Date: **June 23, 2021**

Black & Veatch Corp.
6800 W. 115th St., Suite 2292
Overland Park, KS 66211
(913) 458-6909

Structural Analysis Report

Co-Locate
Site Number: 9JK0094A
Site Name: Columbia

BU Number: 809329
Site Name: COLUMBIA J-FL-012-094
JDE Job Number: 664615
Work Order Number: 1976191
Order Number: 565980 Rev. 0

Black & Veatch Corp. Project Number: 406642

1307 SW English ST, Lake City, Columbia County, FL
Latitude Longitude
250 Foot - Guyed Tower

: SNS S- 6 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:

LC7: Proposed Equipment Configuration **Sufficient Capacity**

This analysis utilizes an ultimate 3-second gust wind speed of 120 mph as required by the 2020 Florida Building Code 7th Edition. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

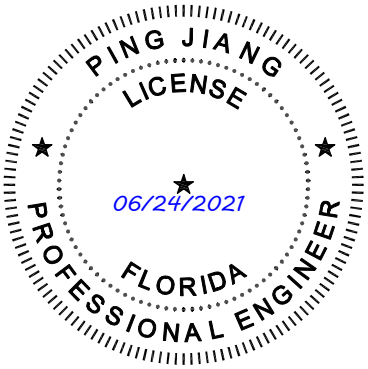
Structural analysis prepared by: Thanyaporn Yakhasem

Respectfully submitted by:

Ping Jiang, P.E.
Professional Engineer

Digitally signed by Jiang, Ping
DN: CN="Jiang, Ping", O=Black Veatch, C=US
Date: 2021.06.24 23:21:54-05'00'

THIS ITEM HAS BEEN ELECTRONICALLY SIGNED & SEALED BY PING JIANG, P.E., ON THE TIME & DATE STAMP SHOWN USING A DIGITAL SIGNATURE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED & SEALED & THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.



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1) INTRODUCTION

This tower is a 250 ft Guyed tower designed by Rohn Industries, Inc.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	120 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)
246.0	247.0	3	commscope	FFVV-65C-R3-V1_TMO w/ Mount Pipe	11	1-5/8
		3	ericsson	AIR6449 B41_T-MOBILE w/ Mount Pipe		
		3	ericsson	RADIO 4460 B2/B25 B66_TMO		
		3	ericsson	RADIO 4480 B71_TMO		
	246.0	1	sabre	(3) C10857001C 12' HD V-Boom		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
238.0	238.0	2	aviat networks	ODU600	20	1-5/8
		1	cci tower mounts (v2.1)	Sector Mount [SM 502-3]		
		6	commscope	NHH-65C-R2B w/ Mount Pipe		
		1	commscope	VHLPX3-11W		
		3	css	X7CAP-865 w/ Mount Pipe		
		3	ericsson	AIR 6449 B77 w/ Mount Pipe		
		3	ericsson	RRUS 4449 B5/B12		
		3	ericsson	RRUS 8843 B2/B66A		
		2	raycap	RCMDC-6627-PF-48		
150.0	150.0	2	cci tower mounts (v2.1)	Pipe Mount [PM 602-1]	2	3/8
		1	ceragon	ODU 5-11 GHZ		
		1	radiowaves	HP2-11		
	149.0	1	ceragon	ODU 5-11 GHZ		
		1	radiowaves	HP4-11		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
4-GEOTECHNICAL REPORTS	121215	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	121252	CCISITES
4-TOWER MANUFACTURER DRAWINGS	192569	CCISITES

3.1) Analysis Method

tnxTower (version 8.1.1.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A. When applicable, Crown Castle has calculated and provided the effective area for panel antennas using approved methods following the intent of the TIA-222 standard.

3.2) Assumptions

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

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary) (Guyed Tower)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (lb)	SF*P_allow (lb)	% Capacity	Pass / Fail
T1	250 - 230	Leg	ROHN 2.5 EH	1	-30.96	99.13	31.2	Pass
T2	230 - 210	Leg	ROHN 2.5 EH	58	-35.91	99.13	36.2	Pass
T3	210 - 190	Leg	ROHN 2.5 EH	115	-49.68	99.13	50.1	Pass
T4	190 - 170	Leg	ROHN 3 EHH	172	-72.15	189.17	38.1	Pass
T5	170 - 150	Leg	ROHN 3 EHH	229	-67.67	189.17	35.8	Pass
T6	150 - 130	Leg	ROHN 3 EH	288	-45.52	117.93	38.6	Pass
T7	130 - 110	Leg	ROHN 3 EH	319	-44.89	117.93	38.1	Pass
T8	110 - 90	Leg	ROHN 3 EH	352	-46.71	135.92	34.4	Pass
T9	90 - 70	Leg	ROHN 3 EH	409	-54.73	135.92	40.3	Pass
T10	70 - 50	Leg	ROHN 3 EHH	466	-70.26	162.29	43.3	Pass
T11	50 - 35	Leg	ROHN 3 EHH	499	-71.80	163.12	44.0	Pass
T12	35 - 20	Leg	ROHN 3 EHH	526	-69.09	163.12	42.4	Pass
T13	20 - 4.81771	Leg	ROHN 3 EHH	555	-59.88	162.29	36.9	Pass
T14	4.81771 - 0	Leg	ROHN 3 EH	582	-49.45	140.55	35.2	Pass
T1	250 - 230	Diagonal	L2x2x1/4	23	4.20	25.71	16.3	Pass
T2	230 - 210	Diagonal	ROHN 1.5 x 16GA	112	-1.34	6.24	21.5	Pass
T3	210 - 190	Diagonal	ROHN 1.5 x 11GA	124	-2.04	11.83	17.3	Pass
T4	190 - 170	Diagonal	L2x2x1/4	183	-5.61	30.08	18.7	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (lb)	SF*P_allow (lb)	% Capacity	Pass / Fail
T5	170 - 150	Diagonal	ROHN 1.5 x 16GA	282	-3.37	6.35	53.1	Pass
T6	150 - 130	Diagonal	ROHN 1.5 x 16GA	316	-3.51	6.35	55.3	Pass
T7	130 - 110	Diagonal	ROHN 1.5 x 16GA	330	-3.01	6.35	47.4	Pass
T8	110 - 90	Diagonal	ROHN 1.5 x 16GA	366	-3.23	6.35	50.9	Pass
T9	90 - 70	Diagonal	ROHN 1.5 x 16GA	465	-3.00	6.35	47.2	Pass
T10	70 - 50	Diagonal	ROHN 1.5 x 11GA	498	-3.51	12.04	29.1	Pass
T11	50 - 35	Diagonal	ROHN 1.5 x 16GA	509	-2.12	6.37	33.3	Pass
T12	35 - 20	Diagonal	ROHN 1.5 x 16GA	535	-3.26	6.37	51.1	Pass
T13	20 - 4.81771	Diagonal	ROHN 1.5 x 11GA	562	-4.20	12.04	34.8	Pass
T14	4.81771 - 0	Horizontal	L4x4x1/4	587	-0.91	61.97	12.7	Pass
T1	250 - 230	Top Girt	L2x2x1/4	4	0.08	25.71	0.3	Pass
T2	230 - 210	Top Girt	ROHN 1.5 x 16GA	63	-0.64	7.40	8.6	Pass
T3	210 - 190	Top Girt	ROHN 1.5 x 11GA	120	-0.89	14.23	6.3	Pass
T4	190 - 170	Top Girt	L2x2x1/4	177	-1.25	23.88	5.2	Pass
T5	170 - 150	Top Girt	ROHN 1.5 x 16GA	234	-1.21	7.48	16.1	Pass
T6	150 - 130	Top Girt	ROHN 1.5 x 16GA	290	-0.89	7.48	11.9	Pass
T7	130 - 110	Top Girt	ROHN 1.5 x 16GA	324	-0.78	7.48	10.4	Pass
T8	110 - 90	Top Girt	ROHN 1.5 x 16GA	357	-0.81	7.48	10.8	Pass
T9	90 - 70	Top Girt	ROHN 1.5 x 16GA	414	-0.98	7.48	13.1	Pass
T10	70 - 50	Top Girt	ROHN 1.5 x 11GA	471	-1.22	14.40	8.5	Pass
T11	50 - 35	Top Girt	ROHN 1.5 x 16GA	504	-1.24	7.48	16.6	Pass
T12	35 - 20	Top Girt	ROHN 1.5 x 16GA	531	-1.21	7.48	16.2	Pass
T13	20 - 4.81771	Top Girt	ROHN 1.5 x 11GA	558	-1.06	14.40	7.4	Pass
T14	4.81771 - 0	Top Girt	L4x4x1/4	584	8.71	66.00	13.2	Pass
T1	250 - 230	Bottom Girt	L2x2x1/4	8	0.80	25.71	3.1	Pass
T2	230 - 210	Bottom Girt	ROHN 1.5 x 16GA	66	-0.64	7.40	8.6	Pass
T3	210 - 190	Bottom Girt	ROHN 1.5 x 11GA	123	-0.89	14.23	6.3	Pass
T4	190 - 170	Bottom Girt	L2x2x1/4	180	-1.25	23.88	5.2	Pass
T5	170 - 150	Bottom Girt	ROHN 1.5 x 16GA	237	-1.21	7.48	16.1	Pass
T6	150 - 130	Bottom Girt	ROHN 1.5 x 16GA	294	-0.81	7.48	10.9	Pass
T7	130 - 110	Bottom Girt	ROHN 1.5 x 16GA	327	-0.79	7.48	10.6	Pass
T8	110 - 90	Bottom Girt	ROHN 1.5 x 16GA	360	-0.81	7.48	10.8	Pass
T9	90 - 70	Bottom Girt	ROHN 1.5 x 16GA	417	-0.98	7.48	13.1	Pass
T10	70 - 50	Bottom Girt	ROHN 1.5 x 11GA	474	-1.22	14.40	8.5	Pass
T11	50 - 35	Bottom Girt	ROHN 1.5 x 16GA	507	-1.24	7.48	16.6	Pass
T12	35 - 20	Bottom Girt	ROHN 1.5 x 16GA	534	-1.21	7.48	16.2	Pass
T13	20 - 4.81771	Bottom Girt	ROHN 1.5 x 11GA	560	2.59	20.65	12.5	Pass
T1	250 - 230	Guy A@232.523	3/4	606	16.65	36.73	45.3	Pass
T4	190 - 170	Guy A@172.523	3/4	621	14.12	36.73	38.4	Pass
T8	110 - 90	Guy A@92.5234	3/4	630	16.37	36.73	44.6	Pass
T1	250 - 230	Guy B@232.523	3/4	602	16.14	36.73	43.9	Pass
T4	190 - 170	Guy B@172.523	3/4	618	13.15	36.73	35.8	Pass
T8	110 - 90	Guy B@92.5234	3/4	629	15.05	36.73	41.0	Pass
T1	250 - 230	Guy C@232.523	3/4	596	16.90	36.73	46.0	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (lb)	SF*P_allow (lb)	% Capacity	Pass / Fail
T4	190 - 170	Guy C@172.523	3/4	611	14.41	36.73	39.2	Pass
T8	110 - 90	Guy C@92.5234	3/4	625	16.35	36.73	44.5	Pass
T1	250 - 230	Top Guy Pull-Off@232.523	2L2x2x1/4x3/8	600	8.82	51.56	17.1	Pass
T4	190 - 170	Top Guy Pull-Off@172.523	2L2x2x1/4x3/8	615	8.83	51.56	17.1	Pass
T8	110 - 90	Top Guy Pull-Off@92.5234	2L2x2x1/4x3/8	627	7.26	51.56	14.1	Pass
T1	250 - 230	Torque Arm Top@232.523	C15x33.9	605	-3.50	299.75	34.1	Pass
T4	190 - 170	Torque Arm Top@172.523	C15x33.9	620	-3.33	300.27	24.3	Pass
							Summary	
						Leg (T3)	50.1	Pass
						Diagonal (T6)	55.3	Pass
						Horizontal (T14)	12.7	Pass
						Top Girt (T11)	16.6	Pass
						Bottom Girt (T11)	16.6	Pass
						Guy A (T1)	45.3	Pass
						Guy B (T1)	43.9	Pass
						Guy C (T1)	46.0	Pass
						Top Guy Pull-Off (T4)	17.1	Pass
						Torque Arm Top (T1)	34.1	Pass
						Bolt Checks	52.8	Pass
						Rating =	55.3	Pass

Table 5 - Tower Component Stresses vs. Capacity (Guyed Tower)

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1, 2	Base Foundation (Compared w/ Design Loads)	0	42.0	Pass
1, 2	Guy Anchor Foundation (Comp. w/ Design Loads)	0	43.3	Pass

Structure Rating (max from all components) =	55.3%

Notes:
1) See additional documentation in “Appendix C – Additional Calculations” for calculations supporting the % capacity. Rating per TIA-222-H Section 15.5.
2) Foundation capacity determined by comparing analysis reactions to original design reactions.

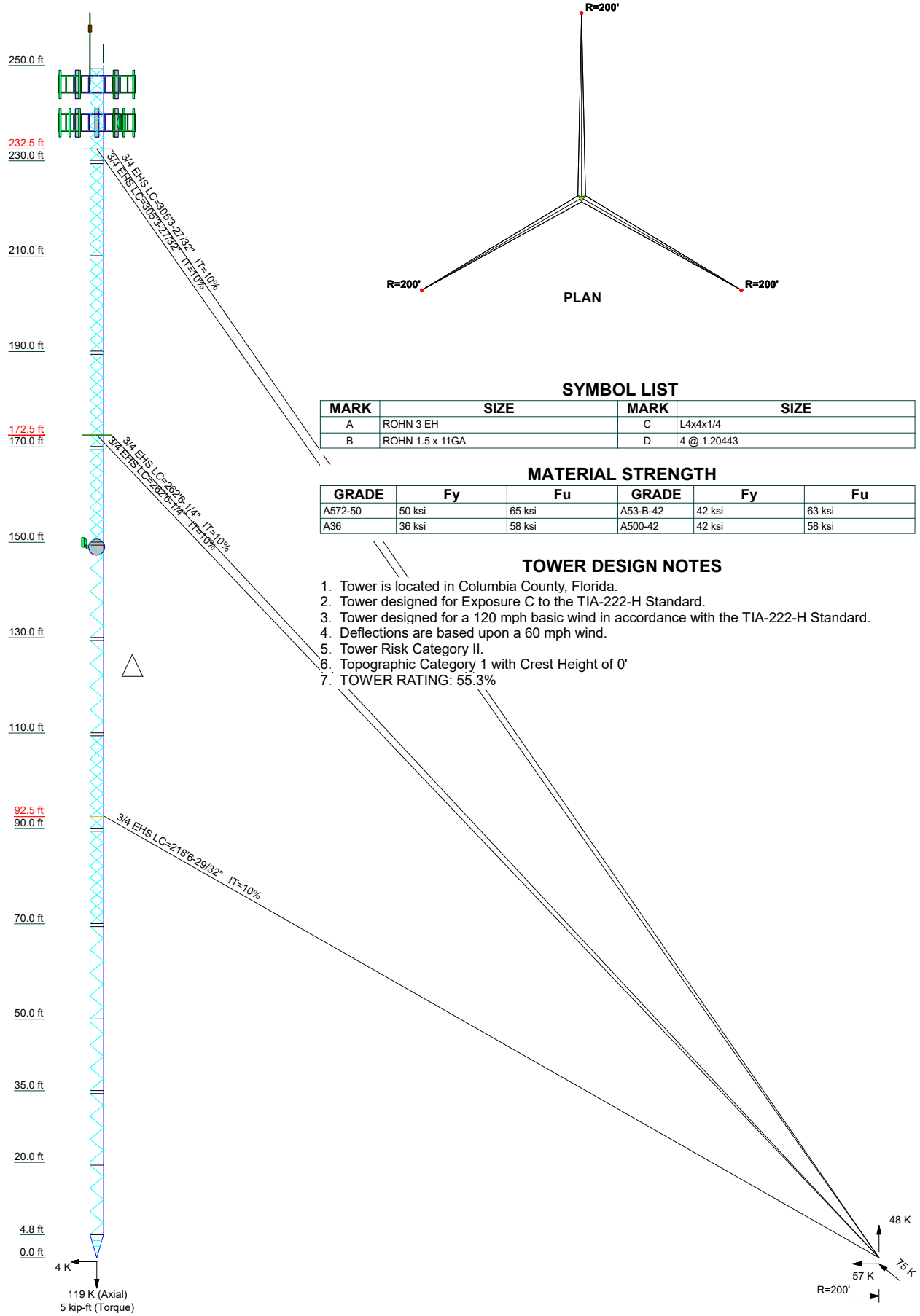
4.1) Recommendations

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

Section		T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14
Legs		ROHN 2.5 EH			ROHN 3 EHH			ROHN 3 EH				ROHN 3 EHH			A
Leg Grade								A572-50							
Diagonals	L2x2x1/4	ROHN 1.5 x 16GA		ROHN 1.5 x 11GA							ROHN 1.5 x 11GA	ROHN 1.5 x 16GA		B	N.A.
Diagonal Grade	A36	A53-B-42		A500-42							A500-42	A53-B-42		A500-42	N.A.
Top Girts	L2x2x1/4	ROHN 1.5 x 16GA		ROHN 1.5 x 11GA							ROHN 1.5 x 11GA	ROHN 1.5 x 16GA		B	C
Bottom Girts	L2x2x1/4	ROHN 1.5 x 16GA		ROHN 1.5 x 11GA							ROHN 1.5 x 11GA	ROHN 1.5 x 16GA		B	N.A.
Horizontals								N.A.							C
Top Guy Pull-Offs	2L2x2x1/4x3/8	N.A.		N.A.	2L2x2x1/4x3/8		N.A.		2L2x2x1/4x3/8		N.A.				
Face Width (ft)	3.41667					80 @ 2.40885						12 @ 2.37847		6 @ 2.40885	D
# Panels @ (ft)	2.1	0.7		0.9	2.5	1.1	0.8	0.8	0.9	0.9	1.1	0.8	0.8	0.9	0.3
Weight (K)	14.5														



PLAN

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	ROHN 3 EH	C	L4x4x1/4
B	ROHN 1.5 x 11GA	D	4 @ 1.20443

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in Columbia County, Florida.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 120 mph basic wind in accordance with the TIA-222-H Standard.
4. Deflections are based upon a 60 mph wind.
5. Tower Risk Category II.
6. Topographic Category 1 with Crest Height of 0'
7. TOWER RATING: 55.3%

ALL REACTIONS ARE FACTORED

BLACK & VEATCH
Building a world of difference.
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FAX:

Job:			
Project:			
Client: Crown Castle	Drawn by: klu81529	App'd:	
Code: TIA-222-H	Date: 06/25/21	Scale: NTS	
Path: C:\Users\klu81529\Saranphat\SA\809329\809329.1976191 - TSA\Structural\809329.1976191 Structural Analysis.eri		Dwg No. E-1	

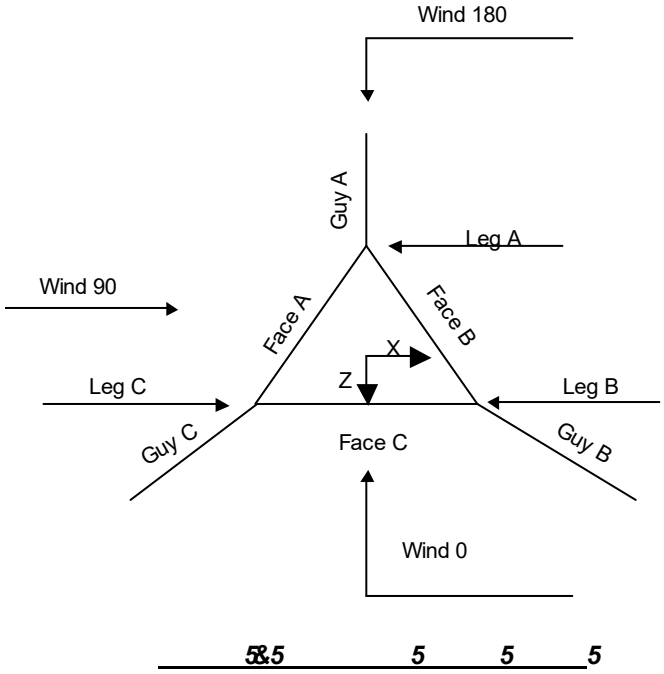
Tower Input Data

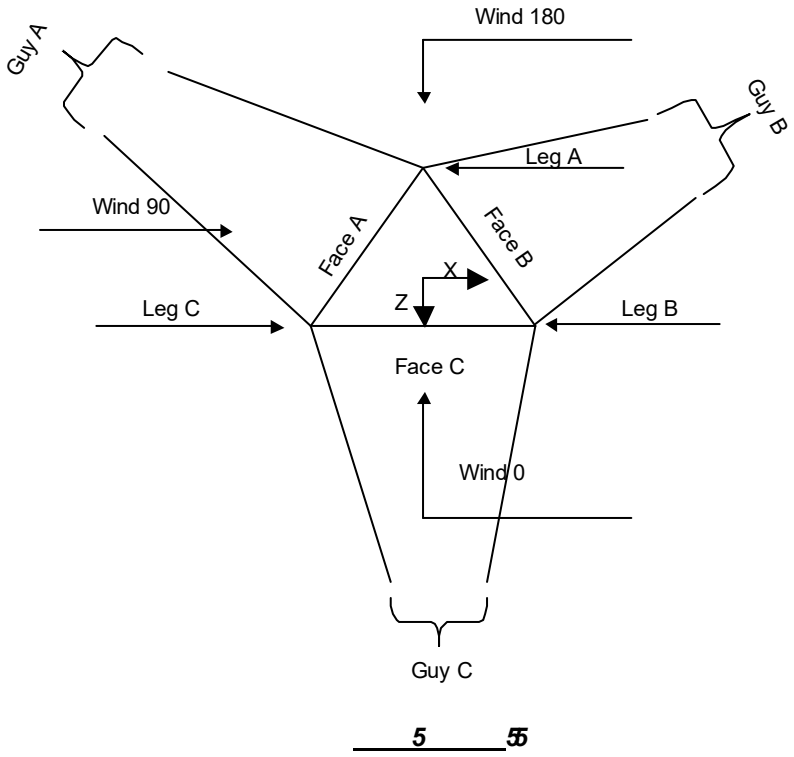
The main tower is a 3x guyed tower with an overall height of 250' above the ground line.
The base of the tower is set at an elevation of 0' above the ground line.
The face width of the tower is 3'5" at the top and tapered at the base.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

- Tower is located in Columbia County, Florida.
- Tower base elevation above sea level: 151'.
- Basic wind speed of 120 mph.
- Risk Category II.
- Exposure Category C.
- Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- Topographic Category: 1.
- Crest Height: 0'.
- Deflections calculated using a wind speed of 60 mph.
- Pressures are calculated at each section.
- Stress ratio used in tower member design is 1.
- Safety factor used in guy design is 1.
- Tower analysis based on target reliabilities in accordance with Annex S.
- Load Modification Factors used: $K_{es}(F_w) = 0.95$.
- Maximum demand-capacity ratio is: 1.05.
- Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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


Wind 180
Guy A
Leg A
Wind 90
Face A
Face B
X
Z
Leg C
Leg B
Guy C
Face C
Guy B
Wind 0



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Tower Section Geometry

S	S	Y	S	%	S	S	SS	S
S S S S	S	%	S			SS	SS	ø S
S						S	S	S
S						S		S
T1	250'-230'					3'5-1/32"	1	20'
T2	230'-210'					3'5-1/32"	1	20'
T3	210'-190'					3'5-1/32"	1	20'
T4	190'-170'					3'5-1/32"	1	20'
T5	170'-150'					3'5-1/32"	1	20'
T6	150'-130'					3'5-1/32"	1	20'
T7	130'-110'					3'5-1/32"	1	20'
T8	110'-90'					3'5-1/32"	1	20'
T9	90'-70'					3'5-1/32"	1	20'
T10	70'-50'					3'5-1/32"	1	20'
T11	50'-35'					3'5-1/32"	1	15'
T12	35'-20'					3'5-1/32"	1	15'
T13	20'-4'9-27/32"					3'5-1/32"	1	15'2-5/32"
T14	4'9-27/32"-0'					3'5-1/32"	1	4'9-27/32"

Tower Section Geometry 9 P

S	S	% S	: S	# S	# SS	Sx S	: Sx S
S S S S S S			S	?S S # S ° S S		S S	S S
T1	250'-230'	2'4-29/32"	X Brace	No	No	7.3750	1.3750
T2	230'-210'	2'4-29/32"	CX Brace	No	No	7.3750	1.3750
T3	210'-190'	2'4-29/32"	CX Brace	No	No	7.3750	1.3750
T4	190'-170'	2'4-29/32"	X Brace	No	No	7.3750	1.3750
T5	170'-150'	2'4-29/32"	CX Brace	No	No	7.3750	1.3750
T6	150'-130'	2'4-29/32"	K Brace Left	No	No	7.3750	1.3750
T7	130'-110'	2'4-29/32"	K Brace Left	No	No	7.3750	1.3750
T8	110'-90'	2'4-29/32"	CX Brace	No	No	7.3750	1.3750
T9	90'-70'	2'4-29/32"	CX Brace	No	No	7.3750	1.3750
T10	70'-50'	2'4-29/32"	K Brace Left	No	No	7.3750	1.3750
T11	50'-35'	2'4-9/16"	K Brace Left	No	No	7.3750	1.3750
T12	35'-20'	2'4-9/16"	K Brace Left	No	No	7.3750	1.3750
T13	20'-4'9-27/32"	2'4-29/32"	K Brace Left	No	No	7.3750	1.3750
T14	4'9-27/32"-0'	1'2-13/32"	X Brace	No	Yes	0.0000	0.0000

Tower Section Geometry *9* *P*

S	ø S	ø SS	ø SS	% S	% SS	% S
S S S	S	S	x S	S	S	x S
T1 250'-230'	Pipe	ROHN 2.5 EH	A572-50 (50 ksi)	Equal Angle	L2x2x1/4	A36 (36 ksi)
T2 230'-210'	Pipe	ROHN 2.5 EH	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)
T3 210'-190'	Pipe	ROHN 2.5 EH	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T4 190'-170'	Pipe	ROHN 3 EHH	A572-50 (50 ksi)	Equal Angle	L2x2x1/4	A36 (36 ksi)
T5 170'-150'	Pipe	ROHN 3 EHH	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)
T6 150'-130'	Pipe	ROHN 3 EH	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)
T7 130'-110'	Pipe	ROHN 3 EH	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)
T8 110'-90'	Pipe	ROHN 3 EH	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)
T9 90'-70'	Pipe	ROHN 3 EH	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)
T10 70'-50'	Pipe	ROHN 3 EHH	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T11 50'-35'	Pipe	ROHN 3 EHH	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)
T12 35'-20'	Pipe	ROHN 3 EHH	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)
T13 20'-4'9-27/32"	Pipe	ROHN 3 EHH	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T14 4'9-27/32"-0'	Pipe	ROHN 3 EH	A572-50 (50 ksi)	Single Angle		A36 (36 ksi)

Tower Section Geometry *9* *P*

S	Sx S	Sx SS	Sx SS	: Sx S	: Sx SS	: Sx S
S S S	S	S	x S	S	S	x S
T1 250'-230'	Equal Angle	L2x2x1/4	A36 (36 ksi)	Equal Angle	L2x2x1/4	A36 (36 ksi)
T2 230'-210'	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)
T3 210'-190'	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)

S Sx S S S	Sx S S	Sx SS S	Sx SS x S	Sx S S	Sx SS S	Sx S x S
T4 190'-170'	Equal Angle	L2x2x1/4	A36 (36 ksi)	Equal Angle	L2x2x1/4	A36 (36 ksi)
T5 170'-150'	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)
T6 150'-130'	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)
T7 130'-110'	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)
T8 110'-90'	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)
T9 90'-70'	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)
T10 70'-50'	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T11 50'-35'	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)
T12 35'-20'	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)	Pipe	ROHN 1.5 x 16GA	A53-B-42 (42 ksi)
T13 20'-4'9-27/32"	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T14 4'9-27/32"-0'	Equal Angle	L4x4x1/4	A36 (36 ksi)	Equal Angle	L4x4x1/4	A36 (36 ksi)

Tower Section Geometry *9* *P*

S 6S Sx S S SS x S	Sx S S	Sx SS S	Sx SS x S	# S S	# S S	# SS x S
T14 4'9-27/32"-0'	None	Single Angle	A36 (36 ksi)	Equal Angle	L4x4x1/4	A36 (36 ksi)

Tower Section Geometry *9* *P*

S x S S	x S x S	Sx Y 6Sq Ys	Y 6S q SS Ys	S 6t% S	SY % S S	SY % S S	SY S S
T1 250'-230'	0.00	0.3750	A36 (36 ksi)	1.05	1	1.05	0.0000	0.0000	36.0000
T2 230'-210'	0.00	0.3750	A36 (36 ksi)	1	1.05	1.05	0.0000	0.0000	36.0000
T3 210'-190'	0.00	0.1757	A36 (36 ksi)	1	1.05	1.05	0.0000	0.0000	36.0000
T4 190'-170'	0.00	0.3750	A36 (36 ksi)	1.05	1	1.05	0.0000	0.0000	36.0000
T5 170'-150'	0.00	0.3750	A36 (36 ksi)	1	1.05	1.05	0.0000	0.0000	36.0000
T6 150'-130'	0.00	0.3750	A36 (36 ksi)	1	1.05	1.05	0.0000	0.0000	36.0000
T7 130'-110'	0.00	0.3750	A36 (36 ksi)	1	1.05	1.05	0.0000	0.0000	36.0000
T8 110'-90'	0.00	0.3750	A36 (36 ksi)	1	1.05	1.05	0.0000	0.0000	36.0000
T9 90'-70'	0.00	0.3750	A36 (36 ksi)	1	1.05	1.05	0.0000	0.0000	36.0000
T10 70'-50'	0.00	0.3750	A36 (36 ksi)	1	1.05	1.05	0.0000	0.0000	36.0000
T11 50'-35'	0.00	0.3750	A36	1	1.05	1.05	0.0000	0.0000	36.0000

S	x S	x S	x Sx	Y 6Sq	Y 6S	S 6%	SY %	SY %	SY
S S Y S S 9 S FS S S S S	S S S			Ys	q Ss Ys	S	S S S % S # S	S S S S	S S S S
T12 35'-20'	0.00	0.3750	(36 ksi) A36 (36 ksi)	1	1.05	1.05	0.0000	0.0000	36.0000
T13 20'-4'9-27/32"	0.00	0.3750	(36 ksi) A36 (36 ksi)	1	1.05	1.05	0.0000	0.0000	36.0000
T14 4'9-27/32"-0'	0.00	0.0000	(36 ksi) A36 (36 ksi)	1	1	1	0.0000	0.0000	36.0000

S
S

Tower Section Geometry 9 P

S	S	S	?Sq vS							
S - S - S S S ?S ?S S S Y S S	ø S	S : S % S	?S : S % S	S S S S S S	x S S S S S S	# 6S S S S S S	6S # 6S S S S S	/ S : S S S S S		
T1 250'-230'	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T2 230'-210'	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T3 210'-190'	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T4 190'-170'	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T5 170'-150'	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T6 150'-130'	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T7 130'-110'	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T8 110'-90'	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T9 90'-70'	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T10 70'-50'	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T11 50'-35'	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T12 35'-20'	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T13 20'-4'9-27/32"	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T14 4'9-27/32"-0'	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1

v '?'S S S S S S S S 6S?4 S S S S S S S S?S S S S 4 4
S S S S S 6S
S
S

Tower Section Geometry 9 P

S S S	ø S	% S	Sx S	: Sx S	Sx S	ø S# S	S# S
S	S S % S S in S	S S % S in S	S S % S S in S	S S % S in S	S S % S in S	S S % S in S	S S % S in S
T1 250'-230'	0.0000 1	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 1	0.0000 0.75
T2 230'-210'	0.0000 1	0.0000 1	0.0000 1	0.0000 1	0.0000 0.75	0.0000 1	0.0000 0.75
T3 210'-190'	0.0000 1	0.0000 1	0.0000 1	0.0000 1	0.0000 0.75	0.0000 1	0.0000 0.75
T4 190'-170'	0.0000 1	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 1	0.0000 0.75

S S S	ø S	% S	Sx S	: Sx S	Sx S	ø Sf	Sf S
	S S % S S inS	S S % S S inS	S S % S S inS	S S % S S inS	S S % S S inS	S S % S S inS	S S % S S inS
T5 170'-150'	0.0000 1	0.0000 1	0.0000 1	0.0000 1	0.0000 0.75	0.0000 1	0.0000 0.75
T6 150'-130'	0.0000 1	0.0000 1	0.0000 1	0.0000 1	0.0000 0.75	0.0000 1	0.0000 0.75
T7 130'-110'	0.0000 1	0.0000 1	0.0000 1	0.0000 1	0.0000 0.75	0.0000 1	0.0000 0.75
T8 110'-90'	0.0000 1	0.0000 1	0.0000 1	0.0000 1	0.0000 0.75	0.0000 1	0.0000 0.75
T9 90'-70'	0.0000 1	0.0000 1	0.0000 1	0.0000 1	0.0000 0.75	0.0000 1	0.0000 0.75
T10 70'-50'	0.0000 1	0.0000 1	0.0000 1	0.0000 1	0.0000 0.75	0.0000 1	0.0000 0.75
T11 50'-35'	0.0000 1	0.0000 1	0.0000 1	0.0000 1	0.0000 0.75	0.0000 1	0.0000 0.75
T12 35'-20'	0.0000 1	0.0000 1	0.0000 1	0.0000 1	0.0000 0.75	0.0000 1	0.0000 0.75
T13 20'-4'9-27/32"	0.0000 1	0.0000 1	0.0000 1	0.0000 1	0.0000 0.75	0.0000 1	0.0000 0.75
T14 4'9-27/32"-0'	0.0000 1	0.0000 1	0.0000 1	0.0000 1	0.0000 0.75	0.0000 1	0.0000 0.75

S

S S S	# S	% S	% S 4	# S 4	S S	Sf S	Sf S % S
	S S % S S inS	S S % S S inS	S S % S S inS	S S % S S inS	S S % S S inS	S S % S S inS	S S % S S inS
T1 250'-230'	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75
T2 230'-210'	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75
T3 210'-190'	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75
T4 190'-170'	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75
T5 170'-150'	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75
T6 150'-130'	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75
T7 130'-110'	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75
T8 110'-90'	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75
T9 90'-70'	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75
T10 70'-50'	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75
T11 50'-35'	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75
T12 35'-20'	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75
T13 20'-4'9-27/32"	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75
T14 4'9-27/32"-0'	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75	0.0000 0.75

S

Tower Section Geometry *9 P*

S S -	ø S	ø S	% S	Sx S	: Sx S	Sx S	ø Sf	S # S
S S S	S : S 6S inS	S : S 6S inS	S : S 6S inS	S : S 6S inS	S : S 6S inS	S : S 6S inS	S : S 6S inS	S : S 6S inS
T1 250'-230'	Flange	0.7500 0 A325X	0.6250 2 A325X	0.6250 2 A325X	0.6250 2 A325X	0.6250 0 A325N	0.6250 0 A325X	0.6250 0 A325N
T2 230'-210'	Flange	0.7500 4 A325X	0.5000 1 A325X	0.5000 1 A325X	0.5000 1 A325X	0.6250 0 A325N	0.6250 0 A325X	0.6250 0 A325N
T3 210'-190'	Flange	0.7500 4 A325X	0.5000 1 A325X	0.5000 1 A325X	0.5000 1 A325X	0.6250 0 A325N	0.6250 0 A325X	0.6250 0 A325N
T4 190'-170'	Flange	0.7500 4 A325X	0.6250 2 A325X	0.6250 2 A325X	0.6250 2 A325X	0.6250 0 A325N	0.6250 0 A325X	0.6250 0 A325N
T5 170'-150'	Flange	0.7500 4 A325X	0.5000 1 A325X	0.5000 1 A325X	0.5000 1 A325X	0.6250 0 A325N	0.6250 0 A325X	0.6250 0 A325N
T6 150'-130'	Flange	0.7500 4 A325X	0.5000 1 A325X	0.5000 1 A325X	0.5000 1 A325X	0.6250 0 A325N	0.6250 0 A325X	0.6250 0 A325N
T7 130'-110'	Flange	0.7500 4 A325X	0.5000 1 A325X	0.5000 1 A325X	0.5000 1 A325X	0.6250 0 A325N	0.6250 0 A325X	0.6250 0 A325N

S S - S	ø S	ø S	% S	Sx S	: Sx S	Sx S	ø S#	S # S
S S : S inS 6S	S : S		S : S		S : S		S : S	S : S
			inS 6S	inS 6S	inS 6S	inS 6S	inS 6S	inS 6S
T8 110'-90'	Flange	0.7500 A325X	4	0.5000 A325X	1	0.5000 A325X	1	0.5000 A325X	1	0.6250 A325N	0	0.6250 A325X	0	0.6250 A325N	0
T9 90'-70'	Flange	0.7500 A325X	4	0.5000 A325X	1	0.5000 A325X	1	0.5000 A325X	1	0.6250 A325N	0	0.6250 A325X	0	0.6250 A325N	0
T10 70'-50'	Flange	0.7500 A325X	4	0.5000 A325X	1	0.5000 A325X	1	0.5000 A325X	1	0.6250 A325N	0	0.6250 A325X	0	0.6250 A325N	0
T11 50'-35'	Flange	0.7500 A325X	4	0.5000 A325X	1	0.5000 A325X	1	0.5000 A325X	1	0.6250 A325N	0	0.6250 A325X	0	0.6250 A325N	0
T12 35'-20'	Flange	0.7500 A325X	4	0.5000 A325X	1	0.5000 A325X	1	0.5000 A325X	1	0.6250 A325N	0	0.6250 A325X	0	0.6250 A325N	0
T13 20'-4'9-27/32"	Flange	0.7500 A325X	4	0.5000 A325X	1	0.5000 A325X	1	0.5000 A325X	1	0.6250 A325N	0	0.6250 A325X	0	0.6250 A325N	0
T14 4'9-27/32"-0'	Flange	0.8750 A325X	4	0.0000 A325X	0	0.0000 A325X	0	0.0000 A325X	0	0.0000 A325N	0	0.0000 A325X	0	0.0000 A325N	0

S

Guy Data

x S S	x S S	x S / S US	x S	x S	ø S	Y S	Y S	Y S ° S
S x S S	S S	S S	S	S	S	S	S Y S °	S q S
S S	S	S ?S	S	S	S	S	Y 6S	S ° US
232.523	EHS	A 3/4	5.83	10%	24000	1.155	305'1-5/16"	200'	0.0000	0'	100%
		B 3/4	5.83	10%	24000	1.155	305'1-5/16"	200'	0.0000	0'	100%
		C 3/4	5.83	10%	24000	1.155	305'1-5/16"	200'	0.0000	0'	100%
172.523	EHS	A 3/4	5.83	10%	24000	1.155	262'4-3/32"	200'	0.0000	0'	100%
		B 3/4	5.83	10%	24000	1.155	262'4-3/32"	200'	0.0000	0'	100%
		C 3/4	5.83	10%	24000	1.155	262'4-3/32"	200'	0.0000	0'	100%
92.5234	EHS	A 3/4	5.83	10%	24000	1.155	218'5-5/32"	200'	0.0000	0'	100%
		B 3/4	5.83	10%	24000	1.155	218'5-5/32"	200'	0.0000	0'	100%
		C 3/4	5.83	10%	24000	1.155	218'5-5/32"	200'	0.0000	0'	100%

Guy Data9 P

x S S S	4Y S S	4Y S ø SY S S	4Y S S	4Y S x S	4Y S S	4Y S S
232.523	Torque Arm	7'6"	0.0000	Channel	A36 (36 ksi)	Channel	C15x33.9
172.523	Torque Arm	7'6"	0.0000	Channel	A36 (36 ksi)	Channel	C15x33.9
92.5234	Corner						

Guy Data 9 P

x S S x S	% S S	% S S	S% S S	ø S% S S	/ S 6E	4 S x S	4 S S	4 S S
232'6-1/4"	A572-50 (50 ksi)	Solid Round			No	A36 (36 ksi)	Double Equal Angle	2L2x2x1/4x3/8
172'6-1/4"	A572-50 (50 ksi)	Solid Round			No	A36 (36 ksi)	Double Equal Angle	2L2x2x1/4x3/8
92'6-1/4"	A572-50	Solid Round			No	A36	Double Equal	2L2x2x1/4x3/8

x S % S % S S% S ø S% S / S 4 S 4 S S 4 S S S S x S S S 6E x S S							
	(50 ksi)				(36 ksi)	Angle	

Guy Data 9 P

x S S S	- S S	- S S	- S S	- S S	S S / S	S S / S	S S / S	S S / S
S	YS ?S	: S ?S	- S ?S	%S ?S	YS S	: S S	- S S	%S S
232.523	0.35	0.35	0.35		9'1/4" 5.2 sec/pulse	9'1/4" 5.2 sec/pulse	9'1/4" 5.2 sec/pulse	
172.523	0.30	0.30	0.30		6'8-17/32" 4.5 sec/pulse	6'8-17/32" 4.5 sec/pulse	6'8-17/32" 4.5 sec/pulse	
92.5234	0.25	0.25	0.25		4'8-9/32" 3.7 sec/pulse	4'8-9/32" 3.7 sec/pulse	4'8-9/32" 3.7 sec/pulse	

Guy Data 9 P

S x S S S	S - S ?S	S - S ?S	SY S ? S	? S	S S ? S	? S	% ? S	S ? S
	Y S	S						
232.523	Yes	No	1	1	1	1	1	1
172.523	Yes	No	1	1	1	1	1	1
92.5234	Yes	No			1	1	1	1

Guy Data 9 P

S x S S S	4Y S : S S inS	S S % S	S S	S S : S S inS	S S % S	S S	% S : S S inS	S S % S	S S
S		inS			inS			inS	
232.523	0.8750 A325X	2	0.0000	1	0.6250 A325X	2	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
172.523	0.8750 A325X	2	0.0000	1	0.6250 A325X	2	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
92.5234	0.7500 A325N	8	0.0000	1	0.6250 A325X	2	0.0000	0.75	0.6250 A325N	0	0.0000	0.75

Guy Pressures

x S S S	x S ø S	S S S	S S	S S / S S	/ S S
232.523	A	116'3-1/8"	39		
	B	116'3-1/8"	39		
	C	116'3-1/8"	39		
172.523	A	86'3-1/8"	36		
	B	86'3-1/8"	36		
	C	86'3-1/8"	36		

x S S	x S S	S S	s S / S	/ S S
92.5234	A	46'3-1/8"	32	
	B	46'3-1/8"	32	
	C	46'3-1/8"	32	

Guy-Mast Forces (Excluding Wind) - No Ice

x S S	x S - S	x S S	q S S	q S S	q S S	S S	S S	S S
232.523	A	49.6032	6.10 5.83	-0.07	4.72	-3.86	-10.21	14.65	-17.69
	A	49.6032	6.10 5.83	0.07	4.72	-3.86	-10.21	-14.65	17.69
	B	49.6032	6.10 5.83	3.38	4.72	1.87	20.43	14.65	0.00
	B	49.6032	6.10 5.83	3.31	4.72	2.00	-10.21	-14.65	-17.69
	C	49.6032	6.10 5.83	-3.31	4.72	2.00	-10.21	14.65	17.69
	C	49.6032	6.10 5.83	-3.38	4.72	1.87	20.43	-14.65	0.00
			Sum:	0.00	28.31	0.00	-0.00	0.00	0.00
172.523	A	41.0852	6.03 5.83	-0.08	4.05	-4.47	-8.76	16.94	-15.18
	A	41.0852	6.03 5.83	0.08	4.05	-4.47	-8.76	-16.94	15.18
	B	41.0852	6.03 5.83	3.91	4.05	2.16	17.53	16.94	0.00
	B	41.0852	6.03 5.83	3.83	4.05	2.31	-8.76	-16.94	-15.18
	C	41.0852	6.03 5.83	-3.83	4.05	2.31	-8.76	16.94	15.18
	C	41.0852	6.03 5.83	-3.91	4.05	2.16	17.53	-16.94	0.00
			Sum:	0.00	24.29	0.00	-0.00	0.00	0.00
92.5234	A	25.0432	5.94 5.83	0.00	2.62	-5.33	-5.16	0.00	0.00
	B	25.0432	5.94 5.83	4.62	2.62	2.66	2.58	0.00	-4.47
	C	25.0432	5.94 5.83	-4.62	2.62	2.66	2.58	-0.00	4.47
			Sum:	0.00	7.85	0.00	0.00	0.00	0.00

Guy-Mast Forces (Excluding Wind) - Service

x S S	x S - S	x S S	q S S	q S S	q S S	S S	S S	S S
232.523	A	49.6032	6.10 5.83	-0.07	4.72	-3.86	-10.21	14.65	-17.69
	A	49.6032	6.10 5.83	0.07	4.72	-3.86	-10.21	-14.65	17.69
	B	49.6032	6.10 5.83	3.38	4.72	1.87	20.43	14.65	0.00
	B	49.6032	6.10 5.83	3.31	4.72	2.00	-10.21	-14.65	-17.69
	C	49.6032	6.10 5.83	-3.31	4.72	2.00	-10.21	14.65	17.69

	C	49.6032	6.10 5.83	-3.38	4.72	1.87	20.43	-14.65	0.00
			Sum:	0.00	28.31	0.00	-0.00	0.00	0.00
172.523	A	41.0852	6.03 5.83	-0.08	4.05	-4.47	-8.76	16.94	-15.18
	A	41.0852	6.03 5.83	0.08	4.05	-4.47	-8.76	-16.94	15.18
	B	41.0852	6.03 5.83	3.91	4.05	2.16	17.53	16.94	0.00
	B	41.0852	6.03 5.83	3.83	4.05	2.31	-8.76	-16.94	-15.18
	C	41.0852	6.03 5.83	-3.83	4.05	2.31	-8.76	16.94	15.18
	C	41.0852	6.03 5.83	-3.91	4.05	2.16	17.53	-16.94	0.00
			Sum:	0.00	24.29	0.00	-0.00	0.00	0.00
92.5234	A	25.0432	5.94 5.83	0.00	2.62	-5.33	-5.16	0.00	0.00
	B	25.0432	5.94 5.83	4.62	2.62	2.66	2.58	0.00	-4.47
	C	25.0432	5.94 5.83	-4.62	2.62	2.66	2.58	-0.00	4.47
			Sum:	0.00	7.85	0.00	0.00	0.00	0.00

Guy-Tensioning Information

232.523	A	197.87	232.52	7.005	7.53	6.605	7.98	6.213	8.48	5.830	9.02	5.457	9.63	5.096	10.29	4.750	11.02
	B	197.87	232.52	7.005	7.53	6.605	7.98	6.213	8.48	5.830	9.02	5.457	9.63	5.096	10.29	4.750	11.02
	C	197.87	232.52	7.005	7.53	6.605	7.98	6.213	8.48	5.830	9.02	5.457	9.63	5.096	10.29	4.750	11.02
172.523	A	197.87	172.52	7.428	5.28	6.883	5.70	6.349	6.17	5.830	6.71	5.330	7.33	4.855	8.03	4.408	8.83
	B	197.87	172.52	7.428	5.28	6.883	5.70	6.349	6.17	5.830	6.71	5.330	7.33	4.855	8.03	4.408	8.83
	C	197.87	172.52	7.428	5.28	6.883	5.70	6.349	6.17	5.830	6.71	5.330	7.33	4.855	8.03	4.408	8.83
92.5234	A	198.03	92.52	8.166	3.35	7.364	3.72	6.582	4.16	5.830	4.69	5.118	5.33	4.463	6.11	3.878	7.02
	B	198.03	92.52	8.166	3.35	7.364	3.72	6.582	4.16	5.830	4.69	5.118	5.33	4.463	6.11	3.878	7.02
	C	198.03	92.52	8.166	3.35	7.364	3.72	6.582	4.16	5.830	4.69	5.118	5.33	4.463	6.11	3.878	7.02

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Safety Line 3/8	B	No	No	Ar (CaAa)	250' - 0'	0.0000	0.5	1	1	0.3750	0.3750		0.22
Step Pegs (5/8" SR) 7-in. w/30" step ***	B	No	No	Ar (CaAa)	250' - 0'	0.0000	0.5	1	1	0.3500	0.3500		0.49
Tower Lighting(5/8) ***	A	No	No	Ar (CaAa)	250' - 0'	0.0000	-0.5	1	1	0.5000	0.8400		0.24
HB158-21U6S24-xxM_TMO(1-5/8)	B	No	No	Ar (CaAa)	246' - 0'	0.0000	-0.25	2	2	0.5000	1.9960		2.50
LDF7-50A(1-	B	No	No	Ar (CaAa)	246' - 0'	0.0000	0.08	9	9	0.5000	1.9800		0.82

%	Sq	Y	S	°	S -		q	S	ø	S	i S	i S	-	S	S S		S
	S ø S			q	S -	S	S	S	S 9q	Sq F		S	S S	%		S S	S
5/8) ***																	
MLE HYBRID 9POWER/18 FIBER RL 2(1-5/8)	C	No	No	Ar (CaAa)	238' - 0'	0.0000	-0.06	2	1	0.5000	1.6250		1.07
(12)LDF7-50A(1-5/8) + (6)AT158J50 (1-5/8)	C	No	No	Ar (CaAa)	238' - 0'	0.0000	-0.27	18	6	0.5000	1.9800		0.82
LMR-400(3/8) ***	C	No	No	Ar (CaAa)	238' - 0'	0.0000	0.05	2	2	0.4050	0.4050		0.07
LMR-400(3/8) ***	C	No	No	Ar (CaAa)	150' - 0'	0.0000	0.3	2	2	0.4050	0.4050		0.07
Rohn 80 Waveguide	B	No	No	Af (CaAa)	250' - 0'	0.0000	0	1	1	0.8600	0.8600		1.10
Rohn 80 Waveguide *** *** ***	C	No	No	Af (CaAa)	250' - 0'	0.0000	0	1	1	0.8600	0.8600		1.10

Feed Line/Linear Appurtenances - Entered As Area

%	S	q	Y	S	°	S -			S	S	S	- YYS		S
	S ø S			S	q	S -	S	S	S			S gOS		S
*** *** ***														

Feed Line/Linear Appurtenances Section Areas

S	S S	q S	Y S	YqS	- YYYS	- YYYS	S
S	S		S gS	Sq gS	/ Sq gS	Sq gS	?S
T1	250'-230'	A	0.000	0.000	1.680	0.000	0.00
		B	0.000	0.000	39.216	0.000	0.23
		C	0.000	0.000	34.627	0.000	0.16
T2	230'-210'	A	0.000	0.000	1.680	0.000	0.00
		B	0.000	0.000	47.941	0.000	0.28
		C	0.000	0.000	82.267	0.000	0.36
T3	210'-190'	A	0.000	0.000	1.680	0.000	0.00
		B	0.000	0.000	47.941	0.000	0.28
		C	0.000	0.000	82.267	0.000	0.36
T4	190'-170'	A	0.000	0.000	1.680	0.000	0.00
		B	0.000	0.000	47.941	0.000	0.28
		C	0.000	0.000	82.267	0.000	0.36
T5	170'-150'	A	0.000	0.000	1.680	0.000	0.00
		B	0.000	0.000	47.941	0.000	0.28
		C	0.000	0.000	82.267	0.000	0.36
T6	150'-130'	A	0.000	0.000	1.680	0.000	0.00
		B	0.000	0.000	47.941	0.000	0.28
		C	0.000	0.000	83.887	0.000	0.37

S	S	q S	Y S	Y qS	- YYYS	- YYYS	S
S	S		S	SS	/ Sq SS	Sq SS	S
			S	gS	gS	gS	?S
T7	130'-110'	A	0.000	0.000	1.680	0.000	0.00
		B	0.000	0.000	47.941	0.000	0.28
		C	0.000	0.000	83.887	0.000	0.37
T8	110'-90'	A	0.000	0.000	1.680	0.000	0.00
		B	0.000	0.000	47.941	0.000	0.28
		C	0.000	0.000	83.887	0.000	0.37
T9	90'-70'	A	0.000	0.000	1.680	0.000	0.00
		B	0.000	0.000	47.941	0.000	0.28
		C	0.000	0.000	83.887	0.000	0.37
T10	70'-50'	A	0.000	0.000	1.680	0.000	0.00
		B	0.000	0.000	47.941	0.000	0.28
		C	0.000	0.000	83.887	0.000	0.37
T11	50'-35'	A	0.000	0.000	1.260	0.000	0.00
		B	0.000	0.000	35.956	0.000	0.21
		C	0.000	0.000	62.915	0.000	0.27
T12	35'-20'	A	0.000	0.000	1.260	0.000	0.00
		B	0.000	0.000	35.956	0.000	0.21
		C	0.000	0.000	62.915	0.000	0.27
T13	20'-4'9-27/32"	A	0.000	0.000	1.275	0.000	0.00
		B	0.000	0.000	36.392	0.000	0.22
		C	0.000	0.000	63.680	0.000	0.28
T14	4'9-27/32"-0'	A	0.000	0.000	0.405	0.000	0.00
		B	0.000	0.000	11.548	0.000	0.07
		C	0.000	0.000	20.207	0.000	0.09

Feed Line Center of Pressure

S	S	° SS	- S	- S	- S	- S
		S	S	S	/ S	/ S
		S	S	S	S	S
T1	250'-230'	3.4325	-0.0265	3.4325	-0.0265	
T2	230'-210'	5.7922	1.3836	5.7922	1.3836	
T3	210'-190'	5.7922	1.3836	5.7922	1.3836	
T4	190'-170'	4.7070	1.1848	4.6988	1.1827	
T5	170'-150'	5.6169	1.3428	5.6047	1.3399	
T6	150'-130'	5.7335	1.5207	5.7208	1.5174	
T7	130'-110'	5.7286	1.5194	5.7208	1.5174	
T8	110'-90'	5.2947	1.4098	5.2934	1.4095	
T9	90'-70'	5.3697	1.4260	5.3697	1.4260	
T10	70'-50'	5.7208	1.5174	5.7208	1.5174	
T11	50'-35'	5.6965	1.5111	5.6965	1.5111	
T12	35'-20'	5.6965	1.5111	5.6965	1.5111	
T13	20'-4'9-27/32"	5.7007	1.5122	5.7007	1.5122	
T14	4'9-27/32"-0'	2.9392	0.8819	2.9392	0.8819	

Shielding Factor Ka

S	q Sd S S 6	%	q Sd S S ° (	? S Sf	? S /
T1	1	Safety Line 3/8	230.00 - 250.00	0.6000	0.6000
T1	2	Step Pegs (5/8" SR) 7-in. w/30" step	230.00 - 250.00	0.6000	0.6000
T1	4	Tower Lighting(5/8)	230.00 - 250.00	0.6000	0.6000
T1	6	HB158-21U6S24-xxM_TMO(1-5/8)	230.00 - 246.00	0.6000	0.6000
T1	7	LDF7-50A(1-5/8)	230.00 - 246.00	0.6000	0.6000
T1	11	MLE HYBRID	230.00 -	0.6000	0.6000

S	q Sx S S 6	%	q Sx S S ° (	? S Sf	? S /
		9POWER/18FIBER RL 2(1-5/8)	238.00		
T1	14	(12)LDF7-50A(1-5/8) + (6)AT158J50(1-5/8)	230.00 - 238.00	0.6000	0.6000
T1	15	LMR-400(3/8)	230.00 - 238.00	0.6000	0.6000
T1	20	Rohn 80 Waveguide	230.00 - 250.00	0.6000	0.6000
T1	21	Rohn 80 Waveguide	230.00 - 250.00	0.6000	0.6000
T2	1	Safety Line 3/8	210.00 - 230.00	0.6000	0.6000
T2	2	Step Pegs (5/8" SR) 7-in. w/30" step	210.00 - 230.00	0.6000	0.6000
T2	4	Tower Lighting(5/8)	210.00 - 230.00	0.6000	0.6000
T2	6	HB158-21U6S24-xxM_TMO(1-5/8)	210.00 - 230.00	0.6000	0.6000
T2	7	LDF7-50A(1-5/8)	210.00 - 230.00	0.6000	0.6000
T2	11	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	210.00 - 230.00	0.6000	0.6000
T2	14	(12)LDF7-50A(1-5/8) + (6)AT158J50(1-5/8)	210.00 - 230.00	0.6000	0.6000
T2	15	LMR-400(3/8)	210.00 - 230.00	0.6000	0.6000
T2	20	Rohn 80 Waveguide	210.00 - 230.00	0.6000	0.6000
T2	21	Rohn 80 Waveguide	210.00 - 230.00	0.6000	0.6000
T3	1	Safety Line 3/8	190.00 - 210.00	0.6000	0.6000
T3	2	Step Pegs (5/8" SR) 7-in. w/30" step	190.00 - 210.00	0.6000	0.6000
T3	4	Tower Lighting(5/8)	190.00 - 210.00	0.6000	0.6000
T3	6	HB158-21U6S24-xxM_TMO(1-5/8)	190.00 - 210.00	0.6000	0.6000
T3	7	LDF7-50A(1-5/8)	190.00 - 210.00	0.6000	0.6000
T3	11	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	190.00 - 210.00	0.6000	0.6000
T3	14	(12)LDF7-50A(1-5/8) + (6)AT158J50(1-5/8)	190.00 - 210.00	0.6000	0.6000
T3	15	LMR-400(3/8)	190.00 - 210.00	0.6000	0.6000
T3	20	Rohn 80 Waveguide	190.00 - 210.00	0.6000	0.6000
T3	21	Rohn 80 Waveguide	190.00 - 210.00	0.6000	0.6000
T4	1	Safety Line 3/8	170.00 - 190.00	0.6000	0.6000
T4	2	Step Pegs (5/8" SR) 7-in. w/30" step	170.00 - 190.00	0.6000	0.6000
T4	4	Tower Lighting(5/8)	170.00 - 190.00	0.6000	0.6000
T4	6	HB158-21U6S24-xxM_TMO(1-5/8)	170.00 - 190.00	0.6000	0.6000
T4	7	LDF7-50A(1-5/8)	170.00 - 190.00	0.6000	0.6000
T4	11	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	170.00 - 190.00	0.6000	0.6000
T4	14	(12)LDF7-50A(1-5/8) + (6)AT158J50(1-5/8)	170.00 - 190.00	0.6000	0.6000
T4	15	LMR-400(3/8)	170.00 - 190.00	0.6000	0.6000

S	q Sd S S 6	%	q Sd S S ° (	? S Sf	? S /
T4	20	Rohn 80 Waveguide	170.00 - 190.00	0.6000	0.6000
T4	21	Rohn 80 Waveguide	170.00 - 190.00	0.6000	0.6000
T5	1	Safety Line 3/8	150.00 - 170.00	0.6000	0.6000
T5	2	Step Pegs (5/8" SR) 7-in. w/30" step	150.00 - 170.00	0.6000	0.6000
T5	4	Tower Lighting(5/8)	150.00 - 170.00	0.6000	0.6000
T5	6	HB158-21U6S24-xxM_TMO(1-5/8)	150.00 - 170.00	0.6000	0.6000
T5	7	LDF7-50A(1-5/8)	150.00 - 170.00	0.6000	0.6000
T5	11	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	150.00 - 170.00	0.6000	0.6000
T5	14	(12)LDF7-50A(1-5/8) + (6)AT158J50(1-5/8)	150.00 - 170.00	0.6000	0.6000
T5	15	LMR-400(3/8)	150.00 - 170.00	0.6000	0.6000
T5	20	Rohn 80 Waveguide	150.00 - 170.00	0.6000	0.6000
T5	21	Rohn 80 Waveguide	150.00 - 170.00	0.6000	0.6000
T6	1	Safety Line 3/8	130.00 - 150.00	0.6000	0.6000
T6	2	Step Pegs (5/8" SR) 7-in. w/30" step	130.00 - 150.00	0.6000	0.6000
T6	4	Tower Lighting(5/8)	130.00 - 150.00	0.6000	0.6000
T6	6	HB158-21U6S24-xxM_TMO(1-5/8)	130.00 - 150.00	0.6000	0.6000
T6	7	LDF7-50A(1-5/8)	130.00 - 150.00	0.6000	0.6000
T6	11	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	130.00 - 150.00	0.6000	0.6000
T6	14	(12)LDF7-50A(1-5/8) + (6)AT158J50(1-5/8)	130.00 - 150.00	0.6000	0.6000
T6	15	LMR-400(3/8)	130.00 - 150.00	0.6000	0.6000
T6	18	LMR-400(3/8)	130.00 - 150.00	0.6000	0.6000
T6	20	Rohn 80 Waveguide	130.00 - 150.00	0.6000	0.6000
T6	21	Rohn 80 Waveguide	130.00 - 150.00	0.6000	0.6000
T7	1	Safety Line 3/8	110.00 - 130.00	0.6000	0.6000
T7	2	Step Pegs (5/8" SR) 7-in. w/30" step	110.00 - 130.00	0.6000	0.6000
T7	4	Tower Lighting(5/8)	110.00 - 130.00	0.6000	0.6000
T7	6	HB158-21U6S24-xxM_TMO(1-5/8)	110.00 - 130.00	0.6000	0.6000
T7	7	LDF7-50A(1-5/8)	110.00 - 130.00	0.6000	0.6000
T7	11	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	110.00 - 130.00	0.6000	0.6000
T7	14	(12)LDF7-50A(1-5/8) + (6)AT158J50(1-5/8)	110.00 - 130.00	0.6000	0.6000
T7	15	LMR-400(3/8)	110.00 - 130.00	0.6000	0.6000
T7	18	LMR-400(3/8)	110.00 - 130.00	0.6000	0.6000
T7	20	Rohn 80 Waveguide	110.00 - 130.00	0.6000	0.6000

S	q Sd S S 6	%	q Sd S S ° (	? S Sf	? S /
T7	21	Rohn 80 Waveguide	110.00 - 130.00	0.6000	0.6000
T8	1	Safety Line 3/8	90.00 - 110.00	0.6000	0.6000
T8	2	Step Pegs (5/8" SR) 7-in. w/30" step	90.00 - 110.00	0.6000	0.6000
T8	4	Tower Lighting(5/8)	90.00 - 110.00	0.6000	0.6000
T8	6	HB158-21U6S24-xxM_TMO(1-5/8)	90.00 - 110.00	0.6000	0.6000
T8	7	LDF7-50A(1-5/8)	90.00 - 110.00	0.6000	0.6000
T8	11	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	90.00 - 110.00	0.6000	0.6000
T8	14	(12)LDF7-50A(1-5/8) + (6)AT158J50(1-5/8)	90.00 - 110.00	0.6000	0.6000
T8	15	LMR-400(3/8)	90.00 - 110.00	0.6000	0.6000
T8	18	LMR-400(3/8)	90.00 - 110.00	0.6000	0.6000
T8	20	Rohn 80 Waveguide	90.00 - 110.00	0.6000	0.6000
T8	21	Rohn 80 Waveguide	90.00 - 110.00	0.6000	0.6000
T9	1	Safety Line 3/8	70.00 - 90.00	0.6000	0.6000
T9	2	Step Pegs (5/8" SR) 7-in. w/30" step	70.00 - 90.00	0.6000	0.6000
T9	4	Tower Lighting(5/8)	70.00 - 90.00	0.6000	0.6000
T9	6	HB158-21U6S24-xxM_TMO(1-5/8)	70.00 - 90.00	0.6000	0.6000
T9	7	LDF7-50A(1-5/8)	70.00 - 90.00	0.6000	0.6000
T9	11	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	70.00 - 90.00	0.6000	0.6000
T9	14	(12)LDF7-50A(1-5/8) + (6)AT158J50(1-5/8)	70.00 - 90.00	0.6000	0.6000
T9	15	LMR-400(3/8)	70.00 - 90.00	0.6000	0.6000
T9	18	LMR-400(3/8)	70.00 - 90.00	0.6000	0.6000
T9	20	Rohn 80 Waveguide	70.00 - 90.00	0.6000	0.6000
T9	21	Rohn 80 Waveguide	70.00 - 90.00	0.6000	0.6000
T10	1	Safety Line 3/8	50.00 - 70.00	0.6000	0.6000
T10	2	Step Pegs (5/8" SR) 7-in. w/30" step	50.00 - 70.00	0.6000	0.6000
T10	4	Tower Lighting(5/8)	50.00 - 70.00	0.6000	0.6000
T10	6	HB158-21U6S24-xxM_TMO(1-5/8)	50.00 - 70.00	0.6000	0.6000
T10	7	LDF7-50A(1-5/8)	50.00 - 70.00	0.6000	0.6000
T10	11	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	50.00 - 70.00	0.6000	0.6000
T10	14	(12)LDF7-50A(1-5/8) + (6)AT158J50(1-5/8)	50.00 - 70.00	0.6000	0.6000
T10	15	LMR-400(3/8)	50.00 - 70.00	0.6000	0.6000
T10	18	LMR-400(3/8)	50.00 - 70.00	0.6000	0.6000
T10	20	Rohn 80 Waveguide	50.00 - 70.00	0.6000	0.6000

S	q Sd S S 6	%	q Sd S S ° (	? S Sf	? S /
T10	21	Rohn 80 Waveguide	50.00 - 70.00	0.6000	0.6000
T11	1	Safety Line 3/8	35.00 - 50.00	0.6000	0.6000
T11	2	Step Pegs (5/8" SR) 7-in. w/30" step	35.00 - 50.00	0.6000	0.6000
T11	4	Tower Lighting(5/8)	35.00 - 50.00	0.6000	0.6000
T11	6	HB158-21U6S24-xxM_TMO(1-5/8)	35.00 - 50.00	0.6000	0.6000
T11	7	LDF7-50A(1-5/8)	35.00 - 50.00	0.6000	0.6000
T11	11	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	35.00 - 50.00	0.6000	0.6000
T11	14	(12)LDF7-50A(1-5/8) + (6)AT158J50(1-5/8)	35.00 - 50.00	0.6000	0.6000
T11	15	LMR-400(3/8)	35.00 - 50.00	0.6000	0.6000
T11	18	LMR-400(3/8)	35.00 - 50.00	0.6000	0.6000
T11	20	Rohn 80 Waveguide	35.00 - 50.00	0.6000	0.6000
T11	21	Rohn 80 Waveguide	35.00 - 50.00	0.6000	0.6000
T12	1	Safety Line 3/8	20.00 - 35.00	0.6000	0.6000
T12	2	Step Pegs (5/8" SR) 7-in. w/30" step	20.00 - 35.00	0.6000	0.6000
T12	4	Tower Lighting(5/8)	20.00 - 35.00	0.6000	0.6000
T12	6	HB158-21U6S24-xxM_TMO(1-5/8)	20.00 - 35.00	0.6000	0.6000
T12	7	LDF7-50A(1-5/8)	20.00 - 35.00	0.6000	0.6000
T12	11	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	20.00 - 35.00	0.6000	0.6000
T12	14	(12)LDF7-50A(1-5/8) + (6)AT158J50(1-5/8)	20.00 - 35.00	0.6000	0.6000
T12	15	LMR-400(3/8)	20.00 - 35.00	0.6000	0.6000
T12	18	LMR-400(3/8)	20.00 - 35.00	0.6000	0.6000
T12	20	Rohn 80 Waveguide	20.00 - 35.00	0.6000	0.6000
T12	21	Rohn 80 Waveguide	20.00 - 35.00	0.6000	0.6000
T13	1	Safety Line 3/8	4.82 - 20.00	0.6000	0.6000
T13	2	Step Pegs (5/8" SR) 7-in. w/30" step	4.82 - 20.00	0.6000	0.6000
T13	4	Tower Lighting(5/8)	4.82 - 20.00	0.6000	0.6000
T13	6	HB158-21U6S24-xxM_TMO(1-5/8)	4.82 - 20.00	0.6000	0.6000
T13	7	LDF7-50A(1-5/8)	4.82 - 20.00	0.6000	0.6000
T13	11	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	4.82 - 20.00	0.6000	0.6000
T13	14	(12)LDF7-50A(1-5/8) + (6)AT158J50(1-5/8)	4.82 - 20.00	0.6000	0.6000
T13	15	LMR-400(3/8)	4.82 - 20.00	0.6000	0.6000
T13	18	LMR-400(3/8)	4.82 - 20.00	0.6000	0.6000
T13	20	Rohn 80 Waveguide	4.82 - 20.00	0.6000	0.6000
T13	21	Rohn 80 Waveguide	4.82 - 20.00	0.6000	0.6000
T14	1	Safety Line 3/8	0.00 - 4.82	0.4347	0.4347
T14	2	Step Pegs (5/8" SR) 7-in. w/30" step	0.00 - 4.82	0.4347	0.4347
T14	4	Tower Lighting(5/8)	0.00 - 4.82	0.4347	0.4347
T14	6	HB158-21U6S24-	0.00 - 4.82	0.4347	0.4347

S	q Sb S S 6	%	q Sb S S ° (	? S Sf	? S /
		xxM_TMO(1-5/8)			
T14	7	LDF7-50A(1-5/8)	0.00 - 4.82	0.4347	0.4347
T14	11	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	0.00 - 4.82	0.4347	0.4347
T14	14	(12)LDF7-50A(1-5/8) + (6)AT158J50(1-5/8)	0.00 - 4.82	0.4347	0.4347
T14	15	LMR-400(3/8)	0.00 - 4.82	0.4347	0.4347
T14	18	LMR-400(3/8)	0.00 - 4.82	0.4347	0.4347
T14	20	Rohn 80 Waveguide	0.00 - 4.82	0.4347	0.4347
T14	21	Rohn 80 Waveguide	0.00 - 4.82	0.4347	0.4347

Discrete Tower Loads

% S	q S S ø S	S S	# S ø S S S S S S	'S Y S Y S S S S S	S S	- YYS q S S S S	- YYS S S S S	S S S ?S
Lightning Rod 5/8"x4'	C	From Leg	0.000' 9'	0.0000	250'	No Ice	0.25	0.25	0.00
7'x2" Mount Pipe	C	From Leg	0.000' 3'6"	0.0000	250'	No Ice	1.66	1.66	0.03
Flash Beacon Lighting	C	From Leg	0.000' 7'	0.0000	250'	No Ice	2.70	2.70	0.05
5'x2" Mount Pipe	B	From Leg	0.000' 2'6"	0.0000	250'	No Ice	1.19	1.19	0.02
***									
Sabre (3) C10857001C 12' HD V-Boom	C	None		0.0000	246'	No Ice	16.14	16.14	1.39
AIR6449 B41_T-MOBILE w/ Mount Pipe	A	From Leg	4.000' 1'	0.0000	246'	No Ice	5.19	2.71	0.13
AIR6449 B41_T-MOBILE w/ Mount Pipe	B	From Leg	4.000' 1'	0.0000	246'	No Ice	5.19	2.71	0.13
AIR6449 B41_T-MOBILE w/ Mount Pipe	C	From Leg	4.000' 1'	0.0000	246'	No Ice	5.19	2.71	0.13
FFVV-65C-R3-V1_TMO w/ Mount Pipe	A	From Leg	4.000' 1'	0.0000	246'	No Ice	12.97	6.20	0.16
FFVV-65C-R3-V1_TMO w/ Mount Pipe	B	From Leg	4.000' 1'	0.0000	246'	No Ice	12.97	6.20	0.16
FFVV-65C-R3-V1_TMO w/ Mount Pipe	C	From Leg	4.000' 1'	0.0000	246'	No Ice	12.97	6.20	0.16
RADIO 4460 B2/B25 B66_TMO	A	From Leg	4.000' 1'	0.0000	246'	No Ice	2.14	1.69	0.11
RADIO 4460 B2/B25 B66_TMO	B	From Leg	4.000' 1'	0.0000	246'	No Ice	2.14	1.69	0.11
RADIO 4460 B2/B25 B66_TMO	C	From Leg	4.000'	0.0000	246'	No Ice	2.14	1.69	0.11

% S	q S S ø S	S	# S Y S ø S S S S S S S	S S S S	S S	- YYYS q S S S S ?S	- YYYS S S S S ?S	S S S S ?S
RADIO 4480 B71_TMO	A	From Leg	1' 4.000' 0'	0.0000	246'	No Ice	2.85	1.38	0.09
RADIO 4480 B71_TMO	B	From Leg	1' 4.000' 0'	0.0000	246'	No Ice	2.85	1.38	0.09
RADIO 4480 B71_TMO	C	From Leg	1' 4.000' 0'	0.0000	246'	No Ice	2.85	1.38	0.09
(2) 6'x2" Mount Pipe	A	From Leg	1' 4.000' 0'	0.0000	246'	No Ice	1.43	1.43	0.02
(2) 6'x2" Mount Pipe	B	From Leg	0' 4.000' 0'	0.0000	246'	No Ice	1.43	1.43	0.02
(2) 6'x2" Mount Pipe	C	From Leg	0' 4.000' 0'	0.0000	246'	No Ice	1.43	1.43	0.02
***									
Sector Mount [SM 502-3]	C	None		0.0000	238'	No Ice	29.82	29.82	1.67
AIR 6449 B77 w/ Mount Pipe	A	From Leg	4.000' 0'	0.0000	238'	No Ice	3.65	2.72	0.11
AIR 6449 B77 w/ Mount Pipe	B	From Leg	0' 4.000' 0'	0.0000	238'	No Ice	3.65	2.72	0.11
AIR 6449 B77 w/ Mount Pipe	C	From Leg	0' 4.000' 0'	0.0000	238'	No Ice	3.65	2.72	0.11
(2) NHH-65C-R2B w/ Mount Pipe	A	From Leg	0' 4.000' 0'	0.0000	238'	No Ice	5.56	4.47	0.08
(2) NHH-65C-R2B w/ Mount Pipe	B	From Leg	0' 4.000' 0'	0.0000	238'	No Ice	5.56	4.47	0.08
(2) NHH-65C-R2B w/ Mount Pipe	C	From Leg	0' 4.000' 0'	0.0000	238'	No Ice	5.56	4.47	0.08
X7CAP-865 w/ Mount Pipe	A	From Leg	0' 4.000' 0'	0.0000	238'	No Ice	10.04	7.60	0.11
X7CAP-865 w/ Mount Pipe	B	From Leg	0' 4.000' 0'	0.0000	238'	No Ice	10.04	7.60	0.11
X7CAP-865 w/ Mount Pipe	C	From Leg	0' 4.000' 0'	0.0000	238'	No Ice	10.04	7.60	0.11
RCMDC-6627-PF-48	A	From Leg	0' 4.000' 0'	0.0000	238'	No Ice	4.06	3.10	0.03
RCMDC-6627-PF-48	B	From Leg	0' 4.000' 0'	0.0000	238'	No Ice	4.06	3.10	0.03
RRUS 4449 B5/B12	A	From Leg	0' 4.000' 0'	0.0000	238'	No Ice	1.97	1.41	0.07
RRUS 4449 B5/B12	B	From Leg	0' 4.000' 0'	0.0000	238'	No Ice	1.97	1.41	0.07
RRUS 4449 B5/B12	C	From Leg	0' 4.000' 0'	0.0000	238'	No Ice	1.97	1.41	0.07
RRUS 8843 B2/B66A	A	From Leg	0' 4.000' 0'	0.0000	238'	No Ice	1.64	1.35	0.07

RRUS 8843 B2/B66A	B	From Leg	0' 4.00 0'	0.0000	238'	No Ice	1.64	1.35	0.07
RRUS 8843 B2/B66A	C	From Leg	0' 4.00 0'	0.0000	238'	No Ice	1.64	1.35	0.07
(2) ODU600	B	From Leg	0' 4.00 0'	0.0000	238'	No Ice	0.91	0.43	0.01
6'x2" Mount Pipe	B	From Leg	0' 4.00 0' 0'	0.0000	238'	No Ice	1.43	1.43	0.02
***									
Pipe Mount [PM 602-1]	A	From Leg	0.50 0'	0.0000	150'	No Ice	2.78	2.78	0.09
Pipe Mount [PM 602-1]	C	From Leg	0' 0.50 0'	0.0000	150'	No Ice	2.78	2.78	0.09
7'x1.9"OD (1-1/2" STD) Horizontal Stabilizer Pipe	A	From Face	0' 0.50 0'	0.0000	150'	No Ice	0.03	0.89	0.02
7'x1.9"OD (1-1/2" STD) Horizontal Stabilizer Pipe	B	From Face	0' 0.50 0'	0.0000	150'	No Ice	0.03	0.89	0.02
ODU 5-11 GHZ	A	From Leg	0' 1.00 0'	0.0000	150'	No Ice	0.70	0.58	0.02
ODU 5-11 GHZ	C	From Leg	0' 1.00 0' -1'	0.0000	150'	No Ice	0.70	0.58	0.02
***									

Dishes

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VHLPX3-11W	B	Paraboloid w/Shroud (HP)	From Leg	4.00 0' 0'	-17.0000		238'	3.28	No Ice	8.47	0.05
***											
HP4-11	A	Paraboloid w/Shroud (HP)	From Leg	1.00 0' -1'	-72.0000		150'	4.17	No Ice	13.64	0.09
HP2-11	C	Paraboloid w/Shroud (HP)	From Leg	1.00 0' 0'	45.0000		150'	2.04	No Ice	3.27	0.03
***											

Load Combinations

- 6S tS	% S
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	1.2 Dead+1.0 Wind 30 deg - No Ice+1.0 Guy
8	1.2D+1.0W (pattern 1) 30 deg - No Ice+1.0 Guy
9	1.2D+1.0W (pattern 2) 30 deg - No Ice+1.0 Guy
10	1.2D+1.0W (pattern 3) 30 deg - No Ice+1.0 Guy
11	1.2D+1.0W (pattern 4) 30 deg - No Ice+1.0 Guy
12	1.2 Dead+1.0 Wind 60 deg - No Ice+1.0 Guy
13	1.2D+1.0W (pattern 1) 60 deg - No Ice+1.0 Guy
14	1.2D+1.0W (pattern 2) 60 deg - No Ice+1.0 Guy
15	1.2D+1.0W (pattern 3) 60 deg - No Ice+1.0 Guy
16	1.2D+1.0W (pattern 4) 60 deg - No Ice+1.0 Guy
17	1.2 Dead+1.0 Wind 90 deg - No Ice+1.0 Guy
18	1.2D+1.0W (pattern 1) 90 deg - No Ice+1.0 Guy
19	1.2D+1.0W (pattern 2) 90 deg - No Ice+1.0 Guy
20	1.2D+1.0W (pattern 3) 90 deg - No Ice+1.0 Guy
21	1.2D+1.0W (pattern 4) 90 deg - No Ice+1.0 Guy
22	1.2 Dead+1.0 Wind 120 deg - No Ice+1.0 Guy
23	1.2D+1.0W (pattern 1) 120 deg - No Ice+1.0 Guy
24	1.2D+1.0W (pattern 2) 120 deg - No Ice+1.0 Guy
25	1.2D+1.0W (pattern 3) 120 deg - No Ice+1.0 Guy
26	1.2D+1.0W (pattern 4) 120 deg - No Ice+1.0 Guy
27	1.2 Dead+1.0 Wind 150 deg - No Ice+1.0 Guy
28	1.2D+1.0W (pattern 1) 150 deg - No Ice+1.0 Guy
29	1.2D+1.0W (pattern 2) 150 deg - No Ice+1.0 Guy
30	1.2D+1.0W (pattern 3) 150 deg - No Ice+1.0 Guy
31	1.2D+1.0W (pattern 4) 150 deg - No Ice+1.0 Guy
32	1.2 Dead+1.0 Wind 180 deg - No Ice+1.0 Guy
33	1.2D+1.0W (pattern 1) 180 deg - No Ice+1.0 Guy
34	1.2D+1.0W (pattern 2) 180 deg - No Ice+1.0 Guy
35	1.2D+1.0W (pattern 3) 180 deg - No Ice+1.0 Guy
36	1.2D+1.0W (pattern 4) 180 deg - No Ice+1.0 Guy
37	1.2 Dead+1.0 Wind 210 deg - No Ice+1.0 Guy
38	1.2D+1.0W (pattern 1) 210 deg - No Ice+1.0 Guy
39	1.2D+1.0W (pattern 2) 210 deg - No Ice+1.0 Guy
40	1.2D+1.0W (pattern 3) 210 deg - No Ice+1.0 Guy
41	1.2D+1.0W (pattern 4) 210 deg - No Ice+1.0 Guy
42	1.2 Dead+1.0 Wind 240 deg - No Ice+1.0 Guy
43	1.2D+1.0W (pattern 1) 240 deg - No Ice+1.0 Guy
44	1.2D+1.0W (pattern 2) 240 deg - No Ice+1.0 Guy
45	1.2D+1.0W (pattern 3) 240 deg - No Ice+1.0 Guy
46	1.2D+1.0W (pattern 4) 240 deg - No Ice+1.0 Guy
47	1.2 Dead+1.0 Wind 270 deg - No Ice+1.0 Guy
48	1.2D+1.0W (pattern 1) 270 deg - No Ice+1.0 Guy
49	1.2D+1.0W (pattern 2) 270 deg - No Ice+1.0 Guy
50	1.2D+1.0W (pattern 3) 270 deg - No Ice+1.0 Guy
51	1.2D+1.0W (pattern 4) 270 deg - No Ice+1.0 Guy
52	1.2 Dead+1.0 Wind 300 deg - No Ice+1.0 Guy
53	1.2D+1.0W (pattern 1) 300 deg - No Ice+1.0 Guy
54	1.2D+1.0W (pattern 2) 300 deg - No Ice+1.0 Guy
55	1.2D+1.0W (pattern 3) 300 deg - No Ice+1.0 Guy
56	1.2D+1.0W (pattern 4) 300 deg - No Ice+1.0 Guy
57	1.2 Dead+1.0 Wind 330 deg - No Ice+1.0 Guy
58	1.2D+1.0W (pattern 1) 330 deg - No Ice+1.0 Guy
59	1.2D+1.0W (pattern 2) 330 deg - No Ice+1.0 Guy
60	1.2D+1.0W (pattern 3) 330 deg - No Ice+1.0 Guy
61	1.2D+1.0W (pattern 4) 330 deg - No Ice+1.0 Guy
62	Dead+Wind 0 deg - Service+Guy
63	Dead+Wind 30 deg - Service+Guy
64	Dead+Wind 60 deg - Service+Guy
65	Dead+Wind 90 deg - Service+Guy
66	Dead+Wind 120 deg - Service+Guy
67	Dead+Wind 150 deg - Service+Guy
68	Dead+Wind 180 deg - Service+Guy
69	Dead+Wind 210 deg - Service+Guy
70	Dead+Wind 240 deg - Service+Guy

- 6S tS	% S
71	Dead+Wind 270 deg - Service+Guy
72	Dead+Wind 300 deg - Service+Guy
73	Dead+Wind 330 deg - Service+Guy

Maximum Member Forces

° S S	- S S	- S	x 6S ø S - tS	Y S S ?S	SY S S 4 S	SY S S 4 S
T1	250 - 230	Leg	Max Tension	14	21.24	0.50	-0.27
			Max. Compression	45	-32.38	-0.06	0.09
			Max. Mx	49	17.64	2.25	0.77
			Max. My	34	-1.05	0.03	2.43
			Max. Vy	14	-1.85	-1.11	0.53
			Max. Vx	34	-1.93	-0.12	-1.18
		Diagonal	Max Tension	49	4.20	0.01	0.01
			Max. Compression	49	-4.07	0.00	0.00
			Max. Mx	45	3.00	0.04	0.00
			Max. My	45	-3.93	-0.03	0.01
			Max. Vy	45	-0.02	0.04	0.00
			Max. Vx	45	0.00	-0.03	0.01
		Top Girt	Max Tension	34	0.08	0.00	0.00
			Max. Compression	25	-0.05	0.00	0.00
			Max. Mx	52	0.08	-0.01	0.00
			Max. My	9	0.02	0.00	0.00
			Max. Vy	52	0.01	0.00	0.00
			Max. Vx	9	-0.00	0.00	0.00
		Bottom Girt	Max Tension	41	0.80	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	52	0.37	-0.01	0.00
			Max. My	9	0.56	0.00	0.00
			Max. Vy	52	0.01	0.00	0.00
			Max. Vx	9	-0.00	0.00	0.00
		Guy A	Bottom Tension	34	16.38		
			Top Tension	34	16.65		
			Top Cable Vert	34	12.88		
			Top Cable Norm	34	10.56		
			Top Cable Tan	34	0.01		
			Bot Cable Vert	34	-12.24		
			Bot Cable Norm	34	10.89		
			Bot Cable Tan	34	0.00		
		Guy B	Bottom Tension	54	15.87		
			Top Tension	54	16.14		
			Top Cable Vert	54	12.49		
			Top Cable Norm	54	10.22		
			Top Cable Tan	54	0.01		
			Bot Cable Vert	54	-11.85		
			Bot Cable Norm	54	10.55		
			Bot Cable Tan	54	0.01		
		Guy C	Bottom Tension	14	16.63		
			Top Tension	14	16.90		
			Top Cable Vert	14	13.07		
			Top Cable Norm	14	10.72		
			Top Cable Tan	14	0.01		
			Bot Cable Vert	14	-12.43		
			Bot Cable Norm	14	11.05		
			Bot Cable Tan	14	0.00		
		Top Guy Pull-Off	Max Tension	14	8.82	0.00	0.00
			Max. Compression	43	-5.97	0.00	0.00
			Max. Mx	52	8.28	0.01	0.00
			Max. My	9	0.83	0.00	-0.00
			Max. Vy	52	-0.01	0.00	0.00
			Max. Vx	9	0.00	0.00	0.00
		Torque Arm Top	Max Tension	49	10.72	0.00	0.00
			Max. Compression	49	-4.48	0.00	0.00
			Max. Mx	14	-2.78	-48.01	0.00
			Max. My	9	-1.56	-27.16	0.00

S	S	S	S	x 6S	Y S	SY S	SY S
tS				- tS	?S	4 S	4 S
			Max. Vy	14	12.87	-48.01	0.00
			Max. Vx	9	0.00	-27.16	0.00
T2	230 - 210	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	45	-36.80	0.00	-0.01
			Max. Mx	14	-4.72	-0.90	0.43
			Max. My	34	-4.83	-0.09	-0.96
			Max. Vy	14	-1.85	-0.90	0.43
			Max. Vx	34	-1.93	-0.09	-0.96
		Diagonal	Max Tension	36	1.21	0.00	0.00
			Max. Compression	36	-1.34	0.00	0.00
			Max. Mx	44	-0.55	0.00	0.00
			Max. My	9	-0.14	0.00	-0.00
			Max. Vy	44	-0.00	0.00	0.00
			Max. Vx	9	0.00	0.00	0.00
		Top Girt	Max Tension	39	0.67	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	52	0.61	0.00	0.00
			Max. My	9	0.48	0.00	-0.00
			Max. Vy	52	-0.00	0.00	0.00
			Max. Vx	9	0.00	0.00	0.00
		Bottom Girt	Max Tension	55	0.27	0.00	0.00
			Max. Compression	45	-0.08	0.00	0.00
			Max. Mx	54	0.18	0.00	0.00
			Max. My	9	0.19	0.00	-0.00
			Max. Vy	54	-0.00	0.00	0.00
			Max. Vx	9	0.00	0.00	0.00
T3	210 - 190	Leg	Max Tension	15	5.77	0.18	-0.06
			Max. Compression	45	-51.44	0.10	-0.08
			Max. Mx	45	-37.14	0.36	-0.18
			Max. My	5	-35.83	0.01	0.37
			Max. Vy	42	-1.51	0.04	-0.04
			Max. Vx	2	-1.53	-0.01	0.07
		Diagonal	Max Tension	42	1.46	0.00	0.00
			Max. Compression	42	-2.04	0.00	0.00
			Max. Mx	44	0.11	0.00	0.00
			Max. My	9	-0.19	0.00	-0.00
			Max. Vy	44	-0.00	0.00	0.00
			Max. Vx	9	0.00	0.00	0.00
		Top Girt	Max Tension	35	0.33	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	54	0.28	0.00	0.00
			Max. My	9	0.23	0.00	-0.00
			Max. Vy	54	-0.00	0.00	0.00
			Max. Vx	9	0.00	0.00	0.00
		Bottom Girt	Max Tension	12	0.65	0.00	0.00
			Max. Compression	45	-0.32	0.00	0.00
			Max. Mx	21	0.52	0.00	0.00
			Max. My	9	0.30	0.00	-0.00
			Max. Vy	21	-0.00	0.00	0.00
			Max. Vx	9	0.00	0.00	0.00
T4	190 - 170	Leg	Max Tension	12	21.88	0.06	-0.02
			Max. Compression	42	-72.15	0.12	0.09
			Max. Mx	42	7.69	1.73	-0.37
			Max. My	33	0.58	-0.05	1.77
			Max. Vy	13	-3.13	-1.73	0.70
			Max. Vx	33	-3.14	-0.42	-1.74
		Diagonal	Max Tension	42	2.74	-0.00	0.00
			Max. Compression	2	-5.61	0.00	0.00
			Max. Mx	42	1.65	0.05	0.00
			Max. My	33	-5.37	0.00	-0.01
			Max. Vy	42	-0.03	0.05	0.00
			Max. Vx	33	-0.01	0.00	0.00
		Top Girt	Max Tension	11	0.50	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	54	0.20	-0.01	0.00
			Max. My	9	0.31	0.00	0.00
			Max. Vy	54	0.01	0.00	0.00
			Max. Vx	9	-0.00	0.00	0.00
		Bottom Girt	Max Tension	41	1.03	0.00	0.00

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			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	20	0.81	-0.01	0.00
			Max. My	9	0.69	0.00	0.00
			Max. Vy	20	0.01	0.00	0.00
			Max. Vx	9	-0.00	0.00	0.00
		Guy A	Bottom Tension	33	13.92		
			Top Tension	33	14.12		
			Top Cable Vert	33	9.45		
			Top Cable Norm	33	10.49		
			Top Cable Tan	33	0.00		
			Bot Cable Vert	33	-8.95		
			Bot Cable Norm	33	10.66		
			Bot Cable Tan	33	0.00		
		Guy B	Bottom Tension	53	12.96		
			Top Tension	53	13.15		
			Top Cable Vert	53	8.82		
			Top Cable Norm	53	9.76		
			Top Cable Tan	53	0.00		
			Bot Cable Vert	53	-8.32		
			Bot Cable Norm	53	9.93		
			Bot Cable Tan	53	0.00		
		Guy C	Bottom Tension	13	14.21		
			Top Tension	13	14.41		
			Top Cable Vert	13	9.64		
			Top Cable Norm	13	10.71		
			Top Cable Tan	13	0.00		
			Bot Cable Vert	13	-9.14		
			Bot Cable Norm	13	10.88		
			Bot Cable Tan	13	0.00		
		Top Guy Pull-Off	Max Tension	12	8.83	0.00	0.00
			Max. Compression	42	-6.74	0.00	0.00
			Max. Mx	54	6.77	0.01	0.00
			Max. My	9	1.77	0.00	-0.00
			Max. Vy	54	-0.01	0.00	0.00
			Max. Vx	9	0.00	0.00	0.00
		Torque Arm Top	Max Tension	13	10.69	0.00	0.00
			Max. Compression	42	-5.03	0.00	0.00
			Max. Mx	13	-2.33	-33.96	0.00
			Max. My	9	-1.68	-20.06	0.00
			Max. Vy	13	9.13	-33.96	0.00
			Max. Vx	9	0.00	-20.06	0.00
T5	170 - 150	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	44	-69.66	-0.21	0.03
			Max. Mx	13	-3.51	-1.37	0.55
			Max. My	33	-4.41	-0.34	-1.38
			Max. Vy	13	-3.12	-1.37	0.55
			Max. Vx	33	-3.13	-0.34	-1.38
		Diagonal	Max Tension	5	3.09	0.00	0.00
			Max. Compression	5	-3.37	0.00	0.00
			Max. Mx	46	1.86	0.00	0.00
			Max. My	10	1.67	0.00	-0.00
			Max. Vy	46	-0.00	0.00	0.00
			Max. Vx	10	0.00	0.00	0.00
		Top Girt	Max Tension	15	0.76	0.00	0.00
			Max. Compression	45	-0.03	0.00	0.00
			Max. Mx	51	0.19	0.00	0.00
			Max. My	9	0.44	0.00	-0.00
			Max. Vy	51	-0.00	0.00	0.00
			Max. Vx	9	0.00	0.00	0.00
		Bottom Girt	Max Tension	38	0.71	0.00	0.00
			Max. Compression	10	-0.38	0.00	0.00
			Max. Mx	44	0.41	0.00	0.00
			Max. My	10	0.31	0.00	0.00
			Max. Vy	44	-0.00	0.00	0.00
			Max. Vx	10	-0.00	0.00	0.00
T6	150 - 130	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	44	-46.92	-0.14	-0.05
			Max. Mx	45	-31.81	0.85	-0.23
			Max. My	5	-27.17	-0.06	0.83

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			Max. Vy	45	2.00	0.85	-0.23
			Max. Vx	5	1.80	-0.06	0.83
		Diagonal	Max Tension	5	3.28	0.00	0.00
			Max. Compression	45	-3.51	0.00	0.00
			Max. Mx	45	3.16	0.00	0.00
			Max. My	9	-0.89	0.00	-0.00
			Max. Vy	45	-0.00	0.00	0.00
			Max. Vx	9	0.00	0.00	0.00
		Top Girt	Max Tension	45	1.17	0.00	0.00
			Max. Compression	5	-0.89	0.00	0.00
			Max. Mx	52	0.09	0.00	0.00
			Max. My	10	0.45	0.00	0.00
			Max. Vy	52	-0.00	0.00	0.00
			Max. Vx	10	-0.00	0.00	0.00
		Bottom Girt	Max Tension	8	0.47	0.00	0.00
			Max. Compression	40	-0.32	0.00	0.00
			Max. Mx	54	0.06	0.00	0.00
			Max. My	8	0.35	0.00	-0.00
			Max. Vy	54	-0.00	0.00	0.00
			Max. Vx	8	0.00	0.00	0.00
T7	130 - 110	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	13	-44.89	0.11	0.12
			Max. Mx	21	-34.03	0.39	-0.19
			Max. My	41	-35.62	-0.07	0.53
			Max. Vy	21	1.28	0.24	-0.16
			Max. Vx	41	1.46	0.01	0.36
		Diagonal	Max Tension	41	2.82	0.00	0.00
			Max. Compression	11	-3.01	0.00	0.00
			Max. Mx	38	2.58	0.00	0.00
			Max. My	8	0.65	0.00	-0.00
			Max. Vy	38	-0.00	0.00	0.00
			Max. Vx	8	0.00	0.00	0.00
		Top Girt	Max Tension	41	0.46	0.00	0.00
			Max. Compression	10	-0.26	0.00	0.00
			Max. Mx	54	0.13	0.00	0.00
			Max. My	8	-0.17	0.00	-0.00
			Max. Vy	54	-0.00	0.00	0.00
			Max. Vx	8	0.00	0.00	0.00
		Bottom Girt	Max Tension	11	0.97	0.00	0.00
			Max. Compression	41	-0.79	0.00	0.00
			Max. Mx	2	0.58	0.00	0.00
			Max. My	38	-0.71	0.00	-0.00
			Max. Vy	2	-0.00	0.00	0.00
			Max. Vx	38	0.00	0.00	0.00
T8	110 - 90	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	38	-46.71	0.32	-0.37
			Max. Mx	14	-26.30	-0.78	0.43
			Max. My	34	-26.78	-0.01	-0.84
			Max. Vy	12	-2.44	-0.78	0.42
			Max. Vx	32	-2.61	-0.01	-0.84
		Diagonal	Max Tension	41	2.04	0.00	0.00
			Max. Compression	9	-3.23	0.00	0.00
			Max. Mx	38	1.58	0.00	0.00
			Max. My	39	1.10	0.00	0.00
			Max. Vy	38	-0.00	0.00	0.00
			Max. Vx	39	-0.00	0.00	0.00
		Top Girt	Max Tension	16	0.63	0.00	0.00
			Max. Compression	46	-0.10	0.00	0.00
			Max. Mx	54	0.19	0.00	0.00
			Max. My	38	-0.03	0.00	-0.00
			Max. Vy	54	-0.00	0.00	0.00
			Max. Vx	38	0.00	0.00	0.00
		Bottom Girt	Max Tension	44	0.58	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	57	0.36	0.00	0.00
			Max. My	38	0.38	0.00	-0.00
			Max. Vy	57	-0.00	0.00	0.00
			Max. Vx	38	0.00	0.00	0.00
		Guy A	Bottom Tension	41	16.26		

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		Top Tension	41	16.37		
		Top Cable Vert	41	7.07		
		Top Cable Norm	41	14.76		
		Top Cable Tan	41	0.05		
		Bot Cable Vert	41	-6.72		
		Bot Cable Norm	41	14.80		
		Bot Cable Tan	41	0.08		
	Guy B	Bottom Tension	51	14.95		
		Top Tension	51	15.05		
		Top Cable Vert	51	6.51		
		Top Cable Norm	51	13.57		
		Top Cable Tan	51	0.05		
		Bot Cable Vert	51	-6.17		
		Bot Cable Norm	51	13.61		
		Bot Cable Tan	51	0.08		
	Guy C	Bottom Tension	11	16.25		
		Top Tension	11	16.35		
		Top Cable Vert	11	7.06		
		Top Cable Norm	11	14.75		
		Top Cable Tan	11	0.05		
		Bot Cable Vert	11	-6.72		
		Bot Cable Norm	11	14.79		
		Bot Cable Tan	11	0.08		
	Top Guy Pull-Off	Max Tension	46	7.26	0.00	0.00
		Max. Compression	1	0.00	0.00	0.00
		Max. Mx	6	4.11	0.01	0.00
		Max. My	38	4.51	0.00	-0.00
		Max. Vy	6	-0.01	0.00	0.00
		Max. Vx	38	0.00	0.00	0.00
T9	90 - 70	Leg	1	0.00	0.00	0.00
		Max. Compression	14	-56.71	-0.17	-0.04
		Max. Mx	15	-24.33	0.99	-0.54
		Max. My	37	-28.64	-0.21	1.07
		Max. Vy	12	-2.44	-0.50	0.27
		Max. Vx	32	-2.61	-0.01	-0.54
		Diagonal	7	2.51	0.00	0.00
		Max. Compression	7	-3.00	0.00	0.00
		Max. Mx	44	1.96	0.00	0.00
		Max. My	39	-1.64	0.00	0.00
		Max. Vy	44	-0.00	0.00	0.00
		Max. Vx	39	-0.00	0.00	0.00
		Top Girt	12	0.88	0.00	0.00
		Max. Compression	1	0.00	0.00	0.00
		Max. Mx	54	0.76	0.00	0.00
		Max. My	38	0.41	0.00	-0.00
		Max. Vy	54	-0.00	0.00	0.00
		Max. Vx	38	0.00	0.00	0.00
		Bottom Girt	37	0.60	0.00	0.00
		Max. Compression	9	-0.05	0.00	0.00
		Max. Mx	22	0.50	0.00	0.00
		Max. My	38	0.13	0.00	-0.00
		Max. Vy	22	-0.00	0.00	0.00
		Max. Vx	38	0.00	0.00	0.00
T10	70 - 50	Leg	45	3.43	-0.25	0.13
		Max. Compression	14	-70.45	0.17	-0.19
		Max. Mx	47	-51.74	-0.68	-0.18
		Max. My	37	-57.15	-0.13	0.82
		Max. Vy	17	-1.40	-0.21	-0.12
		Max. Vx	37	-1.56	0.27	-0.14
		Diagonal	37	3.20	0.00	0.00
		Max. Compression	7	-3.51	0.00	0.00
		Max. Mx	41	-2.11	0.00	0.00
		Max. My	9	0.84	0.00	-0.00
		Max. Vy	41	-0.00	0.00	0.00
		Max. Vx	9	0.00	0.00	0.00
		Top Girt	9	1.36	0.00	0.00
		Max. Compression	37	-1.11	0.00	0.00
		Max. Mx	22	0.08	0.00	0.00
		Max. My	38	-0.72	0.00	-0.00

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			Max. Vy	22	-0.00	0.00	0.00
			Max. Vx	38	0.00	0.00	0.00
		Bottom Girt	Max Tension	37	0.64	0.00	0.00
			Max. Compression	9	-0.33	0.00	0.00
			Max. Mx	22	0.27	0.00	0.00
			Max. My	41	0.63	0.00	-0.00
			Max. Vy	22	-0.00	0.00	0.00
			Max. Vx	41	0.00	0.00	0.00
T11	50 - 35	Leg	Max Tension	45	3.71	-0.23	0.14
			Max. Compression	14	-71.80	0.02	-0.03
			Max. Mx	9	-69.29	0.56	-0.27
			Max. My	39	-68.95	0.00	0.55
			Max. Vy	40	-1.12	-0.32	-0.03
			Max. Vx	10	-1.14	-0.18	-0.34
		Diagonal	Max Tension	10	1.93	0.00	0.00
			Max. Compression	39	-2.12	0.00	0.00
			Max. Mx	41	-0.74	0.00	0.00
			Max. My	41	0.50	0.00	0.00
			Max. Vy	41	-0.00	0.00	0.00
			Max. Vx	41	-0.00	0.00	0.00
		Top Girt	Max Tension	8	0.42	0.00	0.00
			Max. Compression	41	-0.24	0.00	0.00
			Max. Mx	22	0.12	0.00	0.00
			Max. My	41	-0.24	0.00	-0.00
			Max. Vy	22	-0.00	0.00	0.00
			Max. Vx	41	0.00	0.00	0.00
		Bottom Girt	Max Tension	39	0.52	0.00	0.00
			Max. Compression	10	-0.32	0.00	0.00
			Max. Mx	23	0.13	0.00	0.00
			Max. My	41	0.26	0.00	-0.00
			Max. Vy	23	-0.00	0.00	0.00
			Max. Vx	41	0.00	0.00	0.00
T12	35 - 20	Leg	Max Tension	45	0.43	-0.36	-0.02
			Max. Compression	14	-70.08	-0.16	-0.32
			Max. Mx	14	-61.29	0.66	-0.28
			Max. My	34	-26.66	0.12	0.53
			Max. Vy	45	-1.88	-0.38	-0.06
			Max. Vx	5	-1.75	-0.42	-0.29
		Diagonal	Max Tension	5	3.02	0.00	0.00
			Max. Compression	45	-3.26	0.00	0.00
			Max. Mx	41	0.41	0.00	0.00
			Max. My	41	1.88	0.00	0.00
			Max. Vy	41	-0.00	0.00	0.00
			Max. Vx	41	-0.00	0.00	0.00
		Top Girt	Max Tension	9	0.68	0.00	0.00
			Max. Compression	40	-0.44	0.00	0.00
			Max. Mx	22	0.23	0.00	0.00
			Max. My	41	-0.02	0.00	-0.00
			Max. Vy	22	-0.00	0.00	0.00
			Max. Vx	41	0.00	0.00	0.00
		Bottom Girt	Max Tension	40	0.79	0.00	0.00
			Max. Compression	9	-0.61	0.00	0.00
			Max. Mx	22	0.02	0.00	0.00
			Max. My	41	0.05	0.00	-0.00
			Max. Vy	22	-0.00	0.00	0.00
			Max. Vx	41	0.00	0.00	0.00
T13	20 - 4.81771	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-61.29	-0.59	-0.29
			Max. Mx	14	-45.45	-0.78	0.65
			Max. My	9	-44.98	-0.71	0.85
			Max. Vy	14	6.09	-0.78	0.65
			Max. Vx	37	4.65	0.39	-0.77
		Diagonal	Max Tension	5	4.21	0.00	0.00
			Max. Compression	45	-4.20	0.00	0.00
			Max. Mx	41	0.85	0.00	0.00
			Max. My	41	3.18	0.00	0.00
			Max. Vy	41	-0.00	0.00	0.00
			Max. Vx	41	-0.00	0.00	0.00
		Top Girt	Max Tension	9	1.27	0.00	0.00

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			Max. Compression	40	-0.96	0.00	0.00
			Max. Mx	22	0.36	0.00	0.00
			Max. My	41	0.23	0.00	-0.00
			Max. Vy	22	-0.00	0.00	0.00
			Max. Vx	41	0.00	0.00	0.00
		Bottom Girt	Max Tension	37	2.59	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	24	2.01	0.00	0.00
			Max. My	11	1.90	0.00	-0.00
			Max. Vy	24	-0.00	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
T14	4.81771 - 0	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	37	-49.45	-0.03	-0.96
			Max. Mx	7	-48.98	0.84	-0.49
			Max. My	9	-41.63	-0.43	1.88
			Max. Vy	7	0.93	0.84	-0.49
			Max. Vx	9	-1.28	-0.43	1.88
		Horizontal	Max Tension	7	0.71	-0.53	-0.11
			Max. Compression	37	-0.37	-0.56	-0.32
			Max. Mx	9	-0.21	1.29	0.11
			Max. My	7	-0.36	-0.57	-0.32
			Max. Vy	9	2.59	1.28	0.02
			Max. Vx	11	0.49	1.00	0.10
		Top Girt	Max Tension	37	8.71	-0.32	-0.16
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	39	8.58	0.47	0.14
			Max. My	39	6.52	0.02	-0.25
			Max. Vy	39	-0.24	0.47	0.14
			Max. Vx	9	0.14	0.10	0.22

Maximum Reactions

ø S	- S	x 6S ø S - tS	S ?S	# tS S ?S	# tS S ?S
Mast	Max. Vert	37	118.96	1.82	-3.03
	Max. H_x	49	114.79	3.40	-0.03
	Max. H_z	4	111.06	0.02	3.47
	Max. M_x	1	0.00	0.03	0.01
	Max. M_z	1	0.00	0.03	0.01
	Max. Torsion	39	5.03	1.94	-3.22
	Min. Vert	1	89.64	0.03	0.01
	Min. H_x	19	114.91	-3.33	-0.02
	Min. H_z	34	115.39	0.04	-3.24
	Min. M_x	1	0.00	0.03	0.01
	Min. M_z	1	0.00	0.03	0.01
	Min. Torsion	9	-5.07	-1.81	3.29
Guy C @ 200 ft Elev 0 ft Azimuth 240 deg	Max. Vert	42	-2.65	-2.26	1.30
	Max. H_x	42	-2.65	-2.26	1.30
	Max. H_z	12	-48.38	-49.34	28.46
	Min. Vert	12	-48.38	-49.34	28.46
	Min. H_x	12	-48.38	-49.34	28.46
	Min. H_z	42	-2.65	-2.26	1.30
Guy B @ 200 ft Elev 0 ft Azimuth 120 deg	Max. Vert	22	-3.15	2.81	1.62
	Max. H_x	52	-45.90	46.44	26.81
	Max. H_z	52	-45.90	46.44	26.81
	Min. Vert	52	-45.90	46.44	26.81
	Min. H_x	22	-3.15	2.81	1.62
	Min. H_z	22	-3.15	2.81	1.62
Guy A @ 200 ft Elev 0 ft	Max. Vert	2	-2.90	0.00	-2.90

ø S - S x 6S ø S - tS	S ?S	# bS S ?S	# bS S ?S
Azimuth 0 deg			
Max. H_x	47	-25.65	1.64	-29.63
Max. H_z	2	-2.90	0.00	-2.90
Min. Vert	32	-47.08	-0.03	-55.30
Min. H_x	17	-25.96	-1.64	-29.99
Min. H_z	32	-47.08	-0.03	-55.30

Tower Mast Reaction Summary

ø S -	SbS S ?	S S ?	S S ?	S S bS 4	S S bS 4	S S S 4	S S
Dead Only	89.64	-0.03	-0.01	0.00	0.00	0.01
1.2 Dead+1.0 Wind 0 deg - No Ice+1.0 Guy	113.66	-0.02	-3.28	0.00	0.00	3.53
1.2D+1.0W (pattern 1) 0 deg - No Ice+1.0 Guy	112.53	-0.02	-1.78	0.00	0.00	3.57
1.2D+1.0W (pattern 2) 0 deg - No Ice+1.0 Guy	111.06	-0.02	-3.47	0.00	0.00	3.55
1.2D+1.0W (pattern 3) 0 deg - No Ice+1.0 Guy	110.00	-0.02	-3.40	0.00	0.00	3.49
1.2D+1.0W (pattern 4) 0 deg - No Ice+1.0 Guy	108.68	-0.02	-3.28	0.00	0.00	3.50
1.2 Dead+1.0 Wind 30 deg - No Ice+1.0 Guy	118.74	1.70	-3.10	0.00	0.00	4.97
1.2D+1.0W (pattern 1) 30 deg - No Ice+1.0 Guy	117.65	0.88	-1.64	0.00	0.00	5.02
1.2D+1.0W (pattern 2) 30 deg - No Ice+1.0 Guy	115.91	1.81	-3.29	0.00	0.00	5.07
1.2D+1.0W (pattern 3) 30 deg - No Ice+1.0 Guy	115.19	1.72	-3.22	0.00	0.00	4.97
1.2D+1.0W (pattern 4) 30 deg - No Ice+1.0 Guy	114.79	1.68	-3.10	0.00	0.00	4.96
1.2 Dead+1.0 Wind 60 deg - No Ice+1.0 Guy	117.33	2.78	-1.66	0.00	0.00	3.09
1.2D+1.0W (pattern 1) 60 deg - No Ice+1.0 Guy	116.92	1.44	-0.89	0.00	0.00	3.11
1.2D+1.0W (pattern 2) 60 deg - No Ice+1.0 Guy	115.99	2.97	-1.76	0.00	0.00	3.18
1.2D+1.0W (pattern 3) 60 deg - No Ice+1.0 Guy	115.54	2.84	-1.70	0.00	0.00	3.09
1.2D+1.0W (pattern 4) 60 deg - No Ice+1.0 Guy	114.99	2.76	-1.65	0.00	0.00	3.08
1.2 Dead+1.0 Wind 90 deg - No Ice+1.0 Guy	117.23	3.12	0.02	0.00	0.00	0.72
1.2D+1.0W (pattern 1) 90 deg - No Ice+1.0 Guy	116.39	1.62	-0.00	0.00	0.00	0.73
1.2D+1.0W (pattern 2) 90 deg - No Ice+1.0 Guy	114.91	3.33	0.02	0.00	0.00	0.80
1.2D+1.0W (pattern 3) 90 deg - No Ice+1.0 Guy	114.18	3.23	0.05	0.00	0.00	0.71
1.2D+1.0W (pattern 4) 90 deg - No Ice+1.0 Guy	113.34	3.11	0.03	0.00	0.00	0.69
1.2 Dead+1.0 Wind 120 deg - No Ice+1.0 Guy	111.91	2.52	1.46	0.00	0.00	0.10
1.2D+1.0W (pattern 1) 120 deg - No Ice+1.0 Guy	111.08	1.35	0.78	0.00	0.00	0.10
1.2D+1.0W (pattern 2) 120 deg - No Ice+1.0 Guy	110.39	2.66	1.54	0.00	0.00	0.16
1.2D+1.0W (pattern 3) 120 deg - No Ice+1.0 Guy	109.34	2.60	1.50	0.00	0.00	0.10
1.2D+1.0W (pattern 4) 120 deg - No Ice+1.0 Guy	107.32	2.51	1.46	0.00	0.00	0.10
1.2 Dead+1.0 Wind 150 deg - No Ice+1.0 Guy	114.25	1.32	2.27	0.00	0.00	-0.62

ø S	SS	S	S	S	S	S	S
-	S	S	S		bS	bS	S
	?	?	?		4	4	4
1.2D+1.0W (pattern 1) 150 deg - No Ice+1.0 Guy	113.77	0.68	1.19	0.00	0.00		-0.63
1.2D+1.0W (pattern 2) 150 deg - No Ice+1.0 Guy	112.92	1.41	2.42	0.00	0.00		-0.58
1.2D+1.0W (pattern 3) 150 deg - No Ice+1.0 Guy	112.17	1.37	2.33	0.00	0.00		-0.61
1.2D+1.0W (pattern 4) 150 deg - No Ice+1.0 Guy	111.03	1.31	2.25	0.00	0.00		-0.60
1.2 Dead+1.0 Wind 180 deg - No Ice+1.0 Guy	116.57	-0.04	3.04	0.00	0.00		-3.55
1.2D+1.0W (pattern 1) 180 deg - No Ice+1.0 Guy	116.21	-0.04	1.60	0.00	0.00		-3.56
1.2D+1.0W (pattern 2) 180 deg - No Ice+1.0 Guy	115.39	-0.04	3.24	0.00	0.00		-3.56
1.2D+1.0W (pattern 3) 180 deg - No Ice+1.0 Guy	114.94	-0.04	3.11	0.00	0.00		-3.54
1.2D+1.0W (pattern 4) 180 deg - No Ice+1.0 Guy	114.35	-0.04	3.02	0.00	0.00		-3.53
1.2 Dead+1.0 Wind 210 deg - No Ice+1.0 Guy	118.96	-1.82	3.03	0.00	0.00		-4.92
1.2D+1.0W (pattern 1) 210 deg - No Ice+1.0 Guy	117.86	-0.96	1.59	0.00	0.00		-4.97
1.2D+1.0W (pattern 2) 210 deg - No Ice+1.0 Guy	116.04	-1.94	3.22	0.00	0.00		-5.03
1.2D+1.0W (pattern 3) 210 deg - No Ice+1.0 Guy	115.33	-1.92	3.11	0.00	0.00		-4.92
1.2D+1.0W (pattern 4) 210 deg - No Ice+1.0 Guy	114.92	-1.83	3.02	0.00	0.00		-4.91
1.2 Dead+1.0 Wind 240 deg - No Ice+1.0 Guy	116.06	-3.01	1.72	0.00	0.00		-3.05
1.2D+1.0W (pattern 1) 240 deg - No Ice+1.0 Guy	114.70	-1.63	0.92	0.00	0.00		-3.08
1.2D+1.0W (pattern 2) 240 deg - No Ice+1.0 Guy	112.31	-3.21	1.83	0.00	0.00		-3.15
1.2D+1.0W (pattern 3) 240 deg - No Ice+1.0 Guy	111.13	-3.14	1.80	0.00	0.00		-3.03
1.2D+1.0W (pattern 4) 240 deg - No Ice+1.0 Guy	110.24	-3.02	1.73	0.00	0.00		-3.02
1.2 Dead+1.0 Wind 270 deg - No Ice+1.0 Guy	116.99	-3.20	0.03	0.00	0.00		-0.71
1.2D+1.0W (pattern 1) 270 deg - No Ice+1.0 Guy	116.17	-1.70	0.01	0.00	0.00		-0.72
1.2D+1.0W (pattern 2) 270 deg - No Ice+1.0 Guy	114.79	-3.40	0.03	0.00	0.00		-0.78
1.2D+1.0W (pattern 3) 270 deg - No Ice+1.0 Guy	114.01	-3.30	0.06	0.00	0.00		-0.70
1.2D+1.0W (pattern 4) 270 deg - No Ice+1.0 Guy	113.15	-3.19	0.04	0.00	0.00		-0.68
1.2 Dead+1.0 Wind 300 deg - No Ice+1.0 Guy	115.86	-2.41	-1.40	0.00	0.00		-0.12
1.2D+1.0W (pattern 1) 300 deg - No Ice+1.0 Guy	115.55	-1.28	-0.74	0.00	0.00		-0.12
1.2D+1.0W (pattern 2) 300 deg - No Ice+1.0 Guy	114.82	-2.57	-1.48	0.00	0.00		-0.16
1.2D+1.0W (pattern 3) 300 deg - No Ice+1.0 Guy	114.41	-2.46	-1.43	0.00	0.00		-0.12
1.2D+1.0W (pattern 4) 300 deg - No Ice+1.0 Guy	113.65	-2.39	-1.38	0.00	0.00		-0.12
1.2 Dead+1.0 Wind 330 deg - No Ice+1.0 Guy	113.92	-1.31	-2.36	0.00	0.00		0.59
1.2D+1.0W (pattern 1) 330 deg - No Ice+1.0 Guy	113.48	-0.70	-1.26	0.00	0.00		0.60
1.2D+1.0W (pattern 2) 330 deg - No Ice+1.0 Guy	112.72	-1.40	-2.50	0.00	0.00		0.57
1.2D+1.0W (pattern 3) 330 deg - No Ice+1.0 Guy	111.98	-1.34	-2.43	0.00	0.00		0.58
1.2D+1.0W (pattern 4) 330 deg - No Ice+1.0 Guy	110.86	-1.30	-2.34	0.00	0.00		0.57
Dead+Wind 0 deg -	90.64	-0.02	-0.87	0.00	0.00		0.93

ø S -	SS S ?	S ?	S ?	S 4	S 4	S 4	S
Service+Guy							
Dead+Wind 30 deg - Service+Guy	90.60	0.45	-0.85	0.00	0.00		1.32
Dead+Wind 60 deg - Service+Guy	90.56	0.75	-0.47	0.00	0.00		0.82
Dead+Wind 90 deg - Service+Guy	90.57	0.83	-0.01	0.00	0.00		0.20
Dead+Wind 120 deg - Service+Guy	90.63	0.64	0.37	0.00	0.00		0.04
Dead+Wind 150 deg - Service+Guy	90.54	0.34	0.61	0.00	0.00		-0.16
Dead+Wind 180 deg - Service+Guy	90.53	-0.03	0.83	0.00	0.00		-0.92
Dead+Wind 210 deg - Service+Guy	90.60	-0.51	0.82	0.00	0.00		-1.29
Dead+Wind 240 deg - Service+Guy	90.65	-0.81	0.44	0.00	0.00		-0.80
Dead+Wind 270 deg - Service+Guy	90.57	-0.89	-0.01	0.00	0.00		-0.18
Dead+Wind 300 deg - Service+Guy	90.51	-0.68	-0.39	0.00	0.00		-0.03
Dead+Wind 330 deg - Service+Guy	90.55	-0.38	-0.64	0.00	0.00		0.16

Solution Summary

S ø S - 6S	S ?S	S SY Sq ?S	S ?S	S ?S	S ?S	S ?S	S US	S
1	0.00	-33.90	0.00	0.00	33.90	0.00	0.003%	
2	-0.28	-40.12	-44.33	0.28	40.12	44.32	0.003%	
3	-0.28	-40.12	-40.97	0.28	40.12	40.97	0.002%	
4	-0.21	-40.12	-40.20	0.21	40.12	40.20	0.001%	
5	-0.28	-40.12	-40.64	0.28	40.12	40.64	0.002%	
6	-0.24	-40.12	-40.31	0.24	40.12	40.31	0.002%	
7	24.10	-39.74	-41.31	-24.10	39.74	41.31	0.003%	
8	22.20	-39.74	-38.02	-22.20	39.74	38.01	0.002%	
9	21.74	-39.74	-37.33	-21.74	39.74	37.33	0.001%	
10	22.07	-39.74	-37.80	-22.07	39.74	37.79	0.002%	
11	22.03	-39.74	-37.80	-22.03	39.74	37.80	0.001%	
12	40.16	-39.37	-22.61	-40.16	39.37	22.61	0.003%	
13	37.06	-39.37	-20.83	-37.06	39.37	20.83	0.003%	
14	36.24	-39.37	-20.51	-36.24	39.37	20.51	0.002%	
15	36.85	-39.37	-20.70	-36.84	39.37	20.70	0.003%	
16	36.62	-39.37	-20.64	-36.62	39.37	20.64	0.003%	
17	45.17	-39.74	0.19	-45.17	39.74	-0.19	0.005%	
18	41.76	-39.74	0.19	-41.75	39.74	-0.19	0.001%	
19	40.85	-39.74	0.14	-40.85	39.74	-0.14	0.002%	
20	41.46	-39.74	0.19	-41.46	39.74	-0.19	0.003%	
21	41.09	-39.74	0.17	-41.09	39.74	-0.17	0.002%	
22	36.55	-40.12	20.96	-36.55	40.12	-20.96	0.002%	
23	33.93	-40.12	19.45	-33.93	40.12	-19.45	0.001%	
24	33.18	-40.12	19.06	-33.18	40.12	-19.06	0.001%	
25	33.62	-40.12	19.28	-33.62	40.12	-19.27	0.001%	
26	33.05	-40.12	18.96	-33.05	40.12	-18.96	0.003%	
27	20.52	-39.74	34.60	-20.52	39.74	-34.60	0.002%	
28	19.09	-39.74	32.12	-19.09	39.74	-32.12	0.002%	
29	18.59	-39.74	31.51	-18.59	39.74	-31.51	0.001%	
30	18.93	-39.74	31.85	-18.93	39.74	-31.85	0.004%	
31	18.53	-39.74	31.28	-18.53	39.74	-31.28	0.002%	
32	0.34	-39.37	43.88	-0.34	39.37	-43.88	0.002%	
33	0.34	-39.37	40.53	-0.34	39.37	-40.53	0.002%	
34	0.25	-39.37	39.76	-0.25	39.37	-39.76	0.001%	
35	0.34	-39.37	40.27	-0.34	39.37	-40.27	0.002%	
36	0.29	-39.37	39.95	-0.29	39.37	-39.94	0.002%	
37	-24.14	-39.74	41.31	24.13	39.74	-41.31	0.003%	

S	S SY Sq S	S S S	S
ø S - 6S	S ?S	S ?S	S ?S	S ?S	S ?S	S ?S	S U S
38	-22.23	-39.74	38.01	22.23	39.74	-38.01	0.002%
39	-21.77	-39.74	37.32	21.77	39.74	-37.31	0.001%
40	-22.10	-39.74	37.79	22.10	39.74	-37.79	0.002%
41	-22.06	-39.74	37.80	22.06	39.74	-37.80	0.001%
42	-40.49	-40.12	22.86	40.49	40.12	-22.86	0.004%
43	-37.39	-40.12	21.07	37.39	40.12	-21.07	0.003%
44	-36.62	-40.12	20.75	36.62	40.12	-20.75	0.001%
45	-37.11	-40.12	20.91	37.11	40.12	-20.91	0.003%
46	-36.84	-40.12	20.85	36.84	40.12	-20.85	0.003%
47	-45.10	-39.74	-0.17	45.10	39.74	0.17	0.005%
48	-41.68	-39.74	-0.17	41.68	39.74	0.17	0.001%
49	-40.84	-39.74	-0.14	40.84	39.74	0.14	0.002%
50	-41.39	-39.74	-0.17	41.39	39.74	0.17	0.003%
51	-40.98	-39.74	-0.14	40.98	39.74	0.14	0.002%
52	-36.10	-39.37	-20.72	36.10	39.37	20.72	0.001%
53	-33.49	-39.37	-19.21	33.49	39.37	19.21	0.002%
54	-32.79	-39.37	-18.83	32.79	39.37	18.83	0.001%
55	-33.24	-39.37	-19.07	33.24	39.37	19.07	0.001%
56	-32.65	-39.37	-18.75	32.64	39.37	18.75	0.001%
57	-20.47	-39.74	-34.56	20.47	39.74	34.56	0.002%
58	-19.04	-39.74	-32.08	19.04	39.74	32.08	0.002%
59	-18.59	-39.74	-31.49	18.59	39.74	31.49	0.001%
60	-18.89	-39.74	-31.81	18.89	39.74	31.81	0.004%
61	-18.45	-39.74	-31.23	18.45	39.74	31.23	0.002%
62	-0.07	-34.00	-11.67	0.07	34.00	11.67	0.002%
63	6.35	-33.90	-10.88	-6.35	33.90	10.88	0.002%
64	10.57	-33.80	-5.95	-10.57	33.80	5.95	0.003%
65	11.89	-33.90	0.05	-11.89	33.90	-0.05	0.002%
66	9.62	-34.00	5.52	-9.62	34.00	-5.52	0.002%
67	5.40	-33.90	9.11	-5.40	33.90	-9.11	0.004%
68	0.09	-33.80	11.55	-0.09	33.80	-11.55	0.003%
69	-6.35	-33.90	10.87	6.35	33.90	-10.87	0.002%
70	-10.66	-34.00	6.02	10.66	34.00	-6.02	0.003%
71	-11.87	-33.90	-0.05	11.87	33.90	0.05	0.002%
72	-9.50	-33.80	-5.45	9.50	33.80	5.45	0.003%
73	-5.39	-33.90	-9.10	5.39	33.90	9.10	0.004%

Non-Linear Convergence Results

ø S -	MS S	S S	% S	q S
- S	S	S	S	S
1	Yes	7	0.00000001	0.00008906
2	Yes	16	0.00000001	0.00004417
3	Yes	16	0.00000001	0.00005561
4	Yes	16	0.00000001	0.00006412
5	Yes	15	0.00000001	0.00007329
6	Yes	16	0.00000001	0.00006492
7	Yes	16	0.00000001	0.00006296
8	Yes	16	0.00000001	0.00003928
9	Yes	16	0.00000001	0.00004487
10	Yes	16	0.00000001	0.00005803
11	Yes	17	0.00000001	0.00004545
12	Yes	12	0.00000001	0.00007177
13	Yes	12	0.00000001	0.00004614
14	Yes	12	0.00000001	0.00007250
15	Yes	12	0.00000001	0.00007290
16	Yes	12	0.00000001	0.00007589
17	Yes	15	0.00009718	0.00007238
18	Yes	16	0.00000001	0.00003433
19	Yes	15	0.00000001	0.00009561
20	Yes	15	0.00000001	0.00005939
21	Yes	16	0.00000001	0.00004896
22	Yes	16	0.00000001	0.00003353
23	Yes	16	0.00000001	0.00004996
24	Yes	16	0.00000001	0.00005721

25	Yes	15	0.00000001	0.00005288
26	Yes	15	0.00000001	0.00007893
27	Yes	15	0.00000001	0.00004914
28	Yes	15	0.00000001	0.00006773
29	Yes	15	0.00000001	0.00007570
30	Yes	14	0.00000001	0.00008147
31	Yes	15	0.00000001	0.00005053
32	Yes	12	0.00000001	0.00006742
33	Yes	12	0.00000001	0.00004575
34	Yes	12	0.00000001	0.00006749
35	Yes	12	0.00000001	0.00006636
36	Yes	12	0.00000001	0.00005983
37	Yes	16	0.00000001	0.00006392
38	Yes	16	0.00000001	0.00004009
39	Yes	16	0.00000001	0.00004572
40	Yes	16	0.00000001	0.00005848
41	Yes	17	0.00000001	0.00004599
42	Yes	16	0.00000001	0.00006134
43	Yes	16	0.00000001	0.00006360
44	Yes	16	0.00000001	0.00007101
45	Yes	15	0.00000001	0.00008941
46	Yes	16	0.00000001	0.00008345
47	Yes	15	0.00009354	0.00006909
48	Yes	16	0.00000001	0.00003346
49	Yes	15	0.00000001	0.00009401
50	Yes	15	0.00000001	0.00005626
51	Yes	16	0.00000001	0.00004688
52	Yes	12	0.00000001	0.00003893
53	Yes	11	0.00000001	0.00005161
54	Yes	12	0.00000001	0.00003625
55	Yes	12	0.00000001	0.00004139
56	Yes	12	0.00000001	0.00003753
57	Yes	15	0.00000001	0.00004579
58	Yes	15	0.00000001	0.00006303
59	Yes	15	0.00000001	0.00006962
60	Yes	14	0.00000001	0.00007422
61	Yes	15	0.00000001	0.00004551
62	Yes	11	0.00000001	0.00006384
63	Yes	11	0.00000001	0.00005797
64	Yes	10	0.00000001	0.00007536
65	Yes	11	0.00000001	0.00004536
66	Yes	11	0.00000001	0.00005261
67	Yes	10	0.00000001	0.00009861
68	Yes	10	0.00000001	0.00007199
69	Yes	11	0.00000001	0.00005844
70	Yes	11	0.00000001	0.00007289
71	Yes	11	0.00000001	0.00004481
72	Yes	10	0.00000001	0.00006380
73	Yes	10	0.00000001	0.00009722

Maximum Tower Deflections - Service Wind

S 6S	° S S	# 6S % S S	x 6S ø S - tS	S S S	S S S
T1	250 - 230	1.729	64	0.0930	0.0973
T2	230 - 210	1.362	64	0.0697	0.0949
T3	210 - 190	1.127	64	0.0520	0.1148
T4	190 - 170	0.941	64	0.0314	0.1082
T5	170 - 150	0.868	64	0.0121	0.1016
T6	150 - 130	0.970	69	0.0234	0.1794
T7	130 - 110	1.044	69	0.0055	0.3194
T8	110 - 90	0.990	69	0.0163	0.3986
T9	90 - 70	0.934	69	0.0042	0.4152
T10	70 - 50	0.988	69	0.0050	0.4112
T11	50 - 35	0.922	69	0.0381	0.3775
T12	35 - 20	0.753	69	0.0694	0.2978
T13	20 - 4.81771	0.470	69	0.0963	0.1898

S 6S	° S S	# 6S % S S	x 6S ø S - tS	S S	S S S
T14	4.81771 - 0	0.116	69	0.1113	0.1126

Critical Deflections and Radius of Curvature - Service Wind

° S S	Y S	x 6S ø S - tS	% S S	S S S	S S S	S S - S
250'	Lightning Rod 5/8"x4'	64	1.729	0.0930	0.0973	94753
246'	Sabre (3) C10857001C 12' HD V-Boom	64	1.649	0.0882	0.0954	94753
238'	VHLPX3-11W	64	1.496	0.0788	0.0930	39480
232'6-1/4"	Guy	64	1.402	0.0725	0.0937	27412
172'6-1/4"	Guy	64	0.867	0.0115	0.0990	22064
150'	HP2-11	69	0.970	0.0234	0.1794	70982
149'	HP4-11	69	0.976	0.0230	0.1858	63132
92'6-1/4"	Guy	69	0.934	0.0059	0.4150	26061

Maximum Tower Deflections - Design Wind

S 6S	° S S	# 6S % S S	x 6S ø S - tS	S S	S S
T1	250 - 230	10.698	44	0.6828	0.5284
T2	230 - 210	8.039	43	0.5925	0.5191
T3	210 - 190	6.557	38	0.5044	0.5946
T4	190 - 170	5.348	38	0.3633	0.5706
T5	170 - 150	4.803	37	0.1793	0.5463
T6	150 - 130	5.215	41	0.1612	0.8517
T7	130 - 110	5.578	41	0.1206	1.3412
T8	110 - 90	5.355	41	0.1488	1.6041
T9	90 - 70	5.080	46	0.1156	1.6318
T10	70 - 50	5.113	46	0.0877	1.6106
T11	50 - 35	4.552	46	0.2280	1.4773
T12	35 - 20	3.616	46	0.3580	1.1541
T13	20 - 4.81771	2.220	46	0.4667	0.7242
T14	4.81771 - 0	0.545	46	0.5263	0.4354

Critical Deflections and Radius of Curvature - Design Wind

° S S	Y S	x 6S ø S - tS	% S S	S S S	S S S	S S - S
250'	Lightning Rod 5/8"x4'	44	10.698	0.6828	0.5284	25807
246'	Sabre (3) C10857001C 12' HD V-Boom	44	10.120	0.6640	0.5213	25807
238'	VHLPX3-11W	44	8.988	0.6272	0.5123	10753
232'6-1/4"	Guy	43	8.308	0.6031	0.5146	7443
172'6-1/4"	Guy	37	4.823	0.2024	0.5353	4383
150'	HP2-11	41	5.215	0.1612	0.8517	12823
149'	HP4-11	41	5.245	0.1591	0.8751	12762
92'6-1/4"	Guy	46	5.085	0.1168	1.6331	6594

Bolt Design Data

S ° S - S : S : S S	S S Y S S Y S - S
6S S S	S x S S S ø S ø S ø S S
S S	S S : S S S S S S Y S
	? ?

T1	250	Diagonal	A325X	0.6250	2	2.10	8.90	0.236	1.05	Member Block Shear
		Top Girt	A325X	0.6250	2	0.04	8.90	0.004	1.05	Member Block Shear
		Bottom Girt	A325X	0.6250	2	0.40	8.90	0.045	1.05	Member Block Shear
		Top Guy Pull-Off@232.523	A325X	0.6250	2	4.41	16.45	0.268	1.05	Member Block Shear
		Torque Arm Top@232.523	A325X	0.8750	2	5.36	26.10	0.205	1.05	Gusset Bearing
T2	230	Leg	A325X	0.7500	4	2.70	30.10	0.090	1.05	Bolt Tension
		Diagonal	A325X	0.5000	1	1.21	5.92	0.205	1.05	Member Bearing
		Top Girt	A325X	0.5000	1	0.67	5.92	0.113	1.05	Member Bearing
		Bottom Girt	A325X	0.5000	1	0.64	5.92	0.108	1.05	Member Bearing
T3	210	Leg	A325X	0.7500	4	3.07	30.10	0.102	1.05	Bolt Tension
		Diagonal	A325X	0.5000	1	2.04	9.78	0.209	1.05	Gusset Bearing
		Top Girt	A325X	0.5000	1	0.89	9.78	0.091	1.05	Gusset Bearing
		Bottom Girt	A325X	0.5000	1	0.89	9.78	0.091	1.05	Gusset Bearing
T4	190	Leg	A325X	0.7500	4	4.29	30.10	0.142	1.05	Bolt Tension
		Diagonal	A325X	0.6250	2	2.81	17.26	0.163	1.05	Bolt Shear
		Top Girt	A325X	0.6250	2	0.62	8.90	0.070	1.05	Member Block Shear
		Bottom Girt	A325X	0.6250	2	0.62	8.90	0.070	1.05	Member Block Shear
		Top Guy Pull-Off@172.523	A325X	0.6250	2	4.42	16.45	0.268	1.05	Member Block Shear
		Torque Arm Top@172.523	A325X	0.8750	2	5.34	26.10	0.205	1.05	Gusset Bearing
T5	170	Leg	A325X	0.7500	4	5.81	30.10	0.193	1.05	Bolt Tension
		Diagonal	A325X	0.5000	1	3.09	5.92	0.522	1.05	Member Bearing
		Top Girt	A325X	0.5000	1	1.21	5.92	0.204	1.05	Member Bearing
		Bottom Girt	A325X	0.5000	1	1.21	5.92	0.204	1.05	Member Bearing
T6	150	Leg	A325X	0.7500	4	3.91	30.10	0.130	1.05	Bolt Tension
		Diagonal	A325X	0.5000	1	3.28	5.92	0.554	1.05	Member Bearing
		Top Girt	A325X	0.5000	1	1.17	5.92	0.198	1.05	Member Bearing
		Bottom Girt	A325X	0.5000	1	0.81	5.92	0.137	1.05	Member Bearing
T7	130	Leg	A325X	0.7500	4	3.72	30.10	0.124	1.05	Bolt Tension
		Diagonal	A325X	0.5000	1	2.82	5.92	0.477	1.05	Member Bearing
		Top Girt	A325X	0.5000	1	0.78	5.92	0.131	1.05	Member Bearing
		Bottom Girt	A325X	0.5000	1	0.97	5.92	0.164	1.05	Member Bearing
T8	110	Leg	A325X	0.7500	4	3.10	30.10	0.103	1.05	Bolt Tension
		Diagonal	A325X	0.5000	1	3.23	7.02	0.461	1.05	Member Bearing
		Top Girt	A325X	0.5000	1	0.81	5.92	0.137	1.05	Member Bearing
		Bottom Girt	A325X	0.5000	1	0.81	5.92	0.137	1.05	Member Bearing
		Top Guy Pull-Off@92.5234	A325X	0.6250	2	3.63	16.45	0.221	1.05	Member Block Shear
T9	90	Leg	A325X	0.7500	4	3.86	30.10	0.128	1.05	Bolt Tension
		Diagonal	A325X	0.5000	1	3.00	7.02	0.427	1.05	Member Bearing
		Top Girt	A325X	0.5000	1	0.98	5.92	0.166	1.05	Member Bearing
		Bottom Girt	A325X	0.5000	1	0.98	5.92	0.166	1.05	Member

S ° S - S : S : S S S Y S S Y S - S 6S S S S x S S S ø S ø S ø S S Y S S ? ?										
										Bearing
T10	70	Leg	A325X	0.7500	4	4.73	30.10	0.157	1.05	Bolt Tension
		Diagonal	A325X	0.5000	1	3.51	11.04	0.317	1.05	Bolt Shear
		Top Girt	A325X	0.5000	1	1.36	11.04	0.123	1.05	Bolt Shear
		Bottom Girt	A325X	0.5000	1	1.22	11.04	0.110	1.05	Bolt Shear
T11	50	Leg	A325X	0.7500	4	5.87	30.10	0.195	1.05	Bolt Tension
		Diagonal	A325X	0.5000	1	1.93	5.92	0.326	1.05	Member Bearing
		Top Girt	A325X	0.5000	1	1.24	5.92	0.210	1.05	Member Bearing
		Bottom Girt	A325X	0.5000	1	1.24	5.92	0.210	1.05	Member Bearing
T12	35	Leg	A325X	0.7500	4	5.84	30.10	0.194	1.05	Bolt Tension
		Diagonal	A325X	0.5000	1	3.02	5.92	0.511	1.05	Member Bearing
		Top Girt	A325X	0.5000	1	1.21	5.92	0.205	1.05	Member Bearing
		Bottom Girt	A325X	0.5000	1	1.21	5.92	0.205	1.05	Member Bearing
T13	20	Leg	A325X	0.7500	4	5.11	30.10	0.170	1.05	Bolt Tension
		Diagonal	A325X	0.5000	1	4.21	11.04	0.381	1.05	Bolt Shear
		Top Girt	A325X	0.5000	1	1.27	11.04	0.115	1.05	Bolt Shear
		Bottom Girt	A325X	0.5000	1	2.59	11.04	0.234	1.05	Bolt Shear
T14	4.81771	Leg	A325X	0.8750	4	4.10	41.56	0.099	1.05	Bolt Tension

Guy Design Data

S ° S S / S : S Y S Y S S Y S 6S S S ø S s ϕ S 6q6S 6q6S ?S ?S ?S ?S S S								
T1	232'6-1/4" (A) (606)	3/4 EHS	5.83	58.30	16.65	36.73	0.952	2.101
	232'6-1/4" (A) (607)	3/4 EHS	5.83	58.30	15.91	36.73	0.952	2.199
	232'6-1/4" (B) (602)	3/4 EHS	5.83	58.30	16.14	36.73	0.952	2.168
	232'6-1/4" (B) (603)	3/4 EHS	5.83	58.30	16.13	36.73	0.952	2.169
	232'6-1/4" (C) (595)	3/4 EHS	5.83	58.30	16.27	36.73	0.952	2.150
	232'6-1/4" (C) (596)	3/4 EHS	5.83	58.30	16.90	36.73	0.952	2.070
T4	172'6-1/4" (A) (621)	3/4 EHS	5.83	58.30	14.12	36.73	0.952	2.477
	172'6-1/4" (A) (622)	3/4 EHS	5.83	58.30	13.01	36.73	0.952	2.688
	172'6-1/4" (B) (617)	3/4 EHS	5.83	58.30	13.09	36.73	0.952	2.671
	172'6-1/4" (B) (618)	3/4 EHS	5.83	58.30	13.15	36.73	0.952	2.659
	172'6-1/4" (C) (610)	3/4 EHS	5.83	58.30	13.59	36.73	0.952	2.573
	172'6-1/4" (C) (611)	3/4 EHS	5.83	58.30	14.41	36.73	0.952	2.427
T8	92'6-1/4" (A) (630)	3/4 EHS	5.83	58.30	16.37	36.73	0.952	2.137
	92'6-1/4" (B) (629)	3/4 EHS	5.83	58.30	15.05	36.73	0.952	2.324
	92'6-1/4" (C) (625)	3/4 EHS	5.83	58.30	16.35	36.73	0.952	2.139

5

Leg Design Data (Compression)

S 6S	° S S	S S	øS S S	ø S S S	? OS S	YS S gS	S S ?S	ϕ S S ?S	S S ϕ S
T1	250 - 230	ROHN 2.5 EH	20'	2'4-29/32"	31.3 K=1.00	2.2535	-30.96	94.41	0.328 [1]
T2	230 - 210	ROHN 2.5 EH	20'	2'4-29/32"	31.3 K=1.00	2.2535	-35.91	94.41	0.380 [1]
T3	210 - 190	ROHN 2.5 EH	20'	2'4-29/32"	31.3 K=1.00	2.2535	-49.68	94.41	0.526 [1]
T4	190 - 170	ROHN 3 EHH	20'	2'4-29/32"	26.4 K=1.00	4.2134	-72.15	180.16	0.401 [1]
T5	170 - 150	ROHN 3 EHH	20'	2'4-29/32"	26.4 K=1.00	4.2134	-67.67	180.16	0.376 [1]
T6	150 - 130	ROHN 3 EH	20'	2'4-29/32"	50.9 K=2.00	3.0159	-45.52	112.32	0.405 [1]
T7	130 - 110	ROHN 3 EH	20'	2'4-29/32"	50.9 K=2.00	3.0159	-44.89	112.32	0.400 [1]
T8	110 - 90	ROHN 3 EH	20'	2'4-29/32"	25.4 K=1.00	3.0159	-46.71	129.44	0.361 [1]
T9	90 - 70	ROHN 3 EH	20'	2'4-29/32"	25.4 K=1.00	3.0159	-54.73	129.44	0.423 [1]
T10	70 - 50	ROHN 3 EHH	20'	2'4-29/32"	52.9 K=2.00	4.2134	-70.26	154.56	0.455 [1]
T11	50 - 35	ROHN 3 EHH	15'	2'4-9/16"	52.2 K=2.00	4.2134	-71.80	155.35	0.462 [1]
T12	35 - 20	ROHN 3 EHH	15'	2'4-9/16"	52.2 K=2.00	4.2134	-69.09	155.35	0.445 [1]
T13	20 - 4.81771	ROHN 3 EHH	15'2-5/32"	2'4-29/32"	52.9 K=2.00	4.2134	-59.88	154.56	0.387 [1]
T14	4.81771 - 0	ROHN 3 EH	5'2-17/32"	1'3-19/32"	13.7 K=1.00	3.0159	-49.45	133.85	0.369 [1]

[1] S_S / ϕ controls

Diagonal Design Data (Compression)

S 6S	° S S	S S	øS S S	ø S S S	? OS S	YS S gS	S S ?S	ϕ S S ?S	S S ϕ S
T1	250 - 230	L2x2x1/4	4'2-5/32"	1'9"	70.2 K=1.31	0.9380	-4.07	28.54	0.143 [1]
T2	230 - 210	ROHN 1.5 x 16GA	4'2-5/32"	3'10-11/16"	91.4 K=1.00	0.2627	-1.34	5.94	0.226 [1]
T3	210 - 190	ROHN 1.5 x 11GA	4'2-5/32"	3'10-11/16"	95.2 K=1.00	0.5202	-2.04	11.26	0.181 [1]
T4	190 - 170	L2x2x1/4	4'2-5/32"	1'8-17/32"	69.4 K=1.32	0.9380	-5.61	28.65	0.196 [1]
T5	170 - 150	ROHN 1.5 x 16GA	4'2-5/32"	3'9-27/32"	89.9 K=1.00	0.2627	-3.37	6.04	0.557 [1]
T6	150 - 130	ROHN 1.5 x 16GA	4'2-5/32"	3'9-27/32"	89.9 K=1.00	0.2627	-3.51	6.04	0.580 [1]
T7	130 - 110	ROHN 1.5 x 16GA	4'2-5/32"	3'9-27/32"	89.9 K=1.00	0.2627	-3.01	6.04	0.498 [1]
T8	110 - 90	ROHN 1.5 x 16GA	4'2-5/32"	3'9-27/32"	89.9 K=1.00	0.2627	-3.23	6.04	0.535 [1]
T9	90 - 70	ROHN 1.5 x 16GA	4'2-5/32"	3'9-27/32"	89.9 K=1.00	0.2627	-3.00	6.04	0.496 [1]

S ° S 6S	S S S	S	øS S S	ø S S S	? OS S	YS S gS	S s ?S	ϕ S S ?S	S s ϕ S
T10	70 - 50	ROHN 1.5 x 11GA	4'2-5/32"	3'9-27/32"	93.7 K=1.00	0.5202	-3.51	11.47	0.306 [1]
T11	50 - 35	ROHN 1.5 x 16GA	4'1-29/32"	3'9-23/32"	89.6 K=1.00	0.2627	-2.12	6.07	0.350 [1]
T12	35 - 20	ROHN 1.5 x 16GA	4'1-29/32"	3'9-23/32"	89.6 K=1.00	0.2627	-3.26	6.07	0.536 [1]
T13	20 - 4.81771	ROHN 1.5 x 11GA	4'2-5/32"	3'9-27/32"	93.7 K=1.00	0.5202	-4.20	11.47	0.366 [1]

[1] S_S / ϕ controls

Horizontal Design Data (Compression)

S ° S 6S	S S S	S	øS S S	ø S S S	? OS S	YS S gS	S s ?S	ϕ S S ?S	S s ϕ S
T14	4.81771 - 0	L4x4x1/4	2'6-23/32"	2'3-1/4"	77.1 K=2.25	1.9400	-0.91	55.28	0.016 [1]

[1] S_S / ϕ controls

Top Girt Design Data (Compression)

S ° S 6S	S S S	S	øS S S	ø S S S	? OS S	YS S gS	S s ?S	ϕ S S ?S	S s ϕ S
T1	250 - 230	L2x2x1/4	3'5-1/32"	2'9-3/8"	102.7 K=1.20	0.9380	-0.05	22.57	0.002 [1]
T2	230 - 210	ROHN 1.5 x 16GA	3'5-1/32"	3'2-5/32"	74.7 K=1.00	0.2627	-0.64	7.05	0.090 [1]
T3	210 - 190	ROHN 1.5 x 11GA	3'5-1/32"	3'2-5/32"	77.8 K=1.00	0.5202	-0.89	13.55	0.066 [1]
T4	190 - 170	L2x2x1/4	3'5-1/32"	2'8-3/4"	101.9 K=1.22	0.9380	-1.25	22.75	0.055 [1]
T5	170 - 150	ROHN 1.5 x 16GA	3'5-1/32"	3'1-9/16"	73.5 K=1.00	0.2627	-1.21	7.13	0.169 [1]
T6	150 - 130	ROHN 1.5 x 16GA	3'5-1/32"	3'1-9/16"	73.5 K=1.00	0.2627	-0.89	7.13	0.125 [1]
T7	130 - 110	ROHN 1.5 x 16GA	3'5-1/32"	3'1-9/16"	73.5 K=1.00	0.2627	-0.78	7.13	0.109 [1]
T8	110 - 90	ROHN 1.5 x 16GA	3'5-1/32"	3'1-9/16"	73.5 K=1.00	0.2627	-0.81	7.13	0.114 [1]
T9	90 - 70	ROHN 1.5 x 16GA	3'5-1/32"	3'1-9/16"	73.5 K=1.00	0.2627	-0.98	7.13	0.138 [1]
T10	70 - 50	ROHN 1.5 x 11GA	3'5-1/32"	3'1-9/16"	76.6 K=1.00	0.5202	-1.22	13.72	0.089 [1]
T11	50 - 35	ROHN 1.5 x 16GA	3'5-1/32"	3'1-9/16"	73.5 K=1.00	0.2627	-1.24	7.13	0.174 [1]
T12	35 - 20	ROHN 1.5 x 16GA	3'5-1/32"	3'1-9/16"	73.5 K=1.00	0.2627	-1.21	7.13	0.170 [1]
T13	20 - 4.81771	ROHN 1.5 x 11GA	3'5-1/32"	3'1-9/16"	76.6 K=1.00	0.5202	-1.06	13.72	0.077 [1]
T14	4.81771 - 0	L4x4x1/4	3'5-1/32"	3'1-9/16"	83.6 K=1.77	1.9400	-0.91	53.15	0.017 [1]

[1] S_S / ϕ controls

Bottom Girt Design Data (Compression)

S 6S	° S S S	S	øS S S	ø S S S	? OS S	YS S gS	S S ?S	ϕ S S ?S	S S ϕ S
T1	250 - 230	L2x2x1/4	3'5-1/32"	2'9-3/8"	102.7 K=1.20	0.9380	-0.56	22.57	0.025 [1]
T2	230 - 210	ROHN 1.5 x 16GA	3'5-1/32"	3'2-5/32"	74.7 K=1.00	0.2627	-0.64	7.05	0.090 [1]
T3	210 - 190	ROHN 1.5 x 11GA	3'5-1/32"	3'2-5/32"	77.8 K=1.00	0.5202	-0.89	13.55	0.066 [1]
T4	190 - 170	L2x2x1/4	3'5-1/32"	2'8-3/4"	101.9 K=1.22	0.9380	-1.25	22.75	0.055 [1]
T5	170 - 150	ROHN 1.5 x 16GA	3'5-1/32"	3'1-9/16"	73.5 K=1.00	0.2627	-1.21	7.13	0.169 [1]
T6	150 - 130	ROHN 1.5 x 16GA	3'5-1/32"	3'1-9/16"	73.5 K=1.00	0.2627	-0.81	7.13	0.114 [1]
T7	130 - 110	ROHN 1.5 x 16GA	3'5-1/32"	3'1-9/16"	73.5 K=1.00	0.2627	-0.79	7.13	0.111 [1]
T8	110 - 90	ROHN 1.5 x 16GA	3'5-1/32"	3'1-9/16"	73.5 K=1.00	0.2627	-0.81	7.13	0.114 [1]
T9	90 - 70	ROHN 1.5 x 16GA	3'5-1/32"	3'1-9/16"	73.5 K=1.00	0.2627	-0.98	7.13	0.138 [1]
T10	70 - 50	ROHN 1.5 x 11GA	3'5-1/32"	3'1-9/16"	76.6 K=1.00	0.5202	-1.22	13.72	0.089 [1]
T11	50 - 35	ROHN 1.5 x 16GA	3'5-1/32"	3'1-9/16"	73.5 K=1.00	0.2627	-1.24	7.13	0.174 [1]
T12	35 - 20	ROHN 1.5 x 16GA	3'5-1/32"	3'1-9/16"	73.5 K=1.00	0.2627	-1.21	7.13	0.170 [1]
T13	20 - 4.81771	ROHN 1.5 x 11GA	3'5-1/32"	3'1-9/16"	76.6 K=1.00	0.5202	-1.06	13.72	0.077 [1]

[1] S_S / ϕ controls

Top Guy Pull-Off Design Data (Compression)

S 6S	° S S S	S	øS S S	ø S S S	? OS S	YS S gS	S S ?S	ϕ S S ?S	S S ϕ S
T1	250 - 230	2L2x2x1/4x3/8	3'5-1/32"	2'9-3/8"	54.8 K=1.00	1.8800	-5.97	61.29	0.097 [1]
T4	190 - 170	2L2x2x1/4x3/8	3'5-1/32"	2'8-3/4"	53.8 K=1.00	1.8800	-6.74	61.53	0.110 [1]

[1] S_S / ϕ controls

Top Guy Pull-Off Bending Design Data

S 6S	° S S S	S	S 4 S	ϕ S 4 S	S S ϕ S	S 4 S	ϕ S 4 S	S S ϕ S
T1	250 - 230	2L2x2x1/4x3/8	0.00	2.00	0.000	0.00	3.39	0.000
T4	190 - 170	2L2x2x1/4x3/8	0.00	2.00	0.000	0.00	3.39	0.000

Top Guy Pull-Off Interaction Design Data

S 6S	° S S	S	S s ϕ S	S s ϕ S	S s ϕ S	- 6S S S	Y 6S S S	- S
T1	250 - 230	2L2x2x1/4x3/8	0.097	0.000	0.000	0.097 [1]	1.050	4.8.1
T4	190 - 170	2L2x2x1/4x3/8	0.110	0.000	0.000	0.110 [1]	1.050	4.8.1

[1] S_S/ϕ controls

Torque-Arm Top Design Data

S 6S	° S S	S	øS S S	ø S S S	? OS S	YS S ºS	s s ?S	ϕ S S ?S	S s ϕ S
T1	250 - 230 (597)	C15x33.9	3'9"	3'7-11/16"	48.3 K=1.00	9.9600	-2.78	285.48	0.010
T1	250 - 230 (598)	C15x33.9	3'9"	3'7-11/16"	48.3 K=1.00	9.9600	-2.55	285.48	0.009
T1	250 - 230 (604)	C15x33.9	3'9"	3'7-11/16"	48.3 K=1.00	9.9600	-2.88	285.48	0.010
T1	250 - 230 (605)	C15x33.9	3'9"	3'7-11/16"	48.3 K=1.00	9.9600	-3.50	285.48	0.012
T1	250 - 230 (608)	C15x33.9	3'9"	3'7-11/16"	48.3 K=1.00	9.9600	-2.84	285.48	0.010
T1	250 - 230 (609)	C15x33.9	3'9"	3'7-11/16"	48.3 K=1.00	9.9600	-3.36	285.48	0.012
T4	190 - 170 (612)	C15x33.9	3'9"	3'7-5/16"	47.9 K=1.00	9.9600	-2.33	285.98	0.008
T4	190 - 170 (613)	C15x33.9	3'9"	3'7-5/16"	47.9 K=1.00	9.9600	-1.88	285.98	0.007
T4	190 - 170 (619)	C15x33.9	3'9"	3'7-5/16"	47.9 K=1.00	9.9600	-2.17	285.98	0.008
T4	190 - 170 (620)	C15x33.9	3'9"	3'7-5/16"	47.9 K=1.00	9.9600	-3.33	285.98	0.012
T4	190 - 170 (623)	C15x33.9	3'9"	3'7-5/16"	47.9 K=1.00	9.9600	-2.20	285.98	0.008
T4	190 - 170 (624)	C15x33.9	3'9"	3'7-5/16"	47.9 K=1.00	9.9600	-3.13	285.98	0.011

Torque-Arm Top Bending Design Data

S 6S	° S S	S	s S 4 S	ϕ s S 4 S	S s ϕ S	s S 4 S	ϕ s S 4 S	S s ϕ S
T1	250 - 230 (597)	C15x33.9	-48.01	136.08	0.353	0.00	12.60	0.000
T1	250 - 230 (598)	C15x33.9	-47.19	136.08	0.347	-0.00	12.60	0.000
T1	250 - 230 (604)	C15x33.9	-46.78	136.08	0.344	0.00	12.60	0.000
T1	250 - 230 (605)	C15x33.9	-47.93	136.08	0.352	0.00	12.60	0.000
T1	250 - 230 (608)	C15x33.9	-46.79	136.08	0.344	0.00	12.60	0.000
T1	250 - 230 (609)	C15x33.9	-47.10	136.08	0.346	-0.00	12.60	0.000
T4	190 - 170 (612)	C15x33.9	-33.96	136.08	0.250	0.00	12.60	0.000
T4	190 - 170 (613)	C15x33.9	-32.98	136.08	0.242	-0.00	12.60	0.000
T4	190 - 170 (619)	C15x33.9	-31.95	136.08	0.235	0.00	12.60	0.000
T4	190 - 170 (620)	C15x33.9	-33.91	136.08	0.249	0.00	12.60	0.000

S ° S 6S S S	S	S 4 S	4 S	S S	S 4 S	4 S	S S
T4	190 - 170 (623)	C15x33.9	-31.97	136.08	0.235	0.00	12.60	0.000
T4	190 - 170 (624)	C15x33.9	-32.95	136.08	0.242	-0.00	12.60	0.000

Torque-Arm Top Interaction Design Data

S ° S 6S S S	S	S S	S S	S S	- 6S S	Y 6S S	- S
T1	250 - 230 (597)	C15x33.9	0.010	0.353	0.000	0.358	1.050	4.8.1
T1	250 - 230 (598)	C15x33.9	0.009	0.347	0.000	0.351	1.050	4.8.1
T1	250 - 230 (604)	C15x33.9	0.010	0.344	0.000	0.349	1.050	4.8.1
T1	250 - 230 (605)	C15x33.9	0.012	0.352	0.000	0.358	1.050	4.8.1
T1	250 - 230 (608)	C15x33.9	0.010	0.344	0.000	0.349	1.050	4.8.1
T1	250 - 230 (609)	C15x33.9	0.012	0.346	0.000	0.352	1.050	4.8.1
T4	190 - 170 (612)	C15x33.9	0.008	0.250	0.000	0.254	1.050	4.8.1
T4	190 - 170 (613)	C15x33.9	0.007	0.242	0.000	0.246	1.050	4.8.1
T4	190 - 170 (619)	C15x33.9	0.008	0.235	0.000	0.239	1.050	4.8.1
T4	190 - 170 (620)	C15x33.9	0.012	0.249	0.000	0.255	1.050	4.8.1
T4	190 - 170 (623)	C15x33.9	0.008	0.235	0.000	0.239	1.050	4.8.1
T4	190 - 170 (624)	C15x33.9	0.011	0.242	0.000	0.248	1.050	4.8.1

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Leg Design Data (Tension)

S ° S 6S S S	S	øS S S	ø S S	? OS S	YS S gS	S S ?S	ϕ S S ?S	S S ϕ S
T1	250 - 230	ROHN 2.5 EH	20'	2'4-29/32"	31.3	2.2535	21.24	101.41	0.209 [1]
T3	210 - 190	ROHN 2.5 EH	20'	1-5/16"	1.5	2.2535	5.77	101.41	0.057 [1]
T4	190 - 170	ROHN 3 EHH	20'	2'4-29/32"	26.4	4.2134	21.88	189.60	0.115 [1]
T10	70 - 50	ROHN 3 EHH	20'	2'4-29/32"	26.4	4.2134	3.43	189.60	0.018 [1]
T11	50 - 35	ROHN 3 EHH	15'	2'4-9/16"	26.1	4.2134	3.71	189.60	0.020 [1]
T12	35 - 20	ROHN 3 EHH	15'	7-5/16"	6.7	4.2134	0.43	189.60	0.002 [1]

[1] S_S / ϕ controls

Diagonal Design Data (Tension)

S 6S	° S S S	S	øS S S	ø S S S	? OS S	YS S gS	S S ?S	ϕ S S ?S	S S ϕ S
T1	250 - 230	L2x2x1/4	4'2-5/32"	1'9"	38.3	0.5629	4.20	24.49	0.172 [1]
T2	230 - 210	ROHN 1.5 x 16GA	4'2-5/32"	3'10-11/16"	91.4	0.2627	1.21	9.93	0.122 [1]
T3	210 - 190	ROHN 1.5 x 11GA	4'2-5/32"	3'10-11/16"	95.2	0.5202	1.46	19.67	0.074 [1]
T4	190 - 170	L2x2x1/4	4'2-5/32"	1'8-17/32"	37.7	0.5629	2.74	24.49	0.112 [1]
T5	170 - 150	ROHN 1.5 x 16GA	4'2-5/32"	3'9-27/32"	89.9	0.2627	3.09	9.93	0.311 [1]
T6	150 - 130	ROHN 1.5 x 16GA	4'2-5/32"	3'9-27/32"	89.9	0.2627	3.28	9.93	0.330 [1]
T7	130 - 110	ROHN 1.5 x 16GA	4'2-5/32"	3'9-27/32"	89.9	0.2627	2.82	9.93	0.284 [1]
T8	110 - 90	ROHN 1.5 x 16GA	4'2-5/32"	3'9-27/32"	89.9	0.2627	2.04	9.93	0.206 [1]
T9	90 - 70	ROHN 1.5 x 16GA	4'2-5/32"	3'9-27/32"	89.9	0.2627	2.51	9.93	0.252 [1]
T10	70 - 50	ROHN 1.5 x 11GA	4'2-5/32"	3'9-27/32"	93.7	0.5202	3.20	19.67	0.163 [1]
T11	50 - 35	ROHN 1.5 x 16GA	4'1-29/32"	3'9-23/32"	89.6	0.2627	1.93	9.93	0.194 [1]
T12	35 - 20	ROHN 1.5 x 16GA	4'1-29/32"	3'9-23/32"	89.6	0.2627	3.02	9.93	0.304 [1]
T13	20 - 4.81771	ROHN 1.5 x 11GA	4'2-5/32"	3'9-27/32"	93.7	0.5202	4.21	19.67	0.214 [1]

[1] S_S / ϕ controls

Horizontal Design Data (Tension)

S 6S	° S S S	S	øS S S	ø S S S	? OS S	YS S gS	S S ?S	ϕ S S ?S	S S ϕ S
T14	4.81771 - 0	L4x4x1/4	10-3/16"	6-23/32"	5.4	1.9400	0.91	62.86	0.014 [1]

[1] S_S / ϕ controls

Top Girt Design Data (Tension)

S 6S	° S S S	S	øS S S	ø S S S	? OS S	YS S gS	S S ?S	ϕ S S ?S	S S ϕ S
T1	250 - 230	L2x2x1/4	3'5-1/32"	2'9-3/8"	62.6	0.5629	0.08	24.49	0.003 [1]
T2	230 - 210	ROHN 1.5 x 16GA	3'5-1/32"	3'2-5/32"	74.7	0.2627	0.67	9.93	0.067 [1]
T3	210 - 190	ROHN 1.5 x 11GA	3'5-1/32"	3'2-5/32"	77.8	0.5202	0.89	19.67	0.045 [1]
T4	190 - 170	L2x2x1/4	3'5-1/32"	2'8-3/4"	61.6	0.5629	1.25	24.49	0.051 [1]
T5	170 - 150	ROHN 1.5 x 16GA	3'5-1/32"	3'1-9/16"	73.5	0.2627	1.21	9.93	0.121 [1]
T6	150 - 130	ROHN 1.5 x 16GA	3'5-1/32"	3'1-9/16"	73.5	0.2627	1.17	9.93	0.118 [1]
T7	130 - 110	ROHN 1.5 x 16GA	3'5-	3'1-	73.5	0.2627	0.78	9.93	0.078 [1]

S 6S	° S S	S S	øS S S	ø S S S	? OS S	YS S gS	S S ?S	ϕ S S ?S	S S ϕ S
T8	110 - 90	ROHN 1.5 x 16GA	1/32" 3'5-1/32"	9/16" 3'1-9/16"	73.5	0.2627	0.81	9.93	0.081 [1]
T9	90 - 70	ROHN 1.5 x 16GA	3'5-1/32"	3'1-9/16"	73.5	0.2627	0.98	9.93	0.099 [1]
T10	70 - 50	ROHN 1.5 x 11GA	3'5-1/32"	3'1-9/16"	76.6	0.5202	1.36	19.67	0.069 [1]
T11	50 - 35	ROHN 1.5 x 16GA	3'5-1/32"	3'1-9/16"	73.5	0.2627	1.24	9.93	0.125 [1]
T12	35 - 20	ROHN 1.5 x 16GA	3'5-1/32"	3'1-9/16"	73.5	0.2627	1.21	9.93	0.122 [1]
T13	20 - 4.81771	ROHN 1.5 x 11GA	3'5-1/32"	3'1-9/16"	76.6	0.5202	1.27	19.67	0.065 [1]
T14	4.81771 - 0	L4x4x1/4	3'5-1/32"	3'1-9/16"	30.0	1.9400	8.71	62.86	0.139 [1]

[1] S_S / ϕ controls

Bottom Girt Design Data (Tension)

S 6S	° S S	S S	øS S S	ø S S S	? OS S	YS S gS	S S ?S	ϕ S S ?S	S S ϕ S
T1	250 - 230	L2x2x1/4	3'5-1/32"	2'9-3/8"	62.6	0.5629	0.80	24.49	0.033 [1]
T2	230 - 210	ROHN 1.5 x 16GA	3'5-1/32"	3'2-5/32"	74.7	0.2627	0.64	9.93	0.064 [1]
T3	210 - 190	ROHN 1.5 x 11GA	3'5-1/32"	3'2-5/32"	77.8	0.5202	0.89	19.67	0.045 [1]
T4	190 - 170	L2x2x1/4	3'5-1/32"	2'8-3/4"	61.6	0.5629	1.25	24.49	0.051 [1]
T5	170 - 150	ROHN 1.5 x 16GA	3'5-1/32"	3'1-9/16"	73.5	0.2627	1.21	9.93	0.121 [1]
T6	150 - 130	ROHN 1.5 x 16GA	3'5-1/32"	3'1-9/16"	73.5	0.2627	0.81	9.93	0.082 [1]
T7	130 - 110	ROHN 1.5 x 16GA	3'5-1/32"	3'1-9/16"	73.5	0.2627	0.97	9.93	0.098 [1]
T8	110 - 90	ROHN 1.5 x 16GA	3'5-1/32"	3'1-9/16"	73.5	0.2627	0.81	9.93	0.081 [1]
T9	90 - 70	ROHN 1.5 x 16GA	3'5-1/32"	3'1-9/16"	73.5	0.2627	0.98	9.93	0.099 [1]
T10	70 - 50	ROHN 1.5 x 11GA	3'5-1/32"	3'1-9/16"	76.6	0.5202	1.22	19.67	0.062 [1]
T11	50 - 35	ROHN 1.5 x 16GA	3'5-1/32"	3'1-9/16"	73.5	0.2627	1.24	9.93	0.125 [1]
T12	35 - 20	ROHN 1.5 x 16GA	3'5-1/32"	3'1-9/16"	73.5	0.2627	1.21	9.93	0.122 [1]
T13	20 - 4.81771	ROHN 1.5 x 11GA	3'5-1/32"	3'1-9/16"	76.6	0.5202	2.59	19.67	0.132 [1]

[1] S_S / ϕ controls

Top Guy Pull-Off Design Data (Tension)

S 6S	° S S	S S	øS S S	ø S S S	? OS S	YS S gS	S S ?S	ϕ S S ?S	S S ϕ S
T1	250 - 230	2L2x2x1/4x3/8	3'5-1/32"	2'9-3/8"	62.6	1.1287	8.82	49.10	0.180 [1]
T4	190 - 170	2L2x2x1/4x3/8	3'5-	2'8-3/4"	61.6	1.1287	8.83	49.10	0.180 [1]

S 6S	° S S	S	øS S S	ø S S S	? OS S	YS S gS	S S ?S	ϕ S S ?S	S S ϕ S
T8	110 - 90	2L2x2x1/4x3/8	1/32" 3'5-1/32"	2'8-3/4"	61.6	1.1287	7.26	49.10	0.148 [1]

[1] S_S/ϕ controls

Top Guy Pull-Off Bending Design Data

S 6S	° S S	S	S 4 S	ϕ S 4 S	S S ϕ S	S 4 S	ϕ S 4 S	S S ϕ S
T1	250 - 230	2L2x2x1/4x3/8	0.00	2.00	0.000	0.00	3.39	0.000
T4	190 - 170	2L2x2x1/4x3/8	0.00	2.00	0.000	0.00	3.39	0.000
T8	110 - 90	2L2x2x1/4x3/8	0.00	2.00	0.000	0.00	3.39	0.000

Top Guy Pull-Off Interaction Design Data

S 6S	° S S	S	S S ϕ S	S S ϕ S	S S ϕ S	- 6S S S	Y 6S S S	- S
T1	250 - 230	2L2x2x1/4x3/8	0.180	0.000	0.000	0.180 [1]	1.050	4.8.1
T4	190 - 170	2L2x2x1/4x3/8	0.180	0.000	0.000	0.180 [1]	1.050	4.8.1
T8	110 - 90	2L2x2x1/4x3/8	0.148	0.000	0.000	0.148 [1]	1.050	4.8.1

[1] S_S/ϕ controls

Torque-Arm Top Design Data

S 6S	° S S	S	øS S S	ø S S S	? OS S	YS S gS	S S ?S	ϕ S S ?S	S S ϕ S
T1	250 - 230 (597)	C15x33.9	3'9"	3'7-11/16"	48.3	9.9600	0.18	322.70	0.001
T1	250 - 230 (598)	C15x33.9	3'9"	3'7-11/16"	48.3	9.9600	0.35	322.70	0.001
T1	250 - 230 (604)	C15x33.9	3'9"	3'7-11/16"	48.3	9.9600	0.14	322.70	0.000
T1	250 - 230 (605)	C15x33.9	3'9"	3'7-11/16"	48.3	9.9600	3.61	322.70	0.011
T1	250 - 230 (608)	C15x33.9	3'9"	3'7-11/16"	48.3	9.9600	0.11	322.70	0.000
T1	250 - 230 (609)	C15x33.9	3'9"	3'7-11/16"	48.3	9.9600	3.81	322.70	0.012
T4	190 - 170 (612)	C15x33.9	3'9"	3'7-5/16"	47.9	9.9600	0.46	322.70	0.001
T4	190 - 170 (613)	C15x33.9	3'9"	3'7-5/16"	47.9	9.9600	0.87	322.70	0.003
T4	190 - 170 (619)	C15x33.9	3'9"	3'7-5/16"	47.9	9.9600	0.60	322.70	0.002
T4	190 - 170 (620)	C15x33.9	3'9"	3'7-5/16"	47.9	9.9600	3.21	322.70	0.010
T4	190 - 170 (623)	C15x33.9	3'9"	3'7-5/16"	47.9	9.9600	0.39	322.70	0.001
T4	190 - 170 (624)	C15x33.9	3'9"	3'7-5/16"	47.9	9.9600	3.57	322.70	0.011

S ° S	S	øS	ø S	? OS	YS	S	ϕ S	S
6S S S	S	S S	S S	S	S gS	S ?S	S ?S	S ϕ S

Torque-Arm Top Bending Design Data

S ° S 6S S S	S	S 4 S	ϕ S 4 S	S S ϕ S	S 4 S	ϕ S 4 S	S S ϕ S
T1	250 - 230 (597)	C15x33.9	-45.87	136.08	0.337	-0.00	12.60	0.000
T1	250 - 230 (598)	C15x33.9	-43.96	136.08	0.323	0.00	12.60	0.000
T1	250 - 230 (604)	C15x33.9	-44.00	136.08	0.323	-0.00	12.60	0.000
T1	250 - 230 (605)	C15x33.9	-36.49	136.08	0.268	-0.00	12.60	0.000
T1	250 - 230 (608)	C15x33.9	-45.94	136.08	0.338	0.00	12.60	0.000
T1	250 - 230 (609)	C15x33.9	-37.38	136.08	0.275	0.00	12.60	0.000
T4	190 - 170 (612)	C15x33.9	-31.83	136.08	0.234	0.00	12.60	0.000
T4	190 - 170 (613)	C15x33.9	-29.62	136.08	0.218	0.00	12.60	0.000
T4	190 - 170 (619)	C15x33.9	-29.68	136.08	0.218	-0.00	12.60	0.000
T4	190 - 170 (620)	C15x33.9	-24.62	136.08	0.181	0.00	12.60	0.000
T4	190 - 170 (623)	C15x33.9	-31.80	136.08	0.234	0.00	12.60	0.000
T4	190 - 170 (624)	C15x33.9	-25.72	136.08	0.189	-0.00	12.60	0.000

Torque-Arm Top Interaction Design Data

S ° S 6S S S	S	S ϕ S	S ϕ S	S ϕ S	- 6S S S	Y 6S S S	- S
T1	250 - 230 (597)	C15x33.9	0.001	0.337	0.000	0.337	1.050	4.8.1
T1	250 - 230 (598)	C15x33.9	0.001	0.323	0.000	0.324	1.050	4.8.1
T1	250 - 230 (604)	C15x33.9	0.000	0.323	0.000	0.324	1.050	4.8.1
T1	250 - 230 (605)	C15x33.9	0.011	0.268	0.000	0.274	1.050	4.8.1
T1	250 - 230 (608)	C15x33.9	0.000	0.338	0.000	0.338	1.050	4.8.1
T1	250 - 230 (609)	C15x33.9	0.012	0.275	0.000	0.281	1.050	4.8.1
T4	190 - 170 (612)	C15x33.9	0.001	0.234	0.000	0.235	1.050	4.8.1
T4	190 - 170 (613)	C15x33.9	0.003	0.218	0.000	0.219	1.050	4.8.1
T4	190 - 170 (619)	C15x33.9	0.002	0.218	0.000	0.219	1.050	4.8.1
T4	190 - 170 (620)	C15x33.9	0.010	0.181	0.000	0.186	1.050	4.8.1
T4	190 - 170 (623)	C15x33.9	0.001	0.234	0.000	0.234	1.050	4.8.1
T4	190 - 170 (624)	C15x33.9	0.011	0.189	0.000	0.195	1.050	4.8.1

S ° S S S S S - 6S Y 6S - S
6S S S S S S S
S S S
ϕ S ϕ S ϕ S S S

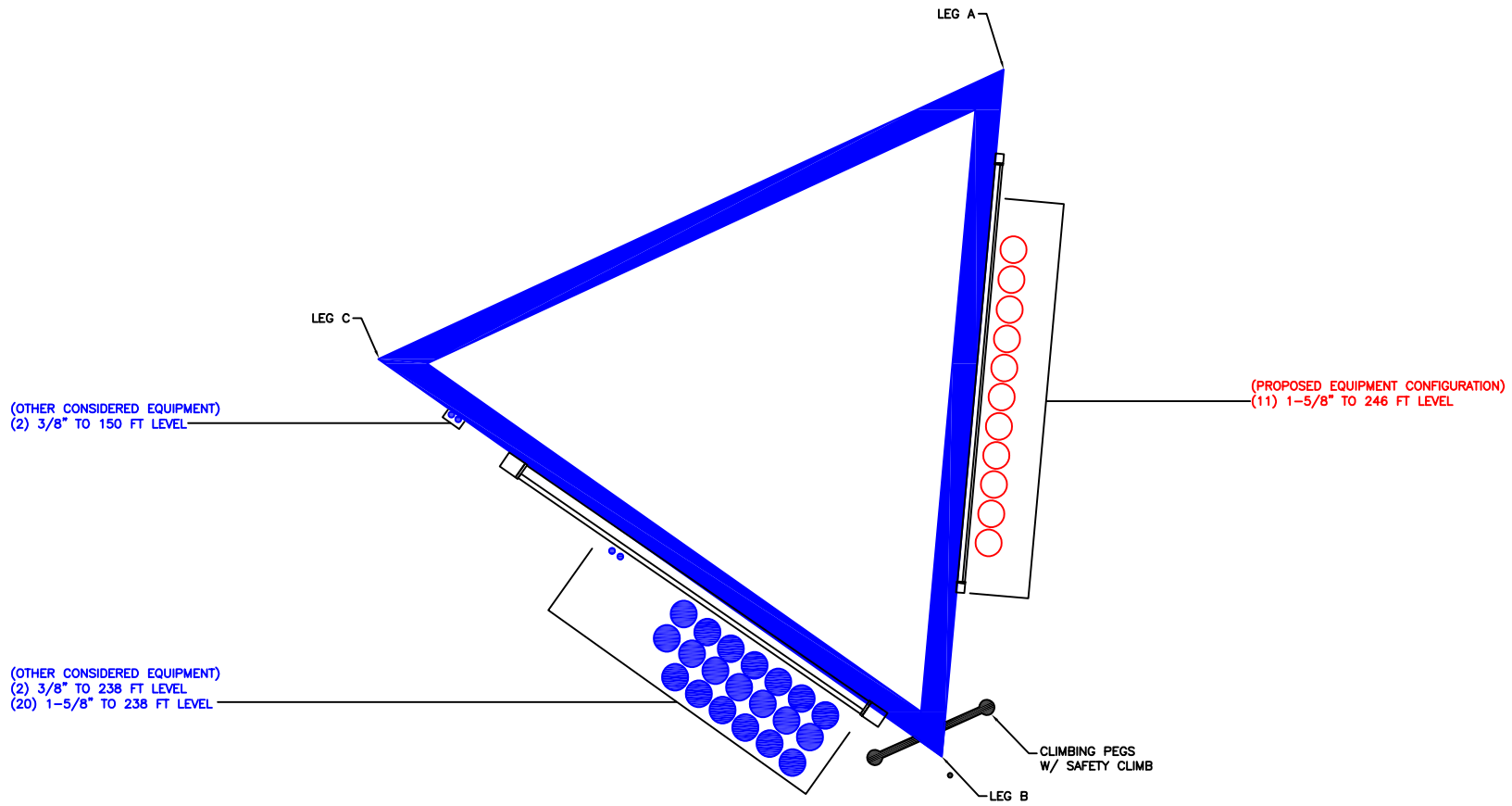
Section Capacity Table

S S tS	° S S	- S S	S	- S ° S	S ?S	s ?S	US -	S ς q S
T1	250 - 230	Leg	ROHN 2.5 EH	1	-30.96	99.13	31.2	Pass
T2	230 - 210	Leg	ROHN 2.5 EH	58	-35.91	99.13	36.2	Pass
T3	210 - 190	Leg	ROHN 2.5 EH	115	-49.68	99.13	50.1	Pass
T4	190 - 170	Leg	ROHN 3 EHH	172	-72.15	189.17	38.1	Pass
T5	170 - 150	Leg	ROHN 3 EHH	229	-67.67	189.17	35.8	Pass
T6	150 - 130	Leg	ROHN 3 EH	288	-45.52	117.93	38.6	Pass
T7	130 - 110	Leg	ROHN 3 EH	319	-44.89	117.93	38.1	Pass
T8	110 - 90	Leg	ROHN 3 EH	352	-46.71	135.92	34.4	Pass
T9	90 - 70	Leg	ROHN 3 EH	409	-54.73	135.92	40.3	Pass
T10	70 - 50	Leg	ROHN 3 EHH	466	-70.26	162.29	43.3	Pass
T11	50 - 35	Leg	ROHN 3 EHH	499	-71.80	163.12	44.0	Pass
T12	35 - 20	Leg	ROHN 3 EHH	526	-69.09	163.12	42.4	Pass
T13	20 - 4.81771	Leg	ROHN 3 EHH	555	-59.88	162.29	36.9	Pass
T14	4.81771 - 0	Leg	ROHN 3 EH	582	-49.45	140.55	35.2	Pass
T1	250 - 230	Diagonal	L2x2x1/4	23	4.20	25.71	16.3	Pass
T2	230 - 210	Diagonal	ROHN 1.5 x 16GA	112	-1.34	6.24	21.5	Pass
T3	210 - 190	Diagonal	ROHN 1.5 x 11GA	124	-2.04	11.83	17.3	Pass
T4	190 - 170	Diagonal	L2x2x1/4	183	-5.61	30.08	18.7	Pass
T5	170 - 150	Diagonal	ROHN 1.5 x 16GA	282	-3.37	6.35	53.1	Pass
T6	150 - 130	Diagonal	ROHN 1.5 x 16GA	316	-3.51	6.35	55.3	Pass
T7	130 - 110	Diagonal	ROHN 1.5 x 16GA	330	-3.01	6.35	47.4	Pass
T8	110 - 90	Diagonal	ROHN 1.5 x 16GA	366	-3.23	6.35	50.9	Pass
T9	90 - 70	Diagonal	ROHN 1.5 x 16GA	465	-3.00	6.35	47.2	Pass
T10	70 - 50	Diagonal	ROHN 1.5 x 11GA	498	-3.51	12.04	29.1	Pass
T11	50 - 35	Diagonal	ROHN 1.5 x 16GA	509	-2.12	6.37	33.3	Pass
T12	35 - 20	Diagonal	ROHN 1.5 x 16GA	535	-3.26	6.37	51.1	Pass
T13	20 - 4.81771	Diagonal	ROHN 1.5 x 11GA	562	-4.20	12.04	34.8	Pass
T14	4.81771 - 0	Horizontal	L4x4x1/4	587	-0.91	61.97	12.7	Pass
T1	250 - 230	Top Girt	L2x2x1/4	4	0.08	25.71	0.3	Pass
T2	230 - 210	Top Girt	ROHN 1.5 x 16GA	63	-0.64	7.40	8.6	Pass
T3	210 - 190	Top Girt	ROHN 1.5 x 11GA	120	-0.89	14.23	6.3	Pass
T4	190 - 170	Top Girt	L2x2x1/4	177	-1.25	23.88	5.2	Pass
T5	170 - 150	Top Girt	ROHN 1.5 x 16GA	234	-1.21	7.48	16.1	Pass
T6	150 - 130	Top Girt	ROHN 1.5 x 16GA	290	-0.89	7.48	11.9	Pass
T7	130 - 110	Top Girt	ROHN 1.5 x 16GA	324	-0.78	7.48	10.4	Pass
T8	110 - 90	Top Girt	ROHN 1.5 x 16GA	357	-0.81	7.48	10.8	Pass
T9	90 - 70	Top Girt	ROHN 1.5 x 16GA	414	-0.98	7.48	13.1	Pass
T10	70 - 50	Top Girt	ROHN 1.5 x 11GA	471	-1.22	14.40	8.5	Pass
T11	50 - 35	Top Girt	ROHN 1.5 x 16GA	504	-1.24	7.48	16.6	Pass
T12	35 - 20	Top Girt	ROHN 1.5 x 16GA	531	-1.21	7.48	16.2	Pass
T13	20 - 4.81771	Top Girt	ROHN 1.5 x 11GA	558	-1.06	14.40	7.4	Pass
T14	4.81771 - 0	Top Girt	L4x4x1/4	584	8.71	66.00	13.2	Pass
T1	250 - 230	Bottom Girt	L2x2x1/4	8	0.80	25.71	3.1	Pass
T2	230 - 210	Bottom Girt	ROHN 1.5 x 16GA	66	-0.64	7.40	8.6	Pass
T3	210 - 190	Bottom Girt	ROHN 1.5 x 11GA	123	-0.89	14.23	6.3	Pass
T4	190 - 170	Bottom Girt	L2x2x1/4	180	-1.25	23.88	5.2	Pass
T5	170 - 150	Bottom Girt	ROHN 1.5 x 16GA	237	-1.21	7.48	16.1	Pass
T6	150 - 130	Bottom Girt	ROHN 1.5 x 16GA	294	-0.81	7.48	10.9	Pass
T7	130 - 110	Bottom Girt	ROHN 1.5 x 16GA	327	-0.79	7.48	10.6	Pass
T8	110 - 90	Bottom Girt	ROHN 1.5 x 16GA	360	-0.81	7.48	10.8	Pass
T9	90 - 70	Bottom Girt	ROHN 1.5 x 16GA	417	-0.98	7.48	13.1	Pass
T10	70 - 50	Bottom Girt	ROHN 1.5 x 11GA	474	-1.22	14.40	8.5	Pass
T11	50 - 35	Bottom Girt	ROHN 1.5 x 16GA	507	-1.24	7.48	16.6	Pass
T12	35 - 20	Bottom Girt	ROHN 1.5 x 16GA	534	-1.21	7.48	16.2	Pass
T13	20 - 4.81771	Bottom Girt	ROHN 1.5 x 11GA	560	2.59	20.65	12.5	Pass
T1	250 - 230	Guy A@232.523	3/4	606	16.65	36.73	45.3	Pass
T4	190 - 170	Guy A@172.523	3/4	621	14.12	36.73	38.4	Pass
T8	110 - 90	Guy A@92.5234	3/4	630	16.37	36.73	44.6	Pass
T1	250 - 230	Guy B@232.523	3/4	602	16.14	36.73	43.9	Pass
T4	190 - 170	Guy B@172.523	3/4	618	13.15	36.73	35.8	Pass

S S tS	° S S	- S S	S	- S ° S	S ?S	s ?S	US - s	S q S
T8	110 - 90	Guy B@92.5234	3/4	629	15.05	36.73	41.0	Pass
T1	250 - 230	Guy C@232.523	3/4	596	16.90	36.73	46.0	Pass
T4	190 - 170	Guy C@172.523	3/4	611	14.41	36.73	39.2	Pass
T8	110 - 90	Guy C@92.5234	3/4	625	16.35	36.73	44.5	Pass
T1	250 - 230	Top Guy Pull-Off@232.523	2L2x2x1/4x3/8	600	8.82	51.56	17.1	Pass
T4	190 - 170	Top Guy Pull-Off@172.523	2L2x2x1/4x3/8	615	8.83	51.56	17.1	Pass
T8	110 - 90	Top Guy Pull-Off@92.5234	2L2x2x1/4x3/8	627	7.26	51.56	14.1	Pass
T1	250 - 230	Torque Arm Top@232.523	C15x33.9	605	-3.50	299.75	34.1	Pass
T4	190 - 170	Torque Arm Top@172.523	C15x33.9	620	-3.33	300.27	24.3	Pass
							Summary	
						Leg (T3)	50.1	Pass
						Diagonal (T6)	55.3	Pass
						Horizontal (T14)	12.7	Pass
						Top Girt (T11)	16.6	Pass
						Bottom Girt (T11)	16.6	Pass
						Guy A (T1)	45.3	Pass
						Guy B (T1)	43.9	Pass
						Guy C (T1)	46.0	Pass
						Top Guy Pull-Off (T4)	17.1	Pass
						Torque Arm Top (T1)	34.1	Pass
						Bolt Checks	52.8	Pass
						RATING =	**55.3**	**Pass**

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 809329 TOWER ID: C_BASELEVEL

APPENDIX C

ADDITIONAL CALCULATIONS

BLACK & VEATCH Building a world of difference.	Client:	Crown Castle	Design:	TYM
6800 W. 115th St., Suite 2292 Overland Park, KS 66211 Phone: (913) 458-6909	Project:	406642 (809329.1976191)	Date:	6/25/2021
	Site:	COLUMBIA J-FL-012-094	Verify:	
	Title:	Foundation Design Reaction Comparison	Date:	6/25/2021
			Code:	TIA-222-H

Template Version 1.8

FOUNDATION ANALYSIS:

Original Tower Design Reactions:

Tower Base:

Compression:	270.1	Kip

Anchor:

Uplift:	109.2	Kip
Shear:	125.4	Kip

Note: Design reactions are multiplied by 1.35 for comparison as allowed by TIA-222-H Section 15.6.2.

TnxTower Reactions:

Tower Base:

Compression:	119.0	Kip

Anchor:

Uplift:	48.0	Kip
Shear:	57.0	Kip

Stress Ratio:

Tower Base:

Compression:	42.0%

Anchor:

Uplift:	41.9%
Shear:	43.3%

Note: Ratings per TIA-222-H Section 15.5.

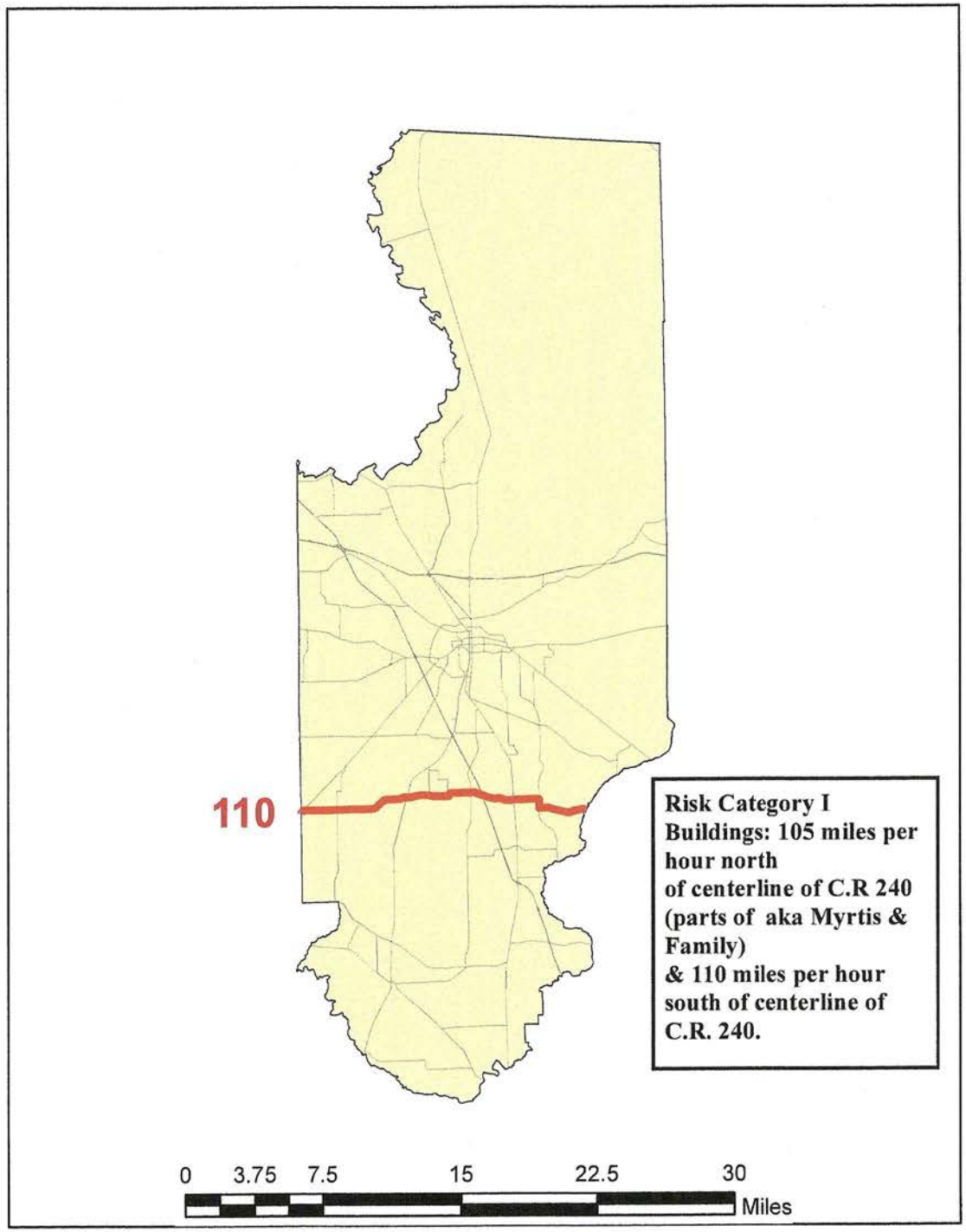
Conclusion:

When the calculated reactions are compared to the original design reactions, the existing foundation is considered to have been designed and constructed with adequate capacity to support the existing and proposed loads.

Controlling Foundation Stress Ratio: **43.3%**

COLUMBIA

Figure 1609C
Ultimate Design Wind Speeds
Risk Category I Buildings

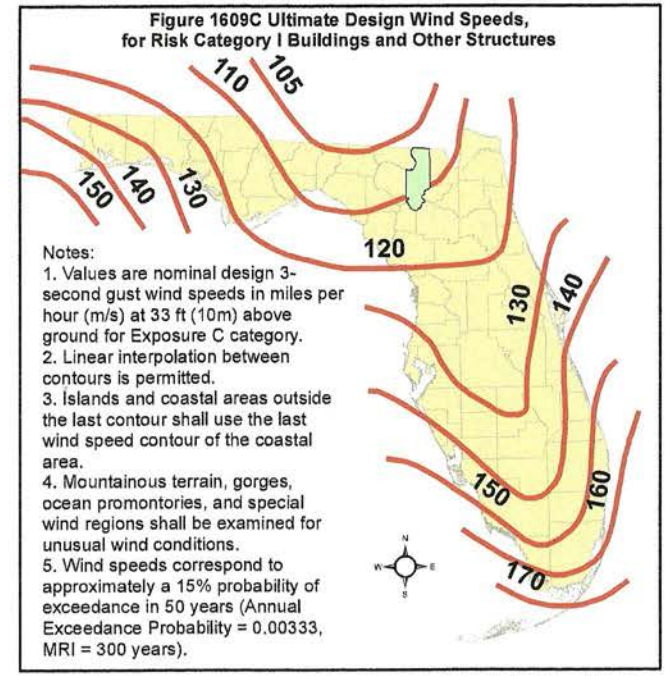


September 5, 2011

BASIC WIND SPEED. The basic wind speed in miles per hour, for the development of wind loads, shall be determined from Figure 1609. The exact location of wind speed lines shall be established by local ordinance using recognized physical landmarks such as major roads, canals, rivers and lake shores whenever possible.

WIND-BORNE DEBRIS REGION. Areas within hurricane- prone regions located:
1. Within 1 mile (1.61 km) of the coastal mean high water line where the ultimate design wind speed Vult is 130 mph (48 m/s) or greater; or
2. In areas where the ultimate design wind speed Vult is 140 mph (53 m/s) or greater

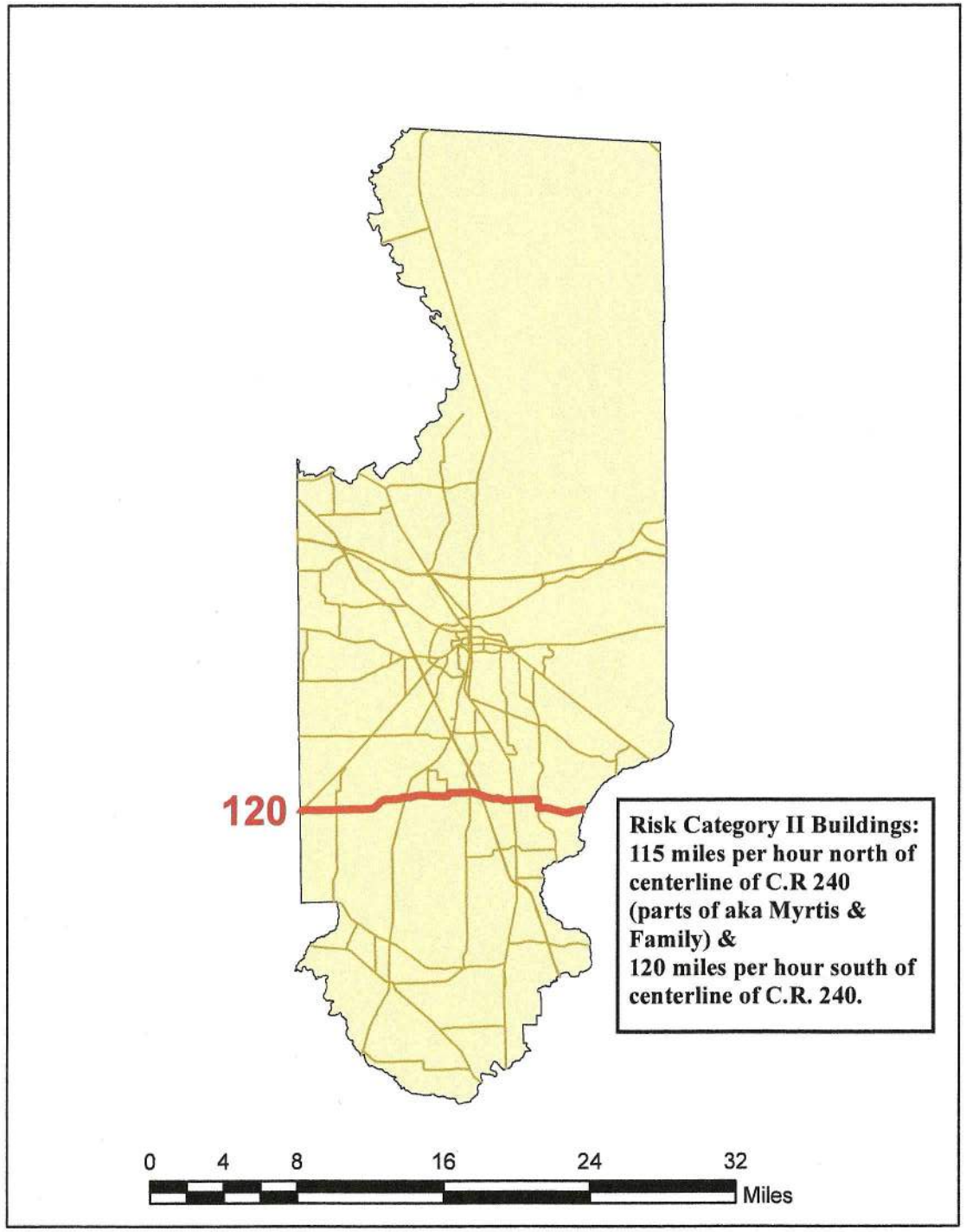
For Risk Category II buildings and structures and occupancy category III buildings and structures, except health care facilities, the windborne debris region shall be based on Figure 1609A. For occupancy category IV buildings and structures and occupancy category III health care facilities, the windborne debris region shall be based on Figure 1609B.



Sources: Florida Department of Community Affairs, Codes and Standards Division; Applied Research Associates, Inc.; Florida Geographic Data Library ;Florida Building Code 2010; Troy Crews, Columbia County Building Official, 08/19/2011

COLUMBIA

Figure 1609A
Ultimate Design Wind Speeds
Risk Category II Buildings

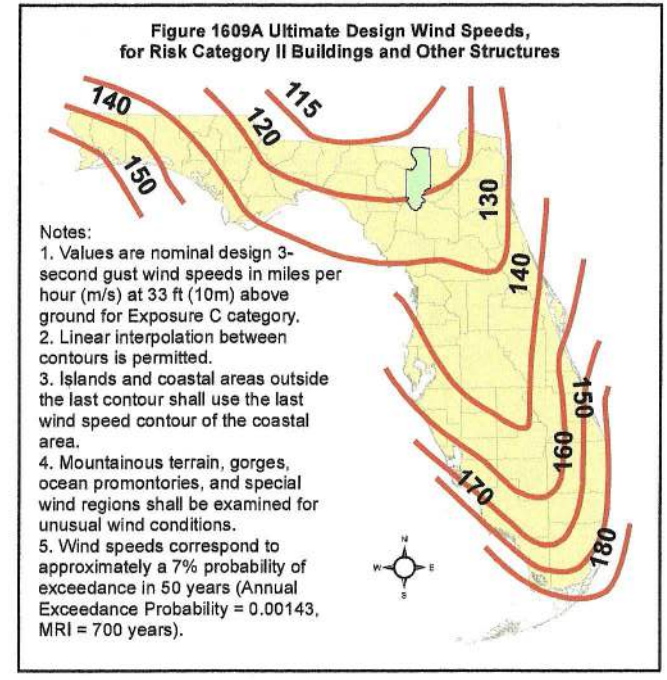


September 5, 2011

BASIC WIND SPEED. The basic wind speed in miles per hour, for the development of wind loads, shall be determined from Figure 1609. The exact location of wind speed lines shall be established by local ordinance using recognized physical landmarks such as major roads, canals, rivers and lake shores whenever possible.

WIND-BORNE DEBRIS REGION. Areas within hurricane- prone regions located:
1. Within 1 mile (1.61 km) of the coastal mean high water line where the ultimate design wind speed Vult is 130 mph (48 m/s) or greater; or
2. In areas where the ultimate design wind speed Vult is 140 mph (53 m/s) or greater

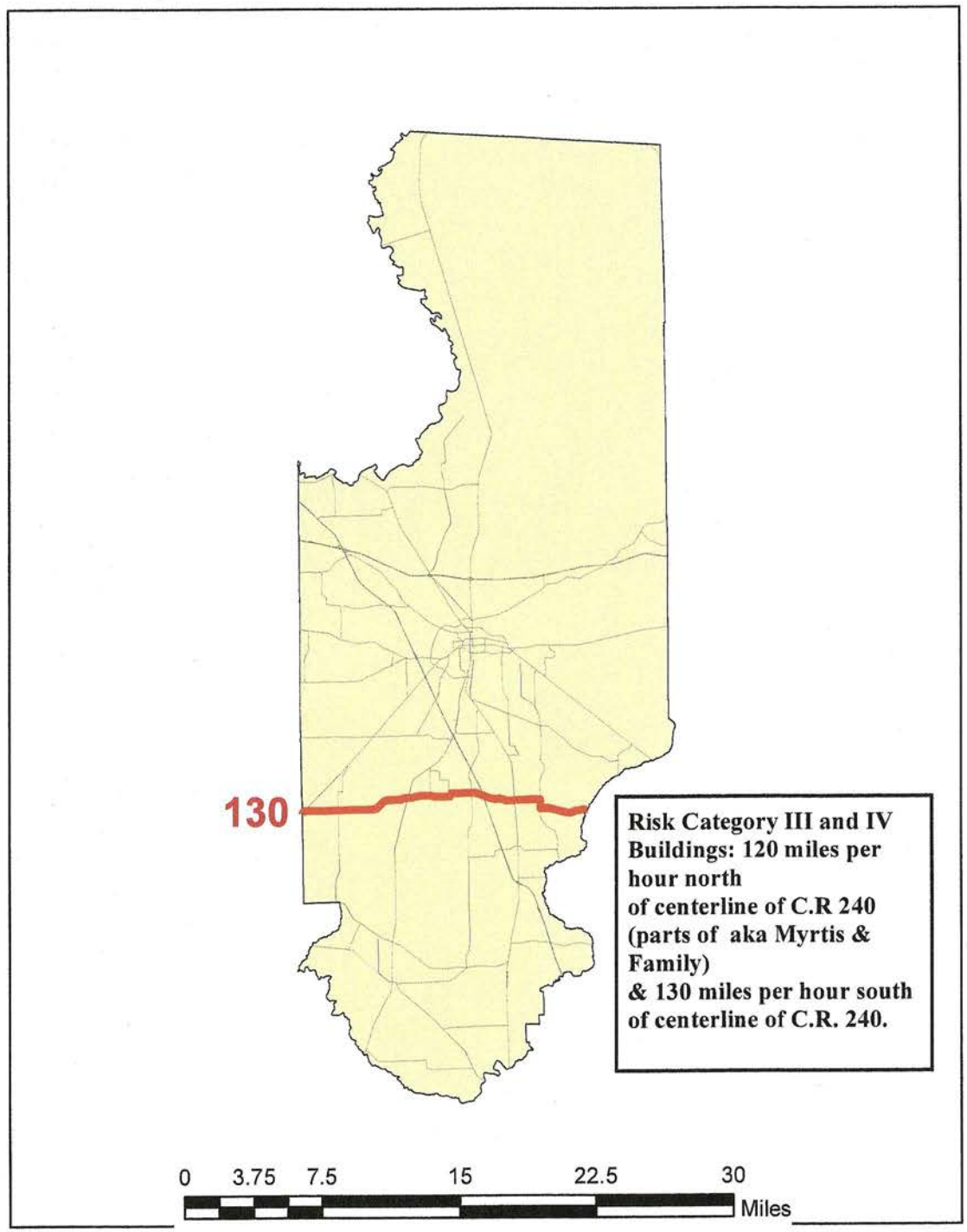
For Risk Category II buildings and structures and occupancy category III buildings and structures, except health care facilities, the windborne debris region shall be based on Figure 1609A. For occupancy category IV buildings and structures and occupancy category III health care facilities, the windborne debris region shall be based on Figure 1609B.



Sources: Florida Department of Community Affairs, Codes and Standards Division; Applied Research Associates, Inc.; Florida Geographic Data Library ;Florida Building Code 2010; Troy Crews, Columbia County Building Official, 08/19/2011

COLUMBIA

Figure 1609B
Ultimate Design Wind Speeds
Risk Category III and IV Buildings

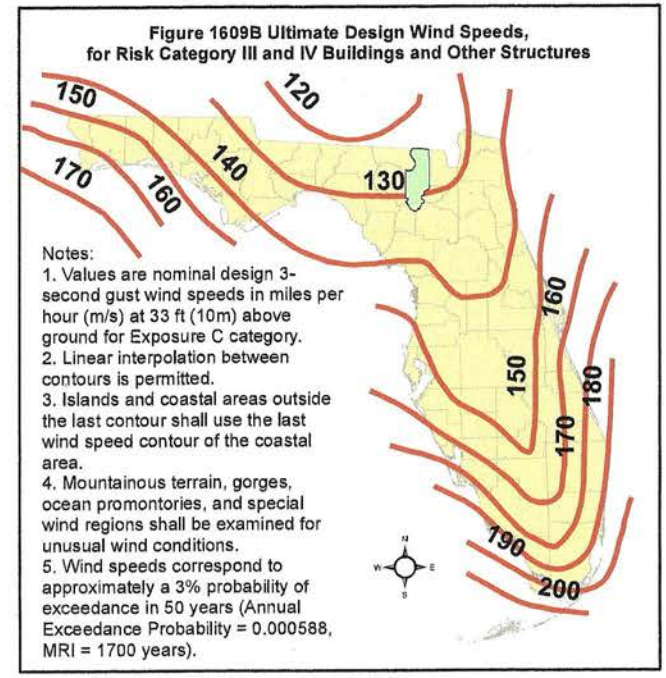


September 5, 2011

BASIC WIND SPEED. The basic wind speed in miles per hour, for the development of wind loads, shall be determined from Figure 1609. The exact location of wind speed lines shall be established by local ordinance using recognized physical landmarks such as major roads, canals, rivers and lake shores whenever possible.

WIND-BORNE DEBRIS REGION. Areas within hurricane- prone regions located:
1. Within 1 mile (1.61 km) of the coastal mean high water line where the ultimate design wind speed Vult is 130 mph (48 m/s) or greater; or
2. In areas where the ultimate design wind speed Vult is 140 mph (53 m/s) or greater

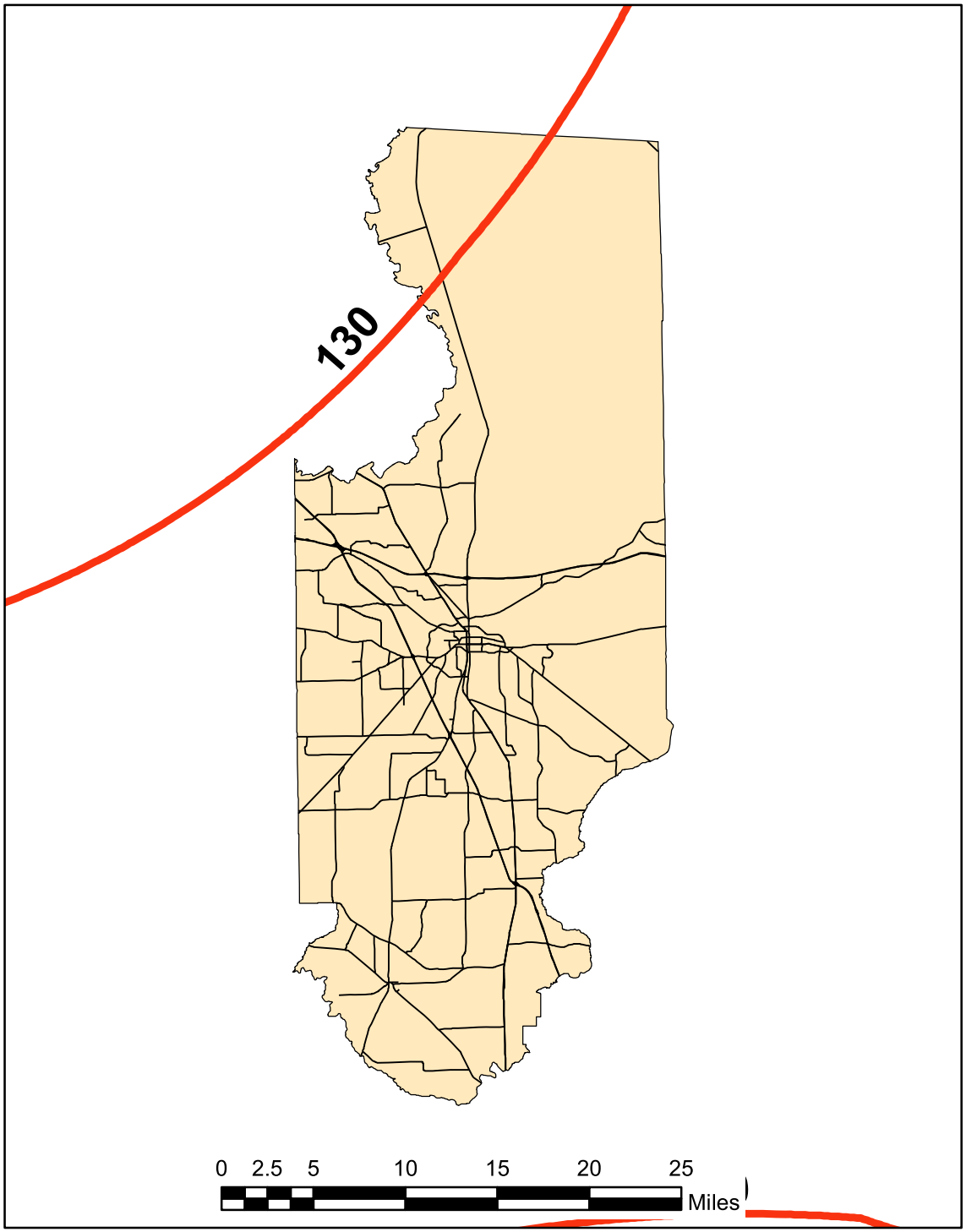
For Risk Category II buildings and structures and occupancy category III buildings and structures, except health care facilities, the windborne debris region shall be based on Figure 1609A. For occupancy category IV buildings and structures and occupancy category III health care facilities, the windborne debris region shall be based on Figure 1609B.



Sources: Florida Department of Community Affairs, Codes and Standards Division; Applied Research Associates, Inc.; Florida Geographic Data Library ;Florida Building Code 2010; Troy Crews, Columbia County Building Official, 08/19/2011

COLUMBIA

Figure 1609.3(3)
Ultimate Design Wind Speeds
Risk Category IV Buildings



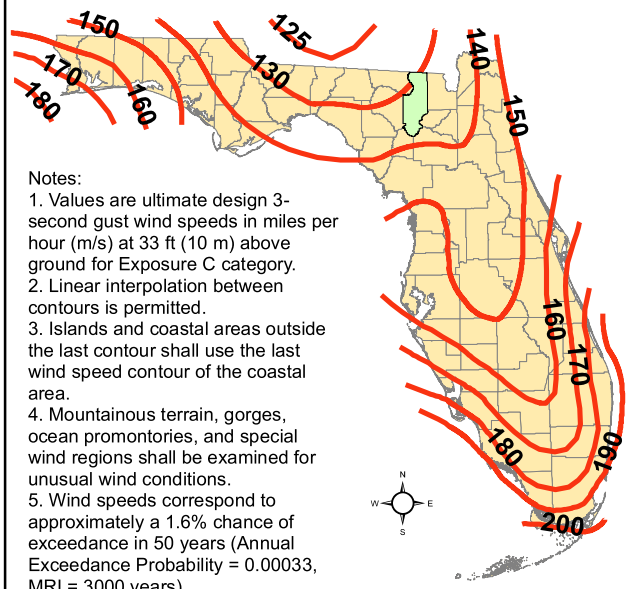
June 2nd, 2020

BASIC WIND SPEED. The basic wind speed in miles per hour, for the development of wind loads, shall be determined from Figure 1609.3. The exact location of wind speed lines shall be established by local ordinance using recognized physical landmarks such as major roads, canals, rivers and lake shores whenever possible.

WIND-BORNE DEBRIS REGION. Areas within hurricane- prone regions located:
1. Within 1 mile (1.61 km) of the coastal mean high water line where the ultimate design wind speed Vult is 130 mph (58 m/s) or greater; or
2. In areas where the ultimate design wind speed Vult is 140 mph (63.6 m/s) or greater

For Risk Category II buildings and other structures and Risk Category III buildings and other structures, except health care facilities, the windborne debris region shall be based on Figure 1609.3(1). For Risk Category III health care facilities, the windborne debris region shall be based on Figure 1609.3(2). For Risk Category IV buildings and other structures, the windborne debris region shall be based on Figure 1609.3(3).

Figure 1609.3(3) Ultimate Design Wind Speeds, for Risk Category IV Buildings and Other Structures



Notes:
1. Values are ultimate design 3-second gust wind speeds in miles per hour (m/s) at 33 ft (10 m) above ground for Exposure C category.
2. Linear interpolation between contours is permitted.
3. Islands and coastal areas outside the last contour shall use the last wind speed contour of the coastal area.
4. Mountainous terrain, gorges, ocean promontories, and special wind regions shall be examined for unusual wind conditions.
5. Wind speeds correspond to approximately a 1.6% chance of exceedance in 50 years (Annual Exceedance Probability = 0.00033, MRI = 3000 years).

Sources: Florida Department of Business and Professional Regulations, Building Codes and Standards Office; Florida Building Commission; Applied Research Associates, Inc.; University of Florida GeoPlan Center; Florida Geographic Data Library; Florida Building Code 2020; County Building Official, 06/02/2020

TABLE 1604.5 RISK CATEGORY OF BUILDINGS AND OTHER STRUCTURES

RISK CATEGORY	NATURE OF OCCUPANCY
I	Buildings and other structures that represent a low hazard to human life in the event of failure, including but not limited to: • Agricultural facilities. • Certain temporary facilities. • Minor storage facilities. • Screen enclosures.
II	Buildings and other structures except those listed in Risk Categories I, III and IV
III	Buildings and other structures that represent a substantial hazard to human life in the event of failure, including but not limited to: • Buildings and other structures whose primary occupancy is public assembly with an occupant load greater than 300. • Buildings and other structures containing elementary school, secondary school or day care facilities with an occupant load greater than 250. • Buildings and other structures containing adult education facilities, such as colleges and universities, with an occupant load greater than 500. • Group I-2 occupancies with an occupant load of 50 or more resident patients but not having surgery or emergency treatment facilities. • Group I-3 occupancies. • Any other occupancy with an occupant load greater than 5,000[a]. • Power-generating stations, water treatment facilities for potable water, waste water treatment facilities and other public utility facilities not included in Risk Category IV. • Buildings and other structures not included in Risk Category IV containing sufficient quantities of toxic or explosive substances to be dangerous to the public if released.
IV	Buildings and other structures designated as essential facilities, including but not limited to: • Group I-2 occupancies having surgery or emergency treatment facilities. • Fire, rescue, ambulance and police stations and emergency vehicle garages. • Designated earthquake, hurricane or other emergency shelters. • Designated emergency preparedness, communications and operations centers and other facilities required for emergency response. • Power-generating stations and other public utility facilities required as emergency backup facilities for Risk Category IV structures. • Structures containing highly toxic materials as defined by Section 307 where the quantity of the material exceeds the maximum allowable quantities of Table 307.1(2). • Aviation control towers, air traffic control centers and emergency aircraft hangars. • Buildings and other structures having critical national defense functions. • Water storage facilities and pump structures required to maintain water pressure for fire suppression.