

Date: **July 25, 2024**



Morrison Hershfield
1455 Lincoln Parkway, Suite 500
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Subject: **Structural Analysis Report**

Carrier Designation: **T-Mobile Co-Locate**
Site Number: 9JK0345B

Crown Castle Designation: **BU Number:** 846216
Site Name: Fort White
JDE Job Number: 2117940
Work Order Number: 2314725
Order Number: 672918 Rev. 0

Engineering Firm Designation: **Morrison Hershfield Project Number:** CN7-432R1 / 2400001

Site Data: **612 Southwest Hilliard Lane, Fort White, Columbia Co., FL 32038**
Latitude 29° 54' 31.23", Longitude -82° 40' 19.58"
300 Foot – Rohn Guyed Tower

Morrison Hershfield is pleased to submit this “**Structural Analysis Report**” to determine the structural integrity of the above-mentioned tower.

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC5: Proposed Equipment Configuration

Sufficient Capacity

This analysis utilizes an ultimate 3-second gust wind speed of 121 mph as required by the 2023 Florida Building Code, 8th Edition. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Respectfully submitted by:

G. Lance Cooke, P.E. (FL License No. 68787)
Senior Engineer

Certificate of Authorization# 8508



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1) INTRODUCTION

This tower is a 300 ft Rohn guyed tower and mapped by GPD Group, Inc.

2) ANALYSIS CRITERIA

TIA-222 Revision: TIA-222-H
Risk Category: II
Wind Speed: 121 mph
Exposure Category: C
Topographic Factor: 1
Service Wind Speed: 60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
250.0	253.0	1	ericsson	RADIO 4415 B25_TMO	4 2 2	1-5/8 2-1/8 1/2
		2	ericsson	RADIO 4424 B25_TMOV1		
		2	ericsson	RADIO 4449 B71 B85A_T-MOBILE		
	250.0	3	ericsson	AIR6449 B41_T-MOBILE w/ Mount Pipe		
		3	commscope	FFV4-65C-R3-V1_TMO w/ Mount Pipe		
		1	commscope	VHLP4-11W/A		
		1	comsat rsi	P-24A35GF-U		
		2	ceragon	FIBEAIR IP-20A RFU-D-HP		
		1	-	8' Mount Pipe [#P2.0 STD]		
		1	-	Sector Mount [SM 502-3]		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
289.0	291.0	6	andrew	SBNH-1D8585B w/ Mount Pipe	7 6 4 3	3/4 1-5/8 3/8 5/16
		3	andrew	SBNHH-1D65B w/ Mount Pipe		
		3	commscope	SBNHH-1D85B w/ Mount Pipe		
	289.0	6	ericsson	KRY 112 81/2		
		3	ericsson	RADIO 4426		
		3	ericsson	RRUS 11		
		6	ericsson	RRUS 12		
		3	ericsson	RRUS 32		
		2	ericsson	RRUS 4478 B14		
		3	ericsson	RRUS A2 MODULE		
		2	raycap	DC6-48-60-18-8C		
		2	raycap	DC6-48-60-18-8F		
		1	-	Sector Mount [SM 502-3]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
4-GEOTECHNICAL REPORTS	5179866	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	5183121	CCISITES
4-TOWER MANUFACTURER DRAWINGS	5183178	CCISITES

3.1) Analysis Method

tnxTower (version 8.2.4.3), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A. When applicable, Crown Castle has calculated and provided the effective area for panel antennas using approved methods following the intent of the TIA-222 standard.

3.2) Assumptions

- 1) Tower and structures were maintained in accordance with the TIA-222 Standard.
- 2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.

This analysis may be affected if any assumptions are not valid or have been made in error. Morrison Hershfield should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P _{allow} (K)	% Capacity	Pass / Fail
T1	300 - 280	Leg	ROHN 2.5 EH	2	-20.04	99.13	20.2	Pass
T2	280 - 260	Leg	ROHN 2.5 STD	59	-19.83	75.22	26.4	Pass
T3	260 - 240	Leg	ROHN 2.5 EH	116	-37.95	99.13	38.3	Pass
T4	240 - 220	Leg	ROHN 2.5 EH	169	-40.78	99.13	41.1	Pass
T5	220 - 200	Leg	ROHN 2.5 EH	226	-44.23	79.98	55.3	Pass
T6	200 - 180	Leg	ROHN 3 EH	261	-44.30	117.93	37.6	Pass
T7	180 - 160	Leg	ROHN 3 EH	293	-49.08	117.93	41.6	Pass
T8	160 - 140	Leg	ROHN 3 EH	326	-48.85	117.93	41.4	Pass
T9	140 - 120	Leg	ROHN 3 EH	358	-61.46	135.92	45.2	Pass
T10	120 - 100	Leg	ROHN 3 EH	415	-57.54	135.92	42.3	Pass
T11	100 - 80	Leg	ROHN 3 EH	473	-59.01	117.93	50.0	Pass
T12	80 - 60	Leg	ROHN 3 EH	506	-57.81	117.93	49.0	Pass
T13	60 - 40	Leg	ROHN 3 EH	539	-64.80	117.93	54.9	Pass
T14	40 - 20	Leg	ROHN 3 EH	572	-66.86	117.93	56.7	Pass
T15	20 - 4.81771	Leg	ROHN 3 EH	604	-64.01	117.93	54.3	Pass
T16	4.81771 - 0	Leg	ROHN 3 EH	632	-60.91	140.55	43.3	Pass
T1	300 - 280	Diagonal	ROHN 1.5 x 11GA	15	-2.61	12.40	21.0 25.4 (b)	Pass
T2	280 - 260	Diagonal	ROHN 1.5 x 11GA	113	-1.63	12.40	13.2 15.9 (b)	Pass
T3	260 - 240	Diagonal	L2x2x1/4	124	-4.08	29.99	13.6	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
							27.0 (b)	
T4	240 - 220	Diagonal	ROHN 1.5 x 11GA	223	-2.89	12.40	23.3 28.1 (b)	Pass
T5	220 - 200	Diagonal	ROHN 1.5 x 16GA	235	-2.39	6.52	36.7	Pass
T6	200 - 180	Diagonal	ROHN 1.5 x 16GA	274	-3.36	6.52	51.5 55.1 (b)	Pass
T7	180 - 160	Diagonal	ROHN 1.5 x 16GA	324	-2.40	6.52	36.8	Pass
T8	160 - 140	Diagonal	ROHN 1.5 x 16GA	334	-2.50	6.52	38.3	Pass
T9	140 - 120	Diagonal	ROHN 1.5 x 16GA	372	-2.91	6.52	44.7	Pass
T10	120 - 100	Diagonal	ROHN 1.5 x 16GA	471	-2.13	6.52	32.7	Pass
T11	100 - 80	Diagonal	ROHN 1.5 x 16GA	502	-1.82	6.52	27.8	Pass
T12	80 - 60	Diagonal	ROHN 1.5 x 16GA	515	-2.57	6.52	39.4	Pass
T13	60 - 40	Diagonal	ROHN 1.5 x 16GA	565	-3.02	6.52	46.3 48.3 (b)	Pass
T14	40 - 20	Diagonal	ROHN 1.5 x 16GA	581	-2.32	6.52	35.5	Pass
T15	20 - 4.81771	Diagonal	ROHN 1.5 x 16GA	618	-2.60	6.52	39.9 42.8 (b)	Pass
T16	4.81771 - 0	Horizontal	L4x4x1/4	639	-1.11	61.97	9.8	Pass
T1	300 - 280	Top Girt	ROHN 1.5 x 11GA	4	-0.36	14.23	2.5 3.5 (b)	Pass
T2	280 - 260	Top Girt	ROHN 1.5 x 11GA	61	0.74	16.91	4.4 7.2 (b)	Pass
T3	260 - 240	Top Girt	2L2x2x1/4x3/8	118	0.66	51.56	1.3 3.7 (b)	Pass
T4	240 - 220	Top Girt	ROHN 1.5 x 11GA	173	1.69	16.91	10.0 16.4 (b)	Pass
T5	220 - 200	Top Girt	ROHN 1.5 x 16GA	229	-0.77	7.40	10.4 12.3 (b)	Pass
T6	200 - 180	Top Girt	ROHN 1.5 x 16GA	263	-0.77	7.48	10.3 12.3 (b)	Pass
T7	180 - 160	Top Girt	ROHN 1.5 x 16GA	296	-0.85	7.48	11.4 13.7 (b)	Pass
T8	160 - 140	Top Girt	ROHN 1.5 x 16GA	329	-0.85	7.48	11.3 13.6 (b)	Pass
T9	140 - 120	Top Girt	ROHN 1.5 x 16GA	361	-1.06	7.48	14.2 17.1 (b)	Pass
T10	120 - 100	Top Girt	ROHN 1.5 x 16GA	420	-1.04	7.48	13.9 16.7 (b)	Pass
T11	100 - 80	Top Girt	ROHN 1.5 x 16GA	475	-1.02	7.48	13.7 16.4 (b)	Pass
T12	80 - 60	Top Girt	ROHN 1.5 x 16GA	508	-1.01	7.48	13.5 16.3 (b)	Pass
T13	60 - 40	Top Girt	ROHN 1.5 x 16GA	541	-1.12	7.48	15.0 18.1 (b)	Pass
T14	40 - 20	Top Girt	ROHN 1.5 x 16GA	574	-1.16	7.48	15.5 18.6 (b)	Pass
T15	20 - 4.81771	Top Girt	ROHN 1.5 x 16GA	607	-1.11	7.48	14.9 17.9 (b)	Pass
T16	4.81771 - 0	Top Girt	L4x4x1/4	636	11.54	66.00	17.5	Pass
T1	300 - 280	Bottom Girt	ROHN 1.5 x 11GA	9	0.69	16.91	4.1 6.7 (b)	Pass
T2	280 - 260	Bottom Girt	ROHN 1.5 x 11GA	65	-0.36	14.23	2.5 3.5 (b)	Pass
T4	240 - 220	Bottom Girt	ROHN 1.5 x 11GA	175	-0.73	14.23	5.1 8.0 (b)	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
T5	220 - 200	Bottom Girt	ROHN 1.5 x 16GA	232	-0.77	7.40	10.4 12.3 (b)	Pass
T6	200 - 180	Bottom Girt	ROHN 1.5 x 16GA	266	-0.77	7.48	10.3 12.3 (b)	Pass
T7	180 - 160	Bottom Girt	ROHN 1.5 x 16GA	299	-0.85	7.48	11.4 13.7 (b)	Pass
T8	160 - 140	Bottom Girt	ROHN 1.5 x 16GA	332	-0.85	7.48	11.3 13.6 (b)	Pass
T9	140 - 120	Bottom Girt	ROHN 1.5 x 16GA	364	-1.06	7.48	14.2 17.1 (b)	Pass
T10	120 - 100	Bottom Girt	ROHN 1.5 x 16GA	423	-1.04	7.48	13.9 16.7 (b)	Pass
T11	100 - 80	Bottom Girt	ROHN 1.5 x 16GA	478	-1.02	7.48	13.7 16.4 (b)	Pass
T12	80 - 60	Bottom Girt	ROHN 1.5 x 16GA	511	-1.01	7.48	13.5 16.3 (b)	Pass
T13	60 - 40	Bottom Girt	ROHN 1.5 x 16GA	544	-1.12	7.48	15.0 18.1 (b)	Pass
T14	40 - 20	Bottom Girt	ROHN 1.5 x 16GA	577	-1.16	7.48	15.5 18.6 (b)	Pass
T15	20 - 4.81771	Bottom Girt	ROHN 1.5 x 16GA	612	1.72	9.44	18.2 27.7 (b)	Pass
T1	300 - 280	Guy A@282.523	3/4 [ECP-24000]	690	14.21	36.73	38.7	Pass
T3	260 - 240	Guy A@242.523	3/4 [ECP-24000]	675	14.31	36.73	39.0	Pass
T6	200 - 180	Guy A@182.523	3/4 [ECP-24000]	663	14.98	36.73	40.8	Pass
T9	140 - 120	Guy A@122.523	3/4 [ECP-24000]	657	15.56	36.73	42.4	Pass
T13	60 - 40	Guy A@59.3854	1/2 [ECP-23000]	651	7.60	16.95	44.8	Pass
T1	300 - 280	Guy B@282.523	3/4 [ECP-24000]	687	14.54	36.73	39.6	Pass
T3	260 - 240	Guy B@242.523	3/4 [ECP-24000]	672	15.14	36.73	41.2	Pass
T6	200 - 180	Guy B@182.523	3/4 [ECP-24000]	662	16.18	36.73	44.0	Pass
T9	140 - 120	Guy B@122.523	3/4 [ECP-24000]	656	17.41	36.73	47.4	Pass
T13	60 - 40	Guy B@59.3854	1/2 [ECP-23000]	650	8.44	16.95	49.8	Pass
T1	300 - 280	Guy C@282.523	3/4 [ECP-24000]	679	14.67	36.73	39.9	Pass
T3	260 - 240	Guy C@242.523	3/4 [ECP-24000]	664	15.43	36.73	42.0	Pass
T6	200 - 180	Guy C@182.523	3/4 [ECP-24000]	658	16.25	36.73	44.2	Pass
T9	140 - 120	Guy C@122.523	3/4 [ECP-24000]	652	17.16	36.73	46.7	Pass
T13	60 - 40	Guy C@59.3854	1/2 [ECP-23000]	646	8.34	16.95	49.2	Pass
T1	300 - 280	Top Guy Pull-Off@282.523	2L2x2x1/4x3/8	684	5.11	51.56	9.9 22.0 (b)	Pass
T3	260 - 240	Top Guy Pull-Off@242.523	2L2x2x1/4x3/8	669	7.92	51.56	15.4 22.9 (b)	Pass
T6	200 - 180	Top Guy Pull-Off@182.523	2L2x2x1/4x3/8	660	5.79	51.56	11.2 16.8 (b)	Pass
T9	140 - 120	Top Guy Pull-Off@122.523	2L2x2x1/4x3/8	654	6.70	51.56	13.0 19.4 (b)	Pass
T13	60 - 40	Top Guy Pull-Off@59.3854	4 1/2x3/8	649	3.53	57.41	6.2 7.1 (b)	Pass
T1	300 - 280	Torque Arm Top@282.523	C15x33.9	681	-0.81	306.34	26.9 28.2 (b)	Pass
T3	260 - 240	Torque Arm Top@242.523	C15x33.9	666	-1.94	306.34	26.3	Pass
							Summary	
						Leg (T14)	56.7	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P _{allow} (K)	% Capacity	Pass / Fail
						Diagonal (T6)	55.1	Pass
						Horizontal (T16)	9.8	Pass
						Top Girt (T14)	18.6	Pass
						Bottom Girt (T15)	27.7	Pass
						Guy A (T13)	44.8	Pass
						Guy B (T13)	49.8	Pass
						Guy C (T13)	49.2	Pass
						Top Guy Pull-Off (T3)	22.9	Pass
						Torque Arm Top (T1)	28.2	Pass
						Bolt Checks	55.1	Pass
						Rating =	56.7	Pass

Table 5 - Tower Component Stresses vs. Capacity – LC5

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Base Foundation (Structure)	0	23.3	Pass
1	Base Foundation (Soil Interaction)		34.8	Pass
1	Guy Anchor Foundation Soil Interaction (Inner)	0	18.1	Pass
1	Guy Anchor Foundation Soil Interaction (Outer)		17.6	Pass

Structure Rating (max from all components) =	56.7%*
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Notes:

- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.
- 2) *Rating per TIA-222-H, Section 15.5.

4.1) Recommendations

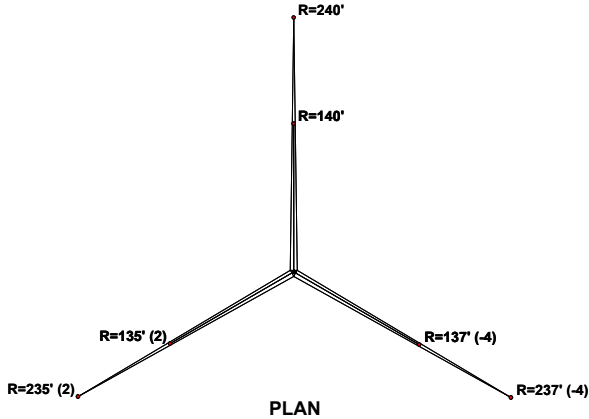
The tower and its base and anchor foundations have sufficient capacity to carry the proposed load configuration. No modifications are required at this time.

The results of the tilt and twist values for a 60 mph 3-second gust service wind speed per the TIA-222-H Standard are given below:

Tilt & Twist Values for Dishes (60 mph Service Wind)

Elevation (ft)	Appurtenance	Deflection (in)	Tilt (°)	Twist (°)
250.0	VHLP4-11W/A	1.172	0.0281	0.1311
250.0	P-24A35GF-U	1.172	0.0281	0.1311

APPENDIX A
TNXTOWER OUTPUT



SYMBOL LIST			
MARK	SIZE	MARK	SIZE
A	ROHN 1.5 x 11GA	C	L4x4x1/4
B	N.A.	D	4 @ 1.20443

MATERIAL STRENGTH					
GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi
A500-42	42 ksi	58 ksi	A53-B-42	42 ksi	63 ksi

- ## TOWER DESIGN NOTES
1. Tower is located in Columbia County, Florida.
 2. Tower designed for Exposure C to the TIA-222-H Standard.
 3. Tower designed for a 121 mph basic wind in accordance with the TIA-222-H Standard.
 4. Deflections are based upon a 60 mph wind.
 5. Tower Risk Category II.
 6. Topographic Category 1 with Crest Height of 0'
 7. TOWER RATING: 56.7%



ALL REACTIONS ARE FACTORED

 Morrison Hershfield 1455 Lincoln Parkway, Suite 500 Atlanta, GA 30346 Phone: (770) 379-8500 FAX: (770) 379-8501 Stantec Consulting Engineers	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="3">Job: CN7-432R1 / 2400001</td> </tr> <tr> <td colspan="3">Project: 846216 / Fort White</td> </tr> <tr> <td style="width: 33%;">Client: Crown Castle USA</td> <td style="width: 33%;">Drawn by: PKD</td> <td style="width: 33%;">App'd:</td> </tr> <tr> <td>Code: TIA-222-H</td> <td>Date: 07/26/24</td> <td>Scale: NTS</td> </tr> <tr> <td colspan="2">Path:</td> <td>Dwg No. E-1</td> </tr> </table>	Job: CN7-432R1 / 2400001			Project: 846216 / Fort White			Client: Crown Castle USA	Drawn by: PKD	App'd:	Code: TIA-222-H	Date: 07/26/24	Scale: NTS	Path:		Dwg No. E-1
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Code: TIA-222-H	Date: 07/26/24	Scale: NTS														
Path:		Dwg No. E-1														

Tower Input Data

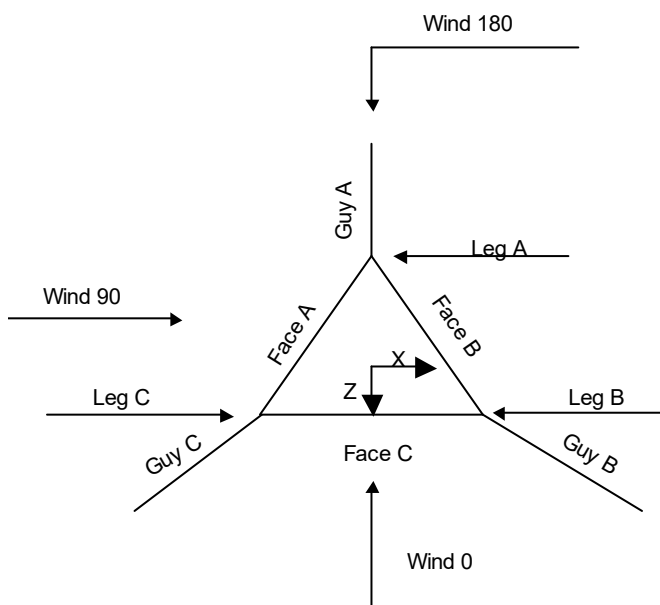
The main tower is a 3x guyed tower with an overall height of 300' above the ground line.
 The base of the tower is set at an elevation of 0' above the ground line.
 The face width of the tower is 3'5" at the top and tapered at the base.
 This tower is designed using the TIA-222-H standard.

The following design criteria apply:

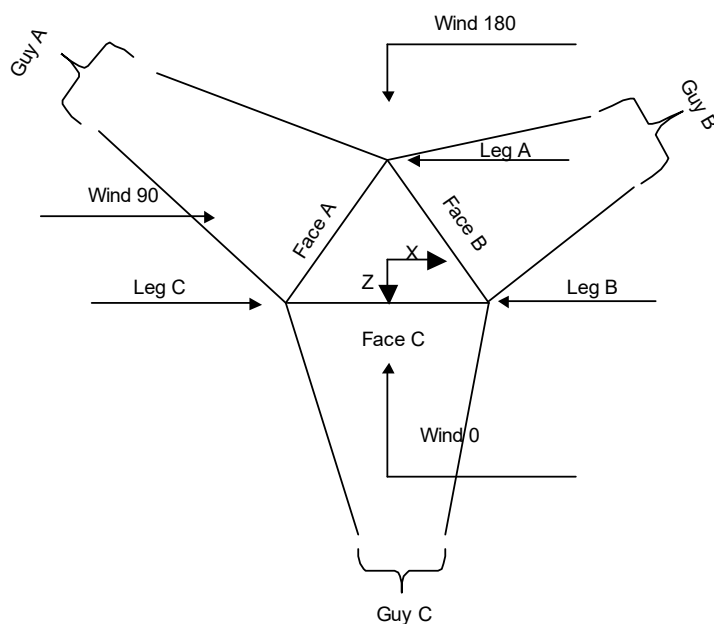
- Tower is located in Columbia County, Florida.
- Tower base elevation above sea level: 72'.
- Basic wind speed of 121 mph.
- Risk Category II.
- Exposure Category C.
- Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- Topographic Category: 1.
- Crest Height: 0'.
- Deflections calculated using a wind speed of 60 mph.
- Pressures are calculated at each section.
- Stress ratio used in tower member design is 1.
- Safety factor used in guy design is 1.
- Tower analysis based on target reliabilities in accordance with Annex S.
- Load Modification Factors used: $K_{es}(F_w) = 0.95$.
- Maximum demand-capacity ratio is: 1.05.
- Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

- | | | |
|---|---|--|
| <ul style="list-style-type: none"> Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification ✓ Use Code Stress Ratios ✓ Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile ✓ Include Bolts In Member Capacity Leg Bolts Are At Top Of Section Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) SR Members Have Cut Ends SR Members Are Concentric Distribute Leg Loads As Uniform | <ul style="list-style-type: none"> Assume Legs Pinned ✓ Assume Rigid Index Plate ✓ Use Clear Spans For Wind Area ✓ Use Clear Spans For KL/r ✓ Retension Guys To Initial Tension ✓ Bypass Mast Stability Checks ✓ Use Azimuth Dish Coefficients ✓ Project Wind Area of Appurtenances ✓ Alternative Appurt. EPA Calculation ✓ Autocalc Torque Arm Areas Add IBC .6D+W Combination ✓ Sort Capacity Reports By Component Triangulate Diamond Inner Bracing Treat Feed Line Bundles As Cylinder Ignore KL/ry For 60 Deg. Angle Legs Use ASCE 10 X-Brace Ly Rules | <ul style="list-style-type: none"> ✓ Calculate Redundant Bracing Forces Ignore Redundant Members in FEA ✓ SR Leg Bolts Resist Compression All Leg Panels Have Same Allowable Offset Girt At Foundation ✓ Consider Feed Line Torque ✓ Include Angle Block Shear Check Use TIA-222-H Bracing Resist. Exemption Use TIA-222-H Tension Splice Exemption |
|---|---|--|
- Poles
- Include Shear-Torsion Interaction
 - Always Use Sub-Critical Flow
 - Use Top Mounted Sockets
 - Pole Without Linear Attachments
 - Pole With Shroud Or No Appurtenances
 - Outside and Inside Corner Radii Are Known



Corner & Starmount Guyed Tower



Face Guyed

Tower Section Geometry

Tower Section	Tower Elevation <i>ft</i>	Assembly Database	Description	Section Width <i>ft</i>	Number of Sections	Section Length <i>ft</i>
T1	300'-280'			3'5-1/32"	1	20'
T2	280'-260'			3'5-1/32"	1	20'
T3	260'-240'			3'5-1/32"	1	20'
T4	240'-220'			3'5-1/32"	1	20'
T5	220'-200'			3'5-1/32"	1	20'
T6	200'-180'			3'5-1/32"	1	20'
T7	180'-160'			3'5-1/32"	1	20'
T8	160'-140'			3'5-1/32"	1	20'
T9	140'-120'			3'5-1/32"	1	20'
T10	120'-100'			3'5-1/32"	1	20'
T11	100'-80'			3'5-1/32"	1	20'
T12	80'-60'			3'5-1/32"	1	20'
T13	60'-40'			3'5-1/32"	1	20'
T14	40'-20'			3'5-1/32"	1	20'
T15	20'-4'9-27/32"			3'5-1/32"	1	15'2-5/32"
T16	4'9-27/32"-0'			3'5-1/32"	1	4'9-27/32"

Tower Section Geometry (cont'd)

Tower Section	Tower Elevation <i>ft</i>	Diagonal Spacing <i>ft</i>	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset <i>in</i>	Bottom Girt Offset <i>in</i>
T1	300'-280'	2'4-29/32"	CX Brace	No	No	7.3750	1.3750
T2	280'-260'	2'4-29/32"	CX Brace	No	No	7.3750	1.3750
T3	260'-240'	2'4-29/32"	X Brace	No	No	7.3750	1.3750
T4	240'-220'	2'4-29/32"	CX Brace	No	No	7.3750	1.3750
T5	220'-200'	2'4-29/32"	K Brace Left	No	No	7.3750	1.3750
T6	200'-180'	2'4-29/32"	K Brace Left	No	No	7.3750	1.3750
T7	180'-160'	2'4-29/32"	K Brace Left	No	No	7.3750	1.3750
T8	160'-140'	2'4-29/32"	K Brace Left	No	No	7.3750	1.3750
T9	140'-120'	2'4-29/32"	CX Brace	No	No	7.3750	1.3750
T10	120'-100'	2'4-29/32"	CX Brace	No	No	7.3750	1.3750
T11	100'-80'	2'4-29/32"	K Brace Left	No	No	7.3750	1.3750
T12	80'-60'	2'4-29/32"	K Brace Left	No	No	7.3750	1.3750
T13	60'-40'	2'4-29/32"	K Brace Left	No	No	7.3750	1.3750
T14	40'-20'	2'4-29/32"	K Brace Left	No	No	7.3750	1.3750
T15	20'-4'9-27/32"	2'4-29/32"	K Brace Left	No	No	7.3750	1.3750
T16	4'9-27/32"-0'	1'2-13/32"	X Brace	No	Yes	0.0000	0.0000

Tower Section Geometry (cont'd)

Tower Elevation <i>ft</i>	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 300'-280'	Pipe	ROHN 2.5 EH	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T2 280'-260'	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T3 260'-240'	Pipe	ROHN 2.5 EH	A572-50 (50 ksi)	Equal Angle	L2x2x1/4	A36 (36 ksi)
T4 240'-220'	Pipe	ROHN 2.5 EH	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T5 220'-200'	Pipe	ROHN 2.5 EH	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)
T6 200'-180'	Pipe	ROHN 3 EH	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)
T7 180'-160'	Pipe	ROHN 3 EH	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T8 160'-140'	Pipe	ROHN 3 EH	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)
T9 140'-120'	Pipe	ROHN 3 EH	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)
T10 120'-100'	Pipe	ROHN 3 EH	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)
T11 100'-80'	Pipe	ROHN 3 EH	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)
T12 80'-60'	Pipe	ROHN 3 EH	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)
T13 60'-40'	Pipe	ROHN 3 EH	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)
T14 40'-20'	Pipe	ROHN 3 EH	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)
T15 20'-4'9- 27/32"	Pipe	ROHN 3 EH	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)
T16 4'9-27/32"- 0'	Pipe	ROHN 3 EH	A572-50 (50 ksi)	Equal Angle		A53-B-42 (42 ksi)

Tower Section Geometry (cont'd)

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 300'-280'	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T2 280'-260'	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T3 260'-240'	Double Angle	2L2x2x1/4x3/8	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T4 240'-220'	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T5 220'-200'	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)
T6 200'-180'	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)
T7 180'-160'	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)
T8 160'-140'	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)
T9 140'-120'	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)
T10 120'-100'	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)
T11 100'-80'	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)
T12 80'-60'	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)
T13 60'-40'	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)
T14 40'-20'	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)
T15 20'-4'9- 27/32"	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)
T16 4'9-27/32"- 0'	Equal Angle	L4x4x1/4	A36 (36 ksi)	Equal Angle	L4x4x1/4	A36 (36 ksi)

Tower Section Geometry (cont'd)

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T16 4'9"-27'32"-0'	None	Flat Bar		A36 (36 ksi)	Equal Angle	L4x4x1/4	A36 (36 ksi)

Tower Section Geometry (cont'd)

Tower Elevation ft	Gusset Area (per face) ft ²	Gusset Thickness in	Gusset Grade	Adjust. Factor A _r	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontal in	Double Angle Stitch Bolt Spacing Redundants in
T1 300'-280'	0.00	0.1757	A36 (36 ksi)	1	1.03	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T2 280'-260'	0.00	0.1757	A36 (36 ksi)	1	1.03	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T3 260'-240'	0.00	0.3750	A36 (36 ksi)	1.03	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T4 240'-220'	0.00	0.1757	A36 (36 ksi)	1	1.03	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T5 220'-200'	0.00	0.3750	A36 (36 ksi)	1	1.03	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T6 200'-180'	0.00	0.3750	A36 (36 ksi)	1	1.03	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T7 180'-160'	0.00	0.3750	A36 (36 ksi)	1	1.03	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T8 160'-140'	0.00	0.3750	A36 (36 ksi)	1	1.03	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T9 140'-120'	0.00	0.3750	A36 (36 ksi)	1	1.03	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T10 120'-100'	0.00	0.3750	A36 (36 ksi)	1	1.03	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T11 100'-80'	0.00	0.3750	A36 (36 ksi)	1	1.03	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T12 80'-60'	0.00	0.3750	A36 (36 ksi)	1	1.03	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T13 60'-40'	0.00	0.3750	A36 (36 ksi)	1	1.03	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T14 40'-20'	0.00	0.3750	A36 (36 ksi)	1	1.03	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T15 20'-4'9"-27'32"	0.00	0.3750	A36 (36 ksi)	1	1.03	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T16 4'9"-27'32"-0'	0.00	0.0000	A36 (36 ksi)	1.03	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt

Tower Section Geometry (cont'd)

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Legs	K Factors ¹						
				X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T1 300'-280'	No	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T2 280'-260'	No	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T3 260'-240'	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T4 240'-220'	No	No	1	1	1	1	1	1	1	1

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Legs	K Factors ¹						
				X Brace Diags	K Brace Diags	Single Diags	Girts	Horiz.	Sec. Horiz.	Inner Brace
				X Y	X Y	X Y	X Y	X Y	X Y	X Y
T5 220'-200'	No	No	1	1	1	1	1	1	1	1
T6 200'-180'	No	No	1	1	1	1	1	1	1	1
T7 180'-160'	No	No	1	1	1	1	1	1	1	1
T8 160'-140'	No	No	1	1	1	1	1	1	1	1
T9 140'-120'	No	No	1	1	1	1	1	1	1	1
T10 120'-100'	No	No	1	1	1	1	1	1	1	1
T11 100'-80'	No	No	1	1	1	1	1	1	1	1
T12 80'-60'	No	No	1	1	1	1	1	1	1	1
T13 60'-40'	No	No	1	1	1	1	1	1	1	1
T14 40'-20'	No	No	1	1	1	1	1	1	1	1
T15 20'-4'-9'-27/32"	No	No	1	1	1	1	1	1	1	1
T16 4'-9'-27/32"-0'	Yes	No	1	1	1	1	1	1	1	1

¹Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.

Tower Section Geometry (cont'd)

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 300'-280'	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T2 280'-260'	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T3 260'-240'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T4 240'-220'	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T5 220'-200'	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T6 200'-180'	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T7 180'-160'	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T8 160'-140'	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T9 140'-120'	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T10 120'-100'	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T11 100'-80'	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T12 80'-60'	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T13 60'-40'	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T14 40'-20'	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T15 20'-4'-9'-27/32"	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T16 4'-9'-27/32"-0'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub- Diagonal		Redundant Sub- Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 300'-280'	0.0000	0.75 (1)	0.0000	0.75 (1)	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75 (1)	0.0000	0.75 (1)
	0.0000	0.75 (2)	0.0000	0.75 (2)							0.0000	0.75 (2)	0.0000	0.75 (2)
	0.0000	0.75 (3)	0.0000	0.75 (3)							0.0000	0.75 (3)	0.0000	0.75 (3)
	0.0000	0.75 (4)	0.0000	0.75 (4)							0.0000	0.75 (4)	0.0000	0.75 (4)
T2 280'-260'	0.0000	0.75 (1)	0.0000	0.75 (1)	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75 (1)	0.0000	0.75 (1)
	0.0000	0.75 (2)	0.0000	0.75 (2)							0.0000	0.75 (2)	0.0000	0.75 (2)
	0.0000	0.75 (3)	0.0000	0.75 (3)							0.0000	0.75 (3)	0.0000	0.75 (3)
	0.0000	0.75 (4)	0.0000	0.75 (4)							0.0000	0.75 (4)	0.0000	0.75 (4)
T3 260'-240'	0.0000	0.75 (1)	0.0000	0.75 (1)	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75 (1)	0.0000	0.75 (1)
	0.0000	0.75 (2)	0.0000	0.75 (2)							0.0000	0.75 (2)	0.0000	0.75 (2)
	0.0000	0.75 (3)	0.0000	0.75 (3)							0.0000	0.75 (3)	0.0000	0.75 (3)
	0.0000	0.75 (4)	0.0000	0.75 (4)							0.0000	0.75 (4)	0.0000	0.75 (4)
T4 240'-220'	0.0000	0.75 (1)	0.0000	0.75 (1)	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75 (1)	0.0000	0.75 (1)
	0.0000	0.75 (2)	0.0000	0.75 (2)							0.0000	0.75 (2)	0.0000	0.75 (2)
	0.0000	0.75 (3)	0.0000	0.75 (3)							0.0000	0.75 (3)	0.0000	0.75 (3)
	0.0000	0.75 (4)	0.0000	0.75 (4)							0.0000	0.75 (4)	0.0000	0.75 (4)
T5 220'-200'	0.0000	0.75 (1)	0.0000	0.75 (1)	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75 (1)	0.0000	0.75 (1)
	0.0000	0.75 (2)	0.0000	0.75 (2)							0.0000	0.75 (2)	0.0000	0.75 (2)
	0.0000	0.75 (3)	0.0000	0.75 (3)							0.0000	0.75 (3)	0.0000	0.75 (3)
	0.0000	0.75 (4)	0.0000	0.75 (4)							0.0000	0.75 (4)	0.0000	0.75 (4)
T6 200'-180'	0.0000	0.75 (1)	0.0000	0.75 (1)	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75 (1)	0.0000	0.75 (1)
	0.0000	0.75 (2)	0.0000	0.75 (2)							0.0000	0.75 (2)	0.0000	0.75 (2)
	0.0000	0.75 (3)	0.0000	0.75 (3)							0.0000	0.75 (3)	0.0000	0.75 (3)
	0.0000	0.75 (4)	0.0000	0.75 (4)							0.0000	0.75 (4)	0.0000	0.75 (4)
T7 180'-160'	0.0000	0.75 (1)	0.0000	0.75 (1)	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75 (1)	0.0000	0.75 (1)
	0.0000	0.75 (2)	0.0000	0.75 (2)							0.0000	0.75 (2)	0.0000	0.75 (2)
	0.0000	0.75 (3)	0.0000	0.75 (3)							0.0000	0.75 (3)	0.0000	0.75 (3)
	0.0000	0.75 (4)	0.0000	0.75 (4)							0.0000	0.75 (4)	0.0000	0.75 (4)
T8 160'-140'	0.0000	0.75 (1)	0.0000	0.75 (1)	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75 (1)	0.0000	0.75 (1)
	0.0000	0.75 (2)	0.0000	0.75 (2)							0.0000	0.75 (2)	0.0000	0.75 (2)
	0.0000	0.75 (3)	0.0000	0.75 (3)							0.0000	0.75 (3)	0.0000	0.75 (3)
	0.0000	0.75 (4)	0.0000	0.75 (4)							0.0000	0.75 (4)	0.0000	0.75 (4)

Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub- Diagonal		Redundant Sub- Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T9 140'-120'	0.0000	0.75 (1)	0.0000	0.75 (1)	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75 (1)	0.0000	0.75 (1)
	0.0000	0.75 (2)	0.0000	0.75 (2)							0.0000	0.75 (2)	0.0000	0.75 (2)
	0.0000	0.75 (3)	0.0000	0.75 (3)							0.0000	0.75 (3)	0.0000	0.75 (3)
	0.0000	0.75 (4)	0.0000	0.75 (4)							0.0000	0.75 (4)	0.0000	0.75 (4)
T10 120'-100'	0.0000	0.75 (1)	0.0000	0.75 (1)	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75 (1)	0.0000	0.75 (1)
	0.0000	0.75 (2)	0.0000	0.75 (2)							0.0000	0.75 (2)	0.0000	0.75 (2)
	0.0000	0.75 (3)	0.0000	0.75 (3)							0.0000	0.75 (3)	0.0000	0.75 (3)
	0.0000	0.75 (4)	0.0000	0.75 (4)							0.0000	0.75 (4)	0.0000	0.75 (4)
T11 100'-80'	0.0000	0.75 (1)	0.0000	0.75 (1)	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75 (1)	0.0000	0.75 (1)
	0.0000	0.75 (2)	0.0000	0.75 (2)							0.0000	0.75 (2)	0.0000	0.75 (2)
	0.0000	0.75 (3)	0.0000	0.75 (3)							0.0000	0.75 (3)	0.0000	0.75 (3)
	0.0000	0.75 (4)	0.0000	0.75 (4)							0.0000	0.75 (4)	0.0000	0.75 (4)
T12 80'-60'	0.0000	0.75 (1)	0.0000	0.75 (1)	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75 (1)	0.0000	0.75 (1)
	0.0000	0.75 (2)	0.0000	0.75 (2)							0.0000	0.75 (2)	0.0000	0.75 (2)
	0.0000	0.75 (3)	0.0000	0.75 (3)							0.0000	0.75 (3)	0.0000	0.75 (3)
	0.0000	0.75 (4)	0.0000	0.75 (4)							0.0000	0.75 (4)	0.0000	0.75 (4)
T13 60'-40'	0.0000	0.75 (1)	0.0000	0.75 (1)	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75 (1)	0.0000	0.75 (1)
	0.0000	0.75 (2)	0.0000	0.75 (2)							0.0000	0.75 (2)	0.0000	0.75 (2)
	0.0000	0.75 (3)	0.0000	0.75 (3)							0.0000	0.75 (3)	0.0000	0.75 (3)
	0.0000	0.75 (4)	0.0000	0.75 (4)							0.0000	0.75 (4)	0.0000	0.75 (4)
T14 40'-20'	0.0000	0.75 (1)	0.0000	0.75 (1)	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75 (1)	0.0000	0.75 (1)
	0.0000	0.75 (2)	0.0000	0.75 (2)							0.0000	0.75 (2)	0.0000	0.75 (2)
	0.0000	0.75 (3)	0.0000	0.75 (3)							0.0000	0.75 (3)	0.0000	0.75 (3)
	0.0000	0.75 (4)	0.0000	0.75 (4)							0.0000	0.75 (4)	0.0000	0.75 (4)
T15 20'-4'- 27/32"	0.0000	0.75 (1)	0.0000	0.75 (1)	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75 (1)	0.0000	0.75 (1)
	0.0000	0.75 (2)	0.0000	0.75 (2)							0.0000	0.75 (2)	0.0000	0.75 (2)
	0.0000	0.75 (3)	0.0000	0.75 (3)							0.0000	0.75 (3)	0.0000	0.75 (3)
	0.0000	0.75 (4)	0.0000	0.75 (4)							0.0000	0.75 (4)	0.0000	0.75 (4)
T16 4'-9'- 27/32"-0'	0.0000	0.75 (1)	0.0000	0.75 (1)	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75 (1)	0.0000	0.75 (1)
	0.0000	0.75 (2)	0.0000	0.75 (2)							0.0000	0.75 (2)	0.0000	0.75 (2)

	0.0000	0.75 (3)	0.0000	0.75 (3)				0.0000	0.75 (3)	0.0000	0.75 (3)
	0.0000	0.75 (4)	0.0000	0.75 (4)				0.0000	0.75 (4)	0.0000	0.75 (4)

Tower Section Geometry (cont'd)

Tower Elevation ft	Connection Offsets							
	Diagonal				K-Bracing			
	Vert. Top	Horiz. Top	Vert. Bot.	Horiz. Bot.	Vert. Top	Horiz. Top	Vert. Bot.	Horiz. Bot.
	in	in	in	in	in	in	in	in
T1 300'-280'	0.0000	3.5000	0.0000	3.5000	0.0000	0.0000	0.0000	0.0000
T2 280'-260'	0.0000	3.5000	0.0000	3.5000	0.0000	0.0000	0.0000	0.0000
T3 260'-240'	0.0000	3.5000	0.0000	3.5000	0.0000	0.0000	0.0000	0.0000
T4 240'-220'	0.0000	3.5000	0.0000	3.5000	0.0000	0.0000	0.0000	0.0000
T5 220'-200'	0.0000	3.5000	0.0000	3.5000	0.0000	0.0000	0.0000	0.0000
T6 200'-180'	0.0000	3.5000	0.0000	3.5000	0.0000	0.0000	0.0000	0.0000
T7 180'-160'	0.0000	3.5000	0.0000	3.5000	0.0000	0.0000	0.0000	0.0000
T8 160'-140'	0.0000	3.5000	0.0000	3.5000	0.0000	0.0000	0.0000	0.0000
T9 140'-120'	0.0000	3.5000	0.0000	3.5000	0.0000	0.0000	0.0000	0.0000
T10 120'-100'	0.0000	3.5000	0.0000	3.5000	0.0000	0.0000	0.0000	0.0000
T11 100'-80'	0.0000	3.5000	0.0000	3.5000	0.0000	0.0000	0.0000	0.0000
T12 80'-60'	0.0000	3.5000	0.0000	3.5000	0.0000	0.0000	0.0000	0.0000
T13 60'-40'	0.0000	3.5000	0.0000	3.5000	0.0000	0.0000	0.0000	0.0000
T14 40'-20'	0.0000	3.5000	0.0000	3.5000	0.0000	0.0000	0.0000	0.0000
T15 20'-4'- 27/32"	0.0000	3.5000	0.0000	3.5000	0.0000	0.0000	0.0000	0.0000
T16 4'- 27/32"-0'	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Tower Section Geometry (cont'd)

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size	No.	Bolt Size	No.	Bolt Size	No.	Bolt Size	No.	Bolt Size	No.	Bolt Size	No.	Bolt Size	No.
		in		in		in		in		in		in		in	
T1 300'-280'	Flange	0.7500	4	0.5000	1	0.5000	1	0.5000	1	0.6250	0	0.0000	0	0.6250	0
		A325X		A325X		A325X		A325X		A325X		A325X		A325X	
T2 280'-260'	Flange	0.7500	4	0.5000	1	0.5000	1	0.5000	1	0.6250	0	0.0000	0	0.6250	0
		A325X		A325X		A325X		A325X		A325X		A325X		A325X	
T3 260'-240'	Flange	0.7500	4	0.6250	1	0.6250	1	0.6250	0	0.6250	0	0.0000	0	0.6250	0
		A325X		A325X		A325X		A325X		A325X		A325X		A325X	
T4 240'-220'	Flange	0.7500	4	0.5000	1	0.5000	1	0.5000	1	0.6250	0	0.0000	0	0.6250	0
		A325X		A325X		A325X		A325X		A325X		A325X		A325X	
T5 220'-200'	Flange	0.7500	4	0.5000	1	0.5000	1	0.5000	1	0.6250	0	0.0000	0	0.6250	0
		A325X		A325X		A325X		A325X		A325X		A325X		A325X	
T6 200'-180'	Flange	0.7500	4	0.5000	1	0.5000	1	0.5000	1	0.6250	0	0.0000	0	0.6250	0
		A325X		A325X		A325X		A325X		A325X		A325X		A325X	
T7 180'-160'	Flange	0.7500	4	0.5000	1	0.5000	1	0.5000	1	0.6250	0	0.0000	0	0.6250	0
		A325X		A325X		A325X		A325X		A325X		A325X		A325X	
T8 160'-140'	Flange	0.7500	4	0.5000	1	0.5000	1	0.5000	1	0.6250	0	0.0000	0	0.6250	0
		A325X		A325X		A325X		A325X		A325X		A325X		A325X	
T9 140'-120'	Flange	0.7500	4	0.5000	1	0.5000	1	0.5000	1	0.6250	0	0.0000	0	0.6250	0
		A325X		A325X		A325X		A325X		A325X		A325X		A325X	
T10 120'-100'	Flange	0.7500	4	0.5000	1	0.5000	1	0.5000	1	0.6250	0	0.0000	0	0.6250	0
		A325X		A325X		A325X		A325X		A325X		A325X		A325X	
T11 100'-80'	Flange	0.7500	4	0.5000	1	0.5000	1	0.5000	1	0.6250	0	0.0000	0	0.6250	0
		A325X		A325X		A325X		A325X		A325X		A325X		A325X	

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T12 80'-60'	Flange	0.7500	4	0.5000	1	0.5000	1	0.5000	1	0.6250	0	0.0000	0	0.6250	0
		A325X		A325X		A325X		A325X		A325X		A325X		A325X	
T13 60'-40'	Flange	0.7500	4	0.5000	1	0.5000	1	0.5000	1	0.6250	0	0.0000	0	0.0000	2
		A325X		A325X		A325X		A325X		A325X		A325X		A325N	
T14 40'-20'	Flange	0.7500	4	0.5000	1	0.5000	1	0.5000	1	0.6250	0	0.0000	0	0.6250	0
		A325X		A325X		A325X		A325X		A325X		A325X		A325X	
T15 20'-4'-9- 27/32"	Flange	0.8750	4	0.5000	1	0.5000	1	0.5000	1	0.6250	0	0.0000	0	0.6250	0
		A325X		A325X		A325X		A325X		A325X		A325X		A325X	
T16 4'-9- 27/32"-0'	Flange	0.0000	0	0.0000	0	0.0000	0	0.0000	0	0.6250	0	0.0000	0	0.6250	0
		A325X		A325X		A325X		A325X		A325X		A325X		A325X	

Guy Data

Guy Elevation ft	Guy Grade	Guy Size	Initial Tension K	%	Guy Modulus ksi	Guy Weight plf	L _u ft	Anchor Radius ft	Anchor Azimuth Adj. °	Anchor Elevation ft	End Fitting Efficiency %
59.3854	EHS	A 1/2 [ECP- B 23000] C 1/2 [ECP- 23000] 1/2 [ECP- 23000]	2.69 2.69 2.69	10% 10% 10%	23000 23000 23000	0.517 0.517 0.517	150'1- 13/16" 149'19/32" 144'9-1/4"	140' 137' 135'	0.0000 0.0000 0.0000	0' -4' 2'	100% 100% 100%
122.523	EHS	A 3/4 [ECP- B 24000] C 3/4 [ECP- 24000] 3/4 [ECP- 24000]	5.83 5.83 5.83	10% 10% 10%	24000 24000 24000	1.155 1.155 1.155	184'5-5/32" 184'10- 29/32" 179'4-9/16"	140' 137' 135'	0.0000 0.0000 0.0000	0' -4' 2'	100% 100% 100%
182.523	EHS	A 3/4 [ECP- B 24000] C 3/4 [ECP- 24000] 3/4 [ECP- 24000]	5.83 5.83 5.83	10% 10% 10%	24000 24000 24000	1.155 1.155 1.155	228'8-5/32" 230'1-5/16" 224'31/32"	140' 137' 135'	0.0000 0.0000 0.0000	0' -4' 2'	100% 100% 100%
242.523	EHS	A 3/4 [ECP- B 24000] C 3/4 [ECP- 24000] 3/4 [ECP- 24000]	5.83 5.83 5.83	10% 10% 10%	24000 24000 24000	1.155 1.155 1.155	339'7-5/16" 340'4- 13/16" 334'8-9/32"	240' 237' 235'	0.0000 0.0000 0.0000	0' -4' 2'	100% 100% 100%
282.523	EHS	A 3/4 [ECP- B 24000] C 3/4 [ECP- 24000] 3/4 [ECP- 24000]	5.83 5.83 5.83	10% 10% 10%	24000 24000 24000	1.155 1.155 1.155	369'2- 13/32" 370'4-5/16" 364'5- 17/32"	240' 237' 235'	0.0000 0.0000 0.0000	0' -4' 2'	100% 100% 100%

Guy Data(cont'd)

Guy Elevation ft	Mount Type	Torque-Arm Spread ft	Torque-Arm Leg Angle °	Torque-Arm Style	Torque-Arm Grade	Torque-Arm Type	Torque-Arm Size
59.3854	Corner						
122.523	Corner						
182.523	Corner						
242.523	Torque Arm	6'9-31/32"	0.0000	Channel	A36 (36 ksi)	Channel	C15x33.9
282.523	Torque Arm	6'9-31/32"	0.0000	Channel	A36 (36 ksi)	Channel	C15x33.9

Guy Data (cont'd)

Guy Elevation ft	Diagonal Grade	Diagonal Type	Upper Diagonal Size	Lower Diagonal Size	Is Strap.	Pull-Off Grade	Pull-Off Type	Pull-Off Size
59'4-11/16"	A36 (36 ksi)	Solid Round			Yes	A36 (36 ksi)	Flat Bar	4 1/2x3/8
122'6-1/4"	A36 (36 ksi)	Solid Round			No	A36 (36 ksi)	Double Angle	2L2x2x1/4x3/8
182'6-1/4"	A36 (36 ksi)	Solid Round			No	A36 (36 ksi)	Double Angle	2L2x2x1/4x3/8
242'6-1/4"	A36 (36 ksi)	Solid Round			No	A36 (36 ksi)	Double Angle	2L2x2x1/4x3/8
282'6-1/4"	A36 (36 ksi)	Solid Round			No	A36 (36 ksi)	Double Angle	2L2x2x1/4x3/8

Guy Data (cont'd)

Guy Elevation ft	Cable Weight A K	Cable Weight B K	Cable Weight C K	Cable Weight D K	Tower Intercept A ft	Tower Intercept B ft	Tower Intercept C ft	Tower Intercept D ft
59.3854	0.08	0.08	0.07		2'1-29/32" 2.5 sec/pulse	2'1-7/16" 2.5 sec/pulse	2' 2.4 sec/pulse	
122.523	0.21	0.21	0.21		3'3-31/32" 3.2 sec/pulse	3'4-3/16" 3.2 sec/pulse	3'1-13/16" 3.1 sec/pulse	
182.523	0.26	0.27	0.26		5'1-3/32" 3.9 sec/pulse	5'1-13/16" 3.9 sec/pulse	4'10-11/16" 3.8 sec/pulse	
242.523	0.39	0.39	0.39		11'2-1/32" 5.8 sec/pulse	11'2-17/32" 5.8 sec/pulse	10'10-3/16" 5.7 sec/pulse	
282.523	0.43	0.43	0.42		13'1-13/16" 6.3 sec/pulse	13'2-5/8" 6.3 sec/pulse	12'9-23/32" 6.2 sec/pulse	

Guy Data (cont'd)

Guy Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Torque Arm		Pull Off		Diagonal	
			K _x	K _y	K _x	K _y	K _x	K _y
59.3854	No	No			1	1	1	1
122.523	No	No			1	1	1	1
182.523	No	No			1	1	1	1
242.523	No	No	1	1	1	1	1	1
282.523	No	No	1	1	1	1	1	1

Guy Data (cont'd)

Guy Elevation ft	Torque-Arm				Pull Off				Diagonal			
	Bolt Size in	Number	Net Width Deduct in	U	Bolt Size in	Number	Net Width Deduct in	U	Bolt Size in	Number	Net Width Deduct in	U
59.3854	0.0000 A325N	0	0.0000	1	0.7500 A325X	2	0.0000	1	0.0000 A325N	0	0.0000	1
122.523	0.7500 A325N	8	0.0000	0.75	0.6250 A325X	2	0.0000	0.75	0.0000 A325N	0	0.0000	1

Guy Elevation ft	Torque-Arm				Pull Off				Diagonal			
	Bolt Size in	Number	Net Width Deduct in	U	Bolt Size in	Number	Net Width Deduct in	U	Bolt Size in	Number	Net Width Deduct in	U
182.523	0.0000 A325N	0	0.0000	1	0.6250 A325X	2	0.0000	0.75	0.0000 A325N	0	0.0000	1
242.523	0.8750 A325X	2	0.0000	0.75	0.6250 A325X	2	0.0000	0.75	0.0000 A325N	0	0.0000	1
282.523	0.8750 A325X	2	0.0000	0.75	0.6250 A325X	2	0.0000	0.75	0.0000 A325N	0	0.0000	1

Guy Pressures

Guy Elevation ft	Guy Location	z ft	q _z psf	q _z Ice psf	Ice Thickness in
59.3854	A	29'8-9/32"	30		
	B	27'8-9/32"	29		
	C	30'8-9/32"	30		
122.523	A	61'3-1/8"	34		
	B	59'3-1/8"	34		
	C	62'3-1/8"	35		
182.523	A	91'3-1/8"	37		
	B	89'3-1/8"	37		
	C	92'3-1/8"	38		
242.523	A	121'3-1/8"	40		
	B	119'3-1/8"	40		
	C	122'3-1/8"	40		
282.523	A	141'3-1/8"	41		
	B	139'3-1/8"	41		
	C	142'3-1/8"	41		

Guy-Mast Forces (Excluding Wind) - No Ice

Guy Elevation ft	Guy Location	Chord Angle °	Guy Tension Top Bottom K	F _x K	F _y K	F _z K	M _x kip-ft	M _y kip-ft	M _z kip-ft
59.3854	A	23.2795	2.72	0.00	1.11	-2.48	-2.19	0.00	0.00
			2.69						
	B	25.1466	2.72	2.12	1.19	1.22	1.17	0.00	-2.03
			2.69						
	C	23.3344	2.72	-2.15	1.11	1.24	1.09	-0.00	1.89
			2.69						
122.523			Sum:	-0.03	3.41	-0.02	0.08	0.00	-0.14
	A	41.5947	5.97	0.00	4.02	-4.41	-7.94	0.00	0.00
			5.83						
	B	43.1378	5.98	3.73	4.14	2.15	4.09	0.00	-7.08
			5.83						
	C	42.1767	5.97	-3.79	4.06	2.19	4.01	-0.00	6.94
			5.83						
182.523			Sum:	-0.06	12.23	-0.07	0.16	0.00	-0.13
	A	52.9028	6.04	0.00	4.87	-3.58	-9.60	0.00	0.00
			5.83						
	B	54.0986	6.05	3.01	4.94	1.74	4.87	0.00	-8.44
			5.83						
	C	53.6136	6.04	-3.05	4.91	1.76	4.84	-0.00	8.38
			5.83						
242.523			Sum:	-0.03	14.71	-0.08	0.12	0.00	-0.06
	A	45.5331	6.11	-0.06	4.46	-4.18	-8.79	14.40	-15.23
			5.83						
	A	45.5331	6.11	0.06	4.46	-4.18	-8.79	-14.40	15.23
			5.83						
	B	46.3645	6.11	3.60	4.52	2.01	17.83	14.19	0.00
			5.83						

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom	F_x	F_y	F_z	M_x	M_y	M_z
ft		°	K	K	K	K	kip-ft	kip-ft	kip-ft
282.523	B	46.3645	6.11 5.83	3.54	4.52	2.11	-8.91	-14.19	-15.44
	C	45.9038	6.11 5.83	-3.56	4.48	2.13	-8.84	14.30	15.31
	C	45.9038	6.11 5.83	-3.63	4.48	2.02	17.67	-14.30	0.00
	A	49.8828	Sum: 6.16 5.83	-0.06 -0.06	26.91 4.80	-0.09 -3.86	0.17 -9.46	0.00 13.30	-0.13 -16.39
	A	49.8828	6.16 5.83	0.06	4.80	-3.86	-9.46	-13.30	16.39
	B	50.6359	6.16 5.83	3.32	4.85	1.85	19.13	13.09	0.00
	B	50.6359	6.16 5.83	3.26	4.85	1.95	-9.56	-13.09	-16.57
	C	50.2810	6.15 5.83	-3.29	4.82	1.96	-9.51	13.19	16.46
	C	50.2810	6.15 5.83	-3.34	4.82	1.86	19.01	-13.19	0.00
			Sum:	-0.05	28.93	-0.09	0.15	0.00	-0.10

Guy-Mast Forces (Excluding Wind) - Service

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom	F_x	F_y	F_z	M_x	M_y	M_z
ft		°	K	K	K	K	kip-ft	kip-ft	kip-ft
59.3854	A	23.2795	2.72 2.69	0.00	1.11	-2.48	-2.19	0.00	0.00
	B	25.1466	2.72 2.69	2.12	1.19	1.22	1.17	0.00	-2.03
	C	23.3344	2.72 2.69	-2.15	1.11	1.24	1.09	-0.00	1.89
122.523	A	41.5947	Sum: 5.97 5.83	-0.03 0.00	3.41 4.02	-0.02 -4.41	0.08 -7.94	0.00 0.00	-0.14 0.00
	B	43.1378	5.98 5.83	3.73	4.14	2.15	4.09	0.00	-7.08
	C	42.1767	5.97 5.83	-3.79	4.06	2.19	4.01	-0.00	6.94
182.523	A	52.9028	Sum: 6.04 5.83	-0.06 0.00	12.23 4.87	-0.07 -3.58	0.16 -9.60	0.00 0.00	-0.13 0.00
	B	54.0986	6.05 5.83	3.01	4.94	1.74	4.87	0.00	-8.44
	C	53.6136	6.04 5.83	-3.05	4.91	1.76	4.84	-0.00	8.38
242.523	A	45.5331	Sum: 6.11 5.83	-0.03 -0.06	14.71 4.46	-0.08 -4.18	0.12 -8.79	0.00 14.40	-0.06 -15.23
	A	45.5331	6.11 5.83	0.06	4.46	-4.18	-8.79	-14.40	15.23
	B	46.3645	6.11 5.83	3.60	4.52	2.01	17.83	14.19	0.00
	B	46.3645	6.11 5.83	3.54	4.52	2.11	-8.91	-14.19	-15.44
	C	45.9038	6.11 5.83	-3.56	4.48	2.13	-8.84	14.30	15.31
	C	45.9038	6.11 5.83	-3.63	4.48	2.02	17.67	-14.30	0.00
282.523	A	49.8828	Sum: 6.16 5.83	-0.06 -0.06	26.91 4.80	-0.09 -3.86	0.17 -9.46	0.00 13.30	-0.13 -16.39

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom	F _x	F _y	F _z	M _x	M _y	M _z
ft		°	K	K	K	K	kip-ft	kip-ft	kip-ft
	A	49.8828	6.16 5.83	0.06	4.80	-3.86	-9.46	-13.30	16.39
	B	50.6359	6.16 5.83	3.32	4.85	1.85	19.13	13.09	0.00
	B	50.6359	6.16 5.83	3.26	4.85	1.95	-9.56	-13.09	-16.57
	C	50.2810	6.15 5.83	-3.29	4.82	1.96	-9.51	13.19	16.46
	C	50.2810	6.15 5.83	-3.34	4.82	1.86	19.01	-13.19	0.00
			Sum:	-0.05	28.93	-0.09	0.15	0.00	-0.10

Guy-Tensioning Information

Temperature At Time Of Tensioning																
Guy Elevation ft	H ft	V ft	0 F		20 F		40 F		60 F		80 F		100 F		120 F	
			Initial Tension K	Intercept ft	Initial Tension K	Intercept ft	Initial Tension K	Intercept ft	Initial Tension K	Intercept ft	Initial Tension K	Intercept ft	Initial Tension K	Intercept ft	Initial Tension K	Intercept ft
59.3854	A	138.03	59.39	3.776	1.54	3.409	1.70	3.046	1.90	2.690	2.16	2.343	2.47	2.011	2.88	1.702
	B	135.03	63.39	3.746	1.53	3.389	1.69	3.037	1.88	2.690	2.12	2.352	2.43	2.027	2.81	1.723
	C	133.03	57.39	3.778	1.43	3.411	1.58	3.048	1.77	2.690	2.00	2.341	2.30	2.007	2.68	1.695
122.523	A	138.03	122.52	7.494	2.60	6.932	2.81	6.377	3.05	5.830	3.33	5.295	3.66	4.776	4.06	4.278
	B	135.03	126.52	7.417	2.64	6.881	2.84	6.352	3.08	5.830	3.35	5.318	3.67	4.820	4.04	4.341
	C	133.03	120.52	7.470	2.47	6.917	2.66	6.369	2.89	5.830	3.15	5.301	3.46	4.787	3.83	4.292
182.523	A	138.03	182.52	6.908	4.31	6.545	4.54	6.186	4.80	5.830	5.09	5.482	5.41	5.134	5.77	4.796
	B	135.03	186.52	6.850	4.40	6.507	4.63	6.167	4.88	5.830	5.15	5.497	5.46	5.170	5.80	4.848
	C	133.03	180.52	6.876	4.16	6.524	4.38	6.175	4.62	5.830	4.89	5.489	5.19	5.153	5.52	4.823
242.523	A	238.05	242.52	7.143	9.15	6.693	9.75	6.254	10.42	5.830	11.17	5.423	11.99	5.036	12.89	4.671
	B	235.05	246.52	7.108	9.23	6.670	9.83	6.243	10.49	5.830	11.21	5.433	12.02	5.054	12.89	4.696
	C	233.05	240.52	7.134	8.90	6.687	9.48	6.252	10.13	5.830	10.85	5.425	11.64	5.039	12.51	4.674
282.523	A	238.05	282.52	6.935	11.10	6.557	11.72	6.188	12.40	5.830	13.15	5.484	13.96	5.151	14.83	4.834
	B	235.05	286.52	6.903	11.21	6.537	11.83	6.178	12.50	5.830	13.22	5.493	14.02	5.168	14.87	4.858
	C	233.05	280.52	6.923	10.83	6.550	11.44	6.185	12.10	5.830	12.81	5.487	13.60	5.156	14.44	4.840

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Componen t Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacin g in	Width or Diameter in	Perimete r in	Weight plf

Safety Line 3/8"	A	No	No	Ar (CaAa)	300' - 0'	0.0000	0.5	1	1	0.3750	0.3750		0.22
Lighting Cable (3/8)	B	No	No	Ar (CaAa)	300' - 149'	0.0000	0.49	1	1	0.2500	0.4400		0.08
Lighting Cable (3/8)	B	No	No	Ar (CaAa)	149' - 0'	0.0000	0.49	2	2	0.2500	0.4400		0.08
ROHN Waveguide Brackets	B	No	No	Af (CaAa)	289' - 0'	0.0000	0	1	1	1.7500	1.7500		1.27
Feedline Ladder (Af)	A	No	No	Af (CaAa)	252' - 0'	0.0000	0	1	1	3.0000	3.0000		8.40

FB-L98B- 002- 100000(3/8)	B	No	No	Ar (CaAa)	289' - 0'	1.0000	-0.19	1	1	0.5000	0.3937		0.06
FB-L98B- 002- 100000(3/8)	B	No	No	Ar (CaAa)	289' - 0'	1.0000	0.19	1	1	0.5000	0.3937		0.06
LDF7-50A(1- 5/8)	B	No	No	Ar (CaAa)	289' - 0'	0.0000	0	6	6	0.5000	1.9800		0.82
ATCB- B01(5/16)	B	No	No	Ar (CaAa)	289' - 0'	2.0000	-0.15	3	2	0.5000	0.3150		0.07

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
WR-VG86T(3/4)	B	No	No	Ar (CaAa)	289' - 0'	0.0000	-0.2	2	2	0.5000	0.7560		0.53
WR-VG86T(3/4)	B	No	No	Ar (CaAa)	289' - 0'	0.0000	0.2	2	2	0.5000	0.7560		0.53
LDF2-50(3/8)	B	No	No	Ar (CaAa)	289' - 0'	2.0000	-0.1	2	2	0.5000	0.4400		0.08
WR-VG86ST-BRD(3/4)	B	No	No	Ar (CaAa)	289' - 0'	2.0000	0.11	3	3	0.5000	0.7950		0.58

LDF7-50A(1-5/8)	A	No	No	Ar (CaAa)	250' - 0'	0.0000	0	3	3	0.5000	1.9800		0.82
HB158-21U6S24-xxM_TMO(1-5/8)	A	No	No	Ar (CaAa)	250' - 0'	0.0000	0.12	1	1	0.5000	1.9960		2.50

LDF4-50A(1/2)	A	No	No	Ar (CaAa)	250' - 0'	2.0000	0.05	2	2	0.5000	0.6250		0.15
NTM 2013929/256.9MM(2-1/8)	A	No	No	Ar (CaAa)	250' - 0'	0.0000	0.23	2	2	0.5000	2.2400		1.90

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
T1	300'-280'	A	0.000	0.000	0.750	0.000	0.00
		B	0.000	0.000	21.416	0.000	0.10
		C	0.000	0.000	0.000	0.000	0.00
T2	280'-260'	A	0.000	0.000	0.750	0.000	0.00
		B	0.000	0.000	46.516	0.000	0.21
		C	0.000	0.000	0.000	0.000	0.00
T3	260'-240'	A	0.000	0.000	20.416	0.000	0.20
		B	0.000	0.000	46.516	0.000	0.21
		C	0.000	0.000	0.000	0.000	0.00
T4	240'-220'	A	0.000	0.000	38.082	0.000	0.35
		B	0.000	0.000	46.516	0.000	0.21
		C	0.000	0.000	0.000	0.000	0.00
T5	220'-200'	A	0.000	0.000	38.082	0.000	0.35
		B	0.000	0.000	46.516	0.000	0.21
		C	0.000	0.000	0.000	0.000	0.00
T6	200'-180'	A	0.000	0.000	38.082	0.000	0.35
		B	0.000	0.000	46.516	0.000	0.21
		C	0.000	0.000	0.000	0.000	0.00
T7	180'-160'	A	0.000	0.000	38.082	0.000	0.35
		B	0.000	0.000	46.516	0.000	0.21
		C	0.000	0.000	0.000	0.000	0.00
T8	160'-140'	A	0.000	0.000	38.082	0.000	0.35
		B	0.000	0.000	46.912	0.000	0.21
		C	0.000	0.000	0.000	0.000	0.00
T9	140'-120'	A	0.000	0.000	38.082	0.000	0.35
		B	0.000	0.000	47.396	0.000	0.21
		C	0.000	0.000	0.000	0.000	0.00
T10	120'-100'	A	0.000	0.000	38.082	0.000	0.35
		B	0.000	0.000	47.396	0.000	0.21
		C	0.000	0.000	0.000	0.000	0.00
T11	100'-80'	A	0.000	0.000	38.082	0.000	0.35
		B	0.000	0.000	47.396	0.000	0.21
		C	0.000	0.000	0.000	0.000	0.00
T12	80'-60'	A	0.000	0.000	38.082	0.000	0.35
		B	0.000	0.000	47.396	0.000	0.21
		C	0.000	0.000	0.000	0.000	0.00

Tower Section n	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
T13	60'-40'	A	0.000	0.000	38.082	0.000	0.35
		B	0.000	0.000	47.396	0.000	0.21
		C	0.000	0.000	0.000	0.000	0.00
T14	40'-20'	A	0.000	0.000	38.082	0.000	0.35
		B	0.000	0.000	47.396	0.000	0.21
		C	0.000	0.000	0.000	0.000	0.00
T15	20'-4'9-27/32"	A	0.000	0.000	28.909	0.000	0.27
		B	0.000	0.000	35.979	0.000	0.16
		C	0.000	0.000	0.000	0.000	0.00
T16	4'9-27/32"-0'	A	0.000	0.000	9.173	0.000	0.09
		B	0.000	0.000	11.417	0.000	0.05
		C	0.000	0.000	0.000	0.000	0.00

Feed Line Center of Pressure

Section	Elevation ft	CP _x in	CP _z in	CP _x Ice in	CP _z Ice in
T1	300'-280'	2.8774	-2.0415	2.8774	-2.0415
T2	280'-260'	4.8294	-3.2757	4.8294	-3.2757
T3	260'-240'	1.9114	-3.7143	1.9114	-3.7143
T4	240'-220'	0.8087	-4.9507	0.8087	-4.9507
T5	220'-200'	0.8701	-5.2659	0.8701	-5.2659
T6	200'-180'	0.8222	-5.0338	0.8182	-5.0129
T7	180'-160'	0.8372	-5.0976	0.8335	-5.0786
T8	160'-140'	0.8927	-5.0402	0.8896	-5.0250
T9	140'-120'	0.8819	-4.6350	0.8803	-4.6278
T10	120'-100'	0.8956	-4.6857	0.8946	-4.6812
T11	100'-80'	0.9580	-4.9613	0.9577	-4.9600
T12	80'-60'	0.9577	-4.9600	0.9577	-4.9600
T13	60'-40'	0.9196	-4.8200	0.9196	-4.8200
T14	40'-20'	0.9577	-4.9600	0.9577	-4.9600
T15	20'-4'9-27/32"	0.9539	-4.9435	0.9539	-4.9435
T16	4'9-27/32"-0'	0.4393	-3.5738	0.4393	-3.5738

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T1	2	Safety Line 3/8"	280.00 - 300.00	0.6000	0.6000
T1	3	Lighting Cable (3/8)	280.00 - 300.00	0.6000	0.6000
T1	5	ROHN Waveguide Brackets	280.00 - 289.00	0.6000	0.6000
T1	8	FB-L98B-002-100000(3/8)	280.00 - 289.00	0.6000	0.6000
T1	9	FB-L98B-002-100000(3/8)	280.00 - 289.00	0.6000	0.6000
T1	10	LDF7-50A(1-5/8)	280.00 - 289.00	0.6000	0.6000
T1	11	ATCB-B01(5/16)	280.00 - 289.00	0.6000	0.6000
T1	12	WR-VG86T(3/4)	280.00 - 289.00	0.6000	0.6000
T1	13	WR-VG86T(3/4)	280.00 - 289.00	0.6000	0.6000
T1	14	LDF2-50(3/8)	280.00 - 289.00	0.6000	0.6000
T1	15	WR-VG86ST-BRD(3/4)	280.00 - 289.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T2	2	Safety Line 3/8"	260.00 - 280.00	0.6000	0.6000
T2	3	Lighting Cable (3/8)	260.00 - 280.00	0.6000	0.6000
T2	5	ROHN Waveguide Brackets	260.00 - 280.00	0.6000	0.6000
T2	8	FB-L98B-002-100000(3/8)	260.00 - 280.00	0.6000	0.6000
T2	9	FB-L98B-002-100000(3/8)	260.00 - 280.00	0.6000	0.6000
T2	10	LDF7-50A(1-5/8)	260.00 - 280.00	0.6000	0.6000
T2	11	ATCB-B01(5/16)	260.00 - 280.00	0.6000	0.6000
T2	12	WR-VG86T(3/4)	260.00 - 280.00	0.6000	0.6000
T2	13	WR-VG86T(3/4)	260.00 - 280.00	0.6000	0.6000
T2	14	LDF2-50(3/8)	260.00 - 280.00	0.6000	0.6000
T2	15	WR-VG86ST-BRD(3/4)	260.00 - 280.00	0.6000	0.6000
T3	2	Safety Line 3/8"	240.00 - 260.00	0.6000	0.6000
T3	3	Lighting Cable (3/8)	240.00 - 260.00	0.6000	0.6000
T3	5	ROHN Waveguide Brackets	240.00 - 260.00	0.6000	0.6000
T3	6	Feedline Ladder (Af)	240.00 - 252.00	0.6000	0.6000
T3	8	FB-L98B-002-100000(3/8)	240.00 - 260.00	0.6000	0.6000
T3	9	FB-L98B-002-100000(3/8)	240.00 - 260.00	0.6000	0.6000
T3	10	LDF7-50A(1-5/8)	240.00 - 260.00	0.6000	0.6000
T3	11	ATCB-B01(5/16)	240.00 - 260.00	0.6000	0.6000
T3	12	WR-VG86T(3/4)	240.00 - 260.00	0.6000	0.6000
T3	13	WR-VG86T(3/4)	240.00 - 260.00	0.6000	0.6000
T3	14	LDF2-50(3/8)	240.00 - 260.00	0.6000	0.6000
T3	15	WR-VG86ST-BRD(3/4)	240.00 - 260.00	0.6000	0.6000
T3	17	LDF7-50A(1-5/8)	240.00 - 250.00	0.6000	0.6000
T3	18	HB158-21U6S24-xxM_TMO(1-5/8)	240.00 - 250.00	0.6000	0.6000
T3	20	LDF4-50A(1/2)	240.00 - 250.00	0.6000	0.6000
T3	21	NTM 201 3929/2 56.9MM(2-1/8)	240.00 - 250.00	0.6000	0.6000
T4	2	Safety Line 3/8"	220.00 - 240.00	0.6000	0.6000
T4	3	Lighting Cable (3/8)	220.00 - 240.00	0.6000	0.6000
T4	5	ROHN Waveguide Brackets	220.00 - 240.00	0.6000	0.6000
T4	6	Feedline Ladder (Af)	220.00 - 240.00	0.6000	0.6000
T4	8	FB-L98B-002-100000(3/8)	220.00 - 240.00	0.6000	0.6000
T4	9	FB-L98B-002-100000(3/8)	220.00 - 240.00	0.6000	0.6000
T4	10	LDF7-50A(1-5/8)	220.00 - 240.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T4	11	ATCB-B01(5/16)	220.00 - 240.00	0.6000	0.6000
T4	12	WR-VG86T(3/4)	220.00 - 240.00	0.6000	0.6000
T4	13	WR-VG86T(3/4)	220.00 - 240.00	0.6000	0.6000
T4	14	LDF2-50(3/8)	220.00 - 240.00	0.6000	0.6000
T4	15	WR-VG86ST-BRD(3/4)	220.00 - 240.00	0.6000	0.6000
T4	17	LDF7-50A(1-5/8)	220.00 - 240.00	0.6000	0.6000
T4	18	HB158-21U6S24- xxM_TMO(1-5/8)	220.00 - 240.00	0.6000	0.6000
T4	20	LDF4-50A(1/2)	220.00 - 240.00	0.6000	0.6000
T4	21	NTM 201 3929/2 56.9MM(2-1/8)	220.00 - 240.00	0.6000	0.6000
T5	2	Safety Line 3/8"	200.00 - 220.00	0.6000	0.6000
T5	3	Lighting Cable (3/8)	200.00 - 220.00	0.6000	0.6000
T5	5	ROHN Waveguide Brackets	200.00 - 220.00	0.6000	0.6000
T5	6	Feedline Ladder (Af)	200.00 - 220.00	0.6000	0.6000
T5	8	FB-L98B-002-100000(3/8)	200.00 - 220.00	0.6000	0.6000
T5	9	FB-L98B-002-100000(3/8)	200.00 - 220.00	0.6000	0.6000
T5	10	LDF7-50A(1-5/8)	200.00 - 220.00	0.6000	0.6000
T5	11	ATCB-B01(5/16)	200.00 - 220.00	0.6000	0.6000
T5	12	WR-VG86T(3/4)	200.00 - 220.00	0.6000	0.6000
T5	13	WR-VG86T(3/4)	200.00 - 220.00	0.6000	0.6000
T5	14	LDF2-50(3/8)	200.00 - 220.00	0.6000	0.6000
T5	15	WR-VG86ST-BRD(3/4)	200.00 - 220.00	0.6000	0.6000
T5	17	LDF7-50A(1-5/8)	200.00 - 220.00	0.6000	0.6000
T5	18	HB158-21U6S24- xxM_TMO(1-5/8)	200.00 - 220.00	0.6000	0.6000
T5	20	LDF4-50A(1/2)	200.00 - 220.00	0.6000	0.6000
T5	21	NTM 201 3929/2 56.9MM(2-1/8)	200.00 - 220.00	0.6000	0.6000
T6	2	Safety Line 3/8"	180.00 - 200.00	0.6000	0.6000
T6	3	Lighting Cable (3/8)	180.00 - 200.00	0.6000	0.6000
T6	5	ROHN Waveguide Brackets	180.00 - 200.00	0.6000	0.6000
T6	6	Feedline Ladder (Af)	180.00 - 200.00	0.6000	0.6000
T6	8	FB-L98B-002-100000(3/8)	180.00 - 200.00	0.6000	0.6000
T6	9	FB-L98B-002-100000(3/8)	180.00 - 200.00	0.6000	0.6000
T6	10	LDF7-50A(1-5/8)	180.00 - 200.00	0.6000	0.6000
T6	11	ATCB-B01(5/16)	180.00 - 200.00	0.6000	0.6000
T6	12	WR-VG86T(3/4)	180.00 - 200.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T6	13	WR-VG86T(3/4)	180.00 - 200.00	0.6000	0.6000
T6	14	LDF2-50(3/8)	180.00 - 200.00	0.6000	0.6000
T6	15	WR-VG86ST-BRD(3/4)	180.00 - 200.00	0.6000	0.6000
T6	17	LDF7-50A(1-5/8)	180.00 - 200.00	0.6000	0.6000
T6	18	HB158-21U6S24- xxM_TMO(1-5/8)	180.00 - 200.00	0.6000	0.6000
T6	20	LDF4-50A(1/2)	180.00 - 200.00	0.6000	0.6000
T6	21	NTM 201 3929/2 56.9MM(2-1/8)	180.00 - 200.00	0.6000	0.6000
T7	2	Safety Line 3/8"	160.00 - 180.00	0.6000	0.6000
T7	3	Lighting Cable (3/8)	160.00 - 180.00	0.6000	0.6000
T7	5	ROHN Waveguide Brackets	160.00 - 180.00	0.6000	0.6000
T7	6	Feedline Ladder (Af)	160.00 - 180.00	0.6000	0.6000
T7	8	FB-L98B-002-100000(3/8)	160.00 - 180.00	0.6000	0.6000
T7	9	FB-L98B-002-100000(3/8)	160.00 - 180.00	0.6000	0.6000
T7	10	LDF7-50A(1-5/8)	160.00 - 180.00	0.6000	0.6000
T7	11	ATCB-B01(5/16)	160.00 - 180.00	0.6000	0.6000
T7	12	WR-VG86T(3/4)	160.00 - 180.00	0.6000	0.6000
T7	13	WR-VG86T(3/4)	160.00 - 180.00	0.6000	0.6000
T7	14	LDF2-50(3/8)	160.00 - 180.00	0.6000	0.6000
T7	15	WR-VG86ST-BRD(3/4)	160.00 - 180.00	0.6000	0.6000
T7	17	LDF7-50A(1-5/8)	160.00 - 180.00	0.6000	0.6000
T7	18	HB158-21U6S24- xxM_TMO(1-5/8)	160.00 - 180.00	0.6000	0.6000
T7	20	LDF4-50A(1/2)	160.00 - 180.00	0.6000	0.6000
T7	21	NTM 201 3929/2 56.9MM(2-1/8)	160.00 - 180.00	0.6000	0.6000
T8	2	Safety Line 3/8"	140.00 - 160.00	0.6000	0.6000
T8	3	Lighting Cable (3/8)	149.00 - 160.00	0.6000	0.6000
T8	4	Lighting Cable (3/8)	140.00 - 149.00	0.6000	0.6000
T8	5	ROHN Waveguide Brackets	140.00 - 160.00	0.6000	0.6000
T8	6	Feedline Ladder (Af)	140.00 - 160.00	0.6000	0.6000
T8	8	FB-L98B-002-100000(3/8)	140.00 - 160.00	0.6000	0.6000
T8	9	FB-L98B-002-100000(3/8)	140.00 - 160.00	0.6000	0.6000
T8	10	LDF7-50A(1-5/8)	140.00 - 160.00	0.6000	0.6000
T8	11	ATCB-B01(5/16)	140.00 - 160.00	0.6000	0.6000
T8	12	WR-VG86T(3/4)	140.00 - 160.00	0.6000	0.6000
T8	13	WR-VG86T(3/4)	140.00 - 160.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T8	14	LDF2-50(3/8)	140.00 - 160.00	0.6000	0.6000
T8	15	WR-VG86ST-BRD(3/4)	140.00 - 160.00	0.6000	0.6000
T8	17	LDF7-50A(1-5/8)	140.00 - 160.00	0.6000	0.6000
T8	18	HB158-21U6S24- xxM_TMO(1-5/8)	140.00 - 160.00	0.6000	0.6000
T8	20	LDF4-50A(1/2)	140.00 - 160.00	0.6000	0.6000
T8	21	NTM 201 3929/2 56.9MM(2-1/8)	140.00 - 160.00	0.6000	0.6000
T9	2	Safety Line 3/8"	120.00 - 140.00	0.6000	0.6000
T9	4	Lighting Cable (3/8)	120.00 - 140.00	0.6000	0.6000
T9	5	ROHN Waveguide Brackets	120.00 - 140.00	0.6000	0.6000
T9	6	Feedline Ladder (Af)	120.00 - 140.00	0.6000	0.6000
T9	8	FB-L98B-002-100000(3/8)	120.00 - 140.00	0.6000	0.6000
T9	9	FB-L98B-002-100000(3/8)	120.00 - 140.00	0.6000	0.6000
T9	10	LDF7-50A(1-5/8)	120.00 - 140.00	0.6000	0.6000
T9	11	ATCB-B01(5/16)	120.00 - 140.00	0.6000	0.6000
T9	12	WR-VG86T(3/4)	120.00 - 140.00	0.6000	0.6000
T9	13	WR-VG86T(3/4)	120.00 - 140.00	0.6000	0.6000
T9	14	LDF2-50(3/8)	120.00 - 140.00	0.6000	0.6000
T9	15	WR-VG86ST-BRD(3/4)	120.00 - 140.00	0.6000	0.6000
T9	17	LDF7-50A(1-5/8)	120.00 - 140.00	0.6000	0.6000
T9	18	HB158-21U6S24- xxM_TMO(1-5/8)	120.00 - 140.00	0.6000	0.6000
T9	20	LDF4-50A(1/2)	120.00 - 140.00	0.6000	0.6000
T9	21	NTM 201 3929/2 56.9MM(2-1/8)	120.00 - 140.00	0.6000	0.6000
T10	2	Safety Line 3/8"	100.00 - 120.00	0.6000	0.6000
T10	4	Lighting Cable (3/8)	100.00 - 120.00	0.6000	0.6000
T10	5	ROHN Waveguide Brackets	100.00 - 120.00	0.6000	0.6000
T10	6	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T10	8	FB-L98B-002-100000(3/8)	100.00 - 120.00	0.6000	0.6000
T10	9	FB-L98B-002-100000(3/8)	100.00 - 120.00	0.6000	0.6000
T10	10	LDF7-50A(1-5/8)	100.00 - 120.00	0.6000	0.6000
T10	11	ATCB-B01(5/16)	100.00 - 120.00	0.6000	0.6000
T10	12	WR-VG86T(3/4)	100.00 - 120.00	0.6000	0.6000
T10	13	WR-VG86T(3/4)	100.00 - 120.00	0.6000	0.6000
T10	14	LDF2-50(3/8)	100.00 - 120.00	0.6000	0.6000
T10	15	WR-VG86ST-BRD(3/4)	100.00 - 120.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T10	17	LDF7-50A(1-5/8)	100.00 - 120.00	0.6000	0.6000
T10	18	HB158-21U6S24- xxM_TMO(1-5/8)	100.00 - 120.00	0.6000	0.6000
T10	20	LDF4-50A(1/2)	100.00 - 120.00	0.6000	0.6000
T10	21	NTM 201 3929/2 56.9MM(2-1/8)	100.00 - 120.00	0.6000	0.6000
T11	2	Safety Line 3/8"	80.00 - 100.00	0.6000	0.6000
T11	4	Lighting Cable (3/8)	80.00 - 100.00	0.6000	0.6000
T11	5	ROHN Waveguide Brackets	80.00 - 100.00	0.6000	0.6000
T11	6	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T11	8	FB-L98B-002-100000(3/8)	80.00 - 100.00	0.6000	0.6000
T11	9	FB-L98B-002-100000(3/8)	80.00 - 100.00	0.6000	0.6000
T11	10	LDF7-50A(1-5/8)	80.00 - 100.00	0.6000	0.6000
T11	11	ATCB-B01(5/16)	80.00 - 100.00	0.6000	0.6000
T11	12	WR-VG86T(3/4)	80.00 - 100.00	0.6000	0.6000
T11	13	WR-VG86T(3/4)	80.00 - 100.00	0.6000	0.6000
T11	14	LDF2-50(3/8)	80.00 - 100.00	0.6000	0.6000
T11	15	WR-VG86ST-BRD(3/4)	80.00 - 100.00	0.6000	0.6000
T11	17	LDF7-50A(1-5/8)	80.00 - 100.00	0.6000	0.6000
T11	18	HB158-21U6S24- xxM_TMO(1-5/8)	80.00 - 100.00	0.6000	0.6000
T11	20	LDF4-50A(1/2)	80.00 - 100.00	0.6000	0.6000
T11	21	NTM 201 3929/2 56.9MM(2-1/8)	80.00 - 100.00	0.6000	0.6000
T12	2	Safety Line 3/8"	60.00 - 80.00	0.6000	0.6000
T12	4	Lighting Cable (3/8)	60.00 - 80.00	0.6000	0.6000
T12	5	ROHN Waveguide Brackets	60.00 - 80.00	0.6000	0.6000
T12	6	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T12	8	FB-L98B-002-100000(3/8)	60.00 - 80.00	0.6000	0.6000
T12	9	FB-L98B-002-100000(3/8)	60.00 - 80.00	0.6000	0.6000
T12	10	LDF7-50A(1-5/8)	60.00 - 80.00	0.6000	0.6000
T12	11	ATCB-B01(5/16)	60.00 - 80.00	0.6000	0.6000
T12	12	WR-VG86T(3/4)	60.00 - 80.00	0.6000	0.6000
T12	13	WR-VG86T(3/4)	60.00 - 80.00	0.6000	0.6000
T12	14	LDF2-50(3/8)	60.00 - 80.00	0.6000	0.6000
T12	15	WR-VG86ST-BRD(3/4)	60.00 - 80.00	0.6000	0.6000
T12	17	LDF7-50A(1-5/8)	60.00 - 80.00	0.6000	0.6000
T12	18	HB158-21U6S24- xxM_TMO(1-5/8)	60.00 - 80.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T12	20	LDF4-50A(1/2)	60.00 - 80.00	0.6000	0.6000
T12	21	NTM 201 3929/2 56.9MM(2-1/8)	60.00 - 80.00	0.6000	0.6000
T13	2	Safety Line 3/8"	40.00 - 60.00	0.6000	0.6000
T13	4	Lighting Cable (3/8)	40.00 - 60.00	0.6000	0.6000
T13	5	ROHN Waveguide Brackets	40.00 - 60.00	0.6000	0.6000
T13	6	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T13	8	FB-L98B-002-100000(3/8)	40.00 - 60.00	0.6000	0.6000
T13	9	FB-L98B-002-100000(3/8)	40.00 - 60.00	0.6000	0.6000
T13	10	LDF7-50A(1-5/8)	40.00 - 60.00	0.6000	0.6000
T13	11	ATCB-B01(5/16)	40.00 - 60.00	0.6000	0.6000
T13	12	WR-VG86T(3/4)	40.00 - 60.00	0.6000	0.6000
T13	13	WR-VG86T(3/4)	40.00 - 60.00	0.6000	0.6000
T13	14	LDF2-50(3/8)	40.00 - 60.00	0.6000	0.6000
T13	15	WR-VG86ST-BRD(3/4)	40.00 - 60.00	0.6000	0.6000
T13	17	LDF7-50A(1-5/8)	40.00 - 60.00	0.6000	0.6000
T13	18	HB158-21U6S24-xxM_TMO(1-5/8)	40.00 - 60.00	0.6000	0.6000
T13	20	LDF4-50A(1/2)	40.00 - 60.00	0.6000	0.6000
T13	21	NTM 201 3929/2 56.9MM(2-1/8)	40.00 - 60.00	0.6000	0.6000
T14	2	Safety Line 3/8"	20.00 - 40.00	0.6000	0.6000
T14	4	Lighting Cable (3/8)	20.00 - 40.00	0.6000	0.6000
T14	5	ROHN Waveguide Brackets	20.00 - 40.00	0.6000	0.6000
T14	6	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T14	8	FB-L98B-002-100000(3/8)	20.00 - 40.00	0.6000	0.6000
T14	9	FB-L98B-002-100000(3/8)	20.00 - 40.00	0.6000	0.6000
T14	10	LDF7-50A(1-5/8)	20.00 - 40.00	0.6000	0.6000
T14	11	ATCB-B01(5/16)	20.00 - 40.00	0.6000	0.6000
T14	12	WR-VG86T(3/4)	20.00 - 40.00	0.6000	0.6000
T14	13	WR-VG86T(3/4)	20.00 - 40.00	0.6000	0.6000
T14	14	LDF2-50(3/8)	20.00 - 40.00	0.6000	0.6000
T14	15	WR-VG86ST-BRD(3/4)	20.00 - 40.00	0.6000	0.6000
T14	17	LDF7-50A(1-5/8)	20.00 - 40.00	0.6000	0.6000
T14	18	HB158-21U6S24-xxM_TMO(1-5/8)	20.00 - 40.00	0.6000	0.6000
T14	20	LDF4-50A(1/2)	20.00 - 40.00	0.6000	0.6000
T14	21	NTM 201 3929/2 56.9MM(2-1/8)	20.00 - 40.00	0.6000	0.6000
T15	2	Safety Line 3/8"	4.82 - 20.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T15	4	Lighting Cable (3/8)	4.82 - 20.00	0.6000	0.6000
T15	5	ROHN Waveguide Brackets	4.82 - 20.00	0.6000	0.6000
T15	6	Feedline Ladder (Af)	4.82 - 20.00	0.6000	0.6000
T15	8	FB-L98B-002-100000(3/8)	4.82 - 20.00	0.6000	0.6000
T15	9	FB-L98B-002-100000(3/8)	4.82 - 20.00	0.6000	0.6000
T15	10	LDF7-50A(1-5/8)	4.82 - 20.00	0.6000	0.6000
T15	11	ATCB-B01(5/16)	4.82 - 20.00	0.6000	0.6000
T15	12	WR-VG86T(3/4)	4.82 - 20.00	0.6000	0.6000
T15	13	WR-VG86T(3/4)	4.82 - 20.00	0.6000	0.6000
T15	14	LDF2-50(3/8)	4.82 - 20.00	0.6000	0.6000
T15	15	WR-VG86ST-BRD(3/4)	4.82 - 20.00	0.6000	0.6000
T15	17	LDF7-50A(1-5/8)	4.82 - 20.00	0.6000	0.6000
T15	18	HB158-21U6S24-xxM_TMO(1-5/8)	4.82 - 20.00	0.6000	0.6000
T15	20	LDF4-50A(1/2)	4.82 - 20.00	0.6000	0.6000
T15	21	NTM 201 3929/2 56.9MM(2-1/8)	4.82 - 20.00	0.6000	0.6000
T16	2	Safety Line 3/8"	0.00 - 4.82	0.4271	0.4271
T16	4	Lighting Cable (3/8)	0.00 - 4.82	0.4271	0.4271
T16	5	ROHN Waveguide Brackets	0.00 - 4.82	0.4271	0.4271
T16	6	Feedline Ladder (Af)	0.00 - 4.82	0.4271	0.4271
T16	8	FB-L98B-002-100000(3/8)	0.00 - 4.82	0.4271	0.4271
T16	9	FB-L98B-002-100000(3/8)	0.00 - 4.82	0.4271	0.4271
T16	10	LDF7-50A(1-5/8)	0.00 - 4.82	0.4271	0.4271
T16	11	ATCB-B01(5/16)	0.00 - 4.82	0.4271	0.4271
T16	12	WR-VG86T(3/4)	0.00 - 4.82	0.4271	0.4271
T16	13	WR-VG86T(3/4)	0.00 - 4.82	0.4271	0.4271
T16	14	LDF2-50(3/8)	0.00 - 4.82	0.4271	0.4271
T16	15	WR-VG86ST-BRD(3/4)	0.00 - 4.82	0.4271	0.4271
T16	17	LDF7-50A(1-5/8)	0.00 - 4.82	0.4271	0.4271
T16	18	HB158-21U6S24-xxM_TMO(1-5/8)	0.00 - 4.82	0.4271	0.4271
T16	20	LDF4-50A(1/2)	0.00 - 4.82	0.4271	0.4271
T16	21	NTM 201 3929/2 56.9MM(2-1/8)	0.00 - 4.82	0.4271	0.4271

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment t °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K

Flash Beacon Lighting	B	From Leg	0.00 0' 6"	0.0000	300'	No Ice	2.70	2.70	0.05
Side Light	A	From Leg	0.50 0' 0'	0.0000	149'	No Ice	0.26	0.26	0.01
Side Light	B	From Leg	0.50 0' 0'	0.0000	149'	No Ice	0.26	0.26	0.01
Side Light	C	From Leg	0.50 0' 0'	0.0000	149'	No Ice	0.26	0.26	0.01

SBNHH-1D65B w/ Mount Pipe	A	From Leg	4.00 0' 2'	-56.0000	289'	No Ice	4.09	3.30	0.07
SBNHH-1D65B w/ Mount Pipe	B	From Leg	4.00 0'	-56.0000	289'	No Ice	4.09	3.30	0.07

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
SBNHH-1D65B w/ Mount Pipe	C	From Leg	2' 4.00 0'	-56.0000	289'	No Ice	4.09	3.30	0.07
(2) SBNH-1D8585B w/ Mount Pipe	A	From Leg	2' 4.00 0'	-56.0000	289'	No Ice	4.09	3.30	0.07
(2) SBNH-1D8585B w/ Mount Pipe	B	From Leg	2' 4.00 0'	-56.0000	289'	No Ice	4.09	3.30	0.07
(2) SBNH-1D8585B w/ Mount Pipe	C	From Leg	2' 4.00 0'	-56.0000	289'	No Ice	4.09	3.30	0.07
SBNHH-1D85B w/ Mount Pipe	A	From Leg	2' 4.00 0'	-56.0000	289'	No Ice	4.09	3.30	0.07
SBNHH-1D85B w/ Mount Pipe	B	From Leg	2' 4.00 0'	-56.0000	289'	No Ice	4.09	3.30	0.07
SBNHH-1D85B w/ Mount Pipe	C	From Leg	2' 4.00 0'	-56.0000	289'	No Ice	4.09	3.30	0.07
(2) DC6-48-60-18-8F	B	From Leg	2' 1.00 0'	0.0000	289'	No Ice	0.92	0.92	0.02
(4) KRY 112 81/2	B	From Leg	0' 4.00 0'	0.0000	289'	No Ice	0.18	0.39	0.01
(2) KRY 112 81/2	C	From Leg	0' 4.00 0'	0.0000	289'	No Ice	0.18	0.39	0.01
(2) RRUS 32	B	From Leg	0' 4.00 0'	0.0000	289'	No Ice	2.86	1.78	0.06
RRUS 32	C	From Leg	0' 4.00 0'	0.0000	289'	No Ice	2.86	1.78	0.06
(2) RRUS 12	A	From Leg	0' 4.00 0'	0.0000	289'	No Ice	3.15	1.29	0.06
(2) RRUS 12	B	From Leg	0' 4.00 0'	0.0000	289'	No Ice	3.15	1.29	0.06
(2) RRUS 12	C	From Leg	0' 4.00 0'	0.0000	289'	No Ice	3.15	1.29	0.06
RRUS A2 MODULE	A	From Leg	0' 4.00 0'	0.0000	289'	No Ice	1.84	1.06	0.06
RRUS A2 MODULE	B	From Leg	0' 4.00 0'	0.0000	289'	No Ice	1.84	1.06	0.06
RRUS A2 MODULE	C	From Leg	0' 4.00 0'	0.0000	289'	No Ice	1.84	1.06	0.06
DC6-48-60-18-8C	B	From Leg	0' 1.00 0'	0.0000	289'	No Ice	2.74	2.74	0.03
DC6-48-60-18-8C	C	From Leg	0' 1.00 0'	0.0000	289'	No Ice	2.74	2.74	0.03
RRUS 11	A	From Leg	0' 4.00 0'	0.0000	289'	No Ice	2.78	1.19	0.05
RRUS 11	B	From Leg	0' 4.00 0'	0.0000	289'	No Ice	2.78	1.19	0.05

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
RRUS 11	C	From Leg	0' 0' 4.00	0.0000	289'	No Ice	2.78	1.19	0.05
RRUS 4478 B14	B	From Leg	0' 0' 4.00	0.0000	289'	No Ice	1.84	1.06	0.06
RRUS 4478 B14	C	From Leg	0' 0' 4.00	0.0000	289'	No Ice	1.84	1.06	0.06
RADIO 4426	A	From Leg	0' 0' 4.00	0.0000	289'	No Ice	1.64	0.73	0.05
RADIO 4426	B	From Leg	0' 0' 4.00	0.0000	289'	No Ice	1.64	0.73	0.05
RADIO 4426	C	From Leg	0' 0' 4.00	0.0000	289'	No Ice	1.64	0.73	0.05
Sector Mount [SM 502-3] *****	A	None	0'	0.0000	289'	No Ice	29.82	29.82	1.67
AIR6449 B41_T-MOBILE w/ Mount Pipe	A	From Leg	0' 0' 4.00	34.0000	250'	No Ice	5.19	2.71	0.13
AIR6449 B41_T-MOBILE w/ Mount Pipe	B	From Leg	0' 0' 4.00	9.0000	250'	No Ice	5.19	2.71	0.13
AIR6449 B41_T-MOBILE w/ Mount Pipe	C	From Leg	0' 0' 4.00	19.0000	250'	No Ice	5.19	2.71	0.13
FFV4-65C-R3-V1_TMO w/ Mount Pipe	A	From Leg	0' 0' 4.00	34.0000	250'	No Ice	12.97	6.20	0.18
FFV4-65C-R3-V1_TMO w/ Mount Pipe	B	From Leg	0' 0' 4.00	9.0000	250'	No Ice	12.97	6.20	0.18
FFV4-65C-R3-V1_TMO w/ Mount Pipe	C	From Leg	0' 0' 4.00	19.0000	250'	No Ice	12.97	6.20	0.18
RADIO 4449 B71 B85A_T- MOBILE	B	From Leg	0' 0' 4.00	0.0000	250'	No Ice	1.97	1.59	0.07
RADIO 4449 B71 B85A_T- MOBILE	C	From Leg	0' 0' 4.00	0.0000	250'	No Ice	1.97	1.59	0.07
RADIO 4424 B25_TMOV1	B	From Leg	0' 0' 4.00	0.0000	250'	No Ice	2.05	1.61	0.10
RADIO 4424 B25_TMOV1	C	From Leg	0' 0' 4.00	0.0000	250'	No Ice	2.05	1.61	0.10
RADIO 4415 B25_TMO	B	From Leg	0' 0' 4.00	0.0000	250'	No Ice	1.86	0.87	0.05
8' x 2" Mount Pipe	C	From Leg	0' 0' 4.00	0.0000	250'	No Ice	1.90	1.90	0.03
Sector Mount [SM 502-3] ***	A	None	0'	0.0000	250'	No Ice	29.82	29.82	1.67
(2) FIBEAIR IP-20A RFU- D-HP	A	From Leg	0' 0' 4.00	0.0000	250'	No Ice	1.18	0.45	0.03
8' Mount Pipe [#P2.0 STD]	A	From Leg	0' 0' 4.00	0.0000	250'	No Ice	1.90	1.90	0.03

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft 0'	Azimuth Adjustmen t °	Placement ft	C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft	Aperture Area ft²	Weight K	

P-24A35GF-U	C	Grid	From Leg	4.00 0' 0'	34.0000		250'	3.00	No Ice	7.10	0.05

VHLP4-11W/A	A	Paraboloid w/Shroud (HP)	From Leg	4.00 0' 0'	38.0000		250'	4.23	No Ice	14.05	0.07

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice+1.0 Guy
3	1.2 Dead+1.0 Wind 30 deg - No Ice+1.0 Guy
4	1.2 Dead+1.0 Wind 60 deg - No Ice+1.0 Guy
5	1.2 Dead+1.0 Wind 90 deg - No Ice+1.0 Guy
6	1.2 Dead+1.0 Wind 120 deg - No Ice+1.0 Guy
7	1.2 Dead+1.0 Wind 150 deg - No Ice+1.0 Guy
8	1.2 Dead+1.0 Wind 180 deg - No Ice+1.0 Guy
9	1.2 Dead+1.0 Wind 210 deg - No Ice+1.0 Guy
10	1.2 Dead+1.0 Wind 240 deg - No Ice+1.0 Guy
11	1.2 Dead+1.0 Wind 270 deg - No Ice+1.0 Guy
12	1.2 Dead+1.0 Wind 300 deg - No Ice+1.0 Guy
13	1.2 Dead+1.0 Wind 330 deg - No Ice+1.0 Guy
14	Dead+Wind 0 deg - Service+Guy
15	Dead+Wind 30 deg - Service+Guy
16	Dead+Wind 60 deg - Service+Guy
17	Dead+Wind 90 deg - Service+Guy
18	Dead+Wind 120 deg - Service+Guy
19	Dead+Wind 150 deg - Service+Guy
20	Dead+Wind 180 deg - Service+Guy
21	Dead+Wind 210 deg - Service+Guy
22	Dead+Wind 240 deg - Service+Guy
23	Dead+Wind 270 deg - Service+Guy
24	Dead+Wind 300 deg - Service+Guy
25	Dead+Wind 330 deg - Service+Guy

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T1	300 - 280	Leg	Max Tension	8	10.92	0.04	0.54

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T2	280 - 260	Diagonal	Max. Compression	6	-20.64	0.13	-0.08
			Max. Mx	10	-9.85	0.63	-0.34
			Max. My	2	-9.13	0.04	0.68
			Max. Vy	5	-0.97	-0.41	-0.34
			Max. Vx	8	-1.17	0.05	-0.65
			Max Tension	5	2.30	0.00	0.00
			Max. Compression	4	-2.61	0.00	0.00
			Max. Mx	8	1.65	0.00	0.00
			Max. My	11	-1.13	0.00	-0.00
			Max. Vy	8	-0.00	0.00	0.00
		Top Girt	Max. Vx	11	0.00	0.00	0.00
			Max Tension	2	0.03	0.00	0.00
			Max. Compression	11	-0.04	0.00	0.00
			Max. Mx	2	-0.02	0.00	0.00
			Max. My	11	-0.04	0.00	-0.00
		Bottom Girt	Max. Vy	2	-0.00	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
			Max Tension	7	0.69	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	3	0.60	0.00	0.00
		Guy A	Max. My	11	0.27	0.00	-0.00
			Max. Vy	7	-0.00	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
			Bottom Tension	8	13.89		
			Top Tension	8	14.21		
		Guy B	Top Cable Vert	8	11.12		
			Top Cable Norm	8	8.85		
			Top Cable Tan	8	0.00		
			Bot Cable Vert	8	-10.33		
			Bot Cable Norm	8	9.28		
		Guy C	Bot Cable Tan	8	0.01		
			Bottom Tension	12	14.21		
			Top Tension	12	14.54		
			Top Cable Vert	12	11.49		
			Top Cable Norm	12	8.90		
		Top Guy Pull-Off	Top Cable Tan	12	0.01		
			Bot Cable Vert	12	-10.70		
			Bot Cable Norm	12	9.35		
			Bot Cable Tan	12	0.01		
			Bottom Tension	4	14.35		
		Torque Arm Top	Top Tension	4	14.67		
			Top Cable Vert	4	11.53		
			Top Cable Norm	4	9.07		
			Top Cable Tan	4	0.01		
			Bot Cable Vert	4	-10.75		
		Leg	Bot Cable Norm	4	9.50		
			Bot Cable Tan	4	0.01		
			Max Tension	4	5.11	0.00	0.00
			Max. Compression	10	-3.55	0.00	0.00
			Max. Mx	2	-3.23	0.01	0.00
		Diagonal	Max. My	11	4.41	0.00	-0.00
			Max. Vy	2	-0.01	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
			Max Tension	9	7.81	0.00	0.00
			Max. Compression	9	-1.67	-34.96	0.00
		Torque Arm Top	Max. Mx	4	-0.54	-38.29	-0.00
			Max. My	11	0.84	-35.35	0.00
			Max. Vy	4	11.28	-38.29	-0.00
			Max. Vx	11	0.00	-35.35	0.00
			Max Tension	1	0.00	0.00	0.00
		Diagonal	Max. Compression	6	-20.65	0.05	0.22
			Max. Mx	4	-11.71	-0.41	0.38
			Max. My	8	-10.92	0.03	-0.51
			Max. Vy	5	-0.99	-0.30	-0.28
			Max. Vx	8	-1.17	0.03	-0.51
		Diagonal	Max Tension	4	1.16	0.00	0.00
			Max. Compression	10	-1.63	0.00	0.00
			Max. Mx	11	0.83	0.00	0.00
		Diagonal	Max. My	11	0.31	0.00	-0.00

Section n No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T3	260 - 240	Top Girt	Max. Vy	11	-0.00	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
			Max Tension	8	0.74	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	3	0.52	0.00	0.00
			Max. My	11	0.64	0.00	-0.00
		Bottom Girt	Max. Vy	3	-0.00	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
			Max Tension	8	0.34	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	6	0.20	0.00	0.00
			Max. My	11	0.32	0.00	-0.00
		Leg	Max. Vy	6	-0.00	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	6	-37.95	0.12	-0.06
			Max. Mx	4	-24.87	-1.36	1.02
			Max. My	8	-24.52	-0.08	-1.58
		Diagonal	Max. Vy	4	-2.83	-1.36	1.02
			Max. Vx	8	-3.27	-0.08	-1.58
			Max Tension	9	2.59	-0.02	-0.00
			Max. Compression	6	-4.08	0.04	-0.02
			Max. Mx	5	-0.56	-0.08	-0.00
			Max. My	5	-3.55	-0.06	-0.02
		Top Girt	Max. Vy	5	-0.05	0.00	0.00
			Max. Vx	5	-0.01	0.00	0.00
			Max Tension	4	0.38	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	6	0.31	0.01	0.00
			Max. My	11	0.30	0.00	-0.00
		Guy A	Max. Vy	6	-0.01	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
			Bottom Tension	8	14.03		
			Top Tension	8	14.31		
			Top Cable Vert	8	10.45		
			Top Cable Norm	8	9.78		
		Guy B	Top Cable Tan	8	0.00		
			Bot Cable Vert	8	-9.75		
			Bot Cable Norm	8	10.09		
			Bot Cable Tan	8	0.01		
			Bottom Tension	12	14.86		
			Top Tension	12	15.14		
		Guy C	Top Cable Vert	12	11.19		
			Top Cable Norm	12	10.20		
			Top Cable Tan	12	0.00		
			Bot Cable Vert	12	-10.49		
			Bot Cable Norm	12	10.53		
			Bot Cable Tan	12	0.00		
		Top Guy Pull-Off	Bottom Tension	4	15.16		
			Top Tension	4	15.43		
			Top Cable Vert	4	11.31		
			Top Cable Norm	4	10.50		
			Top Cable Tan	4	0.01		
			Bot Cable Vert	4	-10.62		
		Torque Arm Top	Bot Cable Norm	4	10.81		
			Bot Cable Tan	4	0.00		
			Max Tension	4	7.92	0.00	0.00
			Max. Compression	10	-5.08	0.00	0.00
			Max. Mx	4	7.92	0.01	0.00
			Max. My	11	7.21	0.00	-0.00
T4	240 - 220	Leg	Max. Vy	4	-0.01	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
			Max Tension	4	9.59	-15.05	-0.00
			Max. Compression	10	-3.29	-28.46	-0.00
			Max. Mx	4	-1.32	-37.24	-0.00
			Max. My	11	0.37	-34.66	0.00
			Max. Vy	4	10.97	-37.24	-0.00
			Max. Vx	11	0.00	-34.66	0.00
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T5	220 - 200	Diagonal	Max. Compression	4	-42.18	-0.08	0.21
			Max. Mx	4	-24.86	-1.04	0.76
			Max. My	8	-24.52	-0.06	-1.20
			Max. Vy	4	-2.83	-1.04	0.76
			Max. Vx	8	-3.29	-0.06	-1.20
			Max Tension	6	1.98	0.00	0.00
			Max. Compression	6	-2.89	0.00	0.00
			Max. Mx	10	1.86	0.00	0.00
			Max. My	11	0.74	0.00	-0.00
			Max. Vy	10	-0.00	0.00	0.00
		Top Girt	Max. Vx	11	0.00	0.00	0.00
			Max Tension	4	1.69	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	12	1.66	0.00	0.00
			Max. My	11	1.60	0.00	-0.00
		Bottom Girt	Max. Vy	12	-0.00	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
			Max Tension	5	0.82	0.00	0.00
			Max. Compression	11	-0.16	0.00	0.00
			Max. Mx	4	0.32	0.00	0.00
T6	200 - 180	Leg	Max. My	5	0.46	0.00	-0.00
			Max. Vy	4	-0.00	0.00	0.00
			Max. Vx	5	0.00	0.00	0.00
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	4	-44.23	-0.12	-0.11
		Diagonal	Max. Mx	11	-33.13	0.58	-0.06
			Max. My	11	-34.54	0.05	-0.52
			Max. Vy	11	-1.64	-0.32	-0.04
			Max. Vx	12	1.06	-0.05	0.45
			Max Tension	5	2.13	0.00	0.00
		Top Girt	Max. Compression	11	-2.39	0.00	0.00
			Max. Mx	10	1.57	0.00	0.00
			Max. My	11	-2.39	0.00	-0.00
			Max. Vy	10	-0.00	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
		Bottom Girt	Max Tension	6	0.60	0.00	0.00
			Max. Compression	11	-0.28	0.00	0.00
			Max. Mx	4	0.33	0.00	0.00
			Max. My	5	0.58	0.00	-0.00
			Max. Vy	4	-0.00	0.00	0.00
T6	200 - 180	Leg	Max. Vx	5	0.00	0.00	0.00
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	5	-44.30	-0.08	0.19
			Max. Mx	11	-34.52	0.87	-0.17
			Max. My	8	-36.42	-0.01	-0.81
		Diagonal	Max. Vy	11	-1.64	0.68	-0.01
			Max. Vx	12	1.48	0.26	0.77
			Max Tension	5	3.43	0.00	0.00
			Max. Compression	11	-3.36	0.00	0.00
			Max. Mx	8	1.83	0.00	0.00
		Top Girt	Max. My	11	-0.46	0.00	-0.00
			Max. Vy	8	-0.00	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
			Max Tension	4	0.43	0.00	0.00
			Max. Compression	11	-0.19	0.00	0.00
		Bottom Girt	Max. Mx	10	0.17	0.00	0.00
			Max. My	5	0.20	0.00	0.00
			Max. Vy	10	-0.00	0.00	0.00
			Max. Vx	5	-0.00	0.00	0.00
			Max Tension	12	0.26	0.00	0.00
			Max. Compression	6	-0.15	0.00	0.00
			Max. Mx	3	0.05	0.00	0.00
			Max. My	12	-0.02	0.00	-0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T7	180 - 160	Guy A	Max. Vy	3	-0.00	0.00	0.00
			Max. Vx	12	0.00	0.00	0.00
			Bottom Tension	8	14.77		
			Top Tension	8	14.98		
			Top Cable Vert	8	12.09		
			Top Cable Norm	8	8.85		
			Top Cable Tan	8	0.00		
			Bot Cable Vert	8	-11.61		
		Guy B	Bot Cable Norm	8	9.13		
			Bot Cable Tan	8	0.00		
			Bottom Tension	11	15.96		
			Top Tension	11	16.18		
			Top Cable Vert	11	13.23		
			Top Cable Norm	11	9.31		
			Top Cable Tan	11	0.09		
			Bot Cable Vert	11	-12.77		
		Guy C	Bot Cable Norm	11	9.58		
			Bot Cable Tan	11	0.14		
			Bottom Tension	4	16.04		
			Top Tension	4	16.25		
			Top Cable Vert	4	13.21		
			Top Cable Norm	4	9.47		
			Top Cable Tan	4	0.00		
			Bot Cable Vert	4	-12.75		
		Top Guy Pull-Off	Bot Cable Norm	4	9.74		
			Bot Cable Tan	4	0.00		
			Max Tension	11	5.79	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
		Leg	Max. Mx	10	5.09	0.01	0.00
			Max. My	12	2.69	0.00	-0.00
			Max. Vy	10	-0.01	0.00	0.00
			Max. Vx	12	0.00	0.00	0.00
		Diagonal	Max Tension	1	0.00	0.00	0.00
			Max. Compression	11	-49.08	0.16	0.05
			Max. Mx	4	-39.87	0.54	-0.29
			Max. My	12	-39.66	0.13	0.60
			Max. Vy	12	1.09	0.13	0.60
			Max. Vx	12	1.48	0.13	0.60
		Top Girt	Max Tension	12	2.06	0.00	0.00
			Max. Compression	4	-2.40	0.00	0.00
			Max. Mx	4	0.27	0.00	0.00
			Max. My	5	0.25	0.00	0.00
			Max. Vy	4	-0.00	0.00	0.00
			Max. Vx	5	-0.00	0.00	0.00
		Bottom Girt	Max Tension	3	0.43	0.00	0.00
			Max. Compression	11	-0.01	0.00	0.00
			Max. Mx	12	0.29	0.00	0.00
			Max. My	12	0.30	0.00	-0.00
			Max. Vy	12	-0.00	0.00	0.00
			Max. Vx	12	0.00	0.00	0.00
		Leg	Max Tension	10	0.19	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	12	0.13	0.00	0.00
			Max. My	11	0.15	0.00	-0.00
			Max. Vy	12	-0.00	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
T8	160 - 140	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	11	-48.85	0.22	-0.05
			Max. Mx	5	-39.62	0.55	0.09
			Max. My	9	-37.72	-0.05	0.50
			Max. Vy	5	1.65	0.31	-0.11
			Max. Vx	9	1.38	0.02	0.34
		Diagonal	Max Tension	5	2.31	0.00	0.00
			Max. Compression	11	-2.50	0.00	0.00
			Max. Mx	3	1.80	0.00	0.00
			Max. My	11	0.87	0.00	-0.00
			Max. Vy	3	-0.00	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
		Top Girt	Max Tension	3	0.22	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T9	140 - 120	Bottom Girt	Max. Compression	11	-0.01	0.00	0.00
			Max. Mx	12	0.03	0.00	0.00
			Max. My	11	-0.01	0.00	-0.00
			Max. Vy	12	-0.00	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
			Max Tension	3	0.66	0.00	0.00
			Max. Compression	5	-0.42	0.00	0.00
			Max. Mx	12	0.24	0.00	0.00
			Max. My	11	0.65	0.00	-0.00
			Max. Vy	2	-0.00	0.00	0.00
		Leg	Max. Vx	11	0.00	0.00	0.00
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	10	-61.46	0.51	-0.36
			Max. Mx	4	-30.19	-0.87	0.50
			Max. My	8	-31.18	-0.00	-0.98
			Max. Vy	4	-2.10	-0.87	0.50
			Max. Vx	8	-2.30	-0.00	-0.98
		Diagonal	Max Tension	3	1.76	0.00	0.00
			Max. Compression	3	-2.91	0.00	0.00
			Max. Mx	3	0.95	0.00	0.00
			Max. My	11	0.52	0.00	-0.00
			Max. Vy	3	-0.00	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
		Top Girt	Max Tension	3	0.56	0.00	0.00
			Max. Compression	5	-0.15	0.00	0.00
			Max. Mx	12	0.14	0.00	0.00
			Max. My	11	0.48	0.00	-0.00
			Max. Vy	2	-0.00	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
		Bottom Girt	Max Tension	3	0.53	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	12	0.40	0.00	0.00
			Max. My	11	0.32	0.00	-0.00
			Max. Vy	2	-0.00	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
		Guy A	Bottom Tension	9	15.42		
			Top Tension	9	15.56		
			Top Cable Vert	9	10.44		
			Top Cable Norm	9	11.54		
			Top Cable Tan	9	0.05		
			Bot Cable Vert	9	-10.09		
			Bot Cable Norm	9	11.66		
			Bot Cable Tan	9	0.10		
		Guy B	Bottom Tension	11	17.27		
			Top Tension	11	17.41		
			Top Cable Vert	11	12.01		
			Top Cable Norm	11	12.61		
			Top Cable Tan	11	0.05		
			Bot Cable Vert	11	-11.66		
			Bot Cable Norm	11	12.74		
			Bot Cable Tan	11	0.10		
		Guy C	Bottom Tension	5	17.02		
			Top Tension	5	17.16		
			Top Cable Vert	5	11.62		
			Top Cable Norm	5	12.63		
			Top Cable Tan	5	0.05		
			Bot Cable Vert	5	-11.29		
			Bot Cable Norm	5	12.74		
			Bot Cable Tan	5	0.10		
		Top Guy Pull-Off	Bottom Tension	5	17.02		
			Top Tension	5	17.16		
			Top Cable Vert	5	11.62		
			Top Cable Norm	5	12.63		
			Top Cable Tan	5	0.05		
			Bot Cable Vert	5	-11.29		
			Bot Cable Norm	5	12.74		
			Bot Cable Tan	5	0.10		
			Max Tension	10	6.70	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
T10	120 - 100	Leg	Max. Mx	12	2.46	0.01	0.00
			Max. My	11	4.21	0.00	-0.00
			Max. Vy	2	-0.01	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	10	-60.02	-0.53	0.34
			Max. Mx	4	-36.02	-0.77	0.44
			Max. My	8	-36.45	0.00	-0.85

Section n No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T11	100 - 80	Diagonal	Max. Vy	4	-2.11	-0.63	0.36
			Max. Vx	8	-2.31	0.00	-0.71
			Max Tension	11	1.60	0.00	0.00
			Max. Compression	3	-2.13	0.00	0.00
			Max. Mx	3	-2.13	0.00	0.00
			Max. My	11	-1.28	0.00	-0.00
			Max. Vy	3	-0.00	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
			Max Tension	8	1.04	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
		Top Girt	Max. Mx	12	0.88	0.00	0.00
			Max. My	11	0.44	0.00	-0.00
			Max. Vy	12	-0.00	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
			Max Tension	9	0.56	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	4	0.16	0.00	0.00
			Max. My	11	0.46	0.00	-0.00
			Max. Vy	4	-0.00	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
		Bottom Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	11	-59.01	0.02	0.11
			Max. Mx	5	-40.75	0.47	0.03
			Max. My	9	-51.68	0.03	0.45
			Max. Vy	5	-1.19	-0.30	-0.13
			Max. Vx	9	-0.98	0.24	-0.14
			Max Tension	5	1.54	0.00	0.00
			Max. Compression	11	-1.82	0.00	0.00
			Max. Mx	10	0.38	0.00	0.00
			Max. My	11	-0.25	0.00	-0.00
		Leg	Max. Vy	10	-0.00	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
			Max Tension	3	0.54	0.00	0.00
			Max. Compression	5	-0.23	0.00	0.00
			Max. Mx	4	0.17	0.00	0.00
			Max. My	11	0.53	0.00	-0.00
			Max. Vy	4	-0.00	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
			Max Tension	4	0.21	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
T12	80 - 60	Top Girt	Max. Mx	4	0.17	0.00	0.00
			Max. My	11	0.10	0.00	-0.00
			Max. Vy	4	-0.00	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	11	-58.36	-0.17	0.29
			Max. Mx	3	-49.43	-0.53	0.11
			Max. My	11	-50.78	0.13	0.57
			Max. Vy	11	-1.30	-0.09	-0.23
			Max. Vx	12	-1.19	-0.21	-0.18
		Diagonal	Max Tension	6	2.28	0.00	0.00
			Max. Compression	6	-2.57	0.00	0.00
			Max. Mx	10	2.03	0.00	0.00
			Max. My	11	1.25	0.00	-0.00
			Max. Vy	10	-0.00	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
			Max Tension	11	0.29	0.00	0.00
			Max. Compression	5	-0.02	0.00	0.00
			Max. Mx	4	0.06	0.00	0.00
			Max. My	11	0.11	0.00	-0.00
		Bottom Girt	Max. Vy	4	-0.00	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
			Max Tension	6	0.77	0.00	0.00
			Max. Compression	12	-0.38	0.00	0.00
			Max. Mx	4	0.36	0.00	0.00
			Max. My	11	0.64	0.00	-0.00
			Max. Vy	4	-0.00	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	11	-59.01	0.02	0.11
T13	60 - 40	Leg	Max. Mx	5	-40.75	0.47	0.03
			Max. My	9	-51.68	0.03	0.45
			Max. Vy	5	-1.19	-0.30	-0.13
			Max. Vx	9	-0.98	0.24	-0.14

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T14	40 - 20	Diagonal	Max. Compression	11	-64.80	-0.32	-0.01
			Max. Mx	5	-48.64	-1.06	-0.23
			Max. My	2	-44.27	0.19	1.05
			Max. Vy	5	-1.35	-0.36	-0.40
			Max. Vx	12	-1.19	0.49	0.55
			Max Tension	11	3.00	0.00	0.00
			Max. Compression	5	-3.02	0.00	0.00
			Max. Mx	10	-0.28	0.00	0.00
			Max. My	5	-0.18	0.00	0.00
			Max. Vy	10	-0.00	0.00	0.00
		Top Girt	Max. Vx	5	-0.00	0.00	0.00
			Max Tension	5	0.55	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	4	0.07	0.00	0.00
			Max. My	11	0.41	0.00	-0.00
		Bottom Girt	Max. Vy	4	-0.00	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
			Max Tension	4	0.37	0.00	0.00
			Max. Compression	11	-0.01	0.00	0.00
			Max. Mx	6	0.32	0.00	0.00
		Guy A	Max. My	11	-0.01	0.00	-0.00
			Max. Vy	6	-0.00	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
			Bottom Tension	9	7.57		
			Top Tension	9	7.60		
		Guy B	Top Cable Vert	9	3.05		
			Top Cable Norm	9	6.96		
			Top Cable Tan	9	0.02		
			Bot Cable Vert	9	-2.93		
			Bot Cable Norm	9	6.98		
		Guy C	Bot Cable Tan	9	0.04		
			Bottom Tension	11	8.41		
			Top Tension	11	8.44		
			Top Cable Vert	11	3.63		
			Top Cable Norm	11	7.62		
		Top Guy Pull-Off	Top Cable Tan	11	0.02		
			Bot Cable Vert	11	-3.52		
			Bot Cable Norm	11	7.64		
			Bot Cable Tan	11	0.04		
			Bottom Tension	5	8.31		
		Leg	Top Tension	5	8.34		
			Top Cable Vert	5	3.35		
			Top Cable Norm	5	7.64		
			Top Cable Tan	5	0.02		
			Bot Cable Vert	5	-3.24		
		Diagonal	Bot Cable Norm	5	7.66		
			Bot Cable Tan	5	0.04		
			Max Tension	5	3.53	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	4	0.42	0.01	0.00
		Top Girt	Max. My	11	2.63	0.00	-0.00
			Max. Vy	4	-0.01	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	11	-66.86	-0.09	0.23
		Diagonal	Max. Mx	5	-63.92	0.62	-0.27
			Max. My	5	-53.51	0.04	-0.65
			Max. Vy	5	-1.35	-0.21	-0.38
			Max. Vx	5	1.29	-0.02	0.42
			Max Tension	5	1.87	0.00	0.00
		Top Girt	Max. Compression	5	-2.32	0.00	0.00
			Max. Mx	11	-0.88	0.00	0.00
			Max. My	11	1.05	0.00	-0.00
			Max. Vy	11	-0.00	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
		Top Girt	Max Tension	11	0.31	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	6	0.12	0.00	0.00
		Top Girt	Max. My	11	0.31	0.00	-0.00
			Max. My	11	0.31	0.00	-0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T15	20 - 4.81771	Bottom Girt	Max. Vy	6	-0.00	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
			Max Tension	5	0.32	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	6	0.26	0.00	0.00
			Max. My	11	0.15	0.00	-0.00
		Leg	Max. Vy	6	-0.00	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	11	-64.28	-0.16	0.56
			Max. Mx	11	-56.77	1.33	0.14
			Max. My	8	-54.31	-0.06	-1.12
		Diagonal	Max. Vy	11	-3.60	1.33	0.14
			Max. Vx	10	4.06	0.50	-0.69
			Max Tension	6	2.66	0.00	0.00
			Max. Compression	11	-2.60	0.00	0.00
			Max. Mx	11	-0.04	0.00	0.00
			Max. My	5	1.87	0.00	0.00
		Top Girt	Max. Vy	11	-0.00	0.00	0.00
			Max. Vx	5	-0.00	0.00	0.00
			Max Tension	11	0.46	0.00	0.00
			Max. Compression	5	-0.07	0.00	0.00
			Max. Mx	6	0.17	0.00	0.00
			Max. My	11	0.19	0.00	-0.00
T16	4.81771 - 0	Bottom Girt	Max. Vy	6	-0.00	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
			Max Tension	5	1.72	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	6	1.65	0.00	0.00
			Max. My	11	1.48	0.00	-0.00
		Leg	Max. Vy	6	-0.00	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	11	-60.91	0.04	0.80
			Max. Mx	6	-56.03	0.89	-0.17
			Max. My	11	-56.67	-0.61	1.44
		Horizontal	Max. Vy	5	1.08	-0.55	-0.68
			Max. Vx	11	-0.94	-0.61	1.44
			Max Tension	5	0.86	-0.42	-0.18
			Max. Compression	11	-0.40	-0.37	-0.29
			Max. Mx	11	-0.28	1.11	-0.04
			Max. My	11	-0.40	-0.37	-0.29
		Top Girt	Max. Vy	11	2.00	1.11	-0.04
			Max. Vx	5	-0.35	0.94	0.02
			Max Tension	5	11.54	-0.35	-0.15
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	10	9.33	0.70	-0.00
			Max. My	11	10.00	0.35	-0.40
			Max. Vy	10	0.34	0.70	-0.00
			Max. Vx	11	0.19	-0.11	0.25

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Mast	Max. Vert	11	157.86	1.68	0.08
	Max. H _x	11	157.86	1.68	0.08
	Max. H _z	2	149.12	-0.01	1.50
	Max. M _x	1	0.00	-0.00	-0.02
	Max. M _z	1	0.00	-0.00	-0.02
	Max. Torsion	5	3.90	-1.71	0.07
	Min. Vert	1	114.57	-0.00	-0.02
	Min. H _x	5	157.21	-1.71	0.07
	Min. H _z	8	151.28	0.00	-1.60

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Guy C @ 135 ft Elev 2 ft Azimuth 240 deg	Min. M _x	1	0.00	-0.00	-0.02
	Min. M _z	1	0.00	-0.00	-0.02
	Min. Torsion	11	-3.91	1.68	0.08
	Max. Vert	10	-0.99	-0.65	0.37
	Max. H _x	10	-0.99	-0.65	0.37
	Max. H _z	5	-27.13	-26.14	14.77
Guy B @ 137 ft Elev -4 ft Azimuth 120 deg	Min. Vert	5	-27.13	-26.14	14.77
	Min. H _x	5	-27.13	-26.14	14.77
	Min. H _z	10	-0.99	-0.65	0.37
	Max. Vert	6	-1.22	0.78	0.45
	Max. H _x	11	-27.94	26.09	14.73
	Max. H _z	11	-27.94	26.09	14.73
Guy A @ 140 ft Elev 0 ft Azimuth 0 deg	Min. Vert	11	-27.94	26.09	14.73
	Min. H _x	6	-1.22	0.78	0.45
	Min. H _z	6	-1.22	0.78	0.45
	Max. Vert	2	-1.10	0.00	-0.88
	Max. H _x	11	-14.18	0.63	-15.86
	Max. H _z	2	-1.10	0.00	-0.88
Guy C @ 235 ft Elev 2 ft Azimuth 240 deg	Min. Vert	9	-24.54	0.28	-27.67
	Min. H _x	5	-14.17	-0.63	-15.89
	Min. H _z	9	-24.54	0.28	-27.67
	Max. Vert	10	-5.86	-3.90	2.25
	Max. H _x	10	-5.86	-3.90	2.25
	Max. H _z	4	-42.02	-34.60	19.99
Guy B @ 237 ft Elev -4 ft Azimuth 120 deg	Min. Vert	4	-42.02	-34.60	19.99
	Min. H _x	4	-42.02	-34.60	19.99
	Min. H _z	10	-5.86	-3.90	2.25
	Max. Vert	6	-6.65	4.43	2.55
	Max. H _x	12	-41.42	33.67	19.46
	Max. H _z	12	-41.42	33.67	19.46
Guy A @ 240 ft Elev 0 ft Azimuth 0 deg	Min. Vert	12	-41.42	33.67	19.46
	Min. H _x	6	-6.65	4.43	2.55
	Min. H _z	6	-6.65	4.43	2.55
	Max. Vert	2	-6.32	0.00	-5.01
	Max. H _x	11	-24.21	1.89	-22.78
	Max. H _z	2	-6.32	0.00	-5.01
	Min. Vert	8	-40.11	0.00	-38.70
	Min. H _x	5	-23.96	-1.89	-22.54
	Min. H _z	8	-40.11	0.00	-38.70

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear _x K	Shear _z K	Overtuning Moment, M _x kip-ft	Overtuning Moment, M _z kip-ft	Torque kip-ft
Dead Only	114.57	0.00	0.02	0.00	0.00	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice+1.0 Guy	149.12	0.01	-1.50	0.00	0.00	0.59
1.2 Dead+1.0 Wind 30 deg - No Ice+1.0 Guy	154.56	0.87	-1.31	0.00	0.00	0.15
1.2 Dead+1.0 Wind 60 deg - No Ice+1.0 Guy	154.28	1.52	-0.85	0.00	0.00	-2.28

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
1.2 Dead+1.0 Wind 90 deg - No Ice+1.0 Guy	157.21	1.71	-0.07	0.00	0.00	-3.90
1.2 Dead+1.0 Wind 120 deg - No Ice+1.0 Guy	150.70	1.37	0.82	0.00	0.00	-3.00
1.2 Dead+1.0 Wind 150 deg - No Ice+1.0 Guy	149.44	0.69	1.30	0.00	0.00	-0.80
1.2 Dead+1.0 Wind 180 deg - No Ice+1.0 Guy	151.28	-0.00	1.60	0.00	0.00	-0.59
1.2 Dead+1.0 Wind 210 deg - No Ice+1.0 Guy	153.79	-0.73	1.45	0.00	0.00	-0.13
1.2 Dead+1.0 Wind 240 deg - No Ice+1.0 Guy	154.48	-1.39	0.84	0.00	0.00	2.21
1.2 Dead+1.0 Wind 270 deg - No Ice+1.0 Guy	157.86	-1.68	-0.08	0.00	0.00	3.91
1.2 Dead+1.0 Wind 300 deg - No Ice+1.0 Guy	152.97	-1.41	-0.79	0.00	0.00	3.08
1.2 Dead+1.0 Wind 330 deg - No Ice+1.0 Guy	150.45	-0.75	-1.19	0.00	0.00	0.81
Dead+Wind 0 deg - Service+Guy	116.27	0.00	-0.44	0.00	0.00	0.16
Dead+Wind 30 deg - Service+Guy	116.23	0.24	-0.40	0.00	0.00	0.04
Dead+Wind 60 deg - Service+Guy	116.25	0.44	-0.23	0.00	0.00	-0.62
Dead+Wind 90 deg - Service+Guy	116.23	0.53	0.02	0.00	0.00	-1.08
Dead+Wind 120 deg - Service+Guy	116.20	0.42	0.26	0.00	0.00	-0.83
Dead+Wind 150 deg - Service+Guy	116.08	0.22	0.39	0.00	0.00	-0.22
Dead+Wind 180 deg - Service+Guy	116.01	0.00	0.47	0.00	0.00	-0.16
Dead+Wind 210 deg - Service+Guy	116.04	-0.24	0.44	0.00	0.00	-0.03
Dead+Wind 240 deg - Service+Guy	116.13	-0.44	0.28	0.00	0.00	0.63
Dead+Wind 270 deg - Service+Guy	116.12	-0.52	0.02	0.00	0.00	1.08
Dead+Wind 300 deg - Service+Guy	116.12	-0.40	-0.22	0.00	0.00	0.83
Dead+Wind 330 deg - Service+Guy	116.15	-0.21	-0.35	0.00	0.00	0.23

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.00	-34.96	0.00	-0.00	34.96	0.00	0.010%
2	0.23	-41.12	-49.57	-0.23	41.12	49.57	0.004%
3	26.18	-40.62	-44.95	-26.18	40.62	44.95	0.005%
4	46.36	-40.14	-26.73	-46.36	40.14	26.73	0.006%
5	54.96	-40.62	-0.27	-54.96	40.61	0.27	0.006%
6	44.45	-41.10	25.34	-44.45	41.10	-25.34	0.003%
7	23.56	-40.63	41.06	-23.56	40.63	-41.06	0.004%
8	-0.31	-40.17	49.41	0.31	40.17	-49.41	0.004%
9	-26.28	-40.66	45.06	26.28	40.66	-45.06	0.005%
10	-46.71	-41.15	26.97	46.70	41.15	-26.97	0.006%
11	-55.04	-40.67	0.38	55.04	40.67	-0.37	0.004%
12	-44.18	-40.19	-25.23	44.18	40.19	25.23	0.002%
13	-23.64	-40.65	-41.01	23.64	40.65	41.01	0.005%
14	0.06	-35.08	-12.84	-0.06	35.08	12.84	0.006%
15	6.78	-34.96	-11.65	-6.78	34.96	11.64	0.006%
16	12.01	-34.83	-6.93	-12.01	34.83	6.92	0.007%
17	14.24	-34.95	-0.07	-14.24	34.95	0.07	0.007%
18	11.52	-35.08	6.56	-11.51	35.08	-6.56	0.014%

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
19	6.10	-34.96	10.64	-6.10	34.96	-10.63	0.013%
20	-0.08	-34.84	12.80	0.08	34.84	-12.80	0.016%
21	-6.81	-34.97	11.67	6.81	34.97	-11.67	0.015%
22	-12.10	-35.09	6.99	12.10	35.09	-6.99	0.007%
23	-14.26	-34.97	0.10	14.26	34.97	-0.10	0.008%
24	-11.45	-34.84	-6.54	11.44	34.84	6.54	0.008%
25	-6.12	-34.96	-10.63	6.12	34.96	10.62	0.016%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	9	0.00000001	0.00008007
2	Yes	22	0.00000001	0.00003405
3	Yes	21	0.00009165	0.00005173
4	Yes	14	0.00009436	0.00009944
5	Yes	21	0.00009265	0.00008571
6	Yes	22	0.00000001	0.00004351
7	Yes	20	0.00000001	0.00003808
8	Yes	14	0.00000001	0.00006531
9	Yes	21	0.00009286	0.00005076
10	Yes	22	0.00009218	0.00006691
11	Yes	22	0.00007224	0.00006645
12	Yes	15	0.00000001	0.00005856
13	Yes	20	0.00009867	0.00005145
14	Yes	11	0.00000001	0.00005042
15	Yes	11	0.00000001	0.00005378
16	Yes	11	0.00000001	0.00005959
17	Yes	11	0.00000001	0.00006102
18	Yes	10	0.00000001	0.00009755
19	Yes	10	0.00000001	0.00007360
20	Yes	10	0.00000001	0.00008090
21	Yes	10	0.00000001	0.00009408
22	Yes	11	0.00000001	0.00005659
23	Yes	11	0.00000001	0.00006704
24	Yes	11	0.00000001	0.00006278
25	Yes	10	0.00000001	0.00009412

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	300 - 280	1.153	16	0.0212	0.0843
T2	280 - 260	1.125	16	0.0216	0.0924
T3	260 - 240	1.155	16	0.0223	0.1229
T4	240 - 220	1.203	16	0.0333	0.1364
T5	220 - 200	1.307	16	0.0250	0.1816
T6	200 - 180	1.327	23	0.0124	0.3194
T7	180 - 160	1.248	23	0.0136	0.4173
T8	160 - 140	1.193	23	0.0232	0.4982
T9	140 - 120	1.036	23	0.0308	0.5388
T10	120 - 100	0.907	23	0.0091	0.5458
T11	100 - 80	0.916	23	0.0039	0.5401
T12	80 - 60	0.874	23	0.0182	0.4951
T13	60 - 40	0.730	23	0.0262	0.4217
T14	40 - 20	0.603	23	0.0376	0.3300
T15	20 - 4.81771	0.354	23	0.0616	0.2103
T16	4.81771 - 0	0.076	23	0.0735	0.0979

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
300'	Flash Beacon Lighting	16	1.153	0.0212	0.0843	159585
289'	SBNHH-1D65B w/ Mount Pipe	16	1.132	0.0195	0.0859	72539
282'6-1/4"	Guy	16	1.125	0.0213	0.0898	46232
250'	P-24A35GF-U	16	1.172	0.0281	0.1311	76624
242'6-1/4"	Guy	16	1.193	0.0325	0.1350	40640
182'6-1/4"	Guy	23	1.257	0.0131	0.4064	55380
149'	Side Light	23	1.116	0.0304	0.5260	68990
122'6-1/4"	Guy	23	0.915	0.0119	0.5456	24322
59'4-11/16"	Guy	23	0.726	0.0264	0.4193	56340

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	300 - 280	7.640	4	0.1300	0.5087
T2	280 - 260	7.197	4	0.1057	0.5395
T3	260 - 240	6.978	4	0.1133	0.6562
T4	240 - 220	7.343	11	0.1738	0.7060
T5	220 - 200	8.031	11	0.1423	0.8579
T6	200 - 180	8.219	11	0.1018	1.3068
T7	180 - 160	7.898	11	0.1048	1.6187
T8	160 - 140	7.606	10	0.1374	1.8619
T9	140 - 120	6.901	10	0.1616	1.9647
T10	120 - 100	6.246	10	0.0766	1.9551
T11	100 - 80	6.090	10	0.0608	1.9475
T12	80 - 60	5.668	10	0.1345	1.7988
T13	60 - 40	4.727	10	0.1936	1.5173
T14	40 - 20	3.690	10	0.2648	1.1891
T15	20 - 4.81771	2.058	10	0.3753	0.7555
T16	4.81771 - 0	0.439	10	0.4261	0.3522

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
300'	Flash Beacon Lighting	4	7.640	0.1300	0.5087	46673
289'	SBNHH-1D65B w/ Mount Pipe	4	7.374	0.1084	0.5149	21215
282'6-1/4"	Guy	4	7.241	0.1051	0.5298	13524
250'	P-24A35GF-U	11	7.102	0.1435	0.6870	14392
242'6-1/4"	Guy	11	7.271	0.1681	0.7007	8730
182'6-1/4"	Guy	11	7.941	0.1055	1.5855	13914
149'	Side Light	10	7.263	0.1616	1.9386	14505
122'6-1/4"	Guy	10	6.298	0.0877	1.9563	5937
59'4-11/16"	Guy	10	4.697	0.1961	1.5082	16304

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load Allowable	Allowable Ratio	Criteria
T1	300	Leg	A325X	0.7500	4	1.72	30.10	0.057	1.05	Bolt Tension
		Diagonal	A325X	0.5000	1	2.61	9.78	0.266	1.05	Gusset Bearing
		Top Girt	A325X	0.5000	1	0.36	9.78	0.037	1.05	Gusset Bearing

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load Allowable	Allowable Ratio	Criteria
T2	280	Bottom Girt	A325X	0.5000	1	0.69	9.78	0.070	1.05	Gusset Bearing
		Top Guy Pull-Off@282.523	A325X	0.6250	2	2.56	11.07	0.231	1.05	Gusset Bearing
		Torque Arm Top@282.523	A325X	0.8750	2	3.91	13.21	0.296	1.05	Gusset Bearing
		Leg	A325X	0.7500	4	1.57	30.10	0.052	1.05	Bolt Tension
		Diagonal	A325X	0.5000	1	1.63	9.78	0.167	1.05	Gusset Bearing
T3	260	Top Girt	A325X	0.5000	1	0.74	9.78	0.076	1.05	Gusset Bearing
		Bottom Girt	A325X	0.5000	1	0.36	9.78	0.037	1.05	Gusset Bearing
		Leg	A325X	0.7500	4	3.15	30.10	0.105	1.05	Bolt Tension
T4	240	Diagonal	A325X	0.6250	1	2.59	9.11	0.284	1.05	Member Block Shear
		Top Girt	A325X	0.6250	1	0.66	16.96	0.039	1.05	Gusset Bearing
		Top Guy Pull-Off@242.523	A325X	0.6250	2	3.96	16.45	0.241	1.05	Member Block Shear
		Torque Arm Top@242.523	A325X	0.8750	2	4.79	26.10	0.184	1.05	Gusset Bearing
		Leg	A325X	0.7500	4	3.52	30.10	0.117	1.05	Bolt Tension
T5	220	Diagonal	A325X	0.5000	1	2.89	9.78	0.296	1.05	Gusset Bearing
		Top Girt	A325X	0.5000	1	1.69	9.78	0.172	1.05	Gusset Bearing
		Bottom Girt	A325X	0.5000	1	0.82	9.78	0.084	1.05	Gusset Bearing
T6	200	Leg	A325X	0.7500	4	3.38	30.10	0.112	1.05	Bolt Tension
		Diagonal	A325X	0.5000	1	2.13	5.92	0.360	1.05	Member Bearing
		Top Girt	A325X	0.5000	1	0.77	5.92	0.129	1.05	Member Bearing
		Bottom Girt	A325X	0.5000	1	0.77	5.92	0.129	1.05	Member Bearing
		Leg	A325X	0.7500	4	3.60	30.10	0.119	1.05	Bolt Tension
T7	180	Diagonal	A325X	0.5000	1	3.43	5.92	0.579	1.05	Member Bearing
		Top Girt	A325X	0.5000	1	0.77	5.92	0.130	1.05	Member Bearing
		Bottom Girt	A325X	0.5000	1	0.77	5.92	0.130	1.05	Member Bearing
		Leg	A325X	0.7500	4	3.57	30.10	0.119	1.05	Bolt Tension
		Diagonal	A325X	0.5000	1	2.31	5.92	0.390	1.05	Member Bearing
T8	160	Top Girt	A325X	0.5000	1	0.85	5.92	0.144	1.05	Member Bearing
		Bottom Girt	A325X	0.5000	1	0.85	5.92	0.144	1.05	Member Bearing
		Leg	A325X	0.7500	4	3.57	30.10	0.119	1.05	Bolt Tension
		Diagonal	A325X	0.5000	1	2.31	5.92	0.390	1.05	Member Bearing
		Top Girt	A325X	0.5000	1	0.85	5.92	0.143	1.05	Member Bearing
T9	140	Bottom Girt	A325X	0.5000	1	0.85	5.92	0.143	1.05	Member Bearing
		Leg	A325X	0.7500	4	5.00	30.10	0.166	1.05	Bolt Tension
		Diagonal	A325X	0.5000	1	2.91	7.02	0.415	1.05	Member Bearing
		Top Girt	A325X	0.5000	1	1.06	5.92	0.180	1.05	Member Bearing
		Bottom Girt	A325X	0.5000	1	1.06	5.92	0.180	1.05	Member Bearing
T10	120	Top Guy Pull-Off@122.523	A325X	0.6250	2	3.35	16.45	0.204	1.05	Member Block Shear
		Leg	A325X	0.7500	4	4.48	30.10	0.149	1.05	Bolt Tension
		Diagonal	A325X	0.5000	1	2.13	7.02	0.304	1.05	Member Bearing
		Top Girt	A325X	0.5000	1	1.04	5.92	0.176	1.05	Member Bearing
		Bottom Girt	A325X	0.5000	1	1.04	5.92	0.176	1.05	Member Bearing
T11	100	Leg	A325X	0.7500	4	4.86	30.10	0.162	1.05	Bolt Tension

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load Allowable	Allowable Ratio	Criteria
T12	80	Diagonal	A325X	0.5000	1	1.54	5.92	0.260	1.05	Member Bearing
		Top Girt	A325X	0.5000	1	1.02	5.92	0.173	1.05	Member Bearing
		Bottom Girt	A325X	0.5000	1	1.02	5.92	0.173	1.05	Member Bearing
		Leg	A325X	0.7500	4	4.23	30.10	0.141	1.05	Bolt Tension
		Diagonal	A325X	0.5000	1	2.28	5.92	0.386	1.05	Member Bearing
		Top Girt	A325X	0.5000	1	1.01	5.92	0.171	1.05	Member Bearing
T13	60	Bottom Girt	A325X	0.5000	1	1.01	5.92	0.171	1.05	Member Bearing
		Leg	A325X	0.7500	4	5.38	30.10	0.179	1.05	Bolt Tension
		Diagonal	A325X	0.5000	1	3.00	5.92	0.507	1.05	Member Bearing
		Top Girt	A325X	0.5000	1	1.12	5.92	0.190	1.05	Member Bearing
		Bottom Girt	A325X	0.5000	1	1.12	5.92	0.190	1.05	Member Bearing
		Top Guy Pull-Off@59.3854	A325X	0.7500	2	1.77	23.82	0.074	1.05	Gusset Bearing
T14	40	Leg	A325X	0.7500	4	5.36	30.10	0.178	1.05	Bolt Tension
		Diagonal	A325X	0.5000	1	2.32	7.02	0.330	1.05	Member Bearing
		Top Girt	A325X	0.5000	1	1.16	5.92	0.196	1.05	Member Bearing
		Bottom Girt	A325X	0.5000	1	1.16	5.92	0.196	1.05	Member Bearing
		Leg	A325X	0.8750	4	4.73	41.56	0.114	1.05	Bolt Tension
		Diagonal	A325X	0.5000	1	2.66	5.92	0.449	1.05	Member Bearing
T15	20	Top Girt	A325X	0.5000	1	1.11	5.92	0.188	1.05	Member Bearing
		Bottom Girt	A325X	0.5000	1	1.72	5.92	0.290	1.05	Member Bearing

Guy Design Data

Section No.	Elevation ft	Size	Initial Tension K	Breaking Load K	Actual T_u K	Allowable ϕT_n K	Required S.F.	Actual S.F.
T1	282'6-1/4" (A) (690)	3/4 [ECP-24000] EHS	5.83	58.30	14.21	36.73	0.952	2.461
	282'6-1/4" (A) (691)	3/4 [ECP-24000] EHS	5.83	58.30	14.16	36.73	0.952	2.471
	282'6-1/4" (B) (686)	3/4 [ECP-24000] EHS	5.83	58.30	14.06	36.73	0.952	2.488
	282'6-1/4" (B) (687)	3/4 [ECP-24000] EHS	5.83	58.30	14.54	36.73	0.952	2.406
	282'6-1/4" (C) (679)	3/4 [ECP-24000] EHS	5.83	58.30	14.67	36.73	0.952	2.384
	282'6-1/4" (C) (680)	3/4 [ECP-24000] EHS	5.83	58.30	14.35	36.73	0.952	2.438
T3	242'6-1/4" (A) (675)	3/4 [ECP-24000] EHS	5.83	58.30	14.31	36.73	0.952	2.444
	242'6-1/4" (A) (676)	3/4 [ECP-24000] EHS	5.83	58.30	14.30	36.73	0.952	2.445
	242'6-1/4" (B) (671)	3/4 [ECP-24000] EHS	5.83	58.30	14.33	36.73	0.952	2.440
	242'6-1/4" (B) (672)	3/4 [ECP-24000] EHS	5.83	58.30	15.14	36.73	0.952	2.310
	242'6-1/4" (C) (664)	3/4 [ECP-24000] EHS	5.83	58.30	15.43	36.73	0.952	2.267

Section No.	Elevation ft	Size	Initial Tension K	Breaking Load K	Actual T_u K	Allowable ϕT_n K	Required S.F.	Actual S.F.
T6	242'6-1/4" (C) (665)	3/4 [ECP- 24000] EHS	5.83	58.30	14.77	36.73	0.952	2.369
	182'6-1/4" (A) (663)	3/4 [ECP- 24000] EHS	5.83	58.30	14.98	36.73	0.952	2.335
	182'6-1/4" (B) (662)	3/4 [ECP- 24000] EHS	5.83	58.30	16.18	36.73	0.952	2.162
T9	182'6-1/4" (C) (658)	3/4 [ECP- 24000] EHS	5.83	58.30	16.25	36.73	0.952	2.152
	122'6-1/4" (A) (657)	3/4 [ECP- 24000] EHS	5.83	58.30	15.56	36.73	0.952	2.248
	122'6-1/4" (B) (656)	3/4 [ECP- 24000] EHS	5.83	58.30	17.41	36.73	0.952	2.009
T13	122'6-1/4" (C) (652)	3/4 [ECP- 24000] EHS	5.83	58.30	17.16	36.73	0.952	2.038
	59'4-11/16" (A) (651)	1/2 [ECP- 23000] EHS	2.69	26.90	7.60	16.95	0.952	2.124
	59'4-11/16" (B) (650)	1/2 [ECP- 23000] EHS	2.69	26.90	8.44	16.95	0.952	1.911
	59'4-11/16" (C) (646)	1/2 [ECP- 23000] EHS	2.69	26.90	8.34	16.95	0.952	1.934

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in ²	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	300 - 280	ROHN 2.5 EH	20'	2'4- 29/32"	31.3 K=1.00	2.2535	-20.04	94.41	0.212 ¹
T2	280 - 260	ROHN 2.5 STD	20'	2'4- 29/32"	30.5 K=1.00	1.7040	-19.83	71.64	0.277 ¹
T3	260 - 240	ROHN 2.5 EH	20'	2'4- 29/32"	31.3 K=1.00	2.2535	-37.95	94.41	0.402 ¹
T4	240 - 220	ROHN 2.5 EH	20'	2'4- 29/32"	31.3 K=1.00	2.2535	-40.78	94.41	0.432 ¹
T5	220 - 200	ROHN 2.5 EH	20'	2'4- 29/32"	62.6 K=2.00	2.2535	-44.23	76.17	0.581 ¹
T6	200 - 180	ROHN 3 EH	20'	2'4- 29/32"	50.9 K=2.00	3.0159	-44.30	112.32	0.394 ¹
T7	180 - 160	ROHN 3 EH	20'	2'4- 29/32"	50.9 K=2.00	3.0159	-49.08	112.32	0.437 ¹
T8	160 - 140	ROHN 3 EH	20'	2'4- 29/32"	50.9 K=2.00	3.0159	-48.85	112.32	0.435 ¹
T9	140 - 120	ROHN 3 EH	20'	2'4- 29/32"	25.4 K=1.00	3.0159	-61.46	129.44	0.475 ¹
T10	120 - 100	ROHN 3 EH	20'	2'4- 29/32"	25.4 K=1.00	3.0159	-57.54	129.44	0.445 ¹
T11	100 - 80	ROHN 3 EH	20'	2'4- 29/32"	50.9 K=2.00	3.0159	-59.01	112.32	0.525 ¹
T12	80 - 60	ROHN 3 EH	20'	2'4- 29/32"	50.9 K=2.00	3.0159	-57.81	112.32	0.515 ¹
T13	60 - 40	ROHN 3 EH	20'	2'4- 29/32"	50.9 K=2.00	3.0159	-64.80	112.32	0.577 ¹
T14	40 - 20	ROHN 3 EH	20'	2'4- 29/32"	50.9 K=2.00	3.0159	-66.86	112.32	0.595 ¹
T15	20 - 4.81771	ROHN 3 EH	15'2- 5/32"	2'4- 29/32"	50.9 K=2.00	3.0159	-64.01	112.32	0.570 ¹
T16	4.81771 - 0	ROHN 3 EH	5'2- 17/32"	1'3- 19/32"	13.7 K=1.00	3.0159	-60.91	133.85	0.455 ¹

¹ $P_u / \phi P_n$ controls

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	300 - 280	ROHN 1.5 x 11GA	3'8-5/8"	3'8-5/8"	91.1 K=1.00	0.5202	-2.61	11.81	0.221 ¹
T2	280 - 260	ROHN 1.5 x 11GA	3'8-5/8"	3'8-5/8"	91.1 K=1.00	0.5202	-1.63	11.81	0.138 ¹
T3	260 - 240	L2x2x1/4	3'8-5/8"	1'8-7/8"	70.0 K=1.31	0.9380	-4.08	28.56	0.143 ¹
T4	240 - 220	ROHN 1.5 x 11GA	3'8-5/8"	3'8-5/8"	91.1 K=1.00	0.5202	-2.89	11.81	0.245 ¹
T5	220 - 200	ROHN 1.5 x 16GA	3'8-5/8"	3'8-5/8"	87.5 K=1.00	0.2627	-2.39	6.21	0.386 ¹
T6	200 - 180	ROHN 1.5 x 16GA	3'8-5/8"	3'8-5/8"	87.5 K=1.00	0.2627	-3.36	6.21	0.540 ¹
T7	180 - 160	ROHN 1.5 x 16GA	3'8-5/8"	3'8-5/8"	87.5 K=1.00	0.2627	-2.40	6.21	0.386 ¹
T8	160 - 140	ROHN 1.5 x 16GA	3'8-5/8"	3'8-5/8"	87.5 K=1.00	0.2627	-2.50	6.21	0.403 ¹
T9	140 - 120	ROHN 1.5 x 16GA	3'8-5/8"	3'8-5/8"	87.5 K=1.00	0.2627	-2.91	6.21	0.469 ¹
T10	120 - 100	ROHN 1.5 x 16GA	3'8-5/8"	3'8-5/8"	87.5 K=1.00	0.2627	-2.13	6.21	0.344 ¹
T11	100 - 80	ROHN 1.5 x 16GA	3'8-5/8"	3'8-5/8"	87.5 K=1.00	0.2627	-1.82	6.21	0.292 ¹
T12	80 - 60	ROHN 1.5 x 16GA	3'8-5/8"	3'8-5/8"	87.5 K=1.00	0.2627	-2.57	6.21	0.414 ¹
T13	60 - 40	ROHN 1.5 x 16GA	3'8-5/8"	3'8-5/8"	87.5 K=1.00	0.2627	-3.02	6.21	0.487 ¹
T14	40 - 20	ROHN 1.5 x 16GA	3'8-5/8"	3'8-5/8"	87.5 K=1.00	0.2627	-2.32	6.21	0.373 ¹
T15	20 - 4.81771	ROHN 1.5 x 16GA	3'8-5/8"	3'8-5/8"	87.5 K=1.00	0.2627	-2.60	6.21	0.419 ¹

¹ P_u / φP_n controls

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T16	4.81771 - 0	L4x4x1/4	2'6-23/32"	2'3-1/4"	77.1 K=2.25	1.9400	-1.12	55.28	0.020 ¹

¹ P_u / φP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	300 - 280	ROHN 1.5 x 11GA	3'5-1/32"	3'2-5/32"	77.8 K=1.00	0.5202	-0.36	13.55	0.026 ¹
T2	280 - 260	ROHN 1.5 x 11GA	3'5-1/32"	3'2-5/32"	77.8 K=1.00	0.5202	-0.36	13.55	0.026 ¹
T3	260 - 240	2L2x2x1/4x3/8	3'5-1/32"	2'11-9/32"	58.0 K=1.00	1.8800	-0.66	59.64	0.011 ¹
T4	240 - 220	ai/ri > 0.75(KL/r) _o - 118 ROHN 1.5 x 11GA	3'5-1/32"	3'2-5/32"	77.8 K=1.00	0.5202	-0.73	13.55	0.054 ¹

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T5	220 - 200	ROHN 1.5 x 16GA	3'5- 1/32"	3'2- 5/32"	74.7 K=1.00	0.2627	-0.77	7.05	0.109 ¹
T6	200 - 180	ROHN 1.5 x 16GA	3'5- 1/32"	3'1- 9/16"	73.5 K=1.00	0.2627	-0.77	7.13	0.108 ¹
T7	180 - 160	ROHN 1.5 x 16GA	3'5- 1/32"	3'1- 9/16"	73.5 K=1.00	0.2627	-0.85	7.13	0.119 ¹
T8	160 - 140	ROHN 1.5 x 16GA	3'5- 1/32"	3'1- 9/16"	73.5 K=1.00	0.2627	-0.85	7.13	0.119 ¹
T9	140 - 120	ROHN 1.5 x 16GA	3'5- 1/32"	3'1- 9/16"	73.5 K=1.00	0.2627	-1.06	7.13	0.149 ¹
T10	120 - 100	ROHN 1.5 x 16GA	3'5- 1/32"	3'1- 9/16"	73.5 K=1.00	0.2627	-1.04	7.13	0.146 ¹
T11	100 - 80	ROHN 1.5 x 16GA	3'5- 1/32"	3'1- 9/16"	73.5 K=1.00	0.2627	-1.02	7.13	0.143 ¹
T12	80 - 60	ROHN 1.5 x 16GA	3'5- 1/32"	3'1- 9/16"	73.5 K=1.00	0.2627	-1.01	7.13	0.142 ¹
T13	60 - 40	ROHN 1.5 x 16GA	3'5- 1/32"	3'1- 9/16"	73.5 K=1.00	0.2627	-1.12	7.13	0.157 ¹
T14	40 - 20	ROHN 1.5 x 16GA	3'5- 1/32"	3'1- 9/16"	73.5 K=1.00	0.2627	-1.16	7.13	0.162 ¹
T15	20 - 4.81771	ROHN 1.5 x 16GA	3'5- 1/32"	3'1- 9/16"	73.5 K=1.00	0.2627	-1.11	7.13	0.156 ¹
T16	4.81771 - 0	L4x4x1/4	3'5- 1/32"	3'1- 9/16"	83.6 K=1.77	1.9400	-1.12	53.15	0.021 ¹

¹ P_u / φP_n controls

Bottom Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	300 - 280	ROHN 1.5 x 11GA	3'5- 1/32"	3'2- 5/32"	77.8 K=1.00	0.5202	-0.36	13.55	0.026 ¹
T2	280 - 260	ROHN 1.5 x 11GA	3'5- 1/32"	3'2- 5/32"	77.8 K=1.00	0.5202	-0.36	13.55	0.026 ¹
T4	240 - 220	ROHN 1.5 x 11GA	3'5- 1/32"	3'2- 5/32"	77.8 K=1.00	0.5202	-0.73	13.55	0.054 ¹
T5	220 - 200	ROHN 1.5 x 16GA	3'5- 1/32"	3'2- 5/32"	74.7 K=1.00	0.2627	-0.77	7.05	0.109 ¹
T6	200 - 180	ROHN 1.5 x 16GA	3'5- 1/32"	3'1- 9/16"	73.5 K=1.00	0.2627	-0.77	7.13	0.108 ¹
T7	180 - 160	ROHN 1.5 x 16GA	3'5- 1/32"	3'1- 9/16"	73.5 K=1.00	0.2627	-0.85	7.13	0.119 ¹
T8	160 - 140	ROHN 1.5 x 16GA	3'5- 1/32"	3'1- 9/16"	73.5 K=1.00	0.2627	-0.85	7.13	0.119 ¹
T9	140 - 120	ROHN 1.5 x 16GA	3'5- 1/32"	3'1- 9/16"	73.5 K=1.00	0.2627	-1.06	7.13	0.149 ¹
T10	120 - 100	ROHN 1.5 x 16GA	3'5- 1/32"	3'1- 9/16"	73.5 K=1.00	0.2627	-1.04	7.13	0.146 ¹
T11	100 - 80	ROHN 1.5 x 16GA	3'5- 1/32"	3'1- 9/16"	73.5 K=1.00	0.2627	-1.02	7.13	0.143 ¹
T12	80 - 60	ROHN 1.5 x 16GA	3'5- 1/32"	3'1- 9/16"	73.5 K=1.00	0.2627	-1.01	7.13	0.142 ¹
T13	60 - 40	ROHN 1.5 x 16GA	3'5- 1/32"	3'1- 9/16"	73.5 K=1.00	0.2627	-1.12	7.13	0.157 ¹
T14	40 - 20	ROHN 1.5 x 16GA	3'5- 1/32"	3'1- 9/16"	73.5 K=1.00	0.2627	-1.16	7.13	0.162 ¹
T15	20 - 4.81771	ROHN 1.5 x 16GA	3'5- 1/32"	3'1- 9/16"	73.5 K=1.00	0.2627	-1.11	7.13	0.156 ¹

¹ P_u / φP_n controls

Top Guy Pull-Off Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	300 - 280	2L2x2x1/4x3/8	3'5- 1/32"	3'2- 5/32"	62.7 K=1.00	1.8800	-3.55	58.53	0.061 ¹
T3	260 - 240	ai/ri > 0.75(KL/r) _o - 684 2L2x2x1/4x3/8 ai/ri > 0.75(KL/r) _o - 669	3'5- 1/32"	3'2- 5/32"	62.7 K=1.00	1.8800	-5.08	58.53	0.087 ¹

¹ P_u / φP_n controls

Top Guy Pull-Off Bending Design Data

Section No.	Elevation ft	Size	M _{ux} kip-ft	φM _{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M _{uy} kip-ft	φM _{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
T1	300 - 280	2L2x2x1/4x3/8	0.00	2.00	0.000	0.00	3.39	0.000
T3	260 - 240	2L2x2x1/4x3/8	0.00	2.00	0.000	0.00	3.39	0.000

Top Guy Pull-Off Interaction Design Data

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T1	300 - 280	2L2x2x1/4x3/8	0.061	0.000	0.000	0.061 ¹	1.050	
T3	260 - 240	2L2x2x1/4x3/8	0.087	0.000	0.000	0.087 ¹	1.050	

¹ P_u / φP_n controls

Torque-Arm Top Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	300 - 280 (681)	C15x33.9	3'5- 1/32"	3'3- 19/32"	43.8 K=1.00	9.9600	-0.81	291.75	0.003
T1	300 - 280 (682)	C15x33.9	3'5- 1/32"	3'3- 19/32"	43.8 K=1.00	9.9600	-0.55	291.75	0.002
T1	300 - 280 (688)	C15x33.9	3'5- 1/32"	3'3- 19/32"	43.8 K=1.00	9.9600	-0.35	291.75	0.001
T1	300 - 280 (689)	C15x33.9	3'5- 1/32"	3'3- 19/32"	43.8 K=1.00	9.9600	-0.54	291.75	0.002
T1	300 - 280 (692)	C15x33.9	3'5- 1/32"	3'3- 19/32"	43.8 K=1.00	9.9600	-0.73	291.75	0.003
T1	300 - 280 (693)	C15x33.9	3'5- 1/32"	3'3- 19/32"	43.8 K=1.00	9.9600	-0.57	291.75	0.002
T3	260 - 240 (666)	C15x33.9	3'5- 1/32"	3'3- 19/32"	43.8 K=1.00	9.9600	-1.94	291.75	0.007
T3	260 - 240 (667)	C15x33.9	3'5- 1/32"	3'3- 19/32"	43.8 K=1.00	9.9600	-1.31	291.75	0.004
T3	260 - 240 (673)	C15x33.9	3'5- 1/32"	3'3- 19/32"	43.8 K=1.00	9.9600	-1.08	291.75	0.004
T3	260 - 240 (674)	C15x33.9	3'5- 1/32"	3'3- 19/32"	43.8 K=1.00	9.9600	-1.32	291.75	0.005

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T3	260 - 240 (677)	C15x33.9	3'5- 1/32"	3'3- 19/32"	43.8 K=1.00	9.9600	-1.74	291.75	0.006
T3	260 - 240 (678)	C15x33.9	3'5- 1/32"	3'3- 19/32"	43.8 K=1.00	9.9600	-1.18	291.75	0.004

Torque-Arm Top Bending Design Data

Section No.	Elevation ft	Size	M _{ux} kip-ft	φM _{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M _{uy} kip-ft	φM _{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
T1	300 - 280 (681)	C15x33.9	-38.29	136.08	0.281	-0.00	12.60	0.000
T1	300 - 280 (682)	C15x33.9	-37.25	136.08	0.274	-0.00	12.60	0.000
T1	300 - 280 (688)	C15x33.9	-37.97	136.08	0.279	0.00	12.60	0.000
T1	300 - 280 (689)	C15x33.9	-38.29	136.08	0.281	-0.00	12.60	0.000
T1	300 - 280 (692)	C15x33.9	-37.93	136.08	0.279	0.00	12.60	0.000
T1	300 - 280 (693)	C15x33.9	-37.21	136.08	0.273	-0.00	12.60	0.000
T3	260 - 240 (666)	C15x33.9	-37.12	136.08	0.273	-0.00	12.60	0.000
T3	260 - 240 (667)	C15x33.9	-35.07	136.08	0.258	0.00	12.60	0.000
T3	260 - 240 (673)	C15x33.9	-36.67	136.08	0.269	0.00	12.60	0.000
T3	260 - 240 (674)	C15x33.9	-37.24	136.08	0.274	-0.00	12.60	0.000
T3	260 - 240 (677)	C15x33.9	-36.52	136.08	0.268	0.00	12.60	0.000
T3	260 - 240 (678)	C15x33.9	-35.04	136.08	0.258	0.00	12.60	0.000

Torque-Arm Top Interaction Design Data

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T1	300 - 280 (681)	C15x33.9	0.003	0.281	0.000	0.283	1.050	
T1	300 - 280 (682)	C15x33.9	0.002	0.274	0.000	0.275	1.050	
T1	300 - 280 (688)	C15x33.9	0.001	0.279	0.000	0.280	1.050	
T1	300 - 280 (689)	C15x33.9	0.002	0.281	0.000	0.282	1.050	
T1	300 - 280 (692)	C15x33.9	0.003	0.279	0.000	0.280	1.050	
T1	300 - 280 (693)	C15x33.9	0.002	0.273	0.000	0.274	1.050	
T3	260 - 240 (666)	C15x33.9	0.007	0.273	0.000	0.276	1.050	
T3	260 - 240 (667)	C15x33.9	0.004	0.258	0.000	0.260	1.050	
T3	260 - 240 (673)	C15x33.9	0.004	0.269	0.000	0.271	1.050	
T3	260 - 240 (674)	C15x33.9	0.005	0.274	0.000	0.276	1.050	

Section No.	Elevation ft	Size	Ratio P_u ϕP_n	Ratio M_{ux} ϕM_{nx}	Ratio M_{uy} ϕM_{ny}	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T3	260 - 240 (677)	C15x33.9	0.006	0.268	0.000	0.271	1.050	
T3	260 - 240 (678)	C15x33.9	0.004	0.258	0.000	0.260	1.050	

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in ²	P_u K	ϕP_n K	Ratio P_u ϕP_n
T1	300 - 280	ROHN 2.5 EH	20'	2'-4- 29/32"	31.3	2.2535	10.92	101.41	0.108 ¹

¹ $P_u / \phi P_n$ controls

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in ²	P_u K	ϕP_n K	Ratio P_u ϕP_n
T1	300 - 280	ROHN 1.5 x 11GA	3'-8-5/8"	3'-8-5/8"	91.1	0.3702	2.30	16.11	0.143 ¹
T2	280 - 260	ROHN 1.5 x 11GA	3'-8-5/8"	3'-8-5/8"	91.1	0.3702	1.16	16.11	0.072 ¹
T3	260 - 240	L2x2x1/4	3'-8-5/8"	1'-8-7/8"	36.6	0.5629	2.59	24.49	0.106 ¹
T4	240 - 220	ROHN 1.5 x 11GA	3'-8-5/8"	3'-8-5/8"	91.1	0.3702	1.98	16.11	0.123 ¹
T5	220 - 200	ROHN 1.5 x 16GA	3'-8-5/8"	3'-8-5/8"	87.5	0.1902	2.13	8.99	0.237 ¹
T6	200 - 180	ROHN 1.5 x 16GA	3'-8-5/8"	3'-8-5/8"	87.5	0.1902	3.43	8.99	0.381 ¹
T7	180 - 160	ROHN 1.5 x 16GA	3'-8-5/8"	3'-8-5/8"	87.5	0.1902	2.06	8.99	0.230 ¹
T8	160 - 140	ROHN 1.5 x 16GA	3'-8-5/8"	3'-8-5/8"	87.5	0.1902	2.31	8.99	0.257 ¹
T9	140 - 120	ROHN 1.5 x 16GA	3'-8-5/8"	3'-8-5/8"	87.5	0.1902	1.76	8.99	0.195 ¹
T10	120 - 100	ROHN 1.5 x 16GA	3'-8-5/8"	3'-8-5/8"	87.5	0.1902	1.60	8.99	0.178 ¹
T11	100 - 80	ROHN 1.5 x 16GA	3'-8-5/8"	3'-8-5/8"	87.5	0.1902	1.54	8.99	0.171 ¹
T12	80 - 60	ROHN 1.5 x 16GA	3'-8-5/8"	3'-8-5/8"	87.5	0.1902	2.28	8.99	0.254 ¹
T13	60 - 40	ROHN 1.5 x 16GA	3'-8-5/8"	3'-8-5/8"	87.5	0.1902	3.00	8.99	0.334 ¹
T14	40 - 20	ROHN 1.5 x 16GA	3'-8-5/8"	3'-8-5/8"	87.5	0.1902	1.87	8.99	0.208 ¹
T15	20 - 4.81771	ROHN 1.5 x 16GA	3'-8-5/8"	3'-8-5/8"	87.5	0.1902	2.66	8.99	0.296 ¹

¹ $P_u / \phi P_n$ controls

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in ²	P_u K	ϕP_n K	Ratio P_u ϕP_n
T16	4.81771 - 0	L4x4x1/4	2'-6- 23/32"	2'-3-1/4"	21.8	1.9400	1.12	62.86	0.018 ¹

¹ $P_u / \phi P_n$ controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	300 - 280	ROHN 1.5 x 11GA	3'5- 1/32"	3'2- 5/32"	77.8	0.3702	0.36	16.11	0.022 ¹
T2	280 - 260	ROHN 1.5 x 11GA	3'5- 1/32"	3'2- 5/32"	77.8	0.3702	0.74	16.11	0.046 ¹
T3	260 - 240	2L2x2x1/4x3/8	3'5- 1/32"	2'11- 9/32"	62.6	1.1287	0.66	49.10	0.013 ¹
T4	240 - 220	ai/ri > 0.75(KL/r) _o - 118 ROHN 1.5 x 11GA	3'5- 1/32"	3'2- 5/32"	77.8	0.3702	1.69	16.11	0.105 ¹
T5	220 - 200	ROHN 1.5 x 16GA	3'5- 1/32"	3'2- 5/32"	74.7	0.1902	0.77	8.99	0.085 ¹
T6	200 - 180	ROHN 1.5 x 16GA	3'5- 1/32"	3'1- 9/16"	73.5	0.1902	0.77	8.99	0.085 ¹
T7	180 - 160	ROHN 1.5 x 16GA	3'5- 1/32"	3'1- 9/16"	73.5	0.1902	0.85	8.99	0.095 ¹
T8	160 - 140	ROHN 1.5 x 16GA	3'5- 1/32"	3'1- 9/16"	73.5	0.1902	0.85	8.99	0.094 ¹
T9	140 - 120	ROHN 1.5 x 16GA	3'5- 1/32"	3'1- 9/16"	73.5	0.1902	1.06	8.99	0.118 ¹
T10	120 - 100	ROHN 1.5 x 16GA	3'5- 1/32"	3'1- 9/16"	73.5	0.1902	1.04	8.99	0.116 ¹
T11	100 - 80	ROHN 1.5 x 16GA	3'5- 1/32"	3'1- 9/16"	73.5	0.1902	1.02	8.99	0.114 ¹
T12	80 - 60	ROHN 1.5 x 16GA	3'5- 1/32"	3'1- 9/16"	73.5	0.1902	1.01	8.99	0.112 ¹
T13	60 - 40	ROHN 1.5 x 16GA	3'5- 1/32"	3'1- 9/16"	73.5	0.1902	1.12	8.99	0.125 ¹
T14	40 - 20	ROHN 1.5 x 16GA	3'5- 1/32"	3'1- 9/16"	73.5	0.1902	1.16	8.99	0.129 ¹
T15	20 - 4.81771	ROHN 1.5 x 16GA	3'5- 1/32"	3'1- 9/16"	73.5	0.1902	1.11	8.99	0.124 ¹
T16	4.81771 - 0	L4x4x1/4	3'5- 1/32"	3'1- 9/16"	30.0	1.9400	11.54	62.86	0.184 ¹

¹ P_u / φP_n controls

Bottom Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	300 - 280	ROHN 1.5 x 11GA	3'5- 1/32"	3'2- 5/32"	77.8	0.3702	0.69	16.11	0.043 ¹
T2	280 - 260	ROHN 1.5 x 11GA	3'5- 1/32"	3'2- 5/32"	77.8	0.3702	0.36	16.11	0.022 ¹
T4	240 - 220	ROHN 1.5 x 11GA	3'5- 1/32"	3'2- 5/32"	77.8	0.3702	0.82	16.11	0.051 ¹
T5	220 - 200	ROHN 1.5 x 16GA	3'5- 1/32"	3'2- 5/32"	74.7	0.1902	0.77	8.99	0.085 ¹
T6	200 - 180	ROHN 1.5 x 16GA	3'5- 1/32"	3'1- 9/16"	73.5	0.1902	0.77	8.99	0.085 ¹
T7	180 - 160	ROHN 1.5 x 16GA	3'5- 1/32"	3'1- 9/16"	73.5	0.1902	0.85	8.99	0.095 ¹
T8	160 - 140	ROHN 1.5 x 16GA	3'5- 1/32"	3'1- 9/16"	73.5	0.1902	0.85	8.99	0.094 ¹
T9	140 - 120	ROHN 1.5 x 16GA	3'5- 1/32"	3'1- 9/16"	73.5	0.1902	1.06	8.99	0.118 ¹
T10	120 - 100	ROHN 1.5 x 16GA	3'5- 1/32"	3'1- 9/16"	73.5	0.1902	1.04	8.99	0.116 ¹
T11	100 - 80	ROHN 1.5 x 16GA	3'5- 1/32"	3'1- 9/16"	73.5	0.1902	1.02	8.99	0.114 ¹

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T12	80 - 60	ROHN 1.5 x 16GA	3'5- 1/32"	3'1- 9/16"	73.5	0.1902	1.01	8.99	0.112 ¹
T13	60 - 40	ROHN 1.5 x 16GA	3'5- 1/32"	3'1- 9/16"	73.5	0.1902	1.12	8.99	0.125 ¹
T14	40 - 20	ROHN 1.5 x 16GA	3'5- 1/32"	3'1- 9/16"	73.5	0.1902	1.16	8.99	0.129 ¹
T15	20 - 4.81771	ROHN 1.5 x 16GA	3'5- 1/32"	3'1- 9/16"	73.5	0.1902	1.72	8.99	0.191 ¹

¹ P_u / φP_n controls

Top Guy Pull-Off Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	300 - 280	2L2x2x1/4x3/8	3'5- 1/32"	3'2- 5/32"	62.6	1.1287	5.11	49.10	0.104 ¹
T3	260 - 240	ai/ri > 0.75(KL/r) _o - 684 2L2x2x1/4x3/8	3'5- 1/32"	3'2- 5/32"	62.6	1.1287	7.92	49.10	0.161 ¹
T6	200 - 180	ai/ri > 0.75(KL/r) _o - 669 2L2x2x1/4x3/8	3'5- 1/32"	3'1- 9/16"	61.6	1.1287	5.79	49.10	0.118 ¹
T9	140 - 120	ai/ri > 0.75(KL/r) _o - 660 2L2x2x1/4x3/8	3'5- 1/32"	3'1- 9/16"	61.6	1.1287	6.70	49.10	0.137 ¹
T13	60 - 40	ai/ri > 0.75(KL/r) _o - 654 4 1/2x3/8	3'5- 1/32"	3'1- 9/16"	346.4	1.6875	3.53	54.67	0.065 ¹

¹ P_u / φP_n controls

Top Guy Pull-Off Bending Design Data

Section No.	Elevation ft	Size	M _{ux} kip-ft	φM _{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M _{uy} kip-ft	φM _{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
T1	300 - 280	2L2x2x1/4x3/8	0.00	2.00	0.000	0.00	3.39	0.000
T3	260 - 240	2L2x2x1/4x3/8	0.00	2.00	0.000	0.00	3.39	0.000
T6	200 - 180	2L2x2x1/4x3/8	0.00	2.00	0.000	0.00	3.39	0.000
T9	140 - 120	2L2x2x1/4x3/8	0.00	2.00	0.000	0.00	3.39	0.000
T13	60 - 40	4 1/2x3/8	0.00	5.13	0.000	0.00	0.43	0.000

Top Guy Pull-Off Interaction Design Data

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T1	300 - 280	2L2x2x1/4x3/8	0.104	0.000	0.000	0.104 ¹	1.050	
T3	260 - 240	2L2x2x1/4x3/8	0.161	0.000	0.000	0.161 ¹	1.050	
T6	200 - 180	2L2x2x1/4x3/8	0.118	0.000	0.000	0.118 ¹	1.050	
T9	140 - 120	2L2x2x1/4x3/8	0.137	0.000	0.000	0.137 ¹	1.050	
T13	60 - 40	4 1/2x3/8	0.065	0.000	0.000	0.065 ¹	1.050	

¹ P_u / φP_n controls

Torque-Arm Top Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	KI/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	300 - 280 (681)	C15x33.9	3'5- 1/32"	3'3- 19/32"	43.8	7.1700	0.78	311.89	0.002
T1	300 - 280 (682)	C15x33.9	3'5- 1/32"	3'3- 19/32"	43.8	7.1700	1.20	311.89	0.004
T1	300 - 280 (688)	C15x33.9	3'5- 1/32"	3'3- 19/32"	43.8	7.1700	1.24	311.89	0.004
T1	300 - 280 (689)	C15x33.9	3'5- 1/32"	3'3- 19/32"	43.8	7.1700	1.01	311.89	0.003
T1	300 - 280 (692)	C15x33.9	3'5- 1/32"	3'3- 19/32"	43.8	7.1700	0.84	311.89	0.003
T1	300 - 280 (693)	C15x33.9	3'5- 1/32"	3'3- 19/32"	43.8	7.1700	1.08	311.89	0.003
T3	260 - 240 (666)	C15x33.9	3'5- 1/32"	3'3- 19/32"	43.8	7.1700	0.22	311.89	0.001
T3	260 - 240 (667)	C15x33.9	3'5- 1/32"	3'3- 19/32"	43.8	7.1700	1.11	311.89	0.004
T3	260 - 240 (673)	C15x33.9	3'5- 1/32"	3'3- 19/32"	43.8	7.1700	1.16	311.89	0.004
T3	260 - 240 (674)	C15x33.9	3'5- 1/32"	3'3- 19/32"	43.8	7.1700	0.91	311.89	0.003
T3	260 - 240 (677)	C15x33.9	3'5- 1/32"	3'3- 19/32"	43.8	7.1700	0.37	311.89	0.001
T3	260 - 240 (678)	C15x33.9	3'5- 1/32"	3'3- 19/32"	43.8	7.1700	1.07	311.89	0.003

Torque-Arm Top Bending Design Data

Section No.	Elevation ft	Size	M _{ux} kip-ft	φM _{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M _{uy} kip-ft	φM _{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
T1	300 - 280 (681)	C15x33.9	-35.32	136.08	0.260	-0.00	12.60	0.000
T1	300 - 280 (682)	C15x33.9	-34.33	136.08	0.252	0.00	12.60	0.000
T1	300 - 280 (688)	C15x33.9	-34.83	136.08	0.256	0.00	12.60	0.000
T1	300 - 280 (689)	C15x33.9	-35.40	136.08	0.260	0.00	12.60	0.000
T1	300 - 280 (692)	C15x33.9	-35.35	136.08	0.260	0.00	12.60	0.000
T1	300 - 280 (693)	C15x33.9	-35.04	136.08	0.257	-0.00	12.60	0.000
T3	260 - 240 (666)	C15x33.9	-34.38	136.08	0.253	-0.00	12.60	0.000
T3	260 - 240 (667)	C15x33.9	-32.01	136.08	0.235	0.00	12.60	0.000
T3	260 - 240 (673)	C15x33.9	-32.91	136.08	0.242	0.00	12.60	0.000
T3	260 - 240 (674)	C15x33.9	-34.07	136.08	0.250	0.00	12.60	0.000
T3	260 - 240 (677)	C15x33.9	-34.66	136.08	0.255	0.00	12.60	0.000
T3	260 - 240 (678)	C15x33.9	-33.55	136.08	0.247	-0.00	12.60	0.000

Torque-Arm Top Interaction Design Data

Section No.	Elevation ft	Size	Ratio P_u	Ratio M_{ux}	Ratio M_{uy}	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T1	300 - 280 (681)	C15x33.9	0.002	0.260	0.000	0.261	1.050	
T1	300 - 280 (682)	C15x33.9	0.004	0.252	0.000	0.254	1.050	
T1	300 - 280 (688)	C15x33.9	0.004	0.256	0.000	0.258	1.050	
T1	300 - 280 (689)	C15x33.9	0.003	0.260	0.000	0.262	1.050	
T1	300 - 280 (692)	C15x33.9	0.003	0.260	0.000	0.261	1.050	
T1	300 - 280 (693)	C15x33.9	0.003	0.257	0.000	0.259	1.050	
T3	260 - 240 (666)	C15x33.9	0.001	0.253	0.000	0.253	1.050	
T3	260 - 240 (667)	C15x33.9	0.004	0.235	0.000	0.237	1.050	
T3	260 - 240 (673)	C15x33.9	0.004	0.242	0.000	0.244	1.050	
T3	260 - 240 (674)	C15x33.9	0.003	0.250	0.000	0.252	1.050	
T3	260 - 240 (677)	C15x33.9	0.001	0.255	0.000	0.255	1.050	
T3	260 - 240 (678)	C15x33.9	0.003	0.247	0.000	0.248	1.050	

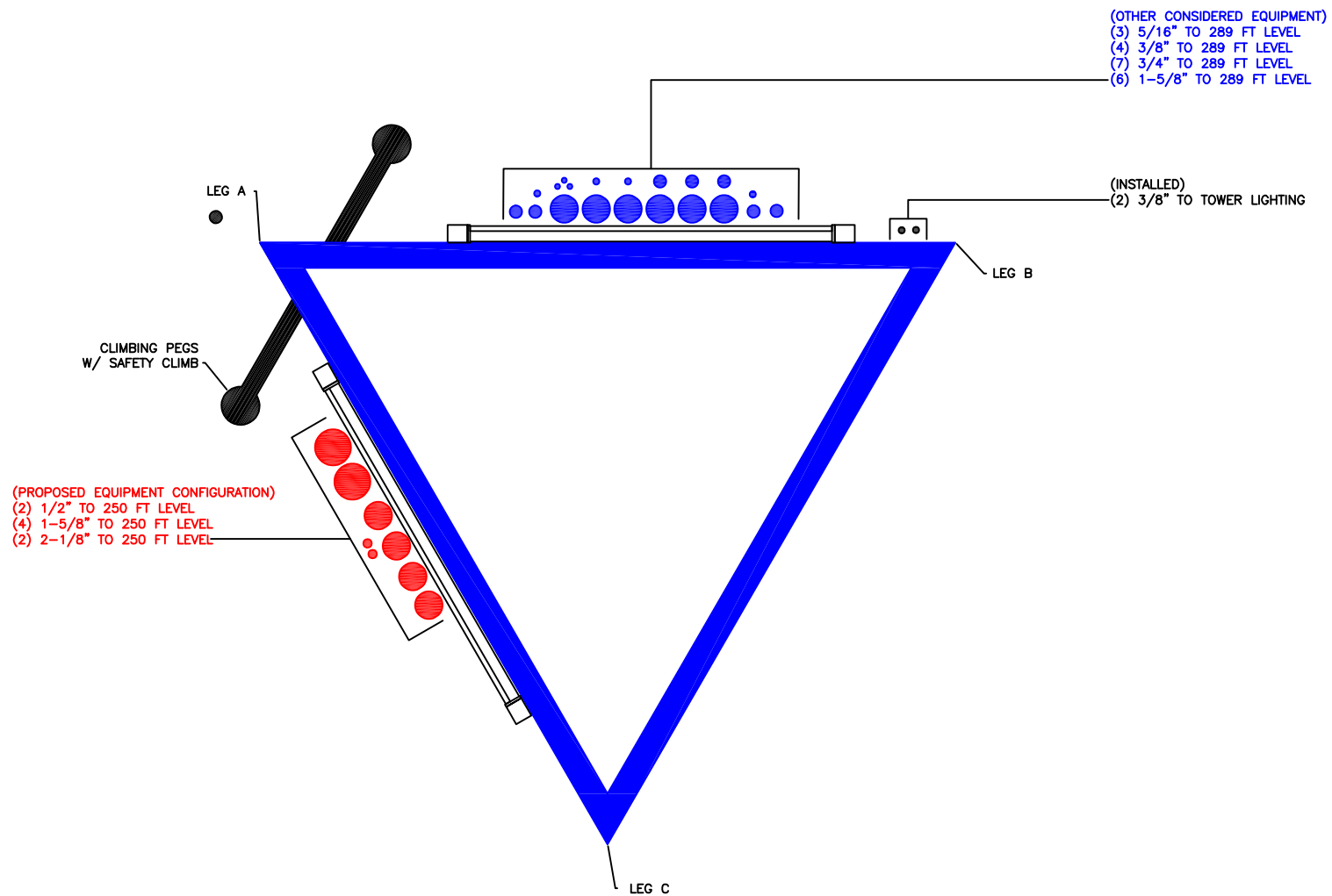
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T1	300 - 280	Leg	ROHN 2.5 EH	2	-20.04	99.13	20.2	Pass
T2	280 - 260	Leg	ROHN 2.5 STD	59	-19.83	75.22	26.4	Pass
T3	260 - 240	Leg	ROHN 2.5 EH	116	-37.95	99.13	38.3	Pass
T4	240 - 220	Leg	ROHN 2.5 EH	169	-40.78	99.13	41.1	Pass
T5	220 - 200	Leg	ROHN 2.5 EH	226	-44.23	79.98	55.3	Pass
T6	200 - 180	Leg	ROHN 3 EH	261	-44.30	117.93	37.6	Pass
T7	180 - 160	Leg	ROHN 3 EH	293	-49.08	117.93	41.6	Pass
T8	160 - 140	Leg	ROHN 3 EH	326	-48.85	117.93	41.4	Pass
T9	140 - 120	Leg	ROHN 3 EH	358	-61.46	135.92	45.2	Pass
T10	120 - 100	Leg	ROHN 3 EH	415	-57.54	135.92	42.3	Pass
T11	100 - 80	Leg	ROHN 3 EH	473	-59.01	117.93	50.0	Pass
T12	80 - 60	Leg	ROHN 3 EH	506	-57.81	117.93	49.0	Pass
T13	60 - 40	Leg	ROHN 3 EH	539	-64.80	117.93	54.9	Pass
T14	40 - 20	Leg	ROHN 3 EH	572	-66.86	117.93	56.7	Pass
T15	20 - 4.81771	Leg	ROHN 3 EH	604	-64.01	117.93	54.3	Pass
T16	4.81771 - 0	Leg	ROHN 3 EH	632	-60.91	140.55	43.3	Pass
T1	300 - 280	Diagonal	ROHN 1.5 x 11GA	15	-2.61	12.40	21.0	Pass
							25.4 (b)	
T2	280 - 260	Diagonal	ROHN 1.5 x 11GA	113	-1.63	12.40	13.2	Pass
							15.9 (b)	
T3	260 - 240	Diagonal	L2x2x1/4	124	-4.08	29.99	13.6	Pass
							27.0 (b)	
T4	240 - 220	Diagonal	ROHN 1.5 x 11GA	223	-2.89	12.40	23.3	Pass
							28.1 (b)	
T5	220 - 200	Diagonal	ROHN 1.5 x 16GA	235	-2.39	6.52	36.7	Pass
T6	200 - 180	Diagonal	ROHN 1.5 x 16GA	274	-3.36	6.52	51.5	Pass
							55.1 (b)	
T7	180 - 160	Diagonal	ROHN 1.5 x 16GA	324	-2.40	6.52	36.8	Pass
T8	160 - 140	Diagonal	ROHN 1.5 x 16GA	334	-2.50	6.52	38.3	Pass
T9	140 - 120	Diagonal	ROHN 1.5 x 16GA	372	-2.91	6.52	44.7	Pass
T10	120 - 100	Diagonal	ROHN 1.5 x 16GA	471	-2.13	6.52	32.7	Pass
T11	100 - 80	Diagonal	ROHN 1.5 x 16GA	502	-1.82	6.52	27.8	Pass
T12	80 - 60	Diagonal	ROHN 1.5 x 16GA	515	-2.57	6.52	39.4	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T13	60 - 40	Diagonal	ROHN 1.5 x 16GA	565	-3.02	6.52	46.3	Pass
T14	40 - 20	Diagonal	ROHN 1.5 x 16GA	581	-2.32	6.52	48.3 (b)	Pass
T15	20 - 4.81771	Diagonal	ROHN 1.5 x 16GA	618	-2.60	6.52	35.5	Pass
T16	4.81771 - 0	Horizontal	L4x4x1/4	639	-1.11	61.97	39.9	Pass
T1	300 - 280	Top Girt	ROHN 1.5 x 11GA	4	-0.36	14.23	42.8 (b)	Pass
T2	280 - 260	Top Girt	ROHN 1.5 x 11GA	61	0.74	16.91	9.8	Pass
T3	260 - 240	Top Girt	2L2x2x1/4x3/8	118	0.66	51.56	2.5	Pass
T4	240 - 220	Top Girt	ROHN 1.5 x 11GA	173	1.69	16.91	3.5 (b)	Pass
T5	220 - 200	Top Girt	ROHN 1.5 x 16GA	229	-0.77	7.40	7.2 (b)	Pass
T6	200 - 180	Top Girt	ROHN 1.5 x 16GA	263	-0.77	7.48	1.3	Pass
T7	180 - 160	Top Girt	ROHN 1.5 x 16GA	296	-0.85	7.48	3.7 (b)	Pass
T8	160 - 140	Top Girt	ROHN 1.5 x 16GA	329	-0.85	7.48	10.0	Pass
T9	140 - 120	Top Girt	ROHN 1.5 x 16GA	361	-1.06	7.48	16.4 (b)	Pass
T10	120 - 100	Top Girt	ROHN 1.5 x 16GA	420	-1.04	7.48	10.4	Pass
T11	100 - 80	Top Girt	ROHN 1.5 x 16GA	475	-1.02	7.48	12.3 (b)	Pass
T12	80 - 60	Top Girt	ROHN 1.5 x 16GA	508	-1.01	7.48	10.3	Pass
T13	60 - 40	Top Girt	ROHN 1.5 x 16GA	541	-1.12	7.48	12.3 (b)	Pass
T14	40 - 20	Top Girt	ROHN 1.5 x 16GA	574	-1.16	7.48	11.4	Pass
T15	20 - 4.81771	Top Girt	ROHN 1.5 x 16GA	607	-1.11	7.48	13.7 (b)	Pass
T16	4.81771 - 0	Top Girt	L4x4x1/4	636	11.54	66.00	14.2	Pass
T1	300 - 280	Bottom Girt	ROHN 1.5 x 11GA	9	0.69	16.91	17.1 (b)	Pass
T2	280 - 260	Bottom Girt	ROHN 1.5 x 11GA	65	-0.36	14.23	13.9	Pass
T4	240 - 220	Bottom Girt	ROHN 1.5 x 11GA	175	-0.73	14.23	16.7 (b)	Pass
T5	220 - 200	Bottom Girt	ROHN 1.5 x 16GA	232	-0.77	7.40	13.7	Pass
T6	200 - 180	Bottom Girt	ROHN 1.5 x 16GA	266	-0.77	7.48	16.4 (b)	Pass
T7	180 - 160	Bottom Girt	ROHN 1.5 x 16GA	299	-0.85	7.48	13.5	Pass
T8	160 - 140	Bottom Girt	ROHN 1.5 x 16GA	332	-0.85	7.48	16.3 (b)	Pass
T9	140 - 120	Bottom Girt	ROHN 1.5 x 16GA	364	-1.06	7.48	15.0	Pass
T10	120 - 100	Bottom Girt	ROHN 1.5 x 16GA	423	-1.04	7.48	18.1 (b)	Pass
T11	100 - 80	Bottom Girt	ROHN 1.5 x 16GA	478	-1.02	7.48	15.5	Pass
T12	80 - 60	Bottom Girt	ROHN 1.5 x 16GA	511	-1.01	7.48	18.6 (b)	Pass
T13	60 - 40	Bottom Girt	ROHN 1.5 x 16GA	544	-1.12	7.48	14.9	Pass
T14	40 - 20	Bottom Girt	ROHN 1.5 x 16GA	577	-1.16	7.48	17.9 (b)	Pass
T15	20 - 4.81771	Bottom Girt	ROHN 1.5 x 16GA	612	1.72	9.44	17.5	Pass
T1	300 - 280	Guy A@282.523	3/4 [ECP-24000]	690	14.21	36.73	4.1	Pass
T3	260 - 240	Guy A@242.523	3/4 [ECP-24000]	675	14.31	36.73	6.7 (b)	Pass
T6	200 - 180	Guy A@182.523	3/4 [ECP-24000]	663	14.98	36.73	2.5	Pass
T9	140 - 120	Guy A@122.523	3/4 [ECP-24000]	657	15.56	36.73	3.5 (b)	Pass
T13	60 - 40	Guy A@59.3854	1/2 [ECP-23000]	651	7.60	16.95	5.1	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T1	300 - 280	Guy B@282.523	3/4 [ECP-24000]	687	14.54	36.73	39.6	Pass
T3	260 - 240	Guy B@242.523	3/4 [ECP-24000]	672	15.14	36.73	41.2	Pass
T6	200 - 180	Guy B@182.523	3/4 [ECP-24000]	662	16.18	36.73	44.0	Pass
T9	140 - 120	Guy B@122.523	3/4 [ECP-24000]	656	17.41	36.73	47.4	Pass
T13	60 - 40	Guy B@59.3854	1/2 [ECP-23000]	650	8.44	16.95	49.8	Pass
T1	300 - 280	Guy C@282.523	3/4 [ECP-24000]	679	14.67	36.73	39.9	Pass
T3	260 - 240	Guy C@242.523	3/4 [ECP-24000]	664	15.43	36.73	42.0	Pass
T6	200 - 180	Guy C@182.523	3/4 [ECP-24000]	658	16.25	36.73	44.2	Pass
T9	140 - 120	Guy C@122.523	3/4 [ECP-24000]	652	17.16	36.73	46.7	Pass
T13	60 - 40	Guy C@59.3854	1/2 [ECP-23000]	646	8.34	16.95	49.2	Pass
T1	300 - 280	Top Guy Pull-Off@282.523	2L2x2x1/4x3/8	684	5.11	51.56	9.9	Pass
							22.0 (b)	
T3	260 - 240	Top Guy Pull-Off@242.523	2L2x2x1/4x3/8	669	7.92	51.56	15.4	Pass
							22.9 (b)	
T6	200 - 180	Top Guy Pull-Off@182.523	2L2x2x1/4x3/8	660	5.79	51.56	11.2	Pass
							16.8 (b)	
T9	140 - 120	Top Guy Pull-Off@122.523	2L2x2x1/4x3/8	654	6.70	51.56	13.0	Pass
							19.4 (b)	
T13	60 - 40	Top Guy Pull-Off@59.3854	4 1/2x3/8	649	3.53	57.41	6.2	Pass
							7.1 (b)	
T1	300 - 280	Torque Arm Top@282.523	C15x33.9	681	-0.81	306.34	26.9	Pass
							28.2 (b)	
T3	260 - 240	Torque Arm Top@242.523	C15x33.9	666	-1.94	306.34	26.3	Pass
Summary								
Leg (T14)							56.7	Pass
Diagonal (T6)							55.1	Pass
Horizontal (T16)							9.8	Pass
Top Girt (T14)							18.6	Pass
Bottom Girt (T15)							27.7	Pass
Guy A (T13)							44.8	Pass
Guy B (T13)							49.8	Pass
Guy C (T13)							49.2	Pass
Top Guy Pull-Off (T3)							22.9	Pass
Torque Arm Top (T1)							28.2	Pass
Bolt Checks							55.1	Pass
RATING =							56.7	Pass

APPENDIX B
BASE LEVEL DRAWING



APPENDIX C
ADDITIONAL CALCULATIONS

Pier and Pad Foundation



BU # : 846216
 Site Name: Fort White
 App. Number: 672918 Rev. 0

TIA-222 Revision: H
 Tower Type: Guyed

Top & Bot. Pad Rein. Different?:	☐
Block Foundation?:	☐
Rectangular Pad?:	☐

Superstructure Analysis Reactions		
Compression, P_{comp} :	157.86	kips
Base Shear, V_{u_comp} :	2	kips
Moment, M_u :	0	ft-kips
Tower Height, H :	300	ft
BP Dist. Above Fdn, bp_{dist} :	3	in
Bolt Circle / Bearing Plate Width, BC :	18	in

Pier Properties		
Pier Shape:	Circular	
Pier Diameter, $dpier$:	3	ft
Ext. Above Grade, E :	1	ft
Pier Rebar Size, Sc :	9	
Pier Rebar Quantity, mc :	6	
Pier Tie/Spiral Size, St :	3	
Pier Tie/Spiral Quantity, mt :	14	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier} :	3	in

Pad Properties		
Depth, D :	10	ft
Pad Width, W_1 :	11	ft
Pad Thickness, T :	2	ft
Pad Rebar Size (Bottom dir. 2), Sp_2 :	9	
Pad Rebar Quantity (Bottom dir. 2), mp_2 :	6	
Pad Clear Cover, cc_{pad} :	3	in

Material Properties		
Rebar Grade, F_y :	60	ksi
Concrete Compressive Strength, F'_c :	3	ksi
Dry Concrete Density, δ_c :	150	pcf

Soil Properties		
Total Soil Unit Weight, γ :	120	pcf
Ultimate Net Bearing, Q_{net} :	12.000	ksf
Cohesion, C_u :	2.000	ksf
Friction Angle, ϕ :	0	degrees
SPT Blow Count, N_{blows} :		
Base Friction, μ :	0.35	
Neglected Depth, N :	2.00	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, gw :	N/A	ft

Foundation Analysis Checks				
	Capacity	Demand	Rating*	Check
Lateral (Sliding) (kips)	170.93	2.00	1.1%	Pass
Bearing Pressure (ksf)	7.92	2.90	34.8%	Pass
Overturning (kip*ft)	1208.33	22.50	1.9%	Pass
Pier Flexure (Comp.) (kip*ft)	508.42	18.00	3.4%	Pass
Pier Compression (kip)	1528.95	169.31	10.5%	Pass
Pad Flexure (kip*ft)	506.88	123.97	23.3%	Pass
Pad Shear - 1-way (kips)	209.39	37.12	16.9%	Pass
Pad Shear - 2-way (Comp) (ksi)	0.164	0.033	19.1%	Pass
Flexural 2-way (Comp) (kip*ft)	733.13	10.80	1.4%	Pass

*Rating per TIA-222-H Section 15.5

min steel assumed

Structural Rating*:	23.3%
Soil Rating*:	34.8%

min steel assumed

<-- Toggle between Gross and Net

Guyed Anchor Block Foundation

Checks capacity of anchor blocks for a guyed tower.



BU#:	846216
Site Name:	Fort White
Order Number:	672918 Rev. 0
Location:	Guy A @ 140 ft (Elev 0 ft)

TIA-222 Revision:	H
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Design Reactions		
Shear, S:	27.67	kips
Uplift, Ua:	24.54	kips
Resultant Force, Rf:	36.99	kips
Tower Height, H:	300.00	ft
Guy Anchor Radius, R:	140.00	ft
Resultant Angle to Horizontal, θ:	41.6	deg

Guy Anchor Properties		
Depth to Bottom of Deadman, Da:	8.5	ft
Anchor Width, Wa:	4	ft
Anchor Thickness, Ta:	2	ft
Anchor Length, La:	14	ft
Concrete Volume, Vc:	4.1	yd ³
Toe Width, toe:	0	ft

Design Checks				
	Capacity	Demand	Rating*	Check
Lateral Capacity (kips):	145.87	27.67	18.1%	Pass
Uplift Capacity (kips):	148.49	24.54	15.7%	Pass

*Rating per TIA-222-H Section 15.5

Anchor Shaft Rating:	N/A
Structural Rating:	N/A
Soil Rating:	18.1%

Neglect Depth, Neg:	2	ft
Groundwater Level, gw:	None	ft

Soil Properties:		No. of Soil Layers:				
Layer	φ, deg	cu, ksf	δ, pcf	d, ft	Ultimate fs (ksf)	N (blows/ft)
1	0	0.000	120	2.00	0.000	
2	35	0.000	135	6.00	0.350	
3	40	0.000	135	8.50	1.000	

Material Properties

Wt. Avg. Concrete Density, δx:	0.150	kcf
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*key: φ = Internal Angle of Friction

cu = Cohesion / Undrained Shear Strength

δ = Buoyant Soil Unit Weight

d = Depth to Bottom of Layer

Ultimate fs = Geotechnical Report-provided skin friction / adhesion

N = SPT Blow Count

Guyed Anchor Block Foundation

Checks capacity of anchor blocks for a guyed tower.



BU#:	846216
Site Name:	Fort White
Order Number:	672918 Rev. 0
Location:	Guy B @ 137 ft (Elev -4 ft)

TIA-222 Revision: H

Design Reactions		
Shear, S:	29.96	kips
Uplift, Ua:	27.94	kips
Resultant Force, Rf:	40.97	kips
Tower Height, H:	300.00	ft
Guy Anchor Radius, R:	137.00	ft
Resultant Angle to Horizontal, θ:	43.0	deg

Guy Anchor Properties		
Depth to Bottom of Deadman, Da:	8.5	ft
Anchor Width, Wa:	4	ft
Anchor Thickness, Ta:	2	ft
Anchor Length, La:	14	ft
Concrete Volume, Vc:	4.1	yd ³
Toe Width, toe:	0	ft

Design Checks				
	Capacity	Demand	Rating*	Check
Lateral Capacity (kips):	227.80	29.96	12.5%	Pass
Uplift Capacity (kips):	229.91	27.94	11.6%	Pass

*Rating per TIA-222-H Section 15.5

Anchor Shaft Rating:	N/A
Structural Rating:	N/A
Soil Rating:	12.5%

Neglect Depth, Neg:	2	ft
Groundwater Level, gw:	None	ft

Soil Properties:		No. of Soil Layers:				
Layer	φ, deg	cu, ksf	δ, pcf	d, ft	Ultimate fs (ksf)	N (blows/ft)
1	0	0.000	110	2.00	0.000	
2	0	1.250	125	4.00	1.250	
3	0	2.250	125	8.50	2.250	

Material Properties

Wt. Avg. Concrete Density, δx:	0.150	kcf
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*key: φ = Internal Angle of Friction

cu = Cohesion / Undrained Shear Strength

δ = Buoyant Soil Unit Weight

d = Depth to Bottom of Layer

Ultimate fs = Geotechnical Report-provided skin friction / adhesion

N = SPT Blow Count

Guyed Anchor Block Foundation

Checks capacity of anchor blocks for a guyed tower.



BU#:	846216
Site Name:	Fort White
Order Number:	672918 Rev. 0
Location:	Guy C @ 135 ft (Elev 2 ft)

TIA-222 Revision:	H
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Design Reactions		
Shear, S:	30.02	kips
Uplift, Ua:	27.13	kips
Resultant Force, Rf:	40.47	kips
Tower Height, H:	300.00	ft
Guy Anchor Radius, R:	135.00	ft
Resultant Angle to Horizontal, θ:	42.1	deg

Guy Anchor Properties		
Depth to Bottom of Deadman, Da:	8.5	ft
Anchor Width, Wa:	4	ft
Anchor Thickness, Ta:	2	ft
Anchor Length, La:	14	ft
Concrete Volume, Vc:	4.1	yd ³
Toe Width, toe:	0	ft

Design Checks				
	Capacity	Demand	Rating*	Check
Lateral Capacity (kips):	228.09	30.02	12.5%	Pass
Uplift Capacity (kips):	229.60	27.13	11.3%	Pass

*Rating per TIA-222-H Section 15.5

Anchor Shaft Rating:	N/A
Structural Rating:	N/A
Soil Rating:	12.5%

Neglect Depth, Neg:	2	ft
Groundwater Level, gw:	None	ft

Soil Properties:		No. of Soil Layers:				
Layer	φ, deg	cu, ksf	δ, pcf	d, ft	Ultimate fs (ksf)	N (blows/ft)
1	0	0.000	110	2.00	0.000	
2	0	1.250	125	4.00	1.250	
3	0	2.250	125	8.50	2.250	

Material Properties

Wt. Avg. Concrete Density, δx:	0.150	kcf
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*key: φ = Internal Angle of Friction

cu = Cohesion / Undrained Shear Strength

δ = Buoyant Soil Unit Weight

d = Depth to Bottom of Layer

Ultimate fs = Geotechnical Report-provided skin friction / adhesion

N = SPT Blow Count

Guyed Anchor Block Foundation

Checks capacity of anchor blocks for a guyed tower.



BU#:	846216
Site Name:	Fort White
Order Number:	672918 Rev. 0
Location:	Guy A @ 240 ft (Elev 0 ft)

TIA-222 Revision: H

Design Reactions		
Shear, S:	38.70	kips
Uplift, Ua:	40.11	kips
Resultant Force, Rf:	55.74	kips
Tower Height, H:	300.00	ft
Guy Anchor Radius, R:	240.00	ft
Resultant Angle to Horizontal, θ:	46.0	deg

Guy Anchor Properties		
Depth to Bottom of Deadman, Da:	10	ft
Anchor Width, Wa:	4	ft
Anchor Thickness, Ta:	2	ft
Anchor Length, La:	18	ft
Concrete Volume, Vc:	5.3	yd ³
Toe Width, toe:	0	ft

Design Checks				
	Capacity	Demand	Rating*	Check
Lateral Capacity (kips):	209.47	38.70	17.6%	Pass
Uplift Capacity (kips):	252.54	40.11	15.1%	Pass

*Rating per TIA-222-H Section 15.5

Anchor Shaft Rating:	N/A
Structural Rating:	N/A
Soil Rating:	17.6%

Neglect Depth, Neg:	2	ft
Groundwater Level, gw:	None	ft

Soil Properties:		No. of Soil Layers:				
Layer	φ, deg	cu, ksf	δ, pcf	d, ft	Ultimate fs (ksf)	N (blows/ft)
1	0	0.000	120	2.00	0.000	
2	35	0.000	135	6.00	0.350	
3	40	0.000	135	10.00	1.000	

Material Properties

Wt. Avg. Concrete Density, δx:	0.150	kcf
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*key: φ = Internal Angle of Friction

cu = Cohesion / Undrained Shear Strength

δ = Buoyant Soil Unit Weight

d = Depth to Bottom of Layer

Ultimate fs = Geotechnical Report-provided skin friction / adhesion

N = SPT Blow Count

Guyed Anchor Block Foundation

Checks capacity of anchor blocks for a guyed tower.



BU#:	846216
Site Name:	Fort White
Order Number:	672918 Rev. 0
Location:	Guy B @ 237 ft (Elev -4 ft)

TIA-222 Revision:	H
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Design Reactions		
Shear, S:	38.89	kips
Uplift, Ua:	41.42	kips
Resultant Force, Rf:	56.82	kips
Tower Height, H:	300.00	ft
Guy Anchor Radius, R:	237.00	ft
Resultant Angle to Horizontal, θ:	46.8	deg

Guy Anchor Properties		
Depth to Bottom of Deadman, Da:	10	ft
Anchor Width, Wa:	4	ft
Anchor Thickness, Ta:	2	ft
Anchor Length, La:	18	ft
Concrete Volume, Vc:	5.3	yd ³
Toe Width, toe:	0	ft

Design Checks				
	Capacity	Demand	Rating*	Check
Lateral Capacity (kips):	291.05	38.89	12.7%	Pass
Uplift Capacity (kips):	352.48	41.42	11.2%	Pass

*Rating per TIA-222-H Section 15.5

Anchor Shaft Rating:	N/A
Structural Rating:	N/A
Soil Rating:	12.7%

Neglect Depth, Neg:	2	ft
Groundwater Level, gw:	None	ft

Soil Properties:		No. of Soil Layers:				
Layer	φ, deg	cu, ksf	δ, pcf	d, ft	Ultimate fs (ksf)	N (blows/ft)
1	0	0.000	110	2.00	0.000	
2	0	1.250	125	4.00	1.250	
3	0	2.250	125	10.00	2.250	

Material Properties

Wt. Avg. Concrete Density, δx:	0.150	kcf
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*key: φ = Internal Angle of Friction

cu = Cohesion / Undrained Shear Strength

δ = Buoyant Soil Unit Weight

d = Depth to Bottom of Layer

Ultimate fs = Geotechnical Report-provided skin friction / adhesion

N = SPT Blow Count

Guyed Anchor Block Foundation

Checks capacity of anchor blocks for a guyed tower.



BU#:	846216
Site Name:	Fort White
Order Number:	672918 Rev. 0
Location:	Guy C @ 235 ft (Elev 2 ft)

TIA-222 Revision:	H
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Design Reactions		
Shear, S:	39.96	kips
Uplift, Ua:	42.02	kips
Resultant Force, Rf:	57.99	kips
Tower Height, H:	300.00	ft
Guy Anchor Radius, R:	235.00	ft
Resultant Angle to Horizontal, θ:	46.4	deg

Guy Anchor Properties		
Depth to Bottom of Deadman, Da:	10	ft
Anchor Width, Wa:	4	ft
Anchor Thickness, Ta:	2	ft
Anchor Length, La:	18	ft
Concrete Volume, Vc:	5.3	yd ³
Toe Width, toe:	0	ft

Design Checks				
	Capacity	Demand	Rating*	Check
Lateral Capacity (kips):	291.17	39.96	13.1%	Pass
Uplift Capacity (kips):	352.36	42.02	11.4%	Pass

*Rating per TIA-222-H Section 15.5

Anchor Shaft Rating:	N/A
Structural Rating:	N/A
Soil Rating:	13.1%

Neglect Depth, Neg:	2	ft
Groundwater Level, gw:	None	ft

Soil Properties:		No. of Soil Layers:				
Layer	φ, deg	cu, ksf	δ, pcf	d, ft	Ultimate fs (ksf)	N (blows/ft)
1	0	0.000	110	2.00	0.000	
2	0	1.250	125	4.00	1.250	
3	0	2.250	125	10.00	2.250	

Material Properties

Wt. Avg. Concrete Density, δx:	0.150	kcf
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*key: φ = Internal Angle of Friction

cu = Cohesion / Undrained Shear Strength

δ = Buoyant Soil Unit Weight

d = Depth to Bottom of Layer

Ultimate fs = Geotechnical Report-provided skin friction / adhesion

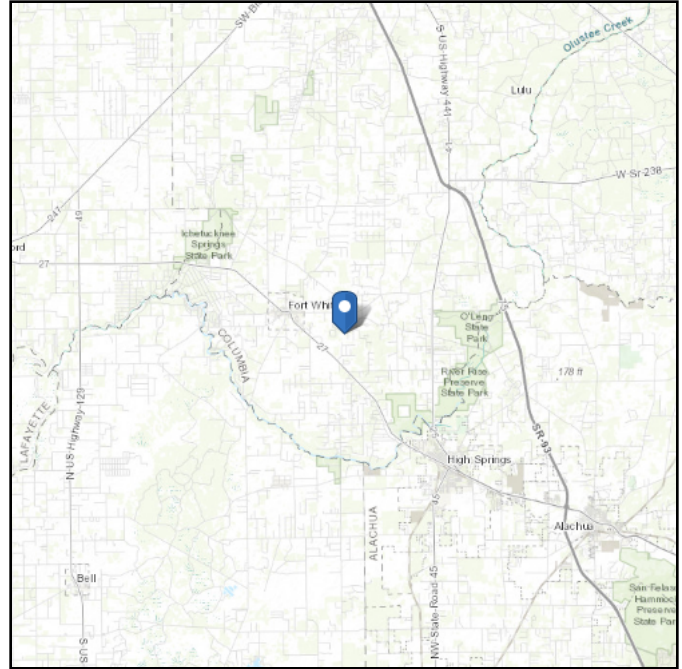
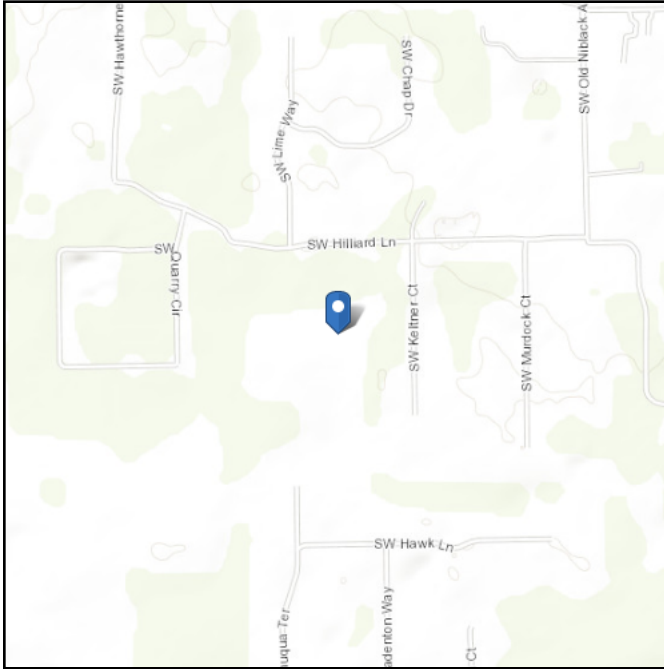
N = SPT Blow Count

ASCE Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-22
Risk Category: II
Soil Class: D - Stiff Soil

Latitude: 29.908675
Longitude: -82.672106
Elevation: 72.12069634657612 ft
(NAVD 88)



Wind

Results:

Wind Speed	121 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	90 Vmph
100-year MRI	99 Vmph
300-year MRI	111 Vmph
700-year MRI	121 Vmph
1,700-year MRI	131 Vmph
3,000-year MRI	137 Vmph
10,000-year MRI	146 Vmph
100,000-year MRI	155 Vmph
1,000,000-year MRI	168 Vmph

Data Source: ASCE/SEI 7-22, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Thu Jul 25 2024



Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-22 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years). Values for 10-year MRI, 25-year MRI, 50-year MRI and 100-year MRI are Service Level wind speeds, all other wind speeds are Ultimate wind speeds.

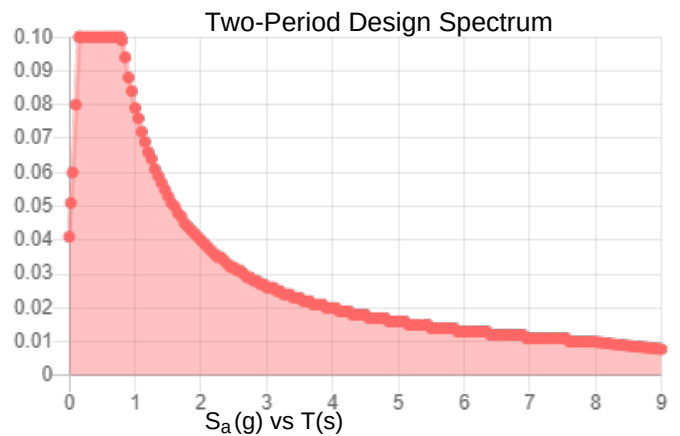
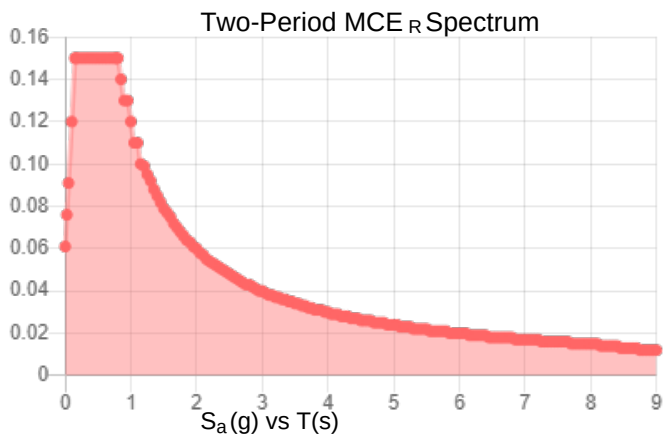
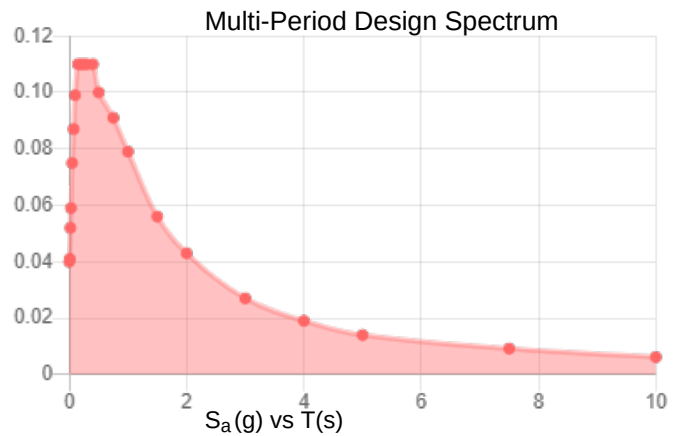
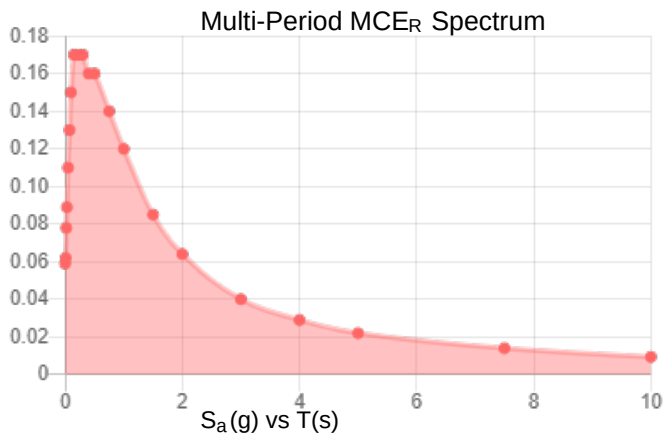
Site is in a hurricane-prone region as defined in ASCE/SEI 7-22 Section 26.2. Glazed openings need not be protected against wind-borne debris.

Site Soil Class: D - Stiff Soil

Results:

PGA _M :	0.055	T _L :	8
S _{MS} :	0.15	S _S :	0.12
S _{M1} :	0.12	S ₁ :	0.056
S _{DS} :	0.1	V _{S30} :	260
S _{D1} :	0.079		

Seismic Design Category: B



MCE_R Vertical Response Spectrum
Vertical ground motion data has not yet been made available by USGS.

Design Vertical Response Spectrum
Vertical ground motion data has not yet been made available by USGS.

Data Accessed: Thu Jul 25 2024

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-22 and ASCE/SEI 7-22 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-22 Ch. 21 are available from USGS.

Results:

Ice Thickness: N/A
Concurrent Temperature: N/A
3-s Gust Speed N/A

Data Source: Standard ASCE/SEI 7-22, Figs. 10-2 through 10-8

Date Accessed: Thu Jul 25 2024

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

Values provided are equivalent radial ice thicknesses due to freezing rain for 250, 500, 1,000, and 1,400-year mean recurrence intervals along with concurrent 3-s gust speeds and concurrent air temperatures. The shading indicates special icing regions, with elevations above 2,100 ft (640 m) in the east, 6,000 ft (1829 m) in the west, and 1,600 ft (488 m) in Alaska, with sparse weather station data for determining design ice loads. In these regions, as well as in regions with complex terrain causing unusual icing conditions and regions where snow or in-cloud icing results in larger loads, the mapped values should be adjusted based on a combination of local historical records and experience, reanalysis data, and numerical weather prediction systems.

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