



STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

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VIA ELECTRONIC MAIL

August 3, 2022

Denise Sabo
Northeast Site Solutions
54 Main Street, Unit 3
Sturbridge, MA 01566
denise@northeastsitesolutions.com

RE: TS-DISH-141-220527- Dish Wireless, LLC request for an order to approve tower sharing at an existing telecommunications facility located at 720 Thompson Road, Thompson, Connecticut.

Dear Ms. Sabo:

The Connecticut Siting Council (Council) is in receipt of your correspondence of July 27, 2022 submitted in response to the Council's June 24, 2022 notification of an incomplete request for tower sharing with regard to the above-referenced matter.

The submission renders the request for tower sharing 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/IN/emr

To: Robidoux, Evan <Evan.Robidoux@ct.gov>

Cc: CSC-DL Siting Council <Siting.Council@ct.gov>

Subject: RE: Council Extension Letter for TS-DISH-141-220527 (720 Thompson Road, Thompson)

EXTERNAL EMAIL: This email originated from outside of the organization. Do not click any links or open any attachments unless you trust the sender and know the content is safe.

Good afternoon, Evan

As requested in the incomplete letter for TS-DISH-141-220527, please see attached revised structural.

Thank you

Denise

Date: **July 25, 2022**



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

Subject: **Structural Analysis Report**

Carrier Designation: **DISH Network Co-Locate**
Site Number: BOBOS00035A
Site Name: CT-CCI-T-828402

Crown Castle Designation: **BU Number:** 828402
Site Name: Thompson/ I-395 X99_1
JDE Job Number: 645138
Work Order Number: 2141869
Order Number: 553315 Rev. 3

Engineering Firm Designation: **Crown Castle Project Number:** 2141869

Site Data: **720 Thompson Rd, Thompson, Windham County, CT**
Latitude 41° 58' 39.74", Longitude -71° 50' 47.55"
156 Foot - Monopole Tower

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:

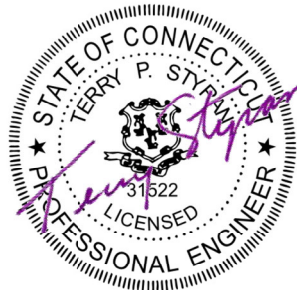
LC7: Proposed Equipment Configuration

Sufficient Capacity - 94.1%

This analysis utilizes an ultimate 3-second gust wind speed of 120 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - "Analysis Criteria".

Structural analysis prepared by: Ryan T. Conway

Respectfully submitted by:



Terry P. Styran, P.E.
Senior Project Engineer

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1) INTRODUCTION

This tower is a 156 ft Monopole tower designed by Fred A. Nudd Corporation. 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:	120 mph
Exposure Category:	C
Topographic Factor:	1
Ice Thickness:	1 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)
131.0	131.0	3	fujitsu	TA08025-B604	1	1-1/2
		3	fujitsu	TA08025-B605		
		3	jma wireless	MX08FRO665-21 w/ Mount Pipe		
		1	raycap	RDIDC-9181-PF-48		
		1	tower mounts	Commscope MC-PK8-DSH		

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)
150.0	150.0	3	alcatel lucent	PCS 1900MHZ 4X45W-65MHZ	4	1-1/4
		6	alcatel lucent	RRH2X50-800		
		3	alcatel lucent	TD-RRH8X20-25		
		3	commscope	NNVV-65B-R4 w/ Mount Pipe		
		3	rfs celwave	APXVTM14-ALU-I20 w/ Mount Pipe		
		1	tower mounts	T-Arm Mount [TA 702-3]		
141.0	143.0	3	ericsson	AIR 6419 B41_TMO	4	1-5/8
		3	ericsson	RADIO 4460 B2/B25 B66_TMO		
		3	rfs celwave	APXVAARR24_43-U-NA20		
	141.0	1		Site Pro1 F4P-HRK12		
		3	ericsson	RADIO 4449 B71/B85A		
		1	pole mounts	Site Pro 1 F4P-12W 12' Fortress Quad Platform		
120.0	120.0	2	decibel	980H120T4E-M w/ Mount Pipe	2	1-5/8
		1	tower mounts	Platform Mount [LP 1201-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
4-GEOTECHNICAL REPORTS	4726392	CCISITES
4-POST-MODIFICATION INSPECTION	8524608	CCISITES
4-POST-MODIFICATION INSPECTION	3675131	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	3918434	CCISITES
4-TOWER MANUFACTURER DRAWINGS	3508519	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	7744596	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	3675126	CCISITES

3.1) Analysis Method

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

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

3.2) Assumptions

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

This analysis may be affected if any assumptions are not valid or have been made in error. 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
156 - 151	Pole	TP10.75x10.75x0.375	Pole	0.4%	Pass
151 - 146	Pole	TP10.75x10.75x0.375	Pole	10.9%	Pass
146 - 144	Pole	TP10.75x10.75x0.375	Pole	15.9%	Pass
144 - 139	Pole	TP18.944x18x0.25	Pole	26.4%	Pass
139 - 134	Pole	TP19.887x18.944x0.25	Pole	44.2%	Pass
134 - 129	Pole	TP20.831x19.887x0.25	Pole	62.5%	Pass
129 - 128.25	Pole	TP20.972x20.831x0.25	Pole	65.4%	Pass
128.25 - 128	Pole + Reinf.	TP21.019x20.972x0.575	Pole	29.5%	Pass
128 - 123	Pole + Reinf.	TP21.963x21.019x0.5625	Pole	38.5%	Pass
123 - 118	Pole + Reinf.	TP22.906x21.963x0.55	Pole	47.4%	Pass
118 - 113	Pole + Reinf.	TP23.85x22.906x0.525	Pole	56.0%	Pass
113 - 108	Pole + Reinf.	TP24.793x23.85x0.5125	Pole	63.9%	Pass
108 - 103	Pole + Reinf.	TP25.737x24.793x0.5	Pole	71.1%	Pass

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
103 - 98	Pole + Reinf.	TP26.68x25.737x0.4938	Pole	77.7%	Pass
98 - 96.5	Pole + Reinf.	TP27.624x26.68x0.4875	Pole	79.6%	Pass
96.5 - 92	Pole + Reinf.	TP27.313x26.464x0.7	Pole	62.6%	Pass
92 - 87	Pole + Reinf.	TP28.257x27.313x0.675	Pole	67.7%	Pass
87 - 82	Pole + Reinf.	TP29.201x28.257x0.65	Pole	72.6%	Pass
82 - 77.5	Pole + Reinf.	TP30.05x29.201x0.6375	Pole	77.0%	Pass
77.5 - 72.5	Pole + Reinf.	TP30.994x30.05x0.6875	Pole	71.5%	Pass
72.5 - 67.5	Pole + Reinf.	TP31.937x30.994x0.6875	Pole	74.6%	Pass
67.5 - 67.08	Pole + Reinf.	TP32.016x31.937x0.675	Pole	74.8%	Pass
67.08 - 66.83	Pole + Reinf.	TP32.063x32.016x0.975	Pole	53.6%	Pass
66.83 - 66.33	Pole + Reinf.	TP32.158x32.063x0.9625	Pole	53.9%	Pass
66.33 - 66.08	Pole + Reinf.	TP32.205x32.158x0.9625	Pole	54.0%	Pass
66.08 - 61.75	Pole + Reinf.	TP33.824x32.205x0.95	Pole	56.0%	Pass
61.75 - 56.75	Pole + Reinf.	TP33.341x32.397x0.9375	Pole	59.7%	Pass
56.75 - 51.75	Pole + Reinf.	TP34.284x33.341x0.9125	Pole	61.8%	Pass
51.75 - 46.75	Pole + Reinf.	TP35.228x34.284x0.9	Pole	64.3%	Pass
46.75 - 41.75	Pole + Reinf.	TP36.171x35.228x0.8875	Pole	66.8%	Pass
41.75 - 39.7	Pole + Reinf.	TP36.558x36.171x0.9	Pole	66.9%	Pass
39.7 - 39.5	Pole + Reinf.	TP36.596x36.558x0.8875	Pole	66.9%	Pass
39.5 - 34.5	Pole + Reinf.	TP37.539x36.596x0.875	Pole	68.6%	Pass
34.5 - 31.75	Pole + Reinf.	TP38.058x37.539x0.8625	Pole	69.5%	Pass
31.75 - 31.5	Pole + Reinf.	TP38.105x38.058x0.95	Pole	64.2%	Pass
31.5 - 26.5	Pole + Reinf.	TP39.049x38.105x0.925	Pole	65.7%	Pass
26.5 - 21.5	Pole + Reinf.	TP39.993x39.049x0.9	Pole	67.1%	Pass
21.5 - 16.5	Pole + Reinf.	TP40.936x39.993x0.9	Pole	68.5%	Pass
16.5 - 15.05	Pole + Reinf.	TP42.201x40.936x0.8875	Pole	68.9%	Pass
15.05 - 8.8	Pole + Reinf.	TP41.639x40.46x0.875	Pole	72.5%	Pass
8.8 - 8.25	Pole + Reinf.	TP41.743x41.639x0.875	Pole	72.7%	Pass
8.25 - 8	Pole + Reinf.	TP41.79x41.743x0.95	Pole	67.3%	Pass
8 - 4.75	Pole + Reinf.	TP42.404x41.79x0.95	Pole	68.4%	Pass
4.75 - 4.5	Pole + Reinf.	TP42.451x42.404x1.3	Pole	53.8%	Pass
4.5 - 4.25	Pole + Reinf.	TP42.498x42.451x1.3	Pole	53.9%	Pass
4.25 - 4	Pole + Reinf.	TP42.545x42.498x1.2	Pole	54.7%	Pass
4 - 3.5	Pole + Reinf.	TP42.64x42.545x1.2	Pole	54.9%	Pass
3.5 - 3.25	Pole + Reinf.	TP42.687x42.64x1.475	Reinf. 10 Weldment	50.2%	Pass
3.25 - 2.5	Pole + Reinf.	TP42.828x42.687x1.475	Pole	46.3%	Pass
2.5 - 2.25	Pole + Reinf.	TP42.875x42.828x1.325	Reinf. 11 Weldment	56.2%	Pass
2.25 - 0	Pole + Reinf.	TP43.3x42.875x1.325	Pole	53.1%	Pass
				Summary	
			Pole	79.6%	Pass
			Reinforcement	68.8%	Pass
			Overall	79.6%	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Flange Connection	144.0	37.8	Pass
1	Anchor Rods	0	73.3	Pass
1	Base Plate	0	82.9	Pass
1	Base Foundation (Structure)	0	94.1	Pass
1	Base Foundation (Soil Interaction)	0	26.8	Pass

Structure Rating (max from all components) =	94.1%
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Notes:

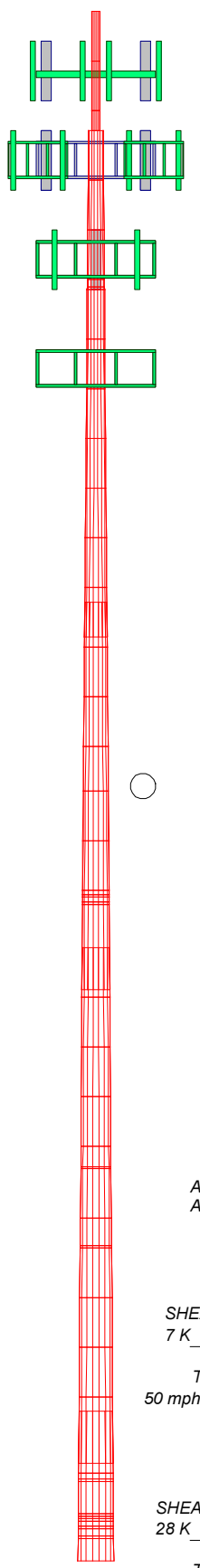
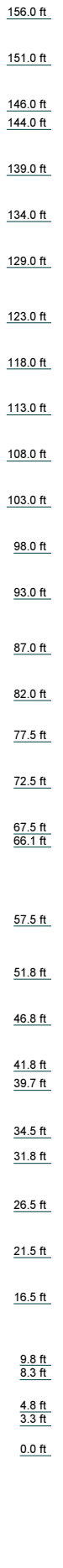
- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity.

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

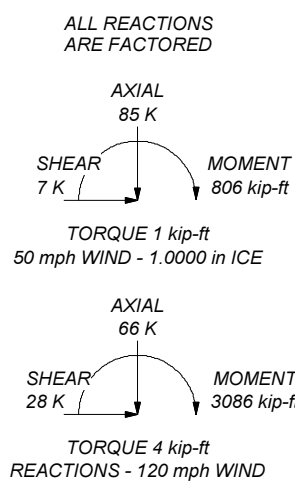
Section	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45									
Length (ft)	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00						
Number of Sides	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12					
Thickness (in)	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500						
Socket Length (ft)	3.50																																																					
Top Dia (in)	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000	18.0000				
Bot Dia (in)	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435	18.9435
Grade	A53-B-35																																																					
Weight (K)	0.1	0.2	0.1	0.2	0.1	0.2	0.3	0.4	0.5	0.6	0.6	0.6	0.6	0.6	0.7	0.8	0.9	0.9	0.8	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1		




MATERIAL STRENGTH					
GRADE	Fy	Fu	GRADE	Fy	Fu
A53-B-35	35 ksi	60 ksi	A36	36 ksi	58 ksi

TOWER DESIGN NOTES

1. Tower is located in Windham County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 120 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 79.6%



 Crown Castle 2000 Corporate Drive Canonsburg, PA Phone: (724) 416-2000 FAX:	Job: 828402		
	Project: Crown Castle Client: Crown Castle Code: TIA-222-H Path:	Drawn by: RConway Date: 07/25/22 Scale: NTS Dwg No. E-1	App'd:

C:\Users\RConway\SA\I Work Area\828402\WO 2141869 - SA\Prod\828402.dwg

Tower Input Data

The tower is a monopole.

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

The following design criteria apply:

- Tower is located in Windham County, Connecticut.
- Tower base elevation above sea level: 624.00 ft.
- Basic wind speed of 120 mph.
- Risk Category II.
- Exposure Category C.
- Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- Topographic Category: 1.
- Crest Height: 0.00 ft.
- Nominal ice thickness of 1.0000 in.
- Ice thickness is considered to increase with height.
- Ice density of 56 pcf.
- A wind speed of 50 mph is used in combination with ice.
- Temperature drop of 50 °F.
- Deflections calculated using a wind speed of 60 mph.
- TOWER RATING: 79.6%.
- A non-linear (P-delta) analysis was used.
- Pressures are calculated at each section.
- Stress ratio used in pole design is 1.
- Tower analysis based on target reliabilities in accordance with Annex S.
- Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
- Maximum demand-capacity ratio is: 1.05.
- Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification ✓ Use Code Stress Ratios ✓ Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile Include Bolts In Member Capacity Leg Bolts Are At Top Of Section Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) SR Members Have Cut Ends SR Members Are Concentric	Distribute Leg Loads As Uniform Assume Legs Pinned ✓ Assume Rigid Index Plate ✓ Use Clear Spans For Wind Area Use Clear Spans For KL/r Retension Guys To Initial Tension ✓ Bypass Mast Stability Checks ✓ Use Azimuth Dish Coefficients ✓ Project Wind Area of Appurt. Autocalc Torque Arm Areas Add IBC .6D+W Combination ✓ Sort Capacity Reports By Component Triangulate Diamond Inner Bracing Treat Feed Line Bundles As Cylinder Ignore KL/ry For 60 Deg. Angle Legs	Use ASCE 10 X-Brace Ly Rules Calculate Redundant Bracing Forces Ignore Redundant Members in FEA SR Leg Bolts Resist Compression All Leg Panels Have Same Allowable Offset Girt At Foundation ✓ Consider Feed Line Torque Include Angle Block Shear Check Use TIA-222-H Bracing Resist. Exemption Use TIA-222-H Tension Splice Exemption <div style="text-align: center; background-color: #e0e0e0; padding: 2px;">Poles</div> ✓ Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets Pole Without Linear Attachments Pole With Shroud Or No Appurtenances Outside and Inside Corner Radii Are Known
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Tapered Pole Section Geometry

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
L1	156.00-151.00	5.00	0.00	Round	10.7500	10.7500	0.3750		A53-B-35 (35 ksi)
L2	151.00-146.00	5.00	0.00	Round	10.7500	10.7500	0.3750		A53-B-35 (35 ksi)
L3	146.00-144.00	2.00	0.00	Round	10.7500	10.7500	0.3750		A53-B-35 (35 ksi)
L4	144.00-139.00	5.00	0.00	12	18.0000	18.9435	0.2500	1.0000	A36 (36 ksi)
L5	139.00-134.00	5.00	0.00	12	18.9435	19.8871	0.2500	1.0000	A36 (36 ksi)
L6	134.00-129.00	5.00	0.00	12	19.8871	20.8306	0.2500	1.0000	A36 (36 ksi)
L7	129.00-128.25	0.75	0.00	12	20.8306	20.9721	0.2500	1.0000	A36 (36 ksi)
L8	128.25-128.00	0.25	0.00	12	20.9721	21.0193	0.5750	2.3000	A36 (36 ksi)
L9	128.00-123.00	5.00	0.00	12	21.0193	21.9628	0.5625	2.2500	A36 (36 ksi)
L10	123.00-118.00	5.00	0.00	12	21.9628	22.9064	0.5500	2.2000	A36 (36 ksi)
L11	118.00-113.00	5.00	0.00	12	22.9064	23.8499	0.5250	2.1000	A36 (36 ksi)
L12	113.00-108.00	5.00	0.00	12	23.8499	24.7934	0.5125	2.0500	A36 (36 ksi)
L13	108.00-103.00	5.00	0.00	12	24.7934	25.7369	0.5000	2.0000	A36 (36 ksi)
L14	103.00-98.00	5.00	0.00	12	25.7369	26.6805	0.4938	1.9750	A36 (36 ksi)
L15	98.00-93.00	5.00	3.50	12	26.6805	27.6240	0.4875	1.9500	A36 (36 ksi)
L16	93.00-92.00	4.50	0.00	12	26.4635	27.3130	0.7000	2.8000	A36 (36 ksi)
L17	92.00-87.00	5.00	0.00	12	27.3130	28.2568	0.6750	2.7000	A36 (36 ksi)
L18	87.00-82.00	5.00	0.00	12	28.2568	29.2006	0.6500	2.6000	A36 (36 ksi)
L19	82.00-77.50	4.50	0.00	12	29.2006	30.0500	0.6375	2.5500	A36 (36 ksi)
L20	77.50-72.50	5.00	0.00	12	30.0500	30.9935	0.6875	2.7500	A36 (36 ksi)
L21	72.50-67.50	5.00	0.00	12	30.9935	31.9370	0.6875	2.7500	A36 (36 ksi)
L22	67.50-67.08	0.42	0.00	12	31.9370	32.0163	0.6750	2.7000	A36 (36 ksi)
L23	67.08-66.83	0.25	0.00	12	32.0163	32.0634	0.9750	3.9000	A36 (36 ksi)
L24	66.83-66.33	0.50	0.00	12	32.0634	32.1578	0.9625	3.8500	A36 (36 ksi)
L25	66.33-66.08	0.25	0.00	12	32.1578	32.2050	0.9625	3.8500	A36 (36 ksi)
L26	66.08-57.50	8.58	4.25	12	32.2050	33.8240	0.9500	3.8000	A36 (36 ksi)
L27	57.50-56.75	5.00	0.00	12	32.3970	33.3405	0.9375	3.7500	A36 (36 ksi)
L28	56.75-51.75	5.00	0.00	12	33.3405	34.2840	0.9125	3.6500	A36 (36 ksi)
L29	51.75-46.75	5.00	0.00	12	34.2840	35.2275	0.9000	3.6000	A36 (36 ksi)
L30	46.75-41.75	5.00	0.00	12	35.2275	36.1710	0.8875	3.5500	A36 (36 ksi)
L31	41.75-39.70	2.05	0.00	12	36.1710	36.5579	0.9000	3.6000	A36 (36 ksi)
L32	39.70-39.50	0.20	0.00	12	36.5579	36.5956	0.8875	3.5500	A36 (36 ksi)
L33	39.50-34.50	5.00	0.00	12	36.5956	37.5393	0.8750	3.5000	A36 (36 ksi)
L34	34.50-31.75	2.75	0.00	12	37.5393	38.0583	0.8625	3.4500	A36 (36 ksi)
L35	31.75-31.50	0.25	0.00	12	38.0583	38.1055	0.9500	3.8000	A36 (36 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
L36	31.50-26.50	5.00	0.00	12	38.1055	39.0492	0.9250	3.7000	(36 ksi) A36
L37	26.50-21.50	5.00	0.00	12	39.0492	39.9928	0.9000	3.6000	(36 ksi) A36
L38	21.50-16.50	5.00	0.00	12	39.9928	40.9365	0.9000	3.6000	(36 ksi) A36
L39	16.50-9.80	6.70	5.25	12	40.9365	42.2010	0.8875	3.5500	(36 ksi) A36
L40	9.80-8.80	6.25	0.00	12	40.4601	41.6395	0.8750	3.5000	(36 ksi) A36
L41	8.80-8.25	0.55	0.00	12	41.6395	41.7433	0.8750	3.5000	(36 ksi) A36
L42	8.25-8.00	0.25	0.00	12	41.7433	41.7904	0.9500	3.8000	(36 ksi) A36
L43	8.00-4.75	3.25	0.00	12	41.7904	42.4037	0.9500	3.8000	(36 ksi) A36
L44	4.75-4.50	0.25	0.00	12	42.4037	42.4509	1.3000	5.2000	(36 ksi) A36
L45	4.50-4.25	0.25	0.00	12	42.4509	42.4980	1.3000	5.2000	(36 ksi) A36
L46	4.25-4.00	0.25	0.00	12	42.4980	42.5452	1.2000	4.8000	(36 ksi) A36
L47	4.00-3.50	0.50	0.00	12	42.5452	42.6396	1.2000	4.8000	(36 ksi) A36
L48	3.50-3.25	0.25	0.00	12	42.6396	42.6867	1.4750	5.9000	(36 ksi) A36
L49	3.25-2.50	0.75	0.00	12	42.6867	42.8283	1.4750	5.9000	(36 ksi) A36
L50	2.50-2.25	0.25	0.00	12	42.8283	42.8754	1.3250	5.3000	(36 ksi) A36
L51	2.25-0.00	2.25		12	42.8754	43.3000	1.3250	5.3000	(36 ksi) A36

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	10.7500	12.2228	164.6730	3.6705	5.3750	30.6368	329.3461	6.1077	0.0000	0
L2	10.7500	12.2228	164.6730	3.6705	5.3750	30.6368	329.3461	6.1077	0.0000	0
L3	10.7500	12.2228	164.6730	3.6705	5.3750	30.6368	329.3461	6.1077	0.0000	0
L4	18.5468	14.2888	574.6149	6.3545	9.3240	61.6275	1164.3256	7.0325	4.1540	16.616
L5	19.5236	15.0483	671.2058	6.6923	9.8127	68.4014	1360.0450	7.4063	4.4069	17.627
L6	20.5004	15.8078	778.0566	7.0301	10.3015	75.5285	1576.5535	7.7801	4.6597	18.639
L7	21.4772	16.5674	895.6847	7.3679	10.7902	83.0088	1814.9001	8.1540	4.9126	19.65
L8	21.4772	16.5674	895.6847	7.3679	10.7902	83.0088	1814.9001	8.1540	4.9126	19.65
L9	21.6237	16.6813	914.2906	7.4185	10.8636	84.1613	1852.6006	8.2100	4.9505	19.802
L10	21.5091	37.7653	2005.4696	7.3022	10.8636	184.6052	4063.6252	18.5869	4.0795	7.095
L11	21.5579	37.8526	2019.4171	7.3191	10.8880	185.4719	4091.8864	18.6299	4.0922	7.117
L12	21.5623	37.0524	1979.1425	7.3235	10.8880	181.7729	4010.2793	18.2360	4.1257	7.335
L13	22.5392	38.7613	2265.8199	7.6613	11.3767	199.1624	4591.1655	19.0772	4.3785	7.784
L14	22.5436	37.9221	2219.3528	7.6658	11.3767	195.0781	4497.0106	18.6641	4.4120	8.022
L15	23.5204	39.5931	2525.8490	8.0036	11.8655	212.8735	5118.0549	19.4865	4.6649	8.482
L16	23.5292	37.8357	2419.1352	8.0125	11.8655	203.8799	4901.8237	18.6216	4.7319	9.013
L17	24.5060	39.4307	2738.1642	8.3503	12.3542	221.6376	5548.2631	19.4066	4.9848	9.495
L18	24.5104	38.5125	2677.2695	8.3548	12.3542	216.7086	5424.8739	18.9547	5.0183	9.792
L19	25.4872	40.0696	3015.3010	8.6926	12.8430	234.7819	6109.8174	19.7210	5.2711	10.285
L20	25.4916	39.1124	2946.3028	8.6970	12.8430	229.4095	5970.0082	19.2499	5.3046	10.609
L21	26.4685	40.6315	3303.1018	9.0348	13.3317	247.7623	6692.9798	19.9976	5.5575	11.115
L22	26.4707	40.1335	3264.2371	9.0371	13.3317	244.8471	6614.2293	19.7525	5.5743	11.29

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
L15	27.4475	41.6336	3644.1168	9.3748	13.8205	263.6751	7383.9687	20.4908	5.8271	11.802
	27.4497	41.1164	3600.5656	9.3771	13.8205	260.5238	7295.7221	20.2362	5.8439	11.987
	28.4265	42.5975	4003.8513	9.7149	14.3092	279.8090	8112.8882	20.9652	6.0967	12.506
L16	27.8341	58.0710	4919.8959	9.2233	13.7081	358.9041	9969.0430	28.5808	5.2162	7.452
	28.0295	59.9856	5422.7459	9.5274	14.1481	383.2841	10987.953	29.5231	5.4439	7.777
L17	28.0383	57.8976	5243.8268	9.5364	14.1481	370.6379	10625.414	28.4954	5.5109	8.164
	29.0154	59.9490	5821.1898	9.8743	14.6370	397.7036	11795.308	29.5051	5.7638	8.539
L18	29.0243	57.7810	5620.8466	9.8832	14.6370	384.0162	11389.359	28.4380	5.8308	8.97
	30.0014	59.7563	6217.2691	10.2211	15.1259	411.0347	12597.872	29.4103	6.0838	9.36
L19	30.0058	58.6328	6105.7188	10.2256	15.1259	403.6600	12371.841	28.8573	6.1173	9.596
	30.8852	60.3765	6666.8062	10.5297	15.5659	428.2956	13508.756	29.7155	6.3449	9.953
L20	30.8675	65.0012	7153.0888	10.5118	15.5659	459.5358	14494.097	31.9916	6.2109	9.034
	31.8443	67.0899	7865.0300	10.8495	16.0546	489.8916	15936.683	33.0196	6.4638	9.402
L21	31.8443	67.0899	7865.0300	10.8495	16.0546	489.8916	15936.683	33.0196	6.4638	9.402
	32.8211	69.1786	8622.7093	11.1873	16.5434	521.2186	17471.946	34.0476	6.7166	9.77
L22	32.8255	67.9480	8476.0961	11.1918	16.5434	512.3562	17174.868	33.4419	6.7501	10
	32.9076	68.1202	8540.7243	11.2202	16.5844	514.9848	17305.822	33.5267	6.7714	10.032
L23	32.8017	97.4540	11985.722	11.1128	16.5844	722.7098	24286.322	47.9639	5.9674	6.12
	32.8506	97.6021	12040.451	11.1297	16.6089	724.9416	24397.218	48.0368	5.9800	6.133
L24	32.8550	96.3896	11900.429	11.1341	16.6089	716.5111	24113.497	47.4400	6.0135	6.248
	32.9526	96.6820	12009.064	11.1679	16.6577	720.9305	24333.620	47.5839	6.0388	6.274
L25	32.9526	96.6820	12009.064	11.1679	16.6577	720.9305	24333.620	47.5839	6.0388	6.274
	33.0015	96.8282	12063.629	11.1848	16.6822	723.1452	24444.183	47.6559	6.0514	6.287
L26	33.0059	95.6089	11921.256	11.1893	16.6822	714.6108	24155.697	47.0558	6.0849	6.405
	34.6821	100.5616	13871.488	11.7689	17.5208	791.7141	28107.397	49.4933	6.5188	6.862
L27	34.0394	94.9684	11996.915	11.2625	16.7817	714.8825	24309.002	46.7406	6.1699	6.581
	34.1859	97.8166	13109.008	11.6003	17.2704	759.0452	26562.405	48.1424	6.4228	6.851
L28	34.1948	95.2817	12788.990	11.6092	17.2704	740.5153	25913.962	46.8947	6.4898	7.112
	35.1715	98.0539	13938.083	11.9470	17.7591	784.8405	28242.335	48.2591	6.7426	7.389
L29	35.1760	96.7469	13762.604	11.9515	17.7591	774.9595	27886.767	47.6159	6.7761	7.529
	36.1527	99.4812	14962.772	12.2893	18.2479	819.9740	30318.633	48.9616	7.0290	7.81
L30	36.1571	98.1352	14771.080	12.2937	18.2479	809.4691	29930.214	48.2992	7.0625	7.958
	37.1339	100.8315	16022.357	12.6315	18.7366	855.1371	32465.640	49.6262	7.3153	8.243
L31	37.1295	102.2153	16230.673	12.6270	18.7366	866.2567	32887.744	50.3072	7.2818	8.091
	37.5300	103.3365	16770.678	12.7655	18.9370	885.6048	33981.941	50.8591	7.3855	8.206
L32	37.5344	101.9370	16555.150	12.7700	18.9370	874.2235	33545.223	50.1703	7.4190	8.359
	37.5735	102.0449	16607.763	12.7835	18.9565	876.0972	33651.830	50.2234	7.4291	8.371

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
L33	37.5779	100.6428	16391.0524	12.7880	18.9565	864.6652	33212.7161	49.5333	7.4626	8.529
	38.5549	103.3016	17724.7291	13.1258	19.4454	911.5150	35915.1066	50.8419	7.7155	8.818
L34	38.5593	101.8606	17489.3945	13.1303	19.4454	899.4127	35438.2549	50.1327	7.7490	8.984
	39.0966	103.3020	18242.4323	13.3161	19.7142	925.3447	36964.1135	50.8421	7.8881	9.146
L35	39.0657	113.5143	19951.6450	13.2848	19.7142	1012.0443	40427.4420	55.8683	7.6536	8.056
	39.1146	113.6586	20027.8487	13.3017	19.7386	1014.6518	40581.8512	55.9393	7.6663	8.07
L36	39.1234	110.7421	19540.1897	13.3106	19.7386	989.9460	39593.7220	54.5039	7.7333	8.36
	40.1004	113.5528	21066.1012	13.6484	20.2275	1041.4605	42685.6323	55.8872	7.9862	8.634
L37	40.1092	110.5562	20537.0959	13.6574	20.2275	1015.3076	41613.7242	54.4124	8.0532	8.948
	41.0861	113.2910	22099.1378	13.9952	20.7163	1066.7522	44778.8446	55.7584	8.3061	9.229
L38	41.0861	113.2910	22099.1378	13.9952	20.7163	1066.7522	44778.8446	55.7584	8.3061	9.229
	42.0631	116.0257	23738.4425	14.3331	21.2051	1119.4685	48100.5203	57.1043	8.5590	9.51
L39	42.0675	114.4500	23430.6745	14.3375	21.2051	1104.9547	47476.8988	56.3288	8.5925	9.682
	43.3766	118.0637	25720.8994	14.7902	21.8601	1176.6130	52117.5155	58.1073	8.9314	10.064
L40	42.6044	111.5312	22307.2873	14.1715	20.9584	1064.3624	45200.6118	54.8922	8.4983	9.712
	42.7997	114.8540	24361.0450	14.5937	21.5693	1129.4337	49362.0819	56.5276	8.8144	10.074
L41	42.7997	114.8540	24361.0450	14.5937	21.5693	1129.4337	49362.0819	56.5276	8.8144	10.074
	42.9071	115.1464	24547.5809	14.6308	21.6230	1135.2525	49740.0541	56.6715	8.8422	10.105
L42	42.8807	124.7866	26505.1979	14.6040	21.6230	1225.7864	53706.7168	61.4162	8.6412	9.096
	42.9295	124.9309	26597.2554	14.6209	21.6475	1228.6553	53893.2503	61.4872	8.6538	9.109
L43	42.9295	124.9309	26597.2554	14.6209	21.6475	1228.6553	53893.2503	61.4872	8.6538	9.109
	43.5644	126.8069	27813.4838	14.8404	21.9651	1266.2570	56357.6588	62.4105	8.8182	9.282
L44	43.4410	172.0601	37104.6201	14.7151	21.9651	1689.2521	75184.0198	84.6827	7.8802	6.062
	43.4898	172.2576	37232.5170	14.7320	21.9896	1693.1912	75443.1737	84.7799	7.8928	6.071
L45	43.4898	172.2576	37232.5170	14.7320	21.9896	1693.1912	75443.1737	84.7799	7.8928	6.071
	43.5386	172.4550	37360.7102	14.7489	22.0140	1697.1349	75702.9279	84.8771	7.9055	6.081
L46	43.5739	159.5757	34738.5489	14.7847	22.0140	1578.0215	70389.7182	78.5383	8.1735	6.811
	43.6227	159.7579	34857.7286	14.8016	22.0384	1581.6796	70631.2085	78.6280	8.1861	6.822
L47	43.6227	159.7579	34857.7286	14.8016	22.0384	1581.6796	70631.2085	78.6280	8.1861	6.822
	43.7204	160.1225	35096.9025	14.8354	22.0873	1589.0085	71115.8396	78.8074	8.2114	6.843
L48	43.6234	195.5111	42286.7776	14.7369	22.0873	1914.5293	85684.4760	96.2246	7.4744	5.067
	43.6722	195.7352	42432.3213	14.7538	22.1117	1918.9957	85979.3869	96.3349	7.4870	5.076
L49	43.6722	195.7352	42432.3213	14.7538	22.1117	1918.9957	85979.3869	96.3349	7.4870	5.076
	43.8188	196.4073	42870.9615	14.8045	22.1850	1932.4265	86868.1909	96.6657	7.5250	5.102
L50	43.8717	177.0737	38931.7978	14.8582	22.1850	1754.8671	78886.3772	87.1503	7.9270	5.983

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
	43.9205	177.2749	39064.702 3	14.8751	22.2095	1758.9204	79155.677 8	87.2493	7.9396	5.992
L51	43.9205	177.2749	39064.702 3	14.8751	22.2095	1758.9204	79155.677 8	87.2493	7.9396	5.992
	44.3600	179.0863	40274.468 2	15.0270	22.4294	1795.6106	81606.991 5	88.1408	8.0534	6.078

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A _r	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
ft	ft ²	in							
L1 156.00-151.00				1	1	1			
L2 151.00-146.00				1	1	1			
L3 146.00-144.00				1	1	1			
L4 144.00-139.00				1	1	1			
L5 139.00-134.00				1	1	1			
L6 134.00-129.00				1	1	1			
L7 129.00-128.25				1	1	1			
L8 128.25-128.00				1	1	0.917905			
L9 128.00-123.00				1	1	0.915981			
L10 123.00-118.00				1	1	0.915921			
L11 118.00-113.00				1	1	0.938956			
L12 113.00-108.00				1	1	0.942941			
L13 108.00-103.00				1	1	0.948594			
L14 103.00-98.00				1	1	0.944005			
L15 98.00-93.00				1	1	0.951143			
L16 93.00-92.00				1	1	0.895321			
L17 92.00-87.00				1	1	0.908542			
L18 87.00-82.00				1	1	0.924185			
L19 82.00-77.50				1	1	0.926017			
L20 77.50-72.50				1	1	0.93596			
L21 72.50-67.50				1	1	0.921425			
L22 67.50-67.08				1	1	0.936911			
L23 67.08-66.83				1	1	0.904489			
L24 66.83-66.33				1	1	0.914079			
L25 66.33-66.08				1	1	0.913189			
L26 66.08-57.50				1	1	0.909654			
L27 57.50-56.75				1	1	0.915643			
L28 56.75-51.75				1	1	0.92311			
L29 51.75-				1	1	0.919409			

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_r	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
ft	ft ²	in							
L30 46.75-41.75				1	1	0.916512			
L31 41.75-39.70				1	1	0.943692			
L32 39.70-39.50				1	1	0.956084			
L33 39.50-34.50				1	1	0.955483			
L34 34.50-31.75				1	1	0.961546			
L35 31.75-31.50				1	1	0.940513			
L36 31.50-26.50				1	1	0.951424			
L37 26.50-21.50				1	1	0.963681			
L38 21.50-16.50				1	1	0.950787			
L39 16.50-9.80				1	1	0.960204			
L40 9.80-8.80				1	1	0.967879			
L41 8.80-8.25				1	1	0.966509			
L42 8.25-8.00				1	1	0.956397			
L43 8.00-4.75				1	1	0.948088			
L44 4.75-4.50				1	1	0.887204			
L45 4.50-4.25				1	1	0.886519			
L46 4.25-4.00				1	1	0.824129			
L47 4.00-3.50				1	1	0.822964			
L48 3.50-3.25				1	1	0.82701			
L49 3.25-2.50				1	1	0.82505			
L50 2.50-2.25				1	1	0.819087			
L51 2.25-0.00				1	1	0.813665			

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

CCI-SFP-085125	C	No	Surface Af (CaAa)	35.50 - 0.50	1	1	0.000	8.5000	19.5000	0.00
CCI-SFP-085125	B	No	Surface Af (CaAa)	35.50 - 0.50	1	1	0.000	8.5000	19.5000	0.00
CWFP-085125	B	No	Surface Af (CaAa)	35.50 - 0.50	1	1	0.000	8.5000	19.5000	0.00
CWFP-085125	A	No	Surface Af (CaAa)	35.50 - 0.50	1	1	0.000	8.5000	19.5000	0.00
CWFP-085125	C	No	Surface Af (CaAa)	35.50 - 0.50	1	1	0.000	8.5000	19.5000	0.00
CCI-SFP-065125	A	No	Surface Af (CaAa)	35.50 - 5.50	1	1	0.000	6.5000	15.5000	0.00
CCI-AFP-065125	B	No	Surface Af (CaAa)	70.58 - 35.50	1	1	0.000	6.5000	15.5000	0.00
CCI-AFP-065125	A	No	Surface Af (CaAa)	70.58 - 35.50	1	1	0.000	6.5000	15.5000	0.00
CCI-AFP-065125	C	No	Surface Af (CaAa)	70.58 - 35.50	1	1	0.000	6.5000	15.5000	0.00
CCI-AFP-085125	C	No	Surface Af (CaAa)	70.58 - 35.50	1	1	0.000	8.5000	19.5000	0.00
CCI-AFP-085125	B	No	Surface Af	70.58 -	1	1	0.000	8.5000	19.5000	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
CCI-AFP-085125	A	No	(CaAa) Surface Af	35.50 70.58 - 35.50	1	1	0.000 0.000	8.5000	19.5000	0.00
CFP-085125	C	No	(CaAa) Surface Af	100.66 - 70.58	1	1	0.000	8.5000	19.5000	0.00
CFP-085125	B	No	(CaAa) Surface Af	100.66 - 70.58	1	1	0.000	8.5000	19.5000	0.00
CFP-085125	A	No	(CaAa) Surface Af	100.66 - 70.58	1	1	0.000	8.5000	19.5000	0.00
CCI-AFP-060100	C	No	(CaAa) Surface Af	130.75 - 100.66	1	1	0.000	6.0000	14.0000	0.00
CCI-AFP-060100	B	No	(CaAa) Surface Af	130.75 - 100.66	1	1	0.000	6.0000	14.0000	0.00
CCI-AFP-060100	A	No	(CaAa) Surface Af	130.75 - 100.66	1	1	0.000	6.0000	14.0000	0.00

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Ice	C _{AA} ft ² /ft	Weight plf
***** **									
HB114-1-0813U4-M5J(1-1/4)	C	No	No	Inside Pole	150.00 - 0.00	3	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	1.20 1.20 1.20
HB114-13U3M12-XXXF(1-1/4)	C	No	No	Inside Pole	150.00 - 0.00	1	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.99 0.99 0.99
***** **									
HCS 6X12 4AWG(1-5/8)	C	No	No	Inside Pole	141.00 - 0.00	1	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	2.40 2.40 2.40
HB158-21U6S24-xxM_TMO(1-5/8)	C	No	No	Inside Pole	141.00 - 0.00	3	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	2.50 2.50 2.50
***** **									
CU12PSM9P6XXX (1-1/2)	C	No	No	Inside Pole	131.00 - 0.00	1	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	2.35 2.35 2.35
***** **									
LDF7-50A(1-5/8)	C	No	No	Inside Pole	120.00 - 0.00	2	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.82 0.82 0.82
***** ** ***** *****									

Feed Line/Linear Appurtenances Section Areas

Tower Section n	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
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Tower Sectio n	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L1	156.00-151.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L2	151.00-146.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.02
L3	146.00-144.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.01
L4	144.00-139.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.04
L5	139.00-134.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.07
L6	134.00-129.00	A	0.000	0.000	1.750	0.000	0.00
		B	0.000	0.000	1.750	0.000	0.00
		C	0.000	0.000	1.750	0.000	0.08
L7	129.00-128.25	A	0.000	0.000	0.750	0.000	0.00
		B	0.000	0.000	0.750	0.000	0.00
		C	0.000	0.000	0.750	0.000	0.01
L8	128.25-128.00	A	0.000	0.000	0.250	0.000	0.00
		B	0.000	0.000	0.250	0.000	0.00
		C	0.000	0.000	0.250	0.000	0.00
L9	128.00-123.00	A	0.000	0.000	5.000	0.000	0.00
		B	0.000	0.000	5.000	0.000	0.00
		C	0.000	0.000	5.000	0.000	0.08
L10	123.00-118.00	A	0.000	0.000	5.000	0.000	0.00
		B	0.000	0.000	5.000	0.000	0.00
		C	0.000	0.000	5.000	0.000	0.09
L11	118.00-113.00	A	0.000	0.000	5.000	0.000	0.00
		B	0.000	0.000	5.000	0.000	0.00
		C	0.000	0.000	5.000	0.000	0.09
L12	113.00-108.00	A	0.000	0.000	5.000	0.000	0.00
		B	0.000	0.000	5.000	0.000	0.00
		C	0.000	0.000	5.000	0.000	0.09
L13	108.00-103.00	A	0.000	0.000	5.000	0.000	0.00
		B	0.000	0.000	5.000	0.000	0.00
		C	0.000	0.000	5.000	0.000	0.09
L14	103.00-98.00	A	0.000	0.000	6.108	0.000	0.00
		B	0.000	0.000	6.108	0.000	0.00
		C	0.000	0.000	6.108	0.000	0.09
L15	98.00-93.00	A	0.000	0.000	7.083	0.000	0.00
		B	0.000	0.000	7.083	0.000	0.00
		C	0.000	0.000	7.083	0.000	0.09
L16	93.00-92.00	A	0.000	0.000	1.417	0.000	0.00
		B	0.000	0.000	1.417	0.000	0.00
		C	0.000	0.000	1.417	0.000	0.02
L17	92.00-87.00	A	0.000	0.000	7.083	0.000	0.00
		B	0.000	0.000	7.083	0.000	0.00
		C	0.000	0.000	7.083	0.000	0.09
L18	87.00-82.00	A	0.000	0.000	7.083	0.000	0.00
		B	0.000	0.000	7.083	0.000	0.00
		C	0.000	0.000	7.083	0.000	0.09
L19	82.00-77.50	A	0.000	0.000	6.375	0.000	0.00
		B	0.000	0.000	6.375	0.000	0.00
		C	0.000	0.000	6.375	0.000	0.08
L20	77.50-72.50	A	0.000	0.000	7.083	0.000	0.00
		B	0.000	0.000	7.083	0.000	0.00
		C	0.000	0.000	7.083	0.000	0.09
L21	72.50-67.50	A	0.000	0.000	10.420	0.000	0.00
		B	0.000	0.000	10.420	0.000	0.00
		C	0.000	0.000	10.420	0.000	0.09
L22	67.50-67.08	A	0.000	0.000	1.050	0.000	0.00
		B	0.000	0.000	1.050	0.000	0.00
		C	0.000	0.000	1.050	0.000	0.01
L23	67.08-66.83	A	0.000	0.000	0.625	0.000	0.00
		B	0.000	0.000	0.625	0.000	0.00
		C	0.000	0.000	0.625	0.000	0.00

Tower Sectio n	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L24	66.83-66.33	A	0.000	0.000	1.250	0.000	0.00
		B	0.000	0.000	1.250	0.000	0.00
		C	0.000	0.000	1.250	0.000	0.01
L25	66.33-66.08	A	0.000	0.000	0.625	0.000	0.00
		B	0.000	0.000	0.625	0.000	0.00
		C	0.000	0.000	0.625	0.000	0.00
L26	66.08-57.50	A	0.000	0.000	21.450	0.000	0.00
		B	0.000	0.000	21.450	0.000	0.00
		C	0.000	0.000	21.450	0.000	0.16
L27	57.50-56.75	A	0.000	0.000	1.875	0.000	0.00
		B	0.000	0.000	1.875	0.000	0.00
		C	0.000	0.000	1.875	0.000	0.01
L28	56.75-51.75	A	0.000	0.000	12.500	0.000	0.00
		B	0.000	0.000	12.500	0.000	0.00
		C	0.000	0.000	12.500	0.000	0.09
L29	51.75-46.75	A	0.000	0.000	12.500	0.000	0.00
		B	0.000	0.000	12.500	0.000	0.00
		C	0.000	0.000	12.500	0.000	0.09
L30	46.75-41.75	A	0.000	0.000	12.500	0.000	0.00
		B	0.000	0.000	12.500	0.000	0.00
		C	0.000	0.000	12.500	0.000	0.09
L31	41.75-39.70	A	0.000	0.000	5.125	0.000	0.00
		B	0.000	0.000	5.125	0.000	0.00
		C	0.000	0.000	5.125	0.000	0.04
L32	39.70-39.50	A	0.000	0.000	0.500	0.000	0.00
		B	0.000	0.000	0.500	0.000	0.00
		C	0.000	0.000	0.500	0.000	0.00
L33	39.50-34.50	A	0.000	0.000	12.500	0.000	0.00
		B	0.000	0.000	12.833	0.000	0.00
		C	0.000	0.000	12.833	0.000	0.09
L34	34.50-31.75	A	0.000	0.000	6.875	0.000	0.00
		B	0.000	0.000	7.792	0.000	0.00
		C	0.000	0.000	7.792	0.000	0.05
L35	31.75-31.50	A	0.000	0.000	0.625	0.000	0.00
		B	0.000	0.000	0.708	0.000	0.00
		C	0.000	0.000	0.708	0.000	0.00
L36	31.50-26.50	A	0.000	0.000	12.500	0.000	0.00
		B	0.000	0.000	14.167	0.000	0.00
		C	0.000	0.000	14.167	0.000	0.09
L37	26.50-21.50	A	0.000	0.000	12.500	0.000	0.00
		B	0.000	0.000	14.167	0.000	0.00
		C	0.000	0.000	14.167	0.000	0.09
L38	21.50-16.50	A	0.000	0.000	12.500	0.000	0.00
		B	0.000	0.000	14.167	0.000	0.00
		C	0.000	0.000	14.167	0.000	0.09
L39	16.50-9.80	A	0.000	0.000	16.750	0.000	0.00
		B	0.000	0.000	18.983	0.000	0.00
		C	0.000	0.000	18.983	0.000	0.12
L40	9.80-8.80	A	0.000	0.000	2.500	0.000	0.00
		B	0.000	0.000	2.833	0.000	0.00
		C	0.000	0.000	2.833	0.000	0.02
L41	8.80-8.25	A	0.000	0.000	1.375	0.000	0.00
		B	0.000	0.000	1.558	0.000	0.00
		C	0.000	0.000	1.558	0.000	0.01
L42	8.25-8.00	A	0.000	0.000	0.625	0.000	0.00
		B	0.000	0.000	0.708	0.000	0.00
		C	0.000	0.000	0.708	0.000	0.00
L43	8.00-4.75	A	0.000	0.000	7.313	0.000	0.00
		B	0.000	0.000	9.208	0.000	0.00
		C	0.000	0.000	9.208	0.000	0.06
L44	4.75-4.50	A	0.000	0.000	0.354	0.000	0.00
		B	0.000	0.000	0.708	0.000	0.00
		C	0.000	0.000	0.708	0.000	0.00
L45	4.50-4.25	A	0.000	0.000	0.354	0.000	0.00
		B	0.000	0.000	0.708	0.000	0.00
		C	0.000	0.000	0.708	0.000	0.00
L46	4.25-4.00	A	0.000	0.000	0.354	0.000	0.00
		B	0.000	0.000	0.708	0.000	0.00
		C	0.000	0.000	0.708	0.000	0.00

Tower Section	Tower Elevation	Face	A _R	A _F	C _{AA} _A In Face	C _{AA} _A Out Face	Weight
n	ft		ft ²	ft ²	ft ²	ft ²	K
L47	4.00-3.50	A	0.000	0.000	0.708	0.000	0.00
		B	0.000	0.000	1.417	0.000	0.00
		C	0.000	0.000	1.417	0.000	0.01
L48	3.50-3.25	A	0.000	0.000	0.354	0.000	0.00
		B	0.000	0.000	0.708	0.000	0.00
		C	0.000	0.000	0.708	0.000	0.00
L49	3.25-2.50	A	0.000	0.000	1.063	0.000	0.00
		B	0.000	0.000	2.125	0.000	0.00
		C	0.000	0.000	2.125	0.000	0.01
L50	2.50-2.25	A	0.000	0.000	0.354	0.000	0.00
		B	0.000	0.000	0.708	0.000	0.00
		C	0.000	0.000	0.708	0.000	0.00
L51	2.25-0.00	A	0.000	0.000	2.479	0.000	0.00
		B	0.000	0.000	4.958	0.000	0.00
		C	0.000	0.000	4.958	0.000	0.04

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation	Face or Leg	Ice Thickness	A _R	A _F	C _{AA} _A In Face	C _{AA} _A Out Face	Weight
n	ft		in	ft ²	ft ²	ft ²	ft ²	K
L1	156.00-151.00	A	0.991	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
L2	151.00-146.00	A	0.988	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.02
L3	146.00-144.00	A	0.986	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.01
L4	144.00-139.00	A	0.983	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.04
L5	139.00-134.00	A	0.980	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.07
L6	134.00-129.00	A	0.976	0.000	0.000	2.092	0.000	0.01
		B		0.000	0.000	2.092	0.000	0.01
		C		0.000	0.000	2.092	0.000	0.09
L7	129.00-128.25	A	0.974	0.000	0.000	0.896	0.000	0.01
		B		0.000	0.000	0.896	0.000	0.01
		C		0.000	0.000	0.896	0.000	0.02
L8	128.25-128.00	A	0.973	0.000	0.000	0.299	0.000	0.00
		B		0.000	0.000	0.299	0.000	0.00
		C		0.000	0.000	0.299	0.000	0.01
L9	128.00-123.00	A	0.971	0.000	0.000	5.971	0.000	0.03
		B		0.000	0.000	5.971	0.000	0.03
		C		0.000	0.000	5.971	0.000	0.12
L10	123.00-118.00	A	0.968	0.000	0.000	5.968	0.000	0.03
		B		0.000	0.000	5.968	0.000	0.03
		C		0.000	0.000	5.968	0.000	0.12
L11	118.00-113.00	A	0.963	0.000	0.000	5.963	0.000	0.03
		B		0.000	0.000	5.963	0.000	0.03
		C		0.000	0.000	5.963	0.000	0.13
L12	113.00-108.00	A	0.959	0.000	0.000	5.959	0.000	0.03
		B		0.000	0.000	5.959	0.000	0.03
		C		0.000	0.000	5.959	0.000	0.13
L13	108.00-103.00	A	0.955	0.000	0.000	5.955	0.000	0.03
		B		0.000	0.000	5.955	0.000	0.03
		C		0.000	0.000	5.955	0.000	0.13
L14	103.00-98.00	A	0.950	0.000	0.000	7.058	0.000	0.04
		B		0.000	0.000	7.058	0.000	0.04
		C		0.000	0.000	7.058	0.000	0.13
L15	98.00-93.00	A	0.945	0.000	0.000	8.029	0.000	0.04
		B		0.000	0.000	8.029	0.000	0.04
		C		0.000	0.000	8.029	0.000	0.13

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
L16	93.00-92.00	A	0.942	0.000	0.000	1.606	0.000	0.01
		B		0.000	0.000	1.606	0.000	0.01
		C		0.000	0.000	1.606	0.000	0.03
L17	92.00-87.00	A	0.939	0.000	0.000	8.023	0.000	0.04
		B		0.000	0.000	8.023	0.000	0.04
		C		0.000	0.000	8.023	0.000	0.13
L18	87.00-82.00	A	0.934	0.000	0.000	8.017	0.000	0.04
		B		0.000	0.000	8.017	0.000	0.04
		C		0.000	0.000	8.017	0.000	0.13
L19	82.00-77.50	A	0.928	0.000	0.000	7.211	0.000	0.04
		B		0.000	0.000	7.211	0.000	0.04
		C		0.000	0.000	7.211	0.000	0.12
L20	77.50-72.50	A	0.923	0.000	0.000	8.006	0.000	0.04
		B		0.000	0.000	8.006	0.000	0.04
		C		0.000	0.000	8.006	0.000	0.13
L21	72.50-67.50	A	0.916	0.000	0.000	11.901	0.000	0.06
		B		0.000	0.000	11.901	0.000	0.06
		C		0.000	0.000	11.901	0.000	0.15
L22	67.50-67.08	A	0.913	0.000	0.000	1.203	0.000	0.01
		B		0.000	0.000	1.203	0.000	0.01
		C		0.000	0.000	1.203	0.000	0.01
L23	67.08-66.83	A	0.912	0.000	0.000	0.716	0.000	0.00
		B		0.000	0.000	0.716	0.000	0.00
		C		0.000	0.000	0.716	0.000	0.01
L24	66.83-66.33	A	0.912	0.000	0.000	1.432	0.000	0.01
		B		0.000	0.000	1.432	0.000	0.01
		C		0.000	0.000	1.432	0.000	0.02
L25	66.33-66.08	A	0.911	0.000	0.000	0.716	0.000	0.00
		B		0.000	0.000	0.716	0.000	0.00
		C		0.000	0.000	0.716	0.000	0.01
L26	66.08-57.50	A	0.905	0.000	0.000	24.556	0.000	0.13
		B		0.000	0.000	24.556	0.000	0.13
		C		0.000	0.000	24.556	0.000	0.28
L27	57.50-56.75	A	0.898	0.000	0.000	2.146	0.000	0.01
		B		0.000	0.000	2.146	0.000	0.01
		C		0.000	0.000	2.146	0.000	0.02
L28	56.75-51.75	A	0.893	0.000	0.000	14.287	0.000	0.07
		B		0.000	0.000	14.287	0.000	0.07
		C		0.000	0.000	14.287	0.000	0.16
L29	51.75-46.75	A	0.885	0.000	0.000	14.269	0.000	0.07
		B		0.000	0.000	14.269	0.000	0.07
		C		0.000	0.000	14.269	0.000	0.16
L30	46.75-41.75	A	0.875	0.000	0.000	14.251	0.000	0.07
		B		0.000	0.000	14.251	0.000	0.07
		C		0.000	0.000	14.251	0.000	0.16
L31	41.75-39.70	A	0.868	0.000	0.000	5.837	0.000	0.03
		B		0.000	0.000	5.837	0.000	0.03
		C		0.000	0.000	5.837	0.000	0.07
L32	39.70-39.50	A	0.866	0.000	0.000	0.569	0.000	0.00
		B		0.000	0.000	0.569	0.000	0.00
		C		0.000	0.000	0.569	0.000	0.01
L33	39.50-34.50	A	0.860	0.000	0.000	14.220	0.000	0.07
		B		0.000	0.000	14.553	0.000	0.07
		C		0.000	0.000	14.553	0.000	0.16
L34	34.50-31.75	A	0.850	0.000	0.000	7.810	0.000	0.04
		B		0.000	0.000	8.727	0.000	0.04
		C		0.000	0.000	8.727	0.000	0.09
L35	31.75-31.50	A	0.846	0.000	0.000	0.710	0.000	0.00
		B		0.000	0.000	0.793	0.000	0.00
		C		0.000	0.000	0.793	0.000	0.01
L36	31.50-26.50	A	0.839	0.000	0.000	14.178	0.000	0.07
		B		0.000	0.000	15.845	0.000	0.07
		C		0.000	0.000	15.845	0.000	0.17
L37	26.50-21.50	A	0.823	0.000	0.000	14.147	0.000	0.07
		B		0.000	0.000	15.813	0.000	0.07
		C		0.000	0.000	15.813	0.000	0.16
L38	21.50-16.50	A	0.804	0.000	0.000	14.109	0.000	0.06
		B		0.000	0.000	15.775	0.000	0.07
		C		0.000	0.000	15.775	0.000	0.16

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
L39	16.50-9.80	A	0.775	0.000	0.000	18.827	0.000	0.08
		B		0.000	0.000	21.061	0.000	0.09
		C		0.000	0.000	21.061	0.000	0.21
L40	9.80-8.80	A	0.749	0.000	0.000	2.810	0.000	0.01
		B		0.000	0.000	3.143	0.000	0.01
		C		0.000	0.000	3.143	0.000	0.03
L41	8.80-8.25	A	0.742	0.000	0.000	1.538	0.000	0.01
		B		0.000	0.000	1.722	0.000	0.01
		C		0.000	0.000	1.722	0.000	0.02
L42	8.25-8.00	A	0.739	0.000	0.000	0.699	0.000	0.00
		B		0.000	0.000	0.782	0.000	0.00
		C		0.000	0.000	0.782	0.000	0.01
L43	8.00-4.75	A	0.721	0.000	0.000	8.142	0.000	0.03
		B		0.000	0.000	10.146	0.000	0.04
		C		0.000	0.000	10.146	0.000	0.10
L44	4.75-4.50	A	0.698	0.000	0.000	0.389	0.000	0.00
		B		0.000	0.000	0.778	0.000	0.00
		C		0.000	0.000	0.778	0.000	0.01
L45	4.50-4.25	A	0.694	0.000	0.000	0.389	0.000	0.00
		B		0.000	0.000	0.778	0.000	0.00
		C		0.000	0.000	0.778	0.000	0.01
L46	4.25-4.00	A	0.690	0.000	0.000	0.389	0.000	0.00
		B		0.000	0.000	0.777	0.000	0.00
		C		0.000	0.000	0.777	0.000	0.01
L47	4.00-3.50	A	0.684	0.000	0.000	0.777	0.000	0.00
		B		0.000	0.000	1.553	0.000	0.01
		C		0.000	0.000	1.553	0.000	0.02
L48	3.50-3.25	A	0.677	0.000	0.000	0.388	0.000	0.00
		B		0.000	0.000	0.776	0.000	0.00
		C		0.000	0.000	0.776	0.000	0.01
L49	3.25-2.50	A	0.666	0.000	0.000	1.162	0.000	0.00
		B		0.000	0.000	2.325	0.000	0.01
		C		0.000	0.000	2.325	0.000	0.02
L50	2.50-2.25	A	0.653	0.000	0.000	0.387	0.000	0.00
		B		0.000	0.000	0.774	0.000	0.00
		C		0.000	0.000	0.774	0.000	0.01
L51	2.25-0.00	A	0.606	0.000	0.000	2.691	0.000	0.01
		B		0.000	0.000	5.383	0.000	0.02
		C		0.000	0.000	5.383	0.000	0.06

Feed Line Center of Pressure

Section	Elevation ft	CP _x in	CP _z in	CP _x Ice in	CP _z Ice in
L1	156.00-151.00	0.0000	0.0000	0.0000	0.0000
L2	151.00-146.00	0.0000	0.0000	0.0000	0.0000
L3	146.00-144.00	0.0000	0.0000	0.0000	0.0000
L4	144.00-139.00	0.0000	0.0000	0.0000	0.0000
L5	139.00-134.00	0.0000	0.0000	0.0000	0.0000
L6	134.00-129.00	0.0000	0.0000	0.0000	0.0000
L7	129.00-128.25	0.0000	0.0000	0.0000	0.0000
L8	128.25-128.00	0.0000	0.0000	0.0000	0.0000
L9	128.00-123.00	0.0000	0.0000	0.0000	0.0000
L10	123.00-118.00	0.0000	0.0000	0.0000	0.0000
L11	118.00-113.00	0.0000	0.0000	0.0000	0.0000
L12	113.00-108.00	0.0000	0.0000	0.0000	0.0000
L13	108.00-103.00	0.0000	0.0000	0.0000	0.0000
L14	103.00-98.00	0.0000	0.0000	0.0000	0.0000
L15	98.00-93.00	0.0000	0.0000	0.0000	0.0000
L16	93.00-92.00	0.0000	0.0000	0.0000	0.0000
L17	92.00-87.00	0.0000	0.0000	0.0000	0.0000
L18	87.00-82.00	0.0000	0.0000	0.0000	0.0000
L19	82.00-77.50	0.0000	0.0000	0.0000	0.0000
L20	77.50-72.50	0.0000	0.0000	0.0000	0.0000

Section	Elevation	CP _x	CP _z	CP _x	CP _z
	ft	in	in	Ice in	Ice in
L21	72.50-67.50	0.0000	0.0000	0.0000	0.0000
L22	67.50-67.08	0.0000	0.0000	0.0000	0.0000
L23	67.08-66.83	0.0000	0.0000	0.0000	0.0000
L24	66.83-66.33	0.0000	0.0000	0.0000	0.0000
L25	66.33-66.08	0.0000	0.0000	0.0000	0.0000
L26	66.08-57.50	0.0000	0.0000	0.0000	0.0000
L27	57.50-56.75	0.0000	0.0000	0.0000	0.0000
L28	56.75-51.75	0.0000	0.0000	0.0000	0.0000
L29	51.75-46.75	0.0000	0.0000	0.0000	0.0000
L30	46.75-41.75	0.0000	0.0000	0.0000	0.0000
L31	41.75-39.70	0.0000	0.0000	0.0000	0.0000
L32	39.70-39.50	0.0000	0.0000	0.0000	0.0000
L33	39.50-34.50	0.1049	0.0606	0.0883	0.0510
L34	34.50-31.75	0.5014	0.2895	0.4257	0.2458
L35	31.75-31.50	0.5041	0.2911	0.4281	0.2472
L36	31.50-26.50	0.5086	0.2936	0.4321	0.2495
L37	26.50-21.50	0.5171	0.2985	0.4398	0.2539
L38	21.50-16.50	0.5255	0.3034	0.4477	0.2585
L39	16.50-9.80	0.5351	0.3090	0.4570	0.2638
L40	9.80-8.80	0.5349	0.3088	0.4570	0.2638
L41	8.80-8.25	0.5362	0.3096	0.4594	0.2652
L42	8.25-8.00	0.5370	0.3100	0.4602	0.2657
L43	8.00-4.75	0.9677	0.5587	0.8778	0.5068
L44	4.75-4.50	2.5458	1.4698	2.3993	1.3853
L45	4.50-4.25	2.5476	1.4709	2.4007	1.3860
L46	4.25-4.00	2.5488	1.4715	2.4013	1.3864
L47	4.00-3.50	2.5515	1.4731	2.4033	1.3875
L48	3.50-3.25	2.5561	1.4757	2.4071	1.3897
L49	3.25-2.50	2.5597	1.4778	2.4095	1.3911
L50	2.50-2.25	2.5623	1.4793	2.4108	1.3919
L51	2.25-0.00	2.3470	1.3550	2.1815	1.2595

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
L6	29	CCI-AFP-060100	129.00 - 130.75	1.0000	1.0000
L6	30	CCI-AFP-060100	129.00 - 130.75	1.0000	1.0000
L6	31	CCI-AFP-060100	129.00 - 130.75	1.0000	1.0000
L7	29	CCI-AFP-060100	128.25 - 129.00	1.0000	1.0000
L7	30	CCI-AFP-060100	128.25 - 129.00	1.0000	1.0000
L7	31	CCI-AFP-060100	128.25 - 129.00	1.0000	1.0000
L8	29	CCI-AFP-060100	128.00 - 128.25	1.0000	1.0000
L8	30	CCI-AFP-060100	128.00 - 128.25	1.0000	1.0000
L8	31	CCI-AFP-060100	128.00 - 128.25	1.0000	1.0000
L9	29	CCI-AFP-060100	123.00 - 128.00	1.0000	1.0000
L9	30	CCI-AFP-060100	123.00 - 128.00	1.0000	1.0000
L9	31	CCI-AFP-060100	123.00 - 128.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L10	29	CCI-AFP-060100	128.00 118.00 - 123.00	1.0000	1.0000
L10	30	CCI-AFP-060100	118.00 - 123.00	1.0000	1.0000
L10	31	CCI-AFP-060100	118.00 - 123.00	1.0000	1.0000
L11	29	CCI-AFP-060100	113.00 - 118.00	1.0000	1.0000
L11	30	CCI-AFP-060100	113.00 - 118.00	1.0000	1.0000
L11	31	CCI-AFP-060100	113.00 - 118.00	1.0000	1.0000
L12	29	CCI-AFP-060100	108.00 - 113.00	1.0000	1.0000
L12	30	CCI-AFP-060100	108.00 - 113.00	1.0000	1.0000
L12	31	CCI-AFP-060100	108.00 - 113.00	1.0000	1.0000
L13	29	CCI-AFP-060100	103.00 - 108.00	1.0000	1.0000
L13	30	CCI-AFP-060100	103.00 - 108.00	1.0000	1.0000
L13	31	CCI-AFP-060100	103.00 - 108.00	1.0000	1.0000
L14	26	CFP-085125	98.00 - 100.66	1.0000	1.0000
L14	27	CFP-085125	98.00 - 100.66	1.0000	1.0000
L14	28	CFP-085125	98.00 - 100.66	1.0000	1.0000
L14	29	CCI-AFP-060100	100.66 - 103.00	1.0000	1.0000
L14	30	CCI-AFP-060100	100.66 - 103.00	1.0000	1.0000
L14	31	CCI-AFP-060100	100.66 - 103.00	1.0000	1.0000
L15	26	CFP-085125	93.00 - 98.00	1.0000	1.0000
L15	27	CFP-085125	93.00 - 98.00	1.0000	1.0000
L15	28	CFP-085125	93.00 - 98.00	1.0000	1.0000
L16	26	CFP-085125	92.00 - 93.00	1.0000	1.0000
L16	27	CFP-085125	92.00 - 93.00	1.0000	1.0000
L16	28	CFP-085125	92.00 - 93.00	1.0000	1.0000
L17	26	CFP-085125	87.00 - 92.00	1.0000	1.0000
L17	27	CFP-085125	87.00 - 92.00	1.0000	1.0000
L17	28	CFP-085125	87.00 - 92.00	1.0000	1.0000
L18	26	CFP-085125	82.00 - 87.00	1.0000	1.0000
L18	27	CFP-085125	82.00 - 87.00	1.0000	1.0000
L18	28	CFP-085125	82.00 - 87.00	1.0000	1.0000
L19	26	CFP-085125	77.50 - 82.00	1.0000	1.0000
L19	27	CFP-085125	77.50 - 82.00	1.0000	1.0000
L19	28	CFP-085125	77.50 - 82.00	1.0000	1.0000
L20	26	CFP-085125	72.50 - 77.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L20	27	CFP-085125	72.50 - 77.50	1.0000	1.0000
L20	28	CFP-085125	72.50 - 77.50	1.0000	1.0000
L21	20	CCI-AFP-065125	67.50 - 70.58	1.0000	1.0000
L21	21	CCI-AFP-065125	67.50 - 70.58	1.0000	1.0000
L21	22	CCI-AFP-065125	67.50 - 70.58	1.0000	1.0000
L21	23	CCI-AFP-085125	67.50 - 70.58	1.0000	1.0000
L21	24	CCI-AFP-085125	67.50 - 70.58	1.0000	1.0000
L21	25	CCI-AFP-085125	67.50 - 70.58	1.0000	1.0000
L21	26	CFP-085125	70.58 - 72.50	1.0000	1.0000
L21	27	CFP-085125	70.58 - 72.50	1.0000	1.0000
L21	28	CFP-085125	70.58 - 72.50	1.0000	1.0000
L22	20	CCI-AFP-065125	67.08 - 67.50	1.0000	1.0000
L22	21	CCI-AFP-065125	67.08 - 67.50	1.0000	1.0000
L22	22	CCI-AFP-065125	67.08 - 67.50	1.0000	1.0000
L22	23	CCI-AFP-085125	67.08 - 67.50	1.0000	1.0000
L22	24	CCI-AFP-085125	67.08 - 67.50	1.0000	1.0000
L22	25	CCI-AFP-085125	67.08 - 67.50	1.0000	1.0000
L23	20	CCI-AFP-065125	66.83 - 67.08	1.0000	1.0000
L23	21	CCI-AFP-065125	66.83 - 67.08	1.0000	1.0000
L23	22	CCI-AFP-065125	66.83 - 67.08	1.0000	1.0000
L23	23	CCI-AFP-085125	66.83 - 67.08	1.0000	1.0000
L23	24	CCI-AFP-085125	66.83 - 67.08	1.0000	1.0000
L23	25	CCI-AFP-085125	66.83 - 67.08	1.0000	1.0000
L24	20	CCI-AFP-065125	66.33 - 66.83	1.0000	1.0000
L24	21	CCI-AFP-065125	66.33 - 66.83	1.0000	1.0000
L24	22	CCI-AFP-065125	66.33 - 66.83	1.0000	1.0000
L24	23	CCI-AFP-085125	66.33 - 66.83	1.0000	1.0000
L24	24	CCI-AFP-085125	66.33 - 66.83	1.0000	1.0000
L24	25	CCI-AFP-085125	66.33 - 66.83	1.0000	1.0000
L25	20	CCI-AFP-065125	66.08 - 66.33	1.0000	1.0000
L25	21	CCI-AFP-065125	66.08 - 66.33	1.0000	1.0000
L25	22	CCI-AFP-065125	66.08 - 66.33	1.0000	1.0000
L25	23	CCI-AFP-085125	66.08 - 66.33	1.0000	1.0000
L25	24	CCI-AFP-085125	66.08 - 66.33	1.0000	1.0000
L25	25	CCI-AFP-085125	66.08 - 66.33	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L26	20	CCI-AFP-065125	66.33 57.50 -	1.0000	1.0000
L26	21	CCI-AFP-065125	66.08 57.50 -	1.0000	1.0000
L26	22	CCI-AFP-065125	66.08 57.50 -	1.0000	1.0000
L26	23	CCI-AFP-085125	66.08 57.50 -	1.0000	1.0000
L26	24	CCI-AFP-085125	66.08 57.50 -	1.0000	1.0000
L26	25	CCI-AFP-085125	66.08 57.50 -	1.0000	1.0000
L27	20	CCI-AFP-065125	56.75 - 57.50	1.0000	1.0000
L27	21	CCI-AFP-065125	56.75 - 57.50	1.0000	1.0000
L27	22	CCI-AFP-065125	56.75 - 57.50	1.0000	1.0000
L27	23	CCI-AFP-085125	56.75 - 57.50	1.0000	1.0000
L27	24	CCI-AFP-085125	56.75 - 57.50	1.0000	1.0000
L27	25	CCI-AFP-085125	56.75 - 57.50	1.0000	1.0000
L28	20	CCI-AFP-065125	51.75 - 56.75	1.0000	1.0000
L28	21	CCI-AFP-065125	51.75 - 56.75	1.0000	1.0000
L28	22	CCI-AFP-065125	51.75 - 56.75	1.0000	1.0000
L28	23	CCI-AFP-085125	51.75 - 56.75	1.0000	1.0000
L28	24	CCI-AFP-085125	51.75 - 56.75	1.0000	1.0000
L28	25	CCI-AFP-085125	51.75 - 56.75	1.0000	1.0000
L29	20	CCI-AFP-065125	46.75 - 51.75	1.0000	1.0000
L29	21	CCI-AFP-065125	46.75 - 51.75	1.0000	1.0000
L29	22	CCI-AFP-065125	46.75 - 51.75	1.0000	1.0000
L29	23	CCI-AFP-085125	46.75 - 51.75	1.0000	1.0000
L29	24	CCI-AFP-085125	46.75 - 51.75	1.0000	1.0000
L29	25	CCI-AFP-085125	46.75 - 51.75	1.0000	1.0000
L30	20	CCI-AFP-065125	41.75 - 46.75	1.0000	1.0000
L30	21	CCI-AFP-065125	41.75 - 46.75	1.0000	1.0000
L30	22	CCI-AFP-065125	41.75 - 46.75	1.0000	1.0000
L30	23	CCI-AFP-085125	41.75 - 46.75	1.0000	1.0000
L30	24	CCI-AFP-085125	41.75 - 46.75	1.0000	1.0000
L30	25	CCI-AFP-085125	41.75 - 46.75	1.0000	1.0000
L31	20	CCI-AFP-065125	39.70 - 41.75	1.0000	1.0000
L31	21	CCI-AFP-065125	39.70 - 41.75	1.0000	1.0000
L31	22	CCI-AFP-065125	39.70 - 41.75	1.0000	1.0000
L31	23	CCI-AFP-085125	39.70 - 41.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L31	24	CCI-AFP-085125	39.70 - 41.75	1.0000	1.0000
L31	25	CCI-AFP-085125	39.70 - 41.75	1.0000	1.0000
L32	20	CCI-AFP-065125	39.50 - 39.70	1.0000	1.0000
L32	21	CCI-AFP-065125	39.50 - 39.70	1.0000	1.0000
L32	22	CCI-AFP-065125	39.50 - 39.70	1.0000	1.0000
L32	23	CCI-AFP-085125	39.50 - 39.70	1.0000	1.0000
L32	24	CCI-AFP-085125	39.50 - 39.70	1.0000	1.0000
L32	25	CCI-AFP-085125	39.50 - 39.70	1.0000	1.0000
L33	14	CCI-SFP-085125	34.50 - 35.50	1.0000	1.0000
L33	15	CCI-SFP-085125	34.50 - 35.50	1.0000	1.0000
L33	16	CWFP-085125	34.50 - 35.50	1.0000	1.0000
L33	17	CWFP-085125	34.50 - 35.50	1.0000	1.0000
L33	18	CWFP-085125	34.50 - 35.50	1.0000	1.0000
L33	19	CCI-SFP-065125	34.50 - 35.50	1.0000	1.0000
L33	20	CCI-AFP-065125	35.50 - 39.50	1.0000	1.0000
L33	21	CCI-AFP-065125	35.50 - 39.50	1.0000	1.0000
L33	22	CCI-AFP-065125	35.50 - 39.50	1.0000	1.0000
L33	23	CCI-AFP-085125	35.50 - 39.50	1.0000	1.0000
L33	24	CCI-AFP-085125	35.50 - 39.50	1.0000	1.0000
L33	25	CCI-AFP-085125	35.50 - 39.50	1.0000	1.0000
L34	14	CCI-SFP-085125	31.75 - 34.50	1.0000	1.0000
L34	15	CCI-SFP-085125	31.75 - 34.50	1.0000	1.0000
L34	16	CWFP-085125	31.75 - 34.50	1.0000	1.0000
L34	17	CWFP-085125	31.75 - 34.50	1.0000	1.0000
L34	18	CWFP-085125	31.75 - 34.50	1.0000	1.0000
L34	19	CCI-SFP-065125	31.75 - 34.50	1.0000	1.0000
L35	14	CCI-SFP-085125	31.50 - 31.75	1.0000	1.0000
L35	15	CCI-SFP-085125	31.50 - 31.75	1.0000	1.0000
L35	16	CWFP-085125	31.50 - 31.75	1.0000	1.0000
L35	17	CWFP-085125	31.50 - 31.75	1.0000	1.0000
L35	18	CWFP-085125	31.50 - 31.75	1.0000	1.0000
L35	19	CCI-SFP-065125	31.50 - 31.75	1.0000	1.0000
L36	14	CCI-SFP-085125	26.50 - 31.50	1.0000	1.0000
L36	15	CCI-SFP-085125	26.50 - 31.50	1.0000	1.0000
L36	16	CWFP-085125	26.50 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L36	17	CWFP-085125	31.50 26.50 -	1.0000	1.0000
L36	18	CWFP-085125	31.50 26.50 -	1.0000	1.0000
L36	19	CCI-SFP-065125	31.50 26.50 -	1.0000	1.0000
L37	14	CCI-SFP-085125	31.50 21.50 -	1.0000	1.0000
L37	15	CCI-SFP-085125	26.50 21.50 -	1.0000	1.0000
L37	16	CWFP-085125	26.50 21.50 -	1.0000	1.0000
L37	17	CWFP-085125	26.50 21.50 -	1.0000	1.0000
L37	18	CWFP-085125	26.50 21.50 -	1.0000	1.0000
L37	19	CCI-SFP-065125	26.50 21.50 -	1.0000	1.0000
L38	14	CCI-SFP-085125	16.50 - 21.50	1.0000	1.0000
L38	15	CCI-SFP-085125	16.50 - 21.50	1.0000	1.0000
L38	16	CWFP-085125	16.50 - 21.50	1.0000	1.0000
L38	17	CWFP-085125	16.50 - 21.50	1.0000	1.0000
L38	18	CWFP-085125	16.50 - 21.50	1.0000	1.0000
L38	19	CCI-SFP-065125	16.50 - 21.50	1.0000	1.0000
L39	14	CCI-SFP-085125	9.80 - 16.50	1.0000	1.0000
L39	15	CCI-SFP-085125	9.80 - 16.50	1.0000	1.0000
L39	16	CWFP-085125	9.80 - 16.50	1.0000	1.0000
L39	17	CWFP-085125	9.80 - 16.50	1.0000	1.0000
L39	18	CWFP-085125	9.80 - 16.50	1.0000	1.0000
L39	19	CCI-SFP-065125	9.80 - 16.50	1.0000	1.0000
L40	14	CCI-SFP-085125	8.80 - 9.80	1.0000	1.0000
L40	15	CCI-SFP-085125	8.80 - 9.80	1.0000	1.0000
L40	16	CWFP-085125	8.80 - 9.80	1.0000	1.0000
L40	17	CWFP-085125	8.80 - 9.80	1.0000	1.0000
L40	18	CWFP-085125	8.80 - 9.80	1.0000	1.0000
L40	19	CCI-SFP-065125	8.80 - 9.80	1.0000	1.0000
L41	14	CCI-SFP-085125	8.25 - 8.80	1.0000	1.0000
L41	15	CCI-SFP-085125	8.25 - 8.80	1.0000	1.0000
L41	16	CWFP-085125	8.25 - 8.80	1.0000	1.0000
L41	17	CWFP-085125	8.25 - 8.80	1.0000	1.0000
L41	18	CWFP-085125	8.25 - 8.80	1.0000	1.0000
L41	19	CCI-SFP-065125	8.25 - 8.80	1.0000	1.0000
L42	14	CCI-SFP-085125	8.00 - 8.25	1.0000	1.0000
L42	15	CCI-SFP-085125	8.00 - 8.25	1.0000	1.0000
L42	16	CWFP-085125	8.00 - 8.25	1.0000	1.0000
L42	17	CWFP-085125	8.00 - 8.25	1.0000	1.0000
L42	18	CWFP-085125	8.00 - 8.25	1.0000	1.0000
L42	19	CCI-SFP-065125	8.00 - 8.25	1.0000	1.0000
L43	14	CCI-SFP-085125	4.75 - 8.00	1.0000	1.0000
L43	15	CCI-SFP-085125	4.75 - 8.00	1.0000	1.0000
L43	16	CWFP-085125	4.75 - 8.00	1.0000	1.0000
L43	17	CWFP-085125	4.75 - 8.00	1.0000	1.0000
L43	18	CWFP-085125	4.75 - 8.00	1.0000	1.0000
L43	19	CCI-SFP-065125	5.50 - 8.00	1.0000	1.0000
L44	14	CCI-SFP-085125	4.50 - 4.75	1.0000	1.0000
L44	15	CCI-SFP-085125	4.50 - 4.75	1.0000	1.0000
L44	16	CWFP-085125	4.50 - 4.75	1.0000	1.0000
L44	17	CWFP-085125	4.50 - 4.75	1.0000	1.0000
L44	18	CWFP-085125	4.50 - 4.75	1.0000	1.0000
L45	14	CCI-SFP-085125	4.25 - 4.50	1.0000	1.0000
L45	15	CCI-SFP-085125	4.25 - 4.50	1.0000	1.0000
L45	16	CWFP-085125	4.25 - 4.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L45	17	CWFP-085125	4.25 - 4.50	1.0000	1.0000
L45	18	CWFP-085125	4.25 - 4.50	1.0000	1.0000
L46	14	CCI-SFP-085125	4.00 - 4.25	1.0000	1.0000
L46	15	CCI-SFP-085125	4.00 - 4.25	1.0000	1.0000
L46	16	CWFP-085125	4.00 - 4.25	1.0000	1.0000
L46	17	CWFP-085125	4.00 - 4.25	1.0000	1.0000
L46	18	CWFP-085125	4.00 - 4.25	1.0000	1.0000
L47	14	CCI-SFP-085125	3.50 - 4.00	1.0000	1.0000
L47	15	CCI-SFP-085125	3.50 - 4.00	1.0000	1.0000
L47	16	CWFP-085125	3.50 - 4.00	1.0000	1.0000
L47	17	CWFP-085125	3.50 - 4.00	1.0000	1.0000
L47	18	CWFP-085125	3.50 - 4.00	1.0000	1.0000
L48	14	CCI-SFP-085125	3.25 - 3.50	1.0000	1.0000
L48	15	CCI-SFP-085125	3.25 - 3.50	1.0000	1.0000
L48	16	CWFP-085125	3.25 - 3.50	1.0000	1.0000
L48	17	CWFP-085125	3.25 - 3.50	1.0000	1.0000
L48	18	CWFP-085125	3.25 - 3.50	1.0000	1.0000
L49	14	CCI-SFP-085125	2.50 - 3.25	1.0000	1.0000
L49	15	CCI-SFP-085125	2.50 - 3.25	1.0000	1.0000
L49	16	CWFP-085125	2.50 - 3.25	1.0000	1.0000
L49	17	CWFP-085125	2.50 - 3.25	1.0000	1.0000
L49	18	CWFP-085125	2.50 - 3.25	1.0000	1.0000
L50	14	CCI-SFP-085125	2.25 - 2.50	1.0000	1.0000
L50	15	CCI-SFP-085125	2.25 - 2.50	1.0000	1.0000
L50	16	CWFP-085125	2.25 - 2.50	1.0000	1.0000
L50	17	CWFP-085125	2.25 - 2.50	1.0000	1.0000
L50	18	CWFP-085125	2.25 - 2.50	1.0000	1.0000
L51	14	CCI-SFP-085125	0.50 - 2.25	1.0000	1.0000
L51	15	CCI-SFP-085125	0.50 - 2.25	1.0000	1.0000
L51	16	CWFP-085125	0.50 - 2.25	1.0000	1.0000
L51	17	CWFP-085125	0.50 - 2.25	1.0000	1.0000
L51	18	CWFP-085125	0.50 - 2.25	1.0000	1.0000

Effective Width of Flat Linear Attachments / Feed Lines

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L6	29	CCI-AFP-060100	129.00 - 130.75	Auto	0.1886
L6	30	CCI-AFP-060100	129.00 - 130.75	Auto	0.1886
L6	31	CCI-AFP-060100	129.00 - 130.75	Auto	0.1886
L7	29	CCI-AFP-060100	128.25 - 129.00	Auto	0.1781
L7	30	CCI-AFP-060100	128.25 - 129.00	Auto	0.1781
L7	31	CCI-AFP-060100	128.25 - 129.00	Auto	0.1781
L8	29	CCI-AFP-060100	128.00 - 128.25	Auto	0.3190
L8	30	CCI-AFP-060100	128.00 - 128.25	Auto	0.3190
L8	31	CCI-AFP-060100	128.00 - 128.25	Auto	0.3190
L9	29	CCI-AFP-060100	123.00 - 128.00	Auto	0.2913
L9	30	CCI-AFP-060100	123.00 - 128.00	Auto	0.2913

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L9	31	CCI-AFP-060100	123.00 - 128.00	Auto	0.2913
L10	29	CCI-AFP-060100	118.00 - 123.00	Auto	0.2436
L10	30	CCI-AFP-060100	118.00 - 123.00	Auto	0.2436
L10	31	CCI-AFP-060100	118.00 - 123.00	Auto	0.2436
L11	29	CCI-AFP-060100	113.00 - 118.00	Auto	0.1903
L11	30	CCI-AFP-060100	113.00 - 118.00	Auto	0.1903
L11	31	CCI-AFP-060100	113.00 - 118.00	Auto	0.1903
L12	29	CCI-AFP-060100	108.00 - 113.00	Auto	0.1425
L12	30	CCI-AFP-060100	108.00 - 113.00	Auto	0.1425
L12	31	CCI-AFP-060100	108.00 - 113.00	Auto	0.1425
L13	29	CCI-AFP-060100	103.00 - 108.00	Auto	0.0948
L13	30	CCI-AFP-060100	103.00 - 108.00	Auto	0.0948
L13	31	CCI-AFP-060100	103.00 - 108.00	Auto	0.0948
L14	26	CFP-085125	98.00 - 100.66	Auto	0.3224
L14	27	CFP-085125	98.00 - 100.66	Auto	0.3224
L14	28	CFP-085125	98.00 - 100.66	Auto	0.3224
L14	29	CCI-AFP-060100	100.66 - 103.00	Auto	0.0611
L14	30	CCI-AFP-060100	100.66 - 103.00	Auto	0.0611
L14	31	CCI-AFP-060100	100.66 - 103.00	Auto	0.0611
L15	26	CFP-085125	93.00 - 98.00	Auto	0.2976
L15	27	CFP-085125	93.00 - 98.00	Auto	0.2976
L15	28	CFP-085125	93.00 - 98.00	Auto	0.2976
L16	26	CFP-085125	92.00 - 93.00	Auto	0.3625
L16	27	CFP-085125	92.00 - 93.00	Auto	0.3625
L16	28	CFP-085125	92.00 - 93.00	Auto	0.3625
L17	26	CFP-085125	87.00 - 92.00	Auto	0.3368
L17	27	CFP-085125	87.00 - 92.00	Auto	0.3368
L17	28	CFP-085125	87.00 - 92.00	Auto	0.3368
L18	26	CFP-085125	82.00 - 87.00	Auto	0.2991
L18	27	CFP-085125	82.00 - 87.00	Auto	0.2991
L18	28	CFP-085125	82.00 - 87.00	Auto	0.2991
L19	26	CFP-085125	77.50 - 82.00	Auto	0.2669
L19	27	CFP-085125	77.50 - 82.00	Auto	0.2669
L19	28	CFP-085125	77.50 - 82.00	Auto	0.2669

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L20	26	CFP-085125	72.50 - 77.50	Auto	0.2544
L20	27	CFP-085125	72.50 - 77.50	Auto	0.2544
L20	28	CFP-085125	72.50 - 77.50	Auto	0.2544
L21	20	CCI-AFP-065125	67.50 - 70.58	Auto	0.0000
L21	21	CCI-AFP-065125	67.50 - 70.58	Auto	0.0000
L21	22	CCI-AFP-065125	67.50 - 70.58	Auto	0.0000
L21	23	CCI-AFP-085125	67.50 - 70.58	Auto	0.2190
L21	24	CCI-AFP-085125	67.50 - 70.58	Auto	0.2190
L21	25	CCI-AFP-085125	67.50 - 70.58	Auto	0.2190
L21	26	CFP-085125	70.58 - 72.50	Auto	0.2338
L21	27	CFP-085125	70.58 - 72.50	Auto	0.2338
L21	28	CFP-085125	70.58 - 72.50	Auto	0.2338
L22	20	CCI-AFP-065125	67.08 - 67.50	Auto	0.0000
L22	21	CCI-AFP-065125	67.08 - 67.50	Auto	0.0000
L22	22	CCI-AFP-065125	67.08 - 67.50	Auto	0.0000
L22	23	CCI-AFP-085125	67.08 - 67.50	Auto	0.2046
L22	24	CCI-AFP-085125	67.08 - 67.50	Auto	0.2046
L22	25	CCI-AFP-085125	67.08 - 67.50	Auto	0.2046
L23	20	CCI-AFP-065125	66.83 - 67.08	Auto	0.0810
L23	21	CCI-AFP-065125	66.83 - 67.08	Auto	0.0810
L23	22	CCI-AFP-065125	66.83 - 67.08	Auto	0.0810
L23	23	CCI-AFP-085125	66.83 - 67.08	Auto	0.2972
L23	24	CCI-AFP-085125	66.83 - 67.08	Auto	0.2972
L23	25	CCI-AFP-085125	66.83 - 67.08	Auto	0.2972
L24	20	CCI-AFP-065125	66.33 - 66.83	Auto	0.0729
L24	21	CCI-AFP-065125	66.33 - 66.83	Auto	0.0729
L24	22	CCI-AFP-065125	66.33 - 66.83	Auto	0.0729
L24	23	CCI-AFP-085125	66.33 - 66.83	Auto	0.2910
L24	24	CCI-AFP-085125	66.33 - 66.83	Auto	0.2910
L24	25	CCI-AFP-085125	66.33 - 66.83	Auto	0.2910
L25	20	CCI-AFP-065125	66.08 - 66.33	Auto	0.0700
L25	21	CCI-AFP-065125	66.08 - 66.33	Auto	0.0700
L25	22	CCI-AFP-065125	66.08 - 66.33	Auto	0.0700
L25	23	CCI-AFP-085125	66.08 - 66.33	Auto	0.2888

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L25	24	CCI-AFP-085125	66.08 - 66.33	Auto	0.2888
L25	25	CCI-AFP-085125	66.08 - 66.33	Auto	0.2888
L26	20	CCI-AFP-065125	57.50 - 66.08	Auto	0.0305
L26	21	CCI-AFP-065125	57.50 - 66.08	Auto	0.0305
L26	22	CCI-AFP-065125	57.50 - 66.08	Auto	0.0305
L26	23	CCI-AFP-085125	57.50 - 66.08	Auto	0.2586
L26	24	CCI-AFP-085125	57.50 - 66.08	Auto	0.2586
L26	25	CCI-AFP-085125	57.50 - 66.08	Auto	0.2586
L27	20	CCI-AFP-065125	56.75 - 57.50	Auto	0.0148
L27	21	CCI-AFP-065125	56.75 - 57.50	Auto	0.0148
L27	22	CCI-AFP-065125	56.75 - 57.50	Auto	0.0148
L27	23	CCI-AFP-085125	56.75 - 57.50	Auto	0.2466
L27	24	CCI-AFP-085125	56.75 - 57.50	Auto	0.2466
L27	25	CCI-AFP-085125	56.75 - 57.50	Auto	0.2466
L28	20	CCI-AFP-065125	51.75 - 56.75	Auto	0.0000
L28	21	CCI-AFP-065125	51.75 - 56.75	Auto	0.0000
L28	22	CCI-AFP-065125	51.75 - 56.75	Auto	0.0000
L28	23	CCI-AFP-085125	51.75 - 56.75	Auto	0.2216
L28	24	CCI-AFP-085125	51.75 - 56.75	Auto	0.2216
L28	25	CCI-AFP-085125	51.75 - 56.75	Auto	0.2216
L29	20	CCI-AFP-065125	46.75 - 51.75	Auto	0.0000
L29	21	CCI-AFP-065125	46.75 - 51.75	Auto	0.0000
L29	22	CCI-AFP-065125	46.75 - 51.75	Auto	0.0000
L29	23	CCI-AFP-085125	46.75 - 51.75	Auto	0.1879
L29	24	CCI-AFP-085125	46.75 - 51.75	Auto	0.1879
L29	25	CCI-AFP-085125	46.75 - 51.75	Auto	0.1879
L30	20	CCI-AFP-065125	41.75 - 46.75	Auto	0.0000
L30	21	CCI-AFP-065125	41.75 - 46.75	Auto	0.0000
L30	22	CCI-AFP-065125	41.75 - 46.75	Auto	0.0000
L30	23	CCI-AFP-085125	41.75 - 46.75	Auto	0.1542
L30	24	CCI-AFP-085125	41.75 - 46.75	Auto	0.1542
L30	25	CCI-AFP-085125	41.75 - 46.75	Auto	0.1542
L31	20	CCI-AFP-065125	39.70 - 41.75	Auto	0.0000
L31	21	CCI-AFP-065125	39.70 - 41.75	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L31	22	CCI-AFP-065125	39.70 - 41.75	Auto	0.0000
L31	23	CCI-AFP-085125	39.70 - 41.75	Auto	0.1372
L31	24	CCI-AFP-085125	39.70 - 41.75	Auto	0.1372
L31	25	CCI-AFP-085125	39.70 - 41.75	Auto	0.1372
L32	20	CCI-AFP-065125	39.50 - 39.70	Auto	0.0000
L32	21	CCI-AFP-065125	39.50 - 39.70	Auto	0.0000
L32	22	CCI-AFP-065125	39.50 - 39.70	Auto	0.0000
L32	23	CCI-AFP-085125	39.50 - 39.70	Auto	0.1266
L32	24	CCI-AFP-085125	39.50 - 39.70	Auto	0.1266
L32	25	CCI-AFP-085125	39.50 - 39.70	Auto	0.1266
L33	14	CCI-SFP-085125	34.50 - 35.50	Auto	0.0953
L33	15	CCI-SFP-085125	34.50 - 35.50	Auto	0.0953
L33	16	CWFP-085125	34.50 - 35.50	Auto	0.0953
L33	17	CWFP-085125	34.50 - 35.50	Auto	0.0953
L33	18	CWFP-085125	34.50 - 35.50	Auto	0.0953
L33	19	CCI-SFP-065125	34.50 - 35.50	Auto	0.0000
L33	20	CCI-AFP-065125	35.50 - 39.50	Auto	0.0000
L33	21	CCI-AFP-065125	35.50 - 39.50	Auto	0.0000
L33	22	CCI-AFP-065125	35.50 - 39.50	Auto	0.0000
L33	23	CCI-AFP-085125	35.50 - 39.50	Auto	0.1101
L33	24	CCI-AFP-085125	35.50 - 39.50	Auto	0.1101
L33	25	CCI-AFP-085125	35.50 - 39.50	Auto	0.1101
L34	14	CCI-SFP-085125	31.75 - 34.50	Auto	0.0802
L34	15	CCI-SFP-085125	31.75 - 34.50	Auto	0.0802
L34	16	CWFP-085125	31.75 - 34.50	Auto	0.0802
L34	17	CWFP-085125	31.75 - 34.50	Auto	0.0802
L34	18	CWFP-085125	31.75 - 34.50	Auto	0.0802
L34	19	CCI-SFP-065125	31.75 - 34.50	Auto	0.0000
L35	14	CCI-SFP-085125	31.50 - 31.75	Auto	0.0988
L35	15	CCI-SFP-085125	31.50 - 31.75	Auto	0.0988
L35	16	CWFP-085125	31.50 - 31.75	Auto	0.0988
L35	17	CWFP-085125	31.50 - 31.75	Auto	0.0988
L35	18	CWFP-085125	31.50 - 31.75	Auto	0.0988
L35	19	CCI-SFP-065125	31.50 - 31.75	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L36	14	CCI-SFP-085125	26.50 - 31.50	Auto	0.0753
L36	15	CCI-SFP-085125	26.50 - 31.50	Auto	0.0753
L36	16	CWFP-085125	26.50 - 31.50	Auto	0.0753
L36	17	CWFP-085125	26.50 - 31.50	Auto	0.0753
L36	18	CWFP-085125	26.50 - 31.50	Auto	0.0753
L36	19	CCI-SFP-065125	26.50 - 31.50	Auto	0.0000
L37	14	CCI-SFP-085125	21.50 - 26.50	Auto	0.0377
L37	15	CCI-SFP-085125	21.50 - 26.50	Auto	0.0377
L37	16	CWFP-085125	21.50 - 26.50	Auto	0.0377
L37	17	CWFP-085125	21.50 - 26.50	Auto	0.0377
L37	18	CWFP-085125	21.50 - 26.50	Auto	0.0377
L37	19	CCI-SFP-065125	21.50 - 26.50	Auto	0.0000
L38	14	CCI-SFP-085125	16.50 - 21.50	Auto	0.0087
L38	15	CCI-SFP-085125	16.50 - 21.50	Auto	0.0087
L38	16	CWFP-085125	16.50 - 21.50	Auto	0.0087
L38	17	CWFP-085125	16.50 - 21.50	Auto	0.0087
L38	18	CWFP-085125	16.50 - 21.50	Auto	0.0087
L38	19	CCI-SFP-065125	16.50 - 21.50	Auto	0.0000
L39	14	CCI-SFP-085125	9.80 - 16.50	Auto	0.0000
L39	15	CCI-SFP-085125	9.80 - 16.50	Auto	0.0000
L39	16	CWFP-085125	9.80 - 16.50	Auto	0.0000
L39	17	CWFP-085125	9.80 - 16.50	Auto	0.0000
L39	18	CWFP-085125	9.80 - 16.50	Auto	0.0000
L39	19	CCI-SFP-065125	9.80 - 16.50	Auto	0.0000
L40	14	CCI-SFP-085125	8.80 - 9.80	Auto	0.0000
L40	15	CCI-SFP-085125	8.80 - 9.80	Auto	0.0000
L40	16	CWFP-085125	8.80 - 9.80	Auto	0.0000
L40	17	CWFP-085125	8.80 - 9.80	Auto	0.0000
L40	18	CWFP-085125	8.80 - 9.80	Auto	0.0000
L40	19	CCI-SFP-065125	8.80 - 9.80	Auto	0.0000
L41	14	CCI-SFP-085125	8.25 - 8.80	Auto	0.0000
L41	15	CCI-SFP-085125	8.25 - 8.80	Auto	0.0000
L41	16	CWFP-085125	8.25 - 8.80	Auto	0.0000
L41	17	CWFP-085125	8.25 - 8.80	Auto	0.0000
L41	18	CWFP-085125	8.25 - 8.80	Auto	0.0000
L41	19	CCI-SFP-065125	8.25 - 8.80	Auto	0.0000
L42	14	CCI-SFP-085125	8.00 - 8.25	Auto	0.0000
L42	15	CCI-SFP-085125	8.00 - 8.25	Auto	0.0000
L42	16	CWFP-085125	8.00 - 8.25	Auto	0.0000
L42	17	CWFP-085125	8.00 - 8.25	Auto	0.0000
L42	18	CWFP-085125	8.00 - 8.25	Auto	0.0000
L42	19	CCI-SFP-065125	8.00 - 8.25	Auto	0.0000
L43	14	CCI-SFP-085125	4.75 - 8.00	Auto	0.0000
L43	15	CCI-SFP-085125	4.75 - 8.00	Auto	0.0000
L43	16	CWFP-085125	4.75 - 8.00	Auto	0.0000
L43	17	CWFP-085125	4.75 - 8.00	Auto	0.0000
L43	18	CWFP-085125	4.75 - 8.00	Auto	0.0000
L43	19	CCI-SFP-065125	5.50 - 8.00	Auto	0.0000
L44	14	CCI-SFP-085125	4.50 - 4.75	Auto	0.0722
L44	15	CCI-SFP-085125	4.50 - 4.75	Auto	0.0722

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L44	16	CWFP-085125	4.50 - 4.75	Auto	0.0722
L44	17	CWFP-085125	4.50 - 4.75	Auto	0.0722
L44	18	CWFP-085125	4.50 - 4.75	Auto	0.0722
L45	14	CCI-SFP-085125	4.25 - 4.50	Auto	0.0707
L45	15	CCI-SFP-085125	4.25 - 4.50	Auto	0.0707
L45	16	CWFP-085125	4.25 - 4.50	Auto	0.0707
L45	17	CWFP-085125	4.25 - 4.50	Auto	0.0707
L45	18	CWFP-085125	4.25 - 4.50	Auto	0.0707
L46	14	CCI-SFP-085125	4.00 - 4.25	Auto	0.0377
L46	15	CCI-SFP-085125	4.00 - 4.25	Auto	0.0377
L46	16	CWFP-085125	4.00 - 4.25	Auto	0.0377
L46	17	CWFP-085125	4.00 - 4.25	Auto	0.0377
L46	18	CWFP-085125	4.00 - 4.25	Auto	0.0377
L47	14	CCI-SFP-085125	3.50 - 4.00	Auto	0.0354
L47	15	CCI-SFP-085125	3.50 - 4.00	Auto	0.0354
L47	16	CWFP-085125	3.50 - 4.00	Auto	0.0354
L47	17	CWFP-085125	3.50 - 4.00	Auto	0.0354
L47	18	CWFP-085125	3.50 - 4.00	Auto	0.0354
L48	14	CCI-SFP-085125	3.25 - 3.50	Auto	0.1199
L48	15	CCI-SFP-085125	3.25 - 3.50	Auto	0.1199
L48	16	CWFP-085125	3.25 - 3.50	Auto	0.1199
L48	17	CWFP-085125	3.25 - 3.50	Auto	0.1199
L48	18	CWFP-085125	3.25 - 3.50	Auto	0.1199
L49	14	CCI-SFP-085125	2.50 - 3.25	Auto	0.1169
L49	15	CCI-SFP-085125	2.50 - 3.25	Auto	0.1169
L49	16	CWFP-085125	2.50 - 3.25	Auto	0.1169
L49	17	CWFP-085125	2.50 - 3.25	Auto	0.1169
L49	18	CWFP-085125	2.50 - 3.25	Auto	0.1169
L50	14	CCI-SFP-085125	2.25 - 2.50	Auto	0.0667
L50	15	CCI-SFP-085125	2.25 - 2.50	Auto	0.0667
L50	16	CWFP-085125	2.25 - 2.50	Auto	0.0667
L50	17	CWFP-085125	2.25 - 2.50	Auto	0.0667
L50	18	CWFP-085125	2.25 - 2.50	Auto	0.0667
L51	14	CCI-SFP-085125	0.50 - 2.25	Auto	0.0607
L51	15	CCI-SFP-085125	0.50 - 2.25	Auto	0.0607
L51	16	CWFP-085125	0.50 - 2.25	Auto	0.0607
L51	17	CWFP-085125	0.50 - 2.25	Auto	0.0607
L51	18	CWFP-085125	0.50 - 2.25	Auto	0.0607

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets:			Azimuth Adjustment	Placement
			Horz	Lateral	Vert		
			ft	ft	°	ft	
NNVV-65B-R4 w/ Mount Pipe	A	From Leg	4.00	0.00	0.00	0.0000	150.00
NNVV-65B-R4 w/ Mount Pipe	B	From Leg	4.00	0.00	0.00	0.0000	150.00
NNVV-65B-R4 w/ Mount Pipe	C	From Leg	4.00	0.00	0.00	0.0000	150.00
APXVTM14-ALU-I20 w/ Mount Pipe	A	From Leg	4.00	0.00	0.00	0.0000	150.00
APXVTM14-ALU-I20 w/ Mount Pipe	B	From Leg	4.00	0.00	0.00	0.0000	150.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
			0.00		
APXVTM14-ALU-I20 w/ Mount Pipe	C	From Leg	0.00 0.00 4.00	0.0000	150.00
			0.00		
TD-RRH8X20-25	A	From Leg	0.00 0.00 4.00	0.0000	150.00
			0.00		
TD-RRH8X20-25	B	From Leg	0.00 0.00 4.00	0.0000	150.00
			0.00		
TD-RRH8X20-25	C	From Leg	0.00 0.00 4.00	0.0000	150.00
			0.00		
PCS 1900MHZ 4X45W-65MHZ	A	From Leg	0.00 0.00 4.00	0.0000	150.00
			0.00		
PCS 1900MHZ 4X45W-65MHZ	B	From Leg	0.00 0.00 4.00	0.0000	150.00
			0.00		
PCS 1900MHZ 4X45W-65MHZ	C	From Leg	0.00 0.00 4.00	0.0000	150.00
			0.00		
(2) RRH2X50-800	A	From Leg	0.00 0.00 4.00	0.0000	150.00
			0.00		
(2) RRH2X50-800	B	From Leg	0.00 0.00 4.00	0.0000	150.00
			0.00		
(2) RRH2X50-800	C	From Leg	0.00 0.00 4.00	0.0000	150.00
			0.00		
T-Arm Mount [TA 702-3] ***	A	None		0.0000	150.00
APXVAARR24_43-U-NA20	A	From Leg	4.00 0.00 2.00	0.0000	141.00
			2.00		
APXVAARR24_43-U-NA20	B	From Leg	4.00 0.00 2.00	0.0000	141.00
			2.00		
APXVAARR24_43-U-NA20	C	From Face	4.00 0.00 2.00	0.0000	141.00
			2.00		
AIR 6419 B41_TMO	A	From Leg	4.00 0.00 2.00	0.0000	141.00
			2.00		
AIR 6419 B41_TMO	B	From Leg	4.00 0.00 2.00	0.0000	141.00
			2.00		
AIR 6419 B41_TMO	C	From Face	4.00 0.00 2.00	0.0000	141.00
			2.00		
RADIO 4460 B2/B25 B66_TMO	A	From Leg	4.00 0.00 2.00	0.0000	141.00
			2.00		
RADIO 4460 B2/B25 B66_TMO	B	From Leg	4.00 0.00 2.00	0.0000	141.00
			2.00		
RADIO 4460 B2/B25 B66_TMO	C	From Face	4.00 0.00 2.00	0.0000	141.00
			2.00		
RADIO 4449 B71/B85A	A	From Leg	4.00 0.00 0.00	0.0000	141.00
			0.00		
RADIO 4449 B71/B85A	B	From Leg	4.00 0.00 0.00	0.0000	141.00
			0.00		

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
			0.00		
			0.00		
RADIO 4449 B71/B85A	C	From Face	4.00	0.0000	141.00
			0.00		
			0.00		
Site Pro 1 F4P-12W 12' Fortress Quad Platform	C	None		0.0000	141.00
Site Pro1 F4P-HRK12	C	None		0.0000	141.00
(2) 10'x2.5" Mount Pipe	A	From Leg	4.00	0.0000	141.00
			0.00		
			0.00		
(2) 10'x2.5" Mount Pipe	B	From Leg	4.00	-30.0000	141.00
			0.00		
			0.00		
(2) 10'x2.5" Mount Pipe	C	From Leg	4.00	30.0000	141.00
			0.00		
			0.00		
(2) 10'x2.5" Mount Pipe	C	From Face	4.00	0.0000	141.00
			0.00		
			0.00		

MX08FRO665-21 w/ Mount Pipe	A	From Leg	4.00	0.0000	131.00
			0.00		
			0.00		
MX08FRO665-21 w/ Mount Pipe	B	From Leg	4.00	0.0000	131.00
			0.00		
			0.00		
MX08FRO665-21 w/ Mount Pipe	C	From Leg	4.00	0.0000	131.00
			0.00		
			0.00		
TA08025-B604	A	From Leg	4.00	0.0000	131.00
			0.00		
			0.00		
TA08025-B604	B	From Leg	4.00	0.0000	131.00
			0.00		
			0.00		
TA08025-B604	C	From Leg	4.00	0.0000	131.00
			0.00		
			0.00		
TA08025-B605	A	From Leg	4.00	0.0000	131.00
			0.00		
			0.00		
TA08025-B605	B	From Leg	4.00	0.0000	131.00
			0.00		
			0.00		
TA08025-B605	C	From Leg	4.00	0.0000	131.00
			0.00		
			0.00		
RDIDC-9181-PF-48	A	From Leg	4.00	0.0000	131.00
			0.00		
			0.00		
Commscope MC-PK8-DSH	C	None		0.0000	131.00
(2) 8'x2" Mount Pipe	A	From Leg	4.00	0.0000	131.00
			0.00		
			0.00		
(2) 8'x2" Mount Pipe	B	From Leg	4.00	0.0000	131.00
			0.00		
			0.00		
(2) 8'x2" Mount Pipe	C	From Leg	4.00	0.0000	131.00
			0.00		
			0.00		

Platform Mount [LP 1201-1]	B	None		0.0000	120.00
6'x2" Mount Pipe	B	From Leg	4.00	0.0000	120.00
			0.00		
			0.00		

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
(3) 6'x2" Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	120.00
(3) 6'x2" Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	120.00
(2) 980H120T4E-M w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	120.00

Top Bridge	A	From Face	0.00 0.00 3.00	0.0000	144.00
Top Bridge	B	From Face	0.00 0.00 3.00	0.0000	144.00
Top Bridge	C	From Face	0.00 0.00 3.00	0.0000	144.00
Top Bridge	A	From Leg	0.00 0.00 3.00	0.0000	144.00
Rod of Bridge	A	From Face	0.00 0.00 0.00	0.0000	144.00
Rod of Bridge	B	From Face	0.00 0.00 0.00	0.0000	144.00
Rod of Bridge	C	From Face	0.00 0.00 0.00	0.0000	144.00
Rod of Bridge	A	From Leg	0.00 0.00 0.00	0.0000	144.00
Bottom Bridge	A	From Face	0.00 0.00 -3.00	0.0000	144.00
Bottom Bridge	B	From Face	0.00 0.00 -3.00	0.0000	144.00
Bottom Bridge	C	From Face	0.00 0.00 -3.00	0.0000	144.00
Bottom Bridge	A	From Leg	0.00 0.00 -3.00	0.0000	144.00

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

Comb. No.	Description
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
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	156 - 151	Pole	Max Tension	20	0.00	-0.00	0.00
			Max. Compression	26	-0.32	-0.00	-0.00
			Max. Mx	8	-0.24	-0.39	-0.00
			Max. My	14	-0.24	-0.00	-0.39
			Max. Vy	8	0.15	-0.39	-0.00
			Max. Vx	14	0.16	-0.00	-0.39
			Max. Torque	20			0.00
L2	151 - 146	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-4.21	-0.01	-0.01
			Max. Mx	8	-2.20	-11.36	-0.03
			Max. My	14	-2.18	-0.03	-11.41
			Max. Vy	8	2.76	-11.36	-0.03
			Max. Vx	14	2.78	-0.03	-11.41
			Max. Torque	16			-0.00
L3	146 - 144	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-4.34	-0.02	-0.01
			Max. Mx	8	-2.31	-16.95	-0.04
			Max. My	14	-2.29	-0.04	-17.03

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L4	144 - 139	Pole	Max. Vy	8	2.82	-16.95	-0.04
			Max. Vx	14	2.84	-0.04	-17.03
			Max. Torque	16			-0.00
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-17.80	-3.88	-3.00
			Max. Mx	8	-11.03	-53.93	-2.71
			Max. My	14	-10.89	-3.26	-57.23
			Max. Vy	8	9.64	-53.93	-2.71
			Max. Vx	14	10.65	-3.26	-57.23
			Max. Torque	16			3.39
L5	139 - 134	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-18.33	-3.94	-3.04
			Max. Mx	8	-11.42	-103.10	-4.36
			Max. My	14	-11.29	-4.92	-111.42
			Max. Vy	8	10.03	-103.10	-4.36
			Max. Vx	14	11.04	-4.92	-111.42
			Max. Torque	16			3.39
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-23.82	-3.99	-2.76
			Max. Mx	8	-14.82	-161.04	-5.91
L6	134 - 129	Pole	Max. My	14	-14.67	-6.58	-174.39
			Max. Vy	8	13.84	-161.04	-5.91
			Max. Vx	14	14.90	-6.58	-174.39
			Max. Torque	16			3.38
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-23.92	-4.00	-2.76
			Max. Mx	8	-14.89	-171.44	-6.16
			Max. My	14	-14.74	-6.83	-185.58
			Max. Vy	8	13.90	-171.44	-6.16
			Max. Vx	14	14.95	-6.83	-185.58
L7	129 - 128.25	Pole	Max. Torque	16			3.26
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-23.98	-4.00	-2.77
			Max. Mx	8	-14.94	-174.91	-6.24
			Max. My	14	-14.79	-6.91	-189.32
			Max. Vy	8	13.91	-174.91	-6.24
			Max. Vx	14	14.97	-6.91	-189.32
			Max. Torque	16			3.26
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-25.02	-4.05	-2.80
L8	128.25 - 128	Pole	Max. Mx	8	-15.75	-245.57	-7.91
			Max. My	14	-15.60	-8.59	-265.26
			Max. Vy	8	14.35	-245.57	-7.91
			Max. Vx	14	15.41	-8.59	-265.26
			Max. Torque	16			3.26
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-30.30	-4.58	-3.11
			Max. Mx	8	-19.22	-322.21	-9.65
			Max. My	14	-19.07	-10.37	-347.14
			Max. Vy	8	16.64	-322.21	-9.65
L9	128 - 123	Pole	Max. Vx	14	17.69	-10.37	-347.14
			Max. Torque	16			3.97
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-31.40	-4.63	-3.14
			Max. Mx	8	-20.10	-406.45	-11.43
			Max. My	14	-19.95	-12.15	-436.61
			Max. Vy	8	17.07	-406.45	-11.43
			Max. Vx	14	18.12	-12.15	-436.61
			Max. Torque	16			3.97
			Max Tension	1	0.00	0.00	0.00
L10	123 - 118	Pole	Max. Compression	26	-32.52	-4.68	-3.18
			Max. Mx	8	-21.00	-492.85	-13.20
			Max. My	14	-20.86	-13.93	-528.25
			Max. Vy	8	17.51	-492.85	-13.20
			Max. Vx	14	18.55	-13.93	-528.25
			Max. Torque	16			3.97
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-33.66	-4.72	-3.20
			Max. Mx	8	-21.92	-581.43	-14.97
			Max. My	14	-19.95	-12.15	-436.61
L11	118 - 113	Pole	Max. Vy	8	17.07	-406.45	-11.43
			Max. Vx	14	18.12	-12.15	-436.61
			Max. Torque	16			3.97
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-32.52	-4.68	-3.18
			Max. Mx	8	-21.00	-492.85	-13.20
			Max. My	14	-20.86	-13.93	-528.25
			Max. Vy	8	17.51	-492.85	-13.20
			Max. Vx	14	18.55	-13.93	-528.25
			Max. Torque	16			3.97
L12	113 - 108	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-33.66	-4.72	-3.20
			Max. Mx	8	-21.92	-581.43	-14.97
			Max. My	14	-19.95	-12.15	-436.61
			Max. Vy	8	17.07	-406.45	-11.43
			Max. Vx	14	18.12	-12.15	-436.61
			Max. Torque	16			3.97
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-33.66	-4.72	-3.20
			Max. Mx	8	-21.92	-581.43	-14.97
L13	108 - 103	Pole	Max. Vy	8	17.07	-406.45	-11.43
			Max. Vx	14	18.12	-12.15	-436.61
			Max. Torque	16			3.97
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-33.66	-4.72	-3.20
			Max. Mx	8	-21.92	-581.43	-14.97
			Max. My	14	-19.95	-12.15	-436.61
			Max. Vy	8	17.07	-406.45	-11.43
			Max. Vx	14	18.12	-12.15	-436.61
			Max. Torque	16			3.97

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L14	103 - 98	Pole	Max. My	14	-21.80	-15.70	-622.05
			Max. Vy	8	17.94	-581.43	-14.97
			Max. Vx	14	18.99	-15.70	-622.05
			Max. Torque	16			3.97
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-34.83	-4.76	-3.23
			Max. Mx	8	-22.87	-672.17	-16.72
			Max. My	14	-22.76	-17.46	-718.00
			Max. Vy	8	18.38	-672.17	-16.72
			Max. Vx	14	19.42	-17.46	-718.00
L15	98 - 93	Pole	Max. Torque	16			3.97
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-35.19	-4.77	-3.24
			Max. Mx	8	-23.16	-699.82	-17.24
			Max. My	14	-23.04	-17.99	-747.21
			Max. Vy	8	18.51	-699.82	-17.24
			Max. Vx	14	19.55	-17.99	-747.21
			Max. Torque	16			3.96
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-37.22	-4.80	-3.26
L16	93 - 92	Pole	Max. Mx	8	-24.82	-784.17	-18.82
			Max. My	14	-24.71	-19.57	-836.24
			Max. Vy	8	18.99	-784.17	-18.82
			Max. Vx	14	20.03	-19.57	-836.24
			Max. Torque	16			3.96
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-38.72	-4.83	-3.28
			Max. Mx	8	-26.07	-880.23	-20.57
			Max. My	14	-25.97	-21.32	-937.50
			Max. Vy	8	19.45	-880.23	-20.57
L17	92 - 87	Pole	Max. Vx	14	20.49	-21.32	-937.50
			Max. Torque	16			3.96
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-40.23	-4.86	-3.30
			Max. Mx	8	-27.34	-978.61	-22.30
			Max. My	14	-27.25	-23.06	-1041.06
			Max. Vy	8	19.92	-978.61	-22.30
			Max. Vx	14	20.95	-23.06	-1041.06
			Max. Torque	16			3.96
			Max Tension	1	0.00	0.00	0.00
L18	87 - 82	Pole	Max. Compression	26	-41.62	-4.88	-3.31
			Max. Mx	8	-28.50	-1069.12	-23.86
			Max. My	14	-28.41	-24.62	-1136.22
			Max. Vy	8	20.34	-1069.12	-23.86
			Max. Vx	14	21.37	-24.62	-1136.22
			Max. Torque	16			3.96
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-43.30	-4.90	-3.33
			Max. Mx	8	-29.93	-1171.92	-25.59
			Max. My	14	-29.85	-26.35	-1244.17
L19	82 - 77.5	Pole	Max. Vy	8	20.81	-1171.92	-25.59
			Max. Vx	14	21.84	-26.35	-1244.17
			Max. Torque	16			3.96
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-45.06	-4.92	-3.34
			Max. Mx	8	-31.38	-1277.09	-27.31
			Max. My	14	-31.31	-28.07	-1354.47
			Max. Vy	8	21.28	-1277.09	-27.31
			Max. Vx	14	22.31	-28.07	-1354.47
			Max. Torque	16			3.96
L20	77.5 - 72.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-45.21	-4.93	-3.34
			Max. Mx	8	-31.51	-1286.03	-27.45
			Max. My	14	-31.44	-28.22	-1363.85
			Max. Vy	8	21.32	-1286.03	-27.45
			Max. Vx	14	22.34	-28.22	-1363.85
			Max. Torque	16			3.96
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-45.21	-4.93	-3.34
			Max. Mx	8	-31.51	-1286.03	-27.45
L21	72.5 - 67.5	Pole	Max. My	14	-31.44	-28.22	-1363.85
			Max. Vy	8	21.32	-1286.03	-27.45
			Max. Vx	14	22.34	-28.22	-1363.85
			Max. Torque	16			3.96
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-45.21	-4.93	-3.34
			Max. Mx	8	-31.51	-1286.03	-27.45
			Max. My	14	-31.44	-28.22	-1363.85
			Max. Vy	8	21.32	-1286.03	-27.45
			Max. Vx	14	22.34	-28.22	-1363.85
L22	67.5 - 67.08	Pole	Max. Torque	16			3.96
			Max Tension	1	0.00	0.00	0.00
L23	67.08 - 66.83	Pole	Max. Compression	26	-45.21	-4.93	-3.34
			Max. Mx	8	-31.51	-1286.03	-27.45

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L24	66.83 - 66.33	Pole	Max. Compression	26	-45.33	-4.93	-3.35
			Max. Mx	8	-31.61	-1291.36	-27.53
			Max. My	14	-31.54	-28.30	-1369.43
			Max. Vy	20	-21.34	1286.47	24.26
			Max. Vx	14	22.36	-28.30	-1369.43
			Max. Torque	16			3.96
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-45.56	-4.93	-3.35
L25	66.33 - 66.08	Pole	Max. Mx	8	-31.80	-1302.05	-27.71
			Max. My	14	-31.73	-28.47	-1380.63
			Max. Vy	8	21.39	-1302.05	-27.71
			Max. Vx	14	22.42	-28.47	-1380.63
			Max. Torque	16			3.96
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-45.68	-4.93	-3.35
			L26	66.08 - 57.5	Pole	Max. Mx	8
Max. My	14	-31.83				-28.56	-1386.23
Max. Vy	20	-21.42				1302.50	24.52
Max. Vx	14	22.44				-28.56	-1386.23
Max. Torque	16						3.96
Max Tension	1	0.00				0.00	0.00
Max. Compression	26	-47.69				-4.93	-3.35
L27	57.5 - 56.75	Pole				Max. Mx	8
			Max. My	14	-33.52	-30.04	-1484.35
			Max. Vy	8	21.87	-1401.08	-29.27
			Max. Vx	14	22.89	-30.04	-1484.35
			Max. Torque	16			3.96
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-51.75	-4.93	-3.35
			L28	56.75 - 51.75	Pole	Max. Mx	8
Max. My	14	-37.02				-31.76	-1600.31
Max. Vy	8	22.47				-1511.92	-30.98
Max. Vx	14	23.49				-31.76	-1600.31
Max. Torque	16						3.96
Max Tension	1	0.00				0.00	0.00
Max. Compression	26	-54.09				-4.93	-3.35
L29	51.75 - 46.75	Pole				Max. Mx	8
			Max. My	14	-39.01	-33.47	-1718.94
			Max. Vy	8	22.96	-1625.44	-32.69
			Max. Vx	14	23.98	-33.47	-1718.94
			Max. Torque	16			3.96
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-56.46	-4.93	-3.35
			L30	46.75 - 41.75	Pole	Max. Mx	8
Max. My	14	-41.02				-35.17	-1839.98
Max. Vy	8	23.44				-1741.38	-34.39
Max. Vx	14	24.46				-35.17	-1839.98
Max. Torque	16						3.95
Max Tension	1	0.00				0.00	0.00
Max. Compression	26	-58.84				-4.93	-3.35
L31	41.75 - 39.7	Pole				Max. Mx	8
			Max. My	14	-43.06	-36.87	-1963.39
			Max. Vy	8	23.92	-1859.72	-36.09
			Max. Vx	14	24.93	-36.87	-1963.39
			Max. Torque	16			3.95
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-59.87	-4.93	-3.35
			L32	39.7 - 39.5	Pole	Max. Mx	8
Max. My	14	-43.94				-37.56	-2014.66
Max. Vy	8	24.11				-1908.92	-36.78
Max. Vx	14	25.12				-37.56	-2014.66
Max. Torque	16						3.95
Max Tension	1	0.00				0.00	0.00
Max. Compression	26	-59.97				-4.93	-3.35

Sectio n No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L33	39.5 - 34.5	Pole	Max. Mx	8	-44.08	-1913.74	-36.85
			Max. My	14	-44.03	-37.63	-2019.69
			Max. Vy	20	-24.12	1908.78	33.50
			Max. Vx	14	25.13	-37.63	-2019.69
			Max. Torque	16			3.95
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-62.49	-4.93	-3.35
			Max. Mx	8	-46.23	-2035.47	-38.53
			Max. My	14	-46.19	-39.31	-2146.46
			Max. Vy	8	24.59	-2035.47	-38.53
L34	34.5 - 31.75	Pole	Max. Vx	14	25.60	-39.31	-2146.46
			Max. Torque	16			3.95
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-63.89	-4.94	-3.35
			Max. Mx	8	-47.43	-2103.39	-39.45
			Max. My	14	-47.40	-40.23	-2217.14
			Max. Vy	8	24.84	-2103.39	-39.45
			Max. Vx	14	25.85	-40.23	-2217.14
			Max. Torque	16			3.95
			Max Tension	1	0.00	0.00	0.00
L35	31.75 - 31.5	Pole	Max. Compression	26	-64.02	-4.94	-3.35
			Max. Mx	8	-47.56	-2109.60	-39.53
			Max. My	14	-47.52	-40.31	-2223.60
			Max. Vy	20	-24.85	2104.63	36.18
			Max. Vx	14	25.85	-40.31	-2223.60
			Max. Torque	16			3.95
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-66.74	-4.94	-3.36
			Max. Mx	8	-49.90	-2234.96	-41.19
			Max. My	14	-49.87	-41.98	-2353.95
L36	31.5 - 26.5	Pole	Max. Vy	8	25.31	-2234.96	-41.19
			Max. Vx	14	26.31	-41.98	-2353.95
			Max. Torque	16			3.95
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-69.47	-4.95	-3.36
			Max. Mx	8	-52.28	-2362.49	-42.85
			Max. My	14	-52.25	-43.63	-2486.46
			Max. Vy	8	25.73	-2362.49	-42.85
			Max. Vx	14	26.73	-43.63	-2486.46
			Max. Torque	16			3.95
L37	26.5 - 21.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-72.22	-4.96	-3.37
			Max. Mx	8	-54.68	-2492.10	-44.49
			Max. My	14	-54.66	-45.27	-2621.01
			Max. Vy	8	26.14	-2492.10	-44.49
			Max. Vx	14	27.12	-45.27	-2621.01
			Max. Torque	16			3.95
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-73.02	-4.97	-3.37
			Max. Mx	8	-55.38	-2530.06	-44.96
L38	21.5 - 16.5	Pole	Max. My	14	-55.36	-45.75	-2660.40
			Max. Vy	8	26.25	-2530.06	-44.96
			Max. Vx	14	27.24	-45.75	-2660.40
			Max. Torque	16			3.95
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-79.06	-4.98	-3.38
			Max. Mx	8	-60.76	-2695.82	-47.00
			Max. My	14	-60.75	-47.79	-2832.28
			Max. Vy	8	26.81	-2695.82	-47.00
			Max. Vx	14	27.79	-47.79	-2832.28
L39	16.5 - 9.8	Pole	Max. Torque	16			3.95
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-79.37	-4.98	-3.38
			Max. Mx	8	-61.04	-2710.56	-47.18
			Max. My	14	-61.03	-47.97	-2847.56
			Max. Vy	8	26.84	-2710.56	-47.18
			Max. Vx	14	27.82	-47.97	-2847.56
			Max. Torque	16			3.95
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-79.37	-4.98	-3.38
L40	9.8 - 8.8	Pole	Max. Mx	8	-60.76	-2695.82	-47.00
			Max. My	14	-60.75	-47.79	-2832.28
			Max. Vy	8	26.81	-2695.82	-47.00
			Max. Vx	14	27.79	-47.79	-2832.28
			Max. Torque	16			3.95
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-79.37	-4.98	-3.38
			Max. Mx	8	-61.04	-2710.56	-47.18
			Max. My	14	-61.03	-47.97	-2847.56
			Max. Vy	8	26.84	-2710.56	-47.18
L41	8.8 - 8.25	Pole	Max. Vx	14	27.82	-47.97	-2847.56
			Max. Torque	16			3.95
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-79.37	-4.98	-3.38
			Max. Mx	8	-61.04	-2710.56	-47.18
			Max. My	14	-61.03	-47.97	-2847.56
			Max. Vy	8	26.84	-2710.56	-47.18
			Max. Vx	14	27.82	-47.97	-2847.56
			Max. Torque	16			3.95
			Max Tension	1	0.00	0.00	0.00
L42	8.25 - 8	Pole	Max. Compression	26	-79.37	-4.98	-3.38
			Max Tension	1	0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L43	8 - 4.75	Pole	Max. Compression	26	-79.52	-4.98	-3.38
			Max. Mx	8	-61.17	-2717.27	-47.26
			Max. My	14	-61.16	-48.05	-2854.52
			Max. Vy	20	-26.85	2712.28	43.90
			Max. Vx	14	27.83	-48.05	-2854.52
			Max. Torque	16			3.95
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-81.41	-4.99	-3.38
			Max. Mx	8	-62.86	-2804.92	-48.32
			Max. My	14	-62.86	-49.10	-2945.33
L44	4.75 - 4.5	Pole	Max. Vy	8	27.11	-2804.92	-48.32
			Max. Vx	14	28.08	-49.10	-2945.33
			Max. Torque	16			3.95
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-81.59	-4.99	-3.38
			Max. Mx	8	-63.03	-2811.69	-48.40
			Max. My	14	-63.03	-49.18	-2952.35
			Max. Vy	20	-27.11	2806.70	45.04
			Max. Vx	14	28.08	-49.18	-2952.35
			Max. Torque	16			3.95
L45	4.5 - 4.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-81.77	-5.00	-3.39
			Max. Mx	8	-63.20	-2818.47	-48.48
			Max. My	14	-63.19	-49.26	-2959.37
			Max. Vy	20	-27.13	2813.48	45.12
			Max. Vx	14	28.10	-49.26	-2959.37
			Max. Torque	16			3.95
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-81.92	-5.00	-3.39
			Max. Mx	8	-63.34	-2825.26	-48.56
L46	4.25 - 4	Pole	Max. My	14	-63.34	-49.34	-2966.40
			Max. Vy	20	-27.15	2820.26	45.20
			Max. Vx	14	28.12	-49.34	-2966.40
			Max. Torque	16			3.95
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-82.24	-5.00	-3.39
			Max. Mx	8	-63.62	-2838.84	-48.72
			Max. My	14	-63.62	-49.50	-2980.47
			Max. Vy	8	27.20	-2838.84	-48.72
			Max. Vx	14	28.17	-49.50	-2980.47
L47	4 - 3.5	Pole	Max. Torque	16			3.95
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-82.42	-5.01	-3.39
			Max. Mx	8	-63.80	-2845.64	-48.80
			Max. My	14	-63.80	-49.58	-2987.51
			Max. Vy	20	-27.21	2840.64	45.44
			Max. Vx	14	28.18	-49.58	-2987.51
			Max. Torque	16			3.95
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-82.98	-5.01	-3.40
L48	3.5 - 3.25	Pole	Max. Mx	8	-64.31	-2866.07	-49.04
			Max. My	14	-64.31	-49.83	-3008.67
			Max. Vy	8	27.28	-2866.07	-49.04
			Max. Vx	14	28.25	-49.83	-3008.67
			Max. Torque	16			3.95
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-83.15	-5.01	-3.40
			Max. Mx	8	-64.47	-2872.89	-49.12
			Max. My	14	-64.47	-49.91	-3015.73
			Max. Vy	20	-27.30	2867.90	45.76
L49	3.25 - 2.5	Pole	Max. Vx	14	28.27	-49.91	-3015.73
			Max. Torque	16			3.95
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-84.66	-5.03	-3.40
			Max. Mx	8	-65.87	-2934.52	-49.85
			Max. My	14	-65.87	-50.63	-3079.54
			Max. Vy	8	27.49	-2934.52	-49.85
			Max. Vx	14	28.46	-50.63	-3079.54
			Max. Torque	16			3.95
			Max Tension	1	0.00	0.00	0.00
L50	2.5 - 2.25	Pole	Max. Compression	26	-83.15	-5.01	-3.40
			Max. Mx	8	-64.47	-2872.89	-49.12
			Max. My	14	-64.47	-49.91	-3015.73
			Max. Vy	20	-27.30	2867.90	45.76
			Max. Vx	14	28.27	-49.91	-3015.73
			Max. Torque	16			3.95
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-83.15	-5.01	-3.40
			Max. Mx	8	-64.47	-2872.89	-49.12
			Max. My	14	-64.47	-49.91	-3015.73
L51	2.25 - 0	Pole	Max. Vy	20	-27.30	2867.90	45.76
			Max. Vx	14	28.27	-49.91	-3015.73
			Max. Torque	16			3.95
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-84.66	-5.03	-3.40
			Max. Mx	8	-65.87	-2934.52	-49.85
			Max. My	14	-65.87	-50.63	-3079.54
			Max. Vy	8	27.49	-2934.52	-49.85
			Max. Vx	14	28.46	-50.63	-3079.54
			Max. Torque	16			3.95

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
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Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	84.66	-0.00	-0.00
	Max. H _x	20	65.88	27.48	0.32
	Max. H _z	3	49.41	0.32	28.45
	Max. M _x	2	3076.14	0.32	28.45
	Max. M _z	8	2934.52	-27.48	-0.32
	Max. Torsion	16	3.95	13.46	-24.48
	Min. Vert	19	49.41	23.64	-13.95
	Min. H _x	9	49.41	-27.48	-0.32
	Min. H _z	14	65.88	-0.32	-28.45
	Min. M _x	14	-3079.54	-0.32	-28.45
	Min. M _z	20	-2929.52	27.48	0.32
	Min. Torsion	4	-3.78	-13.46	24.48

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	54.90	0.00	0.00	1.34	-1.97	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	65.88	-0.32	-28.45	-3076.14	45.69	2.98
0.9 Dead+1.0 Wind 0 deg - No Ice	49.41	-0.32	-28.45	-3037.18	45.65	2.93
1.2 Dead+1.0 Wind 30 deg - No Ice	65.88	13.46	-24.48	-2639.88	-1426.69	3.78
0.9 Dead+1.0 Wind 30 deg - No Ice	49.41	13.46	-24.48	-2606.55	-1408.01	3.73
1.2 Dead+1.0 Wind 60 deg - No Ice	65.88	23.64	-13.95	-1495.72	-2517.61	3.63
0.9 Dead+1.0 Wind 60 deg - No Ice	49.41	23.64	-13.95	-1477.07	-2485.03	3.58
1.2 Dead+1.0 Wind 90 deg - No Ice	65.88	27.48	0.32	49.85	-2934.52	2.53
0.9 Dead+1.0 Wind 90 deg - No Ice	49.41	27.48	0.32	48.68	-2896.58	2.50
1.2 Dead+1.0 Wind 120 deg - No Ice	65.88	23.96	14.50	1582.41	-2565.63	0.73
0.9 Dead+1.0 Wind 120 deg - No Ice	49.41	23.96	14.50	1561.62	-2532.34	0.72
1.2 Dead+1.0 Wind 150 deg - No Ice	65.88	14.02	24.80	2691.26	-1510.03	-1.34
0.9 Dead+1.0 Wind 150 deg - No Ice	49.41	14.02	24.80	2656.31	-1490.12	-1.31
1.2 Dead+1.0 Wind 180 deg - No Ice	65.88	0.32	28.45	3079.54	-50.63	-3.07
0.9 Dead+1.0 Wind 180 deg - No Ice	49.41	0.32	28.45	3039.66	-49.25	-3.02
1.2 Dead+1.0 Wind 210 deg - No Ice	65.88	-13.46	24.48	2643.26	1421.75	-3.95
0.9 Dead+1.0 Wind 210 deg - No Ice	49.41	-13.46	24.48	2609.01	1404.41	-3.89
1.2 Dead+1.0 Wind 240 deg - No Ice	65.88	-23.64	13.95	1499.07	2512.65	-3.71
0.9 Dead+1.0 Wind 240 deg - No Ice	49.41	-23.64	13.95	1479.51	2481.41	-3.66

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
1.2 Dead+1.0 Wind 270 deg - No Ice	65.88	-27.48	-0.32	-46.49	2929.52	-2.45
0.9 Dead+1.0 Wind 270 deg - No Ice	49.41	-27.48	-0.32	-46.23	2892.94	-2.42
1.2 Dead+1.0 Wind 300 deg - No Ice	65.88	-23.96	-14.50	-1579.02	2560.63	-0.56
0.9 Dead+1.0 Wind 300 deg - No Ice	49.41	-23.96	-14.50	-1559.15	2528.69	-0.56
1.2 Dead+1.0 Wind 330 deg - No Ice	65.88	-14.02	-24.80	-2687.85	1505.05	1.42
0.9 Dead+1.0 Wind 330 deg - No Ice	49.41	-14.02	-24.80	-2653.82	1486.49	1.39
1.2 Dead+1.0 Ice+1.0 Temp	84.66	0.00	0.00	3.40	-5.03	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	84.66	-0.06	-7.07	-796.39	3.72	0.71
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	84.66	3.40	-6.09	-684.79	-383.94	0.94
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	84.66	5.94	-3.48	-388.75	-670.12	0.93
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	84.66	6.89	0.06	12.38	-778.12	0.67
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	84.66	6.00	3.58	411.14	-679.01	0.22
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	84.66	3.50	6.15	700.67	-399.34	-0.28
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	84.66	0.06	7.07	803.39	-14.05	-0.71
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	84.66	-3.40	6.09	691.78	373.62	-0.95
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	84.66	-5.94	3.48	395.74	659.79	-0.93
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	84.66	-6.89	-0.06	-5.39	767.79	-0.66
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	84.66	-6.00	-3.58	-404.15	668.67	-0.21
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	84.66	-3.50	-6.15	-693.67	389.01	0.29
Dead+Wind 0 deg - Service	54.90	-0.08	-6.72	-720.72	9.19	0.71
Dead+Wind 30 deg - Service	54.90	3.18	-5.78	-618.36	-336.32	0.90
Dead+Wind 60 deg - Service	54.90	5.58	-3.29	-349.93	-592.26	0.86
Dead+Wind 90 deg - Service	54.90	6.49	0.08	12.64	-690.06	0.59
Dead+Wind 120 deg - Service	54.90	5.66	3.42	372.19	-603.50	0.16
Dead+Wind 150 deg - Service	54.90	3.31	5.85	632.39	-355.79	-0.32
Dead+Wind 180 deg - Service	54.90	0.08	6.72	723.51	-13.29	-0.71
Dead+Wind 210 deg - Service	54.90	-3.18	5.78	621.15	332.22	-0.91
Dead+Wind 240 deg - Service	54.90	-5.58	3.29	352.72	588.16	-0.87
Dead+Wind 270 deg - Service	54.90	-6.49	-0.08	-9.84	685.96	-0.58
Dead+Wind 300 deg - Service	54.90	-5.66	-3.42	-369.40	599.40	-0.15
Dead+Wind 330 deg - Service	54.90	-3.31	-5.85	-629.59	351.69	0.33

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.00	-54.90	0.00	-0.00	54.90	0.00	0.000%
2	-0.32	-65.88	-28.45	0.32	65.88	28.45	0.000%
3	-0.32	-49.41	-28.45	0.32	49.41	28.45	0.000%

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
4	13.46	-65.88	-24.48	-13.46	65.88	24.48	0.000%
5	13.46	-49.41	-24.48	-13.46	49.41	24.48	0.000%
6	23.64	-65.88	-13.95	-23.64	65.88	13.95	0.000%
7	23.64	-49.41	-13.95	-23.64	49.41	13.95	0.000%
8	27.48	-65.88	0.32	-27.48	65.88	-0.32	0.000%
9	27.48	-49.41	0.32	-27.48	49.41	-0.32	0.000%
10	23.96	-65.88	14.50	-23.96	65.88	-14.50	0.000%
11	23.96	-49.41	14.50	-23.96	49.41	-14.50	0.000%
12	14.02	-65.88	24.80	-14.02	65.88	-24.80	0.000%
13	14.02	-49.41	24.80	-14.02	49.41	-24.80	0.000%
14	0.32	-65.88	28.45	-0.32	65.88	-28.45	0.000%
15	0.32	-49.41	28.45	-0.32	49.41	-28.45	0.000%
16	-13.46	-65.88	24.48	13.46	65.88	-24.48	0.000%
17	-13.46	-49.41	24.48	13.46	49.41	-24.48	0.000%
18	-23.64	-65.88	13.95	23.64	65.88	-13.95	0.000%
19	-23.64	-49.41	13.95	23.64	49.41	-13.95	0.000%
20	-27.48	-65.88	-0.32	27.48	65.88	0.32	0.000%
21	-27.48	-49.41	-0.32	27.48	49.41	0.32	0.000%
22	-23.96	-65.88	-14.50	23.96	65.88	14.50	0.000%
23	-23.96	-49.41	-14.50	23.96	49.41	14.50	0.000%
24	-14.02	-65.88	-24.80	14.02	65.88	24.80	0.000%
25	-14.02	-49.41	-24.80	14.02	49.41	24.80	0.000%
26	0.00	-84.66	0.00	-0.00	84.66	-0.00	0.000%
27	-0.06	-84.66	-7.07	0.06	84.66	7.07	0.000%
28	3.40	-84.66	-6.09	-3.40	84.66	6.09	0.000%
29	5.94	-84.66	-3.48	-5.94	84.66	3.48	0.000%
30	6.89	-84.66	0.06	-6.89	84.66	-0.06	0.000%
31	6.00	-84.66	3.58	-6.00	84.66	-3.58	0.000%
32	3.50	-84.66	6.15	-3.50	84.66	-6.15	0.000%
33	0.06	-84.66	7.07	-0.06	84.66	-7.07	0.000%
34	-3.40	-84.66	6.09	3.40	84.66	-6.09	0.000%
35	-5.94	-84.66	3.48	5.94	84.66	-3.48	0.000%
36	-6.89	-84.66	-0.06	6.89	84.66	0.06	0.000%
37	-6.00	-84.66	-3.58	6.00	84.66	3.58	0.000%
38	-3.50	-84.66	-6.15	3.50	84.66	6.15	0.000%
39	-0.08	-54.90	-6.72	0.08	54.90	6.72	0.000%
40	3.18	-54.90	-5.78	-3.18	54.90	5.78	0.000%
41	5.58	-54.90	-3.29	-5.58	54.90	3.29	0.000%
42	6.49	-54.90	0.08	-6.49	54.90	-0.08	0.000%
43	5.66	-54.90	3.42	-5.66	54.90	-3.42	0.000%
44	3.31	-54.90	5.85	-3.31	54.90	-5.85	0.000%
45	0.08	-54.90	6.72	-0.08	54.90	-6.72	0.000%
46	-3.18	-54.90	5.78	3.18	54.90	-5.78	0.000%
47	-5.58	-54.90	3.29	5.58	54.90	-3.29	0.000%
48	-6.49	-54.90	-0.08	6.49	54.90	0.08	0.000%
49	-5.66	-54.90	-3.42	5.66	54.90	3.42	0.000%
50	-3.31	-54.90	-5.85	3.31	54.90	5.85	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000358
2	Yes	6	0.00000001	0.00007735
3	Yes	5	0.00000001	0.00056908
4	Yes	6	0.00000001	0.00084443
5	Yes	6	0.00000001	0.00030148
6	Yes	6	0.00000001	0.00068308
7	Yes	6	0.00000001	0.00024128
8	Yes	6	0.00000001	0.00012794
9	Yes	5	0.00000001	0.00094161
10	Yes	6	0.00000001	0.00082826
11	Yes	6	0.00000001	0.00029120
12	Yes	6	0.00000001	0.00086241
13	Yes	6	0.00000001	0.00030249

14	Yes	6	0.00000001	0.00015363
15	Yes	6	0.00000001	0.00005577
16	Yes	6	0.00000001	0.00067769
17	Yes	6	0.00000001	0.00023829
18	Yes	6	0.00000001	0.00081046
19	Yes	6	0.00000001	0.00029050
20	Yes	5	0.00000001	0.00086164
21	Yes	5	0.00000001	0.00043339
22	Yes	6	0.00000001	0.00079343
23	Yes	6	0.00000001	0.00027936
24	Yes	6	0.00000001	0.00079363
25	Yes	6	0.00000001	0.00027806
26	Yes	4	0.00000001	0.00072436
27	Yes	6	0.00000001	0.00039443
28	Yes	6	0.00000001	0.00043140
29	Yes	6	0.00000001	0.00042081
30	Yes	6	0.00000001	0.00039036
31	Yes	6	0.00000001	0.00044317
32	Yes	6	0.00000001	0.00045030
33	Yes	6	0.00000001	0.00040429
34	Yes	6	0.00000001	0.00042426
35	Yes	6	0.00000001	0.00041978
36	Yes	6	0.00000001	0.00037643
37	Yes	6	0.00000001	0.00042073
38	Yes	6	0.00000001	0.00042824
39	Yes	5	0.00000001	0.00008437
40	Yes	5	0.00000001	0.00022163
41	Yes	5	0.00000001	0.00014110
42	Yes	5	0.00000001	0.00007950
43	Yes	5	0.00000001	0.00018073
44	Yes	5	0.00000001	0.00019706
45	Yes	5	0.00000001	0.00009744
46	Yes	5	0.00000001	0.00013536
47	Yes	5	0.00000001	0.00020523
48	Yes	5	0.00000001	0.00006792
49	Yes	5	0.00000001	0.00015836
50	Yes	5	0.00000001	0.00015452

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	156 - 151	20.744	44	1.2725	0.0106
L2	151 - 146	19.412	44	1.2722	0.0106
L3	146 - 144	18.083	44	1.2620	0.0107
L4	144 - 139	17.557	44	1.2503	0.0107
L5	139 - 134	16.255	44	1.2318	0.0099
L6	134 - 129	14.986	44	1.1897	0.0080
L7	129 - 128.25	13.770	44	1.1307	0.0064
L8	128.25 - 128	13.593	44	1.1204	0.0062
L9	128 - 123	13.534	44	1.1188	0.0062
L10	123 - 118	12.382	44	1.0820	0.0055
L11	118 - 113	11.271	44	1.0380	0.0049
L12	113 - 108	10.211	44	0.9864	0.0043
L13	108 - 103	9.208	44	0.9290	0.0037
L14	103 - 98	8.267	44	0.8668	0.0032
L15	98 - 93	7.394	44	0.8014	0.0027
L16	96.5 - 92	7.145	44	0.7811	0.0026
L17	92 - 87	6.422	44	0.7502	0.0024
L18	87 - 82	5.664	44	0.6963	0.0021
L19	82 - 77.5	4.964	44	0.6401	0.0018
L20	77.5 - 72.5	4.385	44	0.5886	0.0016
L21	72.5 - 67.5	3.797	44	0.5354	0.0014
L22	67.5 - 67.08	3.264	44	0.4825	0.0012
L23	67.08 - 66.83	3.222	44	0.4780	0.0011
L24	66.83 - 66.33	3.197	44	0.4761	0.0011
L25	66.33 - 66.08	3.147	44	0.4723	0.0011

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L26	66.08 - 57.5	3.122	44	0.4703	0.0011
L27	61.75 - 56.75	2.711	44	0.4367	0.0010
L28	56.75 - 51.75	2.264	44	0.4137	0.0009
L29	51.75 - 46.75	1.853	44	0.3720	0.0008
L30	46.75 - 41.75	1.485	44	0.3305	0.0007
L31	41.75 - 39.7	1.161	44	0.2891	0.0006
L32	39.7 - 39.5	1.040	44	0.2725	0.0005
L33	39.5 - 34.5	1.029	44	0.2709	0.0005
L34	34.5 - 31.75	0.767	44	0.2300	0.0004
L35	31.75 - 31.5	0.641	44	0.2075	0.0004
L36	31.5 - 26.5	0.630	44	0.2056	0.0004
L37	26.5 - 21.5	0.435	44	0.1678	0.0003
L38	21.5 - 16.5	0.279	44	0.1298	0.0002
L39	16.5 - 9.8	0.162	44	0.0925	0.0002
L40	15.05 - 8.8	0.136	44	0.0816	0.0001
L41	8.8 - 8.25	0.045	44	0.0538	0.0001
L42	8.25 - 8	0.039	44	0.0495	0.0001
L43	8 - 4.75	0.037	44	0.0477	0.0001
L44	4.75 - 4.5	0.012	44	0.0245	0.0000
L45	4.5 - 4.25	0.011	44	0.0232	0.0000
L46	4.25 - 4	0.010	44	0.0218	0.0000
L47	4 - 3.5	0.009	44	0.0204	0.0000
L48	3.5 - 3.25	0.007	44	0.0176	0.0000
L49	3.25 - 2.5	0.006	44	0.0164	0.0000
L50	2.5 - 2.25	0.003	44	0.0129	0.0000
L51	2.25 - 0	0.003	44	0.0116	0.0000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.00	NNVV-65B-R4 w/ Mount Pipe	44	19.146	1.2718	0.0106	45797
144.00	Top Bridge	44	17.557	1.2503	0.0107	14552
141.00	APXVAARR24_43-U-NA20	44	16.773	1.2396	0.0103	11804
131.00	MX08FRO665-21 w/ Mount Pipe	44	14.249	1.1581	0.0070	5020
120.00	Platform Mount [LP 1201-1]	44	11.710	1.0563	0.0052	6378

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	156 - 151	87.845	12	5.3642	0.0453
L2	151 - 146	82.242	12	5.3631	0.0453
L3	146 - 144	76.653	12	5.3212	0.0454
L4	144 - 139	74.439	12	5.2721	0.0455
L5	139 - 134	68.962	12	5.1987	0.0423
L6	134 - 129	63.610	12	5.0321	0.0344
L7	129 - 128.25	58.471	12	4.7915	0.0276
L8	128.25 - 128	57.723	12	4.7491	0.0267
L9	128 - 123	57.475	12	4.7425	0.0265
L10	123 - 118	52.596	12	4.5895	0.0238
L11	118 - 113	47.892	12	4.4059	0.0212
L12	113 - 108	43.397	12	4.1889	0.0184
L13	108 - 103	39.142	12	3.9469	0.0159
L14	103 - 98	35.150	12	3.6841	0.0137
L15	98 - 93	31.440	12	3.4072	0.0116
L16	96.5 - 92	30.384	12	3.3215	0.0110
L17	92 - 87	27.311	12	3.1905	0.0102
L18	87 - 82	24.092	12	2.9617	0.0089

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L19	82 - 77.5	21.118	12	2.7231	0.0077
L20	77.5 - 72.5	18.656	12	2.5042	0.0067
L21	72.5 - 67.5	16.153	12	2.2780	0.0058
L22	67.5 - 67.08	13.886	12	2.0531	0.0049
L23	67.08 - 66.83	13.707	12	2.0340	0.0049
L24	66.83 - 66.33	13.601	12	2.0259	0.0048
L25	66.33 - 66.08	13.389	12	2.0096	0.0048
L26	66.08 - 57.5	13.284	12	2.0014	0.0047
L27	61.75 - 56.75	11.535	12	1.8584	0.0042
L28	56.75 - 51.75	9.634	12	1.7603	0.0039
L29	51.75 - 46.75	7.884	12	1.5831	0.0034
L30	46.75 - 41.75	6.320	12	1.4064	0.0029
L31	41.75 - 39.7	4.940	12	1.2302	0.0025
L32	39.7 - 39.5	4.427	12	1.1597	0.0023
L33	39.5 - 34.5	4.378	12	1.1528	0.0023
L34	34.5 - 31.75	3.262	12	0.9786	0.0019
L35	31.75 - 31.5	2.726	12	0.8828	0.0017
L36	31.5 - 26.5	2.680	12	0.8749	0.0016
L37	26.5 - 21.5	1.849	12	0.7141	0.0013
L38	21.5 - 16.5	1.186	12	0.5522	0.0010
L39	16.5 - 9.8	0.691	12	0.3933	0.0007
L40	15.05 - 8.8	0.579	12	0.3472	0.0006
L41	8.8 - 8.25	0.192	12	0.2287	0.0004
L42	8.25 - 8	0.167	12	0.2106	0.0003
L43	8 - 4.75	0.156	12	0.2029	0.0003
L44	4.75 - 4.5	0.051	12	0.1042	0.0002
L45	4.5 - 4.25	0.046	12	0.0985	0.0002
L46	4.25 - 4	0.041	12	0.0929	0.0001
L47	4 - 3.5	0.036	12	0.0868	0.0001
L48	3.5 - 3.25	0.028	12	0.0747	0.0001
L49	3.25 - 2.5	0.024	12	0.0697	0.0001
L50	2.5 - 2.25	0.014	12	0.0548	0.0001
L51	2.25 - 0	0.012	12	0.0493	0.0001

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.00	NNVV-65B-R4 w/ Mount Pipe	12	81.121	5.3616	0.0453	11379
144.00	Top Bridge	12	74.439	5.2721	0.0455	3573
141.00	APXVAARR24_43-U-NA20	12	71.142	5.2289	0.0443	3033
131.00	MX08FRO665-21 w/ Mount Pipe	12	60.496	4.9044	0.0303	1249
120.00	Platform Mount [LP 1201-1]	12	49.750	4.4826	0.0222	1545

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	KI/r	A in ²	P _u K	φP _n K	Ratio P _u / φP _n
L1	156 - 151 (1)	TP10.75x10.75x0.375	5.00	0.00	0.0	12.222 8	-0.24	385.02	0.001
L2	151 - 146 (2)	TP10.75x10.75x0.375	5.00	0.00	0.0	12.222 8	-2.18	385.02	0.006
L3	146 - 144 (3)	TP10.75x10.75x0.375	2.00	0.00	0.0	12.222 8	-2.29	385.02	0.006

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio P _u / φP _n
L4	144 - 139 (4)	TP18.9435x18x0.25	5.00	0.00	0.0	15.048	-10.89	487.57	0.022
L5	139 - 134 (5)	TP19.8871x18.9435x0.25	5.00	0.00	0.0	15.807	-11.28	512.17	0.022
L6	134 - 129 (6)	TP20.8306x19.8871x0.25	5.00	0.00	0.0	16.567	-14.67	536.78	0.027
L7	129 - 128.25 (7)	TP20.9721x20.8306x0.25	0.75	0.00	0.0	16.681	-14.74	540.47	0.027
L8	128.25 - 128 (8)	TP21.0193x20.9721x0.57	0.25	0.00	0.0	37.852	-14.78	1226.42	0.012
L9	128 - 123 (9)	TP21.9628x21.0193x0.56	5.00	0.00	0.0	38.761	-15.59	1255.87	0.012
L10	123 - 118 (10)	TP22.9064x21.9628x0.55	5.00	0.00	0.0	39.593	-19.06	1282.82	0.015
L11	118 - 113 (11)	TP23.8499x22.9064x0.52	5.00	0.00	0.0	39.430	-19.95	1277.56	0.016
L12	113 - 108 (12)	TP24.7934x23.8499x0.51	5.00	0.00	0.0	40.069	-20.86	1298.25	0.016
L13	108 - 103 (13)	TP25.7369x24.7934x0.5	5.00	0.00	0.0	40.631	-21.79	1316.46	0.017
L14	103 - 98 (14)	TP26.6805x25.7369x0.49	5.00	0.00	0.0	41.633	-22.75	1348.93	0.017
L15	98 - 93 (15)	TP27.624x26.6805x0.487	5.00	0.00	0.0	41.560	-23.04	1346.57	0.017
L16	93 - 92 (16)	TP27.313x26.4635x0.7	4.50	0.00	0.0	59.985	-24.71	1943.53	0.013
L17	92 - 87 (17)	TP28.2568x27.313x0.675	5.00	0.00	0.0	59.949	-25.96	1942.35	0.013
L18	87 - 82 (18)	TP29.2006x28.2568x0.65	5.00	0.00	0.0	59.756	-27.24	1936.11	0.014
L19	82 - 77.5 (19)	TP30.05x29.2006x0.6375	4.50	0.00	0.0	60.376	-28.41	1956.20	0.015
L20	77.5 - 72.5 (20)	TP30.9935x30.05x0.6875	5.00	0.00	0.0	67.089	-29.85	2173.71	0.014
L21	72.5 - 67.5 (21)	TP31.937x30.9935x0.687	5.00	0.00	0.0	69.178	-31.31	2241.39	0.014
L22	67.5 - 67.08 (22)	TP32.0163x31.937x0.675	0.42	0.00	0.0	68.120	-31.43	2207.10	0.014
L23	67.08 - 66.83 (23)	TP32.0634x32.0163x0.97	0.25	0.00	0.0	97.602	-31.53	3162.31	0.010
L24	66.83 - 66.33 (24)	TP32.1578x32.0634x0.96	0.50	0.00	0.0	96.682	-31.73	3132.50	0.010
L25	66.33 - 66.08 (25)	TP32.205x32.1578x0.962	0.25	0.00	0.0	96.828	-31.83	3137.23	0.010
L26	66.08 - 57.5 (26)	TP33.824x32.205x0.95	8.58	0.00	0.0	98.108	-33.52	3178.71	0.011
L27	57.5 - 56.75 (27)	TP33.3405x32.397x0.937	5.00	0.00	0.0	97.816	-37.02	3169.26	0.012
L28	56.75 - 51.75 (28)	TP34.284x33.3405x0.912	5.00	0.00	0.0	98.053	-39.01	3176.95	0.012
L29	51.75 - 46.75 (29)	TP35.2275x34.284x0.9	5.00	0.00	0.0	99.481	-41.02	3223.19	0.013
L30	46.75 - 41.75 (30)	TP36.171x35.2275x0.887	5.00	0.00	0.0	100.83	-43.05	3266.94	0.013
L31	41.75 - 39.7 (31)	TP36.5579x36.171x0.9	2.05	0.00	0.0	103.33	-43.94	3348.10	0.013
L32	39.7 - 39.5 (32)	TP36.5956x36.5579x0.88	0.20	0.00	0.0	102.04	-44.03	3306.25	0.013
L33	39.5 - 34.5 (33)	TP37.5393x36.5956x0.87	5.00	0.00	0.0	103.30	-46.19	3346.97	0.014
L34	34.5 - 31.75 (34)	TP38.0583x37.5393x0.86	2.75	0.00	0.0	103.30	-47.39	3346.99	0.014
L35	31.75 - 31.5 (35)	TP38.1055x38.0583x0.95	0.25	0.00	0.0	113.65	-47.52	3682.54	0.013
L36	31.5 - 26.5 (36)	TP39.0492x38.1055x0.92	5.00	0.00	0.0	113.55	-49.87	3679.11	0.014
L37	26.5 - 21.5 (37)	TP39.9928x39.0492x0.9	5.00	0.00	0.0	113.29	-52.25	3670.63	0.014
L38	21.5 - 16.5	TP40.9365x39.9928x0.9	5.00	0.00	0.0	116.02	-54.66	3759.23	0.015

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio P _u φP _n
	(38)					60			
L39	16.5 - 9.8 (39)	TP42.201x40.9365x0.887 5	6.70	0.00	0.0	115.23 20	-55.36	3733.52	0.015
L40	9.8 - 8.8 (40)	TP41.6395x40.4602x0.87 5	6.25	0.00	0.0	114.85 40	-60.75	3721.27	0.016
L41	8.8 - 8.25 (41)	TP41.7433x41.6395x0.87 5	0.55	0.00	0.0	115.14 60	-61.03	3730.74	0.016
L42	8.25 - 8 (42)	TP41.7904x41.7433x0.95	0.25	0.00	0.0	124.93 10	-61.16	4047.76	0.015
L43	8 - 4.75 (43)	TP42.4037x41.7904x0.95	3.25	0.00	0.0	126.80 70	-62.86	4108.54	0.015
L44	4.75 - 4.5 (44)	TP42.4509x42.4037x1.3	0.25	0.00	0.0	172.25 80	-63.03	5581.15	0.011
L45	4.5 - 4.25 (45)	TP42.498x42.4509x1.3	0.25	0.00	0.0	172.45 50	-63.19	5587.54	0.011
L46	4.25 - 4 (46)	TP42.5452x42.498x1.2	0.25	0.00	0.0	159.75 80	-63.34	5176.16	0.012
L47	4 - 3.5 (47)	TP42.6396x42.5452x1.2	0.50	0.00	0.0	160.12 20	-63.62	5187.97	0.012
L48	3.5 - 3.25 (48)	TP42.6867x42.6396x1.47 5	0.25	0.00	0.0	195.73 50	-63.80	6341.82	0.010
L49	3.25 - 2.5 (49)	TP42.8283x42.6867x1.47 5	0.75	0.00	0.0	196.40 70	-64.31	6363.60	0.010
L50	2.5 - 2.25 (50)	TP42.8754x42.8283x1.32 5	0.25	0.00	0.0	177.27 50	-64.47	5743.71	0.011
L51	2.25 - 0 (51)	TP43.3x42.8754x1.325	2.25	0.00	0.0	179.08 60	-65.87	5802.40	0.011

Pole Bending Design Data

Section No.	Elevation ft	Size	M _{ux} kip-ft	φM _{nx} kip-ft	Ratio M _{ux} φM _{nx}	M _{uy} kip-ft	φM _{ny} kip-ft	Ratio M _{uy} φM _{ny}
L1	156 - 151 (1)	TP10.75x10.75x0.375	0.39	106.01	0.004	0.00	106.01	0.000
L2	151 - 146 (2)	TP10.75x10.75x0.375	11.42	106.01	0.108	0.00	106.01	0.000
L3	146 - 144 (3)	TP10.75x10.75x0.375	17.03	106.01	0.161	0.00	106.01	0.000
L4	144 - 139 (4)	TP18.9435x18x0.25	58.24	232.70	0.250	0.00	232.70	0.000
L5	139 - 134 (5)	TP19.8871x18.9435x0.25	112.58	256.95	0.438	0.00	256.95	0.000
L6	134 - 129 (6)	TP20.8306x19.8871x0.25	175.69	282.40	0.622	0.00	282.40	0.000
L7	129 - 128.25 (7)	TP20.9721x20.8306x0.25	186.90	286.32	0.653	0.00	286.32	0.000
L8	128.25 - 128 (8)	TP21.0193x20.9721x0.57 5	190.65	630.98	0.302	0.00	630.98	0.000
L9	128 - 123 (9)	TP21.9628x21.0193x0.56 25	266.70	677.55	0.394	0.00	677.55	0.000
L10	123 - 118 (10)	TP22.9064x21.9628x0.55	348.76	724.20	0.482	0.00	724.20	0.000
L11	118 - 113 (11)	TP23.8499x22.9064x0.52 5	438.45	754.01	0.581	0.00	754.01	0.000
L12	113 - 108 (12)	TP24.7934x23.8499x0.51 25	530.31	798.73	0.664	0.00	798.73	0.000
L13	108 - 103 (13)	TP25.7369x24.7934x0.5	624.32	842.88	0.741	0.00	842.88	0.000
L14	103 - 98 (14)	TP26.6805x25.7369x0.49 38	720.48	897.02	0.803	0.00	897.02	0.000
L15	98 - 93 (15)	TP27.624x26.6805x0.487 5	749.75	905.74	0.828	0.00	905.74	0.000
L16	93 - 92 (16)	TP27.313x26.4635x0.7	838.98	1303.93	0.643	0.00	1303.93	0.000
L17	92 - 87 (17)	TP28.2568x27.313x0.675	940.43	1352.99	0.695	0.00	1352.99	0.000
L18	87 - 82 (18)	TP29.2006x28.2568x0.65	1044.20	1398.34	0.747	0.00	1398.34	0.000
L19	82 - 77.5 (19)	TP30.05x29.2006x0.6375	1139.56	1457.06	0.782	0.00	1457.06	0.000
L20	77.5 - 72.5 (20)	TP30.9935x30.05x0.6875	1247.71	1666.61	0.749	0.00	1666.61	0.000
L21	72.5 - 67.5 (21)	TP31.937x30.9935x0.687 5	1358.22	1773.18	0.766	0.00	1773.18	0.000
L22	67.5 - 67.08 (22)	TP32.0163x31.937x0.675	1367.61	1751.97	0.781	0.00	1751.97	0.000

Section No.	Elevation ft	Size	M_{ux}	ϕM_{nx}	Ratio	M_{uy} kip-ft	ϕM_{ny}	Ratio
			kip-ft	kip-ft	$\frac{M_{ux}}{\phi M_{nx}}$		kip-ft	$\frac{M_{uy}}{\phi M_{ny}}$
L23	67.08 - 66.83 (23)	TP32.0634x32.0163x0.97 5	1373.21	2466.25	0.557	0.00	2466.25	0.000
L24	66.83 - 66.33 (24)	TP32.1578x32.0634x0.96 25	1384.42	2452.61	0.564	0.00	2452.61	0.000
L25	66.33 - 66.08 (25)	TP32.205x32.1578x0.962 5	1390.03	2460.14	0.565	0.00	2460.14	0.000
L26	66.08 - 57.5 (26)	TP33.824x32.205x0.95	1488.33	2561.80	0.581	0.00	2561.80	0.000
L27	57.5 - 56.75 (27)	TP33.3405x32.397x0.937 5	1604.49	2582.28	0.621	0.00	2582.28	0.000
L28	56.75 - 51.75 (28)	TP34.284x33.3405x0.912 5	1723.33	2670.03	0.645	0.00	2670.03	0.000
L29	51.75 - 46.75 (29)	TP35.2275x34.284x0.9	1844.57	2789.55	0.661	0.00	2789.55	0.000
L30	46.75 - 41.75 (30)	TP36.171x35.2275x0.887 5	1968.18	2909.18	0.677	0.00	2909.18	0.000
L31	41.75 - 39.7 (31)	TP36.5579x36.171x0.9	2019.53	3012.82	0.670	0.00	3012.82	0.000
L32	39.7 - 39.5 (32)	TP36.5956x36.5579x0.88 75	2024.56	2980.48	0.679	0.00	2980.48	0.000
L33	39.5 - 34.5 (33)	TP37.5393x36.5956x0.87 5	2151.53	3100.97	0.694	0.00	3100.97	0.000
L34	34.5 - 31.75 (34)	TP38.0583x37.5393x0.86 25	2222.32	3148.03	0.706	0.00	3148.03	0.000
L35	31.75 - 31.5 (35)	TP38.1055x38.0583x0.95	2228.80	3451.84	0.646	0.00	3451.84	0.000
L36	31.5 - 26.5 (36)	TP39.0492x38.1055x0.92 5	2359.34	3543.05	0.666	0.00	3543.05	0.000
L37	26.5 - 21.5 (37)	TP39.9928x39.0492x0.9	2492.04	3629.09	0.687	0.00	3629.09	0.000
L38	21.5 - 16.5 (38)	TP40.9365x39.9928x0.9	2626.79	3808.43	0.690	0.00	3808.43	0.000
L39	16.5 - 9.8 (39)	TP42.201x40.9365x0.887 5	2666.23	3811.17	0.700	0.00	3811.17	0.000
L40	9.8 - 8.8 (40)	TP41.6395x40.4602x0.87 5	2838.36	3842.33	0.739	0.00	3842.33	0.000
L41	8.8 - 8.25 (41)	TP41.7433x41.6395x0.87 5	2853.66	3862.13	0.739	0.00	3862.13	0.000
L42	8.25 - 8 (42)	TP41.7904x41.7433x0.95	2860.63	4179.88	0.684	0.00	4179.88	0.000
L43	8 - 4.75 (43)	TP42.4037x41.7904x0.95	2951.56	4307.81	0.685	0.00	4307.81	0.000
L44	4.75 - 4.5 (44)	TP42.4509x42.4037x1.3	2958.58	5760.23	0.514	0.00	5760.23	0.000
L45	4.5 - 4.25 (45)	TP42.498x42.4509x1.3	2965.62	5773.65	0.514	0.00	5773.65	0.000
L46	4.25 - 4 (46)	TP42.5452x42.498x1.2	2972.66	5380.88	0.552	0.00	5380.88	0.000
L47	4 - 3.5 (47)	TP42.6396x42.5452x1.2	2986.74	5405.81	0.553	0.00	5405.81	0.000
L48	3.5 - 3.25 (48)	TP42.6867x42.6396x1.47 5	2993.80	6528.42	0.459	0.00	6528.42	0.000
L49	3.25 - 2.5 (49)	TP42.8283x42.6867x1.47 5	3014.98	6574.12	0.459	0.00	6574.12	0.000
L50	2.5 - 2.25 (50)	TP42.8754x42.8283x1.32 5	3022.06	5983.85	0.505	0.00	5983.85	0.000
L51	2.25 - 0 (51)	TP43.3x42.8754x1.325	3085.94	6108.67	0.505	0.00	6108.67	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual	ϕV_n	Ratio	Actual	ϕT_n	Ratio
			V_u K	K	$\frac{V_u}{\phi V_n}$	T_u kip-ft	kip-ft	$\frac{T_u}{\phi T_n}$
L1	156 - 151 (1)	TP10.75x10.75x0.375	0.16	115.51	0.001	0.00	105.36	0.000
L2	151 - 146 (2)	TP10.75x10.75x0.375	2.78	115.51	0.024	0.00	105.36	0.000
L3	146 - 144 (3)	TP10.75x10.75x0.375	2.84	115.51	0.025	0.00	105.36	0.000
L4	144 - 139 (4)	TP18.9435x18x0.25	10.68	146.27	0.073	0.86	240.52	0.004
L5	139 - 134 (5)	TP19.8871x18.9435x0.25	11.07	153.65	0.072	0.86	265.41	0.003
L6	134 - 129 (6)	TP20.8306x19.8871x0.25	14.92	161.04	0.093	0.99	291.53	0.003
L7	129 - 128.25 (7)	TP20.9721x20.8306x0.25	14.98	162.14	0.092	0.99	295.55	0.003

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio V_u ϕV_n	Actual T_u kip-ft	ϕT_n kip-ft	Ratio T_u ϕT_n
L8	128.25 - 128 (8)	TP21.0193x20.9721x0.575	15.01	367.93	0.041	0.99	661.66	0.001
L9	128 - 123 (9)	TP21.9628x21.0193x0.5625	15.44	376.76	0.041	0.99	709.23	0.001
L10	123 - 118 (10)	TP22.9064x21.9628x0.55	17.73	384.85	0.046	1.34	756.81	0.002
L11	118 - 113 (11)	TP23.8499x22.9064x0.525	18.16	383.27	0.047	1.34	786.36	0.002
L12	113 - 108 (12)	TP24.7934x23.8499x0.5125	18.60	389.48	0.048	1.34	831.85	0.002
L13	108 - 103 (13)	TP25.7369x24.7934x0.5	19.03	394.94	0.048	1.34	876.73	0.002
L14	103 - 98 (14)	TP26.6805x25.7369x0.4938	19.46	404.68	0.048	1.34	932.16	0.001
L15	98 - 93 (15)	TP27.624x26.6805x0.4875	19.59	403.97	0.049	1.34	940.81	0.001
L16	93 - 92 (16)	TP27.313x26.4635x0.7	20.07	583.06	0.034	1.34	1364.92	0.001
L17	92 - 87 (17)	TP28.2568x27.313x0.675	20.54	582.70	0.035	1.34	1413.74	0.001
L18	87 - 82 (18)	TP29.2006x28.2568x0.65	21.00	580.83	0.036	1.34	1458.70	0.001
L19	82 - 77.5 (19)	TP30.05x29.2006x0.6375	21.41	586.86	0.036	1.34	1518.33	0.001
L20	77.5 - 72.5 (20)	TP30.9935x30.05x0.6875	21.88	652.11	0.034	1.34	1738.41	0.001
L21	72.5 - 67.5 (21)	TP31.937x30.9935x0.6875	22.35	672.42	0.033	1.34	1848.33	0.001
L22	67.5 - 67.08 (22)	TP32.0163x31.937x0.675	22.38	662.13	0.034	1.34	1825.40	0.001
L23	67.08 - 66.83 (23)	TP32.0634x32.0163x0.975	22.41	948.69	0.024	1.34	2594.32	0.001
L24	66.83 - 66.33 (24)	TP32.1578x32.0634x0.9625	22.46	939.75	0.024	1.34	2578.70	0.001
L25	66.33 - 66.08 (25)	TP32.205x32.1578x0.9625	22.49	941.17	0.024	1.34	2586.50	0.001
L26	66.08 - 57.5 (26)	TP33.824x32.205x0.95	22.93	953.61	0.024	1.34	2690.28	0.000
L27	57.5 - 56.75 (27)	TP33.3405x32.397x0.9375	23.53	950.78	0.025	1.34	2709.97	0.000
L28	56.75 - 51.75 (28)	TP34.284x33.3405x0.9125	24.02	953.08	0.025	1.34	2797.74	0.000
L29	51.75 - 46.75 (29)	TP35.2275x34.284x0.9	24.50	966.96	0.025	1.34	2919.78	0.000
L30	46.75 - 41.75 (30)	TP36.171x35.2275x0.8875	24.97	980.08	0.025	1.34	3041.82	0.000
L31	41.75 - 39.7 (31)	TP36.5579x36.171x0.9	25.16	1004.43	0.025	1.34	3150.47	0.000
L32	39.7 - 39.5 (32)	TP36.5956x36.5579x0.8875	25.17	991.88	0.025	1.34	3115.47	0.000
L33	39.5 - 34.5 (33)	TP37.5393x36.5956x0.875	25.64	1004.09	0.026	1.34	3238.30	0.000
L34	34.5 - 31.75 (34)	TP38.0583x37.5393x0.8625	25.89	1004.10	0.026	1.34	3285.25	0.000
L35	31.75 - 31.5 (35)	TP38.1055x38.0583x0.95	25.89	1104.76	0.023	1.34	3610.70	0.000
L36	31.5 - 26.5 (36)	TP39.0492x38.1055x0.925	26.34	1103.73	0.024	1.34	3701.38	0.000
L37	26.5 - 21.5 (37)	TP39.9928x39.0492x0.9	26.77	1101.19	0.024	1.34	3786.68	0.000
L38	21.5 - 16.5 (38)	TP40.9365x39.9928x0.9	27.16	1127.77	0.024	1.34	3971.70	0.000
L39	16.5 - 9.8 (39)	TP42.201x40.9365x0.8875	27.28	1120.06	0.024	1.34	3972.72	0.000
L40	9.8 - 8.8 (40)	TP41.6395x40.4602x0.875	27.82	1116.38	0.025	1.34	4003.07	0.000
L41	8.8 - 8.25 (41)	TP41.7433x41.6395x0.875	27.85	1119.22	0.025	1.34	4023.48	0.000
L42	8.25 - 8 (42)	TP41.7904x41.7433x0.95	27.87	1214.33	0.023	1.34	4362.41	0.000
L43	8 - 4.75 (43)	TP42.4037x41.7904x0.95	28.12	1232.56	0.023	1.34	4494.41	0.000
L44	4.75 - 4.5 (44)	TP42.4509x42.4037x1.3	28.12	1674.34	0.017	1.34	6060.71	0.000
L45	4.5 - 4.25 (45)	TP42.498x42.4509x1.3	28.14	1676.26	0.017	1.34	6074.62	0.000
L46	4.25 - 4 (46)	TP42.5452x42.498x1.2	28.16	1552.85	0.018	1.34	5647.47	0.000
L47	4 - 3.5 (47)	TP42.6396x42.5452x1.2	28.20	1556.39	0.018	1.34	5673.27	0.000
L48	3.5 - 3.25 (48)	TP42.6867x42.6396x1.47	28.22	1902.55	0.015	1.34	6896.93	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 $\frac{T_u}{\phi T_n}$
L49	3.25 - 2.5 (49)	TP42.8283x42.6867x1.47 5	28.29	1909.08	0.015	1.34	6944.38	0.000
L50	2.5 - 2.25 (50)	TP42.8754x42.8283x1.32 5	28.31	1723.11	0.016	1.34	6297.80	0.000
L51	2.25 - 0 (51)	TP43.3x42.8754x1.325 5	28.50	1740.72	0.016	1.34	6427.17	0.000

Pole Interaction Design Data

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
L1	156 - 151 (1)	0.001	0.004	0.000	0.001	0.000	0.004	1.050	4.8.2
L2	151 - 146 (2)	0.006	0.108	0.000	0.024	0.000	0.114	1.050	4.8.2
L3	146 - 144 (3)	0.006	0.161	0.000	0.025	0.000	0.167	1.050	4.8.2
L4	144 - 139 (4)	0.022	0.250	0.000	0.073	0.004	0.278	1.050	4.8.2
L5	139 - 134 (5)	0.022	0.438	0.000	0.072	0.003	0.466	1.050	4.8.2
L6	134 - 129 (6)	0.027	0.622	0.000	0.093	0.003	0.659	1.050	4.8.2
L7	129 - 128.25 (7)	0.027	0.653	0.000	0.092	0.003	0.689	1.050	4.8.2
L8	128.25 - 128 (8)	0.012	0.302	0.000	0.041	0.001	0.316	1.050	4.8.2
L9	128 - 123 (9)	0.012	0.394	0.000	0.041	0.001	0.408	1.050	4.8.2
L10	123 - 118 (10)	0.015	0.482	0.000	0.046	0.002	0.499	1.050	4.8.2
L11	118 - 113 (11)	0.016	0.581	0.000	0.047	0.002	0.600	1.050	4.8.2
L12	113 - 108 (12)	0.016	0.664	0.000	0.048	0.002	0.682	1.050	4.8.2
L13	108 - 103 (13)	0.017	0.741	0.000	0.048	0.002	0.760	1.050	4.8.2
L14	103 - 98 (14)	0.017	0.803	0.000	0.048	0.001	0.823	1.050	4.8.2
L15	98 - 93 (15)	0.017	0.828	0.000	0.049	0.001	0.847	1.050	4.8.2
L16	93 - 92 (16)	0.013	0.643	0.000	0.034	0.001	0.657	1.050	4.8.2
L17	92 - 87 (17)	0.013	0.695	0.000	0.035	0.001	0.710	1.050	4.8.2
L18	87 - 82 (18)	0.014	0.747	0.000	0.036	0.001	0.762	1.050	4.8.2
L19	82 - 77.5 (19)	0.015	0.782	0.000	0.036	0.001	0.798	1.050	4.8.2
L20	77.5 - 72.5 (20)	0.014	0.749	0.000	0.034	0.001	0.764	1.050	4.8.2
L21	72.5 - 67.5 (21)	0.014	0.766	0.000	0.033	0.001	0.781	1.050	4.8.2
L22	67.5 - 67.08 (22)	0.014	0.781	0.000	0.034	0.001	0.796	1.050	4.8.2
L23	67.08 - 66.83 (23)	0.010	0.557	0.000	0.024	0.001	0.567	1.050	4.8.2
L24	66.83 - 66.33 (24)	0.010	0.564	0.000	0.024	0.001	0.575	1.050	4.8.2
L25	66.33 - 66.08 (25)	0.010	0.565	0.000	0.024	0.001	0.576	1.050	4.8.2
L26	66.08 - 57.5 (26)	0.011	0.581	0.000	0.024	0.000	0.592	1.050	4.8.2
L27	57.5 - 56.75 (27)	0.012	0.621	0.000	0.025	0.000	0.634	1.050	4.8.2
L28	56.75 - 51.75 (28)	0.012	0.645	0.000	0.025	0.000	0.658	1.050	4.8.2
L29	51.75 - 46.75 (29)	0.013	0.661	0.000	0.025	0.000	0.675	1.050	4.8.2
L30	46.75 - 41.75 (30)	0.013	0.677	0.000	0.025	0.000	0.690	1.050	4.8.2
L31	41.75 - 39.7 (31)	0.013	0.670	0.000	0.025	0.000	0.684	1.050	4.8.2
L32	39.7 - 39.5 (32)	0.013	0.679	0.000	0.025	0.000	0.693	1.050	4.8.2
L33	39.5 - 34.5 (33)	0.014	0.694	0.000	0.026	0.000	0.708	1.050	4.8.2
L34	34.5 - 31.75 (34)	0.014	0.706	0.000	0.026	0.000	0.721	1.050	4.8.2

Section No.	Elevation ft	Ratio	Ratio	Ratio	Ratio	Ratio	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
		P_u	M_{ux}	M_{uy}	V_u	T_u			
L35	31.75 - 31.5 (35)	0.013	0.646	0.000	0.023	0.000	0.659	1.050	4.8.2
L36	31.5 - 26.5 (36)	0.014	0.666	0.000	0.024	0.000	0.680	1.050	4.8.2
L37	26.5 - 21.5 (37)	0.014	0.687	0.000	0.024	0.000	0.702	1.050	4.8.2
L38	21.5 - 16.5 (38)	0.015	0.690	0.000	0.024	0.000	0.705	1.050	4.8.2
L39	16.5 - 9.8 (39)	0.015	0.700	0.000	0.024	0.000	0.715	1.050	4.8.2
L40	9.8 - 8.8 (40)	0.016	0.739	0.000	0.025	0.000	0.756	1.050	4.8.2
L41	8.8 - 8.25 (41)	0.016	0.739	0.000	0.025	0.000	0.756	1.050	4.8.2
L42	8.25 - 8 (42)	0.015	0.684	0.000	0.023	0.000	0.700	1.050	4.8.2
L43	8 - 4.75 (43)	0.015	0.685	0.000	0.023	0.000	0.701	1.050	4.8.2
L44	4.75 - 4.5 (44)	0.011	0.514	0.000	0.017	0.000	0.525	1.050	4.8.2
L45	4.5 - 4.25 (45)	0.011	0.514	0.000	0.017	0.000	0.525	1.050	4.8.2
L46	4.25 - 4 (46)	0.012	0.552	0.000	0.018	0.000	0.565	1.050	4.8.2
L47	4 - 3.5 (47)	0.012	0.553	0.000	0.018	0.000	0.565	1.050	4.8.2
L48	3.5 - 3.25 (48)	0.010	0.459	0.000	0.015	0.000	0.469	1.050	4.8.2
L49	3.25 - 2.5 (49)	0.010	0.459	0.000	0.015	0.000	0.469	1.050	4.8.2
L50	2.5 - 2.25 (50)	0.011	0.505	0.000	0.016	0.000	0.517	1.050	4.8.2
L51	2.25 - 0 (51)	0.011	0.505	0.000	0.016	0.000	0.517	1.050	4.8.2

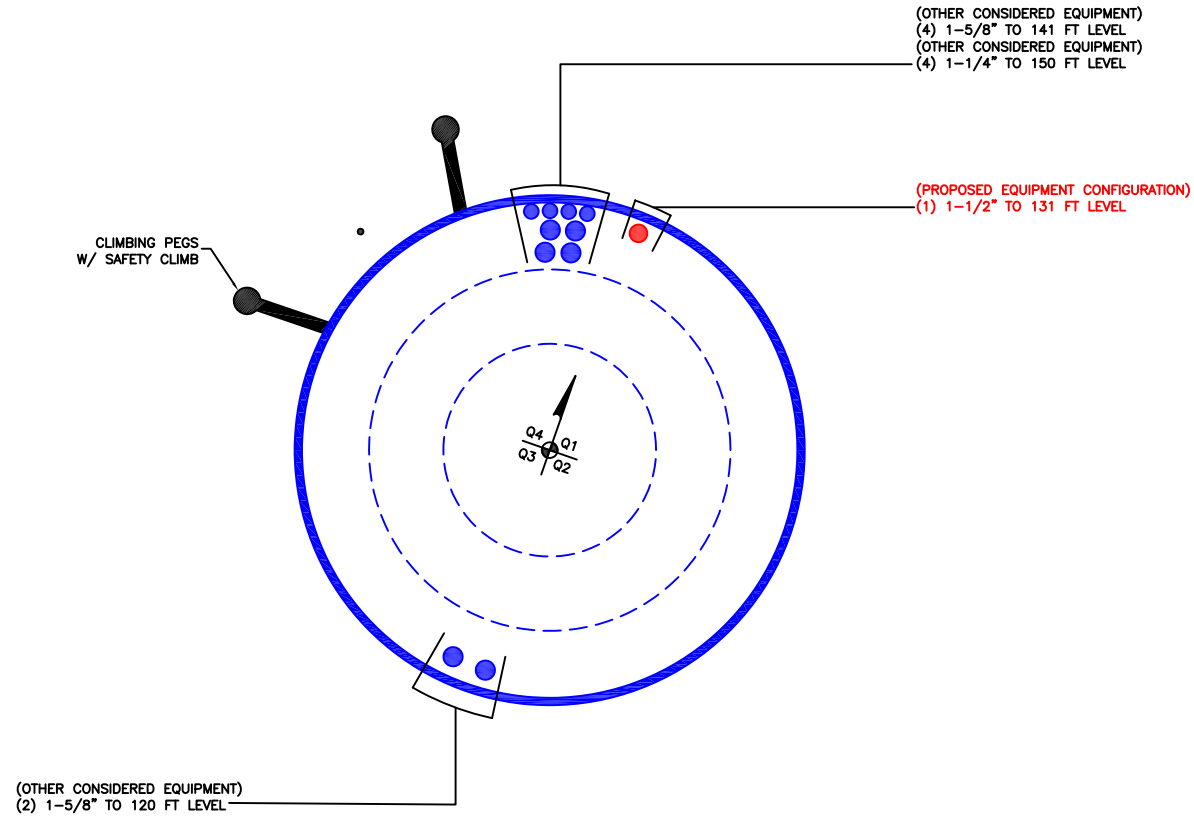
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	156 - 151	Pole	TP10.75x10.75x0.375	1	-0.24	404.27	0.4	Pass
L2	151 - 146	Pole	TP10.75x10.75x0.375	2	-2.18	404.27	10.9	Pass
L3	146 - 144	Pole	TP10.75x10.75x0.375	3	-2.29	404.27	15.9	Pass
L4	144 - 139	Pole	TP18.9435x18x0.25	4	-10.89	511.94	26.5	Pass
L5	139 - 134	Pole	TP19.8871x18.9435x0.25	5	-11.28	537.78	44.4	Pass
L6	134 - 129	Pole	TP20.8306x19.8871x0.25	6	-14.67	563.62	62.7	Pass
L7	129 - 128.25	Pole	TP20.9721x20.8306x0.25	7	-14.74	567.50	65.6	Pass
L8	128.25 - 128	Pole	TP21.0193x20.9721x0.575	8	-14.78	1287.74	30.1	Pass
L9	128 - 123	Pole	TP21.9628x21.0193x0.5625	9	-15.59	1318.66	38.8	Pass
L10	123 - 118	Pole	TP22.9064x21.9628x0.55	10	-19.06	1346.96	47.5	Pass
L11	118 - 113	Pole	TP23.8499x22.9064x0.525	11	-19.95	1341.44	57.1	Pass
L12	113 - 108	Pole	TP24.7934x23.8499x0.5125	12	-20.86	1363.16	65.0	Pass
L13	108 - 103	Pole	TP25.7369x24.7934x0.5	13	-21.79	1382.28	72.4	Pass
L14	103 - 98	Pole	TP26.6805x25.7369x0.4938	14	-22.75	1416.38	78.3	Pass
L15	98 - 93	Pole	TP27.624x26.6805x0.4875	15	-23.04	1413.90	80.7	Pass
L16	93 - 92	Pole	TP27.313x26.4635x0.7	16	-24.71	2040.71	62.6	Pass
L17	92 - 87	Pole	TP28.2568x27.313x0.675	17	-25.96	2039.47	67.6	Pass
L18	87 - 82	Pole	TP29.2006x28.2568x0.65	18	-27.24	2032.92	72.6	Pass
L19	82 - 77.5	Pole	TP30.05x29.2006x0.6375	19	-28.41	2054.01	76.0	Pass
L20	77.5 - 72.5	Pole	TP30.9935x30.05x0.6875	20	-29.85	2282.40	72.7	Pass
L21	72.5 - 67.5	Pole	TP31.937x30.9935x0.6875	21	-31.31	2353.46	74.4	Pass
L22	67.5 - 67.08	Pole	TP32.0163x31.937x0.675	22	-31.43	2317.45	75.8	Pass
L23	67.08 - 66.83	Pole	TP32.0634x32.0163x0.975	23	-31.53	3320.43	54.0	Pass
L24	66.83 - 66.33	Pole	TP32.1578x32.0634x0.9625	24	-31.73	3289.12	54.8	Pass
L25	66.33 - 66.08	Pole	TP32.205x32.1578x0.9625	25	-31.83	3294.09	54.8	Pass
L26	66.08 - 57.5	Pole	TP33.824x32.205x0.95	26	-33.52	3337.65	56.4	Pass
L27	57.5 - 56.75	Pole	TP33.3405x32.397x0.9375	27	-37.02	3327.72	60.3	Pass
L28	56.75 - 51.75	Pole	TP34.284x33.3405x0.9125	28	-39.01	3335.80	62.7	Pass
L29	51.75 - 46.75	Pole	TP35.2275x34.284x0.9	29	-41.02	3384.35	64.3	Pass
L30	46.75 - 41.75	Pole	TP36.171x35.2275x0.8875	30	-43.05	3430.29	65.8	Pass
L31	41.75 - 39.7	Pole	TP36.5579x36.171x0.9	31	-43.94	3515.50	65.2	Pass
L32	39.7 - 39.5	Pole	TP36.5956x36.5579x0.8875	32	-44.03	3471.56	66.0	Pass
L33	39.5 - 34.5	Pole	TP37.5393x36.5956x0.875	33	-46.19	3514.32	67.5	Pass
L34	34.5 - 31.75	Pole	TP38.0583x37.5393x0.8625	34	-47.39	3514.34	68.6	Pass
L35	31.75 - 31.5	Pole	TP38.1055x38.0583x0.95	35	-47.52	3866.67	62.8	Pass
L36	31.5 - 26.5	Pole	TP39.0492x38.1055x0.925	36	-49.87	3863.07	64.8	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail	
L37	26.5 - 21.5	Pole	TP39.9928x39.0492x0.9	37	-52.25	3854.16	66.8	Pass	
L38	21.5 - 16.5	Pole	TP40.9365x39.9928x0.9	38	-54.66	3947.19	67.1	Pass	
L39	16.5 - 9.8	Pole	TP42.201x40.9365x0.8875	39	-55.36	3920.20	68.1	Pass	
L40	9.8 - 8.8	Pole	TP41.6395x40.4602x0.875	40	-60.75	3907.33	72.0	Pass	
L41	8.8 - 8.25	Pole	TP41.7433x41.6395x0.875	41	-61.03	3917.28	72.0	Pass	
L42	8.25 - 8	Pole	TP41.7904x41.7433x0.95	42	-61.16	4250.15	66.7	Pass	
L43	8 - 4.75	Pole	TP42.4037x41.7904x0.95	43	-62.86	4313.97	66.8	Pass	
L44	4.75 - 4.5	Pole	TP42.4509x42.4037x1.3	44	-63.03	5860.21	50.0	Pass	
L45	4.5 - 4.25	Pole	TP42.498x42.4509x1.3	45	-63.19	5866.92	50.0	Pass	
L46	4.25 - 4	Pole	TP42.5452x42.498x1.2	46	-63.34	5434.97	53.8	Pass	
L47	4 - 3.5	Pole	TP42.6396x42.5452x1.2	47	-63.62	5447.37	53.8	Pass	
L48	3.5 - 3.25	Pole	TP42.6867x42.6396x1.475	48	-63.80	6658.91	44.7	Pass	
L49	3.25 - 2.5	Pole	TP42.8283x42.6867x1.475	49	-64.31	6681.78	44.7	Pass	
L50	2.5 - 2.25	Pole	TP42.8754x42.8283x1.325	50	-64.47	6030.90	49.2	Pass	
L51	2.25 - 0	Pole	TP43.3x42.8754x1.325	51	-65.87	6092.52	49.2	Pass	
							Summary		
							Pole (L15)	80.7	Pass
							RATING =	80.7	Pass

***NOTE: Above stress ratios for reinforced sections are approximate. More exact calculations are presented in Appendix C.**

APPENDIX B
BASE LEVEL DRAWING



APPENDIX C
ADDITIONAL CALCULATIONS

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	156	12	0	0	10.75	10.75	0.375		A53-B-35
2	144	51	3.5	12	18.00	27.624	0.25	Auto	A36
3	96.5	19	0	12	26.46	30.05	0.25	Auto	A36
4	77.5	20	4.25	12	30.05	33.824	0.3125	Auto	A36
5	61.75	21.95	0	12	32.40	36.539	0.3125	Auto	A36
6	39.8	30	5.25	12	36.54	42.201	0.375	Auto	A36
7	15.05	15.05	0	12	40.46	43.3	0.375	Auto	A36

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
1	4.25	39.75	plate	CCI-SFP-085125	2	E				E							
2	8.25	39.75	plate	CCI-SFP-065125	1									E			
3	39.75	66.33	plate	CCI-AFP-085125	3	E				E				E			
4	66.33	95.67	plate	CFP-085125	3	E				E				E			
5	95.67	128.25	plate	CCI-AFP-060100	3	E				E				E			
6	2.5	31.75	plate	CWFP-085125	3				E				E				E
7	31.75	67.08	plate	CCI-AFP-065125	3				E				E				E
8	0	4.75	plate	TS 1.25"x6.5"	4	c			c	c							c
9	0	8.25	plate	TS 1.25"x6.5"	2								c	c			
10	0	3.5	plate	TS 1.25"x4"	6		o	4			o	-4			o	4	
11	0	2.5	plate	TS 1.25"x4"	3				o				o				o
12																	

Reinforcement Details

	B (in)	H (in)	Gross Area (in ²)	Pole Face to Centroid (in)	Bottom Termination Type	Bottom Termination Length (in)	Top Termination Type	Top Termination Length (in)	Lu (in)	Net Area (in ²)	Bolt Hole Size (in)	Reinforcement Material
1	8.5	1.25	10.625	0.625	PC 8.8 - M20 (100)	45	PC 8.8 - M20 (100)	45.000	17.000	9.063	1.1875	A572-65
2	6.5	1.25	8.125	0.625	PC 8.8 - M20 (100)	33	PC 8.8 - M20 (100)	33.000	19.000	6.563	1.1875	A572-65
3	8.5	1.25	10.625	0.625	PC 8.8 - M20 (100)	51	PC 8.8 - M20 (100)	51.000	17.000	9.063	1.1875	A572-65
4	8.5	1.25	10.625	0.625	PC 8.8 - M20 (100)	60	PC 8.8 - M20 (100)	60.000	17.000	9.063	1.1875	A572-65
5	6	1	6	0.5	PC 8.8 - M20 (100)	30	PC 8.8 - M20 (100)	30.000	16.000	4.750	1.1875	A572-65
6	8.5	1.25	10.625	0.625	Welded	n/a	PC 8.8 - M20 (100)	45.000	17.000	9.063	1.1875	A572-65
7	6.5	1.25	8.125	0.625	PC 8.8 - M20 (100)	42	PC 8.8 - M20 (100)	42.000	19.000	6.563	1.1875	A572-65
8	1.25	6.5	8.125	3.25	Welded	n/a	Welded	n/a	0.000	8.125	0.0000	A572-65
9	1.25	6.5	8.125	3.25	Welded	n/a	Welded	n/a	0.000	8.125	0.0000	A572-65
10	1.25	4	5	2	Welded	n/a	Welded	n/a	0.000	5.000	0.0000	A572-65
11	1.25	4	5	2	Welded	n/a	Welded	n/a	0.000	5.000	0.0000	A572-65

Connection Details for Custom Reinforcements

Reinforcement	End	# Bolts	N or X	Bolt Spacing (in)	Edge Dist (in)	Weld Grade (ksi)	Transverse (Horiz.) Weld Type	Horiz. Weld Length (in)	Horiz. Groove Depth (in)	Horiz. Groove Angle (deg)	Horiz. Fillet Size (in)	Vertical Weld Length (in)	Vertical Fillet Size (in)	Rev H Connection Capacity (kip)
CFP-085125	Top	20	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	20	N	3	3	-	-	-	-	-	-	-	-	-
CWFP-085125	Top	15	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-	80	Fillet	8.5	-	-	0.625	-	-	-
TS 1.25"x6.5"	Top	-	-	-	-	80	None	-	-	-	-	27	0.375	-
	Bottom	-	-	-	-	80	CJP Groove	11.5	0.625	45	0.625	-	-	-
TS 1.25"x4"	Top	-	-	-	-	80	None	-	-	-	-	12	0.375	-
	Bottom	-	-	-	-	80	CJP Groove	6.5	0.625	45	0.625	-	-	-

TNX Geometry Input

Increment (ft): 5 [Export to TNX](#)

	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	156 - 151	5		0	10.750	10.750	0.375	A53-B-35	1.000
2	151 - 146	5		0	10.750	10.750	0.375	A53-B-35	1.000
3	146 - 144	2	0	0	10.750	10.750	0.375	A53-B-35	1.000
4	144 - 139	5		12	18.000	18.944	0.25	A36	1.000
5	139 - 134	5		12	18.944	19.887	0.25	A36	1.000
6	134 - 129	5		12	19.887	20.831	0.25	A36	1.000
7	129 - 128.25	0.75		12	20.831	20.972	0.25	A36	1.000
8	128.25 - 128	0.25		12	20.972	21.019	0.575	A36	0.918
9	128 - 123	5		12	21.019	21.963	0.5625	A36	0.916
10	123 - 118	5		12	21.963	22.906	0.55	A36	0.916
11	118 - 113	5		12	22.906	23.850	0.525	A36	0.939
12	113 - 108	5		12	23.850	24.793	0.5125	A36	0.943
13	108 - 103	5		12	24.793	25.737	0.5	A36	0.949
14	103 - 98	5		12	25.737	26.680	0.49375	A36	0.944
15	98 - 96.5	5	3.5	12	26.680	27.624	0.4875	A36	0.951
16	96.5 - 92	4.5		12	26.680	27.313	0.7	A36	0.895
17	92 - 87	5		12	27.313	28.257	0.675	A36	0.909
18	87 - 82	5		12	28.257	29.201	0.65	A36	0.924
19	82 - 77.5	4.5	0	12	29.201	30.050	0.6375	A36	0.926
20	77.5 - 72.5	5		12	30.050	30.994	0.6875	A36	0.936
21	72.5 - 67.5	5		12	30.994	31.937	0.6875	A36	0.921
22	67.5 - 67.08	0.42		12	31.937	32.016	0.675	A36	0.937
23	67.08 - 66.83	0.25		12	32.016	32.063	0.975	A36	0.904
24	66.83 - 66.33	0.5		12	32.063	32.158	0.9625	A36	0.914
25	66.33 - 66.08	0.25		12	32.158	32.205	0.9625	A36	0.913
26	66.08 - 61.75	8.58	4.25	12	32.205	33.824	0.95	A36	0.910
27	61.75 - 56.75	5		12	32.397	33.341	0.9375	A36	0.916
28	56.75 - 51.75	5		12	33.341	34.284	0.9125	A36	0.923
29	51.75 - 46.75	5		12	34.284	35.228	0.9	A36	0.919
30	46.75 - 41.75	5	0	12	35.228	36.171	0.8875	A36	0.917
31	41.75 - 39.7	2.05		12	36.171	36.558	0.9	A36	0.944
32	39.7 - 39.5	0.2		12	36.558	36.596	0.8875	A36	0.956
33	39.5 - 34.5	5		12	36.596	37.539	0.875	A36	0.955
34	34.5 - 31.75	2.75		12	37.539	38.058	0.8625	A36	0.962
35	31.75 - 31.5	0.25		12	38.058	38.105	0.95	A36	0.941
36	31.5 - 26.5	5		12	38.105	39.049	0.925	A36	0.951
37	26.5 - 21.5	5		12	39.049	39.993	0.9	A36	0.964
38	21.5 - 16.5	5		12	39.993	40.936	0.9	A36	0.951
39	16.5 - 15.05	6.7	5.25	12	40.936	42.201	0.8875	A36	0.960
40	15.05 - 8.8	6.25		12	40.460	41.639	0.875	A36	0.968
41	8.8 - 8.25	0.55		12	41.639	41.743	0.875	A36	0.967
42	8.25 - 8	0.25		12	41.743	41.790	0.95	A36	0.956
43	8 - 4.75	3.25		12	41.790	42.404	0.95	A36	0.948
44	4.75 - 4.5	0.25		12	42.404	42.451	1.3	A36	0.887
45	4.5 - 4.25	0.25		12	42.451	42.498	1.3	A36	0.887
46	4.25 - 4	0.25		12	42.498	42.545	1.2	A36	0.824
47	4 - 3.5	0.5		12	42.545	42.640	1.2	A36	0.823
48	3.5 - 3.25	0.25		12	42.640	42.687	1.475	A36	0.827
49	3.25 - 2.5	0.75		12	42.687	42.828	1.475	A36	0.825
50	2.5 - 2.25	0.25		12	42.828	42.875	1.325	A36	0.819
51	2.25 - 0	2.25		12	42.875	43.300	1.325	A36	0.814

TNX Section Forces

Increment (ft):		5	TNX Output		
	Section Height (ft)	P _u (K)	M _{ux} (kip-ft)	V _u (K)	
1	156 - 151	0.24	0.39	0.16	
2	151 - 146	2.18	11.42	2.78	
3	146 - 144	2.29	17.03	2.84	
4	144 - 139	10.89	58.24	10.68	
5	139 - 134	11.28	112.58	11.07	
6	134 - 129	14.67	175.69	14.92	
7	129 - 128.25	14.74	186.90	14.98	
8	128.25 - 128	14.78	190.65	15.01	
9	128 - 123	15.59	266.70	15.44	
10	123 - 118	19.06	348.76	17.73	
11	118 - 113	19.95	438.45	18.16	
12	113 - 108	20.86	530.31	18.60	
13	108 - 103	21.79	624.32	19.03	
14	103 - 98	22.75	720.48	19.46	
15	98 - 96.5	23.04	749.75	19.59	
16	96.5 - 92	24.71	838.97	20.07	
17	92 - 87	25.96	940.43	20.54	
18	87 - 82	27.24	1044.20	21.00	
19	82 - 77.5	28.41	1139.56	21.41	
20	77.5 - 72.5	29.85	1247.71	21.88	
21	72.5 - 67.5	31.31	1358.22	22.35	
22	67.5 - 67.08	31.43	1367.61	22.38	
23	67.08 - 66.83	31.53	1373.21	22.41	
24	66.83 - 66.33	31.73	1384.42	22.46	
25	66.33 - 66.08	31.83	1390.04	22.49	
26	66.08 - 61.75	33.52	1488.33	22.93	
27	61.75 - 56.75	37.02	1604.49	23.53	
28	56.75 - 51.75	39.01	1723.32	24.02	
29	51.75 - 46.75	41.02	1844.56	24.50	
30	46.75 - 41.75	43.05	1968.17	24.97	
31	41.75 - 39.7	43.94	2019.53	25.16	
32	39.7 - 39.5	44.03	2024.56	25.17	
33	39.5 - 34.5	46.19	2151.53	25.64	
34	34.5 - 31.75	47.39	2222.33	25.89	
35	31.75 - 31.5	47.52	2228.80	25.89	
36	31.5 - 26.5	49.87	2359.34	26.34	
37	26.5 - 21.5	52.25	2492.05	26.77	
38	21.5 - 16.5	54.66	2626.79	27.16	
39	16.5 - 15.05	55.36	2666.23	27.28	
40	15.05 - 8.8	60.75	2838.36	27.82	
41	8.8 - 8.25	61.03	2853.66	27.85	
42	8.25 - 8	61.16	2860.62	27.87	
43	8 - 4.75	62.86	2951.56	28.12	
44	4.75 - 4.5	63.03	2958.59	28.12	
45	4.5 - 4.25	63.19	2965.62	28.14	
46	4.25 - 4	63.34	2972.66	28.16	
47	4 - 3.5	63.62	2986.75	28.20	
48	3.5 - 3.25	63.80	2993.80	28.22	
49	3.25 - 2.5	64.31	3014.99	28.29	
50	2.5 - 2.25	64.47	3022.06	28.31	
51	2.25 - 0	65.87	3085.94	28.50	

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
156 - 151	Pole	TP10.75x10.75x0.375	Pole	0.4%	Pass
151 - 146	Pole	TP10.75x10.75x0.375	Pole	10.9%	Pass
146 - 144	Pole	TP10.75x10.75x0.375	Pole	15.9%	Pass
144 - 139	Pole	TP18.944x18x0.25	Pole	26.4%	Pass
139 - 134	Pole	TP19.887x18.944x0.25	Pole	44.2%	Pass
134 - 129	Pole	TP20.831x19.887x0.25	Pole	62.5%	Pass
129 - 128.25	Pole	TP20.972x20.831x0.25	Pole	65.4%	Pass
128.25 - 128	Pole + Reinf.	TP21.019x20.972x0.575	Pole	29.5%	Pass
128 - 123	Pole + Reinf.	TP21.963x21.019x0.5625	Pole	38.5%	Pass
123 - 118	Pole + Reinf.	TP22.906x21.963x0.55	Pole	47.4%	Pass
118 - 113	Pole + Reinf.	TP23.85x22.906x0.525	Pole	56.0%	Pass
113 - 108	Pole + Reinf.	TP24.793x23.85x0.5125	Pole	63.9%	Pass
108 - 103	Pole + Reinf.	TP25.737x24.793x0.5	Pole	71.1%	Pass
103 - 98	Pole + Reinf.	TP26.68x25.737x0.4938	Pole	77.7%	Pass
98 - 96.5	Pole + Reinf.	TP27.624x26.68x0.4875	Pole	79.6%	Pass
96.5 - 92	Pole + Reinf.	TP27.313x26.464x0.7	Pole	62.6%	Pass
92 - 87	Pole + Reinf.	TP28.257x27.313x0.675	Pole	67.7%	Pass
87 - 82	Pole + Reinf.	TP29.201x28.257x0.65	Pole	72.6%	Pass
82 - 77.5	Pole + Reinf.	TP30.05x29.201x0.6375	Pole	77.0%	Pass
77.5 - 72.5	Pole + Reinf.	TP30.994x30.05x0.6875	Pole	71.5%	Pass
72.5 - 67.5	Pole + Reinf.	TP31.937x30.994x0.6875	Pole	74.6%	Pass
67.5 - 67.08	Pole + Reinf.	TP32.016x31.937x0.675	Pole	74.8%	Pass
67.08 - 66.83	Pole + Reinf.	TP32.063x32.016x0.975	Pole	53.6%	Pass
66.83 - 66.33	Pole + Reinf.	TP32.158x32.063x0.9625	Pole	53.9%	Pass
66.33 - 66.08	Pole + Reinf.	TP32.205x32.158x0.9625	Pole	54.0%	Pass
66.08 - 61.75	Pole + Reinf.	TP33.824x32.205x0.95	Pole	56.0%	Pass
61.75 - 56.75	Pole + Reinf.	TP33.341x32.397x0.9375	Pole	59.7%	Pass
56.75 - 51.75	Pole + Reinf.	TP34.284x33.341x0.9125	Pole	61.8%	Pass
51.75 - 46.75	Pole + Reinf.	TP35.228x34.284x0.9	Pole	64.3%	Pass
46.75 - 41.75	Pole + Reinf.	TP36.171x35.228x0.8875	Pole	66.8%	Pass
41.75 - 39.7	Pole + Reinf.	TP36.558x36.171x0.9	Pole	66.9%	Pass
39.7 - 39.5	Pole + Reinf.	TP36.596x36.558x0.8875	Pole	66.9%	Pass
39.5 - 34.5	Pole + Reinf.	TP37.539x36.596x0.875	Pole	68.6%	Pass
34.5 - 31.75	Pole + Reinf.	TP38.058x37.539x0.8625	Pole	69.5%	Pass
31.75 - 31.5	Pole + Reinf.	TP38.105x38.058x0.95	Pole	64.2%	Pass
31.5 - 26.5	Pole + Reinf.	TP39.049x38.105x0.925	Pole	65.7%	Pass
26.5 - 21.5	Pole + Reinf.	TP39.993x39.049x0.9	Pole	67.1%	Pass
21.5 - 16.5	Pole + Reinf.	TP40.936x39.993x0.9	Pole	68.5%	Pass
16.5 - 15.05	Pole + Reinf.	TP42.201x40.936x0.8875	Pole	68.9%	Pass
15.05 - 8.8	Pole + Reinf.	TP41.639x40.46x0.875	Pole	72.5%	Pass
8.8 - 8.25	Pole + Reinf.	TP41.743x41.639x0.875	Pole	72.7%	Pass
8.25 - 8	Pole + Reinf.	TP41.79x41.743x0.95	Pole	67.3%	Pass
8 - 4.75	Pole + Reinf.	TP42.404x41.79x0.95	Pole	68.4%	Pass
4.75 - 4.5	Pole + Reinf.	TP42.451x42.404x1.3	Pole	53.8%	Pass
4.5 - 4.25	Pole + Reinf.	TP42.498x42.451x1.3	Pole	53.9%	Pass
4.25 - 4	Pole + Reinf.	TP42.545x42.498x1.2	Pole	54.7%	Pass
4 - 3.5	Pole + Reinf.	TP42.64x42.545x1.2	Pole	54.9%	Pass
3.5 - 3.25	Pole + Reinf.	TP42.687x42.64x1.475	Reinf. 10 Weldment	50.2%	Pass
3.25 - 2.5	Pole + Reinf.	TP42.828x42.687x1.475	Pole	46.3%	Pass
2.5 - 2.25	Pole + Reinf.	TP42.875x42.828x1.325	Reinf. 11 Weldment	56.2%	Pass
2.25 - 0	Pole + Reinf.	TP43.3x42.875x1.325	Pole	53.1%	Pass
				Summary	
			Pole	79.6%	Pass
			Reinforcement	68.8%	Pass
			Overall	79.6%	Pass

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in ⁴)			Area (in ²)			% Capacity* (100% Max. Allowable)												
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	
156 - 151	165	n/a	165	12.22	n/a	12.22	0.4%												
151 - 146	165	n/a	165	12.22	n/a	12.22	10.9%												
146 - 144	165	n/a	165	12.22	n/a	12.22	15.9%												
144 - 139	672	n/a	672	15.03	n/a	15.03	26.4%												
139 - 134	779	n/a	779	15.79	n/a	15.79	44.2%												
134 - 129	897	n/a	897	16.54	n/a	16.54	62.5%												
129 - 128.25	916	n/a	916	16.66	n/a	16.66	65.4%												
128.25 - 128	922	1119	2040	16.70	18.00	34.70	29.5%					25.8%							
128 - 123	1053	1214	2267	17.45	18.00	35.45	38.5%					33.6%							
123 - 118	1197	1314	2510	18.21	18.00	36.21	47.4%					41.3%							
118 - 113	1352	1417	2770	18.97	18.00	36.97	56.0%					48.7%							
113 - 108	1521	1525	3046	19.73	18.00	37.73	63.9%					55.4%							
108 - 103	1703	1636	3340	20.49	18.00	38.49	71.1%					61.5%							
103 - 98	1900	1752	3651	21.25	18.00	39.25	77.7%					67.2%							
98 - 96.5	1961	1787	3749	21.47	18.00	39.47	79.6%					68.8%							
96.5 - 92	2039	3349	5388	21.75	31.88	53.63	62.6%				50.8%								
92 - 87	2260	3567	5827	22.51	31.88	54.39	67.7%				54.3%								
87 - 82	2497	3792	6289	23.27	31.88	55.15	72.6%				57.6%								
82 - 77.5	2723	4001	6724	23.95	31.88	55.83	77.0%				60.5%								
77.5 - 72.5	3714	4240	7955	30.83	31.88	62.70	71.5%				57.7%								
72.5 - 67.5	4068	4486	8554	31.78	31.88	63.65	74.6%				60.1%								
67.5 - 67.08	4098	4507	8606	31.86	31.88	63.73	74.8%				60.3%								
67.08 - 66.83	4117	7946	12062	31.90	56.25	88.15	53.6%				43.2%			45.5%					
66.83 - 66.33	4153	7990	12143	32.00	56.25	88.25	53.9%				43.4%			45.7%					
66.33 - 66.08	4172	8012	12184	32.05	56.25	88.30	54.0%			43.5%				45.8%					
66.08 - 61.75	4501	8401	12902	32.87	56.25	89.12	56.0%			45.0%				47.4%					
61.75 - 56.75	4634	8555	13189	33.19	56.25	89.44	59.7%			48.0%				50.5%					
56.75 - 51.75	5042	9021	14063	34.13	56.25	90.38	61.8%			49.6%				52.3%					
51.75 - 46.75	5474	9498	14972	35.08	56.25	91.33	64.3%			51.2%				54.0%					
46.75 - 41.75	5930	9989	15919	36.03	56.25	92.28	66.8%			52.8%				55.6%					
41.75 - 39.7	7320	9326	16647	43.63	53.75	97.38	66.9%	51.9%	56.7%					55.8%					
39.7 - 39.5	7343	9344	16688	43.67	53.75	97.42	66.9%	49.9%	56.8%					55.9%					
39.5 - 34.5	7932	9809	17742	44.81	53.75	98.56	68.6%	51.2%	58.2%					57.3%					
34.5 - 31.75	8269	10070	18339	45.44	53.75	99.19	69.5%	51.9%	58.9%					58.0%					
31.75 - 31.5	8299	11602	19901	45.49	61.25	106.74	64.2%	48.2%	54.4%				52.9%						
31.5 - 26.5	8937	12156	21093	46.63	61.25	107.88	65.7%	49.3%	55.6%				52.0%						
26.5 - 21.5	9607	12723	22330	47.77	61.25	109.02	67.1%	50.4%	56.8%				53.1%						
21.5 - 16.5	10310	13304	23613	48.91	61.25	110.16	68.5%	51.4%	57.9%				54.2%						
16.5 - 15.05	10520	13474	23994	49.24	61.25	110.49	68.9%	51.7%	58.2%				54.5%						
15.05 - 8.8	10855	13744	24599	49.76	61.25	111.01	72.5%	54.3%	61.1%				57.2%						
8.8 - 8.25	10937	13810	24747	49.88	61.25	111.13	72.7%	54.4%	61.2%				57.3%						
8.25 - 8	10970	15814	26784	49.94	69.38	119.31	67.3%	53.1%					53.3%				49.3%		
8 - 4.75	11464	16260	27724	50.68	69.38	120.05	68.4%	53.7%					53.9%				46.0%		
4.75 - 4.5	11610	25633	37243	50.73	101.88	152.61	53.8%	35.4%					41.6%		39.7%		42.7%		
4.5 - 4.25	11649	25684	37333	50.79	101.88	152.67	53.9%	36.8%					41.7%		36.7%		42.7%		
4.25 - 4	11574	23398	34972	50.85	80.63	131.47	54.7%						43.5%		43.8%		43.8%		
4 - 3.5	11652	23491	35143	50.96	80.63	131.59	54.9%						43.6%		43.9%		43.9%		
3.5 - 3.25	11691	31042	42733	51.02	110.63	161.64	44.4%						36.1%		36.9%		35.2%	50.2%	
3.25 - 2.5	11810	31100	42910	51.19	110.63	161.81	46.3%						36.2%		37.0%		35.3%	34.1%	
2.5 - 2.25	11849	27566	39415	51.25	93.75	145.00	50.6%								42.2%		40.2%	39.0%	56.2%
2.25 - 0	12208	27927	40136	51.76	93.75	145.51	53.1%								43.4%		41.4%	43.3%	42.9%

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

Monopole Flange Plate Connection

Elevation = 144 ft.

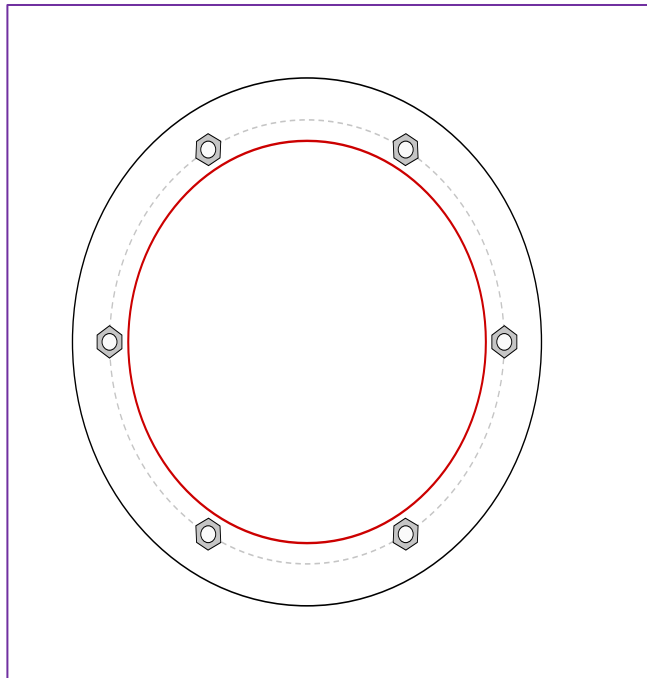


BU #	828402
Site Name	hompson/ I-395 X99
Order #	553315 Rev. 3
TIA-222 Revision	H

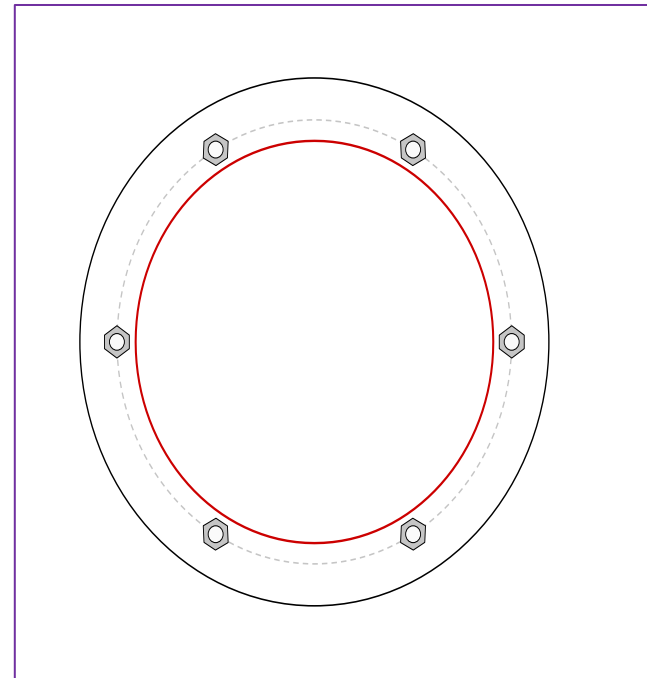
Applied Loads	
Moment (kip-ft)	17.03
Axial Force (kips)	2.29
Shear Force (kips)	2.84

*TIA-222-H Section 15.5 Applied

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(6) 3/4" ϕ bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 19.875" BC

Top Plate Data

23.625" OD x 1.5" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Top Stiffener Data

N/A

Top Pole Data

18" x 0.365" round pole (A53-B-35; Fy=35 ksi, Fu=60 ksi)

Bottom Plate Data

23.625" OD x 0.5" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Bottom Stiffener Data

N/A

Bottom Pole Data

18" x 0.25" 12-sided pole (A36; Fy=36 ksi, Fu=58 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	6.47
Allowable (kips)	30.05
Stress Rating:	20.5% Pass

Top Plate Capacity

Max Stress (ksi):	1.43	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	4.2%	Pass
Tension Side Stress Rating:	1.4%	Pass

Bottom Plate Capacity

Max Stress (ksi):	12.87	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	37.8%	Pass
Tension Side Stress Rating:	13.0%	Pass

Monopole Base Plate Connection

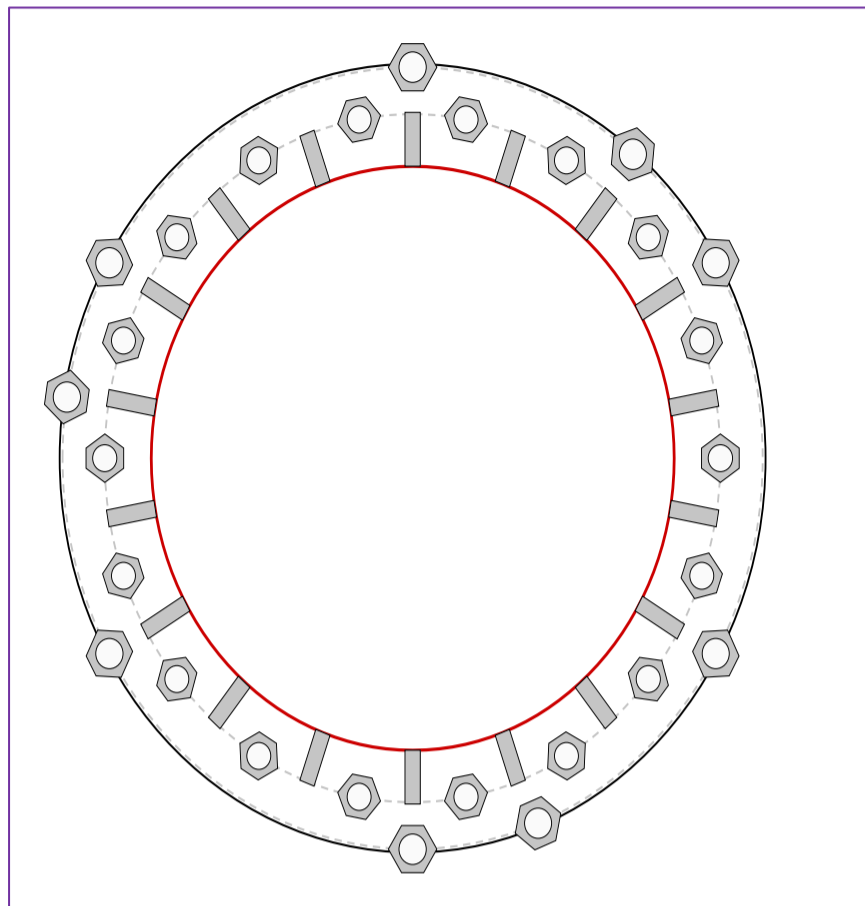


Site Info	
BU #	828402
Site Name	hompson/ I-395 X99
Order #	553315 Rev. 3

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	See Custom Sheet
I_{ar} (in)	See Custom Sheet

Applied Loads	
Moment (kip-ft)	3085.94
Axial Force (kips)	65.87
Shear Force (kips)	28.50

*TIA-222-H Section 15.5 Applied



Connection Properties	Analysis Results
-----------------------	------------------

Anchor Rod Data
GROUP 1: (18) 2" ϕ bolts (A36M-42 N; $F_y=42$ ksi, $F_u=60$ ksi) on 51" BC
GROUP 2: (9) 2-1/4" ϕ bolts (A193 Gr. B7 N; $F_y=105$ ksi, $F_u=125$ ksi) on 58" BC
Base Plate Data
58.5" OD x 1.5" Plate (A36; $F_y=36$ ksi, $F_u=58$ ksi)
Stiffener Data
(18) 18"H x 4"W x 1.25"T, Notch: 1"
plate: $F_y= 36$ ksi ; weld: $F_y= 70$ ksi
horiz. weld: 0.625" fillet
vert. weld: 0.375" fillet
Pole Data
43.3" x 1.2" 12-sided pole (A36; $F_y=36$ ksi, $F_u=58$ ksi)

Anchor Rod Summary	<i>(units of kips, kip-in)</i>	
GROUP 1:		
$P_{u_c} = 91.27$	$\phi P_{n_c} = 118.75$	Stress Rating
$V_u = 1.58$	$\phi V_n = 53.44$	73.3%
$M_u = n/a$	$\phi M_n = n/a$	Pass
GROUP 2:		
$P_{u_t} = 129.52$	$\phi P_{n_t} = 304.69$	Stress Rating
$V_u = 0$	$\phi V_n = 186.38$	40.5%
$M_u = 0$	$\phi M_n = 179.4$	Pass
Base Plate Summary		
Max Stress (ksi):	28.2	(Roark's Flexural)
Allowable Stress (ksi):	32.4	
Stress Rating:	82.9%	Pass
Stiffener Summary		
Horizontal Weld:	38.7%	Pass
Vertical Weld:	12.0%	Pass
Plate Flexure+Shear:	2.3%	Pass
Plate Tension+Shear:	26.8%	Pass
Plate Compression:	20.3%	Pass
Pole Summary		
Punching Shear:	1.4%	Pass

CClplate

Elevation (ft) 0 (Base)

note: Bending interaction not considered when Grout Considered = "Yes"

Bolt Group	Resist Axial	Resist Shear	Induce Plate Bending	Grout Considered	Apply at BARB Elevation	BARB CL Elevation (ft)
1	Yes	Yes	Yes	No	No	
2	No	No	No	No	No	

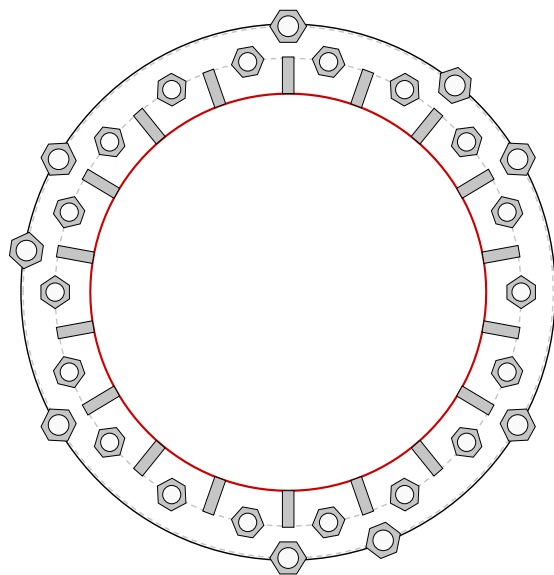
Custom Bolt Connection

Bolt	Bolt Group ID	Location (deg.)	Diameter (in)	Material	Bolt Circle (in)	Eta Factor, η	I_{br} (in)	Thread Type	Area Override, in ²	Tension Only
1	1	0	2	A36M-42	51	0.5	1.625	N-Included		No
2	1	20	2	A36M-42	51	0.5	1.625	N-Included		No
3	1	40	2	A36M-42	51	0.5	1.625	N-Included		No
4	1	60	2	A36M-42	51	0.5	1.625	N-Included		No
5	1	80	2	A36M-42	51	0.5	1.625	N-Included		No
6	1	100	2	A36M-42	51	0.5	1.625	N-Included		No
7	1	120	2	A36M-42	51	0.5	1.625	N-Included		No
8	1	140	2	A36M-42	51	0.5	1.625	N-Included		No
9	1	160	2	A36M-42	51	0.5	1.625	N-Included		No
10	1	180	2	A36M-42	51	0.5	1.625	N-Included		No
11	1	200	2	A36M-42	51	0.5	1.625	N-Included		No
12	1	220	2	A36M-42	51	0.5	1.625	N-Included		No
13	1	240	2	A36M-42	51	0.5	1.625	N-Included		No
14	1	260	2	A36M-42	51	0.5	1.625	N-Included		No
15	1	280	2	A36M-42	51	0.5	1.625	N-Included		No
16	1	300	2	A36M-42	51	0.5	1.625	N-Included		No
17	1	320	2	A36M-42	51	0.5	1.625	N-Included		No
18	1	340	2	A36M-42	51	0.5	1.625	N-Included		No
19	2	30	2.25	A193 Gr. B7	58	0.5	7.5	N-Included		No
20	2	51	2.25	A193 Gr. B7	58	0.5	7.5	N-Included		No
21	2	90	2.25	A193 Gr. B7	58	0.5	7.5	N-Included		No
22	2	150	2.25	A193 Gr. B7	58	0.5	7.5	N-Included		No
23	2	171	2.25	A193 Gr. B7	58	0.5	7.5	N-Included		No
24	2	210	2.25	A193 Gr. B7	58	0.5	7.5	N-Included		No
25	2	270	2.25	A193 Gr. B7	58	0.5	7.5	N-Included		No
26	2	291	2.25	A193 Gr. B7	58	0.5	7.5	N-Included		No
27	2	330	2.25	A193 Gr. B7	58	0.5	7.5	N-Included		No

Custom Stiffener Connection

Stiffener	Stiffener Group ID	Location (deg.)	Width (in)	Height (in)	Thickness (in)	H. Notch (in)	V. Notch (in)	Grade (ksi)	Weld Type	Groove Depth (in)	Groove Angle (deg.)	H. Fillet Weld Size (in)	V. Fillet Weld Size (in)	Weld Strength (ksi)
1	1	10	4	18	1.25	1	1	36	Fillet			0.625	0.375	70
2	1	30	4	18	1.25	1	1	36	Fillet			0.625	0.375	70
3	1	50	4	18	1.25	1	1	36	Fillet			0.625	0.375	70
4	1	70	4	18	1.25	1	1	36	Fillet			0.625	0.375	70
5	1	90	4	18	1.25	1	1	36	Fillet			0.625	0.375	70
6	1	110	4	18	1.25	1	1	36	Fillet			0.625	0.375	70
7	1	130	4	18	1.25	1	1	36	Fillet			0.625	0.375	70
8	1	150	4	18	1.25	1	1	36	Fillet			0.625	0.375	70
9	1	170	4	18	1.25	1	1	36	Fillet			0.625	0.375	70
10	1	190	4	18	1.25	1	1	36	Fillet			0.625	0.375	70
11	1	210	4	18	1.25	1	1	36	Fillet			0.625	0.375	70
12	1	230	4	18	1.25	1	1	36	Fillet			0.625	0.375	70
13	1	250	4	18	1.25	1	1	36	Fillet			0.625	0.375	70
14	1	270	4	18	1.25	1	1	36	Fillet			0.625	0.375	70
15	1	290	4	18	1.25	1	1	36	Fillet			0.625	0.375	70
16	1	310	4	18	1.25	1	1	36	Fillet			0.625	0.375	70
17	1	330	4	18	1.25	1	1	36	Fillet			0.625	0.375	70
18	1	350	4	18	1.25	1	1	36	Fillet			0.625	0.375	70

Plot Graphic



Drilled Pier Foundation

BU # :	828402
Site Name:	Thompson/ I-395 X99_1
Order Number:	553315 Rev. 3
TIA-222 Revision:	H
Tower Type:	Monopole



Applied Loads		
	Comp.	Uplift
Moment (kip-ft)	3085.95	
Axial Force (kips)	65.88	
Shear Force (kips)	28.49	

Material Properties		
Concrete Strength, f'c:	3	ksi
Rebar Strength, Fy:	60	ksi
Tie Yield Strength, Fyt:	40	ksi

Rebar 2, Fy
Override
(ksi)

Pier Design Data		
Depth	25.25	ft
Ext. Above Grade	0.25	ft
Pier Section 1		
<i>From 0.25' above grade to 25.25' below grade</i>		
Pier Diameter	6	ft
Rebar Quantity	34	
Rebar Size	8	
Clear Cover to Ties	3	in
Tie Size	4	
Tie Spacing		in

Rebar & Pier Options
Embedded Pole Inputs
Belled Pier Inputs

Analysis Results		
Soil Lateral Check		
	Compression	Uplift
D _{v=0} (ft from TOC)	6.72	-
Soil Safety Factor	4.73	-
Max Moment (kip-ft)	3322.40	-
Rating*	26.8%	-
Soil Vertical Check		
	Compression	Uplift
Skin Friction (kips)	557.71	-
End Bearing (kips)	566.19	-
Weight of Concrete (kips)	129.78	-
Total Capacity (kips)	1123.90	-
Axial (kips)	195.66	-
Rating*	16.6%	-
Reinforced Concrete Flexure		
	Compression	Uplift
Critical Depth (ft from TOC)	6.53	-
Critical Moment (kip-ft)	3322.15	-
Critical Moment Capacity	3697.28	-
Rating*	85.6%	-
Reinforced Concrete Shear		
	Compression	Uplift
Critical Depth (ft from TOC)	18.77	-
Critical Shear (kip)	390.78	-
Critical Shear Capacity	395.35	-
Rating*	94.1%	-

Check Limitation	
Apply TIA-222-H Section 15.5:	<input checked="" type="checkbox"/>
N/A	<input type="checkbox"/>
Additional Longitudinal Rebar	
Input Effective Depths (else Actual):	<input checked="" type="checkbox"/>
Shear Design Options	
Check Shear along Depth of Pier:	<input checked="" type="checkbox"/>
Utilize Shear-Friction Methodology:	<input type="checkbox"/>
Override Critical Depth:	<input type="checkbox"/>

[Go to Soil Calculations](#)

Structural Foundation Rating*	94.1%
Soil Interaction Rating*	26.8%

*Rating per TIA-222-H Section 15.5

Soil Profile				
Groundwater Depth	n/a	# of Layers	5	

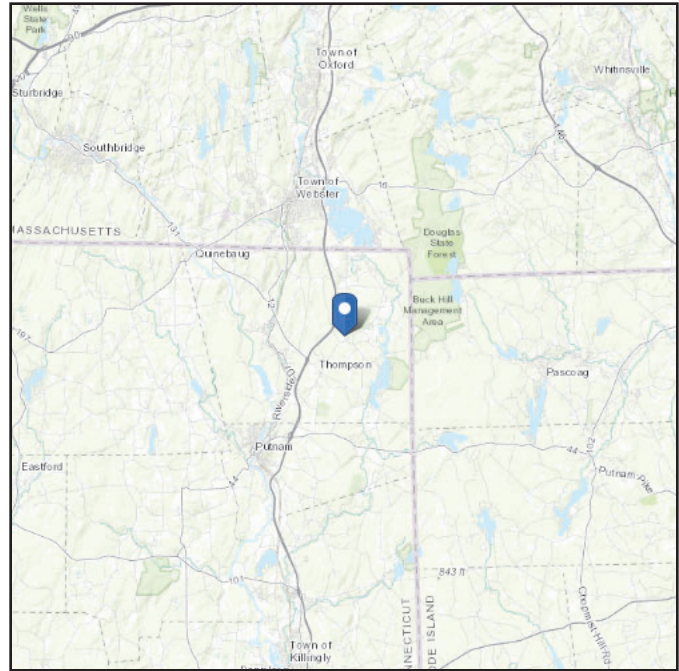
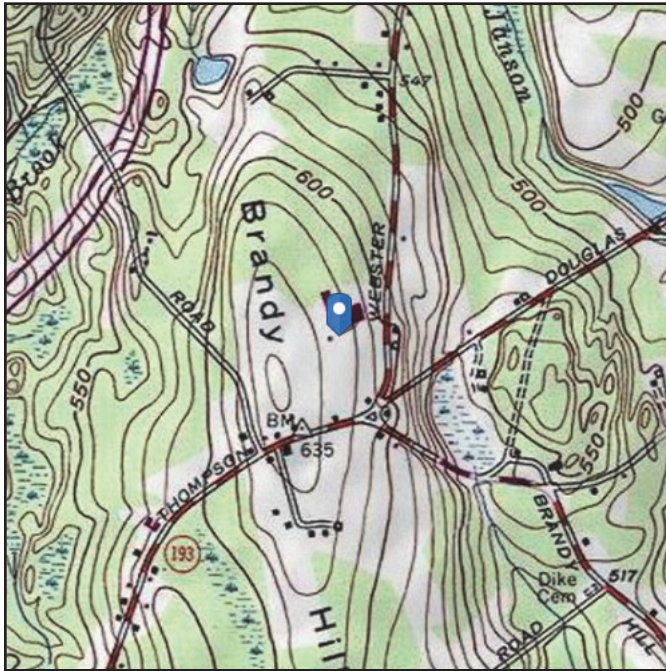
Layer	Top (ft)	Bottom (ft)	Thickness (ft)	γ _{soil} (pcf)	γ _{concrete} (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Gross Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	4	4	140	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
2	4	8	4	130	150		38	0.000	0.000	0.90	0.90			Cohesionless
3	8	15	7	140	150		42	0.000	0.000	1.60	1.60			Cohesionless
4	15	20	5	140	150		42	0.000	0.000	2.20	2.20			Cohesionless
5	20	25.25	5.25	140	150		42	0.000	0.000	2.60	2.60	26.7		Cohesionless

ASCE 7 Hazards Report

Address:
No Address at This
Location

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

Elevation: 623.8 ft (NAVD 88)
Latitude: 41.977706
Longitude: -71.846542



Wind

Results:

Wind Speed:	120 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	93 Vmph
100-year MRI	99 Vmph

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

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

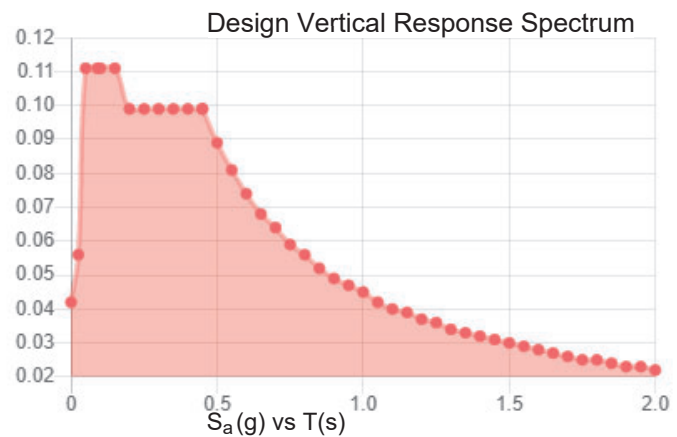
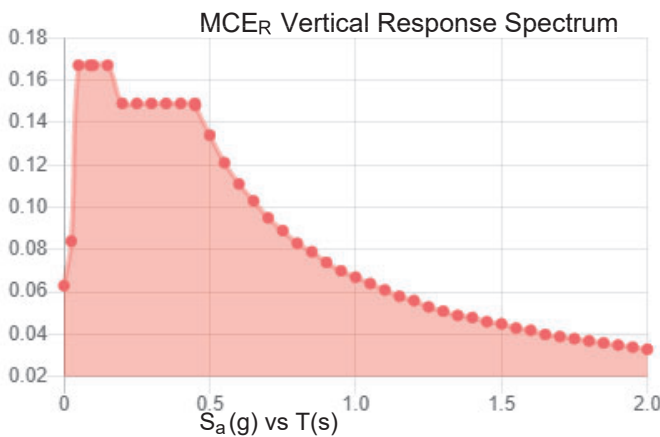
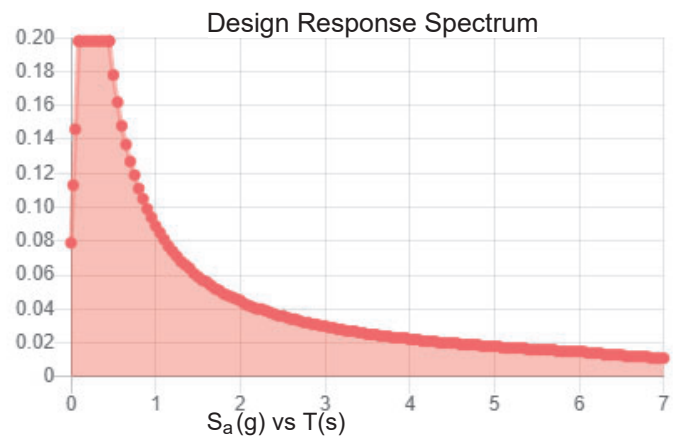
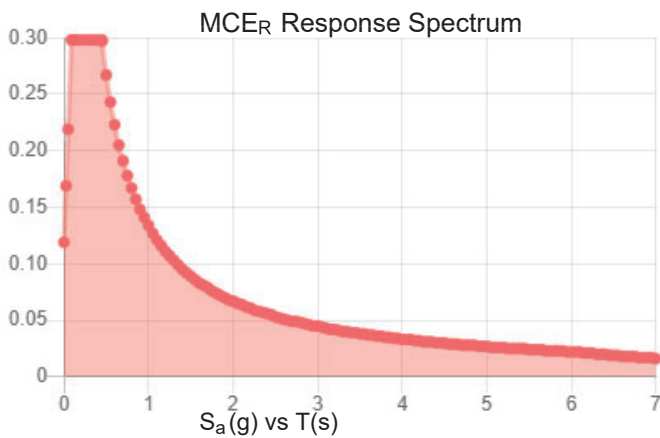
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

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

Results:

S_s :	0.186	S_{D1} :	0.089
S_1 :	0.056	T_L :	6
F_a :	1.6	PGA :	0.1
F_v :	2.4	PGA _M :	0.16
S_{MS} :	0.298	F_{PGA} :	1.599
S_{M1} :	0.134	I_e :	1
S_{DS} :	0.198	C_v :	0.7

Seismic Design Category B



Data Accessed:

Thu Sep 16 2021

Date Source:

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

Ice

Results:

Ice Thickness: 1.00 in.
Concurrent Temperature: 15 F
Gust Speed: 50 mph

Data Source: Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8

Date Accessed: Thu Sep 16 2021

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

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

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