Date: **November 22, 2016**

Charles McGuirt
Crown Castle
3530 Toringdon Way Suite 300
Charlotte, NC 28277

Velocitel, Inc., d.b.a. FDH Velocitel
6521 Meridien Drive, Suite 107
Raleigh, North Carolina 27616
9197551012

Subject: Structural Analysis Report

Carrier Designation:	***AT&T Mobility* Co-Locate**	
	Carrier Site Number:	CTL02122
	Carrier Site Name:	NORWALK ROCKLAND RD
Crown Castle Designation:	**Crown Castle BU Number:**	807133
	Crown Castle Site Name:	BRG 134 943057
	Crown Castle JDE Job Number:	408143
	Crown Castle Work Order Number:	1325666
	Crown Castle Application Number:	368241 Rev. 1
Engineering Firm Designation:	**FDH Velocitel Project Number:**	16PWHX1400

Site Data: **50 ROCKLAND ROADNORWALK OFC - MTSO, SO NORWALK, Fairfield County, CT**
Latitude *41° 4' 54.44"*, Longitude *-73° 25' 49.52"*
180 Foot - Self Support Tower

Dear Charles McGuirt,

FDH Velocitel is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 970836, in accordance with application 368241, revision 1.

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: Existing + Reserved + Proposed Equipment **Sufficient Capacity**
Note: See Table I and Table II for the proposed and existing/reserved loading, respectively.

This analysis has been performed in accordance with the 2016 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 120 mph converted to a nominal 3-second gust wind speed of 93 mph per Section 1609.3 and Appendix N as required for use in the TIA-222-G Standard per Exception #5 of Section 1609.1.1. Exposure Category B with a maximum topographic factor, Kzt, of 1.0 and Risk Category II was/were used in this analysis.

We at *FDH Velocitel* appreciate the opportunity of providing our continuing professional services to you and Crown Castle. If you have any questions or need further assistance on this or any other projects please give us a call.

Respectfully submitted by:

Mark S. Girgis, EI
Project Engineer II

Reviewed by:

Dennis D. Abel, PE
Director of Structural Engineering
CT PE License No. 23247

STATE OF CONNECTICUT
No. 23247
LICENSED PROFESSIONAL ENGINEER
11-22-2016

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 180 ft Self Support tower designed by ROHN in July of 1987. The tower was originally designed for E.I.A. Zone A. This tower has been modified per reinforcement drawings prepared by Vertical Solutions in November of 2004. These modifications were considered in this analysis.

2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of TIA-222-G Structural Standard for Antenna Supporting Structures and Antennas using a 3-second gust wind speed of 93 mph with no ice, 50 mph with 0.75 inch ice thickness and 60 mph under service loads, exposure category B with topographic category 1 and crest height of 0 feet.

Table 1 - Proposed Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
102.0	102.0	3	quintel tech	QS66512-2 w/ Mount Pipe	2 1	5/8 3/8	-
		3	ericsson	RRUS 32 B2			
		3	ericsson	RRUS 32			
		6	cci antennas	TPX-070821			
		1	raycap	DC6-48-60-18-8F			

Table 2 - Existing and Reserved Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
178.0	178.0	2	crown mounts	Side Arm Mount [SO 305-1]	-	-	1
170.0	173.0	3	ericsson	AIR -32 B2A/B66AA w/ Mount Pipe	1	7/8	2
		3	ericsson	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	13	1-5/8	1
		3	commscope	LNX-6515DS-VTM w/ Mount Pipe			
		3	ericsson	RRUS 11 B12			
		3	ericsson	KRY 112 144/1			
	170.0	1	crown mounts	Sector Mount [SM 702-3]			
157.0	157.0	2	andrew	VHLP2-18	2	7983A	1
		2	crown mounts	Side Arm Mount [SO 202-1]			
148.0	148.0	3	rfs celwave	APXVTM14-C-120 w/ Mount Pipe	1	1-1/4	2
		3	alcatel lucent	TD-RRH8x20-25			
		3	rfs celwave	APXVSPP18-C-A20 w/ Mount Pipe	3	1-1/4	1
		9	rfs celwave	ACU-A20-N			
		3	site pro	VFA12-U w/ 12' Stiff Arm			
143.0	145.0	3	alcatel lucent	800 EXTERNAL NOTCH FILTER	-	-	1
		3	alcatel lucent	PCS 1900MHz 4x45W-65MHz			
		3	alcatel lucent	TME-800MHZ 2X50W RRH			
	143.0	1	crown mounts	Side Arm Mount [SO 312-3]			
	142.0	3	alcatel lucent	PCS 1900MHz 4x45W-65MHz			

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
134.0	135.0	1	andrew	VHLP2-23	6 1	5/16 1/2	1
		3	argus tech	LLPX310R w/ Mount Pipe			
		3	samsung telecom	RRH-2WB			
	134.0	1	crown mounts	Pipe Mount [PM 601-1]			
		1	crown mounts	Sector Mount [SM 502-3]			
126.0	130.0	1	gps	GPS_A	19 1	1-5/8 1/2	1
	128.0	2	andrew	LNX-6514DS-T4M w/ Mount Pipe			
		4	decibel	DB844G65ZAXY w/ Mount Pipe			
		2	decibel	DB844H80-XY w/ Mount Pipe			
		3	rymsa wireless	MG D3-800TV w/ Mount Pipe			
		1	powerwave tech	P65.16.XL.2 w/ Mount Pipe			
		3	alcatel lucent	RRH2X40-AWS			
		1	rfs celwave	DB-T1-6Z-8AB-0Z			
		3	commscope	HBX-6516DS-VTM w/ Mount Pipe	-	-	2
	126.0	1	crown mounts	Sector Mount [SM 410-3]	-	-	1
112.0	112.0	3	kathrein	800 10504 w/ Mount Pipe	6	1-5/8	1
		1	crown mounts	Sector Mount [SM 104-3]			
102.0	102.0	3	powerwave tech	7770.00 w/ Mount Pipe	-	-	3
		6	powerwave tech	LGP13519			
		3	ericsson	RRUS 12			
		3	powerwave tech	7770.00 w/ Mount Pipe	12 1 2	1-5/8 3/8 5/8	1
		3	powerwave tech	P65-16-XLH-RR w/ Mount Pipe			
		6	powerwave tech	LGP2140X			
		3	ericsson	RRUS 11 B2			
		1	raycap	DC6-48-60-18-8F			
		1	crown mounts	Sector Mount [SM 301-3]			
48.0	48.0	1	gps	GPS_A	2	1/2	1
		2	crown mounts	Side Arm Mount [SO 701-1]			
	47.0	1	gps	GPS_A			

Notes:
1) Existing Equipment
2) Reserved Equipment
3) Equipment To Be Removed; Not Considered In This Analysis

Table 3 - Design Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
217	217	4	celwave	PD10017	-	-
207	207	6	celwave	PD1132	-	-
180	180	3	generic	8' Dish	-	-
170	170	1	generic	8' Dish	-	-
156	156	1	generic	8' Dish	-	-
150	150	1	generic	8' Dish	-	-
130	130	1	celwave	PD1109	-	-

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	FDH Engineering, Inc.	2311843	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Paul J. Ford and Company	821566	CCISITES
4-TOWER MANUFACTURER DRAWINGS	Rohn	392878	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	Vertical Structures, Inc.	1257479	CCISITES
4-POST-MODIFICATION INSPECTION	All Points Technology Corp.	4065020	CCISITES

3.1) Analysis Method

tnxTower (version 7.0.5.1), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Assumptions

1) Tower and structures were built in accordance with the manufacturer's specifications.
2) The tower and structures have been maintained in accordance with the manufacturer's specification.
3) 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. FDH Velocitel should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
T1	180 - 160	Leg	ROHN 3 EH	3	-8.20	110.61	7.4	Pass
T2	160 - 153.333	Leg	ROHN 4 EH	36	-12.14	159.91	7.6	Pass
T3	153.333 - 146.667	Leg	ROHN 4 EH	45	-17.93	159.91	11.2	Pass
T4	146.667 - 140	Leg	ROHN 4 EH	57	-24.54	159.91	15.3	Pass
T5	140 - 120	Leg	ROHN 5 EH	69	-50.64	239.38	21.2	Pass
T6	120 - 100	Leg	ROHN 6 EHS	88	-82.63	274.78	30.1	Pass
T7	100 - 80	Leg	ROHN 6 EH	109	-114.88	303.72	37.8	Pass
T8	80 - 70	Leg	ROHN 8 EHS	124	-132.14	393.69	33.6	Pass
T9	70 - 60	Leg	ROHN 8 EHS	133	-149.95	393.69	38.1	Pass
T10	60 - 40	Leg	ROHN 8 EHS	142	-185.31	393.69	47.1	Pass
T11	40 - 20	Leg	ROHN 8 EH	157	-220.41	505.56	43.6	Pass
T12	20 - 0	Leg	ROHN 8 EH	172	-255.53	505.56	50.5	Pass
T1	180 - 160	Diagonal	L2x2x3/16	15	-1.71	7.58	22.6 25.7 (b)	Pass
T2	160 - 153.333	Diagonal	L2 1/2x2 1/2x1/4	39	-2.12	14.85	14.3 19.6 (b)	Pass
T3	153.333 - 146.667	Diagonal	L2 1/2x2 1/2x1/4	51	-2.64	13.43	19.7 23.4 (b)	Pass
T4	146.667 - 140	Diagonal	L2 1/2x2 1/2x1/4	66	-3.59	12.19	29.5 33.4 (b)	Pass
T5	140 - 120	Diagonal	L2 1/2x2 1/2x1/4	75	-5.52	9.37	58.9	Pass
T6	120 - 100	Diagonal	L3x3x1/4	95	-7.24	13.19	54.9 61.6 (b)	Pass
T7	100 - 80	Diagonal	L3 1/2x3 1/2x1/4	116	-9.15	14.20	64.5 65.0 (b)	Pass
T8	80 - 70	Diagonal	L3 1/2x3 1/2x1/4	131	-9.72	13.27	73.3	Pass
T9	70 - 60	Diagonal	2L3 1/2x3 1/2x1/4x3/8	140	-10.51	20.42	51.5	Pass
T10	60 - 40	Diagonal	L4x4x1/4	149	-11.05	15.49	71.3 75.5 (b)	Pass
T11	40 - 20	Diagonal	L4x4x5/16	164	-11.63	16.21	71.8	Pass
T12	20 - 0	Diagonal	2L4x4x5/16x3/8	179	-12.64	23.47	53.8 61.1 (b)	Pass
T1	180 - 160	Top Girt	L2x2x1/8	6	-0.07	3.17	2.3	Pass
T3	153.333 - 146.667	Top Girt	L2x2x1/8	46	-0.14	1.54	9.1	Pass
T4	146.667 - 140	Top Girt	L2x2x1/8	60	0.22	12.74	1.8 4.9 (b)	Pass
T1	180 - 160	Mid Girt	L2x2x1/8	7	-0.38	2.32	16.5	Pass
							Summary	
						Leg (T12)	50.5	Pass
						Diagonal (T10)	75.5	Pass
						Top Girt (T3)	9.1	Pass
						Mid Girt (T1)	16.5	Pass
						Bolt Checks	75.5	Pass
						Rating =	75.5	Pass

Table 6 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	44.7	Pass
1	Base Foundation	0	42.3	Pass

Structure Rating (max from all components) =	75.5%

Notes:
1) See additional documentation in “Appendix C – Additional Calculations” for calculations supporting the % capacity consumed.

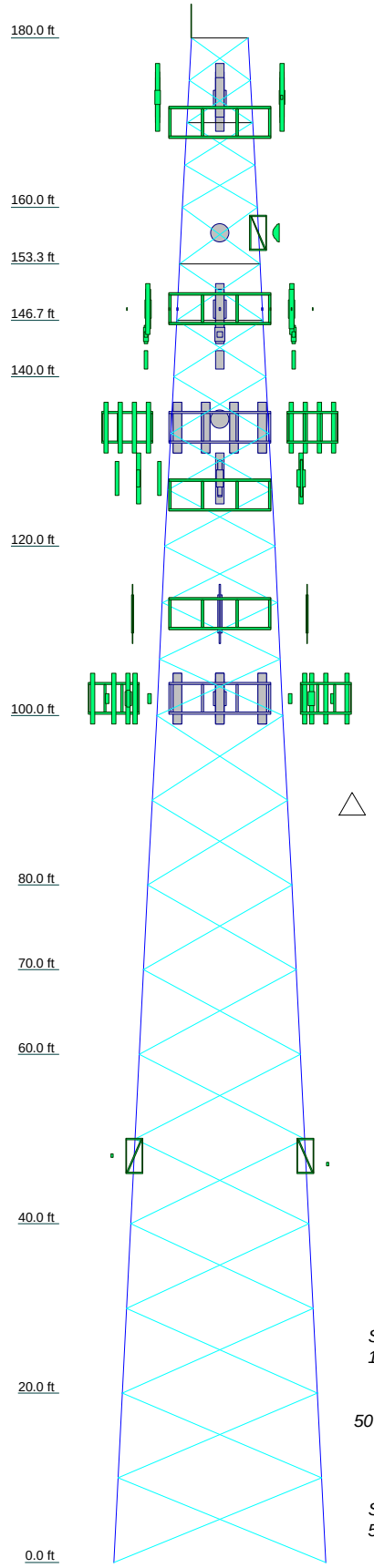
4.1) Recommendations

The tower and its foundations have sufficient capacity to carry the existing, reserved, and proposed loads. No modifications are required at this time.

APPENDIX A

TNXTOWER OUTPUT

Section	Legs	Leg Grade	Diagonals	Diagonal Grade	Top Girts	Mid Girts	Face Width (ft)	# Panels @ (ft)	Weight (K)
T1	ROHN 3 EH	A572-50	L2x2x3/16	A36	L2x2x1/8	L2x2x1/8	6.6875	4 @ 5	1.2
T2	ROHN 4 EH		L2 1/2x2 1/2x1/4		N.A.	N.A.	8.76042	9 @ 6.66667	0.6
T3					L2x2x1/8		9.45052		0.6
T4							10.1432		0.7
T5	ROHN 5 EH						10.8333		2.2
T6	ROHN 6 EHS		L3x3x1/4	A572-50			12.9167		2.7
T7	ROHN 6 EH		L3 1/2x3 1/2x1/4				14.8542		3.0
T8							16.9896		1.7
T9	ROHN 8 EHS		A	A36			17.9948		2.5
T10			L4x4x1/4	A572-50			19	10 @ 10	3.8
T11	ROHN 8 EH		L4x4x5/16				21		5.0
T12			2L4x4x5/16x3/8	A36			23		7.7
							25		31.7



SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	2L3 1/2x3 1/2x1/4x3/8		

MATERIAL STRENGTH

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

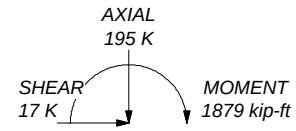
TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-G Standard.
3. Tower designed for a 93 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 75.5%

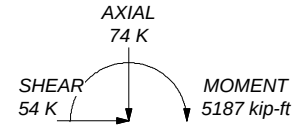
ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 264 K
SHEAR: 33 K

UPLIFT: -209 K
SHEAR: 28 K



TORQUE 5 kip-ft
50 mph WIND - 0.7500 in ICE



TORQUE 24 kip-ft
REACTIONS - 93 mph WIND

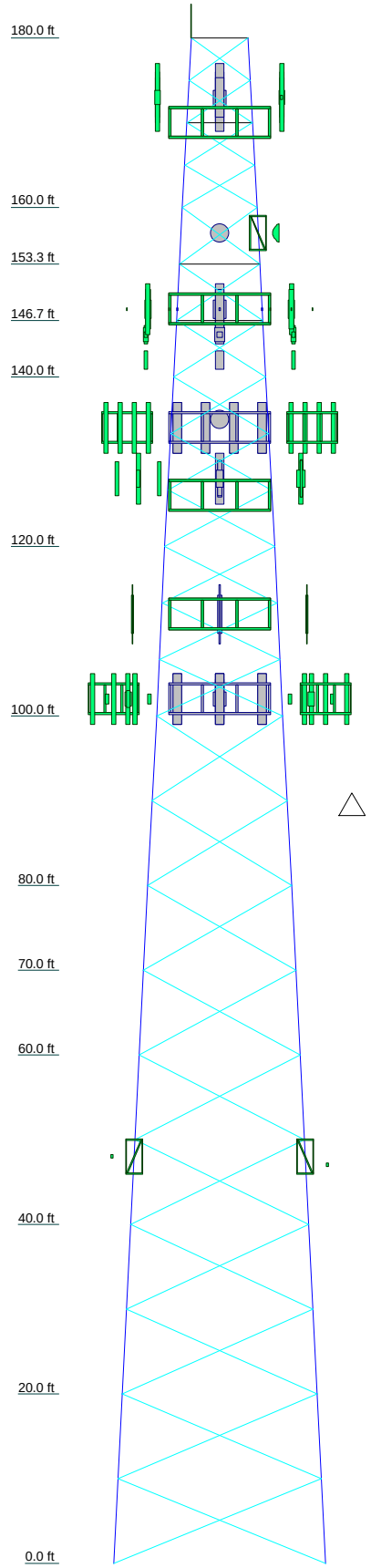
FDH VELOCITEL ENGINEERING INNOVATION
Tower Analysis

FDH Velocitel
6521 Meridien Drive, Suite 107
Raleigh, North Carolina 27616
Phone: 9197551012
FAX: 9197551031

Job: **BRG 134 943057, BU# 807133**			
Project: **16PWHX1400**			
Client: Crown Castle	Drawn by: Mark S. Girgis, EI		App'd:
Code: TIA-222-G	Date: 11/22/16		Scale: NTS
Path:			Dwg No. E-1

Section	T12	T11	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1
Legs	ROHN 8 EHS					ROHN 6 EH	ROHN 6 EHS	ROHN 5 EH	ROHN 4 EH			ROHN 3 EH
Leg Grade	A572-50											
Diagonals	2L4x4x5/16x3/8	L4x4x5/16	L4x4x1/4	A	L3 1/2x3 1/2x1/4		L3x3x1/4	L2 1/2x2 1/2x1/4				L2x2x3/16
Diagonal Grade	A36	A572-50		A36	A572-50				A36			
Top Girts	N.A.								L2x2x1/8		N.A.	L2x2x1/8
Mid Girts	N.A.											L2x2x1/8
Face Width (ft)	25	23	21	19	17.9948	16.9896	14.8542	12.9167	10.8333	10.1432	9.45052	8.76042	6.6875
# Panels @ (ft)	31.7	7.7	5.0	3.8	2.5	1.7	3.0	2.7	2.2	0.7	0.6	0.6	1.2

10 @ 10 | 9 @ 6.66667 | 4 @ 5



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Lightning Rod	180	LLPX310R w/ Mount Pipe	134
Empty Pipe Mount	178	VHLP2-23	134
Empty Pipe Mount	178	DB844G65ZAXY w/ Mount Pipe	126
Side Arm Mount [SO 305-1]	178	DB844G65ZAXY w/ Mount Pipe	126
Side Arm Mount [SO 305-1]	178	(2) DB844G65ZAXY w/ Mount Pipe	126
AIR -32 B2A/B66AA w/ Mount Pipe	170	LNX-6514DS-T4M w/ Mount Pipe	126
AIR -32 B2A/B66AA w/ Mount Pipe	170	LNX-6514DS-T4M w/ Mount Pipe	126
AIR -32 B2A/B66AA w/ Mount Pipe	170	MG D3-800TV w/ Mount Pipe	126
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	170	MG D3-800TV w/ Mount Pipe	126
		MG D3-800TV w/ Mount Pipe	126
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	170	DB844H80-XY w/ Mount Pipe	126
		DB844H80-XY w/ Mount Pipe	126
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	170	GPS_A	126
LNX-6515DS-VTM w/ Mount Pipe	170	P65.16.XL.2 w/ Mount Pipe	126
LNX-6515DS-VTM w/ Mount Pipe	170	RRH2X40-AWS	126
LNX-6515DS-VTM w/ Mount Pipe	170	RRH2X40-AWS	126
KRY 112 144/1	170	RRH2X40-AWS	126
KRY 112 144/1	170	DB-T1-6Z-8AB-0Z	126
KRY 112 144/1	170	Sector Mount [SM 410-3]	126
RRUS 11 B12	170	HBX-6516DS-VTM w/ Mount Pipe	126
RRUS 11 B12	170	HBX-6516DS-VTM w/ Mount Pipe	126
RRUS 11 B12	170	HBX-6516DS-VTM w/ Mount Pipe	126
Sector Mount [SM 702-3]	170	Sector Mount [SM 104-3]	112
Empty Pipe Mount	170	Empty Mount Pipe	112
Empty Pipe Mount	170	Empty Mount Pipe	112
Empty Pipe Mount	170	Empty Mount Pipe	112
Side Arm Mount [SO 202-1]	157	800 10504 w/ Mount Pipe	112
Side Arm Mount [SO 202-1]	157	800 10504 w/ Mount Pipe	112
VHLP2-18	157	800 10504 w/ Mount Pipe	112
VHLP2-18	157	P65-16-XLH-RR w/ Mount Pipe	102
APXVSPP18-C-A20 w/ Mount Pipe	148	P65-16-XLH-RR w/ Mount Pipe	102
APXVTM14-C-120 w/ Mount Pipe	148	P65-16-XLH-RR w/ Mount Pipe	102
APXVTM14-C-120 w/ Mount Pipe	148	(2) LGP2140X	102
APXVTM14-C-120 w/ Mount Pipe	148	(2) LGP2140X	102
(3) ACU-A20-N	148	(2) LGP2140X	102
(3) ACU-A20-N	148	RRUS 11 B2	102
(3) ACU-A20-N	148	RRUS 11 B2	102
TD-RRH8x20-25	148	RRUS 11 B2	102
TD-RRH8x20-25	148	DC6-48-60-18-8F	102
TD-RRH8x20-25	148	QS66512-2 w/ Mount Pipe	102
(3) Site Pro VFA12-U w/ 12' Stiff Arm	148	QS66512-2 w/ Mount Pipe	102
APXVSPP18-C-A20 w/ Mount Pipe	148	QS66512-2 w/ Mount Pipe	102
APXVSPP18-C-A20 w/ Mount Pipe	148	RRUS 32 B2	102
PCS 1900MHz 4x45W-65MHz	143	RRUS 32 B2	102
PCS 1900MHz 4x45W-65MHz	143	RRUS 32 B2	102
PCS 1900MHz 4x45W-65MHz	143	(2) TPX-070821	102
PCS 1900MHz 4x45W-65MHz	143	(2) TPX-070821	102
TME-800MHZ 2X50W RRH	143	(2) TPX-070821	102
TME-800MHZ 2X50W RRH	143	RRUS 32	102
TME-800MHZ 2X50W RRH	143	RRUS 32	102
800 EXTERNAL NOTCH FILTER	143	RRUS 32	102
800 EXTERNAL NOTCH FILTER	143	DC6-48-60-18-8F	102
800 EXTERNAL NOTCH FILTER	143	Sector Mount [SM 301-3]	102
Side Arm Mount [SO 312-3]	143	Empty Mount Pipe	102
PCS 1900MHz 4x45W-65MHz	143	Empty Mount Pipe	102
PCS 1900MHz 4x45W-65MHz	143	Empty Mount Pipe	102
LLPX310R w/ Mount Pipe	134	7770.00 w/ Mount Pipe	102
RRH-2WB	134	7770.00 w/ Mount Pipe	102
RRH-2WB	134	7770.00 w/ Mount Pipe	102
RRH-2WB	134	Side Arm Mount [SO 701-1]	48
Pipe Mount [PM 601-1]	134	GPS_A	48
Sector Mount [SM 502-3]	134	GPS_A	48
LLPX310R w/ Mount Pipe	134	Side Arm Mount [SO 701-1]	48

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	2L3 1/2x3 1/2x1/4x3/8		

FDH VELOCITEL ENGINEERING INNOVATION

Tower Analysis

FDH Velocitel
6521 Meridien Drive, Suite 107
Raleigh, North Carolina 27616
Phone: 9197551012
FAX: 9197551031

Job: ***BRG 134 943057, BU# 807133***			
Project: ***16PWHX1400***			
Client: Crown Castle	Drawn by: Mark S. Girgis, EI		App'd:
Code: TIA-222-G	Date: 11/22/16		Scale: NTS
Path:			Dwg No. E-1

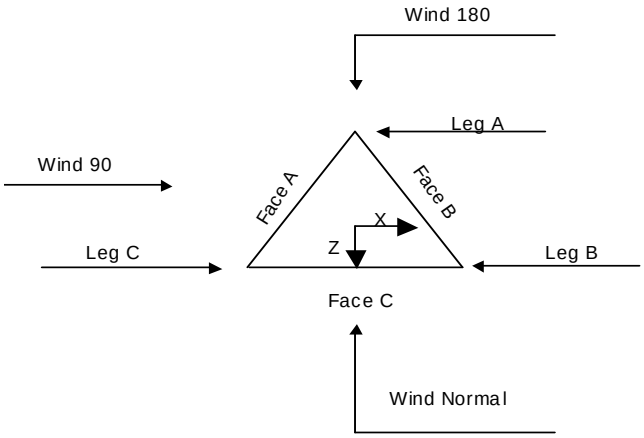
Tower Input Data

The main tower is a 3x free standing tower with an overall height of 180.00 ft above the ground line.
The base of the tower is set at an elevation of 0.00 ft above the ground line.
The face width of the tower is 6.69 ft at the top and 25.00 ft at the base.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

Tower is located in Fairfield County, Connecticut.
Basic wind speed of 93 mph.
Structure Class II.
Exposure Category B.
Topographic Category 1.
Crest Height 0.00 ft.
Nominal ice thickness of 0.7500 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.
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-G Bracing Resist. Exemption
√	Include Bolts In Member Capacity		Autocalc Torque Arm Areas		Use TIA-222-G 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				



Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	180.00-160.00			6.69	1	20.00
T2	160.00-153.33			8.76	1	6.67
T3	153.33-146.67			9.45	1	6.67
T4	146.67-140.00			10.14	1	6.67
T5	140.00-120.00			10.83	1	20.00
T6	120.00-100.00			12.92	1	20.00
T7	100.00-80.00			14.85	1	20.00
T8	80.00-70.00			16.99	1	10.00
T9	70.00-60.00			17.99	1	10.00
T10	60.00-40.00			19.00	1	20.00
T11	40.00-20.00			21.00	1	20.00
T12	20.00-0.00			23.00	1	20.00

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft				in	in
T1	180.00-160.00	5.00	X Brace	No	No	0.0000	0.0000
T2	160.00-153.33	6.67	X Brace	No	No	0.0000	0.0000
T3	153.33-146.67	6.67	X Brace	No	No	0.0000	0.0000

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T4	146.67-140.00	6.67	X Brace	No	No	0.0000	0.0000
T5	140.00-120.00	6.67	X Brace	No	No	0.0000	0.0000
T6	120.00-100.00	6.67	X Brace	No	No	0.0000	0.0000
T7	100.00-80.00	10.00	X Brace	No	No	0.0000	0.0000
T8	80.00-70.00	10.00	X Brace	No	No	0.0000	0.0000
T9	70.00-60.00	10.00	X Brace	No	No	0.0000	0.0000
T10	60.00-40.00	10.00	X Brace	No	No	0.0000	0.0000
T11	40.00-20.00	10.00	X Brace	No	No	0.0000	0.0000
T12	20.00-0.00	10.00	X Brace	No	No	0.0000	0.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 180.00-160.00	Pipe	ROHN 3 EH	A572-50 (50 ksi)	Single Angle	L2x2x3/16	A36 (36 ksi)
T2 160.00-153.33	Pipe	ROHN 4 EH	A572-50 (50 ksi)	Single Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)
T3 153.33-146.67	Pipe	ROHN 4 EH	A572-50 (50 ksi)	Single Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)
T4 146.67-140.00	Pipe	ROHN 4 EH	A572-50 (50 ksi)	Single Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)
T5 140.00-120.00	Pipe	ROHN 5 EH	A572-50 (50 ksi)	Single Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)
T6 120.00-100.00	Pipe	ROHN 6 EHS	A572-50 (50 ksi)	Single Angle	L3x3x1/4	A572-50 (50 ksi)
T7 100.00-80.00	Pipe	ROHN 6 EH	A572-50 (50 ksi)	Single Angle	L3 1/2x3 1/2x1/4	A572-50 (50 ksi)
T8 80.00-70.00	Pipe	ROHN 8 EHS	A572-50 (50 ksi)	Single Angle	L3 1/2x3 1/2x1/4	A572-50 (50 ksi)
T9 70.00-60.00	Pipe	ROHN 8 EHS	A572-50 (50 ksi)	Double Equal Angle	2L3 1/2x3 1/2x1/4x3/8	A36 (36 ksi)
T10 60.00-40.00	Pipe	ROHN 8 EHS	A572-50 (50 ksi)	Single Angle	L4x4x1/4	A572-50 (50 ksi)
T11 40.00-20.00	Pipe	ROHN 8 EH	A572-50 (50 ksi)	Single Angle	L4x4x5/16	A572-50 (50 ksi)
T12 20.00-0.00	Pipe	ROHN 8 EH	A572-50 (50 ksi)	Double Equal Angle	2L4x4x5/16x3/8	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 180.00-160.00	Equal Angle	L2x2x1/8	A36 (36 ksi)	Single Angle		A36 (36 ksi)
T3 153.33-146.67	Equal Angle	L2x2x1/8	A36 (36 ksi)	Single Angle		A36 (36 ksi)
T4 146.67-140.00	Single Angle	L2x2x1/8	A36 (36 ksi)	Single Angle		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T1 180.00-160.00	1	Equal Angle	L2x2x1/8	A36 (36 ksi)	Single Angle		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T1 180.00-160.00	0.00	0.2500	A36 (36 ksi)	1	1	1	30.0000	30.0000	36.0000
T2 160.00-153.33	0.00	0.2500	A36 (36 ksi)	1	1	1	30.0000	30.0000	36.0000
T3 153.33-146.67	0.00	0.2500	A36 (36 ksi)	1	1	1	30.0000	30.0000	36.0000
T4 146.67-140.00	0.00	0.2500	A36 (36 ksi)	1	1	1	30.0000	30.0000	36.0000
T5 140.00-120.00	0.00	0.2500	A36 (36 ksi)	1	1	1	30.0000	30.0000	36.0000
T6 120.00-100.00	0.00	0.2500	A36 (36 ksi)	1	1	1	30.0000	30.0000	36.0000
T7 100.00-80.00	0.00	0.3750	A36 (36 ksi)	1	1	1	30.0000	30.0000	36.0000
T8 80.00-70.00	0.00	0.3750	A36 (36 ksi)	1	1	1	30.0000	30.0000	36.0000
T9 70.00-60.00	0.00	0.3750	A36 (36 ksi)	1	1	1	123.1250	30.0000	36.0000
T10 60.00-40.00	0.00	0.3750	A36 (36 ksi)	1	1	1	30.0000	30.0000	36.0000
T11 40.00-20.00	0.00	0.3750	A36 (36 ksi)	1	1	1	30.0000	30.0000	36.0000
T12 20.00-0.00	0.00	0.3750	A36 (36 ksi)	1	1	1	155.6250	30.0000	36.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T1	Yes	No	1	1	1	1	1	1	1	1

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
180.00-160.00				1	1	1	1	1	1	1
T2	Yes	No	1	1	1	1	1	1	1	1
160.00-153.33				1	1	1	1	1	1	1
T3	Yes	No	1	1	1	1	1	1	1	1
153.33-146.67				1	1	1	1	1	1	1
T4	Yes	No	1	1	1	1	1	1	1	1
146.67-140.00				1	1	1	1	1	1	1
T5	Yes	No	1	1	1	1	1	1	1	1
140.00-120.00				1	1	1	1	1	1	1
T6	Yes	No	1	1	1	1	1	1	1	1
120.00-100.00				1	1	1	1	1	1	1
T7	Yes	No	1	1	1	1	1	1	1	1
100.00-80.00				1	1	1	1	1	1	1
T8	Yes	No	1	1	1	1	1	1	1	1
80.00-70.00				1	1	1	1	1	1	1
T9	Yes	No	1	1	1	1	1	1	1	1
70.00-60.00				1	1	1	1	1	1	1
T10	Yes	No	1	1	1	1	1	1	1	1
60.00-40.00				1	1	1	1	1	1	1
T11	Yes	No	1	1	1	1	1	1	1	1
40.00-20.00				1	1	1	1	1	1	1
T12	Yes	No	1	1	1	1	1	1	1	1
20.00-0.00				1	1	1	1	1	1	1

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

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Net Width Deduct in	Leg U	Diagonal Net Width Deduct in	Diagonal U	Top Girt Net Width Deduct in	Top Girt U	Bottom Girt Net Width Deduct in	Bottom Girt U	Mid Girt Net Width Deduct in	Mid Girt U	Long Horizontal Net Width Deduct in	Long Horizontal U	Short Horizontal Net Width Deduct in	Short Horizontal U
T1 180.00-160.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T2 160.00-153.33	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T3 153.33-146.67	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T4 146.67-140.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5 140.00-120.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T6 120.00-100.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T7 100.00-80.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T8 80.00-70.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T9 70.00-60.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T10 60.00-40.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T11 40.00-20.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T12 20.00-0.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 180.00-160.00	Flange	0.8750 A325X	4	0.6250 A325X	1	0.6250 A325X	1	0.0000 A325X	0	0.6250 A325X	1	0.6250 A325X	0	0.6250 A325N	0
T2 160.00-153.33	Flange	0.0000 A325X	0	0.6250 A325X	1	0.0000 A325X	0	0.0000 A325X	0	0.6250 A325X	0	0.6250 A325X	0	0.6250 A325N	0
T3 153.33-146.67	Flange	0.0000 A325X	0	0.6250 A325X	1	0.6250 A325X	1	0.0000 A325X	0	0.6250 A325X	0	0.6250 A325X	0	0.6250 A325N	0
T4 146.67-140.00	Flange	1.0000 A325X	4	0.6250 A325X	1	0.6250 A325X	1	0.0000 A325X	0	0.6250 A325X	0	0.6250 A325X	0	0.6250 A325N	0
T5 140.00-120.00	Flange	1.0000 A325X	6	0.6250 A325X	1	0.0000 A325X	0	0.0000 A325X	0	0.6250 A325X	0	0.6250 A325X	0	0.6250 A325N	0
T6 120.00-100.00	Flange	1.0000 A325X	6	0.6250 A325X	1	0.0000 A325X	0	0.0000 A325X	0	0.6250 A325X	0	0.6250 A325X	0	0.6250 A325N	0
T7 100.00-80.00	Flange	1.0000 A325X	8	0.7500 A325X	1	0.0000 A325X	0	0.0000 A325X	0	0.6250 A325X	0	0.6250 A325X	0	0.6250 A325N	0
T8 80.00-70.00	Flange	0.0000 A325X	0	0.7500 A325X	1	0.0000 A325X	0	0.0000 A325X	0	0.6250 A325X	0	0.6250 A325X	0	0.6250 A325N	0
T9 70.00-60.00	Flange	1.0000 A325X	8	0.7500 A325X	1	0.0000 A325X	0	0.0000 A325X	0	0.6250 A325X	0	0.6250 A325X	0	0.6250 A325N	0
T10 60.00-40.00	Flange	1.0000 A325X	8	0.7500 A325X	1	0.0000 A325X	0	0.0000 A325X	0	0.6250 A325X	0	0.6250 A325X	0	0.6250 A325N	0
T11 40.00-20.00	Flange	1.0000 A325X	8	0.7500 A325X	1	0.0000 A325X	0	0.0000 A325X	0	0.6250 A325X	0	0.6250 A325X	0	0.6250 A325N	0
T12 20.00-0.00	Flange	1.0000 A449	10	0.7500 A325X	1	0.0000 A325X	0	0.0000 A325X	0	0.6250 A325X	0	0.6250 A325X	0	0.6250 A325N	0

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight klf
Safety Line 3/8	B	No	Ar (CaAa)	180.00 - 0.00	0.0000	0	1	1	0.3750	0.3750		0.00
Feedline Ladder (Af) 1.5"	A	No	Af (CaAa)	157.00 - 0.00	0.0000	0.4	2	2	1.5000	1.5000		0.00
Feedline Ladder (Af)	A	No	Af (CaAa)	172.00 - 0.00	0.0000	0	2	2	1.5000	1.5000		0.00

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight klf
1.5" Feedline Ladder (Af)	B	No	Af (CaAa)	112.00 - 0.00	0.0000	0.35	2	2	1.5000	1.5000		0.00
1.5" Feedline Ladder (Af)	C	No	Af (CaAa)	126.00 - 0.00	-1.0000	0.3	4	2	1.5000	1.5000		0.00
1.5" 2" Rigid Conduit	A	No	Ar (CaAa)	134.00 - 0.00	0.0000	0.4	1	1	2.0000	2.0000		0.00
********** ********** ********												
MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	A	No	Ar (CaAa)	170.00 - 0.00	4.0000	0.05	1	1	1.6250	1.6250		0.00
LCF158-50JA-A0(1 5/8")	A	No	Ar (CaAa)	170.00 - 0.00	0.0000	0	12	9	1.9800	1.9800		0.00
MLC Hybrid 6/6(7/8) ***	A	No	Ar (CaAa)	170.00 - 0.00	4.0000	0.05	1	1	0.4000	0.4000		0.00
7983A(1/2") ***	A	No	Ar (CaAa)	157.00 - 0.00	0.0000	0.47	2	2	0.5800	0.5800		0.00
HB114-21U3M12-XXXF(1-1/4") ***	A	No	Ar (CaAa)	148.00 - 0.00	0.0000	0.375	4	4	1.5400	1.5400		0.00
LDF4-50A(1/2")	A	No	Ar (CaAa)	134.00 - 0.00	0.0000	0.47	1	1	0.6300	0.6300		0.00
9207(5/16")	A	No	Ar (CaAa)	134.00 - 0.00	0.0000	0	6	6	0.3300	0.3300		0.00
2" Rigid Conduit ***	A	No	Ar (CaAa)	134.00 - 0.00	0.0000	0.45	2	2	2.0000	2.0000		0.00
561(1-5/8")	C	No	Ar (CaAa)	126.00 - 0.00	-4.0000	0.3	19	10	1.6250	1.6250		0.00
LDF4-50A(1/2") ***	C	No	Ar (CaAa)	126.00 - 0.00	-1.0000	0.345	1	1	0.6300	0.6300		0.00
LDF7-50A(1-5/8") ***	B	No	Ar (CaAa)	112.00 - 0.00	0.0000	0.35	6	6	1.9800	1.9800		0.00
CR 50 1873(1-5/8")	C	No	Ar (CaAa)	102.00 - 0.00	0.0000	0.425	12	8	0.5000	1.9800		0.00
2" Rigid Conduit	C	No	Ar (CaAa)	102.00 - 0.00	2.0000	0.435	1	1	0.5000	2.0000		0.00
FB-L98-002-XXX(3/8)	C	No	Ar (CaAa)	102.00 - 0.00	0.0000	0.425	1	1	0.3937	0.3937		0.00
WR-VG82ST-BRDA(5/8")	C	No	Ar (CaAa)	102.00 - 0.00	0.0000	0.425	2	2	0.6450	0.6450		0.00
FB-L98-002-XXX(3/8")	C	No	Ar (CaAa)	102.00 - 0.00	2.0000	0.465	1	1	0.3937	0.3937		0.00
WR-VG82ST-BRDA(5/8) ***	C	No	Ar (CaAa)	102.00 - 0.00	2.0000	0.465	2	1	0.5000 5.0000	0.6250		0.00
LDF4-50A(1/2") ***	C	No	Ar (CaAa)	48.00 - 0.00	0.0000	0.35	2	2	0.6300	0.6300		0.00

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	C_AA_A ft^2/ft	Weight klf
***							
***							

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	180.00-160.00	A	0.000	0.000	31.785	0.000	0.22
		B	0.000	0.000	0.750	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
T2	160.00-153.33	A	0.000	0.000	22.782	0.000	0.16
		B	0.000	0.000	0.250	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
T3	153.33-146.67	A	0.000	0.000	25.451	0.000	0.20
		B	0.000	0.000	0.250	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
T4	146.67-140.00	A	0.000	0.000	28.737	0.000	0.22
		B	0.000	0.000	0.250	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
T5	140.00-120.00	A	0.000	0.000	98.264	0.000	0.84
		B	0.000	0.000	0.750	0.000	0.00
		C	0.000	0.000	24.903	0.000	0.26
T6	120.00-100.00	A	0.000	0.000	103.430	0.000	0.91
		B	0.000	0.000	21.006	0.000	0.16
		C	0.000	0.000	88.827	0.000	0.88
T7	100.00-80.00	A	0.000	0.000	103.430	0.000	0.91
		B	0.000	0.000	34.510	0.000	0.27
		C	0.000	0.000	141.185	0.000	1.13
T8	80.00-70.00	A	0.000	0.000	51.715	0.000	0.46
		B	0.000	0.000	17.255	0.000	0.14
		C	0.000	0.000	70.592	0.000	0.57
T9	70.00-60.00	A	0.000	0.000	51.715	0.000	0.46
		B	0.000	0.000	17.255	0.000	0.14
		C	0.000	0.000	70.592	0.000	0.57
T10	60.00-40.00	A	0.000	0.000	103.430	0.000	0.91
		B	0.000	0.000	34.510	0.000	0.27
		C	0.000	0.000	142.193	0.000	1.14
T11	40.00-20.00	A	0.000	0.000	103.430	0.000	0.91
		B	0.000	0.000	34.510	0.000	0.27
		C	0.000	0.000	143.705	0.000	1.14
T12	20.00-0.00	A	0.000	0.000	103.430	0.000	0.91
		B	0.000	0.000	34.510	0.000	0.27
		C	0.000	0.000	143.705	0.000	1.14

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	180.00-160.00	A	1.767	0.000	0.000	71.294	0.000	1.33
		B		0.000	0.000	7.819	0.000	0.10
		C		0.000	0.000	0.000	0.000	0.00
T2	160.00-153.33	A	1.753	0.000	0.000	53.223	0.000	0.96

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B		0.000	0.000	2.587	0.000	0.03
		C		0.000	0.000	0.000	0.000	0.00
T3	153.33-146.67	A	1.745	0.000	0.000	61.691	0.000	1.08
		B		0.000	0.000	2.577	0.000	0.03
		C		0.000	0.000	0.000	0.000	0.00
T4	146.67-140.00	A	1.737	0.000	0.000	71.669	0.000	1.22
		B		0.000	0.000	2.566	0.000	0.03
		C		0.000	0.000	0.000	0.000	0.00
T5	140.00-120.00	A	1.720	0.000	0.000	260.720	0.000	4.32
		B		0.000	0.000	7.632	0.000	0.09
		C		0.000	0.000	37.347	0.000	0.94
T6	120.00-100.00	A	1.692	0.000	0.000	278.820	0.000	4.55
		B		0.000	0.000	60.022	0.000	0.92
		C		0.000	0.000	136.876	0.000	3.29
T7	100.00-80.00	A	1.658	0.000	0.000	276.709	0.000	4.48
		B		0.000	0.000	94.460	0.000	1.45
		C		0.000	0.000	251.099	0.000	4.83
T8	80.00-70.00	A	1.628	0.000	0.000	137.415	0.000	2.21
		B		0.000	0.000	46.979	0.000	0.71
		C		0.000	0.000	124.816	0.000	2.39
T9	70.00-60.00	A	1.605	0.000	0.000	136.689	0.000	2.18
		B		0.000	0.000	46.784	0.000	0.71
		C		0.000	0.000	124.250	0.000	2.36
T10	60.00-40.00	A	1.564	0.000	0.000	270.772	0.000	4.27
		B		0.000	0.000	92.871	0.000	1.38
		C		0.000	0.000	252.734	0.000	4.69
T11	40.00-20.00	A	1.486	0.000	0.000	265.896	0.000	4.11
		B		0.000	0.000	91.566	0.000	1.33
		C		0.000	0.000	257.784	0.000	4.61
T12	20.00-0.00	A	1.331	0.000	0.000	256.238	0.000	3.79
		B		0.000	0.000	88.983	0.000	1.22
		C		0.000	0.000	249.160	0.000	4.30

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	180.00-160.00	-3.2211	-1.9823	-1.8595	-1.5000
T2	160.00-153.33	-4.3672	-3.4955	-2.9018	-2.1676
T3	153.33-146.67	-4.2115	-4.2600	-2.6881	-2.3019
T4	146.67-140.00	-4.2610	-5.2708	-2.6914	-3.0987
T5	140.00-120.00	-5.5400	-4.3477	-3.5213	-3.1971
T6	120.00-100.00	-5.6229	-0.3332	-3.5952	-0.8793
T7	100.00-80.00	-7.4848	2.2162	-5.0932	1.0038
T8	80.00-70.00	-7.9477	2.3701	-5.4820	1.0947
T9	70.00-60.00	-8.3693	2.5056	-5.7747	1.1624
T10	60.00-40.00	-8.9066	2.7138	-6.1573	1.2803
T11	40.00-20.00	-9.7714	3.0457	-6.7185	1.4612
T12	20.00-0.00	-10.5560	3.3052	-7.3013	1.6284

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	1	Safety Line 3/8	160.00 - 180.00	0.6000	0.6000
T1	3	Feedline Ladder (Af) 1.5"	160.00 - 172.00	0.6000	0.6000
T1	8	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	160.00 - 170.00	0.6000	0.6000
T1	9	LCF158-50JA-A0(1 5/8")	160.00 - 170.00	0.6000	0.6000
T1	10	MLC Hybrid 6/6(7/8)	160.00 - 170.00	0.6000	0.6000
T2	1	Safety Line 3/8	153.33 - 160.00	0.6000	0.6000
T2	2	Feedline Ladder (Af) 1.5"	153.33 - 157.00	0.6000	0.6000
T2	3	Feedline Ladder (Af) 1.5"	153.33 - 160.00	0.6000	0.6000
T2	8	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	153.33 - 160.00	0.6000	0.6000
T2	9	LCF158-50JA-A0(1 5/8")	153.33 - 160.00	0.6000	0.6000
T2	10	MLC Hybrid 6/6(7/8)	153.33 - 160.00	0.6000	0.6000
T2	12	7983A(1/2")	153.33 - 157.00	0.6000	0.6000
T3	1	Safety Line 3/8	146.67 - 153.33	0.6000	0.6000
T3	2	Feedline Ladder (Af) 1.5"	146.67 - 153.33	0.6000	0.6000
T3	3	Feedline Ladder (Af) 1.5"	146.67 - 153.33	0.6000	0.6000
T3	8	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	146.67 - 153.33	0.6000	0.6000
T3	9	LCF158-50JA-A0(1 5/8")	146.67 - 153.33	0.6000	0.6000
T3	10	MLC Hybrid 6/6(7/8)	146.67 - 153.33	0.6000	0.6000
T3	12	7983A(1/2")	146.67 - 153.33	0.6000	0.6000
T3	14	HB114-21U3M12-XXXF(1-1 /4")	146.67 - 148.00	0.6000	0.6000
T4	1	Safety Line 3/8	140.00 - 146.67	0.6000	0.6000
T4	2	Feedline Ladder (Af) 1.5"	140.00 - 146.67	0.6000	0.6000
T4	3	Feedline Ladder (Af) 1.5"	140.00 - 146.67	0.6000	0.6000
T4	8	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	140.00 - 146.67	0.6000	0.6000
T4	9	LCF158-50JA-A0(1 5/8")	140.00 - 146.67	0.6000	0.6000
T4	10	MLC Hybrid 6/6(7/8)	140.00 - 146.67	0.6000	0.6000
T4	12	7983A(1/2")	140.00 - 146.67	0.6000	0.6000
T4	14	HB114-21U3M12-XXXF(1-1 /4")	140.00 - 146.67	0.6000	0.6000
T5	1	Safety Line 3/8	120.00 - 140.00	0.6000	0.6000
T5	2	Feedline Ladder (Af) 1.5"	120.00 -	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T5	3	Feedline Ladder (Af) 1.5"	140.00 120.00 - 140.00	0.6000	0.6000
T5	5	Feedline Ladder (Af) 1.5"	120.00 - 126.00	0.6000	0.6000
T5	6	2" Rigid Conduit	120.00 - 134.00	0.6000	0.6000
T5	8	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	120.00 - 140.00	0.6000	0.6000
T5	9	LCF158-50JA-A0(1 5/8")	120.00 - 140.00	0.6000	0.6000
T5	10	MLC Hybrid 6/6(7/8)	120.00 - 140.00	0.6000	0.6000
T5	12	7983A(1/2")	120.00 - 140.00	0.6000	0.6000
T5	14	HB114-21U3M12-XXXF(1-1/4")	120.00 - 140.00	0.6000	0.6000
T5	16	LDF4-50A(1/2")	120.00 - 134.00	0.6000	0.6000
T5	18	9207(5/16")	120.00 - 134.00	0.0000	0.0000
T5	19	2" Rigid Conduit	120.00 - 134.00	0.6000	0.6000
T5	21	561(1-5/8")	120.00 - 126.00	0.6000	0.6000
T5	22	LDF4-50A(1/2")	120.00 - 126.00	0.6000	0.6000
T6	1	Safety Line 3/8	100.00 - 120.00	0.6000	0.6000
T6	2	Feedline Ladder (Af) 1.5"	100.00 - 120.00	0.6000	0.6000
T6	3	Feedline Ladder (Af) 1.5"	100.00 - 120.00	0.6000	0.6000
T6	4	Feedline Ladder (Af) 1.5"	100.00 - 112.00	0.6000	0.6000
T6	5	Feedline Ladder (Af) 1.5"	100.00 - 120.00	0.6000	0.6000
T6	6	2" Rigid Conduit	100.00 - 120.00	0.6000	0.6000
T6	8	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	100.00 - 120.00	0.6000	0.6000
T6	9	LCF158-50JA-A0(1 5/8")	100.00 - 120.00	0.6000	0.6000
T6	10	MLC Hybrid 6/6(7/8)	100.00 - 120.00	0.6000	0.6000
T6	12	7983A(1/2")	100.00 - 120.00	0.6000	0.6000
T6	14	HB114-21U3M12-XXXF(1-1/4")	100.00 - 120.00	0.6000	0.6000
T6	16	LDF4-50A(1/2")	100.00 - 120.00	0.6000	0.6000
T6	18	9207(5/16")	100.00 - 120.00	0.0000	0.0000
T6	19	2" Rigid Conduit	100.00 - 120.00	0.6000	0.6000
T6	21	561(1-5/8")	100.00 - 120.00	0.6000	0.6000
T6	22	LDF4-50A(1/2")	100.00 - 120.00	0.6000	0.6000
T6	25	LDF7-50A(1-5/8")	100.00 - 112.00	0.6000	0.6000
T6	27	CR 50 1873(1-5/8")	100.00 -	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			102.00		
T6	28	2" Rigid Conduit	100.00 - 102.00	0.6000	0.6000
T6	29	FB-L98-002-XXX(3/8)	100.00 - 102.00	0.0000	0.0000
T6	30	WR-VG82ST-BRDA(5/8")	100.00 - 102.00	0.0000	0.0000
T6	31	FB-L98-002-XXX(3/8")	100.00 - 102.00	0.6000	0.6000
T6	32	WR-VG82ST-BRDA(5/8)	100.00 - 102.00	0.6000	0.6000
T7	1	Safety Line 3/8	80.00 - 100.00	0.6000	0.6000
T7	2	Feedline Ladder (Af) 1.5"	80.00 - 100.00	0.6000	0.6000
T7	3	Feedline Ladder (Af) 1.5"	80.00 - 100.00	0.6000	0.6000
T7	4	Feedline Ladder (Af) 1.5"	80.00 - 100.00	0.6000	0.6000
T7	5	Feedline Ladder (Af) 1.5"	80.00 - 100.00	0.6000	0.6000
T7	6	2" Rigid Conduit	80.00 - 100.00	0.6000	0.6000
T7	8	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	80.00 - 100.00	0.6000	0.6000
T7	9	LCF158-50JA-A0(1 5/8")	80.00 - 100.00	0.6000	0.6000
T7	10	MLC Hybrid 6/6(7/8)	80.00 - 100.00	0.6000	0.6000
T7	12	7983A(1/2")	80.00 - 100.00	0.6000	0.6000
T7	14	HB114-21U3M12-XXXF(1-1/4")	80.00 - 100.00	0.6000	0.6000
T7	16	LDF4-50A(1/2")	80.00 - 100.00	0.6000	0.6000
T7	18	9207(5/16")	80.00 - 100.00	0.0000	0.0000
T7	19	2" Rigid Conduit	80.00 - 100.00	0.6000	0.6000
T7	21	561(1-5/8")	80.00 - 100.00	0.6000	0.6000
T7	22	LDF4-50A(1/2")	80.00 - 100.00	0.6000	0.6000
T7	25	LDF7-50A(1-5/8")	80.00 - 100.00	0.6000	0.6000
T7	27	CR 50 1873(1-5/8")	80.00 - 100.00	0.6000	0.6000
T7	28	2" Rigid Conduit	80.00 - 100.00	0.6000	0.6000
T7	29	FB-L98-002-XXX(3/8)	80.00 - 100.00	0.0000	0.0000
T7	30	WR-VG82ST-BRDA(5/8")	80.00 - 100.00	0.0000	0.0000
T7	31	FB-L98-002-XXX(3/8")	80.00 - 100.00	0.6000	0.6000
T7	32	WR-VG82ST-BRDA(5/8)	80.00 - 100.00	0.6000	0.6000
T8	1	Safety Line 3/8	70.00 - 80.00	0.6000	0.6000
T8	2	Feedline Ladder (Af) 1.5"	70.00 - 80.00	0.6000	0.6000
T8	3	Feedline Ladder (Af) 1.5"	70.00 - 80.00	0.6000	0.6000
T8	4	Feedline Ladder (Af) 1.5"	70.00 - 80.00	0.6000	0.6000
T8	5	Feedline Ladder (Af) 1.5"	70.00 - 80.00	0.6000	0.6000
T8	6	2" Rigid Conduit	70.00 - 80.00	0.6000	0.6000
T8	8	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	70.00 - 80.00	0.6000	0.6000
T8	9	LCF158-50JA-A0(1 5/8")	70.00 - 80.00	0.6000	0.6000
T8	10	MLC Hybrid 6/6(7/8)	70.00 - 80.00	0.6000	0.6000
T8	12	7983A(1/2")	70.00 - 80.00	0.6000	0.6000
T8	14	HB114-21U3M12-XXXF(1-1/4")	70.00 - 80.00	0.6000	0.6000
T8	16	LDF4-50A(1/2")	70.00 - 80.00	0.6000	0.6000
T8	18	9207(5/16")	70.00 - 80.00	0.0000	0.0000
T8	19	2" Rigid Conduit	70.00 - 80.00	0.6000	0.6000
T8	21	561(1-5/8")	70.00 - 80.00	0.6000	0.6000
T8	22	LDF4-50A(1/2")	70.00 - 80.00	0.6000	0.6000
T8	25	LDF7-50A(1-5/8")	70.00 - 80.00	0.6000	0.6000
T8	27	CR 50 1873(1-5/8")	70.00 - 80.00	0.6000	0.6000
T8	28	2" Rigid Conduit	70.00 - 80.00	0.6000	0.6000
T8	29	FB-L98-002-XXX(3/8)	70.00 - 80.00	0.0000	0.0000
T8	30	WR-VG82ST-BRDA(5/8")	70.00 - 80.00	0.0000	0.0000
T8	31	FB-L98-002-XXX(3/8")	70.00 - 80.00	0.6000	0.6000
T8	32	WR-VG82ST-BRDA(5/8)	70.00 - 80.00	0.6000	0.6000
T9	1	Safety Line 3/8	60.00 - 70.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T9	2	Feedline Ladder (Af) 1.5"	60.00 - 70.00	0.6000	0.6000
T9	3	Feedline Ladder (Af) 1.5"	60.00 - 70.00	0.6000	0.6000
T9	4	Feedline Ladder (Af) 1.5"	60.00 - 70.00	0.6000	0.6000
T9	5	Feedline Ladder (Af) 1.5"	60.00 - 70.00	0.6000	0.6000
T9	6	2" Rigid Conduit	60.00 - 70.00	0.6000	0.6000
T9	8	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	60.00 - 70.00	0.6000	0.6000
T9	9	LCF158-50JA-A0(1 5/8")	60.00 - 70.00	0.6000	0.6000
T9	10	MLC Hybrid 6/6(7/8)	60.00 - 70.00	0.6000	0.6000
T9	12	7983A(1/2")	60.00 - 70.00	0.6000	0.6000
T9	14	HB114-21U3M12-XXXF(1-1/4")	60.00 - 70.00	0.6000	0.6000
T9	16	LDF4-50A(1/2")	60.00 - 70.00	0.6000	0.6000
T9	18	9207(5/16")	60.00 - 70.00	0.0000	0.0000
T9	19	2" Rigid Conduit	60.00 - 70.00	0.6000	0.6000
T9	21	561(1-5/8")	60.00 - 70.00	0.6000	0.6000
T9	22	LDF4-50A(1/2")	60.00 - 70.00	0.6000	0.6000
T9	25	LDF7-50A(1-5/8")	60.00 - 70.00	0.6000	0.6000
T9	27	CR 50 1873(1-5/8")	60.00 - 70.00	0.6000	0.6000
T9	28	2" Rigid Conduit	60.00 - 70.00	0.6000	0.6000
T9	29	FB-L98-002-XXX(3/8)	60.00 - 70.00	0.0000	0.0000
T9	30	WR-VG82ST-BRDA(5/8")	60.00 - 70.00	0.0000	0.0000
T9	31	FB-L98-002-XXX(3/8")	60.00 - 70.00	0.6000	0.6000
T9	32	WR-VG82ST-BRDA(5/8)	60.00 - 70.00	0.6000	0.6000
T10	1	Safety Line 3/8	40.00 - 60.00	0.6000	0.6000
T10	2	Feedline Ladder (Af) 1.5"	40.00 - 60.00	0.6000	0.6000
T10	3	Feedline Ladder (Af) 1.5"	40.00 - 60.00	0.6000	0.6000
T10	4	Feedline Ladder (Af) 1.5"	40.00 - 60.00	0.6000	0.6000
T10	5	Feedline Ladder (Af) 1.5"	40.00 - 60.00	0.6000	0.6000
T10	6	2" Rigid Conduit	40.00 - 60.00	0.6000	0.6000
T10	8	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	40.00 - 60.00	0.6000	0.6000
T10	9	LCF158-50JA-A0(1 5/8")	40.00 - 60.00	0.6000	0.6000
T10	10	MLC Hybrid 6/6(7/8)	40.00 - 60.00	0.6000	0.6000
T10	12	7983A(1/2")	40.00 - 60.00	0.6000	0.6000
T10	14	HB114-21U3M12-XXXF(1-1/4")	40.00 - 60.00	0.6000	0.6000
T10	16	LDF4-50A(1/2")	40.00 - 60.00	0.6000	0.6000
T10	18	9207(5/16")	40.00 - 60.00	0.0000	0.0000
T10	19	2" Rigid Conduit	40.00 - 60.00	0.6000	0.6000
T10	21	561(1-5/8")	40.00 - 60.00	0.6000	0.6000
T10	22	LDF4-50A(1/2")	40.00 - 60.00	0.6000	0.6000
T10	25	LDF7-50A(1-5/8")	40.00 - 60.00	0.6000	0.6000
T10	27	CR 50 1873(1-5/8")	40.00 - 60.00	0.6000	0.6000
T10	28	2" Rigid Conduit	40.00 - 60.00	0.6000	0.6000
T10	29	FB-L98-002-XXX(3/8)	40.00 - 60.00	0.0000	0.0000
T10	30	WR-VG82ST-BRDA(5/8")	40.00 - 60.00	0.0000	0.0000
T10	31	FB-L98-002-XXX(3/8")	40.00 - 60.00	0.6000	0.6000
T10	32	WR-VG82ST-BRDA(5/8)	40.00 - 60.00	0.6000	0.6000
T10	34	LDF4-50A(1/2")	40.00 - 48.00	0.6000	0.6000
T11	1	Safety Line 3/8	20.00 - 40.00	0.6000	0.6000
T11	2	Feedline Ladder (Af) 1.5"	20.00 - 40.00	0.6000	0.6000
T11	3	Feedline Ladder (Af) 1.5"	20.00 - 40.00	0.6000	0.6000
T11	4	Feedline Ladder (Af) 1.5"	20.00 - 40.00	0.6000	0.6000
T11	5	Feedline Ladder (Af) 1.5"	20.00 - 40.00	0.6000	0.6000
T11	6	2" Rigid Conduit	20.00 - 40.00	0.6000	0.6000
T11	8	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	20.00 - 40.00	0.6000	0.6000
T11	9	LCF158-50JA-A0(1 5/8")	20.00 - 40.00	0.6000	0.6000
T11	10	MLC Hybrid 6/6(7/8)	20.00 - 40.00	0.6000	0.6000
T11	12	7983A(1/2")	20.00 - 40.00	0.6000	0.6000
T11	14	HB114-21U3M12-XXXF(1-1	20.00 - 40.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		/4")			
T11	16	LDF4-50A(1/2")	20.00 - 40.00	0.6000	0.6000
T11	18	9207(5/16")	20.00 - 40.00	0.0000	0.0000
T11	19	2" Rigid Conduit	20.00 - 40.00	0.6000	0.6000
T11	21	561(1-5/8")	20.00 - 40.00	0.6000	0.6000
T11	22	LDF4-50A(1/2")	20.00 - 40.00	0.6000	0.6000
T11	25	LDF7-50A(1-5/8")	20.00 - 40.00	0.6000	0.6000
T11	27	CR 50 1873(1-5/8")	20.00 - 40.00	0.6000	0.6000
T11	28	2" Rigid Conduit	20.00 - 40.00	0.6000	0.6000
T11	29	FB-L98-002-XXX(3/8)	20.00 - 40.00	0.0000	0.0000
T11	30	WR-VG82ST-BRDA(5/8")	20.00 - 40.00	0.0000	0.0000
T11	31	FB-L98-002-XXX(3/8")	20.00 - 40.00	0.6000	0.6000
T11	32	WR-VG82ST-BRDA(5/8)	20.00 - 40.00	0.6000	0.6000
T11	34	LDF4-50A(1/2")	20.00 - 40.00	0.6000	0.6000
T12	1	Safety Line 3/8	0.00 - 20.00	0.6000	0.6000
T12	2	Feedline Ladder (Af) 1.5"	0.00 - 20.00	0.6000	0.6000
T12	3	Feedline Ladder (Af) 1.5"	0.00 - 20.00	0.6000	0.6000
T12	4	Feedline Ladder (Af) 1.5"	0.00 - 20.00	0.6000	0.6000
T12	5	Feedline Ladder (Af) 1.5"	0.00 - 20.00	0.6000	0.6000
T12	6	2" Rigid Conduit	0.00 - 20.00	0.6000	0.6000
T12	8	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	0.00 - 20.00	0.6000	0.6000
T12	9	LCF158-50JA-A0(1 5/8")	0.00 - 20.00	0.6000	0.6000
T12	10	MLC Hybrid 6/6(7/8)	0.00 - 20.00	0.6000	0.6000
T12	12	7983A(1/2")	0.00 - 20.00	0.6000	0.6000
T12	14	HB114-21U3M12-XXXF(1-1/4")	0.00 - 20.00	0.6000	0.6000
T12	16	LDF4-50A(1/2")	0.00 - 20.00	0.6000	0.6000
T12	18	9207(5/16")	0.00 - 20.00	0.0000	0.0000
T12	19	2" Rigid Conduit	0.00 - 20.00	0.6000	0.6000
T12	21	561(1-5/8")	0.00 - 20.00	0.6000	0.6000
T12	22	LDF4-50A(1/2")	0.00 - 20.00	0.6000	0.6000
T12	25	LDF7-50A(1-5/8")	0.00 - 20.00	0.6000	0.6000
T12	27	CR 50 1873(1-5/8")	0.00 - 20.00	0.6000	0.6000
T12	28	2" Rigid Conduit	0.00 - 20.00	0.6000	0.6000
T12	29	FB-L98-002-XXX(3/8)	0.00 - 20.00	0.0000	0.0000
T12	30	WR-VG82ST-BRDA(5/8")	0.00 - 20.00	0.0000	0.0000
T12	31	FB-L98-002-XXX(3/8")	0.00 - 20.00	0.6000	0.6000
T12	32	WR-VG82ST-BRDA(5/8)	0.00 - 20.00	0.6000	0.6000
T12	34	LDF4-50A(1/2")	0.00 - 20.00	0.6000	0.6000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
********** **********									
Lightning Rod	C	From Leg	0.00 0.00 2.00	0.0000	180.00	No Ice 1/2" Ice 1" Ice	0.25 0.66 0.97	0.25 0.66 0.97	0.03 0.03 0.04

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
***									
Empty Pipe Mount	A	From Leg	4.00	0.0000	178.00	No Ice	1.00	1.00	0.01
			0.00			1/2" Ice	1.39	1.39	0.02
			0.00			1" Ice	1.70	1.70	0.03
Empty Pipe Mount	B	From Leg	4.00	0.0000	178.00	No Ice	1.00	1.00	0.01
			0.00			1/2" Ice	1.39	1.39	0.02
			0.00			1" Ice	1.70	1.70	0.03
Side Arm Mount [SO 305-1]	A	From Leg	0.00	0.0000	178.00	No Ice	0.94	1.41	0.03
			0.00			1/2" Ice	1.48	2.17	0.04
			0.00			1" Ice	2.02	2.93	0.06
Side Arm Mount [SO 305-1]	B	From Leg	0.00	0.0000	178.00	No Ice	0.94	1.41	0.03
			0.00			1/2" Ice	1.48	2.17	0.04
			0.00			1" Ice	2.02	2.93	0.06
***									
AIR -32 B2A/B66AA w/ Mount Pipe	A	From Leg	4.00	0.0000	170.00	No Ice	6.75	6.07	0.15
			0.00			1/2" Ice	7.20	6.87	0.21
			3.00			1" Ice	7.65	7.58	0.28
AIR -32 B2A/B66AA w/ Mount Pipe	B	From Leg	4.00	0.0000	170.00	No Ice	6.75	6.07	0.15
			0.00			1/2" Ice	7.20	6.87	0.21
			3.00			1" Ice	7.65	7.58	0.28
AIR -32 B2A/B66AA w/ Mount Pipe	C	From Leg	4.00	0.0000	170.00	No Ice	6.75	6.07	0.15
			0.00			1/2" Ice	7.20	6.87	0.21
			3.00			1" Ice	7.65	7.58	0.28
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	A	From Leg	4.00	0.0000	170.00	No Ice	6.33	5.64	0.11
			0.00			1/2" Ice	6.78	6.43	0.17
			3.00			1" Ice	7.21	7.13	0.23
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	B	From Leg	4.00	0.0000	170.00	No Ice	6.33	5.64	0.11
			0.00			1/2" Ice	6.78	6.43	0.17
			3.00			1" Ice	7.21	7.13	0.23
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	C	From Leg	4.00	0.0000	170.00	No Ice	6.33	5.64	0.11
			0.00			1/2" Ice	6.78	6.43	0.17
			3.00			1" Ice	7.21	7.13	0.23
LNX-6515DS-VTM w/ Mount Pipe	A	From Leg	4.00	0.0000	170.00	No Ice	11.68	9.84	0.08
			0.00			1/2" Ice	12.40	11.37	0.17
			3.00			1" Ice	13.14	12.91	0.27
LNX-6515DS-VTM w/ Mount Pipe	B	From Leg	4.00	0.0000	170.00	No Ice	11.68	9.84	0.08
			0.00			1/2" Ice	12.40	11.37	0.17
			3.00			1" Ice	13.14	12.91	0.27
LNX-6515DS-VTM w/ Mount Pipe	C	From Leg	4.00	0.0000	170.00	No Ice	11.68	9.84	0.08
			0.00			1/2" Ice	12.40	11.37	0.17
			3.00			1" Ice	13.14	12.91	0.27
KRY 112 144/1	A	From Leg	4.00	0.0000	170.00	No Ice	0.35	0.16	0.01
			0.00			1/2" Ice	0.43	0.22	0.01
			3.00			1" Ice	0.51	0.28	0.02
KRY 112 144/1	B	From Leg	4.00	0.0000	170.00	No Ice	0.35	0.16	0.01
			0.00			1/2" Ice	0.43	0.22	0.01
			3.00			1" Ice	0.51	0.28	0.02
KRY 112 144/1	C	From Leg	4.00	0.0000	170.00	No Ice	0.35	0.16	0.01
			0.00			1/2" Ice	0.43	0.22	0.01
			3.00			1" Ice	0.51	0.28	0.02
RRUS 11 B12	A	From Leg	4.00	0.0000	170.00	No Ice	2.83	1.18	0.05
			0.00			1/2" Ice	3.04	1.33	0.07
			3.00			1" Ice	3.26	1.48	0.10
RRUS 11 B12	B	From Leg	4.00	0.0000	170.00	No Ice	2.83	1.18	0.05
			0.00			1/2" Ice	3.04	1.33	0.07
			3.00			1" Ice	3.26	1.48	0.10
RRUS 11 B12	C	From Leg	4.00	0.0000	170.00	No Ice	2.83	1.18	0.05

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00				1/2" Ice	3.04	1.33	0.07
			3.00				1" Ice	3.26	1.48	0.10
Sector Mount [SM 702-3]	C	None			0.0000	170.00	No Ice	37.40	37.40	1.55
							1/2" Ice	54.20	54.20	2.35
							1" Ice	71.00	71.00	3.15
Empty Pipe Mount	A	From Leg	4.00		0.0000	170.00	No Ice	1.05	1.05	0.02
			0.00				1/2" Ice	1.67	1.67	0.03
			3.00				1" Ice	2.09	2.09	0.04
Empty Pipe Mount	B	From Leg	4.00		0.0000	170.00	No Ice	1.05	1.05	0.02
			0.00				1/2" Ice	1.67	1.67	0.03
			3.00				1" Ice	2.09	2.09	0.04
Empty Pipe Mount	C	From Leg	4.00		0.0000	170.00	No Ice	1.05	1.05	0.02
			0.00				1/2" Ice	1.67	1.67	0.03
			3.00				1" Ice	2.09	2.09	0.04
***										
Side Arm Mount [SO 202-1]	A	From Leg	0.00		0.0000	157.00	No Ice	2.96	2.53	0.11
			0.00				1/2" Ice	4.10	3.51	0.13
			0.00				1" Ice	5.24	4.49	0.16
Side Arm Mount [SO 202-1]	B	From Leg	0.00		0.0000	157.00	No Ice	2.96	2.53	0.11
			0.00				1/2" Ice	4.10	3.51	0.13
			0.00				1" Ice	5.24	4.49	0.16
***										
APXVSPP18-C-A20 w/ Mount Pipe	A	From Leg	4.00		0.0000	148.00	No Ice	8.26	7.47	0.09
			0.00				1/2" Ice	8.82	8.66	0.16
			0.00				1" Ice	9.35	9.56	0.24
APXVSPP18-C-A20 w/ Mount Pipe	B	From Leg	4.00		0.0000	148.00	No Ice	8.26	7.47	0.09
			0.00				1/2" Ice	8.82	8.66	0.16
			0.00				1" Ice	9.35	9.56	0.24
APXVSPP18-C-A20 w/ Mount Pipe	C	From Leg	4.00		0.0000	148.00	No Ice	8.26	7.47	0.09
			0.00				1/2" Ice	8.82	8.66	0.16
			0.00				1" Ice	9.35	9.56	0.24
APXVTM14-C-120 w/ Mount Pipe	A	From Leg	4.00		0.0000	148.00	No Ice	6.58	4.96	0.08
			0.00				1/2" Ice	7.03	5.75	0.13
			0.00				1" Ice	7.47	6.47	0.19
APXVTM14-C-120 w/ Mount Pipe	B	From Leg	4.00		0.0000	148.00	No Ice	6.58	4.96	0.08
			0.00				1/2" Ice	7.03	5.75	0.13
			0.00				1" Ice	7.47	6.47	0.19
APXVTM14-C-120 w/ Mount Pipe	C	From Leg	4.00		0.0000	148.00	No Ice	6.58	4.96	0.08
			0.00				1/2" Ice	7.03	5.75	0.13
			0.00				1" Ice	7.47	6.47	0.19
(3) ACU-A20-N	A	From Leg	4.00		0.0000	148.00	No Ice	0.07	0.12	0.00
			0.00				1/2" Ice	0.10	0.16	0.00
			0.00				1" Ice	0.15	0.21	0.00
(3) ACU-A20-N	B	From Leg	4.00		0.0000	148.00	No Ice	0.07	0.12	0.00
			0.00				1/2" Ice	0.10	0.16	0.00
			0.00				1" Ice	0.15	0.21	0.00
(3) ACU-A20-N	C	From Leg	4.00		0.0000	148.00	No Ice	0.07	0.12	0.00
			0.00				1/2" Ice	0.10	0.16	0.00
			0.00				1" Ice	0.15	0.21	0.00
TD-RRH8x20-25	A	From Leg	4.00		0.0000	148.00	No Ice	3.70	1.29	0.07
			0.00				1/2" Ice	3.95	1.46	0.09
			0.00				1" Ice	4.20	1.64	0.12
TD-RRH8x20-25	B	From Leg	4.00		0.0000	148.00	No Ice	3.70	1.29	0.07
			0.00				1/2" Ice	3.95	1.46	0.09
			0.00				1" Ice	4.20	1.64	0.12
TD-RRH8x20-25	C	From Leg	4.00		0.0000	148.00	No Ice	3.70	1.29	0.07
			0.00				1/2" Ice	3.95	1.46	0.09

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1" Ice	4.20	1.64	0.12
(3) Site Pro VFA12-U w/ 12' Stiff Arm	C	None		0.0000	148.00	No Ice	33.02	33.02	1.67
						1/2" Ice	47.36	47.36	2.22
						1" Ice	61.70	61.70	2.77
***									
PCS 1900MHz 4x45W-65MHz	A	From Leg	4.00	0.0000	143.00	No Ice	2.32	2.24	0.06
			0.00			1/2" Ice	2.53	2.44	0.08
			2.00			1" Ice	2.74	2.65	0.11
PCS 1900MHz 4x45W-65MHz	A	From Leg	4.00	0.0000	143.00	No Ice	2.32	2.24	0.06
			0.00			1/2" Ice	2.53	2.44	0.08
			-1.00			1" Ice	2.74	2.65	0.11
PCS 1900MHz 4x45W-65MHz	B	From Leg	4.00	0.0000	143.00	No Ice	2.32	2.24	0.06
			0.00			1/2" Ice	2.53	2.44	0.08
			2.00			1" Ice	2.74	2.65	0.11
PCS 1900MHz 4x45W-65MHz	B	From Leg	4.00	0.0000	143.00	No Ice	2.32	2.24	0.06
			0.00			1/2" Ice	2.53	2.44	0.08
			-1.00			1" Ice	2.74	2.65	0.11
PCS 1900MHz 4x45W-65MHz	C	From Leg	4.00	0.0000	143.00	No Ice	2.32	2.24	0.06
			0.00			1/2" Ice	2.53	2.44	0.08
			2.00			1" Ice	2.74	2.65	0.11
PCS 1900MHz 4x45W-65MHz	C	From Leg	4.00	0.0000	143.00	No Ice	2.32	2.24	0.06
			0.00			1/2" Ice	2.53	2.44	0.08
			-1.00			1" Ice	2.74	2.65	0.11
TME-800MHZ 2X50W RRH	A	From Leg	4.00	0.0000	143.00	No Ice	2.13	1.77	0.05
			0.00			1/2" Ice	2.32	1.95	0.07
			2.00			1" Ice	2.51	2.13	0.10
TME-800MHZ 2X50W RRH	B	From Leg	4.00	0.0000	143.00	No Ice	2.13	1.77	0.05
			0.00			1/2" Ice	2.32	1.95	0.07
			2.00			1" Ice	2.51	2.13	0.10
TME-800MHZ 2X50W RRH	C	From Leg	4.00	0.0000	143.00	No Ice	2.13	1.77	0.05
			0.00			1/2" Ice	2.32	1.95	0.07
			2.00			1" Ice	2.51	2.13	0.10
800 EXTERNAL NOTCH FILTER	A	From Leg	4.00	0.0000	143.00	No Ice	0.66	0.32	0.01
			0.00			1/2" Ice	0.76	0.40	0.02
			2.00			1" Ice	0.87	0.48	0.02
800 EXTERNAL NOTCH FILTER	B	From Leg	4.00	0.0000	143.00	No Ice	0.66	0.32	0.01
			0.00			1/2" Ice	0.76	0.40	0.02
			2.00			1" Ice	0.87	0.48	0.02
800 EXTERNAL NOTCH FILTER	C	From Leg	4.00	0.0000	143.00	No Ice	0.66	0.32	0.01
			0.00			1/2" Ice	0.76	0.40	0.02
			2.00			1" Ice	0.87	0.48	0.02
Side Arm Mount [SO 312-3]	C	None		0.0000	143.00	No Ice	7.87	7.87	0.21
						1/2" Ice	11.82	11.82	0.32
						1" Ice	15.77	15.77	0.43
***									
LLPX310R w/ Mount Pipe	A	From Leg	4.00	0.0000	134.00	No Ice	4.54	2.98	0.05
			0.00			1/2" Ice	4.89	3.53	0.08
			1.00			1" Ice	5.25	4.09	0.13
LLPX310R w/ Mount Pipe	B	From Leg	4.00	0.0000	134.00	No Ice	4.54	2.98	0.05
			0.00			1/2" Ice	4.89	3.53	0.08
			1.00			1" Ice	5.25	4.09	0.13
LLPX310R w/ Mount Pipe	C	From Leg	4.00	0.0000	134.00	No Ice	4.54	2.98	0.05
			0.00			1/2" Ice	4.89	3.53	0.08
			1.00			1" Ice	5.25	4.09	0.13
RRH-2WB	A	From Leg	4.00	0.0000	134.00	No Ice	2.30	0.78	0.04
			0.00			1/2" Ice	2.50	0.92	0.06
			1.00			1" Ice	2.69	1.06	0.08

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert* *ft* *ft* *ft*	*Azimuth Adjustment* °	*Placement* *ft*		*C_AA_A Front* *ft^2*	*C_AA_A Side* *ft^2*	*Weight* *K*
RRH-2WB	B	From Leg	4.00 0.00 1.00	0.0000	134.00	No Ice 1/2" Ice 1" Ice	2.30 2.50 2.69	0.78 0.92 1.06	0.04 0.06 0.08
RRH-2WB	C	From Leg	4.00 0.00 1.00	0.0000	134.00	No Ice 1/2" Ice 1" Ice	2.30 2.50 2.69	0.78 0.92 1.06	0.04 0.06 0.08
Pipe Mount [PM 601-1]	A	From Leg	4.00 0.00 0.00	0.0000	134.00	No Ice 1/2" Ice 1" Ice	3.00 3.74 4.48	0.90 1.12 1.34	0.07 0.08 0.09
Sector Mount [SM 502-3]	C	None		0.0000	134.00	No Ice 1/2" Ice 1" Ice	33.02 47.36 61.70	33.02 47.36 61.70	1.67 2.22 2.77
***									
HBX-6516DS-VTM w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	126.00	No Ice 1/2" Ice 1" Ice	3.56 3.96 4.35	3.24 3.91 4.56	0.03 0.06 0.10
HBX-6516DS-VTM w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	126.00	No Ice 1/2" Ice 1" Ice	3.56 3.96 4.35	3.24 3.91 4.56	0.03 0.06 0.10
HBX-6516DS-VTM w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	126.00	No Ice 1/2" Ice 1" Ice	3.56 3.96 4.35	3.24 3.91 4.56	0.03 0.06 0.10
DB844G65ZAXY w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	126.00	No Ice 1/2" Ice 1" Ice	4.58 4.96 5.34	4.80 5.42 6.04	0.03 0.08 0.13
DB844G65ZAXY w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	126.00	No Ice 1/2" Ice 1" Ice	4.58 4.96 5.34	4.80 5.42 6.04	0.03 0.08 0.13
(2) DB844G65ZAXY w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	126.00	No Ice 1/2" Ice 1" Ice	4.58 4.96 5.34	4.80 5.42 6.04	0.03 0.08 0.13
LNX-6514DS-T4M w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	126.00	No Ice 1/2" Ice 1" Ice	8.32 8.88 9.40	7.00 8.19 9.08	0.06 0.13 0.20
LNX-6514DS-T4M w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	126.00	No Ice 1/2" Ice 1" Ice	8.32 8.88 9.40	7.00 8.19 9.08	0.06 0.13 0.20
MG D3-800TV w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	126.00	No Ice 1/2" Ice 1" Ice	3.57 3.98 4.39	3.42 4.12 4.78	0.04 0.07 0.11
MG D3-800TV w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	126.00	No Ice 1/2" Ice 1" Ice	3.57 3.98 4.39	3.42 4.12 4.78	0.04 0.07 0.11
MG D3-800TV w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	126.00	No Ice 1/2" Ice 1" Ice	3.57 3.98 4.39	3.42 4.12 4.78	0.04 0.07 0.11
DB844H80-XY w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	126.00	No Ice 1/2" Ice 1" Ice	3.10 3.48 3.85	4.98 5.60 6.23	0.03 0.07 0.11
DB844H80-XY w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	126.00	No Ice 1/2" Ice 1" Ice	3.10 3.48 3.85	4.98 5.60 6.23	0.03 0.07 0.11
GPS_A	B	From Leg	4.00 0.00 4.00	0.0000	126.00	No Ice 1/2" Ice 1" Ice	0.26 0.32 0.39	0.26 0.32 0.39	0.00 0.00 0.01
P65.16.XL.2 w/ Mount Pipe	C	From Leg	4.00 0.00	0.0000	126.00	No Ice 1/2" Ice	8.37 8.93	5.78 6.95	0.06 0.12

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			2.00			1" Ice	9.46	7.83	0.19
RRH2X40-AWS	A	From Leg	4.00	0.0000	126.00	No Ice	2.16	1.42	0.04
			0.00			1/2" Ice	2.36	1.59	0.06
			2.00			1" Ice	2.57	1.77	0.08
RRH2X40-AWS	B	From Leg	4.00	0.0000	126.00	No Ice	2.16	1.42	0.04
			0.00			1/2" Ice	2.36	1.59	0.06
			2.00			1" Ice	2.57	1.77	0.08
RRH2X40-AWS	C	From Leg	4.00	0.0000	126.00	No Ice	2.16	1.42	0.04
			0.00			1/2" Ice	2.36	1.59	0.06
			2.00			1" Ice	2.57	1.77	0.08
DB-T1-6Z-8AB-0Z	B	From Leg	4.00	0.0000	126.00	No Ice	4.80	2.00	0.04
			0.00			1/2" Ice	5.07	2.19	0.08
			2.00			1" Ice	5.35	2.39	0.12
Sector Mount [SM 410-3]	C	None		0.0000	126.00	No Ice	23.96	23.96	1.10
						1/2" Ice	34.06	34.06	1.60
						1" Ice	44.16	44.16	2.10
***									
800 10504 w/ Mount Pipe	A	From Leg	4.00	0.0000	112.00	No Ice	3.59	3.18	0.04
			0.00			1/2" Ice	4.01	3.91	0.07
			0.00			1" Ice	4.42	4.58	0.11
800 10504 w/ Mount Pipe	B	From Leg	4.00	0.0000	112.00	No Ice	3.59	3.18	0.04
			0.00			1/2" Ice	4.01	3.91	0.07
			0.00			1" Ice	4.42	4.58	0.11
800 10504 w/ Mount Pipe	C	From Leg	4.00	0.0000	112.00	No Ice	3.59	3.18	0.04
			0.00			1/2" Ice	4.01	3.91	0.07
			0.00			1" Ice	4.42	4.58	0.11
Sector Mount [SM 104-3]	C	None		0.0000	112.00	No Ice	30.02	30.02	0.95
						1/2" Ice	40.48	40.48	1.40
						1" Ice	50.94	50.94	1.86
Empty Mount Pipe	A	From Leg	4.00	0.0000	112.00	No Ice	1.40	1.40	0.03
			0.00			1/2" Ice	2.13	2.13	0.04
			0.00			1" Ice	2.68	2.68	0.06
Empty Mount Pipe	B	From Leg	4.00	0.0000	112.00	No Ice	1.40	1.40	0.03
			0.00			1/2" Ice	2.13	2.13	0.04
			0.00			1" Ice	2.68	2.68	0.06
Empty Mount Pipe	C	From Leg	4.00	0.0000	112.00	No Ice	1.40	1.40	0.03
			0.00			1/2" Ice	2.13	2.13	0.04
			0.00			1" Ice	2.68	2.68	0.06
***									
7770.00 w/ Mount Pipe	A	From Leg	4.00	0.0000	102.00	No Ice	5.75	4.25	0.06
			0.00			1/2" Ice	6.18	5.01	0.10
			0.00			1" Ice	6.61	5.71	0.16
7770.00 w/ Mount Pipe	B	From Leg	4.00	0.0000	102.00	No Ice	5.75	4.25	0.06
			0.00			1/2" Ice	6.18	5.01	0.10
			0.00			1" Ice	6.61	5.71	0.16
7770.00 w/ Mount Pipe	C	From Leg	4.00	0.0000	102.00	No Ice	5.75	4.25	0.06
			0.00			1/2" Ice	6.18	5.01	0.10
			0.00			1" Ice	6.61	5.71	0.16
P65-16-XLH-RR w/ Mount Pipe	A	From Leg	4.00	0.0000	102.00	No Ice	8.37	6.36	0.08
			0.00			1/2" Ice	8.93	7.54	0.14
			0.00			1" Ice	9.46	8.43	0.22
P65-16-XLH-RR w/ Mount Pipe	B	From Leg	4.00	0.0000	102.00	No Ice	8.37	6.36	0.08
			0.00			1/2" Ice	8.93	7.54	0.14
			0.00			1" Ice	9.46	8.43	0.22
P65-16-XLH-RR w/ Mount Pipe	C	From Leg	4.00	0.0000	102.00	No Ice	8.37	6.36	0.08
			0.00			1/2" Ice	8.93	7.54	0.14
			0.00			1" Ice	9.46	8.43	0.22

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(2) LGP2140X	A	From Leg	4.00	0.0000	102.00	No Ice	1.08	0.36	0.01
			0.00			1/2" Ice	1.21	0.45	0.02
			0.00			1" Ice	1.35	0.56	0.03
(2) LGP2140X	B	From Leg	4.00	0.0000	102.00	No Ice	1.08	0.36	0.01
			0.00			1/2" Ice	1.21	0.45	0.02
			0.00			1" Ice	1.35	0.56	0.03
(2) LGP2140X	C	From Leg	4.00	0.0000	102.00	No Ice	1.08	0.36	0.01
			0.00			1/2" Ice	1.21	0.45	0.02
			0.00			1" Ice	1.35	0.56	0.03
RRUS 11 B2	A	From Leg	4.00	0.0000	102.00	No Ice	2.83	1.18	0.05
			0.00			1/2" Ice	3.04	1.33	0.07
			0.00			1" Ice	3.26	1.48	0.10
RRUS 11 B2	B	From Leg	4.00	0.0000	102.00	No Ice	2.83	1.18	0.05
			0.00			1/2" Ice	3.04	1.33	0.07
			0.00			1" Ice	3.26	1.48	0.10
RRUS 11 B2	C	From Leg	4.00	0.0000	102.00	No Ice	2.83	1.18	0.05
			0.00			1/2" Ice	3.04	1.33	0.07
			0.00			1" Ice	3.26	1.48	0.10
DC6-48-60-18-8F	C	From Leg	4.00	0.0000	102.00	No Ice	2.20	3.70	0.02
			0.00			1/2" Ice	2.40	3.94	0.05
			0.00			1" Ice	2.60	4.19	0.09
QS66512-2 w/ Mount Pipe	A	From Leg	4.00	0.0000	102.00	No Ice	8.37	8.46	0.14
			0.00			1/2" Ice	8.93	9.66	0.21
			0.00			1" Ice	9.46	10.55	0.30
QS66512-2 w/ Mount Pipe	B	From Leg	4.00	0.0000	102.00	No Ice	8.37	8.46	0.14
			0.00			1/2" Ice	8.93	9.66	0.21
			0.00			1" Ice	9.46	10.55	0.30
QS66512-2 w/ Mount Pipe	C	From Leg	4.00	0.0000	102.00	No Ice	8.37	8.46	0.14
			0.00			1/2" Ice	8.93	9.66	0.21
			0.00			1" Ice	9.46	10.55	0.30
RRUS 32 B2	A	From Leg	4.00	0.0000	102.00	No Ice	2.76	1.69	0.05
			0.00			1/2" Ice	2.98	1.88	0.07
			0.00			1" Ice	3.22	2.07	0.10
RRUS 32 B2	B	From Leg	4.00	0.0000	102.00	No Ice	2.76	1.69	0.05
			0.00			1/2" Ice	2.98	1.88	0.07
			0.00			1" Ice	3.22	2.07	0.10
RRUS 32 B2	C	From Leg	4.00	0.0000	102.00	No Ice	2.76	1.69	0.05
			0.00			1/2" Ice	2.98	1.88	0.07
			0.00			1" Ice	3.22	2.07	0.10
(2) TPX-070821	A	From Leg	4.00	0.0000	102.00	No Ice	0.47	0.10	0.01
			0.00			1/2" Ice	0.56	0.15	0.01
			0.00			1" Ice	0.66	0.20	0.02
(2) TPX-070821	B	From Leg	4.00	0.0000	102.00	No Ice	0.47	0.10	0.01
			0.00			1/2" Ice	0.56	0.15	0.01
			0.00			1" Ice	0.66	0.20	0.02
(2) TPX-070821	C	From Leg	4.00	0.0000	102.00	No Ice	0.47	0.10	0.01
			0.00			1/2" Ice	0.56	0.15	0.01
			0.00			1" Ice	0.66	0.20	0.02
RRUS 32	A	From Leg	4.00	0.0000	102.00	No Ice	2.86	1.78	0.06
			0.00			1/2" Ice	3.08	1.97	0.08
			0.00			1" Ice	3.32	2.17	0.10
RRUS 32	B	From Leg	4.00	0.0000	102.00	No Ice	2.86	1.78	0.06
			0.00			1/2" Ice	3.08	1.97	0.08
			0.00			1" Ice	3.32	2.17	0.10
RRUS 32	C	From Leg	4.00	0.0000	102.00	No Ice	2.86	1.78	0.06
			0.00			1/2" Ice	3.08	1.97	0.08
			0.00			1" Ice	3.32	2.17	0.10

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
DC6-48-60-18-8F	A	From Leg	4.00 0.00 0.00	0.0000	102.00	No Ice 1/2" Ice 1" Ice	2.20 2.40 2.60	3.70 3.94 4.19	0.02 0.05 0.09
Sector Mount [SM 301-3]	C	None		0.0000	102.00	No Ice 1/2" Ice 1" Ice	29.61 39.80 49.99	1.00 1.20 1.40	1.30 1.84 2.38
Empty Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	102.00	No Ice 1/2" Ice 1" Ice	1.40 2.13 2.68	1.40 2.13 2.68	0.03 0.04 0.06
Empty Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	102.00	No Ice 1/2" Ice 1" Ice	1.40 2.13 2.68	1.40 2.13 2.68	0.03 0.04 0.06
Empty Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	102.00	No Ice 1/2" Ice 1" Ice	1.40 2.13 2.68	1.40 2.13 2.68	0.03 0.04 0.06
***									
GPS_A	B	From Leg	3.00 0.00 -1.00	0.0000	48.00	No Ice 1/2" Ice 1" Ice	0.26 0.32 0.39	0.26 0.32 0.39	0.00 0.00 0.01
GPS_A	C	From Leg	3.00 0.00 0.00	0.0000	48.00	No Ice 1/2" Ice 1" Ice	0.26 0.32 0.39	0.26 0.32 0.39	0.00 0.00 0.01
Side Arm Mount [SO 701-1]	B	From Leg	0.00 0.00 0.00	0.0000	48.00	No Ice 1/2" Ice 1" Ice	0.85 1.14 1.43	1.67 2.34 3.01	0.07 0.08 0.09
Side Arm Mount [SO 701-1]	C	From Leg	0.00 0.00 0.00	0.0000	48.00	No Ice 1/2" Ice 1" Ice	0.85 1.14 1.43	1.67 2.34 3.01	0.07 0.08 0.09
***									

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
**********											
**********											
*											
VHLP2-18	A	Paraboloid w/o Radome	From Leg	2.00 0.00 0.00	-10.0000		157.00	2.17	No Ice 1/2" Ice 1" Ice	3.72 4.01 4.30	0.03 0.05 0.07
VHLP2-18	B	Paraboloid w/o Radome	From Leg	2.00 0.00 0.00	-40.0000		157.00	2.17	No Ice 1/2" Ice 1" Ice	3.72 4.01 4.30	0.03 0.05 0.07
***											
VHLP2-23	A	Paraboloid w/o Radome	From Leg	4.00 0.00 1.00	0.0000		134.00	2.17	No Ice 1/2" Ice 1" Ice	3.72 4.01 4.30	0.03 0.05 0.07

Tower Pressures - No Ice

G_H = 0.850

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1	170.00	1.15	0	160.320	A	14.117	11.688	11.688	45.29	31.785	0.000
180.00-160.00					B	14.117	11.688		45.29	0.750	0.000
					C	14.117	11.688		45.29	0.000	0.000
T2	156.67	1.123	0	63.206	A	4.531	5.009	5.009	52.51	22.782	0.000
160.00-153.33					B	4.531	5.009		52.51	0.250	0.000
					C	4.531	5.009		52.51	0.000	0.000
T3	150.00	1.11	0	67.816	A	6.262	5.009	5.009	44.44	25.451	0.000
153.33-146.67					B	6.262	5.009		44.44	0.250	0.000
					C	6.262	5.009		44.44	0.000	0.000
T4	143.33	1.095	0	72.425	A	6.622	5.009	5.009	43.07	28.737	0.000
146.67-140.00					B	6.622	5.009		43.07	0.250	0.000
					C	6.622	5.009		43.07	0.000	0.000
T5	130.00	1.065	0	246.784	A	16.385	18.577	18.577	53.13	98.264	0.000
140.00-120.00					B	16.385	18.577		53.13	0.750	0.000
					C	16.385	18.577		53.13	24.903	0.000
T6	110.00	1.016	0	288.763	A	22.214	22.118	22.118	49.89	103.430	0.000
120.00-100.00					B	22.214	22.118		49.89	21.006	0.000
					C	22.214	22.118		49.89	88.827	0.000
T7	90.00	0.959	0	329.495	A	21.180	22.125	22.125	51.09	103.430	0.000
100.00-80.00					B	21.180	22.125		51.09	34.510	0.000
					C	21.180	22.125		51.09	141.185	0.000
T8 80.00-70.00	75.00	0.91	0	182.223	A	11.324	14.608	14.608	56.33	51.715	0.000
					B	11.324	14.608		56.33	17.255	0.000
					C	11.324	14.608		56.33	70.592	0.000
T9 70.00-60.00	65.00	0.874	0	192.275	A	11.784	14.608	14.608	55.35	51.715	0.000
					B	11.784	14.608		55.35	17.255	0.000
					C	11.784	14.608		55.35	70.592	0.000
T10	50.00	0.811	0	414.602	A	28.731	29.215	29.215	50.42	103.430	0.000
60.00-40.00					B	28.731	29.215		50.42	34.510	0.000
					C	28.731	29.215		50.42	142.193	0.000
T11	30.00	0.701	0	454.393	A	31.168	28.798	28.798	48.02	103.430	0.000
40.00-20.00					B	31.168	28.798		48.02	34.510	0.000
					C	31.168	28.798		48.02	143.705	0.000
T12 20.00-0.00	10.00	0.7	0	494.393	A	33.631	28.798	28.798	46.13	103.430	0.000
					B	33.631	28.798		46.13	34.510	0.000
					C	33.631	28.798		46.13	143.705	0.000

Tower Pressure - With Ice

G_H = 0.850

Section Elevation ft	z ft	K_Z	q_z ksf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1	170.00	1.15	0	1.7672	166.219	A	14.117	48.438	23.490	37.55	71.294	0.000
180.00-160.00						B	14.117	48.438		37.55	7.819	0.000
						C	14.117	48.438		37.55	0.000	0.000

Section Elevation ft	z ft	K_Z	q_z ksf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T2	156.67	1.123	0	1.7528	65.157	A	4.531	15.264	8.911	45.02	53.223	0.000
160.00-153.33						B	4.531	15.264		45.02	2.587	0.000
						C	4.531	15.264		45.02	0.000	0.000
T3	150.00	1.11	0	1.7452	69.758	A	6.262	18.165	8.894	36.41	61.691	0.000
153.33-146.67						B	6.262	18.165		36.41	2.577	0.000
						C	6.262	18.165		36.41	0.000	0.000
T4	143.33	1.095	0	1.7373	74.358	A	6.622	18.645	8.876	35.13	71.669	0.000
146.67-140.00						B	6.622	18.645		35.13	2.566	0.000
						C	6.622	18.645		35.13	0.000	0.000
T5	130.00	1.065	0	1.7204	252.527	A	16.385	52.618	30.067	43.57	260.720	0.000
140.00-120.00						B	16.385	52.618		43.57	7.632	0.000
						C	16.385	52.618		43.57	37.347	0.000
T6	110.00	1.016	0	1.6919	294.409	A	22.214	58.472	33.415	41.41	278.820	0.000
120.00-100.00						B	22.214	58.472		41.41	60.022	0.000
						C	22.214	58.472		41.41	136.876	0.000
T7 100.00-80.00	90.00	0.959	0	1.6583	335.030	A	21.180	53.272	33.202	44.59	276.709	0.000
						B	21.180	53.272		44.59	94.460	0.000
						C	21.180	53.272		44.59	251.099	0.000
T8 80.00-70.00	75.00	0.91	0	1.6283	184.940	A	11.324	30.582	20.045	47.83	137.415	0.000
						B	11.324	30.582		47.83	46.979	0.000
						C	11.324	30.582		47.83	124.816	0.000
T9 70.00-60.00	65.00	0.874	0	1.6052	194.954	A	11.784	30.776	19.968	46.92	136.689	0.000
						B	11.784	30.776		46.92	46.784	0.000
						C	11.784	30.776		46.92	124.250	0.000
T10 60.00-40.00	50.00	0.811	0	1.5636	419.820	A	28.731	62.119	39.657	43.65	270.772	0.000
						B	28.731	62.119		43.65	92.871	0.000
						C	28.731	62.119		43.65	252.734	0.000
T11 40.00-20.00	30.00	0.701	0	1.4858	459.352	A	31.168	61.874	38.720	41.61	265.896	0.000
						B	31.168	61.874		41.61	91.566	0.000
						C	31.168	61.874		41.61	257.784	0.000
T12 20.00-0.00	10.00	0.7	0	1.3312	498.836	A	33.631	60.072	37.687	40.22	256.238	0.000
						B	33.631	60.072		40.22	88.983	0.000
						C	33.631	60.072		40.22	249.160	0.000

Tower Pressure - Service

G_H = 0.850

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1	170.00	1.15	0	160.320	A	14.117	11.688	11.688	45.29	31.785	0.000
180.00-160.00					B	14.117	11.688		45.29	0.750	0.000
					C	14.117	11.688		45.29	0.000	0.000
T2	156.67	1.123	0	63.206	A	4.531	5.009	5.009	52.51	22.782	0.000
160.00-153.33					B	4.531	5.009		52.51	0.250	0.000
					C	4.531	5.009		52.51	0.000	0.000
T3	150.00	1.11	0	67.816	A	6.262	5.009	5.009	44.44	25.451	0.000
153.33-146.67					B	6.262	5.009		44.44	0.250	0.000
					C	6.262	5.009		44.44	0.000	0.000
T4	143.33	1.095	0	72.425	A	6.622	5.009	5.009	43.07	28.737	0.000
146.67-140.00					B	6.622	5.009		43.07	0.250	0.000
					C	6.622	5.009		43.07	0.000	0.000
T5	130.00	1.065	0	246.784	A	16.385	18.577	18.577	53.13	98.264	0.000

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
140.00-120.00					B	16.385	18.577		53.13	0.750	0.000
					C	16.385	18.577		53.13	24.903	0.000
T6	110.00	1.016	0	288.763	A	22.214	22.118	22.118	49.89	103.430	0.000
120.00-100.00					B	22.214	22.118		49.89	21.006	0.000
					C	22.214	22.118		49.89	88.827	0.000
T7	90.00	0.959	0	329.495	A	21.180	22.125	22.125	51.09	103.430	0.000
100.00-80.00					B	21.180	22.125		51.09	34.510	0.000
					C	21.180	22.125		51.09	141.185	0.000
T8 80.00-70.00	75.00	0.91	0	182.223	A	11.324	14.608	14.608	56.33	51.715	0.000
					B	11.324	14.608		56.33	17.255	0.000
					C	11.324	14.608		56.33	70.592	0.000
T9 70.00-60.00	65.00	0.874	0	192.275	A	11.784	14.608	14.608	55.35	51.715	0.000
					B	11.784	14.608		55.35	17.255	0.000
					C	11.784	14.608		55.35	70.592	0.000
T10	50.00	0.811	0	414.602	A	28.731	29.215	29.215	50.42	103.430	0.000
60.00-40.00					B	28.731	29.215		50.42	34.510	0.000
					C	28.731	29.215		50.42	142.193	0.000
T11	30.00	0.701	0	454.393	A	31.168	28.798	28.798	48.02	103.430	0.000
40.00-20.00					B	31.168	28.798		48.02	34.510	0.000
					C	31.168	28.798		48.02	143.705	0.000
T12 20.00-0.00	10.00	0.7	0	494.393	A	33.631	28.798	28.798	46.13	103.430	0.000
					B	33.631	28.798		46.13	34.510	0.000
					C	33.631	28.798		46.13	143.705	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F K	w klf	Ctrl. Face
T1	0.22	1.23	A	0.161	2.732	0	1	1	20.765	1.40	0.07	A
180.00-160.00			B	0.161	2.732		1	1	20.765			
			C	0.161	2.732		1	1	20.765			
T2	0.17	0.57	A	0.151	2.768	0	1	1	7.259	0.61	0.09	A
160.00-153.33			B	0.151	2.768		1	1	7.259			
			C	0.151	2.768		1	1	7.259			
T3	0.20	0.64	A	0.166	2.713	0	1	1	9.008	0.71	0.11	A
153.33-146.67			B	0.166	2.713		1	1	9.008			
			C	0.166	2.713		1	1	9.008			
T4	0.22	0.65	A	0.161	2.733	0	1	1	9.369	0.75	0.11	A
146.67-140.00			B	0.161	2.733		1	1	9.369			
			C	0.161	2.733		1	1	9.369			
T5	1.10	2.24	A	0.142	2.802	0	1	1	25.809	2.34	0.12	A
140.00-120.00			B	0.142	2.802		1	1	25.809			
			C	0.142	2.802		1	1	25.809			
T6	1.96	2.73	A	0.154	2.759	0	1	1	32.764	3.09	0.15	C
120.00-100.00			B	0.154	2.759		1	1	32.764			
			C	0.154	2.759		1	1	32.764			
T7	2.32	3.02	A	0.131	2.841	0	1	1	31.724	3.44	0.17	C
100.00-80.00			B	0.131	2.841		1	1	31.724			
			C	0.131	2.841		1	1	31.724			
T8	1.16	1.70	A	0.142	2.8	0	1	1	17.384	1.69	0.17	C
80.00-70.00			B	0.142	2.8		1	1	17.384			
			C	0.142	2.8		1	1	17.384			
T9	1.16	2.46	A	0.137	2.819	0	1	1	17.850	1.64	0.16	C
70.00-60.00			B	0.137	2.819		1	1	17.850			
			C	0.137	2.819		1	1	17.850			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
T10	2.32	3.79	A	0.14	2.81	0	1	1	41.225	3.25	0.16	C
60.00-40.00			B	0.14	2.81		1	1	41.225			
			C	0.14	2.81		1	1	41.225			
T11	2.32	4.98	A	0.132	2.839	0	1	1	44.100	2.93	0.15	C
40.00-20.00			B	0.132	2.839		1	1	44.100			
			C	0.132	2.839		1	1	44.100			
T12	2.32	7.71	A	0.126	2.861	0	1	1	46.505	3.01	0.15	C
20.00-0.00			B	0.126	2.861		1	1	46.505			
			C	0.126	2.861		1	1	46.505			
Sum Weight:	15.45	31.72						OTM	2015.78 kip-ft	24.86		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
T1	0.22	1.23	A	0.161	2.732	0	0.8	1	17.941	1.26	0.06	B
180.00-160.00			B	0.161	2.732		0.8	1	17.941			
			C	0.161	2.732		0.8	1	17.941			
T2	0.17	0.57	A	0.151	2.768	0	0.8	1	6.352	0.56	0.08	B
160.00-153.33			B	0.151	2.768		0.8	1	6.352			
			C	0.151	2.768		0.8	1	6.352			
T3	0.20	0.64	A	0.166	2.713	0	0.8	1	7.756	0.65	0.10	B
153.33-146.67			B	0.166	2.713		0.8	1	7.756			
			C	0.166	2.713		0.8	1	7.756			
T4	0.22	0.65	A	0.161	2.733	0	0.8	1	8.044	0.69	0.10	B
146.67-140.00			B	0.161	2.733		0.8	1	8.044			
			C	0.161	2.733		0.8	1	8.044			
T5	1.10	2.24	A	0.142	2.802	0	0.8	1	22.532	2.19	0.11	B
140.00-120.00			B	0.142	2.802		0.8	1	22.532			
			C	0.142	2.802		0.8	1	22.532			
T6	1.96	2.73	A	0.154	2.759	0	0.8	1	28.321	2.89	0.14	A
120.00-100.00			B	0.154	2.759		0.8	1	28.321			
			C	0.154	2.759		0.8	1	28.321			
T7	2.32	3.02	A	0.131	2.841	0	0.8	1	27.488	3.26	0.16	A
100.00-80.00			B	0.131	2.841		0.8	1	27.488			
			C	0.131	2.841		0.8	1	27.488			
T8	1.16	1.70	A	0.142	2.8	0	0.8	1	15.119	1.59	0.16	A
80.00-70.00			B	0.142	2.8		0.8	1	15.119			
			C	0.142	2.8		0.8	1	15.119			
T9	1.16	2.46	A	0.137	2.819	0	0.8	1	15.493	1.55	0.15	A
70.00-60.00			B	0.137	2.819		0.8	1	15.493			
			C	0.137	2.819		0.8	1	15.493			
T10	2.32	3.79	A	0.14	2.81	0	0.8	1	35.478	3.04	0.15	A
60.00-40.00			B	0.14	2.81		0.8	1	35.478			
			C	0.14	2.81		0.8	1	35.478			
T11	2.32	4.98	A	0.132	2.839	0	0.8	1	37.866	2.73	0.14	A
40.00-20.00			B	0.132	2.839		0.8	1	37.866			
			C	0.132	2.839		0.8	1	37.866			
T12	2.32	7.71	A	0.126	2.861	0	0.8	1	39.779	2.80	0.14	A
20.00-0.00			B	0.126	2.861		0.8	1	39.779			
			C	0.126	2.861		0.8	1	39.779			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F K	w klf	Ctrl. Face
Sum Weight:	15.45	31.72						OTM	1876.07 kip-ft	23.20		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F K	w klf	Ctrl. Face
T1	0.22	1.23	A	0.161	2.732	0	0.85	1	18.647	1.29	0.06	C
180.00-160.00			B	0.161	2.732		0.85	1	18.647			
			C	0.161	2.732		0.85	1	18.647			
T2	0.17	0.57	A	0.151	2.768	0	0.85	1	6.579	0.57	0.09	C
160.00-153.33			B	0.151	2.768		0.85	1	6.579			
			C	0.151	2.768		0.85	1	6.579			
T3	0.20	0.64	A	0.166	2.713	0	0.85	1	8.069	0.66	0.10	C
153.33-146.67			B	0.166	2.713		0.85	1	8.069			
			C	0.166	2.713		0.85	1	8.069			
T4	0.22	0.65	A	0.161	2.733	0	0.85	1	8.375	0.70	0.11	C
146.67-140.00			B	0.161	2.733		0.85	1	8.375			
			C	0.161	2.733		0.85	1	8.375			
T5	1.10	2.24	A	0.142	2.802	0	0.85	1	23.351	2.31	0.12	B
140.00-120.00			B	0.142	2.802		0.85	1	23.351			
			C	0.142	2.802		0.85	1	23.351			
T6	1.96	2.73	A	0.154	2.759	0	0.85	1	29.432	3.10	0.15	B
120.00-100.00			B	0.154	2.759		0.85	1	29.432			
			C	0.154	2.759		0.85	1	29.432			
T7	2.32	3.02	A	0.131	2.841	0	0.85	1	28.547	3.34	0.17	B
100.00-80.00			B	0.131	2.841		0.85	1	28.547			
			C	0.131	2.841		0.85	1	28.547			
T8	1.16	1.70	A	0.142	2.8	0	0.85	1	15.685	1.63	0.16	B
80.00-70.00			B	0.142	2.8		0.85	1	15.685			
			C	0.142	2.8		0.85	1	15.685			
T9	1.16	2.46	A	0.137	2.819	0	0.85	1	16.082	1.59	0.16	B
70.00-60.00			B	0.137	2.819		0.85	1	16.082			
			C	0.137	2.819		0.85	1	16.082			
T10	2.32	3.79	A	0.14	2.81	0	0.85	1	36.915	3.12	0.16	B
60.00-40.00			B	0.14	2.81		0.85	1	36.915			
			C	0.14	2.81		0.85	1	36.915			
T11	2.32	4.98	A	0.132	2.839	0	0.85	1	39.425	2.80	0.14	B
40.00-20.00			B	0.132	2.839		0.85	1	39.425			
			C	0.132	2.839		0.85	1	39.425			
T12	2.32	7.71	A	0.126	2.861	0	0.85	1	41.460	2.87	0.14	B
20.00-0.00			B	0.126	2.861		0.85	1	41.460			
			C	0.126	2.861		0.85	1	41.460			
Sum Weight:	15.45	31.72						OTM	1944.47 kip-ft	23.99		

Tower Forces - With Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F K	w klf	Ctrl. Face
T1	1.43	4.53	A	0.376	2.113	0	1	1	44.455	0.74	0.04	A
180.00-160.00			B	0.376	2.113		1	1	44.455			
			C	0.376	2.113		1	1	44.455			
T2	0.99	1.61	A	0.304	2.286	0	1	1	13.691	0.33	0.05	A
160.00-153.33			B	0.304	2.286		1	1	13.691			
			C	0.304	2.286		1	1	13.691			
T3	1.11	1.98	A	0.35	2.171	0	1	1	17.454	0.38	0.06	A
153.33-146.67			B	0.35	2.171		1	1	17.454			
			C	0.35	2.171		1	1	17.454			
T4	1.25	2.05	A	0.34	2.196	0	1	1	18.039	0.41	0.06	A
146.67-140.00			B	0.34	2.196		1	1	18.039			
			C	0.34	2.196		1	1	18.039			
T5	5.36	5.87	A	0.273	2.37	0	1	1	47.485	1.31	0.07	A
140.00-120.00			B	0.273	2.37		1	1	47.485			
			C	0.273	2.37		1	1	47.485			
T6	8.77	7.17	A	0.274	2.367	0	1	1	56.788	1.60	0.08	A
120.00-100.00			B	0.274	2.367		1	1	56.788			
			C	0.274	2.367		1	1	56.788			
T7	10.76	7.05	A	0.222	2.523	0	1	1	52.010	1.69	0.08	A
100.00-80.00			B	0.222	2.523		1	1	52.010			
			C	0.222	2.523		1	1	52.010			
T8	5.31	3.91	A	0.227	2.51	0	1	1	29.051	0.83	0.08	A
80.00-70.00			B	0.227	2.51		1	1	29.051			
			C	0.227	2.51		1	1	29.051			
T9	5.25	5.29	A	0.218	2.536	0	1	1	29.570	0.80	0.08	A
70.00-60.00			B	0.218	2.536		1	1	29.570			
			C	0.218	2.536		1	1	29.570			
T10	10.35	8.68	A	0.216	2.542	0	1	1	64.608	1.54	0.08	A
60.00-40.00			B	0.216	2.542		1	1	64.608			
			C	0.216	2.542		1	1	64.608			
T11	10.04	9.84	A	0.203	2.588	0	1	1	66.742	1.36	0.07	A
40.00-20.00			B	0.203	2.588		1	1	66.742			
			C	0.203	2.588		1	1	66.742			
T12	9.31	13.61	A	0.188	2.637	0	1	1	68.020	1.35	0.07	A
20.00-0.00			B	0.188	2.637		1	1	68.020			
			C	0.188	2.637		1	1	68.020			
Sum Weight:	69.91	71.57						OTM	1036.29 kip-ft	12.33		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F K	w klf	Ctrl. Face
T1	1.43	4.53	A	0.376	2.113	0	0.8	1	41.632	0.71	0.04	B
180.00-160.00			B	0.376	2.113		0.8	1	41.632			
			C	0.376	2.113		0.8	1	41.632			
T2	0.99	1.61	A	0.304	2.286	0	0.8	1	12.785	0.31	0.05	B
160.00-153.33			B	0.304	2.286		0.8	1	12.785			
			C	0.304	2.286		0.8	1	12.785			
T3	1.11	1.98	A	0.35	2.171	0	0.8	1	16.201	0.36	0.05	B
153.33-146.67			B	0.35	2.171		0.8	1	16.201			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
			C	0.35	2.171		0.8	1	16.201			
T4	1.25	2.05	A	0.34	2.196	0	0.8	1	16.714	0.40	0.06	B
146.67-140.00			B	0.34	2.196		0.8	1	16.714			
			C	0.34	2.196		0.8	1	16.714			
T5	5.36	5.87	A	0.273	2.37	0	0.8	1	44.208	1.27	0.06	B
140.00-120.00			B	0.273	2.37		0.8	1	44.208			
			C	0.273	2.37		0.8	1	44.208			
T6	8.77	7.17	A	0.274	2.367	0	0.8	1	52.345	1.55	0.08	B
120.00-100.00			B	0.274	2.367		0.8	1	52.345			
			C	0.274	2.367		0.8	1	52.345			
T7	10.76	7.05	A	0.222	2.523	0	0.8	1	47.774	1.64	0.08	B
100.00-80.00			B	0.222	2.523		0.8	1	47.774			
			C	0.222	2.523		0.8	1	47.774			
T8	5.31	3.91	A	0.227	2.51	0	0.8	1	26.786	0.81	0.08	B
80.00-70.00			B	0.227	2.51		0.8	1	26.786			
			C	0.227	2.51		0.8	1	26.786			
T9	5.25	5.29	A	0.218	2.536	0	0.8	1	27.213	0.78	0.08	B
70.00-60.00			B	0.218	2.536		0.8	1	27.213			
			C	0.218	2.536		0.8	1	27.213			
T10	10.35	8.68	A	0.216	2.542	0	0.8	1	58.862	1.49	0.07	B
60.00-40.00			B	0.216	2.542		0.8	1	58.862			
			C	0.216	2.542		0.8	1	58.862			
T11	10.04	9.84	A	0.203	2.588	0	0.8	1	60.508	1.31	0.07	B
40.00-20.00			B	0.203	2.588		0.8	1	60.508			
			C	0.203	2.588		0.8	1	60.508			
T12	9.31	13.61	A	0.188	2.637	0	0.8	1	61.294	1.29	0.06	B
20.00-0.00			B	0.188	2.637		0.8	1	61.294			
			C	0.188	2.637		0.8	1	61.294			
Sum Weight:	69.91	71.57						OTM	1002.09 kip-ft	11.92		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
T1	1.43	4.53	A	0.376	2.113	0	0.85	1	42.338	0.69	0.03	C
180.00-160.00			B	0.376	2.113		0.85	1	42.338			
			C	0.376	2.113		0.85	1	42.338			
T2	0.99	1.61	A	0.304	2.286	0	0.85	1	13.011	0.30	0.04	C
160.00-153.33			B	0.304	2.286		0.85	1	13.011			
			C	0.304	2.286		0.85	1	13.011			
T3	1.11	1.98	A	0.35	2.171	0	0.85	1	16.514	0.34	0.05	C
153.33-146.67			B	0.35	2.171		0.85	1	16.514			
			C	0.35	2.171		0.85	1	16.514			
T4	1.25	2.05	A	0.34	2.196	0	0.85	1	17.045	0.37	0.06	C
146.67-140.00			B	0.34	2.196		0.85	1	17.045			
			C	0.34	2.196		0.85	1	17.045			
T5	5.36	5.87	A	0.273	2.37	0	0.85	1	45.028	1.22	0.06	B
140.00-120.00			B	0.273	2.37		0.85	1	45.028			
			C	0.273	2.37		0.85	1	45.028			
T6	8.77	7.17	A	0.274	2.367	0	0.85	1	53.456	1.55	0.08	B
120.00-100.00			B	0.274	2.367		0.85	1	53.456			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
			C	0.274	2.367		0.85	1	53.456			
T7	10.76	7.05	A	0.222	2.523	0	0.85	1	48.833	1.65	0.08	B
100.00-80.00			B	0.222	2.523		0.85	1	48.833			
			C	0.222	2.523		0.85	1	48.833			
T8	5.31	3.91	A	0.227	2.51	0	0.85	1	27.352	0.81	0.08	B
80.00-70.00			B	0.227	2.51		0.85	1	27.352			
			C	0.227	2.51		0.85	1	27.352			
T9	5.25	5.29	A	0.218	2.536	0	0.85	1	27.803	0.78	0.08	B
70.00-60.00			B	0.218	2.536		0.85	1	27.803			
			C	0.218	2.536		0.85	1	27.803			
T10	10.35	8.68	A	0.216	2.542	0	0.85	1	60.298	1.50	0.08	B
60.00-40.00			B	0.216	2.542		0.85	1	60.298			
			C	0.216	2.542		0.85	1	60.298			
T11	10.04	9.84	A	0.203	2.588	0	0.85	1	62.066	1.32	0.07	B
40.00-20.00			B	0.203	2.588		0.85	1	62.066			
			C	0.203	2.588		0.85	1	62.066			
T12	9.31	13.61	A	0.188	2.637	0	0.85	1	62.975	1.31	0.07	B
20.00-0.00			B	0.188	2.637		0.85	1	62.975			
			C	0.188	2.637		0.85	1	62.975			
Sum Weight:	69.91	71.57						OTM	985.42 kip-ft	11.85		

Tower Forces - Service - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
T1	0.22	1.23	A	0.161	2.732	0	1	1	20.765	0.58	0.03	A
180.00-160.00			B	0.161	2.732		1	1	20.765			
			C	0.161	2.732		1	1	20.765			
T2	0.17	0.57	A	0.151	2.768	0	1	1	7.259	0.25	0.04	A
160.00-153.33			B	0.151	2.768		1	1	7.259			
			C	0.151	2.768		1	1	7.259			
T3	0.20	0.64	A	0.166	2.713	0	1	1	9.008	0.29	0.04	A
153.33-146.67			B	0.166	2.713		1	1	9.008			
			C	0.166	2.713		1	1	9.008			
T4	0.22	0.65	A	0.161	2.733	0	1	1	9.369	0.31	0.05	A
146.67-140.00			B	0.161	2.733		1	1	9.369			
			C	0.161	2.733		1	1	9.369			
T5	1.10	2.24	A	0.142	2.802	0	1	1	25.809	0.97	0.05	A
140.00-120.00			B	0.142	2.802		1	1	25.809			
			C	0.142	2.802		1	1	25.809			
T6	1.96	2.73	A	0.154	2.759	0	1	1	32.764	1.29	0.06	C
120.00-100.00			B	0.154	2.759		1	1	32.764			
			C	0.154	2.759		1	1	32.764			
T7	2.32	3.02	A	0.131	2.841	0	1	1	31.724	1.43	0.07	C
100.00-80.00			B	0.131	2.841		1	1	31.724			
			C	0.131	2.841		1	1	31.724			
T8	1.16	1.70	A	0.142	2.8	0	1	1	17.384	0.70	0.07	C
80.00-70.00			B	0.142	2.8		1	1	17.384			
			C	0.142	2.8		1	1	17.384			
T9	1.16	2.46	A	0.137	2.819	0	1	1	17.850	0.68	0.07	C
70.00-60.00			B	0.137	2.819		1	1	17.850			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F K	w klf	Ctrl. Face
			C	0.137	2.819		1	1	17.850			
T10	2.32	3.79	A	0.14	2.81	0	1	1	41.225	1.35	0.07	C
60.00-40.00			B	0.14	2.81		1	1	41.225			
			C	0.14	2.81		1	1	41.225			
T11	2.32	4.98	A	0.132	2.839	0	1	1	44.100	1.22	0.06	C
40.00-20.00			B	0.132	2.839		1	1	44.100			
			C	0.132	2.839		1	1	44.100			
T12	2.32	7.71	A	0.126	2.861	0	1	1	46.505	1.25	0.06	C
20.00-0.00			B	0.126	2.861		1	1	46.505			
			C	0.126	2.861		1	1	46.505			
Sum Weight:	15.45	31.72						OTM	839.03 kip-ft	10.35		

Tower Forces - Service - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F K	w klf	Ctrl. Face
T1	0.22	1.23	A	0.161	2.732	0	0.8	1	17.941	0.52	0.03	B
180.00-160.00			B	0.161	2.732		0.8	1	17.941			
			C	0.161	2.732		0.8	1	17.941			
T2	0.17	0.57	A	0.151	2.768	0	0.8	1	6.352	0.23	0.04	B
160.00-153.33			B	0.151	2.768		0.8	1	6.352			
			C	0.151	2.768		0.8	1	6.352			
T3	0.20	0.64	A	0.166	2.713	0	0.8	1	7.756	0.27	0.04	B
153.33-146.67			B	0.166	2.713		0.8	1	7.756			
			C	0.166	2.713		0.8	1	7.756			
T4	0.22	0.65	A	0.161	2.733	0	0.8	1	8.044	0.29	0.04	B
146.67-140.00			B	0.161	2.733		0.8	1	8.044			
			C	0.161	2.733		0.8	1	8.044			
T5	1.10	2.24	A	0.142	2.802	0	0.8	1	22.532	0.91	0.05	B
140.00-120.00			B	0.142	2.802		0.8	1	22.532			
			C	0.142	2.802		0.8	1	22.532			
T6	1.96	2.73	A	0.154	2.759	0	0.8	1	28.321	1.20	0.06	A
120.00-100.00			B	0.154	2.759		0.8	1	28.321			
			C	0.154	2.759		0.8	1	28.321			
T7	2.32	3.02	A	0.131	2.841	0	0.8	1	27.488	1.36	0.07	A
100.00-80.00			B	0.131	2.841		0.8	1	27.488			
			C	0.131	2.841		0.8	1	27.488			
T8	1.16	1.70	A	0.142	2.8	0	0.8	1	15.119	0.66	0.07	A
80.00-70.00			B	0.142	2.8		0.8	1	15.119			
			C	0.142	2.8		0.8	1	15.119			
T9	1.16	2.46	A	0.137	2.819	0	0.8	1	15.493	0.64	0.06	A
70.00-60.00			B	0.137	2.819		0.8	1	15.493			
			C	0.137	2.819		0.8	1	15.493			
T10	2.32	3.79	A	0.14	2.81	0	0.8	1	35.478	1.27	0.06	A
60.00-40.00			B	0.14	2.81		0.8	1	35.478			
			C	0.14	2.81		0.8	1	35.478			
T11	2.32	4.98	A	0.132	2.839	0	0.8	1	37.866	1.14	0.06	A
40.00-20.00			B	0.132	2.839		0.8	1	37.866			
			C	0.132	2.839		0.8	1	37.866			
T12	2.32	7.71	A	0.126	2.861	0	0.8	1	39.779	1.16	0.06	A
20.00-0.00			B	0.126	2.861		0.8	1	39.779			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F K	w klf	Ctrl. Face
			C	0.126	2.861		0.8	1	39.779			
Sum Weight:	15.45	31.72						OTM	780.88 kip-ft	9.66		

Tower Forces - Service - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F K	w klf	Ctrl. Face
T1	0.22	1.23	A	0.161	2.732	0	0.85	1	18.647	0.54	0.03	C
180.00-160.00			B	0.161	2.732		0.85	1	18.647			
			C	0.161	2.732		0.85	1	18.647			
T2	0.17	0.57	A	0.151	2.768	0	0.85	1	6.579	0.24	0.04	C
160.00-153.33			B	0.151	2.768		0.85	1	6.579			
			C	0.151	2.768		0.85	1	6.579			
T3	0.20	0.64	A	0.166	2.713	0	0.85	1	8.069	0.27	0.04	C
153.33-146.67			B	0.166	2.713		0.85	1	8.069			
			C	0.166	2.713		0.85	1	8.069			
T4	0.22	0.65	A	0.161	2.733	0	0.85	1	8.375	0.29	0.04	C
146.67-140.00			B	0.161	2.733		0.85	1	8.375			
			C	0.161	2.733		0.85	1	8.375			
T5	1.10	2.24	A	0.142	2.802	0	0.85	1	23.351	0.96	0.05	B
140.00-120.00			B	0.142	2.802		0.85	1	23.351			
			C	0.142	2.802		0.85	1	23.351			
T6	1.96	2.73	A	0.154	2.759	0	0.85	1	29.432	1.29	0.06	B
120.00-100.00			B	0.154	2.759		0.85	1	29.432			
			C	0.154	2.759		0.85	1	29.432			
T7	2.32	3.02	A	0.131	2.841	0	0.85	1	28.547	1.39	0.07	B
100.00-80.00			B	0.131	2.841		0.85	1	28.547			
			C	0.131	2.841		0.85	1	28.547			
T8	1.16	1.70	A	0.142	2.8	0	0.85	1	15.685	0.68	0.07	B
80.00-70.00			B	0.142	2.8		0.85	1	15.685			
			C	0.142	2.8		0.85	1	15.685			
T9	1.16	2.46	A	0.137	2.819	0	0.85	1	16.082	0.66	0.07	B
70.00-60.00			B	0.137	2.819		0.85	1	16.082			
			C	0.137	2.819		0.85	1	16.082			
T10	2.32	3.79	A	0.14	2.81	0	0.85	1	36.915	1.30	0.06	B
60.00-40.00			B	0.14	2.81		0.85	1	36.915			
			C	0.14	2.81		0.85	1	36.915			
T11	2.32	4.98	A	0.132	2.839	0	0.85	1	39.425	1.17	0.06	B
40.00-20.00			B	0.132	2.839		0.85	1	39.425			
			C	0.132	2.839		0.85	1	39.425			
T12	2.32	7.71	A	0.126	2.861	0	0.85	1	41.460	1.20	0.06	B
20.00-0.00			B	0.126	2.861		0.85	1	41.460			
			C	0.126	2.861		0.85	1	41.460			
Sum Weight:	15.45	31.72						OTM	809.35 kip-ft	9.98		

Discrete Appurtenance Pressures - No Ice $G_H = 0.850$

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z ksf	C_AA_C Front ft^2	C_AA_C Side ft^2
Lightning Rod	240.0000	0.03	-3.34	1.93	182.00	1.173	0	0.25	0.25
Empty Pipe Mount	0.0000	0.01	0.00	-7.98	178.00	1.165	0	1.00	1.00
Empty Pipe Mount	120.0000	0.01	6.91	3.99	178.00	1.165	0	1.00	1.00
Side Arm Mount [SO 305-1]	0.0000	0.03	0.00	-3.98	178.00	1.165	0	0.94	1.41
Side Arm Mount [SO 305-1]	120.0000	0.03	3.45	1.99	178.00	1.165	0	0.94	1.41
AIR -32 B2A/B66AA w/ Mount Pipe	0.0000	0.15	0.00	-8.46	173.00	1.156	0	6.75	6.07
AIR -32 B2A/B66AA w/ Mount Pipe	120.0000	0.15	7.33	4.23	173.00	1.156	0	6.75	6.07
AIR -32 B2A/B66AA w/ Mount Pipe	240.0000	0.15	-7.33	4.23	173.00	1.156	0	6.75	6.07
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	0.0000	0.11	0.00	-8.46	173.00	1.156	0	6.33	5.64
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	120.0000	0.11	7.33	4.23	173.00	1.156	0	6.33	5.64
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	240.0000	0.11	-7.33	4.23	173.00	1.156	0	6.33	5.64
LNX-6515DS-VTM w/ Mount Pipe	0.0000	0.08	0.00	-8.46	173.00	1.156	0	11.68	9.84
LNX-6515DS-VTM w/ Mount Pipe	120.0000	0.08	7.33	4.23	173.00	1.156	0	11.68	9.84
LNX-6515DS-VTM w/ Mount Pipe	240.0000	0.08	-7.33	4.23	173.00	1.156	0	11.68	9.84
KRY 112 144/1	0.0000	0.01	0.00	-8.46	173.00	1.156	0	0.35	0.16
KRY 112 144/1	120.0000	0.01	7.33	4.23	173.00	1.156	0	0.35	0.16
KRY 112 144/1	240.0000	0.01	-7.33	4.23	173.00	1.156	0	0.35	0.16
RRUS 11 B12	0.0000	0.05	0.00	-8.46	173.00	1.156	0	2.83	1.18
RRUS 11 B12	120.0000	0.05	7.33	4.23	173.00	1.156	0	2.83	1.18
RRUS 11 B12	240.0000	0.05	-7.33	4.23	173.00	1.156	0	2.83	1.18
Sector Mount [SM 702-3]	0.0000	1.55	0.00	0.00	170.00	1.150	0	37.40	37.40
Empty Pipe Mount	0.0000	0.02	0.00	-8.46	173.00	1.156	0	1.05	1.05
Empty Pipe Mount	120.0000	0.02	7.33	4.23	173.00	1.156	0	1.05	1.05
Empty Pipe Mount	240.0000	0.02	-7.33	4.23	173.00	1.156	0	1.05	1.05
Side Arm Mount [SO 202-1]	0.0000	0.11	0.00	-5.24	157.00	1.124	0	2.96	2.53
Side Arm Mount [SO 202-1]	120.0000	0.11	4.54	2.62	157.00	1.124	0	2.96	2.53
APXVSPP18-C-A20 w/ Mount Pipe	0.0000	0.09	0.00	-9.78	148.00	1.105	0	8.26	7.47
APXVSPP18-C-A20 w/ Mount Pipe	120.0000	0.09	8.47	4.89	148.00	1.105	0	8.26	7.47
APXVSPP18-C-A20 w/ Mount Pipe	240.0000	0.09	-8.47	4.89	148.00	1.105	0	8.26	7.47
APXVTM14-C-120 w/ Mount Pipe	0.0000	0.08	0.00	-9.78	148.00	1.105	0	6.58	4.96
APXVTM14-C-120 w/ Mount Pipe	120.0000	0.08	8.47	4.89	148.00	1.105	0	6.58	4.96
APXVTM14-C-120 w/ Mount Pipe	240.0000	0.08	-8.47	4.89	148.00	1.105	0	6.58	4.96
ACU-A20-N	0.0000	0.00	0.00	-9.78	148.00	1.105	0	0.20	0.35
ACU-A20-N	120.0000	0.00	8.47	4.89	148.00	1.105	0	0.20	0.35
ACU-A20-N	240.0000	0.00	-8.47	4.89	148.00	1.105	0	0.20	0.35
TD-RRH8x20-25	0.0000	0.07	0.00	-9.78	148.00	1.105	0	3.70	1.29
TD-RRH8x20-25	120.0000	0.07	8.47	4.89	148.00	1.105	0	3.70	1.29
TD-RRH8x20-25	240.0000	0.07	-8.47	4.89	148.00	1.105	0	3.70	1.29

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z ksf	C_AA_C Front ft^2	C_AA_C Side ft^2
(3) Site Pro VFA12-U w/ 12' Stiff Arm	0.0000	1.67	0.00	0.00	148.00	1.105	0	33.02	33.02
PCS 1900MHz 4x45W-65MHz	0.0000	0.06	0.00	-10.08	145.00	1.099	0	2.32	2.24
PCS 1900MHz 4x45W-65MHz	0.0000	0.06	0.00	-10.08	142.00	1.092	0	2.32	2.24
PCS 1900MHz 4x45W-65MHz	120.0000	0.06	8.73	5.04	145.00	1.099	0	2.32	2.24
PCS 1900MHz 4x45W-65MHz	120.0000	0.06	8.73	5.04	142.00	1.092	0	2.32	2.24
PCS 1900MHz 4x45W-65MHz	240.0000	0.06	-8.73	5.04	145.00	1.099	0	2.32	2.24
PCS 1900MHz 4x45W-65MHz	240.0000	0.06	-8.73	5.04	142.00	1.092	0	2.32	2.24
TME-800MHZ 2X50W RRH	0.0000	0.05	0.00	-10.08	145.00	1.099	0	2.13	1.77
TME-800MHZ 2X50W RRH	120.0000	0.05	8.73	5.04	145.00	1.099	0	2.13	1.77
TME-800MHZ 2X50W RRH	240.0000	0.05	-8.73	5.04	145.00	1.099	0	2.13	1.77
800 EXTERNAL NOTCH FILTER	0.0000	0.01	0.00	-10.08	145.00	1.099	0	0.66	0.32
800 EXTERNAL NOTCH FILTER	120.0000	0.01	8.73	5.04	145.00	1.099	0	0.66	0.32
800 EXTERNAL NOTCH FILTER	240.0000	0.01	-8.73	5.04	145.00	1.099	0	0.66	0.32
Side Arm Mount [SO 312-3]	0.0000	0.21	0.00	0.00	143.00	1.095	0	7.87	7.87
LLPX310R w/ Mount Pipe	0.0000	0.05	0.00	-10.62	135.00	1.077	0	4.54	2.98
LLPX310R w/ Mount Pipe	120.0000	0.05	9.19	5.31	135.00	1.077	0	4.54	2.98
LLPX310R w/ Mount Pipe	240.0000	0.05	-9.19	5.31	135.00	1.077	0	4.54	2.98
RRH-2WB	0.0000	0.04	0.00	-10.62	135.00	1.077	0	2.30	0.78
RRH-2WB	120.0000	0.04	9.19	5.31	135.00	1.077	0	2.30	0.78
RRH-2WB	240.0000	0.04	-9.19	5.31	135.00	1.077	0	2.30	0.78
Pipe Mount [PM 601-1]	0.0000	0.07	0.00	-10.62	134.00	1.074	0	3.00	0.90
Sector Mount [SM 502-3]	0.0000	1.67	0.00	0.00	134.00	1.074	0	33.02	33.02
HBX-6516DS-VTM w/ Mount Pipe	0.0000	0.03	0.00	-11.10	128.00	1.060	0	3.56	3.24
HBX-6516DS-VTM w/ Mount Pipe	120.0000	0.03	9.61	5.55	128.00	1.060	0	3.56	3.24
HBX-6516DS-VTM w/ Mount Pipe	240.0000	0.03	-9.61	5.55	128.00	1.060	0	3.56	3.24
DB844G65ZAXY w/ Mount Pipe	0.0000	0.03	0.00	-11.10	128.00	1.060	0	4.58	4.80
DB844G65ZAXY w/ Mount Pipe	120.0000	0.03	9.61	5.55	128.00	1.060	0	4.58	4.80
DB844G65ZAXY w/ Mount Pipe	240.0000	0.06	-9.61	5.55	128.00	1.060	0	9.16	9.60
LNX-6514DS-T4M w/ Mount Pipe	0.0000	0.06	0.00	-11.10	128.00	1.060	0	8.32	7.00
LNX-6514DS-T4M w/ Mount Pipe	120.0000	0.06	9.61	5.55	128.00	1.060	0	8.32	7.00
MG D3-800TV w/ Mount Pipe	0.0000	0.04	0.00	-11.10	128.00	1.060	0	3.57	3.42
MG D3-800TV w/ Mount Pipe	120.0000	0.04	9.61	5.55	128.00	1.060	0	3.57	3.42
MG D3-800TV w/	240.0000	0.04	-9.61	5.55	128.00	1.060	0	3.57	3.42

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z ksf	C_AA_C Front ft^2	C_AA_C Side ft^2
Mount Pipe									
DB844H80-XY w/ Mount Pipe	0.0000	0.03	0.00	-11.10	128.00	1.060	0	3.10	4.98
DB844H80-XY w/ Mount Pipe	120.0000	0.03	9.61	5.55	128.00	1.060	0	3.10	4.98
GPS_A	120.0000	0.00	9.61	5.55	130.00	1.065	0	0.26	0.26
P65.16.XL.2 w/ Mount Pipe	240.0000	0.06	-9.61	5.55	128.00	1.060	0	8.37	5.78
RRH2X40-AWS	0.0000	0.04	0.00	-11.10	128.00	1.060	0	2.16	1.42
RRH2X40-AWS	120.0000	0.04	9.61	5.55	128.00	1.060	0	2.16	1.42
RRH2X40-AWS	240.0000	0.04	-9.61	5.55	128.00	1.060	0	2.16	1.42
DB-T1-6Z-8AB-0Z	120.0000	0.04	9.61	5.55	128.00	1.060	0	4.80	2.00
Sector Mount [SM 410-3]	0.0000	1.10	0.00	0.00	126.00	1.056	0	23.96	23.96
800 10504 w/ Mount Pipe	0.0000	0.04	0.00	-11.90	112.00	1.021	0	3.59	3.18
800 10504 w/ Mount Pipe	120.0000	0.04	10.31	5.95	112.00	1.021	0	3.59	3.18
800 10504 w/ Mount Pipe	240.0000	0.04	-10.31	5.95	112.00	1.021	0	3.59	3.18
Sector Mount [SM 104-3]	0.0000	0.95	0.00	0.00	112.00	1.021	0	30.02	30.02
Empty Mount Pipe	0.0000	0.03	0.00	-11.90	112.00	1.021	0	1.40	1.40
Empty Mount Pipe	120.0000	0.03	10.31	5.95	112.00	1.021	0	1.40	1.40
Empty Mount Pipe	240.0000	0.03	-10.31	5.95	112.00	1.021	0	1.40	1.40
7770.00 w/ Mount Pipe	0.0000	0.06	0.00	-12.46	102.00	0.994	0	5.75	4.25
7770.00 w/ Mount Pipe	120.0000	0.06	10.79	6.23	102.00	0.994	0	5.75	4.25
7770.00 w/ Mount Pipe	240.0000	0.06	-10.79	6.23	102.00	0.994	0	5.75	4.25
P65-16-XLH-RR w/ Mount Pipe	0.0000	0.08	0.00	-12.46	102.00	0.994	0	8.37	6.36
P65-16-XLH-RR w/ Mount Pipe	120.0000	0.08	10.79	6.23	102.00	0.994	0	8.37	6.36
P65-16-XLH-RR w/ Mount Pipe	240.0000	0.08	-10.79	6.23	102.00	0.994	0	8.37	6.36
LGP2140X	0.0000	0.02	0.00	-12.46	102.00	0.994	0	2.16	0.72
LGP2140X	120.0000	0.02	10.79	6.23	102.00	0.994	0	2.16	0.72
LGP2140X	240.0000	0.02	-10.79	6.23	102.00	0.994	0	2.16	0.72
RRUS 11 B2	0.0000	0.05	0.00	-12.46	102.00	0.994	0	2.83	1.18
RRUS 11 B2	120.0000	0.05	10.79	6.23	102.00	0.994	0	2.83	1.18
RRUS 11 B2	240.0000	0.05	-10.79	6.23	102.00	0.994	0	2.83	1.18
DC6-48-60-18-8F	240.0000	0.02	-10.79	6.23	102.00	0.994	0	2.20	3.70
QS66512-2 w/ Mount Pipe	0.0000	0.14	0.00	-12.46	102.00	0.994	0	8.37	8.46
QS66512-2 w/ Mount Pipe	120.0000	0.14	10.79	6.23	102.00	0.994	0	8.37	8.46
QS66512-2 w/ Mount Pipe	240.0000	0.14	-10.79	6.23	102.00	0.994	0	8.37	8.46
RRUS 32 B2	0.0000	0.05	0.00	-12.46	102.00	0.994	0	2.76	1.69
RRUS 32 B2	120.0000	0.05	10.79	6.23	102.00	0.994	0	2.76	1.69
RRUS 32 B2	240.0000	0.05	-10.79	6.23	102.00	0.994	0	2.76	1.69
TPX-070821	0.0000	0.01	0.00	-12.46	102.00	0.994	0	0.94	0.20
TPX-070821	120.0000	0.01	10.79	6.23	102.00	0.994	0	0.94	0.20
TPX-070821	240.0000	0.01	-10.79	6.23	102.00	0.994	0	0.94	0.20
RRUS 32	0.0000	0.06	0.00	-12.46	102.00	0.994	0	2.86	1.78
RRUS 32	120.0000	0.06	10.79	6.23	102.00	0.994	0	2.86	1.78
RRUS 32	240.0000	0.06	-10.79	6.23	102.00	0.994	0	2.86	1.78
DC6-48-60-18-8F	0.0000	0.02	0.00	-12.46	102.00	0.994	0	2.20	3.70
Sector Mount [SM 301-3]	0.0000	1.30	0.00	0.00	102.00	0.994	0	29.61	1.00
Empty Mount Pipe	0.0000	0.03	0.00	-12.46	102.00	0.994	0	1.40	1.40
Empty Mount Pipe	120.0000	0.03	10.79	6.23	102.00	0.994	0	1.40	1.40

Description	*Aiming Azimuth* °	*Weight* *K*	*Offset$_x$* *ft*	*Offset$_z$* *ft*	*z* *ft*	*K_z*	*q_z* *ksf*	*C_AA_C Front* *ft^2*	*C_AA_C Side* *ft^2*
Empty Mount Pipe	240.0000	0.03	-10.79	6.23	102.00	0.994	0	1.40	1.40
GPS_A	120.0000	0.00	12.70	7.33	47.00	0.796	0	0.26	0.26
GPS_A	240.0000	0.00	-12.70	7.33	48.00	0.801	0	0.26	0.26
Side Arm Mount [SO 701-1]	120.0000	0.07	10.10	5.83	48.00	0.801	0	0.85	1.67
Side Arm Mount [SO 701-1]	240.0000	0.07	-10.10	5.83	48.00	0.801	0	0.85	1.67
	Sum Weight:	14.28							

Discrete Appurtenance Pressures - With Ice $G_H = 0.850$

Description	*Aiming Azimuth* °	*Weight* *K*	*Offset$_x$* *ft*	*Offset$_z$* *ft*	*z* *ft*	*K_z*	*q_z* *ksf*	*C_AA_C Front* *ft^2*	*C_AA_C Side* *ft^2*	*t_z* *in*
Lightning Rod	240.0000	0.05	-3.34	1.93	182.00	1.173	0	1.38	1.38	1.7773
Empty Pipe Mount	0.0000	0.06	0.00	-7.98	178.00	1.165	0	2.21	2.21	1.7753
Empty Pipe Mount	120.0000	0.06	6.91	3.99	178.00	1.165	0	2.21	2.21	1.7753
Side Arm Mount [SO 305-1]	0.0000	0.08	0.00	-3.98	178.00	1.165	0	2.86	4.11	1.7753
Side Arm Mount [SO 305-1]	120.0000	0.08	3.45	1.99	178.00	1.165	0	2.86	4.11	1.7753
AIR -32 B2A/B66AA w/ Mount Pipe	0.0000	0.40	0.00	-8.46	173.00	1.156	0	8.35	8.72	1.7672
AIR -32 B2A/B66AA w/ Mount Pipe	120.0000	0.40	7.33	4.23	173.00	1.156	0	8.35	8.72	1.7672
AIR -32 B2A/B66AA w/ Mount Pipe	240.0000	0.40	-7.33	4.23	173.00	1.156	0	8.35	8.72	1.7672
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	0.0000	0.35	0.00	-8.46	173.00	1.156	0	7.91	8.25	1.7672
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	120.0000	0.35	7.33	4.23	173.00	1.156	0	7.91	8.25	1.7672
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	240.0000	0.35	-7.33	4.23	173.00	1.156	0	7.91	8.25	1.7672
LNX-6515DS-VTM w/ Mount Pipe	0.0000	0.45	0.00	-8.46	173.00	1.156	0	14.19	14.72	1.7672
LNX-6515DS-VTM w/ Mount Pipe	120.0000	0.45	7.33	4.23	173.00	1.156	0	14.19	14.72	1.7672
LNX-6515DS-VTM w/ Mount Pipe	240.0000	0.45	-7.33	4.23	173.00	1.156	0	14.19	14.72	1.7672
KRY 112 144/1	0.0000	0.03	0.00	-8.46	173.00	1.156	0	0.66	0.40	1.7672
KRY 112 144/1	120.0000	0.03	7.33	4.23	173.00	1.156	0	0.66	0.40	1.7672
KRY 112 144/1	240.0000	0.03	-7.33	4.23	173.00	1.156	0	0.66	0.40	1.7672
RRUS 11 B12	0.0000	0.14	0.00	-8.46	173.00	1.156	0	3.61	1.75	1.7672
RRUS 11 B12	120.0000	0.14	7.33	4.23	173.00	1.156	0	3.61	1.75	1.7672
RRUS 11 B12	240.0000	0.14	-7.33	4.23	173.00	1.156	0	3.61	1.75	1.7672
Sector Mount [SM 702-3]	0.0000	4.38	0.00	0.00	170.00	1.150	0	96.78	96.78	1.7672
Empty Pipe Mount	0.0000	0.07	0.00	-8.46	173.00	1.156	0	2.67	2.67	1.7672
Empty Pipe Mount	120.0000	0.07	7.33	4.23	173.00	1.156	0	2.67	2.67	1.7672
Empty Pipe Mount	240.0000	0.07	-7.33	4.23	173.00	1.156	0	2.67	2.67	1.7672
Side Arm Mount [SO 202-1]	0.0000	0.19	0.00	-5.24	157.00	1.124	0	6.96	5.97	1.7532
Side Arm Mount [SO 202-1]	120.0000	0.19	4.54	2.62	157.00	1.124	0	6.96	5.97	1.7532
APXVSPP18-C-A20 w/ Mount Pipe	0.0000	0.37	0.00	-9.78	148.00	1.105	0	10.14	10.92	1.7429
APXVSPP18-C-A20 w/	120.0000	0.37	8.47	4.89	148.00	1.105	0	10.14	10.92	1.7429

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z ksf	C_AA_C Front ft^2	C_AA_C Side ft^2	t_z in
Mount Pipe										
APXVSPP18-C-A20 w/ Mount Pipe	240.0000	0.37	-8.47	4.89	148.00	1.105	0	10.14	10.92	1.7429
APXVTM14-C-120 w/ Mount Pipe	0.0000	0.30	0.00	-9.78	148.00	1.105	0	8.15	7.56	1.7429
APXVTM14-C-120 w/ Mount Pipe	120.0000	0.30	8.47	4.89	148.00	1.105	0	8.15	7.56	1.7429
APXVTM14-C-120 w/ Mount Pipe	240.0000	0.30	-8.47	4.89	148.00	1.105	0	8.15	7.56	1.7429
ACU-A20-N	0.0000	0.03	0.00	-9.78	148.00	1.105	0	0.69	0.93	1.7429
ACU-A20-N	120.0000	0.03	8.47	4.89	148.00	1.105	0	0.69	0.93	1.7429
ACU-A20-N	240.0000	0.03	-8.47	4.89	148.00	1.105	0	0.69	0.93	1.7429
TD-RRH8x20-25	0.0000	0.17	0.00	-9.78	148.00	1.105	0	4.58	1.92	1.7429
TD-RRH8x20-25	120.0000	0.17	8.47	4.89	148.00	1.105	0	4.58	1.92	1.7429
TD-RRH8x20-25	240.0000	0.17	-8.47	4.89	148.00	1.105	0	4.58	1.92	1.7429
(3) Site Pro VFA12-U w/ 12' Stiff Arm	0.0000	3.59	0.00	0.00	148.00	1.105	0	83.01	83.01	1.7429
PCS 1900MHz 4x45W-65MHz	0.0000	0.16	0.00	-10.08	145.00	1.099	0	3.07	2.98	1.7369
PCS 1900MHz 4x45W-65MHz	0.0000	0.16	0.00	-10.08	142.00	1.092	0	3.07	2.98	1.7369
PCS 1900MHz 4x45W-65MHz	120.0000	0.16	8.73	5.04	145.00	1.099	0	3.07	2.98	1.7369
PCS 1900MHz 4x45W-65MHz	120.0000	0.16	8.73	5.04	142.00	1.092	0	3.07	2.98	1.7369
PCS 1900MHz 4x45W-65MHz	240.0000	0.16	-8.73	5.04	145.00	1.099	0	3.07	2.98	1.7369
PCS 1900MHz 4x45W-65MHz	240.0000	0.16	-8.73	5.04	142.00	1.092	0	3.07	2.98	1.7369
TME-800MHZ 2X50W RRH	0.0000	0.14	0.00	-10.08	145.00	1.099	0	2.81	2.41	1.7369
TME-800MHZ 2X50W RRH	120.0000	0.14	8.73	5.04	145.00	1.099	0	2.81	2.41	1.7369
TME-800MHZ 2X50W RRH	240.0000	0.14	-8.73	5.04	145.00	1.099	0	2.81	2.41	1.7369
800 EXTERNAL NOTCH FILTER	0.0000	0.04	0.00	-10.08	145.00	1.099	0	1.05	0.62	1.7369
800 EXTERNAL NOTCH FILTER	120.0000	0.04	8.73	5.04	145.00	1.099	0	1.05	0.62	1.7369
800 EXTERNAL NOTCH FILTER	240.0000	0.04	-8.73	5.04	145.00	1.099	0	1.05	0.62	1.7369
Side Arm Mount [SO 312-3]	0.0000	0.59	0.00	0.00	143.00	1.095	0	21.59	21.59	1.7369
LLPX310R w/ Mount Pipe	0.0000	0.20	0.00	-10.62	135.00	1.077	0	5.80	4.92	1.7256
LLPX310R w/ Mount Pipe	120.0000	0.20	9.19	5.31	135.00	1.077	0	5.80	4.92	1.7256
LLPX310R w/ Mount Pipe	240.0000	0.20	-9.19	5.31	135.00	1.077	0	5.80	4.92	1.7256
RRH-2WB	0.0000	0.11	0.00	-10.62	135.00	1.077	0	3.00	1.28	1.7256
RRH-2WB	120.0000	0.11	9.19	5.31	135.00	1.077	0	3.00	1.28	1.7256
RRH-2WB	240.0000	0.11	-9.19	5.31	135.00	1.077	0	3.00	1.28	1.7256
Pipe Mount [PM 601-1]	0.0000	0.11	0.00	-10.62	134.00	1.074	0	5.55	1.66	1.7256
Sector Mount [SM 502-3]	0.0000	3.57	0.00	0.00	134.00	1.074	0	82.51	82.51	1.7256
HBX-6516DS-VTM w/ Mount Pipe	0.0000	0.17	0.00	-11.10	128.00	1.060	0	4.92	5.53	1.7151
HBX-6516DS-VTM w/ Mount Pipe	120.0000	0.17	9.61	5.55	128.00	1.060	0	4.92	5.53	1.7151
HBX-6516DS-VTM w/ Mount Pipe	240.0000	0.17	-9.61	5.55	128.00	1.060	0	4.92	5.53	1.7151

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z ksf	C_AA_C Front ft^2	C_AA_C Side ft^2	t_z in
DB844G65ZAXY w/ Mount Pipe	0.0000	0.22	0.00	-11.10	128.00	1.060	0	5.91	6.97	1.7151
DB844G65ZAXY w/ Mount Pipe	120.0000	0.22	9.61	5.55	128.00	1.060	0	5.91	6.97	1.7151
DB844G65ZAXY w/ Mount Pipe	240.0000	0.44	-9.61	5.55	128.00	1.060	0	11.82	13.93	1.7151
LNX-6514DS-T4M w/ Mount Pipe	0.0000	0.33	0.00	-11.10	128.00	1.060	0	10.17	10.38	1.7151
LNX-6514DS-T4M w/ Mount Pipe	120.0000	0.33	9.61	5.55	128.00	1.060	0	10.17	10.38	1.7151
MG D3-800TV w/ Mount Pipe	0.0000	0.18	0.00	-11.10	128.00	1.060	0	4.97	5.77	1.7151
MG D3-800TV w/ Mount Pipe	120.0000	0.18	9.61	5.55	128.00	1.060	0	4.97	5.77	1.7151
MG D3-800TV w/ Mount Pipe	240.0000	0.18	-9.61	5.55	128.00	1.060	0	4.97	5.77	1.7151
DB844H80-XY w/ Mount Pipe	0.0000	0.19	0.00	-11.10	128.00	1.060	0	4.39	7.16	1.7151
DB844H80-XY w/ Mount Pipe	120.0000	0.19	9.61	5.55	128.00	1.060	0	4.39	7.16	1.7151
GPS_A	120.0000	0.02	9.61	5.55	130.00	1.065	0	0.51	0.51	1.7151
P65.16.XL.2 w/ Mount Pipe	240.0000	0.31	-9.61	5.55	128.00	1.060	0	10.23	9.12	1.7151
RRH2X40-AWS	0.0000	0.12	0.00	-11.10	128.00	1.060	0	2.88	2.04	1.7151
RRH2X40-AWS	120.0000	0.12	9.61	5.55	128.00	1.060	0	2.88	2.04	1.7151
RRH2X40-AWS	240.0000	0.12	-9.61	5.55	128.00	1.060	0	2.88	2.04	1.7151
DB-T1-6Z-8AB-0Z	120.0000	0.19	9.61	5.55	128.00	1.060	0	5.76	2.69	1.7151
Sector Mount [SM 410-3]	0.0000	2.81	0.00	0.00	126.00	1.056	0	58.60	58.60	1.7151
800 10504 w/ Mount Pipe	0.0000	0.18	0.00	-11.90	112.00	1.021	0	5.00	5.55	1.6950
800 10504 w/ Mount Pipe	120.0000	0.18	10.31	5.95	112.00	1.021	0	5.00	5.55	1.6950
800 10504 w/ Mount Pipe	240.0000	0.18	-10.31	5.95	112.00	1.021	0	5.00	5.55	1.6950
Sector Mount [SM 104-3]	0.0000	2.49	0.00	0.00	112.00	1.021	0	65.48	65.48	1.6950
Empty Mount Pipe	0.0000	0.09	0.00	-11.90	112.00	1.021	0	3.29	3.29	1.6950
Empty Mount Pipe	120.0000	0.09	10.31	5.95	112.00	1.021	0	3.29	3.29	1.6950
Empty Mount Pipe	240.0000	0.09	-10.31	5.95	112.00	1.021	0	3.29	3.29	1.6950
7770.00 w/ Mount Pipe	0.0000	0.24	0.00	-12.46	102.00	0.994	0	7.21	6.69	1.6792
7770.00 w/ Mount Pipe	120.0000	0.24	10.79	6.23	102.00	0.994	0	7.21	6.69	1.6792
7770.00 w/ Mount Pipe	240.0000	0.24	-10.79	6.23	102.00	0.994	0	7.21	6.69	1.6792
P65-16-XLH-RR w/ Mount Pipe	0.0000	0.34	0.00	-12.46	102.00	0.994	0	10.19	9.66	1.6792
P65-16-XLH-RR w/ Mount Pipe	120.0000	0.34	10.79	6.23	102.00	0.994	0	10.19	9.66	1.6792
P65-16-XLH-RR w/ Mount Pipe	240.0000	0.34	-10.79	6.23	102.00	0.994	0	10.19	9.66	1.6792
LGP2140X	0.0000	0.09	0.00	-12.46	102.00	0.994	0	3.12	1.42	1.6792
LGP2140X	120.0000	0.09	10.79	6.23	102.00	0.994	0	3.12	1.42	1.6792
LGP2140X	240.0000	0.09	-10.79	6.23	102.00	0.994	0	3.12	1.42	1.6792
RRUS 11 B2	0.0000	0.13	0.00	-12.46	102.00	0.994	0	3.57	1.72	1.6792
RRUS 11 B2	120.0000	0.13	10.79	6.23	102.00	0.994	0	3.57	1.72	1.6792
RRUS 11 B2	240.0000	0.13	-10.79	6.23	102.00	0.994	0	3.57	1.72	1.6792
DC6-48-60-18-8F	240.0000	0.14	-10.79	6.23	102.00	0.994	0	2.90	4.54	1.6792
QS66512-2 w/ Mount Pipe	0.0000	0.43	0.00	-12.46	102.00	0.994	0	10.19	11.77	1.6792
QS66512-2 w/ Mount Pipe	120.0000	0.43	10.79	6.23	102.00	0.994	0	10.19	11.77	1.6792
QS66512-2 w/ Mount	240.0000	0.43	-10.79	6.23	102.00	0.994	0	10.19	11.77	1.6792

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z ksf	C_AA_C Front ft^2	C_AA_C Side ft^2	t_z in
Pipe										
RRUS 32 B2	0.0000	0.14	0.00	-12.46	102.00	0.994	0	3.54	2.35	1.6792
RRUS 32 B2	120.0000	0.14	10.79	6.23	102.00	0.994	0	3.54	2.35	1.6792
RRUS 32 B2	240.0000	0.14	-10.79	6.23	102.00	0.994	0	3.54	2.35	1.6792
TPX-070821	0.0000	0.05	0.00	-12.46	102.00	0.994	0	1.61	0.58	1.6792
TPX-070821	120.0000	0.05	10.79	6.23	102.00	0.994	0	1.61	0.58	1.6792
TPX-070821	240.0000	0.05	-10.79	6.23	102.00	0.994	0	1.61	0.58	1.6792
RRUS 32	0.0000	0.14	0.00	-12.46	102.00	0.994	0	3.65	2.45	1.6792
RRUS 32	120.0000	0.14	10.79	6.23	102.00	0.994	0	3.65	2.45	1.6792
RRUS 32	240.0000	0.14	-10.79	6.23	102.00	0.994	0	3.65	2.45	1.6792
DC6-48-60-18-8F	0.0000	0.14	0.00	-12.46	102.00	0.994	0	2.90	4.54	1.6792
Sector Mount [SM 301-3]	0.0000	3.12	0.00	0.00	102.00	0.994	0	63.83	1.67	1.6792
Empty Mount Pipe	0.0000	0.09	0.00	-12.46	102.00	0.994	0	3.28	3.28	1.6792
Empty Mount Pipe	120.0000	0.09	10.79	6.23	102.00	0.994	0	3.28	3.28	1.6792
Empty Mount Pipe	240.0000	0.09	-10.79	6.23	102.00	0.994	0	3.28	3.28	1.6792
GPS_A	120.0000	0.02	12.70	7.33	47.00	0.796	0	0.49	0.49	1.5573
GPS_A	240.0000	0.02	-12.70	7.33	48.00	0.801	0	0.49	0.49	1.5573
Side Arm Mount [SO 701-1]	120.0000	0.11	10.10	5.83	48.00	0.801	0	1.75	3.76	1.5573
Side Arm Mount [SO 701-1]	240.0000	0.11	-10.10	5.83	48.00	0.801	0	1.75	3.76	1.5573
	Sum Weight:	40.90								

Discrete Appurtenance Pressures - Service $G_H = 0.850$

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z ksf	C_AA_C Front ft^2	C_AA_C Side ft^2
Lightning Rod	240.0000	0.03	-3.34	1.93	182.00	1.173	0	0.25	0.25
Empty Pipe Mount	0.0000	0.01	0.00	-7.98	178.00	1.165	0	1.00	1.00
Empty Pipe Mount	120.0000	0.01	6.91	3.99	178.00	1.165	0	1.00	1.00
Side Arm Mount [SO 305-1]	0.0000	0.03	0.00	-3.98	178.00	1.165	0	0.94	1.41
Side Arm Mount [SO 305-1]	120.0000	0.03	3.45	1.99	178.00	1.165	0	0.94	1.41
AIR -32 B2A/B66AA w/ Mount Pipe	0.0000	0.15	0.00	-8.46	173.00	1.156	0	6.75	6.07
AIR -32 B2A/B66AA w/ Mount Pipe	120.0000	0.15	7.33	4.23	173.00	1.156	0	6.75	6.07
AIR -32 B2A/B66AA w/ Mount Pipe	240.0000	0.15	-7.33	4.23	173.00	1.156	0	6.75	6.07
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	0.0000	0.11	0.00	-8.46	173.00	1.156	0	6.33	5.64
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	120.0000	0.11	7.33	4.23	173.00	1.156	0	6.33	5.64
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	240.0000	0.11	-7.33	4.23	173.00	1.156	0	6.33	5.64
LNX-6515DS-VTM w/ Mount Pipe	0.0000	0.08	0.00	-8.46	173.00	1.156	0	11.68	9.84
LNX-6515DS-VTM w/ Mount Pipe	120.0000	0.08	7.33	4.23	173.00	1.156	0	11.68	9.84
LNX-6515DS-VTM w/ Mount Pipe	240.0000	0.08	-7.33	4.23	173.00	1.156	0	11.68	9.84
KRY 112 144/1	0.0000	0.01	0.00	-8.46	173.00	1.156	0	0.35	0.16
KRY 112 144/1	120.0000	0.01	7.33	4.23	173.00	1.156	0	0.35	0.16
KRY 112 144/1	240.0000	0.01	-7.33	4.23	173.00	1.156	0	0.35	0.16

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z ksf	C_AA_C Front ft^2	C_AA_C Side ft^2
RRUS 11 B12	0.0000	0.05	0.00	-8.46	173.00	1.156	0	2.83	1.18
RRUS 11 B12	120.0000	0.05	7.33	4.23	173.00	1.156	0	2.83	1.18
RRUS 11 B12	240.0000	0.05	-7.33	4.23	173.00	1.156	0	2.83	1.18
Sector Mount [SM 702-3]	0.0000	1.55	0.00	0.00	170.00	1.150	0	37.40	37.40
Empty Pipe Mount	0.0000	0.02	0.00	-8.46	173.00	1.156	0	1.05	1.05
Empty Pipe Mount	120.0000	0.02	7.33	4.23	173.00	1.156	0	1.05	1.05
Empty Pipe Mount	240.0000	0.02	-7.33	4.23	173.00	1.156	0	1.05	1.05
Side Arm Mount [SO 202-1]	0.0000	0.11	0.00	-5.24	157.00	1.124	0	2.96	2.53
Side Arm Mount [SO 202-1]	120.0000	0.11	4.54	2.62	157.00	1.124	0	2.96	2.53
APXVSPP18-C-A20 w/ Mount Pipe	0.0000	0.09	0.00	-9.78	148.00	1.105	0	8.26	7.47
APXVSPP18-C-A20 w/ Mount Pipe	120.0000	0.09	8.47	4.89	148.00	1.105	0	8.26	7.47
APXVSPP18-C-A20 w/ Mount Pipe	240.0000	0.09	-8.47	4.89	148.00	1.105	0	8.26	7.47
APXVTM14-C-120 w/ Mount Pipe	0.0000	0.08	0.00	-9.78	148.00	1.105	0	6.58	4.96
APXVTM14-C-120 w/ Mount Pipe	120.0000	0.08	8.47	4.89	148.00	1.105	0	6.58	4.96
APXVTM14-C-120 w/ Mount Pipe	240.0000	0.08	-8.47	4.89	148.00	1.105	0	6.58	4.96
ACU-A20-N	0.0000	0.00	0.00	-9.78	148.00	1.105	0	0.20	0.35
ACU-A20-N	120.0000	0.00	8.47	4.89	148.00	1.105	0	0.20	0.35
ACU-A20-N	240.0000	0.00	-8.47	4.89	148.00	1.105	0	0.20	0.35
TD-RRH8x20-25	0.0000	0.07	0.00	-9.78	148.00	1.105	0	3.70	1.29
TD-RRH8x20-25	120.0000	0.07	8.47	4.89	148.00	1.105	0	3.70	1.29
TD-RRH8x20-25	240.0000	0.07	-8.47	4.89	148.00	1.105	0	3.70	1.29
(3) Site Pro VFA12-U w/ 12' Stiff Arm	0.0000	1.67	0.00	0.00	148.00	1.105	0	33.02	33.02
PCS 1900MHz 4x45W-65MHz	0.0000	0.06	0.00	-10.08	145.00	1.099	0	2.32	2.24
PCS 1900MHz 4x45W-65MHz	0.0000	0.06	0.00	-10.08	142.00	1.092	0	2.32	2.24
PCS 1900MHz 4x45W-65MHz	120.0000	0.06	8.73	5.04	145.00	1.099	0	2.32	2.24
PCS 1900MHz 4x45W-65MHz	120.0000	0.06	8.73	5.04	142.00	1.092	0	2.32	2.24
PCS 1900MHz 4x45W-65MHz	240.0000	0.06	-8.73	5.04	145.00	1.099	0	2.32	2.24
PCS 1900MHz 4x45W-65MHz	240.0000	0.06	-8.73	5.04	142.00	1.092	0	2.32	2.24
TME-800MHZ 2X50W RRH	0.0000	0.05	0.00	-10.08	145.00	1.099	0	2.13	1.77
TME-800MHZ 2X50W RRH	120.0000	0.05	8.73	5.04	145.00	1.099	0	2.13	1.77
TME-800MHZ 2X50W RRH	240.0000	0.05	-8.73	5.04	145.00	1.099	0	2.13	1.77
800 EXTERNAL NOTCH FILTER	0.0000	0.01	0.00	-10.08	145.00	1.099	0	0.66	0.32
800 EXTERNAL NOTCH FILTER	120.0000	0.01	8.73	5.04	145.00	1.099	0	0.66	0.32
800 EXTERNAL NOTCH FILTER	240.0000	0.01	-8.73	5.04	145.00	1.099	0	0.66	0.32
Side Arm Mount [SO 312-3]	0.0000	0.21	0.00	0.00	143.00	1.095	0	7.87	7.87
LLPX310R w/ Mount Pipe	0.0000	0.05	0.00	-10.62	135.00	1.077	0	4.54	2.98
LLPX310R w/ Mount	120.0000	0.05	9.19	5.31	135.00	1.077	0	4.54	2.98

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z ksf	C_AA_C Front ft^2	C_AA_C Side ft^2
Pipe									
LLPX310R w/ Mount Pipe	240.0000	0.05	-9.19	5.31	135.00	1.077	0	4.54	2.98
RRH-2WB	0.0000	0.04	0.00	-10.62	135.00	1.077	0	2.30	0.78
RRH-2WB	120.0000	0.04	9.19	5.31	135.00	1.077	0	2.30	0.78
RRH-2WB	240.0000	0.04	-9.19	5.31	135.00	1.077	0	2.30	0.78
Pipe Mount [PM 601-1]	0.0000	0.07	0.00	-10.62	134.00	1.074	0	3.00	0.90
Sector Mount [SM 502-3]	0.0000	1.67	0.00	0.00	134.00	1.074	0	33.02	33.02
HBX-6516DS-VTM w/ Mount Pipe	0.0000	0.03	0.00	-11.10	128.00	1.060	0	3.56	3.24
HBX-6516DS-VTM w/ Mount Pipe	120.0000	0.03	9.61	5.55	128.00	1.060	0	3.56	3.24
HBX-6516DS-VTM w/ Mount Pipe	240.0000	0.03	-9.61	5.55	128.00	1.060	0	3.56	3.24
DB844G65ZAXY w/ Mount Pipe	0.0000	0.03	0.00	-11.10	128.00	1.060	0	4.58	4.80
DB844G65ZAXY w/ Mount Pipe	120.0000	0.03	9.61	5.55	128.00	1.060	0	4.58	4.80
DB844G65ZAXY w/ Mount Pipe	240.0000	0.06	-9.61	5.55	128.00	1.060	0	9.16	9.60
LNX-6514DS-T4M w/ Mount Pipe	0.0000	0.06	0.00	-11.10	128.00	1.060	0	8.32	7.00
LNX-6514DS-T4M w/ Mount Pipe	120.0000	0.06	9.61	5.55	128.00	1.060	0	8.32	7.00
MG D3-800TV w/ Mount Pipe	0.0000	0.04	0.00	-11.10	128.00	1.060	0	3.57	3.42
MG D3-800TV w/ Mount Pipe	120.0000	0.04	9.61	5.55	128.00	1.060	0	3.57	3.42
MG D3-800TV w/ Mount Pipe	240.0000	0.04	-9.61	5.55	128.00	1.060	0	3.57	3.42
DB844H80-XY w/ Mount Pipe	0.0000	0.03	0.00	-11.10	128.00	1.060	0	3.10	4.98
DB844H80-XY w/ Mount Pipe	120.0000	0.03	9.61	5.55	128.00	1.060	0	3.10	4.98
GPS_A	120.0000	0.00	9.61	5.55	130.00	1.065	0	0.26	0.26
P65.16.XL.2 w/ Mount Pipe	240.0000	0.06	-9.61	5.55	128.00	1.060	0	8.37	5.78
RRH2X40-AWS	0.0000	0.04	0.00	-11.10	128.00	1.060	0	2.16	1.42
RRH2X40-AWS	120.0000	0.04	9.61	5.55	128.00	1.060	0	2.16	1.42
RRH2X40-AWS	240.0000	0.04	-9.61	5.55	128.00	1.060	0	2.16	1.42
DB-T1-6Z-8AB-0Z	120.0000	0.04	9.61	5.55	128.00	1.060	0	4.80	2.00
Sector Mount [SM 410-3]	0.0000	1.10	0.00	0.00	126.00	1.056	0	23.96	23.96
800 10504 w/ Mount Pipe	0.0000	0.04	0.00	-11.90	112.00	1.021	0	3.59	3.18
800 10504 w/ Mount Pipe	120.0000	0.04	10.31	5.95	112.00	1.021	0	3.59	3.18
800 10504 w/ Mount Pipe	240.0000	0.04	-10.31	5.95	112.00	1.021	0	3.59	3.18
Sector Mount [SM 104-3]	0.0000	0.95	0.00	0.00	112.00	1.021	0	30.02	30.02
Empty Mount Pipe	0.0000	0.03	0.00	-11.90	112.00	1.021	0	1.40	1.40
Empty Mount Pipe	120.0000	0.03	10.31	5.95	112.00	1.021	0	1.40	1.40
Empty Mount Pipe	240.0000	0.03	-10.31	5.95	112.00	1.021	0	1.40	1.40
7770.00 w/ Mount Pipe	0.0000	0.06	0.00	-12.46	102.00	0.994	0	5.75	4.25
7770.00 w/ Mount Pipe	120.0000	0.06	10.79	6.23	102.00	0.994	0	5.75	4.25
7770.00 w/ Mount Pipe	240.0000	0.06	-10.79	6.23	102.00	0.994	0	5.75	4.25
P65-16-XLH-RR w/ Mount Pipe	0.0000	0.08	0.00	-12.46	102.00	0.994	0	8.37	6.36
P65-16-XLH-RR w/	120.0000	0.08	10.79	6.23	102.00	0.994	0	8.37	6.36

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z ksf	C_AA_C Front ft^2	C_AA_C Side ft^2
Mount Pipe									
P65-16-XLH-RR w/ Mount Pipe	240.0000	0.08	-10.79	6.23	102.00	0.994	0	8.37	6.36
LGP2140X	0.0000	0.02	0.00	-12.46	102.00	0.994	0	2.16	0.72
LGP2140X	120.0000	0.02	10.79	6.23	102.00	0.994	0	2.16	0.72
LGP2140X	240.0000	0.02	-10.79	6.23	102.00	0.994	0	2.16	0.72
RRUS 11 B2	0.0000	0.05	0.00	-12.46	102.00	0.994	0	2.83	1.18
RRUS 11 B2	120.0000	0.05	10.79	6.23	102.00	0.994	0	2.83	1.18
RRUS 11 B2	240.0000	0.05	-10.79	6.23	102.00	0.994	0	2.83	1.18
DC6-48-60-18-8F	240.0000	0.02	-10.79	6.23	102.00	0.994	0	2.20	3.70
QS66512-2 w/ Mount Pipe	0.0000	0.14	0.00	-12.46	102.00	0.994	0	8.37	8.46
QS66512-2 w/ Mount Pipe	120.0000	0.14	10.79	6.23	102.00	0.994	0	8.37	8.46
QS66512-2 w/ Mount Pipe	240.0000	0.14	-10.79	6.23	102.00	0.994	0	8.37	8.46
RRUS 32 B2	0.0000	0.05	0.00	-12.46	102.00	0.994	0	2.76	1.69
RRUS 32 B2	120.0000	0.05	10.79	6.23	102.00	0.994	0	2.76	1.69
RRUS 32 B2	240.0000	0.05	-10.79	6.23	102.00	0.994	0	2.76	1.69
TPX-070821	0.0000	0.01	0.00	-12.46	102.00	0.994	0	0.94	0.20
TPX-070821	120.0000	0.01	10.79	6.23	102.00	0.994	0	0.94	0.20
TPX-070821	240.0000	0.01	-10.79	6.23	102.00	0.994	0	0.94	0.20
RRUS 32	0.0000	0.06	0.00	-12.46	102.00	0.994	0	2.86	1.78
RRUS 32	120.0000	0.06	10.79	6.23	102.00	0.994	0	2.86	1.78
RRUS 32	240.0000	0.06	-10.79	6.23	102.00	0.994	0	2.86	1.78
DC6-48-60-18-8F	0.0000	0.02	0.00	-12.46	102.00	0.994	0	2.20	3.70
Sector Mount [SM 301-3]	0.0000	1.30	0.00	0.00	102.00	0.994	0	29.61	1.00
Empty Mount Pipe	0.0000	0.03	0.00	-12.46	102.00	0.994	0	1.40	1.40
Empty Mount Pipe	120.0000	0.03	10.79	6.23	102.00	0.994	0	1.40	1.40
Empty Mount Pipe	240.0000	0.03	-10.79	6.23	102.00	0.994	0	1.40	1.40
GPS_A	120.0000	0.00	12.70	7.33	47.00	0.796	0	0.26	0.26
GPS_A	240.0000	0.00	-12.70	7.33	48.00	0.801	0	0.26	0.26
Side Arm Mount [SO 701-1]	120.0000	0.07	10.10	5.83	48.00	0.801	0	0.85	1.67
Side Arm Mount [SO 701-1]	240.0000	0.07	-10.10	5.83	48.00	0.801	0	0.85	1.67
	Sum Weight:	14.28							

Dish Pressures - No Ice

Elevation ft	Dish Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	K_z	A_A ft^2	q_z ksf
157.00	VHLP2-18	-10.0000	0.03	0.00	-7.24	1.124	3.72	0
157.00	VHLP2-18	80.0000	0.03	6.27	3.62	1.124	3.72	0
135.00	VHLP2-23	0.0000	0.03	0.00	-10.56	1.077	3.72	0
		Sum Weight:	0.09					

Dish Pressures - With Ice

Elevation ft	Dish Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	K_z	A_A ft^2	q_z ksf	t_z in
157.00	VHLP2-18	-10.0000	0.10	0.00	-7.24	1.124	4.74	0	1.7532
157.00	VHLP2-18	80.0000	0.10	6.27	3.62	1.124	4.74	0	1.7532
135.00	VHLP2-23	0.0000	0.10	0.00	-10.56	1.077	4.72	0	1.7269
		Sum Weight:	0.30						

Dish Pressures - Service

Elevation ft	Dish Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	K_z	A_A ft^2	q_z ksf
157.00	VHLP2-18	-10.0000	0.03	0.00	-7.24	1.124	3.72	0
157.00	VHLP2-18	80.0000	0.03	6.27	3.62	1.124	3.72	0
135.00	VHLP2-23	0.0000	0.03	0.00	-10.56	1.077	3.72	0
		Sum Weight:	0.09					

Force Totals

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Overturning Moments, M_x kip-ft	Sum of Overturning Moments, M_z kip-ft	Sum of Torques kip-ft
Leg Weight	15.12					
Bracing Weight	16.60					
Total Member Self-Weight	31.72			2.30	48.30	
Total Weight	61.55			2.30	48.30	
Wind 0 deg - No Ice		0.01	-32.94	-3105.52	45.68	-14.66
Wind 30 deg - No Ice		14.83	-25.69	-2439.28	-1361.52	-10.65
Wind 60 deg - No Ice		25.07	-14.50	-1410.19	-2391.36	-5.35
Wind 90 deg - No Ice		30.02	0.05	9.76	-2897.18	0.64
Wind 120 deg - No Ice		27.80	16.24	1582.46	-2641.55	7.72
Wind 150 deg - No Ice		16.28	28.33	2715.23	-1507.51	13.21
Wind 180 deg - No Ice		-0.02	31.35	2981.10	51.59	13.40
Wind 210 deg - No Ice		-14.84	25.79	2458.64	1461.15	9.83
Wind 240 deg - No Ice		-26.54	15.45	1502.09	2613.56	5.47
Wind 270 deg - No Ice		-30.05	-0.01	1.42	2998.96	-0.93
Wind 300 deg - No Ice		-26.45	-15.21	-1478.26	2630.51	-7.36
Wind 330 deg - No Ice		-16.38	-28.22	-2695.01	1619.54	-13.06
Member Ice	39.86					
Total Weight Ice	182.69			1.74	215.97	
Wind 0 deg - Ice		0.01	-15.99	-1555.17	214.91	-4.45
Wind 30 deg - Ice		7.55	-13.09	-1277.93	-522.41	-3.68
Wind 60 deg - Ice		13.13	-7.60	-746.46	-1076.37	-2.16
Wind 90 deg - Ice		16.00	0.02	4.39	-1363.07	-0.18
Wind 120 deg - Ice		14.61	8.51	840.42	-1218.49	2.21
Wind 150 deg - Ice		8.19	14.24	1400.12	-586.91	3.98
Wind 180 deg - Ice		-0.01	15.60	1528.39	217.29	4.18
Wind 210 deg - Ice		-7.56	13.13	1286.84	955.47	3.38
Wind 240 deg - Ice		-13.51	7.85	773.45	1539.62	2.13
Wind 270 deg - Ice		-16.01	-0.00	1.52	1796.93	0.08
Wind 300 deg - Ice		-14.28	-8.22	-808.90	1625.74	-2.20
Wind 330 deg - Ice		-8.23	-14.21	-1390.89	1024.53	-3.93
Total Weight	61.55			2.30	48.30	
Wind 0 deg - Service		0.01	-13.71	-1294.15	-2.03	-6.10

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Overturning Moments, M_x kip-ft	Sum of Overturning Moments, M_z kip-ft	Sum of Torques kip-ft
Wind 30 deg - Service		6.17	-10.69	-1016.84	-587.75	-4.43
Wind 60 deg - Service		10.44	-6.04	-588.50	-1016.41	-2.23
Wind 90 deg - Service		12.49	0.02	2.53	-1226.94	0.27
Wind 120 deg - Service		11.57	6.76	657.14	-1120.54	3.21
Wind 150 deg - Service		6.78	11.79	1128.64	-648.52	5.50
Wind 180 deg - Service		-0.01	13.05	1239.30	0.43	5.58
Wind 210 deg - Service		-6.18	10.73	1021.84	587.14	4.09
Wind 240 deg - Service		-11.05	6.43	623.69	1066.81	2.28
Wind 270 deg - Service		-12.51	-0.00	-0.94	1227.23	-0.39
Wind 300 deg - Service		-11.01	-6.33	-616.83	1073.86	-3.06
Wind 330 deg - Service		-6.82	-11.75	-1123.28	653.06	-5.44

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 60 deg - No Ice
7	0.9 Dead+1.6 Wind 60 deg - No Ice
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice
13	0.9 Dead+1.6 Wind 150 deg - No Ice
14	1.2 Dead+1.6 Wind 180 deg - No Ice
15	0.9 Dead+1.6 Wind 180 deg - No Ice
16	1.2 Dead+1.6 Wind 210 deg - No Ice
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service

Comb. No.	Description
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T1	180 - 160	Leg	Max Tension	23	4.98	-0.02	-0.00
			Max. Compression	2	-8.20	0.09	-0.01
			Max. Mx	18	-8.19	0.11	-0.00
			Max. My	17	-1.22	-0.00	0.10
			Max. Vy	14	-1.04	0.00	-0.00
			Max. Vx	24	1.01	0.00	-0.04
		Diagonal	Max Tension	16	1.76	0.00	0.00
			Max. Compression	16	-1.71	0.00	0.00
			Max. Mx	37	0.49	0.03	-0.00
			Max. My	35	0.12	0.03	-0.01
			Max. Vy	37	0.04	0.03	-0.00
			Max. Vx	35	-0.00	0.00	0.00
		Top Girt	Max Tension	19	0.05	0.00	0.00
			Max. Compression	37	-0.07	0.00	0.00
			Max. Mx	26	-0.05	-0.07	0.00
			Max. My	29	-0.04	0.00	0.00
			Max. Vy	26	0.04	0.00	0.00
			Max. Vx	29	0.00	0.00	0.00
		Mid Girt	Max Tension	19	0.37	0.00	0.00
			Max. Compression	14	-0.38	0.00	0.00
			Max. Mx	26	-0.01	-0.09	0.00
			Max. My	28	-0.12	0.00	0.00
			Max. Vy	26	-0.05	0.00	0.00
			Max. Vx	28	-0.00	0.00	0.00
T2	160 - 153.333	Leg	Max Tension	23	8.28	-0.10	0.01
			Max. Compression	2	-12.14	0.23	-0.01
			Max. Mx	14	7.41	-0.28	0.02
			Max. My	17	-1.42	-0.02	0.32
			Max. Vy	14	0.14	-0.28	0.02
			Max. Vx	16	-0.17	-0.02	0.32
		Diagonal	Max Tension	12	2.04	0.00	0.00
			Max. Compression	12	-2.12	0.00	0.00
			Max. Mx	37	0.46	0.06	0.01
			Max. My	35	0.04	0.05	-0.01
			Max. Vy	37	0.05	0.06	0.01
			Max. Vx	27	0.00	0.00	0.00
T3	153.333 - 146.667	Leg	Max Tension	23	12.28	-0.27	0.02
			Max. Compression	2	-17.93	0.45	0.02
			Max. Mx	6	10.72	-0.50	0.01
			Max. My	21	-2.58	-0.02	-0.42
			Max. Vy	6	0.68	-0.50	0.01
			Max. Vx	20	0.63	-0.03	-0.42

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
		Diagonal	Max Tension	13	2.44	0.00	0.00
			Max. Compression	10	-2.64	0.00	0.00
			Max. Mx	37	0.46	0.06	0.01
			Max. My	35	0.00	0.06	-0.01
			Max. Vy	37	0.05	0.06	0.01
			Max. Vx	35	0.00	0.00	0.00
		Top Girt	Max Tension	37	0.30	0.00	0.00
			Max. Compression	3	-0.14	0.00	0.00
			Max. Mx	26	0.24	-0.13	0.00
			Max. My	28	0.28	0.00	0.00
			Max. Vy	26	0.06	0.00	0.00
			Max. Vx	29	-0.00	0.00	0.00
T4	146.667 - 140	Leg	Max Tension	23	16.93	-0.48	-0.01
			Max. Compression	2	-24.54	0.17	0.01
			Max. Mx	6	15.98	-0.50	0.01
			Max. My	21	-2.78	-0.02	-0.42
			Max. Vy	14	-0.20	-0.49	-0.02
			Max. Vx	20	-0.18	-0.03	-0.42
		Diagonal	Max Tension	4	3.49	0.00	0.00
			Max. Compression	16	-3.59	0.00	0.00
			Max. Mx	37	0.83	0.07	-0.01
			Max. My	36	-0.53	0.06	-0.01
			Max. Vy	37	0.05	0.07	-0.01
			Max. Vx	36	0.00	0.00	0.00
		Top Girt	Max Tension	37	0.22	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	26	0.22	-0.15	0.00
			Max. My	28	0.21	0.00	0.00
			Max. Vy	26	-0.06	0.00	0.00
			Max. Vx	28	-0.00	0.00	0.00
T5	140 - 120	Leg	Max Tension	23	37.05	-0.31	-0.00
			Max. Compression	2	-50.64	0.35	0.01
			Max. Mx	10	-49.60	0.36	0.00
			Max. My	20	-7.40	-0.00	-0.51
			Max. Vy	6	-0.79	-0.32	0.01
			Max. Vx	4	-0.74	-0.03	-0.20
		Diagonal	Max Tension	4	5.50	0.00	0.00
			Max. Compression	16	-5.52	0.00	0.00
			Max. Mx	37	1.43	0.09	0.01
			Max. My	36	-0.71	0.09	-0.01
			Max. Vy	37	0.06	0.09	0.01
			Max. Vx	36	-0.00	0.00	0.00
T6	120 - 100	Leg	Max Tension	23	62.57	-0.60	0.00
			Max. Compression	18	-82.63	0.98	-0.03
			Max. Mx	6	58.05	-1.04	0.03
			Max. My	24	-9.64	-0.02	0.77
			Max. Vy	6	0.82	-1.04	0.03
			Max. Vx	12	0.73	-0.04	-0.74
		Diagonal	Max Tension	4	7.20	0.00	0.00
			Max. Compression	4	-7.24	0.00	0.00
			Max. Mx	37	1.80	0.14	-0.02
			Max. My	35	0.36	0.13	-0.02
			Max. Vy	37	0.08	0.14	-0.02
			Max. Vx	35	-0.00	0.00	0.00
T7	100 - 80	Leg	Max Tension	23	89.07	-0.23	0.04
			Max. Compression	18	-114.88	0.43	-0.00
			Max. Mx	6	70.15	-1.04	0.03
			Max. My	24	-11.63	-0.04	0.74
			Max. Vy	6	-0.18	-1.04	0.03
			Max. Vx	24	0.13	-0.03	0.58
		Diagonal	Max Tension	4	9.20	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	4	-9.15	0.00	0.00
			Max. Mx	37	2.33	0.21	0.03
			Max. My	35	0.41	0.19	-0.03
			Max. Vy	37	0.11	0.21	0.03
			Max. Vx	35	-0.01	0.00	0.00
T8	80 - 70	Leg	Max Tension	23	103.77	-0.50	0.03
			Max. Compression	18	-132.14	1.80	-0.05
			Max. Mx	10	-129.42	1.81	-0.03
			Max. My	24	-15.04	0.06	1.58
			Max. Vy	10	-0.24	1.81	-0.03
			Max. Vx	24	-0.24	0.06	1.58
		Diagonal	Max Tension	4	9.53	0.00	0.00
			Max. Compression	4	-9.72	0.00	0.00
			Max. Mx	37	2.09	0.24	0.03
			Max. My	35	0.15	0.21	-0.03
			Max. Vy	37	0.11	0.24	-0.03
			Max. Vx	35	-0.01	0.00	0.00
T9	70 - 60	Leg	Max Tension	23	118.51	-1.58	0.05
			Max. Compression	18	-149.95	0.05	0.03
			Max. Mx	10	-146.68	1.81	-0.03
			Max. My	24	-15.92	0.06	1.58
			Max. Vy	10	0.27	1.81	-0.03
			Max. Vx	12	-0.25	0.06	-1.57
		Diagonal	Max Tension	4	10.28	0.00	0.00
			Max. Compression	4	-10.51	0.00	0.00
			Max. Mx	37	2.37	-0.39	-0.05
			Max. My	33	-2.36	-0.35	0.05
			Max. Vy	37	-0.19	-0.39	0.05
			Max. Vx	38	-0.01	0.00	0.00
T10	60 - 40	Leg	Max Tension	23	147.70	-0.98	0.04
			Max. Compression	18	-185.31	1.32	-0.02
			Max. Mx	29	-1.22	-2.53	0.02
			Max. My	24	-19.66	0.06	1.06
			Max. Vy	29	0.41	-2.53	0.02
			Max. Vx	12	0.19	-0.03	-1.04
		Diagonal	Max Tension	4	10.68	0.00	0.00
			Max. Compression	4	-11.05	0.00	0.00
			Max. Mx	37	2.85	0.32	-0.04
			Max. My	38	-1.22	0.30	0.04
			Max. Vy	37	0.14	0.32	-0.04
			Max. Vx	38	0.01	0.00	0.00
T11	40 - 20	Leg	Max Tension	23	176.07	-0.63	0.02
			Max. Compression	18	-220.41	2.27	-0.04
			Max. Mx	29	-0.92	-5.78	0.01
			Max. My	24	-21.46	-0.20	1.13
			Max. Vy	29	0.99	-5.78	0.01
			Max. Vx	24	0.13	-0.20	1.13
		Diagonal	Max Tension	4	11.29	0.00	0.00
			Max. Compression	4	-11.63	0.00	0.00
			Max. Mx	37	1.25	0.42	-0.05
			Max. My	27	-0.64	0.38	0.05
			Max. Vy	37	0.16	0.42	-0.05
			Max. Vx	27	0.01	0.00	0.00
T12	20 - 0	Leg	Max Tension	23	202.74	-0.86	0.04
			Max. Compression	18	-255.53	0.00	-0.00
			Max. Mx	29	5.08	-5.78	0.01
			Max. My	24	-24.97	-0.27	2.23
			Max. Vy	29	-1.15	-5.78	0.01
			Max. Vx	24	0.33	-0.27	2.23
		Diagonal	Max Tension	4	12.36	0.00	0.00
			Max. Compression	4	-12.64	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	37	-1.24	-0.86	-0.08
			Max. My	34	-6.10	-0.79	0.10
			Max. Vy	37	-0.28	-0.86	-0.08
			Max. Vx	33	-0.01	0.00	0.00

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg C	Max. Vert	18	264.19	28.79	-16.89
	Max. H_x	18	264.19	28.79	-16.89
	Max. H_z	5	-179.65	-19.98	14.57
	Min. Vert	7	-205.45	-24.09	14.12
	Min. H_x	7	-205.45	-24.09	14.12
	Min. H_z	18	264.19	28.79	-16.89
Leg B	Max. Vert	10	259.25	-28.96	-16.37
	Max. H_x	23	-209.34	24.40	13.79
	Max. H_z	25	-183.93	20.53	13.90
	Min. Vert	23	-209.34	24.40	13.79
	Min. H_x	10	259.25	-28.96	-16.37
	Min. H_z	10	259.25	-28.96	-16.37
Leg A	Max. Vert	2	260.93	-0.59	33.26
	Max. H_x	21	18.43	4.40	1.63
	Max. H_z	2	260.93	-0.59	33.26
	Min. Vert	15	-208.33	0.46	-28.06
	Min. H_x	8	23.94	-4.50	2.13
	Min. H_z	15	-208.33	0.46	-28.06

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	61.55	0.00	0.00	2.30	48.31	0.00
1.2 Dead+1.6 Wind 0 deg - No Ice	73.86	0.02	-53.58	-5116.27	53.92	-23.60
0.9 Dead+1.6 Wind 0 deg - No Ice	55.39	0.02	-53.58	-5112.92	39.37	-23.57
1.2 Dead+1.6 Wind 30 deg - No Ice	73.86	26.07	-45.16	-4328.42	-2442.75	-17.20
0.9 Dead+1.6 Wind 30 deg - No Ice	55.39	26.07	-45.16	-4325.69	-2455.34	-17.16
1.2 Dead+1.6 Wind 60 deg - No Ice	73.86	44.05	-25.47	-2447.29	-4174.45	-8.65
0.9 Dead+1.6 Wind 60 deg - No Ice	55.39	44.05	-25.47	-2446.04	-4185.67	-8.63
1.2 Dead+1.6 Wind 90 deg - No Ice	73.86	52.12	0.08	14.71	-4939.64	1.03
0.9 Dead+1.6 Wind 90 deg - No Ice	55.39	52.12	0.08	14.02	-4950.26	1.03
1.2 Dead+1.6 Wind 120 deg - No Ice	73.86	46.33	27.05	2599.93	-4364.75	12.40

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
0.9 Dead+1.6 Wind 120 deg - No Ice	55.39	46.33	27.05	2597.20	-4375.83	12.39
1.2 Dead+1.6 Wind 150 deg - No Ice	73.86	26.05	45.33	4357.10	-2438.98	21.22
0.9 Dead+1.6 Wind 150 deg - No Ice	55.39	26.05	45.33	4352.99	-2451.58	21.20
1.2 Dead+1.6 Wind 180 deg - No Ice	73.86	-0.03	51.04	4914.71	63.43	21.56
0.9 Dead+1.6 Wind 180 deg - No Ice	55.39	-0.03	51.04	4910.15	48.87	21.53
1.2 Dead+1.6 Wind 210 deg - No Ice	73.86	-26.10	45.32	4357.60	2563.87	15.87
0.9 Dead+1.6 Wind 210 deg - No Ice	55.39	-26.10	45.32	4353.49	2547.34	15.84
1.2 Dead+1.6 Wind 240 deg - No Ice	73.86	-46.39	27.00	2592.87	4492.26	8.84
0.9 Dead+1.6 Wind 240 deg - No Ice	55.39	-46.39	27.00	2590.14	4474.21	8.82
1.2 Dead+1.6 Wind 270 deg - No Ice	73.86	-52.17	-0.01	1.33	5064.20	-1.49
0.9 Dead+1.6 Wind 270 deg - No Ice	55.39	-52.17	-0.01	0.64	5045.70	-1.49
1.2 Dead+1.6 Wind 300 deg - No Ice	73.86	-44.17	-25.40	-2434.55	4308.26	-11.82
0.9 Dead+1.6 Wind 300 deg - No Ice	55.39	-44.17	-25.40	-2433.31	4290.34	-11.81
1.2 Dead+1.6 Wind 330 deg - No Ice	73.86	-26.21	-45.16	-4326.50	2580.04	-20.99
0.9 Dead+1.6 Wind 330 deg - No Ice	55.39	-26.21	-45.16	-4323.78	2563.49	-20.96
1.2 Dead+1.0 Ice+1.0 Temp	195.00	0.00	0.00	1.95	227.34	-0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	195.00	0.01	-16.90	-1672.83	226.29	-4.63
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	195.00	8.20	-14.21	-1403.38	-583.54	-3.85
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	195.00	14.25	-8.24	-818.93	-1190.73	-2.28
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	195.00	16.39	0.02	4.57	-1393.34	-0.22
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	195.00	14.61	8.51	847.84	-1219.52	2.28
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	195.00	8.19	14.24	1412.45	-582.49	4.12
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	195.00	-0.01	16.50	1646.15	228.70	4.36
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	195.00	-8.20	14.24	1412.68	1039.40	3.55
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	195.00	-14.62	8.50	846.45	1677.03	2.25
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	195.00	-16.40	-0.00	1.69	1850.00	0.10
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	195.00	-14.28	-8.22	-815.79	1649.43	-2.27
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	195.00	-8.23	-14.21	-1402.83	1042.96	-4.06
Dead+Wind 0 deg - Service	61.55	0.01	-13.94	-1328.72	47.32	-6.13
Dead+Wind 30 deg - Service	61.55	6.78	-11.75	-1123.87	-601.85	-4.46
Dead+Wind 60 deg - Service	61.55	11.46	-6.63	-634.76	-1052.08	-2.25
Dead+Wind 90 deg - Service	61.55	13.56	0.02	5.40	-1251.06	0.26
Dead+Wind 120 deg - Service	61.55	12.05	7.04	677.58	-1101.59	3.22
Dead+Wind 150 deg - Service	61.55	6.78	11.79	1134.47	-600.87	5.52

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Dead+Wind 180 deg - Service	61.55	-0.01	13.28	1279.45	49.81	5.60
Dead+Wind 210 deg - Service	61.55	-6.79	11.79	1134.61	699.94	4.12
Dead+Wind 240 deg - Service	61.55	-12.07	7.02	675.75	1201.34	2.30
Dead+Wind 270 deg - Service	61.55	-13.57	-0.00	1.92	1350.06	-0.38
Dead+Wind 300 deg - Service	61.55	-11.49	-6.61	-631.42	1153.50	-3.07
Dead+Wind 330 deg - Service	61.55	-6.82	-11.75	-1123.37	704.14	-5.46

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.00	-61.55	0.00	0.00	61.55	0.00	0.000%
2	0.02	-73.86	-53.58	-0.02	73.86	53.58	0.000%
3	0.02	-55.39	-53.58	-0.02	55.39	53.58	0.000%
4	26.07	-73.86	-45.16	-26.07	73.86	45.16	0.000%
5	26.07	-55.39	-45.16	-26.07	55.39	45.16	0.000%
6	44.05	-73.86	-25.47	-44.05	73.86	25.47	0.000%
7	44.05	-55.39	-25.47	-44.05	55.39	25.47	0.000%
8	52.12	-73.86	0.08	-52.12	73.86	-0.08	0.000%
9	52.12	-55.39	0.08	-52.12	55.39	-0.08	0.000%
10	46.33	-73.86	27.05	-46.33	73.86	-27.05	0.000%
11	46.33	-55.39	27.05	-46.33	55.39	-27.05	0.000%
12	26.05	-73.86	45.33	-26.05	73.86	-45.33	0.000%
13	26.05	-55.39	45.33	-26.05	55.39	-45.33	0.000%
14	-0.03	-73.86	51.04	0.03	73.86	-51.04	0.000%
15	-0.03	-55.39	51.04	0.03	55.39	-51.04	0.000%
16	-26.10	-73.86	45.32	26.10	73.86	-45.32	0.000%
17	-26.10	-55.39	45.32	26.10	55.39	-45.32	0.000%
18	-46.39	-73.86	27.00	46.39	73.86	-27.00	0.000%
19	-46.39	-55.39	27.00	46.39	55.39	-27.00	0.000%
20	-52.17	-73.86	-0.01	52.17	73.86	0.01	0.000%
21	-52.17	-55.39	-0.01	52.17	55.39	0.01	0.000%
22	-44.17	-73.86	-25.40	44.17	73.86	25.40	0.000%
23	-44.17	-55.39	-25.40	44.17	55.39	25.40	0.000%
24	-26.21	-73.86	-45.16	26.21	73.86	45.16	0.000%
25	-26.21	-55.39	-45.16	26.21	55.39	45.16	0.000%
26	0.00	-195.00	0.00	-0.00	195.00	0.00	0.000%
27	0.01	-195.00	-16.90	-0.01	195.00	16.90	0.000%
28	8.20	-195.00	-14.21	-8.20	195.00	14.21	0.000%
29	14.25	-195.00	-8.24	-14.25	195.00	8.24	0.000%
30	16.39	-195.00	0.02	-16.39	195.00	-0.02	0.000%
31	14.61	-195.00	8.51	-14.61	195.00	-8.51	0.000%
32	8.19	-195.00	14.24	-8.19	195.00	-14.24	0.000%
33	-0.01	-195.00	16.50	0.01	195.00	-16.50	0.000%
34	-8.20	-195.00	14.24	8.20	195.00	-14.24	0.000%
35	-14.62	-195.00	8.50	14.62	195.00	-8.50	0.000%
36	-16.40	-195.00	-0.00	16.40	195.00	0.00	0.000%
37	-14.28	-195.00	-8.22	14.28	195.00	8.22	0.000%
38	-8.23	-195.00	-14.21	8.23	195.00	14.21	0.000%
39	0.01	-61.55	-13.94	-0.01	61.55	13.94	0.000%
40	6.78	-61.55	-11.75	-6.78	61.55	11.75	0.000%
41	11.46	-61.55	-6.63	-11.46	61.55	6.63	0.000%
42	13.56	-61.55	0.02	-13.56	61.55	-0.02	0.000%
43	12.05	-61.55	7.04	-12.05	61.55	-7.04	0.000%
44	6.78	-61.55	11.79	-6.78	61.55	-11.79	0.000%
45	-0.01	-61.55	13.28	0.01	61.55	-13.28	0.000%
46	-6.79	-61.55	11.79	6.79	61.55	-11.79	0.000%

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
47	-12.07	-61.55	7.02	12.07	61.55	-7.02	0.000%
48	-13.57	-61.55	-0.00	13.57	61.55	0.00	0.000%
49	-11.49	-61.55	-6.61	11.49	61.55	6.61	0.000%
50	-6.82	-61.55	-11.75	6.82	61.55	11.75	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00000001
3	Yes	4	0.00000001	0.00000001
4	Yes	4	0.00000001	0.00000001
5	Yes	4	0.00000001	0.00000001
6	Yes	4	0.00000001	0.00000001
7	Yes	4	0.00000001	0.00000001
8	Yes	4	0.00000001	0.00000001
9	Yes	4	0.00000001	0.00000001
10	Yes	4	0.00000001	0.00000001
11	Yes	4	0.00000001	0.00000001
12	Yes	4	0.00000001	0.00000001
13	Yes	4	0.00000001	0.00000001
14	Yes	4	0.00000001	0.00000001
15	Yes	4	0.00000001	0.00000001
16	Yes	4	0.00000001	0.00000001
17	Yes	4	0.00000001	0.00000001
18	Yes	4	0.00000001	0.00000001
19	Yes	4	0.00000001	0.00000001
20	Yes	4	0.00000001	0.00000001
21	Yes	4	0.00000001	0.00000001
22	Yes	4	0.00000001	0.00000001
23	Yes	4	0.00000001	0.00000001
24	Yes	4	0.00000001	0.00000001
25	Yes	4	0.00000001	0.00000001
26	Yes	4	0.00000001	0.00000001
27	Yes	4	0.00000001	0.00000001
28	Yes	4	0.00000001	0.00000001
29	Yes	4	0.00000001	0.00000001
30	Yes	4	0.00000001	0.00000001
31	Yes	4	0.00000001	0.00000001
32	Yes	4	0.00000001	0.00000285
33	Yes	4	0.00000001	0.00000001
34	Yes	4	0.00000001	0.00000001
35	Yes	4	0.00000001	0.00000001
36	Yes	4	0.00000001	0.00000001
37	Yes	4	0.00000001	0.00000001
38	Yes	4	0.00000001	0.00000001
39	Yes	4	0.00000001	0.00000001
40	Yes	4	0.00000001	0.00000001
41	Yes	4	0.00000001	0.00000001
42	Yes	4	0.00000001	0.00000001
43	Yes	4	0.00000001	0.00000001
44	Yes	4	0.00000001	0.00000001
45	Yes	4	0.00000001	0.00000001
46	Yes	4	0.00000001	0.00000001
47	Yes	4	0.00000001	0.00000001

48	Yes	4	0.00000001	0.00000001
49	Yes	4	0.00000001	0.00000001
50	Yes	4	0.00000001	0.00000001

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	180 - 160	2.200	47	0.0894	0.0051
T2	160 - 153.333	1.820	47	0.0879	0.0050
T3	153.333 - 146.667	1.696	47	0.0866	0.0049
T4	146.667 - 140	1.573	47	0.0848	0.0049
T5	140 - 120	1.451	47	0.0824	0.0048
T6	120 - 100	1.101	47	0.0746	0.0044
T7	100 - 80	0.787	47	0.0634	0.0039
T8	80 - 70	0.520	47	0.0515	0.0031
T9	70 - 60	0.405	47	0.0456	0.0026
T10	60 - 40	0.308	47	0.0390	0.0024
T11	40 - 20	0.146	47	0.0250	0.0014
T12	20 - 0	0.041	47	0.0130	0.0005

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
180.00	Lightning Rod	47	2.200	0.0894	0.0051	Inf
178.00	Empty Pipe Mount	47	2.162	0.0893	0.0051	Inf
170.00	AIR -32 B2A/B66AA w/ Mount Pipe	47	2.009	0.0890	0.0050	785606
157.00	VHLP2-18	47	1.764	0.0874	0.0050	300685
148.00	APXVSPP18-C-A20 w/ Mount Pipe	47	1.597	0.0852	0.0049	488373
143.00	PCS 1900MHz 4x45W-65MHz	47	1.506	0.0835	0.0048	321402
135.00	VHLP2-23	47	1.361	0.0805	0.0047	184594
134.00	LLPX310R w/ Mount Pipe	47	1.343	0.0802	0.0047	180511
126.00	HBX-6516DS-VTM w/ Mount Pipe	47	1.203	0.0772	0.0046	153373
112.00	800 10504 w/ Mount Pipe	47	0.970	0.0705	0.0042	112563
102.00	7770.00 w/ Mount Pipe	47	0.816	0.0646	0.0040	91987
48.00	GPS_A	47	0.206	0.0305	0.0018	105007

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	180 - 160	8.325	18	0.3388	0.0196
T2	160 - 153.333	6.886	18	0.3331	0.0192
T3	153.333 - 146.667	6.414	18	0.3279	0.0190
T4	146.667 - 140	5.949	18	0.3209	0.0187
T5	140 - 120	5.488	18	0.3116	0.0184

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T6	120 - 100	4.164	18	0.2817	0.0171
T7	100 - 80	2.974	18	0.2390	0.0150
T8	80 - 70	1.967	18	0.1938	0.0120
T9	70 - 60	1.532	18	0.1716	0.0102
T10	60 - 40	1.169	18	0.1469	0.0092
T11	40 - 20	0.555	18	0.0939	0.0053
T12	20 - 0	0.157	18	0.0491	0.0019

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
180.00	Lightning Rod	18	8.325	0.3388	0.0196	423195
178.00	Empty Pipe Mount	18	8.180	0.3386	0.0196	423195
170.00	AIR -32 B2A/B66AA w/ Mount Pipe	18	7.602	0.3372	0.0194	211597
157.00	VHLP2-18	18	6.673	0.3310	0.0191	80927
148.00	APXVSPP18-C-A20 w/ Mount Pipe	18	6.041	0.3225	0.0188	138124
143.00	PCS 1900MHz 4x45W-65MHz	18	5.694	0.3160	0.0185	89472
135.00	VHLP2-23	18	5.147	0.3046	0.0182	50199
134.00	LLPX310R w/ Mount Pipe	18	5.080	0.3032	0.0181	49041
126.00	HBX-6516DS-VTM w/ Mount Pipe	18	4.549	0.2916	0.0175	41402
112.00	800 10504 w/ Mount Pipe	18	3.668	0.2659	0.0163	29967
102.00	7770.00 w/ Mount Pipe	18	3.085	0.2436	0.0152	24209
48.00	GPS_A	18	0.781	0.1146	0.0071	28085

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	180	Leg	A325X	0.8750	4	1.24	40.59	0.031	1	Bolt Tension
		Diagonal	A325X	0.6250	1	1.76	6.83	0.257	1	Member Block Shear
		Top Girt	A325X	0.6250	1	0.05	4.55	0.011	1	Member Block Shear
		Mid Girt	A325X	0.6250	1	0.37	4.55	0.081	1	Member Block Shear
T2	160	Diagonal	A325X	0.6250	1	2.04	10.44	0.196	1	Member Bearing
T3	153.333	Diagonal	A325X	0.6250	1	2.44	10.44	0.234	1	Member Bearing
		Top Girt	A325X	0.6250	1	0.30	4.55	0.067	1	Member Block Shear
T4	146.667	Leg	A325X	1.0000	4	4.23	53.01	0.080	1	Bolt Tension
		Diagonal	A325X	0.6250	1	3.49	10.44	0.334	1	Member Bearing
		Top Girt	A325X	0.6250	1	0.22	4.55	0.049	1	Member Block Shear
T5	140	Leg	A325X	1.0000	6	6.17	53.01	0.116	1	Bolt Tension
		Diagonal	A325X	0.6250	1	5.50	10.44	0.527	1	Member Bearing
T6	120	Leg	A325X	1.0000	6	10.43	53.01	0.197	1	Bolt Tension
		Diagonal	A325X	0.6250	1	7.20	11.70	0.616	1	Member Bearing

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load / Allowable	Allowable Ratio	Criteria
T7	100	Leg	A325X	1.0000	8	11.13	53.01	0.210	1	Bolt Tension
		Diagonal	A325X	0.7500	1	9.20	14.14	0.650	1	Member Bearing
T8	80	Diagonal	A325X	0.7500	1	9.53	14.14	0.674	1	Member Bearing
T9	70	Leg	A325X	1.0000	8	14.81	53.01	0.279	1	Bolt Tension
		Diagonal	A325X	0.7500	1	10.28	20.23	0.508	1	Gusset Bearing
T10	60	Leg	A325X	1.0000	8	18.46	53.01	0.348	1	Bolt Tension
		Diagonal	A325X	0.7500	1	10.68	14.14	0.755	1	Member Bearing
T11	40	Leg	A325X	1.0000	8	22.01	53.01	0.415	1	Bolt Tension
		Diagonal	A325X	0.7500	1	11.29	17.67	0.639	1	Member Bearing
T12	20	Leg	A449	1.0000	10	20.27	53.01	0.382	1	Bolt Tension
		Diagonal	A325X	0.7500	1	12.36	20.23	0.611	1	Gusset Bearing

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	180 - 160	ROHN 3 EH	20.04	5.01	52.9 K=1.00	3.0159	-8.20	110.61	0.074 [1]
T2	160 - 153.333	ROHN 4 EH	6.68	6.68	54.3 K=1.00	4.4074	-12.14	159.91	0.076 [1]
T3	153.333 - 146.667	ROHN 4 EH	6.68	6.68	54.3 K=1.00	4.4074	-17.93	159.91	0.112 [1]
T4	146.667 - 140	ROHN 4 EH	6.68	6.68	54.3 K=1.00	4.4074	-24.54	159.91	0.153 [1]
T5	140 - 120	ROHN 5 EH	20.04	6.68	43.6 K=1.00	6.1120	-50.64	239.38	0.212 [1]
T6	120 - 100	ROHN 6 EHS	20.03	6.68	36.0 K=1.00	6.7133	-82.63	274.78	0.301 [1]
T7	100 - 80	ROHN 6 EH	20.04	10.02	54.8 K=1.00	8.4049	-114.88	303.72	0.378 [1]
T8	80 - 70	ROHN 8 EHS	10.02	10.02	40.6 K=1.00	9.8666	-132.14	393.69	0.336 [1]
T9	70 - 60	ROHN 8 EHS	10.02	10.02	40.6 K=1.00	9.8666	-149.95	393.69	0.381 [1]
T10	60 - 40	ROHN 8 EHS	20.03	10.02	40.6 K=1.00	9.8666	-185.31	393.69	0.471 [1]
T11	40 - 20	ROHN 8 EH	20.03	10.02	41.8 K=1.00	12.7627	-220.41	505.56	0.436 [1]
T12	20 - 0	ROHN 8 EH	20.03	10.02	41.8 K=1.00	12.7627	-255.53	505.56	0.505 [1]

[1] P_u / ϕP_n controls

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	180 - 160	L2x2x3/16	9.86	4.79	146.0 K=1.00	0.7150	-1.71	7.58	0.226 [1]
T2	160 - 153.333	L2 1/2x2 1/2x1/4	11.29	5.51	134.5 K=1.00	1.1900	-2.12	14.85	0.143 [1]
T3	153.333 - 146.667	L2 1/2x2 1/2x1/4	11.85	5.79	141.5 K=1.00	1.1900	-2.64	13.43	0.197 [1]
T4	146.667 - 140	L2 1/2x2 1/2x1/4	12.43	6.08	148.5 K=1.00	1.1900	-3.59	12.19	0.295 [1]
T5	140 - 120	L2 1/2x2 1/2x1/4	14.23	6.93	169.3 K=1.00	1.1900	-5.52	9.37	0.589 [1]
T6	120 - 100	L3x3x1/4	15.99	7.75	157.1 K=1.00	1.4400	-7.24	13.19	0.549 [1]
T7	100 - 80	L3 1/2x3 1/2x1/4	19.26	9.48	164.0 K=1.00	1.6900	-9.15	14.20	0.645 [1]
T8	80 - 70	L3 1/2x3 1/2x1/4	20.15	9.81	169.6 K=1.00	1.6900	-9.72	13.27	0.733 [1]
T9	70 - 60	2L3 1/2x3 1/2x1/4x3/8 2L 'a' > 58.7386 in - 140	21.03	10.25	193.4 K=1.00	3.3800	-10.51	20.42	0.515 [1]
T10	60 - 40	L4x4x1/4	22.81	11.14	168.2 K=1.00	1.9400	-11.05	15.49	0.713 [1]
T11	40 - 20	L4x4x5/16	24.62	12.06	182.9 K=1.00	2.4000	-11.63	16.21	0.718 [1]
T12	20 - 0	2L4x4x5/16x3/8 2L 'a' > 74.5105 in - 179	26.46	12.98	214.9 K=1.00	4.8000	-12.64	23.47	0.538 [1]

[1] P_u / ϕP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	180 - 160	L2x2x1/8	6.69	6.16	185.8 K=1.00	0.4844	-0.07	3.17	0.023 [1]
T3	153.333 - 146.667	L2x2x1/8 KL/R > 200 (C) - 46	9.45	8.84	266.7 K=1.00	0.4844	-0.14	1.54	0.091 [1]

[1] P_u / ϕP_n controls

Mid 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	180 - 160	L2x2x1/8 KL/R > 200 (C) - 7	7.72	7.19	217.1 K=1.00	0.4844	-0.38	2.32	0.165 [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	180 - 160	ROHN 3 EH	20.04	5.01	52.9	3.0159	4.98	135.72	0.037 [1]
T2	160 - 153.333	ROHN 4 EH	6.68	6.68	54.3	4.4074	8.28	198.34	0.042 [1]
T3	153.333 - 146.667	ROHN 4 EH	6.68	6.68	54.3	4.4074	12.28	198.34	0.062 [1]
T4	146.667 - 140	ROHN 4 EH	6.68	6.68	54.3	4.4074	16.93	198.34	0.085 [1]
T5	140 - 120	ROHN 5 EH	20.04	6.68	43.6	6.1120	37.05	275.04	0.135 [1]
T6	120 - 100	ROHN 6 EHS	20.03	6.68	36.0	6.7133	62.57	302.10	0.207 [1]
T7	100 - 80	ROHN 6 EH	20.04	10.02	54.8	8.4049	89.07	378.22	0.235 [1]
T8	80 - 70	ROHN 8 EHS	10.02	10.02	40.6	9.8666	103.78	444.00	0.234 [1]
T9	70 - 60	ROHN 8 EHS	10.02	10.02	40.6	9.8666	118.51	444.00	0.267 [1]
T10	60 - 40	ROHN 8 EHS	20.03	10.02	40.6	9.8666	147.70	444.00	0.333 [1]
T11	40 - 20	ROHN 8 EH	20.03	10.02	41.8	12.7627	176.07	574.32	0.307 [1]
T12	20 - 0	ROHN 8 EH	20.03	10.02	41.8	12.7627	202.74	574.32	0.353 [1]

[1] P_u / ϕP_n controls

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	180 - 160	L2x2x3/16	9.86	4.79	95.6	0.4308	1.76	18.74	0.094 [1]
T2	160 - 153.333	L2 1/2x2 1/2x1/4	11.29	5.51	87.8	0.7519	2.04	32.71	0.062 [1]
T3	153.333 - 146.667	L2 1/2x2 1/2x1/4	11.85	5.79	92.2	0.7519	2.44	32.71	0.075 [1]
T4	146.667 - 140	L2 1/2x2 1/2x1/4	12.43	6.08	96.7	0.7519	3.49	32.71	0.107 [1]
T5	140 - 120	L2 1/2x2 1/2x1/4	14.23	6.93	110.0	0.7519	5.50	32.71	0.168 [1]
T6	120 - 100	L3x3x1/4	15.99	7.75	101.5	0.9394	7.20	45.79	0.157 [1]
T7	100 - 80	L3 1/2x3 1/2x1/4	19.26	9.48	105.9	1.1034	9.20	53.79	0.171 [1]
T8	80 - 70	L3 1/2x3 1/2x1/4	20.15	9.81	109.5	1.1034	9.53	53.79	0.177 [1]
T9	70 - 60	2L3 1/2x3 1/2x1/4x3/8 2L 'a' > 58.7386 in - 141	21.03	10.25	114.3	2.2069	10.28	96.00	0.107 [1]
T10	60 - 40	L4x4x1/4	22.81	11.14	108.3	1.2909	10.68	62.93	0.170 [1]
T11	40 - 20	L4x4x5/16	23.71	11.60	113.6	1.5949	11.29	77.75	0.145 [1]
T12	20 - 0	2L4x4x5/16x3/8 2L 'a' > 74.5105 in - 180	26.46	12.98	126.9	3.1898	12.36	138.76	0.089 [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	180 - 160	L2x2x1/8	6.69	6.16	122.6	0.2930	0.05	12.74	0.004 [1]
T3	153.333 - 146.667	L2x2x1/8	9.45	8.84	173.9	0.2930	0.30	12.74	0.024 [1]
T4	146.667 - 140	L2x2x1/8	10.14	9.53	187.2	0.2930	0.22	12.74	0.018 [1]

[1] P_u / ϕP_n controls

Mid 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	180 - 160	L2x2x1/8	7.72	7.19	142.4	0.2930	0.37	12.74	0.029 [1]

[1] P_u / ϕP_n controls

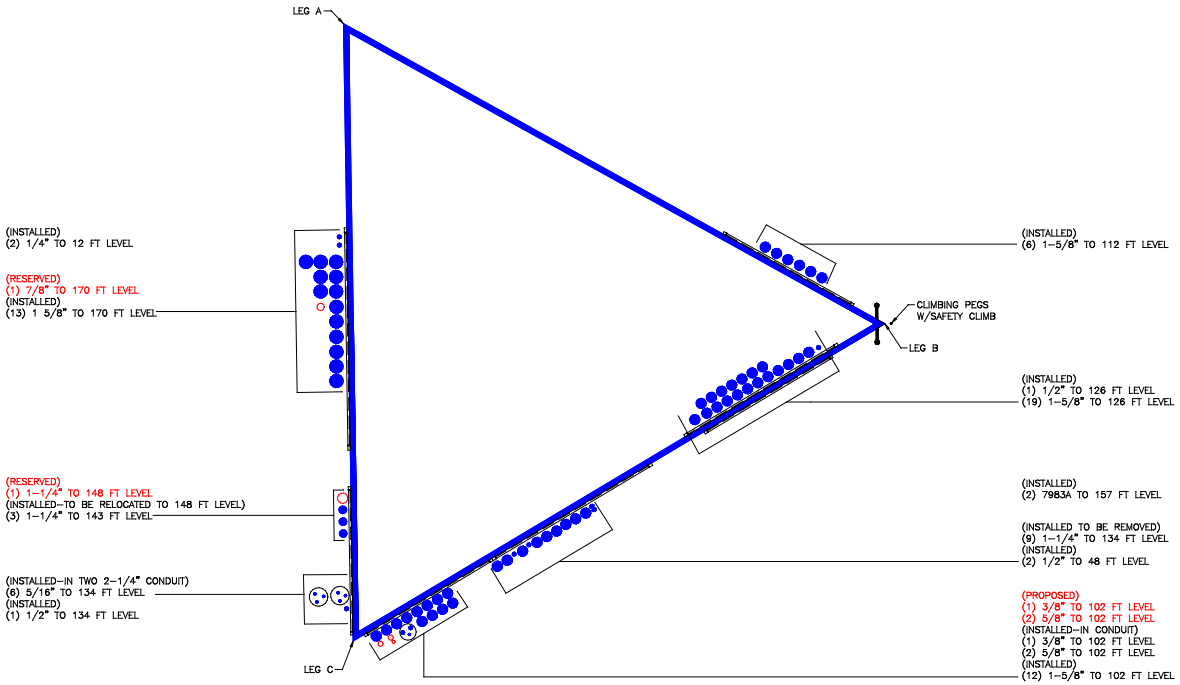
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T1	180 - 160	Leg	ROHN 3 EH	3	-8.20	110.61	7.4	Pass
T2	160 - 153.333	Leg	ROHN 4 EH	36	-12.14	159.91	7.6	Pass
T3	153.333 - 146.667	Leg	ROHN 4 EH	45	-17.93	159.91	11.2	Pass
T4	146.667 - 140	Leg	ROHN 4 EH	57	-24.54	159.91	15.3	Pass
T5	140 - 120	Leg	ROHN 5 EH	69	-50.64	239.38	21.2	Pass
T6	120 - 100	Leg	ROHN 6 EHS	88	-82.63	274.78	30.1	Pass
T7	100 - 80	Leg	ROHN 6 EH	109	-114.88	303.72	37.8	Pass
T8	80 - 70	Leg	ROHN 8 EHS	124	-132.14	393.69	33.6	Pass
T9	70 - 60	Leg	ROHN 8 EHS	133	-149.95	393.69	38.1	Pass
T10	60 - 40	Leg	ROHN 8 EHS	142	-185.31	393.69	47.1	Pass
T11	40 - 20	Leg	ROHN 8 EH	157	-220.41	505.56	43.6	Pass
T12	20 - 0	Leg	ROHN 8 EH	172	-255.53	505.56	50.5	Pass
T1	180 - 160	Diagonal	L2x2x3/16	15	-1.71	7.58	22.6 25.7 (b)	Pass
T2	160 - 153.333	Diagonal	L2 1/2x2 1/2x1/4	39	-2.12	14.85	14.3 19.6 (b)	Pass
T3	153.333 - 146.667	Diagonal	L2 1/2x2 1/2x1/4	51	-2.64	13.43	19.7 23.4 (b)	Pass
T4	146.667 - 140	Diagonal	L2 1/2x2 1/2x1/4	66	-3.59	12.19	29.5 33.4 (b)	Pass
T5	140 - 120	Diagonal	L2 1/2x2 1/2x1/4	75	-5.52	9.37	58.9	Pass
T6	120 - 100	Diagonal	L3x3x1/4	95	-7.24	13.19	54.9 61.6 (b)	Pass
T7	100 - 80	Diagonal	L3 1/2x3 1/2x1/4	116	-9.15	14.20	64.5 65.0 (b)	Pass
T8	80 - 70	Diagonal	L3 1/2x3 1/2x1/4	131	-9.72	13.27	73.3	Pass
T9	70 - 60	Diagonal	2L3 1/2x3 1/2x1/4x3/8	140	-10.51	20.42	51.5	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T10	60 - 40	Diagonal	L4x4x1/4	149	-11.05	15.49	71.3 75.5 (b)	Pass
T11	40 - 20	Diagonal	L4x4x5/16	164	-11.63	16.21	71.8	Pass
T12	20 - 0	Diagonal	2L4x4x5/16x3/8	179	-12.64	23.47	53.8 61.1 (b)	Pass
T1	180 - 160	Top Girt	L2x2x1/8	6	-0.07	3.17	2.3	Pass
T3	153.333 - 146.667	Top Girt	L2x2x1/8	46	-0.14	1.54	9.1	Pass
T4	146.667 - 140	Top Girt	L2x2x1/8	60	0.22	12.74	1.8 4.9 (b)	Pass
T1	180 - 160	Mid Girt	L2x2x1/8	7	-0.38	2.32	16.5	Pass
						Summary		
						Leg (T12)	50.5	Pass
						Diagonal (T10)	75.5	Pass
						Top Girt (T3)	9.1	Pass
						Mid Girt (T1)	16.5	Pass
						Bolt Checks	75.5	Pass
						RATING =	**75.5**	**Pass**

APPENDIX B

BASE LEVEL DRAWING


LEG A
(INSTALLED)
(2) 1/4" TO 12 FT LEVEL
(RESERVED)
(1) 7/8" TO 170 FT LEVEL
(INSTALLED)
(13) 1 5/8" TO 170 FT LEVEL
(RESERVED)
(1) 1-1/4" TO 148 FT LEVEL
(INSTALLED-TO BE RELOCATED TO 148 FT LEVEL)
(3) 1-1/4" TO 143 FT LEVEL
(INSTALLED-IN TWO 2-1/4" CONDUIT)
(6) 5/16" TO 134 FT LEVEL
(INSTALLED)
(1) 1/2" TO 134 FT LEVEL
LEG C
(INSTALLED)
(6) 1-5/8" TO 112 FT LEVEL
CLIMBING PEGS
W/SAFETY CLIMB
LEG B
(INSTALLED)
(1) 1/2" TO 126 FT LEVEL
(19) 1-5/8" TO 126 FT LEVEL
(INSTALLED)
(2) 7983A TO 157 FT LEVEL
(INSTALLED TO BE REMOVED)
(9) 1-1/4" TO 134 FT LEVEL
(INSTALLED)
(2) 1/2" TO 48 FT LEVEL
(PROPOSED)
(1) 3/8" TO 102 FT LEVEL
(2) 5/8" TO 102 FT LEVEL
(INSTALLED-IN CONDUIT)
(1) 3/8" TO 102 FT LEVEL
(2) 5/8" TO 102 FT LEVEL
(INSTALLED)
(12) 1-5/8" TO 102 FT LEVEL

APPENDIX C

ADDITIONAL CALCULATIONS

Anchor Rod Check for Self Supporting Towers

TIA-222-G, Section 4.9.9

Site Data	
BU#:	
Site Name:	
App:	

Anchor Rod Data		
Qty:	10	
Diam:	1	in
Rod Material:	A449 (1/4 to 1 Incl.)	
Strength (Fu):	120	ksi
Yield (Fy):	92	ksi

* Rod Circle:		in
* e:		in
* # of Rods		1 or 2

Mu= Pu x e:		ft-kips

** Enter rod circle, offset (e) and number of anchor rods at the extreme fiber to consider if eccentric load due to leg reinforcement exists.*

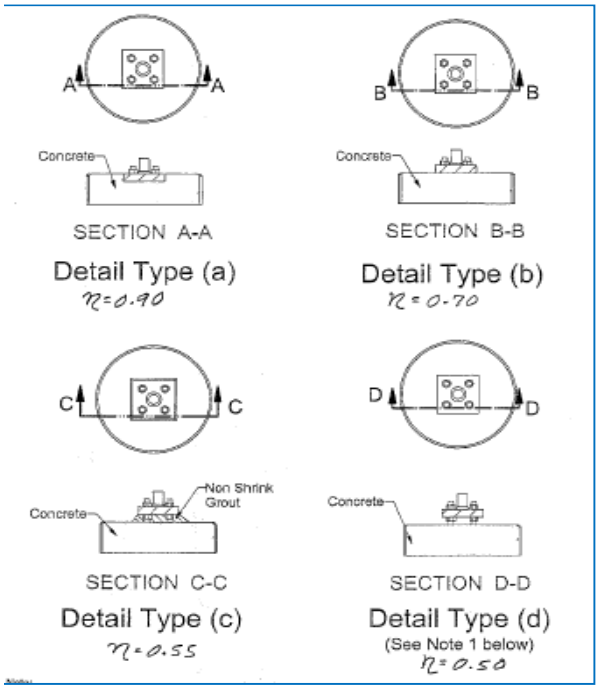


Figure 4-4 of TIA-222-G

Reactions		
Eta Factor, η	0.55	Detail Type
Uplift, Pu:	209	kips
Shear, Vu:	28	kips

I_{ar}:		in
Mu = 0.65*I_{ar}*V_u		ft-kips

Anchor Rod Results:

Max Rod (Cu+ Vu/ή):	26.0	Kips
Allowable Axial, Φ*Fu*Anet:	58.2	Kips
Anchor Rod Stress Ratio:	44.7%	

If Applicable;

Anchor Rod Results with Bending Considered:

When the clear distance from the top of concrete to the bottom of level nut excceeds 1.0 times the diameter of the anchor rod, the following interaction equation shall also be satisfied (see Figure 4-4 of Rev. G):

$$(V_u/\phi R_{nv})^2 + [(P_u/\phi R_{nt}) + (M_u/\phi R_{nm})]^2 <= 1$$

$\phi R_{nv}=\phi*0.45*F_{ub}*A_b=$		kips
$\phi R_{nt}=\phi*F_u*A_{net}=$		kips
$\phi R_{nm}=\phi*F_y*Z=$		ft-kips

Maximum Acceptable Ratio:	105	%
Governing Stress Ratio:	44.7%	**Pass**

Rock Anchor Foundation Calculations

TNX Reactions:

$P_{uplift} := 209\ kip$ $P_{comp} := 264\ kip$

$V_{uplift} := 28\ kip$ $V_{comp} := 33\ kip$

$d_{shaft} := 9\ ft$

$b := 8.75\ ft$

$M_u := V_{comp} \cdot d_{shaft} = 297\ kip \cdot ft$ $S := \frac{b \cdot d_{shaft}^{2}}{3} = 408240\ in^3$

Concrete Bearing Check:

$w_c := (6.25\ ft \cdot 8.75\ ft \cdot 9\ ft) \cdot 150\ pcf = 73.828\ kip$

$q_{ult} := 30\ ksf$ (*Ultimate bearing pressure per FDH Project No.* 08–07100*E G*1)

$A_{bearing} := 6.25\ ft \cdot 8.75\ ft = 54.688\ ft^2$

$P_{total} := P_{comp} + 1.2 \cdot w_c = 352.594\ kip$

$q_n := \frac{P_{total}}{A_{bearing}} + \frac{M_u}{S} = 7.705\ ksf$

$Capacity := \frac{q_n}{0.75 \cdot q_{ult}} = 34.243\%$

Tensile Yielding Check: (4) #11 *A*615 *Gr.* 60 *Anchor Bars*

$\phi := 0.9$ $N := 4$ $d := 1.410\ in$ $F_y := 60\ ksi$ $A_g := \left(\frac{\pi}{4}\right) \cdot d^2 = 1.561\ in^2$

$P_u := \frac{P_{uplift} - 0.9 \cdot w_c}{N} = 35.639\ kip$

$P_n := \phi \cdot F_y \cdot A_g = 84.318\ kip$

$Capacity := \frac{P_u}{P_n} = 42.267\%$

Tensile Rupture Check: (4) #11 *A*615 *Gr.* 60 *Anchor Bars*

$\phi := 0.75$ $N := 4$ $d := 1.410\ in$ $F_u := 80\ ksi$ $A_e := \left(\frac{\pi}{4}\right) \cdot d^2 = 1.561\ in^2$

$$P_u := \frac{P_{uplift} - 0.9 \cdot w_c}{N} = 35.639\ kip$$

$$P_n := \phi \cdot F_u \cdot A_e = 93.687\ kip$$

$$Capacity := \frac{P_u}{P_n} = 38.04\%$$

Uplift Check / Soil–Grout Interaction:

$\phi := 0.75$ $Q_{ult} := 16.0\ ksf$ (*Ultimate skin friction from FDH Project No.* 08–07100 *E G*1)

$$P_u := \frac{P_{uplift} - 0.9 \cdot w_c}{N} = 35.639\ kip$$

$$P_n := \phi \cdot \pi \cdot (2.25\ in) \cdot 14.0\ ft \cdot Q_{ult} = 98.96\ kip$$

$$Capacity := \frac{P_u}{P_n} = 36.013\%$$ *Passing*