June 23, 2021 **FL COA# 31011**

John Scandura
Verizon Wireless
4700 Exchange Court, Suite 100
Boca Raton, FL 33431

Tower Engineering Professionals
326 Tryon Road
Raleigh, NC 27603
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Subject: Structural Analysis Report

Verizon Wireless Designation:	**Carrier Site Number:**	228809
	Carrier Site Name:	Lake City North
Engineering Firm Designation:	**TEP Project Number:**	241157.498988
Site Data:	**279 NW Osteen Ct., Lake City, Columbia County, FL 32055** **Latitude *30° 12' 24.83"*, Longitude -82° *39' 08.45"*** **400 Foot - Guyed Tower**	

Dear John Scandura,

Tower Engineering Professionals 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:

LC1: Existing + Proposed Loading ***Sufficient Capacity**
Note: See Table 1 for the existing and proposed loading
***The structure has sufficient capacity once the loading changes described in the Recommendations section of this report are completed.**

Structure Capacity	Foundation Capacity
98.5%	66.6%

The analysis has been performed in accordance with the ANSI/TIA-222-H Structural Standard for Antenna Supporting Structures, Antennas, and Small Wind Turbine Support Structures and the 2020 Florida Building Code, 7th Edition.

All modifications and equipment proposed in this report shall be installed in accordance with the appurtenances listed in Table 1 for the determined available structural capacity to be effective.

We at *Tower Engineering Professionals* appreciate the opportunity of providing our continuing professional services to you and *Verizon Wireless.* If you have any questions or need further assistance on this or any other projects, please give us a call.

Structural analysis prepared by: James N. Fisher, E.I. / ANH

Respectfully submitted by:

Adam M. Amortnont, P.E.

Adam M. Amortnont

Digitally signed by Adam M Amortnont
DN: cn=Adam M Amortnont, c=US, o=Unaffiliated, ou=A01410D0000017EF4BC2720000C8A3, email=amortnont@tepgroup.net
Date: 2021.06.23 11:34:37 -04'00'

ADAM M. AMORTNONT
LICENSE
No. 77387
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

This item has been electronically signed and sealed by Adam M. Amortnont, P.E. on 06/23/21 using a Digital Signature.

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

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1) INTRODUCTION

This tower is a 400-ft Guyed tower designed by Andrew Corporation in March of 1992. The tower has been modified per reinforcement drawings prepared by Excell Communications, Inc. in January of 2012. All information provided to TEP was assumed to be accurate and complete.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	119 mph
Exposure Category:	C
Topographic Factor:	1.0
Service Wind Speed:	60 mph

Table 1 - Existing and Proposed Antenna and Cable Information

Existing/ Proposed	Mount Level (ft)	Ant CL (ft)	Qty	Antenna Model	Mount Type	Qty Coax	Coax Size	Coax Location	Owner/ Tenant
Existing	397.0	397.0	-	-	Stand-Off Mount	-	-	-	Unknown
Existing	350.0	350.0	1	Generic 8' Dia. Grid Dish	Pipe Mount	-	-	-	Unknown
Existing	310.0	310.0	1	Generic 8' Dia. Grid Dish	Pipe Mount	-	-	-	Unknown
Proposed	***186.4***	***190.0***	***3***	***Ericsson AIR6449***	***Sector Mount w/ Modifications***	***-***	***-***	***-***	***Verizon***
Existing	186.4	190.0	6	JMA Wireless MX06FIT865-02		2	12x24	CA Face	Verizon
			3	Ericsson 4449					
			6	Ericsson 8843					
			2	Raycap RHSDC-6627-PF-48					
To Be Removed	*186.4*	*190.0*	*3*	*CSS Antenna X7CAP-865-4C*	-	*10* *6*	*1-5/8* *1-5/8*	*BC Face* *CA Face*	*Verizon*
Existing	152.0	152.0	1	Commscope UHX6-59-P3A/L-P	Pipe Mount	1	EW63	CA Face	Verizon
Existing	132.0	132.0	3	Generic L3x3x1/4 Angle	-	-	-	-	Unknown

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Source
Tower Manufacturer Drawings	Andrew Corporation, dated March 24, 1992 Job No. GI-2635-02	TEP
Previous Structural Analysis	Excell Communications, Inc., dated August 27, 2009 Project No. 241157.328604	Verizon
Tower Modification Drawings	Excell Communications, Inc., dated January 13, 2012 Project No. 20944757A	Verizon
Mount Modification Analysis	Tectonic Engineering Consultants, dated May 7, 2021 Project No. 10880.38	Verizon
Appurtenance Mapping	Tower Engineering Professionals, dated January 29, 2020 TEP No. 241157.328603	TEP
Correspondence	Correspondence from Verizon with regards to the existing and proposed loading.	Verizon

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.

3.2) Assumptions

1) The tower and foundation were built in accordance with the manufacturer's specifications.
2) The tower and foundation have been maintained in accordance with the manufacturer's specification.
3) All tower components are in sufficient condition to carry their full design capacity.
4) Serviceability with respect to antenna twist, tilt, roll, or lateral translation, is not checked and is left to the carrier or tower owner to ensure conformance.
5) All antenna mounts and mounting hardware are structurally sufficient to carry the full design capacity requirements of appurtenance wind area and weight as provided by the original manufacturer specifications. It is the carrier's responsibility to ensure compliance to the structural limitations of the existing and/or proposed antenna mounts. TEP did not analyze antennas supporting mounts as part of this structural analysis report.
6) Unless specified by the client or tower mapping, the location of the existing and proposed coax is assumed by TEP and listed in Table 1.
7) The tower foundation design reactions were taken from the previous structural analysis performed by Excell Communications, Inc. dated August 27, 2009 and were assumed to match the original tower manufacturer drawings.

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

4) ANALYSIS RESULTS

Table 3 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	ΦP_{allow} (K)	% Capacity	Pass / Fail
T1	400 - 380	Leg	04-54 (5.9375x.25)	1	-14.22	67.41	21.1	Pass
T2	380 - 360	Leg	04-54 (5.9375x.25)	43	-23.54	67.41	34.9	Pass
T3	360 - 340	Leg	04-54 (5.9375x.25)	82	-22.52	67.41	33.4	Pass
T4	340 - 320	Leg	04-64 (6.625x.25)	123	-35.28	76.33	46.2	Pass
T5	320 - 300	Leg	04-54 (5.9375x.25)	160	-36.19	67.41	53.7	Pass
T6	300 - 280	Leg	04-54 (5.9375x.25)	199	-34.25	67.41	50.8	Pass
T7	280 - 260	Leg	04-64 (6.625x.25)	239	-36.25	76.33	47.5	Pass
T8	260 - 240	Leg	04-64 (6.625x.25)	278	-36.92	76.33	48.4	Pass
T9	240 - 220	Leg	04-64 (6.625x.25)	318	-37.16	76.33	48.7	Pass
T10	220 - 200	Leg	04-64 (6.625x.25)	357	-42.29	76.33	55.4	Pass
T11	200 - 180	Leg	04-66 (6.625x.375)	394	-44.57	116.42	38.3	Pass
T12	180 - 160	Leg	04-86 (8.5x.375)	433	-79.25	156.64	50.6	Pass
T13	160 - 140	Leg	04-66 (6.625x.375)	472	-53.91	116.42	46.3	Pass
T14	140 - 120	Leg	04-65 (6.625x.3125)	511	-51.22	97.03	52.8	Pass
T15	120 - 100	Leg	04-65 (6.625x.3125)	551	-54.55	97.03	56.2	Pass
T16	100 - 80	Leg	04-66 (6.625x.375)	590	-62.91	116.42	54.0	Pass
T17	80 - 60	Leg	04-66 (6.625x.375)	630	-64.03	116.42	55.0	Pass
T18	60 - 40	Leg	04-66 (6.625x.375)	669	-64.14	116.42	55.1	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	ϕP_{allow} (K)	% Capacity	Pass / Fail
T19	40 - 20	Leg	04-66 (6.625x.375)	708	-64.85	116.42	55.7	Pass
T20	20 - 2	Leg	04-66 (6.625x.375)	747	-61.90	119.08	52.0	Pass
T1	400 - 380	Diagonal	Andrew M-46 Type T Brace	25	-4.24	10.28	41.3	Pass
T2	380 - 360	Diagonal	M46 "Y" Diagonal	72	-2.14	6.30	34.0	Pass
T3	360 - 340	Diagonal	M46 "Y" Diagonal	90	-3.01	6.30	47.7	Pass
T4	340 - 320	Diagonal	Andrew M-46 Type T Brace	141	-5.46	10.28	53.1	Pass
T5	320 - 300	Diagonal	M46 "Y" Diagonal	196	-2.65	6.30	42.1	Pass
T6	300 - 280	Diagonal	M46 "Y" Diagonal	213	-1.42	6.30	22.5	Pass
T7	280 - 260	Diagonal	M46 "Y" Diagonal	276	-1.76	6.30	27.9	Pass
T8	260 - 240	Diagonal	M46 "Y" Diagonal	282	-0.83	6.30	13.2	Pass
T9	240 - 220	Diagonal	M46 "Y" Diagonal	327	-1.91	6.30	30.3	Pass
T10	220 - 200	Diagonal	M46 "Y" Diagonal	383	-1.44	6.30	22.9	Pass
T11	200 - 180	Diagonal	M46 "Y" Diagonal	399	-3.77	6.30	59.9	Pass
T12	180 - 160	Diagonal	L2x2x3/16	451	7.36	19.68	37.4	Pass
T13	160 - 140	Diagonal	M46 "Y" Diagonal	505	-2.61	6.30	41.5	Pass
T14	140 - 120	Diagonal	M46 "Y" Diagonal	524	-0.85	6.30	13.5	Pass
T15	120 - 100	Diagonal	M46 "Y" Diagonal	566	-2.35	6.30	37.3	Pass
T16	100 - 80	Diagonal	M46 "Y" Diagonal	617	-1.23	6.30	19.5	Pass
T17	80 - 60	Diagonal	M46 "Y" Diagonal	631	-1.01	6.30	16.1	Pass
T18	60 - 40	Diagonal	M46 "Y" Diagonal	694	-1.53	6.30	24.2	Pass
T19	40 - 20	Diagonal	M46 "Y" Diagonal	709	-1.09	6.30	17.4	Pass
T20	20 - 2	Diagonal	M46 "Y" Diagonal	748	-2.08	6.79	30.6	Pass
T1	400 - 380	Top Girt	L2x2x1/8	5	1.84	13.38	13.8	Pass
T1	400 - 380	Guy A@386.667	9/16	796	10.78	22.05	48.9	Pass
T4	340 - 320	Guy A@330	9/16	814	11.60	22.05	52.6	Pass
T7	280 - 260	Guy A@276.667	1/2	825	10.13	16.95	59.8	Pass
T9	240 - 220	Guy A@223.333	1/2	831	11.15	16.95	65.8	Pass
T12	180 - 160	Guy A@170	1/2	845	11.26	16.95	66.5	Pass
T15	120 - 100	Guy A@110	7/16	855	8.93	13.10	68.2	Pass
T18	60 - 40	Guy A@53.3333	3/8	861	5.21	9.70	53.7	Pass
T1	400 - 380	Guy B@386.667	9/16	791	10.90	22.05	49.5	Pass
T4	340 - 320	Guy B@330	9/16	809	11.96	22.05	54.2	Pass
T7	280 - 260	Guy B@276.667	1/2	824	10.21	16.95	60.2	Pass
T9	240 - 220	Guy B@223.333	1/2	830	11.13	16.95	65.7	Pass
T12	180 - 160	Guy B@170	1/2	838	11.11	16.95	65.5	Pass
T15	120 - 100	Guy B@110	7/16	854	8.55	13.10	65.3	Pass
T18	60 - 40	Guy B@53.3333	3/8	860	5.00	9.70	51.6	Pass
T1	400 - 380	Guy C@386.667	9/16	784	11.14	22.05	50.5	Pass
T4	340 - 320	Guy C@330	9/16	802	12.47	22.05	56.6	Pass
T7	280 - 260	Guy C@276.667	1/2	820	10.62	16.95	62.7	Pass
T9	240 - 220	Guy C@223.333	1/2	826	11.25	16.95	66.4	Pass
T12	180 - 160	Guy C@170	1/2	832	11.37	16.95	67.1	Pass
T15	120 - 100	Guy C@110	7/16	850	9.10	13.10	69.4	Pass
T18	60 - 40	Guy C@53.3333	3/8	856	5.26	9.70	54.2	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	ϕP_{allow} (K)	% Capacity	Pass / Fail
T7	280 - 260	Top Guy Pull-Off@276.667	2L2x2x3/16x3/8	822	4.86	39.35	12.3	Pass
T9	240 - 220	Top Guy Pull-Off@223.333	2L2x2x3/16x3/8	828	5.04	39.35	12.8	Pass
T15	120 - 100	Top Guy Pull-Off@110	BP 3-3/4 x 2 x 5/16 (GPX)	852	5.28	39.99	13.2	Pass
T18	60 - 40	Top Guy Pull-Off@53.3333	BP 3-3/4 x 2 x 5/16 (GPX)	858	4.05	39.99	10.1	Pass
T1	400 - 380	Torque Arm Top@386.667	L 3.5 x 3.5 x 1/4	786	14.84	64.88	22.9	Pass
T4	340 - 320	Torque Arm Top@330	L 3.5 x 3.5 x 1/4	817	16.34	64.88	25.2	Pass
T12	180 - 160	Torque Arm Top@170	L 3.5 x 3.5 x 1/4	846	15.40	64.88	23.7	Pass
T1	400 - 380	Torque Arm Bottom@386.667	L 3.5 x 3.5 x 1/4	788	-20.14	56.01	36.0	Pass
T4	340 - 320	Torque Arm Bottom@330	L 3.5 x 3.5 x 1/4	806	-22.13	56.01	39.5	Pass
T12	180 - 160	Torque Arm Bottom@170	L 3.5 x 3.5 x 1/4	836	-18.75	56.01	33.5	Pass
							Summary	
						Leg (T15)	56.2	Pass
						Diagonal (T11)	59.9	Pass
						Top Girt (T1)	13.8	Pass
						Guy A (T15)	68.2	Pass
						Guy B (T9)	65.7	Pass
						Guy C (T15)	69.4	Pass
						Top Guy Pull-Off (T15)	13.2	Pass
						Torque Arm Top (T4)	25.2	Pass
						Torque Arm Bottom (T4)	39.5	Pass
						Bolt Checks	98.5	Pass
						RATING =	**98.5**	**Pass**

Table 4 - Tower Component Stresses vs. Capacity

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1,2,3,4	Mast Foundation - Design Reaction Comparison	-	60.1	Pass
1,2,3,4	Inner Guy Anchor Foundation - Design Reaction Comparison	-	66.6	Pass
1,2,3,4	Outer Guy Anchor Foundation - Design Reaction Comparison	-	52.7	Pass

Structure Rating (max from all components) =	98.5%

Notes:
1) Rating per TIA-222-H, Section 15.5
2) See additional documentation in “Appendix B - Additional Calculations” for calculations supporting the % capacity listed.
3) Foundation capacity determined by comparing analysis reactions to original design reactions.
4) Design loads were multiplied by 1.35 for comparison as allowed by TIA-222-H, Section 15.6.2.

4.1) Recommendations

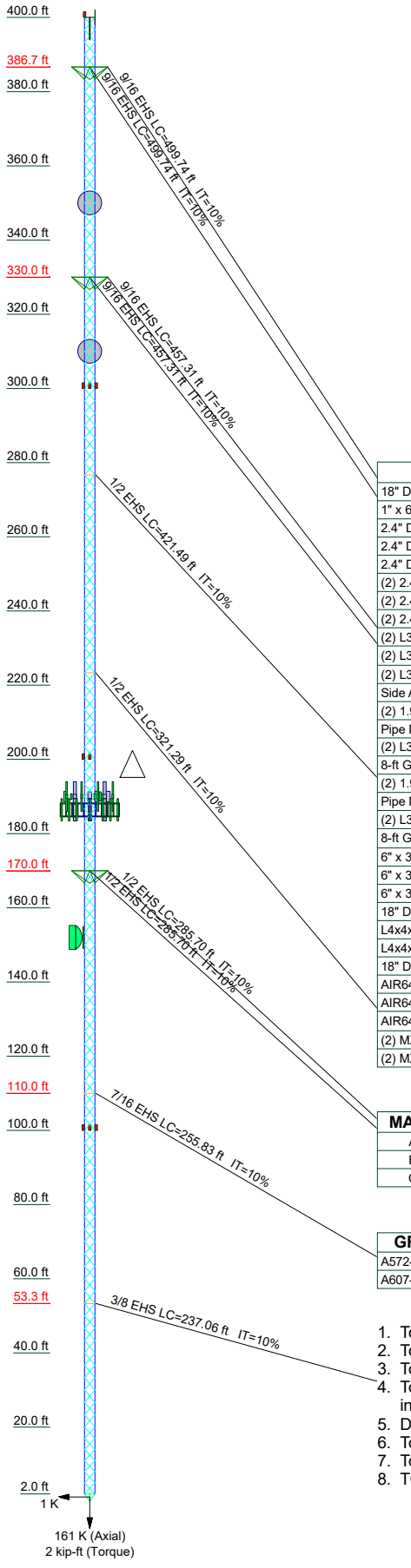
1) If the load differs from that described in Table 1 of this report or the provisions of this analysis are found to be invalid, another structural analysis should be performed.
2) The tower and its base and anchor foundations have sufficient capacity to carry the proposed loading configuration. No other modifications are required at this time provided the following criteria are satisfied.

    a) All (16) 1-5/8 spare feedlines to the proposed 190’ level must be removed

APPENDIX A

TNXTOWER OUTPUT

Section	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	T15	T16	T17	T18	T19	T20	
Legs	04-54 (5.9375x.25)			A	04-54 (5.9375x.25)		04-64 (6.625x.25)				B	C	B	04-65 (6.625x.3125)				04-66 (6.625x.375)			
Leg Grade	A572-50																				
Diagonals	D		M46 "V" Diagonal	D	M46 "V" Diagonal		M46 "V" Diagonal					L2x2x3/16			M46 "V" Diagonal						
Diagonal Grade	A607-45											A36			A607-45						
Top Girts	L2x2x1/8										N.A.										
Top Guy Pull-Offs	N.A.			N.A.			E	N.A.	E	N.A.		N.A.			F	N.A.		F	N.A.		
Face Width (ft)	3.5																				
# Panels @ (ft)	114 @ 3.33333																			6 @ 3	
Weight (K)	1.1	0.5	0.5	1.1	0.5	0.5	0.6	0.5	0.6	0.5	0.7	1.5	0.7	0.6	0.7	0.7	0.7	0.7	0.7	0.7	14.3



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
18" Dia. x 28" Beacon	400	(2) MX06FIT865-02 w/ Mount Pipe	186.4
1" x 6' Lightning Rod	400	(2) RADIO 8843 B2/B66A	186.4
2.4" Dia. x 6-ft	397	(2) RADIO 8843 B2/B66A	186.4
2.4" Dia. x 6-ft	397	(2) RADIO 8843 B2/B66A	186.4
2.4" Dia. x 6-ft	397	RADIO 4449 B13/B5	186.4
(2) 2.4" Dia. x 9-ft Pipe	397	RADIO 4449 B13/B5	186.4
(2) 2.4" Dia. x 9-ft Pipe	397	RADIO 4449 B13/B5	186.4
(2) 2.4" Dia. x 9-ft Pipe	397	RHSDC-6627-PF-48	186.4
(2) L3x3x3/16x4.25' Long	397	RHSDC-6627-PF-48	186.4
(2) L3x3x3/16x4.25' Long	397	2.4" Dia x 4-ft Mount Pipe	186.4
(2) L3x3x3/16x4.25' Long	397	2.4" Dia x 4-ft Mount Pipe	186.4
Side Arm Mount [SO 602-3]	397	2.4" Dia. x 6-ft	186.4
(2) 1.9" Dia. x 4-ft	350	2.4" Dia. x 6-ft	186.4
Pipe Mount [PM 602-1]	350	2.4" Dia. x 6-ft	186.4
(2) L3x3x1/4 (5-ft long)	350	(2) Pipe Mount [PM 601-3]	186.4
8-ft Grid Dish	350	2.9" Dia. x 12.5' Pipe	186.4
(2) 1.9" Dia. x 4-ft	310	2.9" Dia. x 12.5' Pipe	186.4
Pipe Mount [PM 602-1]	310	2.9" Dia. x 12.5' Pipe	186.4
(2) L3x3x1/4 (5-ft long)	310	(4) L2 1/2 x 2 1/2 x 1/4 x 4'	186.4
8-ft Grid Dish	310	(4) L2 1/2 x 2 1/2 x 1/4 x 4'	186.4
6" x 3" Diameter Sidelight	300	(4) L2 1/2 x 2 1/2 x 1/4 x 4'	186.4
6" x 3" Diameter Sidelight	300	Sector Mount [SM 602-3]	186.4
6" x 3" Diameter Sidelight	300	1.9" Dia. x 4-ft	152
18" Dia. x 28" Beacon	200	1.9" x 7' Stabilizer	152
L4x4x3/8 x 4-ft	200	Pipe Mount [PM 601-1]	152
L4x4x3/8 x 4-ft	200	UHX6-59-P3A/L	152
18" Dia. x 28" Beacon	200	(2) L 3x3x1/4 (56" Long)	132
AIR6449 B41 w/ Mount Pipe	186.4	L 3x3x1/4 (56" Long)	132
AIR6449 B41 w/ Mount Pipe	186.4	6" x 3" Diameter Sidelight	100
AIR6449 B41 w/ Mount Pipe	186.4	6" x 3" Diameter Sidelight	100
(2) MX06FIT865-02 w/ Mount Pipe	186.4	6" x 3" Diameter Sidelight	100
(2) MX06FIT865-02 w/ Mount Pipe	186.4		

SYMBOL LIST

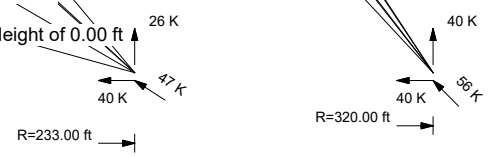
MARK	SIZE	MARK	SIZE
A	04-64 (6.625x.25)	D	Andrew M-46 Type T Brace
B	04-66 (6.625x.375)	E	2L2x2x3/16x3/8
C	04-86 (8.5x.375)	F	BP 3-3/4 x 2 x 5/16 (GPX)

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi
A607-45	45 ksi	60 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 119 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 30 mph basic wind with 0.25 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 98.5%



ALL REACTIONS ARE FACTORED

Tower Engineering Professionals

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Raleigh, NC 27603
Phone: (919) 661-6351
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Job:	***228809 - LAKE CITY NORTH***		
Project:	***TEP No. 241157.498988***		
Client: Verizon Wireless	Drawn by: jfisher	App'd:	
Code: TIA-222-H	Date: 06/23/21	Scale: NTS	
Path: C:\Users\jfisher\Documents\Temp\lake city north\228809 - Lake City North.er		Dwg No. E-1	

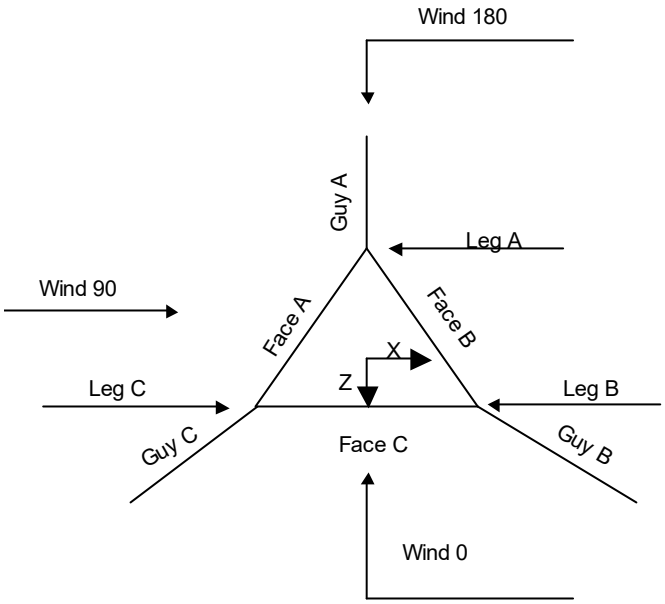
Tower Input Data

The main tower is a 3x guyed tower with an overall height of 400.00 ft above the ground line.
The base of the tower is set at an elevation of 0.00 ft above the ground line.
The face width of the tower is 3.50 ft at the top and 3.50 ft at the base.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

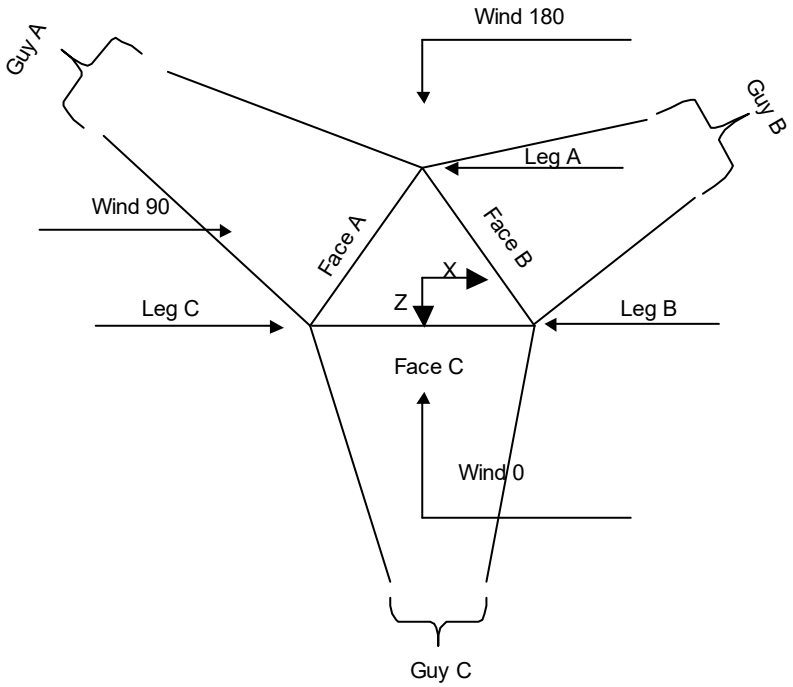
Tower is located in Columbia County, Florida.
Tower base elevation above sea level: 170.00 ft.
Basic wind speed of 119 mph.
Risk Category II.
Exposure Category C.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0.00 ft.
Nominal ice thickness of 0.2500 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 30 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
I-Beam base is 2.00 ft above the pivot.
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: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
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



Corner & Starmount Guyed Tower



Face Guyed

Tower Section Geometry

Tower Section	Tower Elevation ft	Assembly Database	Description	Section Width ft	Number of Sections	Section Length ft
T1	400.00-380.00			3.50	1	20.00
T2	380.00-360.00			3.50	1	20.00
T3	360.00-340.00			3.50	1	20.00
T4	340.00-320.00			3.50	1	20.00
T5	320.00-300.00			3.50	1	20.00
T6	300.00-280.00			3.50	1	20.00
T7	280.00-260.00			3.50	1	20.00
T8	260.00-240.00			3.50	1	20.00
T9	240.00-220.00			3.50	1	20.00
T10	220.00-200.00			3.50	1	20.00
T11	200.00-180.00			3.50	1	20.00
T12	180.00-160.00			3.50	1	20.00
T13	160.00-140.00			3.50	1	20.00
T14	140.00-120.00			3.50	1	20.00
T15	120.00-100.00			3.50	1	20.00
T16	100.00-80.00			3.50	1	20.00

Tower Section	Tower Elevation ft	Assembly Database	Description	Section Width ft	Number of Sections	Section Length ft
T17	80.00-60.00			3.50	1	20.00
T18	60.00-40.00			3.50	1	20.00
T19	40.00-20.00			3.50	1	20.00
T20	20.00-2.00			3.50	1	18.00

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T1	400.00-380.00	3.33	CX Brace	No	No	0.0000	0.0000
T2	380.00-360.00	3.33	CX Brace	No	No	0.0000	0.0000
T3	360.00-340.00	3.33	CX Brace	No	No	0.0000	0.0000
T4	340.00-320.00	3.33	CX Brace	No	No	0.0000	0.0000
T5	320.00-300.00	3.33	CX Brace	No	No	0.0000	0.0000
T6	300.00-280.00	3.33	CX Brace	No	No	0.0000	0.0000
T7	280.00-260.00	3.33	CX Brace	No	No	0.0000	0.0000
T8	260.00-240.00	3.33	CX Brace	No	No	0.0000	0.0000
T9	240.00-220.00	3.33	CX Brace	No	No	0.0000	0.0000
T10	220.00-200.00	3.33	CX Brace	No	No	0.0000	0.0000
T11	200.00-180.00	3.33	CX Brace	No	No	0.0000	0.0000
T12	180.00-160.00	3.33	X Brace	No	No	0.0000	0.0000
T13	160.00-140.00	3.33	CX Brace	No	No	0.0000	0.0000
T14	140.00-120.00	3.33	CX Brace	No	No	0.0000	0.0000
T15	120.00-100.00	3.33	CX Brace	No	No	0.0000	0.0000
T16	100.00-80.00	3.33	CX Brace	No	No	0.0000	0.0000
T17	80.00-60.00	3.33	CX Brace	No	No	0.0000	0.0000
T18	60.00-40.00	3.33	CX Brace	No	No	0.0000	0.0000
T19	40.00-20.00	3.33	CX Brace	No	No	0.0000	0.0000
T20	20.00-2.00	3.00	CX Brace	No	No	0.0000	0.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 400.00-380.00	60 Bent Plate	04-54 (5.9375x.25)	A572-50 (50 ksi)	Arbitrary Shape	Andrew M-46 Type T Brace	A607-45 (45 ksi)
T2 380.00-360.00	60 Bent Plate	04-54 (5.9375x.25)	A572-50 (50 ksi)	Arbitrary Shape	M46 "Y" Diagonal	A607-45 (45 ksi)
T3 360.00-340.00	60 Bent Plate	04-54 (5.9375x.25)	A572-50 (50 ksi)	Arbitrary Shape	M46 "Y" Diagonal	A607-45 (45 ksi)
T4 340.00-320.00	60 Bent Plate	04-64 (6.625x.25)	A572-50 (50 ksi)	Arbitrary Shape	Andrew M-46 Type T Brace	A607-45 (45 ksi)
T5 320.00-300.00	60 Bent Plate	04-54 (5.9375x.25)	A572-50 (50 ksi)	Arbitrary Shape	M46 "Y" Diagonal	A607-45 (45 ksi)
T6 300.00-280.00	60 Bent Plate	04-54 (5.9375x.25)	A572-50 (50 ksi)	Arbitrary Shape	M46 "Y" Diagonal	A607-45 (45 ksi)
T7 280.00-260.00	60 Bent Plate	04-64 (6.625x.25)	A572-50 (50 ksi)	Arbitrary Shape	M46 "Y" Diagonal	A607-45 (45 ksi)
T8 260.00-240.00	60 Bent Plate	04-64 (6.625x.25)	A572-50	Arbitrary	M46 "Y" Diagonal	A607-45

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
			(50 ksi)	Shape		(45 ksi)
T9 240.00-220.00	60 Bent Plate	04-64 (6.625x.25)	A572-50	Arbitrary	M46 "Y" Diagonal	A607-45
			(50 ksi)	Shape		(45 ksi)
T10 220.00-200.00	60 Bent Plate	04-64 (6.625x.25)	A572-50	Arbitrary	M46 "Y" Diagonal	A607-45
			(50 ksi)	Shape		(45 ksi)
T11 200.00-180.00	60 Bent Plate	04-66 (6.625x.375)	A572-50	Arbitrary	M46 "Y" Diagonal	A607-45
			(50 ksi)	Shape		(45 ksi)
T12 180.00-160.00	60 Bent Plate	04-86 (8.5x.375)	A572-50	Single Angle	L2x2x3/16	A36
			(50 ksi)			(36 ksi)
T13 160.00-140.00	60 Bent Plate	04-66 (6.625x.375)	A572-50	Arbitrary	M46 "Y" Diagonal	A607-45
			(50 ksi)	Shape		(45 ksi)
T14 140.00-120.00	60 Bent Plate	04-65 (6.625x.3125)	A572-50	Arbitrary	M46 "Y" Diagonal	A607-45
			(50 ksi)	Shape		(45 ksi)
T15 120.00-100.00	60 Bent Plate	04-65 (6.625x.3125)	A572-50	Arbitrary	M46 "Y" Diagonal	A607-45
			(50 ksi)	Shape		(45 ksi)
T16 100.00-80.00	60 Bent Plate	04-66 (6.625x.375)	A572-50	Arbitrary	M46 "Y" Diagonal	A607-45
			(50 ksi)	Shape		(45 ksi)
T17 80.00-60.00	60 Bent Plate	04-66 (6.625x.375)	A572-50	Arbitrary	M46 "Y" Diagonal	A607-45
			(50 ksi)	Shape		(45 ksi)
T18 60.00-40.00	60 Bent Plate	04-66 (6.625x.375)	A572-50	Arbitrary	M46 "Y" Diagonal	A607-45
			(50 ksi)	Shape		(45 ksi)
T19 40.00-20.00	60 Bent Plate	04-66 (6.625x.375)	A572-50	Arbitrary	M46 "Y" Diagonal	A607-45
			(50 ksi)	Shape		(45 ksi)
T20 20.00-2.00	60 Bent Plate	04-66 (6.625x.375)	A572-50	Arbitrary	M46 "Y" Diagonal	A607-45
			(50 ksi)	Shape		(45 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 400.00-380.00	Single Angle	L2x2x1/8	A36 (36 ksi)	Single Angle		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T1 400.00-380.00	0.00	0.1196	A607-45 (45 ksi)	1	1	1	41.0000	41.0000	36.0000
T2 380.00-360.00	0.00	0.1196	A607-45 (45 ksi)	1	1	1	41.0000	41.0000	36.0000
T3 360.00-340.00	0.00	0.1196	A607-45 (45 ksi)	1	1	1	41.0000	41.0000	36.0000
T4 340.00-320.00	0.00	0.1196	A607-45 (45 ksi)	1	1	1	41.0000	41.0000	36.0000
T5 320.00-300.00	0.00	0.1196	A607-45 (45 ksi)	1	1	1	41.0000	41.0000	36.0000

Tower Elevation ft	Gusset Area (per face) ft²	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T6 300.00-280.00	0.00	0.1196	A607-45 (45 ksi)	1	1	1	41.0000	41.0000	36.0000
T7 280.00-260.00	0.00	0.1196	A607-45 (45 ksi)	1	1	1	41.0000	41.0000	36.0000
T8 260.00-240.00	0.00	0.1196	A607-45 (45 ksi)	1	1	1	41.0000	41.0000	36.0000
T9 240.00-220.00	0.00	0.1196	A607-45 (45 ksi)	1	1	1	41.0000	41.0000	36.0000
T10 220.00-200.00	0.00	0.1196	A607-45 (45 ksi)	1	1	1	41.0000	41.0000	36.0000
T11 200.00-180.00	0.00	0.1196	A607-45 (45 ksi)	1	1	1	41.0000	41.0000	36.0000
T12 180.00-160.00	0.00	0.3750	A572-50 (50 ksi)	1	1	1	41.0000	41.0000	36.0000
T13 160.00-140.00	0.00	0.1196	A607-45 (45 ksi)	1	1	1	41.0000	41.0000	36.0000
T14 140.00-120.00	0.00	0.1196	A607-45 (45 ksi)	1	1	1	41.0000	41.0000	36.0000
T15 120.00-100.00	0.00	0.1196	A607-45 (45 ksi)	1	1	1	41.0000	41.0000	36.0000
T16 100.00-80.00	0.00	0.1196	A607-45 (45 ksi)	1	1	1	41.0000	41.0000	36.0000
T17 80.00-60.00	0.00	0.1196	A607-45 (45 ksi)	1	1	1	41.0000	41.0000	36.0000
T18 60.00-40.00	0.00	0.1196	A607-45 (45 ksi)	1	1	1	41.0000	41.0000	36.0000
T19 40.00-20.00	0.00	0.1196	A607-45 (45 ksi)	1	1	1	41.0000	41.0000	36.0000
T20 20.00-2.00	0.00	0.1196	A607-45 (45 ksi)	1	1	1	41.0000	41.0000	36.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T1 400.00-380.00	Yes	No	1	0.5 0.5	1 1	1 1	1 1	1 1	1 1	1 1
T2 380.00-360.00	Yes	No	1	0.5 0.5	1 1	1 1	1 1	1 1	1 1	1 1
T3 360.00-340.00	Yes	No	1	0.5 0.5	1 1	1 1	1 1	1 1	1 1	1 1
T4 340.00-320.00	Yes	No	1	0.5 0.5	1 1	1 1	1 1	1 1	1 1	1 1
T5 320.00-300.00	Yes	No	1	0.5 0.5	1 1	1 1	1 1	1 1	1 1	1 1
T6 300.00-280.00	Yes	No	1	0.5 0.5	1 1	1 1	1 1	1 1	1 1	1 1
T7 280.00-260.00	Yes	No	1	0.5 0.5	1 1	1 1	1 1	1 1	1 1	1 1
T8 260.00-240.00	Yes	No	1	0.5 0.5	1 1	1 1	1 1	1 1	1 1	1 1

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X	X Brace Diags Y	K Single Diags X	K Single Diags Y	Girts X	Girts Y	Horiz. X	Horiz. Y	Sec. Horiz. X	Sec. Horiz. Y	Inner Brace X	Inner Brace Y
T9	Yes	No	1	0.5	1	1	1	1	1	1	1	1	1	1	1
240.00-220.00				0.5	1	1	1	1	1	1	1	1	1	1	1
T10	Yes	No	1	0.5	1	1	1	1	1	1	1	1	1	1	1
220.00-200.00				0.5	1	1	1	1	1	1	1	1	1	1	1
T11	Yes	No	1	0.5	1	1	1	1	1	1	1	1	1	1	1
200.00-180.00				0.5	1	1	1	1	1	1	1	1	1	1	1
T12	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
180.00-160.00				1	1	1	1	1	1	1	1	1	1	1	1
T13	Yes	No	1	0.5	1	1	1	1	1	1	1	1	1	1	1
160.00-140.00				0.5	1	1	1	1	1	1	1	1	1	1	1
T14	Yes	No	1	0.5	1	1	1	1	1	1	1	1	1	1	1
140.00-120.00				0.5	1	1	1	1	1	1	1	1	1	1	1
T15	Yes	No	1	0.5	1	1	1	1	1	1	1	1	1	1	1
120.00-100.00				0.5	1	1	1	1	1	1	1	1	1	1	1
T16	Yes	No	1	0.5	1	1	1	1	1	1	1	1	1	1	1
100.00-80.00				0.5	1	1	1	1	1	1	1	1	1	1	1
T17	Yes	No	1	0.5	1	1	1	1	1	1	1	1	1	1	1
80.00-60.00				0.5	1	1	1	1	1	1	1	1	1	1	1
T18	Yes	No	1	0.5	1	1	1	1	1	1	1	1	1	1	1
60.00-40.00				0.5	1	1	1	1	1	1	1	1	1	1	1
T19	Yes	No	1	0.5	1	1	1	1	1	1	1	1	1	1	1
40.00-20.00				0.5	1	1	1	1	1	1	1	1	1	1	1
T20	Yes	No	1	0.5	1	1	1	1	1	1	1	1	1	1	1
20.00-2.00				0.5	1	1	1	1	1	1	1	1	1	1	1

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

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Net Width Deduct in	Leg U	Diagonal Net Width Deduct in	Diagonal U	Top Girt Net Width Deduct in	Top Girt U	Bottom Girt Net Width Deduct in	Bottom Girt U	Mid Girt Net Width Deduct in	Mid Girt U	Long Horizontal Net Width Deduct in	Long Horizontal U	Short Horizontal Net Width Deduct in	Short Horizontal U
T1	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75
400.00-380.00														
T2	0.0000	1	0.0000	0.75	0.0000	1	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75
380.00-360.00														
T3	0.0000	1	0.0000	0.75	0.0000	1	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75
360.00-340.00														
T4	0.0000	1	0.0000	0.75	0.0000	1	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75
340.00-320.00														
T5	0.0000	1	0.0000	0.75	0.0000	1	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75
320.00-300.00														
T6	0.0000	1	0.0000	0.75	0.0000	1	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75
300.00-280.00														
T7	0.0000	1	0.0000	0.75	0.0000	1	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75
280.00-260.00														
T8	0.0000	1	0.0000	0.75	0.0000	1	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75
260.00-240.00														
T9	0.0000	1	0.0000	0.75	0.0000	1	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75
240.00-220.00														

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T10 220.00-200.00	0.0000	1	0.0000	0.75	0.0000	1	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75
T11 200.00-180.00	0.0000	1	0.0000	0.75	0.0000	1	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75
T12 180.00-160.00	0.0000	1	0.0000	0.75	0.0000	1	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75
T13 160.00-140.00	0.0000	1	0.0000	0.75	0.0000	1	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75
T14 140.00-120.00	0.0000	1	0.0000	0.75	0.0000	1	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75
T15 120.00-100.00	0.0000	1	0.0000	0.75	0.0000	1	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75
T16 100.00-80.00	0.0000	1	0.0000	0.75	0.0000	1	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75
T17 80.00-60.00	0.0000	1	0.0000	0.75	0.0000	1	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75
T18 60.00-40.00	0.0000	1	0.0000	0.75	0.0000	1	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75
T19 40.00-20.00	0.0000	1	0.0000	0.75	0.0000	1	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75
T20 20.00-2.00	0.0000	1	0.0000	0.75	0.0000	1	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 400.00-380.00	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 380.00-360.00	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 360.00-340.00	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 340.00-320.00	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 320.00-300.00	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 300.00-280.00	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 280.00-260.00	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 260.00-240.00	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 240.00-220.00	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 220.00-200.00	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 200.00-180.00	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 180.00-160.00	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 160.00-140.00	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

Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T14 140.00-120.00	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
T15 120.00-100.00	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
T16 100.00-80.00	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
T17 80.00-60.00	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
T18 60.00-40.00	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
T19 40.00-20.00	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
T20 20.00-2.00	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

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 400.00-380.00	Sleeve DS	0.6250 A325N	12	0.6250 A325N	1	0.6250 A325N	1	0.6250 A325X	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	0
T2 380.00-360.00	Sleeve DS	0.6250 A325N	12	0.6250 A325N	1	0.5000 A325X	0	0.5000 A325X	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	0
T3 360.00-340.00	Sleeve DS	0.6250 A325N	12	0.6250 A325N	1	0.5000 A325X	0	0.5000 A325X	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	0
T4 340.00-320.00	Sleeve DS	0.6250 A325N	12	0.6250 A325N	1	0.6250 A325X	0	0.6250 A325X	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	0
T5 320.00-300.00	Sleeve DS	0.6250 A325N	12	0.6250 A325N	1	0.6250 A325X	0	0.6250 A325X	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	0
T6 300.00-280.00	Sleeve DS	0.6250 A325N	12	0.6250 A325N	1	0.5000 A325X	0	0.5000 A325X	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	0
T7 280.00-260.00	Sleeve DS	0.6250 A325N	12	0.6250 A325N	1	0.5000 A325X	0	0.5000 A325X	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	0
T8 260.00-240.00	Sleeve DS	0.6250 A325N	12	0.6250 A325N	1	0.5000 A325X	0	0.5000 A325X	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	0
T9 240.00-220.00	Sleeve DS	0.6250 A325N	12	0.6250 A325N	1	0.5000 A325X	0	0.5000 A325X	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	0
T10 220.00-200.00	Sleeve DS	0.6250 A325N	12	0.6250 A325N	1	0.5000 A325X	0	0.5000 A325X	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	0
T11 200.00-180.00	Sleeve DS	0.6250 A325N	12	0.6250 A325N	1	0.5000 A325X	0	0.5000 A325X	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	0
T12 180.00-160.00	Sleeve DS	0.6250 A325N	12	0.6250 A325X	1	0.5000 A325X	0	0.5000 A325X	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	0
T13 160.00-140.00	Sleeve DS	0.6250 A325N	12	0.6250 A325N	1	0.5000 A325X	0	0.5000 A325X	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	0
T14 140.00-120.00	Sleeve DS	0.6250 A325N	12	0.6250 A325N	1	0.5000 A325X	0	0.5000 A325X	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	0
T15 120.00-100.00	Sleeve DS	0.6250 A325N	12	0.6250 A325N	1	0.5000 A325X	0	0.5000 A325X	0	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	0

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T16	Sleeve DS	0.6250	12	0.6250	1	0.5000	0	0.5000	0	0.6250	0	0.0000	0	0.6250	0
100.00-80.00		A325N		A325N		A325X		A325X		A325N		A325N		A325N	
T17	Sleeve DS	0.6250	12	0.6250	1	0.5000	0	0.5000	0	0.6250	0	0.0000	0	0.6250	0
80.00-60.00		A325N		A325N		A325X		A325X		A325N		A325N		A325N	
T18	Sleeve DS	0.6250	12	0.6250	1	0.5000	0	0.5000	0	0.6250	0	0.0000	0	0.6250	0
60.00-40.00		A325N		A325N		A325X		A325X		A325N		A325N		A325N	
T19	Sleeve DS	0.6250	12	0.6250	1	0.5000	0	0.5000	0	0.6250	0	0.0000	0	0.6250	0
40.00-20.00		A325N		A325N		A325X		A325X		A325N		A325N		A325N	
T20 20.00-2.00	Sleeve DS	0.6250	0	0.6250	1	0.5000	0	0.5000	0	0.6250	0	0.0000	0	0.6250	0
		A325N		A325N		A325X		A325X		A325N		A325N		A325N	

Guy Data

Guy Elevation ft	Guy Grade		Guy Size	Initial Tension K	%	Guy Modulus ksi	Guy Weight plf	L_u ft	Anchor Radius ft	Anchor Azimuth Adj. °	Anchor Elevation ft	End Fitting Efficiency %
386.667	EHS	A	9/16	3.50	10%	23000	0.671	499.41	320.00	0.0000	0.00	100%
		B	9/16	3.50	10%	23000	0.671	502.22	322.00	0.0000	-2.00	100%
		C	9/16	3.50	10%	23000	0.671	499.41	320.00	0.0000	0.00	100%
330	EHS	A	9/16	3.50	10%	23000	0.671	457.01	320.00	0.0000	0.00	100%
		B	9/16	3.50	10%	23000	0.671	459.83	322.00	0.0000	-2.00	100%
		C	9/16	3.50	10%	23000	0.671	457.01	320.00	0.0000	0.00	100%
276.667	EHS	A	1/2	2.69	10%	23000	0.517	421.22	320.00	0.0000	0.00	100%
		B	1/2	2.69	10%	23000	0.517	424.04	322.00	0.0000	-2.00	100%
		C	1/2	2.69	10%	23000	0.517	421.22	320.00	0.0000	0.00	100%
223.333	EHS	A	1/2	2.69	10%	23000	0.517	322.47	234.00	0.0000	-1.00	100%
		B	1/2	2.69	10%	23000	0.517	322.47	234.00	0.0000	-1.00	100%
		C	1/2	2.69	10%	23000	0.517	321.06	233.00	0.0000	0.00	100%
170	EHS	A	1/2	2.69	10%	23000	0.517	286.89	234.00	0.0000	-1.00	100%
		B	1/2	2.69	10%	23000	0.517	286.89	234.00	0.0000	-1.00	100%
		C	1/2	2.69	10%	23000	0.517	285.49	233.00	0.0000	0.00	100%
110	EHS	A	7/16	2.08	10%	23000	0.399	256.99	234.00	0.0000	-1.00	100%
		B	7/16	2.08	10%	23000	0.399	256.99	234.00	0.0000	-1.00	100%
		C	7/16	2.08	10%	23000	0.399	255.65	233.00	0.0000	0.00	100%
53.3333	EHS	A	3/8	1.54	10%	23000	0.273	238.07	234.00	0.0000	-1.00	100%
		B	3/8	1.54	10%	23000	0.273	238.07	234.00	0.0000	-1.00	100%
		C	3/8	1.54	10%	23000	0.273	236.87	233.00	0.0000	0.00	100%

Guy Data*(cont'd)*

Guy Elevation ft	Mount Type	Torque-Arm Spread ft	Torque-Arm Leg Angle °	Torque-Arm Style	Torque-Arm Grade	Torque-Arm Type	Torque-Arm Size
386.667	Torque Arm	12.00	30.0000	Bat Ear	A572-50 (50 ksi)	Single Angle	L 3.5 x 3.5 x 1/4
330	Torque Arm	12.00	30.0000	Bat Ear	A572-50 (50 ksi)	Single Angle	L 3.5 x 3.5 x 1/4
276.667	Corner						

Guy Elevation ft	Mount Type	Torque-Arm Spread ft	Torque-Arm Leg Angle °	Torque-Arm Style	Torque-Arm Grade	Torque-Arm Type	Torque-Arm Size
223.333	Corner						
170	Torque Arm	12.00	30.0000	Bat Ear	A572-50 (50 ksi)	Single Angle	L 3.5 x 3.5 x 1/4
110	Corner						
53.3333	Corner						

Guy Data *(cont'd)*

Guy Elevation ft	Diagonal Grade	Diagonal Type	Upper Diagonal Size	Lower Diagonal Size	Is Strap.	Pull-Off Grade	Pull-Off Type	Pull-Off Size
386.67	A36 (36 ksi)	Solid Round				A572-50 (50 ksi)	Double Angle	
330.00	A36 (36 ksi)	Solid Round				A572-50 (50 ksi)	Double Angle	
276.67	A36 (36 ksi)	Solid Round			No	A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x3/8
223.33	A36 (36 ksi)	Solid Round			No	A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x3/8
170.00	A36 (36 ksi)	Solid Round				A572-50 (50 ksi)	Double Angle	
110.00	A36 (36 ksi)	Solid Round			No	A572-50 (50 ksi)	Single Angle	BP 3-3/4 x 2 x 5/16 (GPX)
53.33	A36 (36 ksi)	Solid Round			No	A572-50 (50 ksi)	Single Angle	BP 3-3/4 x 2 x 5/16 (GPX)

Guy Data *(cont'd)*

Guy Elevation ft	Cable Weight A K	Cable Weight B K	Cable Weight C K	Cable Weight D K	Tower Intercept A ft	Tower Intercept B ft	Tower Intercept C ft	Tower Intercept D ft
386.667	0.34	0.34	0.34		23.08 8.3 sec/pulse	23.34 8.3 sec/pulse	23.08 8.3 sec/pulse	
330	0.31	0.31	0.31		19.43 7.6 sec/pulse	19.67 7.7 sec/pulse	19.43 7.6 sec/pulse	
276.667	0.22	0.22	0.22		16.63 7.0 sec/pulse	16.85 7.1 sec/pulse	16.63 7.0 sec/pulse	
223.333	0.17	0.17	0.17		9.79 5.4 sec/pulse	9.79 5.4 sec/pulse	9.71 5.4 sec/pulse	
170	0.15	0.15	0.15		7.79 4.8 sec/pulse	7.79 4.8 sec/pulse	7.71 4.8 sec/pulse	
110	0.10	0.10	0.10		6.27 4.3 sec/pulse	6.27 4.3 sec/pulse	6.21 4.3 sec/pulse	
53.3333	0.06	0.06	0.06		5.00 3.9 sec/pulse	5.00 3.9 sec/pulse	4.95 3.8 sec/pulse	

Guy Data *(cont'd)*

Guy Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Torque Arm K_x	Torque Arm K_y	Pull Off K_x	Pull Off K_y	Diagonal K_x	Diagonal K_y
386.667	Yes	Yes	0.5	0.5	0.5	0.5	1	1
330	Yes	Yes	0.5	0.5	0.5	0.5	1	1
276.667	No	No			1	1	1	1
223.333	No	No			1	1	1	1
170	Yes	Yes	0.5	0.5	1	1	1	1
110	No	No			1	1	1	1
53.3333	No	No			1	1	1	1

Guy Data *(cont'd)*

Guy Elevation ft	Torque-Arm Bolt Size in	Torque-Arm Number	Torque-Arm Net Width Deduct in	Torque-Arm U	Pull Off Bolt Size in	Pull Off Number	Pull Off Net Width Deduct in	Pull Off U	Diagonal Bolt Size in	Diagonal Number	Diagonal Net Width Deduct in	Diagonal U
386.667	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75	0.0000 A325N	0	0.0000	0.75
330	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75	0.0000 A325N	0	0.0000	0.75
276.667	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	1	0.0000	0.75	0.0000 A325N	0	0.0000	1
223.333	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	1	0.0000	0.75	0.0000 A325N	0	0.0000	1
170	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75	0.0000 A325N	0	0.0000	1
110	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	1	0.0000	1	0.0000 A325N	0	0.0000	1
53.3333	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	1	0.0000	1	0.0000 A325N	0	0.0000	1

Guy Pressures

Guy Elevation ft	Guy Location	z ft	q_z psf	q_z Ice psf	Ice Thickness in
386.667	A	193.33	42	3	0.2536
	B	192.33	42	3	0.2535
	C	193.33	42	3	0.2536
330	A	165.00	41	3	0.2496
	B	164.00	41	3	0.2495
	C	165.00	41	3	0.2496
276.667	A	138.33	39	3	0.2452
	B	137.33	39	3	0.2451
	C	138.33	39	3	0.2452
223.333	A	111.17	38	2	0.2399
	B	111.17	38	2	0.2399
	C	111.67	38	2	0.2400
170	A	84.50	36	2	0.2334
	B	84.50	36	2	0.2334

Guy Elevation ft	Guy Location	z ft	q_z psf	q_z Ice psf	Ice Thickness in
	C	85.00	36	2	0.2336
110	A	54.50	32	2	0.2234
	B	54.50	32	2	0.2234
	C	55.00	32	2	0.2236
53.3333	A	26.17	28	2	0.2076
	B	26.17	28	2	0.2076
	C	26.67	28	2	0.2080

Guy-Mast Forces (Excluding Wind) - No Ice

Guy Elevation ft	Guy Location	Chord Angle °	Guy Tension Top Bottom K	F_x K	F_y K	F_z K	M_x kip-ft	M_y kip-ft	M_z kip-ft
386.667	A	50.6903	3.76 3.50	-0.04	2.98	-2.30	-10	14	-18
	A	50.6903	3.76 3.50	0.04	2.98	-2.30	-10	-14	18
	B	50.6583	3.76 3.50	2.01	2.98	1.11	21	14	0
	B	50.6583	3.76 3.50	1.97	2.98	1.19	-10	-14	-18
	C	50.6903	3.76 3.50	-1.97	2.98	1.19	-10	14	18
	C	50.6903	3.76 3.50	-2.01	2.98	1.11	21	-14	0
			Sum:	**0.00**	17.85	**0.00**	0	0	**0**
330	A	46.1879	3.72 3.50	-0.05	2.76	-2.50	-10	15	-17
	A	46.1879	3.72 3.50	0.05	2.76	-2.50	-10	-15	17
	B	46.1806	3.72 3.50	2.19	2.76	1.21	19	15	0
	B	46.1806	3.72 3.50	2.14	2.76	1.29	-10	-15	-17
	C	46.1879	3.72 3.50	-2.14	2.76	1.29	-10	15	17
	C	46.1879	3.72 3.50	-2.19	2.76	1.21	19	-15	0
			Sum:	**0.00**	16.55	0.00	**0**	0	**0**
276.667	A	41.0258	2.83 2.69	0.00	1.92	-2.08	-4	0	0
	B	41.0523	2.83 2.69	1.80	1.92	1.04	2	0	-3
	C	41.0258	2.83 2.69	-1.80	1.92	1.04	2	0	3
			Sum:	-0.00	5.77	-0.00	**0**	0	**0**
223.333	A	44.0400	2.81 2.69	0.00	1.99	-1.97	-4	0	0
	B	44.0400	2.81 2.69	1.71	1.99	0.99	2	0	-3
	C	44.0358	2.81 2.69	-1.71	1.99	0.99	2	0	3
			Sum:	0.00	5.98	-0.00	0	0	**0**
170	A	36.5569	2.78 2.69	-0.06	1.70	-2.19	-6	13	-10
	A	36.5569	2.78	0.06	1.70	-2.19	-6	-13	10

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom K	F_x	F_y	F_z	M_x	M_y	M_z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
			2.69						
	B	36.5569	2.78	1.93	1.70	1.05	12	13	0
			2.69						
	B	36.5569	2.78	1.87	1.70	1.15	-6	-13	-10
			2.69						
	C	36.5152	2.78	-1.87	1.70	1.15	-6	13	10
			2.69						
	C	36.5152	2.78	-1.93	1.70	1.05	12	-13	0
			2.69						
			Sum:	**-0.00**	10.21	0.00	**0**	0	**0**
110	A	25.5707	2.12	0.00	0.96	-1.90	-2	0	0
			2.08						
	B	25.5707	2.12	1.64	0.96	0.95	1	0	-2
			2.08						
	C	25.4653	2.12	-1.64	0.95	0.95	1	0	2
			2.08						
			Sum:	**-0.00**	2.87	0.00	**0**	0	**0**
53.3333	A	13.1820	1.55	0.00	0.39	-1.51	-1	0	0
			1.54						
	B	13.1820	1.55	1.30	0.39	0.75	0	0	-1
			1.54						
	C	13.0018	1.55	-1.31	0.38	0.75	0	0	1
			1.54						
			Sum:	-0.00	1.15	0.00	**0**	0	**0**

Guy-Mast Forces (Excluding Wind) - Ice

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom K	F_x	F_y	F_z	M_x	M_y	M_z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
386.667	A	50.6903	5.25	-0.06	4.15	-3.21	-14	19	-25
			4.89						
	A	50.6903	5.25	0.06	4.15	-3.21	-14	-19	25
			4.89						
	B	50.6583	5.25	2.81	4.15	1.55	29	19	0
			4.89						
	B	50.6583	5.25	2.75	4.15	1.66	-14	-19	-25
			4.89						
	C	50.6903	5.25	-2.75	4.15	1.66	-14	19	25
			4.89						
	C	50.6903	5.25	-2.81	4.15	1.55	29	-19	0
			4.89						
			Sum:	**0.00**	24.90	**0.00**	0	0	**0**
330	A	46.1879	5.19	-0.07	3.85	-3.49	-13	21	-23
			4.89						
	A	46.1879	5.19	0.07	3.85	-3.49	-13	-21	23
			4.89						
	B	46.1806	5.19	3.05	3.85	1.69	27	21	0
			4.89						
	B	46.1806	5.19	2.99	3.85	1.80	-13	-21	-23
			4.89						
	C	46.1879	5.19	-2.99	3.85	1.80	-13	21	23

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom K	F_x	F_y	F_z	M_x	M_y	M_z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
			4.89						
	C	46.1879	5.19	-3.05	3.85	1.69	27	-21	0
			4.89						
			Sum:	**0.00**	23.08	0.00	**0**	0	**0**
276.667	A	41.0258	4.00	0.00	2.71	-2.94	-5	0	0
			3.80						
	B	41.0523	4.00	2.54	2.72	1.47	3	0	-5
			3.80						
	C	41.0258	4.00	-2.55	2.71	1.47	3	0	5
			3.80						
			Sum:	-0.00	8.15	-0.00	**0**	0	**0**
223.333	A	44.0400	3.96	0.00	2.81	-2.78	-6	0	0
			3.79						
	B	44.0400	3.96	2.41	2.81	1.39	3	0	-5
			3.79						
	C	44.0358	3.96	-2.41	2.81	1.39	3	0	5
			3.79						
			Sum:	-0.00	8.43	0.00	0	0	**0**
170	A	36.5569	3.91	-0.08	2.40	-3.09	-8	19	-14
			3.79						
	A	36.5569	3.91	0.08	2.40	-3.09	-8	-19	14
			3.79						
	B	36.5569	3.91	2.72	2.40	1.48	17	19	0
			3.79						
	B	36.5569	3.91	2.64	2.40	1.62	-8	-19	-14
			3.79						
	C	36.5152	3.91	-2.64	2.39	1.62	-8	19	14
			3.79						
	C	36.5152	3.91	-2.72	2.39	1.48	17	-19	0
			3.79						
			Sum:	**-0.00**	14.38	**0.00**	**0**	0	**0**
110	A	25.5707	3.01	0.00	1.36	-2.69	-3	0	0
			2.95						
	B	25.5707	3.01	2.33	1.36	1.34	1	0	-2
			2.95						
	C	25.4653	3.01	-2.33	1.35	1.34	1	0	2
			2.95						
			Sum:	**-0.00**	4.07	**0.00**	**0**	0	**0**
53.3333	A	13.1820	2.18	0.00	0.54	-2.11	-1	0	0
			2.16						
	B	13.1820	2.18	1.83	0.54	1.05	1	0	-1
			2.16						
	C	13.0018	2.18	-1.83	0.54	1.06	1	0	1
			2.16						
			Sum:	**-0.00**	1.63	0.00	**0**	0	**0**

Guy-Mast Forces (Excluding Wind) - Service

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom K	F_x	F_y	F_z	M_x	M_y	M_z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
386.667	A	50.6903	3.76	-0.04	2.98	-2.30	-10	14	-18

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom K	F_x	F_y	F_z	M_x	M_y	M_z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
			3.50						
	A	50.6903	3.76	0.04	2.98	-2.30	-10	-14	18
			3.50						
	B	50.6583	3.76	2.01	2.98	1.11	21	14	0
			3.50						
	B	50.6583	3.76	1.97	2.98	1.19	-10	-14	-18
			3.50						
	C	50.6903	3.76	-1.97	2.98	1.19	-10	14	18
			3.50						
	C	50.6903	3.76	-2.01	2.98	1.11	21	-14	0
			3.50						
			Sum:	**0.00**	17.85	**0.00**	0	0	**0**
330	A	46.1879	3.72	-0.05	2.76	-2.50	-10	15	-17
			3.50						
	A	46.1879	3.72	0.05	2.76	-2.50	-10	-15	17
			3.50						
	B	46.1806	3.72	2.19	2.76	1.21	19	15	0
			3.50						
	B	46.1806	3.72	2.14	2.76	1.29	-10	-15	-17
			3.50						
	C	46.1879	3.72	-2.14	2.76	1.29	-10	15	17
			3.50						
	C	46.1879	3.72	-2.19	2.76	1.21	19	-15	0
			3.50						
			Sum:	**0.00**	16.55	0.00	**0**	0	**0**
276.667	A	41.0258	2.83	0.00	1.92	-2.08	-4	0	0
			2.69						
	B	41.0523	2.83	1.80	1.92	1.04	2	0	-3
			2.69						
	C	41.0258	2.83	-1.80	1.92	1.04	2	0	3
			2.69						
			Sum:	-0.00	5.77	-0.00	**0**	0	**0**
223.333	A	44.0400	2.81	0.00	1.99	-1.97	-4	0	0
			2.69						
	B	44.0400	2.81	1.71	1.99	0.99	2	0	-3
			2.69						
	C	44.0358	2.81	-1.71	1.99	0.99	2	0	3
			2.69						
			Sum:	0.00	5.98	-0.00	0	0	**0**
170	A	36.5569	2.78	-0.06	1.70	-2.19	-6	13	-10
			2.69						
	A	36.5569	2.78	0.06	1.70	-2.19	-6	-13	10
			2.69						
	B	36.5569	2.78	1.93	1.70	1.05	12	13	0
			2.69						
	B	36.5569	2.78	1.87	1.70	1.15	-6	-13	-10
			2.69						
	C	36.5152	2.78	-1.87	1.70	1.15	-6	13	10
			2.69						
	C	36.5152	2.78	-1.93	1.70	1.05	12	-13	0
			2.69						
			Sum:	**-0.00**	10.21	0.00	**0**	0	**0**
110	A	25.5707	2.12	0.00	0.96	-1.90	-2	0	0
			2.08						
	B	25.5707	2.12	1.64	0.96	0.95	1	0	-2
			2.08						
	C	25.4653	2.12	-1.64	0.95	0.95	1	0	2
			2.08						
			Sum:	**-0.00**	2.87	0.00	**0**	0	**0**

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom K	F_x	F_y	F_z	M_x	M_y	M_z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
53.3333	A	13.1820	1.55 1.54	0.00	0.39	-1.51	-1	0	0
	B	13.1820	1.55 1.54	1.30	0.39	0.75	0	0	-1
	C	13.0018	1.55 1.54	-1.31	0.38	0.75	0	0	1
			Sum:	-0.00	1.15	0.00	0	0	0

Guy-Tensioning Information

				Temperature At Time Of Tensioning													
				0 F		20 F		40 F		60 F		80 F		100 F		120 F	
Guy Elevation		H	V	Initial Tension	Intercept	Initial Tension	Intercept	Initial Tension	Intercept	Initial Tension	Intercept	Initial Tension	Intercept	Initial Tension	Intercept	Initial Tension	Intercept
ft		ft	ft	K	ft	K	ft	K	ft	K	ft	K	ft	K	ft	K	ft
386.667	A	316.59	386.67	4.045	20.06	3.857	21.00	3.676	22.01	3.500	23.08	3.331	24.21	3.168	25.41	3.013	26.67
	B	318.59	388.67	4.044	20.29	3.857	21.24	3.675	22.26	3.500	23.34	3.331	24.48	3.169	25.69	3.015	26.95
	C	316.59	386.67	4.045	20.06	3.857	21.00	3.676	22.01	3.500	23.08	3.331	24.21	3.168	25.41	3.013	26.67
330	A	316.59	330.00	4.154	16.44	3.928	17.36	3.710	18.36	3.500	19.43	3.300	20.57	3.109	21.79	2.930	23.09
	B	318.59	332.00	4.152	16.65	3.927	17.58	3.709	18.59	3.500	19.67	3.300	20.82	3.110	22.05	2.931	23.35
	C	316.59	330.00	4.154	16.44	3.928	17.36	3.710	18.36	3.500	19.43	3.300	20.57	3.109	21.79	2.930	23.09
276.667	A	317.98	276.67	3.290	13.65	3.081	14.56	2.881	15.55	2.690	16.63	2.509	17.80	2.339	19.05	2.181	20.39
	B	319.98	278.67	3.288	13.84	3.080	14.76	2.880	15.76	2.690	16.85	2.510	18.03	2.341	19.29	2.184	20.64
	C	317.98	276.67	3.290	13.65	3.081	14.56	2.881	15.55	2.690	16.63	2.509	17.80	2.339	19.05	2.181	20.39
223.333	A	231.98	224.33	3.296	8.02	3.089	8.55	2.887	9.14	2.690	9.79	2.500	10.52	2.319	11.33	2.146	12.21
	B	231.98	224.33	3.296	8.02	3.089	8.55	2.887	9.14	2.690	9.79	2.500	10.52	2.319	11.33	2.146	12.21
	C	230.98	223.33	3.297	7.95	3.090	8.47	2.887	9.06	2.690	9.71	2.500	10.43	2.318	11.23	2.145	12.11
170	A	230.61	171.00	3.452	6.09	3.190	6.58	2.936	7.15	2.690	7.79	2.455	8.52	2.233	9.36	2.026	10.29
	B	230.61	171.00	3.452	6.09	3.190	6.58	2.936	7.15	2.690	7.79	2.455	8.52	2.233	9.36	2.026	10.29
	C	229.61	170.00	3.453	6.03	3.191	6.52	2.936	7.07	2.690	7.71	2.454	8.44	2.232	9.27	2.024	10.20
110	A	231.98	111.00	2.827	4.63	2.570	5.09	2.320	5.63	2.080	6.27	1.854	7.03	1.644	7.92	1.456	8.93
	B	231.98	111.00	2.827	4.63	2.570	5.09	2.320	5.63	2.080	6.27	1.854	7.03	1.644	7.92	1.456	8.93
	C	230.98	110.00	2.829	4.58	2.571	5.03	2.321	5.57	2.080	6.21	1.853	6.96	1.643	7.84	1.454	8.85
53.3333	A	231.98	54.33	2.153	3.58	1.943	3.97	1.738	4.44	1.540	5.00	1.353	5.69	1.180	6.53	1.025	7.51
	B	231.98	54.33	2.153	3.58	1.943	3.97	1.738	4.44	1.540	5.00	1.353	5.69	1.180	6.53	1.025	7.51
	C	230.98	53.33	2.154	3.55	1.943	3.93	1.738	4.39	1.540	4.95	1.352	5.64	1.178	6.47	1.023	7.44

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
A Face													
B Face													
Climbing Ladder	B	No	No	Af (CaAa)	400.00 - 0.00	-2.0000	0	2	2	0.5000	1.5000		7.90
Safety Line 3/8	B	No	No	Ar (CaAa)	400.00 - 0.00	-3.0000	0	1	1	0.5000	0.3750		0.22
HJ4.5-50(5/8")	B	No	No	Ar (CaAa)	300.00 - 0.00	0.0000	0.5	1	1	0.5000	0.8750		0.40
C Face													
HJ4.5-50(5/8")	C	No	No	Ar (CaAa)	200.00 - 0.00	0.0000	-0.5	2	2	0.5000	0.8750		0.40
HJ4.5-50(5/8")	C	No	No	Ar (CaAa)	400.00 -	0.0000	-0.5	1	1	0.5000	0.8750		0.40

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
HJ4.5-50(5/8")	C	No	No	Ar (CaAa)	200.00 400.00 - 300.00	0.0000	-0.5	1	1	0.5000	0.8750		0.40
EW63(ELLIPTICAL)	C	No	No	Ar (CaAa)	152.00 - 0.00	-2.0000	0	1	1	0.5000	2.0100		0.51
MLCH 12/24 LOW INDUCTION(2)	C	No	No	Ar (CaAa)	186.40 - 0.00	0.0000	0	2	2	0.5000	2.0160		3.04
Rung BP2x2x1/8 (5' Width, 40" Step)	C	No	No	Af (CaAa)	400.00 - 0.00	0.0000	0	1	1	3.0000	3.0000		2.55
HJ4.5-50(5/8")	C	No	No	Ar (CaAa)	186.40 - 0.00	0.0000	0.4	1	1	0.5000	0.8750		0.40
1/2" dia. coax	C	No	No	Ar (CaAa)	186.40 - 0.00	0.0000	0.43	1	1	0.5000	0.5000		0.15
1" Feedline	C	No	No	Ar (CaAa)	186.40 - 0.00	0.0000	0.47	1	1	0.5000	1.0000		0.20
********** ****** ********** ********** *******													

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#		C_AA_A ft^2/ft	Weight plf
AM Detuner	A	No	No	CaAa (Out Of Face)	386.00 - 0.00	0.0000	0.5	1	No Ice 1/2" Ice	0.03 0.13	1.00 1.48
AM Detuner	B	No	No	CaAa (Out Of Face)	386.00 - 0.00	0.0000	0.5	1	No Ice 1/2" Ice	0.03 0.13	1.00 1.48
AM Detuner	C	No	No	CaAa (Out Of Face)	386.00 - 0.00	0.0000	0.5	1	No Ice 1/2" Ice	0.03 0.13	1.00 1.48
********** ****** ********** ********** *******											

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	400.00-380.00	A	0.000	0.000	0.000	0.168	0.01
		B	0.000	0.000	10.750	0.168	0.33
		C	0.000	0.000	13.500	0.168	0.07
T2	380.00-360.00	A	0.000	0.000	0.000	0.560	0.02
		B	0.000	0.000	10.750	0.560	0.34
		C	0.000	0.000	13.500	0.560	0.09
T3	360.00-340.00	A	0.000	0.000	0.000	0.560	0.02
		B	0.000	0.000	10.750	0.560	0.34
		C	0.000	0.000	13.500	0.560	0.09
T4	340.00-320.00	A	0.000	0.000	0.000	0.560	0.02
		B	0.000	0.000	10.750	0.560	0.34
		C	0.000	0.000	13.500	0.560	0.09
T5	320.00-300.00	A	0.000	0.000	0.000	0.560	0.02
		B	0.000	0.000	10.750	0.560	0.34
		C	0.000	0.000	13.500	0.560	0.09
T6	300.00-280.00	A	0.000	0.000	0.000	0.560	0.02
		B	0.000	0.000	12.500	0.560	0.35
		C	0.000	0.000	11.750	0.560	0.08
T7	280.00-260.00	A	0.000	0.000	0.000	0.560	0.02
		B	0.000	0.000	12.500	0.560	0.35
		C	0.000	0.000	11.750	0.560	0.08
T8	260.00-240.00	A	0.000	0.000	0.000	0.560	0.02
		B	0.000	0.000	12.500	0.560	0.35
		C	0.000	0.000	11.750	0.560	0.08
T9	240.00-220.00	A	0.000	0.000	0.000	0.560	0.02
		B	0.000	0.000	12.500	0.560	0.35
		C	0.000	0.000	11.750	0.560	0.08
T10	220.00-200.00	A	0.000	0.000	0.000	0.560	0.02
		B	0.000	0.000	12.500	0.560	0.35
		C	0.000	0.000	11.750	0.560	0.08
T11	200.00-180.00	A	0.000	0.000	0.000	0.560	0.02
		B	0.000	0.000	12.500	0.560	0.35
		C	0.000	0.000	17.600	0.560	0.13
T12	180.00-160.00	A	0.000	0.000	0.000	0.560	0.02
		B	0.000	0.000	12.500	0.560	0.35
		C	0.000	0.000	26.314	0.560	0.22
T13	160.00-140.00	A	0.000	0.000	0.000	0.560	0.02
		B	0.000	0.000	12.500	0.560	0.35
		C	0.000	0.000	28.726	0.560	0.23
T14	140.00-120.00	A	0.000	0.000	0.000	0.560	0.02
		B	0.000	0.000	12.500	0.560	0.35
		C	0.000	0.000	30.334	0.560	0.23
T15	120.00-100.00	A	0.000	0.000	0.000	0.560	0.02
		B	0.000	0.000	12.500	0.560	0.35
		C	0.000	0.000	30.334	0.560	0.23
T16	100.00-80.00	A	0.000	0.000	0.000	0.560	0.02
		B	0.000	0.000	12.500	0.560	0.35
		C	0.000	0.000	30.334	0.560	0.23
T17	80.00-60.00	A	0.000	0.000	0.000	0.560	0.02
		B	0.000	0.000	12.500	0.560	0.35
		C	0.000	0.000	30.334	0.560	0.23
T18	60.00-40.00	A	0.000	0.000	0.000	0.560	0.02
		B	0.000	0.000	12.500	0.560	0.35
		C	0.000	0.000	30.334	0.560	0.23
T19	40.00-20.00	A	0.000	0.000	0.000	0.560	0.02
		B	0.000	0.000	12.500	0.560	0.35
		C	0.000	0.000	30.334	0.560	0.23
T20	20.00-2.00	A	0.000	0.000	0.000	0.504	0.02
		B	0.000	0.000	11.250	0.504	0.31
		C	0.000	0.000	27.301	0.504	0.21

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	400.00-380.00	A	0.272	0.000	0.000	0.000	0.494	0.01
		B		0.000	0.000	12.141	0.494	0.35
		C		0.000	0.000	16.764	0.494	0.12
T2	380.00-360.00	A	0.271	0.000	0.000	0.000	1.642	0.03
		B		0.000	0.000	12.127	1.642	0.37
		C		0.000	0.000	16.747	1.642	0.13
T3	360.00-340.00	A	0.269	0.000	0.000	0.000	1.636	0.03
		B		0.000	0.000	12.112	1.636	0.37
		C		0.000	0.000	16.729	1.636	0.13
T4	340.00-320.00	A	0.268	0.000	0.000	0.000	1.630	0.03
		B		0.000	0.000	12.097	1.630	0.37
		C		0.000	0.000	16.710	1.630	0.13
T5	320.00-300.00	A	0.266	0.000	0.000	0.000	1.623	0.03
		B		0.000	0.000	12.080	1.623	0.37
		C		0.000	0.000	16.690	1.623	0.13
T6	300.00-280.00	A	0.264	0.000	0.000	0.000	1.616	0.03
		B		0.000	0.000	14.869	1.616	0.38
		C		0.000	0.000	13.863	1.616	0.12
T7	280.00-260.00	A	0.262	0.000	0.000	0.000	1.609	0.02
		B		0.000	0.000	14.843	1.609	0.38
		C		0.000	0.000	13.848	1.609	0.12
T8	260.00-240.00	A	0.260	0.000	0.000	0.000	1.601	0.02
		B		0.000	0.000	14.815	1.601	0.38
		C		0.000	0.000	13.832	1.601	0.12
T9	240.00-220.00	A	0.258	0.000	0.000	0.000	1.592	0.02
		B		0.000	0.000	14.785	1.592	0.38
		C		0.000	0.000	13.814	1.592	0.12
T10	220.00-200.00	A	0.256	0.000	0.000	0.000	1.583	0.02
		B		0.000	0.000	14.753	1.583	0.38
		C		0.000	0.000	13.796	1.583	0.12
T11	200.00-180.00	A	0.253	0.000	0.000	0.000	1.573	0.02
		B		0.000	0.000	14.718	1.573	0.38
		C		0.000	0.000	25.720	1.573	0.20
T12	180.00-160.00	A	0.250	0.000	0.000	0.000	1.561	0.02
		B		0.000	0.000	14.679	1.561	0.38
		C		0.000	0.000	40.512	1.561	0.33
T13	160.00-140.00	A	0.247	0.000	0.000	0.000	1.549	0.02
		B		0.000	0.000	16.456	1.549	0.38
		C		0.000	0.000	37.231	1.549	0.33
T14	140.00-120.00	A	0.244	0.000	0.000	0.000	1.535	0.02
		B		0.000	0.000	16.400	1.535	0.38
		C		0.000	0.000	39.108	1.535	0.34
T15	120.00-100.00	A	0.240	0.000	0.000	0.000	1.519	0.02
		B		0.000	0.000	16.335	1.519	0.38
		C		0.000	0.000	38.963	1.519	0.33
T16	100.00-80.00	A	0.235	0.000	0.000	0.000	1.500	0.02
		B		0.000	0.000	16.259	1.500	0.38
		C		0.000	0.000	38.791	1.500	0.33
T17	80.00-60.00	A	0.229	0.000	0.000	0.000	1.476	0.02
		B		0.000	0.000	16.166	1.476	0.38
		C		0.000	0.000	38.581	1.476	0.33
T18	60.00-40.00	A	0.222	0.000	0.000	0.000	1.446	0.02
		B		0.000	0.000	16.044	1.446	0.38
		C		0.000	0.000	38.309	1.446	0.32
T19	40.00-20.00	A	0.210	0.000	0.000	0.000	1.402	0.02

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B		0.000	0.000	15.868	1.402	0.38
		C		0.000	0.000	37.911	1.402	0.32
T20	20.00-2.00	A	0.190	0.000	0.000	0.000	1.189	0.02
		B		0.000	0.000	13.992	1.189	0.33
		C		0.000	0.000	33.469	1.189	0.28

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	400.00-380.00	1.2580	1.4469	1.7437	1.5902
T2	380.00-360.00	1.1906	1.3705	1.6080	1.4658
T3	360.00-340.00	1.1906	1.3705	1.6061	1.4654
T4	340.00-320.00	1.2019	1.3825	1.6157	1.4745
T5	320.00-300.00	1.1906	1.3705	1.6019	1.4644
T6	300.00-280.00	1.1983	1.3561	1.6099	1.4449
T7	280.00-260.00	1.1337	1.2888	1.5382	1.3871
T8	260.00-240.00	1.1534	1.3094	1.5584	1.4059
T9	240.00-220.00	1.1337	1.2888	1.5327	1.3858
T10	220.00-200.00	1.1534	1.3094	1.5525	1.4045
T11	200.00-180.00	1.1759	1.7859	1.7595	1.9694
T12	180.00-160.00	0.4443	2.2696	0.7607	2.6134
T13	160.00-140.00	0.4966	2.7454	0.6166	3.0354
T14	140.00-120.00	0.4893	2.8516	0.6059	3.1352
T15	120.00-100.00	0.4765	2.7812	0.5915	3.0677
T16	100.00-80.00	0.4892	2.8512	0.6023	3.1262
T17	80.00-60.00	0.4892	2.8512	0.5999	3.1205
T18	60.00-40.00	0.4764	2.7808	0.5840	3.0488
T19	40.00-20.00	0.4892	2.8512	0.5923	3.1018
T20	20.00-2.00	0.4842	2.8238	0.5782	3.0530

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	6	Climbing Ladder	380.00 - 400.00	0.6000	0.6000
T1	7	Safety Line 3/8	380.00 - 400.00	0.6000	0.6000
T1	12	HJ4.5-50(5/8")	380.00 - 400.00	0.6000	0.6000
T1	13	HJ4.5-50(5/8")	380.00 - 400.00	0.6000	0.6000
T1	18	Rung BP2x2x1/8 (5' Width, 40" Step)	380.00 - 400.00	0.6000	0.6000
T2	6	Climbing Ladder	360.00 - 380.00	0.6000	0.6000
T2	7	Safety Line 3/8	360.00 - 380.00	0.6000	0.6000
T2	12	HJ4.5-50(5/8")	360.00 -	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T2	13	HJ4.5-50(5/8")	360.00 - 380.00	0.6000	0.6000
T2	18	Rung BP2x2x1/8 (5' Width, 40" Step)	360.00 - 380.00	0.6000	0.6000
T3	6	Climbing Ladder	340.00 - 360.00	0.6000	0.6000
T3	7	Safety Line 3/8	340.00 - 360.00	0.6000	0.6000
T3	12	HJ4.5-50(5/8")	340.00 - 360.00	0.6000	0.6000
T3	13	HJ4.5-50(5/8")	340.00 - 360.00	0.6000	0.6000
T3	18	Rung BP2x2x1/8 (5' Width, 40" Step)	340.00 - 360.00	0.6000	0.6000
T4	6	Climbing Ladder	320.00 - 340.00	0.6000	0.6000
T4	7	Safety Line 3/8	320.00 - 340.00	0.6000	0.6000
T4	12	HJ4.5-50(5/8")	320.00 - 340.00	0.6000	0.6000
T4	13	HJ4.5-50(5/8")	320.00 - 340.00	0.6000	0.6000
T4	18	Rung BP2x2x1/8 (5' Width, 40" Step)	320.00 - 340.00	0.6000	0.6000
T5	6	Climbing Ladder	300.00 - 320.00	0.6000	0.6000
T5	7	Safety Line 3/8	300.00 - 320.00	0.6000	0.6000
T5	12	HJ4.5-50(5/8")	300.00 - 320.00	0.6000	0.6000
T5	13	HJ4.5-50(5/8")	300.00 - 320.00	0.6000	0.6000
T5	18	Rung BP2x2x1/8 (5' Width, 40" Step)	300.00 - 320.00	0.6000	0.6000
T6	6	Climbing Ladder	280.00 - 300.00	0.6000	0.6000
T6	7	Safety Line 3/8	280.00 - 300.00	0.6000	0.6000
T6	8	HJ4.5-50(5/8")	280.00 - 300.00	0.6000	0.6000
T6	12	HJ4.5-50(5/8")	280.00 - 300.00	0.6000	0.6000
T6	18	Rung BP2x2x1/8 (5' Width, 40" Step)	280.00 - 300.00	0.6000	0.6000
T7	6	Climbing Ladder	260.00 - 280.00	0.6000	0.6000
T7	7	Safety Line 3/8	260.00 - 280.00	0.6000	0.6000
T7	8	HJ4.5-50(5/8")	260.00 - 280.00	0.6000	0.6000
T7	12	HJ4.5-50(5/8")	260.00 - 280.00	0.6000	0.6000
T7	18	Rung BP2x2x1/8 (5' Width, 40" Step)	260.00 - 280.00	0.6000	0.6000
T8	6	Climbing Ladder	240.00 - 260.00	0.6000	0.6000
T8	7	Safety Line 3/8	240.00 - 260.00	0.6000	0.6000
T8	8	HJ4.5-50(5/8")	240.00 - 260.00	0.6000	0.6000
T8	12	HJ4.5-50(5/8")	240.00 -	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			260.00		
T8	18	Rung BP2x2x1/8 (5' Width, 40" Step)	240.00 - 260.00	0.6000	0.6000
T9	6	Climbing Ladder	220.00 - 240.00	0.6000	0.6000
T9	7	Safety Line 3/8	220.00 - 240.00	0.6000	0.6000
T9	8	HJ4.5-50(5/8")	220.00 - 240.00	0.6000	0.6000
T9	12	HJ4.5-50(5/8")	220.00 - 240.00	0.6000	0.6000
T9	18	Rung BP2x2x1/8 (5' Width, 40" Step)	220.00 - 240.00	0.6000	0.6000
T10	6	Climbing Ladder	200.00 - 220.00	0.6000	0.6000
T10	7	Safety Line 3/8	200.00 - 220.00	0.6000	0.6000
T10	8	HJ4.5-50(5/8")	200.00 - 220.00	0.6000	0.6000
T10	12	HJ4.5-50(5/8")	200.00 - 220.00	0.6000	0.6000
T10	18	Rung BP2x2x1/8 (5' Width, 40" Step)	200.00 - 220.00	0.6000	0.6000
T11	6	Climbing Ladder	180.00 - 200.00	0.6000	0.6000
T11	7	Safety Line 3/8	180.00 - 200.00	0.6000	0.6000
T11	8	HJ4.5-50(5/8")	180.00 - 200.00	0.6000	0.6000
T11	11	HJ4.5-50(5/8")	180.00 - 200.00	0.6000	0.6000
T11	17	MLCH 12/24 LOW INDUCTION(2)	180.00 - 186.40	0.6000	0.6000
T11	18	Rung BP2x2x1/8 (5' Width, 40" Step)	180.00 - 200.00	0.6000	0.6000
T11	19	HJ4.5-50(5/8")	180.00 - 186.40	0.6000	0.6000
T11	20	1/2" dia. coax	180.00 - 186.40	0.6000	0.6000
T11	21	1" Feedline	180.00 - 186.40	0.6000	0.6000
T12	6	Climbing Ladder	160.00 - 180.00	0.6000	0.6000
T12	7	Safety Line 3/8	160.00 - 180.00	0.6000	0.6000
T12	8	HJ4.5-50(5/8")	160.00 - 180.00	0.6000	0.6000
T12	11	HJ4.5-50(5/8")	160.00 - 180.00	0.6000	0.6000
T12	17	MLCH 12/24 LOW INDUCTION(2)	160.00 - 180.00	0.6000	0.6000
T12	18	Rung BP2x2x1/8 (5' Width, 40" Step)	160.00 - 180.00	0.6000	0.6000
T12	19	HJ4.5-50(5/8")	160.00 - 180.00	0.6000	0.6000
T12	20	1/2" dia. coax	160.00 - 180.00	0.6000	0.6000
T12	21	1" Feedline	160.00 - 180.00	0.6000	0.6000
T13	6	Climbing Ladder	140.00 - 160.00	0.6000	0.6000
T13	7	Safety Line 3/8	140.00 -	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			160.00		
T13	8	HJ4.5-50(5/8")	140.00 - 160.00	0.6000	0.6000
T13	11	HJ4.5-50(5/8")	140.00 - 160.00	0.6000	0.6000
T13	16	EW63(ELLIPTICAL)	140.00 - 152.00	0.6000	0.6000
T13	17	MLCH 12/24 LOW INDUCTION(2)	140.00 - 160.00	0.6000	0.6000
T13	18	Rung BP2x2x1/8 (5' Width, 40" Step)	140.00 - 160.00	0.6000	0.6000
T13	19	HJ4.5-50(5/8")	140.00 - 160.00	0.6000	0.6000
T13	20	1/2" dia. coax	140.00 - 160.00	0.6000	0.6000
T13	21	1" Feedline	140.00 - 160.00	0.6000	0.6000
T14	6	Climbing Ladder	120.00 - 140.00	0.6000	0.6000
T14	7	Safety Line 3/8	120.00 - 140.00	0.6000	0.6000
T14	8	HJ4.5-50(5/8")	120.00 - 140.00	0.6000	0.6000
T14	11	HJ4.5-50(5/8")	120.00 - 140.00	0.6000	0.6000
T14	16	EW63(ELLIPTICAL)	120.00 - 140.00	0.6000	0.6000
T14	17	MLCH 12/24 LOW INDUCTION(2)	120.00 - 140.00	0.6000	0.6000
T14	18	Rung BP2x2x1/8 (5' Width, 40" Step)	120.00 - 140.00	0.6000	0.6000
T14	19	HJ4.5-50(5/8")	120.00 - 140.00	0.6000	0.6000
T14	20	1/2" dia. coax	120.00 - 140.00	0.6000	0.6000
T14	21	1" Feedline	120.00 - 140.00	0.6000	0.6000
T15	6	Climbing Ladder	100.00 - 120.00	0.6000	0.6000
T15	7	Safety Line 3/8	100.00 - 120.00	0.6000	0.6000
T15	8	HJ4.5-50(5/8")	100.00 - 120.00	0.6000	0.6000
T15	11	HJ4.5-50(5/8")	100.00 - 120.00	0.6000	0.6000
T15	16	EW63(ELLIPTICAL)	100.00 - 120.00	0.6000	0.6000
T15	17	MLCH 12/24 LOW INDUCTION(2)	100.00 - 120.00	0.6000	0.6000
T15	18	Rung BP2x2x1/8 (5' Width, 40" Step)	100.00 - 120.00	0.6000	0.6000
T15	19	HJ4.5-50(5/8")	100.00 - 120.00	0.6000	0.6000
T15	20	1/2" dia. coax	100.00 - 120.00	0.6000	0.6000
T15	21	1" Feedline	100.00 - 120.00	0.6000	0.6000
T16	6	Climbing Ladder	80.00 - 100.00	0.6000	0.6000
T16	7	Safety Line 3/8	80.00 - 100.00	0.6000	0.6000
T16	8	HJ4.5-50(5/8")	80.00 - 100.00	0.6000	0.6000
T16	11	HJ4.5-50(5/8")	80.00 - 100.00	0.6000	0.6000
T16	16	EW63(ELLIPTICAL)	80.00 - 100.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T16	17	MLCH 12/24 LOW INDUCTION(2)	80.00 - 100.00	0.6000	0.6000
T16	18	Rung BP2x2x1/8 (5' Width, 40" Step)	80.00 - 100.00	0.6000	0.6000
T16	19	HJ4.5-50(5/8")	80.00 - 100.00	0.6000	0.6000
T16	20	1/2" dia. coax	80.00 - 100.00	0.6000	0.6000
T16	21	1" Feedline	80.00 - 100.00	0.6000	0.6000
T17	6	Climbing Ladder	60.00 - 80.00	0.6000	0.6000
T17	7	Safety Line 3/8	60.00 - 80.00	0.6000	0.6000
T17	8	HJ4.5-50(5/8")	60.00 - 80.00	0.6000	0.6000
T17	11	HJ4.5-50(5/8")	60.00 - 80.00	0.6000	0.6000
T17	16	EW63(ELLIPTICAL)	60.00 - 80.00	0.6000	0.6000
T17	17	MLCH 12/24 LOW INDUCTION(2)	60.00 - 80.00	0.6000	0.6000
T17	18	Rung BP2x2x1/8 (5' Width, 40" Step)	60.00 - 80.00	0.6000	0.6000
T17	19	HJ4.5-50(5/8")	60.00 - 80.00	0.6000	0.6000
T17	20	1/2" dia. coax	60.00 - 80.00	0.6000	0.6000
T17	21	1" Feedline	60.00 - 80.00	0.6000	0.6000
T18	6	Climbing Ladder	40.00 - 60.00	0.6000	0.6000
T18	7	Safety Line 3/8	40.00 - 60.00	0.6000	0.6000
T18	8	HJ4.5-50(5/8")	40.00 - 60.00	0.6000	0.6000
T18	11	HJ4.5-50(5/8")	40.00 - 60.00	0.6000	0.6000
T18	16	EW63(ELLIPTICAL)	40.00 - 60.00	0.6000	0.6000
T18	17	MLCH 12/24 LOW INDUCTION(2)	40.00 - 60.00	0.6000	0.6000
T18	18	Rung BP2x2x1/8 (5' Width, 40" Step)	40.00 - 60.00	0.6000	0.6000
T18	19	HJ4.5-50(5/8")	40.00 - 60.00	0.6000	0.6000
T18	20	1/2" dia. coax	40.00 - 60.00	0.6000	0.6000
T18	21	1" Feedline	40.00 - 60.00	0.6000	0.6000
T19	6	Climbing Ladder	20.00 - 40.00	0.6000	0.6000
T19	7	Safety Line 3/8	20.00 - 40.00	0.6000	0.6000
T19	8	HJ4.5-50(5/8")	20.00 - 40.00	0.6000	0.6000
T19	11	HJ4.5-50(5/8")	20.00 - 40.00	0.6000	0.6000
T19	16	EW63(ELLIPTICAL)	20.00 - 40.00	0.6000	0.6000
T19	17	MLCH 12/24 LOW INDUCTION(2)	20.00 - 40.00	0.6000	0.6000
T19	18	Rung BP2x2x1/8 (5' Width, 40" Step)	20.00 - 40.00	0.6000	0.6000
T19	19	HJ4.5-50(5/8")	20.00 - 40.00	0.6000	0.6000
T19	20	1/2" dia. coax	20.00 - 40.00	0.6000	0.6000
T19	21	1" Feedline	20.00 - 40.00	0.6000	0.6000
T20	6	Climbing Ladder	2.00 - 20.00	0.6000	0.6000
T20	7	Safety Line 3/8	2.00 - 20.00	0.6000	0.6000
T20	8	HJ4.5-50(5/8")	2.00 - 20.00	0.6000	0.6000
T20	11	HJ4.5-50(5/8")	2.00 - 20.00	0.6000	0.6000
T20	16	EW63(ELLIPTICAL)	2.00 - 20.00	0.6000	0.6000
T20	17	MLCH 12/24 LOW INDUCTION(2)	2.00 - 20.00	0.6000	0.6000
T20	18	Rung BP2x2x1/8 (5' Width, 40" Step)	2.00 - 20.00	0.6000	0.6000
T20	19	HJ4.5-50(5/8")	2.00 - 20.00	0.6000	0.6000
T20	20	1/2" dia. coax	2.00 - 20.00	0.6000	0.6000
T20	21	1" Feedline	2.00 - 20.00	0.6000	0.6000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
*** Tower ***									
18" Dia. x 28" Beacon	C	From Leg	0.00 0.00 0.00	0.0000	400.00	No Ice 1/2" Ice	1.75 2.68	1.75 2.68	0.02 0.06
1" x 6' Lightning Rod	B	From Leg	0.00 0.00 0.00	0.0000	400.00	No Ice 1/2" Ice	0.60 1.22	0.60 1.22	0.00 0.01
6" x 3" Diameter Sidelight	A	From Leg	0.50 0.00 0.00	0.0000	300.00	No Ice 1/2" Ice	0.09 0.14	0.09 0.14	0.01 0.01
6" x 3" Diameter Sidelight	B	From Leg	0.50 0.00 0.00	0.0000	300.00	No Ice 1/2" Ice	0.09 0.14	0.09 0.14	0.01 0.01
6" x 3" Diameter Sidelight	C	From Leg	0.50 0.00 0.00	0.0000	300.00	No Ice 1/2" Ice	0.09 0.14	0.09 0.14	0.01 0.01
18" Dia. x 28" Beacon	A	From Leg	0.50 0.00 0.00	0.0000	200.00	No Ice 1/2" Ice	1.75 2.68	1.75 2.68	0.02 0.06
18" Dia. x 28" Beacon	C	From Leg	0.50 0.00 0.00	0.0000	200.00	No Ice 1/2" Ice	1.75 2.68	1.75 2.68	0.02 0.06
L4x4x3/8 x 4-ft	A	From Face	0.00 0.00 0.00	0.0000	200.00	No Ice 1/2" Ice	2.09 2.39	2.09 2.39	0.04 0.05
L4x4x3/8 x 4-ft	B	From Face	0.00 0.00 0.00	0.0000	200.00	No Ice 1/2" Ice	2.09 2.39	2.09 2.39	0.04 0.05
6" x 3" Diameter Sidelight	A	From Leg	0.50 0.00 0.00	0.0000	100.00	No Ice 1/2" Ice	0.09 0.14	0.09 0.14	0.01 0.01
6" x 3" Diameter Sidelight	B	From Leg	0.50 0.00 0.00	0.0000	100.00	No Ice 1/2" Ice	0.09 0.14	0.09 0.14	0.01 0.01
6" x 3" Diameter Sidelight	C	From Leg	0.50 0.00 0.00	0.0000	100.00	No Ice 1/2" Ice	0.09 0.14	0.09 0.14	0.01 0.01
*** 397 ***									
2.4" Dia. x 6-ft	A	From Leg	6.00 0.00 0.00	0.0000	397.00	No Ice 1/2" Ice	1.43 1.92	1.43 1.92	0.02 0.03
2.4" Dia. x 6-ft	B	From Leg	6.00 0.00 0.00	0.0000	397.00	No Ice 1/2" Ice	1.43 1.92	1.43 1.92	0.02 0.03
2.4" Dia. x 6-ft	C	From Leg	6.00 0.00 0.00	0.0000	397.00	No Ice 1/2" Ice	1.43 1.92	1.43 1.92	0.02 0.03
(2) 2.4" Dia. x 9-ft Pipe	A	From Leg	5.00 0.00 0.00	0.0000	397.00	No Ice 1/2" Ice	2.16 3.09	2.16 3.09	0.04 0.05
(2) 2.4" Dia. x 9-ft Pipe	B	From Leg	5.00 0.00 0.00	0.0000	397.00	No Ice 1/2" Ice	2.16 3.09	2.16 3.09	0.04 0.05
(2) 2.4" Dia. x 9-ft Pipe	C	From Leg	5.00	0.0000	397.00	No Ice	2.16	2.16	0.04

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00 0.00			1/2" Ice	3.09	3.09	0.05
(2) L3x3x3/16x4.25' Long	A	From Face	0.00 0.00 0.00	0.0000	397.00	No Ice 1/2" Ice	1.27 1.58	0.07 0.11	0.02 0.03
(2) L3x3x3/16x4.25' Long	B	From Face	0.00 0.00 0.00	0.0000	397.00	No Ice 1/2" Ice	1.27 1.58	0.07 0.11	0.02 0.03
(2) L3x3x3/16x4.25' Long	C	From Face	0.00 0.00 0.00	0.0000	397.00	No Ice 1/2" Ice	1.27 1.58	0.07 0.11	0.02 0.03
Side Arm Mount [SO 602-3]	C	None		0.0000	397.00	No Ice 1/2" Ice	16.09 19.86	16.09 19.86	0.44 0.66
*** 350 ***									
(2) 1.9" Dia. x 4-ft	A	From Leg	0.50 0.00 0.00	0.0000	350.00	No Ice 1/2" Ice	0.76 1.01	0.76 1.01	0.01 0.02
Pipe Mount [PM 602-1]	A	From Leg	0.50 0.00 0.00	0.0000	350.00	No Ice 1/2" Ice	2.78 3.21	2.78 3.21	0.09 0.11
(2) L3x3x1/4 (5-ft long)	B	From Face	0.00 0.00 0.00	0.0000	350.00	No Ice 1/2" Ice	1.50 1.85	0.07 0.11	0.02 0.04
*** 310 ***									
(2) 1.9" Dia. x 4-ft	A	From Leg	0.50 0.00 0.00	0.0000	310.00	No Ice 1/2" Ice	0.76 1.01	0.76 1.01	0.01 0.02
Pipe Mount [PM 602-1]	A	From Leg	0.50 0.00 0.00	0.0000	310.00	No Ice 1/2" Ice	2.78 3.21	2.78 3.21	0.09 0.11
(2) L3x3x1/4 (5-ft long)	B	From Face	0.00 0.00 0.00	0.0000	310.00	No Ice 1/2" Ice	1.50 1.85	0.07 0.11	0.02 0.04
*** 190 Verizon ***									
AIR6449 B41 w/ Mount Pipe	A	From Leg	4.00 6.00 3.60	55.0000	186.40	No Ice 1/2" Ice	5.89 6.26	3.28 3.74	0.12 0.17
AIR6449 B41 w/ Mount Pipe	B	From Leg	4.00 6.00 3.60	50.0000	186.40	No Ice 1/2" Ice	5.89 6.26	3.28 3.74	0.12 0.17
AIR6449 B41 w/ Mount Pipe	C	From Leg	4.00 6.00 3.60	5.0000	186.40	No Ice 1/2" Ice	5.89 6.26	3.28 3.74	0.12 0.17
(2) MX06FIT865-02 w/ Mount Pipe	A	From Leg	4.00 0.00 3.60	55.0000	186.40	No Ice 1/2" Ice	11.85 12.57	12.58 14.11	0.08 0.19
(2) MX06FIT865-02 w/ Mount Pipe	B	From Leg	4.00 0.00 3.60	50.0000	186.40	No Ice 1/2" Ice	11.85 12.57	12.58 14.11	0.08 0.19
(2) MX06FIT865-02 w/ Mount Pipe	C	From Leg	4.00 0.00 3.60	5.0000	186.40	No Ice 1/2" Ice	11.85 12.57	12.58 14.11	0.08 0.19
(2) RADIO 8843 B2/B66A	A	From Leg	4.00 0.00 3.60	55.0000	186.40	No Ice 1/2" Ice	1.64 1.80	1.38 1.53	0.08 0.09
(2) RADIO 8843 B2/B66A	B	From Leg	4.00 0.00	50.0000	186.40	No Ice 1/2" Ice	1.64 1.80	1.38 1.53	0.08 0.09

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			3.60						
(2) RADIO 8843 B2/B66A	C	From Leg	4.00	5.0000	186.40	No Ice	1.64	1.38	0.08
			0.00			1/2" Ice	1.80	1.53	0.09
			3.60						
RADIO 4449 B13/B5	A	From Leg	4.00	55.0000	186.40	No Ice	1.98	1.71	0.07
			2.00			1/2" Ice	2.16	1.88	0.09
			3.60						
RADIO 4449 B13/B5	B	From Leg	4.00	50.0000	186.40	No Ice	1.98	1.71	0.07
			2.00			1/2" Ice	2.16	1.88	0.09
			3.60						
RADIO 4449 B13/B5	C	From Leg	4.00	5.0000	186.40	No Ice	1.98	1.71	0.07
			2.00			1/2" Ice	2.16	1.88	0.09
			3.60						
RHSDC-6627-PF-48	A	From Leg	2.00	0.0000	186.40	No Ice	4.06	3.10	0.03
			0.00			1/2" Ice	4.32	3.34	0.07
			3.60						
RHSDC-6627-PF-48	B	From Leg	2.00	0.0000	186.40	No Ice	4.06	3.10	0.03
			0.00			1/2" Ice	4.32	3.34	0.07
			3.60						
2.4" Dia x 4-ft Mount Pipe	A	From Leg	2.00	0.0000	186.40	No Ice	0.87	0.87	0.01
			0.00			1/2" Ice	1.12	1.12	0.02
			0.00						
2.4" Dia x 4-ft Mount Pipe	B	From Leg	2.00	0.0000	186.40	No Ice	0.87	0.87	0.01
			0.00			1/2" Ice	1.12	1.12	0.02
			0.00						
2.4" Dia. x 6-ft	A	From Leg	2.00	0.0000	186.40	No Ice	1.43	1.43	0.02
			0.00			1/2" Ice	1.92	1.92	0.03
			0.00						
2.4" Dia. x 6-ft	B	From Leg	2.00	0.0000	186.40	No Ice	1.43	1.43	0.02
			0.00			1/2" Ice	1.92	1.92	0.03
			0.00						
2.4" Dia. x 6-ft	C	From Leg	2.00	0.0000	186.40	No Ice	1.43	1.43	0.02
			0.00			1/2" Ice	1.92	1.92	0.03
			0.00						
(2) Pipe Mount [PM 601-3]	C	None		0.0000	186.40	No Ice	3.17	3.17	0.20
						1/2" Ice	3.79	3.79	0.23
2.9" Dia. x 12.5' Pipe	A	From Face	4.00	0.0000	186.40	No Ice	3.63	3.63	0.07
			0.00			1/2" Ice	4.91	4.91	0.10
			0.00						
2.9" Dia. x 12.5' Pipe	B	From Face	4.00	0.0000	186.40	No Ice	3.63	3.63	0.07
			0.00			1/2" Ice	4.91	4.91	0.10
			0.00						
2.9" Dia. x 12.5' Pipe	C	From Face	4.00	0.0000	186.40	No Ice	3.63	3.63	0.07
			0.00			1/2" Ice	4.91	4.91	0.10
			0.00						
(4) L2 1/2 x 2 1/2 x 1/4 x 4'	A	From Leg	2.00	0.0000	186.40	No Ice	1.51	1.51	0.02
			0.00			1/2" Ice	1.80	1.80	0.03
			0.00						
(4) L2 1/2 x 2 1/2 x 1/4 x 4'	B	From Leg	2.00	0.0000	186.40	No Ice	1.51	1.51	0.02
			0.00			1/2" Ice	1.80	1.80	0.03
			0.00						
(4) L2 1/2 x 2 1/2 x 1/4 x 4'	C	From Leg	2.00	0.0000	186.40	No Ice	1.51	1.51	0.02
			0.00			1/2" Ice	1.80	1.80	0.03
			0.00						
Sector Mount [SM 602-3]	A	None		0.0000	186.40	No Ice	32.10	32.10	1.54
						1/2" Ice	39.56	39.56	2.12

*** 152 ***

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
1.9" Dia. x 4-ft	C	From Leg	0.50 0.00 0.00	0.0000	152.00	No Ice 1/2" Ice	0.76 1.01	0.76 1.01	0.01 0.02
1.9" x 7' Stabilizer	B	From Leg	6.00 0.00 0.00	0.0000	152.00	No Ice 1/2" Ice	1.33 2.05	1.33 2.05	0.02 0.03
Pipe Mount [PM 601-1]	C	From Leg	0.50 0.00 0.00	0.0000	152.00	No Ice 1/2" Ice	1.32 1.58	1.32 1.58	0.07 0.08
*** 132 ***									
(2) L 3x3x1/4 (56" Long)	B	From Leg	2.00 0.00 0.00	0.0000	132.00	No Ice 1/2" Ice	1.40 1.73	0.07 0.11	0.02 0.04
L 3x3x1/4 (56" Long)	C	From Leg	2.00 0.00 0.00	0.0000	132.00	No Ice 1/2" Ice	1.40 1.73	0.07 0.11	0.02 0.04
**********									
**********									
**********									

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral ft Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
350											
8-ft Grid Dish	A	Grid	From Leg	1.00 0.00 0.00	75.0000		350.00	8.00	No Ice 1/2" Ice	50.27 51.32	0.45 0.71
310											
8-ft Grid Dish	A	Grid	From Leg	1.00 0.00 0.00	75.0000		310.00	8.00	No Ice 1/2" Ice	50.27 51.32	0.45 0.71
152 (notes)											
UHX6-59-P3A/L	C	Paraboloid w/Shroud (HP)	From Leg	1.00 0.00 0.00	-15.0000		152.00	6.46	No Ice 1/2" Ice	32.76 33.61	0.25 0.43
**											

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	400	Leg	A325N	0.6250	12	2.37	18.20	0.130	1.05	Bearing

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load / Allowable	Allowable Ratio	Criteria
		Diagonal	A325N	0.6250	1	5.05	6.46	0.782	1.05	Gusset Bearing
		Top Girt	A325N	0.6250	1	1.84	4.55	0.405	1.05	Member Block Shear
T2	380	Leg	A325N	0.6250	12	3.69	18.20	0.203	1.05	Bearing
		Diagonal	A325N	0.6250	1	3.04	6.46	0.470	1.05	Gusset Bearing
T3	360	Leg	A325N	0.6250	12	2.68	18.20	0.147	1.05	Bearing
		Diagonal	A325N	0.6250	1	2.46	6.46	0.382	1.05	Gusset Bearing
T4	340	Leg	A325N	0.6250	12	4.86	18.20	0.267	1.05	Bearing
		Diagonal	A325N	0.6250	1	6.25	6.46	0.967	1.05	Gusset Bearing
T5	320	Leg	A325N	0.6250	12	5.92	18.20	0.325	1.05	Bearing
		Diagonal	A325N	0.6250	1	2.25	6.46	0.349	1.05	Gusset Bearing
T6	300	Leg	A325N	0.6250	12	4.69	18.20	0.258	1.05	Bearing
		Diagonal	A325N	0.6250	1	1.56	6.46	0.242	1.05	Gusset Bearing
T7	280	Leg	A325N	0.6250	12	6.04	18.20	0.332	1.05	Bearing
		Diagonal	A325N	0.6250	1	1.50	6.46	0.233	1.05	Gusset Bearing
		Top Guy Pull-Off@276.667	A325N	0.6250	1	4.86	6.46	0.752	1.05	Gusset Bearing
T8	260	Leg	A325N	0.6250	12	5.92	18.20	0.325	1.05	Bearing
		Diagonal	A325N	0.6250	1	0.87	6.46	0.134	1.05	Gusset Bearing
T9	240	Leg	A325N	0.6250	12	6.19	18.20	0.340	1.05	Bearing
		Diagonal	A325N	0.6250	1	1.67	6.46	0.258	1.05	Gusset Bearing
		Top Guy Pull-Off@223.333	A325N	0.6250	1	5.04	6.46	0.781	1.05	Gusset Bearing
T10	220	Leg	A325N	0.6250	12	7.05	18.20	0.387	1.05	Bearing
		Diagonal	A325N	0.6250	1	1.68	6.46	0.260	1.05	Gusset Bearing
T11	200	Leg	A325N	0.6250	12	7.43	27.30	0.272	1.05	Bearing
		Diagonal	A325N	0.6250	1	3.19	6.46	0.494	1.05	Gusset Bearing
T12	180	Leg	A325N	0.6250	12	10.08	27.30	0.369	1.05	Bearing
		Diagonal	A325X	0.6250	1	7.36	7.12	**1.035**	1.05	Member Block Shear
T13	160	Leg	A325N	0.6250	12	8.51	27.30	0.312	1.05	Bearing
		Diagonal	A325N	0.6250	1	2.43	6.46	0.376	1.05	Gusset Bearing
T14	140	Leg	A325N	0.6250	12	8.23	22.75	0.362	1.05	Bearing
		Diagonal	A325N	0.6250	1	1.03	6.46	0.160	1.05	Gusset Bearing
T15	120	Leg	A325N	0.6250	12	9.09	22.75	0.400	1.05	Bearing
		Diagonal	A325N	0.6250	1	2.04	6.46	0.315	1.05	Gusset Bearing
		Top Guy Pull-Off@110	A325N	0.6250	1	5.28	6.46	0.817	1.05	Gusset Bearing
T16	100	Leg	A325N	0.6250	12	10.49	27.30	0.384	1.05	Bearing
		Diagonal	A325N	0.6250	1	1.42	6.46	0.221	1.05	Gusset Bearing
T17	80	Leg	A325N	0.6250	12	10.39	27.30	0.381	1.05	Bearing
		Diagonal	A325N	0.6250	1	1.01	8.61	0.117	1.05	Gusset Bearing
T18	60	Leg	A325N	0.6250	12	10.69	27.30	0.392	1.05	Bearing
		Diagonal	A325N	0.6250	1	1.27	6.46	0.197	1.05	Gusset Bearing
		Top Guy Pull-Off@53.333	A325N	0.6250	1	4.05	6.46	0.626	1.05	Gusset Bearing
T19	40	Leg	A325N	0.6250	12	10.47	27.30	0.384	1.05	Bearing
		Diagonal	A325N	0.6250	1	0.93	6.46	0.144	1.05	Gusset Bearing
T20	20	Diagonal	A325N	0.6250	1	1.91	6.46	0.296	1.05	Gusset Bearing

Guy Design Data

Section No.	Elevation ft	Size	Initial Tension K	Breaking Load K	Actual T_u K	Allowable ϕT_n K	Required S.F.	Actual S.F.
T1	386.67 (A) (796)	9/16 EHS	3.50	35.00	10.78	22.05	0.952	1.948
	386.67 (A) (797)	9/16 EHS	3.50	35.00	10.68	22.05	0.952	1.966
	386.67 (B) (790)	9/16 EHS	3.50	35.00	10.74	22.05	0.952	1.955
	386.67 (B) (791)	9/16 EHS	3.50	35.00	10.90	22.05	0.952	1.926
	386.67 (C) (784)	9/16 EHS	3.50	35.00	11.14	22.05	0.952	1.886
	386.67 (C) (785)	9/16 EHS	3.50	35.00	11.04	22.05	0.952	1.902
T4	330.00 (A) (814)	9/16 EHS	3.50	35.00	11.60	22.05	0.952	1.811
	330.00 (A) (815)	9/16 EHS	3.50	35.00	11.53	22.05	0.952	1.822
	330.00 (B) (808)	9/16 EHS	3.50	35.00	11.58	22.05	0.952	1.813
	330.00 (B) (809)	9/16 EHS	3.50	35.00	11.96	22.05	0.952	1.756
	330.00 (C) (802)	9/16 EHS	3.50	35.00	12.47	22.05	0.952	1.684
	330.00 (C) (803)	9/16 EHS	3.50	35.00	12.23	22.05	0.952	1.717
T7	276.67 (A) (825)	1/2 EHS	2.69	26.90	10.13	16.95	0.952	1.593
	276.67 (B) (824)	1/2 EHS	2.69	26.90	10.21	16.95	0.952	1.581
	276.67 (C) (820)	1/2 EHS	2.69	26.90	10.62	16.95	0.952	1.519
T9	223.33 (A) (831)	1/2 EHS	2.69	26.90	11.15	16.95	0.952	1.448
	223.33 (B) (830)	1/2 EHS	2.69	26.90	11.13	16.95	0.952	1.451
	223.33 (C) (826)	1/2 EHS	2.69	26.90	11.25	16.95	0.952	1.435
T12	170.00 (A) (844)	1/2 EHS	2.69	26.90	11.25	16.95	0.952	1.435
	170.00 (A) (845)	1/2 EHS	2.69	26.90	11.26	16.95	0.952	1.433
	170.00 (B) (838)	1/2 EHS	2.69	26.90	11.11	16.95	0.952	1.453
	170.00 (B) (839)	1/2 EHS	2.69	26.90	10.88	16.95	0.952	1.484
	170.00 (C) (832)	1/2 EHS	2.69	26.90	11.37	16.95	0.952	1.420
	170.00 (C) (833)	1/2 EHS	2.69	26.90	11.35	16.95	0.952	1.422
T15	110.00 (A) (855)	7/16 EHS	2.08	20.80	8.93	13.10	0.952	1.397
	110.00 (B) (854)	7/16 EHS	2.08	20.80	8.55	13.10	0.952	1.459
	110.00 (C) (850)	7/16 EHS	2.08	20.80	9.10	13.10	0.952	1.372
T18	53.33 (A) (861)	3/8 EHS	1.54	15.40	5.21	9.70	0.952	1.773
	53.33 (B) (860)	3/8 EHS	1.54	15.40	5.00	9.70	0.952	1.847
	53.33 (C) (856)	3/8 EHS	1.54	15.40	5.26	9.70	0.952	1.757

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	400 - 380	04-54 (5.9375x.25)	20.00	3.33	55.6 K=1.00	1.4844	-14.22	64.20	0.221 [1]
T2	380 - 360	04-54 (5.9375x.25)	20.00	3.33	55.6 K=1.00	1.4844	-23.54	64.20	0.367 [1]
T3	360 - 340	04-54 (5.9375x.25)	20.00	3.33	55.6 K=1.00	1.4844	-22.52	64.20	0.351 [1]
T4	340 - 320	04-64 (6.625x.25)	20.00	3.33	49.5 K=1.00	1.6563	-35.28	72.70	0.485 [1]
T5	320 - 300	04-54 (5.9375x.25)	20.00	3.33	55.6 K=1.00	1.4844	-36.19	64.20	0.564 [1]
T6	300 - 280	04-54 (5.9375x.25)	20.00	3.33	55.6 K=1.00	1.4844	-34.25	64.20	0.534 [1]
T7	280 - 260	04-64 (6.625x.25)	20.00	3.33	49.5 K=1.00	1.6563	-36.25	72.70	0.499 [1]
T8	260 - 240	04-64 (6.625x.25)	20.00	3.33	49.5 K=1.00	1.6563	-36.92	72.70	0.508 [1]
T9	240 - 220	04-64 (6.625x.25)	20.00	3.33	49.5 K=1.00	1.6563	-37.16	72.70	0.511 [1]
T10	220 - 200	04-64 (6.625x.25)	20.00	3.33	49.5 K=1.00	1.6563	-42.29	72.70	0.582 [1]
T11	200 - 180	04-66 (6.625x.375)	20.00	3.33	49.6 K=1.00	2.4844	-44.57	110.88	0.402 [1]
T12	180 - 160	04-86 (8.5x.375)	20.00	3.33	38.3 K=1.00	3.1875	-79.25	149.18	0.531 [1]
T13	160 - 140	04-66 (6.625x.375)	20.00	3.33	49.6 K=1.00	2.4844	-53.91	110.88	0.486 [1]
T14	140 - 120	04-65 (6.625x.3125)	20.00	3.33	49.6 K=1.00	2.0703	-51.22	92.41	0.554 [1]
T15	120 - 100	04-65 (6.625x.3125)	20.00	3.33	49.6 K=1.00	2.0703	-54.55	92.41	0.590 [1]
T16	100 - 80	04-66 (6.625x.375)	20.00	3.33	49.6 K=1.00	2.4844	-62.91	110.88	0.567 [1]
T17	80 - 60	04-66 (6.625x.375)	20.00	3.33	49.6 K=1.00	2.4844	-64.03	110.88	0.577 [1]
T18	60 - 40	04-66 (6.625x.375)	20.00	3.33	49.6 K=1.00	2.4844	-64.14	110.88	0.578 [1]
T19	40 - 20	04-66 (6.625x.375)	20.00	3.33	49.6 K=1.00	2.4844	-64.85	110.88	0.585 [1]
T20	20 - 2	04-66 (6.625x.375)	18.00	3.00	44.6 K=1.00	2.4844	-61.90	113.41	0.546 [1]

[1] P_u / ϕP_n controls

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	400 - 380	Andrew M-46 Type T Brace	4.83	4.83	110.1 K=0.50	0.5370	-4.24	9.79	0.433 [1]
T2	380 - 360	M46 "Y" Diagonal	4.83	4.83	113.0 K=0.50	0.3430	-2.14	6.00	0.356 [1]
T3	360 - 340	M46 "Y" Diagonal	4.83	4.83	113.0 K=0.50	0.3430	-3.01	6.00	0.501 [1]
T4	340 - 320	Andrew M-46 Type T Brace	4.83	4.83	110.1 K=0.50	0.5370	-5.46	9.79	0.558 [1]
T5	320 - 300	M46 "Y" Diagonal	4.83	4.83	113.0 K=0.50	0.3430	-2.65	6.00	0.442 [1]
T6	300 - 280	M46 "Y" Diagonal	4.83	4.83	113.0 K=0.50	0.3430	-1.42	6.00	0.237 [1]
T7	280 - 260	M46 "Y" Diagonal	4.83	4.83	113.0 K=0.50	0.3430	-1.76	6.00	0.293 [1]
T8	260 - 240	M46 "Y" Diagonal	4.83	4.83	113.0 K=0.50	0.3430	-0.83	6.00	0.138 [1]
T9	240 - 220	M46 "Y" Diagonal	4.83	4.83	113.0 K=0.50	0.3430	-1.91	6.00	0.319 [1]
T10	220 - 200	M46 "Y" Diagonal	4.83	4.83	113.0 K=0.50	0.3430	-1.44	6.00	0.240 [1]
T11	200 - 180	M46 "Y" Diagonal	4.83	4.83	113.0 K=0.50	0.3430	-3.77	6.00	0.629 [1]
T12	180 - 160	L2x2x3/16	4.83	2.29	82.3 K=1.18	0.7150	-7.00	20.25	0.346 [1]
T13	160 - 140	M46 "Y" Diagonal	4.83	4.83	113.0 K=0.50	0.3430	-2.61	6.00	0.436 [1]
T14	140 - 120	M46 "Y" Diagonal	4.83	4.83	113.0 K=0.50	0.3430	-0.85	6.00	0.141 [1]
T15	120 - 100	M46 "Y" Diagonal	4.83	4.83	113.0 K=0.50	0.3430	-2.35	6.00	0.392 [1]
T16	100 - 80	M46 "Y" Diagonal	4.83	4.83	113.0 K=0.50	0.3430	-1.23	6.00	0.205 [1]
T17	80 - 60	M46 "Y" Diagonal	4.83	4.83	113.0 K=0.50	0.3430	-1.01	6.00	0.169 [1]
T18	60 - 40	M46 "Y" Diagonal	4.83	4.83	113.0 K=0.50	0.3430	-1.53	6.00	0.254 [1]
T19	40 - 20	M46 "Y" Diagonal	4.83	4.83	113.0 K=0.50	0.3430	-1.09	6.00	0.182 [1]
T20	20 - 2	M46 "Y" Diagonal	4.61	4.61	107.8 K=0.50	0.3430	-2.08	6.47	0.321 [1]

[1] P_u / ϕP_n controls

Torque-Arm Bottom Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	400 - 380 (788)	L 3.5 x 3.5 x 1/4	7.01	7.01	90.3 K=0.74	1.6900	-20.14	53.35	0.377 [1]
T1	400 - 380 (789)	L 3.5 x 3.5 x 1/4	7.01	7.01	90.3 K=0.74	1.6900	-19.22	53.35	0.360 [1]
T1	400 - 380 (794)	L 3.5 x 3.5 x 1/4	7.01	7.01	90.3 K=0.74	1.6900	-19.31	53.35	0.362 [1]
T1	400 - 380 (795)	L 3.5 x 3.5 x 1/4	7.01	7.01	90.3 K=0.74	1.6900	-19.91	53.35	0.373 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	400 - 380 (800)	L 3.5 x 3.5 x 1/4	7.01	7.01	90.3 K=0.74	1.6900	-19.65	53.35	0.368 [1]
T1	400 - 380 (801)	L 3.5 x 3.5 x 1/4	7.01	7.01	90.3 K=0.74	1.6900	-19.38	53.35	0.363 [1]
T4	340 - 320 (806)	L 3.5 x 3.5 x 1/4	7.01	7.01	90.3 K=0.74	1.6900	-22.13	53.35	0.415 [1]
T4	340 - 320 (807)	L 3.5 x 3.5 x 1/4	7.01	7.01	90.3 K=0.74	1.6900	-20.84	53.35	0.391 [1]
T4	340 - 320 (812)	L 3.5 x 3.5 x 1/4	7.01	7.01	90.3 K=0.74	1.6900	-20.89	53.35	0.392 [1]
T4	340 - 320 (813)	L 3.5 x 3.5 x 1/4	7.01	7.01	90.3 K=0.74	1.6900	-21.93	53.35	0.411 [1]
T4	340 - 320 (818)	L 3.5 x 3.5 x 1/4	7.01	7.01	90.3 K=0.74	1.6900	-21.02	53.35	0.394 [1]
T4	340 - 320 (819)	L 3.5 x 3.5 x 1/4	7.01	7.01	90.3 K=0.74	1.6900	-20.41	53.35	0.383 [1]
T12	180 - 160 (836)	L 3.5 x 3.5 x 1/4	7.01	7.01	90.3 K=0.74	1.6900	-18.75	53.35	0.351 [1]
T12	180 - 160 (837)	L 3.5 x 3.5 x 1/4	7.01	7.01	90.3 K=0.74	1.6900	-18.59	53.35	0.348 [1]
T12	180 - 160 (842)	L 3.5 x 3.5 x 1/4	7.01	7.01	90.3 K=0.74	1.6900	-18.48	53.35	0.346 [1]
T12	180 - 160 (843)	L 3.5 x 3.5 x 1/4	7.01	7.01	90.3 K=0.74	1.6900	-18.51	53.35	0.347 [1]
T12	180 - 160 (848)	L 3.5 x 3.5 x 1/4	7.01	7.01	90.3 K=0.74	1.6900	-17.29	53.35	0.324 [1]
T12	180 - 160 (849)	L 3.5 x 3.5 x 1/4	7.01	7.01	90.3 K=0.74	1.6900	-17.31	53.35	0.324 [1]

[1] P_u / ϕP_n controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	400 - 380	04-54 (5.9375x.25)	20.00	3.33	41.0	1.1094	6.74	54.08	0.125 [1]
T2	380 - 360	04-54 (5.9375x.25)	20.00	3.33	41.0	1.1094	1.64	54.08	0.030 [1]
T4	340 - 320	04-64 (6.625x.25)	20.00	3.33	37.4	1.2813	6.31	62.46	0.101 [1]

[1] P_u / ϕP_n controls

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	400 - 380	Andrew M-46 Type T Brace	4.83	4.83	220.2	0.5370	5.05	21.75	0.232 [1]
T2	380 - 360	M46 "Y" Diagonal	4.83	4.83	226.0	0.3430	3.04	13.89	0.219 [1]
T3	360 - 340	M46 "Y" Diagonal	4.83	4.83	226.0	0.3430	2.46	13.89	0.177 [1]
T4	340 - 320	Andrew M-46 Type T Brace	4.83	4.83	220.2	0.5370	6.25	21.75	0.287 [1]
T5	320 - 300	M46 "Y" Diagonal	4.83	4.83	226.0	0.3430	2.25	13.89	0.162 [1]
T6	300 - 280	M46 "Y" Diagonal	4.83	4.83	226.0	0.3430	1.56	13.89	0.112 [1]
T7	280 - 260	M46 "Y" Diagonal	4.83	4.83	226.0	0.3430	1.50	13.89	0.108 [1]
T8	260 - 240	M46 "Y" Diagonal	4.83	4.83	226.0	0.3430	0.87	13.89	0.062 [1]
T9	240 - 220	M46 "Y" Diagonal	4.83	4.83	226.0	0.3430	1.67	13.89	0.120 [1]
T10	220 - 200	M46 "Y" Diagonal	4.83	4.83	226.0	0.3430	1.68	13.89	0.121 [1]
T11	200 - 180	M46 "Y" Diagonal	4.83	4.83	226.0	0.3430	3.19	13.89	0.230 [1]
T12	180 - 160	L2x2x3/16	4.83	2.29	47.0	0.4308	7.36	18.74	0.393 [1]
T13	160 - 140	M46 "Y" Diagonal	4.83	4.83	226.0	0.3430	2.43	13.89	0.175 [1]
T14	140 - 120	M46 "Y" Diagonal	4.83	4.83	226.0	0.3430	1.03	13.89	0.074 [1]
T15	120 - 100	M46 "Y" Diagonal	4.83	4.83	226.0	0.3430	2.04	13.89	0.147 [1]
T16	100 - 80	M46 "Y" Diagonal	4.83	4.83	226.0	0.3430	1.42	13.89	0.103 [1]
T17	80 - 60	M46 "Y" Diagonal	4.83	4.83	226.0	0.3430	0.69	13.89	0.050 [1]
T18	60 - 40	M46 "Y" Diagonal	4.83	4.83	226.0	0.3430	1.27	13.89	0.091 [1]
T19	40 - 20	M46 "Y" Diagonal	4.83	4.83	226.0	0.3430	0.93	13.89	0.067 [1]
T20	20 - 2	M46 "Y" Diagonal	4.61	4.61	215.5	0.3430	1.91	13.89	0.138 [1]

[1] P_u / ϕP_n controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	400 - 380	L2x2x1/8	3.50	3.26	67.1	0.2930	1.84	12.74	0.145 [1]

[1] P_u / ϕP_n controls

Top Guy Pull-Off Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T7	280 - 260	2L2x2x3/16x3/8 2L 'a' > 20.1151 in - 822	3.50	3.50	68.1	0.8616	4.86	37.48	0.130 [1]
T9	240 - 220	2L2x2x3/16x3/8 2L 'a' > 20.1151 in - 828	3.50	3.50	68.1	0.8616	5.04	37.48	0.135 [1]
T15	120 - 100	BP 3-3/4 x 2 x 5/16 (GPX)	3.50	3.50	77.6	0.7812	5.28	38.08	0.139 [1]
T18	60 - 40	BP 3-3/4 x 2 x 5/16 (GPX)	3.50	3.50	77.6	0.7812	4.05	38.08	0.106 [1]

[1] P_u / ϕP_n controls

Torque-Arm Top Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	400 - 380 (786)	L 3.5 x 3.5 x 1/4	6.17	6.17	67.9	1.2675	14.84	61.79	0.240 [1]
T1	400 - 380 (787)	L 3.5 x 3.5 x 1/4	6.17	6.17	67.9	1.2675	14.65	61.79	0.237 [1]
T1	400 - 380 (792)	L 3.5 x 3.5 x 1/4	6.17	6.17	67.9	1.2675	14.61	61.79	0.236 [1]
T1	400 - 380 (793)	L 3.5 x 3.5 x 1/4	6.17	6.17	67.9	1.2675	14.80	61.79	0.239 [1]
T1	400 - 380 (798)	L 3.5 x 3.5 x 1/4	6.17	6.17	67.9	1.2675	14.78	61.79	0.239 [1]
T1	400 - 380 (799)	L 3.5 x 3.5 x 1/4	6.17	6.17	67.9	1.2675	14.79	61.79	0.239 [1]
T4	340 - 320 (804)	L 3.5 x 3.5 x 1/4	6.17	6.17	67.9	1.2675	15.11	61.79	0.245 [1]
T4	340 - 320 (805)	L 3.5 x 3.5 x 1/4	6.17	6.17	67.9	1.2675	15.80	61.79	0.256 [1]
T4	340 - 320 (810)	L 3.5 x 3.5 x 1/4	6.17	6.17	67.9	1.2675	15.26	61.79	0.247 [1]
T4	340 - 320 (811)	L 3.5 x 3.5 x 1/4	6.17	6.17	67.9	1.2675	15.06	61.79	0.244 [1]
T4	340 - 320 (816)	L 3.5 x 3.5 x 1/4	6.17	6.17	67.9	1.2675	15.97	61.79	0.258 [1]
T4	340 - 320 (817)	L 3.5 x 3.5 x 1/4	6.17	6.17	67.9	1.2675	16.34	61.79	0.264 [1]
T12	180 - 160 (834)	L 3.5 x 3.5 x 1/4	6.17	6.17	67.9	1.2675	14.45	61.79	0.234 [1]
T12	180 - 160 (835)	L 3.5 x 3.5 x 1/4	6.17	6.17	67.9	1.2675	14.52	61.79	0.235 [1]
T12	180 - 160 (840)	L 3.5 x 3.5 x 1/4	6.17	6.17	67.9	1.2675	14.90	61.79	0.241 [1]
T12	180 - 160 (841)	L 3.5 x 3.5 x 1/4	6.17	6.17	67.9	1.2675	14.57	61.79	0.236 [1]
T12	180 - 160 (846)	L 3.5 x 3.5 x 1/4	6.17	6.17	67.9	1.2675	15.40	61.79	0.249 [1]
T12	180 - 160 (847)	L 3.5 x 3.5 x 1/4	6.17	6.17	67.9	1.2675	15.15	61.79	0.245 [1]

[1] P_u / ϕP_n controls

Torque-Arm Bottom Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T4	340 - 320 (806)	L 3.5 x 3.5 x 1/4	7.01	7.01	77.2	1.2675	0.87	61.79	0.014 [1]
T4	340 - 320 (807)	L 3.5 x 3.5 x 1/4	7.01	7.01	77.2	1.2675	0.44	61.79	0.007 [1]
T4	340 - 320 (812)	L 3.5 x 3.5 x 1/4	7.01	7.01	77.2	1.2675	0.48	61.79	0.008 [1]
T4	340 - 320 (813)	L 3.5 x 3.5 x 1/4	7.01	7.01	77.2	1.2675	0.79	61.79	0.013 [1]
T4	340 - 320 (818)	L 3.5 x 3.5 x 1/4	7.01	7.01	77.2	1.2675	0.61	61.79	0.010 [1]
T4	340 - 320 (819)	L 3.5 x 3.5 x 1/4	7.01	7.01	77.2	1.2675	0.45	61.79	0.007 [1]
T12	180 - 160 (836)	L 3.5 x 3.5 x 1/4	7.01	7.01	77.2	1.2675	3.50	61.79	0.057 [1]
T12	180 - 160 (837)	L 3.5 x 3.5 x 1/4	7.01	7.01	77.2	1.2675	3.64	61.79	0.059 [1]
T12	180 - 160 (842)	L 3.5 x 3.5 x 1/4	7.01	7.01	77.2	1.2675	3.67	61.79	0.059 [1]
T12	180 - 160 (843)	L 3.5 x 3.5 x 1/4	7.01	7.01	77.2	1.2675	3.73	61.79	0.060 [1]
T12	180 - 160 (848)	L 3.5 x 3.5 x 1/4	7.01	7.01	77.2	1.2675	3.10	61.79	0.050 [1]
T12	180 - 160 (849)	L 3.5 x 3.5 x 1/4	7.01	7.01	77.2	1.2675	3.30	61.79	0.053 [1]

[1] P_u / ϕP_n controls

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T1	400 - 380	Leg	04-54 (5.9375x.25)	1	-14.22	67.41	21.1	Pass
T2	380 - 360	Leg	04-54 (5.9375x.25)	43	-23.54	67.41	34.9	Pass
T3	360 - 340	Leg	04-54 (5.9375x.25)	82	-22.52	67.41	33.4	Pass
T4	340 - 320	Leg	04-64 (6.625x.25)	123	-35.28	76.33	46.2	Pass
T5	320 - 300	Leg	04-54 (5.9375x.25)	160	-36.19	67.41	53.7	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T6	300 - 280	Leg	04-54 (5.9375x.25)	199	-34.25	67.41	50.8	Pass
T7	280 - 260	Leg	04-64 (6.625x.25)	239	-36.25	76.33	47.5	Pass
T8	260 - 240	Leg	04-64 (6.625x.25)	278	-36.92	76.33	48.4	Pass
T9	240 - 220	Leg	04-64 (6.625x.25)	318	-37.16	76.33	48.7	Pass
T10	220 - 200	Leg	04-64 (6.625x.25)	357	-42.29	76.33	55.4	Pass
T11	200 - 180	Leg	04-66 (6.625x.375)	394	-44.57	116.42	38.3	Pass
T12	180 - 160	Leg	04-86 (8.5x.375)	433	-79.25	156.64	50.6	Pass
T13	160 - 140	Leg	04-66 (6.625x.375)	472	-53.91	116.42	46.3	Pass
T14	140 - 120	Leg	04-65 (6.625x.3125)	511	-51.22	97.03	52.8	Pass
T15	120 - 100	Leg	04-65 (6.625x.3125)	551	-54.55	97.03	56.2	Pass
T16	100 - 80	Leg	04-66 (6.625x.375)	590	-62.91	116.42	54.0	Pass
T17	80 - 60	Leg	04-66 (6.625x.375)	630	-64.03	116.42	55.0	Pass
T18	60 - 40	Leg	04-66 (6.625x.375)	669	-64.14	116.42	55.1	Pass
T19	40 - 20	Leg	04-66 (6.625x.375)	708	-64.85	116.42	55.7	Pass
T20	20 - 2	Leg	04-66 (6.625x.375)	747	-61.90	119.08	52.0	Pass
T1	400 - 380	Diagonal	Andrew M-46 Type T Brace	25	-4.24	10.28	41.3	Pass
T2	380 - 360	Diagonal	M46 "Y" Diagonal	72	-2.14	6.30	34.0	Pass
T3	360 - 340	Diagonal	M46 "Y" Diagonal	90	-3.01	6.30	47.7	Pass
T4	340 - 320	Diagonal	Andrew M-46 Type T Brace	141	-5.46	10.28	53.1	Pass
T5	320 - 300	Diagonal	M46 "Y" Diagonal	196	-2.65	6.30	42.1	Pass
T6	300 - 280	Diagonal	M46 "Y" Diagonal	213	-1.42	6.30	22.5	Pass
T7	280 - 260	Diagonal	M46 "Y" Diagonal	276	-1.76	6.30	27.9	Pass
T8	260 - 240	Diagonal	M46 "Y" Diagonal	282	-0.83	6.30	13.2	Pass
T9	240 - 220	Diagonal	M46 "Y" Diagonal	327	-1.91	6.30	30.3	Pass
T10	220 - 200	Diagonal	M46 "Y" Diagonal	383	-1.44	6.30	22.9	Pass
T11	200 - 180	Diagonal	M46 "Y" Diagonal	399	-3.77	6.30	59.9	Pass
T12	180 - 160	Diagonal	L2x2x3/16	451	7.36	19.68	37.4	Pass
T13	160 - 140	Diagonal	M46 "Y" Diagonal	505	-2.61	6.30	41.5	Pass
T14	140 - 120	Diagonal	M46 "Y" Diagonal	524	-0.85	6.30	13.5	Pass
T15	120 - 100	Diagonal	M46 "Y" Diagonal	566	-2.35	6.30	37.3	Pass
T16	100 - 80	Diagonal	M46 "Y" Diagonal	617	-1.23	6.30	19.5	Pass
T17	80 - 60	Diagonal	M46 "Y" Diagonal	631	-1.01	6.30	16.1	Pass
T18	60 - 40	Diagonal	M46 "Y" Diagonal	694	-1.53	6.30	24.2	Pass
T19	40 - 20	Diagonal	M46 "Y" Diagonal	709	-1.09	6.30	17.4	Pass
T20	20 - 2	Diagonal	M46 "Y" Diagonal	748	-2.08	6.79	30.6	Pass
T1	400 - 380	Top Girt	L2x2x1/8	5	1.84	13.38	13.8	Pass
T1	400 - 380	Guy A@386.667	9/16	796	10.78	22.05	48.9	Pass
T4	340 - 320	Guy A@330	9/16	814	11.60	22.05	52.6	Pass
T7	280 - 260	Guy A@276.667	1/2	825	10.13	16.95	59.8	Pass
T9	240 - 220	Guy A@223.333	1/2	831	11.15	16.95	65.8	Pass
T12	180 - 160	Guy A@170	1/2	845	11.26	16.95	66.5	Pass
T15	120 - 100	Guy A@110	7/16	855	8.93	13.10	68.2	Pass
T18	60 - 40	Guy A@53.3333	3/8	861	5.21	9.70	53.7	Pass
T1	400 - 380	Guy B@386.667	9/16	791	10.90	22.05	49.5	Pass
T4	340 - 320	Guy B@330	9/16	809	11.96	22.05	54.2	Pass
T7	280 - 260	Guy B@276.667	1/2	824	10.21	16.95	60.2	Pass
T9	240 - 220	Guy B@223.333	1/2	830	11.13	16.95	65.7	Pass
T12	180 - 160	Guy B@170	1/2	838	11.11	16.95	65.5	Pass
T15	120 - 100	Guy B@110	7/16	854	8.55	13.10	65.3	Pass
T18	60 - 40	Guy B@53.3333	3/8	860	5.00	9.70	51.6	Pass
T1	400 - 380	Guy C@386.667	9/16	784	11.14	22.05	50.5	Pass
T4	340 - 320	Guy C@330	9/16	802	12.47	22.05	56.6	Pass
T7	280 - 260	Guy C@276.667	1/2	820	10.62	16.95	62.7	Pass
T9	240 - 220	Guy C@223.333	1/2	826	11.25	16.95	66.4	Pass
T12	180 - 160	Guy C@170	1/2	832	11.37	16.95	67.1	Pass
T15	120 - 100	Guy C@110	7/16	850	9.10	13.10	69.4	Pass
T18	60 - 40	Guy C@53.3333	3/8	856	5.26	9.70	54.2	Pass
T7	280 - 260	Top Guy Pull-Off@276.667	2L2x2x3/16x3/8	822	4.86	39.35	12.3	Pass
T9	240 - 220	Top Guy Pull-Off@223.333	2L2x2x3/16x3/8	828	5.04	39.35	12.8	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T15	120 - 100	Top Guy Pull-Off@110	BP 3-3/4 x 2 x 5/16 (GPX)	852	5.28	39.99	13.2	Pass
T18	60 - 40	Top Guy Pull-Off@53.3333	BP 3-3/4 x 2 x 5/16 (GPX)	858	4.05	39.99	10.1	Pass
T1	400 - 380	Torque Arm Top@386.667	L 3.5 x 3.5 x 1/4	786	14.84	64.88	22.9	Pass
T4	340 - 320	Torque Arm Top@330	L 3.5 x 3.5 x 1/4	817	16.34	64.88	25.2	Pass
T12	180 - 160	Torque Arm Top@170	L 3.5 x 3.5 x 1/4	846	15.40	64.88	23.7	Pass
T1	400 - 380	Torque Arm Bottom@386.667	L 3.5 x 3.5 x 1/4	788	-20.14	56.01	36.0	Pass
T4	340 - 320	Torque Arm Bottom@330	L 3.5 x 3.5 x 1/4	806	-22.13	56.01	39.5	Pass
T12	180 - 160	Torque Arm Bottom@170	L 3.5 x 3.5 x 1/4	836	-18.75	56.01	33.5	Pass

Summary		
Leg (T15)	56.2	Pass
Diagonal (T11)	59.9	Pass
Top Girt (T1)	13.8	Pass
Guy A (T15)	68.2	Pass
Guy B (T9)	65.7	Pass
Guy C (T15)	69.4	Pass
Top Guy Pull-Off (T15)	13.2	Pass
Torque Arm Top (T4)	25.2	Pass
Torque Arm Bottom (T4)	39.5	Pass
Bolt Checks	98.5	Pass
RATING =	**98.5**	**Pass**

APPENDIX B

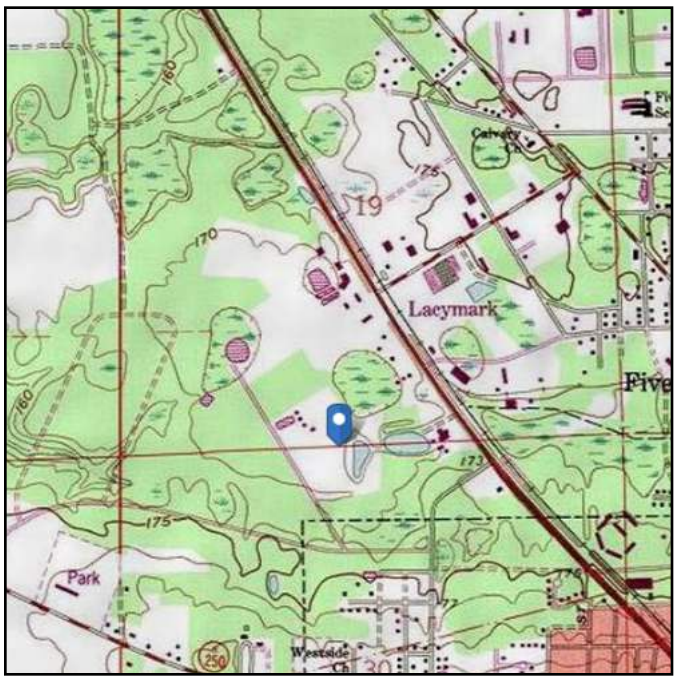
ADDITIONAL CALCULATIONS

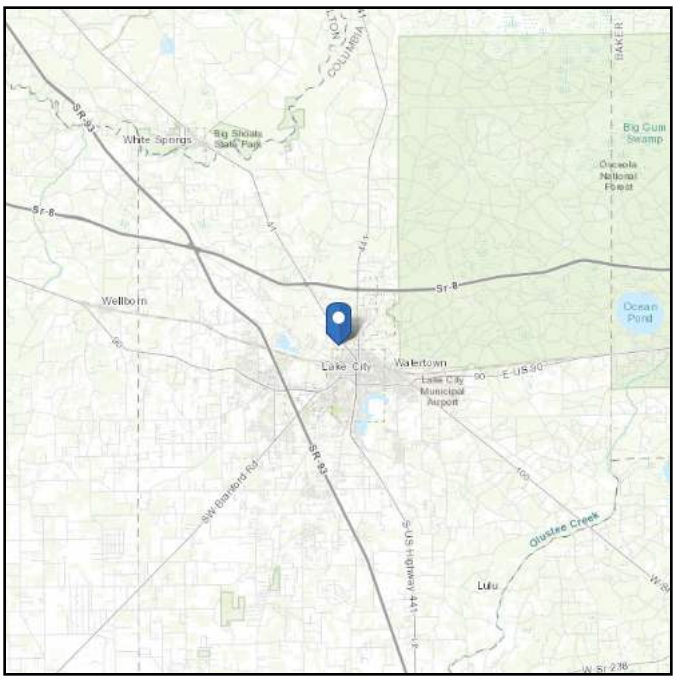
ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Default (see Section 11.4.3)

Elevation: 169.89 ft (NAVD 88)
Latitude: 30.206897
Longitude: -82.652347





Wind

Results:

Wind Speed:	118 Vmph	119 mph per Jurisdiction requirements
10-year MRI	75 Vmph	
25-year MRI	84 Vmph	
50-year MRI	90 Vmph	
100-year MRI	97 Vmph	

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Wed Jun 16 2021

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

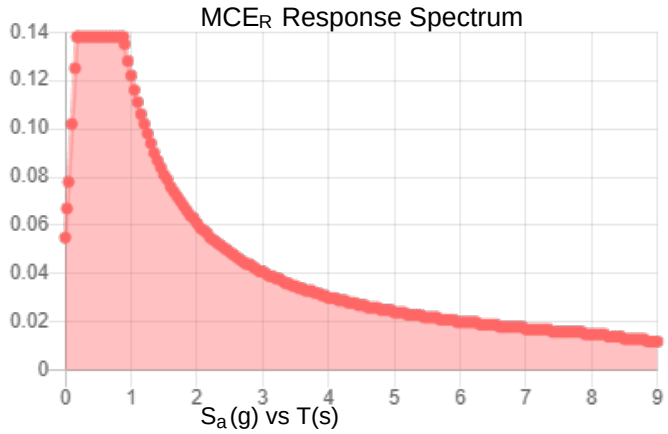
Seismic

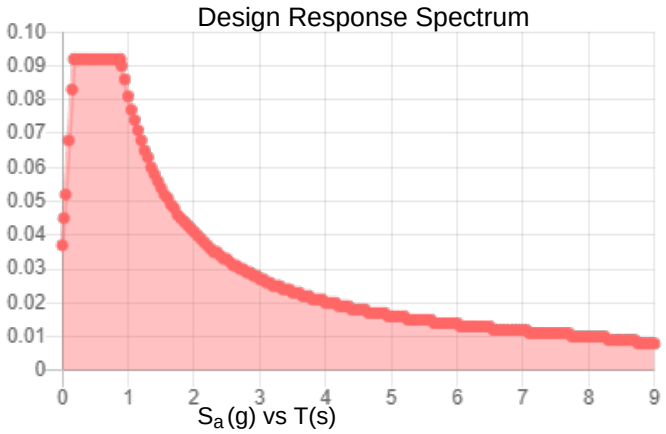
Site Soil Class: D - Default (see Section 11.4.3)

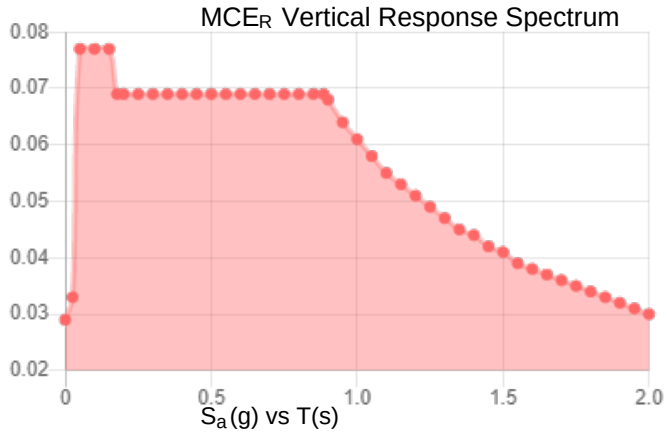
Results:

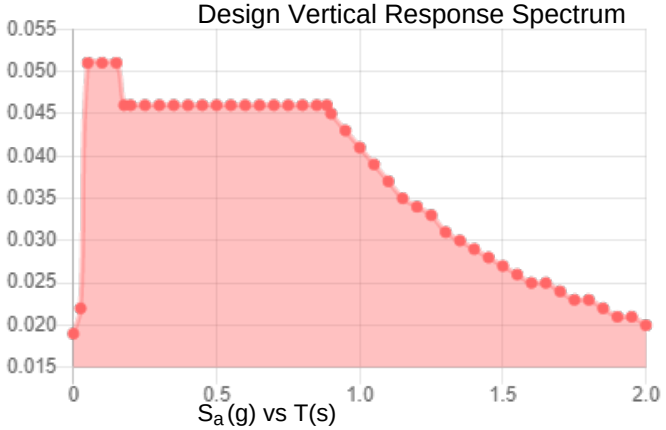
S_S :	0.086	S_{D1} :	0.081
S_1 :	0.051	T_L :	8
F_a :	1.6	PGA :	0.041
F_v :	2.4	PGA_M :	0.066
S_{MS} :	0.138	F_{PGA} :	1.6
S_{M1} :	0.122	I_e :	1
S_{DS} :	0.092	C_v :	0.7

Seismic Design Category B









Data Accessed: Wed Jun 16 2021

Date Source: USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness:	0.25 in.
Concurrent Temperature:	25 F
Gust Speed:	30 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Wed Jun 16 2021

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

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

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228809 - Lake City North

TEP #: 241157.498988

Analysis: JNF 6/23/2021

Check: ANH 6/23/2021

Design Reaction Comparison Tool

Code Revisions: TIA-222-H **Tower Type:** Guyed

Guyed					
Reactions	Design	Design*1.35	Analysis	Capacity	Pass / Fail
Mast Compression (kips)	188.9	255.015	161	60.1%	Pass
Mast Total Shear (kips)	4.2	5.67	1	16.8%	Pass
Inner Anchor Uplift (kips)	28.1	37.935	26	65.3%	Pass
Inner Anchor Shear (kips)	42.4	57.24	40	66.6%	Pass
Outer Anchor Uplift (kips)	54.6	73.71	40	51.7%	Pass
Outer Anchor Shear (kips)	53.5	72.225	40	52.7%	Pass

Note 1: Design loads were multiplied by 1.35 for comparison as allowed by TIA-222-H, Section 15.6.2.

Note 2: Rating per TIA-222-H, Section 15.5