Wi 90° Gust Response Factor (Gh): 0.85 Ice Importance Factor: 1.00
29.24 mph wind with 0.000" radial ice Wind Importance Factor (Iw): 1.00 Ice Dead Load Factor: 1.00

Sect #	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)
10	151	2.57	0.000	18.459	0.00	0.245	2.45	0.85	1.00	0.0	11.09	27.21	0.00	1094	0	59	45	104
9	131	2.49	0.588	16.046	0.00	0.218	2.54	0.85	1.00	0.0	9.96	25.28	0.00	1320	0	54	69	122
8	111	2.41	0.000	16.451	0.00	0.215	2.55	0.85	1.00	0.0	9.71	24.72	0.00	1278	0	51	70	120
7	91	2.31	0.588	16.856	0.00	0.228	2.50	0.85	1.00	0.0	10.51	26.32	0.00	1339	0	52	66	118
6	71	2.19	0.000	16.451	0.00	0.215	2.55	0.85	1.00	0.0	9.71	24.72	0.00	1278	0	46	63	109
5	51	2.04	0.588	16.451	0.00	0.223	2.52	0.85	1.00	0.0	10.23	25.80	0.00	1324	0	45	59	104
4	31	1.84	0.000	16.451	0.00	0.215	2.55	0.85	1.00	0.0	9.71	24.72	0.00	1278	0	39	53	92
3	12	1.58	0.000	14.050	0.00	0.211	2.56	0.85	1.00	0.0	8.26	21.15	0.00	1102	0	28	40	68
2	3	1.58	0.557	0.434	0.00	0.308	2.27	0.85	1.00	0.0	0.73	1.67	0.00	161	0	2	2	4
1	1	1.58	0.919	1.085	0.00	0.554	1.84	0.85	1.00	0.0	1.56	2.87	0.00	270	0	4	4	8
														10,443	0			850

1.2D + 1.0Di + 1.0Wi 120° Gust Response Factor (Gh): 0.85 Ice Importance Factor: 1.00
29.24 mph wind with 0.000" radial ice Wind Importance Factor (Iw): 1.00 Ice Dead Load Factor: 1.00

Sect #	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)
10	151	2.57	0.000	18.459	0.00	0.245	2.45	1.00	1.00	0.0	11.09	27.21	0.00	1094	0	59	45	104
9	131	2.49	0.588	16.046	0.00	0.218	2.54	1.00	1.00	0.0	10.05	25.51	0.00	1320	0	54	69	123
8	111	2.41	0.000	16.451	0.00	0.215	2.55	1.00	1.00	0.0	9.71	24.72	0.00	1278	0	51	70	120
7	91	2.31	0.588	16.856	0.00	0.228	2.50	1.00	1.00	0.0	10.60	26.54	0.00	1339	0	52	66	119
6	71	2.19	0.000	16.451	0.00	0.215	2.55	1.00	1.00	0.0	9.71	24.72	0.00	1278	0	46	63	109
5	51	2.04	0.588	16.451	0.00	0.223	2.52	1.00	1.00	0.0	10.32	26.02	0.00	1324	0	45	59	104
4	31	1.84	0.000	16.451	0.00	0.215	2.55	1.00	1.00	0.0	9.71	24.72	0.00	1278	0	39	53	92
3	12	1.58	0.000	14.050	0.00	0.211	2.56	1.00	1.00	0.0	8.26	21.15	0.00	1102	0	28	40	68
2	3	1.58	0.557	0.434	0.00	0.308	2.27	1.00	1.00	0.0	0.82	1.86	0.00	161	0	2	2	5
1	1	1.58	0.919	1.085	0.00	0.554	1.84	1.00	1.00	0.0	1.70	3.12	0.00	270	0	4	4	8
														10,443	0			852

1.2D + 1.0Di + 1.0Wi 180° Gust Response Factor (Gh): 0.85 Ice Importance Factor: 1.00
29.24 mph wind with 0.000" radial ice Wind Importance Factor (Iw): 1.00 Ice Dead Load Factor: 1.00

Sect #	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)
10	151	2.57	0.000	18.459	0.00	0.245	2.45	0.80	1.00	0.0	11.09	27.21	0.00	1094	0	59	45	104
9	131	2.49	0.588	16.046	0.00	0.218	2.54	0.80	1.00	0.0	9.93	25.21	0.00	1320	0	53	69	122
8	111	2.41	0.000	16.451	0.00	0.215	2.55	0.80	1.00	0.0	9.71	24.72	0.00	1278	0	51	70	120
7	91	2.31	0.588	16.856	0.00	0.228	2.50	0.80	1.00	0.0	10.48	26.25	0.00	1339	0	51	66	118
6	71	2.19	0.000	16.451	0.00	0.215	2.55	0.80	1.00	0.0	9.71	24.72	0.00	1278	0	46	63	109
5	51	2.04	0.588	16.451	0.00	0.223	2.52	0.80	1.00	0.0	10.20	25.73	0.00	1324	0	45	59	104
4	31	1.84	0.000	16.451	0.00	0.215	2.55	0.80	1.00	0.0	9.71	24.72	0.00	1278	0	39	53	92
3	12	1.58	0.000	14.050	0.00	0.211	2.56	0.80	1.00	0.0	8.26	21.15	0.00	1102	0	28	40	68
2	3	1.58	0.557	0.434	0.00	0.308	2.27	0.80	1.00	0.0	0.71	1.61	0.00	161	0	2	2	4

SECTION FORCES

Sect #	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)
1	1	1.58	0.919	1.085	0.00	0.554	1.84	0.80	1.00	0.0	1.51	2.78	0.00	270	0	4	4	8
														10,443	0			849

1.2D + 1.0Di + 1.0Wi 210° Gust Response Factor (Gh): 0.85 Ice Importance Factor: 1.00
29.24 mph wind with 0.000" radial ice Wind Importance Factor (Iw): 1.00 Ice Dead Load Factor: 1.00

Sect #	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)
10	151	2.57	0.000	18.459	0.00	0.245	2.45	0.85	1.00	0.0	11.09	27.21	0.00	1094	0	59	45	104
9	131	2.49	0.588	16.046	0.00	0.218	2.54	0.85	1.00	0.0	9.96	25.28	0.00	1320	0	54	69	122
8	111	2.41	0.000	16.451	0.00	0.215	2.55	0.85	1.00	0.0	9.71	24.72	0.00	1278	0	51	70	120
7	91	2.31	0.588	16.856	0.00	0.228	2.50	0.85	1.00	0.0	10.51	26.32	0.00	1339	0	52	66	118
6	71	2.19	0.000	16.451	0.00	0.215	2.55	0.85	1.00	0.0	9.71	24.72	0.00	1278	0	46	63	109
5	51	2.04	0.588	16.451	0.00	0.223	2.52	0.85	1.00	0.0	10.23	25.80	0.00	1324	0	45	59	104
4	31	1.84	0.000	16.451	0.00	0.215	2.55	0.85	1.00	0.0	9.71	24.72	0.00	1278	0	39	53	92
3	12	1.58	0.000	14.050	0.00	0.211	2.56	0.85	1.00	0.0	8.26	21.15	0.00	1102	0	28	40	68
2	3	1.58	0.557	0.434	0.00	0.308	2.27	0.85	1.00	0.0	0.73	1.67	0.00	161	0	2	2	4
1	1	1.58	0.919	1.085	0.00	0.554	1.84	0.85	1.00	0.0	1.56	2.87	0.00	270	0	4	4	8
														10,443	0			850

1.2D + 1.0Di + 1.0Wi 240° Gust Response Factor (Gh): 0.85 Ice Importance Factor: 1.00
29.24 mph wind with 0.000" radial ice Wind Importance Factor (Iw): 1.00 Ice Dead Load Factor: 1.00

Sect #	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)
10	151	2.57	0.000	18.459	0.00	0.245	2.45	1.00	1.00	0.0	11.09	27.21	0.00	1094	0	59	45	104
9	131	2.49	0.588	16.046	0.00	0.218	2.54	1.00	1.00	0.0	10.05	25.51	0.00	1320	0	54	69	123
8	111	2.41	0.000	16.451	0.00	0.215	2.55	1.00	1.00	0.0	9.71	24.72	0.00	1278	0	51	70	120
7	91	2.31	0.588	16.856	0.00	0.228	2.50	1.00	1.00	0.0	10.60	26.54	0.00	1339	0	52	66	119
6	71	2.19	0.000	16.451	0.00	0.215	2.55	1.00	1.00	0.0	9.71	24.72	0.00	1278	0	46	63	109
5	51	2.04	0.588	16.451	0.00	0.223	2.52	1.00	1.00	0.0	10.32	26.02	0.00	1324	0	45	59	104
4	31	1.84	0.000	16.451	0.00	0.215	2.55	1.00	1.00	0.0	9.71	24.72	0.00	1278	0	39	53	92
3	12	1.58	0.000	14.050	0.00	0.211	2.56	1.00	1.00	0.0	8.26	21.15	0.00	1102	0	28	40	68
2	3	1.58	0.557	0.434	0.00	0.308	2.27	1.00	1.00	0.0	0.82	1.86	0.00	161	0	2	2	5
1	1	1.58	0.919	1.085	0.00	0.554	1.84	1.00	1.00	0.0	1.70	3.12	0.00	270	0	4	4	8
														10,443	0			852

1.2D + 1.0Di + 1.0Wi 300° Gust Response Factor (Gh): 0.85 Ice Importance Factor: 1.00
29.24 mph wind with 0.000" radial ice Wind Importance Factor (Iw): 1.00 Ice Dead Load Factor: 1.00

Sect #	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)
10	151	2.57	0.000	18.459	0.00	0.245	2.45	0.80	1.00	0.0	11.09	27.21	0.00	1094	0	59	45	104
9	131	2.49	0.588	16.046	0.00	0.218	2.54	0.80	1.00	0.0	9.93	25.21	0.00	1320	0	53	69	122
8	111	2.41	0.000	16.451	0.00	0.215	2.55	0.80	1.00	0.0	9.71	24.72	0.00	1278	0	51	70	120
7	91	2.31	0.588	16.856	0.00	0.228	2.50	0.80	1.00	0.0	10.48	26.25	0.00	1339	0	51	66	118
6	71	2.19	0.000	16.451	0.00	0.215	2.55	0.80	1.00	0.0	9.71	24.72	0.00	1278	0	46	63	109
5	51	2.04	0.588	16.451	0.00	0.223	2.52	0.80	1.00	0.0	10.20	25.73	0.00	1324	0	45	59	104
4	31	1.84	0.000	16.451	0.00	0.215	2.55	0.80	1.00	0.0	9.71	24.72	0.00	1278	0	39	53	92
3	12	1.58	0.000	14.050	0.00	0.211	2.56	0.80	1.00	0.0	8.26	21.15	0.00	1102	0	28	40	68
2	3	1.58	0.557	0.434	0.00	0.308	2.27	0.80	1.00	0.0	0.71	1.61	0.00	161	0	2	2	4
1	1	1.58	0.919	1.085	0.00	0.554	1.84	0.80	1.00	0.0	1.51	2.78	0.00	270	0	4	4	8
														10,443	0			849

1.2D + 1.0Di + 1.0Wi 330° Gust Response Factor (Gh): 0.85 Ice Importance Factor: 1.00
29.24 mph wind with 0.000" radial ice Wind Importance Factor (Iw): 1.00 Ice Dead Load Factor: 1.00

SECTION FORCES

Sect #	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)
10	151	2.57	0.000	18.459	0.00	0.245	2.45	0.85	1.00	0.0	11.09	27.21	0.00	1094	0	59	45	104
9	131	2.49	0.588	16.046	0.00	0.218	2.54	0.85	1.00	0.0	9.96	25.28	0.00	1320	0	54	69	122
8	111	2.41	0.000	16.451	0.00	0.215	2.55	0.85	1.00	0.0	9.71	24.72	0.00	1278	0	51	70	120
7	91	2.31	0.588	16.856	0.00	0.228	2.50	0.85	1.00	0.0	10.51	26.32	0.00	1339	0	52	66	118
6	71	2.19	0.000	16.451	0.00	0.215	2.55	0.85	1.00	0.0	9.71	24.72	0.00	1278	0	46	63	109
5	51	2.04	0.588	16.451	0.00	0.223	2.52	0.85	1.00	0.0	10.23	25.80	0.00	1324	0	45	59	104
4	31	1.84	0.000	16.451	0.00	0.215	2.55	0.85	1.00	0.0	9.71	24.72	0.00	1278	0	39	53	92
3	12	1.58	0.000	14.050	0.00	0.211	2.56	0.85	1.00	0.0	8.26	21.15	0.00	1102	0	28	40	68
2	3	1.58	0.557	0.434	0.00	0.308	2.27	0.85	1.00	0.0	0.73	1.67	0.00	161	0	2	2	4
1	1	1.58	0.919	1.085	0.00	0.554	1.84	0.85	1.00	0.0	1.56	2.87	0.00	270	0	4	4	8
														10,443	0			850

1.0D + 1.0W Service Normal — Gust Response Factor (Gh): 0.85
60 mph Wind with No Ice — Wind Importance Factor (Iw): 1.00

Sect #	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)
10	151	10.81	0.000	18.459	0.00	0.245	2.45	1.00	1.00	0.0	11.09	27.21	0.00	912	0	250	181	431
9	131	10.49	0.588	16.046	0.00	0.218	2.54	1.00	1.00	0.0	10.05	25.51	0.00	1100	0	227	274	502
8	111	10.13	0.000	16.451	0.00	0.215	2.55	1.00	1.00	0.0	9.71	24.72	0.00	1065	0	213	275	488
7	91	9.71	0.588	16.856	0.00	0.228	2.50	1.00	1.00	0.0	10.60	26.54	0.00	1116	0	219	264	483
6	71	9.22	0.000	16.451	0.00	0.215	2.55	1.00	1.00	0.0	9.71	24.72	0.00	1065	0	194	251	444
5	51	8.60	0.588	16.451	0.00	0.223	2.52	1.00	1.00	0.0	10.32	26.02	0.00	1103	0	190	234	424
4	31	7.74	0.000	16.451	0.00	0.215	2.55	1.00	1.00	0.0	9.71	24.72	0.00	1065	0	163	210	373
3	12	6.66	0.000	14.050	0.00	0.211	2.56	1.00	1.00	0.0	8.26	21.15	0.00	919	0	120	158	277
2	3	6.66	0.557	0.434	0.00	0.308	2.27	1.00	1.00	0.0	0.82	1.86	0.00	134	0	11	9	20
1	1	6.66	0.919	1.085	0.00	0.554	1.84	1.00	1.00	0.0	1.70	3.12	0.00	225	0	18	17	34
														8,703	0			3,477

1.0D + 1.0W Service 60° — Gust Response Factor (Gh): 0.85
60 mph Wind with No Ice — Wind Importance Factor (Iw): 1.00

Sect #	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)
10	151	10.81	0.000	18.459	0.00	0.245	2.45	0.80	1.00	0.0	11.09	27.21	0.00	912	0	250	181	431
9	131	10.49	0.588	16.046	0.00	0.218	2.54	0.80	1.00	0.0	9.93	25.21	0.00	1100	0	225	274	499
8	111	10.13	0.000	16.451	0.00	0.215	2.55	0.80	1.00	0.0	9.71	24.72	0.00	1065	0	213	275	488
7	91	9.71	0.588	16.856	0.00	0.228	2.50	0.80	1.00	0.0	10.48	26.25	0.00	1116	0	217	264	481
6	71	9.22	0.000	16.451	0.00	0.215	2.55	0.80	1.00	0.0	9.71	24.72	0.00	1065	0	194	251	444
5	51	8.60	0.588	16.451	0.00	0.223	2.52	0.80	1.00	0.0	10.20	25.73	0.00	1103	0	188	234	422
4	31	7.74	0.000	16.451	0.00	0.215	2.55	0.80	1.00	0.0	9.71	24.72	0.00	1065	0	163	210	373
3	12	6.66	0.000	14.050	0.00	0.211	2.56	0.80	1.00	0.0	8.26	21.15	0.00	919	0	120	158	277
2	3	6.66	0.557	0.434	0.00	0.308	2.27	0.80	1.00	0.0	0.71	1.61	0.00	134	0	9	9	18
1	1	6.66	0.919	1.085	0.00	0.554	1.84	0.80	1.00	0.0	1.51	2.78	0.00	225	0	16	17	33
														8,703	0			3,466

1.0D + 1.0W Service 90° — Gust Response Factor (Gh): 0.85
60 mph Wind with No Ice — Wind Importance Factor (Iw): 1.00

Sect #	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)
10	151	10.81	0.000	18.459	0.00	0.245	2.45	0.85	1.00	0.0	11.09	27.21	0.00	912	0	250	181	431
9	131	10.49	0.588	16.046	0.00	0.218	2.54	0.85	1.00	0.0	9.96	25.28	0.00	1100	0	225	274	500
8	111	10.13	0.000	16.451	0.00	0.215	2.55	0.85	1.00	0.0	9.71	24.72	0.00	1065	0	213	275	488
7	91	9.71	0.588	16.856	0.00	0.228	2.50	0.85	1.00	0.0	10.51	26.32	0.00	1116	0	217	264	481
6	71	9.22	0.000	16.451	0.00	0.215	2.55	0.85	1.00	0.0	9.71	24.72	0.00	1065	0	194	251	444
5	51	8.60	0.588	16.451	0.00	0.223	2.52	0.85	1.00	0.0	10.23	25.80	0.00	1103	0	189	234	422
4	31	7.74	0.000	16.451	0.00	0.215	2.55	0.85	1.00	0.0	9.71	24.72	0.00	1065	0	163	210	373
3	12	6.66	0.000	14.050	0.00	0.211	2.56	0.85	1.00	0.0	8.26	21.15	0.00	919	0	120	158	277

SECTION FORCES

Sect #	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)
2	3	6.66	0.557	0.434	0.00	0.308	2.27	0.85	1.00	0.0	0.73	1.67	0.00	134	0	9	9	19
1	1	6.66	0.919	1.085	0.00	0.554	1.84	0.85	1.00	0.0	1.56	2.87	0.00	225	0	16	17	33
														8,703	0			3,469

1.0D + 1.0W Service 120° Gust Response Factor (Gh): 0.85
60 mph Wind with No Ice Wind Importance Factor (Iw): 1.00

Sect #	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)
10	151	10.81	0.000	18.459	0.00	0.245	2.45	1.00	1.00	0.0	11.09	27.21	0.00	912	0	250	181	431
9	131	10.49	0.588	16.046	0.00	0.218	2.54	1.00	1.00	0.0	10.05	25.51	0.00	1100	0	227	274	502
8	111	10.13	0.000	16.451	0.00	0.215	2.55	1.00	1.00	0.0	9.71	24.72	0.00	1065	0	213	275	488
7	91	9.71	0.588	16.856	0.00	0.228	2.50	1.00	1.00	0.0	10.60	26.54	0.00	1116	0	219	264	483
6	71	9.22	0.000	16.451	0.00	0.215	2.55	1.00	1.00	0.0	9.71	24.72	0.00	1065	0	194	251	444
5	51	8.60	0.588	16.451	0.00	0.223	2.52	1.00	1.00	0.0	10.32	26.02	0.00	1103	0	190	234	424
4	31	7.74	0.000	16.451	0.00	0.215	2.55	1.00	1.00	0.0	9.71	24.72	0.00	1065	0	163	210	373
3	12	6.66	0.000	14.050	0.00	0.211	2.56	1.00	1.00	0.0	8.26	21.15	0.00	919	0	120	158	277
2	3	6.66	0.557	0.434	0.00	0.308	2.27	1.00	1.00	0.0	0.82	1.86	0.00	134	0	11	9	20
1	1	6.66	0.919	1.085	0.00	0.554	1.84	1.00	1.00	0.0	1.70	3.12	0.00	225	0	18	17	34
														8,703	0			3,477

1.0D + 1.0W Service 180° Gust Response Factor (Gh): 0.85
60 mph Wind with No Ice Wind Importance Factor (Iw): 1.00

Sect #	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)
10	151	10.81	0.000	18.459	0.00	0.245	2.45	0.80	1.00	0.0	11.09	27.21	0.00	912	0	250	181	431
9	131	10.49	0.588	16.046	0.00	0.218	2.54	0.80	1.00	0.0	9.93	25.21	0.00	1100	0	225	274	499
8	111	10.13	0.000	16.451	0.00	0.215	2.55	0.80	1.00	0.0	9.71	24.72	0.00	1065	0	213	275	488
7	91	9.71	0.588	16.856	0.00	0.228	2.50	0.80	1.00	0.0	10.48	26.25	0.00	1116	0	217	264	481
6	71	9.22	0.000	16.451	0.00	0.215	2.55	0.80	1.00	0.0	9.71	24.72	0.00	1065	0	194	251	444
5	51	8.60	0.588	16.451	0.00	0.223	2.52	0.80	1.00	0.0	10.20	25.73	0.00	1103	0	188	234	422
4	31	7.74	0.000	16.451	0.00	0.215	2.55	0.80	1.00	0.0	9.71	24.72	0.00	1065	0	163	210	373
3	12	6.66	0.000	14.050	0.00	0.211	2.56	0.80	1.00	0.0	8.26	21.15	0.00	919	0	120	158	277
2	3	6.66	0.557	0.434	0.00	0.308	2.27	0.80	1.00	0.0	0.71	1.61	0.00	134	0	9	9	18
1	1	6.66	0.919	1.085	0.00	0.554	1.84	0.80	1.00	0.0	1.51	2.78	0.00	225	0	16	17	33
														8,703	0			3,466

1.0D + 1.0W Service 210° Gust Response Factor (Gh): 0.85
60 mph Wind with No Ice Wind Importance Factor (Iw): 1.00

Sect #	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)
10	151	10.81	0.000	18.459	0.00	0.245	2.45	0.85	1.00	0.0	11.09	27.21	0.00	912	0	250	181	431
9	131	10.49	0.588	16.046	0.00	0.218	2.54	0.85	1.00	0.0	9.96	25.28	0.00	1100	0	225	274	500
8	111	10.13	0.000	16.451	0.00	0.215	2.55	0.85	1.00	0.0	9.71	24.72	0.00	1065	0	213	275	488
7	91	9.71	0.588	16.856	0.00	0.228	2.50	0.85	1.00	0.0	10.51	26.32	0.00	1116	0	217	264	481
6	71	9.22	0.000	16.451	0.00	0.215	2.55	0.85	1.00	0.0	9.71	24.72	0.00	1065	0	194	251	444
5	51	8.60	0.588	16.451	0.00	0.223	2.52	0.85	1.00	0.0	10.23	25.80	0.00	1103	0	189	234	422
4	31	7.74	0.000	16.451	0.00	0.215	2.55	0.85	1.00	0.0	9.71	24.72	0.00	1065	0	163	210	373
3	12	6.66	0.000	14.050	0.00	0.211	2.56	0.85	1.00	0.0	8.26	21.15	0.00	919	0	120	158	277
2	3	6.66	0.557	0.434	0.00	0.308	2.27	0.85	1.00	0.0	0.73	1.67	0.00	134	0	9	9	19
1	1	6.66	0.919	1.085	0.00	0.554	1.84	0.85	1.00	0.0	1.56	2.87	0.00	225	0	16	17	33
														8,703	0			3,469

1.0D + 1.0W Service 240° Gust Response Factor (Gh): 0.85
60 mph Wind with No Ice Wind Importance Factor (Iw): 1.00

Sect	Elev	Q_Z	A_f	A_r	Ice A_r	e	C_f	D_f	D_r	T_{iz}	A_e	EPA_a	EPA_{ai}	Wt.	Ice Wt	F_{st}	F_a	Force (lb)

SECTION FORCES

#	(ft)	(psf)	(sf)	(sf)	(sf)					(in)	(sf)	(sf)	(sf)	(lb)	(lb)	(lb)	(lb)	
10	151	10.81	0.000	18.459	0.00	0.245	2.45	1.00	1.00	0.0	11.09	27.21	0.00	912	0	250	181	431
9	131	10.49	0.588	16.046	0.00	0.218	2.54	1.00	1.00	0.0	10.05	25.51	0.00	1100	0	227	274	502
8	111	10.13	0.000	16.451	0.00	0.215	2.55	1.00	1.00	0.0	9.71	24.72	0.00	1065	0	213	275	488
7	91	9.71	0.588	16.856	0.00	0.228	2.50	1.00	1.00	0.0	10.60	26.54	0.00	1116	0	219	264	483
6	71	9.22	0.000	16.451	0.00	0.215	2.55	1.00	1.00	0.0	9.71	24.72	0.00	1065	0	194	251	444
5	51	8.60	0.588	16.451	0.00	0.223	2.52	1.00	1.00	0.0	10.32	26.02	0.00	1103	0	190	234	424
4	31	7.74	0.000	16.451	0.00	0.215	2.55	1.00	1.00	0.0	9.71	24.72	0.00	1065	0	163	210	373
3	12	6.66	0.000	14.050	0.00	0.211	2.56	1.00	1.00	0.0	8.26	21.15	0.00	919	0	120	158	277
2	3	6.66	0.557	0.434	0.00	0.308	2.27	1.00	1.00	0.0	0.82	1.86	0.00	134	0	11	9	20
1	1	6.66	0.919	1.085	0.00	0.554	1.84	1.00	1.00	0.0	1.70	3.12	0.00	225	0	18	17	34
														8,703	0			3,477

1.0D + 1.0W Service 300°
60 mph Wind with No Ice

Gust Response Factor (Gh): 0.85
Wind Importance Factor (Iw): 1.00

Sect #	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)
10	151	10.81	0.000	18.459	0.00	0.245	2.45	0.80	1.00	0.0	11.09	27.21	0.00	912	0	250	181	431
9	131	10.49	0.588	16.046	0.00	0.218	2.54	0.80	1.00	0.0	9.93	25.21	0.00	1100	0	225	274	499
8	111	10.13	0.000	16.451	0.00	0.215	2.55	0.80	1.00	0.0	9.71	24.72	0.00	1065	0	213	275	488
7	91	9.71	0.588	16.856	0.00	0.228	2.50	0.80	1.00	0.0	10.48	26.25	0.00	1116	0	217	264	481
6	71	9.22	0.000	16.451	0.00	0.215	2.55	0.80	1.00	0.0	9.71	24.72	0.00	1065	0	194	251	444
5	51	8.60	0.588	16.451	0.00	0.223	2.52	0.80	1.00	0.0	10.20	25.73	0.00	1103	0	188	234	422
4	31	7.74	0.000	16.451	0.00	0.215	2.55	0.80	1.00	0.0	9.71	24.72	0.00	1065	0	163	210	373
3	12	6.66	0.000	14.050	0.00	0.211	2.56	0.80	1.00	0.0	8.26	21.15	0.00	919	0	120	158	277
2	3	6.66	0.557	0.434	0.00	0.308	2.27	0.80	1.00	0.0	0.71	1.61	0.00	134	0	9	9	18
1	1	6.66	0.919	1.085	0.00	0.554	1.84	0.80	1.00	0.0	1.51	2.78	0.00	225	0	16	17	33
														8,703	0			3,466

1.0D + 1.0W Service 330°
60 mph Wind with No Ice

Gust Response Factor (Gh): 0.85
Wind Importance Factor (Iw): 1.00

Sect #	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)
10	151	10.81	0.000	18.459	0.00	0.245	2.45	0.85	1.00	0.0	11.09	27.21	0.00	912	0	250	181	431
9	131	10.49	0.588	16.046	0.00	0.218	2.54	0.85	1.00	0.0	9.96	25.28	0.00	1100	0	225	274	500
8	111	10.13	0.000	16.451	0.00	0.215	2.55	0.85	1.00	0.0	9.71	24.72	0.00	1065	0	213	275	488
7	91	9.71	0.588	16.856	0.00	0.228	2.50	0.85	1.00	0.0	10.51	26.32	0.00	1116	0	217	264	481
6	71	9.22	0.000	16.451	0.00	0.215	2.55	0.85	1.00	0.0	9.71	24.72	0.00	1065	0	194	251	444
5	51	8.60	0.588	16.451	0.00	0.223	2.52	0.85	1.00	0.0	10.23	25.80	0.00	1103	0	189	234	422
4	31	7.74	0.000	16.451	0.00	0.215	2.55	0.85	1.00	0.0	9.71	24.72	0.00	1065	0	163	210	373
3	12	6.66	0.000	14.050	0.00	0.211	2.56	0.85	1.00	0.0	8.26	21.15	0.00	919	0	120	158	277
2	3	6.66	0.557	0.434	0.00	0.308	2.27	0.85	1.00	0.0	0.73	1.67	0.00	134	0	9	9	19
1	1	6.66	0.919	1.085	0.00	0.554	1.84	0.85	1.00	0.0	1.56	2.87	0.00	225	0	16	17	33
														8,703	0			3,469

EQUIVALENT LATERAL FORCE METHOD

Spectral Response Acceleration for Short Period (S_S):	0.04
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.02
Long-Period Transition Period (T_L – Seconds):	8
Importance Factor (I_e):	1.00
Site Coefficient F_a:	1.60
Site Coefficient F_v:	2.40
Response Modification Coefficient (R):	3.00
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.05
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.04
Seismic Response Coefficient (C_s):	0.03
Upper Limit C_S:	0.03
Lower Limit C_S:	0.03
Period based on Rayleigh Method (sec):	0.57
Redundancy Factor (p):	1.30
Seismic Force Distribution Exponent (k):	1.04
Total Unfactored Dead Load:	12.58 k
Seismic Base Shear (E):	0.49 k

SEISMIC

Load Case: 1.2D + 1.0Ev + 1.0Eh Seismic

Section	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	Cvx	Horizontal Force (lb)	Vertical Force (lb)
10	150.92	912	165,952	0.113	56	1,103
9	130.92	1,100	172,767	0.118	58	1,331
8	110.92	1,065	140,797	0.096	47	1,288
7	90.92	1,116	120,042	0.082	40	1,349
6	70.92	1,065	88,532	0.060	30	1,288
5	50.92	1,103	65,074	0.044	22	1,335
4	30.92	1,065	37,420	0.026	13	1,288
3	12.21	919	12,317	0.008	4	1,111
2	3.00	134	420	0.000	0	162
1	1.25	225	283	0.000	0	272
Commscope ATSBT-TOP-MF-4G	154.00	5	1,004	0.001	0	7
Generic GPS	154.00	30	5,576	0.004	2	36
Ericsson RRUS 32 (50.8 lbs)	154.00	305	56,655	0.039	19	369
Commscope RCMDC-6627-PF-48	154.00	64	11,896	0.008	4	77
Ericsson AIR 6449 n77D	154.00	245	45,502	0.031	15	296
CSS X7CAP-865	154.00	168	31,227	0.021	10	203
JMA Wireless X7CQAP-86-865-VR0	154.00	329	61,116	0.042	20	398
Generic Round Sector Frame	154.00	900	167,288	0.114	56	1,089
Commscope RDIDC-9181-PF-48	128.00	22	3,360	0.002	1	26
Fujitsu TA08025-B605	128.00	225	34,522	0.024	12	272
Fujitsu TA08025-B604	128.00	192	29,413	0.020	10	232
JMA Wireless MX08FRO665-21	128.00	194	29,689	0.020	10	234
Generic Flat Light Sector Frame	128.00	1,200	184,116	0.126	62	1,452
Totals		12,581	1,464,966	1.000	491	15,217

FORCE/STRESS SUMMARY

Section 1 – Base 0.0 (ft) and Height 2.50 (ft)

Max Compression	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'_y (ksi)	$\Phi_c P_n$ (kip)	Shear ΦR_{nv} (kip)	Bear ΦR_n (kip)	# Bolt	# Hole	Use %	Controls
L SOL - 2 1/4" SOLID	-35.67	1.2D + 1.0W N	1.447	100	100	100	30.86	50.0	166.89	0.00	0.00	0	0	21	Member X
D SAE - 2X2X0.25	-0.64	1.2D + 1.0W N	2.296	100	100	100	82.85	36.0	26.54	8.84	13.92	1	1	7	Bolt Shear

Max Tension Member	Pu (kip)	Load Case	F_y (ksi)	F_u (ksi)	$\Phi_c P_n$ (kip)	Shear ΦR_{nv} (kip)	Bear ΦR_n (kip)	Blk Shear $\Phi_t P_n$ (kip)	# Bolt	# Hole	Use %	Controls
H SAE - 2X2X0.25	0.51	1.2D + 1.0W N	36.0	58	26.08	8.84	8.26	8.97	1	1	6	Bolt Bear

Max Splice Forces	Pu (kip)	Load Case	ΦR_{nt} (kip)	Use %	Num Bolts	Bolt Type

Section 2 – Base 2.5 (ft) and Height 1.00 (ft)

Max Compression	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'_y (ksi)	$\Phi_c P_n$ (kip)	Shear ΦR_{nv} (kip)	Bear ΦR_n (kip)	# Bolt	# Hole	Use %	Controls
L SOL - 2 1/4" SOLID	-35.51	1.2D + 1.0W N	1.157	100	100	100	24.69	50.0	171.13	0.00	0.00	0	0	20	Member X

Max Tension Member	Pu (kip)	Load Case	F_y (ksi)	F_u (ksi)	$\Phi_c P_n$ (kip)	Shear ΦR_{nv} (kip)	Bear ΦR_n (kip)	Blk Shear $\Phi_t P_n$ (kip)	# Bolt	# Hole	Use %	Controls
H DAE - 2X2X0.25	10.21	1.2D + 1.0W N	36.0	58	52.16	17.67	16.53	17.94	2	2	61	Bolt Bear

Max Splice Forces	Pu (kip)	Load Case	ΦR_{nt} (kip)	Use %	Num Bolts	Bolt Type

Section 3 – Base 3.5 (ft) and Height 17.42 (ft)

Max Compression	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'_y (ksi)	$\Phi_c P_n$ (kip)	Shear ΦR_{nv} (kip)	Bear ΦR_n (kip)	# Bolt	# Hole	Use %	Controls
L HPR - 2.88x0.28 + HP3X	-37.25	1.2D + 1.0W 90°	2.393	200	200	200	0.00	0.0	81.88	0.00	0.00	0	0	45	User Input
H PSP - ROHN 1 1/2X16GA	-0.23	1.2D + 1.0W N	3.53	100	100	100	0.00	0.0	7.02	0.00	5.99	1	1	3	User Input
D PSP - ROHN 1 1/2X16GA	-1.77	1.2D + 1.0W 90°	4.265	100	100	100	0.00	0.0	6.21	0.00	5.99	1	1	28	User Input

Max Tension Member	Pu (kip)	Load Case	F_y (ksi)	F_u (ksi)	$\Phi_c P_n$ (kip)	Shear ΦR_{nv} (kip)	Bear ΦR_n (kip)	Blk Shear $\Phi_t P_n$ (kip)	# Bolt	# Hole	Use %	Controls
H PSP - ROHN 1 1/2X16GA	0.36	1.2D + 1.0W 300°	35.0	60	5.92	0.00	0.00	0.00	1	1	6	User Input
D PSP - ROHN 1 1/2X16GA	1.95	1.2D + 1.0W 90°	35.0	60	5.47	0.00	0.00	0.00	1	1	35	User Input

Max Splice Forces	Pu (kip)	Load Case	ΦR_{nt} (kip)	Use %	Num Bolts	Bolt Type

Section 4 – Base 20.9 (ft) and Height 20.00 (ft)

Max Compression	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'_y (ksi)	$\Phi_c P_n$ (kip)	Shear ΦR_{nv} (kip)	Bear ΦR_n (kip)	# Bolt	# Hole	Use %	Controls
L HPR - 2.88x0.28 + HP3X	-37.74	1.2D + 1.0W 330°	2.396	200	200	200	0.00	0.0	81.88	0.00	0.00	0	0	46	User Input
H PSP - ROHN 1 1/2X16GA	-0.59	1.2D + 1.0W 90°	3.53	100	100	100	0.00	0.0	7.02	0.00	5.99	1	1	8	User Input
D PSP - ROHN 1 1/2X16GA	-1.50	1.2D + 1.0W N	4.266	100	100	100	0.00	0.0	6.21	0.00	5.99	1	1	24	User Input

Max Tension Member	Pu (kip)	Load Case	F_y (ksi)	F_u (ksi)	$\Phi_c P_n$ (kip)	Shear ΦR_{nv} (kip)	Bear ΦR_n (kip)	Blk Shear $\Phi_t P_n$ (kip)	# Bolt	# Hole	Use %	Controls

FORCE/STRESS SUMMARY

H PSP - ROHN 1 1/2X16GA	0.62	1.2D + 1.0W 240°	35.0	60	5.92	0.00	0.00	0.00	1	1	10	User Input
D PSP - ROHN 1 1/2X16GA	1.58	1.2D + 1.0W 90°	35.0	60	5.47	0.00	0.00	0.00	1	1	28	User Input

Max Splice Forces	Pu (kip)	Load Case	ΦR_{nt} (kip)	Use %	Num Bolts	Bolt Type

Section 5 – Base 40.9 (ft) and Height 20.00 (ft)

Max Compression	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'_y (ksi)	$\Phi_c P_n$ (kip)	Shear ΦR_{nv} (kip)	Bear ΦR_n (kip)	# Bolt	# Hole	Use %	Controls
L HPR - 2.88x0.28 + HP3X	-32.94	1.2D + 1.0W 90°	0.167	200	200	200	0.00	0.0	81.88	0.00	0.00	0	0	40	User Input
H PSP - ROHN 1 1/2X16GA	-0.87	1.2D + 1.0W 240°	3.53	100	100	100	0.00	0.0	7.02	0.00	5.99	1	1	12	User Input
D PSP - ROHN 1 1/2X16GA	-2.41	1.2D + 1.0W 90°	4.266	100	100	100	0.00	0.0	6.21	0.00	5.99	1	1	38	User Input

Max Tension Member	Pu (kip)	Load Case	F_y (ksi)	F_u (ksi)	$\Phi_c P_n$ (kip)	Shear ΦR_{nv} (kip)	Bear ΦR_n (kip)	Blk Shear $\Phi_t P_n$ (kip)	# Bolt	# Hole	Use %	Controls
H PSP - ROHN 1 1/2X16GA	0.88	1.2D + 1.0W 60°	35.0	60	5.92	0.00	0.00	0.00	1	1	14	User Input
D PSP - ROHN 1 1/2X16GA	2.38	1.2D + 1.0W 90°	35.0	60	5.47	0.00	0.00	0.00	1	1	43	User Input

Max Splice Forces	Pu (kip)	Load Case	ΦR_{nt} (kip)	Use %	Num Bolts	Bolt Type

Section 6 – Base 60.9 (ft) and Height 20.00 (ft)

Max Compression	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'_y (ksi)	$\Phi_c P_n$ (kip)	Shear ΦR_{nv} (kip)	Bear ΦR_n (kip)	# Bolt	# Hole	Use %	Controls
L HPR - 2.88x0.28 + HP3X	-33.84	1.2D + 1.0W N	0.667	200	200	200	0.00	0.0	81.88	0.00	0.00	0	0	41	User Input
H PSP - ROHN 1 1/2X16GA	-1.00	1.2D + 1.0W 180°	3.53	100	100	100	0.00	0.0	7.02	0.00	5.99	1	1	14	User Input
D PSP - ROHN 1 1/2X16GA	-2.20	1.2D + 1.0W 120°	4.266	100	100	100	0.00	0.0	6.21	0.00	5.99	1	1	35	User Input

Max Tension Member	Pu (kip)	Load Case	F_y (ksi)	F_u (ksi)	$\Phi_c P_n$ (kip)	Shear ΦR_{nv} (kip)	Bear ΦR_n (kip)	Blk Shear $\Phi_t P_n$ (kip)	# Bolt	# Hole	Use %	Controls
H PSP - ROHN 1 1/2X16GA	1.19	1.2D + 1.0W 240°	35.0	60	5.92	0.00	0.00	0.00	1	1	20	User Input
D PSP - ROHN 1 1/2X16GA	2.37	1.2D + 1.0W 210°	35.0	60	5.47	0.00	0.00	0.00	1	1	43	User Input

Max Splice Forces	Pu (kip)	Load Case	ΦR_{nt} (kip)	Use %	Num Bolts	Bolt Type

Section 7 – Base 80.9 (ft) and Height 20.00 (ft)

Max Compression	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'_y (ksi)	$\Phi_c P_n$ (kip)	Shear ΦR_{nv} (kip)	Bear ΦR_n (kip)	# Bolt	# Hole	Use %	Controls
L HPR - 2.88x0.28 + HP3X	-49.55	1.2D + 1.0W N	2.396	200	200	200	0.00	0.0	81.88	0.00	0.00	0	0	60	User Input
H PSP - ROHN 1 1/2X16GA	-1.31	1.2D + 1.0W 120°	3.53	100	100	100	0.00	0.0	7.02	0.00	5.99	1	1	18	User Input
D PSP - ROHN 1 1/2X16GA	-4.72	1.2D + 1.0W 90°	4.266	100	100	100	0.00	0.0	6.21	0.00	5.99	1	1	76	User Input

Max Tension Member	Pu (kip)	Load Case	F_y (ksi)	F_u (ksi)	$\Phi_c P_n$ (kip)	Shear ΦR_{nv} (kip)	Bear ΦR_n (kip)	Blk Shear $\Phi_t P_n$ (kip)	# Bolt	# Hole	Use %	Controls
L HPR - 2.88x0.28 + HP3X	11.86	1.2D + 1.0W 180°	50.0	65	169.27	0.00	0.00		0	0	7	Member
H PSP - ROHN 1 1/2X16GA	1.23	1.2D + 1.0W 60°	35.0	60	5.92	0.00	0.00	0.00	1	1	20	User Input
D PSP - ROHN 1 1/2X16GA	5.47	1.2D + 1.0W 90°	35.0	60	5.47	0.00	0.00	0.00	1	1	100	User Input

Max Splice Forces	Pu (kip)	Load Case	ΦR_{nt} (kip)	Use %	Num Bolts	Bolt Type
Top Tension	4.67	1.2D + 1.0W 180°	0.00	0	0	

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Section 8 – Base 100.9 (ft) and Height 20.00 (ft)

Max Compression	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'_y (ksi)	$\Phi_c P_n$ (kip)	Shear ΦR_{nv} (kip)	Bear ΦR_n (kip)	# Bolt	# Hole	Use %	Controls
L HPR - 2.88x0.28 + HP3X	-38.43	1.2D + 1.0W N	0.167	200	200	200	0.00	0.0	81.88	0.00	0.00	0	0	46	User Input
H PSP - ROHN 1 1/2X16GA	-0.87	1.2D + 1.0W 60°	3.53	100	100	100	0.00	0.0	7.02	0.00	5.99	1	1	12	User Input
D PSP - ROHN 1 1/2X16GA	-3.08	1.2D + 1.0W N	4.266	100	100	100	0.00	0.0	6.21	0.00	5.99	1	1	49	User Input

Max Tension Member	Pu (kip)	Load Case	F_y (ksi)	F_u (ksi)	$\Phi_c P_n$ (kip)	Shear ΦR_{nv} (kip)	Bear ΦR_n (kip)	Blk Shear $\Phi_t P_n$ (kip)	# Bolt	# Hole	Use %	Controls
L HPR - 2.88x0.28 + HP3X	4.35	1.2D + 1.0W 60°	50.0	65	169.27	0.00	0.00		0	0	2	Member
H PSP - ROHN 1 1/2X16GA	1.34	1.2D + 1.0W N	35.0	60	5.92	0.00	0.00	0.00	1	1	22	User Input
D PSP - ROHN 1 1/2X16GA	3.06	1.2D + 1.0W 90°	35.0	60	5.47	0.00	0.00	0.00	1	1	55	User Input

Max Splice Forces	Pu (kip)	Load Case	ΦR_{nt} (kip)	Use %	Num Bolts	Bolt Type
Bot Tension	4.67	1.2D + 1.0W 180°	90.30	5	3	3/4 A325-X

Section 9 – Base 120.9 (ft) and Height 20.00 (ft)

Max Compression	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'_y (ksi)	$\Phi_c P_n$ (kip)	Shear ΦR_{nv} (kip)	Bear ΦR_n (kip)	# Bolt	# Hole	Use %	Controls
L HPR - 2.88x0.28 + HP3X	-39.68	1.2D + 1.0W N	2.396	200	200	200	0.00	0.0	81.88	0.00	0.00	0	0	48	User Input
H PSP - ROHN 1 1/2X16GA	-0.18	1.2D + 1.0W 90°	3.53	100	100	100	0.00	0.0	7.02	0.00	5.99	1	1	2	User Input
D PSP - ROHN 1 1/2X16GA	-4.27	1.2D + 1.0W 90°	4.266	100	100	100	0.00	0.0	6.21	0.00	5.99	1	1	68	User Input

Max Tension Member	Pu (kip)	Load Case	F_y (ksi)	F_u (ksi)	$\Phi_c P_n$ (kip)	Shear ΦR_{nv} (kip)	Bear ΦR_n (kip)	Blk Shear $\Phi_t P_n$ (kip)	# Bolt	# Hole	Use %	Controls
L HPR - 2.88x0.28 + HP3X	37.63	1.2D + 1.0W 180°	50.0	65	169.27	0.00	0.00		0	0	22	Member
H PSP - ROHN 1 1/2X16GA	0.24	1.2D + 1.0W 240°	35.0	60	5.92	0.00	0.00	0.00	1	1	4	User Input
D PSP - ROHN 1 1/2X16GA	4.49	1.2D + 1.0W 210°	35.0	60	5.47	0.00	0.00	0.00	1	1	82	User Input

Max Splice Forces	Pu (kip)	Load Case	ΦR_{nt} (kip)	Use %	Num Bolts	Bolt Type
Top Tension	37.63	1.2D + 1.0W 180°	0.00	0	0	

Section 10 – Base 140.9 (ft) and Height 20.00 (ft)

Max Compression	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'_y (ksi)	$\Phi_c P_n$ (kip)	Shear ΦR_{nv} (kip)	Bear ΦR_n (kip)	# Bolt	# Hole	Use %	Controls
L PX - 2-1/2" DIA PIPE	-40.01	1.2D + 1.0W N	0.167	100	100	100	2.17	50.0	101.22	0.00	0.00	0	0	39	Member X
H PSP - ROHN 1 1/2X16GA	-0.87	1.2D + 1.0W N	3.53	100	100	100	0.00	0.0	7.02	0.00	5.99	1	1	12	User Input
D PSP - ROHN 1 1/2X16GA	-4.69	1.2D + 1.0W 90°	4.266	50	50	50	0.00	0.0	6.21	0.00	5.99	1	1	75	User Input

Max Tension Member	Pu (kip)	Load Case	F_y (ksi)	F_u (ksi)	$\Phi_c P_n$ (kip)	Shear ΦR_{nv} (kip)	Bear ΦR_n (kip)	Blk Shear $\Phi_t P_n$ (kip)	# Bolt	# Hole	Use %	Controls
L PX - 2-1/2" DIA PIPE	37.68	1.2D + 1.0W 180°	50.0	65	101.25	0.00	0.00		0	0	37	Member
H PSP - ROHN 1 1/2X16GA	1.30	1.2D + 1.0W 90°	35.0	60	5.92	0.00	0.00	0.00	1	1	21	User Input
D PSP - ROHN 1 1/2X16GA	4.56	1.2D + 1.0W 90°	35.0	60	5.47	0.00	0.00	0.00	1	1	83	User Input

Max Splice Forces	Pu (kip)	Load Case	ΦR_{nt} (kip)	Use %	Num Bolts	Bolt Type
Bot Tension	37.63	1.2D + 1.0W 180°	90.30	42	3	3/4 A325-X

DETAILED REACTIONS

Load Case	Radius (ft)	Elevation (ft)	Azimuth (deg)	Node	*(-) Uplift and (+) Down *F_X (kip)	*F_Y (kip)	*F_Z (kip)
1.2D + 1.0W Normal	0.00	0.00		1	0.03	88.03	-1.70
	96.00	-1.00	0	A1	0.00	-0.36	0.26
	96.00	-1.00	120	A1a	13.76	-13.38	-8.35
	96.00	-2.00	240	A1b	-13.83	-13.60	-8.39
	117.00	-1.00	0	A2	0.00	-0.83	0.45
	117.00	-1.00	120	A2a	15.32	-21.64	-9.47
	117.00	-4.00	240	A2b	-15.29	-22.04	-9.45
1.2D + 1.0W 60°	0.00	0.00		1	-2.03	64.15	-1.15
	96.00	-1.00	0	A1	-0.24	-1.81	2.12
	96.00	-1.00	120	A1a	1.70	-1.80	-1.26
	96.00	-2.00	240	A1b	-15.43	-14.88	-8.91
	117.00	-1.00	0	A2	-0.34	-2.82	2.18
	117.00	-1.00	120	A2a	1.75	-2.87	-1.41
	117.00	-4.00	240	A2b	-17.10	-24.09	-9.87
1.2D + 1.0W 90°	0.00	0.00		1	-1.94	80.51	-0.26
	96.00	-1.00	0	A1	-0.37	-8.27	9.89
	96.00	-1.00	120	A1a	0.46	-0.62	-0.39
	96.00	-2.00	240	A1b	-16.52	-15.87	-9.29
	117.00	-1.00	0	A2	-0.52	-13.02	10.72
	117.00	-1.00	120	A2a	0.55	-1.16	-0.51
	117.00	-4.00	240	A2b	-18.27	-25.54	-10.15
1.2D + 1.0W 120°	0.00	0.00		1	-1.47	87.93	0.88
	96.00	-1.00	0	A1	-0.35	-13.39	16.12
	96.00	-1.00	120	A1a	0.23	-0.35	-0.13
	96.00	-2.00	240	A1b	-14.26	-13.68	-7.83
	117.00	-1.00	0	A2	-0.53	-21.59	17.97
	117.00	-1.00	120	A2a	0.39	-0.83	-0.22
	117.00	-4.00	240	A2b	-15.73	-21.90	-8.46
1.2D + 1.0W 180°	0.00	0.00		1	-0.01	63.82	2.37
	96.00	-1.00	0	A1	0.00	-14.57	17.66
	96.00	-1.00	120	A1a	1.99	-1.84	-0.87
	96.00	-2.00	240	A1b	-1.98	-1.85	-0.86
	117.00	-1.00	0	A2	0.00	-23.83	19.93
	117.00	-1.00	120	A2a	2.11	-2.89	-0.82
	117.00	-4.00	240	A2b	-2.11	-2.96	-0.82
1.2D + 1.0W 210°	0.00	0.00		1	0.75	80.00	1.85
	96.00	-1.00	0	A1	0.21	-15.53	18.76
	96.00	-1.00	120	A1a	8.77	-8.30	-4.64
	96.00	-2.00	240	A1b	-0.58	-0.64	-0.21
	117.00	-1.00	0	A2	0.34	-25.24	21.08
	117.00	-1.00	120	A2a	9.55	-13.04	-4.92
	117.00	-4.00	240	A2b	-0.74	-1.22	-0.23
1.2D + 1.0W 240°	0.00	0.00		1	1.52	87.44	0.88
	96.00	-1.00	0	A1	0.35	-13.39	16.12
	96.00	-1.00	120	A1a	14.20	-13.45	-7.79
	96.00	-2.00	240	A1b	-0.24	-0.37	-0.14
	117.00	-1.00	0	A2	0.53	-21.62	17.99
	117.00	-1.00	120	A2a	15.79	-21.54	-8.50
	117.00	-4.00	240	A2b	-0.41	-0.88	-0.23
1.2D + 1.0W 300°	0.00	0.00		1	2.07	63.79	-1.18
	96.00	-1.00	0	A1	0.24	-1.84	2.16
	96.00	-1.00	120	A1a	15.37	-14.64	-8.87
	96.00	-2.00	240	A1b	-1.73	-1.84	-1.28
	117.00	-1.00	0	A2	0.34	-2.88	2.23
	117.00	-1.00	120	A2a	17.18	-23.72	-9.92
	117.00	-4.00	240	A2b	-1.79	-2.99	-1.43
1.2D + 1.0W 330°	0.00	0.00		1	1.24	80.29	-1.55
	96.00	-1.00	0	A1	0.11	-0.62	0.60
	96.00	-1.00	120	A1a	16.16	-15.54	-9.57
	96.00	-2.00	240	A1b	-8.35	-8.35	-5.24
	117.00	-1.00	0	A2	0.17	-1.16	0.73
	117.00	-1.00	120	A2a	18.05	-25.19	-10.82
	117.00	-4.00	240	A2b	-9.08	-13.38	-5.85
1.2D + 1.0Di + 1.0Wi Normal	0.00	0.00		1	0.00	40.02	-0.09
	96.00	-1.00	0	A1	0.00	-3.10	3.85
	96.00	-1.00	120	A1a	3.76	-3.50	-2.18
	96.00	-2.00	240	A1b	-3.76	-3.54	-2.18
	117.00	-1.00	0	A2	0.00	-4.13	3.43

DETAILED REACTIONS

Load Case	Radius (ft)	Elevation (ft)	Azimuth (deg)	Node	*(-) Uplift and (+) Down *F_X (kip)	*F_Y (kip)	*F_Z (kip)
	117.00	-1.00	120	A2a	3.46	-4.81	-2.01
	117.00	-4.00	240	A2b	-3.46	-4.90	-2.01
1.2D + 1.0Di + 1.0Wi 60°	0.00	0.00		1	-0.08	39.99	-0.04
	96.00	-1.00	0	A1	-0.01	-3.23	4.01
	96.00	-1.00	120	A1a	3.47	-3.23	-2.01
	96.00	-2.00	240	A1b	-3.90	-3.68	-2.25
	117.00	-1.00	0	A2	-0.01	-4.35	3.62
	117.00	-1.00	120	A2a	3.13	-4.35	-1.82
	117.00	-4.00	240	A2b	-3.62	-5.12	-2.09
1.2D + 1.0Di + 1.0Wi 90°	0.00	0.00		1	-0.09	40.00	0.00
	96.00	-1.00	0	A1	-0.01	-3.36	4.18
	96.00	-1.00	120	A1a	3.37	-3.13	-1.95
	96.00	-2.00	240	A1b	-3.87	-3.64	-2.23
	117.00	-1.00	0	A2	-0.01	-4.58	3.81
	117.00	-1.00	120	A2a	3.01	-4.19	-1.75
	117.00	-4.00	240	A2b	-3.58	-5.06	-2.06
1.2D + 1.0Di + 1.0Wi 120°	0.00	0.00		1	-0.08	40.02	0.05
	96.00	-1.00	0	A1	-0.01	-3.50	4.34
	96.00	-1.00	120	A1a	3.33	-3.10	-1.93
	96.00	-2.00	240	A1b	-3.77	-3.55	-2.17
	117.00	-1.00	0	A2	-0.01	-4.81	4.01
	117.00	-1.00	120	A2a	2.98	-4.13	-1.72
	117.00	-4.00	240	A2b	-3.47	-4.90	-1.99
1.2D + 1.0Di + 1.0Wi 180°	0.00	0.00		1	0.00	40.00	0.09
	96.00	-1.00	0	A1	0.00	-3.63	4.51
	96.00	-1.00	120	A1a	3.48	-3.23	-2.00
	96.00	-2.00	240	A1b	-3.48	-3.27	-2.00
	117.00	-1.00	0	A2	0.00	-5.03	4.19
	117.00	-1.00	120	A2a	3.14	-4.35	-1.80
	117.00	-4.00	240	A2b	-3.14	-4.44	-1.80
1.2D + 1.0Di + 1.0Wi 210°	0.00	0.00		1	0.05	40.02	0.08
	96.00	-1.00	0	A1	0.00	-3.60	4.46
	96.00	-1.00	120	A1a	3.63	-3.37	-2.08
	96.00	-2.00	240	A1b	-3.38	-3.17	-1.94
	117.00	-1.00	0	A2	0.01	-4.98	4.15
	117.00	-1.00	120	A2a	3.31	-4.58	-1.90
	117.00	-4.00	240	A2b	-3.02	-4.28	-1.74
1.2D + 1.0Di + 1.0Wi 240°	0.00	0.00		1	0.08	40.03	0.05
	96.00	-1.00	0	A1	0.01	-3.50	4.35
	96.00	-1.00	120	A1a	3.77	-3.51	-2.17
	96.00	-2.00	240	A1b	-3.34	-3.14	-1.93
	117.00	-1.00	0	A2	0.01	-4.81	4.01
	117.00	-1.00	120	A2a	3.48	-4.81	-1.99
	117.00	-4.00	240	A2b	-2.98	-4.22	-1.72
1.2D + 1.0Di + 1.0Wi 300°	0.00	0.00		1	0.08	40.00	-0.05
	96.00	-1.00	0	A1	0.01	-3.23	4.02
	96.00	-1.00	120	A1a	3.91	-3.64	-2.25
	96.00	-2.00	240	A1b	-3.47	-3.27	-2.01
	117.00	-1.00	0	A2	0.01	-4.36	3.62
	117.00	-1.00	120	A2a	3.63	-5.03	-2.10
	117.00	-4.00	240	A2b	-3.13	-4.45	-1.82
1.2D + 1.0Di + 1.0Wi 330°	0.00	0.00		1	0.05	40.01	-0.08
	96.00	-1.00	0	A1	0.00	-3.13	3.90
	96.00	-1.00	120	A1a	3.87	-3.60	-2.24
	96.00	-2.00	240	A1b	-3.61	-3.41	-2.10
	117.00	-1.00	0	A2	0.01	-4.19	3.49
	117.00	-1.00	120	A2a	3.58	-4.97	-2.08
	117.00	-4.00	240	A2b	-3.29	-4.67	-1.92
1.2D + 1.0Ev + 1.0Eh Normal	0.00	0.00		1	0.00	37.13	0.01
	96.00	-1.00	0	A1	0.00	-2.80	3.48
	96.00	-1.00	120	A1a	3.14	-2.94	-1.81
	96.00	-2.00	240	A1b	-3.13	-2.97	-1.81
	117.00	-1.00	0	A2	0.00	-3.84	3.21
	117.00	-1.00	120	A2a	3.02	-4.18	-1.74
	117.00	-4.00	240	A2b	-3.01	-4.26	-1.74
1.2D + 1.0Ev + 1.0Eh 60°	0.00	0.00		1	0.01	37.13	0.00
	96.00	-1.00	0	A1	0.00	-2.85	3.52
	96.00	-1.00	120	A1a	3.05	-2.85	-1.76

DETAILED REACTIONS

Load Case	Radius (ft)	Elevation (ft)	Azimuth (deg)	Node	*(-) Uplift and (+) Down *F_X (kip)	*F_Y (kip)	*F_Z (kip)
	96.00	-2.00	240	A1b	-3.17	-3.01	-1.83
	117.00	-1.00	0	A2	0.00	-3.95	3.30
	117.00	-1.00	120	A2a	2.86	-3.95	-1.65
	117.00	-4.00	240	A2b	-3.09	-4.37	-1.79
1.2D + 1.0Ev + 1.0Eh 90°	0.00	0.00		1	0.01	37.13	0.00
	96.00	-1.00	0	A1	0.00	-2.89	3.57
	96.00	-1.00	120	A1a	3.02	-2.82	-1.74
	96.00	-2.00	240	A1b	-3.16	-3.00	-1.83
	117.00	-1.00	0	A2	0.00	-4.06	3.39
	117.00	-1.00	120	A2a	2.80	-3.87	-1.62
	117.00	-4.00	240	A2b	-3.07	-4.34	-1.77
1.2D + 1.0Ev + 1.0Eh 120°	0.00	0.00		1	0.01	37.13	0.00
	96.00	-1.00	0	A1	0.00	-2.93	3.62
	96.00	-1.00	120	A1a	3.01	-2.81	-1.74
	96.00	-2.00	240	A1b	-3.13	-2.97	-1.81
	117.00	-1.00	0	A2	0.00	-4.18	3.49
	117.00	-1.00	120	A2a	2.78	-3.84	-1.60
	117.00	-4.00	240	A2b	-3.01	-4.26	-1.74
1.2D + 1.0Ev + 1.0Eh 180°	0.00	0.00		1	0.00	37.14	-0.01
	96.00	-1.00	0	A1	0.00	-2.98	3.67
	96.00	-1.00	120	A1a	3.05	-2.85	-1.76
	96.00	-2.00	240	A1b	-3.05	-2.88	-1.76
	117.00	-1.00	0	A2	0.00	-4.30	3.58
	117.00	-1.00	120	A2a	2.86	-3.95	-1.65
	117.00	-4.00	240	A2b	-2.85	-4.03	-1.65
1.2D + 1.0Ev + 1.0Eh 210°	0.00	0.00		1	0.00	37.14	0.00
	96.00	-1.00	0	A1	0.00	-2.96	3.65
	96.00	-1.00	120	A1a	3.10	-2.89	-1.79
	96.00	-2.00	240	A1b	-3.02	-2.85	-1.75
	117.00	-1.00	0	A2	0.00	-4.25	3.55
	117.00	-1.00	120	A2a	2.94	-4.07	-1.70
	117.00	-4.00	240	A2b	-2.80	-3.96	-1.62
1.2D + 1.0Ev + 1.0Eh 240°	0.00	0.00		1	0.00	37.14	0.00
	96.00	-1.00	0	A1	0.00	-2.93	3.62
	96.00	-1.00	120	A1a	3.13	-2.93	-1.81
	96.00	-2.00	240	A1b	-3.01	-2.84	-1.74
	117.00	-1.00	0	A2	0.00	-4.18	3.48
	117.00	-1.00	120	A2a	3.02	-4.18	-1.74
	117.00	-4.00	240	A2b	-2.78	-3.93	-1.61
1.2D + 1.0Ev + 1.0Eh 300°	0.00	0.00		1	0.00	37.14	0.00
	96.00	-1.00	0	A1	0.00	-2.85	3.53
	96.00	-1.00	120	A1a	3.17	-2.97	-1.83
	96.00	-2.00	240	A1b	-3.05	-2.88	-1.76
	117.00	-1.00	0	A2	0.00	-3.96	3.31
	117.00	-1.00	120	A2a	3.09	-4.28	-1.79
	117.00	-4.00	240	A2b	-2.86	-4.03	-1.65
1.2D + 1.0Ev + 1.0Eh 330°	0.00	0.00		1	0.00	37.14	0.01
	96.00	-1.00	0	A1	0.00	-2.82	3.49
	96.00	-1.00	120	A1a	3.17	-2.97	-1.83
	96.00	-2.00	240	A1b	-3.09	-2.92	-1.79
	117.00	-1.00	0	A2	0.00	-3.87	3.23
	117.00	-1.00	120	A2a	3.08	-4.26	-1.78
	117.00	-4.00	240	A2b	-2.93	-4.14	-1.69
1.0D + 1.0W Service Normal	0.00	0.00		1	0.00	34.77	-0.39
	96.00	-1.00	0	A1	0.00	-1.72	2.15
	96.00	-1.00	120	A1a	3.73	-3.51	-2.20
	96.00	-2.00	240	A1b	-3.74	-3.56	-2.20
	117.00	-1.00	0	A2	0.00	-2.10	1.75
	117.00	-1.00	120	A2a	3.68	-5.12	-2.18
	117.00	-4.00	240	A2b	-3.67	-5.22	-2.18
1.0D + 1.0W Service 60°	0.00	0.00		1	-0.33	34.85	-0.19
	96.00	-1.00	0	A1	-0.04	-2.32	2.87
	96.00	-1.00	120	A1a	2.46	-2.31	-1.46
	96.00	-2.00	240	A1b	-4.41	-4.20	-2.55
	117.00	-1.00	0	A2	-0.05	-3.13	2.60
	117.00	-1.00	120	A2a	2.24	-3.14	-1.35
	117.00	-4.00	240	A2b	-4.44	-6.26	-2.56
1.0D + 1.0W Service 90°	0.00	0.00		1	-0.38	34.80	0.00

DETAILED REACTIONS

Load Case	Radius (ft)	Elevation (ft)	Azimuth (deg)	Node	*(-) Uplift and (+) Down *F_X (kip)	*F_Y (kip)	*F_Z (kip)
	96.00	-1.00	0	A1	-0.04	-2.91	3.60
	96.00	-1.00	120	A1a	2.01	-1.88	-1.18
	96.00	-2.00	240	A1b	-4.23	-4.02	-2.43
	117.00	-1.00	0	A2	-0.06	-4.12	3.44
	117.00	-1.00	120	A2a	1.71	-2.39	-1.02
	117.00	-4.00	240	A2b	-4.24	-5.96	-2.42
1.0D + 1.0W Service 120°	0.00	0.00		1	-0.33	34.77	0.19
	96.00	-1.00	0	A1	-0.04	-3.51	4.33
	96.00	-1.00	120	A1a	1.86	-1.71	-1.07
	96.00	-2.00	240	A1b	-3.78	-3.57	-2.14
	117.00	-1.00	0	A2	-0.05	-5.12	4.28
	117.00	-1.00	120	A2a	1.52	-2.11	-0.88
	117.00	-4.00	240	A2b	-3.72	-5.21	-2.09
1.0D + 1.0W Service 180°	0.00	0.00		1	0.00	34.90	0.38
	96.00	-1.00	0	A1	0.00	-4.13	5.08
	96.00	-1.00	120	A1a	2.52	-2.34	-1.42
	96.00	-2.00	240	A1b	-2.52	-2.37	-1.42
	117.00	-1.00	0	A2	0.00	-6.17	5.15
	117.00	-1.00	120	A2a	2.30	-3.16	-1.27
	117.00	-4.00	240	A2b	-2.30	-3.23	-1.27
1.0D + 1.0W Service 210°	0.00	0.00		1	0.19	34.86	0.33
	96.00	-1.00	0	A1	0.02	-3.98	4.90
	96.00	-1.00	120	A1a	3.16	-2.94	-1.77
	96.00	-2.00	240	A1b	-2.03	-1.90	-1.15
	117.00	-1.00	0	A2	0.03	-5.91	4.94
	117.00	-1.00	120	A2a	3.03	-4.15	-1.68
	117.00	-4.00	240	A2b	-1.74	-2.45	-0.98
1.0D + 1.0W Service 240°	0.00	0.00		1	0.34	34.81	0.19
	96.00	-1.00	0	A1	0.04	-3.52	4.35
	96.00	-1.00	120	A1a	3.79	-3.53	-2.15
	96.00	-2.00	240	A1b	-1.87	-1.75	-1.08
	117.00	-1.00	0	A2	0.05	-5.14	4.30
	117.00	-1.00	120	A2a	3.74	-5.13	-2.10
	117.00	-4.00	240	A2b	-1.54	-2.19	-0.89
1.0D + 1.0W Service 300°	0.00	0.00		1	0.33	34.90	-0.19
	96.00	-1.00	0	A1	0.03	-2.34	2.89
	96.00	-1.00	120	A1a	4.41	-4.14	-2.54
	96.00	-2.00	240	A1b	-2.48	-2.36	-1.47
	117.00	-1.00	0	A2	0.05	-3.16	2.63
	117.00	-1.00	120	A2a	4.45	-6.15	-2.57
	117.00	-4.00	240	A2b	-2.26	-3.24	-1.36
1.0D + 1.0W Service 330°	0.00	0.00		1	0.19	34.83	-0.33
	96.00	-1.00	0	A1	0.02	-1.89	2.35
	96.00	-1.00	120	A1a	4.22	-3.97	-2.45
	96.00	-2.00	240	A1b	-3.10	-2.96	-1.84
	117.00	-1.00	0	A2	0.02	-2.40	1.99
	117.00	-1.00	120	A2a	4.23	-5.87	-2.47
	117.00	-4.00	240	A2b	-2.96	-4.23	-1.78

GUY ANCHOR DESIGN LOADS

Radius (ft)	Drop (ft)	Azimuth (deg)	Uplift (kip)	Shear (kip)
96.00	-1.00	0	15.53	18.77
96.00	-1.00	120	15.54	18.78
96.00	-2.00	240	15.87	18.95
117.00	-1.00	0	25.24	21.09
117.00	-1.00	120	25.19	21.04
117.00	-4.00	240	25.54	20.90

DETAILED CABLE FORCES

Load Case	Elev (ft)	Cable	Anchor Node	Tower Node	Allow Tension (kip)	Applied Tension (kip)	Use%
1.2D + 1.0W Normal	48.27	3/8 EHS	A1	26	9.24	0.06	1
		3/8 EHS	A1a	26a	9.24	5.92	64
		3/8 EHS	A1b	26b	9.24	5.99	65
	93.07	9/16 EHS	A1	48	21	0.46	2
		9/16 EHS	A1a	48a	21	15.27	73
		9/16 EHS	A1b	48b	21	15.41	73
	140.25	3/4 EHS	A2	71	34.98	1.11	3
		3/4 EHS	A2a	71a	34.98	28.32	81
		3/4 EHS	A2b	71b	34.98	28.61	82
1.2D + 1.0W 60°	48.27	3/8 EHS	A1	26	9.24	0.93	10
		3/8 EHS	A1a	26a	9.24	0.91	10
		3/8 EHS	A1b	26b	9.24	6.77	73
	93.07	9/16 EHS	A1	48	21	1.97	9
		9/16 EHS	A1a	48a	21	1.97	9
		9/16 EHS	A1b	48b	21	16.72	80
	140.25	3/4 EHS	A2	71	34.98	3.74	11
		3/4 EHS	A2a	71a	34.98	3.81	11
		3/4 EHS	A2b	71b	34.98	31.32	90
1.2D + 1.0W 90°	48.27	3/8 EHS	A1	26	9.24	3.69	40
		3/8 EHS	A1a	26a	9.24	0.24	3
		3/8 EHS	A1b	26b	9.24	7.1	77
	93.07	9/16 EHS	A1	48	21	9.4	45
		9/16 EHS	A1a	48a	21	0.71	3
		9/16 EHS	A1b	48b	21	17.92	85
	140.25	3/4 EHS	A2	71	34.98	17.03	49
		3/4 EHS	A2a	71a	34.98	1.54	4
		3/4 EHS	A2b	71b	34.98	33.17	95
1.2D + 1.0W 120°	48.27	3/8 EHS	A1	26	9.24	5.96	64
		3/8 EHS	A1a	26a	9.24	0.06	1
		3/8 EHS	A1b	26b	9.24	6.03	65
	93.07	9/16 EHS	A1	48	21	15.26	73
		9/16 EHS	A1a	48a	21	0.46	2
		9/16 EHS	A1b	48b	21	15.49	74
	140.25	3/4 EHS	A2	71	34.98	28.26	81
		3/4 EHS	A2a	71a	34.98	1.11	3
		3/4 EHS	A2b	71b	34.98	28.43	81
1.2D + 1.0W 180°	48.27	3/8 EHS	A1	26	9.24	6.67	72
		3/8 EHS	A1a	26a	9.24	0.93	10
		3/8 EHS	A1b	26b	9.24	0.93	10
	93.07	9/16 EHS	A1	48	21	16.51	79
		9/16 EHS	A1a	48a	21	2.01	10
		9/16 EHS	A1b	48b	21	2.02	10
	140.25	3/4 EHS	A2	71	34.98	31.23	89
		3/4 EHS	A2a	71a	34.98	3.84	11
		3/4 EHS	A2b	71b	34.98	3.89	11
1.2D + 1.0W 210°	48.27	3/8 EHS	A1	26	9.24	6.99	76
		3/8 EHS	A1a	26a	9.24	3.68	40
		3/8 EHS	A1b	26b	9.24	0.24	3
	93.07	9/16 EHS	A1	48	21	17.67	84
		9/16 EHS	A1a	48a	21	9.45	45
		9/16 EHS	A1b	48b	21	0.73	3
	140.25	3/4 EHS	A2	71	34.98	33.05	94
		3/4 EHS	A2a	71a	34.98	17.06	49
		3/4 EHS	A2b	71b	34.98	1.61	5
1.2D + 1.0W 240°	48.27	3/8 EHS	A1	26	9.24	5.94	64
		3/8 EHS	A1a	26a	9.24	5.97	65
		3/8 EHS	A1b	26b	9.24	0.06	1
	93.07	9/16 EHS	A1	48	21	15.29	73
		9/16 EHS	A1a	48a	21	15.34	73
		9/16 EHS	A1b	48b	21	0.47	2
	140.25	3/4 EHS	A2	71	34.98	28.3	81
		3/4 EHS	A2a	71a	34.98	28.19	81
		3/4 EHS	A2b	71b	34.98	1.17	3
1.2D + 1.0W 300°	48.27	3/8 EHS	A1	26	9.24	0.94	10
		3/8 EHS	A1a	26a	9.24	6.7	73
		3/8 EHS	A1b	26b	9.24	0.93	10

DETAILED CABLE FORCES

Load Case	Elev (ft)	Cable	Anchor Node	Tower Node	Allow Tension (kip)	Applied Tension (kip)	Use%
	93.07	9/16 EHS	A1	48	21	2.01	10
		9/16 EHS	A1a	48a	21	16.59	79
		9/16 EHS	A1b	48b	21	2.01	10
	140.25	3/4 EHS	A2	71	34.98	3.82	11
		3/4 EHS	A2a	71a	34.98	31.08	89
		3/4 EHS	A2b	71b	34.98	3.93	11
1.2D + 1.0W 330°	48.27	3/8 EHS	A1	26	9.24	0.24	3
		3/8 EHS	A1a	26a	9.24	6.99	76
		3/8 EHS	A1b	26b	9.24	3.67	40
	93.07	9/16 EHS	A1	48	21	0.72	3
		9/16 EHS	A1a	48a	21	17.69	84
		9/16 EHS	A1b	48b	21	9.44	45
	140.25	3/4 EHS	A2	71	34.98	1.55	4
		3/4 EHS	A2a	71a	34.98	32.98	94
		3/4 EHS	A2b	71b	34.98	17.36	50
1.2D + 1.0Di + 1.0Wi Normal	48.27	3/8 EHS	A1	26	9.24	1.68	18
		3/8 EHS	A1a	26a	9.24	1.87	20
		3/8 EHS	A1b	26b	9.24	1.88	20
	93.07	9/16 EHS	A1	48	21	3.38	16
		9/16 EHS	A1a	48a	21	3.84	18
		9/16 EHS	A1b	48b	21	3.85	18
	140.25	3/4 EHS	A2	71	34.98	5.53	16
		3/4 EHS	A2a	71a	34.98	6.42	18
		3/4 EHS	A2b	71b	34.98	6.49	19
1.2D + 1.0Di + 1.0Wi 60°	48.27	3/8 EHS	A1	26	9.24	1.74	19
		3/8 EHS	A1a	26a	9.24	1.74	19
		3/8 EHS	A1b	26b	9.24	1.94	21
	93.07	9/16 EHS	A1	48	21	3.53	17
		9/16 EHS	A1a	48a	21	3.54	17
		9/16 EHS	A1b	48b	21	4	19
	140.25	3/4 EHS	A2	71	34.98	5.82	17
		3/4 EHS	A2a	71a	34.98	5.82	17
		3/4 EHS	A2b	71b	34.98	6.78	19
1.2D + 1.0Di + 1.0Wi 90°	48.27	3/8 EHS	A1	26	9.24	1.81	20
		3/8 EHS	A1a	26a	9.24	1.7	18
		3/8 EHS	A1b	26b	9.24	1.93	21
	93.07	9/16 EHS	A1	48	21	3.69	18
		9/16 EHS	A1a	48a	21	3.43	16
		9/16 EHS	A1b	48b	21	3.96	19
	140.25	3/4 EHS	A2	71	34.98	6.12	17
		3/4 EHS	A2a	71a	34.98	5.61	16
		3/4 EHS	A2b	71b	34.98	6.7	19
1.2D + 1.0Di + 1.0Wi 120°	48.27	3/8 EHS	A1	26	9.24	1.87	20
		3/8 EHS	A1a	26a	9.24	1.68	18
		3/8 EHS	A1b	26b	9.24	1.88	20
	93.07	9/16 EHS	A1	48	21	3.84	18
		9/16 EHS	A1a	48a	21	3.39	16
		9/16 EHS	A1b	48b	21	3.86	18
	140.25	3/4 EHS	A2	71	34.98	6.42	18
		3/4 EHS	A2a	71a	34.98	5.54	16
		3/4 EHS	A2b	71b	34.98	6.49	19
1.2D + 1.0Di + 1.0Wi 180°	48.27	3/8 EHS	A1	26	9.24	1.93	21
		3/8 EHS	A1a	26a	9.24	1.74	19
		3/8 EHS	A1b	26b	9.24	1.76	19
	93.07	9/16 EHS	A1	48	21	3.99	19
		9/16 EHS	A1a	48a	21	3.54	17
		9/16 EHS	A1b	48b	21	3.55	17
	140.25	3/4 EHS	A2	71	34.98	6.72	19
		3/4 EHS	A2a	71a	34.98	5.83	17
		3/4 EHS	A2b	71b	34.98	5.9	17
1.2D + 1.0Di + 1.0Wi 210°	48.27	3/8 EHS	A1	26	9.24	1.92	21
		3/8 EHS	A1a	26a	9.24	1.81	20
		3/8 EHS	A1b	26b	9.24	1.71	18
	93.07	9/16 EHS	A1	48	21	3.95	19
		9/16 EHS	A1a	48a	21	3.69	18
		9/16 EHS	A1b	48b	21	3.44	16
	140.25	3/4 EHS	A2	71	34.98	6.64	19
		3/4 EHS	A2a	71a	34.98	6.13	18

DETAILED CABLE FORCES

Load Case	Elev (ft)	Cable	Anchor Node	Tower Node	Allow Tension (kip)	Applied Tension (kip)	Use%
		3/4 EHS	A2b	71b	34.98	5.69	16
1.2D + 1.0Di + 1.0Wi 240°	48.27	3/8 EHS	A1	26	9.24	1.87	20
		3/8 EHS	A1a	26a	9.24	1.87	20
		3/8 EHS	A1b	26b	9.24	1.69	18
	93.07	9/16 EHS	A1	48	21	3.84	18
		9/16 EHS	A1a	48a	21	3.85	18
		9/16 EHS	A1b	48b	21	3.4	16
	140.25	3/4 EHS	A2	71	34.98	6.43	18
		3/4 EHS	A2a	71a	34.98	6.42	18
		3/4 EHS	A2b	71b	34.98	5.61	16
1.2D + 1.0Di + 1.0Wi 300°	48.27	3/8 EHS	A1	26	9.24	1.74	19
		3/8 EHS	A1a	26a	9.24	1.93	21
		3/8 EHS	A1b	26b	9.24	1.75	19
	93.07	9/16 EHS	A1	48	21	3.54	17
		9/16 EHS	A1a	48a	21	4	19
		9/16 EHS	A1b	48b	21	3.55	17
	140.25	3/4 EHS	A2	71	34.98	5.83	17
		3/4 EHS	A2a	71a	34.98	6.71	19
		3/4 EHS	A2b	71b	34.98	5.9	17
1.2D + 1.0Di + 1.0Wi 330°	48.27	3/8 EHS	A1	26	9.24	1.7	18
		3/8 EHS	A1a	26a	9.24	1.91	21
		3/8 EHS	A1b	26b	9.24	1.82	20
	93.07	9/16 EHS	A1	48	21	3.43	16
		9/16 EHS	A1a	48a	21	3.95	19
		9/16 EHS	A1b	48b	21	3.7	18
	140.25	3/4 EHS	A2	71	34.98	5.61	16
		3/4 EHS	A2a	71a	34.98	6.63	19
		3/4 EHS	A2b	71b	34.98	6.2	18
1.2D + 1.0Ev + 1.0Eh Normal	48.27	3/8 EHS	A1	26	9.24	1.47	16
		3/8 EHS	A1a	26a	9.24	1.51	16
		3/8 EHS	A1b	26b	9.24	1.52	16
	93.07	9/16 EHS	A1	48	21	3.11	15
		9/16 EHS	A1a	48a	21	3.27	16
		9/16 EHS	A1b	48b	21	3.28	16
	140.25	3/4 EHS	A2	71	34.98	5.16	15
		3/4 EHS	A2a	71a	34.98	5.61	16
		3/4 EHS	A2b	71b	34.98	5.66	16
1.2D + 1.0Ev + 1.0Eh 60°	48.27	3/8 EHS	A1	26	9.24	1.48	16
		3/8 EHS	A1a	26a	9.24	1.48	16
		3/8 EHS	A1b	26b	9.24	1.53	17
	93.07	9/16 EHS	A1	48	21	3.16	15
		9/16 EHS	A1a	48a	21	3.17	15
		9/16 EHS	A1b	48b	21	3.34	16
	140.25	3/4 EHS	A2	71	34.98	5.31	15
		3/4 EHS	A2a	71a	34.98	5.31	15
		3/4 EHS	A2b	71b	34.98	5.81	17
1.2D + 1.0Ev + 1.0Eh 90°	48.27	3/8 EHS	A1	26	9.24	1.5	16
		3/8 EHS	A1a	26a	9.24	1.47	16
		3/8 EHS	A1b	26b	9.24	1.53	17
	93.07	9/16 EHS	A1	48	21	3.22	15
		9/16 EHS	A1a	48a	21	3.13	15
		9/16 EHS	A1b	48b	21	3.32	16
	140.25	3/4 EHS	A2	71	34.98	5.46	16
		3/4 EHS	A2a	71a	34.98	5.2	15
		3/4 EHS	A2b	71b	34.98	5.77	17
1.2D + 1.0Ev + 1.0Eh 120°	48.27	3/8 EHS	A1	26	9.24	1.51	16
		3/8 EHS	A1a	26a	9.24	1.47	16
		3/8 EHS	A1b	26b	9.24	1.52	16
	93.07	9/16 EHS	A1	48	21	3.27	16
		9/16 EHS	A1a	48a	21	3.11	15
		9/16 EHS	A1b	48b	21	3.28	16
	140.25	3/4 EHS	A2	71	34.98	5.61	16
		3/4 EHS	A2a	71a	34.98	5.16	15
		3/4 EHS	A2b	71b	34.98	5.66	16
1.2D + 1.0Ev + 1.0Eh 180°	48.27	3/8 EHS	A1	26	9.24	1.52	16
		3/8 EHS	A1a	26a	9.24	1.48	16
		3/8 EHS	A1b	26b	9.24	1.49	16
	93.07	9/16 EHS	A1	48	21	3.32	16

DETAILED CABLE FORCES

Load Case	Elev (ft)	Cable	Anchor Node	Tower Node	Allow Tension (kip)	Applied Tension (kip)	Use%
		9/16 EHS	A1a	48a	21	3.17	15
		9/16 EHS	A1b	48b	21	3.18	15
	140.25	3/4 EHS	A2	71	34.98	5.76	16
		3/4 EHS	A2a	71a	34.98	5.31	15
		3/4 EHS	A2b	71b	34.98	5.37	15
1.2D + 1.0Ev + 1.0Eh 210°	48.27	3/8 EHS	A1	26	9.24	1.52	16
		3/8 EHS	A1a	26a	9.24	1.5	16
		3/8 EHS	A1b	26b	9.24	1.49	16
	93.07	9/16 EHS	A1	48	21	3.3	16
		9/16 EHS	A1a	48a	21	3.22	15
		9/16 EHS	A1b	48b	21	3.14	15
	140.25	3/4 EHS	A2	71	34.98	5.7	16
		3/4 EHS	A2a	71a	34.98	5.46	16
		3/4 EHS	A2b	71b	34.98	5.28	15
1.2D + 1.0Ev + 1.0Eh 240°	48.27	3/8 EHS	A1	26	9.24	1.51	16
		3/8 EHS	A1a	26a	9.24	1.51	16
		3/8 EHS	A1b	26b	9.24	1.48	16
	93.07	9/16 EHS	A1	48	21	3.27	16
		9/16 EHS	A1a	48a	21	3.27	16
		9/16 EHS	A1b	48b	21	3.13	15
	140.25	3/4 EHS	A2	71	34.98	5.6	16
		3/4 EHS	A2a	71a	34.98	5.6	16
		3/4 EHS	A2b	71b	34.98	5.24	15
1.2D + 1.0Ev + 1.0Eh 300°	48.27	3/8 EHS	A1	26	9.24	1.49	16
		3/8 EHS	A1a	26a	9.24	1.52	16
		3/8 EHS	A1b	26b	9.24	1.49	16
	93.07	9/16 EHS	A1	48	21	3.17	15
		9/16 EHS	A1a	48a	21	3.32	16
		9/16 EHS	A1b	48b	21	3.18	15
	140.25	3/4 EHS	A2	71	34.98	5.32	15
		3/4 EHS	A2a	71a	34.98	5.74	16
		3/4 EHS	A2b	71b	34.98	5.38	15
1.2D + 1.0Ev + 1.0Eh 330°	48.27	3/8 EHS	A1	26	9.24	1.48	16
		3/8 EHS	A1a	26a	9.24	1.51	16
		3/8 EHS	A1b	26b	9.24	1.51	16
	93.07	9/16 EHS	A1	48	21	3.13	15
		9/16 EHS	A1a	48a	21	3.31	16
		9/16 EHS	A1b	48b	21	3.23	15
	140.25	3/4 EHS	A2	71	34.98	5.2	15
		3/4 EHS	A2a	71a	34.98	5.72	16
		3/4 EHS	A2b	71b	34.98	5.52	16
1.0D + 1.0W Service Normal	48.27	3/8 EHS	A1	26	9.24	0.96	10
		3/8 EHS	A1a	26a	9.24	1.78	19
		3/8 EHS	A1b	26b	9.24	1.8	19
	93.07	9/16 EHS	A1	48	21	1.9	9
		9/16 EHS	A1a	48a	21	3.93	19
		9/16 EHS	A1b	48b	21	3.94	19
	140.25	3/4 EHS	A2	71	34.98	2.89	8
		3/4 EHS	A2a	71a	34.98	6.83	20
		3/4 EHS	A2b	71b	34.98	6.91	20
1.0D + 1.0W Service 60°	48.27	3/8 EHS	A1	26	9.24	1.23	13
		3/8 EHS	A1a	26a	9.24	1.23	13
		3/8 EHS	A1b	26b	9.24	2.08	23
	93.07	9/16 EHS	A1	48	21	2.57	12
		9/16 EHS	A1a	48a	21	2.56	12
		9/16 EHS	A1b	48b	21	4.66	22
	140.25	3/4 EHS	A2	71	34.98	4.23	12
		3/4 EHS	A2a	71a	34.98	4.24	12
		3/4 EHS	A2b	71b	34.98	8.26	24
1.0D + 1.0W Service 90°	48.27	3/8 EHS	A1	26	9.24	1.51	16
		3/8 EHS	A1a	26a	9.24	1.03	11
		3/8 EHS	A1b	26b	9.24	2	22
	93.07	9/16 EHS	A1	48	21	3.24	15
		9/16 EHS	A1a	48a	21	2.07	10
		9/16 EHS	A1b	48b	21	4.45	21
	140.25	3/4 EHS	A2	71	34.98	5.53	16
		3/4 EHS	A2a	71a	34.98	3.28	9
		3/4 EHS	A2b	71b	34.98	7.86	22

DETAILED CABLE FORCES

Load Case	Elev (ft)	Cable	Anchor Node	Tower Node	Allow Tension (kip)	Applied Tension (kip)	Use%
1.0D + 1.0W Service 120°	48.27	3/8 EHS	A1	26	9.24	1.78	19
		3/8 EHS	A1a	26a	9.24	0.96	10
		3/8 EHS	A1b	26b	9.24	1.8	19
	93.07	9/16 EHS	A1	48	21	3.92	19
		9/16 EHS	A1a	48a	21	1.89	9
		9/16 EHS	A1b	48b	21	3.95	19
	140.25	3/4 EHS	A2	71	34.98	6.83	20
		3/4 EHS	A2a	71a	34.98	2.91	8
		3/4 EHS	A2b	71b	34.98	6.89	20
1.0D + 1.0W Service 180°	48.27	3/8 EHS	A1	26	9.24	2.06	22
		3/8 EHS	A1a	26a	9.24	1.24	13
		3/8 EHS	A1b	26b	9.24	1.25	13
	93.07	9/16 EHS	A1	48	21	4.62	22
		9/16 EHS	A1a	48a	21	2.59	12
		9/16 EHS	A1b	48b	21	2.6	12
	140.25	3/4 EHS	A2	71	34.98	8.2	23
		3/4 EHS	A2a	71a	34.98	4.28	12
		3/4 EHS	A2b	71b	34.98	4.33	12
1.0D + 1.0W Service 210°	48.27	3/8 EHS	A1	26	9.24	1.99	22
		3/8 EHS	A1a	26a	9.24	1.52	16
		3/8 EHS	A1b	26b	9.24	1.03	11
	93.07	9/16 EHS	A1	48	21	4.46	21
		9/16 EHS	A1a	48a	21	3.27	16
		9/16 EHS	A1b	48b	21	2.08	10
	140.25	3/4 EHS	A2	71	34.98	7.87	23
		3/4 EHS	A2a	71a	34.98	5.57	16
		3/4 EHS	A2b	71b	34.98	3.33	10
1.0D + 1.0W Service 240°	48.27	3/8 EHS	A1	26	9.24	1.79	19
		3/8 EHS	A1a	26a	9.24	1.79	19
		3/8 EHS	A1b	26b	9.24	0.97	10
	93.07	9/16 EHS	A1	48	21	3.94	19
		9/16 EHS	A1a	48a	21	3.95	19
		9/16 EHS	A1b	48b	21	1.91	9
	140.25	3/4 EHS	A2	71	34.98	6.87	20
		3/4 EHS	A2a	71a	34.98	6.85	20
		3/4 EHS	A2b	71b	34.98	2.99	9
1.0D + 1.0W Service 300°	48.27	3/8 EHS	A1	26	9.24	1.24	13
		3/8 EHS	A1a	26a	9.24	2.06	22
		3/8 EHS	A1b	26b	9.24	1.24	13
	93.07	9/16 EHS	A1	48	21	2.59	12
		9/16 EHS	A1a	48a	21	4.63	22
		9/16 EHS	A1b	48b	21	2.59	12
	140.25	3/4 EHS	A2	71	34.98	4.28	12
		3/4 EHS	A2a	71a	34.98	8.18	23
		3/4 EHS	A2b	71b	34.98	4.35	12
1.0D + 1.0W Service 330°	48.27	3/8 EHS	A1	26	9.24	1.03	11
		3/8 EHS	A1a	26a	9.24	1.98	21
		3/8 EHS	A1b	26b	9.24	1.52	16
	93.07	9/16 EHS	A1	48	21	2.09	10
		9/16 EHS	A1a	48a	21	4.44	21
		9/16 EHS	A1b	48b	21	3.26	16
	140.25	3/4 EHS	A2	71	34.98	3.28	9
		3/4 EHS	A2a	71a	34.98	7.81	22
		3/4 EHS	A2b	71b	34.98	5.63	16

MAXIMUM CABLE FORCES SUMMARY

Load Case	Elevation (ft)	Cable	Anchor Node	Tower Node	Allowed Tension (kip)	Applied Tension (kip)	Use (%)
1.2D + 1.0W 90°	48.27	3/8 EHS	A1b	26b	9.24	7.10	77
1.2D + 1.0W 90°	93.07	9/16 EHS	A1b	48b	21.00	17.92	85
1.2D + 1.0W 90°	140.25	3/4 EHS	A2b	71b	34.98	33.17	95

MAXIMUM TORQUE ARM STRESS SUMMARY

Load Case	Elevation (ft)	Member	Type	Compression %	Tension %
1.2D + 1.0W Normal	47.40	2X2X0.25	Horiz	0	10
1.2D + 1.0W Normal	92.10	2X2X0.25	Horiz	0	0
1.2D + 1.0W Normal	140.50	2X2X0.25	Horiz	0	19

DEFLECTIONS AND ROTATIONS

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
1.2D + 1.0W Normal 157.90 mph wind with no ice	128.27	1.4067	-0.1217	0.7181	0.7234
1.2D + 1.0W Normal 157.90 mph wind with no ice	153.07	1.7588	-0.1129	1.0279	1.034
1.2D + 1.0W 60° 157.90 mph wind with no ice	128.27	0.7952	-0.1259	0.3954	0.415
1.2D + 1.0W 60° 157.90 mph wind with no ice	153.07	1.0077	-0.0857	0.5620	0.5677
1.2D + 1.0W 90° 157.90 mph wind with no ice	128.27	1.2364	-0.0871	0.6086	0.6135
1.2D + 1.0W 90° 157.90 mph wind with no ice	153.07	1.5343	-0.0692	0.7101	0.7135
1.2D + 1.0W 120° 157.90 mph wind with no ice	128.27	1.4097	-0.2438	0.6955	0.7338
1.2D + 1.0W 120° 157.90 mph wind with no ice	153.07	1.747	-0.2342	0.8579	0.8881
1.2D + 1.0W 180° 157.90 mph wind with no ice	128.27	0.7698	-0.1676	0.3954	0.4226
1.2D + 1.0W 180° 157.90 mph wind with no ice	153.07	0.9838	-0.1127	0.7049	0.7134
1.2D + 1.0W 210° 157.90 mph wind with no ice	128.27	1.2026	0.0498	0.6092	0.6112
1.2D + 1.0W 210° 157.90 mph wind with no ice	153.07	1.5051	0.0898	0.8463	0.8511
1.2D + 1.0W 240° 157.90 mph wind with no ice	128.27	1.3798	-0.1367	0.6845	0.6939
1.2D + 1.0W 240° 157.90 mph wind with no ice	153.07	1.7143	-0.0299	0.8468	0.847
1.2D + 1.0W 300° 157.90 mph wind with no ice	128.27	0.7685	-0.1050	0.3824	0.393
1.2D + 1.0W 300° 157.90 mph wind with no ice	153.07	0.9745	-0.1344	0.5476	0.5623
1.2D + 1.0W 330° 157.90 mph wind with no ice	128.27	1.2142	0.0333	0.6217	0.6218
1.2D + 1.0W 330° 157.90 mph wind with no ice	153.07	1.5218	-0.0448	0.8946	0.8955
1.2D + 1.0Di + 1.0Wi Normal 29.24 mph wind with 0.000" radial ice	128.27	0.018	-0.0033	0.0088	0.009
1.2D + 1.0Di + 1.0Wi Normal 29.24 mph wind with 0.000" radial ice	153.07	0.0231	-0.0030	0.0189	0.0191
1.2D + 1.0Di + 1.0Wi 60° 29.24 mph wind with 0.000" radial ice	128.27	0.0191	-0.0033	0.0086	0.0092
1.2D + 1.0Di + 1.0Wi 60° 29.24 mph wind with 0.000" radial ice	153.07	0.0241	-0.0030	0.0139	0.0142
1.2D + 1.0Di + 1.0Wi 90° 29.24 mph wind with 0.000" radial ice	128.27	0.0189	-0.0022	0.0084	0.0087
1.2D + 1.0Di + 1.0Wi 90° 29.24 mph wind with 0.000" radial ice	153.07	0.0236	-0.0018	0.0114	0.0116
1.2D + 1.0Di + 1.0Wi 120° 29.24 mph wind with 0.000" radial ice	128.27	0.0183	-0.0033	0.0083	0.0089
1.2D + 1.0Di + 1.0Wi 120° 29.24 mph wind with 0.000" radial ice	153.07	0.0229	-0.0030	0.0134	0.0137
1.2D + 1.0Di + 1.0Wi 180° 29.24 mph wind with 0.000" radial ice	128.27	0.0168	-0.0034	0.0086	0.0092
1.2D + 1.0Di + 1.0Wi 180° 29.24 mph wind with 0.000" radial ice	153.07	0.0219	-0.0029	0.0189	0.0191
1.2D + 1.0Di + 1.0Wi 210° 29.24 mph wind with 0.000" radial ice	128.27	0.0163	-0.0023	0.0085	0.0087
1.2D + 1.0Di + 1.0Wi 210° 29.24 mph wind with 0.000" radial ice	153.07	0.0214	-0.0017	0.0174	0.0175
1.2D + 1.0Di + 1.0Wi 240° 29.24 mph wind with 0.000" radial ice	128.27	0.0161	-0.0034	0.0083	0.0086
1.2D + 1.0Di + 1.0Wi 240° 29.24 mph wind with 0.000" radial ice	153.07	0.021	-0.0029	0.0138	0.014
1.2D + 1.0Di + 1.0Wi 300° 29.24 mph wind with 0.000" radial ice	128.27	0.0167	-0.0033	0.0084	0.0086
1.2D + 1.0Di + 1.0Wi 300° 29.24 mph wind with 0.000" radial ice	153.07	0.0217	-0.0030	0.0140	0.0143
1.2D + 1.0Di + 1.0Wi 330° 29.24 mph wind with 0.000" radial ice	128.27	0.0173	-0.0022	0.0087	0.0087
1.2D + 1.0Di + 1.0Wi 330° 29.24 mph wind with 0.000" radial ice	153.07	0.0223	-0.0018	0.0175	0.0176
1.2D + 1.0Ev + 1.0Eh Normal Seismic	128.27	0.0095	-0.0019	0.0079	0.008
1.2D + 1.0Ev + 1.0Eh Normal Seismic	153.07	0.0134	-0.0017	0.0108	0.0109
1.2D + 1.0Ev + 1.0Eh 60° Seismic	128.27	0.0102	-0.0019	0.0080	0.0083
1.2D + 1.0Ev + 1.0Eh 60° Seismic	153.07	0.0141	-0.0017	0.0108	0.0109
1.2D + 1.0Ev + 1.0Eh 90° Seismic	128.27	0.01	-0.0019	0.0081	0.0083
1.2D + 1.0Ev + 1.0Eh 90° Seismic	153.07	0.0139	-0.0017	0.0107	0.0108
1.2D + 1.0Ev + 1.0Eh 120° Seismic	128.27	0.0095	-0.0019	0.0079	0.0082
1.2D + 1.0Ev + 1.0Eh 120° Seismic	153.07	0.0134	-0.0017	0.0107	0.0108
1.2D + 1.0Ev + 1.0Eh 180° Seismic	128.27	0.0083	-0.0019	0.0075	0.0077
1.2D + 1.0Ev + 1.0Eh 180° Seismic	153.07	0.012	-0.0017	0.0107	0.0108
1.2D + 1.0Ev + 1.0Eh 210° Seismic	128.27	0.0072	-0.0015	0.0071	0.0072
1.2D + 1.0Ev + 1.0Eh 210° Seismic	153.07	0.0109	-0.0013	0.0102	0.0103
1.2D + 1.0Ev + 1.0Eh 240° Seismic	128.27	0.007	-0.0015	0.0072	0.0072
1.2D + 1.0Ev + 1.0Eh 240° Seismic	153.07	0.0108	-0.0013	0.0103	0.0104
1.2D + 1.0Ev + 1.0Eh 300° Seismic	128.27	0.0076	-0.0015	0.0073	0.0073
1.2D + 1.0Ev + 1.0Eh 300° Seismic	153.07	0.0113	-0.0013	0.0102	0.0103
1.2D + 1.0Ev + 1.0Eh 330° Seismic	128.27	0.0088	-0.0019	0.0078	0.0079
1.2D + 1.0Ev + 1.0Eh 330° Seismic	153.07	0.0126	-0.0017	0.0108	0.0109
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	128.27	0.076	-0.0045	0.0370	0.0372
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	153.07	0.098	-0.0051	0.0816	0.0818
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	128.27	0.0833	-0.0057	0.0395	0.0399
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	153.07	0.1063	-0.0057	0.0638	0.064
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	128.27	0.0798	0.0039	0.0369	0.0371

DEFLECTIONS AND ROTATIONS

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	153.07	0.1011	0.0047	0.0519	0.0521
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	128.27	0.0766	-0.0054	0.0350	0.0352
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	153.07	0.0969	-0.0057	0.0589	0.0591
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	128.27	0.079	-0.0055	0.0401	0.0402
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	153.07	0.1025	-0.0044	0.0845	0.0846
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	128.27	0.0783	0.0070	0.0387	0.0393
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	153.07	0.1009	0.0083	0.0773	0.0777
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	128.27	0.0749	-0.0051	0.0355	0.0355
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	153.07	0.0958	-0.0038	0.0596	0.0596
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	128.27	0.0793	-0.0047	0.0386	0.0387
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	153.07	0.1014	-0.0051	0.0626	0.0628
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	128.27	0.0773	0.0049	0.0380	0.0384
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	153.07	0.0994	0.0049	0.0763	0.0764

MAXIMUM REACTIONS SUMMARY

Anchor Group	Uplift	Shear
BASE	88.03	2.38
A1	15.87	18.95
A2	25.54	20.90

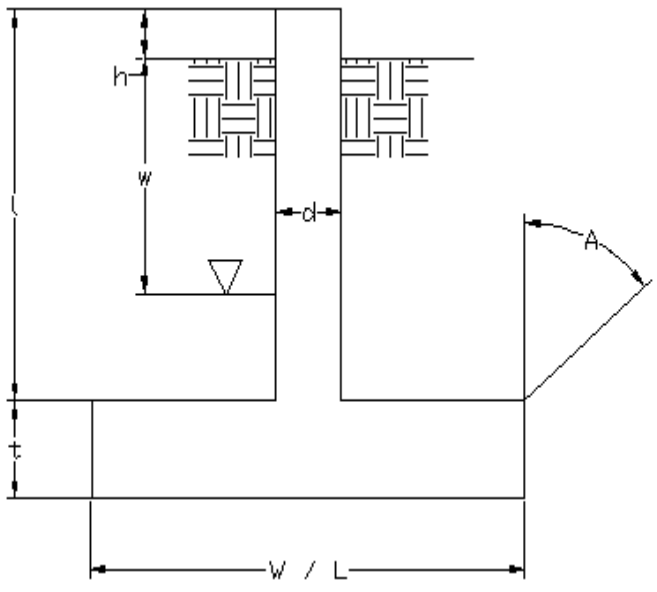
Site Name: Golden Gate Parkway Naples, FL
Site Number: 207833
Design Base Loads (Factored) per TIA-222-H

Individual Pad & Pier Foundation Analysis

Foundation Analysis Parameters		
Foundation Mapped:	Y	-
Moment (M_u):	0.0	k-ft
Shear/Leg (V_u):	2.4	k
Compression/Leg (P_u):	88.0	k
Uplift/Leg (T_u):	0.0	k
Tower Type:	GT	-
Pier Shape		-
Diameter/Width of Prismatic Portion of Pier (d):	3.9	ft
Depth to Base of Foundation:	8.8	ft
Pier Height Above Ground (h):	0.8	ft
Length / Width of Pad (w):	9.4	ft
Thickness of Pad (t):	6.0	ft
Depth Below Ground Surface to Water Table (w):	3	ft
Unit Weight of Concrete:	150	pcf
Unit Weight of Water:	62.4	pcf
Unit Weight of Soil Above Water Table:	105	pcf
Unit Weight of Soil Below Water Table:	42.6	pcf
Friction Angle of Uplift from Top of Pad:	30	°
Friction Angle of Uplift from Base of Pad:	30	°
Uplift Angle Started at Top or Base of Pad (T/B):	T	-
Ultimate Skin Friction:	50	psf
Ultimate Compressive Bearing Pressure:	9,000	psf
Capacity Increase (Due to Transient Loads):	1	-
Bearing Strength Reduction Factor (f_s):	0.6	-
Uplift Strength Reduction Factor (f_s):	0.75	-

Depth (ft)		Ultimate Lateral	Increment	γ_{Soil}	Cu	ϕ
Top	Bottom	Bearing Pressure (psf)	(psf/ft)	(pcf)	(psf)	(°)
0	2.8	0	100	100	0	0
2.8	8.8	990	371	105	0	34

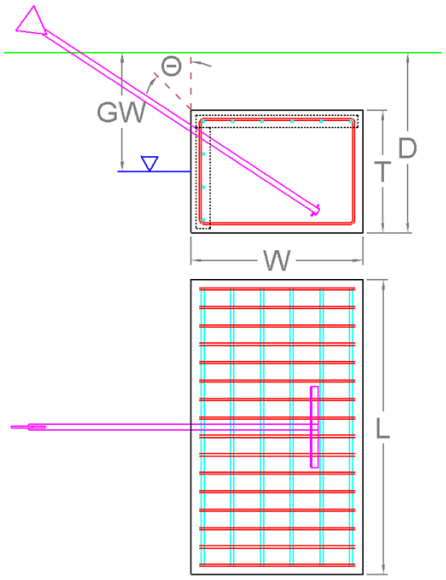
Axial Capacities and Design Moment		
Weight of Concrete (Bouyancy Considered):	71.53	k
Weight of Soil (Bouyancy Considered):	32.35	k
Ultimate Skin Friction Resistance:	11.28	k
Controlling Failure Mode (Top / Base):	Top	-
Nominal Uplift Capacity per Leg (f_sT_n):	78.90	k
T_u/f_sT_n:	0%	Pass
P_u:	141.14	k
Nominal Compressive Capacity per Leg (f_sP_n):	477.14	k
P_u/f_sP_n:	30%	Pass
Inflection Point (Below Ground Surface):	3.01	ft
Factored Design Moment At Inflection Point (M_u):	4.92	k-ft



Guy Anchor Block Analysis (ANSI/TIA-222-H)

Anchor Block Parameters			
Include Berm?		N	
Analyze Anchor Rod?		N	
Ignore Rebar?		Y	
Base Depth	*D*	3.9	ft
Width	*W*	7.0	ft
Length	*L*	18.0	ft
Thickness	*T*	3.3	ft
Water Table Depth [BGL]	*GW*	3	ft
Unit Weight of Concrete		150	pcf
Unit Weight of Soil Above Water Table		105.0	pcf
Unit Weight of Water		62.4	pcf
Unit Weight of Soil [Submerged]		42.6	pcf
Friction Angle		34	°
Cohesion		0	psf
Ultimate Skin Friction		50	psf
Coefficient of Shear Friction		0.30	
Conical Failure Angle	Θ	30	°
Soil Uplift at _____ of Anchor		Top	
Capacity Increase (Transient Loads)		1.00	
Uplift Strength Reduction Factor, ϕ_u		0.75	
Shear Strength Reduction Factor, ϕ_v		0.75	
Dead Load Factor		0.90	

Reactions		
Uplift, T_u	15.9	k
Shear, V_u	19.0	k
Anchor Radius	96	ft
Node	A1	-



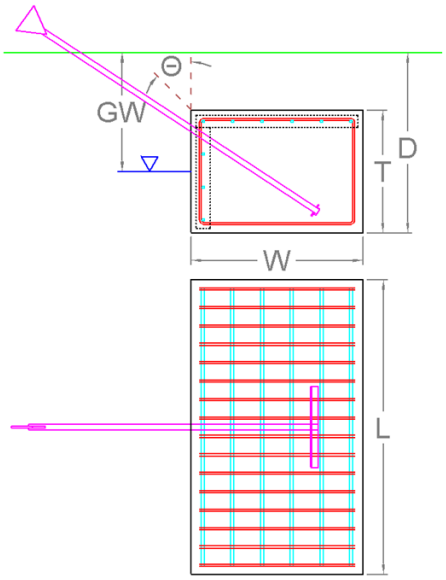
Soil Uplift Capacity		
Uplift Resistance from Skin Friction and Soil Shear	4.5	k
Nominal Uplift Resistance, $\phi_u T_n$	60.9	k
T_u / $\phi_u T_n$	**26.0%**	

Soil Shear Capacity		
Shear Resistance from Skin Friction	1.8	k
Shear Friction Resistance Due to Normal Force	12.4	k
Passive Pressure	838	psf
Passive Pressure Resistance	50.2	k
Nominal Shear Resistance, $\phi_v V_n$	48.3	k
V_u / $\phi_v V_n$	**39.3%**	

Guy Anchor Block Analysis (ANSI/TIA-222-H)

Anchor Block Parameters			
Include Berm?		N	
Analyze Anchor Rod?		N	
Ignore Rebar?		Y	
Base Depth	*D*	4.8	ft
Width	*W*	5.0	ft
Length	*L*	10.0	ft
Thickness	*T*	3.3	ft
Water Table Depth [BGL]	*GW*	3	ft
Unit Weight of Concrete		150	pcf
Unit Weight of Soil Above Water Table		105.0	pcf
Unit Weight of Water		62.4	pcf
Unit Weight of Soil [Submerged]		42.6	pcf
Friction Angle		34	°
Cohesion		0	psf
Ultimate Skin Friction		50	psf
Coefficient of Shear Friction		0.30	
Conical Failure Angle	Θ	30	°
Soil Uplift at _____ of Anchor		Top	
Capacity Increase (Transient Loads)		1.00	
Uplift Strength Reduction Factor, ϕ_u		0.75	
Shear Strength Reduction Factor, ϕ_v		0.75	
Dead Load Factor		0.90	

Reactions		
Uplift, T_u	25.5	k
Shear, V_u	21.1	k
Anchor Radius	117	ft
Node	A2	-



Soil Uplift Capacity		
Uplift Resistance from Skin Friction and Soil Shear	3.0	k
Nominal Uplift Resistance, $\phi_u T_n$	28.3	k
T_u / $\phi_u T_n$	**90.4%**	

Soil Shear Capacity		
Shear Resistance from Skin Friction	1.1	k
Shear Friction Resistance Due to Normal Force	0.0	k
Passive Pressure	1,139	psf
Passive Pressure Resistance	37.9	k
Nominal Shear Resistance, $\phi_v V_n$	29.2	k
V_u / $\phi_v V_n$	**72.1%**	