

Date: **November 1, 2021**



FL COA# 31011

Tower Engineering Professionals
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Subject: Structural Analysis Report

Carrier Designation:

T-Mobile Co-Locate

Site Number:

9JK0251A

Site Name:

N/A

Crown Castle Designation:

BU Number:

870081

Site Name:

Lake City (SR 47 & US 41)

JDE Job Number:

692042

Work Order Number:

2036393

Order Number:

592397 Rev. 0

Engineering Firm Designation:

TEP Project Number:

145283.580407

Site Data:

267 Sw Crystal Gln, Lake City, Columbia County, FL 32025

Latitude 30° 8' 43.70", Longitude -82° 39' 10.90"

350 Foot - Guyed Tower

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:

LC7: Proposed Equipment Configuration

Sufficient Capacity

This analysis utilizes an ultimate 3-second gust wind speed of 118 mph as required by the 2020 Florida Building Code, 7th Edition. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: Gautam Soapli, E.I. / WAT

Respectfully submitted by:

Shawn Hoffmeyer, P.E.

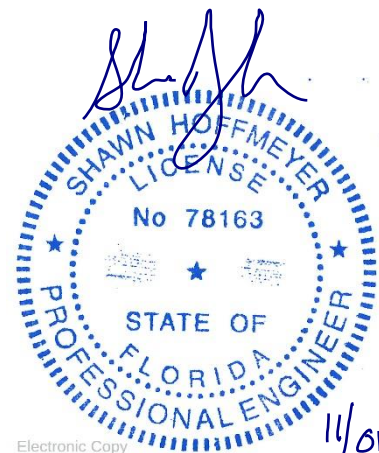


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1) INTRODUCTION

This tower is a 350-ft guyed tower designed by FWT, Inc. and mapped by Pinnacle Towers, Inc. in December of 2000.

2) ANALYSIS CRITERIA

TIA-222 Revision: TIA-222-H
Risk Category: II
Wind Speed: 118 mph
Exposure Category: C
Topographic Factor: 1.0
Service Wind Speed: 60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
229.0	230.0	3	Ericsson	AIR6449 B41_T-MOBILE w/ Mount Pipe	8	1-5/8
		3	Commscope	FHH-65C-R3 w/ Mount Pipe		
		3	Ericsson	RADIO 4460 B2/B25 B66_TMO		
		3	Ericsson	Radio 4480_TMOV2		
	229.0	1	Tower Mounts	Sector Mount [SM 504-3]		
		1	Tower Mounts	Pipe Mount [PM 601-3]		
164.0	164.0	1	Andrew	HPX6-59-P3A/K	1	7/8
		1	Tower Mounts	Pipe Mount [PM 601-1]		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
345.0	355.0	1	Decibel	DB420D-D	3	7/8
	345.0	2	Tower Mounts	Side Arm Mount [SO 602-3]		
	344.0	1	Decibel	DB228-B		
	334.0	1	Decibel	DB420D-D		
324.0	336.0	1	Sinclair	SD214	7	7/8
	333.0	4	Sinclair	SRL-224NM-4		
	324.0	2	Tower Mounts	Side Arm Mount [SO 602-3]		
270.0	278.0	4	Sinclair	SRL-224NM-4	2	7/8
	270.0	4	Tower Mounts	Side Arm Mount [SO 602-1]	1	1/2
255.0	271.0	1	RFS Celwave	PD322-2	1	1/2
	255.0	1	Tower Mounts	Side Arm Mount [SO 305-1]		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
250.0	250.0	6	CSS	X7CQAP-665-VR0 w/ Mount Pipe	12 2	1-5/8 1-1/2
		3	Ericsson	AIR 6449 w/ Mount Pipe		
		1	JMA Wireless	X7CQAP-FRO-645-V w/ Mount Pipe		
		2	Raycap	RDC-4276-PF-48		
		8	Ericsson	RRUS 32		
		1	Raycap	RVZDC-6627-PF-48_CCIV2		
		4	Ericsson	RRUS 4449 B5/B12		
		2	Commscope	TD-850B-LTE78-43		
		1	CSS	DBC-AP		
		1	Tower Mounts	Pipe Mount [PM 601-3]		
		1	Tower Mounts	Sector Mount [SM 503-3]		
222.0	222.0	1	Tower Mounts	Sector Mount [SM 502-3]	3 1	1-3/16 7/8
	220.0	2	Commscope	DT465B-2XR w/ Mount Pipe		
		3	RFS Celwave	APXVSPP18-C w/ Mount Pipe		
		3	Ericsson	RRUS 82 W/SOLAR SHIELD		
		6	Ericsson	RRUS-11 800MHZ		
		3	Ericsson	RRUS 31 B25		
		3	Ericsson	800MHZ SMR FILTER		
		9	RFS Celwave	ACU-A20-N		
215.0	225.0	1	Decibel	DB567R90-CR	1	7/8
	215.0	1	Tower Mounts	Side Arm Mount [SO 602-1]		
201.0	203.0	3	Andrew	DBXNH-8585B-R2M w/ Mount Pipe	12 6 3 3	1-5/8 3/4 3/8 5/16
		6	Commscope	SBNHH-1D85B w/ Mount Pipe		
		3	Commscope	NNHH-65B-R4 w/ Mount Pipe		
		3	Ericsson	RRUS 4478 B14		
		3	Andrew	E15Z01P13		
		3	Ericsson	RRUS 32		
		3	Raycap	DC6-48-60-18-8F		
	201.0	1	Tower Mounts	Sector Mount [SM 502-3]		
164.0	166.0	1	Radiowaves	HPLPD2-11	1	3/8
		1	Ceragon	RFU-C-PD		
	165.0	1	Radiowaves	HPD4-11		
		1	Ceragon	RFU-C-PD		
	164.0	2	Tower Mounts	Pipe Mount [PM 601-1]		
156.0	157.0	9	Decibel	DB848H105ESX w/ Mount Pipe	4	7/8
	156.0	1	Tower Mounts	Sector Mount [SM 1305-3]		
11.0	11.0	1	Channel Master	1.2M	1	3/64
		1	Tower Mounts	Side Arm Mount [SO 301-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
Geotechnical Report	1467434	CCISites
Tower Foundation Drawings	1467548	CCISites
Tower Manufacturer Drawings/Tower Mapping Report	1467491	CCISites

3.1) Analysis Method

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

3.2) Assumptions

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

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 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (k)	ϕP_{allow} (k)	% Capacity	Pass / Fail
T1	350 - 341.945	Leg	2 1/4	2	-3.40	113.53	3.0	Pass
T2	341.945 - 340	Leg	2 1/4	23	-5.30	171.18	3.1	Pass
T3	340 - 320	Leg	2 1/4	39	-26.63	113.53	23.5	Pass
T4	320 - 300	Leg	2 1/4	89	-35.60	113.53	31.4	Pass
T5	300 - 280	Leg	3	141	-59.69	251.58	23.7	Pass
T6	280 - 260	Leg	3	190	-72.21	251.58	28.7	Pass
T7	260 - 240	Leg	3	241	-72.48	251.58	28.8	Pass
T8	240 - 220	Leg	3	293	-106.72	251.58	42.4	Pass
T9	220 - 200	Leg	3	344	-108.88	251.58	43.3	Pass
T10	200 - 180	Leg	3 1/2	394	-105.66	369.17	28.6	Pass
T11	180 - 160	Leg	3 1/2	445	-124.79	369.17	33.8	Pass
T12	160 - 140	Leg	3 1/2	496	-108.52	369.17	29.4	Pass
T13	140 - 120	Leg	3 1/2	547	-126.00	369.17	34.1	Pass
T14	120 - 100	Leg	3 1/2	598	-138.91	369.17	37.6	Pass
T15	100 - 80	Leg	3 1/2	651	-125.66	369.17	34.0	Pass
T16	80 - 60	Leg	3 1/2	702	-126.32	369.17	34.2	Pass
T17	60 - 40	Leg	3 1/2	753	-135.06	369.17	36.6	Pass
T18	40 - 20	Leg	3 1/2	804	-139.27	369.17	37.7	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (k)	ϕP_{allow} (k)	% Capacity	Pass / Fail
T19	20 - 8.05469	Leg	3 1/2	855	-137.32	369.17	37.2	Pass
T20	8.05469 - 6	Leg	3 1/2	885	-128.27	435.19	29.5	Pass
T21	6 - 2.66927	Leg	3 1/2	898	-135.07	384.88	35.1	Pass
T22	2.66927 - 0	Leg	3 1/2	913	-135.50	428.91	31.6	Pass
T1	350 - 341.945	Diagonal	3/4	9	2.42	15.03	16.1	Pass
T2	341.945 - 340	Diagonal	3/4	34	3.26	15.03	21.7	Pass
T3	340 - 320	Diagonal	3/4	84	3.58	15.03	23.8	Pass
T4	320 - 300	Diagonal	3/4	99	3.73	15.03	24.8	Pass
T5	300 - 280	Diagonal	7/8	166	6.03	20.46	29.5	Pass
T6	280 - 260	Diagonal	7/8	235	5.27	20.46	25.8	Pass
T7	260 - 240	Diagonal	2x1/2	250	9.82	34.02	28.9	Pass
T8	240 - 220	Diagonal	2x1/2	332	9.88	34.02	29.0	Pass
T9	220 - 200	Diagonal	7/8	352	3.40	20.46	16.6	Pass
T10	200 - 180	Diagonal	7/8	407	10.36	20.46	50.6	Pass
T11	180 - 160	Diagonal	7/8	494	9.47	20.46	46.3	Pass
T12	160 - 140	Diagonal	7/8	544	4.17	20.46	20.4	Pass
T13	140 - 120	Diagonal	7/8	556	7.80	20.46	38.1	Pass
T14	120 - 100	Diagonal	7/8	643	7.06	20.46	34.5	Pass
T15	100 - 80	Diagonal	3/4	694	4.61	15.03	30.7	Pass
T16	80 - 60	Diagonal	3/4	714	3.59	15.03	23.9	Pass
T17	60 - 40	Diagonal	3/4	779	4.07	15.03	27.1	Pass
T18	40 - 20	Diagonal	3/4	850	2.06	15.03	13.7	Pass
T19	20 - 8.05469	Diagonal	3/4	860	3.14	15.03	20.9	Pass
T20	8.05469 - 6	Diagonal	3/4	893	3.72	15.03	24.8	Pass
T21	6 - 2.66927	Diagonal	2x1/2	909	0.09	34.02	0.3	Pass
T1	350 - 341.945	Horizontal	L2x2x3/16	14	-1.01	15.18	6.7	Pass
T3	340 - 320	Horizontal	L2x2x3/16	80	5.38	24.32	22.1	Pass
T4	320 - 300	Horizontal	L2x2x3/16	104	-2.48	15.18	16.3	Pass
T5	300 - 280	Horizontal	L2x2x1/4	172	-4.26	20.05	21.3	Pass
T6	280 - 260	Horizontal	L2x2x1/4	232	-3.50	20.05	17.5	Pass
T7	260 - 240	Horizontal	L2 1/2x2 1/2x1/4	256	-6.58	29.14	22.6	Pass
T8	240 - 220	Horizontal	L2 1/2x2 1/2x1/4	336	11.96	40.48	29.5	Pass
T9	220 - 200	Horizontal	L2x2x1/4	358	-1.89	20.05	9.4	Pass
T10	200 - 180	Horizontal	L2x2x1/4	411	-6.61	20.22	32.7	Pass
T11	180 - 160	Horizontal	L2x2x1/4	488	10.95	31.91	34.3	Pass
T12	160 - 140	Horizontal	L2x2x1/4	539	-2.01	20.22	9.9	Pass
T13	140 - 120	Horizontal	L2x2x1/4	562	-4.88	20.22	24.1	Pass
T14	120 - 100	Horizontal	L2x2x1/4	641	8.91	31.91	27.9	Pass
T15	100 - 80	Horizontal	L2x2x3/16	691	-2.87	15.50	18.5	Pass
T16	80 - 60	Horizontal	L2x2x3/16	717	-2.25	15.50	14.5	Pass
T17	60 - 40	Horizontal	L2x2x3/16	793	5.09	24.32	20.9	Pass
T18	40 - 20	Horizontal	L2x2x3/16	818	-2.41	15.50	15.6	Pass
T19	20 - 8.05469	Horizontal	L2x2x3/16	875	-2.38	15.50	15.3	Pass
T1	350 - 341.945	Top Girt	L2x2x3/16	6	-0.08	15.18	0.5	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (k)	ϕP_{allow} (k)	% Capacity	Pass / Fail
T2	341.945 - 340	Top Girt	L2x2x3/16	26	-2.34	15.18	15.4	Pass
T3	340 - 320	Top Girt	L2x2x3/16	41	-1.33	15.18	8.8	Pass
T4	320 - 300	Top Girt	L2x2x3/16	92	-0.94	15.18	6.2	Pass
T5	300 - 280	Top Girt	L2x2x1/4	143	-1.55	20.05	7.7	Pass
T6	280 - 260	Top Girt	L2x2x1/4	193	-2.06	20.05	10.3	Pass
T7	260 - 240	Top Girt	L2 1/2x2 1/2x1/4	246	-1.26	29.14	4.3	Pass
T8	240 - 220	Top Girt	L2 1/2x2 1/2x1/4	295	-3.68	29.14	12.6	Pass
T9	220 - 200	Top Girt	L2x2x1/4	346	-1.89	20.05	9.4	Pass
T10	200 - 180	Top Girt	L2x2x1/4	399	-2.27	20.22	11.2	Pass
T11	180 - 160	Top Girt	L2x2x1/4	450	-3.38	20.22	16.7	Pass
T12	160 - 140	Top Girt	L2x2x1/4	501	-1.88	20.22	9.3	Pass
T13	140 - 120	Top Girt	L2x2x1/4	552	-2.18	20.22	10.8	Pass
T14	120 - 100	Top Girt	L2x2x1/4	601	-2.51	20.22	12.4	Pass
T15	100 - 80	Top Girt	L2x2x3/16	653	-2.18	15.50	14.1	Pass
T16	80 - 60	Top Girt	L2x2x3/16	704	-2.19	15.50	14.1	Pass
T17	60 - 40	Top Girt	L2x2x3/16	755	-2.34	15.50	15.1	Pass
T18	40 - 20	Top Girt	L2x2x3/16	806	-2.41	15.50	15.6	Pass
T19	20 - 8.05469	Top Girt	L2x2x3/16	857	-2.38	15.50	15.3	Pass
T20	8.05469 - 6	Top Girt	L2x2x3/16	886	-2.70	15.50	17.4	Pass
T21	6 - 2.66927	Top Girt	L3x3x3/8	901	20.41	71.78	28.4	Pass
T2	341.945 - 340	Bottom Girt	L2x2x3/16	29	-1.59	15.18	10.5	Pass
T3	340 - 320	Bottom Girt	L2x2x3/16	44	-0.75	15.18	4.9	Pass
T4	320 - 300	Bottom Girt	L2x2x3/16	95	-1.35	15.18	8.9	Pass
T5	300 - 280	Bottom Girt	L2x2x1/4	145	-2.06	20.05	10.3	Pass
T6	280 - 260	Bottom Girt	L2x2x1/4	198	-1.25	20.05	6.2	Pass
T7	260 - 240	Bottom Girt	L2 1/2x2 1/2x1/4	247	-3.68	29.14	12.6	Pass
T8	240 - 220	Bottom Girt	L2 1/2x2 1/2x1/4	300	-2.13	29.14	7.3	Pass
T9	220 - 200	Bottom Girt	L2x2x1/4	349	-1.89	20.05	9.4	Pass
T10	200 - 180	Bottom Girt	L2x2x1/4	402	-3.80	20.22	18.8	Pass
T11	180 - 160	Bottom Girt	L2x2x1/4	453	-2.16	20.22	10.7	Pass
T12	160 - 140	Bottom Girt	L2x2x1/4	504	-1.88	20.22	9.3	Pass
T13	140 - 120	Bottom Girt	L2x2x1/4	553	-2.87	20.22	14.2	Pass
T14	120 - 100	Bottom Girt	L2x2x1/4	606	-2.41	20.22	11.9	Pass
T15	100 - 80	Bottom Girt	L2x2x3/16	656	-2.18	15.50	14.1	Pass
T16	80 - 60	Bottom Girt	L2x2x3/16	707	-2.19	15.50	14.1	Pass
T17	60 - 40	Bottom Girt	L2x2x3/16	758	-2.34	15.50	15.1	Pass
T18	40 - 20	Bottom Girt	L2x2x3/16	809	-2.41	15.50	15.6	Pass
T20	8.05469 - 6	Bottom Girt	L2x2x3/16	889	6.00	24.32	24.7	Pass
T21	6 - 2.66927	Bottom Girt	L2x2x1/4	906	-2.47	27.80	8.9	Pass
T22	2.66927 - 0	Bottom Girt	18x3/8	917	-3.10	223.25	5.0	Pass
T3	340 - 320	Guy A@335.836	7/8	953	18.14	50.21	36.1	Pass
T5	300 - 280	Guy A@295.836	7/8	948	18.91	50.21	37.7	Pass
T8	240 - 220	Guy A@235.836	1	942	27.26	65.83	41.4	Pass
T11	180 - 160	Guy A@175.836	7/8	936	20.82	50.21	41.5	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (k)	ΦP_{allow} (k)	% Capacity	Pass / Fail
T14	120 - 100	Guy A@115.836	3/4	930	14.12	36.73	38.4	Pass
T17	60 - 40	Guy A@55.8359	9/16	924	7.45	22.05	33.8	Pass
T3	340 - 320	Guy B@335.836	7/8	951	18.42	50.21	36.7	Pass
T5	300 - 280	Guy B@295.836	7/8	945	19.18	50.21	38.2	Pass
T8	240 - 220	Guy B@235.836	1	939	27.23	65.83	41.4	Pass
T11	180 - 160	Guy B@175.836	7/8	933	20.55	50.21	40.9	Pass
T14	120 - 100	Guy B@115.836	3/4	927	14.07	36.73	38.3	Pass
T17	60 - 40	Guy B@55.8359	9/16	921	7.45	22.05	33.8	Pass
T3	340 - 320	Guy C@335.836	7/8	950	18.32	50.21	36.5	Pass
T5	300 - 280	Guy C@295.836	7/8	944	18.79	50.21	37.4	Pass
T8	240 - 220	Guy C@235.836	1	937	27.21	65.83	41.3	Pass
T11	180 - 160	Guy C@175.836	7/8	931	20.86	50.21	41.5	Pass
T14	120 - 100	Guy C@115.836	3/4	925	14.25	36.73	38.8	Pass
T17	60 - 40	Guy C@55.8359	9/16	919	7.55	22.05	34.2	Pass
							Summary	
						Leg (T9)	43.3	Pass
						Diagonal (T10)	50.6	Pass
						Horizontal (T11)	34.3	Pass
						Top Girt (T21)	28.4	Pass
						Bottom Girt (T20)	24.7	Pass
						Guy A (T11)	41.5	Pass
						Guy B (T8)	41.4	Pass
						Guy C (T11)	41.5	Pass
						Bolt Checks	48.2	Pass
						RATING =	50.6	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1,2	Mast Foundation Structural	-	1.2	Pass
1,2	Mast Foundation Soil Interaction	-	36.6	Pass
1,2	Guy Anchor Structural	-	81.9	Pass
1,2	Guy Anchor Soil Interaction	-	30.0	Pass

Structure Rating (max from all components) =	81.9%
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Notes:

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

Table 6 - Dish Twist/Sway Results for 60 mph Service Wind Speed

Elevation (ft)	Dish Model	Beam Deflection		
		Deflection (in)	Tilt (deg)	Twist (deg)
164.0	Radiowaves HPLPD2-11	1.103	0.0256	0.2847
164.0	Radiowaves HPD4-11	1.103	0.0253	0.2906
164.0	Andrew HPX6-59-P3A/K	1.104	0.0251	0.2961

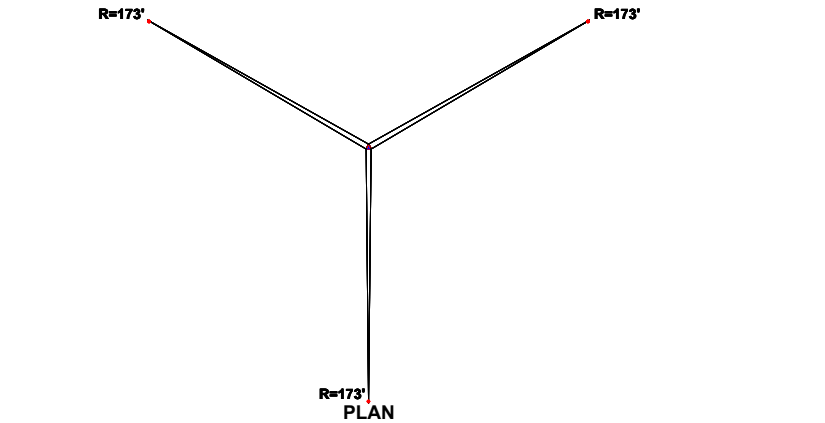
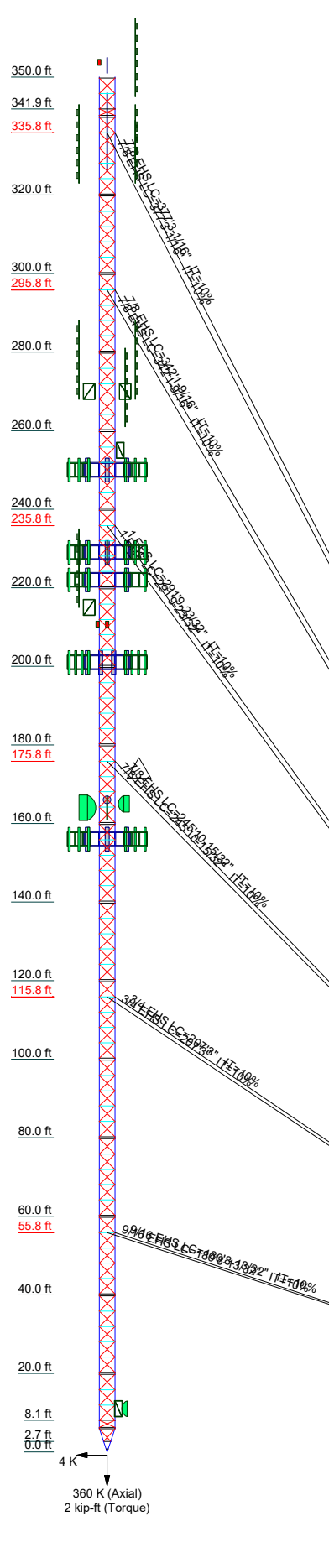
4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT

Section	T19	T18	T17	T16	T15	T14	T13	T12	T11	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1							
Legs	SR 3 1/2										SR 3										SR 2 1/4					
Leg Grade	A572-50																									
Diagonals	B A		SR 3/4				SR 7/8				2x1/2				SR 3/4				SR 3/4							
Diagonal Grade	B		A36																							
Top Girts	B C		L2x2x3/16				L2x2x1/4				L2 1/2x2 1/2x1/4				L2x2x1/4				L2x2x3/16							
Bottom Girts	F E D		N.A.				L2x2x3/16				L2x2x1/4				L2 1/2x2 1/2x1/4				L2x2x1/4				N.A.			
Horizontals	N.A.		L2x2x3/16				L2x2x1/4				L2x2x1/4				L2 1/2x2 1/2x1/4				L2x2x1/4				B D			
Face Width (ft)	78.125																			4						
# Panels @ (ft)	K J I		83 @ 3.89063																	H G						
Weight (K)	38.6		30.3		2.4		2.5		2.5		2.5		2.5		2.0		2.3		2.0		2.0		1.2		0.5	

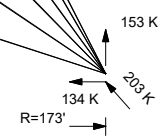


SYMBOL LIST			
MARK	SIZE	MARK	SIZE
A	2x1/2	G	2 @ 3.89063
B	N.A.	H	1 @ 1.67188
C	L3x3x3/8	I	1 @ 1.78125
D	L2x2x3/16	J	1 @ 3.2474
E	L2x2x1/4	K	1 @ 1.91927
F	18x3/8		

MATERIAL STRENGTH					
GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

- TOWER DESIGN NOTES**
1. Tower is located in Columbia County, Florida.
 2. Tower designed for Exposure C to the TIA-222-H Standard.
 3. Tower designed for a 118 mph basic wind in accordance with the TIA-222-H Standard.
 4. Deflections are based upon a 60 mph wind.
 5. Tower Risk Category II.
 6. Topographic Category 1 with Crest Height of 0'
 7. TOWER RATING: 50.6%

ALL REACTIONS ARE FACTORED





Tower Engineering Professionals

326 Tryon Road
Raleigh, NC 270603
Phone: (919) 661-6351
FAX: (919) 661-6350

Job: **Lake City (SR 47 & US 41) (BU 870081)**

Project: TEP No. 145283.618063	Drawn by: anearing	App'd:
Client: Crown Castle	Date: 11/01/21	Scale: NTS
Code: TIA-222-H		Dwg No. E-1
Path:		

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Tower Input Data

The main tower is a 3x guyed tower with an overall height of 350' above the ground line.

The base of the tower is set at an elevation of 0' above the ground line.

The face width of the tower is 4' at the top and tapered at the base.

This tower is designed using the TIA-222-H standard.

The following design criteria apply:

Tower is located in Columbia County, Florida.

Tower base elevation above sea level: 140'.

Basic wind speed of 118 mph.

Risk Category II.

Exposure Category C.

Simplified Topographic Factor Procedure for wind speed-up calculations is used.

Topographic Category: 1.

Crest Height: 0'.

Deflections calculated using a wind speed of 60 mph.

Pressures are calculated at each section.

Stress ratio used in tower member design is 1.

Safety factor used in guy design is 1.

Tower analysis based on target reliabilities in accordance with Annex S.

Load Modification Factors used: $K_{es}(F_w) = 0.95$.

Maximum demand-capacity ratio is: 1.05.

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

Options

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

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Tower Section Geometry

<i>Tower Section</i>	<i>Tower Elevation</i>	<i>Assembly Database</i>	<i>Description</i>	<i>Section Width</i>	<i>Number of Sections</i>	<i>Section Length</i>
	<i>ft</i>			<i>ft</i>		<i>ft</i>
T1	350'-341'11-13/32"			4'	1	8'19/32"
T2	341'11-13/32"-340'			4'	1	1'11-13/32"
T3	340'-320'			4'	1	20'
T4	320'-300'			4'	1	20'
T5	300'-280'			4'	1	20'
T6	280'-260'			4'	1	20'
T7	260'-240'			4'	1	20'
T8	240'-220'			4'	1	20'
T9	220'-200'			4'	1	20'
T10	200'-180'			4'	1	20'
T11	180'-160'			4'	1	20'
T12	160'-140'			4'	1	20'
T13	140'-120'			4'	1	20'
T14	120'-100'			4'	1	20'
T15	100'-80'			4'	1	20'
T16	80'-60'			4'	1	20'
T17	60'-40'			4'	1	20'
T18	40'-20'			4'	1	20'
T19	20'-8'19/32"			4'	1	11'11-13/32"
T20	8'19/32"-6'			4'	1	2'19/32"
T21	6'-2'8-1/32"			4'	1	3'3-31/32"
T22	2'8-1/32"-0'			1'9-3/8"	1	2'8-1/32"

Tower Section Geometry (cont'd)

<i>Tower Section</i>	<i>Tower Elevation</i>	<i>Diagonal Spacing</i>	<i>Bracing Type</i>	<i>Has K Brace End Panels</i>	<i>Has Horizontals</i>	<i>Top Girt Offset</i>	<i>Bottom Girt Offset</i>
	<i>ft</i>	<i>ft</i>				<i>in</i>	<i>in</i>
T1	350'-341'11-13/32"	3'10-11/16"	TX Brace	No	Yes	3.2813	0.0000
T2	341'11-13/32"-340'	1'8-1/32"	TX Brace	No	Yes	0.0000	3.2813
T3	340'-320'	3'10-11/16"	TX Brace	No	Yes	3.2813	3.2813
T4	320'-300'	3'10-11/16"	TX Brace	No	Yes	3.2813	3.2813
T5	300'-280'	3'10-11/16"	TX Brace	No	Yes	3.2813	3.2813
T6	280'-260'	3'10-11/16"	TX Brace	No	Yes	3.2813	3.2813
T7	260'-240'	3'10-11/16"	TX Brace	No	Yes	3.2813	3.2813
T8	240'-220'	3'10-11/16"	TX Brace	No	Yes	3.2813	3.2813
T9	220'-200'	3'10-11/16"	TX Brace	No	Yes	3.2813	3.2813
T10	200'-180'	3'10-11/16"	TX Brace	No	Yes	3.2813	3.2813
T11	180'-160'	3'10-11/16"	TX Brace	No	Yes	3.2813	3.2813
T12	160'-140'	3'10-11/16"	TX Brace	No	Yes	3.2813	3.2813
T13	140'-120'	3'10-11/16"	TX Brace	No	Yes	3.2813	3.2813
T14	120'-100'	3'10-11/16"	TX Brace	No	Yes	3.2813	3.2813
T15	100'-80'	3'10-11/16"	TX Brace	No	Yes	3.2813	3.2813
T16	80'-60'	3'10-11/16"	TX Brace	No	Yes	3.2813	3.2813
T17	60'-40'	3'10-11/16"	TX Brace	No	Yes	3.2813	3.2813
T18	40'-20'	3'10-11/16"	TX Brace	No	Yes	3.2813	3.2813
T19	20'-8'19/32"	3'10-11/16"	TX Brace	No	Yes	3.2813	0.0000

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<i>Tower Section</i>	<i>Tower Elevation</i>	<i>Diagonal Spacing</i>	<i>Bracing Type</i>	<i>Has K Brace End Panels</i>	<i>Has Horizontals</i>	<i>Top Girt Offset</i>	<i>Bottom Girt Offset</i>
	<i>ft</i>	<i>ft</i>				<i>in</i>	<i>in</i>
T20	8'19/32"-6'	1'9-3/8"	TX Brace	No	Yes	0.0000	3.2813
T21	6'-2'8-1/32"	3'3"	TX Brace	No	Yes	1.0000	0.0000
T22	2'8-1/32"-0'	1'11-1/32"	X Brace	No	Yes	0.0000	9.0000

Tower Section Geometry (cont'd)

<i>Tower Elevation</i>	<i>Leg Type</i>	<i>Leg Size</i>	<i>Leg Grade</i>	<i>Diagonal Type</i>	<i>Diagonal Size</i>	<i>Diagonal Grade</i>
<i>ft</i>						
T1 350'-341'11-13/32"	Solid Round	2 1/4	A572-50 (50 ksi)	Solid Round	3/4	A36 (36 ksi)
T2 341'11-13/32"-340'	Solid Round	2 1/4	A572-50 (50 ksi)	Solid Round	3/4	A36 (36 ksi)
T3 340'-320'	Solid Round	2 1/4	A572-50 (50 ksi)	Solid Round	3/4	A36 (36 ksi)
T4 320'-300'	Solid Round	2 1/4	A572-50 (50 ksi)	Solid Round	3/4	A36 (36 ksi)
T5 300'-280'	Solid Round	3	A572-50 (50 ksi)	Solid Round	7/8	A36 (36 ksi)
T6 280'-260'	Solid Round	3	A572-50 (50 ksi)	Solid Round	7/8	A36 (36 ksi)
T7 260'-240'	Solid Round	3	A572-50 (50 ksi)	Flat Bar	2x1/2	A36 (36 ksi)
T8 240'-220'	Solid Round	3	A572-50 (50 ksi)	Flat Bar	2x1/2	A36 (36 ksi)
T9 220'-200'	Solid Round	3	A572-50 (50 ksi)	Solid Round	7/8	A36 (36 ksi)
T10 200'-180'	Solid Round	3 1/2	A572-50 (50 ksi)	Solid Round	7/8	A36 (36 ksi)
T11 180'-160'	Solid Round	3 1/2	A572-50 (50 ksi)	Solid Round	7/8	A36 (36 ksi)
T12 160'-140'	Solid Round	3 1/2	A572-50 (50 ksi)	Solid Round	7/8	A36 (36 ksi)
T13 140'-120'	Solid Round	3 1/2	A572-50 (50 ksi)	Solid Round	7/8	A36 (36 ksi)
T14 120'-100'	Solid Round	3 1/2	A572-50 (50 ksi)	Solid Round	7/8	A36 (36 ksi)
T15 100'-80'	Solid Round	3 1/2	A572-50 (50 ksi)	Solid Round	3/4	A36 (36 ksi)
T16 80'-60'	Solid Round	3 1/2	A572-50 (50 ksi)	Solid Round	3/4	A36 (36 ksi)
T17 60'-40'	Solid Round	3 1/2	A572-50 (50 ksi)	Solid Round	3/4	A36 (36 ksi)
T18 40'-20'	Solid Round	3 1/2	A572-50 (50 ksi)	Solid Round	3/4	A36 (36 ksi)
T19 20'-8'19/32"	Solid Round	3 1/2	A572-50 (50 ksi)	Solid Round	3/4	A36 (36 ksi)
T20 8'19/32"-6'	Solid Round	3 1/2	A572-50 (50 ksi)	Solid Round	3/4	A36 (36 ksi)
T21 6'-2'8-1/32"	Solid Round	3 1/2	A572-50 (50 ksi)	Flat Bar	2x1/2	A36 (36 ksi)
T22 2'8-1/32"-0'	Solid Round	3 1/2	A572-50 (50 ksi)	Flat Bar		A36 (36 ksi)

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Tower Section Geometry (*cont'd*)

<i>Tower Elevation</i> <i>ft</i>	<i>Top Girt Type</i>	<i>Top Girt Size</i>	<i>Top Girt Grade</i>	<i>Bottom Girt Type</i>	<i>Bottom Girt Size</i>	<i>Bottom Girt Grade</i>
T1 350'-341'11"-13/32"	Single Angle	L2x2x3/16	A36 (36 ksi)	Single Angle		A36 (36 ksi)
T2 341'11"-13/32"-340'	Single Angle	L2x2x3/16	A36 (36 ksi)	Single Angle	L2x2x3/16	A36 (36 ksi)
T3 340'-320'	Single Angle	L2x2x3/16	A36 (36 ksi)	Single Angle	L2x2x3/16	A36 (36 ksi)
T4 320'-300'	Single Angle	L2x2x3/16	A36 (36 ksi)	Single Angle	L2x2x3/16	A36 (36 ksi)
T5 300'-280'	Single Angle	L2x2x1/4	A36 (36 ksi)	Single Angle	L2x2x1/4	A36 (36 ksi)
T6 280'-260'	Single Angle	L2x2x1/4	A36 (36 ksi)	Single Angle	L2x2x1/4	A36 (36 ksi)
T7 260'-240'	Single Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)	Single Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)
T8 240'-220'	Single Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)	Single Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)
T9 220'-200'	Single Angle	L2x2x1/4	A36 (36 ksi)	Single Angle	L2x2x1/4	A36 (36 ksi)
T10 200'-180'	Single Angle	L2x2x1/4	A36 (36 ksi)	Single Angle	L2x2x1/4	A36 (36 ksi)
T11 180'-160'	Single Angle	L2x2x1/4	A36 (36 ksi)	Single Angle	L2x2x1/4	A36 (36 ksi)
T12 160'-140'	Single Angle	L2x2x1/4	A36 (36 ksi)	Single Angle	L2x2x1/4	A36 (36 ksi)
T13 140'-120'	Single Angle	L2x2x1/4	A36 (36 ksi)	Single Angle	L2x2x1/4	A36 (36 ksi)
T14 120'-100'	Single Angle	L2x2x1/4	A36 (36 ksi)	Single Angle	L2x2x1/4	A36 (36 ksi)
T15 100'-80'	Single Angle	L2x2x3/16	A36 (36 ksi)	Single Angle	L2x2x3/16	A36 (36 ksi)
T16 80'-60'	Single Angle	L2x2x3/16	A36 (36 ksi)	Single Angle	L2x2x3/16	A36 (36 ksi)
T17 60'-40'	Single Angle	L2x2x3/16	A36 (36 ksi)	Single Angle	L2x2x3/16	A36 (36 ksi)
T18 40'-20'	Single Angle	L2x2x3/16	A36 (36 ksi)	Single Angle	L2x2x3/16	A36 (36 ksi)
T19 20'-8'19/32"	Single Angle	L2x2x3/16	A36 (36 ksi)	Single Angle		A36 (36 ksi)
T20 8'19/32"-6'	Single Angle	L2x2x3/16	A36 (36 ksi)	Single Angle	L2x2x3/16	A36 (36 ksi)
T21 6'-2'8-1/32"	Single Angle	L3x3x3/8	A36 (36 ksi)	Single Angle	L2x2x1/4	A36 (36 ksi)
T22 2'8-1/32"-0'	Single Angle		A36 (36 ksi)	Flat Bar	18x3/8	A36 (36 ksi)

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Tower Section Geometry (*cont'd*)

<i>Tower Elevation</i>	<i>No. of Mid Girts</i>	<i>Mid Girt Type</i>	<i>Mid Girt Size</i>	<i>Mid Girt Grade</i>	<i>Horizontal Type</i>	<i>Horizontal Size</i>	<i>Horizontal Grade</i>
<i>ft</i>							
T1 350'-341'11-13/32"	None	Solid Round		A572-50 (50 ksi)	Single Angle	L2x2x3/16	A36 (36 ksi)
T2 341'11-13/32"-340'	None	Solid Round		A572-50 (50 ksi)	Single Angle	L2x2x3/16	A36 (36 ksi)
T3 340'-320'	None	Solid Round		A572-50 (50 ksi)	Single Angle	L2x2x3/16	A36 (36 ksi)
T4 320'-300'	None	Solid Round		A572-50 (50 ksi)	Single Angle	L2x2x3/16	A36 (36 ksi)
T5 300'-280'	None	Solid Round		A572-50 (50 ksi)	Single Angle	L2x2x1/4	A36 (36 ksi)
T6 280'-260'	None	Solid Round		A572-50 (50 ksi)	Single Angle	L2x2x1/4	A36 (36 ksi)
T7 260'-240'	None	Solid Round		A572-50 (50 ksi)	Single Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)
T8 240'-220'	None	Solid Round		A572-50 (50 ksi)	Single Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)
T9 220'-200'	None	Solid Round		A572-50 (50 ksi)	Single Angle	L2x2x1/4	A36 (36 ksi)
T10 200'-180'	None	Solid Round		A572-50 (50 ksi)	Single Angle	L2x2x1/4	A36 (36 ksi)
T11 180'-160'	None	Solid Round		A572-50 (50 ksi)	Single Angle	L2x2x1/4	A36 (36 ksi)
T12 160'-140'	None	Solid Round		A572-50 (50 ksi)	Single Angle	L2x2x1/4	A36 (36 ksi)
T13 140'-120'	None	Solid Round		A572-50 (50 ksi)	Single Angle	L2x2x1/4	A36 (36 ksi)
T14 120'-100'	None	Solid Round		A572-50 (50 ksi)	Single Angle	L2x2x1/4	A36 (36 ksi)
T15 100'-80'	None	Solid Round		A572-50 (50 ksi)	Single Angle	L2x2x3/16	A36 (36 ksi)
T16 80'-60'	None	Solid Round		A572-50 (50 ksi)	Single Angle	L2x2x3/16	A36 (36 ksi)
T17 60'-40'	None	Solid Round		A572-50 (50 ksi)	Single Angle	L2x2x3/16	A36 (36 ksi)
T18 40'-20'	None	Solid Round		A572-50 (50 ksi)	Single Angle	L2x2x3/16	A36 (36 ksi)
T19 20'-8'19/32"	None	Solid Round		A572-50 (50 ksi)	Single Angle	L2x2x3/16	A36 (36 ksi)
T20 8'19/32"-6'	None	Solid Round		A572-50 (50 ksi)	Single Angle	L2x2x3/16	A36 (36 ksi)
T21 6'-2'8-1/32"	None	Solid Round		A572-50 (50 ksi)	Single Angle	L3x3x3/8	A36 (36 ksi)

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Tower Section Geometry (*cont'd*)

<i>Tower Elevation</i>	<i>Gusset Area (per face)</i>	<i>Gusset Thickness</i>	<i>Gusset Grade</i>	<i>Adjust. Factor A_f</i>	<i>Adjust. Factor A_r</i>	<i>Weight Mult.</i>	<i>Double Angle Stitch Bolt Spacing Diagonals</i>	<i>Double Angle Stitch Bolt Spacing Horizontals</i>	<i>Double Angle Stitch Bolt Spacing Redundants</i>
<i>ft</i>	<i>ft²</i>	<i>in</i>					<i>in</i>	<i>in</i>	<i>in</i>
T1 350'-341'11"-13 /32"	0.00	0.0000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	Mid-Pt
T2 341'11"-13/32"- 340'	0.00	0.0000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	Mid-Pt
T3 340'-320'	0.00	0.0000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	Mid-Pt
T4 320'-300'	0.00	0.0000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	Mid-Pt
T5 300'-280'	0.00	0.0000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	Mid-Pt
T6 280'-260'	0.00	0.0000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	Mid-Pt
T7 260'-240'	0.00	0.0000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	Mid-Pt
T8 240'-220'	0.00	0.0000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	Mid-Pt
T9 220'-200'	0.00	0.0000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	Mid-Pt
T10 200'-180'	0.00	0.0000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	Mid-Pt
T11 180'-160'	0.00	0.0000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	Mid-Pt
T12 160'-140'	0.00	0.0000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	Mid-Pt
T13 140'-120'	0.00	0.0000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	Mid-Pt
T14 120'-100'	0.00	0.0000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	Mid-Pt
T15 100'-80'	0.00	0.0000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	Mid-Pt
T16 80'-60'	0.00	0.0000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	Mid-Pt
T17 60'-40'	0.00	0.0000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	Mid-Pt
T18 40'-20'	0.00	0.0000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	Mid-Pt
T19 20'-8'19/32"	0.00	0.0000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	Mid-Pt
T20 8'19/32"-6'	0.00	0.0000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	Mid-Pt
T21 6'-2'8"-1/32"	0.00	0.0000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	Mid-Pt
T22 2'8"-1/32"-0'	0.00	0.0000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	Mid-Pt

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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	Yes	Yes	1	1	1	1	1	1	1	1
350'-341'11"-1				1	1	1	1	1	1	1
3/32"										
T2	Yes	Yes	1	1	1	1	1	1	1	1
341'11"-13/32"				1	1	1	1	1	1	1
-340'										
T3 340'-320'	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T4 320'-300'	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T5 300'-280'	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T6 280'-260'	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T7 260'-240'	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T8 240'-220'	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T9 220'-200'	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T10 200'-180'	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T11 180'-160'	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T12 160'-140'	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T13 140'-120'	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T14 120'-100'	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T15 100'-80'	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T16 80'-60'	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T17 60'-40'	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T18 40'-20'	Yes	Yes	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T19	Yes	Yes	1	1	1	1	1	1	1	1
20'-8'19/32"				1	1	1	1	1	1	1
T20	Yes	Yes	1	1	1	1	1	1	1	1
8'19/32"-6'				1	1	1	1	1	1	1
T21	Yes	Yes	1	1	1	1	1	1	1	1
6'-2'8-1/32"				1	1	1	1	1	1	1
T22	Yes	Yes	1	1	1	1	1	1	1	1
2'8-1/32"-0'				1	1	1	1	1	1	1

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

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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.
T15 100'-80'	Flange	0.7500	3	0.0000	0	0.0000	0	0.0000	0	0.6250	0	0.0000	0	0.6250	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T16 80'-60'	Flange	0.7500	3	0.0000	0	0.0000	0	0.0000	0	0.6250	0	0.0000	0	0.6250	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T17 60'-40'	Flange	0.7500	3	0.0000	0	0.0000	0	0.0000	0	0.6250	0	0.0000	0	0.6250	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T18 40'-20'	Flange	0.7500	3	0.0000	0	0.0000	0	0.0000	0	0.6250	0	0.0000	0	0.6250	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T19	Flange	0.0000	0	0.0000	0	0.0000	0	0.0000	0	0.6250	0	0.0000	0	0.6250	0
20'-8'19/32"		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T20 8'19/32"-6'	Flange	0.7500	3	0.0000	0	0.0000	0	0.0000	0	0.6250	0	0.0000	0	0.6250	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T21	Flange	0.0000	0	0.0000	0	0.0000	0	0.0000	0	0.6250	0	0.0000	0	0.6250	0
6'-2'8-1/32"		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T22	Flange	0.0000	0	0.0000	0	0.0000	0	0.0000	0	0.6250	0	0.0000	0	0.6250	0
2'8-1/32"-0'		A325N		A325N		A325N		A325N		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 %
55.8359	EHS	A 9/16	3.50	10%	23000	0.671	180'6-27/32"	173'	0.0000	0'	100%
		B 9/16	3.50	10%	23000	0.671	180'6-27/32"	173'	0.0000	0'	100%
		C 9/16	3.50	10%	23000	0.671	180'6-27/32"	173'	0.0000	0'	100%
115.836	EHS	A 3/4	5.83	10%	24000	1.155	207'1-5/16"	173'	0.0000	0'	100%
		B 3/4	5.83	10%	24000	1.155	207'1-5/16"	173'	0.0000	0'	100%
		C 3/4	5.83	10%	24000	1.155	207'1-5/16"	173'	0.0000	0'	100%
175.836	EHS	A 7/8	7.97	10%	24000	1.581	245'8-13/32"	173'	0.0000	0'	100%
		B 7/8	7.97	10%	24000	1.581	245'8-13/32"	173'	0.0000	0'	100%
		C 7/8	7.97	10%	24000	1.581	245'8-13/32"	173'	0.0000	0'	100%
235.836	EHS	A 1	10.45	10%	24000	2.100	291'7-5/16"	173'	0.0000	0'	100%
		B 1	10.45	10%	24000	2.100	291'7-5/16"	173'	0.0000	0'	100%
		C 1	10.45	10%	24000	2.100	291'7-5/16"	173'	0.0000	0'	100%
295.836	EHS	A 7/8	7.97	10%	24000	1.581	341'10-11/16	173'	0.0000	0'	100%
		B 7/8	7.97	10%	24000	1.581	"	173'	0.0000	0'	100%
		C 7/8	7.97	10%	24000	1.581	341'10-11/16	173'	0.0000	0'	100%
							"				
							341'10-11/16				
							"				
335.836	EHS	A 7/8	7.97	10%	24000	1.581	376'11-7/8"	173'	0.0000	0'	100%
		B 7/8	7.97	10%	24000	1.581	376'11-7/8"	173'	0.0000	0'	100%
		C 7/8	7.97	10%	24000	1.581	376'11-7/8"	173'	0.0000	0'	100%

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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
55.8359	Face						
115.836	Face						
175.836	Face						
235.836	Face						
295.836	Face						
335.836	Face						

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
55'10-3/32'	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Flat Bar	
115'10-3/32"	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Flat Bar	
175'10-3/32"	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Flat Bar	
235'10-3/32"	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Flat Bar	
295'10-3/32"	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Flat Bar	
335'10-3/32"	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Flat Bar	

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
55.8359	0.12	0.12	0.12		3'1-5/16"	3'1-5/16"	3'1-5/16"	
					3.0 sec/pulse	3.0 sec/pulse	3.0 sec/pulse	
115.836	0.24	0.24	0.24		4'2-13/32"	4'2-13/32"	4'2-13/32"	
					3.5 sec/pulse	3.5 sec/pulse	3.5 sec/pulse	
175.836	0.39	0.39	0.39		5'10-11/16"	5'10-11/16"	5'10-11/16"	
					4.2 sec/pulse	4.2 sec/pulse	4.2 sec/pulse	
235.836	0.61	0.61	0.61		8'4-3/16"	8'4-3/16"	8'4-3/16"	
					5.0 sec/pulse	5.0 sec/pulse	5.0 sec/pulse	
295.836	0.54	0.54	0.54		11'3-1/4"	11'3-1/4"	11'3-1/4"	
					5.8 sec/pulse	5.8 sec/pulse	5.8 sec/pulse	
335.836	0.60	0.60	0.60		13'7-13/16"	13'7-13/16"	13'7-13/16"	
					6.4 sec/pulse	6.4 sec/pulse	6.4 sec/pulse	

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Guy Data (cont'd)

Guy Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Torque Arm		Pull Off		Diagonal	
			K _x	K _y	K _x	K _y	K _x	K _y
55.8359	No	No			0.7	0.7	1	1
115.836	No	No			0.7	0.7	1	1
175.836	No	No			0.7	0.7	1	1
235.836	No	No			0.7	0.7	1	1
295.836	No	No			0.7	0.7	1	1
335.836	No	No			0.7	0.7	1	1

Guy Data (cont'd)

Guy Elevation ft	Torque-Arm				Pull Off				Diagonal			
	Bolt Size in	Number	Net Width Deduct in	U	Bolt Size in	Number	Net Width Deduct in	U	Bolt Size in	Number	Net Width Deduct in	U
55.8359	0.0000	0	0.0000	1	0.0000 A325N	0	0.0000	1	0.0000 A325N	0	0.0000	1
115.836	0.6250 A325N	0	0.0000	0.75	0.0000 A325N	0	0.0000	1	0.0000 A325N	0	0.0000	1
175.836	0.6250 A325N	0	0.0000	0.75	0.0000 A325N	0	0.0000	1	0.0000 A325N	0	0.0000	1
235.836	0.6250 A325N	0	0.0000	0.75	0.0000 A325N	0	0.0000	1	0.0000 A325N	0	0.0000	1
295.836	0.6250 A325N	0	0.0000	0.75	0.0000 A325N	0	0.0000	1	0.0000 A325N	0	0.0000	1
335.836	0.6250 A325N	0	0.0000	0.75	0.0000 A325N	0	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
55.8359	A	27'11-1/32"	28		
	B	27'11-1/32"	28		
	C	27'11-1/32"	28		
115.836	A	57'11-1/32"	32		
	B	57'11-1/32"	32		
	C	57'11-1/32"	32		
175.836	A	87'11-1/32"	35		
	B	87'11-1/32"	35		
	C	87'11-1/32"	35		
235.836	A	117'11-1/32"	38		
	B	117'11-1/32"	38		
	C	117'11-1/32"	38		
295.836	A	147'11-1/32"	39		
	B	147'11-1/32"	39		
	C	147'11-1/32"	39		
335.836	A	167'11-1/32"	40		
	B	167'11-1/32"	40		
	C	167'11-1/32"	40		

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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
* FACE A*													
LDF7-50A(1-5/8")	A	No	No	Ar (CaAa)	250' - 0'	0.0000	0.4	5	5	0.5000	1.9800		0.82
LDF7-50A(1-5/8")	A	No	No	Ar (CaAa)	250' - 0'	0.0000	-0.35	4	2	0.5000	1.9800		0.82
LDF7-50A(1-5/8")	A	No	No	Ar (CaAa)	250' - 0'	0.0000	0	3	3	0.5000	1.9800		0.82
MLC HYBRID 6X12 LI(1-1/2") Waveguide Brackets	A	No	No	Ar (CaAa)	250' - 0'	2.5000	0.4	2	2	0.5000	1.5500		1.85
* Thin Flat Bar Climbing Ladder Safety Line 3/8	A	No	No	Af (CaAa)	350' - 0'	-0.5000	0	1	1	2.0000	2.0000		4.00
* TSZ 999 067/xxxM-8A WG(1-3/16) FIBER ONLY CABLE 48(7/8")	A	No	No	Ar (CaAa)	222' - 0'	-2.5000	-0.375	3	2	0.5000	1.1900		1.07
* CR 50 1070(7/8)	A	No	No	Ar (CaAa)	222' - 0'	-2.5000	-0.39	1	1	0.5000	0.8670		0.25
* RG-8(3/64")	C	No	No	Ar (CaAa)	156' - 0'	0.0000	-0.45	3	3	0.5000	1.1700		0.28
* FACE B*													
CR 50 1070(7/8)	B	No	No	Ar (CaAa)	156' - 0'	0.0000	0.35	4	4	0.5000	1.1700		0.28
CR 50 1070(7/8)	B	No	No	Ar (CaAa)	270' - 0'	0.0000	-0.1	12	9	0.5000	1.1700		0.28
CR 50 1070(7/8)	B	No	No	Ar (CaAa)	324' - 270'	0.0000	-0.1	10	9	0.5000	1.1700		0.28
CR 50 1070(7/8)	B	No	No	Ar (CaAa)	345' - 324'	0.0000	-0.1	3	3	0.5000	1.1700		0.28
LDF4-50A(1/2")	B	No	No	Ar (CaAa)	255' - 0'	2.0000	0.37	2	2	0.5000	0.6300		0.15
LDF4-50A(1/2")	B	No	No	Ar (CaAa)	270' - 255'	2.0000	0.37	1	1	0.5000	0.6300		0.15
* Waveguide Brackets	B	No	No	Af (CaAa)	350' - 0'	0.0000	0	1	1	1.7500	1.7500		1.27
* FACE C*													
LDF7-50A(1-5/8")	C	No	No	Ar (CaAa)	229' - 0'	0.0000	-0.17	8	3	0.5000	1.9800		0.82

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Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
CR 50 1070(7/8)	C	No	No	Ar (CaAa)	156' - 0'	0.0000	-0.35	4	4	0.5000	1.1700		0.28
CR 50 1070(7/8)	C	No	No	Ar (CaAa)	215' - 0'	0.0000	-0.35	1	1	0.5000	1.1700		0.28
*													
FXL-1873(1-5 /8")	C	No	No	Ar (CaAa)	201' - 0'	0.0000	0.2	12	6	0.5000	1.9800		0.67
RLSS 8AWG DC(3/4")	C	No	No	Ar (CaAa)	201' - 0'	5.0000	0.375	1	1	0.5000	0.7350		0.49
ATCB-B01-00 1(5/16)	C	No	No	Ar (CaAa)	201' - 0'	5.0000	0.3	2	2	0.5000	0.3150		0.07
RLSS 8AWG DC(3/4")	C	No	No	Ar (CaAa)	201' - 0'	5.0000	0.24	1	1	0.5000	0.7350		0.49
FB-L98B-002- 50000(3/8")	C	No	No	Ar (CaAa)	201' - 0'	5.0000	0.17	1	1	0.5000	0.3937		0.06
RLSS 8AWG DC(3/4")	C	No	No	Ar (CaAa)	201' - 0'	5.0000	0.1	1	1	0.5000	0.7350		0.49
FB-L98B-002- 50000(3/8")	C	No	No	Ar (CaAa)	201' - 0'	5.0000	0.03	2	2	0.5000	0.3937		0.06
RLSS 8AWG DC(3/4")	C	No	No	Ar (CaAa)	201' - 0'	4.0000	-0.015	1	1	0.5000	0.7350		0.49
RLSS 8AWG DC(3/4")	C	No	No	Ar (CaAa)	201' - 0'	0.0000	-0.02	2	1	0.5000	0.7350		0.49
ATCB-B01-00 1(5/16)	C	No	No	Ar (CaAa)	201' - 0'	3.0000	-0.02	1	1	0.5000	0.3150		0.07
*													
LMR-400(3/8")	C	No	No	Ar (CaAa)	164' - 0'	0.0000	0.45	1	1	0.5000	0.4050		0.07
EC5-50(7/8")	A	No	No	Ar (CaAa)	164' - 0'	0.0000	-0.45	1	1	0.5000	1.1020		0.36
*													
Waveguide Brackets	C	No	No	Af (CaAa)	350' - 0'	0.0000	0	1	1	1.7500	1.7500		1.27
*													
RPM 777 380(3/8")	C	No	No	Ar (CaAa)	210' - 0'	0.0000	0.5	2	2	0.3800	0.3800		0.22
RPM 777 380(3/8")	C	No	No	Ar (CaAa)	350' - 210'	0.0000	0.5	1	1	0.3800	0.3800		0.22
*													

Feed Line/Linear Appurtenances - Entered As Area

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

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Feed Line/Linear Appurtenances Section Areas

<i>Tower Section</i>	<i>Tower Elevation ft</i>	<i>Face</i>	<i>A_R ft²</i>	<i>A_F ft²</i>	<i>C_{AA} In Face ft²</i>	<i>C_{AA} Out Face ft²</i>	<i>Weight K</i>
T1	350'-341'11"-13/32'	A	0.000	0.000	5.336	0.000	0.04
		B	0.000	0.000	3.421	0.000	0.01
		C	0.000	0.000	2.655	0.000	0.01
T2	341'11"-13/32"-340'	A	0.000	0.000	1.289	0.000	0.01
		B	0.000	0.000	1.250	0.000	0.00
		C	0.000	0.000	0.641	0.000	0.00
T3	340'-320'	A	0.000	0.000	13.250	0.000	0.11
		B	0.000	0.000	16.129	0.000	0.05
		C	0.000	0.000	6.593	0.000	0.03
T4	320'-300'	A	0.000	0.000	13.250	0.000	0.11
		B	0.000	0.000	29.233	0.000	0.08
		C	0.000	0.000	6.593	0.000	0.03
T5	300'-280'	A	0.000	0.000	13.250	0.000	0.11
		B	0.000	0.000	29.233	0.000	0.08
		C	0.000	0.000	6.593	0.000	0.03
T6	280'-260'	A	0.000	0.000	13.250	0.000	0.11
		B	0.000	0.000	32.203	0.000	0.09
		C	0.000	0.000	6.593	0.000	0.03
T7	260'-240'	A	0.000	0.000	40.110	0.000	0.25
		B	0.000	0.000	36.118	0.000	0.10
		C	0.000	0.000	6.593	0.000	0.03
T8	240'-220'	A	0.000	0.000	67.857	0.000	0.39
		B	0.000	0.000	36.433	0.000	0.10
		C	0.000	0.000	20.849	0.000	0.09
T9	220'-200'	A	0.000	0.000	75.844	0.000	0.45
		B	0.000	0.000	36.433	0.000	0.10
		C	0.000	0.000	43.438	0.000	0.18
T10	200'-180'	A	0.000	0.000	75.844	0.000	0.45
		B	0.000	0.000	36.433	0.000	0.10
		C	0.000	0.000	101.966	0.000	0.40
T11	180'-160'	A	0.000	0.000	76.285	0.000	0.45
		B	0.000	0.000	36.433	0.000	0.10
		C	0.000	0.000	102.128	0.000	0.40
T12	160'-140'	A	0.000	0.000	78.048	0.000	0.46
		B	0.000	0.000	43.921	0.000	0.12
		C	0.000	0.000	115.880	0.000	0.43
T13	140'-120'	A	0.000	0.000	78.048	0.000	0.46
		B	0.000	0.000	45.793	0.000	0.12
		C	0.000	0.000	119.156	0.000	0.44
T14	120'-100'	A	0.000	0.000	78.048	0.000	0.46
		B	0.000	0.000	45.793	0.000	0.12
		C	0.000	0.000	119.156	0.000	0.44
T15	100'-80'	A	0.000	0.000	78.048	0.000	0.46
		B	0.000	0.000	45.793	0.000	0.12
		C	0.000	0.000	119.156	0.000	0.44
T16	80'-60'	A	0.000	0.000	78.048	0.000	0.46
		B	0.000	0.000	45.793	0.000	0.12
		C	0.000	0.000	119.156	0.000	0.44
T17	60'-40'	A	0.000	0.000	78.048	0.000	0.46
		B	0.000	0.000	45.793	0.000	0.12
		C	0.000	0.000	119.156	0.000	0.44
T18	40'-20'	A	0.000	0.000	78.048	0.000	0.46
		B	0.000	0.000	45.793	0.000	0.12
		C	0.000	0.000	119.156	0.000	0.44
T19	20'-8'19/32"	A	0.000	0.000	46.629	0.000	0.27
		B	0.000	0.000	27.351	0.000	0.07
		C	0.000	0.000	71.168	0.000	0.26
T20	8'19/32"-6'	A	0.000	0.000	8.027	0.000	0.05

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Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
T21	6'-2'8-1/32"	B	0.000	0.000	4.705	0.000	0.01
		C	0.000	0.000	12.241	0.000	0.05
		A	0.000	0.000	13.013	0.000	0.08
		B	0.000	0.000	7.626	0.000	0.02
		C	0.000	0.000	19.844	0.000	0.07
T22	2'8-1/32"-0'	A	0.000	0.000	10.429	0.000	0.06
		B	0.000	0.000	6.112	0.000	0.02
		C	0.000	0.000	15.903	0.000	0.06

Feed Line Center of Pressure

Section	Elevation ft	CP _x in	CP _z in	CP _x Ice in	CP _z Ice in
T1	350'-341'11-13/32"	-0.9607	-0.8912	-0.9607	-0.8912
T2	341'11-13/32"-340'	-0.2868	-1.0726	-0.2868	-1.0726
T3	340'-320'	-0.1204	-2.0027	-0.1204	-2.0027
T4	320'-300'	0.9622	-3.5376	0.9622	-3.5376
T5	300'-280'	0.8988	-3.3158	0.8988	-3.3158
T6	280'-260'	1.0620	-3.4561	1.0620	-3.4561
T7	260'-240'	-0.6605	-4.6575	-0.6605	-4.6575
T8	240'-220'	-1.5388	-4.7793	-1.5388	-4.7793
T9	220'-200'	-2.0653	-3.1229	-2.0653	-3.1229
T10	200'-180'	-3.5317	-0.8255	-3.5256	-0.8241
T11	180'-160'	-3.5879	-0.7864	-3.5830	-0.7853
T12	160'-140'	-1.9433	-0.0333	-1.9416	-0.0333
T13	140'-120'	-1.5214	0.1062	-1.5207	0.1062
T14	120'-100'	-1.5207	0.1062	-1.5207	0.1062
T15	100'-80'	-1.5272	0.1067	-1.5272	0.1067
T16	80'-60'	-1.5272	0.1067	-1.5272	0.1067
T17	60'-40'	-1.5272	0.1067	-1.5272	0.1067
T18	40'-20'	-1.5272	0.1067	-1.5272	0.1067
T19	20'-8'19/32"	-1.5442	0.1089	-1.5442	0.1089
T20	8'19/32"-6'	-1.3592	0.1005	-1.3592	0.1005
T21	6'-2'8-1/32"	-0.9891	0.1746	-0.9891	0.1746
T22	2'8-1/32"-0'	-0.6371	0.3035	-0.6371	0.3035

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T1	6	Waveguide Brackets	341.95 - 350.00	0.6000	0.6000
T1	8	Thin Flat Bar Climbing Ladder	341.95 - 350.00	0.6000	0.6000
T1	9	Safety Line 3/8	341.95 - 350.00	0.6000	0.6000
T1	25	CR 50 1070(7/8)	341.95 - 345.00	0.6000	0.6000
T1	33	Waveguide Brackets	341.95 - 350.00	0.6000	0.6000
T1	57	Waveguide Brackets	341.95 - 350.00	0.6000	0.6000

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<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T1	60	RPM 777 380(3/8")	341.95 - 350.00	0.6000	0.6000
T2	6	Waveguide Brackets	340.00 - 341.95	0.6000	0.6000
T2	8	Thin Flat Bar Climbing Ladder	340.00 - 341.95	0.6000	0.6000
T2	9	Safety Line 3/8	340.00 - 341.95	0.6000	0.6000
T2	25	CR 50 1070(7/8)	340.00 - 341.95	0.6000	0.6000
T2	33	Waveguide Brackets	340.00 - 341.95	0.6000	0.6000
T2	57	Waveguide Brackets	340.00 - 341.95	0.6000	0.6000
T2	60	RPM 777 380(3/8")	340.00 - 341.95	0.6000	0.6000
T3	6	Waveguide Brackets	320.00 - 340.00	0.6000	0.6000
T3	8	Thin Flat Bar Climbing Ladder	320.00 - 340.00	0.6000	0.6000
T3	9	Safety Line 3/8	320.00 - 340.00	0.6000	0.6000
T3	24	CR 50 1070(7/8)	320.00 - 324.00	0.6000	0.6000
T3	25	CR 50 1070(7/8)	324.00 - 340.00	0.6000	0.6000
T3	33	Waveguide Brackets	320.00 - 340.00	0.6000	0.6000
T3	57	Waveguide Brackets	320.00 - 340.00	0.6000	0.6000
T3	60	RPM 777 380(3/8")	320.00 - 340.00	0.6000	0.6000
T4	6	Waveguide Brackets	300.00 - 320.00	0.6000	0.6000
T4	8	Thin Flat Bar Climbing Ladder	300.00 - 320.00	0.6000	0.6000
T4	9	Safety Line 3/8	300.00 - 320.00	0.6000	0.6000
T4	24	CR 50 1070(7/8)	300.00 - 320.00	0.6000	0.6000
T4	33	Waveguide Brackets	300.00 - 320.00	0.6000	0.6000
T4	57	Waveguide Brackets	300.00 - 320.00	0.6000	0.6000
T4	60	RPM 777 380(3/8")	300.00 - 320.00	0.6000	0.6000
T5	6	Waveguide Brackets	280.00 - 300.00	0.6000	0.6000
T5	8	Thin Flat Bar Climbing Ladder	280.00 - 300.00	0.6000	0.6000
T5	9	Safety Line 3/8	280.00 - 300.00	0.6000	0.6000
T5	24	CR 50 1070(7/8)	280.00 - 300.00	0.6000	0.6000
T5	33	Waveguide Brackets	280.00 - 300.00	0.6000	0.6000
T5	57	Waveguide Brackets	280.00 - 300.00	0.6000	0.6000
T5	60	RPM 777 380(3/8")	280.00 - 300.00	0.6000	0.6000
T6	6	Waveguide Brackets	260.00 - 280.00	0.6000	0.6000

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<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T6	8	Thin Flat Bar Climbing Ladder	260.00 - 280.00	0.6000	0.6000
T6	9	Safety Line 3/8	260.00 - 280.00	0.6000	0.6000
T6	23	CR 50 1070(7/8)	260.00 - 270.00	0.6000	0.6000
T6	24	CR 50 1070(7/8)	270.00 - 280.00	0.6000	0.6000
T6	31	LDF4-50A(1/2")	260.00 - 270.00	0.6000	0.6000
T6	33	Waveguide Brackets	260.00 - 280.00	0.6000	0.6000
T6	57	Waveguide Brackets	260.00 - 280.00	0.6000	0.6000
T6	60	RPM 777 380(3/8")	260.00 - 280.00	0.6000	0.6000
T7	2	LDF7-50A(1-5/8")	240.00 - 250.00	0.6000	0.6000
T7	3	LDF7-50A(1-5/8")	240.00 - 250.00	0.6000	0.6000
T7	4	LDF7-50A(1-5/8")	240.00 - 250.00	0.6000	0.6000
T7	5	MLC HYBRID 6X12 LI(1-1/2")	240.00 - 250.00	0.6000	0.6000
T7	6	Waveguide Brackets	240.00 - 260.00	0.6000	0.6000
T7	8	Thin Flat Bar Climbing Ladder	240.00 - 260.00	0.6000	0.6000
T7	9	Safety Line 3/8	240.00 - 260.00	0.6000	0.6000
T7	23	CR 50 1070(7/8)	240.00 - 260.00	0.6000	0.6000
T7	30	LDF4-50A(1/2")	240.00 - 255.00	0.6000	0.6000
T7	31	LDF4-50A(1/2")	255.00 - 260.00	0.6000	0.6000
T7	33	Waveguide Brackets	240.00 - 260.00	0.6000	0.6000
T7	57	Waveguide Brackets	240.00 - 260.00	0.6000	0.6000
T7	60	RPM 777 380(3/8")	240.00 - 260.00	0.6000	0.6000
T8	2	LDF7-50A(1-5/8")	220.00 - 240.00	0.6000	0.6000
T8	3	LDF7-50A(1-5/8")	220.00 - 240.00	0.6000	0.6000
T8	4	LDF7-50A(1-5/8")	220.00 - 240.00	0.6000	0.6000
T8	5	MLC HYBRID 6X12 LI(1-1/2")	220.00 - 240.00	0.6000	0.6000
T8	6	Waveguide Brackets	220.00 - 240.00	0.6000	0.6000
T8	8	Thin Flat Bar Climbing Ladder	220.00 - 240.00	0.6000	0.6000
T8	9	Safety Line 3/8	220.00 - 240.00	0.6000	0.6000
T8	11	TSZ 999 067/xxxM-8AWG(1-3/16)	220.00 - 222.00	0.6000	0.6000
T8	12	FIBER ONLY CABLE 48(7/8")	220.00 - 222.00	0.6000	0.6000
T8	23	CR 50 1070(7/8)	220.00 - 240.00	0.6000	0.6000

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T8	30	LDF4-50A(1/2")	220.00 - 240.00	0.6000	0.6000
T8	33	Waveguide Brackets	220.00 - 240.00	0.6000	0.6000
T8	37	LDF7-50A(1-5/8")	220.00 - 229.00	0.6000	0.6000
T8	57	Waveguide Brackets	220.00 - 240.00	0.6000	0.6000
T8	60	RPM 777 380(3/8")	220.00 - 240.00	0.6000	0.6000
T9	2	LDF7-50A(1-5/8")	200.00 - 220.00	0.6000	0.6000
T9	3	LDF7-50A(1-5/8")	200.00 - 220.00	0.6000	0.6000
T9	4	LDF7-50A(1-5/8")	200.00 - 220.00	0.6000	0.6000
T9	5	MLC HYBRID 6X12 LI(1-1/2")	200.00 - 220.00	0.6000	0.6000
T9	6	Waveguide Brackets	200.00 - 220.00	0.6000	0.6000
T9	8	Thin Flat Bar Climbing Ladder	200.00 - 220.00	0.6000	0.6000
T9	9	Safety Line 3/8	200.00 - 220.00	0.6000	0.6000
T9	11	TSZ 999 067/xxxM-8AWG(1-3/16)	200.00 - 220.00	0.6000	0.6000
T9	12	FIBER ONLY CABLE 48(7/8")	200.00 - 220.00	0.6000	0.6000
T9	23	CR 50 1070(7/8)	200.00 - 220.00	0.6000	0.6000
T9	30	LDF4-50A(1/2")	200.00 - 220.00	0.6000	0.6000
T9	33	Waveguide Brackets	200.00 - 220.00	0.6000	0.6000
T9	37	LDF7-50A(1-5/8")	200.00 - 220.00	0.6000	0.6000
T9	41	CR 50 1070(7/8)	200.00 - 215.00	0.6000	0.6000
T9	43	FXL-1873(1-5/8")	200.00 - 201.00	0.6000	0.6000
T9	44	RLSS 8AWG DC(3/4")	200.00 - 201.00	0.6000	0.6000
T9	45	ATCB-B01-001(5/16)	200.00 - 201.00	0.6000	0.6000
T9	46	RLSS 8AWG DC(3/4")	200.00 - 201.00	0.6000	0.6000
T9	47	FB-L98B-002-50000(3/8")	200.00 - 201.00	0.6000	0.6000
T9	48	RLSS 8AWG DC(3/4")	200.00 - 201.00	0.6000	0.6000
T9	49	FB-L98B-002-50000(3/8")	200.00 - 201.00	0.6000	0.6000
T9	50	RLSS 8AWG DC(3/4")	200.00 - 201.00	0.6000	0.6000
T9	51	RLSS 8AWG DC(3/4")	200.00 - 201.00	0.6000	0.6000
T9	52	ATCB-B01-001(5/16)	200.00 - 201.00	0.6000	0.6000
T9	57	Waveguide Brackets	200.00 - 220.00	0.6000	0.6000
T9	59	RPM 777 380(3/8")	200.00 - 210.00	0.6000	0.6000

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T9	60	RPM 777 380(3/8")	210.00 - 220.00	0.6000	0.6000
T10	2	LDF7-50A(1-5/8")	180.00 - 200.00	0.6000	0.6000
T10	3	LDF7-50A(1-5/8")	180.00 - 200.00	0.6000	0.6000
T10	4	LDF7-50A(1-5/8")	180.00 - 200.00	0.6000	0.6000
T10	5	MLC HYBRID 6X12 LI(1-1/2")	180.00 - 200.00	0.6000	0.6000
T10	6	Waveguide Brackets	180.00 - 200.00	0.6000	0.6000
T10	8	Thin Flat Bar Climbing Ladder	180.00 - 200.00	0.6000	0.6000
T10	9	Safety Line 3/8	180.00 - 200.00	0.6000	0.6000
T10	11	TSZ 999 067/xxxM-8AWG(1-3/16)	180.00 - 200.00	0.6000	0.6000
T10	12	FIBER ONLY CABLE 48(7/8")	180.00 - 200.00	0.6000	0.6000
T10	23	CR 50 1070(7/8)	180.00 - 200.00	0.6000	0.6000
T10	30	LDF4-50A(1/2")	180.00 - 200.00	0.6000	0.6000
T10	33	Waveguide Brackets	180.00 - 200.00	0.6000	0.6000
T10	37	LDF7-50A(1-5/8")	180.00 - 200.00	0.6000	0.6000
T10	41	CR 50 1070(7/8)	180.00 - 200.00	0.6000	0.6000
T10	43	FXL-1873(1-5/8")	180.00 - 200.00	0.6000	0.6000
T10	44	RLSS 8AWG DC(3/4")	180.00 - 200.00	0.6000	0.6000
T10	45	ATCB-B01-001(5/16)	180.00 - 200.00	0.6000	0.6000
T10	46	RLSS 8AWG DC(3/4")	180.00 - 200.00	0.6000	0.6000
T10	47	FB-L98B-002-50000(3/8")	180.00 - 200.00	0.6000	0.6000
T10	48	RLSS 8AWG DC(3/4")	180.00 - 200.00	0.6000	0.6000
T10	49	FB-L98B-002-50000(3/8")	180.00 - 200.00	0.6000	0.6000
T10	50	RLSS 8AWG DC(3/4")	180.00 - 200.00	0.6000	0.6000
T10	51	RLSS 8AWG DC(3/4")	180.00 - 200.00	0.6000	0.6000
T10	52	ATCB-B01-001(5/16)	180.00 - 200.00	0.6000	0.6000
T10	57	Waveguide Brackets	180.00 - 200.00	0.6000	0.6000
T10	59	RPM 777 380(3/8")	180.00 - 200.00	0.6000	0.6000
T11	2	LDF7-50A(1-5/8")	160.00 - 180.00	0.6000	0.6000
T11	3	LDF7-50A(1-5/8")	160.00 - 180.00	0.6000	0.6000
T11	4	LDF7-50A(1-5/8")	160.00 - 180.00	0.6000	0.6000
T11	5	MLC HYBRID 6X12 LI(1-1/2")	160.00 - 180.00	0.6000	0.6000

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<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T11	6	Waveguide Brackets	160.00 - 180.00	0.6000	0.6000
T11	8	Thin Flat Bar Climbing Ladder	160.00 - 180.00	0.6000	0.6000
T11	9	Safety Line 3/8	160.00 - 180.00	0.6000	0.6000
T11	11	TSZ 999	160.00 - 180.00	0.6000	0.6000
T11	12	067/xxxM-8AWG(1-3/16) FIBER ONLY CABLE	160.00 - 180.00	0.6000	0.6000
T11	23	48(7/8") CR 50 1070(7/8)	160.00 - 180.00	0.6000	0.6000
T11	30	LDF4-50A(1/2")	160.00 - 180.00	0.6000	0.6000
T11	33	Waveguide Brackets	160.00 - 180.00	0.6000	0.6000
T11	37	LDF7-50A(1-5/8")	160.00 - 180.00	0.6000	0.6000
T11	41	CR 50 1070(7/8)	160.00 - 180.00	0.6000	0.6000
T11	43	FXL-1873(1-5/8")	160.00 - 180.00	0.6000	0.6000
T11	44	RLSS 8AWG DC(3/4")	160.00 - 180.00	0.6000	0.6000
T11	45	ATCB-B01-001(5/16)	160.00 - 180.00	0.6000	0.6000
T11	46	RLSS 8AWG DC(3/4")	160.00 - 180.00	0.6000	0.6000
T11	47	FB-L98B-002-50000(3/8")	160.00 - 180.00	0.6000	0.6000
T11	48	RLSS 8AWG DC(3/4")	160.00 - 180.00	0.6000	0.6000
T11	49	FB-L98B-002-50000(3/8")	160.00 - 180.00	0.6000	0.6000
T11	50	RLSS 8AWG DC(3/4")	160.00 - 180.00	0.6000	0.6000
T11	51	RLSS 8AWG DC(3/4")	160.00 - 180.00	0.6000	0.6000
T11	52	ATCB-B01-001(5/16)	160.00 - 180.00	0.6000	0.6000
T11	54	LMR-400(3/8")	160.00 - 164.00	0.6000	0.6000
T11	55	EC5-50(7/8")	160.00 - 164.00	0.6000	0.6000
T11	57	Waveguide Brackets	160.00 - 180.00	0.6000	0.6000
T11	59	RPM 777 380(3/8")	160.00 - 180.00	0.6000	0.6000
T12	2	LDF7-50A(1-5/8")	140.00 - 160.00	0.6000	0.6000
T12	3	LDF7-50A(1-5/8")	140.00 - 160.00	0.6000	0.6000
T12	4	LDF7-50A(1-5/8")	140.00 - 160.00	0.6000	0.6000
T12	5	MLC HYBRID 6X12 LI(1-1/2")	140.00 - 160.00	0.6000	0.6000
T12	6	Waveguide Brackets	140.00 - 160.00	0.6000	0.6000
T12	8	Thin Flat Bar Climbing Ladder	140.00 - 160.00	0.6000	0.6000
T12	9	Safety Line 3/8	140.00 - 160.00	0.6000	0.6000

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<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T12	11	TSZ 999 067/xxxM-8AWG(1-3/16)	140.00 - 160.00	0.6000	0.6000
T12	12	FIBER ONLY CABLE 48(7/8")	140.00 - 160.00	0.6000	0.6000
T12	17	CR 50 1070(7/8)	140.00 - 156.00	0.6000	0.6000
T12	22	CR 50 1070(7/8)	140.00 - 156.00	0.6000	0.6000
T12	23	CR 50 1070(7/8)	140.00 - 160.00	0.6000	0.6000
T12	30	LDF4-50A(1/2")	140.00 - 160.00	0.6000	0.6000
T12	33	Waveguide Brackets	140.00 - 160.00	0.6000	0.6000
T12	37	LDF7-50A(1-5/8")	140.00 - 160.00	0.6000	0.6000
T12	40	CR 50 1070(7/8)	140.00 - 156.00	0.6000	0.6000
T12	41	CR 50 1070(7/8)	140.00 - 160.00	0.6000	0.6000
T12	43	FXL-1873(1-5/8")	140.00 - 160.00	0.6000	0.6000
T12	44	RLSS 8AWG DC(3/4")	140.00 - 160.00	0.6000	0.6000
T12	45	ATCB-B01-001(5/16)	140.00 - 160.00	0.6000	0.6000
T12	46	RLSS 8AWG DC(3/4")	140.00 - 160.00	0.6000	0.6000
T12	47	FB-L98B-002-50000(3/8")	140.00 - 160.00	0.6000	0.6000
T12	48	RLSS 8AWG DC(3/4")	140.00 - 160.00	0.6000	0.6000
T12	49	FB-L98B-002-50000(3/8")	140.00 - 160.00	0.6000	0.6000
T12	50	RLSS 8AWG DC(3/4")	140.00 - 160.00	0.6000	0.6000
T12	51	RLSS 8AWG DC(3/4")	140.00 - 160.00	0.6000	0.6000
T12	52	ATCB-B01-001(5/16)	140.00 - 160.00	0.6000	0.6000
T12	54	LMR-400(3/8")	140.00 - 160.00	0.6000	0.6000
T12	55	EC5-50(7/8")	140.00 - 160.00	0.6000	0.6000
T12	57	Waveguide Brackets	140.00 - 160.00	0.6000	0.6000
T12	59	RPM 777 380(3/8")	140.00 - 160.00	0.6000	0.6000
T13	2	LDF7-50A(1-5/8")	120.00 - 140.00	0.6000	0.6000
T13	3	LDF7-50A(1-5/8")	120.00 - 140.00	0.6000	0.6000
T13	4	LDF7-50A(1-5/8")	120.00 - 140.00	0.6000	0.6000
T13	5	MLC HYBRID 6X12 LI(1-1/2")	120.00 - 140.00	0.6000	0.6000
T13	6	Waveguide Brackets	120.00 - 140.00	0.6000	0.6000
T13	8	Thin Flat Bar Climbing Ladder	120.00 - 140.00	0.6000	0.6000
T13	9	Safety Line 3/8	120.00 - 140.00	0.6000	0.6000

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<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T13	11	TSZ 999	120.00 -	0.6000	0.6000
		067/xxxM-8AWG(1-3/16)	140.00		
T13	12	FIBER ONLY CABLE	120.00 -	0.6000	0.6000
		48(7/8")	140.00		
T13	17	CR 50 1070(7/8)	120.00 -	0.6000	0.6000
			140.00		
T13	22	CR 50 1070(7/8)	120.00 -	0.6000	0.6000
			140.00		
T13	23	CR 50 1070(7/8)	120.00 -	0.6000	0.6000
			140.00		
T13	30	LDF4-50A(1/2")	120.00 -	0.6000	0.6000
			140.00		
T13	33	Waveguide Brackets	120.00 -	0.6000	0.6000
			140.00		
T13	37	LDF7-50A(1-5/8")	120.00 -	0.6000	0.6000
			140.00		
T13	40	CR 50 1070(7/8)	120.00 -	0.6000	0.6000
			140.00		
T13	41	CR 50 1070(7/8)	120.00 -	0.6000	0.6000
			140.00		
T13	43	FXL-1873(1-5/8")	120.00 -	0.6000	0.6000
			140.00		
T13	44	RLSS 8AWG DC(3/4")	120.00 -	0.6000	0.6000
			140.00		
T13	45	ATCB-B01-001(5/16)	120.00 -	0.6000	0.6000
			140.00		
T13	46	RLSS 8AWG DC(3/4")	120.00 -	0.6000	0.6000
			140.00		
T13	47	FB-L98B-002-50000(3/8")	120.00 -	0.6000	0.6000
			140.00		
T13	48	RLSS 8AWG DC(3/4")	120.00 -	0.6000	0.6000
			140.00		
T13	49	FB-L98B-002-50000(3/8")	120.00 -	0.6000	0.6000
			140.00		
T13	50	RLSS 8AWG DC(3/4")	120.00 -	0.6000	0.6000
			140.00		
T13	51	RLSS 8AWG DC(3/4")	120.00 -	0.6000	0.6000
			140.00		
T13	52	ATCB-B01-001(5/16)	120.00 -	0.6000	0.6000
			140.00		
T13	54	LMR-400(3/8")	120.00 -	0.6000	0.6000
			140.00		
T13	55	EC5-50(7/8")	120.00 -	0.6000	0.6000
			140.00		
T13	57	Waveguide Brackets	120.00 -	0.6000	0.6000
			140.00		
T13	59	RPM 777 380(3/8")	120.00 -	0.6000	0.6000
			140.00		
T14	2	LDF7-50A(1-5/8")	100.00 -	0.6000	0.6000
			120.00		
T14	3	LDF7-50A(1-5/8")	100.00 -	0.6000	0.6000
			120.00		
T14	4	LDF7-50A(1-5/8")	100.00 -	0.6000	0.6000
			120.00		
T14	5	MLC HYBRID 6X12	100.00 -	0.6000	0.6000
		LI(1-1/2")	120.00		
T14	6	Waveguide Brackets	100.00 -	0.6000	0.6000
			120.00		
T14	8	Thin Flat Bar Climbing	100.00 -	0.6000	0.6000
		Ladder	120.00		
T14	9	Safety Line 3/8	100.00 -	0.6000	0.6000
			120.00		

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<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T14	11	TSZ 999 067/xxxM-8AWG(1-3/16)	100.00 - 120.00	0.6000	0.6000
T14	12	FIBER ONLY CABLE 48(7/8")	100.00 - 120.00	0.6000	0.6000
T14	17	CR 50 1070(7/8)	100.00 - 120.00	0.6000	0.6000
T14	22	CR 50 1070(7/8)	100.00 - 120.00	0.6000	0.6000
T14	23	CR 50 1070(7/8)	100.00 - 120.00	0.6000	0.6000
T14	30	LDF4-50A(1/2")	100.00 - 120.00	0.6000	0.6000
T14	33	Waveguide Brackets	100.00 - 120.00	0.6000	0.6000
T14	37	LDF7-50A(1-5/8")	100.00 - 120.00	0.6000	0.6000
T14	40	CR 50 1070(7/8)	100.00 - 120.00	0.6000	0.6000
T14	41	CR 50 1070(7/8)	100.00 - 120.00	0.6000	0.6000
T14	43	FXL-1873(1-5/8")	100.00 - 120.00	0.6000	0.6000
T14	44	RLSS 8AWG DC(3/4")	100.00 - 120.00	0.6000	0.6000
T14	45	ATCB-B01-001(5/16)	100.00 - 120.00	0.6000	0.6000
T14	46	RLSS 8AWG DC(3/4")	100.00 - 120.00	0.6000	0.6000
T14	47	FB-L98B-002-50000(3/8")	100.00 - 120.00	0.6000	0.6000
T14	48	RLSS 8AWG DC(3/4")	100.00 - 120.00	0.6000	0.6000
T14	49	FB-L98B-002-50000(3/8")	100.00 - 120.00	0.6000	0.6000
T14	50	RLSS 8AWG DC(3/4")	100.00 - 120.00	0.6000	0.6000
T14	51	RLSS 8AWG DC(3/4")	100.00 - 120.00	0.6000	0.6000
T14	52	ATCB-B01-001(5/16)	100.00 - 120.00	0.6000	0.6000
T14	54	LMR-400(3/8")	100.00 - 120.00	0.6000	0.6000
T14	55	EC5-50(7/8")	100.00 - 120.00	0.6000	0.6000
T14	57	Waveguide Brackets	100.00 - 120.00	0.6000	0.6000
T14	59	RPM 777 380(3/8")	100.00 - 120.00	0.6000	0.6000
T15	2	LDF7-50A(1-5/8")	80.00 - 100.00	0.6000	0.6000
T15	3	LDF7-50A(1-5/8")	80.00 - 100.00	0.6000	0.6000
T15	4	LDF7-50A(1-5/8")	80.00 - 100.00	0.6000	0.6000
T15	5	MLC HYBRID 6X12 LI(1-1/2")	80.00 - 100.00	0.6000	0.6000
T15	6	Waveguide Brackets	80.00 - 100.00	0.6000	0.6000
T15	8	Thin Flat Bar Climbing Ladder	80.00 - 100.00	0.6000	0.6000
T15	9	Safety Line 3/8	80.00 - 100.00	0.6000	0.6000
T15	11	TSZ 999 067/xxxM-8AWG(1-3/16)	80.00 - 100.00	0.6000	0.6000
T15	12	FIBER ONLY CABLE 48(7/8")	80.00 - 100.00	0.6000	0.6000
T15	17	CR 50 1070(7/8)	80.00 - 100.00	0.6000	0.6000

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<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T15	22	CR 50 1070(7/8)	80.00 - 100.00	0.6000	0.6000
T15	23	CR 50 1070(7/8)	80.00 - 100.00	0.6000	0.6000
T15	30	LDF4-50A(1/2")	80.00 - 100.00	0.6000	0.6000
T15	33	Waveguide Brackets	80.00 - 100.00	0.6000	0.6000
T15	37	LDF7-50A(1-5/8")	80.00 - 100.00	0.6000	0.6000
T15	40	CR 50 1070(7/8)	80.00 - 100.00	0.6000	0.6000
T15	41	CR 50 1070(7/8)	80.00 - 100.00	0.6000	0.6000
T15	43	FXL-1873(1-5/8")	80.00 - 100.00	0.6000	0.6000
T15	44	RLSS 8AWG DC(3/4")	80.00 - 100.00	0.6000	0.6000
T15	45	ATCB-B01-001(5/16)	80.00 - 100.00	0.6000	0.6000
T15	46	RLSS 8AWG DC(3/4")	80.00 - 100.00	0.6000	0.6000
T15	47	FB-L98B-002-50000(3/8")	80.00 - 100.00	0.6000	0.6000
T15	48	RLSS 8AWG DC(3/4")	80.00 - 100.00	0.6000	0.6000
T15	49	FB-L98B-002-50000(3/8")	80.00 - 100.00	0.6000	0.6000
T15	50	RLSS 8AWG DC(3/4")	80.00 - 100.00	0.6000	0.6000
T15	51	RLSS 8AWG DC(3/4")	80.00 - 100.00	0.6000	0.6000
T15	52	ATCB-B01-001(5/16)	80.00 - 100.00	0.6000	0.6000
T15	54	LMR-400(3/8")	80.00 - 100.00	0.6000	0.6000
T15	55	EC5-50(7/8")	80.00 - 100.00	0.6000	0.6000
T15	57	Waveguide Brackets	80.00 - 100.00	0.6000	0.6000
T15	59	RPM 777 380(3/8")	80.00 - 100.00	0.6000	0.6000
T16	2	LDF7-50A(1-5/8")	60.00 - 80.00	0.6000	0.6000
T16	3	LDF7-50A(1-5/8")	60.00 - 80.00	0.6000	0.6000
T16	4	LDF7-50A(1-5/8")	60.00 - 80.00	0.6000	0.6000
T16	5	MLC HYBRID 6X12 LI(1-1/2")	60.00 - 80.00	0.6000	0.6000
T16	6	Waveguide Brackets	60.00 - 80.00	0.6000	0.6000
T16	8	Thin Flat Bar Climbing Ladder	60.00 - 80.00	0.6000	0.6000
T16	9	Safety Line 3/8	60.00 - 80.00	0.6000	0.6000
T16	11	TSZ 999	60.00 - 80.00	0.6000	0.6000
T16	12	067/xxxM-8AWG(1-3/16) FIBER ONLY CABLE 48(7/8")	60.00 - 80.00	0.6000	0.6000
T16	17	CR 50 1070(7/8)	60.00 - 80.00	0.6000	0.6000
T16	22	CR 50 1070(7/8)	60.00 - 80.00	0.6000	0.6000
T16	23	CR 50 1070(7/8)	60.00 - 80.00	0.6000	0.6000
T16	30	LDF4-50A(1/2")	60.00 - 80.00	0.6000	0.6000
T16	33	Waveguide Brackets	60.00 - 80.00	0.6000	0.6000
T16	37	LDF7-50A(1-5/8")	60.00 - 80.00	0.6000	0.6000
T16	40	CR 50 1070(7/8)	60.00 - 80.00	0.6000	0.6000
T16	41	CR 50 1070(7/8)	60.00 - 80.00	0.6000	0.6000
T16	43	FXL-1873(1-5/8")	60.00 - 80.00	0.6000	0.6000
T16	44	RLSS 8AWG DC(3/4")	60.00 - 80.00	0.6000	0.6000
T16	45	ATCB-B01-001(5/16)	60.00 - 80.00	0.6000	0.6000
T16	46	RLSS 8AWG DC(3/4")	60.00 - 80.00	0.6000	0.6000
T16	47	FB-L98B-002-50000(3/8")	60.00 - 80.00	0.6000	0.6000
T16	48	RLSS 8AWG DC(3/4")	60.00 - 80.00	0.6000	0.6000
T16	49	FB-L98B-002-50000(3/8")	60.00 - 80.00	0.6000	0.6000
T16	50	RLSS 8AWG DC(3/4")	60.00 - 80.00	0.6000	0.6000
T16	51	RLSS 8AWG DC(3/4")	60.00 - 80.00	0.6000	0.6000
T16	52	ATCB-B01-001(5/16)	60.00 - 80.00	0.6000	0.6000
T16	54	LMR-400(3/8")	60.00 - 80.00	0.6000	0.6000
T16	55	EC5-50(7/8")	60.00 - 80.00	0.6000	0.6000
T16	57	Waveguide Brackets	60.00 - 80.00	0.6000	0.6000
T16	59	RPM 777 380(3/8")	60.00 - 80.00	0.6000	0.6000
T17	2	LDF7-50A(1-5/8")	40.00 - 60.00	0.6000	0.6000
T17	3	LDF7-50A(1-5/8")	40.00 - 60.00	0.6000	0.6000
T17	4	LDF7-50A(1-5/8")	40.00 - 60.00	0.6000	0.6000
T17	5	MLC HYBRID 6X12 LI(1-1/2")	40.00 - 60.00	0.6000	0.6000
T17	6	Waveguide Brackets	40.00 - 60.00	0.6000	0.6000

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<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T17	8	Thin Flat Bar Climbing Ladder	40.00 - 60.00	0.6000	0.6000
T17	9	Safety Line 3/8	40.00 - 60.00	0.6000	0.6000
T17	11	TSZ 999	40.00 - 60.00	0.6000	0.6000
		067/xxxM-8AWG(1-3/16)			
T17	12	FIBER ONLY CABLE	40.00 - 60.00	0.6000	0.6000
		48(7/8")			
T17	17	CR 50 1070(7/8)	40.00 - 60.00	0.6000	0.6000
T17	22	CR 50 1070(7/8)	40.00 - 60.00	0.6000	0.6000
T17	23	CR 50 1070(7/8)	40.00 - 60.00	0.6000	0.6000
T17	30	LDF4-50A(1/2")	40.00 - 60.00	0.6000	0.6000
T17	33	Waveguide Brackets	40.00 - 60.00	0.6000	0.6000
T17	37	LDF7-50A(1-5/8")	40.00 - 60.00	0.6000	0.6000
T17	40	CR 50 1070(7/8)	40.00 - 60.00	0.6000	0.6000
T17	41	CR 50 1070(7/8)	40.00 - 60.00	0.6000	0.6000
T17	43	FXL-1873(1-5/8")	40.00 - 60.00	0.6000	0.6000
T17	44	RLSS 8AWG DC(3/4")	40.00 - 60.00	0.6000	0.6000
T17	45	ATCB-B01-001(5/16)	40.00 - 60.00	0.6000	0.6000
T17	46	RLSS 8AWG DC(3/4")	40.00 - 60.00	0.6000	0.6000
T17	47	FB-L98B-002-50000(3/8")	40.00 - 60.00	0.6000	0.6000
T17	48	RLSS 8AWG DC(3/4")	40.00 - 60.00	0.6000	0.6000
T17	49	FB-L98B-002-50000(3/8")	40.00 - 60.00	0.6000	0.6000
T17	50	RLSS 8AWG DC(3/4")	40.00 - 60.00	0.6000	0.6000
T17	51	RLSS 8AWG DC(3/4")	40.00 - 60.00	0.6000	0.6000
T17	52	ATCB-B01-001(5/16)	40.00 - 60.00	0.6000	0.6000
T17	54	LMR-400(3/8")	40.00 - 60.00	0.6000	0.6000
T17	55	EC5-50(7/8")	40.00 - 60.00	0.6000	0.6000
T17	57	Waveguide Brackets	40.00 - 60.00	0.6000	0.6000
T17	59	RPM 777 380(3/8")	40.00 - 60.00	0.6000	0.6000
T18	2	LDF7-50A(1-5/8")	20.00 - 40.00	0.6000	0.6000
T18	3	LDF7-50A(1-5/8")	20.00 - 40.00	0.6000	0.6000
T18	4	LDF7-50A(1-5/8")	20.00 - 40.00	0.6000	0.6000
T18	5	MLC HYBRID 6X12	20.00 - 40.00	0.6000	0.6000
		LI(1-1/2")			
T18	6	Waveguide Brackets	20.00 - 40.00	0.6000	0.6000
T18	8	Thin Flat Bar Climbing Ladder	20.00 - 40.00	0.6000	0.6000
T18	9	Safety Line 3/8	20.00 - 40.00	0.6000	0.6000
T18	11	TSZ 999	20.00 - 40.00	0.6000	0.6000
		067/xxxM-8AWG(1-3/16)			
T18	12	FIBER ONLY CABLE	20.00 - 40.00	0.6000	0.6000
		48(7/8")			
T18	17	CR 50 1070(7/8)	20.00 - 40.00	0.6000	0.6000
T18	22	CR 50 1070(7/8)	20.00 - 40.00	0.6000	0.6000
T18	23	CR 50 1070(7/8)	20.00 - 40.00	0.6000	0.6000
T18	30	LDF4-50A(1/2")	20.00 - 40.00	0.6000	0.6000
T18	33	Waveguide Brackets	20.00 - 40.00	0.6000	0.6000
T18	37	LDF7-50A(1-5/8")	20.00 - 40.00	0.6000	0.6000
T18	40	CR 50 1070(7/8)	20.00 - 40.00	0.6000	0.6000
T18	41	CR 50 1070(7/8)	20.00 - 40.00	0.6000	0.6000
T18	43	FXL-1873(1-5/8")	20.00 - 40.00	0.6000	0.6000
T18	44	RLSS 8AWG DC(3/4")	20.00 - 40.00	0.6000	0.6000
T18	45	ATCB-B01-001(5/16)	20.00 - 40.00	0.6000	0.6000
T18	46	RLSS 8AWG DC(3/4")	20.00 - 40.00	0.6000	0.6000
T18	47	FB-L98B-002-50000(3/8")	20.00 - 40.00	0.6000	0.6000
T18	48	RLSS 8AWG DC(3/4")	20.00 - 40.00	0.6000	0.6000
T18	49	FB-L98B-002-50000(3/8")	20.00 - 40.00	0.6000	0.6000
T18	50	RLSS 8AWG DC(3/4")	20.00 - 40.00	0.6000	0.6000
T18	51	RLSS 8AWG DC(3/4")	20.00 - 40.00	0.6000	0.6000
T18	52	ATCB-B01-001(5/16)	20.00 - 40.00	0.6000	0.6000
T18	54	LMR-400(3/8")	20.00 - 40.00	0.6000	0.6000
T18	55	EC5-50(7/8")	20.00 - 40.00	0.6000	0.6000

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<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T18	57	Waveguide Brackets	20.00 - 40.00	0.6000	0.6000
T18	59	RPM 777 380(3/8")	20.00 - 40.00	0.6000	0.6000
T19	2	LDF7-50A(1-5/8")	8.05 - 20.00	0.6000	0.6000
T19	3	LDF7-50A(1-5/8")	8.05 - 20.00	0.6000	0.6000
T19	4	LDF7-50A(1-5/8")	8.05 - 20.00	0.6000	0.6000
T19	5	MLC HYBRID 6X12 LI(1-1/2")	8.05 - 20.00	0.6000	0.6000
T19	6	Waveguide Brackets	8.05 - 20.00	0.6000	0.6000
T19	8	Thin Flat Bar Climbing Ladder	8.05 - 20.00	0.6000	0.6000
T19	9	Safety Line 3/8	8.05 - 20.00	0.6000	0.6000
T19	11	TSZ 999	8.05 - 20.00	0.6000	0.6000
T19	12	067/xxxM-8AWG(1-3/16) FIBER ONLY CABLE 48(7/8")	8.05 - 20.00	0.6000	0.6000
T19	17	CR 50 1070(7/8)	8.05 - 20.00	0.6000	0.6000
T19	19	RG-8(3/64")	8.05 - 11.00	0.6000	0.6000
T19	22	CR 50 1070(7/8)	8.05 - 20.00	0.6000	0.6000
T19	23	CR 50 1070(7/8)	8.05 - 20.00	0.6000	0.6000
T19	30	LDF4-50A(1/2")	8.05 - 20.00	0.6000	0.6000
T19	33	Waveguide Brackets	8.05 - 20.00	0.6000	0.6000
T19	37	LDF7-50A(1-5/8")	8.05 - 20.00	0.6000	0.6000
T19	40	CR 50 1070(7/8)	8.05 - 20.00	0.6000	0.6000
T19	41	CR 50 1070(7/8)	8.05 - 20.00	0.6000	0.6000
T19	43	FXL-1873(1-5/8")	8.05 - 20.00	0.6000	0.6000
T19	44	RLSS 8AWG DC(3/4")	8.05 - 20.00	0.6000	0.6000
T19	45	ATCB-B01-001(5/16)	8.05 - 20.00	0.6000	0.6000
T19	46	RLSS 8AWG DC(3/4")	8.05 - 20.00	0.6000	0.6000
T19	47	FB-L98B-002-50000(3/8")	8.05 - 20.00	0.6000	0.6000
T19	48	RLSS 8AWG DC(3/4")	8.05 - 20.00	0.6000	0.6000
T19	49	FB-L98B-002-50000(3/8")	8.05 - 20.00	0.6000	0.6000
T19	50	RLSS 8AWG DC(3/4")	8.05 - 20.00	0.6000	0.6000
T19	51	RLSS 8AWG DC(3/4")	8.05 - 20.00	0.6000	0.6000
T19	52	ATCB-B01-001(5/16)	8.05 - 20.00	0.6000	0.6000
T19	54	LMR-400(3/8")	8.05 - 20.00	0.6000	0.6000
T19	55	EC5-50(7/8")	8.05 - 20.00	0.6000	0.6000
T19	57	Waveguide Brackets	8.05 - 20.00	0.6000	0.6000
T19	59	RPM 777 380(3/8")	8.05 - 20.00	0.6000	0.6000
T20	2	LDF7-50A(1-5/8")	6.00 - 8.05	0.6000	0.6000
T20	3	LDF7-50A(1-5/8")	6.00 - 8.05	0.6000	0.6000
T20	4	LDF7-50A(1-5/8")	6.00 - 8.05	0.6000	0.6000
T20	5	MLC HYBRID 6X12 LI(1-1/2")	6.00 - 8.05	0.6000	0.6000
T20	6	Waveguide Brackets	6.00 - 8.05	0.6000	0.6000
T20	8	Thin Flat Bar Climbing Ladder	6.00 - 8.05	0.6000	0.6000
T20	9	Safety Line 3/8	6.00 - 8.05	0.6000	0.6000
T20	11	TSZ 999	6.00 - 8.05	0.6000	0.6000
T20	12	067/xxxM-8AWG(1-3/16) FIBER ONLY CABLE 48(7/8")	6.00 - 8.05	0.6000	0.6000
T20	17	CR 50 1070(7/8)	6.00 - 8.05	0.6000	0.6000
T20	19	RG-8(3/64")	6.00 - 8.05	0.6000	0.6000
T20	22	CR 50 1070(7/8)	6.00 - 8.05	0.6000	0.6000
T20	23	CR 50 1070(7/8)	6.00 - 8.05	0.6000	0.6000
T20	30	LDF4-50A(1/2")	6.00 - 8.05	0.6000	0.6000
T20	33	Waveguide Brackets	6.00 - 8.05	0.6000	0.6000
T20	37	LDF7-50A(1-5/8")	6.00 - 8.05	0.6000	0.6000
T20	40	CR 50 1070(7/8)	6.00 - 8.05	0.6000	0.6000
T20	41	CR 50 1070(7/8)	6.00 - 8.05	0.6000	0.6000
T20	43	FXL-1873(1-5/8")	6.00 - 8.05	0.6000	0.6000
T20	44	RLSS 8AWG DC(3/4")	6.00 - 8.05	0.6000	0.6000

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<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T20	45	ATCB-B01-001(5/16)	6.00 - 8.05	0.6000	0.6000
T20	46	RLSS 8AWG DC(3/4")	6.00 - 8.05	0.6000	0.6000
T20	47	FB-L98B-002-50000(3/8")	6.00 - 8.05	0.6000	0.6000
T20	48	RLSS 8AWG DC(3/4")	6.00 - 8.05	0.6000	0.6000
T20	49	FB-L98B-002-50000(3/8")	6.00 - 8.05	0.6000	0.6000
T20	50	RLSS 8AWG DC(3/4")	6.00 - 8.05	0.6000	0.6000
T20	51	RLSS 8AWG DC(3/4")	6.00 - 8.05	0.6000	0.6000
T20	52	ATCB-B01-001(5/16)	6.00 - 8.05	0.6000	0.6000
T20	54	LMR-400(3/8")	6.00 - 8.05	0.6000	0.6000
T20	55	EC5-50(7/8")	6.00 - 8.05	0.6000	0.6000
T20	57	Waveguide Brackets	6.00 - 8.05	0.6000	0.6000
T20	59	RPM 777 380(3/8")	6.00 - 8.05	0.6000	0.6000
T21	2	LDF7-50A(1-5/8")	2.67 - 6.00	0.5723	0.5723
T21	3	LDF7-50A(1-5/8")	2.67 - 6.00	0.5723	0.5723
T21	4	LDF7-50A(1-5/8")	2.67 - 6.00	0.5723	0.5723
T21	5	MLC HYBRID 6X12 LI(1-1/2")	2.67 - 6.00	0.5723	0.5723
T21	6	Waveguide Brackets	2.67 - 6.00	0.5723	0.5723
T21	8	Thin Flat Bar Climbing Ladder	2.67 - 6.00	0.5723	0.5723
T21	9	Safety Line 3/8	2.67 - 6.00	0.5723	0.5723
T21	11	TSZ 999 067/xxxM-8AWG(1-3/16)	2.67 - 6.00	0.5723	0.5723
T21	12	FIBER ONLY CABLE 48(7/8")	2.67 - 6.00	0.5723	0.5723
T21	17	CR 50 1070(7/8)	2.67 - 6.00	0.5723	0.5723
T21	19	RG-8(3/64")	2.67 - 6.00	0.5723	0.5723
T21	22	CR 50 1070(7/8)	2.67 - 6.00	0.5723	0.5723
T21	23	CR 50 1070(7/8)	2.67 - 6.00	0.5723	0.5723
T21	30	LDF4-50A(1/2")	2.67 - 6.00	0.5723	0.5723
T21	33	Waveguide Brackets	2.67 - 6.00	0.5723	0.5723
T21	37	LDF7-50A(1-5/8")	2.67 - 6.00	0.5723	0.5723
T21	40	CR 50 1070(7/8)	2.67 - 6.00	0.5723	0.5723
T21	41	CR 50 1070(7/8)	2.67 - 6.00	0.5723	0.5723
T21	43	FXL-1873(1-5/8")	2.67 - 6.00	0.5723	0.5723
T21	44	RLSS 8AWG DC(3/4")	2.67 - 6.00	0.5723	0.5723
T21	45	ATCB-B01-001(5/16)	2.67 - 6.00	0.5723	0.5723
T21	46	RLSS 8AWG DC(3/4")	2.67 - 6.00	0.5723	0.5723
T21	47	FB-L98B-002-50000(3/8")	2.67 - 6.00	0.5723	0.5723
T21	48	RLSS 8AWG DC(3/4")	2.67 - 6.00	0.5723	0.5723
T21	49	FB-L98B-002-50000(3/8")	2.67 - 6.00	0.5723	0.5723
T21	50	RLSS 8AWG DC(3/4")	2.67 - 6.00	0.5723	0.5723
T21	51	RLSS 8AWG DC(3/4")	2.67 - 6.00	0.5723	0.5723
T21	52	ATCB-B01-001(5/16)	2.67 - 6.00	0.5723	0.5723
T21	54	LMR-400(3/8")	2.67 - 6.00	0.5723	0.5723
T21	55	EC5-50(7/8")	2.67 - 6.00	0.5723	0.5723
T21	57	Waveguide Brackets	2.67 - 6.00	0.5723	0.5723
T21	59	RPM 777 380(3/8")	2.67 - 6.00	0.5723	0.5723
T22	2	LDF7-50A(1-5/8")	0.00 - 2.67	0.3803	0.3803
T22	3	LDF7-50A(1-5/8")	0.00 - 2.67	0.3803	0.3803
T22	4	LDF7-50A(1-5/8")	0.00 - 2.67	0.3803	0.3803
T22	5	MLC HYBRID 6X12 LI(1-1/2")	0.00 - 2.67	0.3803	0.3803
T22	6	Waveguide Brackets	0.00 - 2.67	0.3803	0.3803
T22	8	Thin Flat Bar Climbing Ladder	0.00 - 2.67	0.3803	0.3803
T22	9	Safety Line 3/8	0.00 - 2.67	0.3803	0.3803
T22	11	TSZ 999 067/xxxM-8AWG(1-3/16)	0.00 - 2.67	0.3803	0.3803
T22	12	FIBER ONLY CABLE 48(7/8")	0.00 - 2.67	0.3803	0.3803
T22	17	CR 50 1070(7/8)	0.00 - 2.67	0.3803	0.3803

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<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T22	19	RG-8(3/64")	0.00 - 2.67	0.3803	0.3803
T22	22	CR 50 1070(7/8)	0.00 - 2.67	0.3803	0.3803
T22	23	CR 50 1070(7/8)	0.00 - 2.67	0.3803	0.3803
T22	30	LDF4-50A(1/2")	0.00 - 2.67	0.3803	0.3803
T22	33	Waveguide Brackets	0.00 - 2.67	0.3803	0.3803
T22	37	LDF7-50A(1-5/8")	0.00 - 2.67	0.3803	0.3803
T22	40	CR 50 1070(7/8)	0.00 - 2.67	0.3803	0.3803
T22	41	CR 50 1070(7/8)	0.00 - 2.67	0.3803	0.3803
T22	43	FXL-1873(1-5/8")	0.00 - 2.67	0.3803	0.3803
T22	44	RLSS 8AWG DC(3/4")	0.00 - 2.67	0.3803	0.3803
T22	45	ATCB-B01-001(5/16)	0.00 - 2.67	0.3803	0.3803
T22	46	RLSS 8AWG DC(3/4")	0.00 - 2.67	0.3803	0.3803
T22	47	FB-L98B-002-50000(3/8")	0.00 - 2.67	0.3803	0.3803
T22	48	RLSS 8AWG DC(3/4")	0.00 - 2.67	0.3803	0.3803
T22	49	FB-L98B-002-50000(3/8")	0.00 - 2.67	0.3803	0.3803
T22	50	RLSS 8AWG DC(3/4")	0.00 - 2.67	0.3803	0.3803
T22	51	RLSS 8AWG DC(3/4")	0.00 - 2.67	0.3803	0.3803
T22	52	ATCB-B01-001(5/16)	0.00 - 2.67	0.3803	0.3803
T22	54	LMR-400(3/8")	0.00 - 2.67	0.3803	0.3803
T22	55	EC5-50(7/8")	0.00 - 2.67	0.3803	0.3803
T22	57	Waveguide Brackets	0.00 - 2.67	0.3803	0.3803
T22	59	RPM 777 380(3/8")	0.00 - 2.67	0.3803	0.3803

Discrete Tower Loads

<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert</i> <i>ft ft ft</i>	<i>Azimuth Adjustment</i> <i>°</i>	<i>Placement</i> <i>ft</i>		<i>C_AA_A Front</i> <i>ft²</i>	<i>C_AA_A Side</i> <i>ft²</i>	<i>Weight</i> <i>K</i>
12" x 24" Beacon	C	From Leg	0.00 0' 3'	0.0000	350'	No Ice	1.00	1.00	0.03
2.4" Dia x 2.5-ft Mount Pipe	C	From Leg	0.00 0' 1'	0.0000	350'	No Ice	0.46	0.46	0.01
5/8"x6-ft L Rod	A	From Leg	0.00 0' 3'	0.0000	350'	No Ice	0.38	0.38	0.01
8"x15" Dia. Beacon	A	From Leg	0.50 0' 0'	0.0000	210'	No Ice	0.42	0.42	0.05
8"x15" Dia. Beacon	C	From Leg	0.50 0' 0'	0.0000	210'	No Ice	0.42	0.42	0.05
345 DB228-B	A	From Leg	1.00 0' -1'	0.0000	345'	No Ice	7.30	7.30	0.07
DB420D-D	B	From Leg	6.00 0' 10'	0.0000	345'	No Ice	3.33	3.33	0.03
DB420D-D	B	From Leg	6.00 0' -11'	0.0000	345'	No Ice	3.33	3.33	0.03
(2) 2.4" Dia x 6-ft Pipe	A	From Leg	6.00	0.0000	345'	No Ice	1.43	1.43	0.02

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<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert</i>	<i>Azimuth Adjustment</i>	<i>Placement</i>		<i>C_{AA} Front</i>	<i>C_{AA} Side</i>	<i>Weight</i>
			<i>ft ft ft</i>	<i>°</i>	<i>ft</i>		<i>ft²</i>	<i>ft²</i>	<i>K</i>
			0'						
			0'						
(2) 2.4" Dia x 6-ft Pipe	B	From Leg	6.00	0.0000	345'	No Ice	1.43	1.43	0.02
			0'						
(2) 2.4" Dia x 6-ft Pipe	C	From Leg	6.00	0.0000	345'	No Ice	1.43	1.43	0.02
			0'						
			0'						
(2) Side Arm Mount [SO 602-3]	C	None		0.0000	345'	No Ice	16.09	16.09	0.44
324									
SRL-224NM-4	A	From Leg	6.00	0.0000	324'	No Ice	2.60	2.60	0.04
			0'						
			9'						
SD214	A	From Leg	6.00	0.0000	324'	No Ice	6.56	6.56	0.05
			0'						
			12'						
(2) SRL-224NM-4	B	From Leg	6.00	0.0000	324'	No Ice	2.60	2.60	0.04
			0'						
			9'						
SRL-224NM-4	C	From Leg	6.00	0.0000	324'	No Ice	2.60	2.60	0.04
			0'						
			9'						
(2) 2.4" Dia x 6-ft Pipe	A	From Leg	6.00	0.0000	324'	No Ice	1.43	1.43	0.02
			0'						
			0'						
(2) 2.4" Dia x 6-ft Pipe	B	From Leg	6.00	0.0000	324'	No Ice	1.43	1.43	0.02
			0'						
			0'						
(2) 2.4" Dia x 6-ft Pipe	C	From Leg	6.00	0.0000	324'	No Ice	1.43	1.43	0.02
			0'						
			0'						
(2) Side Arm Mount [SO 602-3]	C	None		0.0000	324'	No Ice	16.09	16.09	0.44
270									
(2) SRL-224NM-4	B	From Leg	6.00	0.0000	270'	No Ice	2.60	2.60	0.04
			0'						
			8'						
(2) SRL-224NM-4	C	From Leg	6.00	0.0000	270'	No Ice	2.60	2.60	0.04
			0'						
			8'						
(2) 2.4" Dia x 6-ft Pipe	B	From Leg	6.00	0.0000	270'	No Ice	1.43	1.43	0.02
			0'						
			0'						
(2) 2.4" Dia x 6-ft Pipe	C	From Leg	6.00	0.0000	270'	No Ice	1.43	1.43	0.02
			0'						
			0'						
(2) Side Arm Mount [SO 602-1]	B	From Leg	3.00	0.0000	270'	No Ice	2.58	10.83	0.15
			0'						
			0'						
(2) Side Arm Mount [SO 602-1]	C	From Leg	3.00	0.0000	270'	No Ice	2.58	10.83	0.15
			0'						
			0'						
255									
PD322-2	B	From Leg	3.00	0.0000	255'	No Ice	2.25	2.25	0.03
			0'						
			16'						

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<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert ft ft ft</i>	<i>Azimuth Adjustment °</i>	<i>Placement ft</i>		<i>C_{AA} Front ft²</i>	<i>C_{AA} Side ft²</i>	<i>Weight K</i>
2.4" Dia x 2.5-ft Mount Pipe	B	From Leg	3.00 0' 0'	0.0000	255'	No Ice	0.46	0.46	0.01
Side Arm Mount [SO 305-1]	B	From Leg	1.50 0' 0'	0.0000	255'	No Ice	0.53	1.52	0.03
250 (2) X7CQAP-665-VR0 w/ Mount Pipe	A	From Leg	4.00 0' 0'	0.0000	250'	No Ice	8.88	6.44	0.09
(3) X7CQAP-665-VR0 w/ Mount Pipe	B	From Leg	4.00 0' 0'	0.0000	250'	No Ice	8.88	6.44	0.09
X7CQAP-665-VR0 w/ Mount Pipe	C	From Leg	4.00 0' 0'	0.0000	250'	No Ice	8.88	6.44	0.09
AIR 6449 w/ Mount Pipe	A	From Leg	4.00 0' 0'	0.0000	250'	No Ice	5.18	2.72	0.12
AIR 6449 w/ Mount Pipe	B	From Leg	4.00 0' 0'	0.0000	250'	No Ice	5.18	2.72	0.12
AIR 6449 w/ Mount Pipe	C	From Leg	4.00 0' 0'	0.0000	250'	No Ice	5.18	2.72	0.12
X7CQAP-FRO-645-V w/ Mount Pipe	C	From Leg	4.00 0' 0'	0.0000	250'	No Ice	12.64	8.29	0.09
(2) RDC-4276-PF-48	A	From Leg	4.00 0' 0'	0.0000	250'	No Ice	5.09	2.32	0.03
(2) RRUS 32	A	From Leg	4.00 0' 0'	0.0000	250'	No Ice	2.86	1.78	0.06
(2) RRUS 32	B	From Leg	4.00 0' 0'	0.0000	250'	No Ice	2.86	1.78	0.06
(4) RRUS 32	C	From Leg	4.00 0' 0'	0.0000	250'	No Ice	2.86	1.78	0.06
RVZDC-6627-PF-48_CCIV2	A	From Leg	4.00 0' 0'	0.0000	250'	No Ice	4.06	3.10	0.03
RRUS 4449 B5/B12	A	From Leg	4.00 0' 0'	0.0000	250'	No Ice	1.97	1.41	0.07
RRUS 4449 B5/B12	B	From Leg	4.00 0' 0'	0.0000	250'	No Ice	1.97	1.41	0.07
(2) RRUS 4449 B5/B12	C	From Leg	4.00 0' 0'	0.0000	250'	No Ice	1.97	1.41	0.07
TD-850B-LTE78-43	B	From Leg	4.00 0' 0'	0.0000	250'	No Ice	1.98	0.83	0.05
(2) TD-850B-LTE78-43	C	From Leg	4.00 0'	0.0000	250'	No Ice	1.98	0.83	0.05

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<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz. Lateral Vert</i>	<i>Azimuth Adjustment</i>	<i>Placement</i>		<i>C_{AA} Front</i>	<i>C_{AA} Side</i>	<i>Weight</i>
			<i>ft ft ft</i>	<i>°</i>	<i>ft</i>		<i>ft²</i>	<i>ft²</i>	<i>K</i>
DBC-AP	C	From Leg	0' 4.00 0'	0.0000	250'	No Ice	0.32	0.13	0.01
2.4" Dia x 8-ft Mount Pipe	A	From Leg	0' 4.00 0'	0.0000	250'	No Ice	1.90	1.90	0.03
2.4" Dia x 8-ft Mount Pipe	C	From Leg	0' 4.00 0'	0.0000	250'	No Ice	1.90	1.90	0.03
(2) L2 1/2x2 1/2x1/4 x 8-ft	A	From Leg	0' 2.00 5'	0.0000	250'	No Ice	3.33	3.33	0.03
(2) L2 1/2x2 1/2x1/4 x 8-ft	B	From Leg	0' 2.00 5'	0.0000	250'	No Ice	3.33	3.33	0.03
(2) L2 1/2x2 1/2x1/4 x 8-ft	C	From Leg	0' 2.00 5'	0.0000	250'	No Ice	3.33	3.33	0.03
2.9" Dia. x 12' Pipe	A	From Leg	0' 4.00 5'	0.0000	250'	No Ice	3.46	3.46	0.07
2.9" Dia. x 12' Pipe	B	From Leg	0' 4.00 5'	0.0000	250'	No Ice	3.46	3.46	0.07
2.9" Dia. x 12' Pipe	C	From Leg	0' 4.00 5'	0.0000	250'	No Ice	3.46	3.46	0.07
2.4" Dia. x 10-ft Mount Pipe	A	From Leg	0' 2.00 2'6"	0.0000	250'	No Ice	2.38	2.38	0.04
2.4" Dia. x 10-ft Mount Pipe	B	From Leg	0' 2.00 2'6"	0.0000	250'	No Ice	2.38	2.38	0.04
2.4" Dia. x 10-ft Mount Pipe	C	From Leg	0' 2.00 2'6"	0.0000	250'	No Ice	2.38	2.38	0.04
Pipe Mount [PM 601-3]	C	None		0.0000	250'	No Ice	3.17	3.17	0.20
Sector Mount [SM 503-3]	C	None		0.0000	250'	No Ice	30.43	30.43	1.69
229									
FHH-65C-R3 w/ Mount Pipe	A	From Leg	0' 4.00 1'	0.0000	229'	No Ice	6.09	4.48	0.10
FHH-65C-R3 w/ Mount Pipe	B	From Leg	0' 4.00 1'	0.0000	229'	No Ice	6.09	4.48	0.10
FHH-65C-R3 w/ Mount Pipe	C	From Leg	0' 4.00 1'	0.0000	229'	No Ice	6.09	4.48	0.10
AIR6449 B41_T-MOBILE w/ Mount Pipe	A	From Leg	0' 4.00 1'	0.0000	229'	No Ice	5.19	2.71	0.13
AIR6449 B41_T-MOBILE w/ Mount Pipe	B	From Leg	0' 4.00 1'	0.0000	229'	No Ice	5.19	2.71	0.13
AIR6449 B41_T-MOBILE w/ Mount Pipe	C	From Leg	0' 4.00 1'	0.0000	229'	No Ice	5.19	2.71	0.13

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<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert ft ft ft</i>	<i>Azimuth Adjustment °</i>	<i>Placement ft</i>		<i>C_{AA} Front ft²</i>	<i>C_{AA} Side ft²</i>	<i>Weight K</i>
RADIO 4460 B2/B25 B66_TMO	A	From Leg	1' 4.00 0'	0.0000	229'	No Ice	2.14	1.69	0.11
RADIO 4460 B2/B25 B66_TMO	B	From Leg	1' 4.00 0'	0.0000	229'	No Ice	2.14	1.69	0.11
RADIO 4460 B2/B25 B66_TMO	C	From Leg	1' 4.00 0'	0.0000	229'	No Ice	2.14	1.69	0.11
Radio 4480_TMOV2	A	From Leg	1' 4.00 0'	0.0000	229'	No Ice	3.36	1.60	0.08
Radio 4480_TMOV2	B	From Leg	1' 4.00 0'	0.0000	229'	No Ice	3.36	1.60	0.08
Radio 4480_TMOV2	C	From Leg	1' 4.00 0'	0.0000	229'	No Ice	3.36	1.60	0.08
(2) 2.4" Dia x 8-ft Mount Pipe	A	From Leg	1' 4.00 0'	0.0000	229'	No Ice	1.90	1.90	0.03
(2) 2.4" Dia x 8-ft Mount Pipe	B	From Leg	1' 4.00 0'	0.0000	229'	No Ice	1.90	1.90	0.03
(2) 2.4" Dia x 8-ft Mount Pipe	C	From Leg	1' 4.00 0'	0.0000	229'	No Ice	1.90	1.90	0.03
Sector Mount [SM 504-3]	C	None	0'	0.0000	229'	No Ice	31.05	31.05	1.71
Pipe Mount [PM 601-3]	C	None	0'	0.0000	229'	No Ice	3.17	3.17	0.20
222									
DT465B-2XR w/ Mount Pipe	A	From Leg	4.00 0' -2'	0.0000	222'	No Ice	5.50	4.38	0.09
DT465B-2XR w/ Mount Pipe	B	From Leg	4.00 0' -2'	0.0000	222'	No Ice	5.50	4.38	0.09
APXVSPP18-C w/ Mount Pipe	A	From Leg	4.00 0' -2'	0.0000	222'	No Ice	4.60	4.01	0.09
APXVSPP18-C w/ Mount Pipe	B	From Leg	4.00 0' -2'	0.0000	222'	No Ice	4.60	4.01	0.09
APXVSPP18-C w/ Mount Pipe	C	From Leg	4.00 0' -2'	0.0000	222'	No Ice	4.60	4.01	0.09
RRUS 82 W/SOLAR SHIELD	A	From Leg	4.00 0' -2'	0.0000	222'	No Ice	2.98	1.43	0.06
RRUS 82 W/SOLAR SHIELD	B	From Leg	4.00 0' -2'	0.0000	222'	No Ice	2.98	1.43	0.06
RRUS 82 W/SOLAR SHIELD	C	From Leg	4.00 0' -2'	0.0000	222'	No Ice	2.98	1.43	0.06
(2) RRUS-11 800MHZ	A	From Leg	4.00 0'	0.0000	222'	No Ice	2.52	1.30	0.05

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<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert ft ft ft</i>	<i>Azimuth Adjustment °</i>	<i>Placement ft</i>		<i>C_{AA} Front ft²</i>	<i>C_{AA} Side ft²</i>	<i>Weight K</i>
(2) RRUS-11 800MHZ	B	From Leg	-2' 4.00 0'	0.0000	222'	No Ice	2.52	1.30	0.05
(2) RRUS-11 800MHZ	C	From Leg	-2' 4.00 0'	0.0000	222'	No Ice	2.52	1.30	0.05
RRUS 31 B25	A	From Leg	-2' 4.00 0'	0.0000	222'	No Ice	1.62	1.28	0.06
RRUS 31 B25	B	From Leg	-2' 4.00 0'	0.0000	222'	No Ice	1.62	1.28	0.06
RRUS 31 B25	C	From Leg	-2' 4.00 0'	0.0000	222'	No Ice	1.62	1.28	0.06
800MHZ SMR FILTER	A	From Leg	-2' 4.00 0'	0.0000	222'	No Ice	0.65	0.22	0.01
800MHZ SMR FILTER	B	From Leg	-2' 4.00 0'	0.0000	222'	No Ice	0.65	0.22	0.01
800MHZ SMR FILTER	C	From Leg	-2' 4.00 0'	0.0000	222'	No Ice	0.65	0.22	0.01
(3) ACU-A20-N	A	From Leg	-2' 4.00 0'	0.0000	222'	No Ice	0.07	0.12	0.00
(3) ACU-A20-N	B	From Leg	-2' 4.00 0'	0.0000	222'	No Ice	0.07	0.12	0.00
(3) ACU-A20-N	C	From Leg	-2' 4.00 0'	0.0000	222'	No Ice	0.07	0.12	0.00
(2) 2.4" Dia x 8-ft Mount Pipe	A	From Leg	-2' 4.00 0'	0.0000	222'	No Ice	1.90	1.90	0.03
(2) 2.4" Dia x 8-ft Mount Pipe	B	From Leg	-2' 4.00 0'	0.0000	222'	No Ice	1.90	1.90	0.03
(3) 2.4" Dia x 8-ft Mount Pipe	C	From Leg	-2' 4.00 0'	0.0000	222'	No Ice	1.90	1.90	0.03
Sector Mount [SM 502-3] ***215***	C	None	0'	0.0000	222'	No Ice	29.82	29.82	1.67
DB567R90-CR	C	From Leg	10' 6.00 0'	0.0000	215'	No Ice	7.00	7.00	0.07
2.4" Dia x 6-ft Pipe	C	From Leg	10' 6.00 0'	0.0000	215'	No Ice	1.43	1.43	0.02
Side Arm Mount [SO 602-1]	C	From Leg	0' 3.00 0'	0.0000	215'	No Ice	2.58	10.83	0.15
201 DBXNH-8585B-R2M w/ Mount Pipe	A	From Leg	0' 4.00 0'	0.0000	201'	No Ice	4.09	3.30	0.07

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<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horiz. Lateral Vert</i> <i>ft ft ft</i>	<i>Azimuth Adjustment</i> <i>°</i>	<i>Placement</i> <i>ft</i>		<i>C_{AA}_{Front}</i> <i>ft²</i>	<i>C_{AA}_{Side}</i> <i>ft²</i>	<i>Weight</i> <i>K</i>
DBXNH-8585B-R2M w/ Mount Pipe	B	From Leg	2' 4.00 0'	0.0000	201'	No Ice	4.09	3.30	0.07
DBXNH-8585B-R2M w/ Mount Pipe	C	From Leg	2' 4.00 0'	0.0000	201'	No Ice	4.09	3.30	0.07
(2) SBNHH-1D85B w/ Mount Pipe	A	From Leg	2' 4.00 0'	0.0000	201'	No Ice	4.09	3.30	0.07
(2) SBNHH-1D85B w/ Mount Pipe	B	From Leg	2' 4.00 0'	0.0000	201'	No Ice	4.09	3.30	0.07
(2) SBNHH-1D85B w/ Mount Pipe	C	From Leg	2' 4.00 0'	0.0000	201'	No Ice	4.09	3.30	0.07
NNHH-65B-R4 w/ Mount Pipe	A	From Leg	2' 4.00 0'	0.0000	201'	No Ice	7.55	4.23	0.11
NNHH-65B-R4 w/ Mount Pipe	B	From Leg	2' 4.00 0'	0.0000	201'	No Ice	7.55	4.23	0.11
NNHH-65B-R4 w/ Mount Pipe	C	From Leg	2' 4.00 0'	0.0000	201'	No Ice	7.55	4.23	0.11
(3) RRUS 4478 B14	A	From Leg	2' 4.00 0'	0.0000	201'	No Ice	1.84	1.06	0.06
E15Z01P13	A	From Leg	2' 4.00 0'	0.0000	201'	No Ice	0.78	0.60	0.02
E15Z01P13	B	From Leg	2' 4.00 0'	0.0000	201'	No Ice	0.78	0.60	0.02
E15Z01P13	C	From Leg	2' 4.00 0'	0.0000	201'	No Ice	0.78	0.60	0.02
RRUS 32	A	From Leg	2' 4.00 0'	0.0000	201'	No Ice	2.86	1.78	0.06
RRUS 32	B	From Leg	2' 4.00 0'	0.0000	201'	No Ice	2.86	1.78	0.06
RRUS 32	C	From Leg	2' 4.00 0'	0.0000	201'	No Ice	2.86	1.78	0.06
DC6-48-60-18-8F	A	From Leg	2' 4.00 0'	0.0000	201'	No Ice	1.21	1.21	0.03
DC6-48-60-18-8F	B	From Leg	2' 4.00 0'	0.0000	201'	No Ice	1.21	1.21	0.03
DC6-48-60-18-8F	C	From Leg	2' 4.00 0'	0.0000	201'	No Ice	1.21	1.21	0.03
Sector Mount [SM 502-3] ***164***	C	None	2' 4.00 0'	0.0000	201'	No Ice	29.82	29.82	1.67

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Load Combinations

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

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Mast	Max. Vert	5	359.89	-2.92	-0.25
	Max. H _x	11	359.46	3.02	0.10
	Max. H _z	2	355.98	0.20	3.51
	Max. M _x	1	0.00	-0.01	0.02
	Max. M _z	1	0.00	-0.01	0.02
	Max. Torsion	9	1.71	1.65	-2.62
	Min. Vert	1	278.43	-0.01	0.02
	Min. H _x	5	359.89	-2.92	-0.25
	Min. H _z	8	355.65	-0.00	-3.15
	Min. M _x	1	0.00	-0.01	0.02
	Min. M _z	1	0.00	-0.01	0.02
	Min. Torsion	3	-1.89	-1.16	3.00
	Max. Vert	8	-19.74	-0.00	11.81
Guy C @ 173 ft Elev 0 ft Azimuth 180 deg	Max. H _x	11	-86.07	4.57	73.00
	Max. H _z	2	-151.39	0.02	133.76
	Min. Vert	2	-151.39	0.02	133.76
	Min. H _x	5	-86.54	-4.57	73.54
	Min. H _z	8	-19.74	-0.00	11.81
	Max. Vert	4	-19.35	10.08	-5.82
Guy B @ 173 ft Elev 0 ft Azimuth 60 deg					
	Max. H _x	10	-152.52	116.25	-67.14
	Max. H _z	4	-19.35	10.08	-5.82

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Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Guy A @ 173 ft Elev 0 ft Azimuth -60 deg	Min. Vert	10	-152.52	116.25	-67.14
	Min. H _x	4	-19.35	10.08	-5.82
	Min. H _z	10	-152.52	116.25	-67.14
	Max. Vert	12	-19.91	-10.43	-6.02
	Max. H _x	12	-19.91	-10.43	-6.02
	Max. H _z	12	-19.91	-10.43	-6.02
	Min. Vert	6	-150.92	-115.18	-66.54
	Min. H _x	6	-150.92	-115.18	-66.54
	Min. H _z	6	-150.92	-115.18	-66.54

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
Dead Only	278.43	0.01	-0.02	0.00	0.00	0.01
1.2 Dead+1.0 Wind 0 deg - No Ice+1.0 Guy	355.98	-0.20	-3.51	0.00	0.00	0.07
1.2 Dead+1.0 Wind 30 deg - No Ice+1.0 Guy	358.88	1.16	-3.00	0.00	0.00	1.89
1.2 Dead+1.0 Wind 60 deg - No Ice+1.0 Guy	357.42	2.52	-1.44	0.00	0.00	1.19
1.2 Dead+1.0 Wind 90 deg - No Ice+1.0 Guy	359.89	2.92	0.25	0.00	0.00	0.23
1.2 Dead+1.0 Wind 120 deg - No Ice+1.0 Guy	355.76	2.78	1.64	0.00	0.00	0.98
1.2 Dead+1.0 Wind 150 deg - No Ice+1.0 Guy	356.74	1.72	2.62	0.00	0.00	1.29
1.2 Dead+1.0 Wind 180 deg - No Ice+1.0 Guy	355.65	0.00	3.15	0.00	0.00	-0.20
1.2 Dead+1.0 Wind 210 deg - No Ice+1.0 Guy	358.47	-1.65	2.62	0.00	0.00	-1.71
1.2 Dead+1.0 Wind 240 deg - No Ice+1.0 Guy	356.54	-2.74	1.57	0.00	0.00	-1.23
1.2 Dead+1.0 Wind 270 deg - No Ice+1.0 Guy	359.46	-3.02	-0.10	0.00	0.00	0.58
1.2 Dead+1.0 Wind 300 deg - No Ice+1.0 Guy	355.08	-2.58	-1.71	0.00	0.00	-0.14
1.2 Dead+1.0 Wind 330 deg - No Ice+1.0 Guy	356.67	-1.44	-2.93	0.00	0.00	-1.10
Dead+Wind 0 deg - Service+Guy	281.78	-0.04	-1.04	0.00	0.00	0.02
Dead+Wind 30 deg - Service+Guy	281.68	0.44	-0.92	0.00	0.00	0.52
Dead+Wind 60 deg - Service+Guy	281.69	0.82	-0.47	0.00	0.00	0.30
Dead+Wind 90 deg - Service+Guy	281.69	0.94	-0.01	0.00	0.00	0.06
Dead+Wind 120 deg - Service+Guy	281.77	0.83	0.46	0.00	0.00	0.26
Dead+Wind 150 deg - Service+Guy	281.69	0.49	0.84	0.00	0.00	0.27
Dead+Wind 180 deg - Service+Guy	281.72	-0.00	0.97	0.00	0.00	-0.10
Dead+Wind 210 deg - Service+Guy	281.67	-0.46	0.84	0.00	0.00	-0.48

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Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
Service+Guy						
Dead+Wind 240 deg - Service+Guy	281.78	-0.81	0.45	0.00	0.00	-0.33
Dead+Wind 270 deg - Service+Guy	281.68	-0.96	-0.10	0.00	0.00	0.19
Dead+Wind 300 deg - Service+Guy	281.72	-0.82	-0.53	0.00	0.00	0.01
Dead+Wind 330 deg - Service+Guy	281.70	-0.50	-0.89	0.00	0.00	-0.21

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	350 - 341.945	1.300	22	0.0240	0.1686
T2	341.945 - 340	1.313	22	0.0243	0.1643
T3	340 - 320	1.311	22	0.0247	0.1591
T4	320 - 300	1.382	22	0.0246	0.1348
T5	300 - 280	1.365	22	0.0282	0.0934
T6	280 - 260	1.486	22	0.0288	0.1993
T7	260 - 240	1.560	22	0.0162	0.2109
T8	240 - 220	1.476	22	0.0093	0.1590
T9	220 - 200	1.508	22	0.0133	0.2540
T10	200 - 180	1.400	22	0.0309	0.3208
T11	180 - 160	1.134	22	0.0311	0.2251
T12	160 - 140	1.106	17	0.0247	0.3136
T13	140 - 120	0.988	22	0.0299	0.2591
T14	120 - 100	0.751	14	0.0270	0.1325
T15	100 - 80	0.748	14	0.0197	0.2022
T16	80 - 60	0.783	15	0.0255	0.2707
T17	60 - 40	0.557	14	0.0327	0.1085
T18	40 - 20	0.491	15	0.0382	0.1773
T19	20 - 8.05469	0.309	15	0.0493	0.1418
T20	8.05469 - 6	0.098	14	0.0539	0.0618
T21	6 - 2.66927	0.070	14	0.0544	0.0517
T22	2.66927 - 0	0.031	21	0.0546	0.0271

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
350'	12" x 24" Beacon	22	1.300	0.0240	0.1686	28498
345'	DB228-B	22	1.311	0.0240	0.1687	28498
335'10-3/32"	Guy	22	1.317	0.0251	0.1507	18772
324'	SRL-224NM-4	22	1.370	0.0246	0.1403	26052
295'10-3/32"	Guy	22	1.378	0.0292	0.1167	19586
270'	(2) SRL-224NM-4	22	1.546	0.0232	0.2235	24619
255'	PD322-2	22	1.543	0.0133	0.2006	24814
250'	(2) X7CQAP-665-VR0 w/ Mount Pipe	22	1.517	0.0108	0.1823	224087
235'10-3/32"	Guy	22	1.474	0.0101	0.1675	19474
229'	FHH-65C-R3 w/ Mount Pipe	22	1.489	0.0107	0.1979	150866

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Elevation	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
ft						
222'	DT465B-2XR w/ Mount Pipe	22	1.505	0.0123	0.2410	19669
215'	DB567R90-CR	22	1.504	0.0171	0.2851	15884
210'	8"x15" Dia. Beacon	22	1.486	0.0220	0.3101	16865
201'	DBXNH-8585B-R2M w/ Mount Pipe	22	1.412	0.0302	0.3230	15159
175'10-3/32"	Guy	22	1.110	0.0294	0.2318	13265
166'	HPLPD2-11	22	1.103	0.0256	0.2847	238476
165'	HPD4-11	22	1.103	0.0253	0.2906	86506
164'	HPX6-59-P3A/K	22	1.104	0.0251	0.2961	51454
156'	(3) DB848H105ESX w/ Mount Pipe	17	1.100	0.0251	0.3205	19720
115'10-3/32"	Guy	14	0.729	0.0251	0.1302	13629
55'10-3/32"	Guy	14	0.530	0.0336	0.1061	15607
11'	1.2M	14	0.144	0.0530	0.0791	15989

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
T2	341.945	Leg	A325N	0.7500	3	1.25	30.10	0.041	1.05	Bolt Tension
T3	340	Leg	A325N	0.7500	3	2.82	30.10	0.094	1.05	Bolt Tension
T4	320	Leg	A325N	0.7500	3	3.96	30.10	0.132	1.05	Bolt Tension
T5	300	Leg	A325N	0.7500	3	6.64	30.10	0.221	1.05	Bolt Tension
T6	280	Leg	A325N	0.7500	3	7.94	30.10	0.264	1.05	Bolt Tension
T7	260	Leg	A325N	0.7500	3	6.49	30.10	0.216	1.05	Bolt Tension
T8	240	Leg	A325N	0.7500	3	11.87	30.10	0.394	1.05	Bolt Tension
T9	220	Leg	A325N	0.7500	3	11.37	30.10	0.378	1.05	Bolt Tension
T10	200	Leg	A325N	0.7500	3	11.75	30.10	0.390	1.05	Bolt Tension
T11	180	Leg	A325N	0.7500	3	11.56	30.10	0.384	1.05	Bolt Tension
T12	160	Leg	A325N	0.7500	3	11.46	30.10	0.381	1.05	Bolt Tension
T13	140	Leg	A325N	0.7500	3	14.01	30.10	0.465	1.05	Bolt Tension
T14	120	Leg	A325N	0.7500	3	12.63	30.10	0.419	1.05	Bolt Tension
T15	100	Leg	A325N	0.7500	3	13.97	30.10	0.464	1.05	Bolt Tension
T16	80	Leg	A325N	0.7500	3	13.11	30.10	0.436	1.05	Bolt Tension
T17	60	Leg	A325N	0.7500	3	15.01	30.10	0.499	1.05	Bolt Tension
T18	40	Leg	A325N	0.7500	3	15.23	30.10	0.506	1.05	Bolt Tension
T20	8.05469	Leg	A325N	0.7500	3	14.00	30.10	0.465	1.05	Bolt Tension

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.
T3	335'10-3/32" (A) (953)	7/8 EHS	7.97	79.70	18.14	50.21	0.952	2.636
	335'10-3/32" (A) (954)	7/8 EHS	7.97	79.70	18.11	50.21	0.952	2.640
	335'10-3/32" (B) (951)	7/8 EHS	7.97	79.70	18.42	50.21	0.952	2.596
	335'10-3/32" (B) (952)	7/8 EHS	7.97	79.70	18.23	50.21	0.952	2.623

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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.
T5	335'10-3/32" (C) (949)	7/8 EHS	7.97	79.70	18.01	50.21	0.952	2.656
	335'10-3/32" (C) (950)	7/8 EHS	7.97	79.70	18.32	50.21	0.952	2.610
	295'10-3/32" (A) (947)	7/8 EHS	7.97	79.70	18.48	50.21	0.952	2.587
	295'10-3/32" (A) (948)	7/8 EHS	7.97	79.70	18.91	50.21	0.952	2.529
	295'10-3/32" (B) (945)	7/8 EHS	7.97	79.70	19.18	50.21	0.952	2.493
	295'10-3/32" (B) (946)	7/8 EHS	7.97	79.70	18.77	50.21	0.952	2.548
	295'10-3/32" (C) (943)	7/8 EHS	7.97	79.70	18.69	50.21	0.952	2.559
	295'10-3/32" (C) (944)	7/8 EHS	7.97	79.70	18.79	50.21	0.952	2.544
T8	235'10-3/32" (A) (941)	1 EHS	10.45	104.50	26.24	65.83	0.952	2.389
	235'10-3/32" (A) (942)	1 EHS	10.45	104.50	27.26	65.83	0.952	2.300
	235'10-3/32" (B) (939)	1 EHS	10.45	104.50	27.23	65.83	0.952	2.303
	235'10-3/32" (B) (940)	1 EHS	10.45	104.50	26.84	65.83	0.952	2.336
	235'10-3/32" (C) (937)	1 EHS	10.45	104.50	27.21	65.83	0.952	2.304
	235'10-3/32" (C) (938)	1 EHS	10.45	104.50	26.30	65.83	0.952	2.384
	175'10-3/32" (A) (935)	7/8 EHS	7.97	79.70	19.82	50.21	0.952	2.412
	175'10-3/32" (A) (936)	7/8 EHS	7.97	79.70	20.82	50.21	0.952	2.297
T11	175'10-3/32" (B) (933)	7/8 EHS	7.97	79.70	20.55	50.21	0.952	2.327
	175'10-3/32" (B) (934)	7/8 EHS	7.97	79.70	20.32	50.21	0.952	2.353
	175'10-3/32" (C) (931)	7/8 EHS	7.97	79.70	20.86	50.21	0.952	2.292
	175'10-3/32" (C) (932)	7/8 EHS	7.97	79.70	19.74	50.21	0.952	2.423
	115'10-3/32" (A) (929)	3/4 EHS	5.83	58.30	13.27	36.73	0.952	2.636
	115'10-3/32" (A) (930)	3/4 EHS	5.83	58.30	14.12	36.73	0.952	2.477
	115'10-3/32" (B) (927)	3/4 EHS	5.83	58.30	14.07	36.73	0.952	2.487
	115'10-3/32" (B) (928)	3/4 EHS	5.83	58.30	13.52	36.73	0.952	2.587
T14	115'10-3/32" (C) (925)	3/4 EHS	5.83	58.30	14.25	36.73	0.952	2.454
	115'10-3/32" (C) (926)	3/4 EHS	5.83	58.30	13.58	36.73	0.952	2.575
	55'10-3/32" (A) (923)	9/16 EHS	3.50	35.00	7.01	22.05	0.952	2.994
	55'10-3/32" (A) (924)	9/16 EHS	3.50	35.00	7.45	22.05	0.952	2.821
	55'10-3/32" (B) (921)	9/16 EHS	3.50	35.00	7.45	22.05	0.952	2.820
	55'10-3/32" (B) (922)	9/16 EHS	3.50	35.00	7.11	22.05	0.952	2.955
	55'10-3/32" (C)	9/16 EHS	3.50	35.00	7.55	22.05	0.952	2.781

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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.
	(919) 55'10-3/32" (C) (920)	9/16 EHS	3.50	35.00	7.25	22.05	0.952	2.898

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	350 - 341.945	2 1/4	8'19/32"	3'10-11/16"	83.0 K=1.00	3.9761	-3.40	108.12	0.031 ¹
T2	341.945 - 340	2 1/4	1'11-13/32"	1'8-1/32"	35.7 K=1.00	3.9761	-5.30	163.03	0.033 ¹
T3	340 - 320	2 1/4	20'	3'10-11/16"	83.0 K=1.00	3.9761	-26.63	108.12	0.246 ¹
T4	320 - 300	2 1/4	20'	3'10-11/16"	83.0 K=1.00	3.9761	-35.60	108.12	0.329 ¹
T5	300 - 280	3	20'	3'10-11/16"	62.3 K=1.00	7.0686	-59.69	239.60	0.249 ¹
T6	280 - 260	3	20'	3'10-11/16"	62.3 K=1.00	7.0686	-72.21	239.60	0.301 ¹
T7	260 - 240	3	20'	3'10-11/16"	62.3 K=1.00	7.0686	-72.48	239.60	0.302 ¹
T8	240 - 220	3	20'	3'10-11/16"	62.3 K=1.00	7.0686	-106.72	239.60	0.445 ¹
T9	220 - 200	3	20'	3'10-11/16"	62.3 K=1.00	7.0686	-108.88	239.60	0.454 ¹
T10	200 - 180	3 1/2	20'	3'10-11/16"	53.4 K=1.00	9.6211	-105.66	351.59	0.301 ¹
T11	180 - 160	3 1/2	20'	3'10-11/16"	53.4 K=1.00	9.6211	-124.79	351.59	0.355 ¹
T12	160 - 140	3 1/2	20'	3'10-11/16"	53.4 K=1.00	9.6211	-108.52	351.59	0.309 ¹
T13	140 - 120	3 1/2	20'	3'10-11/16"	53.4 K=1.00	9.6211	-126.00	351.59	0.358 ¹
T14	120 - 100	3 1/2	20'	3'10-11/16"	53.4 K=1.00	9.6211	-138.91	351.59	0.395 ¹
T15	100 - 80	3 1/2	20'	3'10-11/16"	53.4 K=1.00	9.6211	-125.66	351.59	0.357 ¹
T16	80 - 60	3 1/2	20'	3'10-11/16"	53.4 K=1.00	9.6211	-126.32	351.59	0.359 ¹
T17	60 - 40	3 1/2	20'	3'10-11/16"	53.4 K=1.00	9.6211	-135.06	351.59	0.384 ¹
T18	40 - 20	3 1/2	20'	3'10-11/16"	53.4 K=1.00	9.6211	-139.27	351.59	0.396 ¹
T19	20 - 8.05469	3 1/2	11'11-13/32"	3'10-11/16"	53.4 K=1.00	9.6211	-137.32	351.59	0.391 ¹
T20	8.05469 - 6	3 1/2	2'19/32"	1'9-3/8"	24.4 K=1.00	9.6211	-128.27	414.47	0.309 ¹
T21	6 - 2.66927	3 1/2	3'6-27/32"	3'5-3/4"	47.7 K=1.00	9.6211	-135.07	366.56	0.368 ¹

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T22	2.66927 - 0	3 1/2	2'10-5/16"	2'23/32"	28.2 K=1.00	9.6211	-135.50	408.48	0.332 ¹

¹ P_u / φP_n controls

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	350 - 341.945	L2x2x3/16	4'	3'9-23/32"	118.1 K=1.02	0.7150	-1.01	14.46	0.070 ¹
T3	340 - 320	L2x2x3/16	4'	3'9-23/32"	118.1 K=1.02	0.7150	-1.56	14.46	0.108 ¹
T4	320 - 300	L2x2x3/16	4'	3'9-23/32"	118.1 K=1.02	0.7150	-2.48	14.46	0.171 ¹
T5	300 - 280	L2x2x1/4	4'	3'9"	117.5 K=1.02	0.9380	-4.26	19.10	0.223 ¹
T6	280 - 260	L2x2x1/4	4'	3'9"	117.5 K=1.02	0.9380	-3.50	19.10	0.183 ¹
T7	260 - 240	L2 1/2x2 1/2x1/4	4'	3'9"	105.8 K=1.15	1.1900	-6.58	27.75	0.237 ¹
T8	240 - 220	L2 1/2x2 1/2x1/4	4'	3'9"	105.8 K=1.15	1.1900	-6.77	27.75	0.244 ¹
T9	220 - 200	L2x2x1/4	4'	3'9"	117.5 K=1.02	0.9380	-1.89	19.10	0.099 ¹
T10	200 - 180	L2x2x1/4	4'	3'8-17/32"	116.9 K=1.03	0.9380	-6.61	19.26	0.343 ¹
T11	180 - 160	L2x2x1/4	4'	3'8-17/32"	116.9 K=1.03	0.9380	-5.70	19.26	0.296 ¹
T12	160 - 140	L2x2x1/4	4'	3'8-17/32"	116.9 K=1.03	0.9380	-2.01	19.26	0.104 ¹
T13	140 - 120	L2x2x1/4	4'	3'8-17/32"	116.9 K=1.03	0.9380	-4.88	19.26	0.254 ¹
T14	120 - 100	L2x2x1/4	4'	3'8-17/32"	116.9 K=1.03	0.9380	-4.65	19.26	0.242 ¹
T15	100 - 80	L2x2x3/16	4'	3'8-17/32"	116.5 K=1.03	0.7150	-2.87	14.76	0.194 ¹
T16	80 - 60	L2x2x3/16	4'	3'8-17/32"	116.5 K=1.03	0.7150	-2.25	14.76	0.152 ¹
T17	60 - 40	L2x2x3/16	4'	3'8-17/32"	116.5 K=1.03	0.7150	-2.76	14.76	0.187 ¹
T18	40 - 20	L2x2x3/16	4'	3'8-17/32"	116.5 K=1.03	0.7150	-2.41	14.76	0.163 ¹
T19	20 - 8.05469	L2x2x3/16	4'	3'8-17/32"	116.5 K=1.03	0.7150	-2.38	14.76	0.161 ¹

¹ P_u / φP_n controls

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Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	350 - 341.945	L2x2x3/16	4'	3'9-23/3 2"	118.1 K=1.02	0.7150	-0.08	14.46	0.005 ¹
T2	341.945 - 340	L2x2x3/16	4'	3'9-23/3 2"	118.1 K=1.02	0.7150	-2.34	14.46	0.162 ¹
T3	340 - 320	L2x2x3/16	4'	3'9-23/3 2"	118.1 K=1.02	0.7150	-1.33	14.46	0.092 ¹
T4	320 - 300	L2x2x3/16	4'	3'9-23/3 2"	118.1 K=1.02	0.7150	-0.94	14.46	0.065 ¹
T5	300 - 280	L2x2x1/4	4'	3'9"	117.5 K=1.02	0.9380	-1.55	19.10	0.081 ¹
T6	280 - 260	L2x2x1/4	4'	3'9"	117.5 K=1.02	0.9380	-2.06	19.10	0.108 ¹
T7	260 - 240	L2 1/2x2 1/2x1/4	4'	3'9"	105.8 K=1.15	1.1900	-1.26	27.75	0.045 ¹
T8	240 - 220	L2 1/2x2 1/2x1/4	4'	3'9"	105.8 K=1.15	1.1900	-3.68	27.75	0.133 ¹
T9	220 - 200	L2x2x1/4	4'	3'9"	117.5 K=1.02	0.9380	-1.89	19.10	0.099 ¹
T10	200 - 180	L2x2x1/4	4'	3'8-17/3 2"	116.9 K=1.03	0.9380	-2.27	19.26	0.118 ¹
T11	180 - 160	L2x2x1/4	4'	3'8-17/3 2"	116.9 K=1.03	0.9380	-3.38	19.26	0.175 ¹
T12	160 - 140	L2x2x1/4	4'	3'8-17/3 2"	116.9 K=1.03	0.9380	-1.88	19.26	0.098 ¹
T13	140 - 120	L2x2x1/4	4'	3'8-17/3 2"	116.9 K=1.03	0.9380	-2.18	19.26	0.113 ¹
T14	120 - 100	L2x2x1/4	4'	3'8-17/3 2"	116.9 K=1.03	0.9380	-2.51	19.26	0.130 ¹
T15	100 - 80	L2x2x3/16	4'	3'8-17/3 2"	116.5 K=1.03	0.7150	-2.18	14.76	0.148 ¹
T16	80 - 60	L2x2x3/16	4'	3'8-17/3 2"	116.5 K=1.03	0.7150	-2.19	14.76	0.148 ¹
T17	60 - 40	L2x2x3/16	4'	3'8-17/3 2"	116.5 K=1.03	0.7150	-2.34	14.76	0.159 ¹
T18	40 - 20	L2x2x3/16	4'	3'8-17/3 2"	116.5 K=1.03	0.7150	-2.41	14.76	0.163 ¹
T19	20 - 8.05469	L2x2x3/16	4'	3'8-17/3 2"	116.5 K=1.03	0.7150	-2.38	14.76	0.161 ¹
T20	8.05469 - 6	L2x2x3/16	4'	3'8-17/3 2"	116.5 K=1.03	0.7150	-2.70	14.76	0.183 ¹
T21	6 - 2.66927	L3x3x3/8	3'11-9/3 2"	3'7-13/1 6"	97.3 K=1.30	2.1100	-2.46	53.33	0.046 ¹

¹ P_u / φP_n controls

Bottom Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T2	341.945 - 340	L2x2x3/16	4'	3'9-23/3 2"	118.1 K=1.02	0.7150	-1.59	14.46	0.110 ¹
T3	340 - 320	L2x2x3/16	4'	3'9-23/3	118.1	0.7150	-0.75	14.46	0.052 ¹

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T4	320 - 300	L2x2x3/16	4'	3'9-23/32"	K=1.02 118.1	0.7150	-1.35	14.46	0.094 ¹
T5	300 - 280	L2x2x1/4	4'	3'9"	K=1.02 117.5	0.9380	-2.06	19.10	0.108 ¹
T6	280 - 260	L2x2x1/4	4'	3'9"	K=1.02 117.5	0.9380	-1.25	19.10	0.065 ¹
T7	260 - 240	L2 1/2x2 1/2x1/4	4'	3'9"	K=1.02 105.8	1.1900	-3.68	27.75	0.132 ¹
T8	240 - 220	L2 1/2x2 1/2x1/4	4'	3'9"	K=1.15 105.8	1.1900	-2.13	27.75	0.077 ¹
T9	220 - 200	L2x2x1/4	4'	3'9"	K=1.15 117.5	0.9380	-1.89	19.10	0.099 ¹
T10	200 - 180	L2x2x1/4	4'	3'8-17/32"	K=1.02 116.9	0.9380	-3.80	19.26	0.197 ¹
T11	180 - 160	L2x2x1/4	4'	3'8-17/32"	K=1.03 116.9	0.9380	-2.16	19.26	0.112 ¹
T12	160 - 140	L2x2x1/4	4'	3'8-17/32"	K=1.03 116.9	0.9380	-1.88	19.26	0.098 ¹
T13	140 - 120	L2x2x1/4	4'	3'8-17/32"	K=1.03 116.9	0.9380	-2.87	19.26	0.149 ¹
T14	120 - 100	L2x2x1/4	4'	3'8-17/32"	K=1.03 116.9	0.9380	-2.41	19.26	0.125 ¹
T15	100 - 80	L2x2x3/16	4'	3'8-17/32"	K=1.03 116.5	0.7150	-2.18	14.76	0.148 ¹
T16	80 - 60	L2x2x3/16	4'	3'8-17/32"	K=1.03 116.5	0.7150	-2.19	14.76	0.148 ¹
T17	60 - 40	L2x2x3/16	4'	3'8-17/32"	K=1.03 116.5	0.7150	-2.34	14.76	0.159 ¹
T18	40 - 20	L2x2x3/16	4'	3'8-17/32"	K=1.03 116.5	0.7150	-2.41	14.76	0.163 ¹
T20	8.05469 - 6	L2x2x3/16	4'	3'8-17/32"	K=1.03 116.5	0.7150	-2.22	14.76	0.151 ¹
T21	6 - 2.66927	L2x2x1/4	1'9-3/8"	1'5-7/8"	K=1.03 82.9	0.9380	-2.47	26.48	0.093 ¹
T22	2.66927 - 0	18x3/8	6"	2-17/32"	K=1.81 23.1 K=1.00	6.7500	-3.13	212.62	0.015 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	350 - 341.945	2 1/4	8'19/32"	3'10-11/16"	83.0	3.9761	0.05	178.92	0.000 ¹
T2	341.945 - 340	2 1/4	1'11-13/32"	3-1/4"	5.8	3.9761	3.74	178.92	0.021 ¹
T3	340 - 320	2 1/4	20'	3-1/4"	5.8	3.9761	3.74	178.92	0.021 ¹

¹ P_u / φP_n controls

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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 $\frac{P_u}{\phi P_n}$
T1	350 - 341.945	3/4	5'6-31/32"	5'3-27/32"	340.4	0.4418	2.42	14.31	0.169 ¹
T2	341.945 - 340	3/4	4'4-3/32"	4'1-9/16"	264.5	0.4418	3.26	14.31	0.227 ¹
T3	340 - 320	3/4	5'6-31/32"	5'3-27/32"	340.4	0.4418	3.58	14.31	0.250 ¹
T4	320 - 300	3/4	5'6-31/32"	5'3-27/32"	340.4	0.4418	3.73	14.31	0.261 ¹
T5	300 - 280	7/8	5'6-31/32"	5'2-3/4"	287.0	0.6013	6.03	19.48	0.309 ¹
T6	280 - 260	7/8	5'6-31/32"	5'2-3/4"	287.0	0.6013	5.27	19.48	0.270 ¹
T7	260 - 240	2x1/2	5'6-31/32"	5'2-3/4"	434.9	1.0000	9.82	32.40	0.303 ¹
T8	240 - 220	2x1/2	5'6-31/32"	5'2-3/4"	434.9	1.0000	9.88	32.40	0.305 ¹
T9	220 - 200	7/8	5'6-31/32"	5'2-3/4"	287.0	0.6013	3.40	19.48	0.174 ¹
T10	200 - 180	7/8	5'6-31/32"	5'2-1/32"	283.8	0.6013	10.36	19.48	0.532 ¹
T11	180 - 160	7/8	5'6-31/32"	5'2-1/32"	283.8	0.6013	9.47	19.48	0.486 ¹
T12	160 - 140	7/8	5'6-31/32"	5'2-1/32"	283.8	0.6013	4.17	19.48	0.214 ¹
T13	140 - 120	7/8	5'6-31/32"	5'2-1/32"	283.8	0.6013	7.80	19.48	0.400 ¹
T14	120 - 100	7/8	5'6-31/32"	5'2-1/32"	283.8	0.6013	7.06	19.48	0.362 ¹
T15	100 - 80	3/4	5'6-31/32"	5'2-1/32"	331.1	0.4418	4.61	14.31	0.322 ¹
T16	80 - 60	3/4	5'6-31/32"	5'2-1/32"	331.1	0.4418	3.59	14.31	0.251 ¹
T17	60 - 40	3/4	5'6-31/32"	5'2-1/32"	331.1	0.4418	4.07	14.31	0.285 ¹
T18	40 - 20	3/4	5'6-31/32"	5'2-1/32"	331.1	0.4418	2.06	14.31	0.144 ¹
T19	20 - 8.05469	3/4	5'6-31/32"	5'2-1/32"	331.1	0.4418	3.14	14.31	0.219 ¹
T20	8.05469 - 6	3/4	4'4-9/16"	4'23/32"	259.8	0.4418	3.72	14.31	0.260 ¹
T21	6 - 2.66927	2x1/2	4'4-7/16"	3'11-9/32"	327.4	1.0000	0.09	32.40	0.003 ¹

¹ P_u / φP_n controls

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	350 - 341.945	L2x2x3/16	4'	3'9-23/32"	74.1	0.7150	0.29	23.17	0.012 ¹
T3	340 - 320	L2x2x3/16	4'	3'9-23/32"	74.1	0.7150	5.38	23.17	0.232 ¹

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T4	320 - 300	L2x2x3/16	4'	3'9-23/32"	74.1	0.7150	0.62	23.17	0.027 ¹
T5	300 - 280	L2x2x1/4	4'	3'9"	73.9	0.9380	6.37	30.39	0.210 ¹
T6	280 - 260	L2x2x1/4	4'	3'9"	73.9	0.9380	1.25	30.39	0.041 ¹
T7	260 - 240	L2 1/2x2 1/2x1/4	4'	3'9"	58.5	1.1900	1.26	38.56	0.033 ¹
T8	240 - 220	L2 1/2x2 1/2x1/4	4'	3'9"	58.5	1.1900	11.96	38.56	0.310 ¹
T9	220 - 200	L2x2x1/4	4'	3'9"	73.9	0.9380	1.89	30.39	0.062 ¹
T10	200 - 180	L2x2x1/4	4'	3'8-17/32"	73.1	0.9380	1.83	30.39	0.060 ¹
T11	180 - 160	L2x2x1/4	4'	3'8-17/32"	73.1	0.9380	10.95	30.39	0.360 ¹
T12	160 - 140	L2x2x1/4	4'	3'8-17/32"	73.1	0.9380	1.88	30.39	0.062 ¹
T13	140 - 120	L2x2x1/4	4'	3'8-17/32"	73.1	0.9380	2.18	30.39	0.072 ¹
T14	120 - 100	L2x2x1/4	4'	3'8-17/32"	73.1	0.9380	8.91	30.39	0.293 ¹
T15	100 - 80	L2x2x3/16	4'	3'8-17/32"	72.1	0.7150	2.18	23.17	0.094 ¹
T16	80 - 60	L2x2x3/16	4'	3'8-17/32"	72.1	0.7150	2.19	23.17	0.094 ¹
T17	60 - 40	L2x2x3/16	4'	3'8-17/32"	72.1	0.7150	5.09	23.17	0.220 ¹
T18	40 - 20	L2x2x3/16	4'	3'8-17/32"	72.1	0.7150	2.41	23.17	0.104 ¹
T19	20 - 8.05469	L2x2x3/16	4'	3'8-17/32"	72.1	0.7150	2.38	23.17	0.103 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	350 - 341.945	L2x2x3/16	4'	3'9-23/32"	74.1	0.7150	0.02	23.17	0.001 ¹
T2	341.945 - 340	L2x2x3/16	4'	3'9-23/32"	74.1	0.7150	0.09	23.17	0.004 ¹
T3	340 - 320	L2x2x3/16	4'	3'9-23/32"	74.1	0.7150	0.46	23.17	0.020 ¹
T4	320 - 300	L2x2x3/16	4'	3'9-23/32"	74.1	0.7150	0.62	23.17	0.027 ¹
T5	300 - 280	L2x2x1/4	4'	3'9"	73.9	0.9380	1.03	30.39	0.034 ¹
T6	280 - 260	L2x2x1/4	4'	3'9"	73.9	0.9380	1.25	30.39	0.041 ¹
T7	260 - 240	L2 1/2x2 1/2x1/4	4'	3'9"	58.5	1.1900	1.26	38.56	0.033 ¹
T8	240 - 220	L2 1/2x2 1/2x1/4	4'	3'9"	58.5	1.1900	1.85	38.56	0.048 ¹
T9	220 - 200	L2x2x1/4	4'	3'9"	73.9	0.9380	1.89	30.39	0.062 ¹
T10	200 - 180	L2x2x1/4	4'	3'8-17/32"	73.1	0.9380	1.83	30.39	0.060 ¹
T11	180 - 160	L2x2x1/4	4'	3'8-17/32"	73.1	0.9380	2.16	30.39	0.071 ¹
T12	160 - 140	L2x2x1/4	4'	3'8-17/32"	73.1	0.9380	1.88	30.39	0.062 ¹
T13	140 - 120	L2x2x1/4	4'	3'8-17/32"	73.1	0.9380	2.18	30.39	0.072 ¹
T14	120 - 100	L2x2x1/4	4'	3'8-17/32"	73.1	0.9380	2.41	30.39	0.079 ¹

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T15	100 - 80	L2x2x3/16	4'	2" 3'8-17/3	72.1	0.7150	2.18	23.17	0.094 ¹
T16	80 - 60	L2x2x3/16	4'	2" 3'8-17/3	72.1	0.7150	2.19	23.17	0.094 ¹
T17	60 - 40	L2x2x3/16	4'	2" 3'8-17/3	72.1	0.7150	2.34	23.17	0.101 ¹
T18	40 - 20	L2x2x3/16	4'	2" 3'8-17/3	72.1	0.7150	2.41	23.17	0.104 ¹
T19	20 - 8.05469	L2x2x3/16	4'	2" 3'8-17/3	72.1	0.7150	2.38	23.17	0.103 ¹
T20	8.05469 - 6	L2x2x3/16	4'	2" 3'8-17/3	72.1	0.7150	2.22	23.17	0.096 ¹
T21	6 - 2.66927	L3x3x3/8	3'11-9/3 2"	3'7-13/1 6"	48.0	2.1100	20.41	68.36	0.299 ¹

¹ P_u / φP_n controls

Bottom Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T2	341.945 - 340	L2x2x3/16	4'	2" 3'9-23/3	74.1	0.7150	0.18	23.17	0.008 ¹
T3	340 - 320	L2x2x3/16	4'	2" 3'9-23/3	74.1	0.7150	0.46	23.17	0.020 ¹
T4	320 - 300	L2x2x3/16	4'	2" 3'9-23/3	74.1	0.7150	0.62	23.17	0.027 ¹
T5	300 - 280	L2x2x1/4	4'	3'9"	73.9	0.9380	1.03	30.39	0.034 ¹
T6	280 - 260	L2x2x1/4	4'	3'9"	73.9	0.9380	1.25	30.39	0.041 ¹
T7	260 - 240	L2 1/2x2 1/2x1/4	4'	3'9"	58.5	1.1900	1.26	38.56	0.033 ¹
T8	240 - 220	L2 1/2x2 1/2x1/4	4'	3'9"	58.5	1.1900	1.85	38.56	0.048 ¹
T9	220 - 200	L2x2x1/4	4'	3'9"	73.9	0.9380	1.89	30.39	0.062 ¹
T10	200 - 180	L2x2x1/4	4'	2" 3'8-17/3	73.1	0.9380	1.83	30.39	0.060 ¹
T11	180 - 160	L2x2x1/4	4'	2" 3'8-17/3	73.1	0.9380	2.16	30.39	0.071 ¹
T12	160 - 140	L2x2x1/4	4'	2" 3'8-17/3	73.1	0.9380	1.88	30.39	0.062 ¹
T13	140 - 120	L2x2x1/4	4'	2" 3'8-17/3	73.1	0.9380	2.18	30.39	0.072 ¹
T14	120 - 100	L2x2x1/4	4'	2" 3'8-17/3	73.1	0.9380	2.41	30.39	0.079 ¹
T15	100 - 80	L2x2x3/16	4'	2" 3'8-17/3	72.1	0.7150	2.18	23.17	0.094 ¹
T16	80 - 60	L2x2x3/16	4'	2" 3'8-17/3	72.1	0.7150	2.19	23.17	0.094 ¹
T17	60 - 40	L2x2x3/16	4'	2" 3'8-17/3	72.1	0.7150	2.34	23.17	0.101 ¹
T18	40 - 20	L2x2x3/16	4'	2" 3'8-17/3	72.1	0.7150	2.41	23.17	0.104 ¹
T20	8.05469 - 6	L2x2x3/16	4'	2" 3'8-17/3	72.1	0.7150	6.00	23.17	0.259 ¹
T21	6 - 2.66927	L2x2x1/4	1'9-3/8"	1'5-7/8"	29.4	0.9380	2.47	30.39	0.081 ¹

¹ P_u / φP_n controls

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Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T1	350 - 341.945	Leg	2 1/4	2	-3.40	113.53	3.0	Pass
T2	341.945 - 340	Leg	2 1/4	23	-5.30	171.18	3.1	Pass
T3	340 - 320	Leg	2 1/4	39	-26.63	113.53	23.5	Pass
T4	320 - 300	Leg	2 1/4	89	-35.60	113.53	31.4	Pass
T5	300 - 280	Leg	3	141	-59.69	251.58	23.7	Pass
T6	280 - 260	Leg	3	190	-72.21	251.58	28.7	Pass
T7	260 - 240	Leg	3	241	-72.48	251.58	28.8	Pass
T8	240 - 220	Leg	3	293	-106.72	251.58	42.4	Pass
T9	220 - 200	Leg	3	344	-108.88	251.58	43.3	Pass
T10	200 - 180	Leg	3 1/2	394	-105.66	369.17	28.6	Pass
T11	180 - 160	Leg	3 1/2	445	-124.79	369.17	33.8	Pass
T12	160 - 140	Leg	3 1/2	496	-108.52	369.17	29.4	Pass
T13	140 - 120	Leg	3 1/2	547	-126.00	369.17	34.1	Pass
T14	120 - 100	Leg	3 1/2	598	-138.91	369.17	37.6	Pass
T15	100 - 80	Leg	3 1/2	651	-125.66	369.17	34.0	Pass
T16	80 - 60	Leg	3 1/2	702	-126.32	369.17	34.2	Pass
T17	60 - 40	Leg	3 1/2	753	-135.06	369.17	36.6	Pass
T18	40 - 20	Leg	3 1/2	804	-139.27	369.17	37.7	Pass
T19	20 - 8.05469	Leg	3 1/2	855	-137.32	369.17	37.2	Pass
T20	8.05469 - 6	Leg	3 1/2	885	-128.27	435.19	29.5	Pass
T21	6 - 2.66927	Leg	3 1/2	898	-135.07	384.88	35.1	Pass
T22	2.66927 - 0	Leg	3 1/2	913	-135.50	428.91	31.6	Pass
T1	350 - 341.945	Diagonal	3/4	9	2.42	15.03	16.1	Pass
T2	341.945 - 340	Diagonal	3/4	34	3.26	15.03	21.7	Pass
T3	340 - 320	Diagonal	3/4	84	3.58	15.03	23.8	Pass
T4	320 - 300	Diagonal	3/4	99	3.73	15.03	24.8	Pass
T5	300 - 280	Diagonal	7/8	166	6.03	20.46	29.5	Pass
T6	280 - 260	Diagonal	7/8	235	5.27	20.46	25.8	Pass
T7	260 - 240	Diagonal	2x1/2	250	9.82	34.02	28.9	Pass
T8	240 - 220	Diagonal	2x1/2	332	9.88	34.02	29.0	Pass
T9	220 - 200	Diagonal	7/8	352	3.40	20.46	16.6	Pass
T10	200 - 180	Diagonal	7/8	407	10.36	20.46	50.6	Pass
T11	180 - 160	Diagonal	7/8	494	9.47	20.46	46.3	Pass
T12	160 - 140	Diagonal	7/8	544	4.17	20.46	20.4	Pass
T13	140 - 120	Diagonal	7/8	556	7.80	20.46	38.1	Pass
T14	120 - 100	Diagonal	7/8	643	7.06	20.46	34.5	Pass
T15	100 - 80	Diagonal	3/4	694	4.61	15.03	30.7	Pass
T16	80 - 60	Diagonal	3/4	714	3.59	15.03	23.9	Pass
T17	60 - 40	Diagonal	3/4	779	4.07	15.03	27.1	Pass
T18	40 - 20	Diagonal	3/4	850	2.06	15.03	13.7	Pass
T19	20 - 8.05469	Diagonal	3/4	860	3.14	15.03	20.9	Pass
T20	8.05469 - 6	Diagonal	3/4	893	3.72	15.03	24.8	Pass
T21	6 - 2.66927	Diagonal	2x1/2	909	0.09	34.02	0.3	Pass
T1	350 - 341.945	Horizontal	L2x2x3/16	14	-1.01	15.18	6.7	Pass
T3	340 - 320	Horizontal	L2x2x3/16	80	5.38	24.32	22.1	Pass
T4	320 - 300	Horizontal	L2x2x3/16	104	-2.48	15.18	16.3	Pass
T5	300 - 280	Horizontal	L2x2x1/4	172	-4.26	20.05	21.3	Pass
T6	280 - 260	Horizontal	L2x2x1/4	232	-3.50	20.05	17.5	Pass
T7	260 - 240	Horizontal	L2 1/2x2 1/2x1/4	256	-6.58	29.14	22.6	Pass
T8	240 - 220	Horizontal	L2 1/2x2 1/2x1/4	336	11.96	40.48	29.5	Pass
T9	220 - 200	Horizontal	L2x2x1/4	358	-1.89	20.05	9.4	Pass
T10	200 - 180	Horizontal	L2x2x1/4	411	-6.61	20.22	32.7	Pass
T11	180 - 160	Horizontal	L2x2x1/4	488	10.95	31.91	34.3	Pass
T12	160 - 140	Horizontal	L2x2x1/4	539	-2.01	20.22	9.9	Pass
T13	140 - 120	Horizontal	L2x2x1/4	562	-4.88	20.22	24.1	Pass
T14	120 - 100	Horizontal	L2x2x1/4	641	8.91	31.91	27.9	Pass
T15	100 - 80	Horizontal	L2x2x3/16	691	-2.87	15.50	18.5	Pass
T16	80 - 60	Horizontal	L2x2x3/16	717	-2.25	15.50	14.5	Pass

tnxTower Tower Engineering Professionals 326 Tryon Road Raleigh, NC 270603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job	Lake City (SR 47 & US 41) (BU 870081)	Page	50 of 51
	Project	TEP No. 145283.618063	Date	13:37:15 11/01/21
	Client	Crown Castle	Designed by	aneering

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T17	60 - 40	Horizontal	L2x2x3/16	793	5.09	24.32	20.9	Pass
T18	40 - 20	Horizontal	L2x2x3/16	818	-2.41	15.50	15.6	Pass
T19	20 - 8.05469	Horizontal	L2x2x3/16	875	-2.38	15.50	15.3	Pass
T1	350 - 341.945	Top Girt	L2x2x3/16	6	-0.08	15.18	0.5	Pass
T2	341.945 - 340	Top Girt	L2x2x3/16	26	-2.34	15.18	15.4	Pass
T3	340 - 320	Top Girt	L2x2x3/16	41	-1.33	15.18	8.8	Pass
T4	320 - 300	Top Girt	L2x2x3/16	92	-0.94	15.18	6.2	Pass
T5	300 - 280	Top Girt	L2x2x1/4	143	-1.55	20.05	7.7	Pass
T6	280 - 260	Top Girt	L2x2x1/4	193	-2.06	20.05	10.3	Pass
T7	260 - 240	Top Girt	L2 1/2x2 1/2x1/4	246	-1.26	29.14	4.3	Pass
T8	240 - 220	Top Girt	L2 1/2x2 1/2x1/4	295	-3.68	29.14	12.6	Pass
T9	220 - 200	Top Girt	L2x2x1/4	346	-1.89	20.05	9.4	Pass
T10	200 - 180	Top Girt	L2x2x1/4	399	-2.27	20.22	11.2	Pass
T11	180 - 160	Top Girt	L2x2x1/4	450	-3.38	20.22	16.7	Pass
T12	160 - 140	Top Girt	L2x2x1/4	501	-1.88	20.22	9.3	Pass
T13	140 - 120	Top Girt	L2x2x1/4	552	-2.18	20.22	10.8	Pass
T14	120 - 100	Top Girt	L2x2x1/4	601	-2.51	20.22	12.4	Pass
T15	100 - 80	Top Girt	L2x2x3/16	653	-2.18	15.50	14.1	Pass
T16	80 - 60	Top Girt	L2x2x3/16	704	-2.19	15.50	14.1	Pass
T17	60 - 40	Top Girt	L2x2x3/16	755	-2.34	15.50	15.1	Pass
T18	40 - 20	Top Girt	L2x2x3/16	806	-2.41	15.50	15.6	Pass
T19	20 - 8.05469	Top Girt	L2x2x3/16	857	-2.38	15.50	15.3	Pass
T20	8.05469 - 6	Top Girt	L2x2x3/16	886	-2.70	15.50	17.4	Pass
T21	6 - 2.66927	Top Girt	L3x3x3/8	901	20.41	71.78	28.4	Pass
T2	341.945 - 340	Bottom Girt	L2x2x3/16	29	-1.59	15.18	10.5	Pass
T3	340 - 320	Bottom Girt	L2x2x3/16	44	-0.75	15.18	4.9	Pass
T4	320 - 300	Bottom Girt	L2x2x3/16	95	-1.35	15.18	8.9	Pass
T5	300 - 280	Bottom Girt	L2x2x1/4	145	-2.06	20.05	10.3	Pass
T6	280 - 260	Bottom Girt	L2x2x1/4	198	-1.25	20.05	6.2	Pass
T7	260 - 240	Bottom Girt	L2 1/2x2 1/2x1/4	247	-3.68	29.14	12.6	Pass
T8	240 - 220	Bottom Girt	L2 1/2x2 1/2x1/4	300	-2.13	29.14	7.3	Pass
T9	220 - 200	Bottom Girt	L2x2x1/4	349	-1.89	20.05	9.4	Pass
T10	200 - 180	Bottom Girt	L2x2x1/4	402	-3.80	20.22	18.8	Pass
T11	180 - 160	Bottom Girt	L2x2x1/4	453	-2.16	20.22	10.7	Pass
T12	160 - 140	Bottom Girt	L2x2x1/4	504	-1.88	20.22	9.3	Pass
T13	140 - 120	Bottom Girt	L2x2x1/4	553	-2.87	20.22	14.2	Pass
T14	120 - 100	Bottom Girt	L2x2x1/4	606	-2.41	20.22	11.9	Pass
T15	100 - 80	Bottom Girt	L2x2x3/16	656	-2.18	15.50	14.1	Pass
T16	80 - 60	Bottom Girt	L2x2x3/16	707	-2.19	15.50	14.1	Pass
T17	60 - 40	Bottom Girt	L2x2x3/16	758	-2.34	15.50	15.1	Pass
T18	40 - 20	Bottom Girt	L2x2x3/16	809	-2.41	15.50	15.6	Pass
T20	8.05469 - 6	Bottom Girt	L2x2x3/16	889	6.00	24.32	24.7	Pass
T21	6 - 2.66927	Bottom Girt	L2x2x1/4	906	-2.47	27.80	8.9	Pass
T22	2.66927 - 0	Bottom Girt	18x3/8	917	-3.10	223.25	5.0	Pass
T3	340 - 320	Guy A @ 335.836	7/8	953	18.14	50.21	36.1	Pass
T5	300 - 280	Guy A @ 295.836	7/8	948	18.91	50.21	37.7	Pass
T8	240 - 220	Guy A @ 235.836	1	942	27.26	65.83	41.4	Pass
T11	180 - 160	Guy A @ 175.836	7/8	936	20.82	50.21	41.5	Pass
T14	120 - 100	Guy A @ 115.836	3/4	930	14.12	36.73	38.4	Pass
T17	60 - 40	Guy A @ 55.8359	9/16	924	7.45	22.05	33.8	Pass
T3	340 - 320	Guy B @ 335.836	7/8	951	18.42	50.21	36.7	Pass
T5	300 - 280	Guy B @ 295.836	7/8	945	19.18	50.21	38.2	Pass
T8	240 - 220	Guy B @ 235.836	1	939	27.23	65.83	41.4	Pass
T11	180 - 160	Guy B @ 175.836	7/8	933	20.55	50.21	40.9	Pass
T14	120 - 100	Guy B @ 115.836	3/4	927	14.07	36.73	38.3	Pass
T17	60 - 40	Guy B @ 55.8359	9/16	921	7.45	22.05	33.8	Pass
T3	340 - 320	Guy C @ 335.836	7/8	950	18.32	50.21	36.5	Pass
T5	300 - 280	Guy C @ 295.836	7/8	944	18.79	50.21	37.4	Pass
T8	240 - 220	Guy C @ 235.836	1	937	27.21	65.83	41.3	Pass
T11	180 - 160	Guy C @ 175.836	7/8	931	20.86	50.21	41.5	Pass
T14	120 - 100	Guy C @ 115.836	3/4	925	14.25	36.73	38.8	Pass

<i>tnxTower</i> <i>Tower Engineering Professionals</i> 326 Tryon Road Raleigh, NC 270603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job Lake City (SR 47 & US 41) (BU 870081)	Page 51 of 51
	Project TEP No. 145283.618063	Date 13:37:15 11/01/21
	Client Crown Castle	Designed by anearning

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T17	60 - 40	Guy C@55.8359	9/16	919	7.55	22.05	34.2	Pass
Summary								
						Leg (T9)	43.3	Pass
						Diagonal (T10)	50.6	Pass
						Horizontal (T11)	34.3	Pass
						Top Girt (T21)	28.4	Pass
						Bottom Girt (T20)	24.7	Pass
						Guy A (T11)	41.5	Pass
						Guy B (T8)	41.4	Pass
						Guy C (T11)	41.5	Pass
						Bolt Checks	48.2	Pass
						RATING =	50.6	Pass

APPENDIX B

BASE LEVEL DRAWING



APPENDIX C

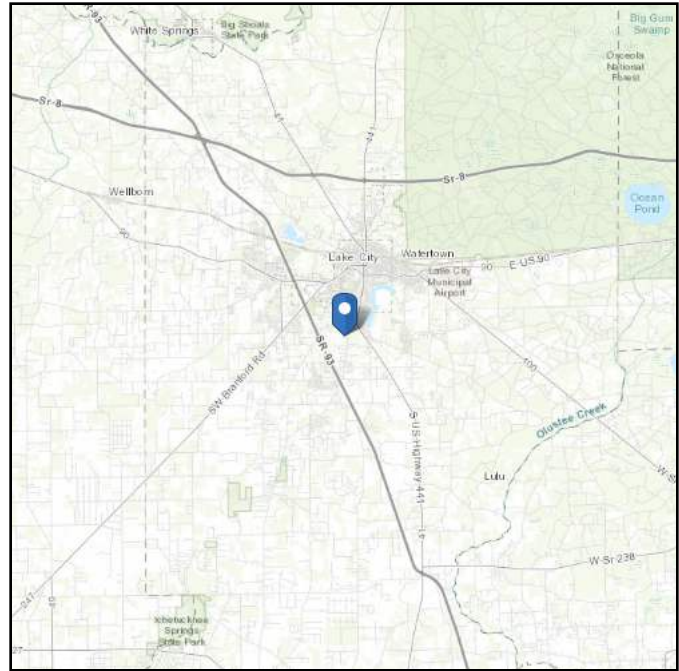
ADDITIONAL CALCULATIONS

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: 140.45 ft (NAVD 88)
Latitude: 30.145472
Longitude: -82.653028



Wind

Results:

Wind Speed:	118 Vmph
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: Tue Oct 26 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).

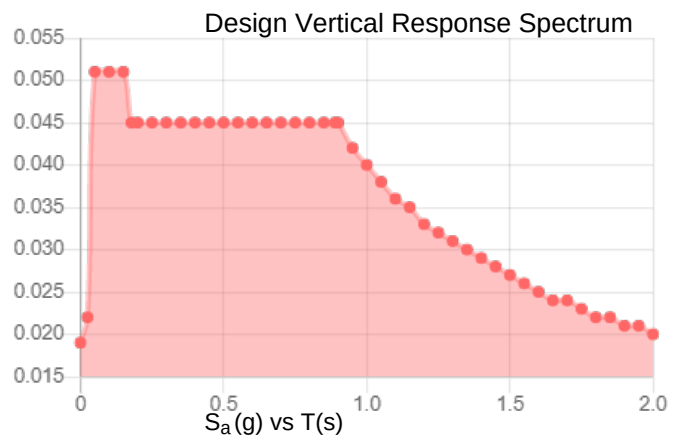
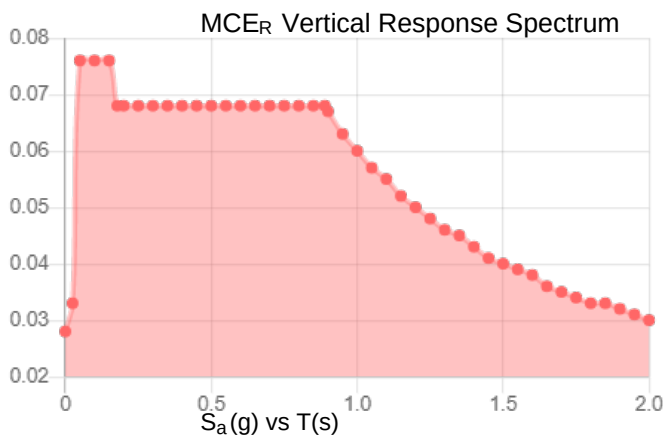
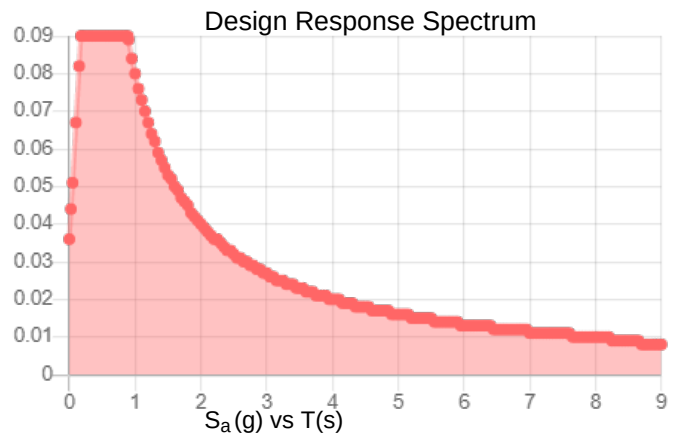
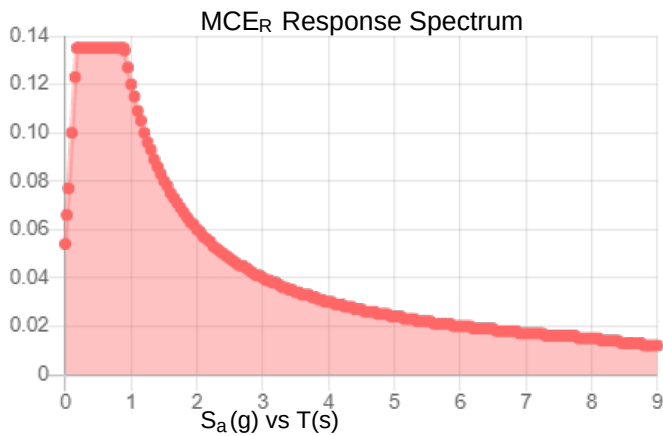
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

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

Results:

S_S :	0.085	S_{D1} :	0.08
S_1 :	0.05	T_L :	8
F_a :	1.6	PGA :	0.04
F_v :	2.4	PGA _M :	0.064
S_{MS} :	0.135	F_{PGA} :	1.6
S_{M1} :	0.12	I_e :	1
S_{DS} :	0.09	C_v :	0.7

Seismic Design Category B



Data Accessed:

Tue Oct 26 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.

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: Tue Oct 26 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.

The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided "as is" and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

ASCE does not intend, nor should anyone interpret, the results provided by this Tool to replace the sound judgment of a competent professional, having knowledge and experience in the appropriate field(s) of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the contents of this Tool or the ASCE 7 standard.

In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE 7 Hazard Tool.

Drilled Pier Foundation

BU #:	870081
Site Name:	Lake City (SR 47 & US 41)
Order Number:	592397 Rev. 0
TIA-222 Revision:	H
Tower Type:	Guyed (Base)
Location:	Base

Report File: C:\Users\lanea\OneDrive\Desktop\145283\IP-299616_L-618063_870081_Lake City (SR 47 & US 41)



Applied Loads		
	Comp.	Uplift
Moment (kip-ft)		
Axial Force (kips)	359.89	
Shear Force (kips)	2.93	

Material Properties	
Concrete Strength, f _c :	4 ksi
Rebar Strength, F _y :	60 ksi
Tie Yield Strength, F _y :	40 ksi

Pier Design Data	
Depth	55.5 ft
Ext. Above Grade	0.5 ft
Pier Section 1	
From 0.5' above grade to 55.5' below grade	
Pier Diameter	6 ft
Rebar Quantity	18
Rebar Size	10
Clear Cover to Ties	4 in
Tie Size	5
Tie Spacing	16 in

[Rebar & Pier Options](#)

[Embedded Pole Inputs](#)

[Belled Pier Inputs](#)

Analysis Results		
Soil Lateral Check	Compression	Uplift
D _{req} (ft from TOC)	26.12	-
Soil Safety Factor	956.78	-
Max Moment (kip-ft)	47.32	-
Rating*	0.2%	-

Soil Vertical Check	Compression	Uplift
Skin Friction (kips)	898.51	-
End Bearing (kips)	488.58	-
Weight of Concrete (kips)	173.85	-
Total Capacity (kips)	1387.09	-
Axial (kips)	533.74	-
Rating*	36.6%	-

Reinforced Concrete Flexure	Compression	Uplift
Critical Depth (ft from TOC)	26.94	-
Critical Moment (kip-ft)	47.27	-
Critical Moment Capacity	3662.89	-
Rating*	1.2%	-

Reinforced Concrete Shear	Compression	Uplift
Critical Depth (ft from TOC)	43.12	-
Critical Shear (kip)	3.31	-
Critical Shear Capacity	676.09	-
Rating*	0.5%	-

Structural Foundation Rating*	1.2%
Soil Interaction Rating*	36.6%

*Rating per TIA-222-H Section 15.5

Check Limitation	
Apply TIA-222-H Section 15.5:	☒
N/A	☐
Additional Longitudinal Rebar	
Input Effective Depths (else Actual):	☐
Shear Design Options	
Check Shear along Depth of Pier:	☒
Utilize Shear-Friction Methodology:	☐
Override Critical Depth:	☐

[Go to Soil Calculations](#)

Soil Profile														
Groundwater Depth		3	# of Layers		6									
Layer	Top (ft)	Bottom (ft)	Thickness (ft)	Y _{soil} (pcf)	Y _{concrete} (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Gross Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	3	3	100	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
2	3	4	1	38	87.6	0	28	0.000	0.000	0.02	0.02			Cohesionless
3	4	6	2	48	87.6	0.4	28	0.000	0.000	0.27	0.27			Cohesionless
4	6	16	10	58	87.6	2	28	0.000	0.000	1.23	1.23			Cohesionless
5	16	32	16	63	87.6	3	0	1.650	1.650	1.65	1.65			Cohesive
6	32	55.5	23.5	58	87.6	2	28	0.000	0.000	1.71	1.71	28.8		Cohesionless

Drilled Pier Foundation

BU # :	870081 - A
Site Name:	Lake City (SR 47 & US 41)
Order Number:	592397 Rev. 0
TIA-222 Revision:	H
Tower Type:	Guyed (Anchor)
Location:	

Applied Loads		
	Comp.	Uplift
Moment (kip-ft)		133
Axial Force (kips)		151
Shear Force (kips)		133

Material Properties		
Concrete Strength, f'c:	4	ksi
Rebar Strength, Fy:	60	ksi
Tie Yield Strength, Fyt:	40	ksi

Pier Design Data		
Depth	34	ft
Ext. Above Grade	0.5	ft
Pier Section 1		
From 0.5' above grade to 34' below grade		
Pier Diameter	6	ft
Rebar Quantity	24	
Rebar Size	10	
Clear Cover to Ties	4	in
Tie Size	5	
Tie Spacing	12	in

[Rebar & Pier Options](#)

[Embedded Pole Inputs](#)

[Belled Pier Inputs](#)

Analysis Results		
Soil Lateral Check	Compression	Uplift
D _{v=0} (ft from TOC)	-	15.30
Soil Safety Factor	-	4.23
Max Moment (kip-ft)	-	3338.68
Rating*	-	30.0%
Soil Vertical Check	Compression	Uplift
Skin Friction (kips)	-	527.60
End Bearing (kips)	-	-
Weight of Concrete (kips)	-	82.44
Total Capacity (kips)	-	610.04
Axial (kips)	-	151.00
Rating*	-	23.6%
Reinforced Concrete Flexure	Compression	Uplift
Critical Depth (ft from TOC)	-	14.97
Critical Moment (kip-ft)	-	3336.91
Critical Moment Capacity	-	3881.45
Rating*	-	81.9%
Reinforced Concrete Shear	Compression	Uplift
Critical Depth (ft from TOC)	-	0.00
Critical Shear (kip)	-	133.00
Critical Shear Capacity	-	395.97
Rating*	-	32.0%

Structural Foundation Rating*	81.9%
Soil Interaction Rating*	30.0%

*Rating per TIA-222-H Section 15.5



Check Limitation	
Apply TIA-222-H Section 15.5:	☒
N/A	☐
Additional Longitudinal Rebar	
Input Effective Depths (else Actual):	☐
Shear Design Options	
Check Shear along Depth of Pier:	☒
Utilize Shear-Friction Methodology:	☐
Override Critical Depth:	☐

[Go to Soil Calculations](#)

Soil Profile														
Groundwater Depth		3	# of Layers		3									
Layer	Top (ft)	Bottom (ft)	Thickness (ft)	Y _{soil} (pcf)	Y _{concrete} (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Gross Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	3	3	100	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
2	3	30	27	58	87.6	1.8	28	0.000	0.000	1.20	1.20			Cohesionless
3	30	34	4	53	87.6	1.2	28	0.000	0.000	1.23	1.23			Cohesionless

Drilled Pier Foundation

BU # : 870081 - B
Site Name: Lake City (SR 47 & US 41)
Order Number: 592397 Rev. 0
TIA-222 Revision: H
Tower Type: Guyed (Anchor)
Location:

Report File:



Applied Loads		
	Comp.	Uplift
Moment (kip-ft)		134
Axial Force (kips)		153
Shear Force (kips)		134

Material Properties		
Concrete Strength, f _c :	4	ksi
Rebar Strength, F _y :	60	ksi
Tie Yield Strength, F _y :	40	ksi

Pier Design Data		
Depth	34	ft
Ext. Above Grade	0.5	ft
Pier Section 1		
From 0.5' above grade to 34' below grade		
Pier Diameter	6	ft
Rebar Quantity	24	
Rebar Size	10	
Clear Cover to Ties	4	in
Tie Size	5	
Tie Spacing	12	in

[Rebar & Pier Options](#)

[Embedded Pole Inputs](#)

[Belled Pier Inputs](#)

Analysis Results		
Soil Lateral Check	Compression	Uplift
D _{u=0} (ft from TOC)	-	16.56
Soil Safety Factor	-	8.69
Max Moment (kip-ft)	-	1499.37
Rating*	-	14.6%

Soil Vertical Check	Compression	Uplift
Skin Friction (kips)	-	513.18
End Bearing (kips)	-	-
Weight of Concrete (kips)	-	82.44
Total Capacity (kips)	-	595.62
Axial (kips)	-	153.00
Rating*	-	24.5%

Reinforced Concrete Flexure	Compression	Uplift
Critical Depth (ft from TOC)	-	16.27
Critical Moment (kip-ft)	-	1498.87
Critical Moment Capacity	-	3859.02
Rating*	-	37.0%

Reinforced Concrete Shear	Compression	Uplift
Critical Depth (ft from TOC)	-	26.38
Critical Shear (kip)	-	170.78
Critical Shear Capacity	-	420.51
Rating*	-	38.7%

Structural Foundation Rating*	38.7%
Soil Interaction Rating*	24.5%

*Rating per TIA-222-H Section 15.5

Check Limitation	
Apply TIA-222-H Section 15.5:	☒
N/A	☐
Additional Longitudinal Rebar	
Input Effective Depths (else Actual):	☐
Shear Design Options	
Check Shear along Depth of Pier:	☒
Utilize Shear-Friction Methodology:	☐
Override Critical Depth:	☐

[Go to Soil Calculations](#)

Soil Profile														
Groundwater Depth			3	# of Layers			5							
Layer	Top (ft)	Bottom (ft)	Thickness (ft)	Y _{soil} (pcf)	Y _{concrete} (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Gross Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	3	3	100	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
2	3	6	3	53	87.6	0.8	28	0.000	0.000	0.48	0.48			Cohesionless
3	6	10	4	58	87.6	2	28	0.000	0.000	1.20	1.20			Cohesionless
4	10	16	6	53	87.6	0.8	28	0.000	0.000	0.60	0.60			Cohesionless
5	16	34	18	58	87.6	1.8	28	0.000	0.000	1.47	1.47			Cohesionless

Drilled Pier Foundation

BU # : 870081 - C
Site Name: Lake City (SR 47 & US 41)
Order Number: 592397 Rev. 0
TIA-222 Revision: H
Tower Type: Guyed (Anchor)
Location:

Report File:



Applied Loads		
	Comp.	Uplift
Moment (kip-ft)		134
Axial Force (kips)		151
Shear Force (kips)		134

Material Properties		
Concrete Strength, f _c :	4	ksi
Rebar Strength, F _y :	60	ksi
Tie Yield Strength, F _y :	40	ksi

Pier Design Data		
Depth	34	ft
Ext. Above Grade	0.5	ft
Pier Section 1		
From 0.5' above grade to 34' below grade		
Pier Diameter	6	ft
Rebar Quantity	24	
Rebar Size	10	
Clear Cover to Ties	4	in
Tie Size	5	
Tie Spacing	12	in

[Rebar & Pier Options](#)

[Embedded Pole Inputs](#)

[Belled Pier Inputs](#)

Analysis Results		
Soil Lateral Check	Compression	Uplift
D _{req} (ft from TOC)	-	14.82
Soil Safety Factor	-	9.71
Max Moment (kip-ft)	-	1462.04
Rating*	-	13.1%

Soil Vertical Check	Compression	Uplift
Skin Friction (kips)	-	559.41
End Bearing (kips)	-	-
Weight of Concrete (kips)	-	82.44
Total Capacity (kips)	-	641.85
Axial (kips)	-	151.00
Rating*	-	22.4%

Reinforced Concrete Flexure	Compression	Uplift
Critical Depth (ft from TOC)	-	14.51
Critical Moment (kip-ft)	-	1461.32
Critical Moment Capacity	-	3864.87
Rating*	-	36.0%

Reinforced Concrete Shear	Compression	Uplift
Critical Depth (ft from TOC)	-	24.03
Critical Shear (kip)	-	148.69
Critical Shear Capacity	-	418.84
Rating*	-	33.8%

Structural Foundation Rating*	36.0%
Soil Interaction Rating*	22.4%

*Rating per TIA-222-H Section 15.5

Check Limitation	
Apply TIA-222-H Section 15.5:	☒
N/A	☐
Additional Longitudinal Rebar	
Input Effective Depths (else Actual):	☐
Shear Design Options	
Check Shear along Depth of Pier:	☒
Utilize Shear-Friction Methodology:	☐
Override Critical Depth:	☐

[Go to Soil Calculations](#)

Soil Profile														
Groundwater Depth			3	# of Layers			5							
Layer	Top (ft)	Bottom (ft)	Thickness (ft)	Y _{soil} (pcf)	Y _{concrete} (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Gross Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	3	3	100	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
2	3	6	3	53	87.6	1	28	0.000	0.000	0.60	0.60			Cohesionless
3	6	23	17	63	87.6	2	28	0.000	0.000	1.29	1.29			Cohesionless
4	23	33	10	63	87.6	2.6	0	1.430	1.430	1.41	1.41			Cohesive
5	33	34	1	58	87.6	2	28	0.000	0.000	1.74	1.74			Cohesionless