

Date: **August 04, 2026**



B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630

Subject: **Structural Analysis Report**

Carrier Designation: **AT&T Mobility Co-Locate**
Site Number: 10091907
Site Name: LAKE CITY
FA Number: 10091907

Crown Castle Designation: **BU Number:** 846213
Site Name: LAKE CITY
JDE Job Number: 2190854
Work Order Number: 2507865
Order Number: 746303 Rev. 0

Engineering Firm Designation: **B+T Group Project Number:** 26-004044

Site Data: **4284 NORTH US HIGHWAY 441, LAKE CITY, Columbia County, FL**
Latitude 30° 14' 58.33", Longitude -82° 38' 30.37"
330.365 Foot - Guyed Tower

B+T Group 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:

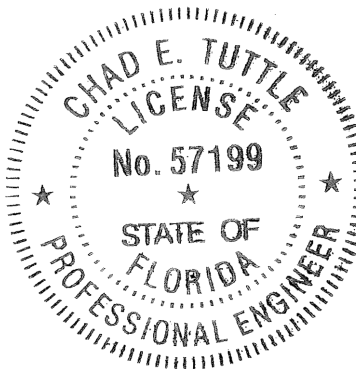
LC5: Proposed Equipment Configuration

Sufficient Capacity

This analysis utilizes an ultimate 3-second gust wind speed of 119 mph as required by the 2023 Florida Building Code, 8th Edition. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: Clint Coody

Respectfully submitted by: B+T Engineering, Inc.



CHAD TUTTLE, P.E.
B&T ENGINEERING, INC

This Item has been digitally signed and sealed by
Chad Tuttle on the date adjacent to the seal.
Printed copies of this document are not
considered signed and sealed and the signature
must be verified on any electronic copies.

8/4/2026

Chad E. Tuttle, P.E.

tnxTower Report - version 8.3.1.2

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1) INTRODUCTION

This tower is a 330.365 ft Guyed tower designed by ROHN.

The tower has been modified per reinforcement drawings prepared by Walker Engineering, in August of 2009 (Ref. Doc. # 5132733). Reinforcement consists of addition of diagonals to create X-brace between elevations 230' to 250' and 270' to 310'. Also, reinforcement consists of addition of secondary horizontal members between elevations 270' to 310'. The X-brace reinforcement was considered in this analysis. The secondary horizontals are not connected to the bracing members which makes them ineffective and were only considered as additional weight and wind area.

2) ANALYSIS CRITERIA

TIA-222 Revision: TIA-222-H
Risk Category: II
Wind Speed: 119 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)
265.0	268.0	6	Commscope	NNH4-85B-R6	21	1-5/8
		3	Ericsson	AIR 6472 B77G B77M_20240625		
		3	Ericsson	RADIO 8843 B2/B66A		
		3	Ericsson	RRUS 32 B30		
		3	Ericsson	RRUS 4449 B5/B12		
		3	Ericsson	RRUS 4478 B14		
		2	Raycap	DC6-48-60-18-8C		
		1	Raycap	DC9-48-60-24-8C-EV_220506		
	265.0	6	Better Metal	1BPP-278120		
		12	Better Metal	1BXP-M01		
		1	--	Sector Mount [SM 503-3]		

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Reference	Source
Tower Details	8184937	CCI Site
Tower Modification Drawing	5132733	CCI Site
Post Modification Inspection	6537847	CCI Site
Foundation Drawing	5169163	CCI Site
Geotech Report	4552411	CCI Site
Crown CAD Package	Date: 07/23/2026	CCI Site

3.1) Analysis Method

tnxTower (version 8.3.1.2), 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) The 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.
- 3) Tower Geometry per previous structural analysis. (Ref.Doc. 8184937)

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

4) ANALYSIS RESULTS

Table 3 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
T1	330.365 - 310.365	Leg	ROHN 2 X-STR	3	-7.515	46.048	16.3	Pass
T2	310.365 - 290.365	Leg	ROHN 2 X-STR	34	-21.383	62.907	34.0	Pass
T3	290.365 - 270.365	Leg	ROHN 2 X-STR	117	-26.921	62.907	42.8	Pass
T4	270.365 - 250.365	Leg	ROHN 2.5 X-STR	198	-27.512	99.127	27.8	Pass
T5	250.365 - 230.365	Leg	ROHN 2 X-STR	255	-39.159	62.907	62.2	Pass
T6	230.365 - 210.365	Leg	ROHN 2.5 X-STR	312	-41.526	79.978	51.9	Pass
T7	210.365 - 190.365	Leg	ROHN 2.5 X-STR	345	-37.021	79.978	46.3	Pass
T8	190.365 - 170.365	Leg	ROHN 2.5 X-STR	378	-47.606	99.127	48.0	Pass
T9	170.365 - 150.365	Leg	ROHN 2.5 X-STR	435	-46.536	79.978	58.2	Pass
T10	150.365 - 130.365	Leg	ROHN 2.5 X-STR	468	-40.051	79.978	50.1	Pass
T11	130.365 - 110.365	Leg	ROHN 2.5 X-STR	501	-39.917	79.978	49.9	Pass
T12	110.365 - 90.3646	Leg	ROHN 2.5 X-STR	534	-52.551	99.127	53.0	Pass
T13	90.3646 - 70.3646	Leg	ROHN 2.5 X-STR	591	-52.506	79.978	65.6	Pass
T14	70.3646 - 50.3646	Leg	ROHN 2.5 X-STR	624	-66.135	79.978	82.7	Pass
T15	50.3646 - 35.1823	Leg	ROHN 2.5 X-STR	657	-67.876	79.978	84.9	Pass
T16	35.1823 - 20	Leg	ROHN 2.5 X-STR	684	-66.615	79.978	83.3	Pass
T17	20 - 4.81771	Leg	ROHN 2.5 X-STR	711	-58.330	79.978	72.9	Pass
T18	4.81771 - 0	Leg	ROHN 2.5 X-STR	736	-46.161	104.364	47.2	Pass
T1	330.365 - 310.365	Diagonal	ROHN 1.5 x 11GA	11	-2.701	12.400	21.8 30.0 (b)	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
T2	310.365 - 290.365	Diagonal	ROHN 1.5 x 11GA	109	-1.545	12.400	12.5 17.1 (b)	Pass
T3	290.365 - 270.365	Diagonal	ROHN 1.5 x 11GA	127	-0.974	12.400	7.9 10.8 (b)	Pass
T4	270.365 - 250.365	Diagonal	ROHN 1.5 x 11GA	205	-3.178	12.400	25.6 31.0 (b)	Pass
T5	250.365 - 230.365	Diagonal	ROHN 1.5 x 11GA	304	-2.135	12.400	17.2 23.7 (b)	Pass
T6	230.365 - 210.365	Diagonal	ROHN 1.5 x 11GA	320	-1.455	12.400	11.7 14.2 (b)	Pass
T7	210.365 - 190.365	Diagonal	ROHN 1.5 x 11GA	353	-3.467	12.400	28.0 33.8 (b)	Pass
T8	190.365 - 170.365	Diagonal	ROHN 1.5 x 11GA	387	-4.541	12.400	36.6 44.2 (b)	Pass
T9	170.365 - 150.365	Diagonal	ROHN 1.5 x 11GA	464	-3.748	12.400	30.2 36.5 (b)	Pass
T10	150.365 - 130.365	Diagonal	ROHN 1.5 x 11GA	497	-2.041	12.400	16.5 19.9 (b)	Pass
T11	130.365 - 110.365	Diagonal	ROHN 1.5 x 11GA	509	-2.197	12.400	17.7 21.4 (b)	Pass
T12	110.365 - 90.3646	Diagonal	ROHN 1.5 x 11GA	543	-5.522	12.400	44.5 53.8 (b)	Pass
T13	90.3646 - 70.3646	Diagonal	ROHN 1.5 x 11GA	620	-4.494	12.400	36.2 43.8 (b)	Pass
T14	70.3646 - 50.3646	Diagonal	ROHN 1.5 x 11GA	653	-2.906	12.400	23.4 28.3 (b)	Pass
T15	50.3646 - 35.1823	Diagonal	ROHN 1.5 x 11GA	664	-1.074	12.400	8.7 10.5 (b)	Pass
T16	35.1823 - 20	Diagonal	ROHN 1.5 x 11GA	692	-2.444	12.400	19.7 23.8 (b)	Pass
T17	20 - 4.81771	Diagonal	ROHN 1.5 x 11GA	722	-2.970	12.400	24.0 28.9 (b)	Pass
T18	4.81771 - 0	Horizontal	L4x4x1/4	740	5.069	65.999	32.2	Pass
T2	310.365 - 290.365	Secondary Horizontal	1	60	0.702	26.719	2.6	Pass
T3	290.365 - 270.365	Secondary Horizontal	1	139	-0.358	7.805	4.6	Pass
T1	330.365 - 310.365	Top Girt	ROHN 1.5 x 11GA	6	-0.169	14.092	1.2 1.9 (b)	Pass
T2	310.365 - 290.365	Top Girt	ROHN 1.5 x 11GA	38	0.534	16.911	3.2 5.9 (b)	Pass
T3	290.365 - 270.365	Top Girt	ROHN 1.5 x 11GA	119	-0.474	14.092	3.4 5.3 (b)	Pass
T4	270.365 - 250.365	Top Girt	ROHN 1.5 x 11GA	200	-0.477	14.231	3.3 5.3 (b)	Pass
T5	250.365 - 230.365	Top Girt	ROHN 1.5 x 11GA	257	-0.699	14.092	5.0 7.7 (b)	Pass
T6	230.365 - 210.365	Top Girt	ROHN 1.5 x 11GA	314	-0.719	14.231	5.1 7.0 (b)	Pass
T7	210.365 - 190.365	Top Girt	ROHN 1.5 x 11GA	348	-0.655	14.231	4.6 6.4 (b)	Pass
T8	190.365 - 170.365	Top Girt	ROHN 1.5 x 11GA	380	-0.825	14.231	5.8 8.0 (b)	Pass
T9	170.365 - 150.365	Top Girt	ROHN 1.5 x 11GA	436	1.768	16.911	10.5 17.2 (b)	Pass
T10	150.365 - 130.365	Top Girt	ROHN 1.5 x 11GA	470	-0.694	14.231	4.9 6.8 (b)	Pass
T11	130.365 - 110.365	Top Girt	ROHN 1.5 x 11GA	503	-0.703	14.231	4.9 6.8 (b)	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
T12	110.365 - 90.3646	Top Girt	ROHN 1.5 x 11GA	537	-0.910	14.231	6.4 8.9 (b)	Pass
T13	90.3646 - 70.3646	Top Girt	ROHN 1.5 x 11GA	594	2.174	16.911	12.9 21.2 (b)	Pass
T14	70.3646 - 50.3646	Top Girt	ROHN 1.5 x 11GA	626	-1.153	14.231	8.1 11.2 (b)	Pass
T15	50.3646 - 35.1823	Top Girt	ROHN 1.5 x 11GA	659	-1.176	14.231	8.3 11.5 (b)	Pass
T16	35.1823 - 20	Top Girt	ROHN 1.5 x 11GA	686	-1.160	14.231	8.2 11.3 (b)	Pass
T17	20 - 4.81771	Top Girt	ROHN 1.5 x 11GA	713	-1.024	14.231	7.2 10.0 (b)	Pass
T1	330.365 - 310.365	Bottom Girt	ROHN 1.5 x 11GA	7	-0.578	14.092	4.1 7.0 (b)	Pass
T2	310.365 - 290.365	Bottom Girt	ROHN 1.5 x 11GA	42	0.548	16.911	3.2 6.1 (b)	Pass
T3	290.365 - 270.365	Bottom Girt	ROHN 1.5 x 11GA	122	-0.474	14.092	3.4 5.3 (b)	Pass
T4	270.365 - 250.365	Bottom Girt	ROHN 1.5 x 11GA	204	1.260	16.911	7.5 12.3 (b)	Pass
T5	250.365 - 230.365	Bottom Girt	ROHN 1.5 x 11GA	260	-0.699	14.092	5.0 7.7 (b)	Pass
T6	230.365 - 210.365	Bottom Girt	ROHN 1.5 x 11GA	317	-0.719	14.231	5.1 7.0 (b)	Pass
T7	210.365 - 190.365	Bottom Girt	ROHN 1.5 x 11GA	350	1.059	16.911	6.3 10.3 (b)	Pass
T8	190.365 - 170.365	Bottom Girt	ROHN 1.5 x 11GA	382	1.619	16.911	9.6 15.8 (b)	Pass
T9	170.365 - 150.365	Bottom Girt	ROHN 1.5 x 11GA	440	-0.822	14.231	5.8 8.0 (b)	Pass
T10	150.365 - 130.365	Bottom Girt	ROHN 1.5 x 11GA	473	-0.694	14.231	4.9 6.8 (b)	Pass
T11	130.365 - 110.365	Bottom Girt	ROHN 1.5 x 11GA	506	-0.703	14.231	4.9 7.9 (b)	Pass
T12	110.365 - 90.3646	Bottom Girt	ROHN 1.5 x 11GA	538	1.872	16.911	11.1 18.2 (b)	Pass
T13	90.3646 - 70.3646	Bottom Girt	ROHN 1.5 x 11GA	596	-0.928	14.231	6.5 9.0 (b)	Pass
T14	70.3646 - 50.3646	Bottom Girt	ROHN 1.5 x 11GA	629	-1.153	14.231	8.1 11.2 (b)	Pass
T15	50.3646 - 35.1823	Bottom Girt	ROHN 1.5 x 11GA	662	-1.176	14.231	8.3 11.5 (b)	Pass
T16	35.1823 - 20	Bottom Girt	ROHN 1.5 x 11GA	689	-1.160	14.231	8.2 11.3 (b)	Pass
T17	20 - 4.81771	Bottom Girt	ROHN 1.5 x 11GA	715	2.201	16.911	13.0 21.4 (b)	Pass
T1	330.365 - 310.365	Guy A@312.888	5/8 (ECP - 23000)	801	12.241	26.712	45.8	Pass
T4	270.365 - 250.365	Guy A@252.888	1/2 (ECP - 23000)	792	11.240	16.947	66.3	Pass
T8	190.365 - 170.365	Guy A@172.888	1/2 (ECP - 23000)	777	12.112	16.947	71.5	Pass
T12	110.365 - 90.3646	Guy A@92.888	3/8 (ECP - 23000)	762	8.156	9.702	84.1	Pass
T1	330.365 - 310.365	Guy B@312.888	5/8 (ECP - 23000)	800	12.248	26.712	45.9	Pass
T4	270.365 - 250.365	Guy B@252.888	1/2 (ECP - 23000)	789	11.146	16.947	65.8	Pass
T8	190.365 - 170.365	Guy B@172.888	1/2 (ECP - 23000)	774	12.107	16.947	71.4	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
T12	110.365 - 90.3646	Guy B@92.888	3/8 (ECP - 23000)	759	8.156	9.702	84.1	Pass
T1	330.365 - 310.365	Guy C@312.888	5/8 (ECP - 23000)	796	12.252	26.712	45.9	Pass
T4	270.365 - 250.365	Guy C@252.888	1/2 (ECP - 23000)	782	11.055	16.947	65.2	Pass
T8	190.365 - 170.365	Guy C@172.888	1/2 (ECP - 23000)	767	11.711	16.947	69.1	Pass
T12	110.365 - 90.3646	Guy C@92.888	3/8 (ECP - 23000)	752	7.842	9.702	80.8	Pass
T1	330.365 - 310.365	Top Guy Pull-Off@312.888	2L2x2x1/4x3/8	797	4.400	51.556	8.5 21.6 (b)	Pass
T4	270.365 - 250.365	Top Guy Pull-Off@252.888	2L2x2x1/4x3/8	785	6.443	51.556	12.5 27.7 (b)	Pass
T8	190.365 - 170.365	Top Guy Pull-Off@172.888	2L2x2x1/4x3/8	770	8.529	51.556	16.5 36.7 (b)	Pass
T12	110.365 - 90.3646	Top Guy Pull-Off@92.888	2L2x2x1/4x3/8	755	8.246	51.556	16.0 35.5 (b)	Pass
T4	270.365 - 250.365	Torque Arm Top@252.888	C15x33.9	784	-2.400	306.341	19.0 30.4 (b)	Pass
T8	190.365 - 170.365	Torque Arm Top@172.888	C15x33.9	780	-4.105	306.341	21.5 31.3 (b)	Pass
T12	110.365 - 90.3646	Torque Arm Top@92.888	C15x33.9	765	-3.943	306.341	10.2 28.3 (b)	Pass
							Summary	
						Leg (T15)	84.9	Pass
						Diagonal (T12)	53.8	Pass
						Horizontal (T18)	32.2	Pass
						Secondary Horizontal (T3)	4.6	Pass
						Top Girt (T13)	21.2	Pass
						Bottom Girt (T17)	21.4	Pass
						Guy A (T12)	84.1	Pass
						Guy B (T12)	84.1	Pass
						Guy C (T12)	80.8	Pass
						Top Guy Pull-Off (T8)	36.7	Pass
						Torque Arm Top (T8)	31.3	Pass
						Bolt Checks	53.8	Pass
						Rating =	84.9	Pass

Table 4 - Tower Component Stresses vs. Capacity – LC5

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1,2	Base Foundation (Structure)	Base	16.6	Pass
1,2	Base Foundation (Soil Interaction)	Base	47.5	Pass
1,2	Inner Guy Anchor Shaft	Base	78.0	Pass
1,2	Inner Guy Anchor Foundation (Soil Interaction)	Base	16.8	Pass
1,2	Outer Guy Anchor Shaft	Base	68.0	Pass
1,2	Outer Guy Anchor Foundation (Soil Interaction)	Base	15.9	Pass

Structure Rating (max from all components) =	84.9%
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Notes:

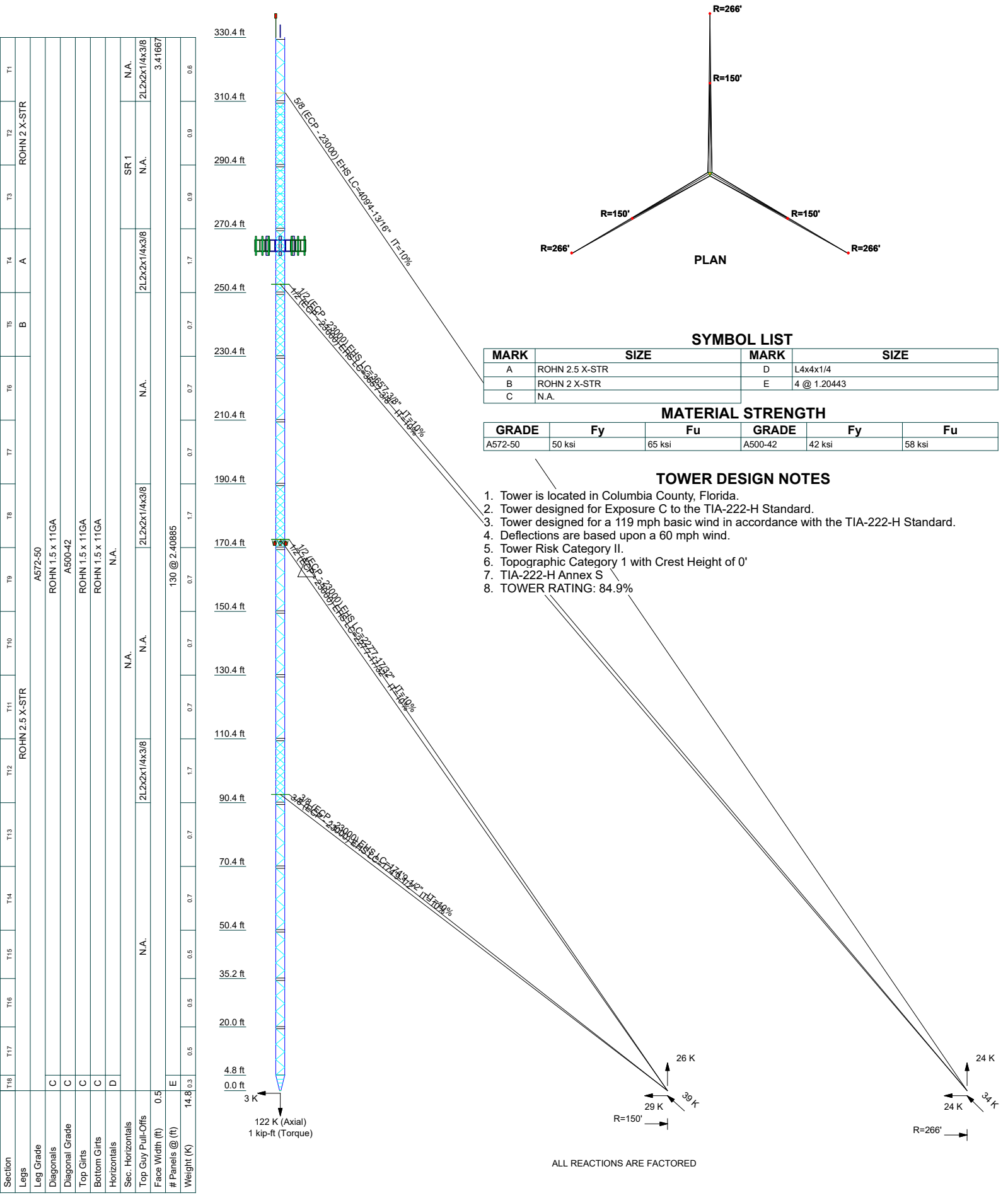
- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.
- 2) Rating per TIA-222-H Section 15.5.

4.1) Recommendations

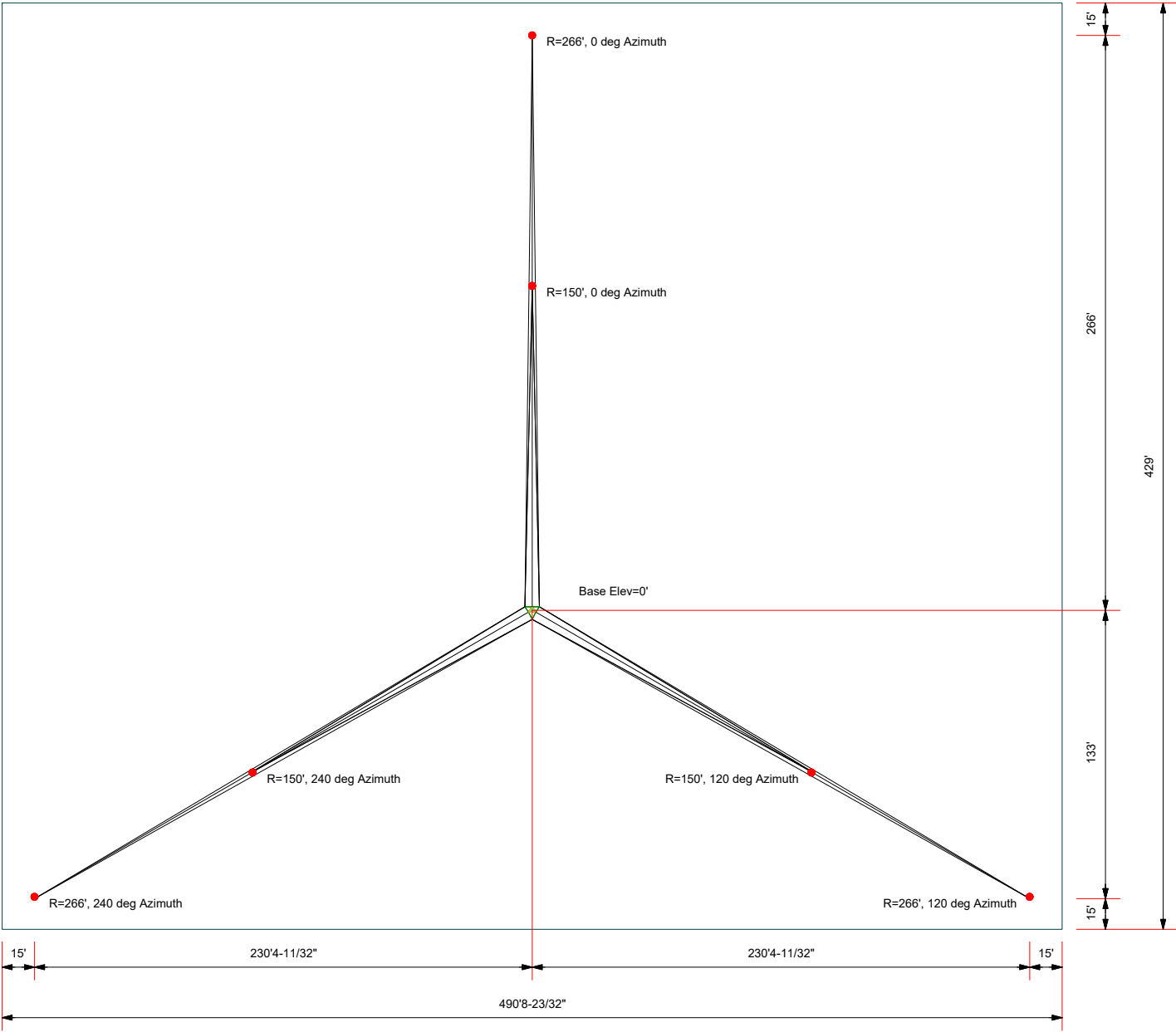
The tower and its base and anchor foundations have sufficient capacity to carry the proposed load configuration. No modifications are required at this time.

APPENDIX A

TNXTOWER OUTPUT



Plot Plan
Total Area - 4.83 Acres



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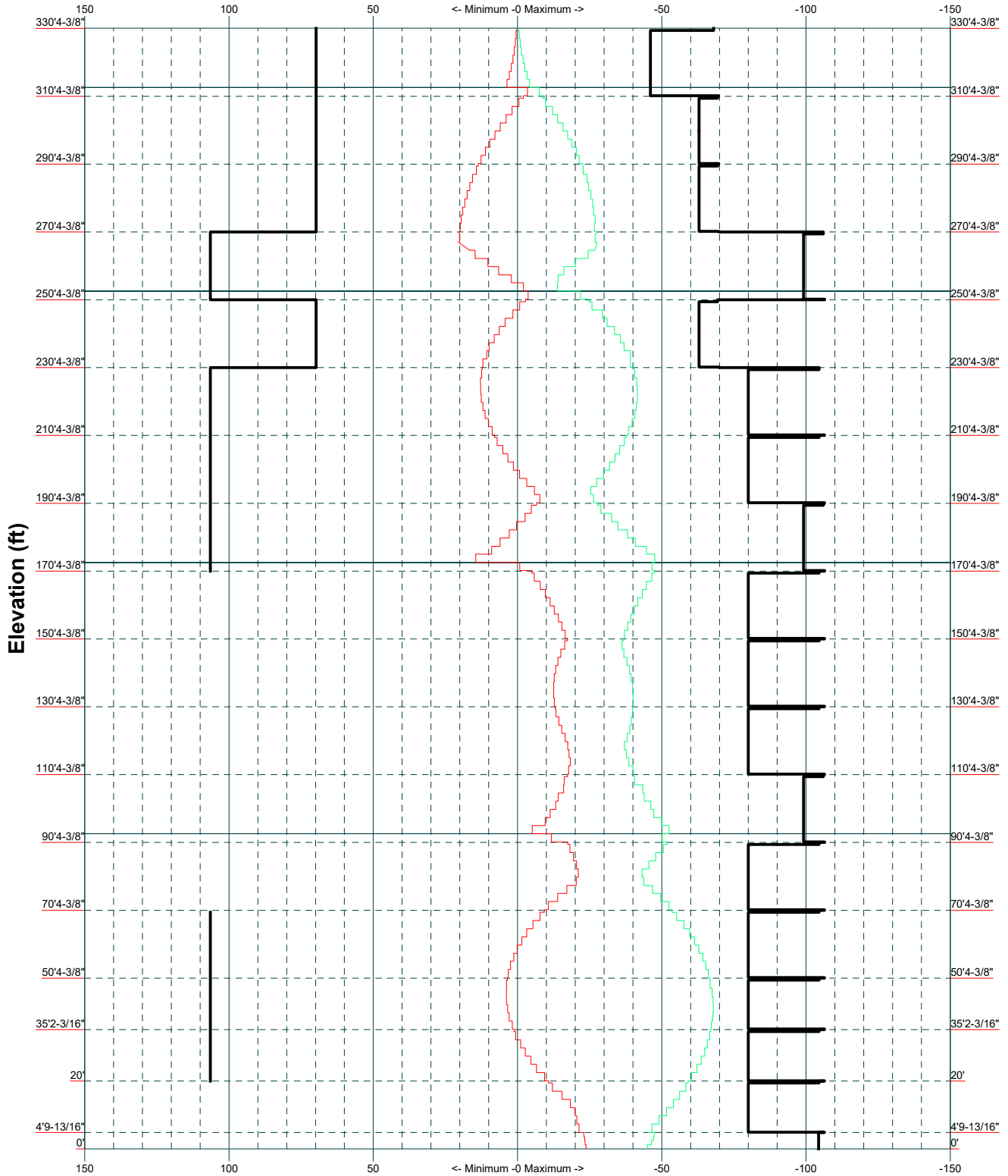
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Project:		
Client: Crown Castle	Drawn by: SK	App'd:
Code: TIA-222-H	Date: 08/04/26	Scale: NTS
Path:	Dwg No. E-2	

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TIA-222-H - 119 mph Exposure C

Leg Capacity ———

Leg Compression (K)



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Job: 26-004044 - LAKE CITY, FL (BU# 846213)		
Project:		
Client: Crown Castle	Drawn by: SK	App'd:
Code: TIA-222-H	Date: 08/04/26	Scale: NTS
Path:	Dwg No. E-3	

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Surf

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TIA-222-H - 119 mph Exposure C

Maximum Values

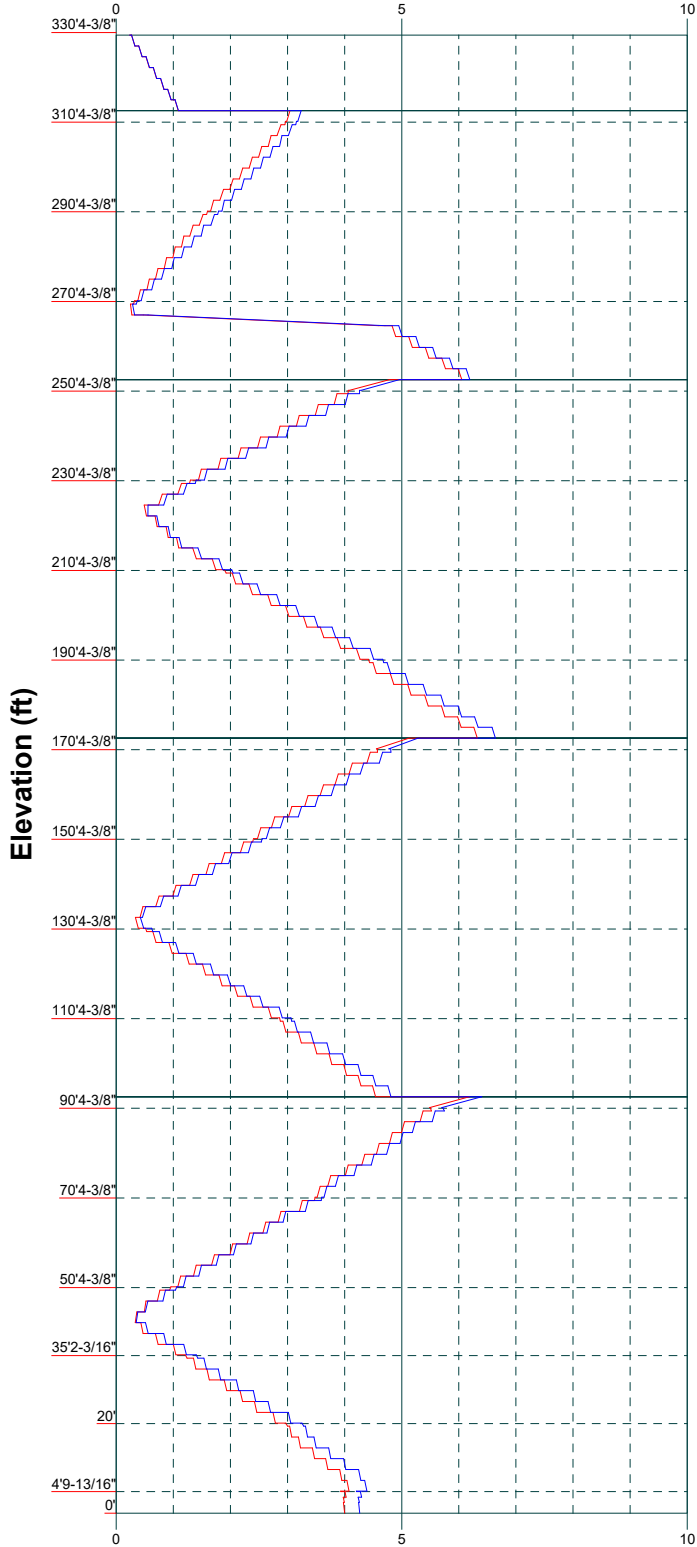
Vx

Vz

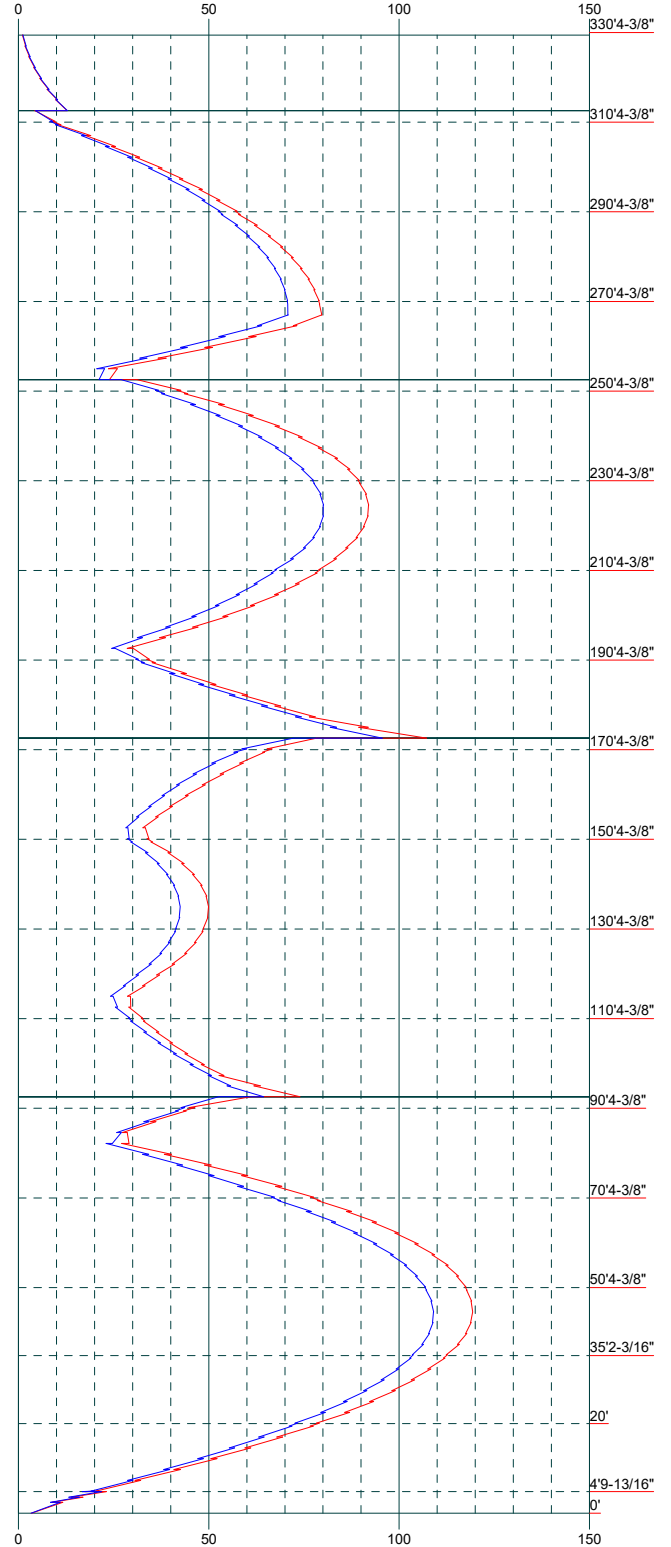
Mx

Mz

Global Mast Shear (K)



Global Mast Moment (kip-ft)



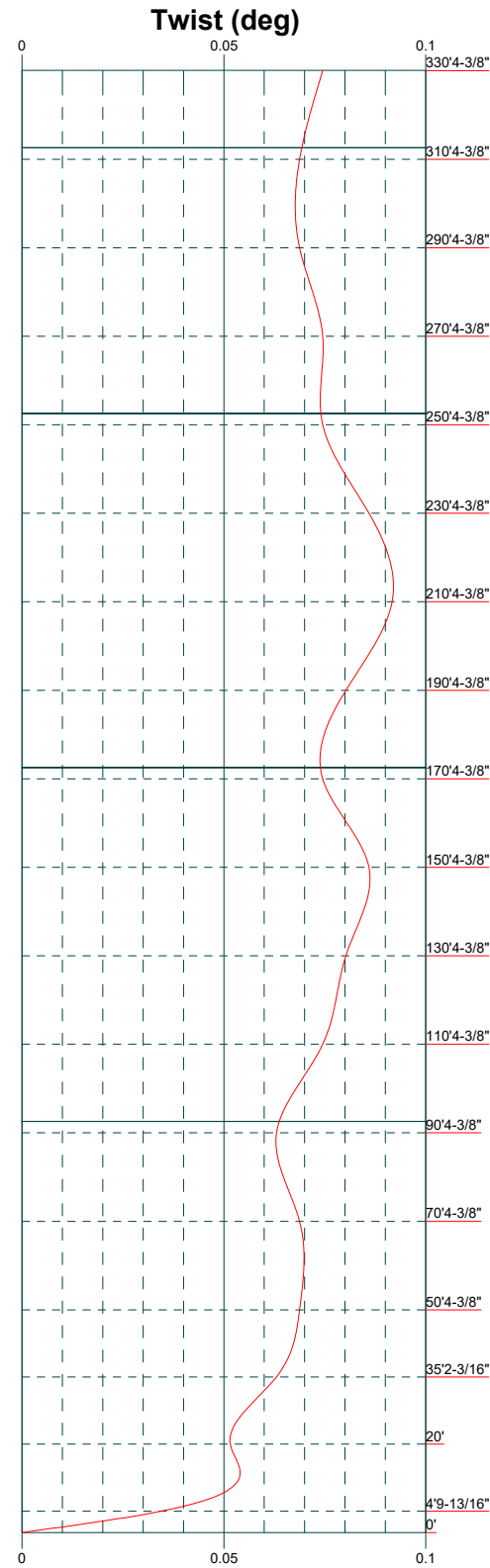
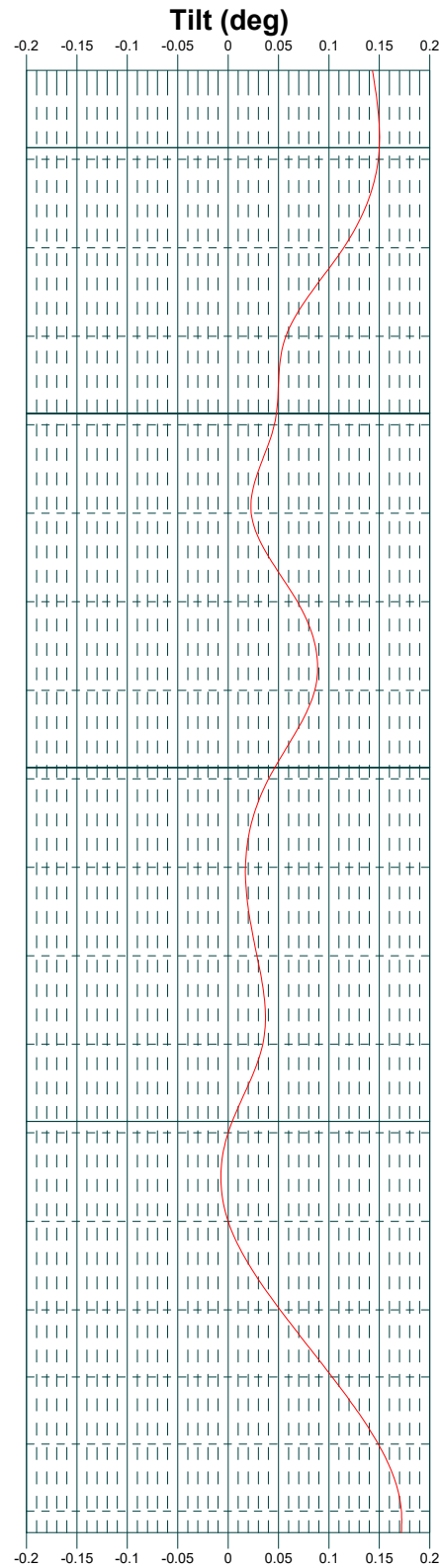
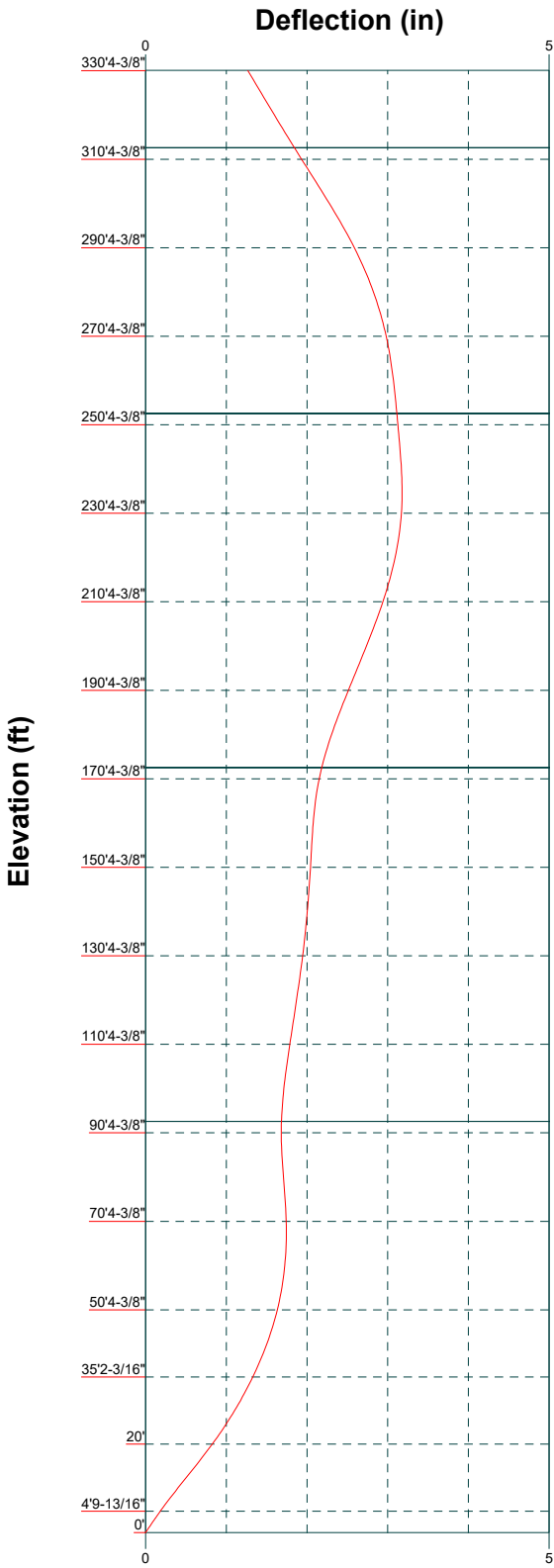
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Job: 26-004044 - LAKE CITY, FL (BU# 846213)		
Project:		
Client: Crown Castle	Drawn by: SK	App'd:
Code: TIA-222-H	Date: 08/04/26	Scale: NTS
Path:	Dwg No. E-4	

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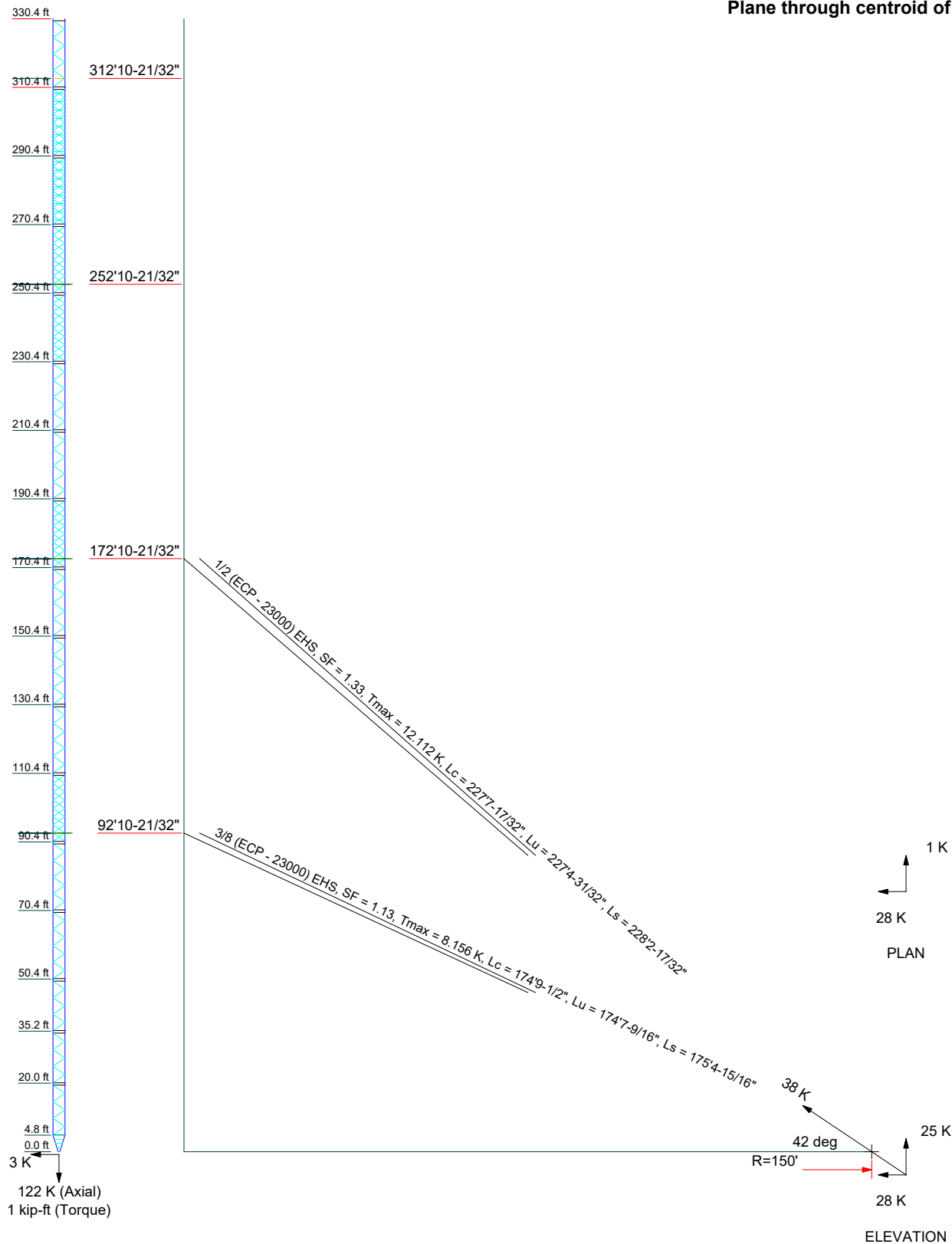
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Guy Tensions and Tower Reactions

TIA-222-H - 119 mph Exposure C

Maximum Values
Anchor 'C' @ 150 ft Azimuth 240 deg Elev 0 ft
Plane through centroid of tower



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Project:		
Client: Crown Castle	Drawn by: SK	App'd:
Code: TIA-222-H	Date: 08/04/26	Scale: NTS
Path:	Dwg No. E-6	

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Feed Line Distribution Chart

4'9-13/16" - 330'4-3/8"

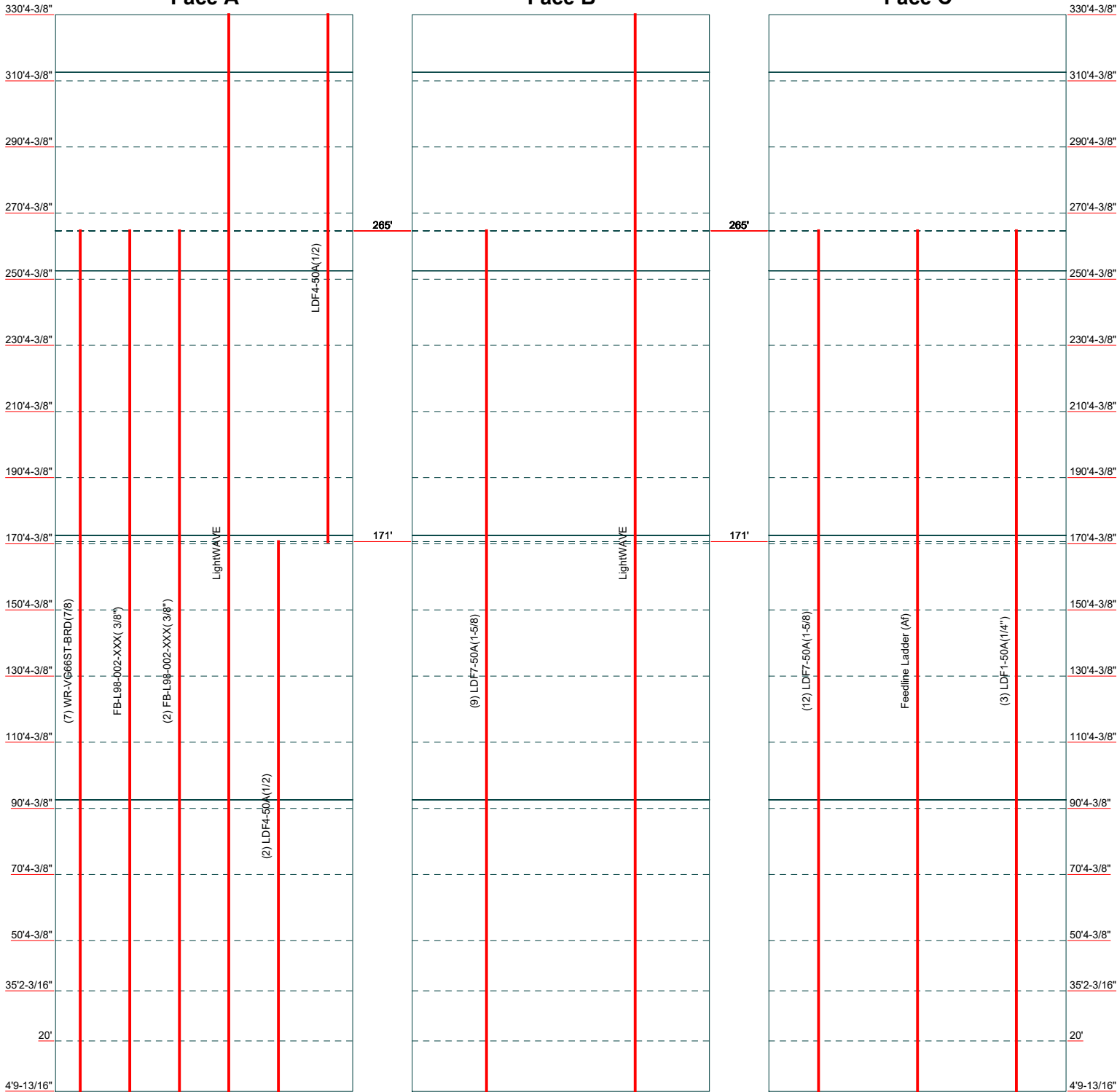
Round Flat App In Face App Out Face Truss Leg

Face A

Face B

Face C

Elevation (ft)



B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
Phone: (918) 587-4630
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Job: **26-004044 - LAKE CITY, FL (BU# 846213)**
Project:
Client: Crown Castle
Code: TIA-222-H
Path:
Drawn by: SK
Date: 08/04/26
Scale: NTS
Dwg No. E-7

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	Client Crown Castle	Designed by SK

Tower Input Data

The main tower is a 3x guyed tower with an overall height of 330'4-3/8" 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 6" 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: 143'.

Basic wind speed of 119 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.

TIA-222-H Annex S.

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: $K_{cs}(F_w) = 0.95$.

Maximum demand-capacity ratio is: 1.05.

Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs	Assume Legs Pinned	✓ Calculate Redundant Bracing Forces
Consider Moments - Horizontals	✓ Assume Rigid Index Plate	Ignore Redundant Members in FEA
Consider Moments - Diagonals	✓ Use Clear Spans For Wind Area	✓ SR Leg Bolts Resist Compression
Use Moment Magnification	✓ Use Clear Spans For KL/r	All Leg Panels Have Same Allowable
✓ Use Code Stress Ratios	✓ Retension Guys To Initial Tension	Offset Girt At Foundation
✓ Use Code Safety Factors - Guys	✓ Bypass Mast Stability Checks	✓ Consider Feed Line Torque
Escalate Ice	✓ Use Azimuth Dish Coefficients	✓ Include Angle Block Shear Check
Always Use Max Kz	✓ Project Wind Area of Appurtenances	Use TIA-222-H Bracing Resist. Exemption
Kz In Exposure D Hurricane Region	✓ Alternative Appurt. EPA Calculation	Use TIA-222-H Tension Splice Exemption
✓ Include Bolts In Member Capacity	✓ Autocalc Torque Arm Areas	Poles
✓ Leg Bolts Are At Top Of Section	Add IBC .6D+W Combination	Include Shear-Torsion Interaction
Secondary Horizontal Braces Leg	✓ Sort Capacity Reports By Component	Always Use Sub-Critical Flow
Use Diamond Inner Bracing (4 Sided)	Triangulate Diamond Inner Bracing	Use Top Mounted Sockets
SR Members Have Cut Ends	Treat Feed Line Bundles As Cylinder	Pole Without Linear Attachments
SR Members Are Concentric	Ignore KL/ry For 60 Deg. Angle Legs	Pole With Shroud Or No Appurtenances
Distribute Leg Loads As Uniform	Use ASCE 10 X-Brace Ly Rules	Outside and Inside Corner Radii Are Known
Use Special Wind Profile		

tnxTower

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Date

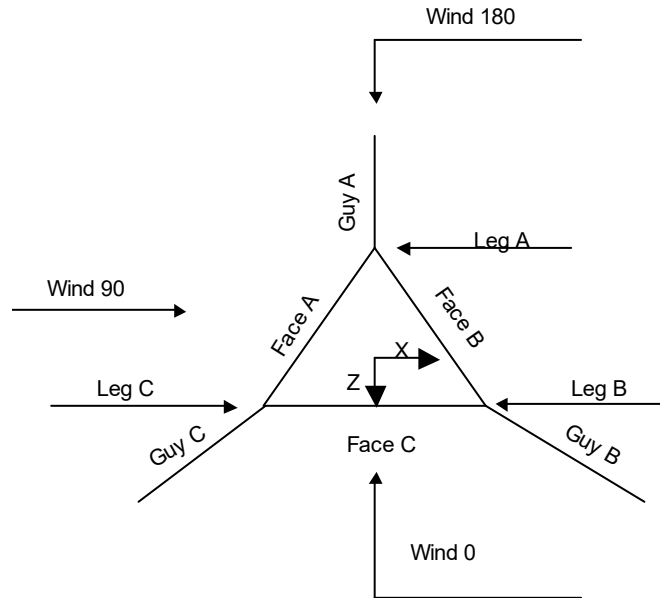
11:47:44 08/04/26

Client

Crown Castle

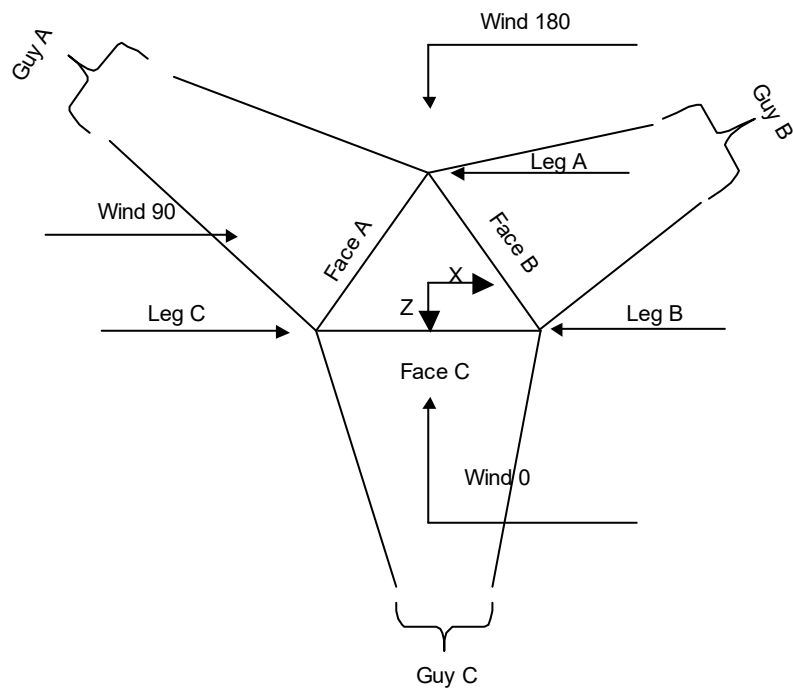
Designed by

SK



Corner & Starmount Guyed Tower

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Face Guyed

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	330'4-3/8"-310'4-3/8"			3'5"	1	20'
T2	310'4-3/8"-290'4-3/8"			3'5"	1	20'
T3	290'4-3/8"-270'4-3/8"			3'5"	1	20'
T4	270'4-3/8"-250'4-3/8"			3'5"	1	20'
T5	250'4-3/8"-230'4-3/8"			3'5"	1	20'
T6	230'4-3/8"-210'4-3/8"			3'5"	1	20'
T7	210'4-3/8"-190'4-3/8"			3'5"	1	20'
T8	190'4-3/8"-170'4-3/8"			3'5"	1	20'

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<i>Tower Section</i>	<i>Tower Elevation</i>	<i>Assembly Database</i>	<i>Description</i>	<i>Section Width</i>	<i>Number of Sections</i>	<i>Section Length</i>
	<i>ft</i>			<i>ft</i>		<i>ft</i>
T9	170'4-3/8"-150'4-3/8"			3'5"	1	20'
T10	150'4-3/8"-130'4-3/8"			3'5"	1	20'
T11	130'4-3/8"-110'4-3/8"			3'5"	1	20'
T12	110'4-3/8"-90'4-3/8"			3'5"	1	20'
T13	90'4-3/8"-70'4-3/8"			3'5"	1	20'
T14	70'4-3/8"-50'4-3/8"			3'5"	1	20'
T15	50'4-3/8"-35'2-3/16"			3'5"	1	15'2-3/16"
T16	35'2-3/16"-20'			3'5"	1	15'2-3/16"
T17	20'-4'9-13/16"			3'5"	1	15'2-3/16"
T18	4'9-13/16"-0'			3'5"	1	4'9-13/16"

Tower Section Geometry (cont'd)

<i>Tower Section</i>	<i>Tower Elevation</i>	<i>Diagonal Spacing</i>	<i>Bracing Type</i>	<i>Has K Brace End Panels</i>	<i>Has Horizontals</i>	<i>Top Girt Offset</i>	<i>Bottom Girt Offset</i>
	<i>ft</i>	<i>ft</i>				<i>in</i>	<i>in</i>
T1	330'4-3/8"-310'4-3/8"	2'4-29/32"	K Brace Left	No	No	7.375	1.375
T2	310'4-3/8"-290'4-3/8"	2'4-29/32"	CX Brace	No	Yes	7.375	1.375
T3	290'4-3/8"-270'4-3/8"	2'4-29/32"	CX Brace	No	Yes	7.375	1.375
T4	270'4-3/8"-250'4-3/8"	2'4-29/32"	CX Brace	No	No	7.375	1.375
T5	250'4-3/8"-230'4-3/8"	2'4-29/32"	CX Brace	No	No	7.375	1.375
T6	230'4-3/8"-210'4-3/8"	2'4-29/32"	K Brace Left	No	No	7.375	1.375
T7	210'4-3/8"-190'4-3/8"	2'4-29/32"	K Brace Left	No	No	7.375	1.375
T8	190'4-3/8"-170'4-3/8"	2'4-29/32"	CX Brace	No	No	7.375	1.375
T9	170'4-3/8"-150'4-3/8"	2'4-29/32"	K Brace Left	No	No	7.375	1.375
T10	150'4-3/8"-130'4-3/8"	2'4-29/32"	K Brace Left	No	No	7.375	1.375
T11	130'4-3/8"-110'4-3/8"	2'4-29/32"	K Brace Left	No	No	7.375	1.375
T12	110'4-3/8"-90'4-3/8"	2'4-29/32"	CX Brace	No	No	7.375	1.375
T13	90'4-3/8"-70'4-3/8"	2'4-29/32"	K Brace Left	No	No	7.375	1.375
T14	70'4-3/8"-50'4-3/8"	2'4-29/32"	K Brace Left	No	No	7.375	1.375
T15	50'4-3/8"-35'2-3/16"	2'4-29/32"	K Brace Left	No	No	7.375	1.375
T16	35'2-3/16"-20'	2'4-29/32"	K Brace Left	No	No	7.375	1.375

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Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft				in	in
T17	20'-4'-9-13/16"	2'-4'-29/32"	K Brace Left	No	No	7.375	1.375
T18	4'-9-13/16"-0'	1'-2'-7/16"	X Brace	No	Yes	0.000	0.000

Tower Section Geometry (cont'd)

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 330'4-3/8"-310'4-3/8"	Pipe	ROHN 2 X-STR	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T2 310'4-3/8"-290'4-3/8"	Pipe	ROHN 2 X-STR	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T3 290'4-3/8"-270'4-3/8"	Pipe	ROHN 2 X-STR	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T4 270'4-3/8"-250'4-3/8"	Pipe	ROHN 2.5 X-STR	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T5 250'4-3/8"-230'4-3/8"	Pipe	ROHN 2 X-STR	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T6 230'4-3/8"-210'4-3/8"	Pipe	ROHN 2.5 X-STR	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T7 210'4-3/8"-190'4-3/8"	Pipe	ROHN 2.5 X-STR	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T8 190'4-3/8"-170'4-3/8"	Pipe	ROHN 2.5 X-STR	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T9 170'4-3/8"-150'4-3/8"	Pipe	ROHN 2.5 X-STR	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T10 150'4-3/8"-130'4-3/8"	Pipe	ROHN 2.5 X-STR	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T11 130'4-3/8"-110'4-3/8"	Pipe	ROHN 2.5 X-STR	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T12 110'4-3/8"-90'4-3/8"	Pipe	ROHN 2.5 X-STR	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T13 90'4-3/8"-70'4-3/8"	Pipe	ROHN 2.5 X-STR	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T14 70'4-3/8"-50'4-3/8"	Pipe	ROHN 2.5 X-STR	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T15 50'4-3/8"-35'2-3/16"	Pipe	ROHN 2.5 X-STR	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T16 35'2-3/16"-20'	Pipe	ROHN 2.5 X-STR	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T17 20'-4'-9-13/16"	Pipe	ROHN 2.5 X-STR	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)

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<i>Tower Elevation ft</i>	<i>Leg Type</i>	<i>Leg Size</i>	<i>Leg Grade</i>	<i>Diagonal Type</i>	<i>Diagonal Size</i>	<i>Diagonal Grade</i>
T18 4'9"-13'16"-0'	Pipe	ROHN 2.5 X-STR	A572-50 (50 ksi)	Pipe		A500-42 (42 ksi)

Tower Section Geometry (cont'd)

<i>Tower Elevation ft</i>	<i>Top Girt Type</i>	<i>Top Girt Size</i>	<i>Top Girt Grade</i>	<i>Bottom Girt Type</i>	<i>Bottom Girt Size</i>	<i>Bottom Girt Grade</i>
T1 330'4-3/8"-310'4-3/8"	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T2 310'4-3/8"-290'4-3/8"	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T3 290'4-3/8"-270'4-3/8"	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T4 270'4-3/8"-250'4-3/8"	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T5 250'4-3/8"-230'4-3/8"	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T6 230'4-3/8"-210'4-3/8"	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T7 210'4-3/8"-190'4-3/8"	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T8 190'4-3/8"-170'4-3/8"	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T9 170'4-3/8"-150'4-3/8"	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T10 150'4-3/8"-130'4-3/8"	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T11 130'4-3/8"-110'4-3/8"	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T12 110'4-3/8"-90'4-3/8"	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T13 90'4-3/8"-70'4-3/8"	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T14 70'4-3/8"-50'4-3/8"	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T15 50'4-3/8"-35'2-3/16"	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T16 35'2-3/16"-20'	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T17	Pipe	ROHN 1.5 x 11GA	A500-42	Pipe	ROHN 1.5 x 11GA	A500-42

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Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
20'-4'-9-13/16"			(42 ksi)			(42 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
T18 4'-9-13/16"-0'	None	Flat Bar		A36 (36 ksi)	Equal Angle	L4x4x1/4	A36 (36 ksi)

Tower Section Geometry (cont'd)

Tower Elevation ft	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
T2 310'4-3/8"-290'4-3/8"	Solid Round	1	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T3 290'4-3/8"-270'4-3/8"	Solid Round	1	A36 (36 ksi)	Equal Angle		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 _f	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T1 330'4-3/8"-310'4-3/8"	0.000	0.154	A36 (36 ksi)	1	1.03	1.05	41.000	41.000	41.000
T2 310'4-3/8"-290'4-3/8"	0.000	0.154	A36 (36 ksi)	1	1.1	1.05	41.000	41.000	41.000
T3 290'4-3/8"-270'4-3/8"	0.000	0.154	A36 (36 ksi)	1	1.1	1.05	41.000	41.000	41.000
T4 270'4-3/8"-250'4-3/8"	0.000	0.176	A36 (36 ksi)	1	1.03	1.05	41.000	41.000	41.000
T5 250'4-3/8"-230'4-3/8"	0.000	0.154	A36 (36 ksi)	1	1.07	1.05	41.000	41.000	41.000
T6	0.000	0.176	A36	1	1.03	1.05	41.000	41.000	41.000

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Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
ft	ft ²	in							
230'4-3/8"-210'4-3/8"			(36 ksi)						
T7	0.000	0.176	A36	1	1.03	1.05	41.000	41.000	41.000
210'4-3/8"-190'4-3/8"			(36 ksi)						
T8	0.000	0.176	A36	1	1.03	1.05	41.000	41.000	41.000
190'4-3/8"-170'4-3/8"			(36 ksi)						
T9	0.000	0.176	A36	1	1.03	1.05	41.000	41.000	41.000
170'4-3/8"-150'4-3/8"			(36 ksi)						
T10	0.000	0.176	A36	1	1.03	1.05	41.000	41.000	41.000
150'4-3/8"-130'4-3/8"			(36 ksi)						
T11	0.000	0.176	A36	1	1.03	1.05	41.000	41.000	41.000
130'4-3/8"-110'4-3/8"			(36 ksi)						
T12	0.000	0.176	A36	1	1.03	1.05	41.000	41.000	41.000
110'4-3/8"-90'4-3/8"			(36 ksi)						
T13	0.000	0.176	A36	1	1.03	1.05	41.000	41.000	41.000
90'4-3/8"-70'4-3/8"			(36 ksi)						
T14	0.000	0.176	A36	1	1.03	1.05	41.000	41.000	41.000
70'4-3/8"-50'4-3/8"			(36 ksi)						
T15	0.000	0.176	A36	1	1.03	1.05	41.000	41.000	41.000
50'4-3/8"-35'2-3/16"			(36 ksi)						
T16	0.000	0.176	A36	1	1.03	1.05	41.000	41.000	41.000
35'2-3/16"-20'4-3/8"			(36 ksi)						
T17	0.000	0.176	A36	1	1.03	1.05	41.000	41.000	41.000
20'4-9-13/16"			(36 ksi)						
T18	0.000	0.000	A36	1	1	1.05	41.000	41.000	41.000
4'9-13/16"-0'			(36 ksi)						

Tower Section Geometry (cont'd)

Tower Elevation	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
ft										
T1	No	No	1	1	1	1	1	1	1	1
330'4-3/8"-310'4-3/8"				1	1	1	1	1	1	1
T2	No	No	1	1	1	1	1	1	1	1
310'4-3/8"-290'4-3/8"				1	1	1	1	1	1	1
T3	No	No	1	1	1	1	1	1	1	1
290'4-3/8"-270'4-3/8"				1	1	1	1	1	1	1
T4	No	No	1	1	1	1	1	1	1	1
270'4-3/8"-250'4-3/8"				1	1	1	1	1	1	1

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Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors ¹							
			Legs	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
0'4-3/8"										
T5	No	No	1	1	1	1	1	1	1	1
250'4-3/8"-23				1	1	1	1	1	1	1
0'4-3/8"										
T6	No	No	1	1	1	1	1	1	1	1
230'4-3/8"-21				1	1	1	1	1	1	1
0'4-3/8"										
T7	No	No	1	1	1	1	1	1	1	1
210'4-3/8"-19				1	1	1	1	1	1	1
0'4-3/8"										
T8	No	No	1	1	1	1	1	1	1	1
190'4-3/8"-17				1	1	1	1	1	1	1
0'4-3/8"										
T9	No	No	1	1	1	1	1	1	1	1
170'4-3/8"-15				1	1	1	1	1	1	1
0'4-3/8"										
T10	No	No	1	1	1	1	1	1	1	1
150'4-3/8"-13				1	1	1	1	1	1	1
0'4-3/8"										
T11	No	No	1	1	1	1	1	1	1	1
130'4-3/8"-11				1	1	1	1	1	1	1
0'4-3/8"										
T12	No	No	1	1	1	1	1	1	1	1
110'4-3/8"-90'				1	1	1	1	1	1	1
4-3/8"										
T13	No	No	1	1	1	1	1	1	1	1
90'4-3/8"-70'4				1	1	1	1	1	1	1
-3/8"										
T14	No	No	1	1	1	1	1	1	1	1
70'4-3/8"-50'4				1	1	1	1	1	1	1
-3/8"										
T15	No	No	1	1	1	1	1	1	1	1
50'4-3/8"-35'2				1	1	1	1	1	1	1
-3/16"										
T16	No	No	1	1	1	1	1	1	1	1
35'2-3/16"-20'				1	1	1	1	1	1	1
T17	No	No	1	1	1	1	1	1	1	1
20'-4'9-13/16"				1	1	1	1	1	1	1
T18	Yes	No	1	1	1	1	1	1	1	1
4'9-13/16"-0'				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)

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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	Net Width Deduct in	U	Net Width Deduct in	U
T1 330'4-3/8"-310' 4-3/8"	0.000	0.75 (1)	0.000	0.75 (1)	0.000	0.75	0.000	0.75	0.000	0.75	0.75 (1)	0.000	0.75 (1)
	0.000	0.75 (2)	0.000	0.75 (2)						0.000	0.75 (2)	0.000	0.75 (2)
	0.000	0.75 (3)	0.000	0.75 (3)						0.000	0.75 (3)	0.000	0.75 (3)
	0.000	0.75 (4)	0.000	0.75 (4)						0.000	0.75 (4)	0.000	0.75 (4)
T2 310'4-3/8"-290' 4-3/8"	0.000	0.75 (1)	0.000	0.75 (1)	0.000	0.75	0.000	0.75	0.000	0.75	0.75 (1)	0.000	0.75 (1)
	0.000	0.75 (2)	0.000	0.75 (2)						0.000	0.75 (2)	0.000	0.75 (2)
	0.000	0.75 (3)	0.000	0.75 (3)						0.000	0.75 (3)	0.000	0.75 (3)
	0.000	0.75 (4)	0.000	0.75 (4)						0.000	0.75 (4)	0.000	0.75 (4)
T3 290'4-3/8"-270' 4-3/8"	0.000	0.75 (1)	0.000	0.75 (1)	0.000	0.75	0.000	0.75	0.000	0.75	0.75 (1)	0.000	0.75 (1)
	0.000	0.75 (2)	0.000	0.75 (2)						0.000	0.75 (2)	0.000	0.75 (2)
	0.000	0.75 (3)	0.000	0.75 (3)						0.000	0.75 (3)	0.000	0.75 (3)
	0.000	0.75 (4)	0.000	0.75 (4)						0.000	0.75 (4)	0.000	0.75 (4)
T4 270'4-3/8"-250' 4-3/8"	0.000	0.75 (1)	0.000	0.75 (1)	0.000	0.75	0.000	0.75	0.000	0.75	0.75 (1)	0.000	0.75 (1)
	0.000	0.75 (2)	0.000	0.75 (2)						0.000	0.75 (2)	0.000	0.75 (2)
	0.000	0.75 (3)	0.000	0.75 (3)						0.000	0.75 (3)	0.000	0.75 (3)
	0.000	0.75 (4)	0.000	0.75 (4)						0.000	0.75 (4)	0.000	0.75 (4)
T5 250'4-3/8"-230' 4-3/8"	0.000	0.75 (1)	0.000	0.75 (1)	0.000	0.75	0.000	0.75	0.000	0.75	0.75 (1)	0.000	0.75 (1)
	0.000	0.75 (2)	0.000	0.75 (2)						0.000	0.75 (2)	0.000	0.75 (2)
	0.000	0.75 (3)	0.000	0.75 (3)						0.000	0.75 (3)	0.000	0.75 (3)
	0.000	0.75 (4)	0.000	0.75 (4)						0.000	0.75 (4)	0.000	0.75 (4)
T6 230'4-3/8"-210' 4-3/8"	0.000	0.75 (1)	0.000	0.75 (1)	0.000	0.75	0.000	0.75	0.000	0.75	0.75 (1)	0.000	0.75 (1)
	0.000	0.75 (2)	0.000	0.75 (2)						0.000	0.75 (2)	0.000	0.75 (2)
	0.000	0.75 (3)	0.000	0.75 (3)						0.000	0.75 (3)	0.000	0.75 (3)
	0.000	0.75 (4)	0.000	0.75 (4)						0.000	0.75 (4)	0.000	0.75 (4)
T7 210'4-3/8"-190' 4-3/8"	0.000	0.75 (1)	0.000	0.75 (1)	0.000	0.75	0.000	0.75	0.000	0.75	0.75 (1)	0.000	0.75 (1)

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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
T8 190'4-3/8"-170' 4-3/8"	0.000	0.75 (2)	0.000	0.75 (2)	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75 (2)	0.000	0.75 (2)
	0.000	0.75 (3)	0.000	0.75 (3)							0.000	0.75 (3)	0.000	0.75 (3)
	0.000	0.75 (4)	0.000	0.75 (4)							0.000	0.75 (4)	0.000	0.75 (4)
	0.000	0.75 (1)	0.000	0.75 (1)							0.000	0.75 (1)	0.000	0.75 (1)
	0.000	0.75 (2)	0.000	0.75 (2)							0.000	0.75 (2)	0.000	0.75 (2)
	0.000	0.75 (3)	0.000	0.75 (3)							0.000	0.75 (3)	0.000	0.75 (3)
	0.000	0.75 (4)	0.000	0.75 (4)							0.000	0.75 (4)	0.000	0.75 (4)
T9 170'4-3/8"-150' 4-3/8"	0.000	0.75 (1)	0.000	0.75 (1)	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75 (1)	0.000	0.75 (1)
	0.000	0.75 (2)	0.000	0.75 (2)							0.000	0.75 (2)	0.000	0.75 (2)
	0.000	0.75 (3)	0.000	0.75 (3)							0.000	0.75 (3)	0.000	0.75 (3)
	0.000	0.75 (4)	0.000	0.75 (4)							0.000	0.75 (4)	0.000	0.75 (4)
T10 150'4-3/8"-130' 4-3/8"	0.000	0.75 (1)	0.000	0.75 (1)	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75 (1)	0.000	0.75 (1)
	0.000	0.75 (2)	0.000	0.75 (2)							0.000	0.75 (2)	0.000	0.75 (2)
	0.000	0.75 (3)	0.000	0.75 (3)							0.000	0.75 (3)	0.000	0.75 (3)
	0.000	0.75 (4)	0.000	0.75 (4)							0.000	0.75 (4)	0.000	0.75 (4)
T11 130'4-3/8"-110' 4-3/8"	0.000	0.75 (1)	0.000	0.75 (1)	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75 (1)	0.000	0.75 (1)
	0.000	0.75 (2)	0.000	0.75 (2)							0.000	0.75 (2)	0.000	0.75 (2)
	0.000	0.75 (3)	0.000	0.75 (3)							0.000	0.75 (3)	0.000	0.75 (3)
	0.000	0.75 (4)	0.000	0.75 (4)							0.000	0.75 (4)	0.000	0.75 (4)
T12 110'4-3/8"-90'4 -3/8"	0.000	0.75 (1)	0.000	0.75 (1)	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75 (1)	0.000	0.75 (1)
	0.000	0.75 (2)	0.000	0.75 (2)							0.000	0.75 (2)	0.000	0.75 (2)
	0.000	0.75 (3)	0.000	0.75 (3)							0.000	0.75 (3)	0.000	0.75 (3)
	0.000	0.75 (4)	0.000	0.75 (4)							0.000	0.75 (4)	0.000	0.75 (4)
T13 90'4-3/8"-70'4- 3/8"	0.000	0.75 (1)	0.000	0.75 (1)	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75 (1)	0.000	0.75 (1)
	0.000	0.75 (2)	0.000	0.75 (2)							0.000	0.75 (2)	0.000	0.75 (2)

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Tower Section Geometry (cont'd)

Tower Elevation	Connection Offsets							
	Diagonal				K-Bracing			
	Vert. Top	Horiz. Top	Vert. Bot.	Horiz. Bot.	Vert. Top	Horiz. Top	Vert. Bot.	Horiz. Bot.
ft	in	in	in	in	in	in	in	in
T1	0.000	3.500	0.000	3.500	0.000	0.000	0.000	0.000
330'4-3/8"-310'4-3/8"								
T2	0.000	3.500	0.000	3.500	0.000	0.000	0.000	0.000
310'4-3/8"-290'4-3/8"								
T3	0.000	3.500	0.000	3.500	0.000	0.000	0.000	0.000
290'4-3/8"-270'4-3/8"								
T4	0.000	3.500	0.000	3.500	0.000	0.000	0.000	0.000
270'4-3/8"-250'4-3/8"								
T5	0.000	3.500	0.000	3.500	0.000	0.000	0.000	0.000
250'4-3/8"-230'4-3/8"								
T6	0.000	3.500	0.000	3.500	0.000	0.000	0.000	0.000
230'4-3/8"-210'4-3/8"								
T7	0.000	3.500	0.000	3.500	0.000	0.000	0.000	0.000
210'4-3/8"-190'4-3/8"								
T8	0.000	3.500	0.000	3.500	0.000	0.000	0.000	0.000
190'4-3/8"-170'4-3/8"								
T9	0.000	3.500	0.000	3.500	0.000	0.000	0.000	0.000
170'4-3/8"-150'4-3/8"								
T10	0.000	3.500	0.000	3.500	0.000	0.000	0.000	0.000
150'4-3/8"-130'4-3/8"								
T11	0.000	3.500	0.000	3.500	0.000	0.000	0.000	0.000
130'4-3/8"-110'4-3/8"								
T12	0.000	3.500	0.000	3.500	0.000	0.000	0.000	0.000
110'4-3/8"-90'4-3/8"								
T13	0.000	3.500	0.000	3.500	0.000	0.000	0.000	0.000
90'4-3/8"-70'4-3/8"								
T14	0.000	3.500	0.000	3.500	0.000	0.000	0.000	0.000
70'4-3/8"-50'4-3/8"								
T15	0.000	3.500	0.000	3.500	0.000	0.000	0.000	0.000
50'4-3/8"-35'2-3/16"								
T16	0.000	3.500	0.000	3.500	0.000	0.000	0.000	0.000
35'2-3/16"-20'4-9/16"								
T17	0.000	3.500	0.000	3.500	0.000	0.000	0.000	0.000
20'4-9/16"-0'								
T18	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4'9-13/16"-0'								

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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 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.
T1 330'4-3/8"-310' 4-3/8"	Flange	0.000 A325X	0	0.500 A325X	1	0.500 A325X	1	0.500 A325X	1	0.625 A325N	0	0.000 A325X	0	0.000 A325X	0
T2 310'4-3/8"-290' 4-3/8"	Flange	0.750 A325X	4	0.500 A325X	1	0.500 A325X	1	0.500 A325X	1	0.625 A325N	0	0.000 A325X	0	0.000 A325X	1
T3 290'4-3/8"-270' 4-3/8"	Flange	0.750 A325X	4	0.500 A325X	1	0.500 A325X	1	0.500 A325X	1	0.625 A325N	0	0.000 A325X	0	0.000 A325X	1
T4 270'4-3/8"-250' 4-3/8"	Flange	0.750 A325X	4	0.500 A325X	1	0.500 A325X	1	0.500 A325X	1	0.625 A325N	0	0.000 A325X	0	0.000 A325X	0
T5 250'4-3/8"-230' 4-3/8"	Flange	0.750 A325X	4	0.500 A325X	1	0.500 A325X	1	0.500 A325X	1	0.625 A325N	0	0.000 A325X	0	0.000 A325X	0
T6 230'4-3/8"-210' 4-3/8"	Flange	0.750 A325X	4	0.500 A325X	1	0.500 A325X	1	0.500 A325X	1	0.625 A325N	0	0.000 A325X	0	0.000 A325X	0
T7 210'4-3/8"-190' 4-3/8"	Flange	0.750 A325X	4	0.500 A325X	1	0.500 A325X	1	0.500 A325X	1	0.625 A325N	0	0.000 A325X	0	0.000 A325X	0
T8 190'4-3/8"-170' 4-3/8"	Flange	0.750 A325X	4	0.500 A325X	1	0.500 A325X	1	0.500 A325X	1	0.625 A325N	0	0.000 A325X	0	0.000 A325X	0
T9 170'4-3/8"-150' 4-3/8"	Flange	0.750 A325X	4	0.500 A325X	1	0.500 A325X	1	0.500 A325X	1	0.625 A325N	0	0.000 A325X	0	0.000 A325X	0
T10 150'4-3/8"-130' 4-3/8"	Flange	0.750 A325X	4	0.500 A325X	1	0.500 A325X	1	0.500 A325X	1	0.625 A325N	0	0.000 A325X	0	0.000 A325X	0
T11 130'4-3/8"-110' 4-3/8"	Flange	0.750 A325X	4	0.500 A325X	1	0.500 A325X	1	0.500 A325X	1	0.625 A325N	0	0.000 A325X	0	0.000 A325X	0
T12 110'4-3/8"-90'4 -3/8"	Flange	0.750 A325X	4	0.500 A325X	1	0.500 A325X	1	0.500 A325X	1	0.625 A325N	0	0.000 A325X	0	0.000 A325X	0
T13 90'4-3/8"-70'4- 3/8"	Flange	0.750 A325X	4	0.500 A325X	1	0.500 A325X	1	0.500 A325X	1	0.625 A325N	0	0.000 A325X	0	0.000 A325X	0
T14 70'4-3/8"-50'4- 3/8"	Flange	0.750 A325X	4	0.500 A325X	1	0.500 A325X	1	0.500 A325X	1	0.625 A325N	0	0.000 A325X	0	0.000 A325X	0
T15 50'4-3/8"-35'2- 3/16"	Flange	0.750 A325X	4	0.500 A325X	1	0.500 A325X	1	0.500 A325X	1	0.625 A325N	0	0.000 A325X	0	0.000 A325X	0
T16 35'2-3/16"-20'	Flange	0.750 A325X	4	0.500 A325X	1	0.500 A325X	1	0.500 A325X	1	0.625 A325N	0	0.000 A325X	0	0.000 A325X	0
T17 20'-4'-9-13/16"	Flange	0.750 A325X	4	0.500 A325X	1	0.500 A325X	1	0.500 A325X	1	0.625 A325N	0	0.000 A325X	0	0.000 A325X	0
T18 4'-9-13/16"-0'	Flange	0.750 A325X	4	0.000 A325X	0	0.000 A325X	0	0.000 A325X	0	0.625 A325N	0	0.000 A325X	0 *	0.000 A325X	0

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* Out-of-plane partial restraint assumed

Guy Data

Guy Elevation	Guy Grade	Guy Size	Initial Tension	%	Guy Modulus	Guy Weight	L_u	Anchor Radius	Anchor Azimuth Adj.	Anchor Elevation	End Fitting Efficiency
ft			K		ksi	plf	ft	ft	°	ft	%
92.888	EHS	A 3/8 (ECP -	1.540	10%	23000.000	0.273	174'7-3/4"	150'	0.000	0'	100%
		B 23000)	1.540	10%	23000.000	0.273	174'7-3/4"	150'	0.000	0'	100%
		C 3/8 (ECP -	1.540	10%	23000.000	0.273	174'7-3/4"	150'	0.000	0'	100%
172.888	EHS	23000)									
		A 1/2 (ECP -	2.690	10%	23000.000	0.517	227'5-7/16"	150'	0.000	0'	100%
		B 23000)	2.690	10%	23000.000	0.517	227'5-7/16"	150'	0.000	0'	100%
252.888	EHS	C 1/2 (ECP -	2.690	10%	23000.000	0.517	227'5-7/16"	150'	0.000	0'	100%
		23000)									
		A 1/2 (ECP -	2.690	10%	23000.000	0.517	365'4-5/16"	266'	0.000	0'	100%
312.888	EHS	B 23000)	2.690	10%	23000.000	0.517	365'4-5/16"	266'	0.000	0'	100%
		C 1/2 (ECP -	2.690	10%	23000.000	0.517	365'4-5/16"	266'	0.000	0'	100%
		23000)									
312.888	EHS	A 5/8 (ECP -	4.240	10%	23000.000	0.813	409'1-11/32"	266'	0.000	0'	100%
		B 23000)	4.240	10%	23000.000	0.813	409'1-11/32"	266'	0.000	0'	100%
		C 5/8 (ECP -	4.240	10%	23000.000	0.813	409'1-11/32"	266'	0.000	0'	100%
		23000)									
		5/8 (ECP -									
		23000)									

Guy Data(cont'd)

Guy Elevation	Mount Type	Torque-Arm Spread	Torque-Arm Leg Angle	Torque-Arm Style	Torque-Arm Grade	Torque-Arm Type	Torque-Arm Size
ft		ft	°				
92.888	Torque Arm	6'10"	0.000	Channel	A36 (36 ksi)	Channel	C15x33.9
172.888	Torque Arm	6'10"	0.000	Channel	A36 (36 ksi)	Channel	C15x33.9
252.888	Torque Arm	6'10"	0.000	Channel	A36 (36 ksi)	Channel	C15x33.9
312.888	Corner						

Guy Data (cont'd)

Guy Elevation	Diagonal Grade	Diagonal Type	Upper Diagonal Size	Lower Diagonal Size	Is Strap.	Pull-Off Grade	Pull-Off Type	Pull-Off Size
ft								

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Guy Elevation ft	Diagonal Grade	Diagonal Type	Upper Diagonal Size	Lower Diagonal Size	Is Strap.	Pull-Off Grade	Pull-Off Type	Pull-Off Size
92'10-21/32"	A500-42 (42 ksi)	Pipe			No	A36 (36 ksi)	Double Angle	2L2x2x1/4x3/8
172'10-21/32"	A500-42 (42 ksi)	Pipe			No	A36 (36 ksi)	Double Angle	2L2x2x1/4x3/8
252'10-21/32"	A500-42 (42 ksi)	Pipe			No	A36 (36 ksi)	Double Angle	2L2x2x1/4x3/8
312'10-21/32"	A500-42 (42 ksi)	Pipe			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
92.888	0.048	0.048	0.048		2'8-7/32" 2.8 sec/pulse	2'8-7/32" 2.8 sec/pulse	2'8-7/32" 2.8 sec/pulse	
172.888	0.118	0.118	0.118		4'10-3/4" 3.8 sec/pulse	4'10-3/4" 3.8 sec/pulse	4'10-3/4" 3.8 sec/pulse	
252.888	0.189	0.189	0.189		12'6-7/16" 6.1 sec/pulse	12'6-7/16" 6.1 sec/pulse	12'6-7/16" 6.1 sec/pulse	
312.888	0.333	0.333	0.333		15'7-1/8" 6.8 sec/pulse	15'7-1/8" 6.8 sec/pulse	15'7-1/8" 6.8 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
92.888	No	No	1	1	1	1	1	1
172.888	No	No	1	1	1	1	1	1
252.888	No	No	1	1	1	1	1	1
312.888	No	No			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
92.888	0.875 A325N	2	0.000	0.75	0.625 A325N	2	0.000	0.75	0.000 A325N	0	0.000	1
172.888	0.875 A325N	2	0.000	0.75	0.625 A325N	2	0.000	0.75	0.000 A325N	0	0.000	1
252.888	0.875 A325N	2	0.000	0.75	0.625 A325N	2	0.000	0.75	0.000 A325N	0	0.000	1
312.888	0.625 A325N	0	0.000	0.75	0.625 A325N	2	0.000	0.75	0.000 A325N	0	0.000	1

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Guy Pressures

Guy Elevation ft	Guy Location	z ft	q _z ksf	q _z Ice ksf	Ice Thickness in
92.888	A	46'5-5/16"	0.031		
	B	46'5-5/16"	0.031		
	C	46'5-5/16"	0.031		
172.888	A	86'5-5/16"	0.036		
	B	86'5-5/16"	0.036		
	C	86'5-5/16"	0.036		
252.888	A	126'5-5/16"	0.039		
	B	126'5-5/16"	0.039		
	C	126'5-5/16"	0.039		
312.888	A	156'5-5/16"	0.040		
	B	156'5-5/16"	0.040		
	C	156'5-5/16"	0.040		

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
92.888	A	32.102	1.565	-0.030	0.849	-1.315	-1.675	4.552	-2.901
			1.540						
	A	32.102	1.565	0.030	0.849	-1.315	-1.675	-4.552	2.901
			1.540						
	B	32.102	1.565	1.154	0.849	0.631	3.349	4.552	0.000
			1.540						
	B	32.102	1.565	1.123	0.849	0.684	-1.675	-4.552	-2.901
			1.540						
	C	32.102	1.565	-1.123	0.849	0.684	-1.675	4.552	2.901
			1.540						
	C	32.102	1.565	-1.154	0.849	0.631	3.349	-4.552	0.000
			1.540						
172.888	A	49.422	Sum:	0.000	5.094	0.000	-0.000	0.000	0.000
			2.779	-0.041	2.136	-1.778	-4.213	6.156	-7.297
	A	49.422	2.690						
			2.779	0.041	2.136	-1.778	-4.213	-6.156	7.297
	B	49.422	2.690						
			2.779	1.560	2.136	0.853	8.426	6.156	0.000
	B	49.422	2.690						
			2.779	1.519	2.136	0.925	-4.213	-6.156	-7.297
	C	49.422	2.690						
			2.779	-1.519	2.136	0.925	-4.213	6.156	7.297
	C	49.422	2.690						
			2.779	-1.560	2.136	0.853	8.426	-6.156	0.000
252.888	A	43.763	Sum:	0.000	12.815	0.000	-0.000	0.000	0.000
			2.820	-0.026	2.000	-1.989	-3.945	6.845	-6.833
	A	43.763	2.690						
			2.820	0.026	2.000	-1.989	-3.945	-6.845	6.833
	B	43.763	2.690						
			2.820	1.735	2.000	0.972	7.890	6.845	0.000

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Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom K	F _x	F _y	F _z	M _x	M _y	M _z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
312.888	B	43.763	2.690						
			2.820	1.709	2.000	1.017	-3.945	-6.845	-6.833
			2.690						
	C	43.763	2.820	-1.709	2.000	1.017	-3.945	6.845	6.833
			2.690						
	C	43.763	2.820	-1.735	2.000	0.972	7.890	-6.845	0.000
			2.690						
	A	49.841	Sum:	0.000	11.999	0.000	-0.000	0.000	0.000
			4.494	0.000	3.504	-2.815	-6.911	0.000	0.000
			4.240						
	B	49.841	4.494	2.438	3.504	1.407	3.456	0.000	-5.985
			4.240						
	C	49.841	4.494	-2.438	3.504	1.407	3.456	-0.000	5.985
			4.240						
			Sum:	0.000	10.511	0.000	0.000	0.000	0.000

Guy-Mast Forces (Excluding Wind) - Service

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom K	F _x	F _y	F _z	M _x	M _y	M _z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
92.888	A	32.102	1.565	-0.030	0.849	-1.315	-1.675	4.552	-2.901
			1.540						
	A	32.102	1.565	0.030	0.849	-1.315	-1.675	-4.552	2.901
			1.540						
	B	32.102	1.565	1.154	0.849	0.631	3.349	4.552	0.000
			1.540						
	B	32.102	1.565	1.123	0.849	0.684	-1.675	-4.552	-2.901
			1.540						
	C	32.102	1.565	-1.123	0.849	0.684	-1.675	4.552	2.901
			1.540						
	C	32.102	1.565	-1.154	0.849	0.631	3.349	-4.552	0.000
			1.540						
172.888	A	49.422	Sum:	0.000	5.094	0.000	-0.000	0.000	0.000
			2.779	-0.041	2.136	-1.778	-4.213	6.156	-7.297
	A	49.422	2.690						
			2.779	0.041	2.136	-1.778	-4.213	-6.156	7.297
	B	49.422	2.690						
			2.779	1.560	2.136	0.853	8.426	6.156	0.000
	B	49.422	2.690						
			2.779	1.519	2.136	0.925	-4.213	-6.156	-7.297
	C	49.422	2.690						
			2.779	-1.519	2.136	0.925	-4.213	6.156	7.297
	C	49.422	2.690						
			2.779	-1.560	2.136	0.853	8.426	-6.156	0.000
252.888	A	43.763	Sum:	0.000	12.815	0.000	-0.000	0.000	0.000
			2.820	-0.026	2.000	-1.989	-3.945	6.845	-6.833
	A	43.763	2.690						
			2.820	0.026	2.000	-1.989	-3.945	-6.845	6.833
	B	43.763	2.690						
			2.820	1.735	2.000	0.972	7.890	6.845	0.000

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Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom K	F _x	F _y	F _z	M _x	M _y	M _z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
312.888	B	43.763	2.690						
			2.820	1.709	2.000	1.017	-3.945	-6.845	-6.833
			2.690						
	C	43.763	2.820	-1.709	2.000	1.017	-3.945	6.845	6.833
			2.690						
	C	43.763	2.820	-1.735	2.000	0.972	7.890	-6.845	0.000
			2.690						
	A	49.841	Sum:	0.000	11.999	0.000	-0.000	0.000	0.000
			4.494	0.000	3.504	-2.815	-6.911	0.000	0.000
			4.240						
	B	49.841	4.494	2.438	3.504	1.407	3.456	0.000	-5.985
			4.240						
	C	49.841	4.494	-2.438	3.504	1.407	3.456	-0.000	5.985
			4.240						
			Sum:	0.000	10.511	0.000	0.000	0.000	0.000

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
92.888	A	148.07	92.89	2.029	2.04	1.864	2.22	1.701	2.43	1.540	2.68	1.382	2.99	1.229	3.36	1.082
	B	148.07	92.89	2.029	2.04	1.864	2.22	1.701	2.43	1.540	2.68	1.382	2.99	1.229	3.36	1.082
	C	148.07	92.89	2.029	2.04	1.864	2.22	1.701	2.43	1.540	2.68	1.382	2.99	1.229	3.36	1.082
172.888	A	148.07	172.89	3.225	4.09	3.045	4.33	2.866	4.60	2.690	4.89	2.516	5.23	2.346	5.60	2.179
	B	148.07	172.89	3.225	4.09	3.045	4.33	2.866	4.60	2.690	4.89	2.516	5.23	2.346	5.60	2.179
	C	148.07	172.89	3.225	4.09	3.045	4.33	2.866	4.60	2.690	4.89	2.516	5.23	2.346	5.60	2.179
252.888	A	264.05	252.89	3.279	10.32	3.076	10.99	2.880	11.73	2.690	12.54	2.508	13.43	2.334	14.40	2.171
	B	264.05	252.89	3.279	10.32	3.076	10.99	2.880	11.73	2.690	12.54	2.508	13.43	2.334	14.40	2.171
	C	264.05	252.89	3.279	10.32	3.076	10.99	2.880	11.73	2.690	12.54	2.508	13.43	2.334	14.40	2.171
312.888	A	264.03	312.89	4.975	13.34	4.723	14.04	4.478	14.79	4.240	15.60	4.009	16.47	3.787	17.41	3.575
	B	264.03	312.89	4.975	13.34	4.723	14.04	4.478	14.79	4.240	15.60	4.009	16.47	3.787	17.41	3.575
	C	264.03	312.89	4.975	13.34	4.723	14.04	4.478	14.79	4.240	15.60	4.009	16.47	3.787	17.41	3.575

Feed Line/Linear Appurtenances - Entered As Round Or Flat

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 klf
LDF7-50A(1-5/8)	B	No	No	Ar (CaAa)	265' - 0'	0.000	0	9	3	0.850	1.980		0.001
LightWAVE	B	No	No	Af (CaAa)	330'4-3/8" - 0'	0.000	0	1	1	1.500	1.500		0.002
*													
LDF7-50A(1-5/8)	C	No	No	Ar (CaAa)	265' - 0'	0.000	0	12	4	0.850	1.980		0.001
Feedline	C	No	No	Af (CaAa)	265' - 0'	0.000	0	1	1	3.000	3.000		0.008
LDF1-50A(1/4")	C	No	No	Ar (CaAa)	265' - 0'	0.000	0.15	3	2	0.500	0.345		0.000

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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 klf
*													
WR-VG66ST-BRD(7/8)	A	No	No	Ar (CaAa)	265' - 0'	0.000	0	7	7	0.850	0.957		0.001
FB-L98-002-XXX(3/8")	A	No	No	Ar (CaAa)	265' - 0'	0.000	0.17	1	1	0.500	0.394		0.000
FB-L98-002-XXX(3/8")	A	No	No	Ar (CaAa)	265' - 0'	1.000	-0.1	2	2	1.000	0.394		0.000
LightWAVE	A	No	No	Af (CaAa)	330'4-3/8" - 0'	0.000	0	1	1	1.500	1.500		0.002
*													
LDF4-50A(1/2)	A	No	No	Ar (CaAa)	171' - 0'	0.000	0.49	2	2	0.500	0.630		0.000
LDF4-50A(1/2)	A	No	No	Ar (CaAa)	330'4-3/8" - 171'	0.000	0.49	1	1	0.500	0.630		0.000
*													

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	C _A A _A ft ² /ft	Weight klf
*								

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	330'4-3/8"-310'4-3/8"	A	0.000	0.000	6.260	0.000	0.043
		B	0.000	0.000	5.000	0.000	0.040
		C	0.000	0.000	0.000	0.000	0.000
T2	310'4-3/8"-290'4-3/8"	A	0.000	0.000	6.260	0.000	0.043
		B	0.000	0.000	5.000	0.000	0.040
		C	0.000	0.000	0.000	0.000	0.000
T3	290'4-3/8"-270'4-3/8"	A	0.000	0.000	6.260	0.000	0.043
		B	0.000	0.000	5.000	0.000	0.040
		C	0.000	0.000	0.000	0.000	0.000
T4	270'4-3/8"-250'4-3/8"	A	0.000	0.000	17.793	0.000	0.139
		B	0.000	0.000	31.080	0.000	0.148
		C	0.000	0.000	43.606	0.000	0.270
T5	250'4-3/8"-230'4-3/8"	A	0.000	0.000	22.020	0.000	0.175
		B	0.000	0.000	40.640	0.000	0.188
		C	0.000	0.000	59.590	0.000	0.368
T6	230'4-3/8"-210'4-3/8"	A	0.000	0.000	22.020	0.000	0.175
		B	0.000	0.000	40.640	0.000	0.188
		C	0.000	0.000	59.590	0.000	0.368
T7	210'4-3/8"-190'4-3/8"	A	0.000	0.000	22.020	0.000	0.175
		B	0.000	0.000	40.640	0.000	0.188
		C	0.000	0.000	59.590	0.000	0.368

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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
T8	190'4-3/8"-170'4-3/8"	A	0.000	0.000	22.060	0.000	0.175
		B	0.000	0.000	40.640	0.000	0.188
		C	0.000	0.000	59.590	0.000	0.368
T9	170'4-3/8"-150'4-3/8"	A	0.000	0.000	23.280	0.000	0.178
		B	0.000	0.000	40.640	0.000	0.188
		C	0.000	0.000	59.590	0.000	0.368
T10	150'4-3/8"-130'4-3/8"	A	0.000	0.000	23.280	0.000	0.178
		B	0.000	0.000	40.640	0.000	0.188
		C	0.000	0.000	59.590	0.000	0.368
T11	130'4-3/8"-110'4-3/8"	A	0.000	0.000	23.280	0.000	0.178
		B	0.000	0.000	40.640	0.000	0.188
		C	0.000	0.000	59.590	0.000	0.368
T12	110'4-3/8"-90'4-3/8"	A	0.000	0.000	23.280	0.000	0.178
		B	0.000	0.000	40.640	0.000	0.188
		C	0.000	0.000	59.590	0.000	0.368
T13	90'4-3/8"-70'4-3/8"	A	0.000	0.000	23.280	0.000	0.178
		B	0.000	0.000	40.640	0.000	0.188
		C	0.000	0.000	59.590	0.000	0.368
T14	70'4-3/8"-50'4-3/8"	A	0.000	0.000	23.280	0.000	0.178
		B	0.000	0.000	40.640	0.000	0.188
		C	0.000	0.000	59.590	0.000	0.368
T15	50'4-3/8"-35'2-3/16"	A	0.000	0.000	17.672	0.000	0.135
		B	0.000	0.000	30.850	0.000	0.142
		C	0.000	0.000	45.236	0.000	0.280
T16	35'2-3/16"-20'	A	0.000	0.000	17.672	0.000	0.135
		B	0.000	0.000	30.850	0.000	0.142
		C	0.000	0.000	45.236	0.000	0.280
T17	20'-4'9-13/16"	A	0.000	0.000	17.672	0.000	0.135
		B	0.000	0.000	30.850	0.000	0.142
		C	0.000	0.000	45.236	0.000	0.280
T18	4'9-13/16"-0'	A	0.000	0.000	5.608	0.000	0.043
		B	0.000	0.000	9.790	0.000	0.045
		C	0.000	0.000	14.354	0.000	0.089

Feed Line Center of Pressure

Section	Elevation ft	CP _x in	CP _z in	CP _x Ice in	CP _z Ice in
T1	330'4-3/8"-310'4-3/8'	-0.014	-1.781	-0.014	-1.781
T2	310'4-3/8"-290'4-3/8'	-0.011	-1.381	-0.011	-1.381
T3	290'4-3/8"-270'4-3/8'	-0.011	-1.381	-0.011	-1.381
T4	270'4-3/8"-250'4-3/8'	0.817	0.483	0.817	0.483
T5	250'4-3/8"-230'4-3/8'	0.987	0.832	0.987	0.832
T6	230'4-3/8"-210'4-3/8'	1.034	0.873	1.034	0.873
T7	210'4-3/8"-190'4-3/8'	1.034	0.873	1.034	0.873
T8	190'4-3/8"-170'4-3/8'	0.954	0.797	0.954	0.797
T9	170'4-3/8"-150'4-3/8'	1.020	0.591	1.020	0.591
T10	150'4-3/8"-130'4-3/8'	1.020	0.591	1.020	0.591

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Section	Elevation	CP _x	CP _z	CP _x	CP _z
	ft	in	in	Ice in	Ice in
T11	130'4-3/8"-110'4-3/8'	1.020	0.591	1.020	0.591
T12	110'4-3/8"-90'4-3/8"	0.942	0.546	0.942	0.546
T13	90'4-3/8"-70'4-3/8"	1.020	0.591	1.020	0.591
T14	70'4-3/8"-50'4-3/8"	1.020	0.591	1.020	0.591
T15	50'4-3/8"-35'2-3/16"	1.016	0.589	1.016	0.589
T16	35'2-3/16"-20'	1.016	0.589	1.016	0.589
T17	20'-4'9-13/16"	1.016	0.589	1.016	0.589
T18	4'9-13/16"-0'	0.611	0.395	0.611	0.395

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T1	2	LightWAVE	310.36 - 330.36	0.6000	0.6000
T1	12	LightWAVE	310.36 - 330.36	0.6000	0.6000
T1	15	LDF4-50A(1/2)	310.36 - 330.36	0.6000	0.6000
T2	2	LightWAVE	290.36 - 310.36	0.6000	0.6000
T2	12	LightWAVE	290.36 - 310.36	0.6000	0.6000
T2	15	LDF4-50A(1/2)	290.36 - 310.36	0.6000	0.6000
T3	2	LightWAVE	270.36 - 290.36	0.6000	0.6000
T3	12	LightWAVE	270.36 - 290.36	0.6000	0.6000
T3	15	LDF4-50A(1/2)	270.36 - 290.36	0.6000	0.6000
T4	1	LDF7-50A(1-5/8)	250.36 - 265.00	0.6000	0.6000
T4	2	LightWAVE	250.36 - 270.36	0.6000	0.6000
T4	4	LDF7-50A(1-5/8)	250.36 - 265.00	0.6000	0.6000
T4	5	Feedline Ladder (Af)	250.36 - 265.00	0.6000	0.6000
T4	6	LDF1-50A(1/4")	250.36 - 265.00	0.6000	0.6000
T4	9	WR-VG66ST-BRD(7/8)	250.36 - 265.00	0.6000	0.6000
T4	10	FB-L98-002-XXX(3/8")	250.36 - 265.00	0.6000	0.6000
T4	11	FB-L98-002-XXX(3/8")	250.36 - 265.00	0.6000	0.6000
T4	12	LightWAVE	250.36 - 270.36	0.6000	0.6000
T4	15	LDF4-50A(1/2)	250.36 - 270.36	0.6000	0.6000
T5	1	LDF7-50A(1-5/8)	230.36 - 250.36	0.6000	0.6000

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<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T5	2	LightWAVE	230.36 - 250.36	0.6000	0.6000
T5	4	LDF7-50A(1-5/8)	230.36 - 250.36	0.6000	0.6000
T5	5	Feedline Ladder (Af)	230.36 - 250.36	0.6000	0.6000
T5	6	LDF1-50A(1/4")	230.36 - 250.36	0.6000	0.6000
T5	9	WR-VG66ST-BRD(7/8)	230.36 - 250.36	0.6000	0.6000
T5	10	FB-L98-002-XXX(3/8")	230.36 - 250.36	0.6000	0.6000
T5	11	FB-L98-002-XXX(3/8")	230.36 - 250.36	0.6000	0.6000
T5	12	LightWAVE	230.36 - 250.36	0.6000	0.6000
T5	15	LDF4-50A(1/2)	230.36 - 250.36	0.6000	0.6000
T6	1	LDF7-50A(1-5/8)	210.36 - 230.36	0.6000	0.6000
T6	2	LightWAVE	210.36 - 230.36	0.6000	0.6000
T6	4	LDF7-50A(1-5/8)	210.36 - 230.36	0.6000	0.6000
T6	5	Feedline Ladder (Af)	210.36 - 230.36	0.6000	0.6000
T6	6	LDF1-50A(1/4")	210.36 - 230.36	0.6000	0.6000
T6	9	WR-VG66ST-BRD(7/8)	210.36 - 230.36	0.6000	0.6000
T6	10	FB-L98-002-XXX(3/8")	210.36 - 230.36	0.6000	0.6000
T6	11	FB-L98-002-XXX(3/8")	210.36 - 230.36	0.6000	0.6000
T6	12	LightWAVE	210.36 - 230.36	0.6000	0.6000
T6	15	LDF4-50A(1/2)	210.36 - 230.36	0.6000	0.6000
T7	1	LDF7-50A(1-5/8)	190.36 - 210.36	0.6000	0.6000
T7	2	LightWAVE	190.36 - 210.36	0.6000	0.6000
T7	4	LDF7-50A(1-5/8)	190.36 - 210.36	0.6000	0.6000
T7	5	Feedline Ladder (Af)	190.36 - 210.36	0.6000	0.6000
T7	6	LDF1-50A(1/4")	190.36 - 210.36	0.6000	0.6000
T7	9	WR-VG66ST-BRD(7/8)	190.36 - 210.36	0.6000	0.6000
T7	10	FB-L98-002-XXX(3/8")	190.36 - 210.36	0.6000	0.6000
T7	11	FB-L98-002-XXX(3/8")	190.36 - 210.36	0.6000	0.6000
T7	12	LightWAVE	190.36 - 210.36	0.6000	0.6000
T7	15	LDF4-50A(1/2)	190.36 - 210.36	0.6000	0.6000
T8	1	LDF7-50A(1-5/8)	170.36 - 190.36	0.6000	0.6000
T8	2	LightWAVE	170.36 - 190.36	0.6000	0.6000

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<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T8	4	LDF7-50A(1-5/8)	170.36 - 190.36	0.6000	0.6000
T8	5	Feedline Ladder (Af)	170.36 - 190.36	0.6000	0.6000
T8	6	LDF1-50A(1/4")	170.36 - 190.36	0.6000	0.6000
T8	9	WR-VG66ST-BRD(7/8)	170.36 - 190.36	0.6000	0.6000
T8	10	FB-L98-002-XXX(3/8")	170.36 - 190.36	0.6000	0.6000
T8	11	FB-L98-002-XXX(3/8")	170.36 - 190.36	0.6000	0.6000
T8	12	LightWAVE	170.36 - 190.36	0.6000	0.6000
T8	14	LDF4-50A(1/2)	170.36 - 171.00	0.6000	0.6000
T8	15	LDF4-50A(1/2)	171.00 - 190.36	0.6000	0.6000
T9	1	LDF7-50A(1-5/8)	150.36 - 170.36	0.6000	0.6000
T9	2	LightWAVE	150.36 - 170.36	0.6000	0.6000
T9	4	LDF7-50A(1-5/8)	150.36 - 170.36	0.6000	0.6000
T9	5	Feedline Ladder (Af)	150.36 - 170.36	0.6000	0.6000
T9	6	LDF1-50A(1/4")	150.36 - 170.36	0.6000	0.6000
T9	9	WR-VG66ST-BRD(7/8)	150.36 - 170.36	0.6000	0.6000
T9	10	FB-L98-002-XXX(3/8")	150.36 - 170.36	0.6000	0.6000
T9	11	FB-L98-002-XXX(3/8")	150.36 - 170.36	0.6000	0.6000
T9	12	LightWAVE	150.36 - 170.36	0.6000	0.6000
T9	14	LDF4-50A(1/2)	150.36 - 170.36	0.6000	0.6000
T10	1	LDF7-50A(1-5/8)	130.36 - 150.36	0.6000	0.6000
T10	2	LightWAVE	130.36 - 150.36	0.6000	0.6000
T10	4	LDF7-50A(1-5/8)	130.36 - 150.36	0.6000	0.6000
T10	5	Feedline Ladder (Af)	130.36 - 150.36	0.6000	0.6000
T10	6	LDF1-50A(1/4")	130.36 - 150.36	0.6000	0.6000
T10	9	WR-VG66ST-BRD(7/8)	130.36 - 150.36	0.6000	0.6000
T10	10	FB-L98-002-XXX(3/8")	130.36 - 150.36	0.6000	0.6000
T10	11	FB-L98-002-XXX(3/8")	130.36 - 150.36	0.6000	0.6000
T10	12	LightWAVE	130.36 - 150.36	0.6000	0.6000
T10	14	LDF4-50A(1/2)	130.36 - 150.36	0.6000	0.6000
T11	1	LDF7-50A(1-5/8)	110.36 - 130.36	0.6000	0.6000
T11	2	LightWAVE	110.36 - 130.36	0.6000	0.6000

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<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T11	4	LDF7-50A(1-5/8)	110.36 - 130.36	0.6000	0.6000
T11	5	Feedline Ladder (Af)	110.36 - 130.36	0.6000	0.6000
T11	6	LDF1-50A(1/4")	110.36 - 130.36	0.6000	0.6000
T11	9	WR-VG66ST-BRD(7/8)	110.36 - 130.36	0.6000	0.6000
T11	10	FB-L98-002-XXX(3/8")	110.36 - 130.36	0.6000	0.6000
T11	11	FB-L98-002-XXX(3/8")	110.36 - 130.36	0.6000	0.6000
T11	12	LightWAVE	110.36 - 130.36	0.6000	0.6000
T11	14	LDF4-50A(1/2)	110.36 - 130.36	0.6000	0.6000
T12	1	LDF7-50A(1-5/8)	90.36 - 110.36	0.6000	0.6000
T12	2	LightWAVE	90.36 - 110.36	0.6000	0.6000
T12	4	LDF7-50A(1-5/8)	90.36 - 110.36	0.6000	0.6000
T12	5	Feedline Ladder (Af)	90.36 - 110.36	0.6000	0.6000
T12	6	LDF1-50A(1/4")	90.36 - 110.36	0.6000	0.6000
T12	9	WR-VG66ST-BRD(7/8)	90.36 - 110.36	0.6000	0.6000
T12	10	FB-L98-002-XXX(3/8")	90.36 - 110.36	0.6000	0.6000
T12	11	FB-L98-002-XXX(3/8")	90.36 - 110.36	0.6000	0.6000
T12	12	LightWAVE	90.36 - 110.36	0.6000	0.6000
T12	14	LDF4-50A(1/2)	90.36 - 110.36	0.6000	0.6000
T13	1	LDF7-50A(1-5/8)	70.36 - 90.36	0.6000	0.6000
T13	2	LightWAVE	70.36 - 90.36	0.6000	0.6000
T13	4	LDF7-50A(1-5/8)	70.36 - 90.36	0.6000	0.6000
T13	5	Feedline Ladder (Af)	70.36 - 90.36	0.6000	0.6000
T13	6	LDF1-50A(1/4")	70.36 - 90.36	0.6000	0.6000
T13	9	WR-VG66ST-BRD(7/8)	70.36 - 90.36	0.6000	0.6000
T13	10	FB-L98-002-XXX(3/8")	70.36 - 90.36	0.6000	0.6000
T13	11	FB-L98-002-XXX(3/8")	70.36 - 90.36	0.6000	0.6000
T13	12	LightWAVE	70.36 - 90.36	0.6000	0.6000
T13	14	LDF4-50A(1/2)	70.36 - 90.36	0.6000	0.6000
T14	1	LDF7-50A(1-5/8)	50.36 - 70.36	0.6000	0.6000
T14	2	LightWAVE	50.36 - 70.36	0.6000	0.6000
T14	4	LDF7-50A(1-5/8)	50.36 - 70.36	0.6000	0.6000
T14	5	Feedline Ladder (Af)	50.36 - 70.36	0.6000	0.6000
T14	6	LDF1-50A(1/4")	50.36 - 70.36	0.6000	0.6000
T14	9	WR-VG66ST-BRD(7/8)	50.36 - 70.36	0.6000	0.6000
T14	10	FB-L98-002-XXX(3/8")	50.36 - 70.36	0.6000	0.6000
T14	11	FB-L98-002-XXX(3/8")	50.36 - 70.36	0.6000	0.6000
T14	12	LightWAVE	50.36 - 70.36	0.6000	0.6000
T14	14	LDF4-50A(1/2)	50.36 - 70.36	0.6000	0.6000
T15	1	LDF7-50A(1-5/8)	35.18 - 50.36	0.6000	0.6000
T15	2	LightWAVE	35.18 - 50.36	0.6000	0.6000
T15	4	LDF7-50A(1-5/8)	35.18 - 50.36	0.6000	0.6000
T15	5	Feedline Ladder (Af)	35.18 - 50.36	0.6000	0.6000
T15	6	LDF1-50A(1/4")	35.18 - 50.36	0.6000	0.6000
T15	9	WR-VG66ST-BRD(7/8)	35.18 - 50.36	0.6000	0.6000
T15	10	FB-L98-002-XXX(3/8")	35.18 - 50.36	0.6000	0.6000
T15	11	FB-L98-002-XXX(3/8")	35.18 - 50.36	0.6000	0.6000
T15	12	LightWAVE	35.18 - 50.36	0.6000	0.6000
T15	14	LDF4-50A(1/2)	35.18 - 50.36	0.6000	0.6000
T16	1	LDF7-50A(1-5/8)	20.00 - 35.18	0.6000	0.6000
T16	2	LightWAVE	20.00 - 35.18	0.6000	0.6000
T16	4	LDF7-50A(1-5/8)	20.00 - 35.18	0.6000	0.6000
T16	5	Feedline Ladder (Af)	20.00 - 35.18	0.6000	0.6000
T16	6	LDF1-50A(1/4")	20.00 - 35.18	0.6000	0.6000
T16	9	WR-VG66ST-BRD(7/8)	20.00 - 35.18	0.6000	0.6000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T16	10	FB-L98-002-XXX(3/8")	20.00 - 35.18	0.6000	0.6000
T16	11	FB-L98-002-XXX(3/8")	20.00 - 35.18	0.6000	0.6000
T16	12	LightWAVE	20.00 - 35.18	0.6000	0.6000
T16	14	LDF4-50A(1/2)	20.00 - 35.18	0.6000	0.6000
T17	1	LDF7-50A(1-5/8)	4.82 - 20.00	0.6000	0.6000
T17	2	LightWAVE	4.82 - 20.00	0.6000	0.6000
T17	4	LDF7-50A(1-5/8)	4.82 - 20.00	0.6000	0.6000
T17	5	Feedline Ladder (Af)	4.82 - 20.00	0.6000	0.6000
T17	6	LDF1-50A(1/4")	4.82 - 20.00	0.6000	0.6000
T17	9	WR-VG66ST-BRD(7/8)	4.82 - 20.00	0.6000	0.6000
T17	10	FB-L98-002-XXX(3/8")	4.82 - 20.00	0.6000	0.6000
T17	11	FB-L98-002-XXX(3/8")	4.82 - 20.00	0.6000	0.6000
T17	12	LightWAVE	4.82 - 20.00	0.6000	0.6000
T17	14	LDF4-50A(1/2)	4.82 - 20.00	0.6000	0.6000
T18	1	LDF7-50A(1-5/8)	0.00 - 4.82	0.5091	0.5091
T18	2	LightWAVE	0.00 - 4.82	0.5091	0.5091
T18	4	LDF7-50A(1-5/8)	0.00 - 4.82	0.5091	0.5091
T18	5	Feedline Ladder (Af)	0.00 - 4.82	0.5091	0.5091
T18	6	LDF1-50A(1/4")	0.00 - 4.82	0.5091	0.5091
T18	9	WR-VG66ST-BRD(7/8)	0.00 - 4.82	0.5091	0.5091
T18	10	FB-L98-002-XXX(3/8")	0.00 - 4.82	0.5091	0.5091
T18	11	FB-L98-002-XXX(3/8")	0.00 - 4.82	0.5091	0.5091
T18	12	LightWAVE	0.00 - 4.82	0.5091	0.5091
T18	14	LDF4-50A(1/2)	0.00 - 4.82	0.5091	0.5091

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
Climb Leg Extension	A	From Leg	0.000 0' 2'	0.000	330'4-3/8"	No Ice	1.355	1.355	0.025
Flash Beacon Lighting	C	From Leg	0.000 0' 0'	0.000	336'4-3/8"	No Ice	2.700	2.700	0.050
6' x 2" Mount Pipe	C	From Leg	0.000 0' 3'	0.000	330'4-3/8"	No Ice	1.425	1.425	0.022
Side Lighting	A	From Leg	0.500 0' 0'	0.000	171'	No Ice	0.107	0.107	0.005
Side Lighting	B	From Leg	0.500 0' 0'	0.000	171'	No Ice	0.107	0.107	0.005
Side Lighting	C	From Leg	0.500 0' 0'	0.000	171'	No Ice	0.107	0.107	0.005
* RADIO 8843 B2/B66A									
	A	From Leg	4.000 0'	0.000	265'	No Ice	1.644	1.384	0.075

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
RADIO 8843 B2/B66A	B	From Leg	3' 4.000 0'	0.000	265'	No Ice	1.644	1.384	0.075
RADIO 8843 B2/B66A	C	From Leg	3' 4.000 0'	0.000	265'	No Ice	1.644	1.384	0.075
RRUS 4449 B5/B12	A	From Leg	3' 4.000 0'	0.000	265'	No Ice	1.968	1.408	0.071
RRUS 4449 B5/B12	B	From Leg	3' 4.000 0'	0.000	265'	No Ice	1.968	1.408	0.071
RRUS 4449 B5/B12	C	From Leg	3' 4.000 0'	0.000	265'	No Ice	1.968	1.408	0.071
RRUS 4478 B14	A	From Leg	3' 4.000 0'	0.000	265'	No Ice	1.843	1.059	0.060
RRUS 4478 B14	B	From Leg	3' 4.000 0'	0.000	265'	No Ice	1.843	1.059	0.060
RRUS 4478 B14	C	From Leg	3' 4.000 0'	0.000	265'	No Ice	1.843	1.059	0.060
DC6-48-60-18-8C	A	From Leg	3' 4.000 0'	0.000	265'	No Ice	1.145	1.145	0.026
DC6-48-60-18-8C	B	From Leg	3' 4.000 0'	0.000	265'	No Ice	1.145	1.145	0.026
(2) NNH4-85B-R6 w/ Mount Pipe	A	From Leg	3' 4.000 0'	0.000	265'	No Ice	7.551	4.226	0.122
(2) NNH4-85B-R6 w/ Mount Pipe	B	From Leg	3' 4.000 0'	0.000	265'	No Ice	7.551	4.226	0.122
(2) NNH4-85B-R6 w/ Mount Pipe	C	From Leg	3' 4.000 0'	0.000	265'	No Ice	7.551	4.226	0.122
AIR 6472 B77G B77M_20240625 w/ Mount Pipe	A	From Leg	3' 4.000 0'	0.000	265'	No Ice	5.170	2.680	0.082
AIR 6472 B77G B77M_20240625 w/ Mount Pipe	B	From Leg	3' 4.000 0'	0.000	265'	No Ice	5.170	2.680	0.082
AIR 6472 B77G B77M_20240625 w/ Mount Pipe	C	From Leg	3' 4.000 0'	0.000	265'	No Ice	5.170	2.680	0.082
RRUS 32 B30	A	From Leg	3' 4.000 0'	0.000	265'	No Ice	2.731	1.668	0.053
RRUS 32 B30	B	From Leg	3' 4.000 0'	0.000	265'	No Ice	2.731	1.668	0.053
RRUS 32 B30	C	From Leg	3' 4.000 0'	0.000	265'	No Ice	2.731	1.668	0.053

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
DC9-48-60-24-8C-EV_22050 6	A	From Leg	3' 4.000 0'	0.000	265'	No Ice	2.105	2.690	0.019
(2) 10' x 2.875" Mount Pipe	A	From Leg	3' 2.000 0'	0.000	265'	No Ice	2.875	2.875	0.058
(2) 10' x 2.875" Mount Pipe	B	From Leg	0' 2.000 0'	0.000	265'	No Ice	2.875	2.875	0.058
(2) 10' x 2.875" Mount Pipe	C	From Leg	0' 2.000 0'	0.000	265'	No Ice	2.875	2.875	0.058
8' x 2" Mount Pipe	A	From Leg	0' 4.000 0'	0.000	265'	No Ice	1.900	1.900	0.029
8' x 2" Mount Pipe	B	From Leg	0' 4.000 0'	0.000	265'	No Ice	1.900	1.900	0.029
8' x 2" Mount Pipe	C	From Leg	0' 4.000 0'	0.000	265'	No Ice	1.900	1.900	0.029
Sector Mount [SM 503-3] *	C	None	0'	0.000	265'	No Ice	30.430	30.430	1.690

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice+1.0 Guy
3	1.2D+1.0W (pattern 1) 0 deg - No Ice+1.0 Guy
4	1.2D+1.0W (pattern 2) 0 deg - No Ice+1.0 Guy
5	1.2D+1.0W (pattern 3) 0 deg - No Ice+1.0 Guy
6	1.2D+1.0W (pattern 4) 0 deg - No Ice+1.0 Guy
7	1.2D+1.0W (pattern 5) 0 deg - No Ice+1.0 Guy
8	1.2 Dead+1.0 Wind 30 deg - No Ice+1.0 Guy
9	1.2D+1.0W (pattern 1) 30 deg - No Ice+1.0 Guy
10	1.2D+1.0W (pattern 2) 30 deg - No Ice+1.0 Guy
11	1.2D+1.0W (pattern 3) 30 deg - No Ice+1.0 Guy
12	1.2D+1.0W (pattern 4) 30 deg - No Ice+1.0 Guy
13	1.2D+1.0W (pattern 5) 30 deg - No Ice+1.0 Guy
14	1.2 Dead+1.0 Wind 60 deg - No Ice+1.0 Guy
15	1.2D+1.0W (pattern 1) 60 deg - No Ice+1.0 Guy
16	1.2D+1.0W (pattern 2) 60 deg - No Ice+1.0 Guy
17	1.2D+1.0W (pattern 3) 60 deg - No Ice+1.0 Guy
18	1.2D+1.0W (pattern 4) 60 deg - No Ice+1.0 Guy
19	1.2D+1.0W (pattern 5) 60 deg - No Ice+1.0 Guy
20	1.2 Dead+1.0 Wind 90 deg - No Ice+1.0 Guy
21	1.2D+1.0W (pattern 1) 90 deg - No Ice+1.0 Guy
22	1.2D+1.0W (pattern 2) 90 deg - No Ice+1.0 Guy

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Comb. No.	Description
23	1.2D+1.0W (pattern 3) 90 deg - No Ice+1.0 Guy
24	1.2D+1.0W (pattern 4) 90 deg - No Ice+1.0 Guy
25	1.2D+1.0W (pattern 5) 90 deg - No Ice+1.0 Guy
26	1.2 Dead+1.0 Wind 120 deg - No Ice+1.0 Guy
27	1.2D+1.0W (pattern 1) 120 deg - No Ice+1.0 Guy
28	1.2D+1.0W (pattern 2) 120 deg - No Ice+1.0 Guy
29	1.2D+1.0W (pattern 3) 120 deg - No Ice+1.0 Guy
30	1.2D+1.0W (pattern 4) 120 deg - No Ice+1.0 Guy
31	1.2D+1.0W (pattern 5) 120 deg - No Ice+1.0 Guy
32	1.2 Dead+1.0 Wind 150 deg - No Ice+1.0 Guy
33	1.2D+1.0W (pattern 1) 150 deg - No Ice+1.0 Guy
34	1.2D+1.0W (pattern 2) 150 deg - No Ice+1.0 Guy
35	1.2D+1.0W (pattern 3) 150 deg - No Ice+1.0 Guy
36	1.2D+1.0W (pattern 4) 150 deg - No Ice+1.0 Guy
37	1.2D+1.0W (pattern 5) 150 deg - No Ice+1.0 Guy
38	1.2 Dead+1.0 Wind 180 deg - No Ice+1.0 Guy
39	1.2D+1.0W (pattern 1) 180 deg - No Ice+1.0 Guy
40	1.2D+1.0W (pattern 2) 180 deg - No Ice+1.0 Guy
41	1.2D+1.0W (pattern 3) 180 deg - No Ice+1.0 Guy
42	1.2D+1.0W (pattern 4) 180 deg - No Ice+1.0 Guy
43	1.2D+1.0W (pattern 5) 180 deg - No Ice+1.0 Guy
44	1.2 Dead+1.0 Wind 210 deg - No Ice+1.0 Guy
45	1.2D+1.0W (pattern 1) 210 deg - No Ice+1.0 Guy
46	1.2D+1.0W (pattern 2) 210 deg - No Ice+1.0 Guy
47	1.2D+1.0W (pattern 3) 210 deg - No Ice+1.0 Guy
48	1.2D+1.0W (pattern 4) 210 deg - No Ice+1.0 Guy
49	1.2D+1.0W (pattern 5) 210 deg - No Ice+1.0 Guy
50	1.2 Dead+1.0 Wind 240 deg - No Ice+1.0 Guy
51	1.2D+1.0W (pattern 1) 240 deg - No Ice+1.0 Guy
52	1.2D+1.0W (pattern 2) 240 deg - No Ice+1.0 Guy
53	1.2D+1.0W (pattern 3) 240 deg - No Ice+1.0 Guy
54	1.2D+1.0W (pattern 4) 240 deg - No Ice+1.0 Guy
55	1.2D+1.0W (pattern 5) 240 deg - No Ice+1.0 Guy
56	1.2 Dead+1.0 Wind 270 deg - No Ice+1.0 Guy
57	1.2D+1.0W (pattern 1) 270 deg - No Ice+1.0 Guy
58	1.2D+1.0W (pattern 2) 270 deg - No Ice+1.0 Guy
59	1.2D+1.0W (pattern 3) 270 deg - No Ice+1.0 Guy
60	1.2D+1.0W (pattern 4) 270 deg - No Ice+1.0 Guy
61	1.2D+1.0W (pattern 5) 270 deg - No Ice+1.0 Guy
62	1.2 Dead+1.0 Wind 300 deg - No Ice+1.0 Guy
63	1.2D+1.0W (pattern 1) 300 deg - No Ice+1.0 Guy
64	1.2D+1.0W (pattern 2) 300 deg - No Ice+1.0 Guy
65	1.2D+1.0W (pattern 3) 300 deg - No Ice+1.0 Guy
66	1.2D+1.0W (pattern 4) 300 deg - No Ice+1.0 Guy
67	1.2D+1.0W (pattern 5) 300 deg - No Ice+1.0 Guy
68	1.2 Dead+1.0 Wind 330 deg - No Ice+1.0 Guy
69	1.2D+1.0W (pattern 1) 330 deg - No Ice+1.0 Guy
70	1.2D+1.0W (pattern 2) 330 deg - No Ice+1.0 Guy
71	1.2D+1.0W (pattern 3) 330 deg - No Ice+1.0 Guy
72	1.2D+1.0W (pattern 4) 330 deg - No Ice+1.0 Guy
73	1.2D+1.0W (pattern 5) 330 deg - No Ice+1.0 Guy
74	Dead+Wind 0 deg - Service+Guy
75	Dead+Wind 30 deg - Service+Guy
76	Dead+Wind 60 deg - Service+Guy
77	Dead+Wind 90 deg - Service+Guy
78	Dead+Wind 120 deg - Service+Guy
79	Dead+Wind 150 deg - Service+Guy
80	Dead+Wind 180 deg - Service+Guy
81	Dead+Wind 210 deg - Service+Guy
82	Dead+Wind 240 deg - Service+Guy
83	Dead+Wind 270 deg - Service+Guy
84	Dead+Wind 300 deg - Service+Guy

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Comb. No.	Description
85	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	330.365 - 310.365	Leg	Max Tension	41	3.673	-0.032	0.161
			Max. Compression	19	-8.683	-0.331	-0.013
			Max. Mx	58	-3.492	0.583	-0.004
			Max. My	70	-7.794	0.253	0.546
			Max. Vy	58	1.544	0.583	-0.004
			Max. Vx	4	1.404	-0.195	0.446
		Diagonal	Max Tension	34	2.704	0.000	0.000
			Max. Compression	70	-2.701	0.000	0.000
			Max. Mx	7	2.153	0.003	0.000
			Max. My	49	1.173	0.000	0.000
			Max. Vy	7	-0.003	0.000	0.000
			Max. Vx	49	-0.000	0.000	0.000
		Top Girt	Max Tension	41	0.162	0.000	0.000
			Max. Compression	3	-0.169	0.000	0.000
			Max. Mx	50	0.084	0.003	0.000
			Max. My	13	-0.134	0.000	0.000
			Max. Vy	50	-0.004	0.000	0.000
			Max. Vx	13	-0.000	0.000	0.000
		Bottom Girt	Max Tension	17	0.630	0.000	0.000
			Max. Compression	52	-0.578	0.000	0.000
			Max. Mx	30	0.191	0.003	0.000
			Max. My	13	-0.446	0.000	0.000
			Max. Vy	30	-0.004	0.000	0.000
			Max. Vx	13	-0.000	0.000	0.000
		Guy A	Bottom Tension	41	11.988		
			Top Tension	41	12.241		
			Top Cable Vert	41	9.572		
			Top Cable Norm	41	7.630		
			Top Cable Tan	41	0.000		
			Bot Cable Vert	41	-8.908		
			Bot Cable Norm	41	8.023		
			Bot Cable Tan	41	0.000		
		Guy B	Bottom Tension	65	11.995		
			Top Tension	65	12.248		
			Top Cable Vert	65	9.577		
			Top Cable Norm	65	7.635		
			Top Cable Tan	65	0.000		
			Bot Cable Vert	65	-8.913		
			Bot Cable Norm	65	8.028		
			Bot Cable Tan	65	0.000		
		Guy C	Bottom Tension	17	11.999		
			Top Tension	17	12.252		
			Top Cable Vert	17	9.581		
			Top Cable Norm	17	7.637		
			Top Cable Tan	17	0.000		
			Bot Cable Vert	17	-8.917		
			Bot Cable Norm	17	8.030		
			Bot Cable Tan	17	0.000		
		Top Guy Pull-Off	Max Tension	17	4.400	0.000	0.000
			Max. Compression	1	0.000	0.000	0.000
			Max. Mx	64	1.472	0.012	0.000

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T2	310.365 - 290.365	Leg	Max. My	13	1.385	0.000	0.000
			Max. Vy	64	-0.014	0.000	0.000
			Max. Vx	13	-0.000	0.000	0.000
			Max Tension	31	13.619	-0.244	-0.137
		Diagonal	Max. Compression	19	-22.608	-0.212	0.107
			Max. Mx	58	-3.496	-0.541	0.119
			Max. My	4	-2.896	0.024	-0.576
			Max. Vy	58	1.543	0.407	0.015
			Max. Vx	4	1.403	-0.161	0.285
			Max Tension	70	1.254	0.000	0.000
			Max. Compression	34	-1.545	0.000	0.000
			Max. Mx	7	0.895	0.003	0.000
			Max. My	49	0.367	0.000	0.000
			Max. Vy	7	-0.003	0.000	0.000
			Max. Vx	49	-0.000	0.000	0.000
		Secondary Horizontal	Max Tension	28	0.702	0.000	0.000
		Top Girt	Max. Compression	49	-0.195	0.000	0.000
			Max. Mx	29	0.475	0.005	0.000
			Max. My	49	0.033	0.000	0.000
			Max. Vy	29	-0.006	0.000	0.000
			Max. Vx	49	-0.000	0.000	0.000
			Max Tension	4	0.534	0.000	0.000
			Max. Compression	40	-0.376	0.000	0.000
			Max. Mx	30	-0.070	0.003	0.000
			Max. My	49	0.400	0.000	0.000
			Max. Vy	30	-0.004	0.000	0.000
			Max. Vx	49	-0.000	0.000	0.000
			Max Tension	28	0.548	0.000	0.000
			Max. Compression	43	-0.218	0.000	0.000
			Max. Mx	29	0.490	0.003	0.000
			Max. My	49	0.067	0.000	0.000
			Max. Vy	29	-0.004	0.000	0.000
			Max. Vx	49	-0.000	0.000	0.000
T3	290.365 - 270.365	Leg	Max Tension	28	20.193	-0.037	-0.012
			Max. Compression	40	-27.347	-0.008	-0.103
			Max. Mx	10	-22.126	-0.390	0.121
			Max. My	41	-23.890	-0.008	-0.424
		Diagonal	Max. Vy	52	0.722	0.174	-0.081
			Max. Vx	4	0.804	0.016	0.195
			Max Tension	4	0.751	0.000	0.000
			Max. Compression	52	-0.974	0.000	0.000
			Max. Mx	7	0.594	0.003	0.000
			Max. My	49	-0.250	0.000	0.000
			Max. Vy	7	-0.003	0.000	0.000
			Max. Vx	49	-0.000	0.000	0.000
		Secondary Horizontal	Max Tension	28	0.977	0.000	0.000
		Top Girt	Max. Compression	43	-0.358	0.000	0.000
			Max. Mx	26	0.636	0.005	0.000
			Max. My	49	0.060	0.000	0.000
			Max. Vy	26	-0.006	0.000	0.000
			Max. Vx	49	-0.000	0.000	0.000
			Max Tension	31	0.323	0.000	0.000
			Max. Compression	49	-0.047	0.000	0.000
			Max. Mx	28	0.321	0.003	0.000
			Max. My	49	0.088	0.000	0.000
			Max. Vy	28	-0.004	0.000	0.000
			Max. Vx	49	-0.000	0.000	0.000

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T4	270.365 - 250.365	Bottom Girt	Max Tension	28	0.422	0.000	0.000
			Max. Compression	40	-0.189	0.000	0.000
			Max. Mx	44	0.335	0.003	0.000
			Max. My	48	0.058	0.000	0.000
			Max. Vy	44	-0.004	0.000	0.000
			Max. Vx	48	-0.000	0.000	0.000
		Leg	Max Tension	28	20.499	0.064	0.046
			Max. Compression	40	-27.512	-0.016	0.004
			Max. Mx	63	-21.821	0.983	0.512
			Max. My	42	-18.274	-0.029	-1.123
			Max. Vy	24	-1.993	-0.952	0.366
			Max. Vx	42	-2.262	-0.029	-1.123
		Diagonal	Max Tension	33	2.228	0.000	0.000
			Max. Compression	16	-3.178	0.000	0.000
			Max. Mx	6	0.019	0.003	0.000
			Max. My	12	-0.313	0.000	-0.000
			Max. Vy	6	-0.003	0.000	0.000
			Max. Vx	12	0.000	0.000	0.000
		Top Girt	Max Tension	28	0.541	0.000	0.000
			Max. Compression	43	-0.169	0.000	0.000
			Max. Mx	31	0.532	0.003	0.000
			Max. My	48	0.122	0.000	0.000
			Max. Vy	31	-0.004	0.000	0.000
			Max. Vx	48	-0.000	0.000	0.000
		Bottom Girt	Max Tension	28	1.260	0.000	0.000
			Max. Compression	40	-0.042	0.000	0.000
			Max. Mx	30	0.729	0.003	0.000
			Max. My	48	0.705	0.000	0.000
			Max. Vy	30	-0.004	0.000	0.000
			Max. Vx	48	-0.000	0.000	0.000
		Guy A	Bottom Tension	39	11.110		
			Top Tension	39	11.240		
			Top Cable Vert	39	7.905		
			Top Cable Norm	39	7.990		
			Top Cable Tan	39	0.002		
			Bot Cable Vert	39	-7.508		
		Guy B	Bot Cable Norm	39	8.189		
			Bot Cable Tan	39	0.003		
			Bottom Tension	63	11.016		
			Top Tension	63	11.146		
			Top Cable Vert	63	7.841		
			Top Cable Norm	63	7.922		
		Guy C	Top Cable Tan	63	0.002		
			Bot Cable Vert	63	-7.444		
			Bot Cable Norm	63	8.121		
			Bot Cable Tan	63	0.003		
			Bottom Tension	15	10.925		
			Top Tension	15	11.055		
		Top Guy Pull-Off	Top Cable Vert	15	7.778		
			Top Cable Norm	15	7.856		
			Top Cable Tan	15	0.002		
			Bot Cable Vert	15	-7.381		
			Bot Cable Norm	15	8.055		
			Bot Cable Tan	15	0.003		
			Max Tension	39	6.443	0.000	0.000
			Max. Compression	3	-4.269	0.000	0.000
			Max. Mx	30	-3.504	0.012	0.000
			Max. My	48	0.810	0.000	0.000
			Max. Vy	30	-0.014	0.000	0.000
			Max. Vx	48	-0.000	0.000	0.000

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T5	250.365 - 230.365	Torque Arm Top	Max Tension	33	8.414	-3.438	0.000
			Max. Compression	33	-3.567	-25.934	-0.000
			Max. Mx	39	-2.400	-26.528	-0.000
			Max. My	48	4.833	-12.681	-0.000
			Max. Vy	39	7.837	-26.528	-0.000
			Max. Vx	48	-0.000	-12.681	-0.000
		Leg	Max Tension	4	12.226	0.036	0.027
			Max. Compression	40	-40.340	0.035	-0.112
			Max. Mx	63	-21.821	0.760	0.398
			Max. My	39	-21.973	-0.016	-0.869
			Max. Vy	24	-2.004	-0.724	0.303
			Max. Vx	42	-2.277	-0.022	-0.864
		Diagonal	Max Tension	24	1.581	0.000	0.000
			Max. Compression	24	-2.135	0.000	0.000
			Max. Mx	6	1.276	0.003	0.000
			Max. My	12	0.635	0.000	-0.000
			Max. Vy	6	-0.003	0.000	0.000
			Max. Vx	12	0.000	0.000	0.000
		Top Girt	Max Tension	42	0.685	0.000	0.000
			Max. Compression	1	0.000	0.000	0.000
			Max. Mx	30	0.432	0.003	0.000
			Max. My	48	0.387	0.000	0.000
			Max. Vy	30	-0.004	0.000	0.000
			Max. Vx	48	-0.000	0.000	0.000
		Bottom Girt	Max Tension	51	0.526	0.000	0.000
			Max. Compression	36	-0.123	0.000	0.000
			Max. Mx	29	0.246	0.003	0.000
			Max. My	12	-0.114	0.000	-0.000
			Max. Vy	29	-0.004	0.000	0.000
			Max. Vx	12	0.000	0.000	0.000
T6	230.365 - 210.365	Leg	Max Tension	4	12.853	0.041	-0.094
			Max. Compression	40	-41.527	0.083	0.090
			Max. Mx	67	-35.089	-0.381	-0.222
			Max. My	43	-35.445	0.008	0.427
			Max. Vy	58	-0.823	-0.248	0.003
			Max. Vx	4	-0.901	0.095	-0.292
		Diagonal	Max Tension	70	1.293	0.000	0.000
			Max. Compression	28	-1.455	0.000	0.000
			Max. Mx	46	1.208	0.003	0.000
			Max. My	10	0.483	0.000	-0.000
			Max. Vy	46	-0.003	0.000	0.000
			Max. Vx	10	0.000	0.000	0.000
		Top Girt	Max Tension	60	0.487	0.000	0.000
			Max. Compression	24	-0.274	0.000	0.000
			Max. Mx	29	0.172	0.003	0.000
			Max. My	12	-0.114	0.000	-0.000
			Max. Vy	29	-0.004	0.000	0.000
			Max. Vx	12	0.000	0.000	0.000
		Bottom Girt	Max Tension	31	0.304	0.000	0.000
			Max. Compression	67	-0.240	0.000	0.000
			Max. Mx	31	-0.006	0.003	0.000
			Max. My	10	0.262	0.000	-0.000
			Max. Vy	31	-0.004	0.000	0.000
			Max. Vx	10	0.000	0.000	0.000
T7	210.365 - 190.365	Leg	Max Tension	3	7.953	0.087	-0.268
			Max. Compression	40	-37.800	0.216	-0.151
			Max. Mx	25	-24.329	-0.642	0.084
			Max. My	4	-13.125	-0.149	-0.638

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T8	190.365 - 170.365	Diagonal	Max. Vy	22	1.987	0.381	-0.101
			Max. Vx	43	2.060	-0.074	0.345
			Max Tension	70	3.357	0.000	0.000
			Max. Compression	34	-3.467	0.000	0.000
			Max. Mx	70	3.357	0.003	0.000
		Top Girt	Max. My	10	1.607	0.000	-0.000
			Max. Vy	70	-0.003	0.000	0.000
			Max. Vx	10	0.000	0.000	0.000
			Max Tension	67	0.442	0.000	0.000
			Max. Compression	28	-0.304	0.000	0.000
		Bottom Girt	Max. Mx	31	0.250	0.003	0.000
			Max. My	10	-0.212	0.000	-0.000
			Max. Vy	31	-0.004	0.000	0.000
			Max. Vx	10	0.000	0.000	0.000
			Max Tension	28	1.059	0.000	0.000
		Leg	Max. Compression	70	-0.845	0.000	0.000
			Max. Mx	31	-0.098	0.003	0.000
			Max. My	10	0.929	0.000	-0.000
			Max. Vy	31	-0.004	0.000	0.000
			Max. Vx	10	0.000	0.000	0.000
		Diagonal	Max Tension	43	14.486	0.007	0.465
			Max. Compression	5	-47.606	0.017	-0.182
			Max. Mx	20	-12.169	-1.521	0.242
			Max. My	39	-7.732	0.144	-1.502
			Max. Vy	23	-2.957	-1.515	0.236
		Diagonal	Max. Vx	39	-2.776	0.144	-1.502
			Max Tension	34	2.472	0.000	0.000
			Max. Compression	2	-4.541	0.000	0.000
			Max. Mx	34	1.800	0.003	0.000
			Max. My	46	0.684	0.000	0.000
		Top Girt	Max. Vy	34	-0.003	0.000	0.000
			Max. Vx	46	-0.000	0.000	0.000
			Max Tension	70	0.781	0.000	0.000
			Max. Compression	4	-0.355	0.000	0.000
			Max. Mx	31	0.651	0.003	0.000
		Bottom Girt	Max. My	10	0.468	0.000	-0.000
			Max. Vy	31	-0.004	0.000	0.000
			Max. Vx	10	0.000	0.000	0.000
			Max Tension	69	1.619	0.000	0.000
			Max. Compression	1	0.000	0.000	0.000
		Guy A	Max. Mx	71	0.407	0.003	0.000
			Max. My	10	0.790	0.000	-0.000
			Max. Vy	71	-0.004	0.000	0.000
			Max. Vx	10	0.000	0.000	0.000
			Bottom Tension	37	12.024		
		Guy B	Top Tension	37	12.112		
			Top Cable Vert	37	9.257		
			Top Cable Norm	37	7.811		
			Top Cable Tan	37	0.016		
			Bot Cable Vert	37	-9.017		
			Bot Cable Norm	37	7.954		
			Bot Cable Tan	37	0.120		
			Bottom Tension	73	12.019		
			Top Tension	73	12.107		
			Top Cable Vert	73	9.253		
			Top Cable Norm	73	7.807		
			Top Cable Tan	73	0.016		
			Bot Cable Vert	73	-9.013		
			Bot Cable Norm	73	7.951		
			Bot Cable Tan	73	0.120		

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T9	170.365 - 150.365	Guy C	Bottom Tension	25	11.624		
			Top Tension	25	11.711		
			Top Cable Vert	25	8.955		
			Top Cable Norm	25	7.548		
			Top Cable Tan	25	0.020		
			Bot Cable Vert	25	-8.714		
			Bot Cable Norm	25	7.691		
			Bot Cable Tan	25	0.116		
		Top Guy Pull-Off	Max Tension	43	8.529	0.000	0.000
			Max. Compression	7	-5.071	0.000	0.000
			Max. Mx	28	-3.979	0.012	0.000
			Max. My	10	1.463	0.000	-0.000
			Max. Vy	28	-0.014	0.000	0.000
			Max. Vx	10	0.000	0.000	0.000
		Torque Arm Top	Max Tension	37	8.666	0.000	0.000
			Max. Compression	37	-4.105	0.000	0.000
			Max. Mx	73	0.040	-30.502	0.000
			Max. My	10	-1.330	-13.592	0.000
			Max. Vy	73	9.000	-30.502	0.000
			Max. Vx	10	0.000	-13.592	0.000
		Leg	Max Tension	1	0.000	0.000	0.000
			Max. Compression	4	-47.442	0.157	0.026
			Max. Mx	20	-12.168	-1.190	0.177
			Max. My	39	-7.730	0.106	-1.184
			Max. Vy	23	-2.961	-1.177	0.176
			Max. Vx	39	-2.781	0.106	-1.184
		Diagonal	Max Tension	71	3.529	0.000	0.000
			Max. Compression	35	-3.748	0.000	0.000
			Max. Mx	34	-1.916	0.003	0.000
			Max. My	10	-0.952	0.000	-0.000
			Max. Vy	34	-0.003	0.000	0.000
			Max. Vx	10	0.000	0.000	0.000
		Top Girt	Max Tension	53	1.768	0.000	0.000
			Max. Compression	17	-0.326	0.000	0.000
			Max. Mx	29	0.238	0.003	0.000
			Max. My	10	1.057	0.000	-0.000
			Max. Vy	29	-0.004	0.000	0.000
		Bottom Girt	Max. Vx	10	0.000	0.000	0.000
			Max Tension	39	0.466	0.000	0.000
			Max. Compression	5	-0.351	0.000	0.000
			Max. Mx	53	0.281	0.003	0.000
			Max. My	10	-0.074	0.000	-0.000
T10	150.365 - 130.365	Leg	Max. Vy	53	-0.004	0.000	0.000
			Max. Vx	10	0.000	0.000	0.000
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	33	-40.051	-0.041	-0.085
			Max. Mx	23	-29.773	0.445	-0.144
		Diagonal	Max. My	39	-30.104	0.024	0.434
			Max. Vy	59	1.270	0.360	-0.128
			Max. Vx	71	1.109	0.028	0.367
			Max Tension	71	1.778	0.000	0.000
			Max. Compression	35	-2.041	0.000	0.000
		Top Girt	Max. Mx	3	0.190	0.003	0.000
			Max. My	9	0.002	0.000	-0.000
			Max. Vy	3	-0.003	0.000	0.000
			Max. Vx	9	0.000	0.000	0.000
			Max Tension	5	0.457	0.000	0.000
		Top Girt	Max. Compression	71	-0.252	0.000	0.000
			Max. Mx	53	-0.057	0.003	0.000

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T11	130.365 - 110.365	Bottom Girt	Max. My	10	0.228	0.000	-0.000
			Max. Vy	53	-0.004	0.000	0.000
			Max. Vx	10	0.000	0.000	0.000
			Max Tension	23	0.148	0.000	0.000
			Max. Compression	1	0.000	0.000	0.000
			Max. Mx	53	0.131	0.003	0.000
		Leg	Max. My	9	0.121	0.000	-0.000
			Max. Vy	53	-0.004	0.000	0.000
			Max. Vx	9	0.000	0.000	0.000
			Max Tension	1	0.000	0.000	0.000
		Diagonal	Max. Compression	4	-40.564	0.111	0.024
			Max. Mx	51	-34.045	0.471	0.051
			Max. My	6	-24.399	-0.125	-0.462
			Max. Vy	24	1.382	0.261	-0.129
			Max. Vx	42	1.380	0.005	0.249
			Max Tension	72	2.021	0.000	0.000
		Top Girt	Max. Compression	36	-2.197	0.000	0.000
			Max. Mx	3	1.940	0.003	0.000
			Max. My	9	0.963	0.000	-0.000
			Max. Vy	3	-0.003	0.000	0.000
			Max. Vx	9	0.000	0.000	0.000
			Max Tension	36	0.222	0.000	0.000
		Bottom Girt	Max. Compression	54	-0.051	0.000	0.000
			Max. Mx	53	0.117	0.003	0.000
			Max. My	9	0.010	0.000	-0.000
			Max. Vy	53	-0.004	0.000	0.000
			Max. Vx	9	0.000	0.000	0.000
			Max Tension	51	0.811	0.000	0.000
T12	110.365 - 90.3646	Leg	Max. Compression	72	-0.458	0.000	0.000
			Max. Mx	29	0.086	0.003	0.000
			Max. My	9	0.663	0.000	-0.000
			Max. Vy	29	-0.004	0.000	0.000
			Max. Vx	9	0.000	0.000	0.000
			Max Tension	1	0.000	0.000	0.000
		Diagonal	Max. Compression	3	-52.551	0.037	-0.142
			Max. Mx	20	-24.910	-1.903	0.375
			Max. My	38	-18.266	0.195	-1.894
			Max. Vy	20	-3.694	-1.903	0.375
			Max. Vx	38	-3.602	0.195	-1.894
			Max Tension	33	1.972	0.000	0.000
		Top Girt	Max. Compression	68	-5.522	0.000	0.000
			Max. Mx	3	1.344	0.003	0.000
			Max. My	45	0.180	0.000	0.000
			Max. Vy	3	-0.003	0.000	0.000
			Max. Vx	45	-0.000	0.000	0.000
			Max Tension	72	0.711	0.000	0.000
		Bottom Girt	Max. Compression	12	-0.037	0.000	0.000
			Max. Mx	29	0.585	0.003	0.000
			Max. My	45	0.159	0.000	-0.000
			Max. Vy	29	-0.004	0.000	0.000
			Max. Vx	45	0.000	0.000	0.000
			Max Tension	68	1.872	0.000	0.000
		Guy A	Max. Compression	1	0.000	0.000	0.000
			Max. Mx	64	0.618	0.003	0.000
			Max. My	45	0.634	0.000	-0.000
			Max. Vy	64	-0.004	0.000	0.000
			Max. Vx	45	0.000	0.000	0.000
			Bottom Tension	36	8.131		
			Top Tension	36	8.156		

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T13	90.3646 - 70.3646	Guy B	Top Cable Vert	36	4.356		
			Top Cable Norm	36	6.895		
			Top Cable Tan	36	0.008		
			Bot Cable Vert	36	-4.262		
			Bot Cable Norm	36	6.924		
			Bot Cable Tan	36	0.064		
			Bottom Tension	72	8.131		
			Top Tension	72	8.156		
			Top Cable Vert	72	4.356		
			Top Cable Norm	72	6.895		
			Top Cable Tan	72	0.008		
			Bot Cable Vert	72	-4.262		
		Guy C	Bot Cable Norm	72	6.924		
			Bot Cable Tan	72	0.064		
			Bottom Tension	24	7.817		
			Top Tension	24	7.842		
			Top Cable Vert	24	4.191		
			Top Cable Norm	24	6.628		
			Top Cable Tan	24	0.004		
			Bot Cable Vert	24	-4.097		
			Bot Cable Norm	24	6.657		
			Bot Cable Tan	24	0.060		
		Top Guy Pull-Off	Max Tension	42	8.246	0.000	0.000
			Max. Compression	6	-4.009	0.000	0.000
			Max. Mx	64	6.836	0.012	0.000
			Max. My	45	2.263	0.000	-0.000
			Max. Vy	64	-0.014	0.000	0.000
			Max. Vx	45	0.000	0.000	0.000
		Torque Arm Top	Max Tension	72	7.834	-2.059	0.000
			Max. Compression	36	-3.943	0.000	0.000
			Max. Mx	72	-0.090	-14.540	0.000
			Max. My	45	-1.389	-5.463	-0.000
			Max. Vy	72	4.329	-14.540	0.000
			Max. Vx	45	-0.000	-5.463	-0.000
		Leg	Max Tension	1	0.000	0.000	0.000
			Max. Compression	35	-53.586	0.206	-0.080
			Max. Mx	20	-24.908	-1.480	0.276
			Max. My	38	-18.264	0.146	-1.481
			Max. Vy	20	-3.713	-1.480	0.276
			Max. Vx	38	-3.616	0.146	-1.481
		Diagonal	Max Tension	68	4.217	0.000	0.000
			Max. Compression	32	-4.494	0.000	0.000
			Max. Mx	3	-2.222	0.003	0.000
			Max. My	9	-1.222	0.000	-0.000
			Max. Vy	3	-0.003	0.000	0.000
			Max. Vx	9	0.000	0.000	0.000
		Top Girt	Max Tension	2	2.174	0.000	0.000
			Max. Compression	42	-0.320	0.000	0.000
			Max. Mx	64	1.242	0.003	0.000
			Max. My	9	1.480	0.000	-0.000
			Max. Vy	64	-0.004	0.000	0.000
			Max. Vx	9	0.000	0.000	0.000
		Bottom Girt	Max Tension	38	0.747	0.000	0.000
			Max. Compression	2	-0.500	0.000	0.000
			Max. Mx	64	-0.207	0.003	0.000
			Max. My	45	0.421	0.000	-0.000
			Max. Vy	64	-0.004	0.000	0.000
			Max. Vx	45	0.000	0.000	0.000
T14	70.3646 - 50.3646	Leg	Max Tension	5	3.490	0.036	0.038

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T15	50.3646 - 35.1823	Diagonal	Max. Compression	35	-66.575	0.236	0.174
			Max. Mx	20	-51.108	0.666	-0.256
			Max. My	38	-48.539	-0.003	0.709
			Max. Vy	56	1.741	0.421	-0.142
			Max. Vx	2	1.585	0.001	0.419
			Max Tension	68	2.559	0.000	0.000
			Max. Compression	32	-2.906	0.000	0.000
			Max. Mx	6	-0.828	0.003	0.000
			Max. My	12	-0.433	0.000	-0.000
			Max. Vy	6	-0.003	0.000	0.000
		Top Girt	Max. Vx	12	0.000	0.000	0.000
			Max Tension	2	0.619	0.000	0.000
			Max. Compression	38	-0.471	0.000	0.000
			Max. Mx	64	0.314	0.003	0.000
			Max. My	45	-0.199	0.000	-0.000
		Bottom Girt	Max. Vy	64	-0.004	0.000	0.000
			Max. Vx	45	0.000	0.000	0.000
			Max Tension	38	0.341	0.000	0.000
			Max. Compression	4	-0.108	0.000	0.000
			Max. Mx	65	-0.044	0.003	0.000
			Max. My	48	0.272	0.000	-0.000
			Max. Vy	65	-0.004	0.000	0.000
			Max. Vx	48	0.000	0.000	0.000
		Leg	Max Tension	5	3.853	0.010	-0.224
			Max. Compression	32	-67.877	0.080	0.125
T16	35.1823 - 20	Diagonal	Max. Mx	59	-64.251	-0.416	0.030
			Max. My	38	-63.956	0.121	0.413
			Max. Vy	53	-0.680	-0.258	-0.016
			Max. Vx	5	-0.624	-0.301	-0.137
			Max Tension	5	0.794	0.000	0.000
			Max. Compression	53	-1.074	0.000	0.000
			Max. Mx	72	0.537	0.003	0.000
			Max. My	6	-0.054	0.000	-0.000
			Max. Vy	72	-0.003	0.000	0.000
			Max. Vx	6	0.000	0.000	0.000
		Top Girt	Max Tension	3	0.230	0.000	0.000
			Max. Compression	49	-0.037	0.000	0.000
			Max. Mx	17	0.129	0.003	0.000
			Max. My	48	-0.036	0.000	-0.000
			Max. Vy	17	-0.004	0.000	0.000
		Bottom Girt	Max. Vx	48	0.000	0.000	0.000
			Max Tension	53	0.247	0.000	0.000
			Max. Compression	71	-0.088	0.000	0.000
			Max. Mx	64	0.116	0.003	0.000
			Max. My	48	0.012	0.000	-0.000
			Max. Vy	64	-0.004	0.000	0.000
			Max. Vx	48	0.000	0.000	0.000
			Max Tension	5	1.226	0.114	-0.213
		Diagonal	Max. Compression	32	-66.976	0.211	0.143
			Max. Mx	23	-56.123	0.626	-0.241
			Max. My	5	-9.357	-0.118	-0.608
			Max. Vy	59	-1.538	-0.432	-0.089
			Max. Vx	5	-1.384	0.184	-0.353
			Max Tension	71	2.182	0.000	0.000
			Max. Compression	35	-2.444	0.000	0.000
			Max. Mx	71	2.182	0.003	0.000
			Max. My	5	0.005	0.000	-0.000
			Max. Vy	71	-0.003	0.000	0.000
		Top Girt	Max. Vx	5	0.000	0.000	0.000
			Max Tension	11	0.388	0.000	0.000

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T17	20 - 4.81771	Bottom Girt	Max. Compression	71	-0.178	0.000	0.000
			Max. Mx	64	-0.056	0.003	0.000
			Max. My	48	0.215	0.000	-0.000
			Max. Vy	64	-0.004	0.000	0.000
			Max. Vx	48	0.000	0.000	0.000
			Max Tension	53	0.531	0.000	0.000
			Max. Compression	71	-0.369	0.000	0.000
			Max. Mx	28	-0.029	0.003	0.000
			Max. My	47	-0.248	0.000	-0.000
			Max. Vy	28	-0.004	0.000	0.000
			Max. Vx	47	0.000	0.000	0.000
			Max Tension	1	0.000	0.000	0.000
		Leg	Max. Compression	32	-59.128	0.199	-0.119
			Max. Mx	59	-42.513	1.490	0.188
			Max. My	5	-28.138	0.181	1.540
			Max. Vy	20	4.574	-1.062	0.206
			Max. Vx	32	4.459	-0.603	-1.421
			Max Tension	71	2.903	0.000	0.000
		Diagonal	Max. Compression	71	-2.970	0.000	0.000
			Max. Mx	71	2.137	0.003	0.000
			Max. My	5	0.199	0.000	-0.000
			Max. Vy	71	-0.003	0.000	0.000
			Max. Vx	5	0.000	0.000	0.000
			Max Tension	17	0.624	0.000	0.000
		Top Girt	Max. Compression	53	-0.426	0.000	0.000
			Max. Mx	26	0.346	0.003	0.000
			Max. My	47	0.490	0.000	-0.000
			Max. Vy	26	-0.004	0.000	0.000
			Max. Vx	47	0.000	0.000	0.000
			Max Tension	2	2.201	0.000	0.000
		Bottom Girt	Max. Compression	1	0.000	0.000	0.000
			Max. Mx	28	2.050	0.003	0.000
			Max. My	11	1.430	0.000	-0.000
			Max. Vy	28	-0.004	0.000	0.000
			Max. Vx	11	0.000	0.000	0.000
			Max Tension	1	0.000	0.000	0.000
T18	4.81771 - 0	Leg	Max. Compression	68	-47.424	0.213	0.188
			Max. Mx	5	-35.175	-0.919	0.171
			Max. My	11	-37.997	-0.185	0.893
			Max. Vy	5	1.198	-0.919	0.171
			Max. Vx	11	-0.897	-0.185	0.893
		Horizontal	Max Tension	68	6.968	-0.288	0.159
			Max. Compression	71	-0.345	0.781	-0.325
			Max. Mx	71	5.069	1.058	-0.252
			Max. My	5	5.676	0.894	-0.393
			Max. Vy	53	-1.178	0.865	-0.360
			Max. Vx	5	-0.425	-0.556	0.134
		Base Beam	Max Tension	1	0.000	0.000	0.000
			Max. Compression	68	-15.195	0.246	-0.011
			Max. Mx	2	-42.373	-12.181	0.035
			Max. My	10	-36.231	-10.691	-0.622
			Max. Vy	68	-42.447	-12.007	-0.066
			Max. Vx	10	-0.943	-10.691	-0.622

Maximum Reactions

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Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Guy C @ 150 ft Elev 0 ft Azimuth 240 deg	Max. Vert	55	-0.653	-0.348	0.201
	Max. H _x	55	-0.653	-0.348	0.201
	Max. H _z	25	-25.145	-24.487	13.711
	Min. Vert	25	-25.145	-24.487	13.711
	Min. H _x	25	-25.145	-24.487	13.711
	Min. H _z	55	-0.653	-0.348	0.201
Guy B @ 150 ft Elev 0 ft Azimuth 120 deg	Max. Vert	31	-0.639	0.337	0.194
	Max. H _x	73	-26.121	25.079	14.922
	Max. H _z	73	-26.121	25.079	14.922
	Min. Vert	73	-26.121	25.079	14.922
	Min. H _x	31	-0.639	0.337	0.194
	Min. H _z	31	-0.639	0.337	0.194
Guy A @ 150 ft Elev 0 ft Azimuth 0 deg	Max. Vert	7	-0.634	0.000	-0.385
	Max. H _x	61	-13.442	0.642	-14.780
	Max. H _z	7	-0.634	0.000	-0.385
	Min. Vert	37	-26.129	-0.384	-29.185
	Min. H _x	25	-13.439	-0.642	-14.777
	Min. H _z	37	-26.129	-0.384	-29.185
Guy C @ 266 ft Elev 0 ft Azimuth 240 deg	Max. Vert	52	-2.128	-1.342	0.775
	Max. H _x	52	-2.128	-1.342	0.775
	Max. H _z	16	-23.535	-20.783	11.997
	Min. Vert	16	-23.535	-20.783	11.997
	Min. H _x	16	-23.535	-20.783	11.997
	Min. H _z	52	-2.128	-1.342	0.775
Guy B @ 266 ft Elev 0 ft Azimuth 120 deg	Max. Vert	28	-2.111	1.327	0.766
	Max. H _x	64	-23.691	20.926	12.082
	Max. H _z	64	-23.691	20.926	12.082
	Min. Vert	64	-23.691	20.926	12.082
	Min. H _x	28	-2.111	1.327	0.766
	Min. H _z	28	-2.111	1.327	0.766
Guy A @ 266 ft Elev 0 ft Azimuth 0 deg	Max. Vert	4	-2.107	0.000	-1.528
	Max. H _x	57	-12.924	1.105	-12.788
	Max. H _z	4	-2.107	0.000	-1.528
	Min. Vert	40	-23.758	-0.001	-24.235
	Min. H _x	21	-12.927	-1.105	-12.791
	Min. H _z	40	-23.758	-0.001	-24.235
Mast	Max. Vert	2	121.597	0.003	1.764
	Max. H _x	58	110.571	2.418	0.163
	Max. H _z	4	114.819	0.003	2.310
	Max. M _x	1	0.000	-0.001	-0.006
	Max. M _z	1	0.000	-0.001	-0.006
	Max. Torsion	45	1.177	0.258	-0.773
	Min. Vert	1	69.226	-0.001	-0.006
	Min. H _x	22	110.577	-2.412	0.161
	Min. H _z	40	104.033	-0.034	-2.722
	Min. M _x	1	0.000	-0.001	-0.006
	Min. M _z	1	0.000	-0.001	-0.006
	Min. Torsion	9	-1.184	-0.552	0.628

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Tower Mast Reaction Summary

Load Combination	Vertical	Shear _x	Shear _z	Overturning Moment, M _x	Overturning Moment, M _z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Dead Only	69.226	0.001	0.006	0.000	0.000	-0.004
1.2 Dead+1.0 Wind 0 deg - No Ice+1.0 Guy	121.597	-0.003	-1.764	0.000	0.000	0.436
1.2D+1.0W (pattern 1) 0 deg - No Ice+1.0 Guy	119.298	-0.003	-0.658	0.000	0.000	0.438
1.2D+1.0W (pattern 2) 0 deg - No Ice+1.0 Guy	114.819	-0.003	-2.310	0.000	0.000	0.441
1.2D+1.0W (pattern 3) 0 deg - No Ice+1.0 Guy	112.891	-0.002	-2.133	0.000	0.000	0.438
1.2D+1.0W (pattern 4) 0 deg - No Ice+1.0 Guy	115.390	-0.002	-1.825	0.000	0.000	0.439
1.2D+1.0W (pattern 5) 0 deg - No Ice+1.0 Guy	121.037	-0.003	-1.758	0.000	0.000	0.437
1.2 Dead+1.0 Wind 30 deg - No Ice+1.0 Guy	113.882	1.173	-1.547	0.000	0.000	1.146
1.2D+1.0W (pattern 1) 30 deg - No Ice+1.0 Guy	112.162	0.552	-0.628	0.000	0.000	1.184
1.2D+1.0W (pattern 2) 30 deg - No Ice+1.0 Guy	108.831	1.249	-1.933	0.000	0.000	1.180
1.2D+1.0W (pattern 3) 30 deg - No Ice+1.0 Guy	107.622	1.229	-1.783	0.000	0.000	1.152
1.2D+1.0W (pattern 4) 30 deg - No Ice+1.0 Guy	109.380	1.180	-1.562	0.000	0.000	1.152
1.2D+1.0W (pattern 5) 30 deg - No Ice+1.0 Guy	113.499	1.177	-1.532	0.000	0.000	1.147
1.2 Dead+1.0 Wind 60 deg - No Ice+1.0 Guy	105.745	2.088	-1.120	0.000	0.000	0.709
1.2D+1.0W (pattern 1) 60 deg - No Ice+1.0 Guy	105.027	1.006	-0.531	0.000	0.000	0.707
1.2D+1.0W (pattern 2) 60 deg - No Ice+1.0 Guy	103.389	2.278	-1.278	0.000	0.000	0.706
1.2D+1.0W (pattern 3) 60 deg - No Ice+1.0 Guy	102.698	2.190	-1.201	0.000	0.000	0.712
1.2D+1.0W (pattern 4) 60 deg - No Ice+1.0 Guy	103.298	2.082	-1.132	0.000	0.000	0.718
1.2D+1.0W (pattern 5) 60 deg - No Ice+1.0 Guy	105.502	2.086	-1.122	0.000	0.000	0.710
1.2 Dead+1.0 Wind 90 deg - No Ice+1.0 Guy	116.007	1.989	-0.319	0.000	0.000	0.247
1.2D+1.0W (pattern 1) 90 deg - No Ice+1.0 Guy	114.160	0.835	-0.213	0.000	0.000	0.215
1.2D+1.0W (pattern 2) 90 deg - No Ice+1.0 Guy	110.577	2.412	-0.161	0.000	0.000	0.234
1.2D+1.0W (pattern 3) 90 deg - No Ice+1.0 Guy	109.315	2.265	-0.205	0.000	0.000	0.250
1.2D+1.0W (pattern 4) 90 deg - No Ice+1.0 Guy	111.356	2.016	-0.306	0.000	0.000	0.249
1.2D+1.0W (pattern 5) 90 deg - No Ice+1.0 Guy	115.618	1.978	-0.328	0.000	0.000	0.248
1.2 Dead+1.0 Wind 120 deg - No Ice+1.0 Guy	121.127	1.510	0.861	0.000	0.000	0.195
1.2D+1.0W (pattern 1) 120 deg - No Ice+1.0 Guy	118.853	0.557	0.310	0.000	0.000	0.192
1.2D+1.0W (pattern 2) 120 deg - No Ice+1.0 Guy	114.422	1.974	1.129	0.000	0.000	0.194

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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
1.2D+1.0W (pattern 3) 120 deg	112.534	1.824	1.043	0.000	0.000	0.196
- No Ice+1.0 Guy						
1.2D+1.0W (pattern 4) 120 deg	114.938	1.561	0.891	0.000	0.000	0.197
- No Ice+1.0 Guy						
1.2D+1.0W (pattern 5) 120 deg	120.563	1.465	0.835	0.000	0.000	0.195
- No Ice+1.0 Guy						
1.2 Dead+1.0 Wind 150 deg -	117.738	0.756	1.932	0.000	0.000	0.091
No Ice+1.0 Guy						
1.2D+1.0W (pattern 1) 150 deg	115.788	0.230	0.836	0.000	0.000	0.120
- No Ice+1.0 Guy						
1.2D+1.0W (pattern 2) 150 deg	112.011	1.103	2.243	0.000	0.000	0.102
- No Ice+1.0 Guy						
1.2D+1.0W (pattern 3) 150 deg	110.667	0.973	2.127	0.000	0.000	0.087
- No Ice+1.0 Guy						
1.2D+1.0W (pattern 4) 150 deg	112.979	0.750	1.952	0.000	0.000	0.091
- No Ice+1.0 Guy						
1.2D+1.0W (pattern 5) 150 deg	117.344	0.745	1.928	0.000	0.000	0.090
- No Ice+1.0 Guy						
1.2 Dead+1.0 Wind 180 deg -	106.545	0.072	2.464	0.000	0.000	-0.481
No Ice+1.0 Guy						
1.2D+1.0W (pattern 1) 180 deg	105.776	0.043	1.174	0.000	0.000	-0.483
- No Ice+1.0 Guy						
1.2D+1.0W (pattern 2) 180 deg	104.033	0.034	2.722	0.000	0.000	-0.482
- No Ice+1.0 Guy						
1.2D+1.0W (pattern 3) 180 deg	103.315	0.050	2.599	0.000	0.000	-0.485
- No Ice+1.0 Guy						
1.2D+1.0W (pattern 4) 180 deg	104.058	0.057	2.465	0.000	0.000	-0.484
- No Ice+1.0 Guy						
1.2D+1.0W (pattern 5) 180 deg	106.301	0.070	2.462	0.000	0.000	-0.482
- No Ice+1.0 Guy						
1.2 Dead+1.0 Wind 210 deg -	113.922	-0.744	1.770	0.000	0.000	-1.136
No Ice+1.0 Guy						
1.2D+1.0W (pattern 1) 210 deg	112.203	-0.258	0.773	0.000	0.000	-1.177
- No Ice+1.0 Guy						
1.2D+1.0W (pattern 2) 210 deg	108.871	-1.040	2.029	0.000	0.000	-1.171
- No Ice+1.0 Guy						
1.2D+1.0W (pattern 3) 210 deg	107.659	-0.920	1.936	0.000	0.000	-1.141
- No Ice+1.0 Guy						
1.2D+1.0W (pattern 4) 210 deg	109.411	-0.754	1.784	0.000	0.000	-1.141
- No Ice+1.0 Guy						
1.2D+1.0W (pattern 5) 210 deg	113.539	-0.729	1.766	0.000	0.000	-1.136
- No Ice+1.0 Guy						
1.2 Dead+1.0 Wind 240 deg -	119.522	-1.473	0.833	0.000	0.000	-0.632
No Ice+1.0 Guy						
1.2D+1.0W (pattern 1) 240 deg	117.336	-0.566	0.309	0.000	0.000	-0.639
- No Ice+1.0 Guy						
1.2D+1.0W (pattern 2) 240 deg	113.069	-1.935	1.100	0.000	0.000	-0.642
- No Ice+1.0 Guy						
1.2D+1.0W (pattern 3) 240 deg	111.244	-1.765	1.002	0.000	0.000	-0.636
- No Ice+1.0 Guy						
1.2D+1.0W (pattern 4) 240 deg	113.430	-1.547	0.876	0.000	0.000	-0.637
- No Ice+1.0 Guy						
1.2D+1.0W (pattern 5) 240 deg	118.968	-1.465	0.828	0.000	0.000	-0.633
- No Ice+1.0 Guy						
1.2 Dead+1.0 Wind 270 deg -	116.002	-1.996	-0.320	0.000	0.000	-0.240
No Ice+1.0 Guy						
1.2D+1.0W (pattern 1) 270 deg	114.154	-0.840	-0.215	0.000	0.000	-0.212
- No Ice+1.0 Guy						
1.2D+1.0W (pattern 2) 270 deg	110.571	-2.418	-0.163	0.000	0.000	-0.229
- No Ice+1.0 Guy						
1.2D+1.0W (pattern 3) 270 deg	109.310	-2.271	-0.207	0.000	0.000	-0.242

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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
- No Ice+1.0 Guy						
1.2D+1.0W (pattern 4) 270 deg	111.352	-2.023	-0.307	0.000	0.000	-0.242
- No Ice+1.0 Guy						
1.2D+1.0W (pattern 5) 270 deg	115.613	-1.985	-0.330	0.000	0.000	-0.240
- No Ice+1.0 Guy						
1.2 Dead+1.0 Wind 300 deg -	106.334	-2.137	-1.222	0.000	0.000	-0.204
No Ice+1.0 Guy						
1.2D+1.0W (pattern 1) 300 deg	105.577	-1.029	-0.588	0.000	0.000	-0.203
- No Ice+1.0 Guy						
1.2D+1.0W (pattern 2) 300 deg	103.859	-2.355	-1.353	0.000	0.000	-0.201
- No Ice+1.0 Guy						
1.2D+1.0W (pattern 3) 300 deg	103.154	-2.253	-1.287	0.000	0.000	-0.202
- No Ice+1.0 Guy						
1.2D+1.0W (pattern 4) 300 deg	103.856	-2.137	-1.223	0.000	0.000	-0.209
- No Ice+1.0 Guy						
1.2D+1.0W (pattern 5) 300 deg	106.091	-2.135	-1.222	0.000	0.000	-0.204
- No Ice+1.0 Guy						
1.2 Dead+1.0 Wind 330 deg -	117.686	-1.307	-1.644	0.000	0.000	-0.077
No Ice+1.0 Guy						
1.2D+1.0W (pattern 1) 330 deg	115.736	-0.621	-0.641	0.000	0.000	-0.112
- No Ice+1.0 Guy						
1.2D+1.0W (pattern 2) 330 deg	111.960	-1.403	-2.100	0.000	0.000	-0.092
- No Ice+1.0 Guy						
1.2D+1.0W (pattern 3) 330 deg	110.620	-1.367	-1.929	0.000	0.000	-0.075
- No Ice+1.0 Guy						
1.2D+1.0W (pattern 4) 330 deg	112.937	-1.327	-1.649	0.000	0.000	-0.077
- No Ice+1.0 Guy						
1.2D+1.0W (pattern 5) 330 deg	117.293	-1.309	-1.633	0.000	0.000	-0.077
- No Ice+1.0 Guy						
Dead+Wind 0 deg -	70.490	-0.002	-0.750	0.000	0.000	0.114
Service+Guy						
Dead+Wind 30 deg -	70.738	0.358	-0.595	0.000	0.000	0.294
Service+Guy						
Dead+Wind 60 deg -	71.105	0.632	-0.377	0.000	0.000	0.165
Service+Guy						
Dead+Wind 90 deg -	70.776	0.726	-0.037	0.000	0.000	0.058
Service+Guy						
Dead+Wind 120 deg -	70.483	0.632	0.356	0.000	0.000	0.049
Service+Guy						
Dead+Wind 150 deg -	70.816	0.370	0.659	0.000	0.000	0.027
Service+Guy						
Dead+Wind 180 deg -	71.147	-0.002	0.758	0.000	0.000	-0.112
Service+Guy						
Dead+Wind 210 deg -	70.740	-0.329	0.592	0.000	0.000	-0.292
Service+Guy						
Dead+Wind 240 deg -	70.462	-0.618	0.344	0.000	0.000	-0.165
Service+Guy						
Dead+Wind 270 deg -	70.775	-0.731	-0.037	0.000	0.000	-0.057
Service+Guy						
Dead+Wind 300 deg -	71.134	-0.661	-0.391	0.000	0.000	-0.047
Service+Guy						
Dead+Wind 330 deg -	70.813	-0.396	-0.668	0.000	0.000	-0.026
Service+Guy						

Solution Summary

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Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.000	-31.937	0.000	-0.004	31.937	-0.017	0.056%
2	0.000	-38.046	-45.838	0.000	38.042	45.784	0.090%
3	0.000	-38.046	-42.672	0.000	38.048	42.730	0.102%
4	0.000	-38.046	-41.954	0.000	38.047	41.982	0.049%
5	0.000	-38.046	-41.517	-0.000	38.041	41.448	0.123%
6	0.000	-38.046	-41.889	-0.000	38.040	41.796	0.164%
7	0.000	-38.046	-45.420	0.000	38.042	45.362	0.098%
8	21.705	-37.700	-37.578	-21.727	37.700	37.566	0.044%
9	20.261	-37.700	-35.077	-20.246	37.702	35.136	0.110%
10	19.918	-37.700	-34.484	-19.909	37.702	34.536	0.097%
11	19.704	-37.700	-34.113	-19.736	37.698	34.065	0.106%
12	19.758	-37.700	-34.213	-19.783	37.698	34.158	0.111%
13	21.497	-37.700	-37.219	-21.522	37.699	37.195	0.060%
14	38.493	-37.355	-22.215	-38.568	37.356	22.157	0.163%
15	35.888	-37.355	-20.711	-35.949	37.356	20.681	0.122%
16	35.279	-37.355	-20.359	-35.343	37.357	20.344	0.119%
17	34.917	-37.355	-20.150	-34.983	37.357	20.110	0.142%
18	35.102	-37.355	-20.261	-35.167	37.356	20.213	0.147%
19	38.136	-37.355	-22.009	-38.209	37.356	21.952	0.160%
20	45.052	-37.700	0.000	-45.036	37.699	0.051	0.091%
21	41.972	-37.700	-0.000	-42.018	37.702	-0.042	0.109%
22	41.262	-37.700	-0.000	-41.302	37.702	-0.030	0.091%
23	40.843	-37.700	0.000	-40.823	37.699	0.040	0.080%
24	41.120	-37.700	0.000	-41.072	37.697	0.064	0.143%
25	44.638	-37.700	0.000	-44.612	37.698	0.058	0.109%
26	39.424	-38.046	22.752	-39.383	38.043	-22.729	0.080%
27	36.711	-38.046	21.186	-36.762	38.048	-21.216	0.103%
28	36.094	-38.046	20.830	-36.121	38.048	-20.845	0.055%
29	35.727	-38.046	20.618	-35.671	38.042	-20.586	0.114%
30	36.007	-38.046	20.783	-35.931	38.040	-20.739	0.156%
31	39.062	-38.046	22.544	-38.976	38.039	-22.494	0.169%
32	23.199	-37.700	40.167	-23.165	37.699	-40.177	0.059%
33	21.585	-37.700	37.371	-21.644	37.702	-37.391	0.108%
34	21.220	-37.700	36.738	-21.263	37.703	-36.760	0.085%
35	21.002	-37.700	36.360	-20.940	37.698	-36.362	0.109%
36	21.215	-37.700	36.737	-21.118	37.696	-36.726	0.172%
37	22.992	-37.700	39.808	-22.950	37.699	-39.815	0.072%
38	0.000	-37.355	45.777	-0.076	37.357	-45.818	0.146%
39	0.000	-37.355	42.620	-0.047	37.356	-42.664	0.114%
40	0.000	-37.355	41.897	-0.038	37.357	-41.952	0.119%
41	0.000	-37.355	41.460	-0.054	37.357	-41.504	0.124%
42	0.000	-37.355	41.832	-0.062	37.357	-41.870	0.129%
43	0.000	-37.355	45.364	-0.074	37.357	-45.405	0.144%
44	-21.705	-37.700	37.578	21.683	37.700	-37.591	0.044%
45	-20.261	-37.700	35.077	20.319	37.702	-35.094	0.111%
46	-19.918	-37.700	34.484	19.968	37.702	-34.502	0.097%
47	-19.704	-37.700	34.113	19.647	37.698	-34.116	0.105%
48	-19.758	-37.700	34.213	19.698	37.698	-34.207	0.110%
49	-21.497	-37.700	37.219	21.465	37.699	-37.228	0.060%
50	-38.546	-38.046	22.245	38.489	38.042	-22.212	0.113%
51	-35.932	-38.046	20.736	35.984	38.048	-20.766	0.105%
52	-35.328	-38.046	20.388	35.362	38.048	-20.407	0.070%
53	-34.966	-38.046	20.179	34.888	38.040	-20.134	0.162%
54	-35.151	-38.046	20.289	35.088	38.041	-20.252	0.131%
55	-38.184	-38.046	22.037	38.121	38.041	-22.000	0.126%
56	-45.052	-37.700	0.000	45.036	37.699	0.051	0.091%
57	-41.972	-37.700	0.000	42.018	37.702	-0.042	0.109%
58	-41.262	-37.700	-0.000	41.302	37.702	-0.030	0.091%
59	-40.843	-37.700	0.000	40.824	37.699	0.040	0.080%
60	-41.120	-37.700	0.000	41.073	37.697	0.064	0.143%
61	-44.638	-37.700	0.000	44.613	37.698	0.058	0.108%

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Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
62	-39.371	-37.355	-22.722	39.417	37.357	22.723	0.078%
63	-36.667	-37.355	-21.161	36.712	37.356	21.167	0.082%
64	-36.044	-37.355	-20.801	36.099	37.357	20.813	0.100%
65	-35.677	-37.355	-20.589	35.726	37.357	20.590	0.087%
66	-35.958	-37.355	-20.755	36.000	37.357	20.755	0.076%
67	-39.014	-37.355	-22.516	39.059	37.357	22.517	0.077%
68	-23.199	-37.700	-40.167	23.225	37.699	40.141	0.061%
69	-21.585	-37.700	-37.371	21.573	37.702	37.431	0.107%
70	-21.220	-37.700	-36.738	21.218	37.702	36.786	0.084%
71	-21.002	-37.700	-36.360	21.034	37.698	36.307	0.110%
72	-21.215	-37.700	-36.737	21.254	37.696	36.647	0.173%
73	-22.992	-37.700	-39.808	23.019	37.699	39.774	0.073%
74	0.000	-32.030	-12.270	-0.000	32.030	12.240	0.087%
75	5.810	-31.937	-10.059	-5.827	31.937	10.041	0.071%
76	10.304	-31.845	-5.947	-10.319	31.845	5.955	0.050%
77	12.060	-31.937	0.000	-12.050	31.937	0.029	0.091%
78	10.553	-32.030	6.090	-10.529	32.030	-6.077	0.080%
79	6.210	-31.937	10.752	-6.193	31.937	-10.755	0.050%
80	0.000	-31.845	12.254	-0.000	31.845	-12.273	0.056%
81	-5.810	-31.937	10.059	5.787	31.937	-10.064	0.071%
82	-10.318	-32.030	5.955	10.299	32.030	-5.944	0.065%
83	-12.060	-31.937	0.000	12.050	31.937	0.029	0.091%
84	-10.539	-31.845	-6.082	10.555	31.845	6.091	0.053%
85	-6.210	-31.937	-10.752	6.221	31.937	10.738	0.051%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	8	0.00000001	0.00009726
2	Yes	29	0.00004505	0.00006270
3	Yes	28	0.00007257	0.00004514
4	Yes	28	0.00008069	0.00004687
5	Yes	29	0.00004274	0.00006945
6	Yes	29	0.00000001	0.00007947
7	Yes	29	0.00003773	0.00006168
8	Yes	27	0.00008890	0.00007962
9	Yes	27	0.00009752	0.00006725
10	Yes	28	0.00007321	0.00005169
11	Yes	27	0.00007700	0.00008911
12	Yes	28	0.00000001	0.00006614
13	Yes	27	0.00007579	0.00007708
14	Yes	21	0.00000001	0.00008211
15	Yes	19	0.00000001	0.00007774
16	Yes	20	0.00000001	0.00007734
17	Yes	21	0.00000001	0.00007609
18	Yes	21	0.00000001	0.00007675
19	Yes	21	0.00000001	0.00008081
20	Yes	27	0.00008817	0.00009276
21	Yes	27	0.00009677	0.00005196
22	Yes	28	0.00007297	0.00003989
23	Yes	28	0.00005272	0.00006230
24	Yes	28	0.00000001	0.00008216
25	Yes	27	0.00007548	0.00009408
26	Yes	29	0.00004529	0.00005883
27	Yes	28	0.00007294	0.00004393

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28	Yes	28	0.00008106	0.00004460
29	Yes	29	0.00004299	0.00006575
30	Yes	29	0.00000001	0.00007605
31	Yes	28	0.00005602	0.00009952
32	Yes	28	0.00006021	0.00006328
33	Yes	27	0.00009627	0.00005114
34	Yes	28	0.00007280	0.00003879
35	Yes	28	0.00005264	0.00007545
36	Yes	28	0.00000001	0.00009615
37	Yes	28	0.00005129	0.00006419
38	Yes	21	0.00000001	0.00007628
39	Yes	19	0.00000001	0.00007591
40	Yes	20	0.00000001	0.00008104
41	Yes	21	0.00000001	0.00007231
42	Yes	21	0.00000001	0.00007053
43	Yes	21	0.00000001	0.00007510
44	Yes	27	0.00008902	0.00008067
45	Yes	27	0.00009764	0.00006923
46	Yes	28	0.00007329	0.00005305
47	Yes	27	0.00007723	0.00008972
48	Yes	28	0.00000001	0.00006619
49	Yes	27	0.00007593	0.00007782
50	Yes	28	0.00006706	0.00008463
51	Yes	28	0.00007366	0.00004610
52	Yes	28	0.00008174	0.00004516
53	Yes	28	0.00006368	0.00009457
54	Yes	29	0.00000001	0.00006562
55	Yes	28	0.00005635	0.00008339
56	Yes	27	0.00008809	0.00009251
57	Yes	27	0.00009669	0.00005207
58	Yes	28	0.00007291	0.00003999
59	Yes	28	0.00005265	0.00006215
60	Yes	28	0.00000001	0.00008197
61	Yes	27	0.00007540	0.00009382
62	Yes	21	0.00000001	0.00005575
63	Yes	19	0.00000001	0.00006335
64	Yes	20	0.00000001	0.00007336
65	Yes	21	0.00000001	0.00006074
66	Yes	21	0.00000001	0.00005419
67	Yes	21	0.00000001	0.00005467
68	Yes	28	0.00006012	0.00006373
69	Yes	27	0.00009613	0.00005081
70	Yes	28	0.00007270	0.00003848
71	Yes	28	0.00005246	0.00007590
72	Yes	28	0.00000001	0.00009669
73	Yes	28	0.00005119	0.00006469
74	Yes	16	0.00000001	0.00007800
75	Yes	15	0.00000001	0.00007703
76	Yes	15	0.00000001	0.00005742
77	Yes	15	0.00000001	0.00009551
78	Yes	16	0.00000001	0.00007303
79	Yes	16	0.00000001	0.00005349
80	Yes	15	0.00000001	0.00006222
81	Yes	15	0.00000001	0.00007708
82	Yes	16	0.00000001	0.00006063
83	Yes	15	0.00000001	0.00009511
84	Yes	15	0.00000001	0.00006048
85	Yes	16	0.00000001	0.00005413

Maximum Tower Deflections - Service Wind

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Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	330.365 - 310.365	1.267	76	0.142	0.073
T2	310.365 - 290.365	1.933	84	0.147	0.068
T3	290.365 - 270.365	2.587	80	0.115	0.070
T4	270.365 - 250.365	2.981	80	0.058	0.073
T5	250.365 - 230.365	3.126	80	0.044	0.076
T6	230.365 - 210.365	3.170	80	0.024	0.084
T7	210.365 - 190.365	2.940	80	0.067	0.089
T8	190.365 - 170.365	2.513	80	0.086	0.083
T9	170.365 - 150.365	2.151	80	0.041	0.077
T10	150.365 - 130.365	2.043	80	0.019	0.084
T11	130.365 - 110.365	1.946	85	0.029	0.083
T12	110.365 - 90.3646	1.787	85	0.035	0.072
T13	90.3646 - 70.3646	1.681	74	0.003	0.064
T14	70.3646 - 50.3646	1.742	74	0.002	0.069
T15	50.3646 - 35.1823	1.632	74	0.054	0.067
T16	35.1823 - 20	1.328	74	0.105	0.061
T17	20 - 4.81771	0.826	74	0.150	0.050
T18	4.81771 - 0	0.181	74	0.175	0.036

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
336'4-3/8"	Flash Beacon Lighting	76	1.267	0.142	0.073	185713
330'4-3/8"	Climb Leg Extension	76	1.267	0.142	0.073	185713
312'10-21/32"	Guy	84	1.847	0.148	0.068	54696
265'	RADIO 8843 B2/B66A	80	3.037	0.052	0.073	22335
252'10-21/32"	Guy	80	3.113	0.047	0.076	160511
172'10-21/32"	Guy	80	2.182	0.047	0.077	14149
171'	Side Lighting	80	2.158	0.043	0.077	13622
92'10-21/32"	Guy	74	1.682	0.006	0.064	18648

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	330.365 - 310.365	9.867	17	0.979	0.347
T2	310.365 - 290.365	12.850	4	0.994	0.352
T3	290.365 - 270.365	16.860	4	0.834	0.362
T4	270.365 - 250.365	19.771	3	0.535	0.375
T5	250.365 - 230.365	21.638	3	0.497	0.388
T6	230.365 - 210.365	22.657	3	0.285	0.412
T7	210.365 - 190.365	22.105	3	0.398	0.423
T8	190.365 - 170.365	20.429	7	0.523	0.393
T9	170.365 - 150.365	18.915	7	0.413	0.369
T10	150.365 - 130.365	18.138	7	0.306	0.387
T11	130.365 - 110.365	17.150	6	0.404	0.372
T12	110.365 - 90.3646	15.890	6	0.477	0.324
T13	90.3646 - 70.3646	14.499	6	0.384	0.293

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Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T14	70.3646 - 50.3646	13.449	6	0.337	0.304
T15	50.3646 - 35.1823	11.443	6	0.554	0.285
T16	35.1823 - 20	8.850	5	0.799	0.251
T17	20 - 4.81771	5.348	5	1.007	0.200
T18	4.81771 - 0	1.155	5	1.123	0.137

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
336'4-3/8"	Flash Beacon Lighting	17	9.867	0.979	0.347	30488
330'4-3/8"	Climb Leg Extension	17	9.867	0.979	0.347	30488
312'10-21/32"	Guy	4	12.316	0.998	0.352	8871
265'	RADIO 8843 B2/B66A	3	20.371	0.523	0.378	3762
252'10-21/32"	Guy	3	21.447	0.507	0.386	6819
172'10-21/32"	Guy	7	19.065	0.431	0.369	3667
171'	Side Lighting	7	18.951	0.418	0.368	3527
92'10-21/32"	Guy	6	14.649	0.397	0.294	4870

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	330.365	Diagonal	A325X	0.500	1	2.704	8.592	0.315	1.05	Gusset Bearing		
		Top Girt	A325X	0.500	1	0.169	8.592	0.020	1.05	Gusset Bearing		
		Bottom Girt	A325X	0.500	1	0.630	8.592	0.073	1.05	Gusset Bearing		
		Top Guy	A325N	0.625	2	2.200	9.720	0.226	1.05	Gusset Bearing		
		Pull-Off@312.888										
T2	310.365	Leg	A325X	0.750	4	0.724	30.101	0.024	1.05	Bolt Tension		
		Diagonal	A325X	0.500	1	1.545	8.592	0.180	1.05	Gusset Bearing		
		Top Girt	A325X	0.500	1	0.534	8.592	0.062	1.05	Gusset Bearing		
		Bottom Girt	A325X	0.500	1	0.548	8.592	0.064	1.05	Gusset Bearing		
T3	290.365	Leg	A325X	0.750	4	3.405	30.101	0.113	1.05	Bolt Tension		
		Diagonal	A325X	0.500	1	0.974	8.592	0.113	1.05	Gusset Bearing		
		Top Girt	A325X	0.500	1	0.474	8.592	0.055	1.05	Gusset Bearing		
		Bottom Girt	A325X	0.500	1	0.474	8.592	0.055	1.05	Gusset Bearing		
T4	270.365	Leg	A325X	0.750	4	5.048	30.101	0.168	1.05	Bolt Tension		
		Diagonal	A325X	0.500	1	3.178	9.777	0.325	1.05	Gusset Bearing		
		Top Girt	A325X	0.500	1	0.541	9.777	0.055	1.05	Gusset Bearing		
		Bottom Girt	A325X	0.500	1	1.260	9.777	0.129	1.05	Gusset Bearing		
		Top Guy	A325N	0.625	2	3.222	11.061	0.291	1.05	Gusset Bearing		
Pull-Off@252.888												
		Torque Arm	A325N	0.875	2	4.207	13.200	0.319	1.05	Gusset Bearing		
		Top@252.888										
		T5	250.365	Leg	A325X	0.750	4	2.060	30.101	0.068	1.05	Bolt Tension
				Diagonal	A325X	0.500	1	2.135	8.592	0.248	1.05	Gusset Bearing
Top Girt	A325X			0.500	1	0.699	8.592	0.081	1.05	Gusset Bearing		

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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
T6	230.365	Bottom Girt	A325X	0.500	1	0.699	8.592	0.081	1.05	Gusset Bearing
		Leg	A325X	0.750	4	3.362	30.101	0.112	1.05	Bolt Tension
		Diagonal	A325X	0.500	1	1.455	9.777	0.149	1.05	Gusset Bearing
		Top Girt	A325X	0.500	1	0.719	9.777	0.074	1.05	Gusset Bearing
T7	210.365	Bottom Girt	A325X	0.500	1	0.719	9.777	0.074	1.05	Gusset Bearing
		Leg	A325X	0.750	4	3.150	30.101	0.105	1.05	Bolt Tension
		Diagonal	A325X	0.500	1	3.467	9.777	0.355	1.05	Gusset Bearing
		Top Girt	A325X	0.500	1	0.655	9.777	0.067	1.05	Gusset Bearing
T8	190.365	Bottom Girt	A325X	0.500	1	1.059	9.777	0.108	1.05	Gusset Bearing
		Leg	A325X	0.750	4	2.313	30.101	0.077	1.05	Bolt Tension
		Diagonal	A325X	0.500	1	4.541	9.777	0.464	1.05	Gusset Bearing
		Top Girt	A325X	0.500	1	0.825	9.777	0.084	1.05	Gusset Bearing
T9	170.365	Bottom Girt	A325X	0.500	1	1.619	9.777	0.166	1.05	Gusset Bearing
		Top Guy	A325N	0.625	2	4.264	11.061	0.386	1.05	Gusset Bearing
		Pull-Off@172.888								
		Torque Arm	A325N	0.875	2	4.333	13.200	0.328	1.05	Gusset Bearing
T10	150.365	Leg	A325X	0.750	4	3.954	30.101	0.131	1.05	Bolt Tension
		Diagonal	A325X	0.500	1	3.748	9.777	0.383	1.05	Gusset Bearing
		Top Girt	A325X	0.500	1	1.768	9.777	0.181	1.05	Gusset Bearing
		Bottom Girt	A325X	0.500	1	0.822	9.777	0.084	1.05	Gusset Bearing
T11	130.365	Leg	A325X	0.750	4	3.057	30.101	0.102	1.05	Bolt Tension
		Diagonal	A325X	0.500	1	2.041	9.777	0.209	1.05	Gusset Bearing
		Top Girt	A325X	0.500	1	0.694	9.777	0.071	1.05	Gusset Bearing
		Bottom Girt	A325X	0.500	1	0.694	9.777	0.071	1.05	Gusset Bearing
T12	110.365	Leg	A325X	0.750	4	3.333	30.101	0.111	1.05	Bolt Tension
		Diagonal	A325X	0.500	1	2.197	9.777	0.225	1.05	Gusset Bearing
		Top Girt	A325X	0.500	1	0.703	9.777	0.072	1.05	Gusset Bearing
		Bottom Girt	A325X	0.500	1	0.811	9.777	0.083	1.05	Gusset Bearing
T13	90.3646	Leg	A325X	0.750	4	3.381	30.101	0.112	1.05	Bolt Tension
		Diagonal	A325X	0.500	1	5.522	9.777	0.565	1.05	Gusset Bearing
		Top Girt	A325X	0.500	1	0.910	9.777	0.093	1.05	Gusset Bearing
		Bottom Girt	A325X	0.500	1	1.872	9.777	0.191	1.05	Gusset Bearing
T14	70.3646	Top Guy	A325N	0.625	2	4.123	11.061	0.373	1.05	Gusset Bearing
		Pull-Off@92.888								
		Torque Arm	A325N	0.875	2	3.917	13.200	0.297	1.05	Gusset Bearing
		Top@92.888								
T15	50.3646	Leg	A325X	0.750	4	4.330	30.101	0.144	1.05	Bolt Tension
		Diagonal	A325X	0.500	1	4.494	9.777	0.460	1.05	Gusset Bearing
		Top Girt	A325X	0.500	1	2.174	9.777	0.222	1.05	Gusset Bearing
		Bottom Girt	A325X	0.500	1	0.928	9.777	0.095	1.05	Gusset Bearing
T16	35.1823	Leg	A325X	0.750	4	4.466	30.101	0.148	1.05	Bolt Tension
		Diagonal	A325X	0.500	1	2.906	9.777	0.297	1.05	Gusset Bearing
		Top Girt	A325X	0.500	1	1.153	9.777	0.118	1.05	Gusset Bearing
		Bottom Girt	A325X	0.500	1	1.153	9.777	0.118	1.05	Gusset Bearing
T17	20	Leg	A325X	0.750	4	5.548	30.101	0.184	1.05	Bolt Tension
		Diagonal	A325X	0.500	1	1.074	9.777	0.110	1.05	Gusset Bearing
		Top Girt	A325X	0.500	1	1.176	9.777	0.120	1.05	Gusset Bearing
		Bottom Girt	A325X	0.500	1	1.176	9.777	0.120	1.05	Gusset Bearing
T18	4.81771	Leg	A325X	0.750	4	5.581	30.101	0.185	1.05	Bolt Tension
		Diagonal	A325X	0.500	1	2.444	9.777	0.250	1.05	Gusset Bearing
		Top Girt	A325X	0.500	1	1.160	9.777	0.119	1.05	Gusset Bearing
		Bottom Girt	A325X	0.500	1	1.160	9.777	0.119	1.05	Gusset Bearing

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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	312'10-21/32" (A) (801)	5/8 (ECP - 23000) EHS	4.240	42.400	12.241	26.712	0.952	2.078
	312'10-21/32" (B) (800)	5/8 (ECP - 23000) EHS	4.240	42.400	12.248	26.712	0.952	2.077
	312'10-21/32" (C) (796)	5/8 (ECP - 23000) EHS	4.240	42.400	12.252	26.712	0.952	2.076
T4	252'10-21/32" (A) (792)	1/2 (ECP - 23000) EHS	2.690	26.900	11.240	16.947	0.952	1.436
	252'10-21/32" (A) (793)	1/2 (ECP - 23000) EHS	2.690	26.900	11.132	16.947	0.952	1.450
	252'10-21/32" (B) (788)	1/2 (ECP - 23000) EHS	2.690	26.900	11.119	16.947	0.952	1.452
	252'10-21/32" (B) (789)	1/2 (ECP - 23000) EHS	2.690	26.900	11.146	16.947	0.952	1.448
	252'10-21/32" (C) (781)	1/2 (ECP - 23000) EHS	2.690	26.900	10.973	16.947	0.952	1.471
	252'10-21/32" (C) (782)	1/2 (ECP - 23000) EHS	2.690	26.900	11.055	16.947	0.952	1.460
	172'10-21/32" (A) (777)	1/2 (ECP - 23000) EHS	2.690	26.900	12.112	16.947	0.952	1.333
	172'10-21/32" (A) (778)	1/2 (ECP - 23000) EHS	2.690	26.900	11.875	16.947	0.952	1.359
	172'10-21/32" (B) (773)	1/2 (ECP - 23000) EHS	2.690	26.900	11.866	16.947	0.952	1.360
T8	172'10-21/32" (B) (774)	1/2 (ECP - 23000) EHS	2.690	26.900	12.107	16.947	0.952	1.333
	172'10-21/32" (C) (766)	1/2 (ECP - 23000) EHS	2.690	26.900	11.447	16.947	0.952	1.410
	172'10-21/32" (C) (767)	1/2 (ECP - 23000) EHS	2.690	26.900	11.711	16.947	0.952	1.378
	92'10-21/32" (A) (762)	3/8 (ECP - 23000) EHS	1.540	15.400	8.156	9.702	0.952	1.133
	92'10-21/32" (A) (763)	3/8 (ECP - 23000) EHS	1.540	15.400	7.977	9.702	0.952	1.158
	92'10-21/32" (B) (758)	3/8 (ECP - 23000) EHS	1.540	15.400	7.981	9.702	0.952	1.158
	92'10-21/32" (B) (759)	3/8 (ECP - 23000) EHS	1.540	15.400	8.156	9.702	0.952	1.133
	92'10-21/32" (C) (751)	3/8 (ECP - 23000) EHS	1.540	15.400	7.608	9.702	0.952	1.214
	92'10-21/32" (C) (752)	3/8 (ECP - 23000) EHS	1.540	15.400	7.842	9.702	0.952	1.178

Compression Checks

Leg Design Data (Compression)

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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	330.365 - 310.365	ROHN 2 X-STR	20'	2'4-29/3 2"	75.4 K=2.00	1.477	-7.515	43.856	0.171 ¹
T2	310.365 - 290.365	ROHN 2 X-STR	20'	2'4-29/3 2"	37.7 K=1.00	1.477	-21.383	59.911	0.357 ¹
T3	290.365 - 270.365	ROHN 2 X-STR	20'	2'4-29/3 2"	37.7 K=1.00	1.477	-26.921	59.911	0.449 ¹
T4	270.365 - 250.365	ROHN 2.5 X-STR	20'	2'4-29/3 2"	31.3 K=1.00	2.254	-27.512	94.407	0.291 ¹
T5	250.365 - 230.365	ROHN 2 X-STR	20'	2'4-29/3 2"	37.7 K=1.00	1.477	-39.159	59.911	0.654 ¹
T6	230.365 - 210.365	ROHN 2.5 X-STR	20'	2'4-29/3 2"	62.6 K=2.00	2.254	-41.526	76.170	0.545 ¹
T7	210.365 - 190.365	ROHN 2.5 X-STR	20'	2'4-29/3 2"	62.6 K=2.00	2.254	-37.021	76.170	0.486 ¹
T8	190.365 - 170.365	ROHN 2.5 X-STR	20'	2'4-29/3 2"	31.3 K=1.00	2.254	-47.606	94.407	0.504 ¹
T9	170.365 - 150.365	ROHN 2.5 X-STR	20'	2'4-29/3 2"	62.6 K=2.00	2.254	-46.536	76.170	0.611 ¹
T10	150.365 - 130.365	ROHN 2.5 X-STR	20'	2'4-29/3 2"	62.6 K=2.00	2.254	-40.051	76.170	0.526 ¹
T11	130.365 - 110.365	ROHN 2.5 X-STR	20'	2'4-29/3 2"	62.6 K=2.00	2.254	-39.917	76.170	0.524 ¹
T12	110.365 - 90.3646	ROHN 2.5 X-STR	20'	2'4-29/3 2"	31.3 K=1.00	2.254	-52.551	94.407	0.557 ¹
T13	90.3646 - 70.3646	ROHN 2.5 X-STR	20'	2'4-29/3 2"	62.6 K=2.00	2.254	-52.506	76.170	0.689 ¹
T14	70.3646 - 50.3646	ROHN 2.5 X-STR	20'	2'4-29/3 2"	62.6 K=2.00	2.254	-66.135	76.170	0.868 ¹
T15	50.3646 - 35.1823	ROHN 2.5 X-STR	15'2-3/1 6"	2'4-29/3 2"	62.6 K=2.00	2.254	-67.876	76.170	0.891 ¹
T16	35.1823 - 20	ROHN 2.5 X-STR	15'2-3/1 6"	2'4-29/3 2"	62.6 K=2.00	2.254	-66.615	76.170	0.875 ¹
T17	20 - 4.81771	ROHN 2.5 X-STR	15'2-3/1 6"	2'4-29/3 2"	62.6 K=2.00	2.254	-58.330	76.170	0.766 ¹
T18	4.81771 - 0	ROHN 2.5 X-STR	5'1-1/4"	1'3-5/16"	16.6 K=1.00	2.254	-46.161	99.394	0.464

¹ P_u / φP_n controls

Leg Bending Design Data (Compression)

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	330.365 - 310.365	ROHN 2 X-STR	0.000	3.816	0.000	0.000	3.816	0.000
T2	310.365 - 290.365	ROHN 2 X-STR	0.000	3.816	0.000	0.000	3.816	0.000
T3	290.365 - 270.365	ROHN 2 X-STR	0.000	3.816	0.000	0.000	3.816	0.000
T4	270.365 - 250.365	ROHN 2.5 X-STR	0.000	7.018	0.000	0.000	7.018	0.000
T5	250.365 - 230.365	ROHN 2 X-STR	0.000	3.816	0.000	0.000	3.816	0.000
T6	230.365 -	ROHN 2.5 X-STR	0.000	7.018	0.000	0.000	7.018	0.000

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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 $\frac{M_{uy}}{\phi M_{ny}}$
T7	210.365 - 190.365	ROHN 2.5 X-STR	0.000	7.018	0.000	0.000	7.018	0.000
T8	190.365 - 170.365	ROHN 2.5 X-STR	0.000	7.018	0.000	0.000	7.018	0.000
T9	170.365 - 150.365	ROHN 2.5 X-STR	0.000	7.018	0.000	0.000	7.018	0.000
T10	150.365 - 130.365	ROHN 2.5 X-STR	0.000	7.018	0.000	0.000	7.018	0.000
T11	130.365 - 110.365	ROHN 2.5 X-STR	0.000	7.018	0.000	0.000	7.018	0.000
T12	110.365 - 90.3646	ROHN 2.5 X-STR	0.000	7.018	0.000	0.000	7.018	0.000
T13	90.3646 - 70.3646	ROHN 2.5 X-STR	0.000	7.018	0.000	0.000	7.018	0.000
T14	70.3646 - 50.3646	ROHN 2.5 X-STR	0.000	7.018	0.000	0.000	7.018	0.000
T15	50.3646 - 35.1823	ROHN 2.5 X-STR	0.000	7.018	0.000	0.000	7.018	0.000
T16	35.1823 - 20	ROHN 2.5 X-STR	0.000	7.018	0.000	0.000	7.018	0.000
T17	20 - 4.81771	ROHN 2.5 X-STR	0.000	7.018	0.000	0.000	7.018	0.000
T18	4.81771 - 0	ROHN 2.5 X-STR	0.655	7.018	0.093	0.000	7.018	0.000

Leg Interaction Design Data (Compression)

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	330.365 - 310.365	ROHN 2 X-STR	0.171	0.000	0.000	0.171 ¹	1.050	
T2	310.365 - 290.365	ROHN 2 X-STR	0.357	0.000	0.000	0.357 ¹	1.050	
T3	290.365 - 270.365	ROHN 2 X-STR	0.449	0.000	0.000	0.449 ¹	1.050	
T4	270.365 - 250.365	ROHN 2.5 X-STR	0.291	0.000	0.000	0.291 ¹	1.050	
T5	250.365 - 230.365	ROHN 2 X-STR	0.654	0.000	0.000	0.654 ¹	1.050	
T6	230.365 - 210.365	ROHN 2.5 X-STR	0.545	0.000	0.000	0.545 ¹	1.050	
T7	210.365 - 190.365	ROHN 2.5 X-STR	0.486	0.000	0.000	0.486 ¹	1.050	
T8	190.365 - 170.365	ROHN 2.5 X-STR	0.504	0.000	0.000	0.504 ¹	1.050	
T9	170.365 - 150.365	ROHN 2.5 X-STR	0.611	0.000	0.000	0.611 ¹	1.050	
T10	150.365 - 130.365	ROHN 2.5 X-STR	0.526	0.000	0.000	0.526 ¹	1.050	
T11	130.365 - 110.365	ROHN 2.5 X-STR	0.524	0.000	0.000	0.524 ¹	1.050	
T12	110.365 - 90.3646	ROHN 2.5 X-STR	0.557	0.000	0.000	0.557 ¹	1.050	
T13	90.3646 - 70.3646	ROHN 2.5 X-STR	0.689	0.000	0.000	0.689 ¹	1.050	
T14	70.3646 - 50.3646	ROHN 2.5 X-STR	0.868	0.000	0.000	0.868 ¹	1.050	

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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
T15	50.3646 - 35.1823	ROHN 2.5 X-STR	0.891	0.000	0.000	0.891 ¹	1.050	
T16	35.1823 - 20	ROHN 2.5 X-STR	0.875	0.000	0.000	0.875 ¹	1.050	
T17	20 - 4.81771	ROHN 2.5 X-STR	0.766	0.000	0.000	0.766 ¹	1.050	
T18	4.81771 - 0	ROHN 2.5 X-STR	0.464	0.093	0.000	0.496	1.050	

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	330.365 - 310.365	ROHN 1.5 x 11GA	3'8-5/8"	3'8-5/8"	91.1 K=1.00	0.520	-2.701	11.809	0.229 ¹
T2	310.365 - 290.365	ROHN 1.5 x 11GA	3'8-5/8"	3'8-5/8"	91.1 K=1.00	0.520	-1.545	11.809	0.131 ¹
T3	290.365 - 270.365	ROHN 1.5 x 11GA	3'8-5/8"	3'8-5/8"	91.1 K=1.00	0.520	-0.974	11.809	0.083 ¹
T4	270.365 - 250.365	ROHN 1.5 x 11GA	3'8-5/8"	3'8-5/8"	91.1 K=1.00	0.520	-3.178	11.809	0.269 ¹
T5	250.365 - 230.365	ROHN 1.5 x 11GA	3'8-5/8"	3'8-5/8"	91.1 K=1.00	0.520	-2.135	11.809	0.181 ¹
T6	230.365 - 210.365	ROHN 1.5 x 11GA	3'8-5/8"	3'8-5/8"	91.1 K=1.00	0.520	-1.455	11.809	0.123 ¹
T7	210.365 - 190.365	ROHN 1.5 x 11GA	3'8-5/8"	3'8-5/8"	91.1 K=1.00	0.520	-3.467	11.809	0.294 ¹
T8	190.365 - 170.365	ROHN 1.5 x 11GA	3'8-5/8"	3'8-5/8"	91.1 K=1.00	0.520	-4.541	11.809	0.385 ¹
T9	170.365 - 150.365	ROHN 1.5 x 11GA	3'8-5/8"	3'8-5/8"	91.1 K=1.00	0.520	-3.748	11.809	0.317 ¹
T10	150.365 - 130.365	ROHN 1.5 x 11GA	3'8-5/8"	3'8-5/8"	91.1 K=1.00	0.520	-2.041	11.809	0.173 ¹
T11	130.365 - 110.365	ROHN 1.5 x 11GA	3'8-5/8"	3'8-5/8"	91.1 K=1.00	0.520	-2.197	11.809	0.186 ¹
T12	110.365 - 90.3646	ROHN 1.5 x 11GA	3'8-5/8"	3'8-5/8"	91.1 K=1.00	0.520	-5.522	11.809	0.468 ¹
T13	90.3646 - 70.3646	ROHN 1.5 x 11GA	3'8-5/8"	3'8-5/8"	91.1 K=1.00	0.520	-4.494	11.809	0.381 ¹
T14	70.3646 - 50.3646	ROHN 1.5 x 11GA	3'8-5/8"	3'8-5/8"	91.1 K=1.00	0.520	-2.906	11.809	0.246 ¹
T15	50.3646 - 35.1823	ROHN 1.5 x 11GA	3'8-5/8"	3'8-5/8"	91.1 K=1.00	0.520	-1.074	11.809	0.091 ¹
T16	35.1823 - 20	ROHN 1.5 x 11GA	3'8-5/8"	3'8-5/8"	91.1 K=1.00	0.520	-2.444	11.809	0.207 ¹
T17	20 - 4.81771	ROHN 1.5 x 11GA	3'8-5/8"	3'8-5/8"	91.1 K=1.00	0.520	-2.970	11.809	0.252 ¹

¹ $P_u / \phi P_n$ controls

Horizontal Design Data (Compression)

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Section No.	Elevation	Size	L	L _u	Kl/r	A	P _u	φP _n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in ²	K	K	
T18	4.81771 - 0	L4x4x1/4	3'5"	3'2-1/8"	84.0 K=1.75	1.940	-0.999	53.019	0.019

Horizontal Bending Design Data

Section No.	Elevation	Size	M _{ux}	φM _{nx}	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M _{uy}	φM _{ny}	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
	ft		kip-ft	kip-ft		kip-ft	kip-ft	
T18	4.81771 - 0	L4x4x1/4	0.926	6.932	0.134	0.570	3.463	0.165

Horizontal Interaction Design Data

Section No.	Elevation	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
	ft							
T18	4.81771 - 0	L4x4x1/4	0.019	0.134	0.165	0.308	1.050	

Secondary Horizontal Design Data (Compression)

Section No.	Elevation	Size	L	L _u	Kl/r	A	P _u	φP _n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in ²	K	K	
T2	310.365 - 290.365	1	3'5"	3'2-5/8"	154.5 K=1.00	0.785	-0.195	7.433	0.026 ¹
T3	290.365 - 270.365	1	3'5"	3'2-5/8"	154.5 K=1.00	0.785	-0.358	7.433	0.048 ¹

¹ P_u / φP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation	Size	L	L _u	Kl/r	A	P _u	φP _n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in ²	K	K	
T1	330.365 - 310.365	ROHN 1.5 x 11GA	3'5"	3'2-5/8"	78.9 K=1.00	0.520	-0.169	13.421	0.013 ¹
T2	310.365 - 290.365	ROHN 1.5 x 11GA	3'5"	3'2-5/8"	78.9 K=1.00	0.520	-0.392	13.421	0.029 ¹
T3	290.365 - 270.365	ROHN 1.5 x 11GA	3'5"	3'2-5/8"	78.9 K=1.00	0.520	-0.474	13.421	0.035 ¹
T4	270.365 - 250.365	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	77.8 K=1.00	0.520	-0.477	13.554	0.035 ¹
T5	250.365 -	ROHN 1.5 x 11GA	3'5"	3'2-5/8"	78.9	0.520	-0.699	13.421	0.052 ¹

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T6	230.365 - 210.365	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	K=1.00 77.8	0.520	-0.719	13.554	0.053 ¹
T7	210.365 - 190.365	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	K=1.00 77.8	0.520	-0.655	13.554	0.048 ¹
T8	190.365 - 170.365	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	K=1.00 77.8	0.520	-0.825	13.554	0.061 ¹
T9	170.365 - 150.365	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	K=1.00 77.8	0.520	-0.822	13.554	0.061 ¹
T10	150.365 - 130.365	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	K=1.00 77.8	0.520	-0.694	13.554	0.051 ¹
T11	130.365 - 110.365	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	K=1.00 77.8	0.520	-0.703	13.554	0.052 ¹
T12	110.365 - 90.3646	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	K=1.00 77.8	0.520	-0.910	13.554	0.067 ¹
T13	90.3646 - 70.3646	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	K=1.00 77.8	0.520	-0.928	13.554	0.068 ¹
T14	70.3646 - 50.3646	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	K=1.00 77.8	0.520	-1.153	13.554	0.085 ¹
T15	50.3646 - 35.1823	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	K=1.00 77.8	0.520	-1.176	13.554	0.087 ¹
T16	35.1823 - 20	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	K=1.00 77.8	0.520	-1.160	13.554	0.086 ¹
T17	20 - 4.81771	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	K=1.00 77.8	0.520	-1.024	13.554	0.076 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	330.365 - 310.365	ROHN 1.5 x 11GA	3'5"	3'2-5/8"	78.9 K=1.00	0.520	-0.578	13.421	0.043 ¹
T2	310.365 - 290.365	ROHN 1.5 x 11GA	3'5"	3'2-5/8"	78.9 K=1.00	0.520	-0.392	13.421	0.029 ¹
T3	290.365 - 270.365	ROHN 1.5 x 11GA	3'5"	3'2-5/8"	78.9 K=1.00	0.520	-0.474	13.421	0.035 ¹
T4	270.365 - 250.365	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	77.8 K=1.00	0.520	-0.477	13.554	0.035 ¹
T5	250.365 - 230.365	ROHN 1.5 x 11GA	3'5"	3'2-5/8"	78.9 K=1.00	0.520	-0.699	13.421	0.052 ¹
T6	230.365 - 210.365	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	77.8 K=1.00	0.520	-0.719	13.554	0.053 ¹
T7	210.365 - 190.365	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	77.8 K=1.00	0.520	-0.845	13.554	0.062 ¹
T8	190.365 - 170.365	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	77.8 K=1.00	0.520	-0.825	13.554	0.061 ¹
T9	170.365 - 150.365	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	77.8 K=1.00	0.520	-0.822	13.554	0.061 ¹
T10	150.365 - 130.365	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	77.8 K=1.00	0.520	-0.694	13.554	0.051 ¹
T11	130.365 - 110.365	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	77.8 K=1.00	0.520	-0.703	13.554	0.052 ¹
T12	110.365 -	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	77.8 K=1.00	0.520	-0.910	13.554	0.067 ¹

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T13	90.3646	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	K=1.00 77.8	0.520	-0.928	13.554	0.068 ¹
T14	90.3646 - 70.3646	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	K=1.00 77.8	0.520	-1.153	13.554	0.085 ¹
T15	70.3646 - 50.3646	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	K=1.00 77.8	0.520	-1.176	13.554	0.087 ¹
T16	50.3646 - 35.1823	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	K=1.00 77.8	0.520	-1.160	13.554	0.086 ¹
T17	35.1823 - 20	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	K=1.00 77.8	0.520	-1.024	13.554	0.076 ¹
	20 - 4.81771	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	K=1.00				

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 $\frac{P_u}{\phi P_n}$
T4	270.365 - 250.365	2L2x2x1/4x3/8	3'5"	3'2-1/8"	97.5 K=1.00	1.880	-4.269	46.763	0.091 ¹
T8	190.365 - 170.365	ai/ri > (KL/r) _o - 785 2L2x2x1/4x3/8	3'5"	3'2-1/8"	97.5 K=1.00	1.880	-5.071	46.763	0.108 ¹
T12	110.365 - 90.3646	ai/ri > (KL/r) _o - 770 2L2x2x1/4x3/8 ai/ri > (KL/r) _o - 755	3'5"	3'2-1/8"	97.5 K=1.00	1.880	-4.009	46.763	0.086 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 $\frac{M_{uy}}{\phi M_{ny}}$
T4	270.365 - 250.365	2L2x2x1/4x3/8	0.000	2.001	0.000	0.000	3.392	0.000
T8	190.365 - 170.365	2L2x2x1/4x3/8	0.000	2.001	0.000	0.000	3.392	0.000
T12	110.365 - 90.3646	2L2x2x1/4x3/8	0.000	2.001	0.000	0.000	3.392	0.000

Top Guy Pull-Off Interaction Design Data

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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
T4	270.365 - 250.365	2L2x2x1/4x3/8	0.091	0.000	0.000	0.091 ¹	1.050	
T8	190.365 - 170.365	2L2x2x1/4x3/8	0.108	0.000	0.000	0.108 ¹	1.050	
T12	110.365 - 90.3646	2L2x2x1/4x3/8	0.086	0.000	0.000	0.086 ¹	1.050	

¹ $P_u / \phi P_n$ 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 $\frac{P_u}{\phi P_n}$
T4	270.365 - 250.365 (783)	C15x33.9	3'5"	3'3-9/16'	43.8 K=1.00	9.960	-2.316	291.753	0.008
T4	270.365 - 250.365 (784)	C15x33.9	3'5"	3'3-9/16'	43.8 K=1.00	9.960	-2.400	291.753	0.008
T4	270.365 - 250.365 (790)	C15x33.9	3'5"	3'3-9/16'	43.8 K=1.00	9.960	-2.414	291.753	0.008
T4	270.365 - 250.365 (791)	C15x33.9	3'5"	3'3-9/16'	43.8 K=1.00	9.960	-2.404	291.753	0.008
T4	270.365 - 250.365 (794)	C15x33.9	3'5"	3'3-9/16'	43.8 K=1.00	9.960	-2.433	291.753	0.008
T4	270.365 - 250.365 (795)	C15x33.9	3'5"	3'3-9/16'	43.8 K=1.00	9.960	-2.505	291.753	0.009
T8	190.365 - 170.365 (768)	C15x33.9	3'5"	3'3-9/16'	43.8 K=1.00	9.960	-2.827	291.753	0.010
T8	190.365 - 170.365 (769)	C15x33.9	3'5"	3'3-9/16'	43.8 K=1.00	9.960	-0.025	291.753	0.000
T8	190.365 - 170.365 (775)	C15x33.9	3'5"	3'3-9/16'	43.8 K=1.00	9.960	-0.026	291.753	0.000
T8	190.365 - 170.365 (776)	C15x33.9	3'5"	3'3-9/16'	43.8 K=1.00	9.960	-3.936	291.753	0.013
T8	190.365 - 170.365 (779)	C15x33.9	3'5"	3'3-9/16'	43.8 K=1.00	9.960	-4.103	291.753	0.014
T8	190.365 - 170.365 (780)	C15x33.9	3'5"	3'3-9/16'	43.8 K=1.00	9.960	-4.105	291.753	0.014
T12	110.365 - 90.3646 (753)	C15x33.9	3'5"	3'3-9/16'	43.8 K=1.00	9.960	-0.027	291.753	0.000
T12	110.365 - 90.3646 (754)	C15x33.9	3'5"	3'3-9/16'	43.8 K=1.00	9.960	-0.086	291.753	0.000
T12	110.365 - 90.3646 (760)	C15x33.9	3'5"	3'3-9/16'	43.8 K=1.00	9.960	-0.090	291.753	0.000
T12	110.365 - 90.3646 (761)	C15x33.9	3'5"	3'3-9/16'	43.8 K=1.00	9.960	-3.782	291.753	0.013
T12	110.365 - 90.3646 (764)	C15x33.9	3'5"	3'3-9/16'	43.8 K=1.00	9.960	-3.942	291.753	0.014
T12	110.365 - 90.3646 (765)	C15x33.9	3'5"	3'3-9/16'	43.8 K=1.00	9.960	-3.943	291.753	0.014

Torque-Arm Top Bending Design Data

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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 $\frac{M_{uy}}{\phi M_{ny}}$
T4	270.365 - 250.365 (783)	C15x33.9	-26.097	136.080	0.192	0.000	12.595	0.000
T4	270.365 - 250.365 (784)	C15x33.9	-26.528	136.080	0.195	-0.000	12.595	0.000
T4	270.365 - 250.365 (790)	C15x33.9	-26.377	136.080	0.194	0.000	12.595	0.000
T4	270.365 - 250.365 (791)	C15x33.9	-26.061	136.080	0.192	0.000	12.595	0.000
T4	270.365 - 250.365 (794)	C15x33.9	-26.384	136.080	0.194	0.000	12.595	0.000
T4	270.365 - 250.365 (795)	C15x33.9	-26.498	136.080	0.195	-0.000	12.595	0.000
T8	190.365 - 170.365 (768)	C15x33.9	-27.883	136.080	0.205	0.000	12.595	0.000
T8	190.365 - 170.365 (769)	C15x33.9	-30.460	136.080	0.224	-0.000	12.595	0.000
T8	190.365 - 170.365 (775)	C15x33.9	-30.482	136.080	0.224	0.000	12.595	0.000
T8	190.365 - 170.365 (776)	C15x33.9	-28.819	136.080	0.212	-0.000	12.595	0.000
T8	190.365 - 170.365 (779)	C15x33.9	-29.768	136.080	0.219	-0.000	12.595	0.000
T8	190.365 - 170.365 (780)	C15x33.9	-29.812	136.080	0.219	0.000	12.595	0.000
T12	110.365 - 90.3646 (753)	C15x33.9	-13.998	136.080	0.103	-0.000	12.595	0.000
T12	110.365 - 90.3646 (754)	C15x33.9	-14.484	136.080	0.106	-0.000	12.595	0.000
T12	110.365 - 90.3646 (760)	C15x33.9	-14.540	136.080	0.107	0.000	12.595	0.000
T12	110.365 - 90.3646 (761)	C15x33.9	-13.180	136.080	0.097	0.000	12.595	0.000
T12	110.365 - 90.3646 (764)	C15x33.9	-13.683	136.080	0.101	-0.000	12.595	0.000
T12	110.365 - 90.3646 (765)	C15x33.9	-13.721	136.080	0.101	0.000	12.595	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
T4	270.365 - 250.365 (783)	C15x33.9	0.008	0.192	0.000	0.196	1.050	
T4	270.365 - 250.365 (784)	C15x33.9	0.008	0.195	0.000	0.199	1.050	
T4	270.365 - 250.365 (790)	C15x33.9	0.008	0.194	0.000	0.198	1.050	
T4	270.365 - 250.365 (791)	C15x33.9	0.008	0.192	0.000	0.196	1.050	
T4	270.365 - 250.365 (794)	C15x33.9	0.008	0.194	0.000	0.198	1.050	
T4	270.365 - 250.365 (795)	C15x33.9	0.009	0.195	0.000	0.199	1.050	
T8	190.365 -	C15x33.9	0.010	0.205	0.000	0.210	1.050	

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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
T8	170.365 (768)	C15x33.9	0.000	0.224	0.000	0.224	1.050	
T8	190.365 - 170.365 (769)	C15x33.9	0.000	0.224	0.000	0.224	1.050	
T8	190.365 - 170.365 (775)	C15x33.9	0.013	0.212	0.000	0.219	1.050	
T8	190.365 - 170.365 (776)	C15x33.9	0.014	0.219	0.000	0.226	1.050	
T8	190.365 - 170.365 (779)	C15x33.9	0.014	0.219	0.000	0.226	1.050	
T12	170.365 (780)	C15x33.9	0.000	0.103	0.000	0.103	1.050	
T12	110.365 - 90.3646 (753)	C15x33.9	0.000	0.106	0.000	0.107	1.050	
T12	110.365 - 90.3646 (754)	C15x33.9	0.000	0.107	0.000	0.107	1.050	
T12	110.365 - 90.3646 (760)	C15x33.9	0.013	0.097	0.000	0.103	1.050	
T12	110.365 - 90.3646 (761)	C15x33.9	0.014	0.101	0.000	0.107	1.050	
T12	110.365 - 90.3646 (764)	C15x33.9	0.014	0.101	0.000	0.108	1.050	
T12	110.365 - 90.3646 (765)	C15x33.9	0.014	0.101	0.000	0.108	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 $\frac{P_u}{\phi P_n}$
T1	330.365 - 310.365	ROHN 2 X-STR	20'	2'4-29/32"	37.7	1.477	3.673	66.477	0.055 ¹
T2	310.365 - 290.365	ROHN 2 X-STR	20'	1-3/8"	1.8	1.477	13.619	66.477	0.205 ¹
T3	290.365 - 270.365	ROHN 2 X-STR	20'	1-3/8"	1.8	1.477	20.193	66.477	0.304 ¹
T4	270.365 - 250.365	ROHN 2.5 X-STR	20'	2'4-29/32"	31.3	2.254	20.498	101.409	0.202 ¹
T5	250.365 - 230.365	ROHN 2 X-STR	20'	1-3/8"	1.8	1.477	12.226	66.477	0.184 ¹
T6	230.365 - 210.365	ROHN 2.5 X-STR	20'	2'4-29/32"	31.3	2.254	12.853	101.409	0.127 ¹
T7	210.365 - 190.365	ROHN 2.5 X-STR	20'	7-3/8"	8.0	2.254	7.953	101.409	0.078 ¹
T8	190.365 - 170.365	ROHN 2.5 X-STR	20'	2'4-29/32"	31.3	2.254	14.486	101.409	0.143 ¹
T14	70.3646 - 50.3646	ROHN 2.5 X-STR	20'	1-3/8"	1.5	2.254	3.490	101.409	0.034 ¹
T15	50.3646 - 35.1823	ROHN 2.5 X-STR	15'2-3/16"	2'4-29/32"	31.3	2.254	3.853	101.409	0.038 ¹
T16	35.1823 - 20	ROHN 2.5 X-STR	15'2-3/16"	7-3/8"	8.0	2.254	1.226	101.409	0.012 ¹

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¹ $P_u / \phi P_n$ controls

Leg Bending Design Data (Tension)

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	330.365 - 310.365	ROHN 2 X-STR	0.000	3.816	0.000	0.000	3.816	0.000
T2	310.365 - 290.365	ROHN 2 X-STR	0.000	3.816	0.000	0.000	3.816	0.000
T3	290.365 - 270.365	ROHN 2 X-STR	0.000	3.816	0.000	0.000	3.816	0.000
T4	270.365 - 250.365	ROHN 2.5 X-STR	0.000	7.018	0.000	0.000	7.018	0.000
T5	250.365 - 230.365	ROHN 2 X-STR	0.000	3.816	0.000	0.000	3.816	0.000
T6	230.365 - 210.365	ROHN 2.5 X-STR	0.000	7.018	0.000	0.000	7.018	0.000
T7	210.365 - 190.365	ROHN 2.5 X-STR	0.000	7.018	0.000	0.000	7.018	0.000
T8	190.365 - 170.365	ROHN 2.5 X-STR	0.000	7.018	0.000	0.000	7.018	0.000
T14	70.3646 - 50.3646	ROHN 2.5 X-STR	0.000	7.018	0.000	0.000	7.018	0.000
T15	50.3646 - 35.1823	ROHN 2.5 X-STR	0.000	7.018	0.000	0.000	7.018	0.000
T16	35.1823 - 20	ROHN 2.5 X-STR	0.000	7.018	0.000	0.000	7.018	0.000

Leg Interaction Design Data (Tension)

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	330.365 - 310.365	ROHN 2 X-STR	0.055	0.000	0.000	0.055 ¹	1.050	
T2	310.365 - 290.365	ROHN 2 X-STR	0.205	0.000	0.000	0.205 ¹	1.050	
T3	290.365 - 270.365	ROHN 2 X-STR	0.304	0.000	0.000	0.304 ¹	1.050	
T4	270.365 - 250.365	ROHN 2.5 X-STR	0.202	0.000	0.000	0.202 ¹	1.050	
T5	250.365 - 230.365	ROHN 2 X-STR	0.184	0.000	0.000	0.184 ¹	1.050	
T6	230.365 - 210.365	ROHN 2.5 X-STR	0.127	0.000	0.000	0.127 ¹	1.050	
T7	210.365 - 190.365	ROHN 2.5 X-STR	0.078	0.000	0.000	0.078 ¹	1.050	
T8	190.365 - 170.365	ROHN 2.5 X-STR	0.143	0.000	0.000	0.143 ¹	1.050	
T14	70.3646 - 50.3646	ROHN 2.5 X-STR	0.034	0.000	0.000	0.034 ¹	1.050	
T15	50.3646 - 35.1823	ROHN 2.5 X-STR	0.038	0.000	0.000	0.038 ¹	1.050	
T16	35.1823 - 20	ROHN 2.5 X-STR	0.012	0.000	0.000	0.012 ¹	1.050	

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Section No.	Elevation	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
	ft							

¹ $P_u / \phi P_n$ controls

Diagonal Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in ²	K	K	
T1	330.365 - 310.365	ROHN 1.5 x 11GA	3'8-5/8"	3'8-5/8"	91.1	0.370	2.704	16.106	0.168 ¹
T2	310.365 - 290.365	ROHN 1.5 x 11GA	3'8-5/8"	3'8-5/8"	91.1	0.370	1.254	16.106	0.078 ¹
T3	290.365 - 270.365	ROHN 1.5 x 11GA	3'8-5/8"	3'8-5/8"	91.1	0.370	0.751	16.106	0.047 ¹
T4	270.365 - 250.365	ROHN 1.5 x 11GA	3'8-5/8"	3'8-5/8"	91.1	0.370	2.228	16.106	0.138 ¹
T5	250.365 - 230.365	ROHN 1.5 x 11GA	3'8-5/8"	3'8-5/8"	91.1	0.370	1.581	16.106	0.098 ¹
T6	230.365 - 210.365	ROHN 1.5 x 11GA	3'8-5/8"	3'8-5/8"	91.1	0.370	1.293	16.106	0.080 ¹
T7	210.365 - 190.365	ROHN 1.5 x 11GA	3'8-5/8"	3'8-5/8"	91.1	0.370	3.357	16.106	0.208 ¹
T8	190.365 - 170.365	ROHN 1.5 x 11GA	3'8-5/8"	3'8-5/8"	91.1	0.370	2.472	16.106	0.153 ¹
T9	170.365 - 150.365	ROHN 1.5 x 11GA	3'8-5/8"	3'8-5/8"	91.1	0.370	3.529	16.106	0.219 ¹
T10	150.365 - 130.365	ROHN 1.5 x 11GA	3'8-5/8"	3'8-5/8"	91.1	0.370	1.778	16.106	0.110 ¹
T11	130.365 - 110.365	ROHN 1.5 x 11GA	3'8-5/8"	3'8-5/8"	91.1	0.370	2.021	16.106	0.126 ¹
T12	110.365 - 90.3646	ROHN 1.5 x 11GA	3'8-5/8"	3'8-5/8"	91.1	0.370	1.972	16.106	0.122 ¹
T13	90.3646 - 70.3646	ROHN 1.5 x 11GA	3'8-5/8"	3'8-5/8"	91.1	0.370	4.217	16.106	0.262 ¹
T14	70.3646 - 50.3646	ROHN 1.5 x 11GA	3'8-5/8"	3'8-5/8"	91.1	0.370	2.559	16.106	0.159 ¹
T15	50.3646 - 35.1823	ROHN 1.5 x 11GA	3'8-5/8"	3'8-5/8"	91.1	0.370	0.794	16.106	0.049 ¹
T16	35.1823 - 20	ROHN 1.5 x 11GA	3'8-5/8"	3'8-5/8"	91.1	0.370	2.182	16.106	0.135 ¹
T17	20 - 4.81771	ROHN 1.5 x 11GA	3'8-5/8"	3'8-5/8"	91.1	0.370	2.903	16.106	0.180 ¹

¹ $P_u / \phi P_n$ controls

Horizontal Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in ²	K	K	
T18	4.81771 - 0	L4x4x1/4	3'5"	3'2-1/8"	30.5	1.940	5.069	62.856	0.081

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Horizontal Bending Design Data

Section No.	Elevation	Size	M_{ux}	ϕM_{nx}	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy}	ϕM_{ny}	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
	ft		kip-ft	kip-ft		kip-ft	kip-ft	
T18	4.81771 - 0	L4x4x1/4	0.926	6.932	0.134	0.570	3.463	0.165

Horizontal Interaction Design Data

Section No.	Elevation	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
	ft							
T18	4.81771 - 0	L4x4x1/4	0.081	0.134	0.165	0.339	1.050	

Secondary Horizontal Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in ²	K	K	
T2	310.365 - 290.365	1	3'5"	3'2-5/8"	154.5	0.785	0.702	25.447	0.028 ¹
T3	290.365 - 270.365	1	3'5"	3'2-5/8"	154.5	0.785	0.977	25.447	0.038 ¹

¹ $P_u / \phi P_n$ controls

Top Girt Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in ²	K	K	
T1	330.365 - 310.365	ROHN 1.5 x 11GA	3'5"	3'2-5/8"	78.9	0.370	0.162	16.106	0.010 ¹
T2	310.365 - 290.365	ROHN 1.5 x 11GA	3'5"	3'2-5/8"	78.9	0.370	0.534	16.106	0.033 ¹
T3	290.365 - 270.365	ROHN 1.5 x 11GA	3'5"	3'2-5/8"	78.9	0.370	0.474	16.106	0.029 ¹
T4	270.365 - 250.365	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	77.8	0.370	0.541	16.106	0.034 ¹
T5	250.365 - 230.365	ROHN 1.5 x 11GA	3'5"	3'2-5/8"	78.9	0.370	0.699	16.106	0.043 ¹
T6	230.365 - 210.365	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	77.8	0.370	0.719	16.106	0.045 ¹
T7	210.365 - 190.365	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	77.8	0.370	0.655	16.106	0.041 ¹
T8	190.365 - 170.365	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	77.8	0.370	0.825	16.106	0.051 ¹
T9	170.365 -	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	77.8	0.370	1.768	16.106	0.110 ¹

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T10	150.365 - 130.365	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	77.8	0.370	0.694	16.106	0.043 ¹
T11	130.365 - 110.365	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	77.8	0.370	0.703	16.106	0.044 ¹
T12	110.365 - 90.3646	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	77.8	0.370	0.910	16.106	0.057 ¹
T13	90.3646 - 70.3646	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	77.8	0.370	2.174	16.106	0.135 ¹
T14	70.3646 - 50.3646	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	77.8	0.370	1.153	16.106	0.072 ¹
T15	50.3646 - 35.1823	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	77.8	0.370	1.176	16.106	0.073 ¹
T16	35.1823 - 20	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	77.8	0.370	1.160	16.106	0.072 ¹
T17	20 - 4.81771	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	77.8	0.370	1.024	16.106	0.064 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	330.365 - 310.365	ROHN 1.5 x 11GA	3'5"	3'2-5/8"	78.9	0.370	0.630	16.106	0.039 ¹
T2	310.365 - 290.365	ROHN 1.5 x 11GA	3'5"	3'2-5/8"	78.9	0.370	0.548	16.106	0.034 ¹
T3	290.365 - 270.365	ROHN 1.5 x 11GA	3'5"	3'2-5/8"	78.9	0.370	0.474	16.106	0.029 ¹
T4	270.365 - 250.365	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	77.8	0.370	1.260	16.106	0.078 ¹
T5	250.365 - 230.365	ROHN 1.5 x 11GA	3'5"	3'2-5/8"	78.9	0.370	0.699	16.106	0.043 ¹
T6	230.365 - 210.365	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	77.8	0.370	0.719	16.106	0.045 ¹
T7	210.365 - 190.365	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	77.8	0.370	1.059	16.106	0.066 ¹
T8	190.365 - 170.365	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	77.8	0.370	1.619	16.106	0.101 ¹
T9	170.365 - 150.365	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	77.8	0.370	0.822	16.106	0.051 ¹
T10	150.365 - 130.365	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	77.8	0.370	0.694	16.106	0.043 ¹
T11	130.365 - 110.365	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	77.8	0.370	0.811	16.106	0.050 ¹
T12	110.365 - 90.3646	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	77.8	0.370	1.872	16.106	0.116 ¹
T13	90.3646 - 70.3646	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	77.8	0.370	0.928	16.106	0.058 ¹
T14	70.3646 - 50.3646	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	77.8	0.370	1.153	16.106	0.072 ¹
T15	50.3646 - 35.1823	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	77.8	0.370	1.176	16.106	0.073 ¹
T16	35.1823 - 20	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	77.8	0.370	1.160	16.106	0.072 ¹
T17	20 - 4.81771	ROHN 1.5 x 11GA	3'5"	3'2-1/8"	77.8	0.370	2.201	16.106	0.137 ¹

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¹ $P_u / \phi P_n$ 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	330.365 - 310.365	2L2x2x1/4x3/8	3'5"	3'2-5/8"	63.4	1.129	4.400	49.101	0.090 ¹
T4	270.365 - 250.365	ai/ri > (KL/r) _o - 797 2L2x2x1/4x3/8	3'5"	3'2-1/8"	62.6	1.129	6.443	49.101	0.131 ¹
T8	190.365 - 170.365	ai/ri > (KL/r) _o - 785 2L2x2x1/4x3/8	3'5"	3'2-1/8"	62.6	1.129	8.529	49.101	0.174 ¹
T12	110.365 - 90.3646	ai/ri > (KL/r) _o - 770 2L2x2x1/4x3/8 ai/ri > (KL/r) _o - 755	3'5"	3'2-1/8"	62.6	1.129	8.246	49.101	0.168 ¹

¹ $P_u / \phi P_n$ 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	330.365 - 310.365	2L2x2x1/4x3/8	0.000	2.001	0.000	0.000	3.392	0.000
T4	270.365 - 250.365	2L2x2x1/4x3/8	0.000	2.001	0.000	0.000	3.392	0.000
T8	190.365 - 170.365	2L2x2x1/4x3/8	0.000	2.001	0.000	0.000	3.392	0.000
T12	110.365 - 90.3646	2L2x2x1/4x3/8	0.000	2.001	0.000	0.000	3.392	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	330.365 - 310.365	2L2x2x1/4x3/8	0.090	0.000	0.000	0.090 ¹	1.050	
T4	270.365 - 250.365	2L2x2x1/4x3/8	0.131	0.000	0.000	0.131 ¹	1.050	
T8	190.365 - 170.365	2L2x2x1/4x3/8	0.174	0.000	0.000	0.174 ¹	1.050	
T12	110.365 - 90.3646	2L2x2x1/4x3/8	0.168	0.000	0.000	0.168 ¹	1.050	

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¹ $P_u / \phi P_n$ 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 $\frac{P_u}{\phi P_n}$
T4	270.365 - 250.365 (783)	C15x33.9	3'5"	3'3-9/16'	43.8	7.170	0.075	311.895	0.000
T4	270.365 - 250.365 (784)	C15x33.9	3'5"	3'3-9/16'	43.8	7.170	0.080	311.895	0.000
T4	270.365 - 250.365 (790)	C15x33.9	3'5"	3'3-9/16'	43.8	7.170	0.078	311.895	0.000
T4	270.365 - 250.365 (791)	C15x33.9	3'5"	3'3-9/16'	43.8	7.170	0.126	311.895	0.000
T4	270.365 - 250.365 (794)	C15x33.9	3'5"	3'3-9/16'	43.8	7.170	0.074	311.895	0.000
T4	270.365 - 250.365 (795)	C15x33.9	3'5"	3'3-9/16'	43.8	7.170	0.131	311.895	0.000
T8	190.365 - 170.365 (768)	C15x33.9	3'5"	3'3-9/16'	43.8	7.170	0.090	311.895	0.000
T8	190.365 - 170.365 (769)	C15x33.9	3'5"	3'3-9/16'	43.8	7.170	0.042	311.895	0.000
T8	190.365 - 170.365 (775)	C15x33.9	3'5"	3'3-9/16'	43.8	7.170	0.040	311.895	0.000
T8	190.365 - 170.365 (776)	C15x33.9	3'5"	3'3-9/16'	43.8	7.170	3.376	311.895	0.011
T8	190.365 - 170.365 (779)	C15x33.9	3'5"	3'3-9/16'	43.8	7.170	0.089	311.895	0.000
T8	190.365 - 170.365 (780)	C15x33.9	3'5"	3'3-9/16'	43.8	7.170	3.223	311.895	0.010
T12	110.365 - 90.3646 (753)	C15x33.9	3'5"	3'3-9/16'	43.8	7.170	3.078	311.895	0.010
T12	110.365 - 90.3646 (754)	C15x33.9	3'5"	3'3-9/16'	43.8	7.170	3.018	311.895	0.010
T12	110.365 - 90.3646 (760)	C15x33.9	3'5"	3'3-9/16'	43.8	7.170	3.162	311.895	0.010
T12	110.365 - 90.3646 (761)	C15x33.9	3'5"	3'3-9/16'	43.8	7.170	3.002	311.895	0.010
T12	110.365 - 90.3646 (764)	C15x33.9	3'5"	3'3-9/16'	43.8	7.170	3.058	311.895	0.010
T12	110.365 - 90.3646 (765)	C15x33.9	3'5"	3'3-9/16'	43.8	7.170	2.818	311.895	0.009

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 $\frac{M_{uy}}{\phi M_{ny}}$
T4	270.365 - 250.365 (783)	C15x33.9	-24.989	136.080	0.184	-0.000	12.595	0.000
T4	270.365 - 250.365 (784)	C15x33.9	-25.444	136.080	0.187	0.000	12.595	0.000
T4	270.365 - 250.365 (790)	C15x33.9	-25.413	136.080	0.187	-0.000	12.595	0.000

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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 $\frac{M_{uy}}{\phi M_{ny}}$
T4	270.365 - 250.365 (791)	C15x33.9	-21.537	136.080	0.158	0.000	12.595	0.000
T4	270.365 - 250.365 (794)	C15x33.9	-24.980	136.080	0.184	0.000	12.595	0.000
T4	270.365 - 250.365 (795)	C15x33.9	-21.559	136.080	0.158	-0.000	12.595	0.000
T8	190.365 - 170.365 (768)	C15x33.9	-29.578	136.080	0.217	0.000	12.595	0.000
T8	190.365 - 170.365 (769)	C15x33.9	-30.483	136.080	0.224	-0.000	12.595	0.000
T8	190.365 - 170.365 (775)	C15x33.9	-30.502	136.080	0.224	0.000	12.595	0.000
T8	190.365 - 170.365 (776)	C15x33.9	-26.171	136.080	0.192	-0.000	12.595	0.000
T8	190.365 - 170.365 (779)	C15x33.9	-29.535	136.080	0.217	0.000	12.595	0.000
T8	190.365 - 170.365 (780)	C15x33.9	-25.291	136.080	0.186	0.000	12.595	0.000
T12	110.365 - 90.3646 (753)	C15x33.9	-12.413	136.080	0.091	-0.000	12.595	0.000
T12	110.365 - 90.3646 (754)	C15x33.9	-12.279	136.080	0.090	-0.000	12.595	0.000
T12	110.365 - 90.3646 (760)	C15x33.9	-12.585	136.080	0.092	-0.000	12.595	0.000
T12	110.365 - 90.3646 (761)	C15x33.9	-12.362	136.080	0.091	-0.000	12.595	0.000
T12	110.365 - 90.3646 (764)	C15x33.9	-12.029	136.080	0.088	0.000	12.595	0.000
T12	110.365 - 90.3646 (765)	C15x33.9	-11.834	136.080	0.087	0.000	12.595	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
T4	270.365 - 250.365 (783)	C15x33.9	0.000	0.184	0.000	0.184	1.050	
T4	270.365 - 250.365 (784)	C15x33.9	0.000	0.187	0.000	0.187	1.050	
T4	270.365 - 250.365 (790)	C15x33.9	0.000	0.187	0.000	0.187	1.050	
T4	270.365 - 250.365 (791)	C15x33.9	0.000	0.158	0.000	0.158	1.050	
T4	270.365 - 250.365 (794)	C15x33.9	0.000	0.184	0.000	0.184	1.050	
T4	270.365 - 250.365 (795)	C15x33.9	0.000	0.158	0.000	0.159	1.050	
T8	190.365 - 170.365 (768)	C15x33.9	0.000	0.217	0.000	0.217	1.050	
T8	190.365 - 170.365 (769)	C15x33.9	0.000	0.224	0.000	0.224	1.050	
T8	190.365 - 170.365 (775)	C15x33.9	0.000	0.224	0.000	0.224	1.050	
T8	190.365 - 170.365 (776)	C15x33.9	0.011	0.192	0.000	0.198	1.050	

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Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$\emptyset P_{allow}$ K	% Capacity	Pass Fail
T2	310.365 - 290.365	Diagonal	ROHN 1.5 x 11GA	109	-1.545	12.400	12.5 17.1 (b)	Pass
T3	290.365 - 270.365	Diagonal	ROHN 1.5 x 11GA	127	-0.974	12.400	7.9 10.8 (b)	Pass
T4	270.365 - 250.365	Diagonal	ROHN 1.5 x 11GA	205	-3.178	12.400	25.6 31.0 (b)	Pass
T5	250.365 - 230.365	Diagonal	ROHN 1.5 x 11GA	304	-2.135	12.400	17.2 23.7 (b)	Pass
T6	230.365 - 210.365	Diagonal	ROHN 1.5 x 11GA	320	-1.455	12.400	11.7 14.2 (b)	Pass
T7	210.365 - 190.365	Diagonal	ROHN 1.5 x 11GA	353	-3.467	12.400	28.0 33.8 (b)	Pass
T8	190.365 - 170.365	Diagonal	ROHN 1.5 x 11GA	387	-4.541	12.400	36.6 44.2 (b)	Pass
T9	170.365 - 150.365	Diagonal	ROHN 1.5 x 11GA	464	-3.748	12.400	30.2 36.5 (b)	Pass
T10	150.365 - 130.365	Diagonal	ROHN 1.5 x 11GA	497	-2.041	12.400	16.5 19.9 (b)	Pass
T11	130.365 - 110.365	Diagonal	ROHN 1.5 x 11GA	509	-2.197	12.400	17.7 21.4 (b)	Pass
T12	110.365 - 90.3646	Diagonal	ROHN 1.5 x 11GA	543	-5.522	12.400	44.5 53.8 (b)	Pass
T13	90.3646 - 70.3646	Diagonal	ROHN 1.5 x 11GA	620	-4.494	12.400	36.2 43.8 (b)	Pass
T14	70.3646 - 50.3646	Diagonal	ROHN 1.5 x 11GA	653	-2.906	12.400	23.4 28.3 (b)	Pass
T15	50.3646 - 35.1823	Diagonal	ROHN 1.5 x 11GA	664	-1.074	12.400	8.7 10.5 (b)	Pass
T16	35.1823 - 20	Diagonal	ROHN 1.5 x 11GA	692	-2.444	12.400	19.7 23.8 (b)	Pass
T17	20 - 4.81771	Diagonal	ROHN 1.5 x 11GA	722	-2.970	12.400	24.0 28.9 (b)	Pass
T18	4.81771 - 0	Horizontal	L4x4x1/4	740	5.069	65.999	32.2	Pass
T2	310.365 - 290.365	Secondary Horizontal	1	60	0.702	26.719	2.6	Pass
T3	290.365 - 270.365	Secondary Horizontal	1	139	-0.358	7.805	4.6	Pass
T1	330.365 - 310.365	Top Girt	ROHN 1.5 x 11GA	6	-0.169	14.092	1.2 1.9 (b)	Pass
T2	310.365 - 290.365	Top Girt	ROHN 1.5 x 11GA	38	0.534	16.911	3.2 5.9 (b)	Pass
T3	290.365 - 270.365	Top Girt	ROHN 1.5 x 11GA	119	-0.474	14.092	3.4 5.3 (b)	Pass
T4	270.365 - 250.365	Top Girt	ROHN 1.5 x 11GA	200	-0.477	14.231	3.3 5.3 (b)	Pass
T5	250.365 - 230.365	Top Girt	ROHN 1.5 x 11GA	257	-0.699	14.092	5.0 7.7 (b)	Pass
T6	230.365 - 210.365	Top Girt	ROHN 1.5 x 11GA	314	-0.719	14.231	5.1 7.0 (b)	Pass
T7	210.365 - 190.365	Top Girt	ROHN 1.5 x 11GA	348	-0.655	14.231	4.6 6.4 (b)	Pass
T8	190.365 - 170.365	Top Girt	ROHN 1.5 x 11GA	380	-0.825	14.231	5.8 8.0 (b)	Pass
T9	170.365 - 150.365	Top Girt	ROHN 1.5 x 11GA	436	1.768	16.911	10.5 17.2 (b)	Pass
T10	150.365 - 130.365	Top Girt	ROHN 1.5 x 11GA	470	-0.694	14.231	4.9 6.8 (b)	Pass
T11	130.365 - 110.365	Top Girt	ROHN 1.5 x 11GA	503	-0.703	14.231	4.9 6.8 (b)	Pass
T12	110.365 - 90.3646	Top Girt	ROHN 1.5 x 11GA	537	-0.910	14.231	6.4 8.9 (b)	Pass

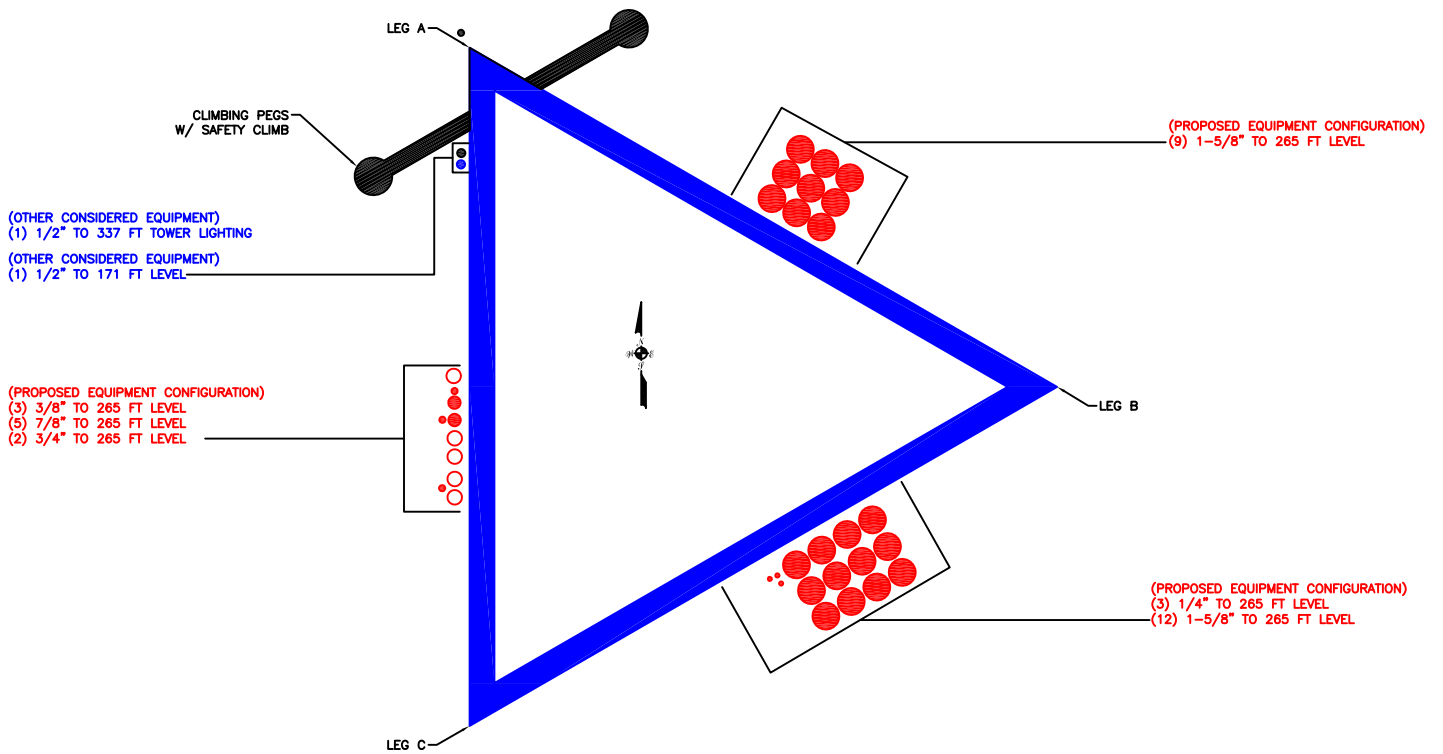
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	Crown Castle	SK

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	σP_{allow} K	% Capacity	Pass Fail
T13	90.3646 - 70.3646	Top Girt	ROHN 1.5 x 11GA	594	2.174	16.911	12.9	Pass
T14	70.3646 - 50.3646	Top Girt	ROHN 1.5 x 11GA	626	-1.153	14.231	21.2 (b) 8.1	Pass
T15	50.3646 - 35.1823	Top Girt	ROHN 1.5 x 11GA	659	-1.176	14.231	11.2 (b) 8.3	Pass
T16	35.1823 - 20	Top Girt	ROHN 1.5 x 11GA	686	-1.160	14.231	11.5 (b) 8.2	Pass
T17	20 - 4.81771	Top Girt	ROHN 1.5 x 11GA	713	-1.024	14.231	11.3 (b) 7.2	Pass
T1	330.365 - 310.365	Bottom Girt	ROHN 1.5 x 11GA	7	-0.578	14.092	10.0 (b) 4.1	Pass
T2	310.365 - 290.365	Bottom Girt	ROHN 1.5 x 11GA	42	0.548	16.911	7.0 (b) 3.2	Pass
T3	290.365 - 270.365	Bottom Girt	ROHN 1.5 x 11GA	122	-0.474	14.092	6.1 (b) 3.4	Pass
T4	270.365 - 250.365	Bottom Girt	ROHN 1.5 x 11GA	204	1.260	16.911	5.3 (b) 7.5	Pass
T5	250.365 - 230.365	Bottom Girt	ROHN 1.5 x 11GA	260	-0.699	14.092	12.3 (b) 5.0	Pass
T6	230.365 - 210.365	Bottom Girt	ROHN 1.5 x 11GA	317	-0.719	14.231	7.7 (b) 5.1	Pass
T7	210.365 - 190.365	Bottom Girt	ROHN 1.5 x 11GA	350	1.059	16.911	7.0 (b) 6.3	Pass
T8	190.365 - 170.365	Bottom Girt	ROHN 1.5 x 11GA	382	1.619	16.911	10.3 (b) 9.6	Pass
T9	170.365 - 150.365	Bottom Girt	ROHN 1.5 x 11GA	440	-0.822	14.231	15.8 (b) 5.8	Pass
T10	150.365 - 130.365	Bottom Girt	ROHN 1.5 x 11GA	473	-0.694	14.231	8.0 (b) 4.9	Pass
T11	130.365 - 110.365	Bottom Girt	ROHN 1.5 x 11GA	506	-0.703	14.231	6.8 (b) 4.9	Pass
T12	110.365 - 90.3646	Bottom Girt	ROHN 1.5 x 11GA	538	1.872	16.911	7.9 (b) 11.1	Pass
T13	90.3646 - 70.3646	Bottom Girt	ROHN 1.5 x 11GA	596	-0.928	14.231	18.2 (b) 6.5	Pass
T14	70.3646 - 50.3646	Bottom Girt	ROHN 1.5 x 11GA	629	-1.153	14.231	9.0 (b) 8.1	Pass
T15	50.3646 - 35.1823	Bottom Girt	ROHN 1.5 x 11GA	662	-1.176	14.231	11.2 (b) 8.3	Pass
T16	35.1823 - 20	Bottom Girt	ROHN 1.5 x 11GA	689	-1.160	14.231	11.5 (b) 8.2	Pass
T17	20 - 4.81771	Bottom Girt	ROHN 1.5 x 11GA	715	2.201	16.911	11.3 (b) 13.0	Pass
T1	330.365 - 310.365	Guy A@312.888	5/8 (ECP - 23000)	801	12.241	26.712	21.4 (b) 45.8	Pass
T4	270.365 - 250.365	Guy A@252.888	1/2 (ECP - 23000)	792	11.240	16.947	66.3	Pass
T8	190.365 - 170.365	Guy A@172.888	1/2 (ECP - 23000)	777	12.112	16.947	71.5	Pass
T12	110.365 - 90.3646	Guy A@92.888	3/8 (ECP - 23000)	762	8.156	9.702	84.1	Pass
T1	330.365 - 310.365	Guy B@312.888	5/8 (ECP - 23000)	800	12.248	26.712	45.9	Pass
T4	270.365 - 250.365	Guy B@252.888	1/2 (ECP - 23000)	789	11.146	16.947	65.8	Pass
T8	190.365 - 170.365	Guy B@172.888	1/2 (ECP - 23000)	774	12.107	16.947	71.4	Pass
T12	110.365 - 90.3646	Guy B@92.888	3/8 (ECP - 23000)	759	8.156	9.702	84.1	Pass
T1	330.365 -	Guy C@312.888	5/8 (ECP - 23000)	796	12.252	26.712	45.9	Pass

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	Crown Castle	SK

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T4	310.365 - 270.365	Guy C@252.888	1/2 (ECP - 23000)	782	11.055	16.947	65.2	Pass
T8	190.365 - 170.365	Guy C@172.888	1/2 (ECP - 23000)	767	11.711	16.947	69.1	Pass
T12	110.365 - 90.3646	Guy C@92.888	3/8 (ECP - 23000)	752	7.842	9.702	80.8	Pass
T1	330.365 - 310.365	Top Guy Pull-Off@312.888	2L2x2x1/4x3/8	797	4.400	51.556	8.5	Pass
T4	270.365 - 250.365	Top Guy Pull-Off@252.888	2L2x2x1/4x3/8	785	6.443	51.556	21.6 (b)	Pass
T8	190.365 - 170.365	Top Guy Pull-Off@172.888	2L2x2x1/4x3/8	770	8.529	51.556	12.5	Pass
T12	110.365 - 90.3646	Top Guy Pull-Off@92.888	2L2x2x1/4x3/8	755	8.246	51.556	27.7 (b)	Pass
T4	270.365 - 250.365	Torque Arm Top@252.888	C15x33.9	784	-2.400	306.341	16.5	Pass
T8	190.365 - 170.365	Torque Arm Top@172.888	C15x33.9	780	-4.105	306.341	36.7 (b)	Pass
T12	110.365 - 90.3646	Torque Arm Top@92.888	C15x33.9	765	-3.943	306.341	16.0	Pass
							35.5 (b)	Pass
							30.4 (b)	Pass
							21.5	Pass
							31.3 (b)	Pass
							10.2	Pass
							28.3 (b)	Pass
							Summary	
							Leg (T15)	84.9
							Diagonal (T12)	53.8
							Horizontal (T18)	32.2
							Secondary Horizontal (T3)	4.6
							Top Girt (T13)	21.2
							Bottom Girt (T17)	21.4
							Guy A (T12)	84.1
							Guy B (T12)	84.1
							Guy C (T12)	80.8
							Top Guy Pull-Off (T8)	36.7
							Torque Arm Top (T8)	31.3
							Bolt Checks	53.8
							RATING =	84.9
								Pass

APPENDIX B
BASE LEVEL DRAWING



BUSINESS UNIT: 846213

APPENDIX C
ADDITIONAL CALCULATIONS

Pier and Pad Foundation



BU #: 846213
 Site Name: LAKE CITY, FL
 App. Number: 746303, Rev# 0

TIA-222 Revision: H
 Tower Type: Guyed

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

Superstructure Analysis Reactions		
Compression, P_{comp} :	122	kips
Base Shear, V_{u_comp} :	3	kips
Moment, M_u :	0	ft-kips
Tower Height, H :	330	ft
BP Dist. Above Fdn, bp_{dist} :	1.625	in
Bolt Circle / Bearing Plate Width, BC :		in

Pier Properties		
Pier Shape:	Square	
Pier Diameter, $dpier$:	2	ft
Ext. Above Grade, E :	0.3	ft
Pier Rebar Size, Sc :	6	
Pier Rebar Quantity, mc :	6	
Pier Tie/Spiral Size, St :	3	
Pier Tie/Spiral Quantity, mt :	6	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier} :	3	in

Pad Properties		
Depth, D :	5.9	ft
Pad Width, W_1 :	8	ft
Pad Thickness, T :	2.2	ft
Pad Rebar Size (Bottom dir. 2), Sp_2 :	6	
Pad Rebar Quantity (Bottom dir. 2), mp_2 :	10	
Pad Clear Cover, cc_{pad} :	3	

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

Soil Properties		
Total Soil Unit Weight, γ :	120	pcf
Ultimate Net Bearing, Q_{net} :	9.000	ksf
Cohesion, C_u :	0.000	ksf
Friction Angle, ϕ :	30	degrees
SPT Blow Count, N_{blows} :	7	
Base Friction, μ :		
Neglected Depth, N :	1.00	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, gw :	5	ft

Foundation Analysis Checks				
	Capacity	Demand	Rating*	Check
Lateral (Sliding) (kips)	49.76	3.00	5.7%	Pass
Bearing Pressure (ksf)	5.79	2.89	47.5%	Pass
Overturning (kip*ft)	327.64	19.01	5.8%	Pass
Pier Flexure (Comp.) (kip*ft)	169.21	12.00	6.8%	Pass
Pier Compression (kip)	1909.44	124.88	6.2%	Pass
Pad Flexure (kip*ft)	430.37	75.06	16.6%	Pass
Pad Shear - 1-way (kips)	175.69	19.30	10.5%	Pass
Pad Shear - 2-way (Comp) (ksi)	0.164	0.018	10.2%	Pass
Flexural 2-way (Comp) (kip*ft)	860.74	7.20	0.8%	Pass

*Rating per TIA-222-H Section 15.5

0.5% min steel assumed

Structural Rating*:	16.6%
Soil Rating*:	47.5%

0.18% min steel assumed

<--Toggle between Gross and Net

Guyed Anchor Block Foundation

Checks capacity of anchor blocks for a guyed tower.



BU#: 846213
 Site Name: LAKE CITY, FL
 Order Number: 746303, Rev# 0
 Location: B3

TIA-222 Revision: H

Design Reactions		
Shear, S:	29.00	kips
Uplift, Ua:	26.00	kips
Resultant Force, Rf:	38.95	kips
Tower Height, H:	330.00	ft
Guy Anchor Radius, R:	150.00	ft
Resultant Angle to Horizontal, θ:	41.9	deg

Guy Anchor Properties		
Depth to Bottom of Deadman, Da:	8.2	ft
Anchor Width, Wa:	4	ft
Anchor Thickness, Ta:	2.5	ft
Anchor Length, La:	14.5	ft
Concrete Volume, Vc:	5.4	yd ³
Toe Width, toe:		ft

Anchor Shaft Diameter, ds:	1.45	in
Anchor Shaft Quantity, n:	1	
Anchor Shaft Area Override:		in ²
Shear Lag Factor, u:	1	

Material Properties

Wt. Avg. Concrete Density, δx:	0.088	kcf
Anchor Shaft Grade, Fy*:	36	ksi
Anchor Shaft Ultimate Strength, Fu*:	58	ksi

Design Checks				
	Capacity	Demand	Rating*	Check
Lateral Capacity (kips):	176.93	29.00	15.6%	Pass
Uplift Capacity (kips):	171.57	26.00	14.4%	Pass

Anchor Shaft (kips):	47.56	38.95	78.0%	Pass
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*Rating per TIA-222-H Section 15.5

Anchor Shaft Rating:	78.0%
Structural Rating:	N/A
Soil Rating:	15.6%

Neglect Depth, Neg:	0	ft
Groundwater Level, gw:	5	ft

Soil Properties:		No. of Soil Layers:				
Layer	φ, deg	cu, ksf	δ, pcf	d, ft	Ultimate fs (ksf)	N (blows/ft)
1	29	0.000	115	2.50		5
2	0	1.870	120	5.00		
3	0	1.870	57.6	8.20		

*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#: 846213
 Site Name: LAKE CITY, FL
 Order Number: 746303, Rev# 0
 Location: B2

TIA-222 Revision: H

Design Reactions		
Shear, S:	29.00	kips
Uplift, Ua:	26.00	kips
Resultant Force, Rf:	38.95	kips
Tower Height, H:	330.00	ft
Guy Anchor Radius, R:	150.00	ft
Resultant Angle to Horizontal, θ:	41.9	deg

Guy Anchor Properties		
Depth to Bottom of Deadman, Da:	8.1	ft
Anchor Width, Wa:	2.7	ft
Anchor Thickness, Ta:	2.3	ft
Anchor Length, La:	14.5	ft
Concrete Volume, Vc:	3.3	yd ³
Toe Width, toe:		ft

Anchor Shaft Diameter, ds:	1.45	in
Anchor Shaft Quantity, n:	1	
Anchor Shaft Area Override:		in ²
Shear Lag Factor, u:	1	

Material Properties

Wt. Avg. Concrete Density, δx:	0.088	kcf
Anchor Shaft Grade, Fy*:	36	ksi
Anchor Shaft Ultimate Strength, Fu*:	58	ksi

Design Checks				
	Capacity	Demand	Rating*	Check
Lateral Capacity (kips):	192.73	29.00	14.3%	Pass
Uplift Capacity (kips):	147.39	26.00	16.8%	Pass

Anchor Shaft (kips):	47.56	38.95	78.0%	Pass
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*Rating per TIA-222-H Section 15.5

Anchor Shaft Rating:	78.0%
Structural Rating:	N/A
Soil Rating:	16.8%

Neglect Depth, Neg:	0	ft
Groundwater Level, gw:	4	ft

Soil Properties:		No. of Soil Layers:				
Layer	φ, deg	cu, ksf	δ, pcf	d, ft	Ultimate fs (ksf)	N (blows/ft)
1	29	0.000	115	2.00		5
2	0	0.880	115	4.00		
3	0	0.880	52.6	4.50		
4	0	2.750	62.6	7.50		
5	0	1.630	57.6	8.10		

*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#: 846213
 Site Name: LAKE CITY, FL
 Order Number: 746303, Rev# 0
 Location: B4

TIA-222 Revision: H

Design Reactions		
Shear, S:	29.00	kips
Uplift, Ua:	26.00	kips
Resultant Force, Rf:	38.95	kips
Tower Height, H:	330.00	ft
Guy Anchor Radius, R:	150.00	ft
Resultant Angle to Horizontal, θ:	41.9	deg

Guy Anchor Properties		
Depth to Bottom of Deadman, Da:	8.5	ft
Anchor Width, Wa:	3.5	ft
Anchor Thickness, Ta:	2.7	ft
Anchor Length, La:	15	ft
Concrete Volume, Vc:	5.3	yd ³
Toe Width, toe:		ft

Anchor Shaft Diameter, ds:	1.45	in
Anchor Shaft Quantity, n:	1	
Anchor Shaft Area Override:		in ²
Shear Lag Factor, u:	1	

Material Properties

Wt. Avg. Concrete Density, δx:	0.088	kcf
Anchor Shaft Grade, Fy*:	36	ksi
Anchor Shaft Ultimate Strength, Fu*:	58	ksi

Design Checks				
	Capacity	Demand	Rating*	Check
Lateral Capacity (kips):	250.07	29.00	11.0%	Pass
Uplift Capacity (kips):	208.10	26.00	11.9%	Pass

Anchor Shaft (kips):	47.56	38.95	78.0%	Pass
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*Rating per TIA-222-H Section 15.5

Anchor Shaft Rating:	78.0%
Structural Rating:	N/A
Soil Rating:	11.9%

Neglect Depth, Neg:	0	ft
Groundwater Level, gw:	5.7	ft

Soil Properties:		No. of Soil Layers:				
Layer	φ, deg	cu, ksf	δ, pcf	d, ft	Ultimate fs (ksf)	N (blows/ft)
1	29	0.000	115	2.00		6
2	0	1.750	120	5.00		
3	0	3.370	125	5.70		
4	0	3.370	62.6	7.00		
5	0	1.500	57.6	8.50		

*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#: 846213
 Site Name: LAKE CITY, FL
 Order Number: 746303, Rev# 0
 Location: B3

TIA-222 Revision: H

Design Reactions		
Shear, S:	24.00	kips
Uplift, Ua:	24.00	kips
Resultant Force, Rf:	33.94	kips
Tower Height, H:	330.00	ft
Guy Anchor Radius, R:	266.00	ft
Resultant Angle to Horizontal, θ:	45.0	deg

Guy Anchor Properties		
Depth to Bottom of Deadman, Da:	8	ft
Anchor Width, Wa:	3.5	ft
Anchor Thickness, Ta:	2	ft
Anchor Length, La:	14.5	ft
Concrete Volume, Vc:	3.8	yd ³
Toe Width, toe:		ft

Anchor Shaft Diameter, ds:	1.45	in
Anchor Shaft Quantity, n:	1	
Anchor Shaft Area Override:		in ²
Shear Lag Factor, u:	1	

Material Properties

Wt. Avg. Concrete Density, δx:	0.088	kcf
Anchor Shaft Grade, Fy*:	36	ksi
Anchor Shaft Ultimate Strength, Fu*:	58	ksi

Design Checks				
	Capacity	Demand	Rating*	Check
Lateral Capacity (kips):	143.41	24.00	15.9%	Pass
Uplift Capacity (kips):	161.76	24.00	14.1%	Pass

Anchor Shaft (kips):	47.56	33.94	68.0%	Pass
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*Rating per TIA-222-H Section 15.5

Anchor Shaft Rating:	68.0%
Structural Rating:	N/A
Soil Rating:	15.9%

Neglect Depth, Neg:	0	ft
Groundwater Level, gw:	5	ft

Soil Properties:		No. of Soil Layers:				
Layer	φ, deg	cu, ksf	δ, pcf	d, ft	Ultimate fs (ksf)	N (blows/ft)
1	29	0.000	115	2.50		5
2	0	1.870	120	5.00		
3	0	1.870	57.6	8.00		

*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#: 846213
 Site Name: LAKE CITY, FL
 Order Number: 746303, Rev# 0
 Location: B2

TIA-222 Revision: H

Design Reactions		
Shear, S:	24.00	kips
Uplift, Ua:	24.00	kips
Resultant Force, Rf:	33.94	kips
Tower Height, H:	330.00	ft
Guy Anchor Radius, R:	266.00	ft
Resultant Angle to Horizontal, θ:	45.0	deg

Guy Anchor Properties		
Depth to Bottom of Deadman, Da:	8	ft
Anchor Width, Wa:	3	ft
Anchor Thickness, Ta:	2	ft
Anchor Length, La:	15	ft
Concrete Volume, Vc:	3.3	yd ³
Toe Width, toe:		ft

Anchor Shaft Diameter, ds:	1.45	in
Anchor Shaft Quantity, n:	1	
Anchor Shaft Area Override:		in ²
Shear Lag Factor, u:	1	

Material Properties

Wt. Avg. Concrete Density, δx:	0.088	kcf
Anchor Shaft Grade, Fy*:	36	ksi
Anchor Shaft Ultimate Strength, Fu*:	58	ksi

Design Checks				
	Capacity	Demand	Rating*	Check
Lateral Capacity (kips):	185.30	24.00	12.3%	Pass
Uplift Capacity (kips):	158.92	24.00	14.4%	Pass

Anchor Shaft (kips):	47.56	33.94	68.0%	Pass
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*Rating per TIA-222-H Section 15.5

Anchor Shaft Rating:	68.0%
Structural Rating:	N/A
Soil Rating:	14.4%

Neglect Depth, Neg:	0	ft
Groundwater Level, gw:	4	ft

Soil Properties:		No. of Soil Layers:				
Layer	φ, deg	cu, ksf	δ, pcf	d, ft	Ultimate fs (ksf)	N (blows/ft)
1	29	0.000	115	2.00		5
2	0	0.880	115	4.00		
3	0	0.880	52.6	4.50		
4	0	2.750	62.6	7.50		
5	0	1.630	57.6	8.00		

*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#: 846213
 Site Name: LAKE CITY, FL
 Order Number: 746303, Rev# 0
 Location: B4

TIA-222 Revision: H

Design Reactions		
Shear, S:	24.00	kips
Uplift, Ua:	24.00	kips
Resultant Force, Rf:	33.94	kips
Tower Height, H:	330.00	ft
Guy Anchor Radius, R:	266.00	ft
Resultant Angle to Horizontal, θ:	45.0	deg

Guy Anchor Properties		
Depth to Bottom of Deadman, Da:	8.3	ft
Anchor Width, Wa:	3	ft
Anchor Thickness, Ta:	2	ft
Anchor Length, La:	14	ft
Concrete Volume, Vc:	3.1	yd ³
Toe Width, toe:		ft

Anchor Shaft Diameter, ds:	1.45	in
Anchor Shaft Quantity, n:	1	
Anchor Shaft Area Override:		in ²
Shear Lag Factor, u:	1	

Material Properties

Wt. Avg. Concrete Density, δx:	0.088	kcf
Anchor Shaft Grade, Fy*:	36	ksi
Anchor Shaft Ultimate Strength, Fu*:	58	ksi

Design Checks				
	Capacity	Demand	Rating*	Check
Lateral Capacity (kips):	171.68	24.00	13.3%	Pass
Uplift Capacity (kips):	192.12	24.00	11.9%	Pass

Anchor Shaft (kips):	47.56	33.94	68.0%	Pass
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*Rating per TIA-222-H Section 15.5

Anchor Shaft Rating:	68.0%
Structural Rating:	N/A
Soil Rating:	13.3%

Neglect Depth, Neg:	0	ft
Groundwater Level, gw:	5.7	ft

Soil Properties:		No. of Soil Layers:				
Layer	φ, deg	cu, ksf	δ, pcf	d, ft	Ultimate fs (ksf)	N (blows/ft)
1	29	0.000	115	2.00		6
2	0	1.750	120	5.00		
3	0	3.370	125	5.70		
4	0	3.370	62.6	7.00		
5	0	1.500	57.6	8.30		

*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

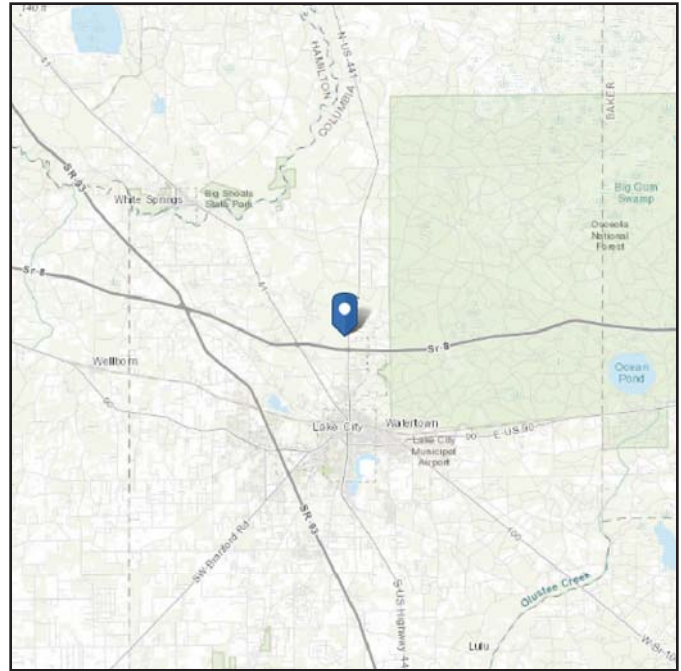
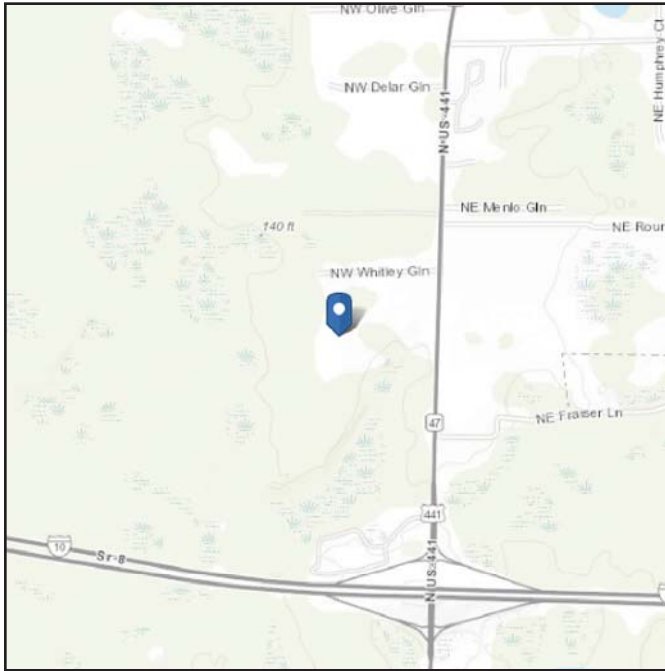
N = SPT Blow Count

ASCE Hazards Report

Address:
No Address at This Location

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

Latitude: 30.249536
Longitude: -82.641769
Elevation: 142.9640948373181 ft
(NAVD 88)



Wind

Results:

Wind Speed	119 Vmph
10-year MRI	75 Vmph
25-year MRI	83 Vmph
50-year MRI	90 Vmph
100-year MRI	97 Vmph
300-year MRI	109 Vmph
700-year MRI	119 Vmph
1,700-year MRI	127 Vmph
3,000-year MRI	132 Vmph
10,000-year MRI	142 Vmph
100,000-year MRI	153 Vmph
1,000,000-year MRI	167 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: Wed Jul 22 2026



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.

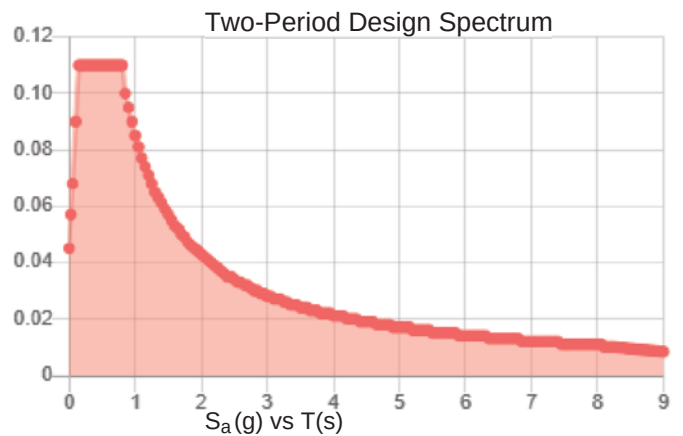
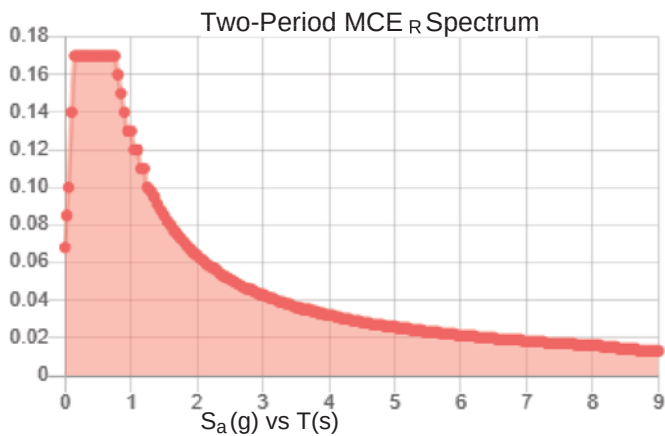
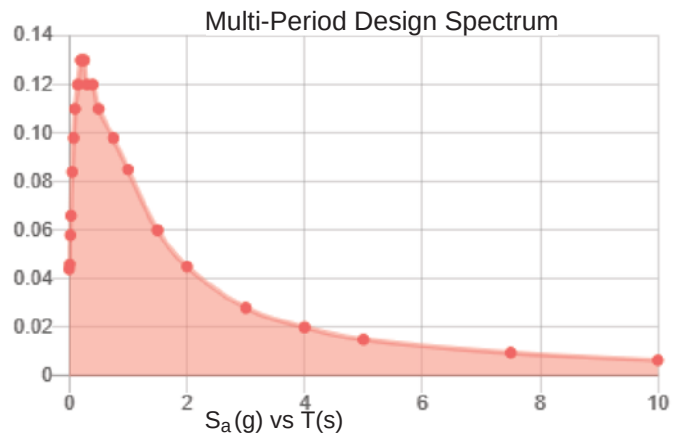
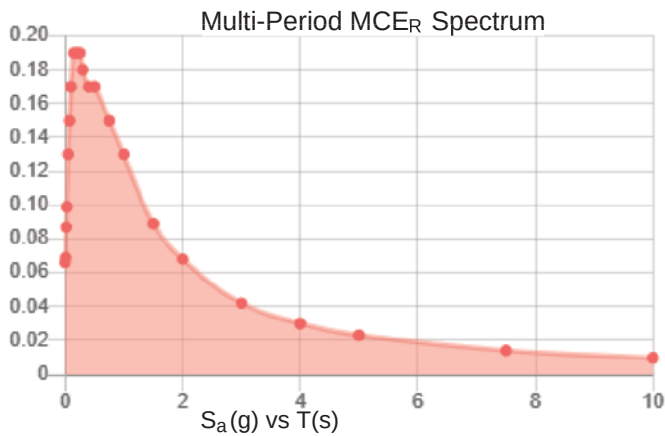
Site is in a hurricane-prone region as defined in ASCE/SEI 7-22 Section 26.2. Glazed openings need not be protected against wind-borne debris.

Site Soil Class: Default

Results:

PGA _M :	0.061	T _L :	8
S _{MS} :	0.17	S _S :	0.13
S _{M1} :	0.13	S ₁ :	0.06
S _{DS} :	0.11	V _{S30} :	260
S _{D1} :	0.085		

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: Wed Jul 22 2026

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: Wed Jul 22 2026

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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