STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
www.ct.gov/csc

VIA ELECTRONIC MAIL

October 22, 2018

Jeffrey Barbadora
Real Estate Specialist
Crown Castle
12 Gill Street, Suite 5800
Woburn, MA 01801

RE: **EM-SPRINT-126-180919** – Sprint notice of intent to modify an existing telecommunications facility located at 30 Oliver Terrace, Shelton, Connecticut.

Dear Mr. Barbadora:

The Connecticut Siting Council (Council) is in receipt of your correspondence of October 22, 2018 submitted in response to the Council's October 3, 2018 notification of an incomplete request for exempt modification with regard to the above-referenced matter.

The submission renders the request for exempt modification complete and the Council will process the request in accordance with the Federal Communications Commission 60-day timeframe.

Thank you for your attention and cooperation.

Sincerely,

Melanie A. Bachman
Executive Director

MAB/FC/IN

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Robidoux, Evan

From: Barbadora, Jeff <Jeff.Barbadora@crowncastle.com>
Sent: Monday, October 22, 2018 12:20 PM
To: Robidoux, Evan
Cc: CSC-DL Siting Council
Subject: RE: Council Incomplete Letter for EM-SPRINT-126-180919-OliverTerrace-Shelton
Attachments: 842873-MOD-SA.pdf; MA.pdf

Good afternoon,

Please find attached an updated structural analysis and mount analysis.

Please let me know if you have any questions or require hard copies to be sent to your office.

Thanks,

Jeffrey Barbadora
781-970-0053
12 Gill Street, Suite 5800, Woburn, MA 01801
CrownCastle.com

From: Robidoux, Evan
Sent: Wednesday, October 3, 2018 9:20 AM
To: Barbadora, Jeff
Cc: CSC-DL Siting Council
Subject: Council Incomplete Letter for EM-SPRINT-126-180919-OliverTerrace-Shelton

Please see the attached correspondence.

Evan Robidoux
Clerk Typist
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Date: **October 18, 2018**

Amanda D Brown
Crown Castle
3530 Toringdon Way Suite 300
Charlotte, NC 28277

Crown Castle
2000 Corporate Drive
Canonsburg, PA 15317
(724) 416-2000

Subject:

Structural Analysis Report

Carrier Designation:	***Sprint PCS* Co-Locate**	
	Carrier Site Number:	CT43XC864
	Carrier Site Name:	CT43XC864
Crown Castle Designation:	**Crown Castle BU Number:**	842873
	Crown Castle Site Name:	SHELTON NE
	Crown Castle JDE Job Number:	450835
	Crown Castle Work Order Number:	1648665
	Crown Castle Order Number:	399478 Rev. 10
Engineering Firm Designation:	**Crown Castle Project Number:**	1648665
Site Data:	**30 Oliver Terrace, SHELTON, Fairfield County, CT** **Latitude *41° 17' 38.21"*, Longitude *-73° 6' 25.83"*** **140 Foot - Monopole Tower**	

Dear Amanda D Brown,

Crown Castle is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above mentioned tower.

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC7: Proposed Equipment Configuration **Sufficient Capacity**

The analysis has been performed in accordance with the 2018 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 125 mph. Applicable standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: Luis Zarate / KB

Respectfully submitted by:

Maribel Dentinger

Maribel Dentinger, P.E.
Senior Project Engineer

STATE OF CONNECTICUT
MARIBEL DENTINGER
23524
LICENSED
PROFESSIONAL ENGINEER

Oct 19 2018 10:48 AM

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 140 ft Monopole tower designed by FWT INC.

The tower has been modified multiple times to accommodate additional loading.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	125 mph
Exposure Category:	B
Topographic Factor:	1
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
73.0	75.0	3	alcatel lucent	1900MHZ 4X40W RRH	3	1-5/8
		3	alcatel lucent	RRH2x50-800		
		3	alcatel lucent	TD-RRH8X20-25		
		3	commscope	DT465B-2XR w/ Mount Pipe		
		3	rfs celwave	APXVSPP18-C-A20 w/ Mount Pipe		
	73.0	1	sitepro1	HRK14		
		1	tower mounts	Platform Mount [LP 1201-1]		
50.0	50.0	1	pctel	GPS-TMG-HR-26NCM	-	-
		1	tower mounts	Pipe Mount [PM 601-1]		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
138.0	145.0	1	andrew	DB636-C	14 2	1-5/8 1-1/4
	140.0	6	andrew	HBXX-6516DS-A2M w/ Mount Pipe		
		3	alcatel lucent	AWS4 (B66) 4X45 RRH		
		3	alcatel lucent	RRH2X60-700		
		3	alcatel lucent	RRH2X60-PCS		
		3	amphenol	BXA-80063-6BF-EDIN-4 w/ Mount Pipe		
		3	css	X7C-FRO-660-VR0 w/ Mount Pipe		
		2	rfs celwave	DB-T1-6Z-8AB-0Z		
	138.0	1	tower mounts	Platform Mount [LP 403-1]		
129.0	129.0	6	cci antennas	HPA-65R-BUU-H6	6 2	1-5/8 3/4
		3	ericsson	RRUS 32 B2		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
		3	ericsson	RRUS-11	1	3/8
		1	tower mounts	Sector Mount [SM 502-3]		
120.0	120.0	3	commscope	LNX-6515DS-A1M w/ Mount Pipe	18	1-5/8
		3	ericsson	KRY 112 144/1		
		3	ericsson	KRY 112 489/2		
		3	rfs celwave	APX16DWV-16DWVS-E-A20 w/ Mount Pipe		
		3	rfs celwave	APX16PV-16PVL w/ Mount Pipe		
		1	tower mounts	T-Arm Mount [TA 602-3]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
3-GEOTECHNICAL REPORTS	Clarence Welti Assoc., Inc.	4529442	CCISITES
3-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Dewberry-Goodkind, Inc.	4598376	CCISITES
3-TOWER MANUFACTURER DRAWINGS	FWT, Inc.	4598387	CCISITES
3-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	B+T Group	4858944	CCISITES
3-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	GPD Associates	5461041	CCISITES
3-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	GPD Associates	5461043	CCISITES
3-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	FDH Velocitel	5785413	CCISITES
3-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	Jacobs Engineering Group, Inc.	5963243	CCISITES
3-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	Jacobs Engineering Group, Inc.	6087139	CCISITES
3-POST-MODIFICATION INSPECTION	B+T Group	5095590	CCISITES
3-POST-MODIFICATION INSPECTION	Tower Engineering Professionals	5994609	CCISITES
3-POST-MODIFICATION INSPECTION	FDH Velocitel	6086125	CCISITES
3-POST-MODIFICATION INSPECTION	FDH Velocitel	6231105	CCISITES

3.1) Analysis Method

tnxTower (version 8.0.4.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

tnxTower was used to determine the loads on the modified structure. Additional calculations were performed to determine the stresses in the pole and in the reinforcing elements. These calculations are presented in Appendix C.

3.2) Assumptions

1) Tower and structures were built and maintained in accordance with the manufacturer's specifications
2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
3) The base plate grout was not considered in this analysis.

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
140 - 135	Pole	TP14.296x13.161x0.1875	Pole	15.1%	Pass
135 - 130	Pole	TP15.431x14.296x0.1875	Pole	26.2%	Pass
130 - 125	Pole	TP16.566x15.431x0.1875	Pole	41.2%	Pass
125 - 120	Pole	TP17.701x16.566x0.1875	Pole	53.7%	Pass
120 - 115	Pole	TP18.836x17.701x0.1875	Pole	68.4%	Pass
115 - 114.75	Pole + Reinf.	TP18.893x18.836x0.4625	Reinf. 9 Tension Rupture	50.7%	Pass
114.75 - 109.75	Pole + Reinf.	TP20.027x18.893x0.45	Reinf. 9 Tension Rupture	60.8%	Pass
109.75 - 104.75	Pole + Reinf.	TP21.162x20.027x0.425	Reinf. 9 Tension Rupture	69.6%	Pass
104.75 - 104	Pole + Reinf.	TP21.333x21.162x0.425	Reinf. 9 Tension Rupture	70.8%	Pass
104 - 103.75	Pole	TP21.389x21.333x0.1875	Pole	93.1%	Pass
103.75 - 101.58	Pole	TP21.882x21.389x0.1875	Pole	96.9%	Pass
101.58 - 96.58	Pole	TP23.017x21.882x0.3125	Pole	59.6%	Pass
96.58 - 91.58	Pole	TP24.152x23.017x0.3125	Pole	62.3%	Pass
91.58 - 91	Pole	TP24.284x24.152x0.3125	Pole	62.6%	Pass
91 - 90.75	Pole + Reinf.	TP24.34x24.284x0.6	Reinf. 8 Tension Rupture	54.3%	Pass
90.75 - 85.75	Pole + Reinf.	TP25.475x24.34x0.5875	Reinf. 8 Tension Rupture	57.4%	Pass
85.75 - 80.75	Pole + Reinf.	TP26.61x25.475x0.5625	Reinf. 8 Tension Rupture	60.2%	Pass
80.75 - 75.75	Pole + Reinf.	TP27.745x26.61x0.55	Reinf. 8 Tension Rupture	62.7%	Pass
75.75 - 70.75	Pole + Reinf.	TP28.88x27.745x0.5438	Reinf. 8 Tension Rupture	65.9%	Pass
70.75 - 69.98	Pole + Reinf.	TP29.055x28.88x0.5313	Reinf. 3 Tension Rupture	69.3%	Pass
69.98 - 69.73	Pole + Reinf.	TP29.112x29.055x0.5313	Reinf. 3 Tension Rupture	69.5%	Pass
69.73 - 64.73	Pole + Reinf.	TP30.247x29.112x0.525	Reinf. 3 Tension Rupture	72.8%	Pass

64.73 - 63	Pole + Reinf.	TP30.64x30.247x0.5188	Reinf. 3 Tension Rupture	73.8%	Pass
63 - 62.75	Pole + Reinf.	TP30.696x30.64x0.7	Reinf. 3 Tension Rupture	57.0%	Pass
62.75 - 59.08	Pole + Reinf.	TP31.53x30.696x0.6875	Reinf. 3 Tension Rupture	58.9%	Pass
59.08 - 58.82	Pole + Reinf.	TP31.589x31.53x0.625	Reinf. 4 Tension Rupture	60.3%	Pass
58.82 - 58.67	Pole + Reinf.	TP31.623x31.589x0.625	Reinf. 4 Tension Rupture	60.3%	Pass
58.67 - 53.67	Pole + Reinf.	TP32.758x31.623x0.6125	Reinf. 4 Tension Rupture	62.7%	Pass
53.67 - 53	Pole + Reinf.	TP33.913x32.758x0.6125	Reinf. 4 Tension Rupture	63.0%	Pass
53 - 47.58	Pole + Reinf.	TP33.515x32.285x0.6375	Reinf. 2 Tension Rupture	67.0%	Pass
47.58 - 42.58	Pole + Reinf.	TP34.65x33.515x0.625	Reinf. 2 Tension Rupture	69.0%	Pass
42.58 - 39.67	Pole + Reinf.	TP35.311x34.65x0.6125	Reinf. 2 Tension Rupture	70.2%	Pass
39.67 - 39.42	Pole + Reinf.	TP35.368x35.311x0.8125	Reinf. 2 Tension Rupture	54.5%	Pass
39.42 - 34.42	Pole + Reinf.	TP36.503x35.368x0.7875	Reinf. 2 Tension Rupture	56.1%	Pass
34.42 - 32.5	Pole + Reinf.	TP36.939x36.503x0.7875	Reinf. 2 Tension Rupture	56.7%	Pass
32.5 - 32.25	Pole + Reinf.	TP36.995x36.939x0.6125	Reinf. 5 Tension Rupture	70.2%	Pass
32.25 - 31.42	Pole + Reinf.	TP37.184x36.995x0.6	Reinf. 5 Tension Rupture	70.5%	Pass
31.42 - 31.17	Pole + Reinf.	TP37.241x37.184x0.775	Reinf. 1 Tension Rupture	57.2%	Pass
31.17 - 29	Pole + Reinf.	TP37.733x37.241x0.7625	Reinf. 1 Tension Rupture	57.8%	Pass
29 - 28.65	Pole + Reinf.	TP37.813x37.733x0.675	Reinf. 1 Tension Rupture	68.8%	Pass
28.65 - 28.42	Pole + Reinf.	TP37.865x37.813x0.675	Reinf. 1 Tension Rupture	68.9%	Pass
28.42 - 23.5	Pole + Reinf.	TP38.982x37.865x0.6625	Reinf. 1 Tension Rupture	70.4%	Pass
23.5 - 23.25	Pole + Reinf.	TP39.039x38.982x0.7875	Reinf. 1 Tension Rupture	57.6%	Pass
23.25 - 23	Pole + Reinf.	TP39.095x39.039x0.7875	Reinf. 1 Tension Rupture	57.7%	Pass
23 - 22.75	Pole + Reinf.	TP39.152x39.095x0.65	Reinf. 1 Tension Rupture	70.0%	Pass
22.75 - 17.75	Pole + Reinf.	TP40.287x39.152x0.6375	Reinf. 1 Tension Rupture	71.5%	Pass
17.75 - 12.75	Pole + Reinf.	TP41.422x40.287x0.625	Reinf. 1 Tension Rupture	72.9%	Pass
12.75 - 7.75	Pole + Reinf.	TP42.558x41.422x0.6125	Reinf. 1 Tension Rupture	74.1%	Pass
7.75 - 2.75	Pole + Reinf.	TP43.693x42.558x0.6	Reinf. 1 Tension Rupture	75.3%	Pass
2.75 - 0	Pole + Reinf.	TP44.317x43.693x0.6	Reinf. 1 Tension Rupture	76.0%	Pass
				Summary	
			Pole	96.9%	Pass
			Reinforcement	76.0%	Pass
			Overall	96.9%	Pass

Table 5 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Flange Bolts	101.58	83.6	Pass
1	Flange Plate		53.5	Pass
1	Anchor Rods	0	62.1	Pass
1	Base Plate	0	52.0	Pass
1	Base Foundation (Structural)	0	48.9	Pass
1	Base Foundation (Soil Interaction)	0	63.5	Pass

Structure Rating (max from all components) =	96.9%

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

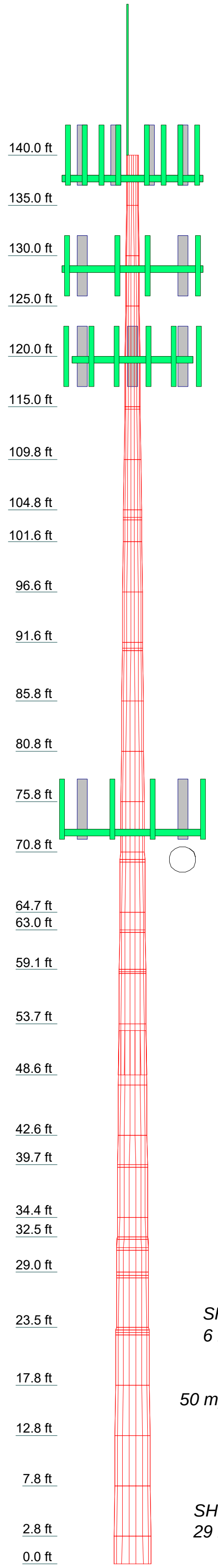
4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	5.0000	18	0.1875		13.1610	14.2960	A572-65	0.1
2	5.0000	18	0.1875		14.2960	15.4309		0.1
3	5.0000	18	0.1875		15.4309	16.5659		0.2
4	5.0000	18	0.1875		16.5659	17.7008		0.2
5	[illegible]	18	[illegible]		[illegible]	[illegible]		0.2
6	[illegible]	18	[illegible]		[illegible]	[illegible]		[illegible]
7	5.0000	18	0.4500		[illegible]	[illegible]		0.4
8	[illegible]	18	[illegible]		[illegible]	[illegible]		0.4
9	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
10	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
11	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
12	5.0000	18	0.3125		[illegible]	[illegible]		0.4
13	[illegible]	18	[illegible]		[illegible]	[illegible]		0.4
14	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
15	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
16	[illegible]	18	[illegible]		[illegible]	[illegible]		0.7
17	5.0000	18	0.5625		25.4754	26.6104		0.7
18	5.0000	18	0.5500		26.6104	27.7454		0.8
19	[illegible]	18	[illegible]		[illegible]	[illegible]		0.8
20	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
21	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
22	[illegible]	18	[illegible]		[illegible]	[illegible]		0.8
23	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
24	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
25	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
26	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
27	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
28	[illegible]	18	[illegible]		[illegible]	[illegible]		1.0
29	[illegible]	18	[illegible]	4.4200	[illegible]	[illegible]		1.1
30	[illegible]	18	[illegible]		[illegible]	[illegible]		1.1
31	5.0000	18	0.6250		[illegible]	[illegible]		1.1
32	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
33	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
34	[illegible]	18	[illegible]		[illegible]	[illegible]		1.4
35	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
36	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
37	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
38	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
39	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
40	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
41	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
42	[illegible]	18	[illegible]		[illegible]	[illegible]		1.3
43	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
44	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
45	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
46	[illegible]	18	[illegible]		[illegible]	[illegible]		1.5
47	5.0000	18	0.6250		40.2873	41.4224		1.5
48	5.0000	18	0.6125		41.4224	42.5576		1.5
49	5.0000	18	0.6000		42.5576	43.6927		1.5
50	2.7500	18	0.6000		[illegible]	[illegible]		0.8
								24.3



MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 125 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.27 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.0000 ft
8. TOWER RATING 96.9%

ALL REACTIONS ARE FACTORED

AXIAL 81 K
SHEAR 6 K
MOMENT 637 kip-ft
TORQUE 0 kip-ft
50 mph WIND - 1.2750 in ICE

AXIAL 48 K
SHEAR 29 K
MOMENT 2650 kip-ft
TORQUE 1 kip-ft
REACTIONS - 125 mph WIND

CROWN CASTLE The pathway to Possible	**Crown Castle** 2000 Corporate Drive Canonsburg. PA 15317 Phone: (724) 416-2000 FAX:	Job: **BU 842873**		
		Project:		
		Client: Crown Castle	Drawn by: KGebremariam	App'd:
		Code: TIA-222-H	Date: 10/18/18	Scale: NTS
		Path: C:\Users\KGebremariam\Desktop\tes\842873-MOD.eri		Dwg No. E-1

Tower Input Data

The tower is a monopole.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

1) Tower is located in Fairfield County, Connecticut.
2) Tower base elevation above sea level: 311.0000 ft.
3) Basic wind speed of 125 mph.
4) Risk Category II.
5) Exposure Category B.
6) Simplified Topographic Factor Procedure for wind speed-up calculations is used.
7) Topographic Category: 1.
8) Crest Height 0.0000 ft.
9) Nominal ice thickness of 1.2750 in.
10) Ice thickness is considered to increase with height.
11) Ice density of 56.00 pcf.
12) A wind speed of 50 mph is used in combination with ice.
13) Temperature drop of 50 °F.
14) Deflections calculated using a wind speed of 60 mph.
15) TOWER RATING 96.9%.
16) A non-linear (P-delta) analysis was used.
17) Pressures are calculated at each section.
18) Stress ratio used in pole design is 1.
19) Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

Tapered Pole Section Geometry

Section	*Elevation*	*Section Length*	*Splice Length*	*Number of Sides*	*Top Diameter*	*Bottom Diameter*	*Wall Thickness*	*Bend Radius*	*Pole Grade*
	ft	*ft*	*ft*		*in*	*in*	*in*	*in*	
L1	140.0000-135.0000	5.0000	0.00	18	13.1610	14.2960	0.1875	0.7500	A572-65 (65 ksi)
L2	135.0000-	5.0000	0.00	18	14.2960	15.4309	0.1875	0.7500	A572-65

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
	130.0000								(65 ksi)
L3	130.0000-125.0000	5.0000	0.00	18	15.4309	16.5659	0.1875	0.7500	A572-65 (65 ksi)
L4	125.0000-120.0000	5.0000	0.00	18	16.5659	17.7008	0.1875	0.7500	A572-65 (65 ksi)
L5	120.0000-115.0000	5.0000	0.00	18	17.7008	18.8358	0.1875	0.7500	A572-65 (65 ksi)
L6	115.0000-114.7500	0.2500	0.00	18	18.8358	18.8925	0.4625	1.8500	A572-65 (65 ksi)
L7	114.7500-109.7500	5.0000	0.00	18	18.8925	20.0275	0.4500	1.8000	A572-65 (65 ksi)
L8	109.7500-104.7500	5.0000	0.00	18	20.0275	21.1624	0.4250	1.7000	A572-65 (65 ksi)
L9	104.7500-104.0000	0.7500	0.00	18	21.1624	21.3327	0.4250	1.7000	A572-65 (65 ksi)
L10	104.0000-103.7500	0.2500	0.00	18	21.3327	21.3894	0.1875	0.7500	A572-65 (65 ksi)
L11	103.7500-101.5800	2.1700	0.00	18	21.3894	21.8820	0.1875	0.7500	A572-65 (65 ksi)
L12	101.5800-96.5800	5.0000	0.00	18	21.8820	23.0170	0.3125	1.2500	A572-65 (65 ksi)
L13	96.5800-91.5800	5.0000	0.00	18	23.0170	24.1520	0.3125	1.2500	A572-65 (65 ksi)
L14	91.5800-91.0000	0.5800	0.00	18	24.1520	24.2837	0.3125	1.2500	A572-65 (65 ksi)
L15	91.0000-90.7500	0.2500	0.00	18	24.2837	24.3404	0.6000	2.4000	A572-65 (65 ksi)
L16	90.7500-85.7500	5.0000	0.00	18	24.3404	25.4754	0.5875	2.3500	A572-65 (65 ksi)
L17	85.7500-80.7500	5.0000	0.00	18	25.4754	26.6104	0.5625	2.2500	A572-65 (65 ksi)
L18	80.7500-75.7500	5.0000	0.00	18	26.6104	27.7454	0.5500	2.2000	A572-65 (65 ksi)
L19	75.7500-70.7500	5.0000	0.00	18	27.7454	28.8804	0.5437	2.1750	A572-65 (65 ksi)
L20	70.7500-69.9800	0.7700	0.00	18	28.8804	29.0552	0.5313	2.1250	A572-65 (65 ksi)
L21	69.9800-69.7300	0.2500	0.00	18	29.0552	29.1120	0.5313	2.1250	A572-65 (65 ksi)
L22	69.7300-64.7300	5.0000	0.00	18	29.1120	30.2469	0.5250	2.1000	A572-65 (65 ksi)
L23	64.7300-63.0000	1.7300	0.00	18	30.2469	30.6397	0.5188	2.0750	A572-65 (65 ksi)
L24	63.0000-62.7500	0.2500	0.00	18	30.6397	30.6964	0.7000	2.8000	A572-65 (65 ksi)
L25	62.7500-59.0800	3.6700	0.00	18	30.6964	31.5295	0.6875	2.7500	A572-65 (65 ksi)
L26	59.0800-58.8200	0.2600	0.00	18	31.5295	31.5885	0.6250	2.5000	A572-65 (65 ksi)
L27	58.8200-58.6700	0.1500	0.00	18	31.5885	31.6226	0.6250	2.5000	A572-65 (65 ksi)
L28	58.6700-53.6700	5.0000	0.00	18	31.6226	32.7576	0.6125	2.4500	A572-65 (65 ksi)
L29	53.6700-48.5800	5.0900	4.42	18	32.7576	33.9130	0.6125	2.4500	A572-65 (65 ksi)
L30	48.5800-47.5800	5.4200	0.00	18	32.2847	33.5151	0.6375	2.5500	A572-65 (65 ksi)
L31	47.5800-42.5800	5.0000	0.00	18	33.5151	34.6503	0.6250	2.5000	A572-65 (65 ksi)
L32	42.5800-39.6700	2.9100	0.00	18	34.6503	35.3109	0.6125	2.4500	A572-65 (65 ksi)
L33	39.6700-39.4200	0.2500	0.00	18	35.3109	35.3677	0.8125	3.2500	A572-65 (65 ksi)
L34	39.4200-34.4200	5.0000	0.00	18	35.3677	36.5028	0.7875	3.1500	A572-65 (65 ksi)
L35	34.4200-32.5000	1.9200	0.00	18	36.5028	36.9387	0.7875	3.1500	A572-65 (65 ksi)
L36	32.5000-32.2500	0.2500	0.00	18	36.9387	36.9954	0.6125	2.4500	A572-65 (65 ksi)

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L37	32.2500-31.4200	0.8300	0.00	18	36.9954	37.1839	0.6000	2.4000	A572-65 (65 ksi)
L38	31.4200-31.1700	0.2500	0.00	18	37.1839	37.2406	0.7750	3.1000	A572-65 (65 ksi)
L39	31.1700-29.0000	2.1700	0.00	18	37.2406	37.7333	0.7625	3.0500	A572-65 (65 ksi)
L40	29.0000-28.6500	0.3500	0.00	18	37.7333	37.8127	0.6750	2.7000	A572-65 (65 ksi)
L41	28.6500-28.4200	0.2300	0.00	18	37.8127	37.8649	0.6750	2.7000	A572-65 (65 ksi)
L42	28.4200-23.5000	4.9200	0.00	18	37.8649	38.9819	0.6625	2.6500	A572-65 (65 ksi)
L43	23.5000-23.2500	0.2500	0.00	18	38.9819	39.0387	0.7875	3.1500	A572-65 (65 ksi)
L44	23.2500-23.0000	0.2500	0.00	18	39.0387	39.0954	0.7875	3.1500	A572-65 (65 ksi)
L45	23.0000-22.7500	0.2500	0.00	18	39.0954	39.1522	0.6500	2.6000	A572-65 (65 ksi)
L46	22.7500-17.7500	5.0000	0.00	18	39.1522	40.2873	0.6375	2.5500	A572-65 (65 ksi)
L47	17.7500-12.7500	5.0000	0.00	18	40.2873	41.4224	0.6250	2.5000	A572-65 (65 ksi)
L48	12.7500-7.7500	5.0000	0.00	18	41.4224	42.5576	0.6125	2.4500	A572-65 (65 ksi)
L49	7.7500-2.7500	5.0000	0.00	18	42.5576	43.6927	0.6000	2.4000	A572-65 (65 ksi)
L50	2.7500-0.0000	2.7500		18	43.6927	44.3170	0.6000	2.4000	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	13.3351	7.7209	164.1788	4.6056	6.6858	24.5564	328.5737	3.8612	1.9863	10.594
	14.4876	8.3963	211.1466	5.0085	7.2623	29.0742	422.5710	4.1989	2.1861	11.659
L2	14.4876	8.3963	211.1466	5.0085	7.2623	29.0742	422.5710	4.1989	2.1861	11.659
	15.6400	9.0717	266.3129	5.4114	7.8389	33.9732	532.9762	4.5367	2.3858	12.724
L3	15.6400	9.0717	266.3129	5.4114	7.8389	33.9732	532.9762	4.5367	2.3858	12.724
	16.7925	9.7472	330.3372	5.8143	8.4155	39.2536	661.1090	4.8745	2.5856	13.79
L4	16.7925	9.7472	330.3372	5.8143	8.4155	39.2536	661.1090	4.8745	2.5856	13.79
	17.9450	10.4226	403.8790	6.2172	8.9920	44.9153	808.2895	5.2123	2.7853	14.855
L5	17.9450	10.4226	403.8790	6.2172	8.9920	44.9153	808.2895	5.2123	2.7853	14.855
	19.0974	11.0981	487.5980	6.6201	9.5686	50.9583	975.8376	5.5501	2.9851	15.921
L6	19.0550	26.9715	1150.3132	6.5225	9.5686	120.2178	2302.1400	13.4883	2.5011	5.408
	19.1126	27.0548	1161.0047	6.5427	9.5974	120.9707	2323.5372	13.5300	2.5111	5.429
L7	19.1146	26.3415	1131.9263	6.5471	9.5974	117.9409	2265.3420	13.1732	2.5331	5.629
	20.2670	27.9625	1354.0273	6.9500	10.1740	133.0875	2709.8362	13.9839	2.7328	6.073
L8	20.2709	26.4428	1283.7088	6.9589	10.1740	126.1759	2569.1067	13.2239	2.7768	6.534
	21.4233	27.9738	1519.8426	7.3618	10.7505	141.3739	3041.6850	13.9895	2.9766	7.004
L9	21.4233	27.9738	1519.8426	7.3618	10.7505	141.3739	3041.6850	13.9895	2.9766	7.004
	21.5962	28.2034	1557.5820	7.4222	10.8370	143.7281	3117.2135	14.1044	3.0066	7.074
L10	21.6328	12.5840	710.8531	7.5065	10.8370	65.5950	1422.6417	6.2932	3.4246	18.264
	21.6905	12.6178	716.5917	7.5267	10.8658	65.9491	1434.1263	6.3101	3.4345	18.318
L11	21.6905	12.6178	716.5917	7.5267	10.8658	65.9491	1434.1263	6.3101	3.4345	18.318
	22.1906	12.9109	767.7054	7.7015	11.1161	69.0627	1536.4209	6.4567	3.5212	18.78
L12	22.1714	21.3942	1257.5192	7.6572	11.1161	113.1264	2516.6931	10.6992	3.3012	10.564
	23.3239	22.5200	1466.6626	8.0601	11.6926	125.4347	2935.2551	11.2622	3.5010	11.203
L13	23.3239	22.5200	1466.6626	8.0601	11.6926	125.4347	2935.2551	11.2622	3.5010	11.203
	24.4764	23.6458	1697.7972	8.4630	12.2692	138.3786	3397.8285	11.8251	3.7008	11.842
L14	24.4764	23.6458	1697.7972	8.4630	12.2692	138.3786	3397.8285	11.8251	3.7008	11.842
	24.6101	23.7764	1726.0825	8.5098	12.3361	139.9213	3454.4362	11.8905	3.7239	11.917
L15	24.5657	45.1032	3196.2598	8.4077	12.3361	259.0981	6396.7254	22.5559	3.2179	5.363
	24.6233	45.2112	3219.2912	8.4278	12.3649	260.3566	6442.8185	22.6099	3.2279	5.38
L16	24.6253	44.2926	3157.2045	8.4323	12.3649	255.3354	6318.5633	22.1505	3.2499	5.532
	25.7778	46.4091	3631.7632	8.8352	12.9415	280.6291	7268.3052	23.2090	3.4497	5.872

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L17	25.7816	44.4789	3487.7093	8.8441	12.9415	269.4979	6980.0078	22.2437	3.4937	6.211
	26.9341	46.5053	3986.4429	9.2470	13.5181	294.8969	7978.1313	23.2571	3.6934	6.566
L18	26.9361	45.4937	3903.4695	9.2514	13.5181	288.7590	7812.0754	22.7512	3.7154	6.755
	28.0886	47.4750	4436.0241	9.6544	14.0947	314.7306	8877.8852	23.7420	3.9152	7.119
L19	28.0895	46.9463	4388.6391	9.6566	14.0947	311.3687	8783.0529	23.4776	3.9262	7.221
	29.2421	48.9052	4961.2330	10.0595	14.6712	338.1602	9928.9940	24.4572	4.1260	7.588
L20	29.2440	47.8020	4853.5991	10.0640	14.6712	330.8239	9713.5847	23.9055	4.1480	7.808
	29.4215	48.0967	4943.9300	10.1260	14.7600	334.9537	9894.3654	24.0529	4.1787	7.866
L21	29.4215	48.0967	4943.9300	10.1260	14.7600	334.9537	9894.3654	24.0529	4.1787	7.866
	29.4791	48.1924	4973.4975	10.1461	14.7889	336.3000	9953.5392	24.1008	4.1887	7.885
L22	29.4801	47.6359	4918.2108	10.1484	14.7889	332.5616	9842.8932	23.8225	4.1997	7.999
	30.6326	49.5272	5527.5868	10.5513	15.3655	359.7413	11062.4470	24.7683	4.3995	8.38
L23	30.6335	48.9479	5465.2285	10.5535	15.3655	355.6829	10937.6483	24.4786	4.4105	8.502
	31.0323	49.5945	5684.6895	10.6929	15.5649	365.2238	11376.8590	24.8019	4.4796	8.635
L24	31.0043	66.5199	7533.2608	10.6286	15.5649	483.9888	15076.4341	33.2663	4.1606	5.944
	31.0620	66.6460	7576.1795	10.6487	15.5938	485.8464	15162.3279	33.3293	4.1706	5.958
L25	31.0639	65.4832	7450.1967	10.6532	15.5938	477.7673	14910.1965	32.7478	4.1926	6.098
	31.9098	67.3011	8088.0658	10.9489	16.0170	504.9680	16186.7740	33.6569	4.3392	6.312
L26	31.9195	61.3068	7397.5780	10.9711	16.0170	461.8583	14804.8900	30.6592	4.4492	7.119
	31.9794	61.4239	7440.0417	10.9920	16.0470	463.6416	14889.8732	30.7178	4.4596	7.135
L27	31.9794	61.4239	7440.0417	10.9920	16.0470	463.6416	14889.8732	30.7178	4.4596	7.135
	32.0140	61.4914	7464.6137	11.0041	16.0643	464.6720	14939.0496	30.7516	4.4656	7.145
L28	32.0159	60.2859	7324.1749	11.0086	16.0643	455.9296	14657.9871	30.1487	4.4876	7.327
	33.1684	62.4924	8158.1858	11.4115	16.6408	490.2507	16327.1064	31.2522	4.6873	7.653
L29	33.1684	62.4924	8158.1858	11.4115	16.6408	490.2507	16327.1064	31.2522	4.6873	7.653
	34.3417	64.7387	9069.9048	11.8217	17.2278	526.4690	18151.7440	32.3755	4.8907	7.985
L30	33.7033	64.0357	8102.6819	11.2347	16.4006	494.0477	16216.0255	32.0239	4.5601	7.153
	33.9338	66.5254	9085.0297	11.6716	17.0257	533.6071	18182.0137	33.2690	4.7767	7.493
L31	33.9357	65.2458	8917.0549	11.6760	17.0257	523.7412	17845.8430	32.6291	4.7987	7.678
	35.0884	67.4976	9872.5395	12.0790	17.6023	560.8654	19758.0695	33.7552	4.9984	7.998
L32	35.0903	66.1720	9685.7557	12.0834	17.6023	550.2541	19384.2563	33.0923	5.0204	8.197
	35.7611	67.4563	10260.7493	12.3179	17.9379	572.0138	20535.0000	33.7346	5.1367	8.386
L33	35.7303	88.9671	13377.1891	12.2469	17.9379	745.7483	26771.9803	44.4920	4.7847	5.889
	35.7879	89.1134	13443.3217	12.2671	17.9668	748.2324	26904.3326	44.5652	4.7947	5.901
L34	35.7918	86.4340	13057.9817	12.2760	17.9668	726.7850	26133.1455	43.2252	4.8387	6.144
	36.9444	89.2713	14386.5768	12.6789	18.5434	775.8320	28792.0839	44.6441	5.0385	6.398
L35	36.9444	89.2713	14386.5768	12.6789	18.5434	775.8320	28792.0839	44.6441	5.0385	6.398
	37.3870	90.3608	14919.7761	12.8337	18.7648	795.0917	29859.1841	45.1890	5.1152	6.496
L36	37.4140	70.6208	11773.6087	12.8958	18.7648	627.4289	23562.7093	35.3171	5.4232	8.854
	37.4717	70.7312	11828.8805	12.9159	18.7937	629.4073	23673.3257	35.3723	5.4332	8.871
L37	37.4736	69.3115	11599.422	12.9204	18.7937	617.1980	23214.107	34.6623	5.4552	9.092

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
			1				0			
	37.6649	69.6703	11780.518 4	12.9873	18.8894	623.6575	23576.537 9	34.8418	5.4884	9.147
L38	37.6379	89.5603	14999.180 1	12.9251	18.8894	794.0526	30018.096 4	44.7887	5.1804	6.684
	37.6956	89.7000	15069.434 3	12.9453	18.9182	796.5560	30158.697 4	44.8585	5.1903	6.697
L39	37.6975	88.2834	14841.631 1	12.9497	18.9182	784.5145	29702.791 2	44.1501	5.2123	6.836
	38.1977	89.4757	15451.106 8	13.1246	19.1685	806.0676	30922.544 6	44.7464	5.2991	6.95
L40	38.2112	79.3955	13775.375 8	13.1557	19.1685	718.6465	27568.877 6	39.7053	5.4531	8.079
	38.2919	79.5657	13864.175 8	13.1839	19.2089	721.7593	27746.594 4	39.7904	5.4670	8.099
L41	38.2919	79.5657	13864.175 8	13.1839	19.2089	721.7593	27746.594 4	39.7904	5.4670	8.099
	38.3449	79.6776	13922.737 3	13.2024	19.2354	723.8084	27863.794 5	39.8464	5.4762	8.113
L42	38.3469	78.2284	13678.692 3	13.2069	19.2354	711.1211	27375.383 4	39.1216	5.4982	8.299
	39.4811	80.5771	14948.119 3	13.6034	19.8028	754.8485	29915.907 7	40.2962	5.6948	8.596
L43	39.4618	95.4679	17595.200 1	13.5590	19.8028	888.5205	35213.552 5	47.7430	5.4748	6.952
	39.5194	95.6097	17673.755 4	13.5792	19.8316	891.1898	35370.766 3	47.8140	5.4848	6.965
L44	39.5194	95.6097	17673.755 4	13.5792	19.8316	891.1898	35370.766 3	47.8140	5.4848	6.965
	39.5770	95.7516	17752.544 1	13.5993	19.8605	893.8631	35528.447 4	47.8849	5.4948	6.978
L45	39.5983	79.3167	14811.243 0	13.6481	19.8605	745.7649	29641.975 0	39.6659	5.7368	8.826
	39.6559	79.4338	14876.936 7	13.6683	19.8893	747.9868	29773.448 8	39.7245	5.7468	8.841
L46	39.6578	77.9316	14605.057 4	13.6727	19.8893	734.3171	29229.332 5	38.9732	5.7688	9.049
	40.8105	80.2284	15934.836 3	14.0757	20.4659	778.6024	31890.640 0	40.1218	5.9686	9.362
L47	40.8124	78.6801	15637.168 5	14.0801	20.4659	764.0578	31294.912 8	39.3475	5.9906	9.585
	41.9650	80.9319	17018.557 0	14.4831	21.0426	808.7671	34059.507 4	40.4736	6.1903	9.905
L48	41.9669	79.3376	16693.520 7	14.4875	21.0426	793.3205	33409.007 2	39.6763	6.2123	10.143
	43.1196	81.5443	18125.614 6	14.8905	21.6192	838.4021	36275.079 3	40.7799	6.4121	10.469
L49	43.1215	79.9040	17771.582 9	14.8949	21.6192	822.0264	35566.550 1	39.9596	6.4341	10.724
	44.2742	82.0657	19253.343 1	15.2979	22.1959	867.4286	38532.020 3	41.0406	6.6339	11.057
L50	44.2742	82.0657	19253.343 1	15.2979	22.1959	867.4286	38532.020 3	41.0406	6.6339	11.057
	44.9081	83.2547	20102.343 0	15.5195	22.5130	892.9201	40231.137 1	41.6352	6.7438	11.24

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
L1 140.0000-135.0000				1	1	1			
L2 135.0000-130.0000				1	1	1			
L3 130.0000-125.0000				1	1	1			
L4 125.0000-120.0000				1	1	1			

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
L5 120.0000-115.0000				1	1	1			
L6 115.0000-114.7500				1	1	0.910459			
L7 114.7500-109.7500				1	1	0.90506			
L8 109.7500-104.7500				1	1	0.928842			
L9 104.7500-104.0000				1	1	0.924871			
L10 104.0000-103.7500				1	1	1			
L11 103.7500-101.5800				1	1	1			
L12 101.5800-96.5800				1	1	1			
L13 96.5800-91.5800				1	1	1			
L14 91.5800-91.0000				1	1	1			
L15 91.0000-90.7500				1	1	0.925286			
L16 90.7500-85.7500				1	1	0.925661			
L17 85.7500-80.7500				1	1	0.947954			
L18 80.7500-75.7500				1	1	0.952304			
L19 75.7500-70.7500				1	1	0.947475			
L20 70.7500-69.9800				1	1	0.951412			
L21 69.9800-69.7300				1	1	0.950691			
L22 69.7300-64.7300				1	1	0.9478			
L23 64.7300-63.0000				1	1	0.954368			
L24 63.0000-62.7500				1	1	0.981128			
L25 62.7500-59.0800				1	1	0.983857			
L26 59.0800-58.8200				1	1	0.999823			
L27 58.8200-58.6700				1	1	0.999274			
L28 58.6700-53.6700				1	1	1.00128			
L29 53.6700-48.5800				1	1	0.99897			
L30 48.5800-47.5800				1	1	0.940602			
L31 47.5800-42.5800				1	1	0.943735			
L32 42.5800-39.6700				1	1	0.954027			
L33 39.6700-39.4200				1	1	0.924799			
L34 39.4200-34.4200				1	1	0.935777			
L35 34.4200-32.5000				1	1	0.929278			
L36 32.5000-32.2500				1	1	0.944082			

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
L37 32.2500-31.4200				1	1	0.961139			
L38 31.4200-31.1700				1	1	0.939463			
L39 31.1700-29.0000				1	1	0.947279			
L40 29.0000-28.6500				1	1	0.990842			
L41 28.6500-28.4200				1	1	0.990101			
L42 28.4200-23.5000				1	1	0.992797			
L43 23.5000-23.2500				1	1	1.02556			
L44 23.2500-23.0000				1	1	1.02463			
L45 23.0000-22.7500				1	1	1.08475			
L46 22.7500-17.7500				1	1	1.08804			
L47 17.7500-12.7500				1	1	1.09249			
L48 12.7500-7.7500				1	1	1.0981			
L49 7.7500-2.7500				1	1	1.10484			
L50 2.7500-0.0000				1	1	1.0965			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
Safety Line 5/8	A	No	Surface Ar (CaAa)	140.0000 - 0.0000	1	1	0.500 0.500	0.8800		0.40
*										
*										
*** Existing Flat Plates ***										
5.75" x 1" Flat Plate (G)	A	No	Surface Af (CaAa)	33.3300 - 0.5000	1	1	0.500 0.500	5.7500	13.5000	19.57
5.75" x 1" Flat Plate (G)	B	No	Surface Af (CaAa)	33.3300 - 0.5000	1	1	0.500 0.500	5.7500	13.5000	0.00
5.75" x 1" Flat Plate (G)	C	No	Surface Af (CaAa)	33.3300 - 0.5000	1	1	0.500 0.500	5.7500	13.5000	0.00
***										
5.75" x 1" Flat Plate (G)	A	No	Surface Af (CaAa)	50.5800 - 30.5800	1	1	-0.300 -0.300	5.7500	13.5000	0.00
5.75" x 1" Flat Plate (G)	B	No	Surface Af (CaAa)	50.5800 - 30.5800	1	1	-0.300 -0.300	5.7500	13.5000	0.00
5.75" x 1" Flat Plate (G)	C	No	Surface Af (CaAa)	50.5800 - 30.5800	1	1	-0.300 -0.300	5.7500	13.5000	0.00
***										
5.75" x 1" Flat Plate (G)	A	No	Surface Af (CaAa)	72.0000 - 57.0000	1	1	-0.300 -0.300	5.7500	13.5000	0.00
5.75" x 1" Flat Plate (G)	B	No	Surface Af (CaAa)	72.0000 - 57.0000	1	1	-0.300 -0.300	5.7500	13.5000	0.00
5.75" x 1" Flat Plate (G)	C	No	Surface Af (CaAa)	72.0000 - 57.0000	1	1	-0.300 -0.300	5.7500	13.5000	0.00
***										
MP3-04	A	No	Surface Af	60.5000 -	1	1	0.000	4.7800	12.7800	0.00

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
			(CaAa)	0.5000			0.000			
MP3-04	B	No	Surface Af (CaAa)	60.5000 - 0.5000	1	1	0.000 0.000	4.7800	12.7800	0.00
MP3-04	C	No	Surface Af (CaAa)	60.5000 - 0.5000	1	1	0.000 0.000	4.7800	12.7800	0.00
***										
CCI-65FP-060100	A	No	Surface Af (CaAa)	41.6700 - 26.6700	1	1	0.000 0.000	6.0000	14.0000	0.00
CCI-65FP-060100	B	No	Surface Af (CaAa)	41.6700 - 26.6700	1	1	0.000 0.000	6.0000	14.0000	0.00
CCI-65FP-060100	C	No	Surface Af (CaAa)	41.6700 - 26.6700	1	1	0.000 0.000	6.0000	14.0000	0.00
***										
CCI-65FP-060100	A	No	Surface Af (CaAa)	25.5000 - 0.5000	1	1	0.000 0.000	6.0000	14.0000	0.00
CCI-65FP-060100	B	No	Surface Af (CaAa)	25.5000 - 0.5000	1	1	0.000 0.000	6.0000	14.0000	0.00
CCI-65FP-060100	C	No	Surface Af (CaAa)	25.5000 - 0.5000	1	1	0.000 0.000	6.0000	14.0000	0.00
***										
CCI-65FP-060100	A	No	Surface Af (CaAa)	65.0000 - 50.0000	1	1	0.000 0.000	6.0000	14.0000	0.00
CCI-65FP-060100	B	No	Surface Af (CaAa)	65.0000 - 50.0000	1	1	0.000 0.000	6.0000	14.0000	0.00
CCI-65FP-060100	C	No	Surface Af (CaAa)	65.0000 - 50.0000	1	1	0.000 0.000	6.0000	14.0000	0.00
***										
CCI-65FP-060100	A	No	Surface Af (CaAa)	93.0000 - 68.0000	1	1	0.000 0.000	6.0000	14.0000	0.00
CCI-65FP-060100	B	No	Surface Af (CaAa)	93.0000 - 68.0000	1	1	0.000 0.000	6.0000	14.0000	0.00
CCI-65FP-060100	C	No	Surface Af (CaAa)	93.0000 - 68.0000	1	1	0.000 0.000	6.0000	14.0000	0.00
***										
CCI-65FP-045100	A	No	Surface Af (CaAa)	117.0000 - 102.0000	1	1	0.300 0.300	4.5000	11.0000	0.00
CCI-65FP-045100	B	No	Surface Af (CaAa)	117.0000 - 102.0000	1	1	0.300 0.300	4.5000	11.0000	0.00
CCI-65FP-045100	C	No	Surface Af (CaAa)	117.0000 - 102.0000	1	1	0.300 0.300	4.5000	11.0000	0.00
Proposed Flat Plates										
CCI-65FP-060100	A	No	Surface Af (CaAa)	31.0000 - 21.0000	1	1	-0.200 -0.200	6.0000	14.0000	0.00
CCI-65FP-060100	C	No	Surface Af (CaAa)	31.0000 - 21.0000	1	1	-0.200 -0.200	6.0000	14.0000	0.00
*										
*										
*										
HB158-1-08U8-S8J18(1-5/8)	B	No	Surface Ar (CaAa)	138.0000 - 0.0000	2	1	0.340 0.360	1.9800		1.30
LDF7-50A(1-5/8)	B	No	Surface Ar (CaAa)	120.0000 - 0.0000	18	6	-0.100 0.100	1.9800		0.82
*										
*										

Feed Line/Linear Appurtenances - Entered As Area

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

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
*									
** FACE A **									
HB158-21U6M48-30F(1-5/8)	A	No	No	Inside Pole	73.0000 - 0.0000	3	No Ice	0.0000	2.39
							1/2" Ice	0.0000	2.39
							1" Ice	0.0000	2.39
							2" Ice	0.0000	2.39
*									
** FACE B **									
AVA6-50(1-1/4)	B	No	No	Inside Pole	138.0000 - 0.0000	2	No Ice	0.0000	0.46
							1/2" Ice	0.0000	0.46
							1" Ice	0.0000	0.46
							2" Ice	0.0000	0.46
LDF7-50A(1-5/8)	B	No	No	Inside Pole	138.0000 - 0.0000	12	No Ice	0.0000	0.82
							1/2" Ice	0.0000	0.82
							1" Ice	0.0000	0.82
							2" Ice	0.0000	0.82
*									
** FACE C **									
AL7-50(1-5/8)	C	No	No	Inside Pole	129.0000 - 0.0000	6	No Ice	0.0000	0.52
							1/2" Ice	0.0000	0.52
							1" Ice	0.0000	0.52
							2" Ice	0.0000	0.52
FB-L98B-034-XXXXXX(3/8)	C	No	No	Inside Pole	129.0000 - 0.0000	1	No Ice	0.0000	0.05
							1/2" Ice	0.0000	0.05
							1" Ice	0.0000	0.05
							2" Ice	0.0000	0.05
WR-VG86ST-BRD(3/4)	C	No	No	Inside Pole	129.0000 - 0.0000	2	No Ice	0.0000	0.58
							1/2" Ice	0.0000	0.58
							1" Ice	0.0000	0.58
							2" Ice	0.0000	0.58
*									

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
L1	140.0000-135.0000	A	0.000	0.000	0.440	0.000	0.0020
		B	0.000	0.000	0.594	0.000	0.0401
		C	0.000	0.000	0.000	0.000	0.0000
L2	135.0000-130.0000	A	0.000	0.000	0.440	0.000	0.0020
		B	0.000	0.000	0.990	0.000	0.0668
		C	0.000	0.000	0.000	0.000	0.0000
L3	130.0000-125.0000	A	0.000	0.000	0.440	0.000	0.0020
		B	0.000	0.000	0.990	0.000	0.0668
		C	0.000	0.000	0.000	0.000	0.0174
L4	125.0000-120.0000	A	0.000	0.000	0.440	0.000	0.0020
		B	0.000	0.000	0.990	0.000	0.0668
		C	0.000	0.000	0.000	0.000	0.0217
L5	120.0000-115.0000	A	0.000	0.000	1.940	0.000	0.0020
		B	0.000	0.000	8.430	0.000	0.1406
		C	0.000	0.000	1.500	0.000	0.0217
L6	115.0000-114.7500	A	0.000	0.000	0.209	0.000	0.0001
		B	0.000	0.000	0.534	0.000	0.0070
		C	0.000	0.000	0.188	0.000	0.0011
L7	114.7500-109.7500	A	0.000	0.000	4.190	0.000	0.0020
		B	0.000	0.000	10.680	0.000	0.1406
		C	0.000	0.000	3.750	0.000	0.0217
L8	109.7500-104.7500	A	0.000	0.000	4.190	0.000	0.0020
		B	0.000	0.000	10.680	0.000	0.1406
		C	0.000	0.000	3.750	0.000	0.0217
L9	104.7500-	A	0.000	0.000	0.628	0.000	0.0003

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
	104.0000	B	0.000	0.000	1.602	0.000	0.0211
		C	0.000	0.000	0.563	0.000	0.0033
L10	104.0000-103.7500	A	0.000	0.000	0.209	0.000	0.0001
		B	0.000	0.000	0.534	0.000	0.0070
		C	0.000	0.000	0.188	0.000	0.0011
L11	103.7500-101.5800	A	0.000	0.000	1.503	0.000	0.0009
		B	0.000	0.000	4.320	0.000	0.0610
		C	0.000	0.000	1.313	0.000	0.0094
L12	101.5800-96.5800	A	0.000	0.000	0.440	0.000	0.0020
		B	0.000	0.000	6.930	0.000	0.1406
		C	0.000	0.000	0.000	0.000	0.0217
L13	96.5800-91.5800	A	0.000	0.000	1.860	0.000	0.0020
		B	0.000	0.000	8.350	0.000	0.1406
		C	0.000	0.000	1.420	0.000	0.0217
L14	91.5800-91.0000	A	0.000	0.000	0.631	0.000	0.0002
		B	0.000	0.000	1.384	0.000	0.0163
		C	0.000	0.000	0.580	0.000	0.0025
L15	91.0000-90.7500	A	0.000	0.000	0.272	0.000	0.0001
		B	0.000	0.000	0.597	0.000	0.0070
		C	0.000	0.000	0.250	0.000	0.0011
L16	90.7500-85.7500	A	0.000	0.000	5.440	0.000	0.0020
		B	0.000	0.000	11.930	0.000	0.1406
		C	0.000	0.000	5.000	0.000	0.0217
L17	85.7500-80.7500	A	0.000	0.000	5.440	0.000	0.0020
		B	0.000	0.000	11.930	0.000	0.1406
		C	0.000	0.000	5.000	0.000	0.0217
L18	80.7500-75.7500	A	0.000	0.000	5.440	0.000	0.0020
		B	0.000	0.000	11.930	0.000	0.1406
		C	0.000	0.000	5.000	0.000	0.0217
L19	75.7500-70.7500	A	0.000	0.000	6.638	0.000	0.0181
		B	0.000	0.000	13.128	0.000	0.1406
		C	0.000	0.000	6.198	0.000	0.0217
L20	70.7500-69.9800	A	0.000	0.000	1.576	0.000	0.0058
		B	0.000	0.000	2.575	0.000	0.0217
		C	0.000	0.000	1.508	0.000	0.0033
L21	69.9800-69.7300	A	0.000	0.000	0.512	0.000	0.0019
		B	0.000	0.000	0.836	0.000	0.0070
		C	0.000	0.000	0.490	0.000	0.0011
L22	69.7300-64.7300	A	0.000	0.000	7.232	0.000	0.0379
		B	0.000	0.000	13.722	0.000	0.1406
		C	0.000	0.000	6.792	0.000	0.0217
L23	64.7300-63.0000	A	0.000	0.000	3.540	0.000	0.0131
		B	0.000	0.000	5.786	0.000	0.0486
		C	0.000	0.000	3.388	0.000	0.0075
L24	63.0000-62.7500	A	0.000	0.000	0.512	0.000	0.0019
		B	0.000	0.000	0.836	0.000	0.0070
		C	0.000	0.000	0.490	0.000	0.0011
L25	62.7500-59.0800	A	0.000	0.000	8.641	0.000	0.0278
		B	0.000	0.000	13.405	0.000	0.1032
		C	0.000	0.000	8.318	0.000	0.0159
L26	59.0800-58.8200	A	0.000	0.000	0.739	0.000	0.0020
		B	0.000	0.000	1.077	0.000	0.0073
		C	0.000	0.000	0.716	0.000	0.0011
L27	58.8200-58.6700	A	0.000	0.000	0.426	0.000	0.0011
		B	0.000	0.000	0.621	0.000	0.0042
		C	0.000	0.000	0.413	0.000	0.0007
L28	58.6700-53.6700	A	0.000	0.000	11.024	0.000	0.0379
		B	0.000	0.000	17.514	0.000	0.1406
		C	0.000	0.000	10.584	0.000	0.0217
L29	53.6700-48.5800	A	0.000	0.000	10.090	0.000	0.0385
		B	0.000	0.000	16.696	0.000	0.1431
		C	0.000	0.000	9.642	0.000	0.0221
L30	48.5800-47.5800	A	0.000	0.000	1.843	0.000	0.0076
		B	0.000	0.000	3.141	0.000	0.0281
		C	0.000	0.000	1.755	0.000	0.0043
L31	47.5800-42.5800	A	0.000	0.000	9.215	0.000	0.0379
		B	0.000	0.000	15.705	0.000	0.1406
		C	0.000	0.000	8.775	0.000	0.0217
L32	42.5800-39.6700	A	0.000	0.000	7.363	0.000	0.0220

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
		B	0.000	0.000	11.140	0.000	0.0818
		C	0.000	0.000	7.107	0.000	0.0126
L33	39.6700-39.4200	A	0.000	0.000	0.711	0.000	0.0019
		B	0.000	0.000	1.035	0.000	0.0070
		C	0.000	0.000	0.689	0.000	0.0011
L34	39.4200-34.4200	A	0.000	0.000	14.215	0.000	0.0379
		B	0.000	0.000	20.705	0.000	0.1406
		C	0.000	0.000	13.775	0.000	0.0217
L35	34.4200-32.5000	A	0.000	0.000	6.254	0.000	0.0308
		B	0.000	0.000	8.746	0.000	0.0540
		C	0.000	0.000	6.085	0.000	0.0083
L36	32.5000-32.2500	A	0.000	0.000	0.950	0.000	0.0068
		B	0.000	0.000	1.275	0.000	0.0070
		C	0.000	0.000	0.928	0.000	0.0011
L37	32.2500-31.4200	A	0.000	0.000	3.155	0.000	0.0225
		B	0.000	0.000	4.232	0.000	0.0233
		C	0.000	0.000	3.082	0.000	0.0036
L38	31.4200-31.1700	A	0.000	0.000	0.950	0.000	0.0068
		B	0.000	0.000	1.275	0.000	0.0070
		C	0.000	0.000	0.928	0.000	0.0011
L39	31.1700-29.0000	A	0.000	0.000	8.559	0.000	0.0589
		B	0.000	0.000	9.551	0.000	0.0610
		C	0.000	0.000	8.368	0.000	0.0094
L40	29.0000-28.6500	A	0.000	0.000	1.314	0.000	0.0095
		B	0.000	0.000	1.449	0.000	0.0098
		C	0.000	0.000	1.283	0.000	0.0015
L41	28.6500-28.4200	A	0.000	0.000	0.864	0.000	0.0062
		B	0.000	0.000	0.952	0.000	0.0065
		C	0.000	0.000	0.843	0.000	0.0010
L42	28.4200-23.5000	A	0.000	0.000	17.305	0.000	0.1335
		B	0.000	0.000	19.204	0.000	0.1384
		C	0.000	0.000	16.872	0.000	0.0213
L43	23.5000-23.2500	A	0.000	0.000	0.939	0.000	0.0068
		B	0.000	0.000	1.035	0.000	0.0070
		C	0.000	0.000	0.917	0.000	0.0011
L44	23.2500-23.0000	A	0.000	0.000	0.939	0.000	0.0068
		B	0.000	0.000	1.035	0.000	0.0070
		C	0.000	0.000	0.917	0.000	0.0011
L45	23.0000-22.7500	A	0.000	0.000	0.939	0.000	0.0068
		B	0.000	0.000	1.035	0.000	0.0070
		C	0.000	0.000	0.917	0.000	0.0011
L46	22.7500-17.7500	A	0.000	0.000	15.811	0.000	0.1357
		B	0.000	0.000	20.705	0.000	0.1406
		C	0.000	0.000	15.371	0.000	0.0217
L47	17.7500-12.7500	A	0.000	0.000	14.215	0.000	0.1357
		B	0.000	0.000	20.705	0.000	0.1406
		C	0.000	0.000	13.775	0.000	0.0217
L48	12.7500-7.7500	A	0.000	0.000	14.215	0.000	0.1357
		B	0.000	0.000	20.705	0.000	0.1406
		C	0.000	0.000	13.775	0.000	0.0217
L49	7.7500-2.7500	A	0.000	0.000	14.215	0.000	0.1357
		B	0.000	0.000	20.705	0.000	0.1406
		C	0.000	0.000	13.775	0.000	0.0217
L50	2.7500-0.0000	A	0.000	0.000	6.441	0.000	0.0648
		B	0.000	0.000	10.010	0.000	0.0773
		C	0.000	0.000	6.199	0.000	0.0119

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
L1	140.0000-	A	1.471	0.000	0.000	1.911	0.000	0.0231
	135.0000	B		0.000	0.000	1.476	0.000	0.0773
		C		0.000	0.000	0.000	0.000	0.0000
L2	135.0000-	A	1.465	0.000	0.000	1.905	0.000	0.0230

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
	130.0000	B		0.000	0.000	2.455	0.000	0.1285
		C		0.000	0.000	0.000	0.000	0.0000
L3	130.0000-125.0000	A	1.459	0.000	0.000	1.899	0.000	0.0229
		B		0.000	0.000	2.449	0.000	0.1281
		C		0.000	0.000	0.000	0.000	0.0174
L4	125.0000-120.0000	A	1.454	0.000	0.000	1.894	0.000	0.0227
		B		0.000	0.000	2.444	0.000	0.1278
		C		0.000	0.000	0.000	0.000	0.0217
L5	120.0000-115.0000	A	1.448	0.000	0.000	3.960	0.000	0.0411
		B		0.000	0.000	13.744	0.000	0.3559
		C		0.000	0.000	2.072	0.000	0.0402
L6	115.0000-114.7500	A	1.444	0.000	0.000	0.353	0.000	0.0034
		B		0.000	0.000	0.842	0.000	0.0192
		C		0.000	0.000	0.259	0.000	0.0034
L7	114.7500-109.7500	A	1.441	0.000	0.000	7.056	0.000	0.0685
		B		0.000	0.000	16.833	0.000	0.3825
		C		0.000	0.000	5.175	0.000	0.0678
L8	109.7500-104.7500	A	1.434	0.000	0.000	7.044	0.000	0.0681
		B		0.000	0.000	16.812	0.000	0.3813
		C		0.000	0.000	5.170	0.000	0.0675
L9	104.7500-104.0000	A	1.431	0.000	0.000	1.056	0.000	0.0102
		B		0.000	0.000	2.520	0.000	0.0571
		C		0.000	0.000	0.775	0.000	0.0101
L10	104.0000-103.7500	A	1.430	0.000	0.000	0.352	0.000	0.0034
		B		0.000	0.000	0.840	0.000	0.0190
		C		0.000	0.000	0.258	0.000	0.0034
L11	103.7500-101.5800	A	1.428	0.000	0.000	2.618	0.000	0.0256
		B		0.000	0.000	6.854	0.000	0.1612
		C		0.000	0.000	1.808	0.000	0.0254
L12	101.5800-96.5800	A	1.423	0.000	0.000	1.863	0.000	0.0220
		B		0.000	0.000	11.617	0.000	0.3339
		C		0.000	0.000	0.000	0.000	0.0217
L13	96.5800-91.5800	A	1.416	0.000	0.000	3.678	0.000	0.0370
		B		0.000	0.000	13.423	0.000	0.3480
		C		0.000	0.000	1.822	0.000	0.0368
L14	91.5800-91.0000	A	1.412	0.000	0.000	0.959	0.000	0.0087
		B		0.000	0.000	2.088	0.000	0.0447
		C		0.000	0.000	0.744	0.000	0.0087
L15	91.0000-90.7500	A	1.411	0.000	0.000	0.413	0.000	0.0037
		B		0.000	0.000	0.900	0.000	0.0193
		C		0.000	0.000	0.321	0.000	0.0037
L16	90.7500-85.7500	A	1.407	0.000	0.000	8.254	0.000	0.0745
		B		0.000	0.000	17.987	0.000	0.3844
		C		0.000	0.000	6.407	0.000	0.0746
L17	85.7500-80.7500	A	1.399	0.000	0.000	8.237	0.000	0.0739
		B		0.000	0.000	17.960	0.000	0.3829
		C		0.000	0.000	6.399	0.000	0.0742
L18	80.7500-75.7500	A	1.390	0.000	0.000	8.220	0.000	0.0733
		B		0.000	0.000	17.932	0.000	0.3812
		C		0.000	0.000	6.390	0.000	0.0737
L19	75.7500-70.7500	A	1.381	0.000	0.000	9.695	0.000	0.1014
		B		0.000	0.000	19.396	0.000	0.3921
		C		0.000	0.000	7.874	0.000	0.0859
L20	70.7500-69.9800	A	1.375	0.000	0.000	2.181	0.000	0.0244
		B		0.000	0.000	3.673	0.000	0.0660
		C		0.000	0.000	1.901	0.000	0.0190
L21	69.9800-69.7300	A	1.374	0.000	0.000	0.708	0.000	0.0079
		B		0.000	0.000	1.192	0.000	0.0214
		C		0.000	0.000	0.617	0.000	0.0061
L22	69.7300-64.7300	A	1.369	0.000	0.000	10.308	0.000	0.1268
		B		0.000	0.000	19.994	0.000	0.3964
		C		0.000	0.000	8.499	0.000	0.0918
L23	64.7300-63.0000	A	1.362	0.000	0.000	4.794	0.000	0.0542
		B		0.000	0.000	8.142	0.000	0.1472
		C		0.000	0.000	4.170	0.000	0.0422
L24	63.0000-62.7500	A	1.360	0.000	0.000	0.692	0.000	0.0078
		B		0.000	0.000	1.176	0.000	0.0212
		C		0.000	0.000	0.602	0.000	0.0061
L25	62.7500-59.0800	A	1.356	0.000	0.000	11.676	0.000	0.1278

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	18.773	0.000	0.3245
		C		0.000	0.000	10.358	0.000	0.1024
L26	59.0800-58.8200	A	1.351	0.000	0.000	0.997	0.000	0.0105
		B		0.000	0.000	1.499	0.000	0.0244
		C		0.000	0.000	0.904	0.000	0.0087
L27	58.8200-58.6700	A	1.351	0.000	0.000	0.575	0.000	0.0061
		B		0.000	0.000	0.865	0.000	0.0141
		C		0.000	0.000	0.521	0.000	0.0050
L28	58.6700-53.6700	A	1.345	0.000	0.000	15.182	0.000	0.1690
		B		0.000	0.000	24.838	0.000	0.4357
		C		0.000	0.000	13.397	0.000	0.1346
L29	53.6700-48.5800	A	1.332	0.000	0.000	14.123	0.000	0.1593
		B		0.000	0.000	23.937	0.000	0.4292
		C		0.000	0.000	12.319	0.000	0.1245
L30	48.5800-47.5800	A	1.324	0.000	0.000	2.642	0.000	0.0300
		B		0.000	0.000	4.570	0.000	0.0830
		C		0.000	0.000	2.288	0.000	0.0232
L31	47.5800-42.5800	A	1.315	0.000	0.000	13.161	0.000	0.1482
		B		0.000	0.000	22.780	0.000	0.4114
		C		0.000	0.000	11.406	0.000	0.1144
L32	42.5800-39.6700	A	1.303	0.000	0.000	10.063	0.000	0.1047
		B		0.000	0.000	15.653	0.000	0.2571
		C		0.000	0.000	9.048	0.000	0.0851
L33	39.6700-39.4200	A	1.298	0.000	0.000	0.958	0.000	0.0097
		B		0.000	0.000	1.438	0.000	0.0228
		C		0.000	0.000	0.871	0.000	0.0080
L34	39.4200-34.4200	A	1.289	0.000	0.000	19.136	0.000	0.1926
		B		0.000	0.000	28.723	0.000	0.4528
		C		0.000	0.000	17.407	0.000	0.1594
L35	34.4200-32.5000	A	1.277	0.000	0.000	8.339	0.000	0.0970
		B		0.000	0.000	12.014	0.000	0.1801
		C		0.000	0.000	7.680	0.000	0.0681
L36	32.5000-32.2500	A	1.273	0.000	0.000	1.257	0.000	0.0167
		B		0.000	0.000	1.735	0.000	0.0247
		C		0.000	0.000	1.171	0.000	0.0101
L37	32.2500-31.4200	A	1.270	0.000	0.000	4.172	0.000	0.0552
		B		0.000	0.000	5.759	0.000	0.0818
		C		0.000	0.000	3.888	0.000	0.0335
L38	31.4200-31.1700	A	1.268	0.000	0.000	1.256	0.000	0.0166
		B		0.000	0.000	1.734	0.000	0.0246
		C		0.000	0.000	1.171	0.000	0.0101
L39	31.1700-29.0000	A	1.263	0.000	0.000	11.073	0.000	0.1480
		B		0.000	0.000	13.127	0.000	0.1988
		C		0.000	0.000	10.334	0.000	0.0914
L40	29.0000-28.6500	A	1.258	0.000	0.000	1.698	0.000	0.0232
		B		0.000	0.000	2.000	0.000	0.0311
		C		0.000	0.000	1.579	0.000	0.0141
L41	28.6500-28.4200	A	1.257	0.000	0.000	1.116	0.000	0.0152
		B		0.000	0.000	1.314	0.000	0.0204
		C		0.000	0.000	1.038	0.000	0.0092
L42	28.4200-23.5000	A	1.245	0.000	0.000	22.491	0.000	0.3130
		B		0.000	0.000	26.729	0.000	0.4231
		C		0.000	0.000	20.833	0.000	0.1849
L43	23.5000-23.2500	A	1.232	0.000	0.000	1.218	0.000	0.0163
		B		0.000	0.000	1.433	0.000	0.0219
		C		0.000	0.000	1.134	0.000	0.0098
L44	23.2500-23.0000	A	1.230	0.000	0.000	1.218	0.000	0.0163
		B		0.000	0.000	1.432	0.000	0.0218
		C		0.000	0.000	1.134	0.000	0.0098
L45	23.0000-22.7500	A	1.229	0.000	0.000	1.217	0.000	0.0163
		B		0.000	0.000	1.432	0.000	0.0218
		C		0.000	0.000	1.134	0.000	0.0098
L46	22.7500-17.7500	A	1.214	0.000	0.000	20.894	0.000	0.2942
		B		0.000	0.000	28.564	0.000	0.4326
		C		0.000	0.000	19.240	0.000	0.1647
L47	17.7500-12.7500	A	1.180	0.000	0.000	18.936	0.000	0.2737
		B		0.000	0.000	28.386	0.000	0.4236
		C		0.000	0.000	17.316	0.000	0.1449
L48	12.7500-7.7500	A	1.134	0.000	0.000	18.752	0.000	0.2669

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	28.144	0.000	0.4115
		C		0.000	0.000	17.178	0.000	0.1389
L49	7.7500-2.7500	A	1.061	0.000	0.000	18.458	0.000	0.2562
		B		0.000	0.000	27.759	0.000	0.3926
		C		0.000	0.000	16.957	0.000	0.1296
L50	2.7500-0.0000	A	0.928	0.000	0.000	8.203	0.000	0.1117
		B		0.000	0.000	13.227	0.000	0.1886
		C		0.000	0.000	7.451	0.000	0.0532

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	140.0000-135.0000	0.9885	-0.4003	1.0950	-0.9486
L2	135.0000-130.0000	1.5160	-0.2539	1.6921	-0.7631
L3	130.0000-125.0000	1.5188	-0.2608	1.7181	-0.7867
L4	125.0000-120.0000	1.5214	-0.2670	1.7415	-0.8081
L5	120.0000-115.0000	4.1722	-2.1638	3.6771	-2.0377
L6	115.0000-114.7500	2.5835	-1.3402	2.9299	-1.6252
L7	114.7500-109.7500	2.6207	-1.3598	2.9805	-1.6547
L8	109.7500-104.7500	2.6894	-1.3961	3.0748	-1.7098
L9	104.7500-104.0000	2.7279	-1.4164	3.1280	-1.7409
L10	104.0000-103.7500	2.7330	-1.4191	3.1358	-1.7455
L11	103.7500-101.5800	2.9905	-1.5530	3.3865	-1.8857
L12	101.5800-96.5800	6.0051	-3.1194	4.9264	-2.7457
L13	96.5800-91.5800	4.7237	-2.4546	4.2487	-2.3708
L14	91.5800-91.0000	2.6201	-1.3618	3.1015	-1.7318
L15	91.0000-90.7500	2.6266	-1.3652	3.1097	-1.7365
L16	90.7500-85.7500	2.6572	-1.3813	3.1522	-1.7611
L17	85.7500-80.7500	2.7140	-1.4113	3.2315	-1.8072
L18	80.7500-75.7500	2.7693	-1.4404	3.3089	-1.8520
L19	75.7500-70.7500	2.5431	-1.3231	3.1119	-1.7431
L20	70.7500-69.9800	1.9863	-1.0336	2.5421	-1.4245
L21	69.9800-69.7300	1.9909	-1.0360	2.5483	-1.4281
L22	69.7300-64.7300	2.4520	-1.2761	3.0909	-1.7327
L23	64.7300-63.0000	2.0440	-1.0639	2.6516	-1.4870
L24	63.0000-62.7500	2.0532	-1.0687	2.6639	-1.4940
L25	62.7500-59.0800	1.8983	-0.9882	2.4668	-1.3837
L26	59.0800-58.8200	1.6924	-0.8811	2.2033	-1.2362
L27	58.8200-58.6700	1.6940	-0.8819	2.2054	-1.2374
L28	58.6700-53.6700	2.0390	-1.0617	2.5903	-1.4537
L29	53.6700-48.5800	2.2160	-1.1540	2.7896	-1.5661
L30	48.5800-47.5800	2.2898	-1.1925	2.8739	-1.6135
L31	47.5800-42.5800	2.3153	-1.2059	2.9079	-1.6324
L32	42.5800-39.6700	1.9453	-1.0133	2.5009	-1.4042
L33	39.6700-39.4200	1.8161	-0.9461	2.3536	-1.3215
L34	39.4200-34.4200	1.8350	-0.9560	2.3785	-1.3356
L35	34.4200-32.5000	1.6899	-0.8805	2.2127	-1.2425
L36	32.5000-32.2500	1.5155	-0.7897	2.0056	-1.1262
L37	32.2500-31.4200	1.5188	-0.7914	2.0099	-1.1286
L38	31.4200-31.1700	1.5223	-0.7933	2.0146	-1.1312
L39	31.1700-29.0000	1.3118	0.1834	1.8482	-0.2370
L40	29.0000-28.6500	1.3540	0.2826	1.9126	-0.1635

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L41	28.6500-28.4200	1.3555	0.2832	1.9146	-0.1633
L42	28.4200-23.5000	1.4363	0.3021	2.0150	-0.1686
L43	23.5000-23.2500	1.3819	0.2925	1.9382	-0.1588
L44	23.2500-23.0000	1.3831	0.2930	1.9399	-0.1586
L45	23.0000-22.7500	1.3842	0.2934	1.9414	-0.1584
L46	22.7500-17.7500	1.7413	-0.5205	2.3051	-0.9427
L47	17.7500-12.7500	1.9847	-1.0347	2.5543	-1.4326
L48	12.7500-7.7500	2.0179	-1.0521	2.5945	-1.4535
L49	7.7500-2.7500	2.0506	-1.0693	2.6300	-1.4701
L50	2.7500-0.0000	2.3361	-1.2183	2.9519	-1.6423

Note: For pole sections, center of pressure calculations do not consider feed line shielding.

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L1	1	Safety Line 5/8	135.00 - 140.00	1.0000	1.0000
L1	56	HB158-1-08U8-S8J18(1-5/8)	135.00 - 138.00	1.0000	1.0000
L2	1	Safety Line 5/8	130.00 - 135.00	1.0000	1.0000
L2	56	HB158-1-08U8-S8J18(1-5/8)	130.00 - 135.00	1.0000	1.0000
L3	1	Safety Line 5/8	125.00 - 130.00	1.0000	1.0000
L3	56	HB158-1-08U8-S8J18(1-5/8)	125.00 - 130.00	1.0000	1.0000
L4	1	Safety Line 5/8	120.00 - 125.00	1.0000	1.0000
L4	56	HB158-1-08U8-S8J18(1-5/8)	120.00 - 125.00	1.0000	1.0000
L5	1	Safety Line 5/8	115.00 - 120.00	1.0000	1.0000
L5	37	CCI-65FP-045100	115.00 - 117.00	1.0000	1.0000
L5	38	CCI-65FP-045100	115.00 - 117.00	1.0000	1.0000
L5	39	CCI-65FP-045100	115.00 - 117.00	1.0000	1.0000
L5	56	HB158-1-08U8-S8J18(1-5/8)	115.00 - 120.00	1.0000	1.0000
L5	57	LDF7-50A(1-5/8)	115.00 - 120.00	1.0000	1.0000
L6	1	Safety Line 5/8	114.75 - 115.00	1.0000	1.0000
L6	37	CCI-65FP-045100	114.75 - 115.00	1.0000	1.0000
L6	38	CCI-65FP-045100	114.75 - 115.00	1.0000	1.0000
L6	39	CCI-65FP-045100	114.75 - 115.00	1.0000	1.0000
L6	56	HB158-1-08U8-S8J18(1-5/8)	114.75 - 115.00	1.0000	1.0000
L6	57	LDF7-50A(1-5/8)	114.75 - 115.00	1.0000	1.0000
L7	1	Safety Line 5/8	109.75 - 114.75	1.0000	1.0000
L7	37	CCI-65FP-045100	109.75 - 114.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L7	38	CCI-65FP-045100	109.75 - 114.75	1.0000	1.0000
L7	39	CCI-65FP-045100	109.75 - 114.75	1.0000	1.0000
L7	56	HB158-1-08U8-S8J18(1-5/8)	109.75 - 114.75	1.0000	1.0000
L7	57	LDF7-50A(1-5/8)	109.75 - 114.75	1.0000	1.0000
L8	1	Safety Line 5/8	104.75 - 109.75	1.0000	1.0000
L8	37	CCI-65FP-045100	104.75 - 109.75	1.0000	1.0000
L8	38	CCI-65FP-045100	104.75 - 109.75	1.0000	1.0000
L8	39	CCI-65FP-045100	104.75 - 109.75	1.0000	1.0000
L8	56	HB158-1-08U8-S8J18(1-5/8)	104.75 - 109.75	1.0000	1.0000
L8	57	LDF7-50A(1-5/8)	104.75 - 109.75	1.0000	1.0000
L9	1	Safety Line 5/8	104.00 - 104.75	1.0000	1.0000
L9	37	CCI-65FP-045100	104.00 - 104.75	1.0000	1.0000
L9	38	CCI-65FP-045100	104.00 - 104.75	1.0000	1.0000
L9	39	CCI-65FP-045100	104.00 - 104.75	1.0000	1.0000
L9	56	HB158-1-08U8-S8J18(1-5/8)	104.00 - 104.75	1.0000	1.0000
L9	57	LDF7-50A(1-5/8)	104.00 - 104.75	1.0000	1.0000
L10	1	Safety Line 5/8	103.75 - 104.00	1.0000	1.0000
L10	37	CCI-65FP-045100	103.75 - 104.00	1.0000	1.0000
L10	38	CCI-65FP-045100	103.75 - 104.00	1.0000	1.0000
L10	39	CCI-65FP-045100	103.75 - 104.00	1.0000	1.0000
L10	56	HB158-1-08U8-S8J18(1-5/8)	103.75 - 104.00	1.0000	1.0000
L10	57	LDF7-50A(1-5/8)	103.75 - 104.00	1.0000	1.0000
L11	1	Safety Line 5/8	101.58 - 103.75	1.0000	1.0000
L11	37	CCI-65FP-045100	102.00 - 103.75	1.0000	1.0000
L11	38	CCI-65FP-045100	102.00 - 103.75	1.0000	1.0000
L11	39	CCI-65FP-045100	102.00 - 103.75	1.0000	1.0000
L11	56	HB158-1-08U8-S8J18(1-5/8)	101.58 - 103.75	1.0000	1.0000
L11	57	LDF7-50A(1-5/8)	101.58 - 103.75	1.0000	1.0000
L12	1	Safety Line 5/8	96.58 - 101.58	1.0000	1.0000
L12	56	HB158-1-08U8-S8J18(1-5/8)	96.58 - 101.58	1.0000	1.0000
L12	57	LDF7-50A(1-5/8)	96.58 - 101.58	1.0000	1.0000
L13	1	Safety Line 5/8	91.58 - 96.58	1.0000	1.0000
L13	33	CCI-65FP-060100	91.58 - 93.00	1.0000	1.0000
L13	34	CCI-65FP-060100	91.58 - 93.00	1.0000	1.0000
L13	35	CCI-65FP-060100	91.58 -	1.0000	1.0000

Tower Section	*Feed Line Record No.*	*Description*	*Feed Line Segment Elev.*	*K_a No Ice*	*K_a Ice*
			93.00		
L13	56	HB158-1-08U8-S8J18(1-5/8)	91.58 - 96.58	1.0000	1.0000
L13	57	LDF7-50A(1-5/8)	91.58 - 96.58	1.0000	1.0000
L14	1	Safety Line 5/8	91.00 - 91.58	1.0000	1.0000
L14	33	CCI-65FP-060100	91.00 - 91.58	1.0000	1.0000
L14	34	CCI-65FP-060100	91.00 - 91.58	1.0000	1.0000
L14	35	CCI-65FP-060100	91.00 - 91.58	1.0000	1.0000
L14	56	HB158-1-08U8-S8J18(1-5/8)	91.00 - 91.58	1.0000	1.0000
L14	57	LDF7-50A(1-5/8)	91.00 - 91.58	1.0000	1.0000
L15	1	Safety Line 5/8	90.75 - 91.00	1.0000	1.0000
L15	33	CCI-65FP-060100	90.75 - 91.00	1.0000	1.0000
L15	34	CCI-65FP-060100	90.75 - 91.00	1.0000	1.0000
L15	35	CCI-65FP-060100	90.75 - 91.00	1.0000	1.0000
L15	56	HB158-1-08U8-S8J18(1-5/8)	90.75 - 91.00	1.0000	1.0000
L15	57	LDF7-50A(1-5/8)	90.75 - 91.00	1.0000	1.0000
L16	1	Safety Line 5/8	85.75 - 90.75	1.0000	1.0000
L16	33	CCI-65FP-060100	85.75 - 90.75	1.0000	1.0000
L16	34	CCI-65FP-060100	85.75 - 90.75	1.0000	1.0000
L16	35	CCI-65FP-060100	85.75 - 90.75	1.0000	1.0000
L16	56	HB158-1-08U8-S8J18(1-5/8)	85.75 - 90.75	1.0000	1.0000
L16	57	LDF7-50A(1-5/8)	85.75 - 90.75	1.0000	1.0000
L17	1	Safety Line 5/8	80.75 - 85.75	1.0000	1.0000
L17	33	CCI-65FP-060100	80.75 - 85.75	1.0000	1.0000
L17	34	CCI-65FP-060100	80.75 - 85.75	1.0000	1.0000
L17	35	CCI-65FP-060100	80.75 - 85.75	1.0000	1.0000
L17	56	HB158-1-08U8-S8J18(1-5/8)	80.75 - 85.75	1.0000	1.0000
L17	57	LDF7-50A(1-5/8)	80.75 - 85.75	1.0000	1.0000
L18	1	Safety Line 5/8	75.75 - 80.75	1.0000	1.0000
L18	33	CCI-65FP-060100	75.75 - 80.75	1.0000	1.0000
L18	34	CCI-65FP-060100	75.75 - 80.75	1.0000	1.0000
L18	35	CCI-65FP-060100	75.75 - 80.75	1.0000	1.0000
L18	56	HB158-1-08U8-S8J18(1-5/8)	75.75 - 80.75	1.0000	1.0000
L18	57	LDF7-50A(1-5/8)	75.75 - 80.75	1.0000	1.0000
L19	1	Safety Line 5/8	70.75 - 75.75	1.0000	1.0000
L19	13	5.75" x 1" Flat Plate (G)	70.75 - 72.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L19	14	5.75" x 1" Flat Plate (G)	70.75 - 72.00	1.0000	1.0000
L19	15	5.75" x 1" Flat Plate (G)	70.75 - 72.00	1.0000	1.0000
L19	33	CCI-65FP-060100	70.75 - 75.75	1.0000	1.0000
L19	34	CCI-65FP-060100	70.75 - 75.75	1.0000	1.0000
L19	35	CCI-65FP-060100	70.75 - 75.75	1.0000	1.0000
L19	56	HB158-1-08U8-S8J18(1-5/8)	70.75 - 75.75	1.0000	1.0000
L19	57	LDF7-50A(1-5/8)	70.75 - 75.75	1.0000	1.0000
L20	1	Safety Line 5/8	69.98 - 70.75	1.0000	1.0000
L20	13	5.75" x 1" Flat Plate (G)	69.98 - 70.75	1.0000	1.0000
L20	14	5.75" x 1" Flat Plate (G)	69.98 - 70.75	1.0000	1.0000
L20	15	5.75" x 1" Flat Plate (G)	69.98 - 70.75	1.0000	1.0000
L20	33	CCI-65FP-060100	69.98 - 70.75	1.0000	1.0000
L20	34	CCI-65FP-060100	69.98 - 70.75	1.0000	1.0000
L20	35	CCI-65FP-060100	69.98 - 70.75	1.0000	1.0000
L20	56	HB158-1-08U8-S8J18(1-5/8)	69.98 - 70.75	1.0000	1.0000
L20	57	LDF7-50A(1-5/8)	69.98 - 70.75	1.0000	1.0000
L21	1	Safety Line 5/8	69.73 - 69.98	1.0000	1.0000
L21	13	5.75" x 1" Flat Plate (G)	69.73 - 69.98	1.0000	1.0000
L21	14	5.75" x 1" Flat Plate (G)	69.73 - 69.98	1.0000	1.0000
L21	15	5.75" x 1" Flat Plate (G)	69.73 - 69.98	1.0000	1.0000
L21	33	CCI-65FP-060100	69.73 - 69.98	1.0000	1.0000
L21	34	CCI-65FP-060100	69.73 - 69.98	1.0000	1.0000
L21	35	CCI-65FP-060100	69.73 - 69.98	1.0000	1.0000
L21	56	HB158-1-08U8-S8J18(1-5/8)	69.73 - 69.98	1.0000	1.0000
L21	57	LDF7-50A(1-5/8)	69.73 - 69.98	1.0000	1.0000
L22	1	Safety Line 5/8	64.73 - 69.73	1.0000	1.0000
L22	13	5.75" x 1" Flat Plate (G)	64.73 - 69.73	1.0000	1.0000
L22	14	5.75" x 1" Flat Plate (G)	64.73 - 69.73	1.0000	1.0000
L22	15	5.75" x 1" Flat Plate (G)	64.73 - 69.73	1.0000	1.0000
L22	29	CCI-65FP-060100	64.73 - 65.00	1.0000	1.0000
L22	30	CCI-65FP-060100	64.73 - 65.00	1.0000	1.0000
L22	31	CCI-65FP-060100	64.73 - 65.00	1.0000	1.0000
L22	33	CCI-65FP-060100	68.00 - 69.73	1.0000	1.0000
L22	34	CCI-65FP-060100	68.00 - 69.73	1.0000	1.0000
L22	35	CCI-65FP-060100	68.00 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L22	56	HB158-1-08U8-S8J18(1-5/8)	69.73 64.73 - 69.73	1.0000	1.0000
L22	57	LDF7-50A(1-5/8)	64.73 - 69.73	1.0000	1.0000
L23	1	Safety Line 5/8	63.00 - 64.73	1.0000	1.0000
L23	13	5.75" x 1" Flat Plate (G)	63.00 - 64.73	1.0000	1.0000
L23	14	5.75" x 1" Flat Plate (G)	63.00 - 64.73	1.0000	1.0000
L23	15	5.75" x 1" Flat Plate (G)	63.00 - 64.73	1.0000	1.0000
L23	29	CCI-65FP-060100	63.00 - 64.73	1.0000	1.0000
L23	30	CCI-65FP-060100	63.00 - 64.73	1.0000	1.0000
L23	31	CCI-65FP-060100	63.00 - 64.73	1.0000	1.0000
L23	56	HB158-1-08U8-S8J18(1-5/8)	63.00 - 64.73	1.0000	1.0000
L23	57	LDF7-50A(1-5/8)	63.00 - 64.73	1.0000	1.0000
L24	1	Safety Line 5/8	62.75 - 63.00	1.0000	1.0000
L24	13	5.75" x 1" Flat Plate (G)	62.75 - 63.00	1.0000	1.0000
L24	14	5.75" x 1" Flat Plate (G)	62.75 - 63.00	1.0000	1.0000
L24	15	5.75" x 1" Flat Plate (G)	62.75 - 63.00	1.0000	1.0000
L24	29	CCI-65FP-060100	62.75 - 63.00	1.0000	1.0000
L24	30	CCI-65FP-060100	62.75 - 63.00	1.0000	1.0000
L24	31	CCI-65FP-060100	62.75 - 63.00	1.0000	1.0000
L24	56	HB158-1-08U8-S8J18(1-5/8)	62.75 - 63.00	1.0000	1.0000
L24	57	LDF7-50A(1-5/8)	62.75 - 63.00	1.0000	1.0000
L25	1	Safety Line 5/8	59.08 - 62.75	1.0000	1.0000
L25	13	5.75" x 1" Flat Plate (G)	59.08 - 62.75	1.0000	1.0000
L25	14	5.75" x 1" Flat Plate (G)	59.08 - 62.75	1.0000	1.0000
L25	15	5.75" x 1" Flat Plate (G)	59.08 - 62.75	1.0000	1.0000
L25	17	MP3-04	59.08 - 60.50	1.0000	1.0000
L25	18	MP3-04	59.08 - 60.50	1.0000	1.0000
L25	19	MP3-04	59.08 - 60.50	1.0000	1.0000
L25	29	CCI-65FP-060100	59.08 - 62.75	1.0000	1.0000
L25	30	CCI-65FP-060100	59.08 - 62.75	1.0000	1.0000
L25	31	CCI-65FP-060100	59.08 - 62.75	1.0000	1.0000
L25	56	HB158-1-08U8-S8J18(1-5/8)	59.08 - 62.75	1.0000	1.0000
L25	57	LDF7-50A(1-5/8)	59.08 - 62.75	1.0000	1.0000
L26	1	Safety Line 5/8	58.82 - 59.08	1.0000	1.0000
L26	13	5.75" x 1" Flat Plate (G)	58.82 - 59.08	1.0000	1.0000

Tower Section	*Feed Line Record No.*	*Description*	*Feed Line Segment Elev.*	*K_a No Ice*	*K_a Ice*
L26	14	5.75" x 1" Flat Plate (G)	58.82 - 59.08	1.0000	1.0000
L26	15	5.75" x 1" Flat Plate (G)	58.82 - 59.08	1.0000	1.0000
L26	17	MP3-04	58.82 - 59.08	1.0000	1.0000
L26	18	MP3-04	58.82 - 59.08	1.0000	1.0000
L26	19	MP3-04	58.82 - 59.08	1.0000	1.0000
L26	29	CCI-65FP-060100	58.82 - 59.08	1.0000	1.0000
L26	30	CCI-65FP-060100	58.82 - 59.08	1.0000	1.0000
L26	31	CCI-65FP-060100	58.82 - 59.08	1.0000	1.0000
L26	56	HB158-1-08U8-S8J18(1-5/8)	58.82 - 59.08	1.0000	1.0000
L26	57	LDF7-50A(1-5/8)	58.82 - 59.08	1.0000	1.0000
L27	1	Safety Line 5/8	58.67 - 58.82	1.0000	1.0000
L27	13	5.75" x 1" Flat Plate (G)	58.67 - 58.82	1.0000	1.0000
L27	14	5.75" x 1" Flat Plate (G)	58.67 - 58.82	1.0000	1.0000
L27	15	5.75" x 1" Flat Plate (G)	58.67 - 58.82	1.0000	1.0000
L27	17	MP3-04	58.67 - 58.82	1.0000	1.0000
L27	18	MP3-04	58.67 - 58.82	1.0000	1.0000
L27	19	MP3-04	58.67 - 58.82	1.0000	1.0000
L27	29	CCI-65FP-060100	58.67 - 58.82	1.0000	1.0000
L27	30	CCI-65FP-060100	58.67 - 58.82	1.0000	1.0000
L27	31	CCI-65FP-060100	58.67 - 58.82	1.0000	1.0000
L27	56	HB158-1-08U8-S8J18(1-5/8)	58.67 - 58.82	1.0000	1.0000
L27	57	LDF7-50A(1-5/8)	58.67 - 58.82	1.0000	1.0000
L28	1	Safety Line 5/8	53.67 - 58.67	1.0000	1.0000
L28	13	5.75" x 1" Flat Plate (G)	57.00 - 58.67	1.0000	1.0000
L28	14	5.75" x 1" Flat Plate (G)	57.00 - 58.67	1.0000	1.0000
L28	15	5.75" x 1" Flat Plate (G)	57.00 - 58.67	1.0000	1.0000
L28	17	MP3-04	53.67 - 58.67	1.0000	1.0000
L28	18	MP3-04	53.67 - 58.67	1.0000	1.0000
L28	19	MP3-04	53.67 - 58.67	1.0000	1.0000
L28	29	CCI-65FP-060100	53.67 - 58.67	1.0000	1.0000
L28	30	CCI-65FP-060100	53.67 - 58.67	1.0000	1.0000
L28	31	CCI-65FP-060100	53.67 - 58.67	1.0000	1.0000
L28	56	HB158-1-08U8-S8J18(1-5/8)	53.67 - 58.67	1.0000	1.0000
L28	57	LDF7-50A(1-5/8)	53.67 - 58.67	1.0000	1.0000
L29	1	Safety Line 5/8	48.58 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			53.67		
L29	9	5.75" x 1" Flat Plate (G)	48.58 - 50.58	1.0000	1.0000
L29	10	5.75" x 1" Flat Plate (G)	48.58 - 50.58	1.0000	1.0000
L29	11	5.75" x 1" Flat Plate (G)	48.58 - 50.58	1.0000	1.0000
L29	17	MP3-04	48.58 - 53.67	1.0000	1.0000
L29	18	MP3-04	48.58 - 53.67	1.0000	1.0000
L29	19	MP3-04	48.58 - 53.67	1.0000	1.0000
L29	29	CCI-65FP-060100	50.00 - 53.67	1.0000	1.0000
L29	30	CCI-65FP-060100	50.00 - 53.67	1.0000	1.0000
L29	31	CCI-65FP-060100	50.00 - 53.67	1.0000	1.0000
L29	56	HB158-1-08U8-S8J18(1-5/8)	48.58 - 53.67	1.0000	1.0000
L29	57	LDF7-50A(1-5/8)	48.58 - 53.67	1.0000	1.0000
L31	1	Safety Line 5/8	42.58 - 47.58	1.0000	1.0000
L31	9	5.75" x 1" Flat Plate (G)	42.58 - 47.58	1.0000	1.0000
L31	10	5.75" x 1" Flat Plate (G)	42.58 - 47.58	1.0000	1.0000
L31	11	5.75" x 1" Flat Plate (G)	42.58 - 47.58	1.0000	1.0000
L31	17	MP3-04	42.58 - 47.58	1.0000	1.0000
L31	18	MP3-04	42.58 - 47.58	1.0000	1.0000
L31	19	MP3-04	42.58 - 47.58	1.0000	1.0000
L31	56	HB158-1-08U8-S8J18(1-5/8)	42.58 - 47.58	1.0000	1.0000
L31	57	LDF7-50A(1-5/8)	42.58 - 47.58	1.0000	1.0000
L32	1	Safety Line 5/8	39.67 - 42.58	1.0000	1.0000
L32	9	5.75" x 1" Flat Plate (G)	39.67 - 42.58	1.0000	1.0000
L32	10	5.75" x 1" Flat Plate (G)	39.67 - 42.58	1.0000	1.0000
L32	11	5.75" x 1" Flat Plate (G)	39.67 - 42.58	1.0000	1.0000
L32	17	MP3-04	39.67 - 42.58	1.0000	1.0000
L32	18	MP3-04	39.67 - 42.58	1.0000	1.0000
L32	19	MP3-04	39.67 - 42.58	1.0000	1.0000
L32	21	CCI-65FP-060100	39.67 - 41.67	1.0000	1.0000
L32	22	CCI-65FP-060100	39.67 - 41.67	1.0000	1.0000
L32	23	CCI-65FP-060100	39.67 - 41.67	1.0000	1.0000
L32	56	HB158-1-08U8-S8J18(1-5/8)	39.67 - 42.58	1.0000	1.0000
L32	57	LDF7-50A(1-5/8)	39.67 - 42.58	1.0000	1.0000
L33	1	Safety Line 5/8	39.42 - 39.67	1.0000	1.0000
L33	9	5.75" x 1" Flat Plate (G)	39.42 - 39.67	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L33	10	5.75" x 1" Flat Plate (G)	39.42 - 39.67	1.0000	1.0000
L33	11	5.75" x 1" Flat Plate (G)	39.42 - 39.67	1.0000	1.0000
L33	17	MP3-04	39.42 - 39.67	1.0000	1.0000
L33	18	MP3-04	39.42 - 39.67	1.0000	1.0000
L33	19	MP3-04	39.42 - 39.67	1.0000	1.0000
L33	21	CCI-65FP-060100	39.42 - 39.67	1.0000	1.0000
L33	22	CCI-65FP-060100	39.42 - 39.67	1.0000	1.0000
L33	23	CCI-65FP-060100	39.42 - 39.67	1.0000	1.0000
L33	56	HB158-1-08U8-S8J18(1-5/8)	39.42 - 39.67	1.0000	1.0000
L33	57	LDF7-50A(1-5/8)	39.42 - 39.67	1.0000	1.0000
L34	1	Safety Line 5/8	34.42 - 39.42	1.0000	1.0000
L34	9	5.75" x 1" Flat Plate (G)	34.42 - 39.42	1.0000	1.0000
L34	10	5.75" x 1" Flat Plate (G)	34.42 - 39.42	1.0000	1.0000
L34	11	5.75" x 1" Flat Plate (G)	34.42 - 39.42	1.0000	1.0000
L34	17	MP3-04	34.42 - 39.42	1.0000	1.0000
L34	18	MP3-04	34.42 - 39.42	1.0000	1.0000
L34	19	MP3-04	34.42 - 39.42	1.0000	1.0000
L34	21	CCI-65FP-060100	34.42 - 39.42	1.0000	1.0000
L34	22	CCI-65FP-060100	34.42 - 39.42	1.0000	1.0000
L34	23	CCI-65FP-060100	34.42 - 39.42	1.0000	1.0000
L34	56	HB158-1-08U8-S8J18(1-5/8)	34.42 - 39.42	1.0000	1.0000
L34	57	LDF7-50A(1-5/8)	34.42 - 39.42	1.0000	1.0000
L35	1	Safety Line 5/8	32.50 - 34.42	1.0000	1.0000
L35	5	5.75" x 1" Flat Plate (G)	32.50 - 33.33	1.0000	1.0000
L35	6	5.75" x 1" Flat Plate (G)	32.50 - 33.33	1.0000	1.0000
L35	7	5.75" x 1" Flat Plate (G)	32.50 - 33.33	1.0000	1.0000
L35	9	5.75" x 1" Flat Plate (G)	32.50 - 34.42	1.0000	1.0000
L35	10	5.75" x 1" Flat Plate (G)	32.50 - 34.42	1.0000	1.0000
L35	11	5.75" x 1" Flat Plate (G)	32.50 - 34.42	1.0000	1.0000
L35	17	MP3-04	32.50 - 34.42	1.0000	1.0000
L35	18	MP3-04	32.50 - 34.42	1.0000	1.0000
L35	19	MP3-04	32.50 - 34.42	1.0000	1.0000
L35	21	CCI-65FP-060100	32.50 - 34.42	1.0000	1.0000
L35	22	CCI-65FP-060100	32.50 - 34.42	1.0000	1.0000
L35	23	CCI-65FP-060100	32.50 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L35	56	HB158-1-08U8-S8J18(1-5/8)	34.42 32.50 - 34.42	1.0000	1.0000
L35	57	LDF7-50A(1-5/8)	32.50 - 34.42	1.0000	1.0000
L36	1	Safety Line 5/8	32.25 - 32.50	1.0000	1.0000
L36	5	5.75" x 1" Flat Plate (G)	32.25 - 32.50	1.0000	1.0000
L36	6	5.75" x 1" Flat Plate (G)	32.25 - 32.50	1.0000	1.0000
L36	7	5.75" x 1" Flat Plate (G)	32.25 - 32.50	1.0000	1.0000
L36	9	5.75" x 1" Flat Plate (G)	32.25 - 32.50	1.0000	1.0000
L36	10	5.75" x 1" Flat Plate (G)	32.25 - 32.50	1.0000	1.0000
L36	11	5.75" x 1" Flat Plate (G)	32.25 - 32.50	1.0000	1.0000
L36	17	MP3-04	32.25 - 32.50	1.0000	1.0000
L36	18	MP3-04	32.25 - 32.50	1.0000	1.0000
L36	19	MP3-04	32.25 - 32.50	1.0000	1.0000
L36	21	CCI-65FP-060100	32.25 - 32.50	1.0000	1.0000
L36	22	CCI-65FP-060100	32.25 - 32.50	1.0000	1.0000
L36	23	CCI-65FP-060100	32.25 - 32.50	1.0000	1.0000
L36	56	HB158-1-08U8-S8J18(1-5/8)	32.25 - 32.50	1.0000	1.0000
L36	57	LDF7-50A(1-5/8)	32.25 - 32.50	1.0000	1.0000
L37	1	Safety Line 5/8	31.42 - 32.25	1.0000	1.0000
L37	5	5.75" x 1" Flat Plate (G)	31.42 - 32.25	1.0000	1.0000
L37	6	5.75" x 1" Flat Plate (G)	31.42 - 32.25	1.0000	1.0000
L37	7	5.75" x 1" Flat Plate (G)	31.42 - 32.25	1.0000	1.0000
L37	9	5.75" x 1" Flat Plate (G)	31.42 - 32.25	1.0000	1.0000
L37	10	5.75" x 1" Flat Plate (G)	31.42 - 32.25	1.0000	1.0000
L37	11	5.75" x 1" Flat Plate (G)	31.42 - 32.25	1.0000	1.0000
L37	17	MP3-04	31.42 - 32.25	1.0000	1.0000
L37	18	MP3-04	31.42 - 32.25	1.0000	1.0000
L37	19	MP3-04	31.42 - 32.25	1.0000	1.0000
L37	21	CCI-65FP-060100	31.42 - 32.25	1.0000	1.0000
L37	22	CCI-65FP-060100	31.42 - 32.25	1.0000	1.0000
L37	23	CCI-65FP-060100	31.42 - 32.25	1.0000	1.0000
L37	56	HB158-1-08U8-S8J18(1-5/8)	31.42 - 32.25	1.0000	1.0000
L37	57	LDF7-50A(1-5/8)	31.42 - 32.25	1.0000	1.0000
L38	1	Safety Line 5/8	31.17 - 31.42	1.0000	1.0000
L38	5	5.75" x 1" Flat Plate (G)	31.17 - 31.42	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L38	6	5.75" x 1" Flat Plate (G)	31.17 - 31.42	1.0000	1.0000
L38	7	5.75" x 1" Flat Plate (G)	31.17 - 31.42	1.0000	1.0000
L38	9	5.75" x 1" Flat Plate (G)	31.17 - 31.42	1.0000	1.0000
L38	10	5.75" x 1" Flat Plate (G)	31.17 - 31.42	1.0000	1.0000
L38	11	5.75" x 1" Flat Plate (G)	31.17 - 31.42	1.0000	1.0000
L38	17	MP3-04	31.17 - 31.42	1.0000	1.0000
L38	18	MP3-04	31.17 - 31.42	1.0000	1.0000
L38	19	MP3-04	31.17 - 31.42	1.0000	1.0000
L38	21	CCI-65FP-060100	31.17 - 31.42	1.0000	1.0000
L38	22	CCI-65FP-060100	31.17 - 31.42	1.0000	1.0000
L38	23	CCI-65FP-060100	31.17 - 31.42	1.0000	1.0000
L38	56	HB158-1-08U8-S8J18(1-5/8)	31.17 - 31.42	1.0000	1.0000
L38	57	LDF7-50A(1-5/8)	31.17 - 31.42	1.0000	1.0000
L39	1	Safety Line 5/8	29.00 - 31.17	1.0000	1.0000
L39	5	5.75" x 1" Flat Plate (G)	29.00 - 31.17	1.0000	1.0000
L39	6	5.75" x 1" Flat Plate (G)	29.00 - 31.17	1.0000	1.0000
L39	7	5.75" x 1" Flat Plate (G)	29.00 - 31.17	1.0000	1.0000
L39	9	5.75" x 1" Flat Plate (G)	30.58 - 31.17	1.0000	1.0000
L39	10	5.75" x 1" Flat Plate (G)	30.58 - 31.17	1.0000	1.0000
L39	11	5.75" x 1" Flat Plate (G)	30.58 - 31.17	1.0000	1.0000
L39	17	MP3-04	29.00 - 31.17	1.0000	1.0000
L39	18	MP3-04	29.00 - 31.17	1.0000	1.0000
L39	19	MP3-04	29.00 - 31.17	1.0000	1.0000
L39	21	CCI-65FP-060100	29.00 - 31.17	1.0000	1.0000
L39	22	CCI-65FP-060100	29.00 - 31.17	1.0000	1.0000
L39	23	CCI-65FP-060100	29.00 - 31.17	1.0000	1.0000
L39	41	CCI-65FP-060100	29.00 - 31.00	1.0000	1.0000
L39	42	CCI-65FP-060100	29.00 - 31.00	1.0000	1.0000
L39	56	HB158-1-08U8-S8J18(1-5/8)	29.00 - 31.17	1.0000	1.0000
L39	57	LDF7-50A(1-5/8)	29.00 - 31.17	1.0000	1.0000
L40	1	Safety Line 5/8	28.65 - 29.00	1.0000	1.0000
L40	5	5.75" x 1" Flat Plate (G)	28.65 - 29.00	1.0000	1.0000
L40	6	5.75" x 1" Flat Plate (G)	28.65 - 29.00	1.0000	1.0000
L40	7	5.75" x 1" Flat Plate (G)	28.65 - 29.00	1.0000	1.0000
L40	17	MP3-04	28.65 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L40	18	MP3-04	29.00 28.65 - 29.00	1.0000	1.0000
L40	19	MP3-04	28.65 - 29.00	1.0000	1.0000
L40	21	CCI-65FP-060100	28.65 - 29.00	1.0000	1.0000
L40	22	CCI-65FP-060100	28.65 - 29.00	1.0000	1.0000
L40	23	CCI-65FP-060100	28.65 - 29.00	1.0000	1.0000
L40	41	CCI-65FP-060100	28.65 - 29.00	1.0000	1.0000
L40	42	CCI-65FP-060100	28.65 - 29.00	1.0000	1.0000
L40	56	HB158-1-08U8-S8J18(1-5/8)	28.65 - 29.00	1.0000	1.0000
L40	57	LDF7-50A(1-5/8)	28.65 - 29.00	1.0000	1.0000
L41	1	Safety Line 5/8	28.42 - 28.65	1.0000	1.0000
L41	5	5.75" x 1" Flat Plate (G)	28.42 - 28.65	1.0000	1.0000
L41	6	5.75" x 1" Flat Plate (G)	28.42 - 28.65	1.0000	1.0000
L41	7	5.75" x 1" Flat Plate (G)	28.42 - 28.65	1.0000	1.0000
L41	17	MP3-04	28.42 - 28.65	1.0000	1.0000
L41	18	MP3-04	28.42 - 28.65	1.0000	1.0000
L41	19	MP3-04	28.42 - 28.65	1.0000	1.0000
L41	21	CCI-65FP-060100	28.42 - 28.65	1.0000	1.0000
L41	22	CCI-65FP-060100	28.42 - 28.65	1.0000	1.0000
L41	23	CCI-65FP-060100	28.42 - 28.65	1.0000	1.0000
L41	41	CCI-65FP-060100	28.42 - 28.65	1.0000	1.0000
L41	42	CCI-65FP-060100	28.42 - 28.65	1.0000	1.0000
L41	56	HB158-1-08U8-S8J18(1-5/8)	28.42 - 28.65	1.0000	1.0000
L41	57	LDF7-50A(1-5/8)	28.42 - 28.65	1.0000	1.0000
L42	1	Safety Line 5/8	23.50 - 28.42	1.0000	1.0000
L42	5	5.75" x 1" Flat Plate (G)	23.50 - 28.42	1.0000	1.0000
L42	6	5.75" x 1" Flat Plate (G)	23.50 - 28.42	1.0000	1.0000
L42	7	5.75" x 1" Flat Plate (G)	23.50 - 28.42	1.0000	1.0000
L42	17	MP3-04	23.50 - 28.42	1.0000	1.0000
L42	18	MP3-04	23.50 - 28.42	1.0000	1.0000
L42	19	MP3-04	23.50 - 28.42	1.0000	1.0000
L42	21	CCI-65FP-060100	26.67 - 28.42	1.0000	1.0000
L42	22	CCI-65FP-060100	26.67 - 28.42	1.0000	1.0000
L42	23	CCI-65FP-060100	26.67 - 28.42	1.0000	1.0000
L42	25	CCI-65FP-060100	23.50 - 25.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L42	26	CCI-65FP-060100	23.50 - 25.50	1.0000	1.0000
L42	27	CCI-65FP-060100	23.50 - 25.50	1.0000	1.0000
L42	41	CCI-65FP-060100	23.50 - 28.42	1.0000	1.0000
L42	42	CCI-65FP-060100	23.50 - 28.42	1.0000	1.0000
L42	56	HB158-1-08U8-S8J18(1-5/8)	23.50 - 28.42	1.0000	1.0000
L42	57	LDF7-50A(1-5/8)	23.50 - 28.42	1.0000	1.0000
L43	1	Safety Line 5/8	23.25 - 23.50	1.0000	1.0000
L43	5	5.75" x 1" Flat Plate (G)	23.25 - 23.50	1.0000	1.0000
L43	6	5.75" x 1" Flat Plate (G)	23.25 - 23.50	1.0000	1.0000
L43	7	5.75" x 1" Flat Plate (G)	23.25 - 23.50	1.0000	1.0000
L43	17	MP3-04	23.25 - 23.50	1.0000	1.0000
L43	18	MP3-04	23.25 - 23.50	1.0000	1.0000
L43	19	MP3-04	23.25 - 23.50	1.0000	1.0000
L43	25	CCI-65FP-060100	23.25 - 23.50	1.0000	1.0000
L43	26	CCI-65FP-060100	23.25 - 23.50	1.0000	1.0000
L43	27	CCI-65FP-060100	23.25 - 23.50	1.0000	1.0000
L43	41	CCI-65FP-060100	23.25 - 23.50	1.0000	1.0000
L43	42	CCI-65FP-060100	23.25 - 23.50	1.0000	1.0000
L43	56	HB158-1-08U8-S8J18(1-5/8)	23.25 - 23.50	1.0000	1.0000
L43	57	LDF7-50A(1-5/8)	23.25 - 23.50	1.0000	1.0000
L44	1	Safety Line 5/8	23.00 - 23.25	1.0000	1.0000
L44	5	5.75" x 1" Flat Plate (G)	23.00 - 23.25	1.0000	1.0000
L44	6	5.75" x 1" Flat Plate (G)	23.00 - 23.25	1.0000	1.0000
L44	7	5.75" x 1" Flat Plate (G)	23.00 - 23.25	1.0000	1.0000
L44	17	MP3-04	23.00 - 23.25	1.0000	1.0000
L44	18	MP3-04	23.00 - 23.25	1.0000	1.0000
L44	19	MP3-04	23.00 - 23.25	1.0000	1.0000
L44	25	CCI-65FP-060100	23.00 - 23.25	1.0000	1.0000
L44	26	CCI-65FP-060100	23.00 - 23.25	1.0000	1.0000
L44	27	CCI-65FP-060100	23.00 - 23.25	1.0000	1.0000
L44	41	CCI-65FP-060100	23.00 - 23.25	1.0000	1.0000
L44	42	CCI-65FP-060100	23.00 - 23.25	1.0000	1.0000
L44	56	HB158-1-08U8-S8J18(1-5/8)	23.00 - 23.25	1.0000	1.0000
L44	57	LDF7-50A(1-5/8)	23.00 - 23.25	1.0000	1.0000
L45	1	Safety Line 5/8	22.75 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L45	5	5.75" x 1" Flat Plate (G)	23.00 22.75 - 23.00	1.0000	1.0000
L45	6	5.75" x 1" Flat Plate (G)	22.75 - 23.00	1.0000	1.0000
L45	7	5.75" x 1" Flat Plate (G)	22.75 - 23.00	1.0000	1.0000
L45	17	MP3-04	22.75 - 23.00	1.0000	1.0000
L45	18	MP3-04	22.75 - 23.00	1.0000	1.0000
L45	19	MP3-04	22.75 - 23.00	1.0000	1.0000
L45	25	CCI-65FP-060100	22.75 - 23.00	1.0000	1.0000
L45	26	CCI-65FP-060100	22.75 - 23.00	1.0000	1.0000
L45	27	CCI-65FP-060100	22.75 - 23.00	1.0000	1.0000
L45	41	CCI-65FP-060100	22.75 - 23.00	1.0000	1.0000
L45	42	CCI-65FP-060100	22.75 - 23.00	1.0000	1.0000
L45	56	HB158-1-08U8-S8J18(1-5/8)	22.75 - 23.00	1.0000	1.0000
L45	57	LDF7-50A(1-5/8)	22.75 - 23.00	1.0000	1.0000
L46	1	Safety Line 5/8	17.75 - 22.75	1.0000	1.0000
L46	5	5.75" x 1" Flat Plate (G)	17.75 - 22.75	1.0000	1.0000
L46	6	5.75" x 1" Flat Plate (G)	17.75 - 22.75	1.0000	1.0000
L46	7	5.75" x 1" Flat Plate (G)	17.75 - 22.75	1.0000	1.0000
L46	17	MP3-04	17.75 - 22.75	1.0000	1.0000
L46	18	MP3-04	17.75 - 22.75	1.0000	1.0000
L46	19	MP3-04	17.75 - 22.75	1.0000	1.0000
L46	25	CCI-65FP-060100	17.75 - 22.75	1.0000	1.0000
L46	26	CCI-65FP-060100	17.75 - 22.75	1.0000	1.0000
L46	27	CCI-65FP-060100	17.75 - 22.75	1.0000	1.0000
L46	41	CCI-65FP-060100	21.00 - 22.75	1.0000	1.0000
L46	42	CCI-65FP-060100	21.00 - 22.75	1.0000	1.0000
L46	56	HB158-1-08U8-S8J18(1-5/8)	17.75 - 22.75	1.0000	1.0000
L46	57	LDF7-50A(1-5/8)	17.75 - 22.75	1.0000	1.0000
L47	1	Safety Line 5/8	12.75 - 17.75	1.0000	1.0000
L47	5	5.75" x 1" Flat Plate (G)	12.75 - 17.75	1.0000	1.0000
L47	6	5.75" x 1" Flat Plate (G)	12.75 - 17.75	1.0000	1.0000
L47	7	5.75" x 1" Flat Plate (G)	12.75 - 17.75	1.0000	1.0000
L47	17	MP3-04	12.75 - 17.75	1.0000	1.0000
L47	18	MP3-04	12.75 - 17.75	1.0000	1.0000
L47	19	MP3-04	12.75 - 17.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L47	25	CCI-65FP-060100	12.75 - 17.75	1.0000	1.0000
L47	26	CCI-65FP-060100	12.75 - 17.75	1.0000	1.0000
L47	27	CCI-65FP-060100	12.75 - 17.75	1.0000	1.0000
L47	56	HB158-1-08U8-S8J18(1-5/8)	12.75 - 17.75	1.0000	1.0000
L47	57	LDF7-50A(1-5/8)	12.75 - 17.75	1.0000	1.0000
L48	1	Safety Line 5/8	7.75 - 12.75	1.0000	1.0000
L48	5	5.75" x 1" Flat Plate (G)	7.75 - 12.75	1.0000	1.0000
L48	6	5.75" x 1" Flat Plate (G)	7.75 - 12.75	1.0000	1.0000
L48	7	5.75" x 1" Flat Plate (G)	7.75 - 12.75	1.0000	1.0000
L48	17	MP3-04	7.75 - 12.75	1.0000	1.0000
L48	18	MP3-04	7.75 - 12.75	1.0000	1.0000
L48	19	MP3-04	7.75 - 12.75	1.0000	1.0000
L48	25	CCI-65FP-060100	7.75 - 12.75	1.0000	1.0000
L48	26	CCI-65FP-060100	7.75 - 12.75	1.0000	1.0000
L48	27	CCI-65FP-060100	7.75 - 12.75	1.0000	1.0000
L48	56	HB158-1-08U8-S8J18(1-5/8)	7.75 - 12.75	1.0000	1.0000
L48	57	LDF7-50A(1-5/8)	7.75 - 12.75	1.0000	1.0000
L49	1	Safety Line 5/8	2.75 - 7.75	1.0000	1.0000
L49	5	5.75" x 1" Flat Plate (G)	2.75 - 7.75	1.0000	1.0000
L49	6	5.75" x 1" Flat Plate (G)	2.75 - 7.75	1.0000	1.0000
L49	7	5.75" x 1" Flat Plate (G)	2.75 - 7.75	1.0000	1.0000
L49	17	MP3-04	2.75 - 7.75	1.0000	1.0000
L49	18	MP3-04	2.75 - 7.75	1.0000	1.0000
L49	19	MP3-04	2.75 - 7.75	1.0000	1.0000
L49	25	CCI-65FP-060100	2.75 - 7.75	1.0000	1.0000
L49	26	CCI-65FP-060100	2.75 - 7.75	1.0000	1.0000
L49	27	CCI-65FP-060100	2.75 - 7.75	1.0000	1.0000
L49	56	HB158-1-08U8-S8J18(1-5/8)	2.75 - 7.75	1.0000	1.0000
L49	57	LDF7-50A(1-5/8)	2.75 - 7.75	1.0000	1.0000
L50	1	Safety Line 5/8	0.00 - 2.75	1.0000	1.0000
L50	5	5.75" x 1" Flat Plate (G)	0.50 - 2.75	1.0000	1.0000
L50	6	5.75" x 1" Flat Plate (G)	0.50 - 2.75	1.0000	1.0000
L50	7	5.75" x 1" Flat Plate (G)	0.50 - 2.75	1.0000	1.0000
L50	17	MP3-04	0.50 - 2.75	1.0000	1.0000
L50	18	MP3-04	0.50 - 2.75	1.0000	1.0000
L50	19	MP3-04	0.50 - 2.75	1.0000	1.0000
L50	25	CCI-65FP-060100	0.50 - 2.75	1.0000	1.0000
L50	26	CCI-65FP-060100	0.50 - 2.75	1.0000	1.0000
L50	27	CCI-65FP-060100	0.50 - 2.75	1.0000	1.0000
L50	56	HB158-1-08U8-S8J18(1-5/8)	0.00 - 2.75	1.0000	1.0000
L50	57	LDF7-50A(1-5/8)	0.00 - 2.75	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Lightning Rod 2"x15'	C	From Leg	0.0000 0.0000 7.5000	0.000	140.0000	No Ice 1/2" Ice	3.0000 4.5250 6.0667	3.0000 4.5250 6.0667	0.0800 0.1031 0.1358

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*
						1" Ice 2" Ice	9.2000	9.2000	0.2303
* ** Level 138ft **									
(2) HBXX-6516DS-A2M w/ Mount Pipe	A	From Leg	4.0000 0.0000 2.0000	0.000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	5.6558 6.0642 6.4748 7.3223	4.5251 5.2049 5.8567 7.1980	0.0497 0.0990 0.1544 0.2870
(2) HBXX-6516DS-A2M w/ Mount Pipe	B	From Leg	4.0000 0.0000 2.0000	0.000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	5.6558 6.0642 6.4748 7.3223	4.5251 5.2049 5.8567 7.1980	0.0497 0.0990 0.1544 0.2870
(2) HBXX-6516DS-A2M w/ Mount Pipe	C	From Leg	4.0000 0.0000 2.0000	0.000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	5.6558 6.0642 6.4748 7.3223	4.5251 5.2049 5.8567 7.1980	0.0497 0.0990 0.1544 0.2870
X7C-FRO-660-VR0 w/ Mount Pipe	A	From Leg	4.0000 0.0000 2.0000	0.000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	9.7864 10.3601 10.8989 11.9990	7.5292 8.7153 9.6153 11.4489	0.0606 0.1387 0.2250 0.4259
X7C-FRO-660-VR0 w/ Mount Pipe	B	From Leg	4.0000 0.0000 2.0000	0.000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	9.7864 10.3601 10.8989 11.9990	7.5292 8.7153 9.6153 11.4489	0.0606 0.1387 0.2250 0.4259
X7C-FRO-660-VR0 w/ Mount Pipe	C	From Leg	4.0000 0.0000 2.0000	0.000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	9.7864 10.3601 10.8989 11.9990	7.5292 8.7153 9.6153 11.4489	0.0606 0.1387 0.2250 0.4259
BXA-80063-6BF-EDIN-4 w/ Mount Pipe	A	From Leg	4.0000 0.0000 2.0000	0.000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	7.4998 8.0328 8.5348 9.5641	5.6302 6.7191 7.5606 9.2937	0.0437 0.1029 0.1695 0.3290
BXA-80063-6BF-EDIN-4 w/ Mount Pipe	B	From Leg	4.0000 0.0000 2.0000	0.000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	7.4998 8.0328 8.5348 9.5641	5.6302 6.7191 7.5606 9.2937	0.0437 0.1029 0.1695 0.3290
BXA-80063-6BF-EDIN-4 w/ Mount Pipe	C	From Leg	4.0000 0.0000 2.0000	0.000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	7.4998 8.0328 8.5348 9.5641	5.6302 6.7191 7.5606 9.2937	0.0437 0.1029 0.1695 0.3290
DB636-C	A	From Leg	4.0000 0.0000 7.0000	0.000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.3750 3.3542 4.3500 5.5813	2.3750 3.3542 4.3500 5.5813	0.0300 0.0477 0.0717 0.1388
AWS4 (B66) 4X45 RRH	A	From Leg	4.0000 0.0000 2.0000	0.000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.6600 2.8781 3.1037 3.5770	1.5861 1.7690 1.9588 2.3594	0.0640 0.0844 0.1078 0.1650
AWS4 (B66) 4X45 RRH	B	From Leg	4.0000 0.0000 2.0000	0.000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.6600 2.8781 3.1037 3.5770	1.5861 1.7690 1.9588 2.3594	0.0640 0.0844 0.1078 0.1650
AWS4 (B66) 4X45 RRH	C	From Leg	4.0000	0.000	138.0000	No Ice	2.6600	1.5861	0.0640

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
			0.0000 2.0000			1/2" Ice 1" Ice 2" Ice	2.8781 3.1037 3.5770	1.7690 1.9588 2.3594	0.0844 0.1078 0.1650
RRH2X60-PCS	A	From Leg	4.0000 0.0000 2.0000	0.000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.2000 2.3926 2.5926 3.0148	1.7233 1.9015 2.0870 2.4804	0.0550 0.0754 0.0987 0.1552
RRH2X60-PCS	B	From Leg	4.0000 0.0000 2.0000	0.000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.2000 2.3926 2.5926 3.0148	1.7233 1.9015 2.0870 2.4804	0.0550 0.0754 0.0987 0.1552
RRH2X60-PCS	C	From Leg	4.0000 0.0000 2.0000	0.000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.2000 2.3926 2.5926 3.0148	1.7233 1.9015 2.0870 2.4804	0.0550 0.0754 0.0987 0.1552
RRH2X60-700	A	From Leg	4.0000 0.0000 2.0000	0.000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	3.5002 3.7609 4.0285 4.5849	1.8157 2.0519 2.2894 2.7852	0.0600 0.0827 0.1091 0.1734
RRH2X60-700	B	From Leg	4.0000 0.0000 2.0000	0.000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	3.5002 3.7609 4.0285 4.5849	1.8157 2.0519 2.2894 2.7852	0.0600 0.0827 0.1091 0.1734
RRH2X60-700	C	From Leg	4.0000 0.0000 2.0000	0.000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	3.5002 3.7609 4.0285 4.5849	1.8157 2.0519 2.2894 2.7852	0.0600 0.0827 0.1091 0.1734
(2) DB-T1-6Z-8AB-0Z	C	From Leg	4.0000 0.0000 2.0000	0.000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.8000 5.0704 5.3481 5.9259	2.0000 2.1926 2.3926 2.8148	0.0440 0.0801 0.1202 0.2130
Platform Mount [LP 403-1]	C	None		0.000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	18.8500 24.3000 29.7500 40.6500	18.8500 24.3000 29.7500 40.6500	1.5000 1.7966 2.0931 2.6862
*									
** Level 129ft **									
(2) HPA-65R-BUU-H6	A	From Leg	4.0000 0.0000 0.0000	0.000	129.0000	No Ice 1/2" Ice 1" Ice 2" Ice	9.6578 10.1285 10.6062 11.5826	6.4500 6.9134 7.3843 8.3078	0.0510 0.1140 0.1834 0.3421
(2) HPA-65R-BUU-H6	B	From Leg	4.0000 0.0000 0.0000	0.000	129.0000	No Ice 1/2" Ice 1" Ice 2" Ice	9.6578 10.1285 10.6062 11.5826	6.4500 6.9134 7.3843 8.3078	0.0510 0.1140 0.1834 0.3421
(2) HPA-65R-BUU-H6	C	From Leg	4.0000 0.0000 0.0000	0.000	129.0000	No Ice 1/2" Ice 1" Ice 2" Ice	9.6578 10.1285 10.6062 11.5826	6.4500 6.9134 7.3843 8.3078	0.0510 0.1140 0.1834 0.3421
RRUS 32 B2	A	From Leg	4.0000 0.0000 0.0000	0.000	129.0000	No Ice 1/2" Ice 1" Ice	2.7313 2.9531 3.1823 3.6628	1.6681 1.8552 2.0493 2.4585	0.0529 0.0740 0.0982 0.1571

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" Ice			
RRUS 32 B2	B	From Leg	4.0000 0.0000 0.0000	0.000	129.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.7313 2.9531 3.1823 3.6628	1.6681 1.8552 2.0493 2.4585	0.0529 0.0740 0.0982 0.1571
RRUS 32 B2	C	From Leg	4.0000 0.0000 0.0000	0.000	129.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.7313 2.9531 3.1823 3.6628	1.6681 1.8552 2.0493 2.4585	0.0529 0.0740 0.0982 0.1571
RRUS-11	A	From Leg	4.0000 0.0000 0.0000	0.000	129.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.7845 2.9919 3.2066 3.6584	1.1872 1.3342 1.4897 1.8326	0.0476 0.0684 0.0923 0.1498
RRUS-11	B	From Leg	4.0000 0.0000 0.0000	0.000	129.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.7845 2.9919 3.2066 3.6584	1.1872 1.3342 1.4897 1.8326	0.0476 0.0684 0.0923 0.1498
RRUS-11	C	From Leg	4.0000 0.0000 0.0000	0.000	129.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.7845 2.9919 3.2066 3.6584	1.1872 1.3342 1.4897 1.8326	0.0476 0.0684 0.0923 0.1498
(2) 6' x 2" Mount Pipe	A	From Leg	4.0000 0.0000 0.0000	0.000	129.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.4250 1.9250 2.2939 3.0596	1.4250 1.9250 2.2939 3.0596	0.0220 0.0328 0.0477 0.0903
(2) 6' x 2" Mount Pipe	B	From Leg	4.0000 0.0000 0.0000	0.000	129.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.4250 1.9250 2.2939 3.0596	1.4250 1.9250 2.2939 3.0596	0.0220 0.0328 0.0477 0.0903
(2) 6' x 2" Mount Pipe	C	From Leg	4.0000 0.0000 0.0000	0.000	129.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.4250 1.9250 2.2939 3.0596	1.4250 1.9250 2.2939 3.0596	0.0220 0.0328 0.0477 0.0903
Sector Mount [SM 502-3]	C	None		0.000	129.0000	No Ice 1/2" Ice 1" Ice 2" Ice	33.0200 47.3600 61.7000 90.3800	33.0200 47.3600 61.7000 90.3800	1.6731 2.2239 2.7747 3.8763
*									
** Level 120ft **									
APX16PV-16PVL w/ Mount Pipe	A	From Leg	4.0000 0.0000 0.0000	0.000	120.0000	No Ice 1/2" Ice 1" Ice 2" Ice	6.2744 6.7026 7.1290 8.0081	3.2678 3.9735 4.6395 6.0214	0.0594 0.1048 0.1564 0.2814
APX16PV-16PVL w/ Mount Pipe	B	From Leg	4.0000 0.0000 0.0000	0.000	120.0000	No Ice 1/2" Ice 1" Ice 2" Ice	6.2744 6.7026 7.1290 8.0081	3.2678 3.9735 4.6395 6.0214	0.0594 0.1048 0.1564 0.2814
APX16PV-16PVL w/ Mount Pipe	C	From Leg	4.0000 0.0000 0.0000	0.000	120.0000	No Ice 1/2" Ice 1" Ice 2" Ice	6.2744 6.7026 7.1290 8.0081	3.2678 3.9735 4.6395 6.0214	0.0594 0.1048 0.1564 0.2814
LNX-6515DS-A1M w/ Mount Pipe	A	From Leg	4.0000 0.0000	0.000	120.0000	No Ice 1/2"	11.6828 12.4043	9.8418 11.3657	0.0833 0.1729

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*
			0.0000			Ice	13.1351	12.9138	0.2726
						1" Ice	14.5120	15.2672	0.5061
						2" Ice			
LNX-6515DS-A1M w/ Mount Pipe	B	From Leg	4.0000 0.0000 0.0000	0.000	120.0000	No Ice 1/2" Ice 1" Ice 2" Ice	11.6828 12.4043 13.1351 14.5120	9.8418 11.3657 12.9138 15.2672	0.0833 0.1729 0.2726 0.5061
LNX-6515DS-A1M w/ Mount Pipe	C	From Leg	4.0000 0.0000 0.0000	0.000	120.0000	No Ice 1/2" Ice 1" Ice 2" Ice	11.6828 12.4043 13.1351 14.5120	9.8418 11.3657 12.9138 15.2672	0.0833 0.1729 0.2726 0.5061
APX16DWV-16DWVS-E-A20 w/ Mount Pipe	A	From Leg	4.0000 0.0000 0.0000	0.000	120.0000	No Ice 1/2" Ice 1" Ice 2" Ice	7.1541 7.6003 8.0441 8.9560	3.7031 4.4953 5.2148 6.7038	0.0625 0.1126 0.1695 0.3067
APX16DWV-16DWVS-E-A20 w/ Mount Pipe	B	From Leg	4.0000 0.0000 0.0000	0.000	120.0000	No Ice 1/2" Ice 1" Ice 2" Ice	7.1541 7.6003 8.0441 8.9560	3.7031 4.4953 5.2148 6.7038	0.0625 0.1126 0.1695 0.3067
APX16DWV-16DWVS-E-A20 w/ Mount Pipe	C	From Leg	4.0000 0.0000 0.0000	0.000	120.0000	No Ice 1/2" Ice 1" Ice 2" Ice	7.1541 7.6003 8.0441 8.9560	3.7031 4.4953 5.2148 6.7038	0.0625 0.1126 0.1695 0.3067
KRY 112 489/2	A	From Leg	4.0000 0.0000 0.0000	0.000	120.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.5592 0.6579 0.7640 0.9984	0.3651 0.4484 0.5420 0.7524	0.0154 0.0205 0.0271 0.0458
KRY 112 489/2	B	From Leg	4.0000 0.0000 0.0000	0.000	120.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.5592 0.6579 0.7640 0.9984	0.3651 0.4484 0.5420 0.7524	0.0154 0.0205 0.0271 0.0458
KRY 112 489/2	C	From Leg	4.0000 0.0000 0.0000	0.000	120.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.5592 0.6579 0.7640 0.9984	0.3651 0.4484 0.5420 0.7524	0.0154 0.0205 0.0271 0.0458
KRY 112 144/1	A	From Leg	4.0000 0.0000 0.0000	0.000	120.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.3500 0.4259 0.5093 0.6981	0.1750 0.2343 0.3009 0.4565	0.0110 0.0142 0.0186 0.0319
KRY 112 144/1	B	From Leg	4.0000 0.0000 0.0000	0.000	120.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.3500 0.4259 0.5093 0.6981	0.1750 0.2343 0.3009 0.4565	0.0110 0.0142 0.0186 0.0319
KRY 112 144/1	C	From Leg	4.0000 0.0000 0.0000	0.000	120.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.3500 0.4259 0.5093 0.6981	0.1750 0.2343 0.3009 0.4565	0.0110 0.0142 0.0186 0.0319
T-Arm Mount [TA 602-3]	C	None		0.000	120.0000	No Ice 1/2" Ice 1" Ice 2" Ice	11.5900 15.4400 19.2900 26.9900	11.5900 15.4400 19.2900 26.9900	0.7743 0.9904 1.2064 1.6385

*
** Level 99ft **

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
*									
** Level 95ft **									
*									
** Level 73ft **									
APXVSPP18-C-A20 w/ Mount Pipe	A	From Leg	4.0000 0.0000 2.0000	0.000	73.0000	No Ice 1/2" Ice 1" Ice 2" Ice	8.2619 8.8215 9.3462 10.4181	6.9458 8.1266 9.0212 10.8440	0.0826 0.1506 0.2265 0.4060
APXVSPP18-C-A20 w/ Mount Pipe	B	From Leg	4.0000 0.0000 2.0000	0.000	73.0000	No Ice 1/2" Ice 1" Ice 2" Ice	8.2619 8.8215 9.3462 10.4181	6.9458 8.1266 9.0212 10.8440	0.0826 0.1506 0.2265 0.4060
APXVSPP18-C-A20 w/ Mount Pipe	C	From Leg	4.0000 0.0000 2.0000	0.000	73.0000	No Ice 1/2" Ice 1" Ice 2" Ice	8.2619 8.8215 9.3462 10.4181	6.9458 8.1266 9.0212 10.8440	0.0826 0.1506 0.2265 0.4060
DT465B-2XR w/ Mount Pipe	A	From Leg	4.0000 0.0000 2.0000	0.000	73.0000	No Ice 1/2" Ice 1" Ice 2" Ice	9.3360 9.9051 10.4391 11.5301	7.6339 8.8197 9.7184 11.5435	0.0835 0.1600 0.2446 0.4420
DT465B-2XR w/ Mount Pipe	B	From Leg	4.0000 0.0000 2.0000	0.000	73.0000	No Ice 1/2" Ice 1" Ice 2" Ice	9.3360 9.9051 10.4391 11.5301	7.6339 8.8197 9.7184 11.5435	0.0835 0.1600 0.2446 0.4420
DT465B-2XR w/ Mount Pipe	C	From Leg	4.0000 0.0000 2.0000	0.000	73.0000	No Ice 1/2" Ice 1" Ice 2" Ice	9.3360 9.9051 10.4391 11.5301	7.6339 8.8197 9.7184 11.5435	0.0835 0.1600 0.2446 0.4420
TD-RRH8X20-25	A	From Leg	4.0000 0.0000 2.0000	0.000	73.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.0455 4.2975 4.5570 5.0981	1.5345 1.7142 1.9008 2.2951	0.0700 0.0972 0.1278 0.2005
TD-RRH8X20-25	B	From Leg	4.0000 0.0000 2.0000	0.000	73.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.0455 4.2975 4.5570 5.0981	1.5345 1.7142 1.9008 2.2951	0.0700 0.0972 0.1278 0.2005
TD-RRH8X20-25	C	From Leg	4.0000 0.0000 2.0000	0.000	73.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.0455 4.2975 4.5570 5.0981	1.5345 1.7142 1.9008 2.2951	0.0700 0.0972 0.1278 0.2005
RRH2x50-800	A	From Leg	4.0000 0.0000 2.0000	0.000	73.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.7008 1.8640 2.0345 2.3979	1.2822 1.4275 1.5803 1.9081	0.0529 0.0699 0.0896 0.1379
RRH2x50-800	B	From Leg	4.0000 0.0000 2.0000	0.000	73.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.7008 1.8640 2.0345 2.3979	1.2822 1.4275 1.5803 1.9081	0.0529 0.0699 0.0896 0.1379
RRH2x50-800	C	From Leg	4.0000 0.0000 2.0000	0.000	73.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.7008 1.8640 2.0345 2.3979	1.2822 1.4275 1.5803 1.9081	0.0529 0.0699 0.0896 0.1379
1900MHZ 4X40W RRH	A	From Leg	4.0000	0.000	73.0000	No Ice	2.3218	2.2360	0.0595

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*
			0.0000 2.0000			1/2" Ice 1" Ice 2" Ice	2.5266 2.7388 3.1855	2.4385 2.6485 3.0906	0.0826 0.1090 0.1722
1900MHZ 4X40W RRH	B	From Leg	4.0000 0.0000 2.0000	0.000	73.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.3218 2.5266 2.7388 3.1855	2.2360 2.4385 2.6485 3.0906	0.0595 0.0826 0.1090 0.1722
1900MHZ 4X40W RRH	C	From Leg	4.0000 0.0000 2.0000	0.000	73.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.3218 2.5266 2.7388 3.1855	2.2360 2.4385 2.6485 3.0906	0.0595 0.0826 0.1090 0.1722
L3x3x1/4	A	From Leg	4.0000 0.0000 0.0000	0.000	73.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.7000 3.3204 3.9481 5.2259	0.0750 0.1120 0.1565 0.2676	0.0000 0.0250 0.0576 0.1464
L3x3x1/4	B	From Leg	4.0000 0.0000 0.0000	0.000	73.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.7000 3.3204 3.9481 5.2259	0.0750 0.1120 0.1565 0.2676	0.0000 0.0250 0.0576 0.1464
L3x3x1/4	C	From Leg	4.0000 0.0000 0.0000	0.000	73.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.7000 3.3204 3.9481 5.2259	0.0750 0.1120 0.1565 0.2676	0.0000 0.0250 0.0576 0.1464
10' x 2.875" Mount Pipe	A	From Leg	4.0000 0.0000 0.0000	0.000	73.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.8750 3.9073 4.9562 6.1880	2.8750 3.9073 4.9562 6.1880	0.0581 0.0791 0.1066 0.1820
10' x 2.875" Mount Pipe	B	From Leg	4.0000 0.0000 0.0000	0.000	73.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.8750 3.9073 4.9562 6.1880	2.8750 3.9073 4.9562 6.1880	0.0581 0.0791 0.1066 0.1820
10' x 2.875" Mount Pipe	C	From Leg	4.0000 0.0000 0.0000	0.000	73.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.8750 3.9073 4.9562 6.1880	2.8750 3.9073 4.9562 6.1880	0.0581 0.0791 0.1066 0.1820
6' x 2" Mount Pipe	A	From Leg	4.0000 0.0000 0.0000	0.000	73.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.4250 1.9250 2.2939 3.0596	1.4250 1.9250 2.2939 3.0596	0.0220 0.0328 0.0477 0.0903
6' x 2" Mount Pipe	B	From Leg	4.0000 0.0000 0.0000	0.000	73.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.4250 1.9250 2.2939 3.0596	1.4250 1.9250 2.2939 3.0596	0.0220 0.0328 0.0477 0.0903
6' x 2" Mount Pipe	C	From Leg	4.0000 0.0000 0.0000	0.000	73.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.4250 1.9250 2.2939 3.0596	1.4250 1.9250 2.2939 3.0596	0.0220 0.0328 0.0477 0.0903
Miscellaneous [NA 510-1]	C	None		0.000	73.0000	No Ice 1/2" Ice 1" Ice 2" Ice	6.0000 8.5000 11.0000 16.0000	6.0000 8.5000 11.0000 16.0000	0.2557 0.3395 0.4233 0.5909
Platform Mount [LP 1201-	C	None		0.000	73.0000	No Ice	23.1000	23.1000	2.1000

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
1]						1/2" Ice	26.8000 30.5000	26.8000 30.5000	2.5000 2.9000
						1" Ice	37.9000	37.9000	3.7000
						2" Ice			
*									
** Level 50ft **									
GPS-TMG-HR-26NCM	C	From Leg	1.0000 0.0000 0.0000	0.000	50.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.1333 0.1826 0.2393 0.3748	0.1333 0.1826 0.2393 0.3748	0.0006 0.0024 0.0051 0.0141
Pipe Mount [PM 601-1]	C	From Leg	0.5000 0.0000 0.0000	0.000	50.0000	No Ice 1/2" Ice 1" Ice 2" Ice	3.0000 3.7400 4.4800 5.9600	0.9000 1.1200 1.3400 1.7800	0.0650 0.0791 0.0933 0.1215
*******									

Load Combinations

Comb. No.	*Description*
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 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

Comb. No.	Description
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
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
L1	140 - 135	Pole	Max Tension	42	0.0000	0.00	-0.00
			Max. Compression	26	-8.1641	1.45	-0.32
			Max. Mx	20	-2.9061	27.39	-0.58
			Max. My	14	-2.9296	0.86	-26.48
			Max. Vy	20	-5.6713	27.39	-0.58
			Max. Vx	2	-5.5607	-0.10	26.28
			Max. Torque	14			-0.74
L2	135 - 130	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-8.6553	1.43	-0.27
			Max. Mx	20	-3.1634	56.26	-1.06
			Max. My	14	-3.1861	1.34	-54.79
			Max. Vy	20	-5.8838	56.26	-1.06
			Max. Vx	2	-5.7732	-0.58	54.62
			Max. Torque	14			-0.74
L3	130 - 125	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-15.6317	1.39	-0.22
			Max. Mx	20	-5.8908	102.31	-1.55
			Max. My	14	-5.9179	1.84	-100.28
			Max. Vy	20	-10.1252	102.31	-1.55
			Max. Vx	2	-10.0122	-1.08	100.12
			Max. Torque	14			-0.74
L4	125 - 120	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-16.1946	1.35	-0.16
			Max. Mx	20	-6.2639	153.40	-2.04
			Max. My	14	-6.2888	2.34	-150.80
			Max. Vy	8	10.3268	-152.54	1.88
			Max. Vx	2	-10.2141	-1.58	150.67
			Max. Torque	14			-0.74
L5	120 - 115	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-21.4016	1.10	0.01
			Max. Mx	20	-8.2442	219.31	-2.48
			Max. My	14	-8.2695	2.76	-216.16
			Max. Vy	8	13.3035	-218.63	2.44
			Max. Vx	2	-13.1898	-2.17	216.15
			Max. Torque	14			-0.74
L6	115 - 114.75	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-21.4634	1.09	0.02
			Max. Mx	20	-8.2932	222.64	-2.51
			Max. My	14	-8.3184	2.78	-219.46
			Max. Vy	8	13.3181	-221.96	2.47
			Max. Vx	2	-13.2046	-2.20	219.45
			Max. Torque	14			-0.73
L7	114.75 - 109.75	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-22.7028	0.83	0.21
			Max. Mx	20	-9.0098	290.24	-2.95
			Max. My	2	-9.0290	-2.79	286.64
			Max. Vy	8	13.7714	-289.75	3.03

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	2	-13.6576	-2.79	286.64
			Max. Torque	14			-0.73
L8	109.75 - 104.75	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-23.9636	0.55	0.40
			Max. Mx	20	-9.7576	360.10	-3.39
			Max. My	2	-9.7756	-3.38	356.09
			Max. Vy	8	14.2260	-359.81	3.59
			Max. Vx	2	-14.1122	-3.38	356.09
			Max. Torque	14			-0.73
L9	104.75 - 104	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-24.1555	0.51	0.43
			Max. Mx	20	-9.8747	370.78	-3.46
			Max. My	2	-9.8925	-3.47	366.71
			Max. Vy	8	14.2934	-370.51	3.68
			Max. Vx	2	-14.1796	-3.47	366.71
			Max. Torque	14			-0.73
L10	104 - 103.75	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-24.2058	0.49	0.44
			Max. Mx	20	-9.9062	374.35	-3.48
			Max. My	2	-9.9238	-3.50	370.26
			Max. Vy	8	14.3110	-374.09	3.71
			Max. Vx	2	-14.1974	-3.50	370.26
			Max. Torque	14			-0.73
L11	103.75 - 101.58	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-24.6335	0.37	0.53
			Max. Mx	20	-10.1527	405.51	-3.67
			Max. My	2	-10.1691	-3.76	401.25
			Max. Vy	8	14.4753	-405.35	3.95
			Max. Vx	2	-14.3618	-3.76	401.25
			Max. Torque	14			-0.73
L12	101.58 - 96.58	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-25.7019	0.07	0.73
			Max. Mx	8	-10.8992	-478.34	4.52
			Max. My	2	-10.9152	-4.36	473.63
			Max. Vy	8	14.7033	-478.34	4.52
			Max. Vx	2	-14.5903	-4.36	473.63
			Max. Torque	14			-0.73
L13	96.58 - 91.58	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-26.8463	-0.24	0.95
			Max. Mx	8	-11.6657	-552.50	5.08
			Max. My	2	-11.6797	-4.97	547.19
			Max. Vy	8	14.9372	-552.50	5.08
			Max. Vx	2	-14.8246	-4.97	547.19
			Max. Torque	14			-0.73
L14	91.58 - 91	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-26.9942	-0.28	0.97
			Max. Mx	8	-11.7599	-561.19	5.15
			Max. My	2	-11.7736	-5.04	555.80
			Max. Vy	8	14.9822	-561.19	5.15
			Max. Vx	2	-14.8697	-5.04	555.80
			Max. Torque	14			-0.73
L15	91 - 90.75	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-27.0764	-0.29	0.98
			Max. Mx	8	-11.8193	-564.94	5.18
			Max. My	2	-11.8329	-5.07	559.52
			Max. Vy	8	15.0029	-564.94	5.18
			Max. Vx	2	-14.8905	-5.07	559.52
			Max. Torque	14			-0.73
L16	90.75 - 85.75	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-28.7283	-0.61	1.20
			Max. Mx	8	-12.9025	-641.28	5.74
			Max. My	2	-12.9153	-5.68	635.25
			Max. Vy	8	15.4968	-641.28	5.74
			Max. Vx	2	-15.3844	-5.68	635.25

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Torque	14			-0.73
L17	85.75 - 80.75	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-30.4094	-0.95	1.43
			Max. Mx	8	-14.0195	-720.07	6.31
			Max. My	2	-14.0313	-6.29	713.44
			Max. Vy	8	15.9900	-720.07	6.31
			Max. Vx	2	-15.8777	-6.29	713.44
			Max. Torque	14			-0.73
L18	80.75 - 75.75	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-32.1194	-1.29	1.66
			Max. Mx	8	-15.1642	-801.34	6.88
			Max. My	2	-15.1750	-6.91	794.10
			Max. Vy	8	16.4854	-801.34	6.88
			Max. Vx	2	-16.3733	-6.91	794.10
			Max. Torque	14			-0.73
L19	75.75 - 70.75	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-42.2455	-1.64	1.90
			Max. Mx	8	-20.5481	-897.27	7.46
			Max. My	2	-20.5585	-7.53	889.43
			Max. Vy	8	20.6622	-897.27	7.46
			Max. Vx	2	-20.5572	-7.53	889.43
			Max. Torque	14			-0.73
L20	70.75 - 69.98	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-42.5440	-1.70	1.93
			Max. Mx	8	-20.7407	-913.22	7.54
			Max. My	2	-20.7507	-7.63	905.30
			Max. Vy	8	20.7387	-913.22	7.54
			Max. Vx	2	-20.6387	-7.63	905.30
			Max. Torque	14			-0.73
L21	69.98 - 69.73	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-42.6411	-1.72	1.95
			Max. Mx	8	-20.8077	-918.41	7.57
			Max. My	2	-20.8174	-7.66	910.46
			Max. Vy	8	20.7602	-918.41	7.57
			Max. Vx	2	-20.6618	-7.66	910.46
			Max. Torque	14			-0.73
L22	69.73 - 64.73	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-44.4986	-2.08	2.19
			Max. Mx	8	-22.0519	-1023.54	8.15
			Max. My	2	-22.0593	-8.29	1015.12
			Max. Vy	8	21.2537	-1023.54	8.15
			Max. Vx	2	-21.1868	-8.29	1015.12
			Max. Torque	14			-0.73
L23	64.73 - 63	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-45.1807	-2.21	2.28
			Max. Mx	8	-22.4851	-1060.48	8.36
			Max. My	2	-22.4917	-8.51	1051.95
			Max. Vy	8	21.4361	-1060.48	8.36
			Max. Vx	2	-21.3800	-8.51	1051.95
			Max. Torque	14			-0.73
L24	63 - 62.75	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-45.2980	-2.23	2.29
			Max. Mx	8	-22.5814	-1065.85	8.39
			Max. My	2	-22.5877	-8.54	1057.30
			Max. Vy	8	21.4484	-1065.85	8.39
			Max. Vx	2	-21.3940	-8.54	1057.30
			Max. Torque	14			-0.73
L25	62.75 - 59.08	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-47.0604	-2.51	2.48
			Max. Mx	8	-23.7673	-1145.39	8.81
			Max. My	2	-23.7723	-9.01	1136.64
			Max. Vy	8	21.8594	-1145.39	8.81

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	2	-21.8273	-9.01	1136.64
			Max. Torque	14			-0.73
L26	59.08 - 58.82	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-47.1856	-2.53	2.49
			Max. Mx	8	-23.8553	-1151.08	8.84
			Max. My	2	-23.8602	-9.04	1142.32
			Max. Vy	8	21.8811	-1151.08	8.84
			Max. Vx	2	-21.8507	-9.04	1142.32
			Max. Torque	14			-0.73
L27	58.82 - 58.67	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-47.2578	-2.54	2.50
			Max. Mx	8	-23.9028	-1154.37	8.86
			Max. My	2	-23.9077	-9.06	1145.60
			Max. Vy	8	21.8987	-1154.37	8.86
			Max. Vx	2	-21.8692	-9.06	1145.60
			Max. Torque	14			-0.73
L28	58.67 - 53.67	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-49.5703	-2.93	2.76
			Max. Mx	8	-25.4546	-1265.29	9.44
			Max. My	2	-25.4585	-9.69	1256.35
			Max. Vy	8	22.4312	-1265.29	9.44
			Max. Vx	14	22.4391	7.44	-1250.75
			Max. Torque	14			-0.73
L29	53.67 - 48.58	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-49.8789	-2.98	2.80
			Max. Mx	8	-25.6697	-1280.36	9.52
			Max. My	2	-25.6735	-9.78	1271.39
			Max. Vy	8	22.4963	-1280.36	9.52
			Max. Vx	14	22.5103	7.48	-1265.79
			Max. Torque	14			-0.73
L30	48.58 - 47.58	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-53.8695	-3.20	2.96
			Max. Mx	8	-28.5461	-1404.25	10.15
			Max. My	2	-28.5501	-10.42	1395.14
			Max. Vy	8	23.2205	-1404.25	10.15
			Max. Vx	14	23.2462	8.06	-1389.77
			Max. Torque	14			-0.78
L31	47.58 - 42.58	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-56.1497	-3.59	3.22
			Max. Mx	8	-30.1385	-1521.65	10.88
			Max. My	2	-30.1411	-11.21	1512.37
			Max. Vy	8	23.7036	-1521.65	10.88
			Max. Vx	14	23.7532	8.55	-1507.12
			Max. Torque	14			-0.78
L32	42.58 - 39.67	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-57.5471	-3.81	3.37
			Max. Mx	8	-31.0757	-1591.10	11.31
			Max. My	2	-31.0777	-11.66	1581.78
			Max. Vy	8	23.9956	-1591.10	11.31
			Max. Vx	14	24.0700	8.83	-1576.60
			Max. Torque	14			-0.78
L33	39.67 - 39.42	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-57.6884	-3.83	3.38
			Max. Mx	8	-31.1863	-1597.10	11.34
			Max. My	2	-31.1881	-11.70	1587.79
			Max. Vy	8	24.0080	-1597.10	11.34
			Max. Vx	14	24.0851	8.85	-1582.62
			Max. Torque	14			-0.78
L34	39.42 - 34.42	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-60.5079	-4.22	3.64

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	8	-33.1578	-1718.58	12.08
			Max. My	2	-33.1587	-12.49	1709.33
			Max. Vy	8	24.5373	-1718.58	12.08
			Max. Vx	14	24.6640	9.33	-1704.36
			Max. Torque	14			-0.78
L35	34.42 - 32.5	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-61.6411	-4.36	3.78
			Max. Mx	8	-33.9397	-1765.92	12.40
			Max. My	2	-33.9402	-12.79	1756.77
			Max. Vy	8	24.7481	-1765.92	12.40
			Max. Vx	14	24.8933	9.53	-1751.83
			Max. Torque	14			-0.78
L36	32.5 - 32.25	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-61.7787	-4.38	3.80
			Max. Mx	8	-34.0412	-1772.11	12.45
			Max. My	2	-34.0416	-12.82	1762.99
			Max. Vy	8	24.7584	-1772.11	12.45
			Max. Vx	14	24.9061	9.55	-1758.04
			Max. Torque	14			-0.78
L37	32.25 - 31.42	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-62.2355	-4.43	3.89
			Max. Mx	8	-34.3348	-1792.70	12.61
			Max. My	2	-34.3350	-12.94	1783.67
			Max. Vy	8	24.8477	-1792.70	12.61
			Max. Vx	14	25.0033	9.64	-1778.68
			Max. Torque	14			-0.78
L38	31.42 - 31.17	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-62.3908	-4.45	3.91
			Max. Mx	8	-34.4476	-1798.92	12.66
			Max. My	2	-34.4477	-12.98	1789.92
			Max. Vy	8	24.8669	-1798.92	12.66
			Max. Vx	14	25.0250	9.67	-1784.92
			Max. Torque	14			-0.78
L39	31.17 - 29	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-63.7320	-4.57	4.11
			Max. Mx	8	-35.3696	-1853.16	13.09
			Max. My	2	-35.3694	-13.29	1844.43
			Max. Vy	8	25.1041	-1853.16	13.09
			Max. Vx	14	25.2825	9.91	-1839.33
			Max. Torque	14			-0.78
L40	29 - 28.65	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-63.9383	-4.59	4.14
			Max. Mx	8	-35.5174	-1861.95	13.16
			Max. My	2	-35.5172	-13.34	1853.27
			Max. Vy	8	25.1328	-1861.95	13.16
			Max. Vx	14	25.3146	9.94	-1848.16
			Max. Torque	14			-0.78
L41	28.65 - 28.42	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-64.0740	-4.61	4.17
			Max. Mx	8	-35.6122	-1867.74	13.20
			Max. My	2	-35.6120	-13.38	1859.09
			Max. Vy	8	25.1555	-1867.74	13.20
			Max. Vx	14	25.3394	9.97	-1853.97
			Max. Torque	14			-0.78
L42	28.42 - 23.5	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-66.9371	-4.88	4.62
			Max. Mx	8	-37.6126	-1992.79	14.18
			Max. My	2	-37.6119	-14.09	1984.86
			Max. Vy	8	25.6623	-1992.79	14.18
			Max. Vx	14	25.8863	10.50	-1979.58
			Max. Torque	14			-0.78
L43	23.5 - 23.25	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-67.1034	-4.90	4.64
			Max. Mx	8	-37.7423	-1999.21	14.23
			Max. My	2	-37.7416	-14.12	1991.32
			Max. Vy	8	25.6772	-1999.21	14.23

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	14	25.9037	10.52	-1986.04
			Max. Torque	14			-0.78
L44	23.25 - 23	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-67.2697	-4.91	4.67
			Max. Mx	8	-37.8634	-2005.63	14.27
			Max. My	2	-37.8627	-14.16	1997.79
			Max. Vy	8	25.7040	-2005.63	14.27
			Max. Vx	14	25.9328	10.55	-1992.50
			Max. Torque	14			-0.78
L45	23 - 22.75	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-67.4238	-4.93	4.69
			Max. Mx	8	-37.9726	-2012.07	14.32
			Max. My	2	-37.9719	-14.20	2004.26
			Max. Vy	8	25.7302	-2012.07	14.32
			Max. Vx	14	25.9613	10.58	-1998.97
			Max. Torque	14			-0.78
L46	22.75 - 17.75	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-70.4384	-5.25	5.20
			Max. Mx	8	-40.1597	-2142.02	15.32
			Max. My	2	-40.1588	-14.92	2135.11
			Max. Vy	8	26.2345	-2142.02	15.32
			Max. Vx	14	26.5126	11.11	-2129.74
			Max. Torque	14			-0.78
L47	17.75 - 12.75	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-73.4264	-5.58	5.75
			Max. Mx	8	-42.3800	-2274.44	16.33
			Max. My	2	-42.3790	-15.64	2268.54
			Max. Vy	8	26.7224	-2274.44	16.33
			Max. Vx	14	27.0474	11.64	-2263.19
			Max. Torque	14			-0.78
L48	12.75 - 7.75	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-76.4086	-5.92	6.30
			Max. Mx	8	-44.6267	-2409.29	17.34
			Max. My	2	-44.6259	-16.35	2404.55
			Max. Vy	8	27.2114	-2409.29	17.34
			Max. Vx	14	27.5834	12.16	-2399.30
			Max. Torque	14			-0.78
L49	7.75 - 2.75	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-79.3626	-6.25	6.86
			Max. Mx	8	-46.8999	-2546.60	18.35
			Max. My	2	-46.8996	-17.07	2543.14
			Max. Vy	8	27.7015	-2546.60	18.35
			Max. Vx	14	28.1203	12.68	-2538.08
			Max. Torque	14			-0.78
L50	2.75 - 0	Pole	Max Tension	1	0.0000	0.00	0.00
			Max. Compression	26	-80.9062	-6.43	7.13
			Max. Mx	8	-48.1488	-2623.16	18.88
			Max. My	2	-48.1487	-17.47	2620.43
			Max. Vy	8	27.9713	-2623.16	18.88
			Max. Vx	14	28.4112	12.95	-2615.57
			Max. Torque	14			-0.78

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	29	80.9062	-5.1270	2.9601
	Max. H_x	20	48.1614	27.9497	-0.1222
	Max. H_z	2	48.1614	-0.1222	28.1709
	Max. M_x	2	2620.43	-0.1222	28.1709
	Max. M_z	8	2623.16	-27.9497	0.1222
	Max. Torsion	2	0.76	-0.1222	28.1709

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
	Min. Vert	17	36.1210	14.0549	-24.0994
	Min. H_x	8	48.1614	-27.9497	0.1222
	Min. H_z	14	48.1614	0.1222	-28.3897
	Min. M_x	14	-2615.57	0.1222	-28.3897
	Min. M_z	20	-2618.67	27.9497	-0.1222
	Min. Torsion	14	-0.78	0.1222	-28.3897

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	40.1345	0.0000	0.0000	-2.99	-1.82	-0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	48.1614	0.1222	-28.1709	-2620.43	-17.47	-0.76
0.9 Dead+1.0 Wind 0 deg - No Ice	36.1210	0.1222	-28.1709	-2591.96	-16.70	-0.74
1.2 Dead+1.0 Wind 30 deg - No Ice	48.1614	14.0549	-24.0994	-2264.68	-1325.21	-0.67
0.9 Dead+1.0 Wind 30 deg - No Ice	36.1210	14.0549	-24.0994	-2239.86	-1310.62	-0.66
1.2 Dead+1.0 Wind 60 deg - No Ice	48.1614	24.8104	-14.3243	-1327.01	-2294.34	-0.42
0.9 Dead+1.0 Wind 60 deg - No Ice	36.1210	24.8104	-14.3243	-1312.16	-2269.67	-0.41
1.2 Dead+1.0 Wind 90 deg - No Ice	48.1614	27.9497	-0.1222	-18.88	-2623.16	-0.05
0.9 Dead+1.0 Wind 90 deg - No Ice	36.1210	27.9497	-0.1222	-17.75	-2594.89	-0.05
1.2 Dead+1.0 Wind 120 deg - No Ice	48.1614	24.4578	13.9796	1291.53	-2276.03	0.34
0.9 Dead+1.0 Wind 120 deg - No Ice	36.1210	24.4578	13.9796	1278.86	-2251.51	0.33
1.2 Dead+1.0 Wind 150 deg - No Ice	48.1614	13.8691	24.0219	2243.38	-1299.60	0.65
0.9 Dead+1.0 Wind 150 deg - No Ice	36.1210	13.8691	24.0219	2220.62	-1285.34	0.64
1.2 Dead+1.0 Wind 180 deg - No Ice	48.1614	-0.1222	28.3897	2615.57	12.95	0.78
0.9 Dead+1.0 Wind 180 deg - No Ice	36.1210	-0.1222	28.3897	2589.01	13.34	0.77
1.2 Dead+1.0 Wind 210 deg - No Ice	48.1614	-14.0549	24.0994	2257.35	1320.70	0.70
0.9 Dead+1.0 Wind 210 deg - No Ice	36.1210	-14.0549	24.0994	2234.40	1307.27	0.69
1.2 Dead+1.0 Wind 240 deg - No Ice	48.1614	-24.5353	14.1655	1317.16	2285.49	0.41
0.9 Dead+1.0 Wind 240 deg - No Ice	36.1210	-24.5353	14.1655	1304.16	2261.94	0.41
1.2 Dead+1.0 Wind 270 deg - No Ice	48.1614	-27.9497	0.1222	11.53	2618.67	0.02
0.9 Dead+1.0 Wind 270 deg - No Ice	36.1210	-27.9497	0.1222	12.28	2591.55	0.02
1.2 Dead+1.0 Wind 300 deg - No Ice	48.1614	-24.6473	-14.0890	-1300.13	2273.68	-0.37
0.9 Dead+1.0 Wind 300 deg - No Ice	36.1210	-24.6473	-14.0890	-1285.61	2250.35	-0.36
1.2 Dead+1.0 Wind 330 deg - No Ice	48.1614	-13.8691	-24.0219	-2250.74	1295.08	-0.65
0.9 Dead+1.0 Wind 330 deg - No Ice	36.1210	-13.8691	-24.0219	-2226.10	1281.98	-0.64
1.2 Dead+1.0 Ice+1.0 Temp	80.9062	0.0000	-0.0000	-7.13	-6.43	-0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	80.9062	0.0238	-5.8789	-629.51	-9.47	-0.21
1.2 Dead+1.0 Wind 30	80.9062	2.9738	-5.1032	-547.60	-321.90	-0.21

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
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	80.9062	5.1270	-2.9601	-320.91	-549.83	-0.15
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	80.9062	5.9064	-0.0238	-10.16	-632.19	-0.05
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	80.9062	5.1032	2.9188	301.36	-546.90	0.07
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	80.9062	2.9326	5.0794	530.20	-316.83	0.16
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	80.9062	-0.0238	5.8789	615.04	-3.61	0.22
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	80.9062	-2.9738	5.1032	533.13	308.82	0.21
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	80.9062	-5.1270	2.9601	306.44	536.76	0.15
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	80.9062	-5.9064	0.0238	-4.31	619.12	0.05
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	80.9062	-5.1032	-2.9188	-315.84	533.83	-0.07
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	80.9062	-2.9326	-5.0794	-544.68	303.75	-0.16
Dead+Wind 0 deg - Service	40.1345	0.0252	-5.8098	-539.78	-4.98	-0.16
Dead+Wind 30 deg - Service	40.1345	2.8986	-4.9701	-466.82	-273.22	-0.14
Dead+Wind 60 deg - Service	40.1345	5.1167	-2.9541	-274.50	-472.02	-0.09
Dead+Wind 90 deg - Service	40.1345	5.7642	-0.0252	-6.17	-539.45	-0.01
Dead+Wind 120 deg - Service	40.1345	5.0440	2.8831	262.62	-468.25	0.07
Dead+Wind 150 deg - Service	40.1345	2.8603	4.9541	457.84	-267.96	0.13
Dead+Wind 180 deg - Service	40.1345	-0.0252	5.8549	534.19	1.25	0.16
Dead+Wind 210 deg - Service	40.1345	-2.8986	4.9701	460.71	269.49	0.14
Dead+Wind 240 deg - Service	40.1345	-5.0600	2.9214	267.87	467.39	0.09
Dead+Wind 270 deg - Service	40.1345	-5.7642	0.0252	0.06	535.72	0.01
Dead+Wind 300 deg - Service	40.1345	-5.0831	-2.9056	-268.98	464.96	-0.07
Dead+Wind 330 deg - Service	40.1345	-2.8603	-4.9541	-463.94	264.23	-0.13

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	0.0000	-40.1345	0.0000	0.0000	40.1345	0.0000	0.000%
2	0.1222	-48.1614	-28.1709	-0.1222	48.1614	28.1709	0.000%
3	0.1222	-36.1210	-28.1709	-0.1222	36.1210	28.1709	0.000%
4	14.0549	-48.1614	-24.0994	-14.0549	48.1614	24.0994	0.000%
5	14.0549	-36.1210	-24.0994	-14.0549	36.1210	24.0994	0.000%
6	24.8104	-48.1614	-14.3243	-24.8104	48.1614	14.3243	0.000%
7	24.8104	-36.1210	-14.3243	-24.8104	36.1210	14.3243	0.000%
8	27.9497	-48.1614	-0.1222	-27.9497	48.1614	0.1222	0.000%
9	27.9497	-36.1210	-0.1222	-27.9497	36.1210	0.1222	0.000%
10	24.4578	-48.1614	13.9796	-24.4578	48.1614	-13.9796	0.000%
11	24.4578	-36.1210	13.9796	-24.4578	36.1210	-13.9796	0.000%
12	13.8691	-48.1614	24.0219	-13.8691	48.1614	-24.0219	0.000%
13	13.8691	-36.1210	24.0219	-13.8691	36.1210	-24.0219	0.000%
14	-0.1222	-48.1614	28.3897	0.1222	48.1614	-28.3897	0.000%
15	-0.1222	-36.1210	28.3897	0.1222	36.1210	-28.3897	0.000%
16	-14.0549	-48.1614	24.0994	14.0549	48.1614	-24.0994	0.000%
17	-14.0549	-36.1210	24.0994	14.0549	36.1210	-24.0994	0.000%
18	-24.5353	-48.1614	14.1655	24.5353	48.1614	-14.1655	0.000%
19	-24.5353	-36.1210	14.1655	24.5353	36.1210	-14.1655	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
20	-27.9497	-48.1614	0.1222	27.9497	48.1614	-0.1222	0.000%
21	-27.9497	-36.1210	0.1222	27.9497	36.1210	-0.1222	0.000%
22	-24.6473	-48.1614	-14.0890	24.6473	48.1614	14.0890	0.000%
23	-24.6473	-36.1210	-14.0890	24.6473	36.1210	14.0890	0.000%
24	-13.8691	-48.1614	-24.0219	13.8691	48.1614	24.0219	0.000%
25	-13.8691	-36.1210	-24.0219	13.8691	36.1210	24.0219	0.000%
26	0.0000	-80.9062	0.0000	-0.0000	80.9062	0.0000	0.000%
27	0.0238	-80.9062	-5.8789	-0.0238	80.9062	5.8789	0.000%
28	2.9738	-80.9062	-5.1032	-2.9738	80.9062	5.1032	0.000%
29	5.1270	-80.9062	-2.9601	-5.1270	80.9062	2.9601	0.000%
30	5.9064	-80.9062	-0.0238	-5.9064	80.9062	0.0238	0.000%
31	5.1032	-80.9062	2.9188	-5.1032	80.9062	-2.9188	0.000%
32	2.9326	-80.9062	5.0794	-2.9326	80.9062	-5.0794	0.000%
33	-0.0238	-80.9062	5.8789	0.0238	80.9062	-5.8789	0.000%
34	-2.9738	-80.9062	5.1032	2.9738	80.9062	-5.1032	0.000%
35	-5.1270	-80.9062	2.9601	5.1270	80.9062	-2.9601	0.000%
36	-5.9064	-80.9062	0.0238	5.9064	80.9062	-0.0238	0.000%
37	-5.1032	-80.9062	-2.9188	5.1032	80.9062	2.9188	0.000%
38	-2.9326	-80.9062	-5.0794	2.9326	80.9062	5.0794	0.000%
39	0.0252	-40.1345	-5.8098	-0.0252	40.1345	5.8098	0.000%
40	2.8986	-40.1345	-4.9701	-2.8986	40.1345	4.9701	0.000%
41	5.1167	-40.1345	-2.9541	-5.1167	40.1345	2.9541	0.000%
42	5.7642	-40.1345	-0.0252	-5.7642	40.1345	0.0252	0.000%
43	5.0440	-40.1345	2.8831	-5.0440	40.1345	-2.8831	0.000%
44	2.8603	-40.1345	4.9541	-2.8603	40.1345	-4.9541	0.000%
45	-0.0252	-40.1345	5.8549	0.0252	40.1345	-5.8549	0.000%
46	-2.8986	-40.1345	4.9701	2.8986	40.1345	-4.9701	0.000%
47	-5.0600	-40.1345	2.9214	5.0600	40.1345	-2.9214	0.000%
48	-5.7642	-40.1345	0.0252	5.7642	40.1345	-0.0252	0.000%
49	-5.0831	-40.1345	-2.9056	5.0831	40.1345	2.9056	0.000%
50	-2.8603	-40.1345	-4.9541	2.8603	40.1345	4.9541	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	5	0.00000001	0.00028988
3	Yes	5	0.00000001	0.00012153
4	Yes	6	0.00000001	0.00065832
5	Yes	6	0.00000001	0.00020415
6	Yes	6	0.00000001	0.00067797
7	Yes	6	0.00000001	0.00021091
8	Yes	5	0.00000001	0.00035648
9	Yes	5	0.00000001	0.00014843
10	Yes	6	0.00000001	0.00066148
11	Yes	6	0.00000001	0.00020734
12	Yes	6	0.00000001	0.00064229
13	Yes	6	0.00000001	0.00020091
14	Yes	5	0.00000001	0.00067571
15	Yes	5	0.00000001	0.00030602
16	Yes	6	0.00000001	0.00068033
17	Yes	6	0.00000001	0.00021251
18	Yes	6	0.00000001	0.00066197
19	Yes	6	0.00000001	0.00020540
20	Yes	5	0.00000001	0.00026396
21	Yes	5	0.00000001	0.00010524
22	Yes	6	0.00000001	0.00064734
23	Yes	6	0.00000001	0.00020241
24	Yes	6	0.00000001	0.00066519
25	Yes	6	0.00000001	0.00020913
26	Yes	4	0.00000001	0.00064007
27	Yes	7	0.00000001	0.00014927
28	Yes	7	0.00000001	0.00016763
29	Yes	7	0.00000001	0.00016840

30	Yes	7	0.00000001	0.00014962
31	Yes	7	0.00000001	0.00016414
32	Yes	7	0.00000001	0.00016332
33	Yes	7	0.00000001	0.00014716
34	Yes	7	0.00000001	0.00016468
35	Yes	7	0.00000001	0.00016476
36	Yes	7	0.00000001	0.00014865
37	Yes	7	0.00000001	0.00016481
38	Yes	7	0.00000001	0.00016480
39	Yes	4	0.00000001	0.00085124
40	Yes	5	0.00000001	0.00015437
41	Yes	5	0.00000001	0.00016685
42	Yes	4	0.00000001	0.00078557
43	Yes	5	0.00000001	0.00015778
44	Yes	5	0.00000001	0.00014713
45	Yes	4	0.00000001	0.00088148
46	Yes	5	0.00000001	0.00016615
47	Yes	5	0.00000001	0.00015429
48	Yes	4	0.00000001	0.00077584
49	Yes	5	0.00000001	0.00015056
50	Yes	5	0.00000001	0.00016082

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	140 - 135	19.762	41	1.583	0.006
L2	135 - 130	18.122	41	1.564	0.005
L3	130 - 125	16.517	41	1.511	0.004
L4	125 - 120	14.975	41	1.433	0.003
L5	120 - 115	13.526	41	1.332	0.002
L6	115 - 114.75	12.193	41	1.211	0.002
L7	114.75 - 109.75	12.129	41	1.208	0.002
L8	109.75 - 104.75	10.896	41	1.148	0.001
L9	104.75 - 104	9.729	41	1.080	0.001
L10	104 - 103.75	9.560	41	1.070	0.001
L11	103.75 - 101.58	9.504	41	1.062	0.001
L12	101.58 - 96.58	9.037	41	0.995	0.001
L13	96.58 - 91.58	8.044	41	0.901	0.001
L14	91.58 - 91	7.151	41	0.805	0.001
L15	91 - 90.75	7.054	41	0.794	0.001
L16	90.75 - 85.75	7.012	41	0.792	0.001
L17	85.75 - 80.75	6.210	41	0.740	0.001
L18	80.75 - 75.75	5.464	41	0.687	0.000
L19	75.75 - 70.75	4.773	41	0.633	0.000
L20	70.75 - 69.98	4.137	41	0.580	0.000
L21	69.98 - 69.73	4.044	41	0.572	0.000
L22	69.73 - 64.73	4.014	41	0.569	0.000
L23	64.73 - 63	3.447	41	0.515	0.000
L24	63 - 62.75	3.263	41	0.496	0.000
L25	62.75 - 59.08	3.237	41	0.494	0.000
L26	59.08 - 58.82	2.869	41	0.464	0.000
L27	58.82 - 58.67	2.844	41	0.461	0.000
L28	58.67 - 53.67	2.830	41	0.460	0.000
L29	53.67 - 48.58	2.372	41	0.414	0.000
L30	53 - 47.58	2.314	41	0.408	0.000
L31	47.58 - 42.58	1.865	41	0.379	0.000
L32	42.58 - 39.67	1.492	41	0.333	0.000
L33	39.67 - 39.42	1.297	41	0.307	0.000
L34	39.42 - 34.42	1.281	41	0.305	0.000
L35	34.42 - 32.5	0.980	41	0.270	0.000
L36	32.5 - 32.25	0.874	41	0.256	0.000
L37	32.25 - 31.42	0.861	41	0.254	0.000
L38	31.42 - 31.17	0.817	41	0.247	0.000
L39	31.17 - 29	0.804	41	0.245	0.000
L40	29 - 28.65	0.697	41	0.230	0.000
L41	28.65 - 28.42	0.680	41	0.227	0.000

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L42	28.42 - 23.5	0.669	41	0.225	0.000
L43	23.5 - 23.25	0.457	41	0.186	0.000
L44	23.25 - 23	0.447	41	0.184	0.000
L45	23 - 22.75	0.438	41	0.183	0.000
L46	22.75 - 17.75	0.428	41	0.181	0.000
L47	17.75 - 12.75	0.260	41	0.141	0.000
L48	12.75 - 7.75	0.134	41	0.101	0.000
L49	7.75 - 2.75	0.049	41	0.061	0.000
L50	2.75 - 0	0.006	41	0.021	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
140.0000	Lightning Rod 2"x15'	41	19.762	1.583	0.006	7545
138.0000	(2) HBXX-6516DS-A2M w/ Mount Pipe	41	19.104	1.578	0.006	7545
129.0000	(2) HPA-65R-BUU-H6	41	16.202	1.497	0.004	4107
120.0000	APX16PV-16PVL w/ Mount Pipe	41	13.526	1.332	0.002	2533
73.0000	APXVSPP18-C-A20 w/ Mount Pipe	41	4.416	0.604	0.000	5393
50.0000	GPS-TMG-HR-26NCM	41	2.061	0.391	0.000	8936

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	140 - 135	96.089	18	7.708	0.027
L2	135 - 130	88.085	18	7.622	0.023
L3	130 - 125	80.265	6	7.372	0.017
L4	125 - 120	72.773	6	7.001	0.013
L5	120 - 115	65.732	6	6.502	0.010
L6	115 - 114.75	59.255	6	5.904	0.008
L7	114.75 - 109.75	58.947	6	5.891	0.008
L8	109.75 - 104.75	52.953	6	5.596	0.007
L9	104.75 - 104	47.284	6	5.264	0.006
L10	104 - 103.75	46.464	6	5.213	0.006
L11	103.75 - 101.58	46.193	6	5.176	0.006
L12	101.58 - 96.58	43.920	6	4.850	0.005
L13	96.58 - 91.58	39.096	6	4.386	0.004
L14	91.58 - 91	34.755	6	3.920	0.003
L15	91 - 90.75	34.283	6	3.866	0.003
L16	90.75 - 85.75	34.081	6	3.854	0.003
L17	85.75 - 80.75	30.183	6	3.600	0.003
L18	80.75 - 75.75	26.554	6	3.341	0.002
L19	75.75 - 70.75	23.195	6	3.081	0.002
L20	70.75 - 69.98	20.106	6	2.823	0.002
L21	69.98 - 69.73	19.655	6	2.783	0.002
L22	69.73 - 64.73	19.509	6	2.769	0.002
L23	64.73 - 63	16.750	6	2.505	0.001
L24	63 - 62.75	15.859	6	2.414	0.001
L25	62.75 - 59.08	15.733	6	2.404	0.001
L26	59.08 - 58.82	13.943	6	2.255	0.001
L27	58.82 - 58.67	13.821	6	2.244	0.001
L28	58.67 - 53.67	13.750	6	2.237	0.001
L29	53.67 - 48.58	11.525	6	2.015	0.001
L30	53 - 47.58	11.244	6	1.985	0.001
L31	47.58 - 42.58	9.061	6	1.843	0.001
L32	42.58 - 39.67	7.248	6	1.621	0.001

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L33	39.67 - 39.42	6.300	6	1.491	0.001
L34	39.42 - 34.42	6.222	6	1.483	0.001
L35	34.42 - 32.5	4.761	6	1.310	0.001
L36	32.5 - 32.25	4.247	6	1.246	0.001
L37	32.25 - 31.42	4.182	6	1.235	0.001
L38	31.42 - 31.17	3.970	6	1.199	0.001
L39	31.17 - 29	3.908	6	1.191	0.001
L40	29 - 28.65	3.383	6	1.116	0.001
L41	28.65 - 28.42	3.302	6	1.103	0.000
L42	28.42 - 23.5	3.249	6	1.094	0.000
L43	23.5 - 23.25	2.220	6	0.904	0.000
L44	23.25 - 23	2.173	6	0.896	0.000
L45	23 - 22.75	2.127	6	0.888	0.000
L46	22.75 - 17.75	2.080	6	0.878	0.000
L47	17.75 - 12.75	1.263	6	0.683	0.000
L48	12.75 - 7.75	0.650	6	0.489	0.000
L49	7.75 - 2.75	0.239	6	0.296	0.000
L50	2.75 - 0	0.030	6	0.104	0.000

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
140.0000	Lightning Rod 2"x15'	18	96.089	7.708	0.029	1690
138.0000	(2) HBXX-6516DS-A2M w/ Mount Pipe	18	92.876	7.686	0.028	1690
129.0000	(2) HPA-65R-BUU-H6	6	78.737	7.305	0.018	892
120.0000	APX16PV-16PVL w/ Mount Pipe	6	65.732	6.502	0.011	539
73.0000	APXVSPP18-C-A20 w/ Mount Pipe	6	21.463	2.939	0.002	1111
50.0000	GPS-TMG-HR-26NCM	6	10.014	1.901	0.001	1839

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	140 - 139	TP14.296x13.161x0.1875	5.0000	0.0000	0.0	7.8559	-0.1145	583.6570	0.000
	139 - 138					7.9910	-0.1519	593.6940	0.000
	138 - 137					8.1261	-2.8122	603.7300	0.005
	137 - 136					8.2612	-2.8528	613.7660	0.005
	136 - 135					8.3963	-2.8947	623.8030	0.005
L2	135 - 134	TP15.4309x14.296x0.1875	5.0000	0.0000	0.0	8.5314	-2.9441	633.8390	0.005
	134 - 133					8.6665	-2.9946	643.8750	0.005
	133 - 132					8.8016	-3.0461	653.9120	0.005
	132 - 131					8.9367	-3.0987	663.9480	0.005
	131 - 130					9.0717	-3.1523	673.9850	0.005
L3	130 - 129	TP16.5659x15.4309x0.1875	5.0000	0.0000	0.0	9.2068	-3.2110	684.0210	0.005
	129 - 128					9.3419	-5.6744	694.0570	0.008
	128 - 127					9.4770	-5.7404	704.0940	0.008
	127 - 126					9.6121	-5.8080	714.1300	0.008
	126 - 125					9.7472	-5.8774	724.1660	0.008
L4	125 - 124	TP17.7008x16.5659x0.18	5.0000	0.0000	0.0	9.8823	-5.9494	734.2030	0.008

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
		75							
	124 - 123					10.0174	-6.0229	744.2390	0.008
	123 - 122					10.1524	-6.0977	754.2760	0.008
	122 - 121					10.2875	-6.1740	764.3120	0.008
	121 - 120					10.4226	-6.2515	774.3480	0.008
L5	120 - 119	TP18.8358x17.7008x0.1875	5.0000	0.0000	0.0	10.5577	-7.8077	784.3850	0.010
	119 - 118					10.6928	-7.9111	792.9000	0.010
	118 - 117					10.8279	-8.0163	800.4750	0.010
	117 - 116					10.9630	-8.1231	807.9890	0.010
	116 - 115					11.0981	-8.2314	815.4420	0.010
L6	115 - 114.75 (6)	TP18.8925x18.8358x0.4625	0.2500	0.0000	0.0	27.0548	-8.2806	2010.0400	0.004
L7	114.75 - 113.75	TP20.0275x18.8925x0.45	5.0000	0.0000	0.0	26.6657	-8.4169	1981.1300	0.004
	113.75 - 112.75					26.9899	-8.5598	2005.2100	0.004
	112.75 - 111.75					27.3141	-8.7042	2029.3000	0.004
	111.75 - 110.75					27.6383	-8.8501	2053.3900	0.004
	110.75 - 109.75					27.9625	-8.9975	2077.4800	0.004
L8	109.75 - 108.75	TP21.1624x20.0275x0.425	5.0000	0.0000	0.0	26.7490	-9.1440	1987.3100	0.005
	108.75 - 107.75					27.0552	-9.2923	2010.0600	0.005
	107.75 - 106.75					27.3614	-9.4421	2032.8100	0.005
	106.75 - 105.75					27.6676	-9.5933	2055.5600	0.005
	105.75 - 104.75					27.9738	-9.7459	2078.3100	0.005
L9	104.75 - 104 (9)	TP21.3327x21.1624x0.425	0.7500	0.0000	0.0	28.2034	-9.8631	2095.3700	0.005
L10	104 - 103.75 (10)	TP21.3894x21.3327x0.1875	0.2500	0.0000	0.0	12.6178	-9.8947	895.0910	0.011
L11	103.75 - 102.665	TP21.882x21.3894x0.1875 4.8.2 (1.02 CR) - 11	2.1700	0.0000	0.0	12.7644	-10.0096	902.3650	0.011
	102.665 - 101.58	4.8.2 (1.02 CR) - 11				12.9109	-10.1416	909.5670	0.011
L12	101.58 - 100.58	TP23.017x21.882x0.3125	5.0000	0.0000	0.0	21.6194	-10.2965	1606.2100	0.006
	100.58 - 99.58					21.8446	-10.4435	1622.9400	0.006
	99.58 - 98.58					22.0697	-10.5915	1639.6700	0.006
	98.58 - 97.58					22.2949	-10.7406	1656.4000	0.006
	97.58 - 96.58					22.5200	-10.8908	1673.1300	0.007
L13	96.58 - 95.58	TP24.152x23.017x0.3125	5.0000	0.0000	0.0	22.7452	-11.0422	1689.8500	0.007
	95.58 - 94.58					22.9703	-11.1946	1706.5800	0.007
	94.58 - 93.58					23.1955	-11.3481	1723.3100	0.007
	93.58 - 92.58					23.4206	-11.5026	1740.0400	0.007

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
	92.58 - 91.58					23.6458	-11.6582	1756.7700	0.007
L14	91.58 - 91 (14)	TP24.2837x24.152x0.3125	0.5800	0.0000	0.0	23.7764	-11.7525	1766.4700	0.007
L15	91 - 90.75 (15)	TP24.3404x24.2837x0.6	0.2500	0.0000	0.0	45.2112	-11.8120	3358.9700	0.004
L16	90.75 - 89.75	TP25.4754x24.3404x0.5875	5.0000	0.0000	0.0	44.7159	-12.0212	3322.1700	0.004
	89.75 - 88.75					45.1392	-12.2373	3353.6200	0.004
	88.75 - 87.75					45.5625	-12.4550	3385.0700	0.004
	87.75 - 86.75					45.9858	-12.6745	3416.5200	0.004
	86.75 - 85.75					46.4091	-12.8956	3447.9600	0.004
L17	85.75 - 84.75	TP26.6104x25.4754x0.5625	5.0000	0.0000	0.0	44.8842	-13.1155	3334.6700	0.004
	84.75 - 83.75					45.2894	-13.3374	3364.7800	0.004
	83.75 - 82.75					45.6947	-13.5609	3394.8900	0.004
	82.75 - 81.75					46.1000	-13.7861	3425.0000	0.004
	81.75 - 80.75					46.5053	-14.0129	3455.1100	0.004
L18	80.75 - 79.75	TP27.7454x26.6104x0.55	5.0000	0.0000	0.0	45.8899	-14.2386	3409.3900	0.004
	79.75 - 78.75					46.2862	-14.4660	3438.8300	0.004
	78.75 - 77.75					46.6825	-14.6951	3468.2700	0.004
	77.75 - 76.75					47.0788	-14.9257	3497.7200	0.004
	76.75 - 75.75					47.4750	-15.1580	3527.1600	0.004
L19	75.75 - 74.75	TP28.8804x27.7454x0.5438	5.0000	0.0000	0.0	47.3381	-15.3928	3516.9800	0.004
	74.75 - 73.75					47.7299	-15.6293	3546.0900	0.004
	73.75 - 72.75					48.1216	-20.0534	3575.2000	0.006
	72.75 - 71.75					48.5134	-20.2965	3604.3000	0.006
	71.75 - 70.75					48.9052	-20.5412	3633.4100	0.006
L20	70.75 - 69.98 (20)	TP29.0552x28.8804x0.5313	0.7700	0.0000	0.0	48.0967	-20.7337	3573.3500	0.006
L21	69.98 - 69.73 (21)	TP29.112x29.0552x0.5313	0.2500	0.0000	0.0	48.1924	-20.8007	3580.4600	0.006
L22	69.73 - 68.73	TP30.247x29.112x0.525	5.0000	0.0000	0.0	48.0141	-21.0402	3567.2100	0.006
	68.73 - 67.73					48.3924	-21.2888	3595.3100	0.006
	67.73 - 66.73					48.7706	-21.5389	3623.4200	0.006
	66.73 - 65.73					49.1489	-21.7906	3651.5200	0.006
	65.73 - 64.73					49.5272	-22.0440	3679.6200	0.006
L23	64.73 - 63 (23)	TP30.6397x30.247x0.5188	1.7300	0.0000	0.0	49.5945	-22.4768	3684.6200	0.006
L24	63 - 62.75 (24)	TP30.6964x30.6397x0.7	0.2500	0.0000	0.0	66.6460	-22.5732	4951.4700	0.005
L25	62.75 - 61.5267	TP31.5295x30.6964x0.6875	3.6700	0.0000	0.0	66.0892	-22.9601	4910.0900	0.005
	61.5267 - 60.3033					66.6951	-23.3577	4955.1100	0.005
	60.3033 -					67.301	-23.7585	5000.1400	0.005

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
	59.08					1			
L26	59.08 - 58.82 (26)	TP31.5885x31.5295x0.625	0.2600	0.0000	0.0	61.4239	-23.8465	4563.4900	0.005
L27	58.82 - 58.67 (27)	TP31.6226x31.5885x0.625	0.1500	0.0000	0.0	61.4914	-23.8941	4568.5100	0.005
L28	58.67 - 57.67	TP32.7576x31.6226x0.6125	5.0000	0.0000	0.0	60.7272	-24.1948	4511.7300	0.005
	57.67 - 56.67					61.1685	-24.5047	4544.5100	0.005
	56.67 - 55.67					61.6098	-24.8166	4577.3000	0.005
	55.67 - 54.67					62.0511	-25.1304	4610.0900	0.005
	54.67 - 53.67					62.4924	-25.4461	4642.8800	0.005
L29	53.67 - 53	TP33.913x32.7576x0.6125	5.0900	0.0000	0.0	62.7881	-25.6613	4664.8400	0.006
	53 - 48.58					64.7387	-14.0557	4809.7600	0.003
L30	53 - 48.58	TP33.5151x32.2847x0.6375	5.4200	0.0000	0.0	66.0661	-14.1535	4908.3800	0.003
	48.58 - 47.58					66.5254	-28.5370	4942.5100	0.006
L31	47.58 - 46.58	TP34.6503x33.5151x0.625	5.0000	0.0000	0.0	65.6962	-28.8518	4880.9000	0.006
	46.58 - 45.58					66.1465	-29.1685	4914.3600	0.006
	45.58 - 44.58					66.5969	-29.4870	4947.8200	0.006
	44.58 - 43.58					67.0473	-29.8074	4981.2800	0.006
	43.58 - 42.58					67.4976	-30.1263	5014.7400	0.006
L32	42.58 - 41.125	TP35.3109x34.6503x0.6125	2.9100	0.0000	0.0	66.8141	-30.5908	4963.9600	0.006
	41.125 - 39.67					67.4563	-31.0636	5011.6700	0.006
L33	39.67 - 39.42 (33)	TP35.3677x35.3109x0.8125	0.2500	0.0000	0.0	89.1134	-31.1744	6620.6800	0.005
L34	39.42 - 38.42	TP36.5028x35.3677x0.7875	5.0000	0.0000	0.0	87.0014	-31.5597	6463.7700	0.005
	38.42 - 37.42					87.5689	-31.9529	6505.9300	0.005
	37.42 - 36.42					88.1364	-32.3483	6548.0900	0.005
	36.42 - 35.42					88.7038	-32.7459	6590.2500	0.005
	35.42 - 34.42					89.2713	-33.1458	6632.4100	0.005
L35	34.42 - 32.5 (35)	TP36.9387x36.5028x0.7875	1.9200	0.0000	0.0	90.3608	-33.9276	6713.3500	0.005
L36	32.5 - 32.25 (36)	TP36.9954x36.9387x0.6125	0.2500	0.0000	0.0	70.7312	-34.0293	5254.9700	0.006
L37	32.25 - 31.42 (37)	TP37.1839x36.9954x0.6	0.8300	0.0000	0.0	69.6703	-34.3229	5176.1600	0.007
L38	31.42 - 31.17 (38)	TP37.2406x37.1839x0.775	0.2500	0.0000	0.0	89.7000	-34.4358	6664.2600	0.005
L39	31.17 - 30.085	TP37.7333x37.2406x0.7625	2.1700	0.0000	0.0	88.8796	-34.8923	6603.3100	0.005
	30.085 - 29					89.4757	-35.3578	6647.6000	0.005
L40	29 - 28.65 (40)	TP37.8127x37.7333x0.675	0.3500	0.0000	0.0	79.5657	-35.5058	5911.3400	0.006
L41	28.65 - 28.42 (41)	TP37.8649x37.8127x0.675	0.2300	0.0000	0.0	79.6776	-35.6006	5919.6500	0.006
L42	28.42 - 27.19	TP38.9819x37.8649x0.6625	4.9200	0.0000	0.0	78.8155	-36.0897	5855.6000	0.006
	27.19 - 25.96					79.4027	-36.5906	5899.2300	0.006

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
	25.96 - 24.73					79.9899	-37.0945	5942.8500	0.006
	24.73 - 23.5					80.5771	-37.6015	5986.4800	0.006
L43	23.5 - 23.25 (43)	TP39.0387x38.9819x0.7875	0.2500	0.0000	0.0	95.6097	-37.7315	7103.3300	0.005
L44	23.25 - 23 (44)	TP39.0954x39.0387x0.7875	0.2500	0.0000	0.0	95.7516	-37.8526	7113.8700	0.005
L45	23 - 22.75 (45)	TP39.1522x39.0954x0.65	0.2500	0.0000	0.0	79.4338	-37.9619	5901.5400	0.006
L46	22.75 - 21.75	TP40.2873x39.1522x0.6375	5.0000	0.0000	0.0	78.3909	-38.3899	5824.0500	0.007
	21.75 - 20.75					78.8503	-38.8268	5858.1800	0.007
	20.75 - 19.75					79.3097	-39.2659	5892.3100	0.007
	19.75 - 18.75					79.7690	-39.7070	5926.4400	0.007
	18.75 - 17.75					80.2284	-40.1503	5960.5700	0.007
L47	17.75 - 16.75	TP41.4224x40.2873x0.625	5.0000	0.0000	0.0	79.1305	-40.5905	5879.0000	0.007
	16.75 - 15.75					79.5808	-41.0329	5912.4600	0.007
	15.75 - 14.75					80.0312	-41.4774	5945.9200	0.007
	14.75 - 13.75					80.4815	-41.9239	5979.3800	0.007
	13.75 - 12.75					80.9319	-42.3726	6012.8400	0.007
L48	12.75 - 11.75	TP42.5576x41.4224x0.6125	5.0000	0.0000	0.0	79.7789	-42.8182	5927.1700	0.007
	11.75 - 10.75					80.2203	-43.2660	5959.9700	0.007
	10.75 - 9.75					80.6616	-43.7159	5992.7600	0.007
	9.75 - 8.75					81.1030	-44.1678	6025.5500	0.007
	8.75 - 7.75					81.5443	-44.6217	6058.3400	0.007
L49	7.75 - 6.75	TP43.6927x42.5576x0.6	5.0000	0.0000	0.0	80.3363	-45.0728	5968.5900	0.008
	6.75 - 5.75					80.7687	-45.5260	6000.7100	0.008
	5.75 - 4.75					81.2010	-45.9813	6032.8300	0.008
	4.75 - 3.75					81.6334	-46.4386	6064.9500	0.008
	3.75 - 2.75					82.0657	-46.8979	6097.0700	0.008
L50	2.75 - 1.375	TP44.317x43.6927x0.6	2.7500	0.0000	0.0	82.6602	-47.5195	6141.2400	0.008
	1.375 - 0					83.2547	-48.1484	6185.4000	0.008

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	140 - 139	TP14.296x13.161x0.1875	1.19	157.44	0.008	0.00	157.44	0.000
	139 - 138		1.39	162.94	0.009	0.00	162.94	0.000
	138 - 137		16.28	168.53	0.097	0.00	168.53	0.000
	137 - 136		21.95	174.22	0.126	0.00	174.22	0.000
	136 - 135		27.65	180.01	0.154	0.00	180.01	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L2	135 - 134	TP15.4309x14.296x0.1875	33.40	185.88	0.180	0.00	185.88	0.000
	134 - 133		39.18	191.85	0.204	0.00	191.85	0.000
	133 - 132		45.01	197.92	0.227	0.00	197.92	0.000
	132 - 131		50.88	204.08	0.249	0.00	204.08	0.000
	131 - 130		56.80	210.34	0.270	0.00	210.34	0.000
L3	130 - 129	TP16.5659x15.4309x0.1875	62.75	216.69	0.290	0.00	216.69	0.000
	129 - 128		72.79	223.13	0.326	0.00	223.13	0.000
	128 - 127		82.86	229.67	0.361	0.00	229.67	0.000
	127 - 126		92.98	236.30	0.393	0.00	236.30	0.000
	126 - 125		103.13	243.03	0.424	0.00	243.03	0.000
L4	125 - 124	TP17.7008x16.5659x0.1875	113.33	249.85	0.454	0.00	249.85	0.000
	124 - 123		123.56	256.77	0.481	0.00	256.77	0.000
	123 - 122		133.84	263.78	0.507	0.00	263.78	0.000
	122 - 121		144.16	270.88	0.532	0.00	270.88	0.000
	121 - 120		154.51	278.08	0.556	0.00	278.08	0.000
L5	120 - 119	TP18.8358x17.7008x0.1875	167.67	285.38	0.588	0.00	285.38	0.000
	119 - 118		180.87	292.20	0.619	0.00	292.20	0.000
	118 - 117		194.11	298.76	0.650	0.00	298.76	0.000
	117 - 116		207.38	305.37	0.679	0.00	305.37	0.000
	116 - 115		220.70	312.02	0.707	0.00	312.02	0.000
L6	115 - 114.75 (6)	TP18.8925x18.8358x0.4625	224.03	748.96	0.299	0.00	748.96	0.000
L7	114.75 - 113.75	TP20.0275x18.8925x0.45	237.43	748.50	0.317	0.00	748.50	0.000
	113.75 - 112.75		250.91	767.03	0.327	0.00	767.03	0.000
	112.75 - 111.75		264.49	785.79	0.337	0.00	785.79	0.000
	111.75 - 110.75		278.16	804.77	0.346	0.00	804.77	0.000
	110.75 - 109.75		291.91	823.98	0.354	0.00	823.98	0.000
L8	109.75 - 108.75	TP21.1624x20.0275x0.425	305.76	799.58	0.382	0.00	799.58	0.000
	108.75 - 107.75		319.69	818.18	0.391	0.00	818.18	0.000
	107.75 - 106.75		333.72	837.00	0.399	0.00	837.00	0.000
	106.75 - 105.75		347.84	856.03	0.406	0.00	856.03	0.000
	105.75 - 104.75		362.05	875.28	0.414	0.00	875.28	0.000
L9	104.75 - 104 (9)	TP21.3327x21.1624x0.425	372.76	889.86	0.419	0.00	889.86	0.000
L10	104 - 103.75 (10)	TP21.3894x21.3327x0.1875	376.35	389.86	0.965	0.00	389.86	0.000
L11	103.75 - 102.665	TP21.882x21.3894x0.1875	391.95	397.64	0.986	0.00	397.64	0.000
	102.665 - 101.58		407.63	405.45	1.005	0.00	405.45	0.000
L12	101.58 - 100.58	TP23.017x21.882x0.3125	422.15	715.32	0.590	0.00	715.32	0.000
	100.58 - 99.58		436.71	730.40	0.598	0.00	730.40	0.000
	99.58 - 98.58		451.32	745.64	0.605	0.00	745.64	0.000
	98.58 - 97.58		465.98	761.04	0.612	0.00	761.04	0.000
	97.58 - 96.58		480.68	776.60	0.619	0.00	776.60	0.000
L13	96.58 - 95.58	TP24.152x23.017x0.3125	495.43	792.31	0.625	0.00	792.31	0.000
	95.58 - 94.58		510.23	808.18	0.631	0.00	808.18	0.000
	94.58 - 93.58		525.07	824.21	0.637	0.00	824.21	0.000
	93.58 - 92.58		539.96	840.39	0.643	0.00	840.39	0.000
	92.58 - 91.58		554.90	856.73	0.648	0.00	856.73	0.000
L14	91.58 - 91 (14)	TP24.2837x24.152x0.3125	563.59	866.29	0.651	0.00	866.29	0.000
L15	91 - 90.75	TP24.3404x24.2837x0.6	567.34	1611.93	0.352	0.00	1611.93	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
	(15)							
L16	90.75 - 89.75	TP25.4754x24.3404x0.5875	582.42	1611.58	0.361	0.00	1611.58	0.000
	89.75 - 88.75		597.60	1642.60	0.364	0.00	1642.60	0.000
	88.75 - 87.75		612.87	1673.92	0.366	0.00	1673.92	0.000
	87.75 - 86.75		628.25	1705.53	0.368	0.00	1705.53	0.000
	86.75 - 85.75		643.72	1737.44	0.370	0.00	1737.44	0.000
L17	85.75 - 84.75	TP26.6104x25.4754x0.5625	659.29	1699.42	0.388	0.00	1699.42	0.000
	84.75 - 83.75		674.95	1730.58	0.390	0.00	1730.58	0.000
	83.75 - 82.75		690.72	1762.03	0.392	0.00	1762.03	0.000
	82.75 - 81.75		706.58	1793.77	0.394	0.00	1793.77	0.000
	81.75 - 80.75		722.55	1825.78	0.396	0.00	1825.78	0.000
L18	80.75 - 79.75	TP27.7454x26.6104x0.55	738.61	1819.38	0.406	0.00	1819.38	0.000
	79.75 - 78.75		754.77	1851.27	0.408	0.00	1851.27	0.000
	78.75 - 77.75		771.02	1883.43	0.409	0.00	1883.43	0.000
	77.75 - 76.75		787.38	1915.87	0.411	0.00	1915.87	0.000
	76.75 - 75.75		803.84	1948.58	0.413	0.00	1948.58	0.000
L19	75.75 - 74.75	TP28.8804x27.7454x0.5438	820.40	1960.39	0.418	0.00	1960.39	0.000
	74.75 - 73.75		837.06	1993.29	0.420	0.00	1993.29	0.000
	73.75 - 72.75		858.62	2026.47	0.424	0.00	2026.47	0.000
	72.75 - 71.75		879.16	2059.91	0.427	0.00	2059.91	0.000
	71.75 - 70.75		899.79	2093.63	0.430	0.00	2093.63	0.000
L20	70.75 - 69.98 (20)	TP29.0552x28.8804x0.5313	915.76	2073.78	0.442	0.00	2073.78	0.000
L21	69.98 - 69.73 (21)	TP29.112x29.0552x0.5313	920.95	2082.12	0.442	0.00	2082.12	0.000
L22	69.73 - 68.73	TP30.247x29.112x0.525	941.80	2092.10	0.450	0.00	2092.10	0.000
	68.73 - 67.73		962.76	2125.49	0.453	0.00	2125.49	0.000
	67.73 - 66.73		983.81	2159.14	0.456	0.00	2159.14	0.000
	66.73 - 65.73		1004.97	2193.07	0.458	0.00	2193.07	0.000
	65.73 - 64.73		1026.23	2227.25	0.461	0.00	2227.25	0.000
L23	64.73 - 63 (23)	TP30.6397x30.247x0.5188	1063.27	2261.19	0.470	0.00	2261.19	0.000
L24	63 - 62.75 (24)	TP30.6964x30.6397x0.7	1068.65	3008.00	0.355	0.00	3008.00	0.000
L25	62.75 - 61.5267	TP31.5295x30.6964x0.6875	1095.08	3013.59	0.363	0.00	3013.59	0.000
	61.5267 - 60.3033		1121.67	3069.73	0.365	0.00	3069.73	0.000
	60.3033 - 59.08		1148.44	3126.38	0.367	0.00	3126.38	0.000
L26	59.08 - 58.82 (26)	TP31.5885x31.5295x0.625	1154.15	2870.53	0.402	0.00	2870.53	0.000
L27	58.82 - 58.67 (27)	TP31.6226x31.5885x0.625	1157.45	2876.90	0.402	0.00	2876.90	0.000
L28	58.67 - 57.67	TP32.7576x31.6226x0.6125	1179.51	2864.66	0.412	0.00	2864.66	0.000
	57.67 - 56.67		1201.67	2906.84	0.413	0.00	2906.84	0.000
	56.67 - 55.67		1223.93	2949.34	0.415	0.00	2949.34	0.000
	55.67 - 54.67		1246.32	2992.15	0.417	0.00	2992.15	0.000
	54.67 - 53.67		1268.80	3035.27	0.418	0.00	3035.27	0.000
L29	53.67 - 53	TP33.913x32.7576x0.6125	1283.92	3064.32	0.419	0.00	3064.32	0.000
	53 - 48.58		699.73	3259.50	0.215	0.00	3259.50	0.000
L30	53 - 48.58	TP33.5151x32.2847x0.6375	685.62	3257.80	0.210	0.00	3257.80	0.000
	48.58 - 47.58		1408.66	3303.69	0.426	0.00	3303.69	0.000
L31	47.58 - 46.58	TP34.6503x33.5151x0.625	1432.07	3287.95	0.436	0.00	3287.95	0.000
	46.58 - 45.58		1455.58	3333.61	0.437	0.00	3333.61	0.000
	45.58 - 44.58		1479.19	3379.57	0.438	0.00	3379.57	0.000
	44.58 - 43.58		1502.90	3425.86	0.439	0.00	3425.86	0.000
	43.58 - 42.58		1526.77	3472.46	0.440	0.00	3472.46	0.000
L32	42.58 - 41.125	TP35.3109x34.6503x0.6125	1561.80	3473.79	0.450	0.00	3473.79	0.000
	41.125 - 39.67		1597.06	3541.48	0.451	0.00	3541.48	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L33	39.67 - 39.42 (33)	TP35.3677x35.3109x0.8125	1603.14	4632.49	0.346	0.00	4632.49	0.000
L34	39.42 - 38.42	TP36.5028x35.3677x0.7875	1627.53	4559.65	0.357	0.00	4559.65	0.000
	38.42 - 37.42		1652.05	4619.98	0.358	0.00	4619.98	0.000
	37.42 - 36.42		1676.67	4680.72	0.358	0.00	4680.72	0.000
	36.42 - 35.42		1701.41	4741.84	0.359	0.00	4741.84	0.000
	35.42 - 34.42		1726.26	4803.37	0.359	0.00	4803.37	0.000
L35	34.42 - 32.5 (35)	TP36.9387x36.5028x0.7875	1774.32	4922.61	0.360	0.00	4922.61	0.000
L36	32.5 - 32.25 (36)	TP36.9954x36.9387x0.6125	1780.61	3896.82	0.457	0.00	3896.82	0.000
L37	32.25 - 31.42 (37)	TP37.1839x36.9954x0.6	1801.53	3861.22	0.467	0.00	3861.22	0.000
L38	31.42 - 31.17 (38)	TP37.2406x37.1839x0.775	1807.86	4931.68	0.367	0.00	4931.68	0.000
L39	31.17 - 30.085	TP37.7333x37.2406x0.7625	1835.37	4923.62	0.373	0.00	4923.62	0.000
	30.085 - 29		1863.02	4990.57	0.373	0.00	4990.57	0.000
L40	29 - 28.65 (40)	TP37.8127x37.7333x0.675	1871.97	4468.59	0.419	0.00	4468.59	0.000
L41	28.65 - 28.42 (41)	TP37.8649x37.8127x0.675	1877.85	4481.27	0.419	0.00	4481.27	0.000
L42	28.42 - 27.19	TP38.9819x37.8649x0.6625	1909.45	4469.65	0.427	0.00	4469.65	0.000
	27.19 - 25.96		1941.21	4537.08	0.428	0.00	4537.08	0.000
	25.96 - 24.73		1973.15	4605.02	0.428	0.00	4605.02	0.000
	24.73 - 23.5		2005.26	4673.46	0.429	0.00	4673.46	0.000
L43	23.5 - 23.25 (43)	TP39.0387x38.9819x0.7875	2011.81	5517.57	0.365	0.00	5517.57	0.000
L44	23.25 - 23 (44)	TP39.0954x39.0387x0.7875	2018.36	5534.13	0.365	0.00	5534.13	0.000
L45	23 - 22.75 (45)	TP39.1522x39.0954x0.65	2024.93	4630.98	0.437	0.00	4630.98	0.000
L46	22.75 - 21.75	TP40.2873x39.1522x0.6375	2051.25	4600.53	0.446	0.00	4600.53	0.000
	21.75 - 20.75		2077.68	4655.05	0.446	0.00	4655.05	0.000
	20.75 - 19.75		2104.22	4709.88	0.447	0.00	4709.88	0.000
	19.75 - 18.75		2130.88	4765.04	0.447	0.00	4765.04	0.000
	18.75 - 17.75		2157.63	4820.52	0.448	0.00	4820.52	0.000
L47	17.75 - 16.75	TP41.4224x40.2873x0.625	2184.51	4785.21	0.457	0.00	4785.21	0.000
	16.75 - 15.75		2211.48	4840.25	0.457	0.00	4840.25	0.000
	15.75 - 14.75		2238.57	4895.61	0.457	0.00	4895.61	0.000
	14.75 - 13.75		2265.76	4951.29	0.458	0.00	4951.29	0.000
	13.75 - 12.75		2293.06	5007.28	0.458	0.00	5007.28	0.000
L48	12.75 - 11.75	TP42.5576x41.4224x0.6125	2320.46	4966.85	0.467	0.00	4966.85	0.000
	11.75 - 10.75		2347.97	5022.37	0.468	0.00	5022.37	0.000
	10.75 - 9.75		2375.59	5078.18	0.468	0.00	5078.18	0.000
	9.75 - 8.75		2403.32	5134.32	0.468	0.00	5134.32	0.000
	8.75 - 7.75		2431.15	5190.76	0.468	0.00	5190.76	0.000
L49	7.75 - 6.75	TP43.6927x42.5576x0.6	2459.09	5144.98	0.478	0.00	5144.98	0.000
	6.75 - 5.75		2487.13	5200.90	0.478	0.00	5200.90	0.000
	5.75 - 4.75		2515.29	5257.13	0.478	0.00	5257.13	0.000
	4.75 - 3.75		2543.55	5313.64	0.479	0.00	5313.64	0.000
	3.75 - 2.75		2571.92	5370.47	0.479	0.00	5370.47	0.000
L50	2.75 - 1.375	TP44.317x43.6927x0.6	2611.09	5449.09	0.479	0.00	5449.09	0.000
	1.375 - 0		2650.47	5528.29	0.479	0.00	5528.29	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	140 - 139	TP14.296x13.161x0.1875	0.1820	137.8720	0.001	0.00	154.89	0.000
	139 - 138		0.2227	140.2430	0.002	0.00	160.34	0.000
	138 - 137		5.6450	142.6130	0.040	0.42	165.88	0.003
	137 - 136		5.6859	144.9840	0.039	0.42	171.52	0.002
	136 - 135		5.7270	147.3550	0.039	0.42	177.26	0.002
L2	135 - 134	TP15.4309x14.296x0.1875	5.7689	149.7260	0.039	0.42	183.09	0.002
	134 - 133		5.8111	152.0970	0.038	0.42	189.01	0.002
	133 - 132		5.8537	154.4670	0.038	0.42	195.02	0.002
	132 - 131		5.8965	156.8380	0.038	0.42	201.13	0.002
	131 - 130		5.9397	159.2090	0.037	0.42	207.34	0.002
L3	130 - 129	TP16.5659x15.4309x0.1875	5.9833	161.5800	0.037	0.42	213.64	0.002
	129 - 128		10.0601	163.9510	0.061	0.42	220.03	0.002
	128 - 127		10.1011	166.3210	0.061	0.42	226.52	0.002
	127 - 126		10.1420	168.6920	0.060	0.42	233.10	0.002
	126 - 125		10.1828	171.0630	0.060	0.42	239.78	0.002
L4	125 - 124	TP17.7008x16.5659x0.1875	10.2232	173.4340	0.059	0.42	246.55	0.002
	124 - 123		10.2634	175.8050	0.058	0.42	253.41	0.002
	123 - 122		10.3037	178.1750	0.058	0.42	260.37	0.002
	122 - 121		10.3439	180.5460	0.057	0.42	267.42	0.002
	121 - 120		10.3841	182.9170	0.057	0.42	274.57	0.002
L5	120 - 119	TP18.8358x17.7008x0.1875	13.2087	185.2880	0.071	0.42	281.81	0.001
	119 - 118		13.2473	187.6590	0.071	0.42	289.15	0.001
	118 - 117		13.2855	190.0290	0.070	0.42	296.58	0.001
	117 - 116		13.3234	192.4000	0.069	0.42	304.10	0.001
	116 - 115		13.3610	194.7710	0.069	0.42	311.72	0.001
L6	115 - 114.75 (6)	TP18.8925x18.8358x0.4625	13.3811	474.8120	0.028	0.42	728.37	0.001
L7	114.75 - 113.75	TP20.0275x18.8925x0.45	13.4672	467.9830	0.029	0.42	728.70	0.001
	113.75 - 112.75		13.5567	473.6720	0.029	0.42	746.97	0.001
	112.75 - 111.75		13.6468	479.3620	0.028	0.42	765.47	0.001
	111.75 - 110.75		13.7376	485.0520	0.028	0.42	784.19	0.001
	110.75 - 109.75		13.8290	490.7420	0.028	0.42	803.14	0.001
L8	109.75 - 108.75	TP21.1624x20.0275x0.425	13.9189	469.4440	0.030	0.42	780.65	0.001
	108.75 - 107.75		14.0091	474.8180	0.030	0.42	799.02	0.001
	107.75 - 106.75		14.0999	480.1920	0.029	0.42	817.61	0.001
	106.75 - 105.75		14.1914	485.5660	0.029	0.42	836.40	0.000
	105.75 - 104.75		14.2836	490.9400	0.029	0.42	855.42	0.000
L9	104.75 - 104 (9)	TP21.3327x21.1624x0.425	14.3512	494.9700	0.029	0.42	869.82	0.000
L10	104 - 103.75 (10)	TP21.3894x21.3327x0.1875	14.3703	221.4420	0.065	0.42	403.93	0.001
L11	103.75 - 102.665	TP21.882x21.3894x0.1875	14.4554	224.0150	0.065	0.42	413.45	0.001
	102.665 - 101.58		14.5324	226.5870	0.064	0.42	423.08	0.001
L12	101.58 - 100.58	TP23.017x21.882x0.3125	14.5727	379.4210	0.038	0.42	703.63	0.001
	100.58 - 99.58		14.6194	383.3720	0.038	0.42	718.58	0.001
	99.58 - 98.58		14.6663	387.3240	0.038	0.42	733.68	0.001
	98.58 - 97.58		14.7132	391.2750	0.038	0.42	748.94	0.001
	97.58 - 96.58		14.7603	395.2260	0.037	0.42	764.36	0.001
L13	96.58 - 95.58	TP24.152x23.017x0.3125	14.8068	399.1780	0.037	0.42	779.94	0.001
	95.58 - 94.58		14.8534	403.1290	0.037	0.42	795.67	0.001
	94.58 - 93.58		14.9001	407.0810	0.037	0.42	811.56	0.001

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
	93.58 - 92.58		14.9470	411.0320	0.036	0.42	827.61	0.001
	92.58 - 91.58		14.9940	414.9840	0.036	0.42	843.82	0.000
L14	91.58 - 91 (14)	TP24.2837x24.152x0.3125	15.0392	417.2760	0.036	0.42	853.28	0.000
L15	91 - 90.75 (15)	TP24.3404x24.2837x0.6	15.0636	793.4570	0.019	0.42	1567.32	0.000
L16	90.75 - 89.75	TP25.4754x24.3404x0.5875	15.1601	784.7650	0.019	0.42	1568.28	0.000
	89.75 - 88.75		15.2575	792.1940	0.019	0.42	1598.86	0.000
	88.75 - 87.75		15.3556	799.6220	0.019	0.42	1629.74	0.000
	87.75 - 86.75		15.4544	807.0510	0.019	0.42	1660.92	0.000
	86.75 - 85.75		15.5537	814.4800	0.019	0.42	1692.38	0.000
L17	85.75 - 84.75	TP26.6104x25.4754x0.5625	15.6514	787.7170	0.020	0.42	1657.52	0.000
	84.75 - 83.75		15.7494	794.8300	0.020	0.42	1688.28	0.000
	83.75 - 82.75		15.8480	801.9420	0.020	0.42	1719.33	0.000
	82.75 - 81.75		15.9472	809.0550	0.020	0.42	1750.65	0.000
	81.75 - 80.75		16.0470	816.1680	0.020	0.42	1782.26	0.000
L18	80.75 - 79.75	TP27.7454x26.6104x0.55	16.1450	805.3680	0.020	0.42	1777.28	0.000
	79.75 - 78.75		16.2435	812.3230	0.020	0.42	1808.78	0.000
	78.75 - 77.75		16.3425	819.2780	0.020	0.42	1840.53	0.000
	77.75 - 76.75		16.4422	826.2320	0.020	0.42	1872.58	0.000
	76.75 - 75.75		16.5424	833.1870	0.020	0.42	1904.90	0.000
L19	75.75 - 74.75	TP28.8804x27.7454x0.5438	16.6441	830.7840	0.020	0.42	1917.26	0.000
	74.75 - 73.75		16.7463	837.6590	0.020	0.42	1949.78	0.000
	73.75 - 72.75		20.5284	844.5350	0.024	0.42	1982.56	0.000
	72.75 - 71.75		20.6279	851.4100	0.024	0.42	2015.62	0.000
	71.75 - 70.75		20.7279	858.2860	0.024	0.42	2048.95	0.000
L20	70.75 - 69.98 (20)	TP29.0552x28.8804x0.5313	20.8093	844.0980	0.025	0.42	2030.73	0.000
L21	69.98 - 69.73 (21)	TP29.112x29.0552x0.5313	20.8337	845.7770	0.025	0.42	2038.97	0.000
L22	69.73 - 68.73	TP30.247x29.112x0.525	20.9412	842.6480	0.025	0.42	2049.54	0.000
	68.73 - 67.73		21.0443	849.2860	0.025	0.42	2082.57	0.000
	67.73 - 66.73		21.1479	855.9250	0.025	0.42	2115.86	0.000
	66.73 - 65.73		21.2521	862.5630	0.025	0.42	2149.41	0.000
	65.73 - 64.73		21.3568	869.2020	0.025	0.42	2183.22	0.000
L23	64.73 - 63 (23)	TP30.6397x30.247x0.5188	21.5498	870.3830	0.025	0.42	2217.53	0.000
L24	63 - 62.75 (24)	TP30.6964x30.6397x0.7	21.5650	1169.6400	0.018	0.42	2930.83	0.000
L25	62.75 - 61.5267	TP31.5295x30.6964x0.6875	21.7118	1159.8600	0.019	0.42	2938.28	0.000
	61.5267 - 60.3033		21.8539	1170.5000	0.019	0.42	2993.68	0.000
	60.3033 - 59.08		21.9968	1181.1300	0.019	0.42	3049.58	0.000
L26	59.08 - 58.82 (26)	TP31.5885x31.5295x0.625	22.0209	1077.9900	0.020	0.42	2806.29	0.000
L27	58.82 - 58.67 (27)	TP31.6226x31.5885x0.625	22.0410	1079.1700	0.020	0.42	2812.59	0.000
L28	58.67 - 57.67	TP32.7576x31.6226x0.6125	22.1502	1065.7600	0.021	0.42	2802.28	0.000
	57.67 - 56.67		22.2572	1073.5100	0.021	0.42	2843.97	0.000
	56.67 - 55.67		22.3647	1081.2500	0.021	0.42	2885.97	0.000
	55.67 - 54.67		22.4726	1089.0000	0.021	0.42	2928.28	0.000
	54.67 - 53.67		22.5810	1096.7400	0.021	0.42	2970.91	0.000
L29	53.67 - 53	TP33.913x32.7576x0.6125	22.6476	1101.9300	0.021	0.42	2999.63	0.000
	53 - 48.58		11.9351	1136.1600	0.011	0.21	3192.62	0.000
L30	53 - 48.58	TP33.5151x32.2847x0.6375	11.3787	1159.4600	0.010	0.21	3187.13	0.000
	48.58 - 47.58		23.4043	1167.5200	0.020	0.42	3232.50	0.000
L31	47.58 - 46.58	TP34.6503x33.5151x0.625	23.5057	1152.9700	0.020	0.42	3218.85	0.000
	46.58 - 45.58		23.6074	1160.8700	0.020	0.42	3263.99	0.000
	45.58 - 44.58		23.7095	1168.7800	0.020	0.42	3309.44	0.000
	44.58 - 43.58		23.8120	1176.6800	0.020	0.42	3355.21	0.000

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
	43.58 - 42.58		23.9759	1184.5800	0.020	0.42	3401.29	0.000
L32	42.58 - 41.125	TP35.3109x34.6503x0.6125	24.1364	1172.5900	0.021	0.42	3404.57	0.000
	41.125 - 39.67		24.2922	1183.8600	0.021	0.42	3471.53	0.000
L33	39.67 - 39.42 (33)	TP35.3677x35.3109x0.8125	24.3070	1563.9400	0.016	0.42	4512.80	0.000
L34	39.42 - 38.42	TP36.5028x35.3677x0.7875	24.4269	1526.8800	0.016	0.42	4446.06	0.000
	38.42 - 37.42		24.5408	1536.8300	0.016	0.42	4505.60	0.000
	37.42 - 36.42		24.6552	1546.7900	0.016	0.42	4565.53	0.000
	36.42 - 35.42		24.7701	1556.7500	0.016	0.42	4625.86	0.000
	35.42 - 34.42		24.8855	1566.7100	0.016	0.42	4686.59	0.000
L35	34.42 - 32.5 (35)	TP36.9387x36.5028x0.7875	25.1147	1585.8300	0.016	0.42	4804.29	0.000
L36	32.5 - 32.25 (36)	TP36.9954x36.9387x0.6125	25.1267	1241.3300	0.020	0.42	3823.13	0.000
L37	32.25 - 31.42 (37)	TP37.1839x36.9954x0.6	25.2243	1222.7100	0.021	0.42	3789.93	0.000
L38	31.42 - 31.17 (38)	TP37.2406x37.1839x0.775	25.2454	1574.2300	0.016	0.42	4815.86	0.000
L39	31.17 - 30.085	TP37.7333x37.2406x0.7625	25.3815	1559.8400	0.016	0.42	4810.50	0.000
	30.085 - 29		25.5097	1570.3000	0.016	0.42	4876.63	0.000
L40	29 - 28.65 (40)	TP37.8127x37.7333x0.675	25.5429	1396.3800	0.018	0.42	4377.90	0.000
L41	28.65 - 28.42 (41)	TP37.8649x37.8127x0.675	25.5683	1398.3400	0.018	0.42	4390.45	0.000
L42	28.42 - 27.19	TP38.9819x37.8649x0.6625	25.7193	1383.2100	0.019	0.42	4381.25	0.000
	27.19 - 25.96		25.8590	1393.5200	0.019	0.42	4447.96	0.000
	25.96 - 24.73		25.9993	1403.8200	0.019	0.42	4515.18	0.000
	24.73 - 23.5		26.1403	1414.1300	0.018	0.42	4582.89	0.000
L43	23.5 - 23.25 (43)	TP39.0387x38.9819x0.7875	26.1581	1677.9500	0.016	0.42	5391.82	0.000
L44	23.25 - 23 (44)	TP39.0954x39.0387x0.7875	26.1886	1680.4400	0.016	0.42	5408.17	0.000
L45	23 - 22.75 (45)	TP39.1522x39.0954x0.65	26.2182	1394.0600	0.019	0.42	4543.18	0.000
L46	22.75 - 21.75	TP40.2873x39.1522x0.6375	26.3373	1375.7600	0.019	0.42	4515.33	0.000
	21.75 - 20.75		26.4470	1383.8200	0.019	0.42	4569.30	0.000
	20.75 - 19.75		26.5570	1391.8800	0.019	0.42	4623.58	0.000
	19.75 - 18.75		26.6673	1399.9500	0.019	0.42	4678.19	0.000
	18.75 - 17.75		26.7779	1408.0100	0.019	0.42	4733.12	0.000
L47	17.75 - 16.75	TP41.4224x40.2873x0.625	26.8842	1388.7400	0.019	0.42	4700.46	0.000
	16.75 - 15.75		26.9906	1396.6400	0.019	0.42	4754.98	0.000
	15.75 - 14.75		27.0972	1404.5500	0.019	0.42	4809.80	0.000
	14.75 - 13.75		27.2041	1412.4500	0.019	0.42	4864.94	0.000
	13.75 - 12.75		27.3113	1420.3500	0.019	0.42	4920.40	0.000
L48	12.75 - 11.75	TP42.5576x41.4224x0.6125	27.4178	1400.1200	0.020	0.42	4882.68	0.000
	11.75 - 10.75		27.5243	1407.8700	0.020	0.42	4937.68	0.000
	10.75 - 9.75		27.6311	1415.6100	0.020	0.42	4992.98	0.000
	9.75 - 8.75		27.7382	1423.3600	0.019	0.42	5048.60	0.000
	8.75 - 7.75		27.8455	1431.1000	0.019	0.42	5104.52	0.000
L49	7.75 - 6.75	TP43.6927x42.5576x0.6	27.9522	1409.9000	0.020	0.42	5061.51	0.000
	6.75 - 5.75		28.0589	1417.4900	0.020	0.42	5116.93	0.000
	5.75 - 4.75		28.1658	1425.0800	0.020	0.42	5172.64	0.000
	4.75 - 3.75		28.2730	1432.6700	0.020	0.42	5228.66	0.000
	3.75 - 2.75		28.3805	1440.2500	0.020	0.42	5284.98	0.000
L50	2.75 - 1.375	TP44.317x43.6927x0.6	28.5282	1450.6900	0.020	0.42	5362.92	0.000
	1.375 - 0		28.6704	1461.1200	0.020	0.42	5441.43	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $P_u/\phi P_n$	Ratio $M_{ux}/\phi M_{nx}$	Ratio $M_{uy}/\phi M_{ny}$	Ratio $V_u/\phi V_n$	Ratio $T_u/\phi T_n$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	140 - 139	0.000	0.008	0.000	0.001	0.000	0.008	1.000	4.8.2
	139 - 138	0.000	0.009	0.000	0.002	0.000	0.009	1.000	4.8.2
	138 - 137	0.005	0.097	0.000	0.040	0.003	0.103	1.000	4.8.2
	137 - 136	0.005	0.126	0.000	0.039	0.002	0.132	1.000	4.8.2
	136 - 135	0.005	0.154	0.000	0.039	0.002	0.160	1.000	4.8.2
L2	135 - 134	0.005	0.180	0.000	0.039	0.002	0.186	1.000	4.8.2
	134 - 133	0.005	0.204	0.000	0.038	0.002	0.211	1.000	4.8.2
	133 - 132	0.005	0.227	0.000	0.038	0.002	0.234	1.000	4.8.2
	132 - 131	0.005	0.249	0.000	0.038	0.002	0.256	1.000	4.8.2
	131 - 130	0.005	0.270	0.000	0.037	0.002	0.276	1.000	4.8.2
L3	130 - 129	0.005	0.290	0.000	0.037	0.002	0.296	1.000	4.8.2
	129 - 128	0.008	0.326	0.000	0.061	0.002	0.338	1.000	4.8.2
	128 - 127	0.008	0.361	0.000	0.061	0.002	0.373	1.000	4.8.2
	127 - 126	0.008	0.393	0.000	0.060	0.002	0.405	1.000	4.8.2
	126 - 125	0.008	0.424	0.000	0.060	0.002	0.436	1.000	4.8.2
L4	125 - 124	0.008	0.454	0.000	0.059	0.002	0.465	1.000	4.8.2
	124 - 123	0.008	0.481	0.000	0.058	0.002	0.493	1.000	4.8.2
	123 - 122	0.008	0.507	0.000	0.058	0.002	0.519	1.000	4.8.2
	122 - 121	0.008	0.532	0.000	0.057	0.002	0.544	1.000	4.8.2
	121 - 120	0.008	0.556	0.000	0.057	0.002	0.567	1.000	4.8.2
L5	120 - 119	0.010	0.588	0.000	0.071	0.001	0.603	1.000	4.8.2
	119 - 118	0.010	0.619	0.000	0.071	0.001	0.634	1.000	4.8.2
	118 - 117	0.010	0.650	0.000	0.070	0.001	0.665	1.000	4.8.2
	117 - 116	0.010	0.679	0.000	0.069	0.001	0.694	1.000	4.8.2
	116 - 115	0.010	0.707	0.000	0.069	0.001	0.722	1.000	4.8.2
L6	115 - 114.75 (6)	0.004	0.299	0.000	0.028	0.001	0.304	1.000	4.8.2
L7	114.75 - 113.75	0.004	0.317	0.000	0.029	0.001	0.322	1.000	4.8.2
	113.75 - 112.75	0.004	0.327	0.000	0.029	0.001	0.332	1.000	4.8.2
	112.75 - 111.75	0.004	0.337	0.000	0.028	0.001	0.342	1.000	4.8.2
	111.75 - 110.75	0.004	0.346	0.000	0.028	0.001	0.351	1.000	4.8.2
	110.75 - 109.75	0.004	0.354	0.000	0.028	0.001	0.359	1.000	4.8.2
L8	109.75 - 108.75	0.005	0.382	0.000	0.030	0.001	0.388	1.000	4.8.2
	108.75 - 107.75	0.005	0.391	0.000	0.030	0.001	0.396	1.000	4.8.2
	107.75 - 106.75	0.005	0.399	0.000	0.029	0.001	0.404	1.000	4.8.2
	106.75 - 105.75	0.005	0.406	0.000	0.029	0.000	0.412	1.000	4.8.2
	105.75 - 104.75	0.005	0.414	0.000	0.029	0.000	0.419	1.000	4.8.2
L9	104.75 - 104 (9)	0.005	0.419	0.000	0.029	0.000	0.424	1.000	4.8.2
L10	104 - 103.75 (10)	0.011	0.965	0.000	0.065	0.001	0.981	1.000	4.8.2
L11	103.75 - 102.665	0.011	0.986	0.000	0.065	0.001	**1.001**	1.000	4.8.2
	102.665 - 101.58	0.011	1.005	0.000	0.064	0.001	**1.021**	1.000	4.8.2
L12	101.58 - 100.58	0.006	0.590	0.000	0.038	0.001	0.598	1.000	4.8.2
	100.58 - 99.58	0.006	0.598	0.000	0.038	0.001	0.606	1.000	4.8.2
	99.58 - 98.58	0.006	0.605	0.000	0.038	0.001	0.613	1.000	4.8.2
	98.58 - 97.58	0.006	0.612	0.000	0.038	0.001	0.620	1.000	4.8.2
	97.58 - 96.58	0.007	0.619	0.000	0.037	0.001	0.627	1.000	4.8.2
L13	96.58 - 95.58	0.007	0.625	0.000	0.037	0.001	0.633	1.000	4.8.2
	95.58 - 94.58	0.007	0.631	0.000	0.037	0.001	0.639	1.000	4.8.2
	94.58 - 93.58	0.007	0.637	0.000	0.037	0.001	0.645	1.000	4.8.2
	93.58 - 92.58	0.007	0.643	0.000	0.036	0.001	0.650	1.000	4.8.2

Section No.	Elevation ft	Ratio P_u / ϕP_n	Ratio M_{ux} / ϕM_{nx}	Ratio M_{uy} / ϕM_{ny}	Ratio V_u / ϕV_n	Ratio T_u / ϕT_n	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	92.58 - 91.58	0.007	0.648	0.000	0.036	0.000	0.656	1.000	4.8.2
L14	91.58 - 91 (14)	0.007	0.651	0.000	0.036	0.000	0.659	1.000	4.8.2
L15	91 - 90.75 (15)	0.004	0.352	0.000	0.019	0.000	0.356	1.000	4.8.2
L16	90.75 - 89.75	0.004	0.361	0.000	0.019	0.000	0.365	1.000	4.8.2
	89.75 - 88.75	0.004	0.364	0.000	0.019	0.000	0.368	1.000	4.8.2
	88.75 - 87.75	0.004	0.366	0.000	0.019	0.000	0.370	1.000	4.8.2
	87.75 - 86.75	0.004	0.368	0.000	0.019	0.000	0.372	1.000	4.8.2
	86.75 - 85.75	0.004	0.370	0.000	0.019	0.000	0.375	1.000	4.8.2
L17	85.75 - 84.75	0.004	0.388	0.000	0.020	0.000	0.392	1.000	4.8.2
	84.75 - 83.75	0.004	0.390	0.000	0.020	0.000	0.394	1.000	4.8.2
	83.75 - 82.75	0.004	0.392	0.000	0.020	0.000	0.396	1.000	4.8.2
	82.75 - 81.75	0.004	0.394	0.000	0.020	0.000	0.398	1.000	4.8.2
	81.75 - 80.75	0.004	0.396	0.000	0.020	0.000	0.400	1.000	4.8.2
L18	80.75 - 79.75	0.004	0.406	0.000	0.020	0.000	0.411	1.000	4.8.2
	79.75 - 78.75	0.004	0.408	0.000	0.020	0.000	0.412	1.000	4.8.2
	78.75 - 77.75	0.004	0.409	0.000	0.020	0.000	0.414	1.000	4.8.2
	77.75 - 76.75	0.004	0.411	0.000	0.020	0.000	0.416	1.000	4.8.2
	76.75 - 75.75	0.004	0.413	0.000	0.020	0.000	0.417	1.000	4.8.2
L19	75.75 - 74.75	0.004	0.418	0.000	0.020	0.000	0.423	1.000	4.8.2
	74.75 - 73.75	0.004	0.420	0.000	0.020	0.000	0.425	1.000	4.8.2
	73.75 - 72.75	0.006	0.424	0.000	0.024	0.000	0.430	1.000	4.8.2
	72.75 - 71.75	0.006	0.427	0.000	0.024	0.000	0.433	1.000	4.8.2
	71.75 - 70.75	0.006	0.430	0.000	0.024	0.000	0.436	1.000	4.8.2
L20	70.75 - 69.98 (20)	0.006	0.442	0.000	0.025	0.000	0.448	1.000	4.8.2
L21	69.98 - 69.73 (21)	0.006	0.442	0.000	0.025	0.000	0.449	1.000	4.8.2
L22	69.73 - 68.73	0.006	0.450	0.000	0.025	0.000	0.457	1.000	4.8.2
	68.73 - 67.73	0.006	0.453	0.000	0.025	0.000	0.460	1.000	4.8.2
	67.73 - 66.73	0.006	0.456	0.000	0.025	0.000	0.462	1.000	4.8.2
	66.73 - 65.73	0.006	0.458	0.000	0.025	0.000	0.465	1.000	4.8.2
	65.73 - 64.73	0.006	0.461	0.000	0.025	0.000	0.467	1.000	4.8.2
L23	64.73 - 63 (23)	0.006	0.470	0.000	0.025	0.000	0.477	1.000	4.8.2
L24	63 - 62.75 (24)	0.005	0.355	0.000	0.018	0.000	0.360	1.000	4.8.2
L25	62.75 - 61.5267	0.005	0.363	0.000	0.019	0.000	0.368	1.000	4.8.2
	61.5267 - 60.3033	0.005	0.365	0.000	0.019	0.000	0.370	1.000	4.8.2
	60.3033 - 59.08	0.005	0.367	0.000	0.019	0.000	0.372	1.000	4.8.2
L26	59.08 - 58.82 (26)	0.005	0.402	0.000	0.020	0.000	0.408	1.000	4.8.2
L27	58.82 - 58.67 (27)	0.005	0.402	0.000	0.020	0.000	0.408	1.000	4.8.2
L28	58.67 - 57.67	0.005	0.412	0.000	0.021	0.000	0.418	1.000	4.8.2
	57.67 - 56.67	0.005	0.413	0.000	0.021	0.000	0.419	1.000	4.8.2
	56.67 - 55.67	0.005	0.415	0.000	0.021	0.000	0.421	1.000	4.8.2
	55.67 - 54.67	0.005	0.417	0.000	0.021	0.000	0.422	1.000	4.8.2
	54.67 - 53.67	0.005	0.418	0.000	0.021	0.000	0.424	1.000	4.8.2
L29	53.67 - 53	0.006	0.419	0.000	0.021	0.000	0.425	1.000	4.8.2
	53 - 48.58	0.003	0.215	0.000	0.011	0.000	0.218	1.000	4.8.2
L30	53 - 48.58	0.003	0.210	0.000	0.010	0.000	0.213	1.000	4.8.2
	48.58 - 47.58	0.006	0.426	0.000	0.020	0.000	0.433	1.000	4.8.2
L31	47.58 - 46.58	0.006	0.436	0.000	0.020	0.000	0.442	1.000	4.8.2
	46.58 - 45.58	0.006	0.437	0.000	0.020	0.000	0.443	1.000	4.8.2
	45.58 - 44.58	0.006	0.438	0.000	0.020	0.000	0.444	1.000	4.8.2
	44.58 - 43.58	0.006	0.439	0.000	0.020	0.000	0.445	1.000	4.8.2
	43.58 - 42.58	0.006	0.440	0.000	0.020	0.000	0.446	1.000	4.8.2
L32	42.58 - 41.125	0.006	0.450	0.000	0.021	0.000	0.456	1.000	4.8.2
	41.125 - 39.67	0.006	0.451	0.000	0.021	0.000	0.458	1.000	4.8.2
L33	39.67 - 39.42 (33)	0.005	0.346	0.000	0.016	0.000	0.351	1.000	4.8.2
L34	39.42 - 38.42	0.005	0.357	0.000	0.016	0.000	0.362	1.000	4.8.2

Section No.	Elevation ft	Ratio P_u / ϕP_n	Ratio M_{ux} / ϕM_{nx}	Ratio M_{uy} / ϕM_{ny}	Ratio V_u / ϕV_n	Ratio T_u / ϕT_n	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	38.42 - 37.42	0.005	0.358	0.000	0.016	0.000	0.363	1.000	4.8.2
	37.42 - 36.42	0.005	0.358	0.000	0.016	0.000	0.363	1.000	4.8.2
	36.42 - 35.42	0.005	0.359	0.000	0.016	0.000	0.364	1.000	4.8.2
	35.42 - 34.42	0.005	0.359	0.000	0.016	0.000	0.365	1.000	4.8.2
L35	34.42 - 32.5 (35)	0.005	0.360	0.000	0.016	0.000	0.366	1.000	4.8.2
L36	32.5 - 32.25 (36)	0.006	0.457	0.000	0.020	0.000	0.464	1.000	4.8.2
L37	32.25 - 31.42 (37)	0.007	0.467	0.000	0.021	0.000	0.474	1.000	4.8.2
L38	31.42 - 31.17 (38)	0.005	0.367	0.000	0.016	0.000	0.372	1.000	4.8.2
L39	31.17 - 30.085	0.005	0.373	0.000	0.016	0.000	0.378	1.000	4.8.2
	30.085 - 29	0.005	0.373	0.000	0.016	0.000	0.379	1.000	4.8.2
L40	29 - 28.65 (40)	0.006	0.419	0.000	0.018	0.000	0.425	1.000	4.8.2
L41	28.65 - 28.42 (41)	0.006	0.419	0.000	0.018	0.000	0.425	1.000	4.8.2
L42	28.42 - 27.19	0.006	0.427	0.000	0.019	0.000	0.434	1.000	4.8.2
	27.19 - 25.96	0.006	0.428	0.000	0.019	0.000	0.434	1.000	4.8.2
	25.96 - 24.73	0.006	0.428	0.000	0.019	0.000	0.435	1.000	4.8.2
	24.73 - 23.5	0.006	0.429	0.000	0.018	0.000	0.436	1.000	4.8.2
L43	23.5 - 23.25 (43)	0.005	0.365	0.000	0.016	0.000	0.370	1.000	4.8.2
L44	23.25 - 23 (44)	0.005	0.365	0.000	0.016	0.000	0.370	1.000	4.8.2
L45	23 - 22.75 (45)	0.006	0.437	0.000	0.019	0.000	0.444	1.000	4.8.2
L46	22.75 - 21.75	0.007	0.446	0.000	0.019	0.000	0.453	1.000	4.8.2
	21.75 - 20.75	0.007	0.446	0.000	0.019	0.000	0.453	1.000	4.8.2
	20.75 - 19.75	0.007	0.447	0.000	0.019	0.000	0.454	1.000	4.8.2
	19.75 - 18.75	0.007	0.447	0.000	0.019	0.000	0.454	1.000	4.8.2
	18.75 - 17.75	0.007	0.448	0.000	0.019	0.000	0.455	1.000	4.8.2
L47	17.75 - 16.75	0.007	0.457	0.000	0.019	0.000	0.464	1.000	4.8.2
	16.75 - 15.75	0.007	0.457	0.000	0.019	0.000	0.464	1.000	4.8.2
	15.75 - 14.75	0.007	0.457	0.000	0.019	0.000	0.465	1.000	4.8.2
	14.75 - 13.75	0.007	0.458	0.000	0.019	0.000	0.465	1.000	4.8.2
	13.75 - 12.75	0.007	0.458	0.000	0.019	0.000	0.465	1.000	4.8.2
L48	12.75 - 11.75	0.007	0.467	0.000	0.020	0.000	0.475	1.000	4.8.2
	11.75 - 10.75	0.007	0.468	0.000	0.020	0.000	0.475	1.000	4.8.2
	10.75 - 9.75	0.007	0.468	0.000	0.020	0.000	0.475	1.000	4.8.2
	9.75 - 8.75	0.007	0.468	0.000	0.019	0.000	0.476	1.000	4.8.2
	8.75 - 7.75	0.007	0.468	0.000	0.019	0.000	0.476	1.000	4.8.2
L49	7.75 - 6.75	0.008	0.478	0.000	0.020	0.000	0.486	1.000	4.8.2
	6.75 - 5.75	0.008	0.478	0.000	0.020	0.000	0.486	1.000	4.8.2
	5.75 - 4.75	0.008	0.478	0.000	0.020	0.000	0.486	1.000	4.8.2
	4.75 - 3.75	0.008	0.479	0.000	0.020	0.000	0.487	1.000	4.8.2
	3.75 - 2.75	0.008	0.479	0.000	0.020	0.000	0.487	1.000	4.8.2
L50	2.75 - 1.375	0.008	0.479	0.000	0.020	0.000	0.487	1.000	4.8.2
	1.375 - 0	0.008	0.479	0.000	0.020	0.000	0.488	1.000	4.8.2

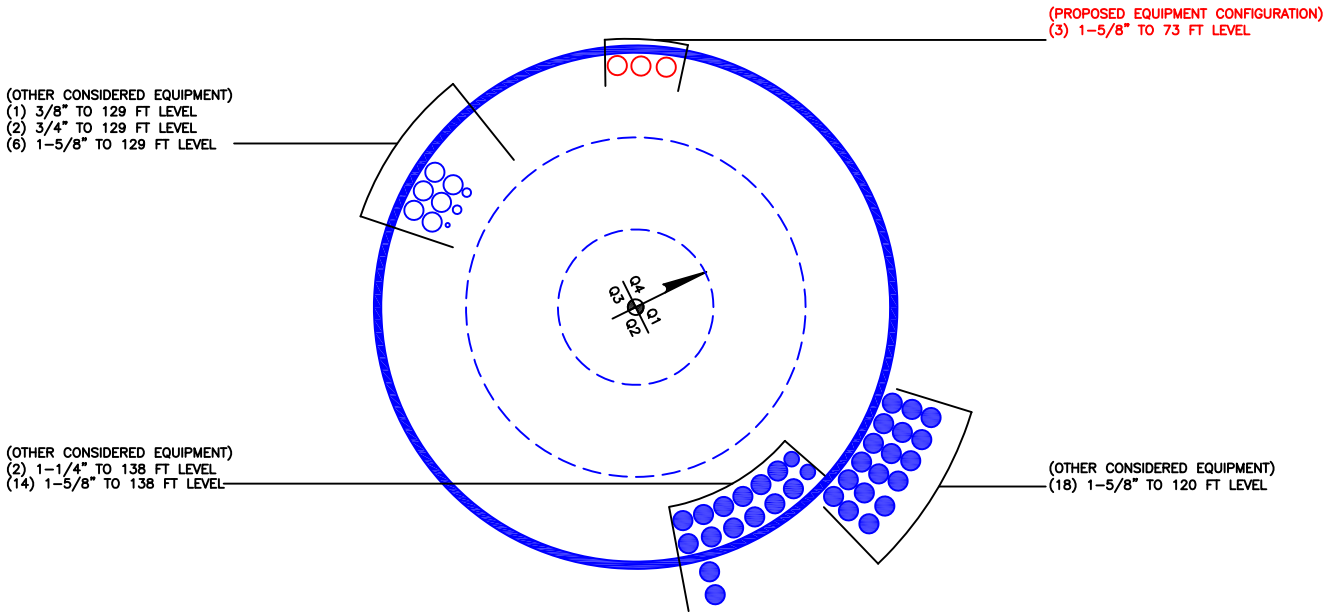
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	140 - 135	Pole	TP14.296x13.161x0.1875	1	-2.8947	623.8030	16.0	Pass
L2	135 - 130	Pole	TP15.4309x14.296x0.1875	2	-3.1523	673.9850	27.6	Pass
L3	130 - 125	Pole	TP16.5659x15.4309x0.1875	3	-5.8774	724.1660	43.6	Pass
L4	125 - 120	Pole	TP17.7008x16.5659x0.1875	4	-6.2515	774.3480	56.7	Pass
L5	120 - 115	Pole	TP18.8358x17.7008x0.1875	5	-8.2314	815.4420	72.2	Pass
L6	115 - 114.75	Pole	TP18.8925x18.8358x0.4625	6	-8.2806	2010.0400	30.4	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L7	114.75 - 109.75	Pole	TP20.0275x18.8925x0.45	7	-8.9975	2077.4800	35.9	Pass
L8	109.75 - 104.75	Pole	TP21.1624x20.0275x0.425	8	-9.7459	2078.3100	41.9	Pass
L9	104.75 - 104	Pole	TP21.3327x21.1624x0.425	9	-9.8631	2095.3700	42.4	Pass
L10	104 - 103.75	Pole	TP21.3894x21.3327x0.1875	10	-9.8947	895.0910	98.1	Pass
L11	103.75 - 101.58	Pole	TP21.882x21.3894x0.1875	11	-10.1416	909.5670	102.1	Fail
L12	101.58 - 96.58	Pole	TP23.017x21.882x0.3125	12	-10.8908	1673.1300	62.7	Pass
L13	96.58 - 91.58	Pole	TP24.152x23.017x0.3125	13	-11.6582	1756.7700	65.6	Pass
L14	91.58 - 91	Pole	TP24.2837x24.152x0.3125	14	-11.7525	1766.4700	65.9	Pass
L15	91 - 90.75	Pole	TP24.3404x24.2837x0.6	15	-11.8120	3358.9700	35.6	Pass
L16	90.75 - 85.75	Pole	TP25.4754x24.3404x0.5875	16	-12.8956	3447.9600	37.5	Pass
L17	85.75 - 80.75	Pole	TP26.6104x25.4754x0.5625	17	-14.0129	3455.1100	40.0	Pass
L18	80.75 - 75.75	Pole	TP27.7454x26.6104x0.55	18	-15.1580	3527.1600	41.7	Pass
L19	75.75 - 70.75	Pole	TP28.8804x27.7454x0.5438	19	-20.5412	3633.4100	43.6	Pass
L20	70.75 - 69.98	Pole	TP29.0552x28.8804x0.5313	20	-20.7337	3573.3500	44.8	Pass
L21	69.98 - 69.73	Pole	TP29.112x29.0552x0.5313	21	-20.8007	3580.4600	44.9	Pass
L22	69.73 - 64.73	Pole	TP30.247x29.112x0.525	22	-22.0440	3679.6200	46.7	Pass
L23	64.73 - 63	Pole	TP30.6397x30.247x0.5188	23	-22.4768	3684.6200	47.7	Pass
L24	63 - 62.75	Pole	TP30.6964x30.6397x0.7	24	-22.5732	4951.4700	36.0	Pass
L25	62.75 - 59.08	Pole	TP31.5295x30.6964x0.6875	25	-23.7585	5000.1400	37.2	Pass
L26	59.08 - 58.82	Pole	TP31.5885x31.5295x0.625	26	-23.8465	4563.4900	40.8	Pass
L27	58.82 - 58.67	Pole	TP31.6226x31.5885x0.625	27	-23.8941	4568.5100	40.8	Pass
L28	58.67 - 53.67	Pole	TP32.7576x31.6226x0.6125	28	-25.4461	4642.8800	42.4	Pass
L29	53.67 - 48.58	Pole	TP33.913x32.7576x0.6125	29	-25.6613	4664.8400	42.5	Pass
L30	48.58 - 47.58	Pole	TP33.5151x32.2847x0.6375	30	-28.5370	4942.5100	43.3	Pass
L31	47.58 - 42.58	Pole	TP34.6503x33.5151x0.625	31	-30.1263	5014.7400	44.6	Pass
L32	42.58 - 39.67	Pole	TP35.3109x34.6503x0.6125	32	-31.0636	5011.6700	45.8	Pass
L33	39.67 - 39.42	Pole	TP35.3677x35.3109x0.8125	33	-31.1744	6620.6800	35.1	Pass
L34	39.42 - 34.42	Pole	TP36.5028x35.3677x0.7875	34	-33.1458	6632.4100	36.5	Pass
L35	34.42 - 32.5	Pole	TP36.9387x36.5028x0.7875	35	-33.9276	6713.3500	36.6	Pass
L36	32.5 - 32.25	Pole	TP36.9954x36.9387x0.6125	36	-34.0293	5254.9700	46.4	Pass
L37	32.25 - 31.42	Pole	TP37.1839x36.9954x0.6	37	-34.3229	5176.1600	47.4	Pass
L38	31.42 - 31.17	Pole	TP37.2406x37.1839x0.775	38	-34.4358	6664.2600	37.2	Pass
L39	31.17 - 29	Pole	TP37.7333x37.2406x0.7625	39	-35.3578	6647.6000	37.9	Pass
L40	29 - 28.65	Pole	TP37.8127x37.7333x0.675	40	-35.5058	5911.3400	42.5	Pass
L41	28.65 - 28.42	Pole	TP37.8649x37.8127x0.675	41	-35.6006	5919.6500	42.5	Pass
L42	28.42 - 23.5	Pole	TP38.9819x37.8649x0.6625	42	-37.6015	5986.4800	43.6	Pass
L43	23.5 - 23.25	Pole	TP39.0387x38.9819x0.7875	43	-37.7315	7103.3300	37.0	Pass
L44	23.25 - 23	Pole	TP39.0954x39.0387x0.7875	44	-37.8526	7113.8700	37.0	Pass
L45	23 - 22.75	Pole	TP39.1522x39.0954x0.65	45	-37.9619	5901.5400	44.4	Pass
L46	22.75 - 17.75	Pole	TP40.2873x39.1522x0.6375	46	-40.1503	5960.5700	45.5	Pass
L47	17.75 - 12.75	Pole	TP41.4224x40.2873x0.625	47	-42.3726	6012.8400	46.5	Pass
L48	12.75 - 7.75	Pole	TP42.5576x41.4224x0.6125	48	-44.6217	6058.3400	47.6	Pass
L49	7.75 - 2.75	Pole	TP43.6927x42.5576x0.6	49	-46.8979	6097.0700	48.7	Pass
L50	2.75 - 0	Pole	TP44.317x43.6927x0.6	50	-48.1484	6185.4000	48.8	Pass
							Summary	
						Pole (L11)	102.1	Fail
						RATING =	**102.1**	**Fail**

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 842873 TOWER ID: C_BASELEVEL

APPENDIX C

ADDITIONAL CALCULATIONS

CCIpole

per TIA-222- H

Site BU: 842873

Work Order: 1648665

Pole Geometry

	Pole Height Above Base (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Bend Radius (in)	Pole Material
1	140	38.42	0	18	13.161	21.882	0.1875	Auto	A572-65
2	101.58	53	4.42	18	21.88	33.913	0.3125	Auto	A572-65
3	53	53	0	18	32.28	44.317	0.3125	Auto	A572-65

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	0	31.42	plate	PL 5.75" x 1"	3	■						■						■					
2	32.5	48.67	plate	PL 5.75" x 1"	3						■						■						■
3	58.92	70.08	plate	PL 5.75" x 1"(Lu=16")	3						■						■						■
4	0	59.08	channel	MP3-04 (1.25in)	3				■						■						■		
5	28.67	39.67	plate	CCI-SFP-060100	3			■						■						■			
6	0	23.5	plate	CCI-SFP-060100	3		■							■								■	
7	52	63	plate	CCI-SFP-060100	3			■						■					■				
8	70	91	plate	CCI-SFP-060100	3		■					■							■				
9	104	115	plate	CCI-AFP-045100	3		■					■							■				
10	23	29	plate	CCI-SFP-060100	2					■						■							
11																							

Reinforcement Details

	B (in)	H (in)	Gross Area (in^2)	Pole Face to Centroid (in)	Bottom Termination Length (in)	Top Termination Length (in)	L_u (in)	Net Area (in^2)	Bolt Hole Size (in)	Reinforcement Material
1	5.75	1	5.75	0.5	23.000	23.000	14.000	4.438	1.2500	A572-65
2	5.75	1	5.75	0.5	23.000	23.000	14.000	4.438	1.2500	A572-65
3	5.75	1	5.75	0.5	23.000	23.000	16.000	4.438	1.2500	A572-65
4	4.78	1.61	4.13	0.61	17.000	17.000	18.000	3.566	1.2500	A572-65
5	6	1	6	0.5	24.000	24.000	16.000	4.750	1.1875	A572-65
6	6	1	6	0.5	24.000	24.000	16.000	4.750	1.1875	A572-65
7	6	1	6	0.5	24.000	24.000	16.000	4.750	1.1875	A572-65
8	6	1	6	0.5	24.000	24.000	16.000	4.750	1.1875	A572-65
9	4.5	1	4.5	0.5	24.000	24.000	20.000	3.250	1.1875	A572-65
10	6	1	6	0.5	24.000	24.000	16.000	4.750	1.1875	A572-65

TNX Geometry Input

Increment (ft): 5

	Section Height (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Tapered Pole Grade	Weight Multiplier
1	140 - 135	5		18	13.161	14.296	0.1875	A572-65	1.000
2	135 - 130	5		18	14.296	15.431	0.1875	A572-65	1.000
3	130 - 125	5		18	15.431	16.566	0.1875	A572-65	1.000
4	125 - 120	5		18	16.566	17.701	0.1875	A572-65	1.000
5	120 - 115	5		18	17.701	18.836	0.1875	A572-65	1.000
6	115 - 114.75	0.25		18	18.836	18.893	0.4625	A572-65	0.910
7	114.75 - 109.75	5		18	18.893	20.027	0.45	A572-65	0.905
8	109.75 - 104.75	5		18	20.027	21.162	0.425	A572-65	0.929
9	104.75 - 104	0.75		18	21.162	21.333	0.425	A572-65	0.925
10	104 - 103.75	0.25		18	21.333	21.389	0.1875	A572-65	1.000
11	103.75 - 101.58	2.17	0	18	21.389	21.882	0.1875	A572-65	1.000
12	101.58 - 96.58	5		18	21.882	23.017	0.3125	A572-65	1.000
13	96.58 - 91.58	5		18	23.017	24.152	0.3125	A572-65	1.000
14	91.58 - 91	0.58		18	24.152	24.284	0.3125	A572-65	1.000
15	91 - 90.75	0.25		18	24.284	24.340	0.6	A572-65	0.925
16	90.75 - 85.75	5		18	24.340	25.475	0.5875	A572-65	0.926
17	85.75 - 80.75	5		18	25.475	26.610	0.5625	A572-65	0.948
18	80.75 - 75.75	5		18	26.610	27.745	0.55	A572-65	0.952
19	75.75 - 70.75	5		18	27.745	28.880	0.54375	A572-65	0.947
20	70.75 - 69.98	0.77		18	28.880	29.055	0.53125	A572-65	0.951
21	69.98 - 69.73	0.25		18	29.055	29.112	0.53125	A572-65	0.951
22	69.73 - 64.73	5		18	29.112	30.247	0.525	A572-65	0.948
23	64.73 - 63	1.73		18	30.247	30.640	0.51875	A572-65	0.954
24	63 - 62.75	0.25		18	30.640	30.696	0.7	A572-65	0.981
25	62.75 - 59.08	3.67		18	30.696	31.530	0.6875	A572-65	0.984
26	59.08 - 58.82	0.26		18	31.530	31.589	0.625	A572-65	1.000
27	58.82 - 58.67	0.15		18	31.589	31.623	0.625	A572-65	0.999
28	58.67 - 53.67	5		18	31.623	32.758	0.6125	A572-65	1.001
29	53.67 - 53	5.09	4.42	18	32.758	33.913	0.6125	A572-65	0.999
30	53 - 47.58	5.42		18	32.285	33.515	0.6375	A572-65	0.941
31	47.58 - 42.58	5		18	33.515	34.650	0.625	A572-65	0.944
32	42.58 - 39.67	2.91		18	34.650	35.311	0.6125	A572-65	0.954
33	39.67 - 39.42	0.25		18	35.311	35.368	0.8125	A572-65	0.925
34	39.42 - 34.42	5		18	35.368	36.503	0.7875	A572-65	0.936
35	34.42 - 32.5	1.92		18	36.503	36.939	0.7875	A572-65	0.929
36	32.5 - 32.25	0.25		18	36.939	36.995	0.6125	A572-65	0.944
37	32.25 - 31.42	0.83		18	36.995	37.184	0.6	A572-65	0.961
38	31.42 - 31.17	0.25		18	37.184	37.241	0.775	A572-65	0.939
39	31.17 - 29	2.17		18	37.241	37.733	0.7625	A572-65	0.947
40	29 - 28.65	0.35		18	37.733	37.813	0.675	A572-65	0.991
41	28.65 - 28.42	0.23		18	37.813	37.865	0.675	A572-65	0.990
42	28.42 - 23.5	4.92		18	37.865	38.982	0.6625	A572-65	0.993
43	23.5 - 23.25	0.25		18	38.982	39.039	0.7875	A572-65	1.026
44	23.25 - 23	0.25		18	39.039	39.095	0.7875	A572-65	1.025
45	23 - 22.75	0.25		18	39.095	39.152	0.65	A572-65	1.085
46	22.75 - 17.75	5		18	39.152	40.287	0.6375	A572-65	1.088
47	17.75 - 12.75	5		18	40.287	41.422	0.625	A572-65	1.092
48	12.75 - 7.75	5		18	41.422	42.558	0.6125	A572-65	1.098
49	7.75 - 2.75	5		18	42.558	43.693	0.6	A572-65	1.105
50	2.75 - 0	2.75		18	43.693	44.317	0.6	A572-65	1.096

TNX Section Forces

Increment (ft): 5

	Section Height (ft)	TNX Output P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	140 - 135	2.89	27.65	5.73
2	135 - 130	3.15	56.80	5.94
3	130 - 125	5.88	103.13	10.18
4	125 - 120	6.25	154.51	10.38
5	120 - 115	8.23	220.70	13.36
6	115 - 114.75	8.28	224.03	13.38
7	114.75 - 109.75	9.00	291.91	13.83
8	109.75 - 104.75	9.75	362.05	14.28
9	104.75 - 104	9.86	372.76	14.35
10	104 - 103.75	9.89	376.35	14.37
11	103.75 - 101.58	10.14	407.63	14.53
12	101.58 - 96.58	10.89	480.68	14.76
13	96.58 - 91.58	11.66	554.90	14.99
14	91.58 - 91	11.75	563.59	15.04
15	91 - 90.75	11.81	567.34	15.06
16	90.75 - 85.75	12.90	643.72	15.55
17	85.75 - 80.75	14.01	722.55	16.05
18	80.75 - 75.75	15.16	803.84	16.54
19	75.75 - 70.75	20.54	899.79	20.73
20	70.75 - 69.98	20.73	915.76	20.81
21	69.98 - 69.73	20.80	920.95	20.83
22	69.73 - 64.73	22.04	1026.23	21.36
23	64.73 - 63	22.48	1063.27	21.55
24	63 - 62.75	22.57	1068.65	21.57
25	62.75 - 59.08	23.76	1148.44	22.00
26	59.08 - 58.82	23.85	1154.15	22.02
27	58.82 - 58.67	23.89	1157.45	22.04
28	58.67 - 53.67	25.45	1268.80	22.58
29	53.67 - 53	25.66	1283.92	22.65
30	53 - 47.58	28.54	1408.65	23.40
31	47.58 - 42.58	30.13	1526.77	23.98
32	42.58 - 39.67	31.06	1597.06	24.29
33	39.67 - 39.42	31.17	1603.14	24.31
34	39.42 - 34.42	33.15	1726.26	24.89
35	34.42 - 32.5	33.93	1774.31	25.11
36	32.5 - 32.25	34.03	1780.60	25.13
37	32.25 - 31.42	34.32	1801.54	25.22
38	31.42 - 31.17	34.44	1807.85	25.25
39	31.17 - 29	35.36	1863.02	25.51
40	29 - 28.65	35.51	1871.97	25.54
41	28.65 - 28.42	35.60	1877.85	25.57
42	28.42 - 23.5	37.60	2005.26	26.14
43	23.5 - 23.25	37.73	2011.81	26.16
44	23.25 - 23	37.85	2018.36	26.19
45	23 - 22.75	37.96	2024.93	26.22
46	22.75 - 17.75	40.15	2157.63	26.78
47	17.75 - 12.75	42.37	2293.06	27.31
48	12.75 - 7.75	44.62	2431.15	27.85
49	7.75 - 2.75	46.90	2571.92	28.38
50	2.75 - 0	48.15	2650.46	28.67

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
140 - 135	Pole	TP14.296x13.161x0.1875	Pole	15.1%	Pass
135 - 130	Pole	TP15.431x14.296x0.1875	Pole	26.2%	Pass
130 - 125	Pole	TP16.566x15.431x0.1875	Pole	41.2%	Pass
125 - 120	Pole	TP17.701x16.566x0.1875	Pole	53.7%	Pass
120 - 115	Pole	TP18.836x17.701x0.1875	Pole	68.4%	Pass
115 - 114.75	Pole + Reinf.	TP18.893x18.836x0.4625	Reinf. 9 Tension Rupture	50.7%	Pass
114.75 - 109.75	Pole + Reinf.	TP20.027x18.893x0.45	Reinf. 9 Tension Rupture	60.8%	Pass
109.75 - 104.75	Pole + Reinf.	TP21.162x20.027x0.425	Reinf. 9 Tension Rupture	69.6%	Pass
104.75 - 104	Pole + Reinf.	TP21.333x21.162x0.425	Reinf. 9 Tension Rupture	70.8%	Pass
104 - 103.75	Pole	TP21.389x21.333x0.1875	Pole	93.1%	Pass
103.75 - 101.58	Pole	TP21.882x21.389x0.1875	Pole	96.9%	Pass
101.58 - 96.58	Pole	TP23.017x21.882x0.3125	Pole	59.6%	Pass
96.58 - 91.58	Pole	TP24.152x23.017x0.3125	Pole	62.3%	Pass
91.58 - 91	Pole	TP24.284x24.152x0.3125	Pole	62.6%	Pass
91 - 90.75	Pole + Reinf.	TP24.34x24.284x0.6	Reinf. 8 Tension Rupture	54.3%	Pass
90.75 - 85.75	Pole + Reinf.	TP25.475x24.34x0.5875	Reinf. 8 Tension Rupture	57.4%	Pass
85.75 - 80.75	Pole + Reinf.	TP26.61x25.475x0.5625	Reinf. 8 Tension Rupture	60.2%	Pass
80.75 - 75.75	Pole + Reinf.	TP27.745x26.61x0.55	Reinf. 8 Tension Rupture	62.7%	Pass
75.75 - 70.75	Pole + Reinf.	TP28.88x27.745x0.5438	Reinf. 8 Tension Rupture	65.9%	Pass
70.75 - 69.98	Pole + Reinf.	TP29.055x28.88x0.5313	Reinf. 3 Tension Rupture	69.3%	Pass
69.98 - 69.73	Pole + Reinf.	TP29.112x29.055x0.5313	Reinf. 3 Tension Rupture	69.5%	Pass
69.73 - 64.73	Pole + Reinf.	TP30.247x29.112x0.525	Reinf. 3 Tension Rupture	72.8%	Pass
64.73 - 63	Pole + Reinf.	TP30.64x30.247x0.5188	Reinf. 3 Tension Rupture	73.8%	Pass
63 - 62.75	Pole + Reinf.	TP30.696x30.64x0.7	Reinf. 3 Tension Rupture	57.0%	Pass
62.75 - 59.08	Pole + Reinf.	TP31.53x30.696x0.6875	Reinf. 3 Tension Rupture	58.9%	Pass
59.08 - 58.82	Pole + Reinf.	TP31.589x31.53x0.625	Reinf. 4 Tension Rupture	60.3%	Pass
58.82 - 58.67	Pole + Reinf.	TP31.623x31.589x0.625	Reinf. 4 Tension Rupture	60.3%	Pass
58.67 - 53.67	Pole + Reinf.	TP32.758x31.623x0.6125	Reinf. 4 Tension Rupture	62.7%	Pass
53.67 - 53	Pole + Reinf.	TP33.913x32.758x0.6125	Reinf. 4 Tension Rupture	63.0%	Pass
53 - 47.58	Pole + Reinf.	TP33.515x32.285x0.6375	Reinf. 2 Tension Rupture	67.0%	Pass
47.58 - 42.58	Pole + Reinf.	TP34.65x33.515x0.625	Reinf. 2 Tension Rupture	69.0%	Pass
42.58 - 39.67	Pole + Reinf.	TP35.311x34.65x0.6125	Reinf. 2 Tension Rupture	70.2%	Pass
39.67 - 39.42	Pole + Reinf.	TP35.368x35.311x0.8125	Reinf. 2 Tension Rupture	54.5%	Pass
39.42 - 34.42	Pole + Reinf.	TP36.503x35.368x0.7875	Reinf. 2 Tension Rupture	56.1%	Pass
34.42 - 32.5	Pole + Reinf.	TP36.939x36.503x0.7875	Reinf. 2 Tension Rupture	56.7%	Pass
32.5 - 32.25	Pole + Reinf.	TP36.995x36.939x0.6125	Reinf. 5 Tension Rupture	70.2%	Pass
32.25 - 31.42	Pole + Reinf.	TP37.184x36.995x0.6	Reinf. 5 Tension Rupture	70.5%	Pass
31.42 - 31.17	Pole + Reinf.	TP37.241x37.184x0.775	Reinf. 1 Tension Rupture	57.2%	Pass
31.17 - 29	Pole + Reinf.	TP37.733x37.241x0.7625	Reinf. 1 Tension Rupture	57.8%	Pass
29 - 28.65	Pole + Reinf.	TP37.813x37.733x0.675	Reinf. 1 Tension Rupture	68.8%	Pass
28.65 - 28.42	Pole + Reinf.	TP37.865x37.813x0.675	Reinf. 1 Tension Rupture	68.9%	Pass
28.42 - 23.5	Pole + Reinf.	TP38.982x37.865x0.6625	Reinf. 1 Tension Rupture	70.4%	Pass
23.5 - 23.25	Pole + Reinf.	TP39.039x38.982x0.7875	Reinf. 1 Tension Rupture	57.6%	Pass
23.25 - 23	Pole + Reinf.	TP39.095x39.039x0.7875	Reinf. 1 Tension Rupture	57.7%	Pass
23 - 22.75	Pole + Reinf.	TP39.152x39.095x0.65	Reinf. 1 Tension Rupture	70.0%	Pass
22.75 - 17.75	Pole + Reinf.	TP40.287x39.152x0.6375	Reinf. 1 Tension Rupture	71.5%	Pass
17.75 - 12.75	Pole + Reinf.	TP41.422x40.287x0.625	Reinf. 1 Tension Rupture	72.9%	Pass
12.75 - 7.75	Pole + Reinf.	TP42.558x41.422x0.6125	Reinf. 1 Tension Rupture	74.1%	Pass
7.75 - 2.75	Pole + Reinf.	TP43.693x42.558x0.6	Reinf. 1 Tension Rupture	75.3%	Pass
2.75 - 0	Pole + Reinf.	TP44.317x43.693x0.6	Reinf. 1 Tension Rupture	76.0%	Pass
				Summary	
			Pole	96.9%	Pass
			Reinforcement	76.0%	Pass
			Overall	96.9%	Pass

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in^4)			Area (in^2)			% Capacity*										
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10
140 - 135	211	n/a	211	8.40	n/a	8.40	15.1%										
135 - 130	266	n/a	266	9.07	n/a	9.07	26.2%										
130 - 125	330	n/a	330	9.75	n/a	9.75	41.2%										
125 - 120	404	n/a	404	10.42	n/a	10.42	53.7%										
120 - 115	487	n/a	487	11.10	n/a	11.10	68.4%										
115 - 114.75	492	680	1172	11.13	13.50	24.63	28.7%									50.7%	
114.75 - 109.75	587	758	1345	11.81	13.50	25.31	35.0%									60.8%	
109.75 - 104.75	694	841	1534	12.48	13.50	25.98	40.8%									69.6%	
104.75 - 104	711	854	1564	12.58	13.50	26.08	41.6%									70.8%	
104 - 103.75	716	n/a	716	12.62	n/a	12.62	93.1%										
103.75 - 101.58	767	n/a	767	12.91	n/a	12.91	96.9%										
101.58 - 96.58	1466	n/a	1466	22.52	n/a	22.52	59.6%										
96.58 - 91.58	1697	n/a	1697	23.64	n/a	23.64	62.3%										
91.58 - 91	1726	n/a	1726	23.78	n/a	23.78	62.6%										
91 - 90.75	1738	1473	3210	23.83	18.00	41.83	33.5%								54.3%		
90.75 - 85.75	1996	1605	3601	24.96	18.00	42.96	35.5%								57.4%		
85.75 - 80.75	2278	1743	4021	26.08	18.00	44.08	37.3%								60.2%		
80.75 - 75.75	2586	1887	4473	27.21	18.00	45.21	38.9%								62.7%		
75.75 - 70.75	2921	2037	4957	28.33	18.00	46.33	41.0%								65.9%		
70.75 - 69.98	2975	1972	4947	28.51	17.25	45.76	42.1%			69.3%							
69.98 - 69.73	2992	1980	4972	28.56	17.25	45.81	42.2%			69.5%							
69.73 - 64.73	3360	2130	5490	29.69	17.25	46.94	44.3%			72.8%							
64.73 - 63	3494	2183	5677	30.08	17.25	47.33	45.1%			73.8%							
63 - 62.75	3520	4069	7589	30.14	35.25	65.39	35.4%			57.0%				52.5%			
62.75 - 59.08	3817	4283	8100	30.96	35.25	66.21	36.8%			58.9%				54.3%			
59.08 - 58.82	3836	3575	7411	31.02	30.39	61.41	40.2%				60.3%			58.9%			
58.82 - 58.67	3848	3583	7431	31.05	30.39	61.44	40.2%				60.3%			59.0%			
58.67 - 53.67	4282	3833	8115	32.18	30.39	62.57	42.2%				62.7%			61.3%			
53.67 - 53	4342	3867	8209	32.33	30.39	62.72	42.4%				63.0%			61.6%			
53 - 47.58	4585	4469	9054	32.93	29.64	62.57	42.0%		67.0%		62.9%						
47.58 - 42.58	5072	4764	9836	34.06	29.64	63.70	43.7%		69.0%		64.8%						
42.58 - 39.67	5370	4941	10311	34.71	29.64	64.35	44.7%		70.2%		65.8%						
39.67 - 39.42	5396	7960	13356	34.77	47.64	82.41	34.8%		54.5%		51.1%	53.1%					
39.42 - 34.42	5938	8460	14398	35.89	47.64	83.53	36.2%		56.1%		52.7%	54.7%					
34.42 - 32.5	6155	8656	14811	36.33	47.64	83.97	36.7%		56.7%		53.2%	55.3%					
32.5 - 32.25	6183	5544	11728	36.38	30.39	66.77	46.6%				67.5%	70.2%					
32.25 - 31.42	6279	5599	11878	36.57	30.39	66.96	46.9%				67.8%	70.5%					
31.42 - 31.17	6308	8793	15102	36.63	47.64	84.27	37.1%	57.2%			53.6%	55.7%					
31.17 - 29	6564	9019	15584	37.12	47.64	84.76	37.7%	57.8%			54.2%	56.4%					
29 - 28.65	6667	7167	13834	37.19	41.64	78.83	46.2%	68.8%			67.8%						56.8%
28.65 - 28.42	6695	7186	13881	37.25	41.64	78.89	46.3%	68.9%			67.9%						56.9%
28.42 - 23.5	7308	7603	14911	38.35	41.64	79.99	47.8%	70.4%			69.3%						58.3%
23.5 - 23.25	7299	10570	17870	38.41	59.64	98.05	39.1%	57.6%			54.0%		52.6%				53.6%
23.25 - 23	7331	10600	17931	38.47	59.64	98.11	39.2%	57.7%			54.1%		52.7%				53.7%
23 - 22.75	7349	7433	14783	38.52	47.64	86.16	46.9%	70.0%			62.5%		55.1%				
22.75 - 17.75	8012	7855	15867	39.65	47.64	87.29	48.4%	71.5%			63.8%		56.4%				
17.75 - 12.75	8714	8288	17002	40.77	47.64	88.41	49.8%	72.9%			65.1%		57.6%				
12.75 - 7.75	9456	8733	18189	41.90	47.64	89.54	51.3%	74.1%			66.2%		58.8%				
7.75 - 2.75	10238	9190	19428	43.03	47.64	90.67	52.7%	75.3%			67.3%		59.9%				
2.75 - 0	10687	9446	20132	43.65	47.64	91.29	53.4%	76.0%			67.9%		60.5%				

Note: Section capacity checked in 5 degree increments.
Rating per TIA-222-H Section 15.5.

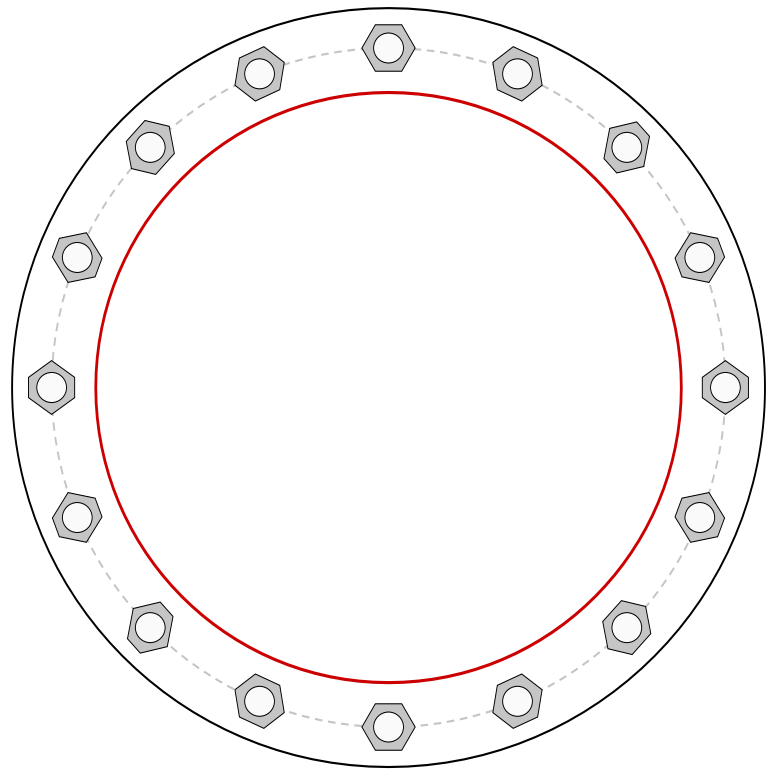
Monopole Base Plate Connection

Site Info	
BU #	842873
Site Name	SHELTON NE
Order #	399478 Rev. 10

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	0

Applied Loads	
Moment (kip-ft)	2650.00
Axial Force (kips)	48.00
Shear Force (kips)	29.00

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

GROUP 1: (12) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 51" BC

GROUP 2: (4) 2-1/4" ø bolts (F1554-105 N; Fy=105 ksi, Fu=125 ksi) on 51" BC

Base Plate Data

57" OD x 2.25" Plate (A633 Grade E; Fy=60 ksi, Fu=70 ksi)

Stiffener Data

N/A

Pole Data

44.317" x 0.3125" 18-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

Anchor Rod Summary *(units of kips, kip-in)*

GROUP 1:

Pu_c = 158.76	ϕPn_c = 243.75	**Stress Rating**
Vu = 1.81	ϕVn = 73.13	**62.1%**
Mu = n/a	ϕMn = n/a	**Pass**

GROUP 2:

Pu_c = 158.61	ϕPn_c = 341.25	**Stress Rating**
Vu = 1.81	ϕVn = 102.38	**44.3%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

Max Stress (ksi):	29.49	(Flexural)
Allowable Stress (ksi):	54	
Stress Rating:	**52.0%**	**Pass**

Monopole Flange Plate Connection

Elevation = 101.58 ft.

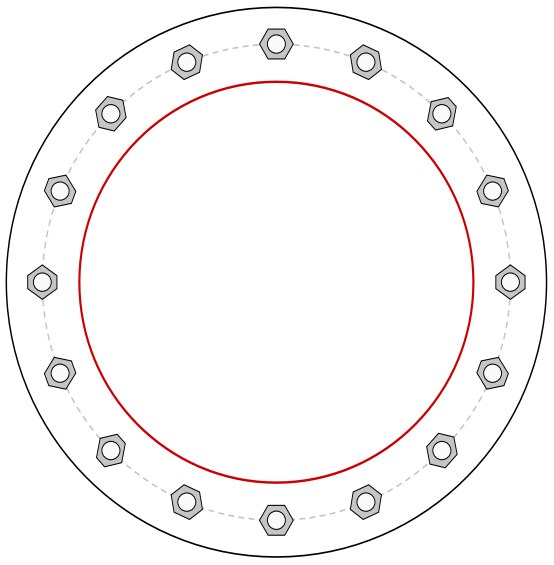
BU #	842873
Site Name	SHELTON NE
Order #	399478 Rev. 10

TIA-222 Revision	H

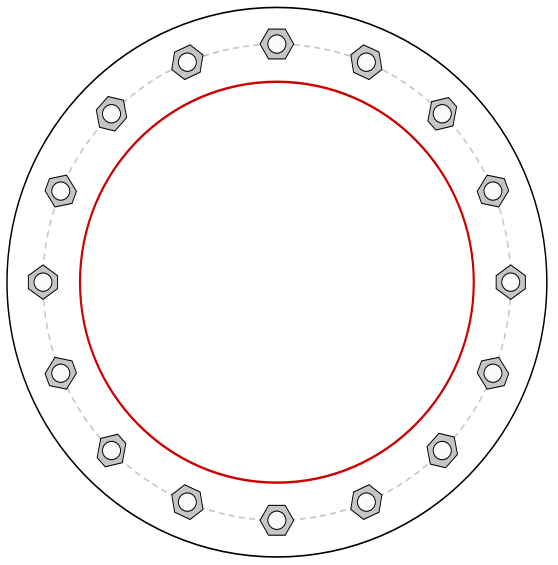
Applied Loads	
Moment (kip-ft)	422.15
Axial Force (kips)	12.90
Shear Force (kips)	14.57

**TIA-222-H Section 15.5 Applied*

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(16) 1" ø bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 26" BC

Top Plate Data

30" OD x 1.5" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Top Stiffener Data

N/A

Top Pole Data

21.882" x 0.1875" 18-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Bottom Plate Data

30" OD x 1.5" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Bottom Stiffener Data

N/A

Bottom Pole Data

21.882" x 0.3125" 18-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	47.88	
Allowable (kips)	54.52	
Stress Rating:	**83.6%**	**Pass**

Top Plate Capacity

Max Stress (ksi):	25.30	(Flexural)
Allowable Stress (ksi):	45.00	
Stress Rating:	**53.5%**	**Pass**
Tension Side Stress Rating:	**39.0%**	**Pass**

Bottom Plate Capacity

Max Stress (ksi):	25.30	(Flexural)
Allowable Stress (ksi):	45.00	
Stress Rating:	**53.5%**	**Pass**
Tension Side Stress Rating:	**39.0%**	**Pass**

Drilled Pier Foundation

BU # :	842873
Site Name:	SHELTON NE
Order Number:	399478 Rev. 10

TIA-222 Revison:	H
Tower Type:	Monopole

Applied Loads	Comp.	Uplift
Moment (kip-ft)	2650	
Axial Force (kips)	48	
Shear Force (kips)	29	

Material Properties		
Concrete Strength, f'c:	4	ksi
Rebar Strength, Fy:	60	ksi

Pier Design Data		
Depth	14	ft
Ext. Above Grade	0.5	ft
Pier Section 1		
From 0.5' above grade to 14' below grade		
Pier Diameter	6	ft
Rebar Quantity	26	
Rebar Size	11	
Clear Cover to Ties	3	in
Tie Size	4	

Analysis Results		
Soil Lateral Capacity	*Compression*	*Uplift*
$D_{v=0}$ (ft from TOC)	3.80	-
Soil Safety Factor	1.99	-
Max Moment (kip-ft)	2756.94	-
Rating*	*63.5%*	-
Soil Vertical Capacity	*Compression*	*Uplift*
Skin Friction (kips)	318.06	-
End Bearing (kips)	254.47	-
Weight of Concrete (kips)	73.80	-
Total Capacity (kips)	572.53	-
Axial (kips)	121.80	-
Rating*	*20.3%*	-
Reinforced Concrete Capacity	*Compression*	*Uplift*
Critical Depth (ft from TOC)	3.82	-
Critical Moment (kip-ft)	2756.92	-
Critical Moment Capacity	5370.31	-
Rating*	*48.9%*	-

Soil Interaction Rating*	**63.5%**
Structural Foundation Rating*	**48.9%**

Check Limitation	
Apply TIA-222-H Section 15.5:	☑

*Rating per TIA-222-H Section 15.5

Soil Profile

Groundwater Depth	n/a	ft	# of Layers	2

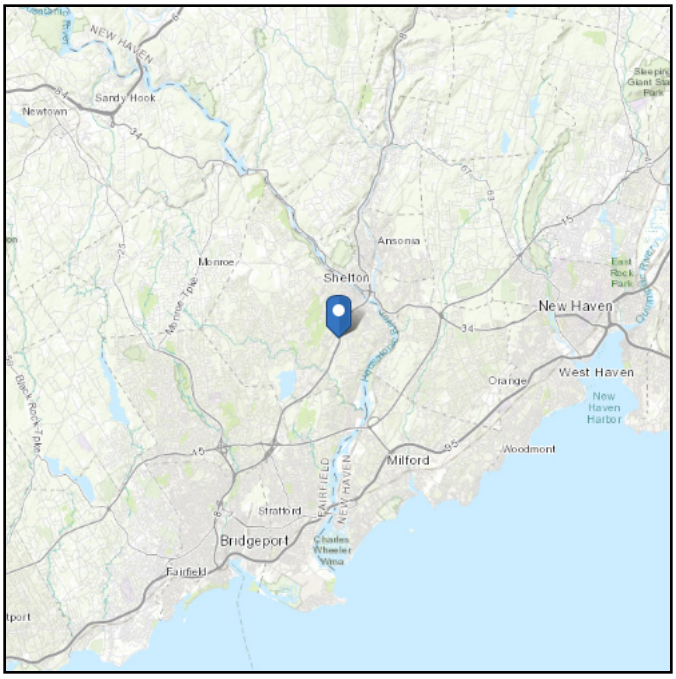
Layer	Top (ft)	Bottom (ft)	Thickness (ft)	γ_{soil} (pcf)	$\gamma_{concrete}$ (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Gross Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	3	3	165	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
2	3	14	11	165	150	4	0	2.045	2.045			12		Cohesive

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-10
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 311.07 ft (NAVD 88)
Latitude: 41.293947
Longitude: -73.107175



Wind

Results:

Wind Speed:	123 Vmph
10-year MRI	76 Vmph
25-year MRI	86 Vmph
50-year MRI	93 Vmph
100-year MRI	99 Vmph

Data Source: ASCE/SEI 7-10, Fig. 26.5-1A and Figs. CC-1–CC-4, incorporating errata of March 12, 2014

Date Accessed: Thu Oct 18 2018

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-10 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Mountainous terrain, gorges, ocean promontories, and special wind regions should be examined for unusual wind conditions.

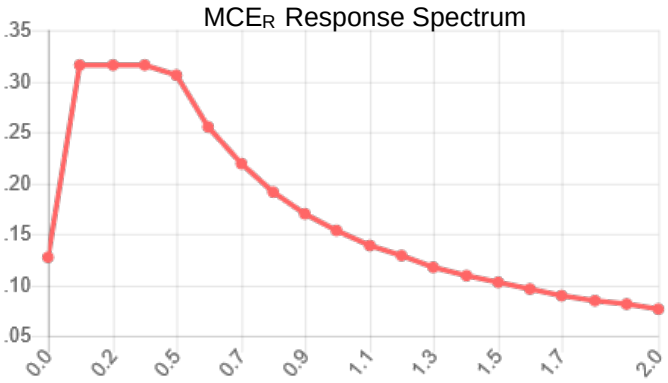
Seismic

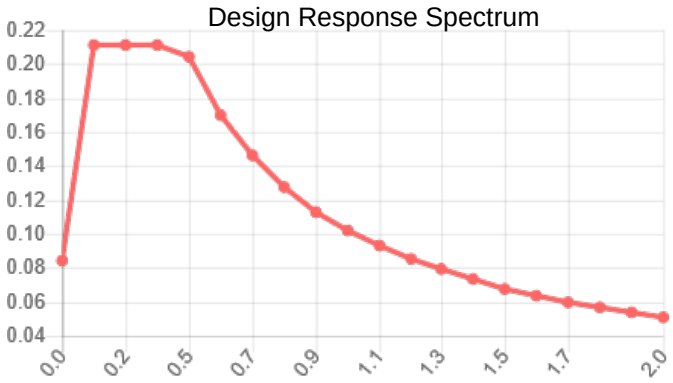
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.198	S_{DS} :	0.211
S_1 :	0.064	S_{D1} :	0.102
F_a :	1.600	T_L :	6.000
F_v :	2.400	PGA :	0.105
S_{MS} :	0.316	PGA_M :	0.167
S_{M1} :	0.153	F_{PGA} :	1.589
		I_e :	1

Seismic Design Category B





Data Accessed: Thu Oct 18 2018

Date Source: USGS Seismic Design Maps based on ASCE/SEI 7-10, incorporating Supplement 1 and errata of March 31, 2013, and ASCE/SEI 7-10 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-10 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Thu Oct 18 2018

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

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 50-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

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October 15, 2018

MOUNT ANALYSIS EVALUATION LETTER - REVISION 2

Site Number: CT43XC864
Site Name: SHELTON NE
Site Address: 30 Oliver Terrace, Shelton, CT 06484
Crown ID#: 842873

Project Name: Sprint 2.5 Equipment Deployment
TECTONIC Work Order: 8887.CT43XC864

To Whom It May Concern,

This letter is to confirm Tectonic Engineering and Surveying Consultants P.C.'s (Tectonic) structural assessment of the existing Sprint antenna mounting system on the site noted above. The intent of the review is to determine if the load from the proposed modification of antennas and equipment will exceed the structural capacity of the existing antenna mounting system.

The existing antenna mounting system has been categorized as a low-profile platform. Currently, Sprint has three (3) panel antennas and six (6) RRH units mounted to the platform at a RAD elevation of approximately seventy-five feet (75'-0") above ground level. Sprint is proposing to install three (3) new panel antennas and six (6) new RRH units as part of this upgrade. The final configuration upon this installation will be as follows:

3 (E) RFS APXVSPP18-C-A20 (72.0"Hx11.8"Wx7.0"D, 62 lbs.) panel antennas, one per sector, mounted to steel pipes.
3 (E) Alcatel Lucent 1900MHz 4x40 RRH (25"Hx11.1"Wx11.4"D, 60 lbs.), one (1) per sector, mounted on monopole.
3 (P) Alcatel Lucent FD-RRH-2x50-800 (19.7"Hx13"Wx10.8"D, 53 lbs.), one (1) per sector, to be mounted on monopole.
3 (P) Alcatel Lucent TD-RRH-8x20-25 (25.4"Hx18.6"Wx6.7"D, 70 lbs.), one (1) per sector, to be mounted to steel pipes.
3 (P) Alcatel Lucent FD-RRH-2x50-800 (19.7"Hx13"Wx10.8"D, 53 lbs.), one (1) per sector, to be mounted to steel pipes.
3 (P) Commscope DT465B-2XR (71.9"Hx13.8"Wx8.2"D, 72.1 lbs.) panel antennas, one (1) per sector, to be mounted to steel pipes.
3 (E) 1-1/4" diameter Andrew LDF6-50A cables routed along the interior of the pole up to the antennas.

1 **(P) 1-1/4" diameter RFS HB114-21U3M12-XXXF cable routed along the existing cables up to the antennas.**

Proposed antennas are to be located at the same RAD elevation as the existing antennas.
The existing low-profile platform is **believed** to be manufactured by FWT, Inc. and have the following characteristics:

- Nominal face width of fourteen feet (14'-0")
- Stand-off member made from four inch (4") wide HSS square tube (HSS 4x4x1/4")
- Main horizontal members made from three inch (3") steel angle (L3x3x1/4)
- Antenna mounting pipes made from two inch (2") standard pipe stock (2.375" OD)

The review and the analysis is based on ANSI/TIA-222-G-2005 "Structural Standard for Antenna Supporting Structures and Antennas", and the 2016 Connecticut State Building Code, using an ultimate 3-second gust wind speed of one hundred twenty-five (125) mph converted to a nominal 3-second gust wind speed of ninety-seven (97) mph per section 1609.3.1 as required for use in the TIA-222-G Standard per Exception #5 of Section 1609.1.1 with no ice, and fifty (50) mph with three quarter inch (0.75") of radial ice at seventy-five feet (75'-0") above ground level.

By engineering analysis and comparison, the existing antenna mounting system will be capable of supporting the proposed Sprint upgrade **once it has been modified as detailed in this analysis report.** The existing platform will require a top rail kit P/N HRK14, as manufactured by SitePro1, or approved equal prior to installation of the proposed upgrade.

This certification is solely based on the information provided by the client and a limited visual inspection from the ground. This certification also assumes that all structural members are in good condition.

A detailed mapping of the mount was not performed. Therefore the contractor shall field verify existing conditions and notify the design engineer of any discrepancies prior to the fabrication of steel.

Any further changes to the antenna or other appurtenances configuration and location should be reviewed with respect to their effect on structural loads prior to implementation.

The existing tower structural analysis is completed by others and therefore not part of this assessment.

Should you have any questions, please do not hesitate to contact us.

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Sincerely,

Tectonic

Edward N. Iamiceli, P.E.
Sr. Project Manager

G:\Newburgh\Projects\8887 - Crown-Sprint\CT43XC864\Structural\MOD\8887.CT43XC864-AssessmentLetter.docx

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Job No.	8887.CT43XC864		
Sheet No.	1	of	3
Calculated By	GQ	Date :	10/15/18
Checked By		Date :	10/15/18

WIND AND ICE LOADS PER TIA-222-G

W.O.	8887.CT43XC864
Project Name	SHELTON NE
Location	30 Oliver Terrace, Shelton, CT 06484
County	Fairfield

Tower Type	MP	Monopole
Structure Class	2	Substantial hazard
Exposure Category	B	Suburban/wooded/obstructed
Topo Category	1	Flat or rolling terrain
Height of crest	0	ft

Basic Wind Speed (3-sec gust):		
Without ice	97	mph*
With ice	50	mph
Service	60	mph
Ice thickness	0.75	in

*125 mph ultimate 3-sec gust converted to nominal 3-sec gust per 2016 Connecticut State Building Code.

Importance Factor	
Wind only	1.00
Wind with ice	1.00
Ice thickness	1.00
Supporting Data:	
K_e	0.90
K_t	N/A
f	N/A
z_g	1200
α	7
$K_{z,min}$	0.7
K_d	0.95
G_h	1.00

Height	z (ft)	75
	Kh	N/A
	Kzt	1.00
	Kz	0.91
	Kiz	1.09
Wind Pressure, qz (psf)	No Ice	20.83
	With Ice	5.53
	Service	7.97
(tiz)	Ice Thk	1.63
Appurtenances (qzGh)	No Ice	20.83
	With Ice	5.53
	Service	7.97

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PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Job No.	8887.CT43XC864		
Sheet No.	2	of	3
Calculated By	GQ	Date :	10/15/18
Checked By	0	Date :	10/15/18

Appurtenance Information

Effective Projected Area for Appurtenance $(EPA)_A=Max((EPA)_N,(EPA)_T)$

$(EPA)_T=\sum(C_aA_A)_T$ | $(EPA)_N=\sum(C_aA_A)_N$

Reduction Factor = 0.8 TIA-222-G 2.6.9.2.4

Wind Only Load Combinations

Antenna Configuration	(E) or (P)	Qty	z (ft)	Length or Diameter (ft)	Width (in)	Depth (in)	Flat or Cylindrical?	Antenna $(Ca)_T$	Antenna $(Ca)_N$	Side Face $(Aa)_T$ (ft^2)	Wind ward Side Face $(CaAa)_T$ (ft^2)	Face Normal $(A_a)_N$ (ft^2)	Windward face Normal $(C_aA_a)_N$ (ft^2)	Normal Antenna Wind Load Each (lb)	Transverse Antenna Wind Load Each (lb)	Antenna Weight (lb)	Total Weight (lb)
TD-RRH8x20-25	P	3	75	2.18	18.60	6.70	Flat	1.26	1.20	1.21	3.68	3.37	9.71	67	26	70.0	210.0
APXVSPP18-C-A20	E	3	75	6.00	11.80	7.00	Flat	1.51	1.36	3.50	12.68	5.90	19.26	134	88	62.0	186.0
DT465B-2XR	P	3	75	5.99	13.80	8.20	Flat	1.46	1.32	4.09	14.34	6.89	21.84	152	100	72.1	216.3
FD-RRH-2x50-800	P/E	6	75	1.64	13.00	10.80	Flat	1.20	1.20	1.48	8.51	1.78	10.24	36	30	53.0	318.0
1900MHz 4X45W RRH	E	3	75	2.08	11.10	11.40	Flat	1.20	1.20	1.98	5.70	1.93	5.55	39	40	60.0	180.0
										$\sum(CaAa)_T$	44.90	$\sum(CaAa)_N$	66.60				1110

$(EPA)_A=Max((EPA)_N,(EPA)_T)\longrightarrow$ **66.60 ft^2**

Wind with Ice Load Combinations **Ice Thk=** 1.63 in

Antenna Configuration	(E) or (P)	Qty	z (ft)	Length or Diameter (ft)	Width (in)	Depth (in)	Flat or Cylindrical?	Antenna $(Ca)_T$	Antenna $(Ca)_N$	Side Face $(A_a)_T$ (ft^2)	Windward Side Face $(CaAa)_T$ (ft^2)	Face Normal $(A_a)_N$ (ft^2)	Windward Face Normal $(C_aA_a)_N$ (ft^2)	Normal Antenna Wind Load Each (lb)	Transverse Antenna Wind Load Each (lb)	Ice Area for Weight (ft^2)	Ice Weight Alone (lbs)
TD-RRH8x20-25	P	3	75	2.45	21.86	9.96	Flat	1.22	1.20	2.03	5.94	4.46	12.83	24	11	9.2	69.7
APXVSPP18-C-A20	E	3	75	6.27	15.06	10.26	Flat	1.41	1.31	5.36	18.16	7.87	24.76	46	33	18.8	142.9
DT465B-2XR	P	3	75	6.26	17.06	11.46	Flat	1.38	1.28	5.98	19.81	8.90	27.45	51	37	22.0	166.9
FD-RRH-2x50-800	P/E	6	75	1.91	16.26	14.06	Flat	1.20	1.20	2.24	12.91	2.59	14.93	14	12	6.5	49.5
1900MHz 4X45W RRH	E	3	75	2.35	14.36	14.66	Flat	1.20	1.20	2.88	8.28	2.82	8.11	15	15	7.8	59.4
										$\sum(CaAa)_T$	65.10	$\sum(CaAa)_N$	88.08				488

$(EPA)_A=Max((EPA)_N,(EPA)_T)\longrightarrow$ **88.08 ft^2**

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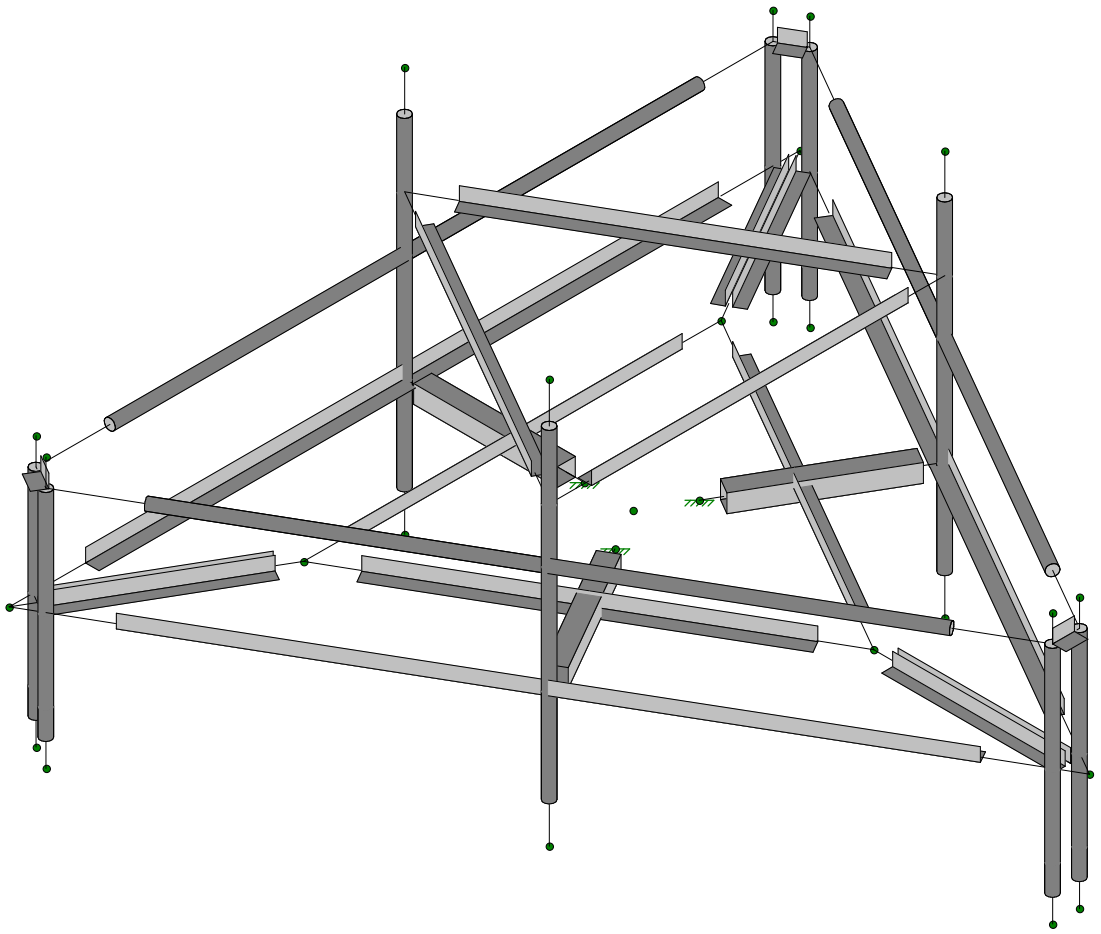
Job No.	8887.CT43XC864		
Sheet No.	3	of	3
Calculated By	GQ	Date :	10/15/18
Checked By	0	Date :	10/15/18

Existing Low-Profile Platform

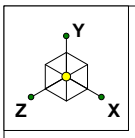
Mount Center Line=	75 ft
Mount members based on manufacturer drawings	

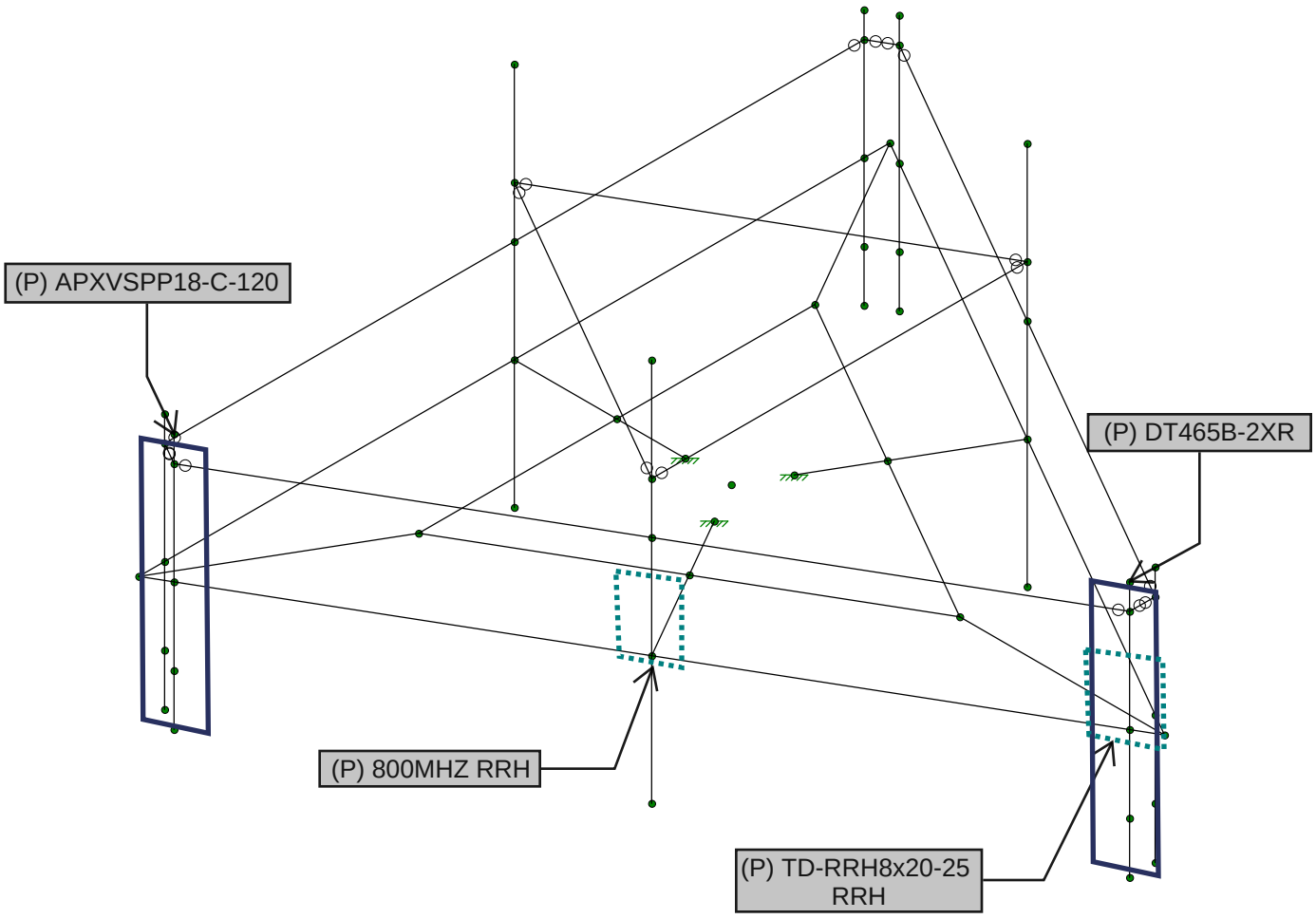
										Reduction Factor =		0.67	TIA-222-G 2.6.9.2.4	
Mount Part	**Quantity**	**Length (ft)**	**Projected Width (in)**	**Depth (in)**	**Weight (lbs/ft)**	**Flat or Cylindrical ?**	**Drag Factor**	**Projected Area (ft^2)**	**Total Weight (lb)**	**Wind Force (lbs/ft)**	**Ice Weight Area (ft^2)**	**Ice Weight (lbs/ft)**	**Projected Area with Ice (ft^2)**	**Wind Force Ice (lbs/ft)**
Mounting Pipe - 2.0" STD	9	6.00	2.38	2.38	3.66	Cylindrical	1.2	12.85	197.64	3.3	33.63	4.7	30.44	2.1
Mounting Pipe - 2.0" STD	3	8.00	2.38	2.38	3.66	Cylindrical	1.2	5.70	87.84	3.3	14.92	4.7	13.52	2.1
Face Horizontal - L3x3x1/4	3	14.67	3.00	3.00	4.90	Flat	2	22.01	215.65	7.0	44.01	7.6	45.89	3.9
(P) Handrail - 2.0" STD	3	14.50	2.38	2.38	3.66	Cylindrical	1.2	10.33	159.21	3.3	27.03	4.7	24.50	2.1
Standoff - HSS4x4x1/4	3	3.33	4.00	4.00	12.21	Flat	2	6.67	122.10	9.3	13.33	10.1	12.09	4.5



Envelope Only Solution

Tectonic		
GQ	Low Profile Platform	Oct 15, 2018 at 8:42 AM
8887.CT43XC864	3D MODEL	8887.CT43XC864 -Platform.r3d



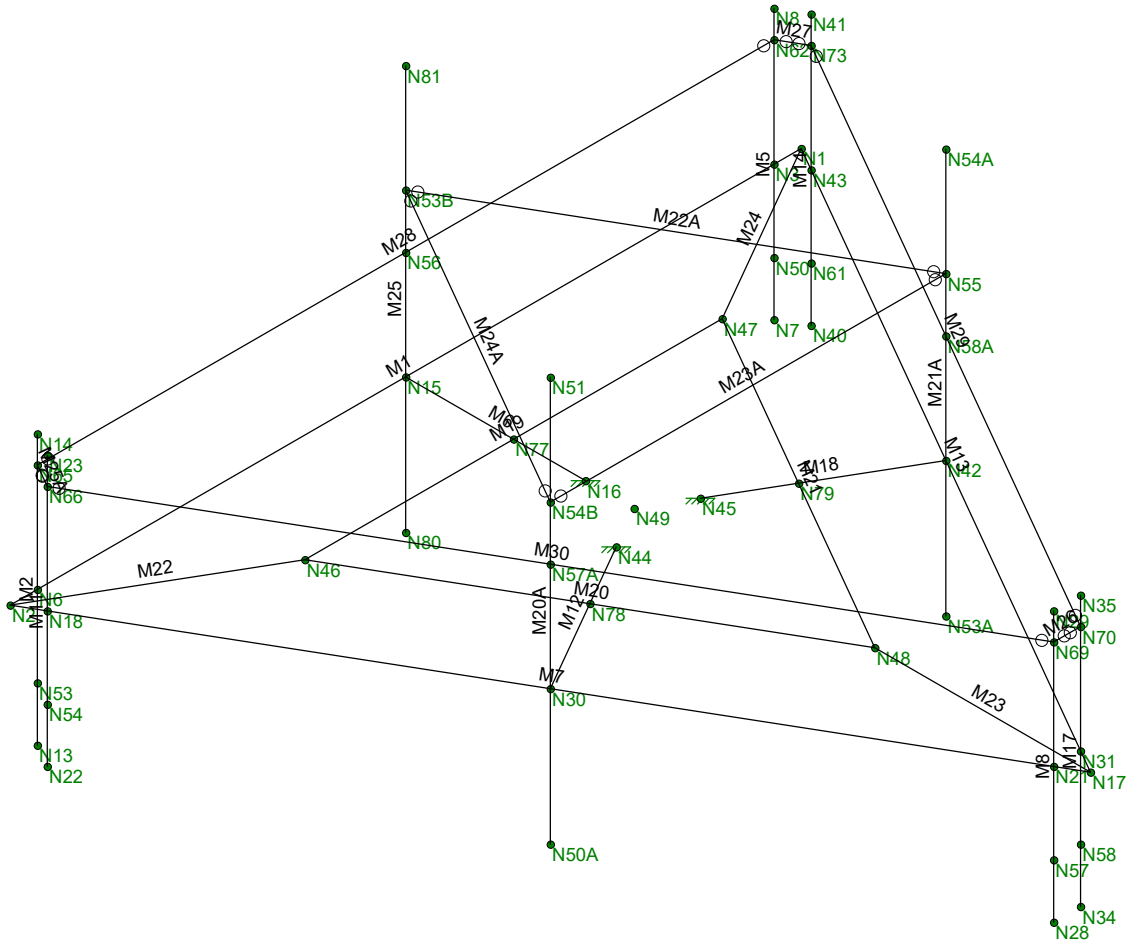


Notes:

*Antennas & Appurtenances shown for one sector. All sectors have the same layout.
*Remaining RRH's units are attached to monopole structure, therefore not shown.

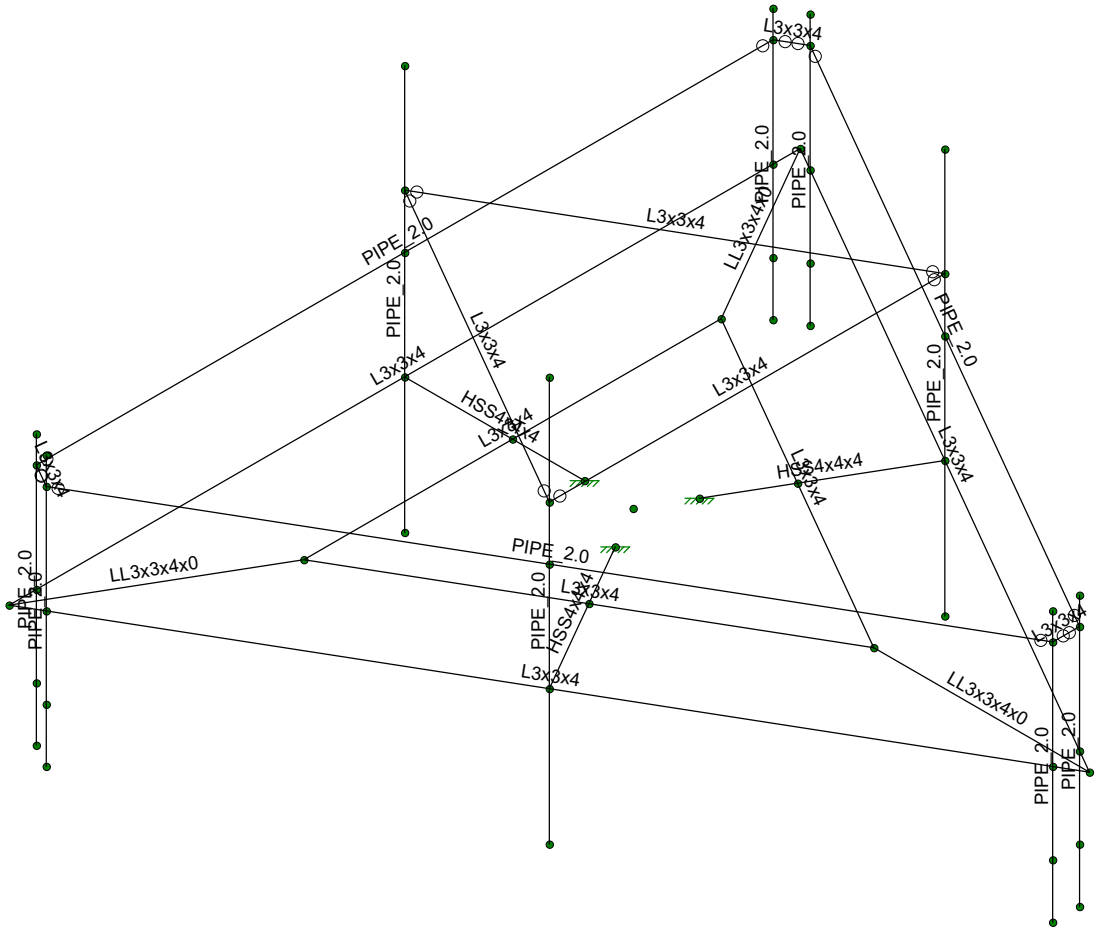
Envelope Only Solution

Tectonic		
GQ	Low Profile Platform	Oct 15, 2018 at 8:41 AM
8887.CT43XC864	LAYOUT	8887.CT43XC864 -Platform.r3d



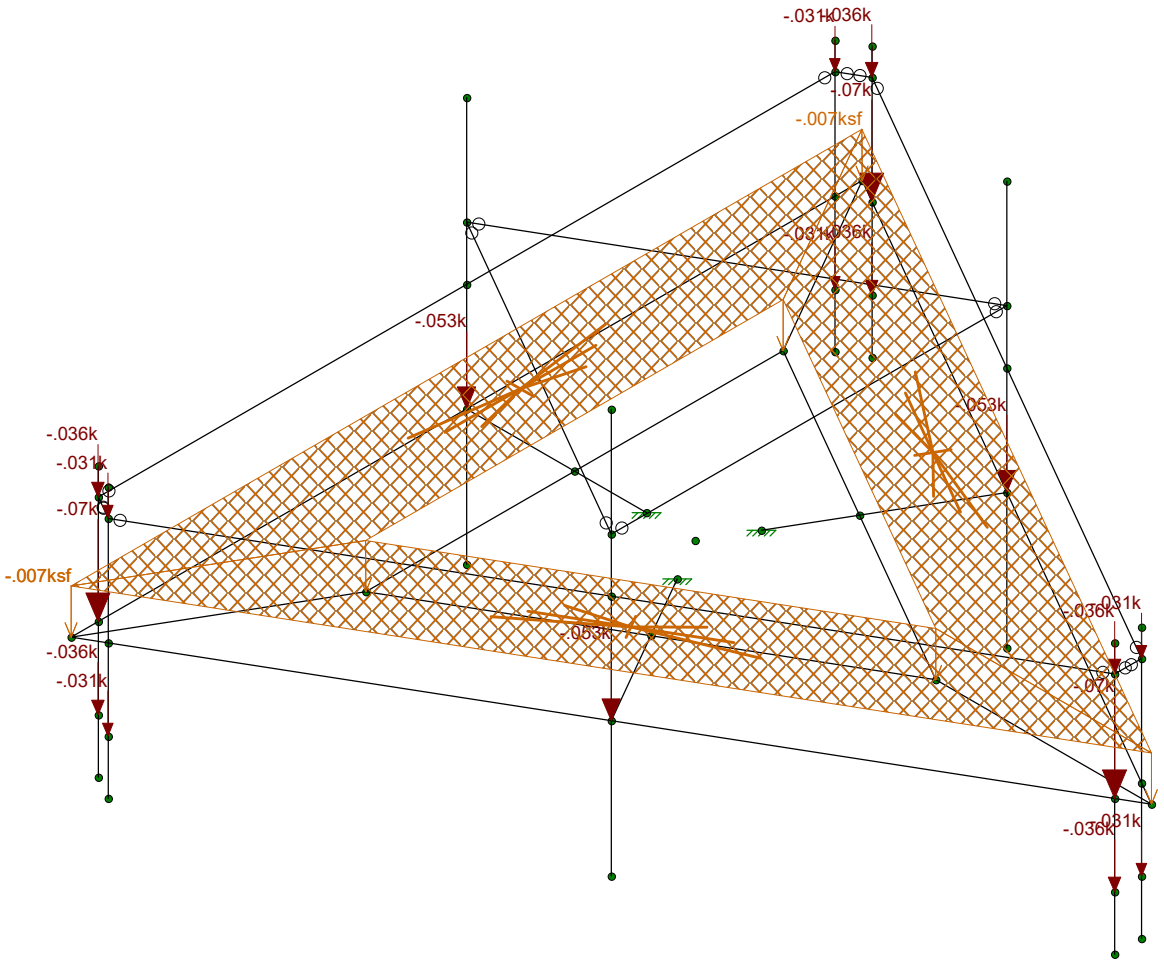
Envelope Only Solution

Tectonic		
GQ	Low Profile Platform	Oct 15, 2018 at 8:42 AM
8887.CT43XC864	MEMBER & NODE LABELS	8887.CT43XC864 -Platform.r3d



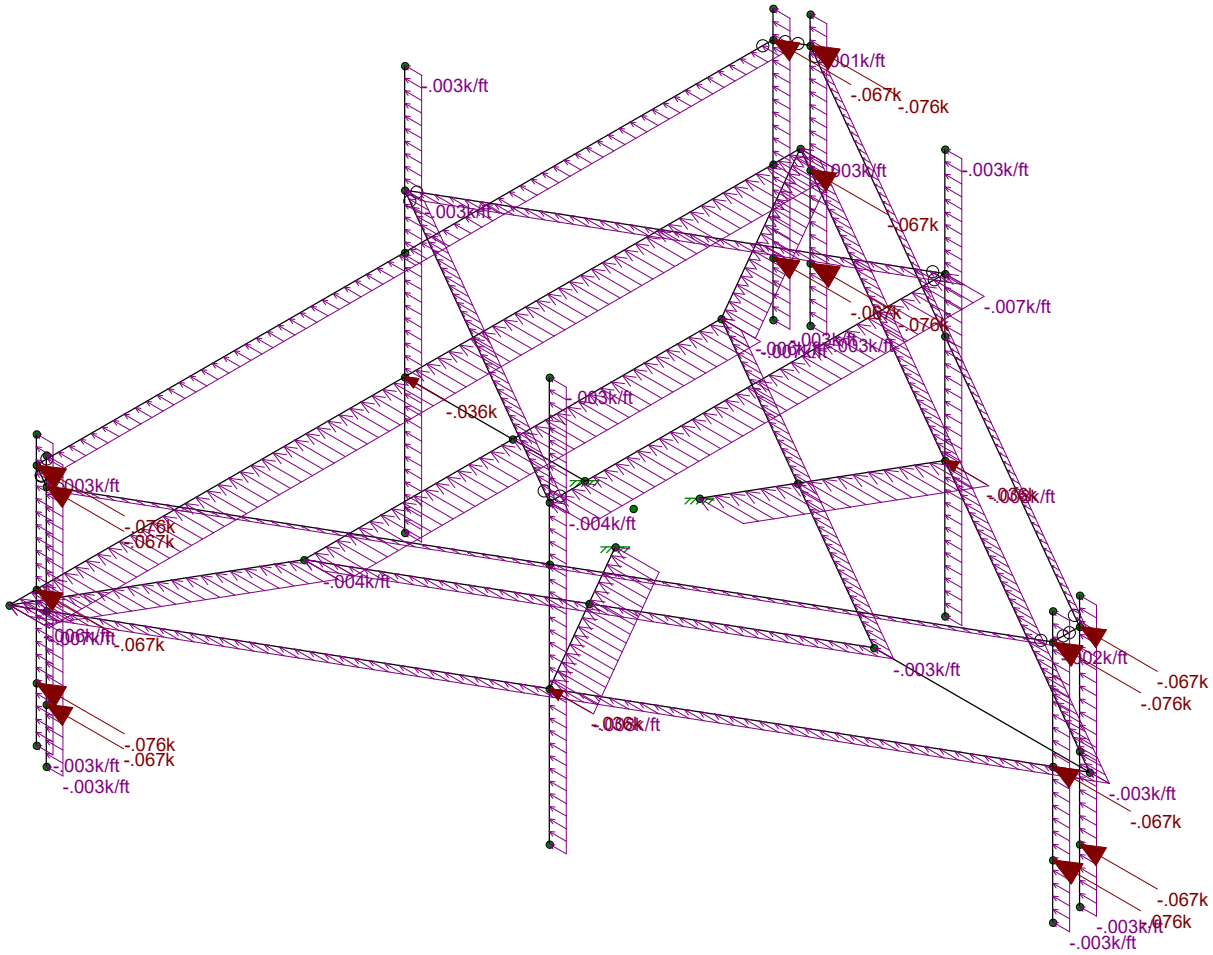
Envelope Only Solution

Tectonic		
GQ	Low Profile Platform	Oct 15, 2018 at 8:44 AM
8887.CT43XC864	MEMBER SHAPES	8887.CT43XC864 -Platform.r3d



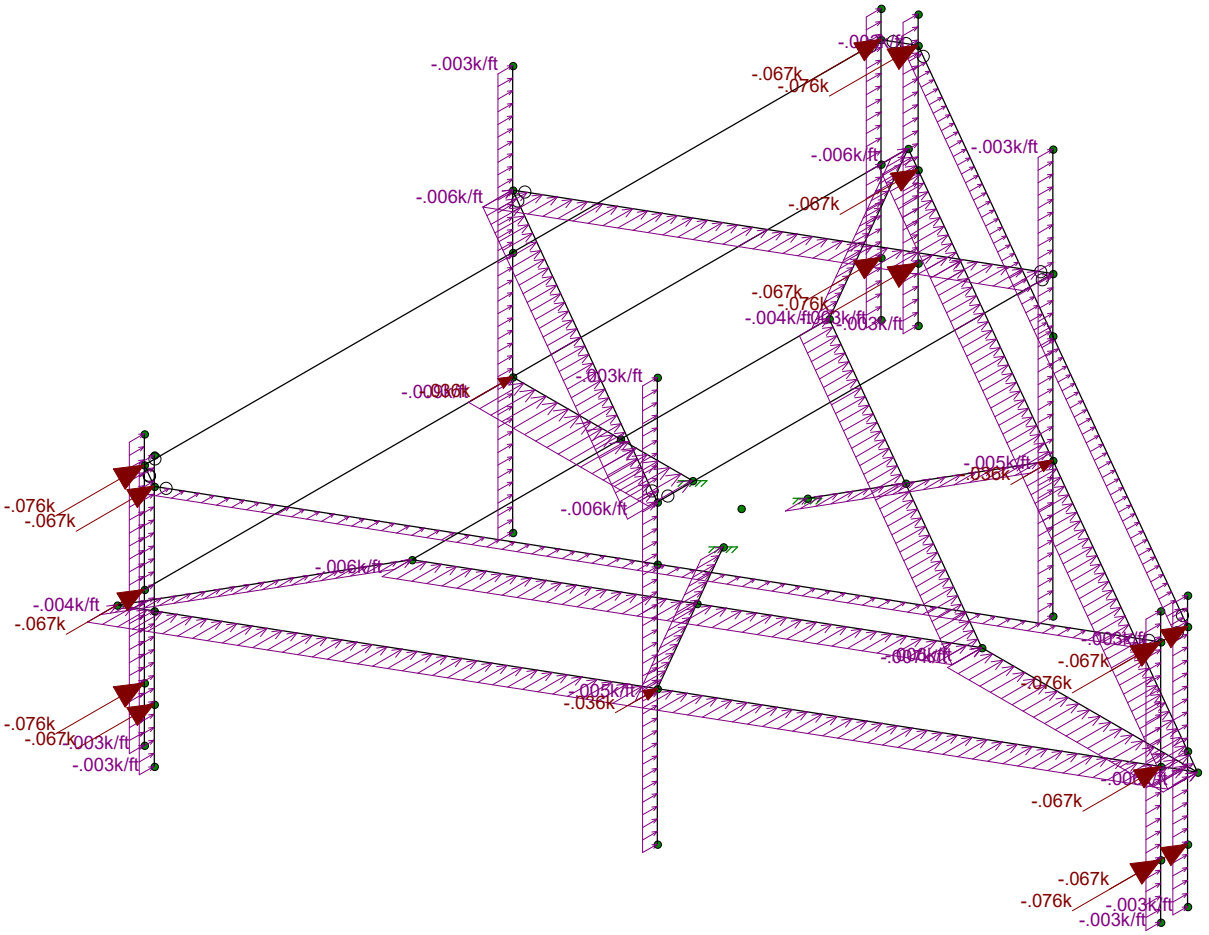
Loads: BLC 1, DL
Envelope Only Solution

Tectonic		
GQ	Low Profile Platform	Oct 15, 2018 at 8:43 AM
8887.CT43XC864	DEAD LOAD	8887.CT43XC864 -Platform.r3d



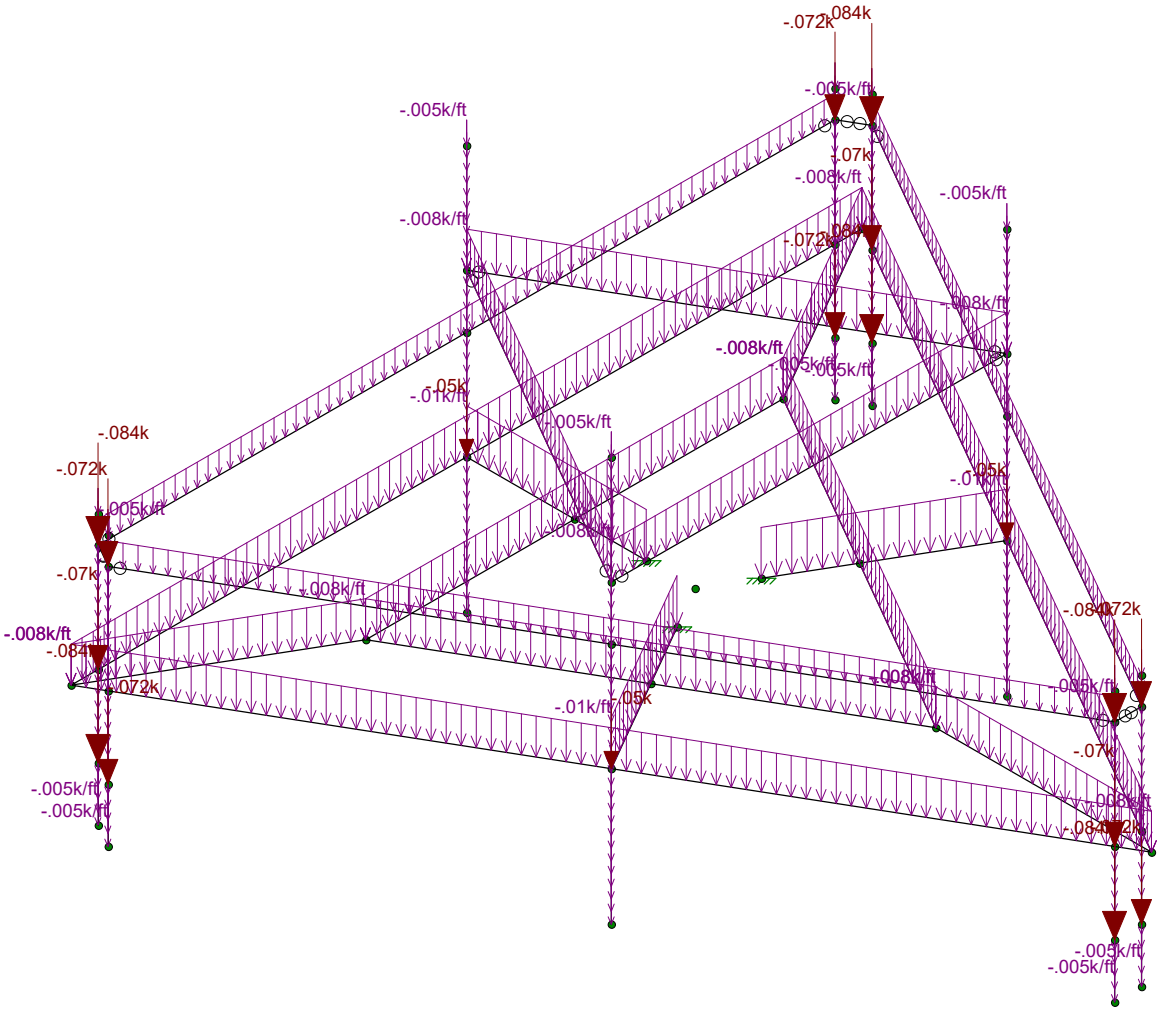
Loads: BLC 2, WLX
Envelope Only Solution

Tectonic		
GQ	Low Profile Platform	Oct 15, 2018 at 8:43 AM
8887.CT43XC864	WIND X	8887.CT43XC864 -Platform.r3d



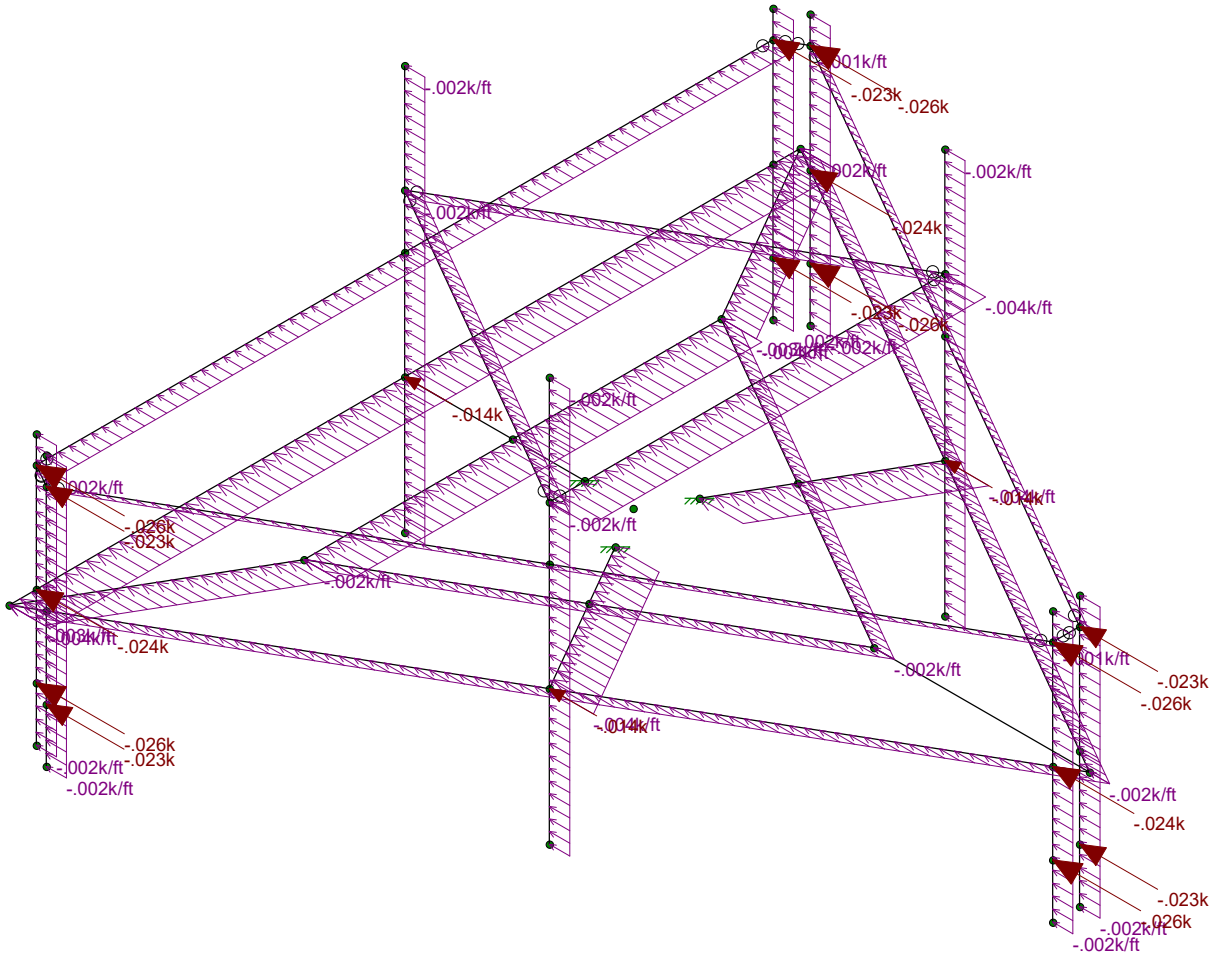
Loads: BLC 3, WLZ
Envelope Only Solution

Tectonic		
GQ	Low Profile Platform	Oct 15, 2018 at 8:43 AM
8887.CT43XC864	WIND Z	8887.CT43XC864 -Platform.r3d



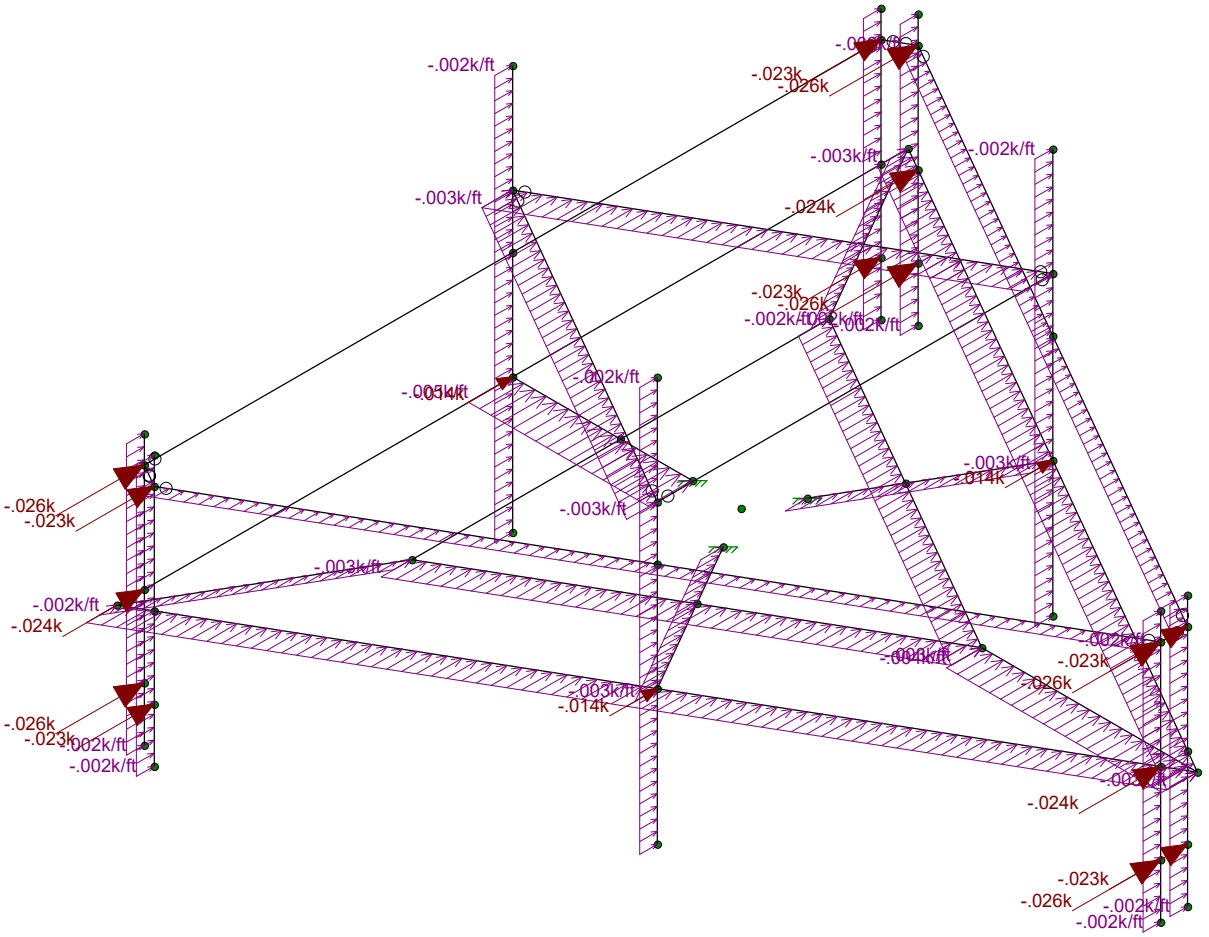
Loads: BLC 4, DLi
Envelope Only Solution

Tectonic		
GQ	Low Profile Platform	Oct 15, 2018 at 8:43 AM
8887.CT43XC864	DEAD LOAD (ICE)	8887.CT43XC864 -Platform.r3d



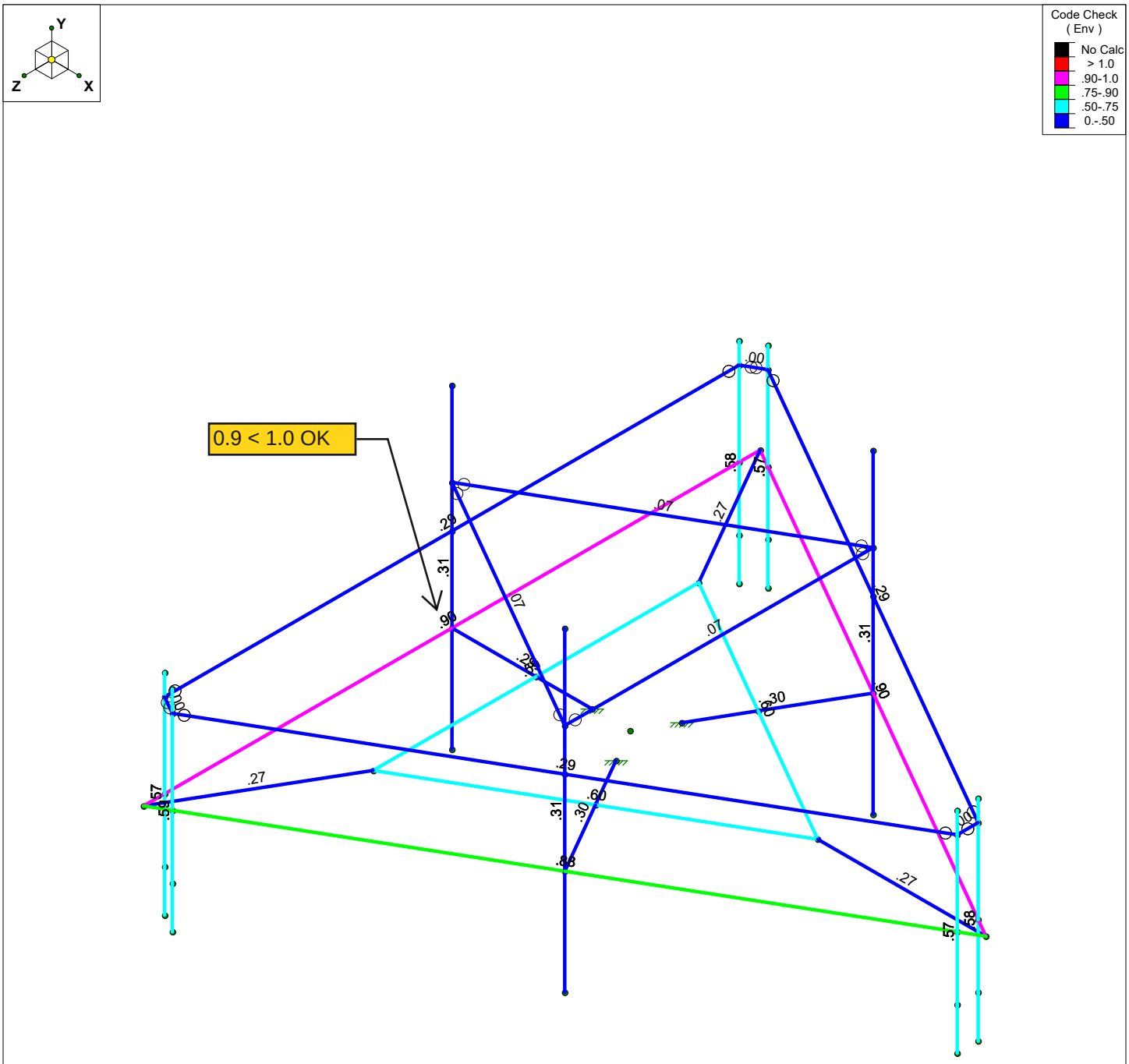
Loads: BLC 5, WLXi
Envelope Only Solution

Tectonic		
GQ	Low Profile Platform	Oct 15, 2018 at 8:43 AM
8887.CT43XC864	WIND X (ICE)	8887.CT43XC864 -Platform.r3d



Loads: BLC 6, WLZi
Envelope Only Solution

Tectonic		
GQ	Low Profile Platform	Oct 15, 2018 at 8:44 AM
8887.CT43XC864	WIND Z (ICE)	8887.CT43XC864 -Platform.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Tectonic		
GQ	Low Profile Platform	Oct 15, 2018 at 8:45 AM
8887.CT43XC864	MEMBER STRESSES	8887.CT43XC864 -Platform.r3d

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E...	Density[k/ft...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
3	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.42	29000	11154	.3	.65	.49	42	1.4	58	1.3
5	A500 Gr.46	29000	11154	.3	.65	.49	46	1.4	58	1.3
6	A53 Gr. B	29000	11154	.3	.65	.49	35	1.5	60	1.2

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	3.0" Std.	PIPE_3.0	Beam	Pipe	A53 Gr. B	Typical	2.07	2.85	2.85	5.69
2	L3x3x1/4	L3x3x4	Beam	Single Angle	A36 Gr.36	Typical	1.44	1.23	1.23	.031
3	2L3x3x1/4	LL3x3x4x0	Beam	Single Angle	A36 Gr.36	Typical	2.88	4.5	2.46	.063
4	2.0" Std.	PIPE_2.0	Beam	Pipe	A53 Gr. B	Typical	1.02	.627	.627	1.25
5	HSS4x4x1/4	HSS4x4x4	Beam	Tube	A500 Gr.46	Typical	3.37	7.8	7.8	12.8

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(...
1	DL	None		-1.05		18			3	
2	WLX	None				18		27		
3	WLZ	None				18		27		
4	DLi	None				18		27		
5	WLXi	None				18		27		
6	WLZi	None				18		27		
7	BLC 1 Transient Area Loads	None						30		

Load Combinations

	Description	...	P.....		BLC	Fa...	BLC	Factor	BLC	Factor	BLC	Fac.....	F.....	F.....	F.....	F.....	F.....	F...
1	*LRFD																	
2	1.2D+1.6WLX- 0 Deg	Y...	Y		1	1.2	2	1.6	3									
3	1.2D+1.385WLX+0.8WLZ - 30 Deg	Y...	Y		1	1.2	2	1.385	3	.8								
4	1.2D+0.8WLX+1.385WLZ - 60 Deg	Y...	Y		1	1.2	2	.8	3	1.385								
5	1.2D+1.6WLZ - 90 Deg	Y...	Y		1	1.2	2		3	1.6								
6	1.2D+0.8WL-X+1.385WLZ - 120 Deg	Y...	Y		1	1.2	2	-.8	3	1.385								
7	1.2D+1.385WL-X+0.8WLZ - 150 Deg	Y...	Y		1	1.2	2	-1.385	3	.8								
8	1.2D+1.6WL-X - 180 Deg	Y...	Y		1	1.2	2	-1.6	3									
9	1.2D+1.385WL-X+0.8WL-Z - 210 Deg	Y...	Y		1	1.2	2	-1.385	3	-.8								
10	1.2D+0.8WL-X+1.385WL-Z - 240 Deg	Y...	Y		1	1.2	2	-.8	3	-1.385								
11	1.2D+1.6WL-Z - 270 Deg	Y...	Y		1	1.2	2		3	-1.6								
12	1.2D+0.8WLX+1.385WL-Z - 300 Deg	Y...	Y		1	1.2	2	.8	3	-1.385								
13	1.2D+1.385WLX+0.8WL-Z - 330 Deg	Y...	Y		1	1.2	2	1.385	3	-.8								
14	**Wind Load with Ice**																	
15	1.2D+1.0Di+1.0WLXi - 0 Deg	Y...	Y		1	1.2	4	1	5	1	6							
16	1.2D+1.0Di+0.87WLXi+0.5WLZi - 30 Deg	Y...	Y		1	1.2	4	1	5	.87	6	.5						
17	1.2D+1.0Di+0.5WLXi+0.87WLZi - 60 Deg	Y...	Y		1	1.2	4	1	5	.5	6	.87						
18	1.2D+1.0Di+1.0WLZi - 90 Deg	Y...	Y		1	1.2	4	1	5		6	1						
19	1.2D+1.0Di+0.5WL-Xi+0.87WLZi - 120 Deg	Y...	Y		1	1.2	4	1	5	-.5	6	.87						
20	1.2D+1.0Di+0.87WL-Xi+0.5WLZi - 150 Deg	Y...	Y		1	1.2	4	1	5	-.87	6	.5						
21	1.2D+1.0Di+1.0WL-Xi - 180 Deg	Y...	Y		1	1.2	4	1	5	-1	6							
22	1.2D+1.0Di+0.87WL-Xi+0.5WL-Zi - 210 Deg	Y...	Y		1	1.2	4	1	5	-.87	6	-.5						
23	1.2D+1.0Di+0.5WL-Xi+0.87WL-Zi - 240 Deg	Y...	Y		1	1.2	4	1	5	-.5	6	-.87						
24	1.2D+1.0Di+1.0WL-Zi - 270 Deg	Y...	Y		1	1.2	4	1	5		6	-1						

Load Combinations (Continued)

	Description	...	P.....	BLC	Fa...	BLC	Factor	BLC	Factor	BLC	Fac.....	F.....	F.....	F.....	F.....	F.....	F.....	F...
25	1.2D+1.0Di+0.5WLXi+0.87WL-Zi - 300 Deg	Y...	Y	1	1.2	4	1	5	.5	6	-.87							
26	1.2D+1.0Di+0.87WLXi+0.5WL-Zi - 330 Deg	Y...	Y	1	1.2	4	1	5	.87	6	-.5							

Envelope Joint Reactions

	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N16	max	.263	2	1.822	15	1.54	5	.348	5	1.332	5	-1.834	8
2		min	-.415	8	.875	8	-1.535	11	-.35	11	-1.337	11	-4.512	15
3	N44	max	1.566	13	1.821	23	1.003	6	-1.567	5	1.679	13	2.32	21
4		min	-1.485	7	.88	4	-.874	12	-3.914	24	-1.684	7	.718	2
5	N45	max	1.562	3	1.821	19	.869	4	3.917	18	1.679	9	2.315	21
6		min	-1.491	9	.88	12	-1.004	10	1.565	11	-1.684	3	.719	2
7	Totals:	max	3.078	2	5.425	16	2.996	5						
8		min	-3.078	8	2.752	9	-2.996	11						

Envelope AISC 14th(360-10): LRFD Steel Code Checks

	Member	Shape	Code Check	Loc[ft]	LC	Shea...	Loc[..	Dir	LC	phi*Pn...	phi*Pnt...	phi*Mn...	phi*Mn...	Cb	Eqn
1	M1	L3x3x4	.904	7.335	16	.147	0	y	22	3.592	46.656	1.688	2.809	1...	H2-1
2	M7	L3x3x4	.882	7.335	23	.147	0	y	18	3.592	46.656	1.688	2.807	1...	H2-1
3	M13	L3x3x4	.903	7.335	20	.147	0	y	26	3.592	46.656	1.688	2.811	1...	H2-1
4	M19	L3x3x4	.593	3.871	24	.026	3.871	y	25	12.898	46.656	1.688	3.135	1...	H2-1
5	M20	L3x3x4	.602	3.871	20	.026	3.871	y	21	12.898	46.656	1.688	3.137	1...	H2-1
6	M21	L3x3x4	.601	3.871	22	.026	3.871	y	17	12.898	46.656	1.688	3.137	1...	H2-1
7	M22A	L3x3x4	.068	3.668	17	.004	0	y	15	14.369	46.656	1.688	3.088	1...	H2-1
8	M23A	L3x3x4	.069	3.668	21	.004	0	y	18	14.369	46.656	1.688	3.088	1...	H2-1
9	M24A	L3x3x4	.068	3.668	25	.004	0	y	21	14.369	46.656	1.688	3.088	1...	H2-1
10	M6	HSS4x4x4	.294	3.333	25	.066	3.333	z	11	133.179	139.518	16.181	16.181	1...	H1-1b
11	M12	HSS4x4x4	.302	3.333	20	.074	3.333	z	13	133.179	139.518	16.181	16.181	1...	H1-1b
12	M18	HSS4x4x4	.302	3.333	17	.074	3.333	z	3	133.179	139.518	16.181	16.181	1...	H1-1b
13	M22	LL3x3x4x0	.270	0	16	.014	4	y	16	78.526	93.312	6.48	3.069	1...	H1-1b
14	M23	LL3x3x4x0	.271	4	24	.014	0	y	23	78.526	93.312	6.48	3.069	1...	H1-1b
15	M24	LL3x3x4x0	.270	4	20	.014	0	y	19	78.526	93.312	6.48	3.069	1...	H1-1b
16	M2	PIPE_2.0	.568	2.5	18	.055	2.5		18	23.809	32.13	1.872	1.872	1...	H1-1b
17	M5	PIPE_2.0	.584	2.5	24	.057	2.5		24	23.809	32.13	1.872	1.872	1...	H1-1b
18	M8	PIPE_2.0	.569	2.5	26	.055	2.5		26	23.809	32.13	1.872	1.872	1...	H1-1b
19	M11	PIPE_2.0	.586	2.5	20	.057	2.5		20	23.809	32.13	1.872	1.872	1...	H1-1b
20	M14	PIPE_2.0	.570	2.5	22	.055	2.5		22	23.809	32.13	1.872	1.872	1...	H1-1b
21	M17	PIPE_2.0	.585	2.5	16	.057	2.5		16	23.809	32.13	1.872	1.872	1...	H1-1b
22	M25	PIPE_2.0	.313	5	21	.031	5		5	16.369	32.13	1.872	1.872	2...	H1-1b
23	M20A	PIPE_2.0	.310	5	17	.031	5		13	16.369	32.13	1.872	1.872	2...	H1-1b
24	M21A	PIPE_2.0	.310	5	25	.031	5		9	16.369	32.13	1.872	1.872	2...	H1-1b
25	M25A	L3x3x4	.001	.25	12	.057	0	y	9	46.398	46.656	1.688	3.756	1...	H2-1
26	M26	L3x3x4	.001	.25	8	.058	0	y	5	46.398	46.656	1.688	3.756	1...	H2-1
27	M27	L3x3x4	.001	.25	4	.057	0	y	7	46.398	46.656	1.688	3.756	1...	H2-1
28	M28	PIPE_2.0	.286	6.835	18	.029	6.835		3	5.264	32.13	1.872	1.872	1...	H1-1b
29	M29	PIPE_2.0	.286	6.835	22	.029	6.835		7	5.264	32.13	1.872	1.872	1...	H1-1b
30	M30	PIPE_2.0	.286	6.835	26	.029	6.835		11	5.264	32.13	1.872	1.872	1...	H1-1b

Max. Member stress does not exceed 90% of member design strength.
Member is adequate for the proposed upgrade.