Date: **October 07, 2022**

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

Subject:	**Structural Analysis Report**	
Carrier Designation:	***Verizon Wireless* Co-Locate**	
	Site Number:	467316
	Site Name:	GUILFORD CT
Crown Castle Designation:	**BU Number:**	806361
	Site Name:	NHV 102 943127
	JDE Job Number:	732112
	Work Order Number:	2166810
	Order Number:	634513 Rev. 0
Engineering Firm Designation:	**Crown Castle Project Number:**	2166810
Site Data:	**131 Manor Rd, GUILFORD, NEW HAVEN County, CT** **Latitude *41° 19' 48.09"*, Longitude *-72° 43' 18.51"*** **150 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 125 mph as required by the 2022 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - "Analysis Criteria".

Structural analysis prepared by: Michael Lopienski

Respectfully submitted by:

Digitally signed by Maham Barimani
Date: 2022.10.07 14:35:27 -04'00'

STATE OF CONNECTICUT
MAHAM BARIMANI
30501
LICENSED
PROFESSIONAL ENGINEER

Maham Barimani, P.E.
Senior Project Engineer

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1) INTRODUCTION

This tower is a 150 ft Monopole tower designed by VALMONT. The tower has been modified multiple times to accommodate additional loading.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	125 mph
Exposure Category:	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)
150.0	150.0	6	antel	LPA-80063/6CFX5 w/ Mount Pipe	1 11 2	1/2 7/8 1-5/8
		6	jma wireless	MX06FRO660-03 w/ Mount Pipe		
		1	raycap	RVZDC-6627-PF-48_CCIV2		
		3	samsung telecommunications	MT6407-77A w/ Mount Pipe		
		3	samsung telecommunications	RF4439D-25A		
		3	samsung telecommunications	RF4440D-13A		
		1	tower mounts	Mount Reinforcements		
		1	tower mounts	Platform Mount (LP 101-1_KCKR)		
	147.0	1	lucent	KS24019-L112A w/ Mount Pipe		

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)
140.0	142.0	3	cci antennas	DMP65R-BU6D w/ Mount Pipe	3 4 3 12	3/8 3/4 7/8 1-5/8
		3	cci antennas	OPA65R-BU6D w/ Mount Pipe		
		3	ericsson	RRUS 4449 B5/B12		
		3	ericsson	RRUS 4478 B14		
		3	ericsson	RRUS 8843 B2/B66A		
		2	raycap	DC6-48-60-18-8F		
	140.0	1	tower mounts	Platform Mount (LP 101-1)		
	139.0	3	ericsson	AIR 6419 B77G_CCIV3 w/ Mount Pipe		
	137.0	1	raycap	DC9-48-60-24-8C-EV		
	135.0	3	ericsson	AIR 6449 B77D_CCVI2 w/		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
				Mount Pipe		
128.0	128.0	3	ericsson	RADIO 4449 B71 B85A_T-MOBILE	3	1-5/8
		3		RRUS 4415 B25_CCIV2		
		3	ericsson	AIR 32 B2A B66AA_T-MOBILE		
		3	ericsson	AIR6449 B41_T-MOBILE		
		3	rfs celwave	APXVAALL24_43-U-NA20_TMO		
		1	tower mounts	Platform Mount [LP 301-1_KCKR]		
110.0	110.0	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		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
4-GEOTECHNICAL REPORTS	780506	CCISITES
4-POST-MODIFICATION INSPECTION	2045675	CCISITES
4-POST-MODIFICATION INSPECTION	3099221	CCISITES
4-POST-MODIFICATION INSPECTION	3335575	CCISITES
4-POST-MODIFICATION INSPECTION	4037923	CCISITES
4-POST-MODIFICATION INSPECTION	5823375	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	217669	CCISITES
4-TOWER MANUFACTURER DRAWINGS	217668	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	1249600	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	3002793	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	3255562	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	3840597	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	5605781	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	8611850	CCISITES
4-POST-MODIFICATION INSPECTION	9726127	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	1883636	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
150 - 145	Pole	TP16.937x16x0.1875	Pole	18.3%	Pass
145 - 140	Pole	TP17.875x16.937x0.1875	Pole	33.4%	Pass
140 - 135	Pole	TP18.812x17.875x0.1875	Pole	60.4%	Pass
135 - 133	Pole	TP19.187x18.812x0.1875	Pole	69.3%	Pass
133 - 132.75	Pole + Reinf.	TP19.234x19.187x0.45	Reinf. 20 Tension Rupture	48.3%	Pass
132.75 - 127.75	Pole + Reinf.	TP20.171x19.234x0.4375	Reinf. 20 Tension Rupture	63.5%	Pass
127.75 - 123.75	Pole + Reinf.	TP20.921x20.171x0.425	Reinf. 20 Tension Rupture	77.5%	Pass
123.75 - 123.5	Pole + Reinf.	TP20.968x20.921x0.425	Reinf. 20 Tension Rupture	78.4%	Pass
123.5 - 118.75	Pole + Reinf.	TP21.859x20.968x0.7625	Reinf. 20 Tension Rupture	53.1%	Pass
118.75 - 118.5	Pole + Reinf.	TP21.906x21.859x1.0375	Reinf. 19 Tension Rupture	41.2%	Pass
118.5 - 117	Pole + Reinf.	TP22.187x21.906x1.0125	Reinf. 19 Tension Rupture	43.3%	Pass
117 - 116.75	Pole + Reinf.	TP22.234x22.187x0.75	Reinf. 18 Tension Rupture	56.7%	Pass
116.75 - 111.75	Pole + Reinf.	TP23.171x22.234x0.7125	Reinf. 18 Tension Rupture	65.2%	Pass
111.75 - 106.75	Pole + Reinf.	TP24.108x23.171x0.6875	Reinf. 18 Tension Rupture	74.3%	Pass
106.75 - 101.75	Pole + Reinf.	TP25.046x24.108x0.6625	Reinf. 18 Tension Rupture	83.0%	Pass
101.75 - 99.5	Pole + Reinf.	TP26.28x25.046x0.6625	Reinf. 18 Tension Rupture	86.7%	Pass
99.5 - 94.5	Pole + Reinf.	TP26.031x25.093x0.7875	Reinf. 18 Tension Rupture	80.4%	Pass
94.5 - 93.75	Pole + Reinf.	TP26.171x26.031x0.7875	Reinf. 18 Tension Rupture	81.3%	Pass
93.75 - 93.5	Pole + Reinf.	TP26.218x26.171x0.9125	Reinf. 9 Tension Rupture	73.4%	Pass
93.5 - 92.75	Pole + Reinf.	TP26.359x26.218x0.9125	Reinf. 9 Tension Rupture	74.3%	Pass
92.75 - 92.5	Pole + Reinf.	TP26.406x26.359x1.1375	Reinf. 9 Tension Rupture	61.8%	Pass

92.5 - 91.25	Pole + Reinf.	TP26.64x26.406x1.1125	Reinf. 9 Tension Rupture	63.0%	Pass
91.25 - 91	Pole + Reinf.	TP26.687x26.64x1.1125	Reinf. 9 Tension Rupture	63.2%	Pass
91 - 89.25	Pole + Reinf.	TP27.016x26.687x1.1125	Reinf. 9 Tension Rupture	64.8%	Pass
89.25 - 89	Pole + Reinf.	TP27.063x27.016x1.2125	Reinf. 3 Connection	61.5%	Pass
89 - 85.75	Pole + Reinf.	TP27.672x27.063x1.1875	Reinf. 9 Tension Rupture	61.7%	Pass
85.75 - 85.5	Pole + Reinf.	TP27.719x27.672x0.8625	Reinf. 17 Tension Rupture	79.6%	Pass
85.5 - 80.5	Pole + Reinf.	TP28.657x27.719x0.8375	Reinf. 17 Tension Rupture	84.2%	Pass
80.5 - 75.5	Pole + Reinf.	TP29.595x28.657x0.8125	Reinf. 17 Tension Rupture	88.4%	Pass
75.5 - 70.5	Pole + Reinf.	TP30.533x29.595x0.7875	Reinf. 17 Tension Rupture	92.3%	Pass
70.5 - 68.08	Pole + Reinf.	TP30.987x30.533x0.7875	Reinf. 17 Tension Rupture	94.1%	Pass
68.08 - 67.83	Pole + Reinf.	TP31.034x30.987x0.8375	Reinf. 16 Tension Rupture	80.7%	Pass
67.83 - 67	Pole + Reinf.	TP31.19x31.034x0.8375	Reinf. 16 Tension Rupture	81.2%	Pass
67 - 66.75	Pole + Reinf.	TP31.237x31.19x1.0625	Reinf. 6 Tension Rupture	65.4%	Pass
66.75 - 63.25	Pole + Reinf.	TP31.894x31.237x1.0375	Reinf. 6 Tension Rupture	67.3%	Pass
63.25 - 63	Pole + Reinf.	TP31.941x31.894x1.2125	Reinf. 8 Tension Rupture	64.4%	Pass
63 - 59.5	Pole + Reinf.	TP32.597x31.941x1.1875	Reinf. 8 Tension Rupture	66.2%	Pass
59.5 - 59.25	Pole + Reinf.	TP32.644x32.597x1.2375	Reinf. 8 Tension Rupture	64.0%	Pass
59.25 - 56.25	Pole + Reinf.	TP33.207x32.644x1.2125	Reinf. 8 Tension Rupture	65.4%	Pass
56.25 - 56	Pole + Reinf.	TP33.254x33.207x1.0625	Reinf. 6 Tension Rupture	68.0%	Pass
56 - 55.75	Pole + Reinf.	TP33.301x33.254x0.8375	Reinf. 16 Tension Rupture	83.5%	Pass
55.75 - 50.75	Pole + Reinf.	TP34.239x33.301x0.825	Reinf. 16 Tension Rupture	86.0%	Pass
50.75 - 50	Pole + Reinf.	TP35.38x34.239x0.8125	Reinf. 16 Tension Rupture	86.4%	Pass
50 - 43.67	Pole + Reinf.	TP34.942x33.754x0.875	Reinf. 16 Tension Rupture	85.0%	Pass
43.67 - 38.67	Pole + Reinf.	TP35.88x34.942x0.8625	Reinf. 16 Tension Rupture	87.0%	Pass
38.67 - 34.5	Pole + Reinf.	TP36.661x35.88x0.85	Reinf. 16 Tension Rupture	88.5%	Pass
34.5 - 34.25	Pole + Reinf.	TP36.708x36.661x1.1	Reinf. 16 Tension Rupture	69.5%	Pass
34.25 - 33	Pole + Reinf.	TP36.942x36.708x1.1	Reinf. 16 Tension Rupture	69.9%	Pass
33 - 32.75	Pole + Reinf.	TP36.989x36.942x1.1	Reinf. 15 Tension Rupture	70.0%	Pass
32.75 - 29.75	Pole + Reinf.	TP37.552x36.989x1.075	Reinf. 15 Tension Rupture	70.9%	Pass
29.75 - 29.5	Pole + Reinf.	TP37.598x37.552x1.125	Reinf. 15 Tension Rupture	68.6%	Pass
29.5 - 25	Pole + Reinf.	TP38.442x37.598x1.1	Reinf. 15 Tension Rupture	69.9%	Pass
25 - 24.75	Pole + Reinf.	TP38.489x38.442x0.8625	Reinf. 15 Tension Rupture	88.0%	Pass
24.75 - 19.75	Pole + Reinf.	TP39.427x38.489x0.85	Reinf. 15 Tension Rupture	89.5%	Pass
19.75 - 14.75	Pole + Reinf.	TP40.364x39.427x0.825	Reinf. 15 Tension Rupture	90.9%	Pass
14.75 - 14.5	Pole + Reinf.	TP40.411x40.364x0.825	Reinf. 15 Tension Rupture	90.9%	Pass
14.5 - 14.25	Pole + Reinf.	TP40.458x40.411x0.825	Reinf. 15 Tension Rupture	91.0%	Pass
14.25 - 12.25	Pole + Reinf.	TP40.833x40.458x0.825	Reinf. 15 Tension Rupture	91.5%	Pass
12.25 - 12	Pole + Reinf.	TP40.88x40.833x0.7875	Reinf. 14 Tension Rupture	92.5%	Pass
12 - 11.5	Pole + Reinf.	TP40.974x40.88x0.7875	Reinf. 14 Tension Rupture	92.6%	Pass
11.5 - 11.25	Pole + Reinf.	TP41.021x40.974x0.9	Reinf. 14 Tension Rupture	87.7%	Pass

11.25 - 9.25	Pole + Reinf.	TP41.396x41.021x0.8875	Reinf. 14 Tension Rupture	88.2%	Pass
9.25 - 9	Pole + Reinf.	TP41.442x41.396x0.85	Reinf. 13 Tension Rupture	89.0%	Pass
9 - 4.5	Pole + Reinf.	TP42.286x41.442x0.825	Reinf. 13 Tension Rupture	90.0%	Pass
4.5 - 4.25	Pole + Reinf.	TP42.333x42.286x0.85	Reinf. 1 Tension Rupture	83.4%	Pass
4.25 - 3	Pole + Reinf.	TP42.567x42.333x0.85	Reinf. 1 Tension Rupture	83.7%	Pass
3 - 2.75	Pole + Reinf.	TP42.614x42.567x0.8375	Reinf. 1 Tension Rupture	83.8%	Pass
2.75 - 0	Pole + Reinf.	TP43.13x42.614x0.825	Reinf. 1 Tension Rupture	84.4%	Pass
				Summary	
			Pole	69.9%	Pass
			Reinforcement	94.1%	Pass
			Overall	94.1%	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	91.2	Pass
1	Base Plate	0	88.6	Pass
1	Base Foundation (Structure)	0	71.6	Pass
1	Base Foundation (Soil Interaction)	0	23.4	Pass

Structure Rating (max from all components) =	**94.1%**

Notes:
1) See additional documentation in “Appendix C – Additional Calculations” for calculations supporting the % capacity consumed. Rating per TIA-222-H Section 15.5.

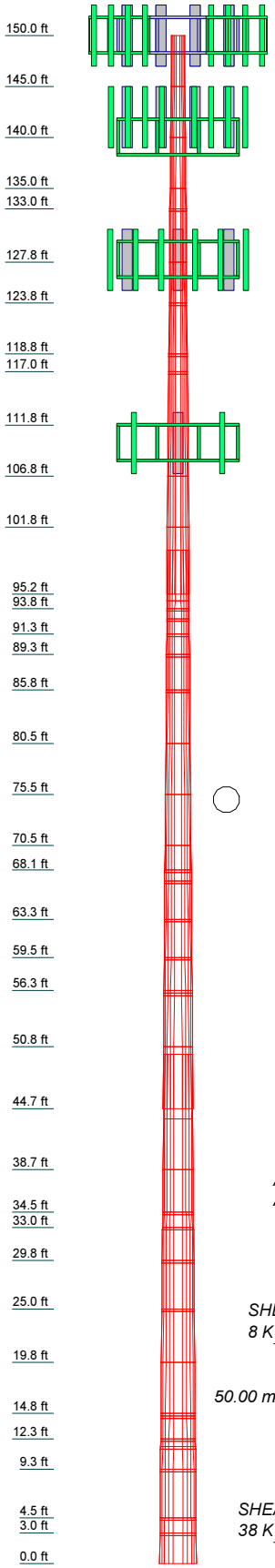
4.1) Recommendations

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

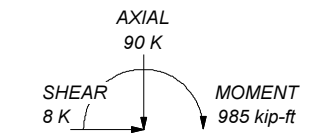
APPENDIX A

TNXTOWER OUTPUT

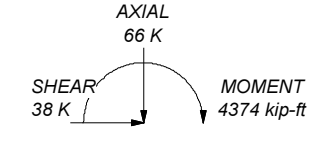
Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	5.0000	12	0.1875		16.0000	16.9374	A572-65	0.2
2	5.0000	12	0.1875		16.9374	17.8748		0.2
3	5.0000	12	0.1875		17.8748	18.8122		0.2
4	5.0000	12	0.1875		18.8122	19.7496		0.2
5	5.0000	12	0.1875		19.7496	20.6870		0.2
6	5.0000	12	0.4375		20.6870	21.6244		0.4
7	5.0000	12	0.3750		21.6244	22.5618		0.3
8	5.0000	12	0.3750		22.5618	23.4992		0.3
9	5.0000	12	0.3750		23.4992	24.4366		0.3
10	5.0000	12	0.3750		24.4366	25.3740		0.3
11	5.0000	12	0.3750		25.3740	26.3114		0.3
12	5.0000	12	0.3750		26.3114	27.2488		0.3
13	5.0000	12	0.7125		27.2488	28.1862		0.8
14	5.0000	12	0.6875		28.1862	29.1236		0.8
15	5.0000	12	0.6625		29.1236	30.0610		0.8
16	6.6830	12	0.6625		30.0610	31.2800		1.1
17	6.6830	12	0.6625		31.2800	32.5000		1.1
18	6.6830	12	0.6625		32.5000	33.7200		1.1
19	6.6830	12	0.6625		33.7200	34.9390		1.1
20	6.6830	12	0.6625		34.9390	36.1590		1.1
21	6.6830	12	0.6625		36.1590	37.3790		1.1
22	6.6830	12	0.6625		37.3790	38.5980		1.1
23	6.6830	12	0.6625		38.5980	39.8180		1.1
24	6.6830	12	0.6625		39.8180	41.0370		1.1
25	6.6830	12	0.6625		41.0370	42.2570		1.1
26	6.6830	12	0.6625		42.2570	43.4760		1.1
27	6.6830	12	0.6625		43.4760	44.6960		1.1
28	5.0000	12	0.8375		44.6960	45.6334		1.1
29	5.0000	12	0.8125		45.6334	46.5708		1.2
30	5.0000	12	0.7875		46.5708	47.5082		1.2
31	5.0000	12	0.7625		47.5082	48.4456		1.2
32	5.0000	12	0.7375		48.4456	49.3830		1.2
33	5.0000	12	0.7125		49.3830	50.3204		1.2
34	5.0000	12	0.6875		50.3204	51.2578		1.2
35	5.0000	12	0.6625		51.2578	52.1952		1.1
36	5.0000	12	0.6375		52.1952	53.1326		1.1
37	5.0000	12	0.6125		53.1326	54.0700		1.1
38	5.0000	12	0.5875		54.0700	55.0074		1.1
39	5.0000	12	0.5625		55.0074	55.9448		1.1
40	5.0000	12	0.5375		55.9448	56.8822		1.1
41	5.0000	12	0.5125		56.8822	57.8196		1.1
42	5.0000	12	0.8250		57.8196	58.7570		1.4
43	6.6830	12	0.8125	5.3330	58.7570	59.8380		1.7
44	6.6830	12	0.7500	5.3330	59.8380	60.9190		1.9
45	5.0000	12	0.8625		60.9190	61.8564		1.5
46	6.6830	12	0.8500		61.8564	62.9374		1.3
47	6.6830	12	0.8500		62.9374	64.0184		1.3
48	6.6830	12	0.8500		64.0184	65.0994		1.3
49	6.6830	12	0.8500		65.0994	66.1804		1.3
50	6.6830	12	0.8500		66.1804	67.2614		1.3
51	6.6830	12	0.8500		67.2614	68.3424		1.3
52	6.6830	12	0.8500		68.3424	69.4234		1.3
53	6.6830	12	0.8500		69.4234	70.5044		1.3
54	5.0000	12	0.8500		70.5044	71.4418		1.7
55	6.6830	12	0.8250		71.4418	72.5228		1.7
56	6.6830	12	0.8250		72.5228	73.6038		1.7
57	6.6830	12	0.8250		73.6038	74.6848		1.7
58	6.6830	12	0.8250		74.6848	75.7658		1.7
59	6.6830	12	0.8250		75.7658	76.8468		1.7
60	6.6830	12	0.8250		76.8468	77.9278		1.7
61	6.6830	12	0.8250		77.9278	79.0088		1.7
62	6.6830	12	0.8250		79.0088	80.0898		1.7
63	6.6830	12	0.8250		80.0898	81.1708		1.7
64	5.0000	12	0.8250		81.1708	82.1082		1.6
65	6.6830	12	0.8250		82.1082	83.1892		2.1
66	2.7500	12	0.8250		83.1892	83.6000		1.0
67	0.3330	12	0.8250		83.6000	83.6500		0.1
68	0.3330	12	0.8250		83.6500	83.7000		0.1
69	0.3330	12	0.8250		83.7000	83.7500		0.1
70	0.3330	12	0.8250		83.7500	83.8000		0.1
71	0.3330	12	0.8250		83.8000	83.8500		0.1
72	0.3330	12	0.8250		83.8500	83.9000		0.1
73	0.3330	12	0.8250		83.9000	83.9500		0.1
74	0.3330	12	0.8250		83.9500	84.0000		0.1
75	0.3330	12	0.8250		84.0000	84.0500		0.1
76	0.3330	12	0.8250		84.0500	84.1000		0.1
77	0.3330	12	0.8250		84.1000	84.1500		0.1
78	0.3330	12	0.8250		84.1500	84.2000		0.1
79	0.3330	12	0.8250		84.2000	84.2500		0.1
80	0.3330	12	0.8250		84.2500	84.3000		0.1
81	0.3330	12	0.8250		84.3000	84.3500		0.1
82	0.3330	12	0.8250		84.3500	84.4000		0.1
83	0.3330	12	0.8250		84.4000	84.4500		0.1
84	0.3330	12	0.8250		84.4500	84.5000		0.1
85	0.3330	12	0.8250		84.5000	84.5500		0.1
86	0.3330	12	0.8250		84.5500	84.6000		0.1
87	0.3330	12	0.8250		84.6000	84.6500		0.1
88	0.3330	12	0.8250		84.6500	84.7000		0.1
89	0.3330	12	0.8250		84.7000	84.7500		0.1
90	0.3330	12	0.8250		84.7500	84.8000		0.1
91	0.3330	12	0.8250		84.8000	84.8500		0.1
92	0.3330	12	0.8250		84.8500	84.9000		0.1
93	0.3330	12	0.8250		84.9000	84.9500		0.1
94	0.3330	12	0.8250		84.9500	85.0000		0.1



ALL REACTIONS ARE FACTORED



TORQUE 0 kip-ft
50.00 mph WIND - 1.0000 in ICE



TORQUE 2 kip-ft
REACTIONS - 125.00 mph WIND

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 125.00 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50.00 mph basic wind with 1.00 in ice. Ice is considered to i ncrease in thickness with height.
5. Deflections are based upon a 60.00 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.0000 ft
8. TOWER RATING: 94.1%

CROWN CASTLE
The Pathway to Possible

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

Job: *BU 806361*			
Project:			
Client: Crown Castle	Drawn by: MLopienski	App'd:	
Code: TIA-222-H	Date: 10/07/22	Scale: NTS	
Path: C:\Work Area\806361\WO 2166810 - SA\Prod\806361 .en		Dwg No. E-1	

Tower Input Data

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

- Tower is located in New Haven County, Connecticut.
- Tower base elevation above sea level: 282.0000 ft.
- Basic wind speed of 125.00 mph.
- Risk Category II.
- Exposure Category C.
- Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- Topographic Category: 1.
- Crest Height: 0.0000 ft.
- Nominal ice thickness of 1.0000 in.
- Ice thickness is considered to increase with height.
- Ice density of 56.00 pcf.
- A wind speed of 50.00 mph is used in combination with ice.
- Temperature drop of 50.00 °F.
- Deflections calculated using a wind speed of 60.00 mph.
- 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		Distribute Leg Loads As Uniform		Use ASCE 10 X-Brace Ly Rules
	Consider Moments - Horizontals		Assume Legs Pinned		Calculate Redundant Bracing Forces
	Consider Moments - Diagonals	√	Assume Rigid Index Plate		Ignore Redundant Members in FEA
	Use Moment Magnification	√	Use Clear Spans For Wind Area		SR Leg Bolts Resist Compression
√	Use Code Stress Ratios		Use Clear Spans For KL/r		All Leg Panels Have Same Allowable
√	Use Code Safety Factors - Guys		Retension Guys To Initial Tension		Offset Girt At Foundation
	Escalate Ice	√	Bypass Mast Stability Checks	√	Consider Feed Line Torque
	Always Use Max Kz	√	Use Azimuth Dish Coefficients		Include Angle Block Shear Check
	Use Special Wind Profile	√	Project Wind Area of Appurt.		Use TIA-222-H Bracing Resist. Exemption
	Include Bolts In Member Capacity		Autocalc Torque Arm Areas		Use TIA-222-H Tension Splice Exemption
	Leg Bolts Are At Top Of Section		Add IBC .6D+W Combination		Poles
	Secondary Horizontal Braces Leg	√	Sort Capacity Reports By Component	√	Include Shear-Torsion Interaction
	Use Diamond Inner Bracing (4 Sided)		Triangulate Diamond Inner Bracing		Always Use Sub-Critical Flow
	SR Members Have Cut Ends		Treat Feed Line Bundles As Cylinder		Use Top Mounted Sockets
	SR Members Are Concentric		Ignore KL/ry For 60 Deg. Angle Legs		Pole Without Linear Attachments
					Pole With Shroud Or No Appurtenances
					Outside and Inside Corner Radii Are Known

Tapered Pole Section Geometry

Section	Elevation 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	150.0000-145.0000	5.0000	0.00	12	16.0000	16.9374	0.1875	0.7500	A572-65 (65 ksi)
L2	145.0000-140.0000	5.0000	0.00	12	16.9374	17.8748	0.1875	0.7500	A572-65 (65 ksi)
L3	140.0000-135.0000	5.0000	0.00	12	17.8748	18.8122	0.1875	0.7500	A572-65 (65 ksi)
L4	135.0000-133.0000	2.0000	0.00	12	18.8122	19.1871	0.1875	0.7500	A572-65 (65 ksi)
L5	133.0000-132.7500	0.2500	0.00	12	19.1871	19.2340	0.4500	1.8000	A572-65 (65 ksi)
L6	132.7500-127.7500	5.0000	0.00	12	19.2340	20.1714	0.4375	1.7500	A572-65 (65 ksi)
L7	127.7500-123.7500	4.0000	0.00	12	20.1714	20.9213	0.4250	1.7000	A572-65 (65 ksi)
L8	123.7500-123.5000	0.2500	0.00	12	20.9213	20.9682	0.4250	1.7000	A572-65 (65 ksi)
L9	123.5000-118.7500	4.7500	0.00	12	20.9682	21.8587	0.7625	3.0500	A572-65 (65 ksi)
L10	118.7500-118.5000	0.2500	0.00	12	21.8587	21.9056	1.0375	4.1500	A572-65 (65 ksi)
L11	118.5000-117.0000	1.5000	0.00	12	21.9056	22.1868	1.0125	4.0500	A572-65 (65 ksi)
L12	117.0000-116.7500	0.2500	0.00	12	22.1868	22.2337	0.7500	3.0000	A572-65 (65 ksi)
L13	116.7500-111.7500	5.0000	0.00	12	22.2337	23.1710	0.7125	2.8500	A572-65 (65 ksi)
L14	111.7500-106.7500	5.0000	0.00	12	23.1710	24.1084	0.6875	2.7500	A572-65 (65 ksi)
L15	106.7500-101.7500	5.0000	0.00	12	24.1084	25.0458	0.6625	2.6500	A572-65 (65 ksi)
L16	101.7500-95.1670	6.5830	4.33	12	25.0458	26.2800	0.6625	2.6500	A572-65 (65 ksi)
L17	95.1670-94.5000	5.0000	0.00	12	25.0927	26.0307	0.7875	3.1500	A572-65 (65 ksi)
L18	94.5000-93.7500	0.7500	0.00	12	26.0307	26.1714	0.7875	3.1500	A572-65 (65 ksi)
L19	93.7500-93.5000	0.2500	0.00	12	26.1714	26.2183	0.9125	3.6500	A572-65 (65 ksi)
L20	93.5000-92.7500	0.7500	0.00	12	26.2183	26.3590	0.9125	3.6500	A572-65 (65 ksi)
L21	92.7500-92.5000	0.2500	0.00	12	26.3590	26.4059	1.1375	4.5500	A572-65 (65 ksi)
L22	92.5000-91.2500	1.2500	0.00	12	26.4059	26.6405	1.1125	4.4500	A572-65 (65 ksi)
L23	91.2500-91.0000	0.2500	0.00	12	26.6405	26.6874	1.1125	4.4500	A572-65 (65 ksi)
L24	91.0000-89.2500	1.7500	0.00	12	26.6874	27.0157	1.1125	4.4500	A572-65 (65 ksi)
L25	89.2500-89.0000	0.2500	0.00	12	27.0157	27.0626	1.2125	4.8500	A572-65 (65 ksi)
L26	89.0000-85.7500	3.2500	0.00	12	27.0626	27.6723	1.1875	4.7500	A572-65 (65 ksi)
L27	85.7500-85.5000	0.2500	0.00	12	27.6723	27.7192	0.8625	3.4500	A572-65 (65 ksi)
L28	85.5000-80.5000	5.0000	0.00	12	27.7192	28.6573	0.8375	3.3500	A572-65 (65 ksi)
L29	80.5000-75.5000	5.0000	0.00	12	28.6573	29.5954	0.8125	3.2500	A572-65 (65 ksi)
L30	75.5000-70.5000	5.0000	0.00	12	29.5954	30.5334	0.7875	3.1500	A572-65 (65 ksi)
L31	70.5000-68.0830	2.4170	0.00	12	30.5334	30.9869	0.7875	3.1500	A572-65 (65 ksi)
L32	68.0830-67.8330	0.2500	0.00	12	30.9869	31.0338	0.8375	3.3500	A572-65 (65 ksi)
L33	67.8330-67.0000	0.8330	0.00	12	31.0338	31.1901	0.8375	3.3500	A572-65 (65 ksi)
L34	67.0000-66.7500	0.2500	0.00	12	31.1901	31.2370	1.0625	4.2500	A572-65 (65 ksi)
L35	66.7500-	3.5000	0.00	12	31.2370	31.8936	1.0375	4.1500	A572-65

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
	63.2500								(65 ksi)
L36	63.2500-63.0000	0.2500	0.00	12	31.8936	31.9405	1.2125	4.8500	A572-65 (65 ksi)
L37	63.0000-59.5000	3.5000	0.00	12	31.9405	32.5971	1.1875	4.7500	A572-65 (65 ksi)
L38	59.5000-59.2500	0.2500	0.00	12	32.5971	32.6441	1.2375	4.9500	A572-65 (65 ksi)
L39	59.2500-56.2500	3.0000	0.00	12	32.6441	33.2069	1.2125	4.8500	A572-65 (65 ksi)
L40	56.2500-56.0000	0.2500	0.00	12	33.2069	33.2538	1.0625	4.2500	A572-65 (65 ksi)
L41	56.0000-55.7500	0.2500	0.00	12	33.2538	33.3007	0.8375	3.3500	A572-65 (65 ksi)
L42	55.7500-50.7500	5.0000	0.00	12	33.3007	34.2388	0.8250	3.3000	A572-65 (65 ksi)
L43	50.7500-44.6670	6.0830	5.33	12	34.2388	35.3800	0.8125	3.2500	A572-65 (65 ksi)
L44	44.6670-43.6670	6.3330	0.00	12	33.7545	34.9420	0.8750	3.5000	A572-65 (65 ksi)
L45	43.6670-38.6670	5.0000	0.00	12	34.9420	35.8795	0.8625	3.4500	A572-65 (65 ksi)
L46	38.6670-34.5000	4.1670	0.00	12	35.8795	36.6609	0.8500	3.4000	A572-65 (65 ksi)
L47	34.5000-34.2500	0.2500	0.00	12	36.6609	36.7078	1.1000	4.4000	A572-65 (65 ksi)
L48	34.2500-33.0000	1.2500	0.00	12	36.7078	36.9421	1.1000	4.4000	A572-65 (65 ksi)
L49	33.0000-32.7500	0.2500	0.00	12	36.9421	36.9890	1.1000	4.4000	A572-65 (65 ksi)
L50	32.7500-29.7500	3.0000	0.00	12	36.9890	37.5516	1.0750	4.3000	A572-65 (65 ksi)
L51	29.7500-29.5000	0.2500	0.00	12	37.5516	37.5984	1.1250	4.5000	A572-65 (65 ksi)
L52	29.5000-25.0000	4.5000	0.00	12	37.5984	38.4422	1.1000	4.4000	A572-65 (65 ksi)
L53	25.0000-24.7500	0.2500	0.00	12	38.4422	38.4891	0.8625	3.4500	A572-65 (65 ksi)
L54	24.7500-19.7500	5.0000	0.00	12	38.4891	39.4267	0.8500	3.4000	A572-65 (65 ksi)
L55	19.7500-14.7500	5.0000	0.00	12	39.4267	40.3642	0.8250	3.3000	A572-65 (65 ksi)
L56	14.7500-14.5000	0.2500	0.00	12	40.3642	40.4111	0.8250	3.3000	A572-65 (65 ksi)
L57	14.5000-14.2500	0.2500	0.00	12	40.4111	40.4580	0.8250	3.3000	A572-65 (65 ksi)
L58	14.2500-12.2500	2.0000	0.00	12	40.4580	40.8330	0.8250	3.3000	A572-65 (65 ksi)
L59	12.2500-12.0000	0.2500	0.00	12	40.8330	40.8799	0.7875	3.1500	A572-65 (65 ksi)
L60	12.0000-11.5000	0.5000	0.00	12	40.8799	40.9736	0.7875	3.1500	A572-65 (65 ksi)
L61	11.5000-11.2500	0.2500	0.00	12	40.9736	41.0205	0.9000	3.6000	A572-65 (65 ksi)
L62	11.2500-9.2500	2.0000	0.00	12	41.0205	41.3955	0.8875	3.5500	A572-65 (65 ksi)
L63	9.2500-9.0000	0.2500	0.00	12	41.3955	41.4424	0.8500	3.4000	A572-65 (65 ksi)
L64	9.0000-4.5000	4.5000	0.00	12	41.4424	42.2862	0.8250	3.3000	A572-65 (65 ksi)
L65	4.5000-4.2500	0.2500	0.00	12	42.2862	42.3331	0.8500	3.4000	A572-65 (65 ksi)
L66	4.2500-3.0000	1.2500	0.00	12	42.3331	42.5675	0.8500	3.4000	A572-65 (65 ksi)
L67	3.0000-2.7500	0.2500	0.00	12	42.5675	42.6143	0.8375	3.3500	A572-65 (65 ksi)
L68	2.7500-0.0000	2.7500		12	42.6143	43.1300	0.8250	3.3000	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	16.4983	9.5468	304.6805	5.6609	8.2880	36.7616	617.3654	4.6986	3.7855	20.189
	17.4687	10.1127	362.1422	5.9965	8.7736	41.2765	733.7982	4.9772	4.0367	21.529
L2	17.4687	10.1127	362.1422	5.9965	8.7736	41.2765	733.7982	4.9772	4.0367	21.529
	18.4392	10.6787	426.4091	6.3320	9.2591	46.0528	864.0205	5.2557	4.2879	22.869
L3	18.4392	10.6787	426.4091	6.3320	9.2591	46.0528	864.0205	5.2557	4.2879	22.869
	19.4097	11.2446	497.8623	6.6676	9.7447	51.0905	1008.8039	5.5343	4.5392	24.209
L4	19.4097	11.2446	497.8623	6.6676	9.7447	51.0905	1008.8039	5.5343	4.5392	24.209
	19.7978	11.4710	528.5410	6.8019	9.9389	53.1788	1070.9673	5.6457	4.6397	24.745
L5	19.7052	27.1501	1216.6444	6.7079	9.9389	122.4120	2465.2515	13.3625	3.9362	8.747
	19.7538	27.2180	1225.7973	6.7247	9.9632	123.0323	2483.7977	13.3959	3.9487	8.775
L6	19.7582	26.4796	1194.1282	6.7291	9.9632	119.8537	2419.6274	13.0324	3.9822	9.102
	20.7286	27.8001	1381.8414	7.0647	10.4488	132.2490	2799.9853	13.6824	4.2334	9.676
L7	20.7330	27.0229	1344.9127	7.0692	10.4488	128.7148	2725.1577	13.2999	4.2669	10.04
	21.5094	28.0492	1504.0337	7.3377	10.8372	138.7839	3047.5801	13.8050	4.4679	10.513
L8	21.5094	28.0492	1504.0337	7.3377	10.8372	138.7839	3047.5801	13.8050	4.4679	10.513
	21.5579	28.1133	1514.3753	7.3545	10.8615	139.4258	3068.5349	13.8365	4.4805	10.542
L9	21.4389	49.6100	2585.2457	7.2336	10.8615	238.0189	5238.4088	24.4165	3.5760	4.69
	22.3608	51.7964	2942.3495	7.5524	11.3228	259.8605	5961.9979	25.4926	3.8146	5.003
L10	22.2638	69.5584	3848.9927	7.4540	11.3228	339.9328	7799.1027	34.2345	3.0776	2.966
	22.3123	69.7150	3875.0441	7.4708	11.3471	341.5013	7851.8899	34.3116	3.0902	2.978
L11	22.3211	68.1166	3795.2771	7.4797	11.3471	334.4716	7690.2605	33.5249	3.1572	3.118
	22.6123	69.0335	3950.6007	7.5804	11.4928	343.7471	8004.9881	33.9762	3.2326	3.193
L12	22.7049	51.7698	3036.5614	7.6744	11.4928	264.2153	6152.8966	25.4795	3.9361	5.248
	22.7534	51.8830	3056.5224	7.6911	11.5170	265.3915	6193.3431	25.5352	3.9486	5.265
L13	22.7666	49.3749	2918.9282	7.7046	11.5170	253.4445	5914.5399	24.3008	4.0491	5.683
	23.7371	51.5255	3317.1998	8.0402	12.0026	276.3734	6721.5462	25.3593	4.3003	6.036
L14	23.7459	49.7730	3211.5078	8.0491	12.0026	267.5676	6507.3855	24.4967	4.3673	6.352
	24.7164	51.8481	3630.1736	8.3847	12.4882	290.6890	7355.7160	25.5181	4.6186	6.718
L15	24.7252	50.0160	3509.3813	8.3936	12.4882	281.0164	7110.9580	24.6164	4.6856	7.073
	25.6956	52.0157	3947.3602	8.7292	12.9737	304.2577	7998.4219	25.6006	4.9368	7.452
L16	25.6956	52.0157	3947.3602	8.7292	12.9737	304.2577	7998.4219	25.6006	4.9368	7.452
	26.9734	54.6485	4577.6010	9.1711	13.6130	336.2659	9275.4608	26.8963	5.2675	7.951
L17	26.5416	61.6318	4647.1602	8.7012	12.9980	357.5290	9416.4064	30.3333	4.6143	5.859
	26.6712	64.0105	5206.2680	9.0371	13.4839	386.1096	10549.3105	31.5040	4.8657	6.179
L18	26.6712	64.0105	5206.2680	9.0371	13.4839	386.1096	10549.3105	31.5040	4.8657	6.179
	26.8169	64.3673	5293.8156	9.0874	13.5568	390.4916	10726.7056	31.6796	4.9034	6.227
L19	26.7728	74.2170	6043.9294	9.0427	13.5568	445.8227	12246.6396	36.5274	4.5684	5.007
	26.8213	74.3549	6077.6607	9.0595	13.5811	447.5089	12314.9883	36.5952	4.5810	5.02
L20	26.8213	74.3549	6077.6607	9.0595	13.5811	447.5089	12314.9883	36.5952	4.5810	5.02
	26.9670	74.7683	6179.6072	9.1099	13.6540	452.5864	12521.5595	36.7987	4.6187	5.062
L21	26.8876	92.3802	7500.8069	9.0293	13.6540	549.3494	15198.6684	45.4667	4.0157	3.53
	26.9362	92.5520	7542.7313	9.0461	13.6783	551.4387	15283.6185	45.5513	4.0283	3.541
L22	26.9450	90.6074	7398.8744	9.0551	13.6783	540.9215	14992.1254	44.5942	4.0953	3.681
	27.1878	91.4475	7606.5907	9.1390	13.7998	551.2119	15413.0151	45.0077	4.1581	3.738
L23	27.1878	91.4475	7606.5907	9.1390	13.7998	551.2119	15413.0151	45.0077	4.1581	3.738
	27.2363	91.6155	7648.5951	9.1558	13.8241	553.2817	15498.1273	45.0904	4.1707	3.749
L24	27.2363	91.6155	7648.5951	9.1558	13.8241	553.2817	15498.1273	45.0904	4.1707	3.749
	27.5762	92.7917	7946.9631	9.2733	13.9941	567.8786	16102.7018	45.6692	4.2587	3.828
L25	27.5410	100.7421	8561.3721	9.2375	13.9941	611.7834	17347.6609	49.5822	3.9907	3.291

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
	27.5895	100.9252	8608.1436	9.2543	14.0184	614.0595	17442.4328	49.6723	4.0033	3.302
L26	27.5983	98.9399	8455.1400	9.2633	14.0184	603.1450	17132.4060	48.6952	4.0703	3.428
	28.2296	101.2713	9067.0658	9.4816	14.3343	632.5449	18372.3335	49.8427	4.2337	3.565
L27	28.3442	74.4576	6830.9777	9.5979	14.3343	476.5489	13841.4127	36.6458	5.1047	5.918
	28.3928	74.5878	6866.8923	9.6147	14.3586	478.2438	13914.1855	36.7099	5.1173	5.933
L28	28.4016	72.4933	6686.4899	9.6237	14.3586	465.6797	13548.6413	35.6790	5.1843	6.19
	29.3728	75.0230	7411.1936	9.9595	14.8445	499.2560	15017.0874	36.9240	5.4357	6.49
L29	29.3816	72.8489	7209.3649	9.9684	14.8445	485.6598	14608.1279	35.8540	5.5027	6.772
	30.3527	75.3031	7962.8148	10.3043	15.3304	519.4137	16134.8215	37.0619	5.7541	7.082
L30	30.3616	73.0495	7737.9330	10.3132	15.3304	504.7446	15679.1501	35.9527	5.8211	7.392
	31.3327	75.4282	8518.7183	10.6490	15.8163	538.6035	17261.2329	37.1235	6.0725	7.711
L31	31.3327	75.4282	8518.7183	10.6490	15.8163	538.6035	17261.2329	37.1235	6.0725	7.711
	31.8022	76.5781	8914.2761	10.8114	16.0512	555.3651	18062.7401	37.6894	6.1940	7.865
L32	31.7845	81.3053	9433.2514	10.7935	16.0512	587.6976	19114.3248	40.0160	6.0600	7.236
	31.8331	81.4318	9477.3455	10.8103	16.0755	589.5523	19203.6715	40.0783	6.0726	7.251
L33	31.8331	81.4318	9477.3455	10.8103	16.0755	589.5523	19203.6715	40.0783	6.0726	7.251
	31.9949	81.8533	9625.2586	10.8662	16.1564	595.7534	19503.3835	40.2857	6.1144	7.301
L34	31.9155	103.0739	11941.5976	10.7857	16.1564	739.1227	24196.9142	50.7298	5.5114	5.187
	31.9641	103.2344	11997.4570	10.8025	16.1807	741.4651	24310.1007	50.8088	5.5240	5.199
L35	31.9729	100.8888	11744.3067	10.8114	16.1807	725.8199	23797.1493	49.6544	5.5910	5.389
	32.6527	103.0825	12527.1730	11.0465	16.5209	758.2628	25383.4489	50.7341	5.7670	5.559
L36	32.5910	119.7867	14392.5053	10.9838	16.5209	871.1703	29163.1177	58.9554	5.2980	4.369
	32.6395	119.9698	14458.6129	11.0006	16.5452	873.8866	29297.0697	59.0455	5.3106	4.38
L37	32.6483	117.5918	14195.0878	11.0096	16.5452	857.9590	28763.0964	57.8751	5.3776	4.528
	33.3281	120.1026	15123.9285	11.2447	16.8853	895.6849	30645.1794	59.1109	5.5535	4.677
L38	33.3105	124.9604	15685.5782	11.2268	16.8853	928.9475	31783.2341	61.5017	5.4195	4.379
	33.3591	125.1473	15756.0640	11.2435	16.9096	931.7812	31926.0573	61.5937	5.4321	4.39
L39	33.3679	122.7166	15474.6549	11.2525	16.9096	915.1392	31355.8463	60.3974	5.4991	4.535
	33.9506	124.9141	16320.9319	11.4540	17.2012	948.8270	33070.6329	61.4789	5.6499	4.66
L40	34.0035	109.9740	14503.9471	11.5077	17.2012	843.1955	29388.9291	54.1258	6.0519	5.696
	34.0520	110.1345	14567.5295	11.5245	17.2255	845.6974	29517.7643	54.2048	6.0645	5.708
L41	34.1314	87.4186	11725.1004	11.6050	17.2255	680.6842	23758.2322	43.0248	6.6675	7.961
	34.1800	87.5451	11776.0691	11.6218	17.2498	682.6802	23861.5087	43.0870	6.6801	7.976
L42	34.1844	86.2717	11613.7122	11.6263	17.2498	673.2681	23532.5296	42.4603	6.7136	8.138
	35.1555	88.7636	12649.4489	11.9621	17.7357	713.2206	25631.2129	43.6868	6.9650	8.442

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
L43	35.1599	87.4514	12471.7771	11.9666	17.7357	703.2028	25271.2017	43.0409	6.9985	8.614
	36.3415	90.4372	13793.3293	12.3752	18.3268	752.6300	27949.0248	44.5104	7.3043	8.99
L44	35.6718	92.6379	12782.7429	11.7708	17.4848	731.0769	25901.3026	45.5936	6.7012	7.659
	35.8659	95.9837	14218.3882	12.1960	18.0999	785.5489	28810.3093	47.2403	7.0194	8.022
L45	35.8703	94.6472	14030.7017	12.2004	18.0999	775.1795	28430.0055	46.5825	7.0529	8.177
	36.8410	97.2510	15220.8387	12.5361	18.5856	818.9590	30841.5457	47.8640	7.3042	8.469
L46	36.8454	95.8758	15016.3164	12.5406	18.5856	807.9547	30427.1282	47.1872	7.3377	8.633
	37.6543	98.0144	16043.7441	12.8203	18.9903	844.8373	32508.9753	48.2397	7.5471	8.879
L47	37.5661	125.9566	20330.6847	12.7308	18.9903	1070.5806	41195.4792	61.9920	6.8771	6.252
	37.6146	126.1227	20411.1928	12.7476	19.0146	1073.4474	41358.6103	62.0737	6.8897	6.263
L48	37.6146	126.1227	20411.1928	12.7476	19.0146	1073.4474	41358.6103	62.0737	6.8897	6.263
	37.8573	126.9529	20816.9224	12.8315	19.1360	1087.8390	42180.7286	62.4823	6.9525	6.32
L49	37.8573	126.9529	20816.9224	12.8315	19.1360	1087.8390	42180.7286	62.4823	6.9525	6.32
	37.9058	127.1189	20898.7082	12.8483	19.1603	1090.7289	42346.4487	62.5641	6.9651	6.332
L50	37.9146	124.3164	20466.4483	12.8572	19.1603	1068.1687	41470.5730	61.1847	7.0321	6.541
	38.4970	126.2636	21443.3071	13.0586	19.4517	1102.3870	43449.9537	62.1431	7.1828	6.682
L51	38.4794	131.9552	22348.5154	13.0407	19.4517	1148.9232	45284.1512	64.9443	7.0488	6.266
	38.5279	132.1250	22434.9080	13.0575	19.4760	1151.9265	45459.2061	65.0279	7.0614	6.277
L52	38.5367	129.2775	21981.4930	13.0664	19.4760	1128.6458	44540.4643	63.6264	7.1284	6.48
	39.4103	132.2662	23541.5645	13.3685	19.9131	1182.2164	47701.5921	65.0974	7.3545	6.686
L53	39.4941	104.3683	18813.1690	13.4535	19.9131	944.7646	38120.5809	51.3669	7.9910	9.265
	39.5426	104.4985	18883.6606	13.4703	19.9374	947.1496	38263.4160	51.4310	8.0036	9.28
L54	39.5470	103.0182	18628.5379	13.4748	19.9374	934.3533	37746.4682	50.7024	8.0371	9.455
	40.5176	105.5843	20055.5569	13.8104	20.4230	982.0078	40637.9955	51.9654	8.2883	9.751
L55	40.5265	102.5453	19503.5569	13.8194	20.4230	954.9795	39519.4939	50.4697	8.3553	10.128
	41.4971	105.0359	20959.4537	14.1550	20.9087	1002.4291	42469.5355	51.6955	8.6066	10.432
L56	41.4971	105.0359	20959.4537	14.1550	20.9087	1002.4291	42469.5355	51.6955	8.6066	10.432
	41.5456	105.1605	21034.0907	14.1718	20.9329	1004.8318	42620.7703	51.7568	8.6192	10.447
L57	41.5456	105.1605	21034.0907	14.1718	20.9329	1004.8318	42620.7703	51.7568	8.6192	10.447
	41.5941	105.2850	21108.9046	14.1886	20.9572	1007.2374	42772.3637	51.8181	8.6317	10.463
L58	41.5941	105.2850	21108.9046	14.1886	20.9572	1007.2374	42772.3637	51.8181	8.6317	10.463
	41.9824	106.2812	21713.8127	14.3229	21.1515	1026.5855	43998.0714	52.3084	8.7322	10.585
L59	41.9956	101.5454	20785.1584	14.3363	21.1515	982.6805	42116.3660	49.9775	8.8327	11.216
	42.0442	101.6642	20858.2379	14.3531	21.1758	985.0048	42264.4449	50.0360	8.8453	11.232
L60	42.0442	101.6642	20858.2379	14.3531	21.1758	985.0048	42264.4449	50.0360	8.8453	11.232

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
	42.1412	101.9020	21004.9103	14.3866	21.2243	989.6615	42561.6429	50.1531	8.8704	11.264
L61	42.1015	116.1334	23804.5664	14.3464	21.2243	1121.5693	48234.5052	57.1573	8.5689	9.521
	42.1501	116.2692	23888.2031	14.3631	21.2486	1124.2237	48403.9759	57.2242	8.5815	9.535
L62	42.1545	114.6901	23578.4472	14.3676	21.2486	1109.6460	47776.3264	56.4470	8.6150	9.707
	42.5427	115.7618	24245.6269	14.5019	21.4429	1130.7075	49128.2133	56.9744	8.7155	9.82
L63	42.5560	110.9731	23285.7139	14.5153	21.4429	1085.9414	47183.1695	54.6176	8.8160	10.372
	42.6045	111.1014	23366.5744	14.5321	21.4672	1088.4797	47347.0146	54.6807	8.8286	10.387
L64	42.6133	107.9001	22721.2511	14.5410	21.4672	1058.4188	46039.4148	53.1052	8.8956	10.783
	43.4869	110.1417	24166.9269	14.8431	21.9043	1103.2984	48968.7458	54.2084	9.1217	11.057
L65	43.4780	113.4109	24854.2444	14.8342	21.9043	1134.6767	50361.4374	55.8174	9.0547	10.653
	43.5266	113.5392	24938.6943	14.8509	21.9285	1137.2713	50532.5558	55.8805	9.0673	10.667
L66	43.5266	113.5392	24938.6943	14.8509	21.9285	1137.2713	50532.5558	55.8805	9.0673	10.667
	43.7692	114.1807	25363.8144	14.9349	22.0499	1150.2891	51393.9644	56.1963	9.1301	10.741
L67	43.7736	112.5353	25013.2882	14.9393	22.0499	1134.3921	50683.7034	55.3864	9.1636	10.942
	43.8222	112.6617	25097.6796	14.9561	22.0742	1136.9673	50854.7031	55.4487	9.1761	10.957
L68	43.8266	111.0134	24745.2861	14.9606	22.0742	1121.0033	50140.6583	54.6374	9.2096	11.163
	44.3604	112.3832	25672.6600	15.1452	22.3413	1149.1101	52019.7693	55.3116	9.3478	11.331

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 150.0000-145.0000				1	1	1			
L2 145.0000-140.0000				1	1	1			
L3 140.0000-135.0000				1	1	1			
L4 135.0000-133.0000				1	1	1			
L5 133.0000-132.7500				1	1	0.919195			
L6 132.7500-127.7500				1	1	0.920306			
L7 127.7500-123.7500				1	1	0.928276			
L8 123.7500-123.5000				1	1	0.927164			
L9 123.5000-118.7500				1	1	0.876126			
L10 118.7500-118.5000				1	1	0.845268			
L11 118.5000-117.0000				1	1	0.856073			
L12 117.0000-116.7500				1	1	0.879027			
L13 116.7500-				1	1	0.89611			

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
111.7500 L14 111.7500-106.7500				1	1	0.901451			
L15 106.7500-101.7500				1	1	0.909426			
L16 101.7500-95.1670				1	1	0.898773			
L17 95.1670-94.5000				1	1	0.908838			
L18 94.5000-93.7500				1	1	0.906			
L19 93.7500-93.5000				1	1	0.906153			
L20 93.5000-92.7500				1	1	0.903036			
L21 92.7500-92.5000				1	1	0.876102			
L22 92.5000-91.2500				1	1	0.889264			
L23 91.2500-91.0000				1	1	0.888148			
L24 91.0000-89.2500				1	1	0.880451			
L25 89.2500-89.0000				1	1	0.884383			
L26 89.0000-85.7500				1	1	0.887418			
L27 85.7500-85.5000				1	1	0.903431			
L28 85.5000-80.5000				1	1	0.910773			
L29 80.5000-75.5000				1	1	0.91992			
L30 75.5000-70.5000				1	1	0.930909			
L31 70.5000-68.0830				1	1	0.922889			
L32 68.0830-67.8330				1	1	0.9238			
L33 67.8330-67.0000				1	1	0.920965			
L34 67.0000-66.7500				1	1	0.905289			
L35 66.7500-63.2500				1	1	0.913033			
L36 63.2500-63.0000				1	1	0.897595			
L37 63.0000-59.5000				1	1	0.902104			
L38 59.5000-59.2500				1	1	0.896125			
L39 59.2500-56.2500				1	1	0.902332			
L40 56.2500-56.0000				1	1	0.901097			
L41 56.0000-55.7500				1	1	0.928243			
L42 55.7500-50.7500				1	1	0.926135			
L43 50.7500-44.6670				1	1	0.937703			
L44 44.6670-43.6670				1	1	0.935663			
L45 43.6670-				1	1	0.935111			

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
38.6670									
L46 38.6670-34.5000				1	1	0.937454			
L47 34.5000-34.2500				1	1	0.922519			
L48 34.2500-33.0000				1	1	0.918716			
L49 33.0000-32.7500				1	1	0.917961			
L50 32.7500-29.7500				1	1	0.929559			
L51 29.7500-29.5000				1	1	0.917173			
L52 29.5000-25.0000				1	1	0.923897			
L53 25.0000-24.7500				1	1	0.936348			
L54 24.7500-19.7500				1	1	0.937441			
L55 19.7500-14.7500				1	1	0.953114			
L56 14.7500-14.5000				1	1	0.952523			
L57 14.5000-14.2500				1	1	0.951934			
L58 14.2500-12.2500				1	1	0.947272			
L59 12.2500-12.0000				1	1	0.990848			
L60 12.0000-11.5000				1	1	0.989648			
L61 11.5000-11.2500				1	1	0.919523			
L62 11.2500-9.2500				1	1	0.927465			
L63 9.2500-9.0000				1	1	0.912797			
L64 9.0000-4.5000				1	1	0.930002			
L65 4.5000-4.2500				1	1	0.955592			
L66 4.2500-3.0000				1	1	0.952702			
L67 3.0000-2.7500				1	1	0.912717			
L68 2.7500-0.0000				1	1	0.920519			

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
***										
9" x 1-1/4" Flate Plate	A	No	Surface Af (CaAa)	29.7500 - 0.0000	1	1	0.500 0.500	9.0000	20.5000	0.00
8" x 1-1/4" Flate Plate	A	No	Surface Af (CaAa)	59.5000 - 29.7500	1	1	0.500 0.500	8.0000	18.5000	0.00
7" x 1-1/4" Flate Plate	A	No	Surface Af (CaAa)	89.2500 - 59.5000	1	1	0.500 0.500	7.0000	16.5000	0.00
5" x 1-1/4" Flate Plate	A	No	Surface Af (CaAa)	125.0000 - 89.2500	1	1	0.500 0.500	5.0000	12.5000	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
***										
9" x 1-1/4" Flate Plate	B	No	Surface Af (CaAa)	29.7500 - 0.0000	1	1	0.500 0.500	9.0000	20.5000	0.00
8" x 1-1/4" Flate Plate	B	No	Surface Af (CaAa)	59.5000 - 29.7500	1	1	0.500 0.500	8.0000	18.5000	0.00
7" x 1-1/4" Flate Plate	B	No	Surface Af (CaAa)	89.2500 - 59.5000	1	1	0.500 0.500	7.0000	16.5000	0.00
5" x 1-1/4" Flate Plate	B	No	Surface Af (CaAa)	125.0000 - 89.2500	1	1	0.500 0.500	5.0000	12.5000	0.00
***										
9" x 1-1/4" Flate Plate	C	No	Surface Af (CaAa)	29.7500 - 0.0000	1	1	0.500 0.500	9.0000	20.5000	0.00
8" x 1-1/4" Flate Plate	C	No	Surface Af (CaAa)	59.5000 - 29.7500	1	1	0.500 0.500	8.0000	18.5000	0.00
7" x 1-1/4" Flate Plate	C	No	Surface Af (CaAa)	89.2500 - 59.5000	1	1	0.500 0.500	7.0000	16.5000	0.00
5" x 1-1/4" Flate Plate	C	No	Surface Af (CaAa)	125.0000 - 89.2500	1	1	0.500 0.500	5.0000	12.5000	0.00
***										
6" x 1" Flate Plate	A	No	Surface Af (CaAa)	70.5833 - 0.0000	1	1	0.000 0.000	6.0000	14.0000	0.00
6" x 1" Flate Plate	B	No	Surface Af (CaAa)	70.5833 - 0.0000	1	1	0.000 0.000	6.0000	14.0000	0.00
6" x 1" Flate Plate	C	No	Surface Af (CaAa)	70.5833 - 0.0000	1	1	0.000 0.000	6.0000	14.0000	0.00
***										
4.5" x 1" Flate Plate	A	No	Surface Af (CaAa)	135.0000 - 70.5833	1	1	0.000 0.000	4.5000	11.0000	0.00
4.5" x 1" Flate Plate	B	No	Surface Af (CaAa)	135.0000 - 70.5833	1	1	0.000 0.000	4.5000	11.0000	0.00
4.5" x 1" Flate Plate	C	No	Surface Af (CaAa)	135.0000 - 70.5833	1	1	0.000 0.000	4.5000	11.0000	0.00
***										
Transition Stiffener	A	No	Surface Af (CaAa)	6.0000 - 0.0000	1	1	0.000 0.000	1.2500	14.5000	0.00
Transition Stiffener	B	No	Surface Af (CaAa)	13.0000 - 0.0000	1	1	0.000 0.000	1.2500	14.5000	0.00
Transition Stiffener	C	No	Surface Af (CaAa)	16.0000 - 0.0000	1	1	0.000 0.000	1.2500	14.5000	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		C_AA_A ft^2/ft	Weight plf
LDF4-50A(1/2)	A	No	No	Inside Pole	150.0000 - 8.0000	1	No Ice 1/2" Ice 1" Ice	0.0000 0.0000 0.0000	0.15 0.15 0.15
LDF5-50A(7/8)	A	No	No	Inside Pole	150.0000 - 8.0000	11	No Ice 1/2" Ice 1" Ice	0.0000 0.0000 0.0000	0.33 0.33 0.33
HB158-1-08U8-S8J18(1-5/8)	A	No	No	Inside Pole	150.0000 - 8.0000	2	No Ice 1/2" Ice 1" Ice	0.0000 0.0000 0.0000	1.30 1.30 1.30
***									
FB-L98B-002-75000(3/8)	B	No	No	Inside Pole	140.0000 - 8.0000	2	No Ice 1/2" Ice 1" Ice	0.0000 0.0000 0.0000	0.06 0.06 0.06
WR-VG86ST-BRD(3/4)	B	No	No	Inside Pole	140.0000 - 8.0000	4	No Ice 1/2" Ice 1" Ice	0.0000 0.0000 0.0000	0.58 0.58 0.58
1" Rigid Conduit	B	No	No	Inside Pole	140.0000 - 8.0000	2	No Ice 1/2" Ice	0.0000 0.0000	0.60 0.60

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
							1" Ice	0.0000	0.60
LDF7-50A(1-5/8)	C	No	No	Inside Pole	140.0000 - 0.0000	12	No Ice	0.0000	0.82
							1/2" Ice	0.0000	0.82
							1" Ice	0.0000	0.82
PWRT-606-S(7/8)	C	No	No	Inside Pole	140.0000 - 0.0000	3	No Ice	0.0000	0.89
							1/2" Ice	0.0000	0.89
							1" Ice	0.0000	0.89
RFFT-48SM-001-XXX(3/8)	C	No	No	Inside Pole	140.0000 - 0.0000	1	No Ice	0.0000	0.06
							1/2" Ice	0.0000	0.06
							1" Ice	0.0000	0.06
***									
LDF7-50A(1-5/8)	B	No	No	Inside Pole	128.0000 - 8.0000	3	No Ice	0.0000	0.82
							1/2" Ice	0.0000	0.82
							1" Ice	0.0000	0.82
***									
CU12PSM9P6XXX (1-1/2)	B	No	No	Inside Pole	110.0000 - 8.0000	1	No Ice	0.0000	2.35
							1/2" Ice	0.0000	2.35
							1" Ice	0.0000	2.35
***									

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	150.0000-	A	0.000	0.000	0.000	0.000	0.03
	145.0000	B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L2	145.0000-	A	0.000	0.000	0.000	0.000	0.03
	140.0000	B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L3	140.0000-	A	0.000	0.000	0.000	0.000	0.03
	135.0000	B	0.000	0.000	0.000	0.000	0.02
		C	0.000	0.000	0.000	0.000	0.06
L4	135.0000-	A	0.000	0.000	1.500	0.000	0.01
	133.0000	B	0.000	0.000	1.500	0.000	0.01
		C	0.000	0.000	1.500	0.000	0.03
L5	133.0000-	A	0.000	0.000	0.188	0.000	0.00
	132.7500	B	0.000	0.000	0.188	0.000	0.00
		C	0.000	0.000	0.188	0.000	0.00
L6	132.7500-	A	0.000	0.000	3.750	0.000	0.03
	127.7500	B	0.000	0.000	3.750	0.000	0.02
		C	0.000	0.000	3.750	0.000	0.06
L7	127.7500-	A	0.000	0.000	4.042	0.000	0.03
	123.7500	B	0.000	0.000	4.042	0.000	0.02
		C	0.000	0.000	4.042	0.000	0.05
L8	123.7500-	A	0.000	0.000	0.396	0.000	0.00
	123.5000	B	0.000	0.000	0.396	0.000	0.00
		C	0.000	0.000	0.396	0.000	0.00
L9	123.5000-	A	0.000	0.000	7.521	0.000	0.03
	118.7500	B	0.000	0.000	7.521	0.000	0.03
		C	0.000	0.000	7.521	0.000	0.06
L10	118.7500-	A	0.000	0.000	0.396	0.000	0.00
	118.5000	B	0.000	0.000	0.396	0.000	0.00
		C	0.000	0.000	0.396	0.000	0.00
L11	118.5000-	A	0.000	0.000	2.375	0.000	0.01
	117.0000	B	0.000	0.000	2.375	0.000	0.01
		C	0.000	0.000	2.375	0.000	0.02
L12	117.0000-	A	0.000	0.000	0.396	0.000	0.00
	116.7500	B	0.000	0.000	0.396	0.000	0.00
		C	0.000	0.000	0.396	0.000	0.00
L13	116.7500-	A	0.000	0.000	7.917	0.000	0.03

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
	111.7500	B	0.000	0.000	7.917	0.000	0.03
		C	0.000	0.000	7.917	0.000	0.06
L14	111.7500-	A	0.000	0.000	7.917	0.000	0.03
	106.7500	B	0.000	0.000	7.917	0.000	0.04
		C	0.000	0.000	7.917	0.000	0.06
L15	106.7500-	A	0.000	0.000	7.917	0.000	0.03
	101.7500	B	0.000	0.000	7.917	0.000	0.04
		C	0.000	0.000	7.917	0.000	0.06
L16	101.7500-	A	0.000	0.000	10.423	0.000	0.04
	95.1670	B	0.000	0.000	10.423	0.000	0.06
		C	0.000	0.000	10.423	0.000	0.08
L17	95.1670-94.5000	A	0.000	0.000	1.056	0.000	0.00
		B	0.000	0.000	1.056	0.000	0.01
		C	0.000	0.000	1.056	0.000	0.01
L18	94.5000-93.7500	A	0.000	0.000	1.188	0.000	0.00
		B	0.000	0.000	1.188	0.000	0.01
		C	0.000	0.000	1.188	0.000	0.01
L19	93.7500-93.5000	A	0.000	0.000	0.396	0.000	0.00
		B	0.000	0.000	0.396	0.000	0.00
		C	0.000	0.000	0.396	0.000	0.00
L20	93.5000-92.7500	A	0.000	0.000	1.188	0.000	0.00
		B	0.000	0.000	1.188	0.000	0.01
		C	0.000	0.000	1.188	0.000	0.01
L21	92.7500-92.5000	A	0.000	0.000	0.396	0.000	0.00
		B	0.000	0.000	0.396	0.000	0.00
		C	0.000	0.000	0.396	0.000	0.00
L22	92.5000-91.2500	A	0.000	0.000	1.979	0.000	0.01
		B	0.000	0.000	1.979	0.000	0.01
		C	0.000	0.000	1.979	0.000	0.02
L23	91.2500-91.0000	A	0.000	0.000	0.396	0.000	0.00
		B	0.000	0.000	0.396	0.000	0.00
		C	0.000	0.000	0.396	0.000	0.00
L24	91.0000-89.2500	A	0.000	0.000	2.771	0.000	0.01
		B	0.000	0.000	2.771	0.000	0.01
		C	0.000	0.000	2.771	0.000	0.02
L25	89.2500-89.0000	A	0.000	0.000	0.479	0.000	0.00
		B	0.000	0.000	0.479	0.000	0.00
		C	0.000	0.000	0.479	0.000	0.00
L26	89.0000-85.7500	A	0.000	0.000	6.229	0.000	0.02
		B	0.000	0.000	6.229	0.000	0.03
		C	0.000	0.000	6.229	0.000	0.04
L27	85.7500-85.5000	A	0.000	0.000	0.479	0.000	0.00
		B	0.000	0.000	0.479	0.000	0.00
		C	0.000	0.000	0.479	0.000	0.00
L28	85.5000-80.5000	A	0.000	0.000	9.583	0.000	0.03
		B	0.000	0.000	9.583	0.000	0.04
		C	0.000	0.000	9.583	0.000	0.06
L29	80.5000-75.5000	A	0.000	0.000	9.583	0.000	0.03
		B	0.000	0.000	9.583	0.000	0.04
		C	0.000	0.000	9.583	0.000	0.06
L30	75.5000-70.5000	A	0.000	0.000	9.604	0.000	0.03
		B	0.000	0.000	9.604	0.000	0.04
		C	0.000	0.000	9.604	0.000	0.06
L31	70.5000-68.0830	A	0.000	0.000	5.237	0.000	0.02
		B	0.000	0.000	5.237	0.000	0.02
		C	0.000	0.000	5.237	0.000	0.03
L32	68.0830-67.8330	A	0.000	0.000	0.542	0.000	0.00
		B	0.000	0.000	0.542	0.000	0.00
		C	0.000	0.000	0.542	0.000	0.00
L33	67.8330-67.0000	A	0.000	0.000	1.805	0.000	0.01
		B	0.000	0.000	1.805	0.000	0.01
		C	0.000	0.000	1.805	0.000	0.01
L34	67.0000-66.7500	A	0.000	0.000	0.542	0.000	0.00
		B	0.000	0.000	0.542	0.000	0.00
		C	0.000	0.000	0.542	0.000	0.00
L35	66.7500-63.2500	A	0.000	0.000	7.583	0.000	0.02
		B	0.000	0.000	7.583	0.000	0.03
		C	0.000	0.000	7.583	0.000	0.04
L36	63.2500-63.0000	A	0.000	0.000	0.542	0.000	0.00

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B	0.000	0.000	0.542	0.000	0.00
		C	0.000	0.000	0.542	0.000	0.00
L37	63.0000-59.5000	A	0.000	0.000	7.583	0.000	0.02
		B	0.000	0.000	7.583	0.000	0.03
		C	0.000	0.000	7.583	0.000	0.04
L38	59.5000-59.2500	A	0.000	0.000	0.583	0.000	0.00
		B	0.000	0.000	0.583	0.000	0.00
		C	0.000	0.000	0.583	0.000	0.00
L39	59.2500-56.2500	A	0.000	0.000	7.000	0.000	0.02
		B	0.000	0.000	7.000	0.000	0.03
		C	0.000	0.000	7.000	0.000	0.04
L40	56.2500-56.0000	A	0.000	0.000	0.583	0.000	0.00
		B	0.000	0.000	0.583	0.000	0.00
		C	0.000	0.000	0.583	0.000	0.00
L41	56.0000-55.7500	A	0.000	0.000	0.583	0.000	0.00
		B	0.000	0.000	0.583	0.000	0.00
		C	0.000	0.000	0.583	0.000	0.00
L42	55.7500-50.7500	A	0.000	0.000	11.667	0.000	0.03
		B	0.000	0.000	11.667	0.000	0.04
		C	0.000	0.000	11.667	0.000	0.06
L43	50.7500-44.6670	A	0.000	0.000	14.194	0.000	0.04
		B	0.000	0.000	14.194	0.000	0.05
		C	0.000	0.000	14.194	0.000	0.08
L44	44.6670-43.6670	A	0.000	0.000	2.333	0.000	0.01
		B	0.000	0.000	2.333	0.000	0.01
		C	0.000	0.000	2.333	0.000	0.01
L45	43.6670-38.6670	A	0.000	0.000	11.667	0.000	0.03
		B	0.000	0.000	11.667	0.000	0.04
		C	0.000	0.000	11.667	0.000	0.06
L46	38.6670-34.5000	A	0.000	0.000	9.723	0.000	0.03
		B	0.000	0.000	9.723	0.000	0.04
		C	0.000	0.000	9.723	0.000	0.05
L47	34.5000-34.2500	A	0.000	0.000	0.583	0.000	0.00
		B	0.000	0.000	0.583	0.000	0.00
		C	0.000	0.000	0.583	0.000	0.00
L48	34.2500-33.0000	A	0.000	0.000	2.917	0.000	0.01
		B	0.000	0.000	2.917	0.000	0.01
		C	0.000	0.000	2.917	0.000	0.02
L49	33.0000-32.7500	A	0.000	0.000	0.583	0.000	0.00
		B	0.000	0.000	0.583	0.000	0.00
		C	0.000	0.000	0.583	0.000	0.00
L50	32.7500-29.7500	A	0.000	0.000	7.000	0.000	0.02
		B	0.000	0.000	7.000	0.000	0.03
		C	0.000	0.000	7.000	0.000	0.04
L51	29.7500-29.5000	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
L52	29.5000-25.0000	A	0.000	0.000	11.250	0.000	0.03
		B	0.000	0.000	11.250	0.000	0.04
		C	0.000	0.000	11.250	0.000	0.06
L53	25.0000-24.7500	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
L54	24.7500-19.7500	A	0.000	0.000	12.500	0.000	0.03
		B	0.000	0.000	12.500	0.000	0.04
		C	0.000	0.000	12.500	0.000	0.06
L55	19.7500-14.7500	A	0.000	0.000	12.500	0.000	0.03
		B	0.000	0.000	12.500	0.000	0.04
		C	0.000	0.000	12.760	0.000	0.06
L56	14.7500-14.5000	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	0.677	0.000	0.00
L57	14.5000-14.2500	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	0.677	0.000	0.00
L58	14.2500-12.2500	A	0.000	0.000	5.000	0.000	0.01
		B	0.000	0.000	5.156	0.000	0.02
		C	0.000	0.000	5.417	0.000	0.03
L59	12.2500-12.0000	A	0.000	0.000	0.625	0.000	0.00

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B	0.000	0.000	0.677	0.000	0.00
		C	0.000	0.000	0.677	0.000	0.00
L60	12.0000-11.5000	A	0.000	0.000	1.250	0.000	0.00
		B	0.000	0.000	1.354	0.000	0.00
		C	0.000	0.000	1.354	0.000	0.01
L61	11.5000-11.2500	A	0.000	0.000	0.625	0.000	0.00
		B	0.000	0.000	0.677	0.000	0.00
		C	0.000	0.000	0.677	0.000	0.00
L62	11.2500-9.2500	A	0.000	0.000	5.000	0.000	0.01
		B	0.000	0.000	5.417	0.000	0.02
		C	0.000	0.000	5.417	0.000	0.03
L63	9.2500-9.0000	A	0.000	0.000	0.625	0.000	0.00
		B	0.000	0.000	0.677	0.000	0.00
		C	0.000	0.000	0.677	0.000	0.00
L64	9.0000-4.5000	A	0.000	0.000	11.493	0.000	0.01
		B	0.000	0.000	12.188	0.000	0.01
		C	0.000	0.000	12.188	0.000	0.06
L65	4.5000-4.2500	A	0.000	0.000	0.666	0.000	0.00
		B	0.000	0.000	0.677	0.000	0.00
		C	0.000	0.000	0.677	0.000	0.00
L66	4.2500-3.0000	A	0.000	0.000	3.328	0.000	0.00
		B	0.000	0.000	3.385	0.000	0.00
		C	0.000	0.000	3.385	0.000	0.02
L67	3.0000-2.7500	A	0.000	0.000	0.666	0.000	0.00
		B	0.000	0.000	0.677	0.000	0.00
		C	0.000	0.000	0.677	0.000	0.00
L68	2.7500-0.0000	A	0.000	0.000	7.321	0.000	0.00
		B	0.000	0.000	7.448	0.000	0.00
		C	0.000	0.000	7.448	0.000	0.03

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	150.0000-	A	0.987	0.000	0.000	0.000	0.000	0.03
	145.0000	B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
L2	145.0000-	A	0.984	0.000	0.000	0.000	0.000	0.03
	140.0000	B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
L3	140.0000-	A	0.980	0.000	0.000	0.000	0.000	0.03
	135.0000	B		0.000	0.000	0.000	0.000	0.02
		C		0.000	0.000	0.000	0.000	0.06
L4	135.0000-	A	0.978	0.000	0.000	1.891	0.000	0.02
	133.0000	B		0.000	0.000	1.891	0.000	0.02
		C		0.000	0.000	1.891	0.000	0.04
L5	133.0000-	A	0.977	0.000	0.000	0.236	0.000	0.00
	132.7500	B		0.000	0.000	0.236	0.000	0.00
		C		0.000	0.000	0.236	0.000	0.00
L6	132.7500-	A	0.975	0.000	0.000	4.725	0.000	0.06
	127.7500	B		0.000	0.000	4.725	0.000	0.05
		C		0.000	0.000	4.725	0.000	0.09
L7	127.7500-	A	0.972	0.000	0.000	5.062	0.000	0.06
	123.7500	B		0.000	0.000	5.062	0.000	0.05
		C		0.000	0.000	5.062	0.000	0.08
L8	123.7500-	A	0.970	0.000	0.000	0.493	0.000	0.00
	123.5000	B		0.000	0.000	0.493	0.000	0.00
		C		0.000	0.000	0.493	0.000	0.01
L9	123.5000-	A	0.968	0.000	0.000	9.360	0.000	0.09
	118.7500	B		0.000	0.000	9.360	0.000	0.08
		C		0.000	0.000	9.360	0.000	0.11
L10	118.7500-	A	0.966	0.000	0.000	0.492	0.000	0.00
	118.5000	B		0.000	0.000	0.492	0.000	0.00
		C		0.000	0.000	0.492	0.000	0.01
L11	118.5000-	A	0.965	0.000	0.000	2.954	0.000	0.03

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
	117.0000	B		0.000	0.000	2.954	0.000	0.03
		C		0.000	0.000	2.954	0.000	0.04
L12	117.0000-116.7500	A	0.965	0.000	0.000	0.492	0.000	0.00
		B		0.000	0.000	0.492	0.000	0.00
		C		0.000	0.000	0.492	0.000	0.01
L13	116.7500-111.7500	A	0.962	0.000	0.000	9.841	0.000	0.09
		B		0.000	0.000	9.841	0.000	0.09
		C		0.000	0.000	9.841	0.000	0.12
L14	111.7500-106.7500	A	0.958	0.000	0.000	9.833	0.000	0.09
		B		0.000	0.000	9.833	0.000	0.10
		C		0.000	0.000	9.833	0.000	0.12
L15	106.7500-101.7500	A	0.954	0.000	0.000	9.824	0.000	0.09
		B		0.000	0.000	9.824	0.000	0.10
		C		0.000	0.000	9.824	0.000	0.12
L16	101.7500-95.1670	A	0.948	0.000	0.000	12.920	0.000	0.12
		B		0.000	0.000	12.920	0.000	0.13
		C		0.000	0.000	12.920	0.000	0.16
L17	95.1670-94.5000	A	0.945	0.000	0.000	1.309	0.000	0.01
		B		0.000	0.000	1.309	0.000	0.01
		C		0.000	0.000	1.309	0.000	0.02
L18	94.5000-93.7500	A	0.944	0.000	0.000	1.471	0.000	0.01
		B		0.000	0.000	1.471	0.000	0.01
		C		0.000	0.000	1.471	0.000	0.02
L19	93.7500-93.5000	A	0.943	0.000	0.000	0.490	0.000	0.00
		B		0.000	0.000	0.490	0.000	0.00
		C		0.000	0.000	0.490	0.000	0.01
L20	93.5000-92.7500	A	0.943	0.000	0.000	1.470	0.000	0.01
		B		0.000	0.000	1.470	0.000	0.01
		C		0.000	0.000	1.470	0.000	0.02
L21	92.7500-92.5000	A	0.942	0.000	0.000	0.490	0.000	0.00
		B		0.000	0.000	0.490	0.000	0.00
		C		0.000	0.000	0.490	0.000	0.01
L22	92.5000-91.2500	A	0.942	0.000	0.000	2.450	0.000	0.02
		B		0.000	0.000	2.450	0.000	0.02
		C		0.000	0.000	2.450	0.000	0.03
L23	91.2500-91.0000	A	0.941	0.000	0.000	0.490	0.000	0.00
		B		0.000	0.000	0.490	0.000	0.00
		C		0.000	0.000	0.490	0.000	0.01
L24	91.0000-89.2500	A	0.940	0.000	0.000	3.429	0.000	0.03
		B		0.000	0.000	3.429	0.000	0.03
		C		0.000	0.000	3.429	0.000	0.04
L25	89.2500-89.0000	A	0.939	0.000	0.000	0.573	0.000	0.00
		B		0.000	0.000	0.573	0.000	0.01
		C		0.000	0.000	0.573	0.000	0.01
L26	89.0000-85.7500	A	0.937	0.000	0.000	7.447	0.000	0.06
		B		0.000	0.000	7.447	0.000	0.07
		C		0.000	0.000	7.447	0.000	0.08
L27	85.7500-85.5000	A	0.935	0.000	0.000	0.573	0.000	0.00
		B		0.000	0.000	0.573	0.000	0.01
		C		0.000	0.000	0.573	0.000	0.01
L28	85.5000-80.5000	A	0.932	0.000	0.000	11.448	0.000	0.09
		B		0.000	0.000	11.448	0.000	0.10
		C		0.000	0.000	11.448	0.000	0.13
L29	80.5000-75.5000	A	0.926	0.000	0.000	11.436	0.000	0.09
		B		0.000	0.000	11.436	0.000	0.10
		C		0.000	0.000	11.436	0.000	0.13
L30	75.5000-70.5000	A	0.920	0.000	0.000	11.445	0.000	0.09
		B		0.000	0.000	11.445	0.000	0.10
		C		0.000	0.000	11.445	0.000	0.12
L31	70.5000-68.0830	A	0.915	0.000	0.000	6.122	0.000	0.05
		B		0.000	0.000	6.122	0.000	0.05
		C		0.000	0.000	6.122	0.000	0.06
L32	68.0830-67.8330	A	0.914	0.000	0.000	0.633	0.000	0.00
		B		0.000	0.000	0.633	0.000	0.01
		C		0.000	0.000	0.633	0.000	0.01
L33	67.8330-67.0000	A	0.913	0.000	0.000	2.109	0.000	0.02
		B		0.000	0.000	2.109	0.000	0.02
		C		0.000	0.000	2.109	0.000	0.02
L34	67.0000-66.7500	A	0.912	0.000	0.000	0.633	0.000	0.00

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B		0.000	0.000	0.633	0.000	0.01
		C		0.000	0.000	0.633	0.000	0.01
L35	66.7500-63.2500	A	0.910	0.000	0.000	8.857	0.000	0.07
		B		0.000	0.000	8.857	0.000	0.08
		C		0.000	0.000	8.857	0.000	0.09
L36	63.2500-63.0000	A	0.907	0.000	0.000	0.632	0.000	0.00
		B		0.000	0.000	0.632	0.000	0.01
		C		0.000	0.000	0.632	0.000	0.01
L37	63.0000-59.5000	A	0.904	0.000	0.000	8.849	0.000	0.07
		B		0.000	0.000	8.849	0.000	0.08
		C		0.000	0.000	8.849	0.000	0.09
L38	59.5000-59.2500	A	0.901	0.000	0.000	0.673	0.000	0.01
		B		0.000	0.000	0.673	0.000	0.01
		C		0.000	0.000	0.673	0.000	0.01
L39	59.2500-56.2500	A	0.899	0.000	0.000	8.079	0.000	0.06
		B		0.000	0.000	8.079	0.000	0.07
		C		0.000	0.000	8.079	0.000	0.08
L40	56.2500-56.0000	A	0.896	0.000	0.000	0.673	0.000	0.01
		B		0.000	0.000	0.673	0.000	0.01
		C		0.000	0.000	0.673	0.000	0.01
L41	56.0000-55.7500	A	0.896	0.000	0.000	0.673	0.000	0.01
		B		0.000	0.000	0.673	0.000	0.01
		C		0.000	0.000	0.673	0.000	0.01
L42	55.7500-50.7500	A	0.892	0.000	0.000	13.450	0.000	0.10
		B		0.000	0.000	13.450	0.000	0.11
		C		0.000	0.000	13.450	0.000	0.13
L43	50.7500-44.6670	A	0.882	0.000	0.000	16.339	0.000	0.12
		B		0.000	0.000	16.339	0.000	0.13
		C		0.000	0.000	16.339	0.000	0.16
L44	44.6670-43.6670	A	0.875	0.000	0.000	2.686	0.000	0.02
		B		0.000	0.000	2.686	0.000	0.02
		C		0.000	0.000	2.686	0.000	0.03
L45	43.6670-38.6670	A	0.869	0.000	0.000	13.405	0.000	0.10
		B		0.000	0.000	13.405	0.000	0.11
		C		0.000	0.000	13.405	0.000	0.13
L46	38.6670-34.5000	A	0.859	0.000	0.000	11.154	0.000	0.08
		B		0.000	0.000	11.154	0.000	0.09
		C		0.000	0.000	11.154	0.000	0.11
L47	34.5000-34.2500	A	0.853	0.000	0.000	0.669	0.000	0.00
		B		0.000	0.000	0.669	0.000	0.01
		C		0.000	0.000	0.669	0.000	0.01
L48	34.2500-33.0000	A	0.852	0.000	0.000	3.342	0.000	0.02
		B		0.000	0.000	3.342	0.000	0.03
		C		0.000	0.000	3.342	0.000	0.03
L49	33.0000-32.7500	A	0.850	0.000	0.000	0.668	0.000	0.00
		B		0.000	0.000	0.668	0.000	0.01
		C		0.000	0.000	0.668	0.000	0.01
L50	32.7500-29.7500	A	0.845	0.000	0.000	8.014	0.000	0.06
		B		0.000	0.000	8.014	0.000	0.06
		C		0.000	0.000	8.014	0.000	0.08
L51	29.7500-29.5000	A	0.841	0.000	0.000	0.709	0.000	0.00
		B		0.000	0.000	0.709	0.000	0.01
		C		0.000	0.000	0.709	0.000	0.01
L52	29.5000-25.0000	A	0.834	0.000	0.000	12.751	0.000	0.09
		B		0.000	0.000	12.751	0.000	0.10
		C		0.000	0.000	12.751	0.000	0.12
L53	25.0000-24.7500	A	0.826	0.000	0.000	0.708	0.000	0.00
		B		0.000	0.000	0.708	0.000	0.01
		C		0.000	0.000	0.708	0.000	0.01
L54	24.7500-19.7500	A	0.817	0.000	0.000	14.134	0.000	0.10
		B		0.000	0.000	14.134	0.000	0.11
		C		0.000	0.000	14.134	0.000	0.13
L55	19.7500-14.7500	A	0.797	0.000	0.000	14.093	0.000	0.09
		B		0.000	0.000	14.093	0.000	0.11
		C		0.000	0.000	14.553	0.000	0.13
L56	14.7500-14.5000	A	0.784	0.000	0.000	0.703	0.000	0.00
		B		0.000	0.000	0.703	0.000	0.01
		C		0.000	0.000	0.795	0.000	0.01
L57	14.5000-14.2500	A	0.782	0.000	0.000	0.703	0.000	0.00

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B		0.000	0.000	0.703	0.000	0.01
		C		0.000	0.000	0.794	0.000	0.01
L58	14.2500-12.2500	A	0.776	0.000	0.000	5.621	0.000	0.04
		B		0.000	0.000	5.876	0.000	0.05
		C		0.000	0.000	6.348	0.000	0.06
L59	12.2500-12.0000	A	0.769	0.000	0.000	0.702	0.000	0.00
		B		0.000	0.000	0.787	0.000	0.01
		C		0.000	0.000	0.792	0.000	0.01
L60	12.0000-11.5000	A	0.767	0.000	0.000	1.403	0.000	0.01
		B		0.000	0.000	1.573	0.000	0.01
		C		0.000	0.000	1.584	0.000	0.01
L61	11.5000-11.2500	A	0.764	0.000	0.000	0.701	0.000	0.00
		B		0.000	0.000	0.786	0.000	0.01
		C		0.000	0.000	0.792	0.000	0.01
L62	11.2500-9.2500	A	0.756	0.000	0.000	5.605	0.000	0.04
		B		0.000	0.000	6.279	0.000	0.05
		C		0.000	0.000	6.324	0.000	0.06
L63	9.2500-9.0000	A	0.747	0.000	0.000	0.700	0.000	0.00
		B		0.000	0.000	0.784	0.000	0.01
		C		0.000	0.000	0.789	0.000	0.01
L64	9.0000-4.5000	A	0.725	0.000	0.000	12.947	0.000	0.06
		B		0.000	0.000	14.049	0.000	0.08
		C		0.000	0.000	14.146	0.000	0.13
L65	4.5000-4.2500	A	0.694	0.000	0.000	0.759	0.000	0.00
		B		0.000	0.000	0.776	0.000	0.00
		C		0.000	0.000	0.781	0.000	0.01
L66	4.2500-3.0000	A	0.682	0.000	0.000	3.785	0.000	0.02
		B		0.000	0.000	3.872	0.000	0.02
		C		0.000	0.000	3.897	0.000	0.03
L67	3.0000-2.7500	A	0.666	0.000	0.000	0.755	0.000	0.00
		B		0.000	0.000	0.772	0.000	0.00
		C		0.000	0.000	0.777	0.000	0.01
L68	2.7500-0.0000	A	0.618	0.000	0.000	8.235	0.000	0.04
		B		0.000	0.000	8.422	0.000	0.04
		C		0.000	0.000	8.468	0.000	0.07

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	150.0000-145.0000	0.0000	0.0000	0.0000	0.0000
L2	145.0000-140.0000	0.0000	0.0000	0.0000	0.0000
L3	140.0000-135.0000	0.0000	0.0000	0.0000	0.0000
L4	135.0000-133.0000	0.0000	0.0000	0.0000	0.0000
L5	133.0000-132.7500	0.0000	0.0000	0.0000	0.0000
L6	132.7500-127.7500	0.0000	0.0000	0.0000	0.0000
L7	127.7500-123.7500	0.0000	0.0000	0.0000	0.0000
L8	123.7500-123.5000	0.0000	0.0000	0.0000	0.0000
L9	123.5000-118.7500	0.0000	0.0000	0.0000	0.0000
L10	118.7500-118.5000	0.0000	0.0000	0.0000	0.0000
L11	118.5000-117.0000	0.0000	0.0000	0.0000	0.0000
L12	117.0000-116.7500	0.0000	0.0000	0.0000	0.0000

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L13	116.7500-111.7500	0.0000	0.0000	0.0000	0.0000
L14	111.7500-106.7500	0.0000	0.0000	0.0000	0.0000
L15	106.7500-101.7500	0.0000	0.0000	0.0000	0.0000
L16	101.7500-95.1670	0.0000	0.0000	0.0000	0.0000
L17	95.1670-94.5000	0.0000	0.0000	0.0000	0.0000
L18	94.5000-93.7500	0.0000	0.0000	0.0000	0.0000
L19	93.7500-93.5000	0.0000	0.0000	0.0000	0.0000
L20	93.5000-92.7500	0.0000	0.0000	0.0000	0.0000
L21	92.7500-92.5000	0.0000	0.0000	0.0000	0.0000
L22	92.5000-91.2500	0.0000	0.0000	0.0000	0.0000
L23	91.2500-91.0000	0.0000	0.0000	0.0000	0.0000
L24	91.0000-89.2500	0.0000	0.0000	0.0000	0.0000
L25	89.2500-89.0000	0.0000	0.0000	0.0000	0.0000
L26	89.0000-85.7500	0.0000	0.0000	0.0000	0.0000
L27	85.7500-85.5000	0.0000	0.0000	0.0000	0.0000
L28	85.5000-80.5000	0.0000	0.0000	0.0000	0.0000
L29	80.5000-75.5000	0.0000	0.0000	0.0000	0.0000
L30	75.5000-70.5000	0.0000	0.0000	0.0000	0.0000
L31	70.5000-68.0830	0.0000	0.0000	0.0000	0.0000
L32	68.0830-67.8330	0.0000	0.0000	0.0000	0.0000
L33	67.8330-67.0000	0.0000	0.0000	0.0000	0.0000
L34	67.0000-66.7500	0.0000	0.0000	0.0000	0.0000
L35	66.7500-63.2500	0.0000	0.0000	0.0000	0.0000
L36	63.2500-63.0000	0.0000	0.0000	0.0000	0.0000
L37	63.0000-59.5000	0.0000	0.0000	0.0000	0.0000
L38	59.5000-59.2500	0.0000	0.0000	0.0000	0.0000
L39	59.2500-56.2500	0.0000	0.0000	0.0000	0.0000
L40	56.2500-56.0000	0.0000	0.0000	0.0000	0.0000
L41	56.0000-55.7500	0.0000	0.0000	0.0000	0.0000
L42	55.7500-50.7500	0.0000	0.0000	0.0000	0.0000
L43	50.7500-44.6670	0.0000	0.0000	0.0000	0.0000
L44	44.6670-43.6670	0.0000	0.0000	0.0000	0.0000
L45	43.6670-38.6670	0.0000	0.0000	0.0000	0.0000
L46	38.6670-34.5000	0.0000	0.0000	0.0000	0.0000
L47	34.5000-34.2500	0.0000	0.0000	0.0000	0.0000
L48	34.2500-33.0000	0.0000	0.0000	0.0000	0.0000
L49	33.0000-32.7500	0.0000	0.0000	0.0000	0.0000
L50	32.7500-29.7500	0.0000	0.0000	0.0000	0.0000
L51	29.7500-29.5000	0.0000	0.0000	0.0000	0.0000
L52	29.5000-25.0000	0.0000	0.0000	0.0000	0.0000
L53	25.0000-24.7500	0.0000	0.0000	0.0000	0.0000
L54	24.7500-19.7500	0.0000	0.0000	0.0000	0.0000
L55	19.7500-14.7500	0.0000	0.1115	0.0000	0.1659
L56	14.7500-14.5000	0.0000	0.4395	0.0000	0.6456
L57	14.5000-14.2500	0.0000	0.4397	0.0000	0.6457
L58	14.2500-12.2500	0.1426	0.3556	0.1947	0.5271
L59	12.2500-12.0000	0.3760	0.2171	0.5101	0.3349
L60	12.0000-11.5000	0.3763	0.2173	0.5101	0.3348
L61	11.5000-11.2500	0.3768	0.2175	0.5104	0.3348
L62	11.2500-9.2500	0.3779	0.2182	0.5105	0.3344
L63	9.2500-9.0000	0.3790	0.2188	0.5104	0.3339
L64	9.0000-4.5000	0.2803	0.1619	0.3728	0.2528
L65	4.5000-4.2500	0.0829	0.0479	0.1066	0.0967
L66	4.2500-3.0000	0.0831	0.0480	0.1065	0.0958
L67	3.0000-2.7500	0.0832	0.0481	0.1063	0.0946
L68	2.7500-0.0000	0.0836	0.0483	0.1054	0.0910

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
L4	37	4.5" x 1" Flate Plate	133.00 - 135.00	1.0000	1.0000
L4	38	4.5" x 1" Flate Plate	133.00 - 135.00	1.0000	1.0000
L4	39	4.5" x 1" Flate Plate	133.00 - 135.00	1.0000	1.0000
L5	37	4.5" x 1" Flate Plate	132.75 - 133.00	1.0000	1.0000
L5	38	4.5" x 1" Flate Plate	132.75 - 133.00	1.0000	1.0000
L5	39	4.5" x 1" Flate Plate	132.75 - 133.00	1.0000	1.0000
L6	37	4.5" x 1" Flate Plate	127.75 - 132.75	1.0000	1.0000
L6	38	4.5" x 1" Flate Plate	127.75 - 132.75	1.0000	1.0000
L6	39	4.5" x 1" Flate Plate	127.75 - 132.75	1.0000	1.0000
L7	21	5" x 1-1/4" Flate Plate	123.75 - 125.00	1.0000	1.0000
L7	26	5" x 1-1/4" Flate Plate	123.75 - 125.00	1.0000	1.0000
L7	31	5" x 1-1/4" Flate Plate	123.75 - 125.00	1.0000	1.0000
L7	37	4.5" x 1" Flate Plate	123.75 - 127.75	1.0000	1.0000
L7	38	4.5" x 1" Flate Plate	123.75 - 127.75	1.0000	1.0000
L7	39	4.5" x 1" Flate Plate	123.75 - 127.75	1.0000	1.0000
L8	21	5" x 1-1/4" Flate Plate	123.50 - 123.75	1.0000	1.0000
L8	26	5" x 1-1/4" Flate Plate	123.50 - 123.75	1.0000	1.0000
L8	31	5" x 1-1/4" Flate Plate	123.50 - 123.75	1.0000	1.0000
L8	37	4.5" x 1" Flate Plate	123.50 - 123.75	1.0000	1.0000
L8	38	4.5" x 1" Flate Plate	123.50 - 123.75	1.0000	1.0000
L8	39	4.5" x 1" Flate Plate	123.50 - 123.75	1.0000	1.0000
L9	21	5" x 1-1/4" Flate Plate	118.75 - 123.50	1.0000	1.0000
L9	26	5" x 1-1/4" Flate Plate	118.75 - 123.50	1.0000	1.0000
L9	31	5" x 1-1/4" Flate Plate	118.75 - 123.50	1.0000	1.0000
L9	37	4.5" x 1" Flate Plate	118.75 - 123.50	1.0000	1.0000
L9	38	4.5" x 1" Flate Plate	118.75 - 123.50	1.0000	1.0000
L9	39	4.5" x 1" Flate Plate	118.75 - 123.50	1.0000	1.0000
L10	21	5" x 1-1/4" Flate Plate	118.50 - 118.75	1.0000	1.0000
L10	26	5" x 1-1/4" Flate Plate	118.50 - 118.75	1.0000	1.0000
L10	31	5" x 1-1/4" Flate Plate	118.50 - 118.75	1.0000	1.0000
L10	37	4.5" x 1" Flate Plate	118.50 - 118.75	1.0000	1.0000
L10	38	4.5" x 1" Flate Plate	118.50 - 118.75	1.0000	1.0000
L10	39	4.5" x 1" Flate Plate	118.50 - 118.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L11	21	5" x 1-1/4" Flate Plate	117.00 - 118.50	1.0000	1.0000
L11	26	5" x 1-1/4" Flate Plate	117.00 - 118.50	1.0000	1.0000
L11	31	5" x 1-1/4" Flate Plate	117.00 - 118.50	1.0000	1.0000
L11	37	4.5" x 1" Flate Plate	117.00 - 118.50	1.0000	1.0000
L11	38	4.5" x 1" Flate Plate	117.00 - 118.50	1.0000	1.0000
L11	39	4.5" x 1" Flate Plate	117.00 - 118.50	1.0000	1.0000
L12	21	5" x 1-1/4" Flate Plate	116.75 - 117.00	1.0000	1.0000
L12	26	5" x 1-1/4" Flate Plate	116.75 - 117.00	1.0000	1.0000
L12	31	5" x 1-1/4" Flate Plate	116.75 - 117.00	1.0000	1.0000
L12	37	4.5" x 1" Flate Plate	116.75 - 117.00	1.0000	1.0000
L12	38	4.5" x 1" Flate Plate	116.75 - 117.00	1.0000	1.0000
L12	39	4.5" x 1" Flate Plate	116.75 - 117.00	1.0000	1.0000
L13	21	5" x 1-1/4" Flate Plate	111.75 - 116.75	1.0000	1.0000
L13	26	5" x 1-1/4" Flate Plate	111.75 - 116.75	1.0000	1.0000
L13	31	5" x 1-1/4" Flate Plate	111.75 - 116.75	1.0000	1.0000
L13	37	4.5" x 1" Flate Plate	111.75 - 116.75	1.0000	1.0000
L13	38	4.5" x 1" Flate Plate	111.75 - 116.75	1.0000	1.0000
L13	39	4.5" x 1" Flate Plate	111.75 - 116.75	1.0000	1.0000
L14	21	5" x 1-1/4" Flate Plate	106.75 - 111.75	1.0000	1.0000
L14	26	5" x 1-1/4" Flate Plate	106.75 - 111.75	1.0000	1.0000
L14	31	5" x 1-1/4" Flate Plate	106.75 - 111.75	1.0000	1.0000
L14	37	4.5" x 1" Flate Plate	106.75 - 111.75	1.0000	1.0000
L14	38	4.5" x 1" Flate Plate	106.75 - 111.75	1.0000	1.0000
L14	39	4.5" x 1" Flate Plate	106.75 - 111.75	1.0000	1.0000
L15	21	5" x 1-1/4" Flate Plate	101.75 - 106.75	1.0000	1.0000
L15	26	5" x 1-1/4" Flate Plate	101.75 - 106.75	1.0000	1.0000
L15	31	5" x 1-1/4" Flate Plate	101.75 - 106.75	1.0000	1.0000
L15	37	4.5" x 1" Flate Plate	101.75 - 106.75	1.0000	1.0000
L15	38	4.5" x 1" Flate Plate	101.75 - 106.75	1.0000	1.0000
L15	39	4.5" x 1" Flate Plate	101.75 - 106.75	1.0000	1.0000
L16	21	5" x 1-1/4" Flate Plate	95.17 - 101.75	1.0000	1.0000
L16	26	5" x 1-1/4" Flate Plate	95.17 - 101.75	1.0000	1.0000
L16	31	5" x 1-1/4" Flate Plate	95.17 - 101.75	1.0000	1.0000
L16	37	4.5" x 1" Flate Plate	95.17 - 101.75	1.0000	1.0000
L16	38	4.5" x 1" Flate Plate	95.17 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L16	39	4.5" x 1" Flate Plate	101.75 95.17 - 101.75	1.0000	1.0000
L17	21	5" x 1-1/4" Flate Plate	94.50 - 95.17	1.0000	1.0000
L17	26	5" x 1-1/4" Flate Plate	94.50 - 95.17	1.0000	1.0000
L17	31	5" x 1-1/4" Flate Plate	94.50 - 95.17	1.0000	1.0000
L17	37	4.5" x 1" Flate Plate	94.50 - 95.17	1.0000	1.0000
L17	38	4.5" x 1" Flate Plate	94.50 - 95.17	1.0000	1.0000
L17	39	4.5" x 1" Flate Plate	94.50 - 95.17	1.0000	1.0000
L18	21	5" x 1-1/4" Flate Plate	93.75 - 94.50	1.0000	1.0000
L18	26	5" x 1-1/4" Flate Plate	93.75 - 94.50	1.0000	1.0000
L18	31	5" x 1-1/4" Flate Plate	93.75 - 94.50	1.0000	1.0000
L18	37	4.5" x 1" Flate Plate	93.75 - 94.50	1.0000	1.0000
L18	38	4.5" x 1" Flate Plate	93.75 - 94.50	1.0000	1.0000
L18	39	4.5" x 1" Flate Plate	93.75 - 94.50	1.0000	1.0000
L19	21	5" x 1-1/4" Flate Plate	93.50 - 93.75	1.0000	1.0000
L19	26	5" x 1-1/4" Flate Plate	93.50 - 93.75	1.0000	1.0000
L19	31	5" x 1-1/4" Flate Plate	93.50 - 93.75	1.0000	1.0000
L19	37	4.5" x 1" Flate Plate	93.50 - 93.75	1.0000	1.0000
L19	38	4.5" x 1" Flate Plate	93.50 - 93.75	1.0000	1.0000
L19	39	4.5" x 1" Flate Plate	93.50 - 93.75	1.0000	1.0000
L20	21	5" x 1-1/4" Flate Plate	92.75 - 93.50	1.0000	1.0000
L20	26	5" x 1-1/4" Flate Plate	92.75 - 93.50	1.0000	1.0000
L20	31	5" x 1-1/4" Flate Plate	92.75 - 93.50	1.0000	1.0000
L20	37	4.5" x 1" Flate Plate	92.75 - 93.50	1.0000	1.0000
L20	38	4.5" x 1" Flate Plate	92.75 - 93.50	1.0000	1.0000
L20	39	4.5" x 1" Flate Plate	92.75 - 93.50	1.0000	1.0000
L21	21	5" x 1-1/4" Flate Plate	92.50 - 92.75	1.0000	1.0000
L21	26	5" x 1-1/4" Flate Plate	92.50 - 92.75	1.0000	1.0000
L21	31	5" x 1-1/4" Flate Plate	92.50 - 92.75	1.0000	1.0000
L21	37	4.5" x 1" Flate Plate	92.50 - 92.75	1.0000	1.0000
L21	38	4.5" x 1" Flate Plate	92.50 - 92.75	1.0000	1.0000
L21	39	4.5" x 1" Flate Plate	92.50 - 92.75	1.0000	1.0000
L22	21	5" x 1-1/4" Flate Plate	91.25 - 92.50	1.0000	1.0000
L22	26	5" x 1-1/4" Flate Plate	91.25 - 92.50	1.0000	1.0000
L22	31	5" x 1-1/4" Flate Plate	91.25 - 92.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L22	37	4.5" x 1" Flate Plate	91.25 - 92.50	1.0000	1.0000
L22	38	4.5" x 1" Flate Plate	91.25 - 92.50	1.0000	1.0000
L22	39	4.5" x 1" Flate Plate	91.25 - 92.50	1.0000	1.0000
L23	21	5" x 1-1/4" Flate Plate	91.00 - 91.25	1.0000	1.0000
L23	26	5" x 1-1/4" Flate Plate	91.00 - 91.25	1.0000	1.0000
L23	31	5" x 1-1/4" Flate Plate	91.00 - 91.25	1.0000	1.0000
L23	37	4.5" x 1" Flate Plate	91.00 - 91.25	1.0000	1.0000
L23	38	4.5" x 1" Flate Plate	91.00 - 91.25	1.0000	1.0000
L23	39	4.5" x 1" Flate Plate	91.00 - 91.25	1.0000	1.0000
L24	21	5" x 1-1/4" Flate Plate	89.25 - 91.00	1.0000	1.0000
L24	26	5" x 1-1/4" Flate Plate	89.25 - 91.00	1.0000	1.0000
L24	31	5" x 1-1/4" Flate Plate	89.25 - 91.00	1.0000	1.0000
L24	37	4.5" x 1" Flate Plate	89.25 - 91.00	1.0000	1.0000
L24	38	4.5" x 1" Flate Plate	89.25 - 91.00	1.0000	1.0000
L24	39	4.5" x 1" Flate Plate	89.25 - 91.00	1.0000	1.0000
L25	20	7" x 1-1/4" Flate Plate	89.00 - 89.25	1.0000	1.0000
L25	25	7" x 1-1/4" Flate Plate	89.00 - 89.25	1.0000	1.0000
L25	30	7" x 1-1/4" Flate Plate	89.00 - 89.25	1.0000	1.0000
L25	37	4.5" x 1" Flate Plate	89.00 - 89.25	1.0000	1.0000
L25	38	4.5" x 1" Flate Plate	89.00 - 89.25	1.0000	1.0000
L25	39	4.5" x 1" Flate Plate	89.00 - 89.25	1.0000	1.0000
L26	20	7" x 1-1/4" Flate Plate	85.75 - 89.00	1.0000	1.0000
L26	25	7" x 1-1/4" Flate Plate	85.75 - 89.00	1.0000	1.0000
L26	30	7" x 1-1/4" Flate Plate	85.75 - 89.00	1.0000	1.0000
L26	37	4.5" x 1" Flate Plate	85.75 - 89.00	1.0000	1.0000
L26	38	4.5" x 1" Flate Plate	85.75 - 89.00	1.0000	1.0000
L26	39	4.5" x 1" Flate Plate	85.75 - 89.00	1.0000	1.0000
L27	20	7" x 1-1/4" Flate Plate	85.50 - 85.75	1.0000	1.0000
L27	25	7" x 1-1/4" Flate Plate	85.50 - 85.75	1.0000	1.0000
L27	30	7" x 1-1/4" Flate Plate	85.50 - 85.75	1.0000	1.0000
L27	37	4.5" x 1" Flate Plate	85.50 - 85.75	1.0000	1.0000
L27	38	4.5" x 1" Flate Plate	85.50 - 85.75	1.0000	1.0000
L27	39	4.5" x 1" Flate Plate	85.50 - 85.75	1.0000	1.0000
L28	20	7" x 1-1/4" Flate Plate	80.50 - 85.50	1.0000	1.0000
L28	25	7" x 1-1/4" Flate Plate	80.50 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			85.50		
L28	30	7" x 1-1/4" Flate Plate	80.50 - 85.50	1.0000	1.0000
L28	37	4.5" x 1" Flate Plate	80.50 - 85.50	1.0000	1.0000
L28	38	4.5" x 1" Flate Plate	80.50 - 85.50	1.0000	1.0000
L28	39	4.5" x 1" Flate Plate	80.50 - 85.50	1.0000	1.0000
L29	20	7" x 1-1/4" Flate Plate	75.50 - 80.50	1.0000	1.0000
L29	25	7" x 1-1/4" Flate Plate	75.50 - 80.50	1.0000	1.0000
L29	30	7" x 1-1/4" Flate Plate	75.50 - 80.50	1.0000	1.0000
L29	37	4.5" x 1" Flate Plate	75.50 - 80.50	1.0000	1.0000
L29	38	4.5" x 1" Flate Plate	75.50 - 80.50	1.0000	1.0000
L29	39	4.5" x 1" Flate Plate	75.50 - 80.50	1.0000	1.0000
L30	20	7" x 1-1/4" Flate Plate	70.50 - 75.50	1.0000	1.0000
L30	25	7" x 1-1/4" Flate Plate	70.50 - 75.50	1.0000	1.0000
L30	30	7" x 1-1/4" Flate Plate	70.50 - 75.50	1.0000	1.0000
L30	33	6" x 1" Flate Plate	70.50 - 70.58	1.0000	1.0000
L30	34	6" x 1" Flate Plate	70.50 - 70.58	1.0000	1.0000
L30	35	6" x 1" Flate Plate	70.50 - 70.58	1.0000	1.0000
L30	37	4.5" x 1" Flate Plate	70.58 - 75.50	1.0000	1.0000
L30	38	4.5" x 1" Flate Plate	70.58 - 75.50	1.0000	1.0000
L30	39	4.5" x 1" Flate Plate	70.58 - 75.50	1.0000	1.0000
L31	20	7" x 1-1/4" Flate Plate	68.08 - 70.50	1.0000	1.0000
L31	25	7" x 1-1/4" Flate Plate	68.08 - 70.50	1.0000	1.0000
L31	30	7" x 1-1/4" Flate Plate	68.08 - 70.50	1.0000	1.0000
L31	33	6" x 1" Flate Plate	68.08 - 70.50	1.0000	1.0000
L31	34	6" x 1" Flate Plate	68.08 - 70.50	1.0000	1.0000
L31	35	6" x 1" Flate Plate	68.08 - 70.50	1.0000	1.0000
L32	20	7" x 1-1/4" Flate Plate	67.83 - 68.08	1.0000	1.0000
L32	25	7" x 1-1/4" Flate Plate	67.83 - 68.08	1.0000	1.0000
L32	30	7" x 1-1/4" Flate Plate	67.83 - 68.08	1.0000	1.0000
L32	33	6" x 1" Flate Plate	67.83 - 68.08	1.0000	1.0000
L32	34	6" x 1" Flate Plate	67.83 - 68.08	1.0000	1.0000
L32	35	6" x 1" Flate Plate	67.83 - 68.08	1.0000	1.0000
L33	20	7" x 1-1/4" Flate Plate	67.00 - 67.83	1.0000	1.0000
L33	25	7" x 1-1/4" Flate Plate	67.00 - 67.83	1.0000	1.0000
L33	30	7" x 1-1/4" Flate Plate	67.00 - 67.83	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L33	33	6" x 1" Flate Plate	67.00 - 67.83	1.0000	1.0000
L33	34	6" x 1" Flate Plate	67.00 - 67.83	1.0000	1.0000
L33	35	6" x 1" Flate Plate	67.00 - 67.83	1.0000	1.0000
L34	20	7" x 1-1/4" Flate Plate	66.75 - 67.00	1.0000	1.0000
L34	25	7" x 1-1/4" Flate Plate	66.75 - 67.00	1.0000	1.0000
L34	30	7" x 1-1/4" Flate Plate	66.75 - 67.00	1.0000	1.0000
L34	33	6" x 1" Flate Plate	66.75 - 67.00	1.0000	1.0000
L34	34	6" x 1" Flate Plate	66.75 - 67.00	1.0000	1.0000
L34	35	6" x 1" Flate Plate	66.75 - 67.00	1.0000	1.0000
L35	20	7" x 1-1/4" Flate Plate	63.25 - 66.75	1.0000	1.0000
L35	25	7" x 1-1/4" Flate Plate	63.25 - 66.75	1.0000	1.0000
L35	30	7" x 1-1/4" Flate Plate	63.25 - 66.75	1.0000	1.0000
L35	33	6" x 1" Flate Plate	63.25 - 66.75	1.0000	1.0000
L35	34	6" x 1" Flate Plate	63.25 - 66.75	1.0000	1.0000
L35	35	6" x 1" Flate Plate	63.25 - 66.75	1.0000	1.0000
L36	20	7" x 1-1/4" Flate Plate	63.00 - 63.25	1.0000	1.0000
L36	25	7" x 1-1/4" Flate Plate	63.00 - 63.25	1.0000	1.0000
L36	30	7" x 1-1/4" Flate Plate	63.00 - 63.25	1.0000	1.0000
L36	33	6" x 1" Flate Plate	63.00 - 63.25	1.0000	1.0000
L36	34	6" x 1" Flate Plate	63.00 - 63.25	1.0000	1.0000
L36	35	6" x 1" Flate Plate	63.00 - 63.25	1.0000	1.0000
L37	20	7" x 1-1/4" Flate Plate	59.50 - 63.00	1.0000	1.0000
L37	25	7" x 1-1/4" Flate Plate	59.50 - 63.00	1.0000	1.0000
L37	30	7" x 1-1/4" Flate Plate	59.50 - 63.00	1.0000	1.0000
L37	33	6" x 1" Flate Plate	59.50 - 63.00	1.0000	1.0000
L37	34	6" x 1" Flate Plate	59.50 - 63.00	1.0000	1.0000
L37	35	6" x 1" Flate Plate	59.50 - 63.00	1.0000	1.0000
L38	19	8" x 1-1/4" Flate Plate	59.25 - 59.50	1.0000	1.0000
L38	24	8" x 1-1/4" Flate Plate	59.25 - 59.50	1.0000	1.0000
L38	29	8" x 1-1/4" Flate Plate	59.25 - 59.50	1.0000	1.0000
L38	33	6" x 1" Flate Plate	59.25 - 59.50	1.0000	1.0000
L38	34	6" x 1" Flate Plate	59.25 - 59.50	1.0000	1.0000
L38	35	6" x 1" Flate Plate	59.25 - 59.50	1.0000	1.0000
L39	19	8" x 1-1/4" Flate Plate	56.25 - 59.25	1.0000	1.0000
L39	24	8" x 1-1/4" Flate Plate	56.25 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L39	29	8" x 1-1/4" Flate Plate	59.25 56.25 - 59.25	1.0000	1.0000
L39	33	6" x 1" Flate Plate	56.25 - 59.25	1.0000	1.0000
L39	34	6" x 1" Flate Plate	56.25 - 59.25	1.0000	1.0000
L39	35	6" x 1" Flate Plate	56.25 - 59.25	1.0000	1.0000
L40	19	8" x 1-1/4" Flate Plate	56.00 - 56.25	1.0000	1.0000
L40	24	8" x 1-1/4" Flate Plate	56.00 - 56.25	1.0000	1.0000
L40	29	8" x 1-1/4" Flate Plate	56.00 - 56.25	1.0000	1.0000
L40	33	6" x 1" Flate Plate	56.00 - 56.25	1.0000	1.0000
L40	34	6" x 1" Flate Plate	56.00 - 56.25	1.0000	1.0000
L40	35	6" x 1" Flate Plate	56.00 - 56.25	1.0000	1.0000
L41	19	8" x 1-1/4" Flate Plate	55.75 - 56.00	1.0000	1.0000
L41	24	8" x 1-1/4" Flate Plate	55.75 - 56.00	1.0000	1.0000
L41	29	8" x 1-1/4" Flate Plate	55.75 - 56.00	1.0000	1.0000
L41	33	6" x 1" Flate Plate	55.75 - 56.00	1.0000	1.0000
L41	34	6" x 1" Flate Plate	55.75 - 56.00	1.0000	1.0000
L41	35	6" x 1" Flate Plate	55.75 - 56.00	1.0000	1.0000
L42	19	8" x 1-1/4" Flate Plate	50.75 - 55.75	1.0000	1.0000
L42	24	8" x 1-1/4" Flate Plate	50.75 - 55.75	1.0000	1.0000
L42	29	8" x 1-1/4" Flate Plate	50.75 - 55.75	1.0000	1.0000
L42	33	6" x 1" Flate Plate	50.75 - 55.75	1.0000	1.0000
L42	34	6" x 1" Flate Plate	50.75 - 55.75	1.0000	1.0000
L42	35	6" x 1" Flate Plate	50.75 - 55.75	1.0000	1.0000
L43	19	8" x 1-1/4" Flate Plate	44.67 - 50.75	1.0000	1.0000
L43	24	8" x 1-1/4" Flate Plate	44.67 - 50.75	1.0000	1.0000
L43	29	8" x 1-1/4" Flate Plate	44.67 - 50.75	1.0000	1.0000
L43	33	6" x 1" Flate Plate	44.67 - 50.75	1.0000	1.0000
L43	34	6" x 1" Flate Plate	44.67 - 50.75	1.0000	1.0000
L43	35	6" x 1" Flate Plate	44.67 - 50.75	1.0000	1.0000
L44	19	8" x 1-1/4" Flate Plate	43.67 - 44.67	1.0000	1.0000
L44	24	8" x 1-1/4" Flate Plate	43.67 - 44.67	1.0000	1.0000
L44	29	8" x 1-1/4" Flate Plate	43.67 - 44.67	1.0000	1.0000
L44	33	6" x 1" Flate Plate	43.67 - 44.67	1.0000	1.0000
L44	34	6" x 1" Flate Plate	43.67 - 44.67	1.0000	1.0000
L44	35	6" x 1" Flate Plate	43.67 - 44.67	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L45	19	8" x 1-1/4" Flate Plate	38.67 - 43.67	1.0000	1.0000
L45	24	8" x 1-1/4" Flate Plate	38.67 - 43.67	1.0000	1.0000
L45	29	8" x 1-1/4" Flate Plate	38.67 - 43.67	1.0000	1.0000
L45	33	6" x 1" Flate Plate	38.67 - 43.67	1.0000	1.0000
L45	34	6" x 1" Flate Plate	38.67 - 43.67	1.0000	1.0000
L45	35	6" x 1" Flate Plate	38.67 - 43.67	1.0000	1.0000
L46	19	8" x 1-1/4" Flate Plate	34.50 - 38.67	1.0000	1.0000
L46	24	8" x 1-1/4" Flate Plate	34.50 - 38.67	1.0000	1.0000
L46	29	8" x 1-1/4" Flate Plate	34.50 - 38.67	1.0000	1.0000
L46	33	6" x 1" Flate Plate	34.50 - 38.67	1.0000	1.0000
L46	34	6" x 1" Flate Plate	34.50 - 38.67	1.0000	1.0000
L46	35	6" x 1" Flate Plate	34.50 - 38.67	1.0000	1.0000
L47	19	8" x 1-1/4" Flate Plate	34.25 - 34.50	1.0000	1.0000
L47	24	8" x 1-1/4" Flate Plate	34.25 - 34.50	1.0000	1.0000
L47	29	8" x 1-1/4" Flate Plate	34.25 - 34.50	1.0000	1.0000
L47	33	6" x 1" Flate Plate	34.25 - 34.50	1.0000	1.0000
L47	34	6" x 1" Flate Plate	34.25 - 34.50	1.0000	1.0000
L47	35	6" x 1" Flate Plate	34.25 - 34.50	1.0000	1.0000
L48	19	8" x 1-1/4" Flate Plate	33.00 - 34.25	1.0000	1.0000
L48	24	8" x 1-1/4" Flate Plate	33.00 - 34.25	1.0000	1.0000
L48	29	8" x 1-1/4" Flate Plate	33.00 - 34.25	1.0000	1.0000
L48	33	6" x 1" Flate Plate	33.00 - 34.25	1.0000	1.0000
L48	34	6" x 1" Flate Plate	33.00 - 34.25	1.0000	1.0000
L48	35	6" x 1" Flate Plate	33.00 - 34.25	1.0000	1.0000
L49	19	8" x 1-1/4" Flate Plate	32.75 - 33.00	1.0000	1.0000
L49	24	8" x 1-1/4" Flate Plate	32.75 - 33.00	1.0000	1.0000
L49	29	8" x 1-1/4" Flate Plate	32.75 - 33.00	1.0000	1.0000
L49	33	6" x 1" Flate Plate	32.75 - 33.00	1.0000	1.0000
L49	34	6" x 1" Flate Plate	32.75 - 33.00	1.0000	1.0000
L49	35	6" x 1" Flate Plate	32.75 - 33.00	1.0000	1.0000
L50	19	8" x 1-1/4" Flate Plate	29.75 - 32.75	1.0000	1.0000
L50	24	8" x 1-1/4" Flate Plate	29.75 - 32.75	1.0000	1.0000
L50	29	8" x 1-1/4" Flate Plate	29.75 - 32.75	1.0000	1.0000
L50	33	6" x 1" Flate Plate	29.75 - 32.75	1.0000	1.0000
L50	34	6" x 1" Flate Plate	29.75 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L50	35	6" x 1" Flate Plate	32.75 - 29.75	1.0000	1.0000
L51	18	9" x 1-1/4" Flate Plate	32.75 - 29.50	1.0000	1.0000
L51	23	9" x 1-1/4" Flate Plate	29.75 - 29.50	1.0000	1.0000
L51	28	9" x 1-1/4" Flate Plate	29.75 - 29.50	1.0000	1.0000
L51	33	6" x 1" Flate Plate	29.75 - 29.50	1.0000	1.0000
L51	34	6" x 1" Flate Plate	29.75 - 29.50	1.0000	1.0000
L51	35	6" x 1" Flate Plate	29.75 - 29.50	1.0000	1.0000
L52	18	9" x 1-1/4" Flate Plate	29.50 - 25.00	1.0000	1.0000
L52	23	9" x 1-1/4" Flate Plate	29.50 - 25.00	1.0000	1.0000
L52	28	9" x 1-1/4" Flate Plate	29.50 - 25.00	1.0000	1.0000
L52	33	6" x 1" Flate Plate	29.50 - 25.00	1.0000	1.0000
L52	34	6" x 1" Flate Plate	29.50 - 25.00	1.0000	1.0000
L52	35	6" x 1" Flate Plate	29.50 - 25.00	1.0000	1.0000
L53	18	9" x 1-1/4" Flate Plate	25.00 - 24.75	1.0000	1.0000
L53	23	9" x 1-1/4" Flate Plate	25.00 - 24.75	1.0000	1.0000
L53	28	9" x 1-1/4" Flate Plate	25.00 - 24.75	1.0000	1.0000
L53	33	6" x 1" Flate Plate	25.00 - 24.75	1.0000	1.0000
L53	34	6" x 1" Flate Plate	25.00 - 24.75	1.0000	1.0000
L53	35	6" x 1" Flate Plate	25.00 - 24.75	1.0000	1.0000
L54	18	9" x 1-1/4" Flate Plate	24.75 - 19.75	1.0000	1.0000
L54	23	9" x 1-1/4" Flate Plate	24.75 - 19.75	1.0000	1.0000
L54	28	9" x 1-1/4" Flate Plate	24.75 - 19.75	1.0000	1.0000
L54	33	6" x 1" Flate Plate	24.75 - 19.75	1.0000	1.0000
L54	34	6" x 1" Flate Plate	24.75 - 19.75	1.0000	1.0000
L54	35	6" x 1" Flate Plate	24.75 - 19.75	1.0000	1.0000
L55	18	9" x 1-1/4" Flate Plate	19.75 - 14.75	1.0000	1.0000
L55	23	9" x 1-1/4" Flate Plate	19.75 - 14.75	1.0000	1.0000
L55	28	9" x 1-1/4" Flate Plate	19.75 - 14.75	1.0000	1.0000
L55	33	6" x 1" Flate Plate	19.75 - 14.75	1.0000	1.0000
L55	34	6" x 1" Flate Plate	19.75 - 14.75	1.0000	1.0000
L55	35	6" x 1" Flate Plate	19.75 - 14.75	1.0000	1.0000
L55	43	Transition Stiffener	19.75 - 16.00	1.0000	1.0000
L56	18	9" x 1-1/4" Flate Plate	14.75 - 14.50	1.0000	1.0000
L56	23	9" x 1-1/4" Flate Plate	14.75 - 14.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L56	28	9" x 1-1/4" Flate Plate	14.50 - 14.75	1.0000	1.0000
L56	33	6" x 1" Flate Plate	14.50 - 14.75	1.0000	1.0000
L56	34	6" x 1" Flate Plate	14.50 - 14.75	1.0000	1.0000
L56	35	6" x 1" Flate Plate	14.50 - 14.75	1.0000	1.0000
L56	43	Transition Stiffener	14.50 - 14.75	1.0000	1.0000
L57	18	9" x 1-1/4" Flate Plate	14.25 - 14.50	1.0000	1.0000
L57	23	9" x 1-1/4" Flate Plate	14.25 - 14.50	1.0000	1.0000
L57	28	9" x 1-1/4" Flate Plate	14.25 - 14.50	1.0000	1.0000
L57	33	6" x 1" Flate Plate	14.25 - 14.50	1.0000	1.0000
L57	34	6" x 1" Flate Plate	14.25 - 14.50	1.0000	1.0000
L57	35	6" x 1" Flate Plate	14.25 - 14.50	1.0000	1.0000
L57	43	Transition Stiffener	14.25 - 14.50	1.0000	1.0000
L58	18	9" x 1-1/4" Flate Plate	12.25 - 14.25	1.0000	1.0000
L58	23	9" x 1-1/4" Flate Plate	12.25 - 14.25	1.0000	1.0000
L58	28	9" x 1-1/4" Flate Plate	12.25 - 14.25	1.0000	1.0000
L58	33	6" x 1" Flate Plate	12.25 - 14.25	1.0000	1.0000
L58	34	6" x 1" Flate Plate	12.25 - 14.25	1.0000	1.0000
L58	35	6" x 1" Flate Plate	12.25 - 14.25	1.0000	1.0000
L58	42	Transition Stiffener	12.25 - 13.00	1.0000	1.0000
L58	43	Transition Stiffener	12.25 - 14.25	1.0000	1.0000
L59	18	9" x 1-1/4" Flate Plate	12.00 - 12.25	1.0000	1.0000
L59	23	9" x 1-1/4" Flate Plate	12.00 - 12.25	1.0000	1.0000
L59	28	9" x 1-1/4" Flate Plate	12.00 - 12.25	1.0000	1.0000
L59	33	6" x 1" Flate Plate	12.00 - 12.25	1.0000	1.0000
L59	34	6" x 1" Flate Plate	12.00 - 12.25	1.0000	1.0000
L59	35	6" x 1" Flate Plate	12.00 - 12.25	1.0000	1.0000
L59	42	Transition Stiffener	12.00 - 12.25	1.0000	1.0000
L59	43	Transition Stiffener	12.00 - 12.25	1.0000	1.0000
L60	18	9" x 1-1/4" Flate Plate	11.50 - 12.00	1.0000	1.0000
L60	23	9" x 1-1/4" Flate Plate	11.50 - 12.00	1.0000	1.0000
L60	28	9" x 1-1/4" Flate Plate	11.50 - 12.00	1.0000	1.0000
L60	33	6" x 1" Flate Plate	11.50 - 12.00	1.0000	1.0000
L60	34	6" x 1" Flate Plate	11.50 - 12.00	1.0000	1.0000
L60	35	6" x 1" Flate Plate	11.50 - 12.00	1.0000	1.0000
L60	42	Transition Stiffener	11.50 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			12.00		
L60	43	Transition Stiffener	11.50 - 12.00	1.0000	1.0000
L61	18	9" x 1-1/4" Flate Plate	11.25 - 11.50	1.0000	1.0000
L61	23	9" x 1-1/4" Flate Plate	11.25 - 11.50	1.0000	1.0000
L61	28	9" x 1-1/4" Flate Plate	11.25 - 11.50	1.0000	1.0000
L61	33	6" x 1" Flate Plate	11.25 - 11.50	1.0000	1.0000
L61	34	6" x 1" Flate Plate	11.25 - 11.50	1.0000	1.0000
L61	35	6" x 1" Flate Plate	11.25 - 11.50	1.0000	1.0000
L61	42	Transition Stiffener	11.25 - 11.50	1.0000	1.0000
L61	43	Transition Stiffener	11.25 - 11.50	1.0000	1.0000
L62	18	9" x 1-1/4" Flate Plate	9.25 - 11.25	1.0000	1.0000
L62	23	9" x 1-1/4" Flate Plate	9.25 - 11.25	1.0000	1.0000
L62	28	9" x 1-1/4" Flate Plate	9.25 - 11.25	1.0000	1.0000
L62	33	6" x 1" Flate Plate	9.25 - 11.25	1.0000	1.0000
L62	34	6" x 1" Flate Plate	9.25 - 11.25	1.0000	1.0000
L62	35	6" x 1" Flate Plate	9.25 - 11.25	1.0000	1.0000
L62	42	Transition Stiffener	9.25 - 11.25	1.0000	1.0000
L62	43	Transition Stiffener	9.25 - 11.25	1.0000	1.0000
L63	18	9" x 1-1/4" Flate Plate	9.00 - 9.25	1.0000	1.0000
L63	23	9" x 1-1/4" Flate Plate	9.00 - 9.25	1.0000	1.0000
L63	28	9" x 1-1/4" Flate Plate	9.00 - 9.25	1.0000	1.0000
L63	33	6" x 1" Flate Plate	9.00 - 9.25	1.0000	1.0000
L63	34	6" x 1" Flate Plate	9.00 - 9.25	1.0000	1.0000
L63	35	6" x 1" Flate Plate	9.00 - 9.25	1.0000	1.0000
L63	42	Transition Stiffener	9.00 - 9.25	1.0000	1.0000
L63	43	Transition Stiffener	9.00 - 9.25	1.0000	1.0000
L64	18	9" x 1-1/4" Flate Plate	4.50 - 9.00	1.0000	1.0000
L64	23	9" x 1-1/4" Flate Plate	4.50 - 9.00	1.0000	1.0000
L64	28	9" x 1-1/4" Flate Plate	4.50 - 9.00	1.0000	1.0000
L64	33	6" x 1" Flate Plate	4.50 - 9.00	1.0000	1.0000
L64	34	6" x 1" Flate Plate	4.50 - 9.00	1.0000	1.0000
L64	35	6" x 1" Flate Plate	4.50 - 9.00	1.0000	1.0000
L64	41	Transition Stiffener	4.50 - 6.00	1.0000	1.0000
L64	42	Transition Stiffener	4.50 - 9.00	1.0000	1.0000
L64	43	Transition Stiffener	4.50 - 9.00	1.0000	1.0000
L65	18	9" x 1-1/4" Flate Plate	4.25 - 4.50	1.0000	1.0000
L65	23	9" x 1-1/4" Flate Plate	4.25 - 4.50	1.0000	1.0000
L65	28	9" x 1-1/4" Flate Plate	4.25 - 4.50	1.0000	1.0000
L65	33	6" x 1" Flate Plate	4.25 - 4.50	1.0000	1.0000
L65	34	6" x 1" Flate Plate	4.25 - 4.50	1.0000	1.0000
L65	35	6" x 1" Flate Plate	4.25 - 4.50	1.0000	1.0000
L65	41	Transition Stiffener	4.25 - 4.50	1.0000	1.0000
L65	42	Transition Stiffener	4.25 - 4.50	1.0000	1.0000
L65	43	Transition Stiffener	4.25 - 4.50	1.0000	1.0000
L66	18	9" x 1-1/4" Flate Plate	3.00 - 4.25	1.0000	1.0000
L66	23	9" x 1-1/4" Flate Plate	3.00 - 4.25	1.0000	1.0000
L66	28	9" x 1-1/4" Flate Plate	3.00 - 4.25	1.0000	1.0000
L66	33	6" x 1" Flate Plate	3.00 - 4.25	1.0000	1.0000
L66	34	6" x 1" Flate Plate	3.00 - 4.25	1.0000	1.0000
L66	35	6" x 1" Flate Plate	3.00 - 4.25	1.0000	1.0000
L66	41	Transition Stiffener	3.00 - 4.25	1.0000	1.0000
L66	42	Transition Stiffener	3.00 - 4.25	1.0000	1.0000
L66	43	Transition Stiffener	3.00 - 4.25	1.0000	1.0000
L67	18	9" x 1-1/4" Flate Plate	2.75 - 3.00	1.0000	1.0000
L67	23	9" x 1-1/4" Flate Plate	2.75 - 3.00	1.0000	1.0000
L67	28	9" x 1-1/4" Flate Plate	2.75 - 3.00	1.0000	1.0000
L67	33	6" x 1" Flate Plate	2.75 - 3.00	1.0000	1.0000
L67	34	6" x 1" Flate Plate	2.75 - 3.00	1.0000	1.0000
L67	35	6" x 1" Flate Plate	2.75 - 3.00	1.0000	1.0000
L67	41	Transition Stiffener	2.75 - 3.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L67	42	Transition Stiffener	2.75 - 3.00	1.0000	1.0000
L67	43	Transition Stiffener	2.75 - 3.00	1.0000	1.0000
L68	18	9" x 1-1/4" Flate Plate	0.00 - 2.75	1.0000	1.0000
L68	23	9" x 1-1/4" Flate Plate	0.00 - 2.75	1.0000	1.0000
L68	28	9" x 1-1/4" Flate Plate	0.00 - 2.75	1.0000	1.0000
L68	33	6" x 1" Flate Plate	0.00 - 2.75	1.0000	1.0000
L68	34	6" x 1" Flate Plate	0.00 - 2.75	1.0000	1.0000
L68	35	6" x 1" Flate Plate	0.00 - 2.75	1.0000	1.0000
L68	41	Transition Stiffener	0.00 - 2.75	1.0000	1.0000
L68	42	Transition Stiffener	0.00 - 2.75	1.0000	1.0000
L68	43	Transition Stiffener	0.00 - 2.75	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
L4	37	4.5" x 1" Flate Plate	133.00 - 135.00	Auto	0.0000
L4	38	4.5" x 1" Flate Plate	133.00 - 135.00	Auto	0.0000
L4	39	4.5" x 1" Flate Plate	133.00 - 135.00	Auto	0.0000
L5	37	4.5" x 1" Flate Plate	132.75 - 133.00	Auto	0.1239
L5	38	4.5" x 1" Flate Plate	132.75 - 133.00	Auto	0.1239
L5	39	4.5" x 1" Flate Plate	132.75 - 133.00	Auto	0.1239
L6	37	4.5" x 1" Flate Plate	127.75 - 132.75	Auto	0.0872
L6	38	4.5" x 1" Flate Plate	127.75 - 132.75	Auto	0.0872
L6	39	4.5" x 1" Flate Plate	127.75 - 132.75	Auto	0.0872
L7	21	5" x 1-1/4" Flate Plate	123.75 - 125.00	Auto	0.1127
L7	26	5" x 1-1/4" Flate Plate	123.75 - 125.00	Auto	0.1127
L7	31	5" x 1-1/4" Flate Plate	123.75 - 125.00	Auto	0.1127
L7	37	4.5" x 1" Flate Plate	123.75 - 127.75	Auto	0.0295
L7	38	4.5" x 1" Flate Plate	123.75 - 127.75	Auto	0.0295
L7	39	4.5" x 1" Flate Plate	123.75 - 127.75	Auto	0.0295
L8	21	5" x 1-1/4" Flate Plate	123.50 - 123.75	Auto	0.1052
L8	26	5" x 1-1/4" Flate Plate	123.50 - 123.75	Auto	0.1052
L8	31	5" x 1-1/4" Flate Plate	123.50 - 123.75	Auto	0.1052
L8	37	4.5" x 1" Flate Plate	123.50 - 123.75	Auto	0.0057
L8	38	4.5" x 1" Flate Plate	123.50 - 123.75	Auto	0.0057
L8	39	4.5" x 1" Flate Plate	123.50 - 123.75	Auto	0.0057
L9	21	5" x 1-1/4" Flate Plate	118.75 -	Auto	0.2609

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L9	26	5" x 1-1/4" Flate Plate	123.50 118.75 - 123.50	Auto	0.2609
L9	31	5" x 1-1/4" Flate Plate	118.75 - 123.50	Auto	0.2609
L9	37	4.5" x 1" Flate Plate	118.75 - 123.50	Auto	0.1788
L9	38	4.5" x 1" Flate Plate	118.75 - 123.50	Auto	0.1788
L9	39	4.5" x 1" Flate Plate	118.75 - 123.50	Auto	0.1788
L10	21	5" x 1-1/4" Flate Plate	118.50 - 118.75	Auto	0.3832
L10	26	5" x 1-1/4" Flate Plate	118.50 - 118.75	Auto	0.3832
L10	31	5" x 1-1/4" Flate Plate	118.50 - 118.75	Auto	0.3832
L10	37	4.5" x 1" Flate Plate	118.50 - 118.75	Auto	0.3147
L10	38	4.5" x 1" Flate Plate	118.50 - 118.75	Auto	0.3147
L10	39	4.5" x 1" Flate Plate	118.50 - 118.75	Auto	0.3147
L11	21	5" x 1-1/4" Flate Plate	117.00 - 118.50	Auto	0.3610
L11	26	5" x 1-1/4" Flate Plate	117.00 - 118.50	Auto	0.3610
L11	31	5" x 1-1/4" Flate Plate	117.00 - 118.50	Auto	0.3610
L11	37	4.5" x 1" Flate Plate	117.00 - 118.50	Auto	0.2900
L11	38	4.5" x 1" Flate Plate	117.00 - 118.50	Auto	0.2900
L11	39	4.5" x 1" Flate Plate	117.00 - 118.50	Auto	0.2900
L12	21	5" x 1-1/4" Flate Plate	116.75 - 117.00	Auto	0.2115
L12	26	5" x 1-1/4" Flate Plate	116.75 - 117.00	Auto	0.2115
L12	31	5" x 1-1/4" Flate Plate	116.75 - 117.00	Auto	0.2115
L12	37	4.5" x 1" Flate Plate	116.75 - 117.00	Auto	0.1239
L12	38	4.5" x 1" Flate Plate	116.75 - 117.00	Auto	0.1239
L12	39	4.5" x 1" Flate Plate	116.75 - 117.00	Auto	0.1239
L13	21	5" x 1-1/4" Flate Plate	111.75 - 116.75	Auto	0.1651
L13	26	5" x 1-1/4" Flate Plate	111.75 - 116.75	Auto	0.1651
L13	31	5" x 1-1/4" Flate Plate	111.75 - 116.75	Auto	0.1651
L13	37	4.5" x 1" Flate Plate	111.75 - 116.75	Auto	0.0723
L13	38	4.5" x 1" Flate Plate	111.75 - 116.75	Auto	0.0723
L13	39	4.5" x 1" Flate Plate	111.75 - 116.75	Auto	0.0723
L14	21	5" x 1-1/4" Flate Plate	106.75 - 111.75	Auto	0.1014
L14	26	5" x 1-1/4" Flate Plate	106.75 - 111.75	Auto	0.1014
L14	31	5" x 1-1/4" Flate Plate	106.75 - 111.75	Auto	0.1014
L14	37	4.5" x 1" Flate Plate	106.75 - 111.75	Auto	0.0078
L14	38	4.5" x 1" Flate Plate	106.75 -	Auto	0.0078

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L14	39	4.5" x 1" Flate Plate	111.75 106.75 -	Auto	0.0078
L15	21	5" x 1-1/4" Flate Plate	111.75 101.75 - 106.75	Auto	0.0378
L15	26	5" x 1-1/4" Flate Plate	101.75 - 106.75	Auto	0.0378
L15	31	5" x 1-1/4" Flate Plate	101.75 - 106.75	Auto	0.0378
L15	37	4.5" x 1" Flate Plate	101.75 - 106.75	Auto	0.0000
L15	38	4.5" x 1" Flate Plate	101.75 - 106.75	Auto	0.0000
L15	39	4.5" x 1" Flate Plate	101.75 - 106.75	Auto	0.0000
L16	21	5" x 1-1/4" Flate Plate	95.17 - 101.75	Auto	0.0012
L16	26	5" x 1-1/4" Flate Plate	95.17 - 101.75	Auto	0.0012
L16	31	5" x 1-1/4" Flate Plate	95.17 - 101.75	Auto	0.0012
L16	37	4.5" x 1" Flate Plate	95.17 - 101.75	Auto	0.0000
L16	38	4.5" x 1" Flate Plate	95.17 - 101.75	Auto	0.0000
L16	39	4.5" x 1" Flate Plate	95.17 - 101.75	Auto	0.0000
L17	21	5" x 1-1/4" Flate Plate	94.50 - 95.17	Auto	0.0302
L17	26	5" x 1-1/4" Flate Plate	94.50 - 95.17	Auto	0.0302
L17	31	5" x 1-1/4" Flate Plate	94.50 - 95.17	Auto	0.0302
L17	37	4.5" x 1" Flate Plate	94.50 - 95.17	Auto	0.0000
L17	38	4.5" x 1" Flate Plate	94.50 - 95.17	Auto	0.0000
L17	39	4.5" x 1" Flate Plate	94.50 - 95.17	Auto	0.0000
L18	21	5" x 1-1/4" Flate Plate	93.75 - 94.50	Auto	0.0231
L18	26	5" x 1-1/4" Flate Plate	93.75 - 94.50	Auto	0.0231
L18	31	5" x 1-1/4" Flate Plate	93.75 - 94.50	Auto	0.0231
L18	37	4.5" x 1" Flate Plate	93.75 - 94.50	Auto	0.0000
L18	38	4.5" x 1" Flate Plate	93.75 - 94.50	Auto	0.0000
L18	39	4.5" x 1" Flate Plate	93.75 - 94.50	Auto	0.0000
L19	21	5" x 1-1/4" Flate Plate	93.50 - 93.75	Auto	0.0851
L19	26	5" x 1-1/4" Flate Plate	93.50 - 93.75	Auto	0.0851
L19	31	5" x 1-1/4" Flate Plate	93.50 - 93.75	Auto	0.0851
L19	37	4.5" x 1" Flate Plate	93.50 - 93.75	Auto	0.0000
L19	38	4.5" x 1" Flate Plate	93.50 - 93.75	Auto	0.0000
L19	39	4.5" x 1" Flate Plate	93.50 - 93.75	Auto	0.0000
L20	21	5" x 1-1/4" Flate Plate	92.75 - 93.50	Auto	0.0800
L20	26	5" x 1-1/4" Flate Plate	92.75 - 93.50	Auto	0.0800
L20	31	5" x 1-1/4" Flate Plate	92.75 -	Auto	0.0800

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L20	37	4.5" x 1" Flate Plate	93.50 92.75 - 93.50	Auto	0.0000
L20	38	4.5" x 1" Flate Plate	92.75 - 93.50	Auto	0.0000
L20	39	4.5" x 1" Flate Plate	92.75 - 93.50	Auto	0.0000
L21	21	5" x 1-1/4" Flate Plate	92.50 - 92.75	Auto	0.1956
L21	26	5" x 1-1/4" Flate Plate	92.50 - 92.75	Auto	0.1956
L21	31	5" x 1-1/4" Flate Plate	92.50 - 92.75	Auto	0.1956
L21	37	4.5" x 1" Flate Plate	92.50 - 92.75	Auto	0.1062
L21	38	4.5" x 1" Flate Plate	92.50 - 92.75	Auto	0.1062
L21	39	4.5" x 1" Flate Plate	92.50 - 92.75	Auto	0.1062
L22	21	5" x 1-1/4" Flate Plate	91.25 - 92.50	Auto	0.1747
L22	26	5" x 1-1/4" Flate Plate	91.25 - 92.50	Auto	0.1747
L22	31	5" x 1-1/4" Flate Plate	91.25 - 92.50	Auto	0.1747
L22	37	4.5" x 1" Flate Plate	91.25 - 92.50	Auto	0.0830
L22	38	4.5" x 1" Flate Plate	91.25 - 92.50	Auto	0.0830
L22	39	4.5" x 1" Flate Plate	91.25 - 92.50	Auto	0.0830
L23	21	5" x 1-1/4" Flate Plate	91.00 - 91.25	Auto	0.1671
L23	26	5" x 1-1/4" Flate Plate	91.00 - 91.25	Auto	0.1671
L23	31	5" x 1-1/4" Flate Plate	91.00 - 91.25	Auto	0.1671
L23	37	4.5" x 1" Flate Plate	91.00 - 91.25	Auto	0.0746
L23	38	4.5" x 1" Flate Plate	91.00 - 91.25	Auto	0.0746
L23	39	4.5" x 1" Flate Plate	91.00 - 91.25	Auto	0.0746
L24	21	5" x 1-1/4" Flate Plate	89.25 - 91.00	Auto	0.1571
L24	26	5" x 1-1/4" Flate Plate	89.25 - 91.00	Auto	0.1571
L24	31	5" x 1-1/4" Flate Plate	89.25 - 91.00	Auto	0.1571
L24	37	4.5" x 1" Flate Plate	89.25 - 91.00	Auto	0.0634
L24	38	4.5" x 1" Flate Plate	89.25 - 91.00	Auto	0.0634
L24	39	4.5" x 1" Flate Plate	89.25 - 91.00	Auto	0.0634
L25	20	7" x 1-1/4" Flate Plate	89.00 - 89.25	Auto	0.4290
L25	25	7" x 1-1/4" Flate Plate	89.00 - 89.25	Auto	0.4290
L25	30	7" x 1-1/4" Flate Plate	89.00 - 89.25	Auto	0.4290
L25	37	4.5" x 1" Flate Plate	89.00 - 89.25	Auto	0.1118
L25	38	4.5" x 1" Flate Plate	89.00 - 89.25	Auto	0.1118
L25	39	4.5" x 1" Flate Plate	89.00 - 89.25	Auto	0.1118
L26	20	7" x 1-1/4" Flate Plate	85.75 -	Auto	0.4069

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L26	25	7" x 1-1/4" Flate Plate	89.00 85.75 - 89.00	Auto	0.4069
L26	30	7" x 1-1/4" Flate Plate	85.75 - 89.00	Auto	0.4069
L26	37	4.5" x 1" Flate Plate	85.75 - 89.00	Auto	0.0773
L26	38	4.5" x 1" Flate Plate	85.75 - 89.00	Auto	0.0773
L26	39	4.5" x 1" Flate Plate	85.75 - 89.00	Auto	0.0773
L27	20	7" x 1-1/4" Flate Plate	85.50 - 85.75	Auto	0.2699
L27	25	7" x 1-1/4" Flate Plate	85.50 - 85.75	Auto	0.2699
L27	30	7" x 1-1/4" Flate Plate	85.50 - 85.75	Auto	0.2699
L27	37	4.5" x 1" Flate Plate	85.50 - 85.75	Auto	0.0000
L27	38	4.5" x 1" Flate Plate	85.50 - 85.75	Auto	0.0000
L27	39	4.5" x 1" Flate Plate	85.50 - 85.75	Auto	0.0000
L28	20	7" x 1-1/4" Flate Plate	80.50 - 85.50	Auto	0.2414
L28	25	7" x 1-1/4" Flate Plate	80.50 - 85.50	Auto	0.2414
L28	30	7" x 1-1/4" Flate Plate	80.50 - 85.50	Auto	0.2414
L28	37	4.5" x 1" Flate Plate	80.50 - 85.50	Auto	0.0000
L28	38	4.5" x 1" Flate Plate	80.50 - 85.50	Auto	0.0000
L28	39	4.5" x 1" Flate Plate	80.50 - 85.50	Auto	0.0000
L29	20	7" x 1-1/4" Flate Plate	75.50 - 80.50	Auto	0.1959
L29	25	7" x 1-1/4" Flate Plate	75.50 - 80.50	Auto	0.1959
L29	30	7" x 1-1/4" Flate Plate	75.50 - 80.50	Auto	0.1959
L29	37	4.5" x 1" Flate Plate	75.50 - 80.50	Auto	0.0000
L29	38	4.5" x 1" Flate Plate	75.50 - 80.50	Auto	0.0000
L29	39	4.5" x 1" Flate Plate	75.50 - 80.50	Auto	0.0000
L30	20	7" x 1-1/4" Flate Plate	70.50 - 75.50	Auto	0.1505
L30	25	7" x 1-1/4" Flate Plate	70.50 - 75.50	Auto	0.1505
L30	30	7" x 1-1/4" Flate Plate	70.50 - 75.50	Auto	0.1505
L30	33	6" x 1" Flate Plate	70.50 - 70.58	Auto	0.0000
L30	34	6" x 1" Flate Plate	70.50 - 70.58	Auto	0.0000
L30	35	6" x 1" Flate Plate	70.50 - 70.58	Auto	0.0000
L30	37	4.5" x 1" Flate Plate	70.58 - 75.50	Auto	0.0000
L30	38	4.5" x 1" Flate Plate	70.58 - 75.50	Auto	0.0000
L30	39	4.5" x 1" Flate Plate	70.58 - 75.50	Auto	0.0000
L31	20	7" x 1-1/4" Flate Plate	68.08 - 70.50	Auto	0.1238
L31	25	7" x 1-1/4" Flate Plate	68.08 -	Auto	0.1238

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L31	30	7" x 1-1/4" Flate Plate	70.50 68.08 -	Auto	0.1238
L31	33	6" x 1" Flate Plate	70.50 68.08 -	Auto	0.0000
L31	34	6" x 1" Flate Plate	70.50 68.08 -	Auto	0.0000
L31	35	6" x 1" Flate Plate	70.50 68.08 -	Auto	0.0000
L32	20	7" x 1-1/4" Flate Plate	70.50 67.83 -	Auto	0.1334
L32	25	7" x 1-1/4" Flate Plate	68.08 67.83 -	Auto	0.1334
L32	30	7" x 1-1/4" Flate Plate	68.08 67.83 -	Auto	0.1334
L32	33	6" x 1" Flate Plate	68.08 67.83 -	Auto	0.0000
L32	34	6" x 1" Flate Plate	68.08 67.83 -	Auto	0.0000
L32	35	6" x 1" Flate Plate	68.08 67.83 -	Auto	0.0000
L33	20	7" x 1-1/4" Flate Plate	68.08 67.00 -	Auto	0.1295
L33	25	7" x 1-1/4" Flate Plate	67.83 67.00 -	Auto	0.1295
L33	30	7" x 1-1/4" Flate Plate	67.83 67.00 -	Auto	0.1295
L33	33	6" x 1" Flate Plate	67.83 67.00 -	Auto	0.0000
L33	34	6" x 1" Flate Plate	67.83 67.00 -	Auto	0.0000
L33	35	6" x 1" Flate Plate	67.83 67.00 -	Auto	0.0000
L34	20	7" x 1-1/4" Flate Plate	67.83 66.75 -	Auto	0.2118
L34	25	7" x 1-1/4" Flate Plate	67.00 66.75 -	Auto	0.2118
L34	30	7" x 1-1/4" Flate Plate	67.00 66.75 -	Auto	0.2118
L34	33	6" x 1" Flate Plate	67.00 66.75 -	Auto	0.0804
L34	34	6" x 1" Flate Plate	67.00 66.75 -	Auto	0.0804
L34	35	6" x 1" Flate Plate	67.00 66.75 -	Auto	0.0804
L35	20	7" x 1-1/4" Flate Plate	67.00 63.25 -	Auto	0.1887
L35	25	7" x 1-1/4" Flate Plate	66.75 63.25 -	Auto	0.1887
L35	30	7" x 1-1/4" Flate Plate	66.75 63.25 -	Auto	0.1887
L35	33	6" x 1" Flate Plate	66.75 63.25 -	Auto	0.0535
L35	34	6" x 1" Flate Plate	66.75 63.25 -	Auto	0.0535
L35	35	6" x 1" Flate Plate	66.75 63.25 -	Auto	0.0535
L36	20	7" x 1-1/4" Flate Plate	66.75 63.00 -	Auto	0.2422
L36	25	7" x 1-1/4" Flate Plate	63.25 63.00 -	Auto	0.2422
L36	30	7" x 1-1/4" Flate Plate	63.25 63.00 -	Auto	0.2422
L36	33	6" x 1" Flate Plate	63.25 63.00 -	Auto	0.1160
L36	34	6" x 1" Flate Plate	63.25 63.00 -	Auto	0.1160
L36	35	6" x 1" Flate Plate	63.25 63.00 -	Auto	0.1160

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L37	20	7" x 1-1/4" Flate Plate	63.25 - 63.00	Auto	0.2192
L37	25	7" x 1-1/4" Flate Plate	59.50 - 63.00	Auto	0.2192
L37	30	7" x 1-1/4" Flate Plate	59.50 - 63.00	Auto	0.2192
L37	33	6" x 1" Flate Plate	59.50 - 63.00	Auto	0.0891
L37	34	6" x 1" Flate Plate	59.50 - 63.00	Auto	0.0891
L37	35	6" x 1" Flate Plate	59.50 - 63.00	Auto	0.0891
L38	19	8" x 1-1/4" Flate Plate	59.25 - 59.50	Auto	0.3218
L38	24	8" x 1-1/4" Flate Plate	59.25 - 59.50	Auto	0.3218
L38	29	8" x 1-1/4" Flate Plate	59.25 - 59.50	Auto	0.3218
L38	33	6" x 1" Flate Plate	59.25 - 59.50	Auto	0.0957
L38	34	6" x 1" Flate Plate	59.25 - 59.50	Auto	0.0957
L38	35	6" x 1" Flate Plate	59.25 - 59.50	Auto	0.0957
L39	19	8" x 1-1/4" Flate Plate	56.25 - 59.25	Auto	0.3032
L39	24	8" x 1-1/4" Flate Plate	56.25 - 59.25	Auto	0.3032
L39	29	8" x 1-1/4" Flate Plate	56.25 - 59.25	Auto	0.3032
L39	33	6" x 1" Flate Plate	56.25 - 59.25	Auto	0.0709
L39	34	6" x 1" Flate Plate	56.25 - 59.25	Auto	0.0709
L39	35	6" x 1" Flate Plate	56.25 - 59.25	Auto	0.0709
L40	19	8" x 1-1/4" Flate Plate	56.00 - 56.25	Auto	0.2427
L40	24	8" x 1-1/4" Flate Plate	56.00 - 56.25	Auto	0.2427
L40	29	8" x 1-1/4" Flate Plate	56.00 - 56.25	Auto	0.2427
L40	33	6" x 1" Flate Plate	56.00 - 56.25	Auto	0.0000
L40	34	6" x 1" Flate Plate	56.00 - 56.25	Auto	0.0000
L40	35	6" x 1" Flate Plate	56.00 - 56.25	Auto	0.0000
L41	19	8" x 1-1/4" Flate Plate	55.75 - 56.00	Auto	0.1658
L41	24	8" x 1-1/4" Flate Plate	55.75 - 56.00	Auto	0.1658
L41	29	8" x 1-1/4" Flate Plate	55.75 - 56.00	Auto	0.1658
L41	33	6" x 1" Flate Plate	55.75 - 56.00	Auto	0.0000
L41	34	6" x 1" Flate Plate	55.75 - 56.00	Auto	0.0000
L41	35	6" x 1" Flate Plate	55.75 - 56.00	Auto	0.0000
L42	19	8" x 1-1/4" Flate Plate	50.75 - 55.75	Auto	0.1451
L42	24	8" x 1-1/4" Flate Plate	50.75 - 55.75	Auto	0.1451
L42	29	8" x 1-1/4" Flate Plate	50.75 - 55.75	Auto	0.1451
L42	33	6" x 1" Flate Plate	50.75 -	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L42	34	6" x 1" Flate Plate	55.75 50.75 -	Auto	0.0000
L42	35	6" x 1" Flate Plate	55.75 50.75 -	Auto	0.0000
L43	19	8" x 1-1/4" Flate Plate	55.75 44.67 -	Auto	0.1061
L43	24	8" x 1-1/4" Flate Plate	50.75 44.67 -	Auto	0.1061
L43	29	8" x 1-1/4" Flate Plate	50.75 44.67 -	Auto	0.1061
L43	33	6" x 1" Flate Plate	50.75 44.67 -	Auto	0.0000
L43	34	6" x 1" Flate Plate	50.75 44.67 -	Auto	0.0000
L43	35	6" x 1" Flate Plate	50.75 44.67 -	Auto	0.0000
L44	19	8" x 1-1/4" Flate Plate	50.75 43.67 -	Auto	0.1257
L44	24	8" x 1-1/4" Flate Plate	44.67 43.67 -	Auto	0.1257
L44	29	8" x 1-1/4" Flate Plate	44.67 43.67 -	Auto	0.1257
L44	33	6" x 1" Flate Plate	44.67 43.67 -	Auto	0.0000
L44	34	6" x 1" Flate Plate	44.67 43.67 -	Auto	0.0000
L44	35	6" x 1" Flate Plate	44.67 43.67 -	Auto	0.0000
L45	19	8" x 1-1/4" Flate Plate	44.67 38.67 -	Auto	0.1027
L45	24	8" x 1-1/4" Flate Plate	43.67 38.67 -	Auto	0.1027
L45	29	8" x 1-1/4" Flate Plate	43.67 38.67 -	Auto	0.1027
L45	33	6" x 1" Flate Plate	43.67 38.67 -	Auto	0.0000
L45	34	6" x 1" Flate Plate	43.67 38.67 -	Auto	0.0000
L45	35	6" x 1" Flate Plate	43.67 38.67 -	Auto	0.0000
L46	19	8" x 1-1/4" Flate Plate	43.67 34.50 -	Auto	0.0697
L46	24	8" x 1-1/4" Flate Plate	38.67 34.50 -	Auto	0.0697
L46	29	8" x 1-1/4" Flate Plate	38.67 34.50 -	Auto	0.0697
L46	33	6" x 1" Flate Plate	38.67 34.50 -	Auto	0.0000
L46	34	6" x 1" Flate Plate	38.67 34.50 -	Auto	0.0000
L46	35	6" x 1" Flate Plate	38.67 34.50 -	Auto	0.0000
L47	19	8" x 1-1/4" Flate Plate	38.67 34.25 -	Auto	0.1396
L47	24	8" x 1-1/4" Flate Plate	34.50 34.25 -	Auto	0.1396
L47	29	8" x 1-1/4" Flate Plate	34.50 34.25 -	Auto	0.1396
L47	33	6" x 1" Flate Plate	34.50 34.25 -	Auto	0.0000
L47	34	6" x 1" Flate Plate	34.50 34.25 -	Auto	0.0000
L47	35	6" x 1" Flate Plate	34.50 34.25 -	Auto	0.0000
L48	19	8" x 1-1/4" Flate Plate	34.50 33.00 -	Auto	0.1349
L48	24	8" x 1-1/4" Flate Plate	34.25 33.00 -	Auto	0.1349

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L48	29	8" x 1-1/4" Flate Plate	34.25 33.00 - 34.25	Auto	0.1349
L48	33	6" x 1" Flate Plate	33.00 - 34.25	Auto	0.0000
L48	34	6" x 1" Flate Plate	33.00 - 34.25	Auto	0.0000
L48	35	6" x 1" Flate Plate	33.00 - 34.25	Auto	0.0000
L49	19	8" x 1-1/4" Flate Plate	32.75 - 33.00	Auto	0.1302
L49	24	8" x 1-1/4" Flate Plate	32.75 - 33.00	Auto	0.1302
L49	29	8" x 1-1/4" Flate Plate	32.75 - 33.00	Auto	0.1302
L49	33	6" x 1" Flate Plate	32.75 - 33.00	Auto	0.0000
L49	34	6" x 1" Flate Plate	32.75 - 33.00	Auto	0.0000
L49	35	6" x 1" Flate Plate	32.75 - 33.00	Auto	0.0000
L50	19	8" x 1-1/4" Flate Plate	29.75 - 32.75	Auto	0.1116
L50	24	8" x 1-1/4" Flate Plate	29.75 - 32.75	Auto	0.1116
L50	29	8" x 1-1/4" Flate Plate	29.75 - 32.75	Auto	0.1116
L50	33	6" x 1" Flate Plate	29.75 - 32.75	Auto	0.0000
L50	34	6" x 1" Flate Plate	29.75 - 32.75	Auto	0.0000
L50	35	6" x 1" Flate Plate	29.75 - 32.75	Auto	0.0000
L51	18	9" x 1-1/4" Flate Plate	29.50 - 29.75	Auto	0.2161
L51	23	9" x 1-1/4" Flate Plate	29.50 - 29.75	Auto	0.2161
L51	28	9" x 1-1/4" Flate Plate	29.50 - 29.75	Auto	0.2161
L51	33	6" x 1" Flate Plate	29.50 - 29.75	Auto	0.0000
L51	34	6" x 1" Flate Plate	29.50 - 29.75	Auto	0.0000
L51	35	6" x 1" Flate Plate	29.50 - 29.75	Auto	0.0000
L52	18	9" x 1-1/4" Flate Plate	25.00 - 29.50	Auto	0.1954
L52	23	9" x 1-1/4" Flate Plate	25.00 - 29.50	Auto	0.1954
L52	28	9" x 1-1/4" Flate Plate	25.00 - 29.50	Auto	0.1954
L52	33	6" x 1" Flate Plate	25.00 - 29.50	Auto	0.0000
L52	34	6" x 1" Flate Plate	25.00 - 29.50	Auto	0.0000
L52	35	6" x 1" Flate Plate	25.00 - 29.50	Auto	0.0000
L53	18	9" x 1-1/4" Flate Plate	24.75 - 25.00	Auto	0.1114
L53	23	9" x 1-1/4" Flate Plate	24.75 - 25.00	Auto	0.1114
L53	28	9" x 1-1/4" Flate Plate	24.75 - 25.00	Auto	0.1114
L53	33	6" x 1" Flate Plate	24.75 - 25.00	Auto	0.0000
L53	34	6" x 1" Flate Plate	24.75 - 25.00	Auto	0.0000
L53	35	6" x 1" Flate Plate	24.75 -	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
			25.00		
L54	18	9" x 1-1/4" Flate Plate	19.75 - 24.75	Auto	0.0930
L54	23	9" x 1-1/4" Flate Plate	19.75 - 24.75	Auto	0.0930
L54	28	9" x 1-1/4" Flate Plate	19.75 - 24.75	Auto	0.0930
L54	33	6" x 1" Flate Plate	19.75 - 24.75	Auto	0.0000
L54	34	6" x 1" Flate Plate	19.75 - 24.75	Auto	0.0000
L54	35	6" x 1" Flate Plate	19.75 - 24.75	Auto	0.0000
L55	18	9" x 1-1/4" Flate Plate	14.75 - 19.75	Auto	0.0577
L55	23	9" x 1-1/4" Flate Plate	14.75 - 19.75	Auto	0.0577
L55	28	9" x 1-1/4" Flate Plate	14.75 - 19.75	Auto	0.0577
L55	33	6" x 1" Flate Plate	14.75 - 19.75	Auto	0.0000
L55	34	6" x 1" Flate Plate	14.75 - 19.75	Auto	0.0000
L55	35	6" x 1" Flate Plate	14.75 - 19.75	Auto	0.0000
L55	43	Transition Stiffener	14.75 - 16.00	Auto	0.0000
L56	18	9" x 1-1/4" Flate Plate	14.50 - 14.75	Auto	0.0430
L56	23	9" x 1-1/4" Flate Plate	14.50 - 14.75	Auto	0.0430
L56	28	9" x 1-1/4" Flate Plate	14.50 - 14.75	Auto	0.0430
L56	33	6" x 1" Flate Plate	14.50 - 14.75	Auto	0.0000
L56	34	6" x 1" Flate Plate	14.50 - 14.75	Auto	0.0000
L56	35	6" x 1" Flate Plate	14.50 - 14.75	Auto	0.0000
L56	43	Transition Stiffener	14.50 - 14.75	Auto	0.0000
L57	18	9" x 1-1/4" Flate Plate	14.25 - 14.50	Auto	0.0416
L57	23	9" x 1-1/4" Flate Plate	14.25 - 14.50	Auto	0.0416
L57	28	9" x 1-1/4" Flate Plate	14.25 - 14.50	Auto	0.0416
L57	33	6" x 1" Flate Plate	14.25 - 14.50	Auto	0.0000
L57	34	6" x 1" Flate Plate	14.25 - 14.50	Auto	0.0000
L57	35	6" x 1" Flate Plate	14.25 - 14.50	Auto	0.0000
L57	43	Transition Stiffener	14.25 - 14.50	Auto	0.0000
L58	18	9" x 1-1/4" Flate Plate	12.25 - 14.25	Auto	0.0353
L58	23	9" x 1-1/4" Flate Plate	12.25 - 14.25	Auto	0.0353
L58	28	9" x 1-1/4" Flate Plate	12.25 - 14.25	Auto	0.0353
L58	33	6" x 1" Flate Plate	12.25 - 14.25	Auto	0.0000
L58	34	6" x 1" Flate Plate	12.25 - 14.25	Auto	0.0000
L58	35	6" x 1" Flate Plate	12.25 - 14.25	Auto	0.0000
L58	42	Transition Stiffener	12.25 -	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
			13.00		
L58	43	Transition Stiffener	12.25 - 14.25	Auto	0.0000
L59	18	9" x 1-1/4" Flate Plate	12.00 - 12.25	Auto	0.0179
L59	23	9" x 1-1/4" Flate Plate	12.00 - 12.25	Auto	0.0179
L59	28	9" x 1-1/4" Flate Plate	12.00 - 12.25	Auto	0.0179
L59	33	6" x 1" Flate Plate	12.00 - 12.25	Auto	0.0000
L59	34	6" x 1" Flate Plate	12.00 - 12.25	Auto	0.0000
L59	35	6" x 1" Flate Plate	12.00 - 12.25	Auto	0.0000
L59	42	Transition Stiffener	12.00 - 12.25	Auto	0.0000
L59	43	Transition Stiffener	12.00 - 12.25	Auto	0.0000
L60	18	9" x 1-1/4" Flate Plate	11.50 - 12.00	Auto	0.0158
L60	23	9" x 1-1/4" Flate Plate	11.50 - 12.00	Auto	0.0158
L60	28	9" x 1-1/4" Flate Plate	11.50 - 12.00	Auto	0.0158
L60	33	6" x 1" Flate Plate	11.50 - 12.00	Auto	0.0000
L60	34	6" x 1" Flate Plate	11.50 - 12.00	Auto	0.0000
L60	35	6" x 1" Flate Plate	11.50 - 12.00	Auto	0.0000
L60	42	Transition Stiffener	11.50 - 12.00	Auto	0.0000
L60	43	Transition Stiffener	11.50 - 12.00	Auto	0.0000
L61	18	9" x 1-1/4" Flate Plate	11.25 - 11.50	Auto	0.0472
L61	23	9" x 1-1/4" Flate Plate	11.25 - 11.50	Auto	0.0472
L61	28	9" x 1-1/4" Flate Plate	11.25 - 11.50	Auto	0.0472
L61	33	6" x 1" Flate Plate	11.25 - 11.50	Auto	0.0000
L61	34	6" x 1" Flate Plate	11.25 - 11.50	Auto	0.0000
L61	35	6" x 1" Flate Plate	11.25 - 11.50	Auto	0.0000
L61	42	Transition Stiffener	11.25 - 11.50	Auto	0.0000
L61	43	Transition Stiffener	11.25 - 11.50	Auto	0.0000
L62	18	9" x 1-1/4" Flate Plate	9.25 - 11.25	Auto	0.0372
L62	23	9" x 1-1/4" Flate Plate	9.25 - 11.25	Auto	0.0372
L62	28	9" x 1-1/4" Flate Plate	9.25 - 11.25	Auto	0.0372
L62	33	6" x 1" Flate Plate	9.25 - 11.25	Auto	0.0000
L62	34	6" x 1" Flate Plate	9.25 - 11.25	Auto	0.0000
L62	35	6" x 1" Flate Plate	9.25 - 11.25	Auto	0.0000
L62	42	Transition Stiffener	9.25 - 11.25	Auto	0.0000
L62	43	Transition Stiffener	9.25 - 11.25	Auto	0.0000
L63	18	9" x 1-1/4" Flate Plate	9.00 - 9.25	Auto	0.0197
L63	23	9" x 1-1/4" Flate Plate	9.00 - 9.25	Auto	0.0197
L63	28	9" x 1-1/4" Flate Plate	9.00 - 9.25	Auto	0.0197
L63	33	6" x 1" Flate Plate	9.00 - 9.25	Auto	0.0000
L63	34	6" x 1" Flate Plate	9.00 - 9.25	Auto	0.0000
L63	35	6" x 1" Flate Plate	9.00 - 9.25	Auto	0.0000
L63	42	Transition Stiffener	9.00 - 9.25	Auto	0.0000
L63	43	Transition Stiffener	9.00 - 9.25	Auto	0.0000
L64	18	9" x 1-1/4" Flate Plate	4.50 - 9.00	Auto	0.0027

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L64	23	9" x 1-1/4" Flate Plate	4.50 - 9.00	Auto	0.0027
L64	28	9" x 1-1/4" Flate Plate	4.50 - 9.00	Auto	0.0027
L64	33	6" x 1" Flate Plate	4.50 - 9.00	Auto	0.0000
L64	34	6" x 1" Flate Plate	4.50 - 9.00	Auto	0.0000
L64	35	6" x 1" Flate Plate	4.50 - 9.00	Auto	0.0000
L64	41	Transition Stiffener	4.50 - 6.00	Auto	0.0000
L64	42	Transition Stiffener	4.50 - 9.00	Auto	0.0000
L64	43	Transition Stiffener	4.50 - 9.00	Auto	0.0000
L65	18	9" x 1-1/4" Flate Plate	4.25 - 4.50	Auto	0.0000
L65	23	9" x 1-1/4" Flate Plate	4.25 - 4.50	Auto	0.0000
L65	28	9" x 1-1/4" Flate Plate	4.25 - 4.50	Auto	0.0000
L65	33	6" x 1" Flate Plate	4.25 - 4.50	Auto	0.0000
L65	34	6" x 1" Flate Plate	4.25 - 4.50	Auto	0.0000
L65	35	6" x 1" Flate Plate	4.25 - 4.50	Auto	0.0000
L65	41	Transition Stiffener	4.25 - 4.50	Auto	0.0000
L65	42	Transition Stiffener	4.25 - 4.50	Auto	0.0000
L65	43	Transition Stiffener	4.25 - 4.50	Auto	0.0000
L66	18	9" x 1-1/4" Flate Plate	3.00 - 4.25	Auto	0.0000
L66	23	9" x 1-1/4" Flate Plate	3.00 - 4.25	Auto	0.0000
L66	28	9" x 1-1/4" Flate Plate	3.00 - 4.25	Auto	0.0000
L66	33	6" x 1" Flate Plate	3.00 - 4.25	Auto	0.0000
L66	34	6" x 1" Flate Plate	3.00 - 4.25	Auto	0.0000
L66	35	6" x 1" Flate Plate	3.00 - 4.25	Auto	0.0000
L66	41	Transition Stiffener	3.00 - 4.25	Auto	0.0000
L66	42	Transition Stiffener	3.00 - 4.25	Auto	0.0000
L66	43	Transition Stiffener	3.00 - 4.25	Auto	0.0000
L67	18	9" x 1-1/4" Flate Plate	2.75 - 3.00	Auto	0.0000
L67	23	9" x 1-1/4" Flate Plate	2.75 - 3.00	Auto	0.0000
L67	28	9" x 1-1/4" Flate Plate	2.75 - 3.00	Auto	0.0000
L67	33	6" x 1" Flate Plate	2.75 - 3.00	Auto	0.0000
L67	34	6" x 1" Flate Plate	2.75 - 3.00	Auto	0.0000
L67	35	6" x 1" Flate Plate	2.75 - 3.00	Auto	0.0000
L67	41	Transition Stiffener	2.75 - 3.00	Auto	0.0000
L67	42	Transition Stiffener	2.75 - 3.00	Auto	0.0000
L67	43	Transition Stiffener	2.75 - 3.00	Auto	0.0000
L68	18	9" x 1-1/4" Flate Plate	0.00 - 2.75	Auto	0.0000
L68	23	9" x 1-1/4" Flate Plate	0.00 - 2.75	Auto	0.0000
L68	28	9" x 1-1/4" Flate Plate	0.00 - 2.75	Auto	0.0000
L68	33	6" x 1" Flate Plate	0.00 - 2.75	Auto	0.0000
L68	34	6" x 1" Flate Plate	0.00 - 2.75	Auto	0.0000
L68	35	6" x 1" Flate Plate	0.00 - 2.75	Auto	0.0000
L68	41	Transition Stiffener	0.00 - 2.75	Auto	0.0000
L68	42	Transition Stiffener	0.00 - 2.75	Auto	0.0000
L68	43	Transition Stiffener	0.00 - 2.75	Auto	0.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
(2) MX06FRO660-03 w/ Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.0000	150.0000
(2) MX06FRO660-03 w/ Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.0000	150.0000
(2) MX06FRO660-03 w/ Mount Pipe	C	From Leg	4.0000	0.0000	150.0000

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
			0.00 0.00		
MT6407-77A w/ Mount Pipe	A	From Leg	4.0000 0.00	0.0000	150.0000
MT6407-77A w/ Mount Pipe	B	From Leg	0.00 4.0000 0.00	0.0000	150.0000
MT6407-77A w/ Mount Pipe	C	From Leg	0.00 4.0000 0.00	0.0000	150.0000
RVZDC-6627-PF-48_CCIV2	A	From Leg	0.00 4.0000 0.00	0.0000	150.0000
RF4439D-25A	A	From Leg	0.00 4.0000 0.00	0.0000	150.0000
RF4439D-25A	B	From Leg	0.00 4.0000 0.00	0.0000	150.0000
RF4439D-25A	C	From Leg	0.00 4.0000 0.00	0.0000	150.0000
RF4440D-13A	A	From Leg	0.00 4.0000 0.00	0.0000	150.0000
RF4440D-13A	B	From Leg	0.00 4.0000 0.00	0.0000	150.0000
RF4440D-13A	C	From Leg	0.00 4.0000 0.00	0.0000	150.0000
(2) LPA-80063/6CFX5 w/ Mount Pipe	A	From Leg	0.00 4.0000 0.00	0.0000	150.0000
(2) LPA-80063/6CFX5 w/ Mount Pipe	B	From Leg	0.00 4.0000 0.00	0.0000	150.0000
(2) LPA-80063/6CFX5 w/ Mount Pipe	C	From Leg	0.00 4.0000 0.00	0.0000	150.0000
KS24019-L112A w/ Mount Pipe	A	From Leg	0.00 4.0000 0.00	0.0000	150.0000
4.5' x 2" horizontal mount pipe	A	From Leg	-3.00 4.0000 0.00	0.0000	150.0000
4.5' x 2" horizontal mount pipe	B	From Leg	0.00 4.0000 0.00	0.0000	150.0000
4.5' x 2" horizontal mount pipe	C	From Leg	0.00 4.0000 0.00	0.0000	150.0000
4' Horizontal L3"x3" Angle Mount	A	From Leg	0.00 4.0000 0.00	0.0000	150.0000
4' Horizontal L3"x3" Angle Mount	B	From Leg	0.00 4.0000 0.00	0.0000	150.0000
4' Horizontal L3"x3" Angle Mount	C	From Leg	0.00 4.0000 0.00	0.0000	150.0000
Platform Mount (LP 101-1_KCKR)	C	None	0.00	0.0000	150.0000
*** DMP65R-BU6D w/ Mount Pipe	A	From Leg	4.0000	0.0000	140.0000

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
DMP65R-BU6D w/ Mount Pipe	B	From Leg	0.00 2.00 4.0000	0.0000	140.0000
DMP65R-BU6D w/ Mount Pipe	C	From Leg	0.00 2.00 4.0000	0.0000	140.0000
OPA65R-BU6D w/ Mount Pipe	A	From Leg	0.00 2.00 4.0000	0.0000	140.0000
OPA65R-BU6D w/ Mount Pipe	B	From Leg	0.00 2.00 4.0000	0.0000	140.0000
OPA65R-BU6D w/ Mount Pipe	C	From Leg	0.00 2.00 4.0000	0.0000	140.0000
RRUS 4478 B14	A	From Leg	0.00 2.00 4.0000	0.0000	140.0000
RRUS 4478 B14	B	From Leg	0.00 2.00 4.0000	0.0000	140.0000
RRUS 4478 B14	C	From Leg	0.00 2.00 4.0000	0.0000	140.0000
RRUS 4449 B5/B12	A	From Leg	0.00 2.00 4.0000	0.0000	140.0000
RRUS 4449 B5/B12	B	From Leg	0.00 2.00 4.0000	0.0000	140.0000
RRUS 4449 B5/B12	C	From Leg	0.00 2.00 4.0000	0.0000	140.0000
RRUS 8843 B2/B66A	A	From Leg	0.00 2.00 4.0000	0.0000	140.0000
RRUS 8843 B2/B66A	B	From Leg	0.00 2.00 4.0000	0.0000	140.0000
RRUS 8843 B2/B66A	C	From Leg	0.00 2.00 4.0000	0.0000	140.0000
DC6-48-60-18-8F	A	From Leg	0.00 2.00 4.0000	0.0000	140.0000
DC6-48-60-18-8F	A	From Leg	0.00 2.00 4.0000	0.0000	140.0000
AIR 6419 B77G_CCIV3 w/ Mount Pipe	A	From Leg	0.00 2.00 4.0000	0.0000	140.0000
AIR 6419 B77G_CCIV3 w/ Mount Pipe	B	From Leg	0.00 -1.00 4.0000	0.0000	140.0000
AIR 6419 B77G_CCIV3 w/ Mount Pipe	C	From Leg	0.00 -1.00 4.0000	0.0000	140.0000
AIR 6449 B77D_CCVI2 w/ Mount Pipe	A	From Leg	0.00 -1.00 4.0000	0.0000	140.0000
AIR 6449 B77D_CCVI2 w/ Mount Pipe	B	From Leg	0.00 -5.00 4.0000	0.0000	140.0000
			0.00 -5.00		

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
AIR 6449 B77D_CCVI2 w/ Mount Pipe	C	From Leg	4.0000 0.00 -5.00	0.0000	140.0000
DC9-48-60-24-8C-EV	A	From Leg	4.0000 0.00 -3.00	0.0000	140.0000
Platform Mount (LP 101-1)	C	None		0.0000	140.0000
(3) P2 STD 13.5'	C	None		0.0000	140.0000
site pro PRK-SFS-L	A	From Leg	2.0000 0.00 0.00	0.0000	140.0000
site pro PRK-SFS-L	B	From Leg	2.0000 0.00 0.00	0.0000	140.0000
site pro PRK-SFS-L	C	From Leg	2.0000 0.00 0.00	0.0000	140.0000
***					
AIR6449 B41_T-MOBILE	A	From Leg	4.0000 0.00 0.00	0.0000	128.0000
AIR6449 B41_T-MOBILE	B	From Leg	4.0000 0.00 0.00	0.0000	128.0000
AIR6449 B41_T-MOBILE	C	From Leg	4.0000 0.00 0.00	0.0000	128.0000
APXVAALL24_43-U-NA20_TMO	A	From Leg	4.0000 0.00 0.00	0.0000	128.0000
APXVAALL24_43-U-NA20_TMO	B	From Leg	4.0000 0.00 0.00	0.0000	128.0000
APXVAALL24_43-U-NA20_TMO	C	From Leg	4.0000 0.00 0.00	0.0000	128.0000
AIR 32 B2A B66AA_T-MOBILE	A	From Leg	4.0000 0.00 0.00	0.0000	128.0000
AIR 32 B2A B66AA_T-MOBILE	B	From Leg	4.0000 0.00 0.00	0.0000	128.0000
AIR 32 B2A B66AA_T-MOBILE	C	From Leg	4.0000 0.00 0.00	0.0000	128.0000
RRUS 4415 B25_CCIV2	A	From Leg	4.0000 0.00 0.00	0.0000	128.0000
RRUS 4415 B25_CCIV2	B	From Leg	4.0000 0.00 0.00	0.0000	128.0000
RRUS 4415 B25_CCIV2	C	From Leg	4.0000 0.00 0.00	0.0000	128.0000
RADIO 4449 B71 B85A_T-MOBILE	A	From Leg	4.0000 0.00 0.00	0.0000	128.0000
RADIO 4449 B71 B85A_T-MOBILE	B	From Leg	4.0000 0.00 0.00	0.0000	128.0000
RADIO 4449 B71 B85A_T-MOBILE	C	From Leg	4.0000 0.00 0.00	0.0000	128.0000
Platform Mount [LP 301-1_KCKR]	C	None		0.0000	128.0000
***					

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft
MX08FRO665-21 w/ Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.0000	110.0000
MX08FRO665-21 w/ Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.0000	110.0000
MX08FRO665-21 w/ Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.0000	110.0000
TA08025-B604	A	From Leg	4.0000 0.00 0.00	0.0000	110.0000
TA08025-B604	B	From Leg	4.0000 0.00 0.00	0.0000	110.0000
TA08025-B604	C	From Leg	4.0000 0.00 0.00	0.0000	110.0000
TA08025-B605	A	From Leg	4.0000 0.00 0.00	0.0000	110.0000
TA08025-B605	B	From Leg	4.0000 0.00 0.00	0.0000	110.0000
TA08025-B605	C	From Leg	4.0000 0.00 0.00	0.0000	110.0000
RDIDC-9181-PF-48	A	From Leg	4.0000 0.00 0.00	0.0000	110.0000
Commscope MC-PK8-DSH	C	None		0.0000	110.0000
(2) 8' x 2" Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.0000	110.0000
(2) 8' x 2" Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.0000	110.0000
(2) 8' x 2" Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.0000	110.0000
*** *** ***					

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice

Comb. No.	Description
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	150 - 145	Pole	Max Tension	26	0.00	0.00	-0.00
			Max. Compression	26	-9.56	-0.00	0.67
			Max. Mx	20	-3.27	45.04	0.13
			Max. My	2	-3.26	0.00	45.50
			Max. Vy	20	-9.21	45.04	0.13
			Max. Vx	2	-9.26	0.00	45.50
			Max. Torque	8			0.81
L2	145 - 140	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-9.92	-0.00	0.69
			Max. Mx	8	-3.51	-92.09	0.15
			Max. My	2	-3.50	0.00	92.80
			Max. Vy	8	9.61	-92.09	0.15
			Max. Vx	2	-9.66	0.00	92.80
			Max. Torque	8			0.81
L3	140 - 135	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-19.16	-0.00	1.63
			Max. Mx	20	-7.71	180.36	0.50
			Max. My	2	-7.70	0.00	181.71
			Max. Vy	20	-17.13	180.36	0.50
			Max. Vx	2	-17.18	0.00	181.71
			Max. Torque	8			1.43
L4	135 - 133	Pole	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
			Max. Compression	26	-19.39	-0.00	1.64
			Max. Mx	8	-7.90	-214.76	0.50
			Max. My	2	-7.89	0.00	216.22
			Max. Vy	8	17.29	-214.76	0.50
			Max. Vx	2	-17.34	0.00	216.22
			Max. Torque	8			1.43
L5	133 - 132.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-19.43	-0.00	1.64
			Max. Mx	20	-7.95	219.08	0.51
			Max. My	2	-7.94	0.00	220.55
			Max. Vy	20	-17.30	219.08	0.51
			Max. Vx	2	-17.35	0.00	220.55
			Max. Torque	8			1.43
L6	132.75 - 127.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-27.37	-0.00	1.66
			Max. Mx	20	-12.36	307.85	0.52
			Max. My	2	-12.35	0.00	309.57
			Max. Vy	20	-22.30	307.85	0.52
			Max. Vx	2	-22.35	0.00	309.57
			Max. Torque	8			1.43
L7	127.75 - 123.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-28.10	-0.00	1.68
			Max. Mx	8	-12.96	-397.72	0.54
			Max. My	2	-12.95	0.00	399.64
			Max. Vy	8	22.65	-397.72	0.54
			Max. Vx	2	-22.70	0.00	399.64
			Max. Torque	8			1.43
L8	123.75 - 123.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-28.15	-0.00	1.68
			Max. Mx	20	-13.01	403.38	0.54
			Max. My	2	-13.00	0.00	405.31
			Max. Vy	20	-22.66	403.38	0.54
			Max. Vx	2	-22.72	0.00	405.31
			Max. Torque	8			1.43
L9	123.5 - 118.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-29.45	-0.00	1.70
			Max. Mx	20	-14.05	512.16	0.56
			Max. My	2	-14.03	0.00	514.33
			Max. Vy	20	-23.15	512.16	0.56
			Max. Vx	2	-23.20	0.00	514.33
			Max. Torque	8			1.43
L10	118.75 - 118.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-29.53	-0.00	1.70
			Max. Mx	20	-14.12	517.95	0.56
			Max. My	2	-14.11	0.00	520.13
			Max. Vy	20	-23.17	517.95	0.56
			Max. Vx	2	-23.22	0.00	520.13
			Max. Torque	8			1.43
L11	118.5 - 117	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-30.03	-0.00	1.71
			Max. Mx	8	-14.53	-552.84	0.56
			Max. My	2	-14.51	0.00	555.09
			Max. Vy	8	23.34	-552.84	0.56
			Max. Vx	2	-23.39	0.00	555.09
			Max. Torque	8			1.43
L12	117 - 116.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-30.10	-0.00	1.71
			Max. Mx	8	-14.59	-558.67	0.56
			Max. My	2	-14.58	0.00	560.94
			Max. Vy	8	23.36	-558.67	0.56
			Max. Vx	2	-23.41	0.00	560.94
			Max. Torque	8			1.43
L13	116.75 - 111.75	Pole	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
			Max. Compression	26	-31.49	-0.00	1.73
			Max. Mx	20	-15.72	676.75	0.58
			Max. My	2	-15.71	0.00	679.25
			Max. Vy	20	-23.88	676.75	0.58
			Max. Vx	2	-23.92	0.00	679.25
			Max. Torque	8			1.43
L14	111.75 - 106.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-37.78	-0.00	2.07
			Max. Mx	20	-19.80	808.48	0.69
			Max. My	2	-19.79	0.00	811.47
			Max. Vy	20	-27.80	808.48	0.69
			Max. Vx	2	-27.89	0.00	811.47
			Max. Torque	8			1.68
L15	106.75 - 101.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-39.21	-0.00	2.07
			Max. Mx	8	-21.03	-948.64	0.70
			Max. My	2	-21.01	0.00	952.08
			Max. Vy	8	28.29	-948.64	0.70
			Max. Vx	2	-28.38	0.00	952.08
			Max. Torque	8			1.68
L16	101.75 - 95.167	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-39.87	-0.00	2.07
			Max. Mx	8	-21.59	-1012.49	0.70
			Max. My	2	-21.57	0.00	1016.14
			Max. Vy	8	28.50	-1012.49	0.70
			Max. Vx	2	-28.59	0.00	1016.14
			Max. Torque	8			1.68
L17	95.167 - 94.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-42.52	-0.00	2.07
			Max. Mx	8	-23.82	-1156.56	0.72
			Max. My	2	-23.81	0.00	1160.66
			Max. Vy	8	29.13	-1156.56	0.72
			Max. Vx	2	-29.22	0.00	1160.66
			Max. Torque	8			1.68
L18	94.5 - 93.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-42.77	-0.00	2.07
			Max. Mx	20	-24.04	1178.43	0.72
			Max. My	2	-24.03	0.00	1182.59
			Max. Vy	20	-29.20	1178.43	0.72
			Max. Vx	2	-29.30	0.00	1182.59
			Max. Torque	8			1.68
L19	93.75 - 93.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-42.86	-0.00	2.07
			Max. Mx	8	-24.13	-1185.73	0.72
			Max. My	2	-24.12	0.00	1189.92
			Max. Vy	8	29.22	-1185.73	0.72
			Max. Vx	2	-29.32	0.00	1189.92
			Max. Torque	8			1.68
L20	93.5 - 92.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-43.15	-0.00	2.07
			Max. Mx	8	-24.37	-1207.68	0.72
			Max. My	2	-24.35	0.00	1211.93
			Max. Vy	8	29.31	-1207.68	0.72
			Max. Vx	2	-29.40	0.00	1211.93
			Max. Torque	8			1.68
L21	92.75 - 92.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-43.25	-0.00	2.07
			Max. Mx	8	-24.47	-1215.01	0.72
			Max. My	2	-24.46	0.00	1219.28
			Max. Vy	8	29.33	-1215.01	0.72
			Max. Vx	2	-29.42	0.00	1219.28
			Max. Torque	8			1.68
L22	92.5 - 91.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-43.79	-0.00	2.07
			Max. Mx	20	-24.93	1251.76	0.72

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	2	-24.92	0.00	1256.14
			Max. Vy	20	-29.48	1251.76	0.72
			Max. Vx	2	-29.57	0.00	1256.14
			Max. Torque	8			1.68
L23	91.25 - 91	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-43.90	-0.00	2.07
			Max. Mx	20	-25.04	1259.13	0.73
			Max. My	2	-25.02	0.00	1263.54
			Max. Vy	20	-29.50	1259.13	0.73
			Max. Vx	2	-29.60	0.00	1263.54
			Max. Torque	8			1.68
L24	91 - 89.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-44.65	-0.00	2.07
			Max. Mx	20	-25.68	1310.93	0.73
			Max. My	2	-25.67	0.00	1315.50
			Max. Vy	8	29.72	-1310.93	0.73
			Max. Vx	2	-29.81	0.00	1315.50
			Max. Torque	8			1.68
L25	89.25 - 89	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-44.77	-0.00	2.07
			Max. Mx	8	-25.80	-1318.36	0.73
			Max. My	2	-25.79	0.00	1322.95
			Max. Vy	8	29.73	-1318.36	0.73
			Max. Vx	2	-29.82	0.00	1322.95
			Max. Torque	20			-1.68
L26	89 - 85.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-46.28	-0.00	2.07
			Max. Mx	8	-27.12	-1415.59	0.74
			Max. My	2	-27.11	0.00	1420.47
			Max. Vy	8	30.12	-1415.59	0.74
			Max. Vx	2	-30.21	0.00	1420.47
			Max. Torque	8			1.68
L27	85.75 - 85.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-46.38	-0.00	2.07
			Max. Mx	20	-27.21	1423.12	0.74
			Max. My	2	-27.20	0.00	1428.03
			Max. Vy	20	-30.14	1423.12	0.74
			Max. Vx	2	-30.23	0.00	1428.03
			Max. Torque	8			1.68
L28	85.5 - 80.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-48.27	-0.00	2.07
			Max. Mx	20	-28.85	1575.06	0.75
			Max. My	2	-28.84	0.00	1580.42
			Max. Vy	20	-30.66	1575.06	0.75
			Max. Vx	2	-30.75	0.00	1580.42
			Max. Torque	8			1.68
L29	80.5 - 75.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-50.19	-0.00	2.07
			Max. Mx	20	-30.53	1729.54	0.75
			Max. My	2	-30.52	0.00	1735.35
			Max. Vy	20	-31.16	1729.54	0.75
			Max. Vx	2	-31.25	0.00	1735.35
			Max. Torque	8			1.68
L30	75.5 - 70.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-52.13	-0.00	2.07
			Max. Mx	20	-32.24	1886.50	0.76
			Max. My	2	-32.23	0.00	1892.75
			Max. Vy	20	-31.66	1886.50	0.76
			Max. Vx	2	-31.75	0.00	1892.75
			Max. Torque	8			1.68
L31	70.5 - 68.083	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-53.09	-0.00	2.07
			Max. Mx	20	-33.08	1963.25	0.76
			Max. My	2	-33.07	0.00	1969.73
			Max. Vy	20	-31.90	1963.25	0.76
			Max. Vx	2	-31.99	0.00	1969.73
			Max. Torque	8			1.68
L32	68.083 -	Pole	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
	67.833						
			Max. Compression	26	-53.19	-0.00	2.07
			Max. Mx	8	-33.19	-1971.22	0.76
			Max. My	2	-33.18	0.00	1977.72
			Max. Vy	8	31.90	-1971.22	0.76
			Max. Vx	2	-32.00	0.00	1977.72
			Max. Torque	8			1.68
L33	67.833 - 67	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-53.54	-0.00	2.07
			Max. Mx	8	-33.48	-1997.83	0.77
			Max. My	2	-33.47	0.00	2004.40
			Max. Vy	8	32.00	-1997.83	0.77
			Max. Vx	2	-32.09	0.00	2004.40
			Max. Torque	8			1.68
L34	67 - 66.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-53.66	-0.00	2.07
			Max. Mx	8	-33.60	-2005.83	0.77
			Max. My	2	-33.59	0.00	2012.42
			Max. Vy	8	32.01	-2005.83	0.77
			Max. Vx	2	-32.11	0.00	2012.42
			Max. Torque	8			1.68
L35	66.75 - 63.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-55.37	-0.00	2.07
			Max. Mx	8	-35.10	-2118.54	0.77
			Max. My	2	-35.10	0.00	2125.45
			Max. Vy	8	32.41	-2118.54	0.77
			Max. Vx	2	-32.50	0.00	2125.45
			Max. Torque	8			1.68
L36	63.25 - 63	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-55.51	-0.00	2.07
			Max. Mx	20	-35.24	2126.64	0.77
			Max. My	2	-35.23	0.00	2133.57
			Max. Vy	20	-32.43	2126.64	0.77
			Max. Vx	2	-32.52	0.00	2133.57
			Max. Torque	8			1.67
L37	63 - 59.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-57.43	-0.00	2.07
			Max. Mx	20	-36.94	2240.82	0.77
			Max. My	2	-36.93	0.00	2248.07
			Max. Vy	20	-32.84	2240.82	0.77
			Max. Vx	2	-32.93	0.00	2248.07
			Max. Torque	8			1.67
L38	59.5 - 59.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-57.57	-0.00	2.07
			Max. Mx	8	-37.08	-2249.03	0.78
			Max. My	2	-37.07	0.00	2256.30
			Max. Vy	8	32.86	-2249.03	0.78
			Max. Vx	2	-32.95	0.00	2256.30
			Max. Torque	8			1.67
L39	59.25 - 56.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-59.27	-0.00	2.07
			Max. Mx	8	-38.59	-2348.11	0.78
			Max. My	2	-38.58	0.00	2355.64
			Max. Vy	8	33.21	-2348.11	0.78
			Max. Vx	2	-33.30	0.00	2355.64
			Max. Torque	8			1.67
L40	56.25 - 56	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-59.40	-0.00	2.07
			Max. Mx	20	-38.71	2356.41	0.78
			Max. My	2	-38.70	0.00	2363.97
			Max. Vy	20	-33.23	2356.41	0.78
			Max. Vx	2	-33.32	0.00	2363.97
			Max. Torque	8			1.67
L41	56 - 55.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-59.51	-0.00	2.07
			Max. Mx	20	-38.81	2364.72	0.78
			Max. My	2	-38.80	0.00	2372.30

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	20	-33.25	2364.72	0.78
			Max. Vx	2	-33.35	0.00	2372.30
			Max. Torque	8			1.67
L42	55.75 - 50.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-61.73	-0.00	2.07
			Max. Mx	8	-40.75	-2532.16	0.78
			Max. My	2	-40.74	0.00	2540.19
			Max. Vy	8	33.75	-2532.16	0.78
			Max. Vx	2	-33.84	0.00	2540.19
			Max. Torque	8			1.67
L43	50.75 - 44.667	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-62.07	-0.00	2.07
			Max. Mx	8	-41.05	-2557.48	0.78
			Max. My	2	-41.05	0.00	2565.58
			Max. Vy	8	33.81	-2557.48	0.78
			Max. Vx	2	-33.90	0.00	2565.58
			Max. Torque	8			1.67
L44	44.667 - 43.667	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-67.09	-0.00	2.07
			Max. Mx	8	-45.45	-2774.09	0.79
			Max. My	2	-45.44	0.00	2782.75
			Max. Vy	8	34.60	-2774.09	0.79
			Max. Vx	2	-34.69	0.00	2782.75
			Max. Torque	8			1.67
L45	43.667 - 38.667	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-69.48	-0.00	2.07
			Max. Mx	8	-47.59	-2948.06	0.79
			Max. My	2	-47.59	0.00	2957.17
			Max. Vy	8	35.04	-2948.06	0.79
			Max. Vx	2	-35.13	0.00	2957.17
			Max. Torque	8			1.67
L46	38.667 - 34.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-71.50	-0.00	2.07
			Max. Mx	8	-49.40	-3094.70	0.80
			Max. My	2	-49.40	0.00	3104.17
			Max. Vy	8	35.39	-3094.70	0.80
			Max. Vx	2	-35.48	0.00	3104.17
			Max. Torque	8			1.67
L47	34.5 - 34.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-71.64	-0.00	2.07
			Max. Mx	8	-49.55	-3103.54	0.80
			Max. My	2	-49.54	0.00	3113.03
			Max. Vy	8	35.39	-3103.54	0.80
			Max. Vx	2	-35.49	0.00	3113.03
			Max. Torque	8			1.67
L48	34.25 - 33	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-72.38	-0.00	2.07
			Max. Mx	20	-50.20	3147.85	0.80
			Max. My	2	-50.19	0.00	3157.46
			Max. Vy	20	-35.53	3147.85	0.80
			Max. Vx	2	-35.62	0.00	3157.46
			Max. Torque	8			1.67
L49	33 - 32.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-72.52	-0.00	2.07
			Max. Mx	20	-50.34	3156.73	0.80
			Max. My	2	-50.34	0.00	3166.36
			Max. Vy	20	-35.54	3156.73	0.80
			Max. Vx	2	-35.63	0.00	3166.36
			Max. Torque	8			1.67
L50	32.75 - 29.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-74.28	-0.00	2.07
			Max. Mx	8	-51.93	-3263.74	0.80
			Max. My	2	-51.93	0.00	3273.63

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	8	35.83	-3263.74	0.80
			Max. Vx	2	-35.92	0.00	3273.63
			Max. Torque	8			1.67
L51	29.75 - 29.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-74.44	-0.00	2.07
			Max. Mx	8	-52.08	-3272.70	0.80
			Max. My	2	-52.07	0.00	3282.61
			Max. Vy	8	35.84	-3272.70	0.80
			Max. Vx	2	-35.93	0.00	3282.61
			Max. Torque	8			1.67
L52	29.5 - 25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-77.17	-0.00	2.07
			Max. Mx	20	-54.54	3434.85	0.80
			Max. My	2	-54.54	0.00	3445.16
			Max. Vy	20	-36.26	3434.85	0.80
			Max. Vx	2	-36.35	0.00	3445.16
			Max. Torque	8			1.67
L53	25 - 24.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-77.29	-0.00	2.07
			Max. Mx	8	-54.67	-3443.91	0.80
			Max. My	2	-54.66	0.00	3454.24
			Max. Vy	8	36.26	-3443.91	0.80
			Max. Vx	2	-36.35	0.00	3454.24
			Max. Torque	8			1.67
L54	24.75 - 19.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-79.85	-0.00	2.07
			Max. Mx	20	-56.97	3626.11	0.80
			Max. My	2	-56.97	0.00	3636.87
			Max. Vy	20	-36.65	3626.11	0.80
			Max. Vx	2	-36.73	0.00	3636.87
			Max. Torque	8			1.67
L55	19.75 - 14.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-82.43	-0.00	2.06
			Max. Mx	20	-59.31	3810.02	0.80
			Max. My	2	-59.31	0.00	3821.21
			Max. Vy	20	-36.97	3810.02	0.80
			Max. Vx	2	-37.06	0.00	3821.21
			Max. Torque	8			1.67
L56	14.75 - 14.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-82.57	-0.00	2.05
			Max. Mx	20	-59.44	3819.26	0.80
			Max. My	2	-59.44	0.00	3830.47
			Max. Vy	20	-36.97	3819.26	0.80
			Max. Vx	2	-37.06	0.00	3830.47
			Max. Torque	8			1.67
L57	14.5 - 14.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-82.70	-0.00	2.05
			Max. Mx	8	-59.56	-3828.50	0.80
			Max. My	2	-59.56	0.00	3839.74
			Max. Vy	8	37.00	-3828.50	0.80
			Max. Vx	2	-37.07	0.00	3839.74
			Max. Torque	8			1.67
L58	14.25 - 12.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-83.75	-0.01	2.04
			Max. Mx	8	-60.50	-3902.66	0.80
			Max. My	2	-60.50	0.00	3913.98
			Max. Vy	8	37.20	-3902.66	0.80
			Max. Vx	2	-37.21	0.00	3913.98
			Max. Torque	8			1.67
L59	12.25 - 12	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-83.88	-0.01	2.03
			Max. Mx	20	-60.63	3911.96	0.80
			Max. My	2	-60.63	0.00	3923.28
			Max. Vy	20	-37.20	3911.96	0.80
			Max. Vx	2	-37.21	0.00	3923.28
			Max. Torque	8			1.67

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L60	12 - 11.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-84.15	-0.01	2.03
			Max. Mx	20	-60.86	3930.57	0.80
			Max. My	2	-60.86	0.00	3941.89
			Max. Vy	20	-37.25	3930.57	0.80
			Max. Vx	2	-37.24	0.00	3941.89
			Max. Torque	8			1.67
L61	11.5 - 11.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-84.29	-0.02	2.03
			Max. Mx	8	-60.99	-3939.88	0.80
			Max. My	2	-60.99	0.00	3951.20
			Max. Vy	8	37.27	-3939.88	0.80
			Max. Vx	2	-37.25	0.00	3951.20
			Max. Torque	8			1.67
L62	11.25 - 9.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-85.39	-0.03	2.02
			Max. Mx	8	-61.98	-4014.59	0.80
			Max. My	2	-61.98	0.00	4025.82
			Max. Vy	8	37.48	-4014.59	0.80
			Max. Vx	2	-37.40	0.00	4025.82
			Max. Torque	8			1.67
L63	9.25 - 9	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-85.53	-0.04	2.02
			Max. Mx	20	-62.11	4023.96	0.80
			Max. My	2	-62.11	0.00	4035.17
			Max. Vy	20	-37.48	4023.96	0.80
			Max. Vx	2	-37.40	0.00	4035.17
			Max. Torque	8			1.67
L64	9 - 4.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-87.85	-0.06	2.00
			Max. Mx	20	-64.19	4193.52	0.80
			Max. My	2	-64.19	0.00	4204.05
			Max. Vy	20	-37.92	4193.52	0.80
			Max. Vx	2	-37.70	0.00	4204.05
			Max. Torque	8			1.67
L65	4.5 - 4.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-87.99	-0.06	2.00
			Max. Mx	20	-64.32	4202.99	0.80
			Max. My	2	-64.32	0.00	4213.47
			Max. Vy	20	-37.92	4202.99	0.80
			Max. Vx	2	-37.69	0.00	4213.47
			Max. Torque	8			1.67
L66	4.25 - 3	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-88.66	-0.06	2.00
			Max. Mx	20	-64.92	4250.45	0.80
			Max. My	2	-64.92	0.00	4260.63
			Max. Vy	20	-38.06	4250.45	0.80
			Max. Vx	2	-37.80	0.00	4260.63
			Max. Torque	8			1.67
L67	3 - 2.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-88.79	-0.06	2.00
			Max. Mx	8	-65.05	-4259.96	0.80
			Max. My	2	-65.05	0.00	4270.07
			Max. Vy	8	38.06	-4259.96	0.80
			Max. Vx	2	-37.79	0.00	4270.07
			Max. Torque	8			1.67
L68	2.75 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-90.19	-0.06	2.00
			Max. Mx	20	-66.32	4364.95	0.80
			Max. My	2	-66.32	0.00	4374.22
			Max. Vy	8	38.34	-4364.95	0.80
			Max. Vx	2	-38.00	0.00	4374.22
			Max. Torque	8			1.67

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	27	90.19	0.00	8.27
	Max. H_x	21	49.76	38.30	0.00
	Max. H_z	2	66.34	0.00	37.96
	Max. M_x	2	4374.22	0.00	37.96
	Max. M_z	8	4364.95	-38.30	0.00
	Max. Torsion	8	1.67	-38.30	0.00
	Min. Vert	11	49.76	-32.83	-19.00
	Min. H_x	9	49.76	-38.30	0.00
	Min. H_z	14	66.34	0.00	-37.96
	Min. M_x	14	-4372.59	0.00	-37.96
	Min. M_z	20	-4364.95	38.30	0.00
	Min. Torsion	20	-1.67	38.30	0.00

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	55.28	0.00	0.00	-0.62	0.00	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	66.34	0.00	-37.96	-4374.22	0.00	0.00
0.9 Dead+1.0 Wind 0 deg - No Ice	49.76	0.00	-37.96	-4313.16	0.00	0.00
1.2 Dead+1.0 Wind 30 deg - No Ice	66.34	19.00	-32.98	-3788.98	-2181.00	-0.83
0.9 Dead+1.0 Wind 30 deg - No Ice	49.76	19.00	-32.98	-3736.07	-2150.66	-0.82
1.2 Dead+1.0 Wind 60 deg - No Ice	66.34	32.80	-18.98	-2187.53	-3776.95	-1.45
0.9 Dead+1.0 Wind 60 deg - No Ice	49.76	32.80	-18.98	-2156.89	-3724.41	-1.43
1.2 Dead+1.0 Wind 90 deg - No Ice	66.34	38.30	0.00	-0.80	-4364.95	-1.67
0.9 Dead+1.0 Wind 90 deg - No Ice	49.76	38.30	-0.00	-0.58	-4304.28	-1.65
1.2 Dead+1.0 Wind 120 deg - No Ice	66.34	32.83	19.00	2186.06	-3777.17	-1.45
0.9 Dead+1.0 Wind 120 deg - No Ice	49.76	32.83	19.00	2155.86	-3724.64	-1.43
1.2 Dead+1.0 Wind 150 deg - No Ice	66.34	19.12	33.19	3789.09	-2181.98	-0.84
0.9 Dead+1.0 Wind 150 deg - No Ice	49.76	19.12	33.19	3736.62	-2151.65	-0.83
1.2 Dead+1.0 Wind 180 deg - No Ice	66.34	0.00	37.96	4372.59	0.00	0.00
0.9 Dead+1.0 Wind 180 deg - No Ice	49.76	0.00	37.96	4311.97	0.00	0.00
1.2 Dead+1.0 Wind 210 deg - No Ice	66.34	-19.00	32.98	3787.36	2180.98	0.84
0.9 Dead+1.0 Wind 210 deg - No Ice	49.76	-19.00	32.98	3734.88	2150.65	0.83
1.2 Dead+1.0 Wind 240 deg - No Ice	66.34	-32.80	18.98	2185.92	3776.93	1.45
0.9 Dead+1.0 Wind 240 deg - No Ice	49.76	-32.80	18.98	2155.72	3724.40	1.43
1.2 Dead+1.0 Wind 270 deg - No Ice	66.34	-38.30	0.00	-0.80	4364.95	1.67
0.9 Dead+1.0 Wind 270 deg - No Ice	49.76	-38.30	-0.00	-0.58	4304.28	1.65
1.2 Dead+1.0 Wind 300 deg - No Ice	66.34	-32.83	-19.00	-2187.67	3777.19	1.45
0.9 Dead+1.0 Wind 300 deg - No Ice	49.76	-32.83	-19.00	-2157.03	3724.66	1.43
1.2 Dead+1.0 Wind 330 deg	66.34	-19.12	-33.19	-3790.71	2182.00	0.83

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
- No Ice 0.9 Dead+1.0 Wind 330 deg - No Ice	49.76	-19.12	-33.19	-3737.80	2151.66	0.82
1.2 Dead+1.0 Ice+1.0 Temp	90.19	0.00	-0.00	-2.00	-0.06	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	90.19	0.00	-8.27	-984.95	-0.06	-0.00
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	90.19	4.13	-7.16	-853.29	-490.36	-0.21
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	90.19	7.15	-4.13	-493.58	-849.29	-0.36
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	90.19	8.25	0.00	-2.21	-980.66	-0.42
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	90.19	7.15	4.13	489.16	-849.28	-0.36
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	90.19	4.13	7.16	848.87	-490.36	-0.21
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	90.19	0.00	8.27	980.53	-0.06	-0.00
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	90.19	-4.13	7.16	848.87	490.24	0.21
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	90.19	-7.15	4.13	489.16	849.16	0.36
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	90.19	-8.25	0.00	-2.21	980.54	0.42
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	90.19	-7.15	-4.13	-493.58	849.16	0.36
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	90.19	-4.13	-7.16	-853.29	490.24	0.21
Dead+Wind 0 deg - Service	55.28	0.00	-8.24	-943.37	0.00	0.00
Dead+Wind 30 deg - Service	55.28	4.12	-7.16	-817.22	-470.12	-0.19
Dead+Wind 60 deg - Service	55.28	7.12	-4.12	-472.02	-814.12	-0.33
Dead+Wind 90 deg - Service	55.28	8.31	0.00	-0.67	-940.87	-0.38
Dead+Wind 120 deg - Service	55.28	7.13	4.12	470.70	-814.17	-0.33
Dead+Wind 150 deg - Service	55.28	4.15	7.20	816.25	-470.33	-0.19
Dead+Wind 180 deg - Service	55.28	0.00	8.24	942.02	0.00	0.00
Dead+Wind 210 deg - Service	55.28	-4.12	7.16	815.87	470.12	0.19
Dead+Wind 240 deg - Service	55.28	-7.12	4.12	470.67	814.12	0.33
Dead+Wind 270 deg - Service	55.28	-8.31	0.00	-0.67	940.87	0.38
Dead+Wind 300 deg - Service	55.28	-7.13	-4.12	-472.05	814.18	0.33
Dead+Wind 330 deg - Service	55.28	-4.15	-7.20	-817.60	470.34	0.19

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.00	-55.28	0.00	0.00	55.28	0.00	0.000%
2	0.00	-66.34	-37.96	0.00	66.34	37.96	0.000%
3	0.00	-49.76	-37.96	0.00	49.76	37.96	0.000%
4	19.00	-66.34	-32.98	-19.00	66.34	32.98	0.000%
5	19.00	-49.76	-32.98	-19.00	49.76	32.98	0.000%
6	32.80	-66.34	-18.98	-32.80	66.34	18.98	0.000%
7	32.80	-49.76	-18.98	-32.80	49.76	18.98	0.000%
8	38.30	-66.34	0.00	-38.30	66.34	0.00	0.000%
9	38.30	-49.76	0.00	-38.30	49.76	0.00	0.000%
10	32.83	-66.34	19.00	-32.83	66.34	-19.00	0.000%
11	32.83	-49.76	19.00	-32.83	49.76	-19.00	0.000%
12	19.12	-66.34	33.19	-19.12	66.34	-33.19	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
13	19.12	-49.76	33.19	-19.12	49.76	-33.19	0.000%
14	0.00	-66.34	37.96	0.00	66.34	-37.96	0.000%
15	0.00	-49.76	37.96	0.00	49.76	-37.96	0.000%
16	-19.00	-66.34	32.98	19.00	66.34	-32.98	0.000%
17	-19.00	-49.76	32.98	19.00	49.76	-32.98	0.000%
18	-32.80	-66.34	18.98	32.80	66.34	-18.98	0.000%
19	-32.80	-49.76	18.98	32.80	49.76	-18.98	0.000%
20	-38.30	-66.34	0.00	38.30	66.34	0.00	0.000%
21	-38.30	-49.76	0.00	38.30	49.76	0.00	0.000%
22	-32.83	-66.34	-19.00	32.83	66.34	19.00	0.000%
23	-32.83	-49.76	-19.00	32.83	49.76	19.00	0.000%
24	-19.12	-66.34	-33.19	19.12	66.34	33.19	0.000%
25	-19.12	-49.76	-33.19	19.12	49.76	33.19	0.000%
26	0.00	-90.19	0.00	0.00	90.19	0.00	0.000%
27	0.00	-90.19	-8.27	0.00	90.19	8.27	0.000%
28	4.13	-90.19	-7.16	-4.13	90.19	7.16	0.000%
29	7.15	-90.19	-4.13	-7.15	90.19	4.13	0.000%
30	8.25	-90.19	0.00	-8.25	90.19	0.00	0.000%
31	7.15	-90.19	4.13	-7.15	90.19	-4.13	0.000%
32	4.13	-90.19	7.16	-4.13	90.19	-7.16	0.000%
33	0.00	-90.19	8.27	0.00	90.19	-8.27	0.000%
34	-4.13	-90.19	7.16	4.13	90.19	-7.16	0.000%
35	-7.15	-90.19	4.13	7.15	90.19	-4.13	0.000%
36	-8.25	-90.19	0.00	8.25	90.19	0.00	0.000%
37	-7.15	-90.19	-4.13	7.15	90.19	4.13	0.000%
38	-4.13	-90.19	-7.16	4.13	90.19	7.16	0.000%
39	0.00	-55.28	-8.24	0.00	55.28	8.24	0.000%
40	4.12	-55.28	-7.16	-4.12	55.28	7.16	0.000%
41	7.12	-55.28	-4.12	-7.12	55.28	4.12	0.000%
42	8.31	-55.28	0.00	-8.31	55.28	0.00	0.000%
43	7.13	-55.28	4.12	-7.13	55.28	-4.12	0.000%
44	4.15	-55.28	7.20	-4.15	55.28	-7.20	0.000%
45	0.00	-55.28	8.24	0.00	55.28	-8.24	0.000%
46	-4.12	-55.28	7.16	4.12	55.28	-7.16	0.000%
47	-7.12	-55.28	4.12	7.12	55.28	-4.12	0.000%
48	-8.31	-55.28	0.00	8.31	55.28	0.00	0.000%
49	-7.13	-55.28	-4.12	7.13	55.28	4.12	0.000%
50	-4.15	-55.28	-7.20	4.15	55.28	7.20	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	5	0.00000001	0.00037588
3	Yes	5	0.00000001	0.00013050
4	Yes	7	0.00000001	0.00019461
5	Yes	7	0.00000001	0.00004303
6	Yes	7	0.00000001	0.00020003
7	Yes	7	0.00000001	0.00004447
8	Yes	6	0.00000001	0.00011339
9	Yes	5	0.00000001	0.00086999
10	Yes	7	0.00000001	0.00019295
11	Yes	7	0.00000001	0.00004264
12	Yes	7	0.00000001	0.00019838
13	Yes	7	0.00000001	0.00004405
14	Yes	5	0.00000001	0.00037567
15	Yes	5	0.00000001	0.00013045
16	Yes	7	0.00000001	0.00019841
17	Yes	7	0.00000001	0.00004405
18	Yes	7	0.00000001	0.00019295
19	Yes	7	0.00000001	0.00004265
20	Yes	6	0.00000001	0.00011339
21	Yes	5	0.00000001	0.00086999
22	Yes	7	0.00000001	0.00020002

23	Yes	7	0.00000001	0.00004447
24	Yes	7	0.00000001	0.00019457
25	Yes	7	0.00000001	0.00004303
26	Yes	4	0.00000001	0.00034582
27	Yes	7	0.00000001	0.00014311
28	Yes	7	0.00000001	0.00017808
29	Yes	7	0.00000001	0.00017907
30	Yes	7	0.00000001	0.00014217
31	Yes	7	0.00000001	0.00017583
32	Yes	7	0.00000001	0.00017698
33	Yes	7	0.00000001	0.00014155
34	Yes	7	0.00000001	0.00017698
35	Yes	7	0.00000001	0.00017583
36	Yes	7	0.00000001	0.00014217
37	Yes	7	0.00000001	0.00017907
38	Yes	7	0.00000001	0.00017808
39	Yes	5	0.00000001	0.00007600
40	Yes	5	0.00000001	0.00076059
41	Yes	5	0.00000001	0.00082489
42	Yes	5	0.00000001	0.00012591
43	Yes	5	0.00000001	0.00074036
44	Yes	5	0.00000001	0.00080228
45	Yes	5	0.00000001	0.00007576
46	Yes	5	0.00000001	0.00080224
47	Yes	5	0.00000001	0.00074035
48	Yes	5	0.00000001	0.00012591
49	Yes	5	0.00000001	0.00082489
50	Yes	5	0.00000001	0.00076063

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150 - 145	26.085	39	1.7251	0.0062
L2	145 - 140	24.287	39	1.7041	0.0053
L3	140 - 135	22.528	39	1.6500	0.0045
L4	135 - 133	20.846	39	1.5566	0.0033
L5	133 - 132.75	20.204	39	1.5085	0.0028
L6	132.75 - 127.75	20.125	39	1.5057	0.0028
L7	127.75 - 123.75	18.581	39	1.4422	0.0023
L8	123.75 - 123.5	17.398	39	1.3808	0.0020
L9	123.5 - 118.75	17.325	39	1.3767	0.0020
L10	118.75 - 118.5	15.980	39	1.3280	0.0018
L11	118.5 - 117	15.910	39	1.3259	0.0018
L12	117 - 116.75	15.496	39	1.3133	0.0017
L13	116.75 - 111.75	15.427	39	1.3105	0.0017
L14	111.75 - 106.75	14.086	39	1.2493	0.0015
L15	106.75 - 101.75	12.813	39	1.1824	0.0014
L16	101.75 - 95.167	11.613	39	1.1097	0.0012
L17	99.5 - 94.5	11.098	39	1.0761	0.0011
L18	94.5 - 93.75	9.990	39	1.0360	0.0010
L19	93.75 - 93.5	9.828	39	1.0258	0.0010
L20	93.5 - 92.75	9.774	39	1.0228	0.0010
L21	92.75 - 92.5	9.614	39	1.0138	0.0010
L22	92.5 - 91.25	9.561	39	1.0113	0.0010
L23	91.25 - 91	9.298	39	0.9989	0.0009
L24	91 - 89.25	9.246	39	0.9963	0.0009
L25	89.25 - 89	8.884	39	0.9789	0.0009
L26	89 - 85.75	8.833	39	0.9765	0.0009
L27	85.75 - 85.5	8.178	39	0.9453	0.0009
L28	85.5 - 80.5	8.129	39	0.9421	0.0008
L29	80.5 - 75.5	7.177	39	0.8766	0.0007
L30	75.5 - 70.5	6.294	39	0.8096	0.0007
L31	70.5 - 68.083	5.482	39	0.7411	0.0006
L32	68.083 - 67.833	5.115	39	0.7083	0.0005
L33	67.833 - 67	5.078	39	0.7051	0.0005
L34	67 - 66.75	4.956	39	0.6945	0.0005

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L35	66.75 - 63.25	4.920	39	0.6919	0.0005
L36	63.25 - 63	4.426	39	0.6553	0.0005
L37	63 - 59.5	4.392	39	0.6531	0.0005
L38	59.5 - 59.25	3.925	39	0.6210	0.0004
L39	59.25 - 56.25	3.893	39	0.6188	0.0004
L40	56.25 - 56	3.512	39	0.5921	0.0004
L41	56 - 55.75	3.481	39	0.5897	0.0004
L42	55.75 - 50.75	3.450	39	0.5866	0.0004
L43	50.75 - 44.667	2.869	39	0.5245	0.0003
L44	50 - 43.667	2.787	39	0.5152	0.0003
L45	43.667 - 38.667	2.130	39	0.4705	0.0003
L46	38.667 - 34.5	1.669	39	0.4103	0.0003
L47	34.5 - 34.25	1.332	39	0.3605	0.0002
L48	34.25 - 33	1.314	39	0.3581	0.0002
L49	33 - 32.75	1.221	39	0.3466	0.0002
L50	32.75 - 29.75	1.203	39	0.3443	0.0002
L51	29.75 - 29.5	0.996	39	0.3160	0.0002
L52	29.5 - 25	0.979	39	0.3138	0.0002
L53	25 - 24.75	0.703	39	0.2730	0.0002
L54	24.75 - 19.75	0.689	39	0.2702	0.0002
L55	19.75 - 14.75	0.435	39	0.2140	0.0001
L56	14.75 - 14.5	0.241	39	0.1575	0.0001
L57	14.5 - 14.25	0.233	39	0.1547	0.0001
L58	14.25 - 12.25	0.225	39	0.1519	0.0001
L59	12.25 - 12	0.166	39	0.1297	0.0001
L60	12 - 11.5	0.159	39	0.1268	0.0001
L61	11.5 - 11.25	0.146	39	0.1211	0.0001
L62	11.25 - 9.25	0.140	39	0.1186	0.0001
L63	9.25 - 9	0.094	39	0.0981	0.0001
L64	9 - 4.5	0.089	39	0.0954	0.0001
L65	4.5 - 4.25	0.022	39	0.0469	0.0000
L66	4.25 - 3	0.020	39	0.0443	0.0000
L67	3 - 2.75	0.010	39	0.0315	0.0000
L68	2.75 - 0	0.008	39	0.0289	0.0000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.0000	(2) MX06FRO660-03 w/ Mount Pipe	39	26.085	1.7251	0.0062	7476
140.0000	DMP65R-BU6D w/ Mount Pipe	39	22.528	1.6500	0.0045	3954
128.0000	AIR6449 B41_T-MOBILE	39	18.656	1.4458	0.0024	4113
110.0000	MX08FRO665-21 w/ Mount Pipe	39	13.633	1.2264	0.0015	4359

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150 - 145	120.744	2	7.9765	0.0277
L2	145 - 140	112.451	2	7.8821	0.0233
L3	140 - 135	104.340	2	7.6345	0.0197
L4	135 - 133	96.573	2	7.2083	0.0142
L5	133 - 132.75	93.607	2	6.9878	0.0123
L6	132.75 - 127.75	93.242	2	6.9751	0.0122
L7	127.75 - 123.75	86.103	2	6.6834	0.0102
L8	123.75 - 123.5	80.631	2	6.4004	0.0088
L9	123.5 - 118.75	80.297	2	6.3815	0.0087
L10	118.75 - 118.5	74.071	2	6.1568	0.0078

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L11	118.5 - 117	73.749	2	6.1473	0.0078
L12	117 - 116.75	71.831	2	6.0893	0.0076
L13	116.75 - 111.75	71.513	2	6.0763	0.0076
L14	111.75 - 106.75	65.307	2	5.7934	0.0067
L15	106.75 - 101.75	59.410	2	5.4843	0.0059
L16	101.75 - 95.167	53.850	2	5.1478	0.0051
L17	99.5 - 94.5	51.464	2	4.9923	0.0048
L18	94.5 - 93.75	46.329	2	4.8064	0.0044
L19	93.75 - 93.5	45.579	2	4.7592	0.0043
L20	93.5 - 92.75	45.330	2	4.7453	0.0043
L21	92.75 - 92.5	44.589	2	4.7038	0.0042
L22	92.5 - 91.25	44.343	2	4.6924	0.0042
L23	91.25 - 91	43.124	2	4.6345	0.0041
L24	91 - 89.25	42.881	2	4.6228	0.0041
L25	89.25 - 89	41.204	2	4.5420	0.0040
L26	89 - 85.75	40.966	2	4.5311	0.0039
L27	85.75 - 85.5	37.934	2	4.3863	0.0037
L28	85.5 - 80.5	37.705	2	4.3716	0.0037
L29	80.5 - 75.5	33.290	2	4.0679	0.0033
L30	75.5 - 70.5	29.197	2	3.7568	0.0029
L31	70.5 - 68.083	25.432	2	3.4392	0.0025
L32	68.083 - 67.833	23.730	2	3.2869	0.0023
L33	67.833 - 67	23.559	2	3.2720	0.0023
L34	67 - 66.75	22.992	2	3.2230	0.0023
L35	66.75 - 63.25	22.824	2	3.2111	0.0023
L36	63.25 - 63	20.534	2	3.0413	0.0021
L37	63 - 59.5	20.375	2	3.0308	0.0021
L38	59.5 - 59.25	18.208	2	2.8820	0.0019
L39	59.25 - 56.25	18.058	2	2.8718	0.0019
L40	56.25 - 56	16.293	2	2.7480	0.0018
L41	56 - 55.75	16.150	2	2.7365	0.0018
L42	55.75 - 50.75	16.007	2	2.7222	0.0018
L43	50.75 - 44.667	13.308	2	2.4341	0.0015
L44	50 - 43.667	12.929	2	2.3906	0.0015
L45	43.667 - 38.667	9.881	2	2.1833	0.0013
L46	38.667 - 34.5	7.741	2	1.9040	0.0011
L47	34.5 - 34.25	6.181	2	1.6726	0.0010
L48	34.25 - 33	6.094	2	1.6618	0.0010
L49	33 - 32.75	5.666	2	1.6082	0.0009
L50	32.75 - 29.75	5.582	2	1.5975	0.0009
L51	29.75 - 29.5	4.620	2	1.4663	0.0008
L52	29.5 - 25	4.543	2	1.4559	0.0008
L53	25 - 24.75	3.261	2	1.2666	0.0007
L54	24.75 - 19.75	3.195	2	1.2537	0.0007
L55	19.75 - 14.75	2.019	2	0.9928	0.0005
L56	14.75 - 14.5	1.117	2	0.7305	0.0004
L57	14.5 - 14.25	1.079	2	0.7176	0.0004
L58	14.25 - 12.25	1.042	2	0.7046	0.0004
L59	12.25 - 12	0.768	2	0.6016	0.0003
L60	12 - 11.5	0.737	2	0.5882	0.0003
L61	11.5 - 11.25	0.677	2	0.5616	0.0003
L62	11.25 - 9.25	0.648	2	0.5499	0.0003
L63	9.25 - 9	0.437	2	0.4549	0.0002
L64	9 - 4.5	0.414	2	0.4427	0.0002
L65	4.5 - 4.25	0.103	2	0.2177	0.0001
L66	4.25 - 3	0.092	2	0.2056	0.0001
L67	3 - 2.75	0.046	2	0.1462	0.0001
L68	2.75 - 0	0.039	2	0.1342	0.0001

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.0000	(2) MX06FRO660-03 w/ Mount	2	120.744	7.9765	0.0277	1701

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
	Pipe					
140.0000	DMP65R-BU6D w/ Mount Pipe	2	104.340	7.6345	0.0197	895
128.0000	AIR6449 B41_T-MOBILE	2	86.452	6.6999	0.0103	917
110.0000	MX08FRO665-21 w/ Mount Pipe	2	63.207	5.6874	0.0065	961

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	150 - 145 (1)	TP16.9374x16x0.1875	5.0000	0.0000	0.0	10.1127	-3.26	591.60	0.006
L2	145 - 140 (2)	TP17.8748x16.9374x0.1875	5.0000	0.0000	0.0	10.6787	-3.50	624.70	0.006
L3	140 - 135 (3)	TP18.8122x17.8748x0.1875	5.0000	0.0000	0.0	11.2446	-7.70	657.81	0.012
L4	135 - 133 (4)	TP19.1871x18.8122x0.1875	2.0000	0.0000	0.0	11.4710	-7.89	671.05	0.012
L5	133 - 132.75 (5)	TP19.234x19.1871x0.45	0.2500	0.0000	0.0	27.2180	-7.94	1592.25	0.005
L6	132.75 - 127.75 (6)	TP20.1714x19.234x0.4375	5.0000	0.0000	0.0	27.8001	-12.35	1626.31	0.008
L7	127.75 - 123.75 (7)	TP20.9213x20.1714x0.425	4.0000	0.0000	0.0	28.0492	-12.95	1640.88	0.008
L8	123.75 - 123.5 (8)	TP20.9682x20.9213x0.425	0.2500	0.0000	0.0	28.1133	-13.00	1644.63	0.008
L9	123.5 - 118.75 (9)	TP21.8587x20.9682x0.7625	4.7500	0.0000	0.0	51.7964	-14.03	3030.09	0.005
L10	118.75 - 118.5 (10)	TP21.9056x21.8587x1.0375	0.2500	0.0000	0.0	69.7150	-14.11	4078.33	0.003
L11	118.5 - 117 (11)	TP22.1868x21.9056x1.0125	1.5000	0.0000	0.0	69.0335	-14.51	4038.46	0.004
L12	117 - 116.75 (12)	TP22.2337x22.1868x0.75	0.2500	0.0000	0.0	51.8830	-14.58	3035.16	0.005
L13	116.75 - 111.75 (13)	TP23.171x22.2337x0.7125	5.0000	0.0000	0.0	51.5255	-15.71	3014.24	0.005
L14	111.75 - 106.75 (14)	TP24.1084x23.171x0.6875	5.0000	0.0000	0.0	51.8481	-19.79	3033.11	0.007
L15	106.75 - 101.75 (15)	TP25.0458x24.1084x0.6625	5.0000	0.0000	0.0	52.0157	-21.01	3042.92	0.007
L16	101.75 - 95.167 (16)	TP26.28x25.0458x0.6625	6.5830	0.0000	0.0	52.9156	-21.57	3095.56	0.007
L17	95.167 - 94.5 (17)	TP26.0307x25.0927x0.7875	5.0000	0.0000	0.0	64.0105	-23.81	3744.61	0.006
L18	94.5 - 93.75 (18)	TP26.1714x26.0307x0.7875	0.7500	0.0000	0.0	64.3673	-24.03	3765.49	0.006
L19	93.75 - 93.5 (19)	TP26.2183x26.1714x0.9125	0.2500	0.0000	0.0	74.3549	-24.12	4349.76	0.006
L20	93.5 - 92.75 (20)	TP26.359x26.2183x0.9125	0.7500	0.0000	0.0	74.7683	-24.35	4373.95	0.006
L21	92.75 - 92.5 (21)	TP26.4059x26.359x1.1375	0.2500	0.0000	0.0	92.5520	-24.46	5414.29	0.005
L22	92.5 - 91.25 (22)	TP26.6405x26.4059x1.1125	1.2500	0.0000	0.0	91.4475	-24.92	5349.68	0.005
L23	91.25 - 91 (23)	TP26.6874x26.6405x1.1125	0.2500	0.0000	0.0	91.6155	-25.02	5359.51	0.005
L24	91 - 89.25 (24)	TP27.0157x26.6874x1.1125	1.7500	0.0000	0.0	92.7917	-25.67	5428.31	0.005
L25	89.25 - 89 (25)	TP27.0626x27.0157x1.2125	0.2500	0.0000	0.0	100.9250	-25.79	5904.12	0.004

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L26	89 - 85.75 (26)	TP27.6723x27.0626x1.1875	3.2500	0.0000	0.0	101.2710	-27.11	5924.37	0.005
L27	85.75 - 85.5 (27)	TP27.7192x27.6723x0.8625	0.2500	0.0000	0.0	74.5878	-27.20	4363.39	0.006
L28	85.5 - 80.5 (28)	TP28.6573x27.7192x0.8375	5.0000	0.0000	0.0	75.0230	-28.84	4388.85	0.007
L29	80.5 - 75.5 (29)	TP29.5954x28.6573x0.8125	5.0000	0.0000	0.0	75.3031	-30.52	4405.23	0.007
L30	75.5 - 70.5 (30)	TP30.5334x29.5954x0.7875	5.0000	0.0000	0.0	75.4282	-32.23	4412.55	0.007
L31	70.5 - 68.083 (31)	TP30.9869x30.5334x0.7875	2.4170	0.0000	0.0	76.5781	-33.07	4479.82	0.007
L32	68.083 - 67.833 (32)	TP31.0338x30.9869x0.8375	0.2500	0.0000	0.0	81.4318	-33.18	4763.76	0.007
L33	67.833 - 67 (33)	TP31.1901x31.0338x0.8375	0.8330	0.0000	0.0	81.8533	-33.47	4788.42	0.007
L34	67 - 66.75 (34)	TP31.237x31.1901x1.0625	0.2500	0.0000	0.0	103.2340	-33.59	6039.21	0.006
L35	66.75 - 63.25 (35)	TP31.8936x31.237x1.0375	3.5000	0.0000	0.0	103.0830	-35.10	6030.33	0.006
L36	63.25 - 63 (36)	TP31.9405x31.8936x1.2125	0.2500	0.0000	0.0	119.9700	-35.23	7018.23	0.005
L37	63 - 59.5 (37)	TP32.5971x31.9405x1.1875	3.5000	0.0000	0.0	120.1030	-36.93	7026.00	0.005
L38	59.5 - 59.25 (38)	TP32.6441x32.5971x1.2375	0.2500	0.0000	0.0	125.1470	-37.07	7321.11	0.005
L39	59.25 - 56.25 (39)	TP33.2069x32.6441x1.2125	3.0000	0.0000	0.0	124.9140	-38.58	7307.47	0.005
L40	56.25 - 56 (40)	TP33.2538x33.2069x1.0625	0.2500	0.0000	0.0	110.1340	-38.70	6442.87	0.006
L41	56 - 55.75 (41)	TP33.3007x33.2538x0.8375	0.2500	0.0000	0.0	87.5451	-38.80	5121.39	0.008
L42	55.75 - 50.75 (42)	TP34.2388x33.3007x0.825	5.0000	0.0000	0.0	88.7636	-40.74	5192.67	0.008
L43	50.75 - 44.667 (43)	TP35.38x34.2388x0.8125	6.0830	0.0000	0.0	87.8196	-41.05	5137.45	0.008
L44	44.667 - 43.667 (44)	TP34.942x33.7545x0.875	6.3330	0.0000	0.0	95.9837	-45.44	5615.05	0.008
L45	43.667 - 38.667 (45)	TP35.8795x34.942x0.8625	5.0000	0.0000	0.0	97.2510	-47.59	5689.19	0.008
L46	38.667 - 34.5 (46)	TP36.6609x35.8795x0.85	4.1670	0.0000	0.0	98.0144	-49.40	5733.84	0.009
L47	34.5 - 34.25 (47)	TP36.7078x36.6609x1.1	0.2500	0.0000	0.0	126.1230	-49.54	7378.18	0.007
L48	34.25 - 33 (48)	TP36.9421x36.7078x1.1	1.2500	0.0000	0.0	126.9530	-50.19	7426.74	0.007
L49	33 - 32.75 (49)	TP36.989x36.9421x1.1	0.2500	0.0000	0.0	127.1190	-50.34	7436.46	0.007
L50	32.75 - 29.75 (50)	TP37.5516x36.989x1.075	3.0000	0.0000	0.0	126.2640	-51.93	7386.42	0.007
L51	29.75 - 29.5 (51)	TP37.5984x37.5516x1.125	0.2500	0.0000	0.0	132.1250	-52.07	7729.31	0.007
L52	29.5 - 25 (52)	TP38.4422x37.5984x1.1	4.5000	0.0000	0.0	132.2660	-54.54	7737.57	0.007
L53	25 - 24.75 (53)	TP38.4891x38.4422x0.8625	0.2500	0.0000	0.0	104.4990	-54.66	6113.16	0.009
L54	24.75 - 19.75 (54)	TP39.4267x38.4891x0.85	5.0000	0.0000	0.0	105.5840	-56.97	6176.68	0.009
L55	19.75 - 14.75 (55)	TP40.3642x39.4267x0.825	5.0000	0.0000	0.0	105.0360	-59.31	6144.60	0.010
L56	14.75 - 14.5 (56)	TP40.4111x40.3642x0.825	0.2500	0.0000	0.0	105.1600	-59.44	6151.89	0.010
L57	14.5 - 14.25 (57)	TP40.458x40.4111x0.825	0.2500	0.0000	0.0	105.2850	-59.56	6159.17	0.010
L58	14.25 - 12.25 (58)	TP40.833x40.458x0.825	2.0000	0.0000	0.0	106.2810	-60.50	6217.45	0.010
L59	12.25 - 12 (59)	TP40.8799x40.833x0.7875	0.2500	0.0000	0.0	101.6640	-60.63	5947.36	0.010
L60	12 - 11.5 (60)	TP40.9736x40.8799x0.78	0.5000	0.0000	0.0	101.90	-60.86	5961.27	0.010

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
		75				20			
L61	11.5 - 11.25 (61)	TP41.0205x40.9736x0.9	0.2500	0.0000	0.0	116.13 30	-60.93	6793.80	0.009
L62	11.25 - 9.25 (62)	TP41.3955x41.0205x0.88 75	2.0000	0.0000	0.0	115.22 60	-61.74	6740.72	0.009
L63	9.25 - 9 (63)	TP41.4424x41.3955x0.85	0.2500	0.0000	0.0	110.97 30	-62.05	6491.93	0.010
L64	9 - 4.5 (64)	TP42.2862x41.4424x0.82 5	4.5000	0.0000	0.0	107.90 00	-62.37	6312.16	0.010
L65	4.5 - 4.25 (65)	TP42.3331x42.2862x0.85	0.2500	0.0000	0.0	113.41 10	-64.27	6634.54	0.010
L66	4.25 - 3 (66)	TP42.5675x42.3331x0.85	1.2500	0.0000	0.0	113.53 90	-64.63	6642.04	0.010
L67	3 - 2.75 (67)	TP42.6143x42.5675x0.83 75	0.2500	0.0000	0.0	112.53 50	-65.00	6583.31	0.010
L68	2.75 - 0 (68)	TP43.13x42.6143x0.825	2.7500	0.0000	0.0	111.01 30	-65.38	6494.28	0.010

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	150 - 145 (1)	TP16.9374x16x0.1875	45.50	246.96	0.184	0.00	246.96	0.000
L2	145 - 140 (2)	TP17.8748x16.9374x0.18 75	92.80	270.48	0.343	0.00	270.48	0.000
L3	140 - 135 (3)	TP18.8122x17.8748x0.18 75	181.71	294.47	0.617	0.00	294.47	0.000
L4	135 - 133 (4)	TP19.1871x18.8122x0.18 75	216.22	304.18	0.711	0.00	304.18	0.000
L5	133 - 132.75 (5)	TP19.234x19.1871x0.45	220.55	755.73	0.292	0.00	755.73	0.000
L6	132.75 - 127.75 (6)	TP20.1714x19.234x0.437 5	309.57	812.34	0.381	0.00	812.34	0.000
L7	127.75 - 123.75 (7)	TP20.9213x20.1714x0.42 5	399.64	852.48	0.469	0.00	852.48	0.000
L8	123.75 - 123.5 (8)	TP20.9682x20.9213x0.42 5	405.31	856.42	0.473	0.00	856.42	0.000
L9	123.5 - 118.75 (9)	TP21.8587x20.9682x0.76 25	514.33	1596.19	0.322	0.00	1596.19	0.000
L10	118.75 - 118.5 (10)	TP21.9056x21.8587x1.03 75	520.13	2097.68	0.248	0.00	2097.68	0.000
L11	118.5 - 117 (11)	TP22.1868x21.9056x1.01 25	555.09	2111.47	0.263	0.00	2111.47	0.000
L12	117 - 116.75 (12)	TP22.2337x22.1868x0.75	560.94	1630.17	0.344	0.00	1630.17	0.000
L13	116.75 - 111.75 (13)	TP23.171x22.2337x0.712 5	679.25	1697.63	0.400	0.00	1697.63	0.000
L14	111.75 - 106.75 (14)	TP24.1084x23.171x0.687 5	811.47	1785.56	0.454	0.00	1785.56	0.000
L15	106.75 - 101.75 (15)	TP25.0458x24.1084x0.66 25	952.08	1868.90	0.509	0.00	1868.90	0.000
L16	101.75 - 95.167 (16)	TP26.28x25.0458x0.6625	1016.14	1935.00	0.525	0.00	1935.00	0.000
L17	95.167 - 94.5 (17)	TP26.0307x25.0927x0.78 75	1160.66	2371.68	0.489	0.00	2371.68	0.000
L18	94.5 - 93.75 (18)	TP26.1714x26.0307x0.78 75	1182.59	2398.59	0.493	0.00	2398.59	0.000
L19	93.75 - 93.5 (19)	TP26.2183x26.1714x0.91 25	1189.92	2748.82	0.433	0.00	2748.82	0.000
L20	93.5 - 92.75 (20)	TP26.359x26.2183x0.912 5	1211.93	2780.01	0.436	0.00	2780.01	0.000
L21	92.75 - 92.5 (21)	TP26.4059x26.359x1.137 5	1219.28	3387.21	0.360	0.00	3387.21	0.000
L22	92.5 - 91.25	TP26.6405x26.4059x1.11	1256.14	3385.82	0.371	0.00	3385.82	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
	(22)	25						
L23	91.25 - 91	TP26.6874x26.6405x1.11	1263.54	3398.53	0.372	0.00	3398.53	0.000
	(23)	25						
L24	91 - 89.25	TP27.0157x26.6874x1.11	1315.50	3488.19	0.377	0.00	3488.19	0.000
	(24)	25						
L25	89.25 - 89	TP27.0626x27.0157x1.21	1322.95	3771.86	0.351	0.00	3771.86	0.000
	(25)	25						
L26	89 - 85.75	TP27.6723x27.0626x1.18	1420.47	3885.41	0.366	0.00	3885.41	0.000
	(26)	75						
L27	85.75 - 85.5	TP27.7192x27.6723x0.86	1428.03	2937.61	0.486	0.00	2937.61	0.000
	(27)	25						
L28	85.5 - 80.5	TP28.6573x27.7192x0.83	1580.43	3066.68	0.515	0.00	3066.68	0.000
	(28)	75						
L29	80.5 - 75.5	TP29.5954x28.6573x0.81	1735.34	3190.50	0.544	0.00	3190.50	0.000
	(29)	25						
L30	75.5 - 70.5	TP30.5334x29.5954x0.78	1892.75	3308.38	0.572	0.00	3308.38	0.000
	(30)	75						
L31	70.5 - 68.083	TP30.9869x30.5334x0.78	1969.72	3411.33	0.577	0.00	3411.33	0.000
	(31)	75						
L32	68.083 -	TP31.0338x30.9869x0.83	1977.72	3621.32	0.546	0.00	3621.32	0.000
	67.833 (32)	75						
L33	67.833 - 67	TP31.1901x31.0338x0.83	2004.40	3659.42	0.548	0.00	3659.42	0.000
	(33)	75						
L34	67 - 66.75	TP31.237x31.1901x1.062	2012.43	4554.45	0.442	0.00	4554.45	0.000
	(34)	5						
L35	66.75 - 63.25	TP31.8936x31.237x1.037	2125.45	4657.63	0.456	0.00	4657.63	0.000
	(35)	5						
L36	63.25 - 63	TP31.9405x31.8936x1.21	2133.57	5367.85	0.397	0.00	5367.85	0.000
	(36)	25						
L37	63 - 59.5 (37)	TP32.5971x31.9405x1.18	2248.07	5501.74	0.409	0.00	5501.74	0.000
		75						
L38	59.5 - 59.25	TP32.6441x32.5971x1.23	2256.30	5723.47	0.394	0.00	5723.47	0.000
	(38)	75						
L39	59.25 - 56.25	TP33.2069x32.6441x1.21	2355.64	5828.17	0.404	0.00	5828.17	0.000
	(39)	25						
L40	56.25 - 56	TP33.2538x33.2069x1.06	2363.97	5194.70	0.455	0.00	5194.70	0.000
	(40)	25						
L41	56 - 55.75	TP33.3007x33.2538x0.83	2372.30	4193.37	0.566	0.00	4193.37	0.000
	(41)	75						
L42	55.75 - 50.75	TP34.2388x33.3007x0.82	2540.18	4380.96	0.580	0.00	4380.96	0.000
	(42)	5						
L43	50.75 -	TP35.38x34.2388x0.8125	2565.57	4356.30	0.589	0.00	4356.30	0.000
	44.667 (43)							
L44	44.667 -	TP34.942x33.7545x0.875	2782.75	4825.23	0.577	0.00	4825.23	0.000
	43.667 (44)							
L45	43.667 -	TP35.8795x34.942x0.862	2957.17	5030.46	0.588	0.00	5030.46	0.000
	38.667 (45)	5						
L46	38.667 - 34.5	TP36.6609x35.8795x0.85	3104.17	5189.42	0.598	0.00	5189.42	0.000
	(46)							
L47	34.5 - 34.25	TP36.7078x36.6609x1.1	3113.03	6593.65	0.472	0.00	6593.65	0.000
	(47)							
L48	34.25 - 33	TP36.9421x36.7078x1.1	3157.46	6682.05	0.473	0.00	6682.05	0.000
	(48)							
L49	33 - 32.75	TP36.989x36.9421x1.1	3166.36	6699.80	0.473	0.00	6699.80	0.000
	(49)							
L50	32.75 - 29.75	TP37.5516x36.989x1.075	3273.63	6771.41	0.483	0.00	6771.41	0.000
	(50)							
L51	29.75 - 29.5	TP37.5984x37.5516x1.12	3282.61	7075.71	0.464	0.00	7075.71	0.000
	(51)	5						
L52	29.5 - 25 (52)	TP38.4422x37.5984x1.1	3445.16	7261.77	0.474	0.00	7261.77	0.000
L53	25 - 24.75	TP38.4891x38.4422x0.86	3454.24	5817.87	0.594	0.00	5817.87	0.000
	(53)	25						
L54	24.75 - 19.75	TP39.4267x38.4891x0.85	3636.87	6031.98	0.603	0.00	6031.98	0.000
	(54)							
L55	19.75 - 14.75	TP40.3642x39.4267x0.82	3821.22	6157.42	0.621	0.00	6157.42	0.000
	(55)	5						
L56	14.75 - 14.5	TP40.4111x40.3642x0.82	3830.47	6172.18	0.621	0.00	6172.18	0.000
	(56)	5						
L57	14.5 - 14.25	TP40.458x40.4111x0.825	3839.73	6186.96	0.621	0.00	6186.96	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
	(57)							
L58	14.25 - 12.25 (58)	TP40.833x40.458x0.825	3913.98	6305.80	0.621	0.00	6305.80	0.000
L59	12.25 - 12 (59)	TP40.8799x40.833x0.7875	3923.28	6050.39	0.648	0.00	6050.39	0.000
L60	12 - 11.5 (60)	TP40.9736x40.8799x0.7875	3941.89	6078.99	0.648	0.00	6078.99	0.000
L61	11.5 - 11.25 (61)	TP41.0205x40.9736x0.9	3941.89	6889.24	0.572	0.00	6889.24	0.000
L62	11.25 - 9.25 (62)	TP41.3955x41.0205x0.8875	3988.47	6880.53	0.580	0.00	6880.53	0.000
L63	9.25 - 9 (63)	TP41.4424x41.3955x0.85	4025.82	6670.39	0.604	0.00	6670.39	0.000
L64	9 - 4.5 (64)	TP42.2862x41.4424x0.825	4035.17	6501.33	0.621	0.00	6501.33	0.000
L65	4.5 - 4.25 (65)	TP42.3331x42.2862x0.85	4204.05	6969.75	0.603	0.00	6969.75	0.000
L66	4.25 - 3 (66)	TP42.5675x42.3331x0.85	4213.47	6985.69	0.603	0.00	6985.69	0.000
L67	3 - 2.75 (67)	TP42.6143x42.5675x0.8375	4260.63	6968.00	0.611	0.00	6968.00	0.000
L68	2.75 - 0 (68)	TP43.13x42.6143x0.825	4270.07	6885.77	0.620	0.00	6885.77	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	150 - 145 (1)	TP16.9374x16x0.1875	9.26	175.49	0.053	0.00	261.49	0.000
L2	145 - 140 (2)	TP17.8748x16.9374x0.1875	9.66	185.43	0.052	0.00	291.58	0.000
L3	140 - 135 (3)	TP18.8122x17.8748x0.1875	17.18	195.36	0.088	0.00	323.30	0.000
L4	135 - 133 (4)	TP19.1871x18.8122x0.1875	17.34	199.33	0.087	0.00	336.45	0.000
L5	133 - 132.75 (5)	TP19.234x19.1871x0.45	17.35	476.48	0.036	0.00	789.26	0.000
L6	132.75 - 127.75 (6)	TP20.1714x19.234x0.4375	22.35	483.26	0.046	0.00	846.91	0.000
L7	127.75 - 123.75 (7)	TP20.9213x20.1714x0.425	22.70	487.76	0.047	0.00	887.51	0.000
L8	123.75 - 123.5 (8)	TP20.9682x20.9213x0.425	22.72	492.26	0.046	0.00	891.58	0.000
L9	123.5 - 118.75 (9)	TP21.8587x20.9682x0.7625	23.20	899.43	0.026	0.00	1686.87	0.000
L10	118.75 - 118.5 (10)	TP21.9056x21.8587x1.0375	23.22	1220.75	0.019	0.00	2245.88	0.000
L11	118.5 - 117 (11)	TP22.1868x21.9056x1.0125	23.39	1195.45	0.020	0.00	2256.55	0.000
L12	117 - 116.75 (12)	TP22.2337x22.1868x0.75	23.41	908.56	0.026	0.00	1720.72	0.000
L13	116.75 - 111.75 (13)	TP23.171x22.2337x0.7125	23.92	896.72	0.027	0.00	1786.41	0.000
L14	111.75 - 106.75 (14)	TP24.1084x23.171x0.6875	27.89	902.65	0.031	0.00	1874.63	0.000
L15	106.75 - 101.75 (15)	TP25.0458x24.1084x0.6625	28.38	905.86	0.031	0.00	1957.97	0.000
L16	101.75 - 95.167 (16)	TP26.28x25.0458x0.6625	28.59	920.77	0.031	0.00	2026.29	0.000
L17	95.167 - 94.5 (17)	TP26.0307x25.0927x0.7875	29.22	1117.82	0.026	0.00	2494.44	0.000
L18	94.5 - 93.75 (18)	TP26.1714x26.0307x0.7875	29.30	1123.38	0.026	0.00	2522.32	0.000
L19	93.75 - 93.5 (19)	TP26.2183x26.1714x0.9125	29.32	1302.51	0.023	0.00	2904.73	0.000
L20	93.5 - 92.75 (20)	TP26.359x26.2183x0.9125	29.40	1304.93	0.023	0.00	2937.13	0.000
L21	92.75 - 92.5	TP26.4059x26.359x1.137	29.42	1621.27	0.018	0.00	3610.28	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 $\frac{T_u}{\phi T_n}$
	(21)	5						
L22	92.5 - 91.25 (22)	TP26.6405x26.4059x1.1125	29.57	1590.16	0.019	0.00	3603.83	0.000
L23	91.25 - 91 (23)	TP26.6874x26.6405x1.1125	29.60	1604.90	0.018	0.00	3617.09	0.000
L24	91 - 89.25 (24)	TP27.0157x26.6874x1.1125	29.81	1607.85	0.019	0.00	3710.56	0.000
L25	89.25 - 89 (25)	TP27.0626x27.0157x1.2125	29.82	1768.02	0.017	0.00	4027.53	0.000
L26	89 - 85.75 (26)	TP27.6723x27.0626x1.1875	30.21	1763.67	0.017	0.00	4140.57	0.000
L27	85.75 - 85.5 (27)	TP27.7192x27.6723x0.8625	30.23	1306.73	0.023	0.00	3092.42	0.000
L28	85.5 - 80.5 (28)	TP28.6573x27.7192x0.8375	30.75	1307.77	0.024	0.00	3222.00	0.000
L29	80.5 - 75.5 (29)	TP29.5954x28.6573x0.8125	31.25	1312.96	0.024	0.00	3345.98	0.000
L30	75.5 - 70.5 (30)	TP30.5334x29.5954x0.7875	31.75	1315.42	0.024	0.00	3463.68	0.000
L31	70.5 - 68.083 (31)	TP30.9869x30.5334x0.7875	31.99	1333.85	0.024	0.00	3570.09	0.000
L32	68.083 - 67.833 (32)	TP31.0338x30.9869x0.8375	32.00	1426.91	0.022	0.00	3795.98	0.000
L33	67.833 - 67 (33)	TP31.1901x31.0338x0.8375	32.09	1429.13	0.022	0.00	3835.38	0.000
L34	67 - 66.75 (34)	TP31.237x31.1901x1.0625	32.11	1808.95	0.018	0.00	4808.84	0.000
L35	66.75 - 63.25 (35)	TP31.8936x31.237x1.0375	32.50	1796.27	0.018	0.00	4910.24	0.000
L36	63.25 - 63 (36)	TP31.9405x31.8936x1.2125	32.52	2102.26	0.015	0.00	5690.93	0.000
L37	63 - 59.5 (37)	TP32.5971x31.9405x1.1875	32.93	2093.11	0.016	0.00	5823.62	0.000
L38	59.5 - 59.25 (38)	TP32.6441x32.5971x1.2375	32.95	2193.05	0.015	0.00	6067.62	0.000
L39	59.25 - 56.25 (39)	TP33.2069x32.6441x1.2125	33.30	2179.39	0.015	0.00	6169.67	0.000
L40	56.25 - 56 (40)	TP33.2538x33.2069x1.0625	33.32	1930.04	0.017	0.00	5473.17	0.000
L41	56 - 55.75 (41)	TP33.3007x33.2538x0.8375	33.35	1534.20	0.022	0.00	4387.32	0.000
L42	55.75 - 50.75 (42)	TP34.2388x33.3007x0.8125	33.84	1549.06	0.022	0.00	4578.65	0.000
L43	50.75 - 44.667 (43)	TP35.38x34.2388x0.8125	33.90	1534.77	0.022	0.00	4550.73	0.000
L44	44.667 - 43.667 (44)	TP34.942x33.7545x0.875	34.69	1675.24	0.021	0.00	5047.87	0.000
L45	43.667 - 38.667 (45)	TP35.8795x34.942x0.8625	35.13	1697.62	0.021	0.00	5257.15	0.000
L46	38.667 - 34.5 (46)	TP36.6609x35.8795x0.85	35.48	1710.77	0.021	0.00	5418.53	0.000
L47	34.5 - 34.25 (47)	TP36.7078x36.6609x1.1	35.49	2210.54	0.016	0.00	6932.90	0.000
L48	34.25 - 33 (48)	TP36.9421x36.7078x1.1	35.62	2213.45	0.016	0.00	7024.47	0.000
L49	33 - 32.75 (49)	TP36.989x36.9421x1.1	35.63	2228.02	0.016	0.00	7042.86	0.000
L50	32.75 - 29.75 (50)	TP37.5516x36.989x1.075	35.92	2204.54	0.016	0.00	7109.99	0.000
L51	29.75 - 29.5 (51)	TP37.5984x37.5516x1.125	35.93	2315.81	0.016	0.00	7439.42	0.000
L52	29.5 - 25 (52)	TP38.4422x37.5984x1.1	36.35	2308.16	0.016	0.00	7624.76	0.000
L53	25 - 24.75 (53)	TP38.4891x38.4422x0.8625	36.35	1831.66	0.020	0.00	6069.91	0.000
L54	24.75 - 19.75 (54)	TP39.4267x38.4891x0.85	36.73	1844.00	0.020	0.00	6287.83	0.000
L55	19.75 - 14.75 (55)	TP40.3642x39.4267x0.825	37.06	1834.64	0.020	0.00	6411.25	0.000
L56	14.75 - 14.5	TP40.4111x40.3642x0.82	37.06	1843.38	0.020	0.00	6426.47	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 $\frac{T_u}{\phi T_n}$
	(56)	5						
L57	14.5 - 14.25 (57)	TP40.458x40.4111x0.825	37.07	1845.57	0.020	0.00	6441.69	0.000
L58	14.25 - 12.25 (58)	TP40.833x40.458x0.825	37.21	1856.49	0.020	0.00	6564.17	0.000
L59	12.25 - 12 (59)	TP40.8799x40.833x0.7875	37.21	1782.12	0.021	0.00	6292.27	0.000
L60	12 - 11.5 (60)	TP40.9736x40.8799x0.7875	37.24	1784.21	0.021	0.00	6321.72	0.000
L61	11.5 - 11.25 (61)	TP41.0205x40.9736x0.9	37.25	2038.14	0.018	0.00	7184.43	0.000
L62	11.25 - 9.25 (62)	TP41.3955x41.0205x0.8875	37.40	2022.22	0.018	0.00	7172.22	0.000
L63	9.25 - 9 (63)	TP41.4424x41.3955x0.85	37.40	1947.58	0.019	0.00	6946.05	0.000
L64	9 - 4.5 (64)	TP42.2862x41.4424x0.825	37.49	1893.65	0.020	0.00	6765.67	0.000
L65	4.5 - 4.25 (65)	TP42.3331x42.2862x0.85	37.69	1990.36	0.019	0.00	7254.57	0.000
L66	4.25 - 3 (66)	TP42.5675x42.3331x0.85	37.80	1992.61	0.019	0.00	7270.99	0.000
L67	3 - 2.75 (67)	TP42.6143x42.5675x0.8375	37.79	1974.99	0.019	0.00	7249.59	0.000
L68	2.75 - 0 (68)	TP43.13x42.6143x0.825	37.91	1948.29	0.019	0.00	7161.73	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	150 - 145 (1)	0.006	0.184	0.000	0.053	0.000	0.193	1.050	4.8.2
L2	145 - 140 (2)	0.006	0.343	0.000	0.052	0.000	0.351	1.050	4.8.2
L3	140 - 135 (3)	0.012	0.617	0.000	0.088	0.000	0.637	1.050	4.8.2
L4	135 - 133 (4)	0.012	0.711	0.000	0.087	0.000	0.730	1.050	4.8.2
L5	133 - 132.75 (5)	0.005	0.292	0.000	0.036	0.000	0.298	1.050	4.8.2
L6	132.75 - 127.75 (6)	0.008	0.381	0.000	0.046	0.000	0.391	1.050	4.8.2
L7	127.75 - 123.75 (7)	0.008	0.469	0.000	0.047	0.000	0.479	1.050	4.8.2
L8	123.75 - 123.5 (8)	0.008	0.473	0.000	0.046	0.000	0.483	1.050	4.8.2
L9	123.5 - 118.75 (9)	0.005	0.322	0.000	0.026	0.000	0.328	1.050	4.8.2
L10	118.75 - 118.5 (10)	0.003	0.248	0.000	0.019	0.000	0.252	1.050	4.8.2
L11	118.5 - 117 (11)	0.004	0.263	0.000	0.020	0.000	0.267	1.050	4.8.2
L12	117 - 116.75 (12)	0.005	0.344	0.000	0.026	0.000	0.350	1.050	4.8.2
L13	116.75 - 111.75 (13)	0.005	0.400	0.000	0.027	0.000	0.406	1.050	4.8.2
L14	111.75 - 106.75 (14)	0.007	0.454	0.000	0.031	0.000	0.462	1.050	4.8.2
L15	106.75 - 101.75 (15)	0.007	0.509	0.000	0.031	0.000	0.517	1.050	4.8.2
L16	101.75 - 95.167 (16)	0.007	0.525	0.000	0.031	0.000	0.533	1.050	4.8.2
L17	95.167 - 94.5 (17)	0.006	0.489	0.000	0.026	0.000	0.496	1.050	4.8.2
L18	94.5 - 93.75 (18)	0.006	0.493	0.000	0.026	0.000	0.500	1.050	4.8.2
L19	93.75 - 93.5 (19)	0.006	0.433	0.000	0.023	0.000	0.439	1.050	4.8.2
L20	93.5 - 92.75 (20)	0.006	0.436	0.000	0.023	0.000	0.442	1.050	4.8.2

Section No.	Elevation ft	Ratio $P_u/\phi P_n$	Ratio $M_{ux}/\phi M_{nx}$	Ratio $M_{uy}/\phi M_{ny}$	Ratio $V_u/\phi V_n$	Ratio $T_u/\phi T_n$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L21	92.75 - 92.5 (21)	0.005	0.360	0.000	0.018	0.000	0.365	1.050	4.8.2
L22	92.5 - 91.25 (22)	0.005	0.371	0.000	0.019	0.000	0.376	1.050	4.8.2
L23	91.25 - 91 (23)	0.005	0.372	0.000	0.018	0.000	0.377	1.050	4.8.2
L24	91 - 89.25 (24)	0.005	0.377	0.000	0.019	0.000	0.382	1.050	4.8.2
L25	89.25 - 89 (25)	0.004	0.351	0.000	0.017	0.000	0.355	1.050	4.8.2
L26	89 - 85.75 (26)	0.005	0.366	0.000	0.017	0.000	0.370	1.050	4.8.2
L27	85.75 - 85.5 (27)	0.006	0.486	0.000	0.023	0.000	0.493	1.050	4.8.2
L28	85.5 - 80.5 (28)	0.007	0.515	0.000	0.024	0.000	0.522	1.050	4.8.2
L29	80.5 - 75.5 (29)	0.007	0.544	0.000	0.024	0.000	0.551	1.050	4.8.2
L30	75.5 - 70.5 (30)	0.007	0.572	0.000	0.024	0.000	0.580	1.050	4.8.2
L31	70.5 - 68.083 (31)	0.007	0.577	0.000	0.024	0.000	0.585	1.050	4.8.2
L32	68.083 - 67.833 (32)	0.007	0.546	0.000	0.022	0.000	0.554	1.050	4.8.2
L33	67.833 - 67 (33)	0.007	0.548	0.000	0.022	0.000	0.555	1.050	4.8.2
L34	67 - 66.75 (34)	0.006	0.442	0.000	0.018	0.000	0.448	1.050	4.8.2
L35	66.75 - 63.25 (35)	0.006	0.456	0.000	0.018	0.000	0.462	1.050	4.8.2
L36	63.25 - 63 (36)	0.005	0.397	0.000	0.015	0.000	0.403	1.050	4.8.2
L37	63 - 59.5 (37)	0.005	0.409	0.000	0.016	0.000	0.414	1.050	4.8.2
L38	59.5 - 59.25 (38)	0.005	0.394	0.000	0.015	0.000	0.400	1.050	4.8.2
L39	59.25 - 56.25 (39)	0.005	0.404	0.000	0.015	0.000	0.410	1.050	4.8.2
L40	56.25 - 56 (40)	0.006	0.455	0.000	0.017	0.000	0.461	1.050	4.8.2
L41	56 - 55.75 (41)	0.008	0.566	0.000	0.022	0.000	0.574	1.050	4.8.2
L42	55.75 - 50.75 (42)	0.008	0.580	0.000	0.022	0.000	0.588	1.050	4.8.2
L43	50.75 - 44.667 (43)	0.008	0.589	0.000	0.022	0.000	0.597	1.050	4.8.2
L44	44.667 - 43.667 (44)	0.008	0.577	0.000	0.021	0.000	0.585	1.050	4.8.2
L45	43.667 - 38.667 (45)	0.008	0.588	0.000	0.021	0.000	0.597	1.050	4.8.2
L46	38.667 - 34.5 (46)	0.009	0.598	0.000	0.021	0.000	0.607	1.050	4.8.2
L47	34.5 - 34.25 (47)	0.007	0.472	0.000	0.016	0.000	0.479	1.050	4.8.2
L48	34.25 - 33 (48)	0.007	0.473	0.000	0.016	0.000	0.480	1.050	4.8.2
L49	33 - 32.75 (49)	0.007	0.473	0.000	0.016	0.000	0.480	1.050	4.8.2
L50	32.75 - 29.75 (50)	0.007	0.483	0.000	0.016	0.000	0.491	1.050	4.8.2
L51	29.75 - 29.5 (51)	0.007	0.464	0.000	0.016	0.000	0.471	1.050	4.8.2
L52	29.5 - 25 (52)	0.007	0.474	0.000	0.016	0.000	0.482	1.050	4.8.2
L53	25 - 24.75 (53)	0.009	0.594	0.000	0.020	0.000	0.603	1.050	4.8.2
L54	24.75 - 19.75 (54)	0.009	0.603	0.000	0.020	0.000	0.613	1.050	4.8.2
L55	19.75 - 14.75 (55)	0.010	0.621	0.000	0.020	0.000	0.631	1.050	4.8.2
L56	14.75 - 14.5	0.010	0.621	0.000	0.020	0.000	0.631	1.050	4.8.2

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	(56)								
L57	14.5 - 14.25	0.010	0.621	0.000	0.020	0.000	0.631	1.050	4.8.2
	(57)								
L58	14.25 - 12.25	0.010	0.621	0.000	0.020	0.000	0.631	1.050	4.8.2
	(58)								
L59	12.25 - 12	0.010	0.648	0.000	0.021	0.000	0.659	1.050	4.8.2
	(59)								
L60	12 - 11.5 (60)	0.010	0.648	0.000	0.021	0.000	0.659	1.050	4.8.2
L61	11.5 - 11.25	0.009	0.572	0.000	0.018	0.000	0.581	1.050	4.8.2
	(61)								
L62	11.25 - 9.25	0.009	0.580	0.000	0.018	0.000	0.589	1.050	4.8.2
	(62)								
L63	9.25 - 9 (63)	0.010	0.604	0.000	0.019	0.000	0.613	1.050	4.8.2
L64	9 - 4.5 (64)	0.010	0.621	0.000	0.020	0.000	0.631	1.050	4.8.2
L65	4.5 - 4.25 (65)	0.010	0.603	0.000	0.019	0.000	0.613	1.050	4.8.2
L66	4.25 - 3 (66)	0.010	0.603	0.000	0.019	0.000	0.613	1.050	4.8.2
L67	3 - 2.75 (67)	0.010	0.611	0.000	0.019	0.000	0.622	1.050	4.8.2
L68	2.75 - 0 (68)	0.010	0.620	0.000	0.019	0.000	0.631	1.050	4.8.2

Section Capacity Table

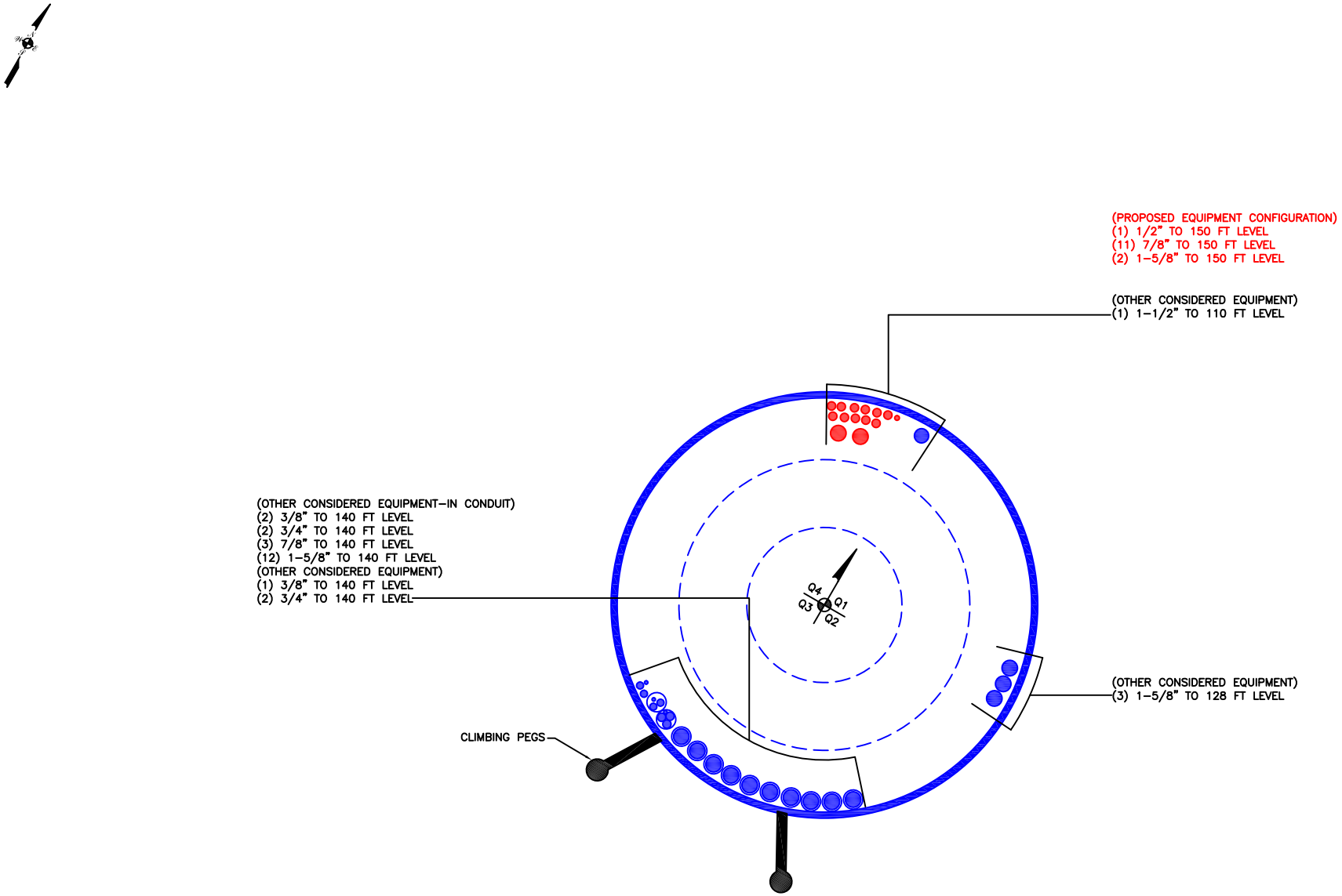
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	150 - 145	Pole	TP16.9374x16x0.1875	1	-3.26	621.18	18.3	Pass
L2	145 - 140	Pole	TP17.8748x16.9374x0.1875	2	-3.50	655.94	33.5	Pass
L3	140 - 135	Pole	TP18.8122x17.8748x0.1875	3	-7.70	690.70	60.6	Pass
L4	135 - 133	Pole	TP19.1871x18.8122x0.1875	4	-7.89	704.61	69.5	Pass
L5	133 - 132.75	Pole	TP19.234x19.1871x0.45	5	-7.94	1671.86	28.4	Pass
L6	132.75 - 127.75	Pole	TP20.1714x19.234x0.4375	6	-12.35	1707.63	37.2	Pass
L7	127.75 - 123.75	Pole	TP20.9213x20.1714x0.425	7	-12.95	1722.92	45.6	Pass
L8	123.75 - 123.5	Pole	TP20.9682x20.9213x0.425	8	-13.00	1726.86	46.0	Pass
L9	123.5 - 118.75	Pole	TP21.8587x20.9682x0.7625	9	-14.03	3181.59	31.2	Pass
L10	118.75 - 118.5	Pole	TP21.9056x21.8587x1.0375	10	-14.11	4282.25	24.0	Pass
L11	118.5 - 117	Pole	TP22.1868x21.9056x1.0125	11	-14.51	4240.38	25.4	Pass
L12	117 - 116.75	Pole	TP22.2337x22.1868x0.75	12	-14.58	3186.92	33.3	Pass
L13	116.75 - 111.75	Pole	TP23.171x22.2337x0.7125	13	-15.71	3164.95	38.7	Pass
L14	111.75 - 106.75	Pole	TP24.1084x23.171x0.6875	14	-19.79	3184.77	44.0	Pass
L15	106.75 - 101.75	Pole	TP25.0458x24.1084x0.6625	15	-21.01	3195.07	49.3	Pass
L16	101.75 - 95.167	Pole	TP26.28x25.0458x0.6625	16	-21.57	3250.34	50.8	Pass
L17	95.167 - 94.5	Pole	TP26.0307x25.0927x0.7875	17	-23.81	3931.84	47.3	Pass
L18	94.5 - 93.75	Pole	TP26.1714x26.0307x0.7875	18	-24.03	3953.76	47.6	Pass
L19	93.75 - 93.5	Pole	TP26.2183x26.1714x0.9125	19	-24.12	4567.25	41.8	Pass
L20	93.5 - 92.75	Pole	TP26.359x26.2183x0.9125	20	-24.35	4592.65	42.1	Pass
L21	92.75 - 92.5	Pole	TP26.4059x26.359x1.1375	21	-24.46	5685.00	34.7	Pass
L22	92.5 - 91.25	Pole	TP26.6405x26.4059x1.1125	22	-24.92	5617.16	35.8	Pass
L23	91.25 - 91	Pole	TP26.6874x26.6405x1.1125	23	-25.02	5627.49	35.9	Pass
L24	91 - 89.25	Pole	TP27.0157x26.6874x1.1125	24	-25.67	5699.73	36.4	Pass
L25	89.25 - 89	Pole	TP27.0626x27.0157x1.2125	25	-25.79	6199.33	33.8	Pass
L26	89 - 85.75	Pole	TP27.6723x27.0626x1.1875	26	-27.11	6220.59	35.3	Pass
L27	85.75 - 85.5	Pole	TP27.7192x27.6723x0.8625	27	-27.20	4581.56	46.9	Pass
L28	85.5 - 80.5	Pole	TP28.6573x27.7192x0.8375	28	-28.84	4608.29	49.8	Pass
L29	80.5 - 75.5	Pole	TP29.5954x28.6573x0.8125	29	-30.52	4625.49	52.5	Pass
L30	75.5 - 70.5	Pole	TP30.5334x29.5954x0.7875	30	-32.23	4633.18	55.2	Pass
L31	70.5 - 68.083	Pole	TP30.9869x30.5334x0.7875	31	-33.07	4703.81	55.7	Pass
L32	68.083 - 67.833	Pole	TP31.0338x30.9869x0.8375	32	-33.18	5001.95	52.7	Pass
L33	67.833 - 67	Pole	TP31.1901x31.0338x0.8375	33	-33.47	5027.84	52.9	Pass
L34	67 - 66.75	Pole	TP31.237x31.1901x1.0625	34	-33.59	6341.17	42.6	Pass
L35	66.75 - 63.25	Pole	TP31.8936x31.237x1.0375	35	-35.10	6331.85	44.0	Pass
L36	63.25 - 63	Pole	TP31.9405x31.8936x1.2125	36	-35.23	7369.14	38.4	Pass
L37	63 - 59.5	Pole	TP32.5971x31.9405x1.1875	37	-36.93	7377.30	39.4	Pass
L38	59.5 - 59.25	Pole	TP32.6441x32.5971x1.2375	38	-37.07	7687.17	38.0	Pass
L39	59.25 - 56.25	Pole	TP33.2069x32.6441x1.2125	39	-38.58	7672.84	39.0	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L40	56.25 - 56	Pole	TP33.2538x33.2069x1.0625	40	-38.70	6765.01	43.9	Pass
L41	56 - 55.75	Pole	TP33.3007x33.2538x0.8375	41	-38.80	5377.46	54.6	Pass
L42	55.75 - 50.75	Pole	TP34.2388x33.3007x0.825	42	-40.74	5452.30	56.0	Pass
L43	50.75 - 44.667	Pole	TP35.38x34.2388x0.8125	43	-41.05	5394.32	56.9	Pass
L44	44.667 - 43.667	Pole	TP34.942x33.7545x0.875	44	-45.44	5895.80	55.7	Pass
L45	43.667 - 38.667	Pole	TP35.8795x34.942x0.8625	45	-47.59	5973.65	56.8	Pass
L46	38.667 - 34.5	Pole	TP36.6609x35.8795x0.85	46	-49.40	6020.53	57.8	Pass
L47	34.5 - 34.25	Pole	TP36.7078x36.6609x1.1	47	-49.54	7747.09	45.6	Pass
L48	34.25 - 33	Pole	TP36.9421x36.7078x1.1	48	-50.19	7798.08	45.7	Pass
L49	33 - 32.75	Pole	TP36.989x36.9421x1.1	49	-50.34	7808.28	45.7	Pass
L50	32.75 - 29.75	Pole	TP37.5516x36.989x1.075	50	-51.93	7755.74	46.7	Pass
L51	29.75 - 29.5	Pole	TP37.5984x37.5516x1.125	51	-52.07	8115.78	44.8	Pass
L52	29.5 - 25	Pole	TP38.4422x37.5984x1.1	52	-54.54	8124.45	45.9	Pass
L53	25 - 24.75	Pole	TP38.4891x38.4422x0.8625	53	-54.66	6418.82	57.4	Pass
L54	24.75 - 19.75	Pole	TP39.4267x38.4891x0.85	54	-56.97	6485.51	58.3	Pass
L55	19.75 - 14.75	Pole	TP40.3642x39.4267x0.825	55	-59.31	6451.83	60.1	Pass
L56	14.75 - 14.5	Pole	TP40.4111x40.3642x0.825	56	-59.44	6459.48	60.1	Pass
L57	14.5 - 14.25	Pole	TP40.458x40.4111x0.825	57	-59.56	6467.13	60.1	Pass
L58	14.25 - 12.25	Pole	TP40.833x40.458x0.825	58	-60.50	6528.32	60.1	Pass
L59	12.25 - 12	Pole	TP40.8799x40.833x0.7875	59	-60.63	6244.73	62.8	Pass
L60	12 - 11.5	Pole	TP40.9736x40.8799x0.7875	60	-60.86	6259.33	62.8	Pass
L61	11.5 - 11.25	Pole	TP41.0205x40.9736x0.9	61	-60.93	7133.49	55.4	Pass
L62	11.25 - 9.25	Pole	TP41.3955x41.0205x0.8875	62	-61.74	7077.76	56.1	Pass
L63	9.25 - 9	Pole	TP41.4424x41.3955x0.85	63	-62.05	6816.53	58.4	Pass
L64	9 - 4.5	Pole	TP42.2862x41.4424x0.825	64	-62.37	6627.77	60.1	Pass
L65	4.5 - 4.25	Pole	TP42.3331x42.2862x0.85	65	-64.27	6966.27	58.4	Pass
L66	4.25 - 3	Pole	TP42.5675x42.3331x0.85	66	-64.63	6974.14	58.4	Pass
L67	3 - 2.75	Pole	TP42.6143x42.5675x0.8375	67	-65.00	6912.48	59.2	Pass
L68	2.75 - 0	Pole	TP43.13x42.6143x0.825	68	-65.38	6818.99	60.1	Pass
							Summary	
						Pole (L4)	69.5	Pass
						RATING =	**69.5**	**Pass**

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

APPENDIX B

BASE LEVEL DRAWING


(PROPOSED EQUIPMENT CONFIGURATION)
(1) 1/2" TO 150 FT LEVEL
(11) 7/8" TO 150 FT LEVEL
(2) 1-5/8" TO 150 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 1-1/2" TO 110 FT LEVEL
(OTHER CONSIDERED EQUIPMENT-IN CONDUIT)
(2) 3/8" TO 140 FT LEVEL
(2) 3/4" TO 140 FT LEVEL
(3) 7/8" TO 140 FT LEVEL
(12) 1-5/8" TO 140 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 3/8" TO 140 FT LEVEL
(2) 3/4" TO 140 FT LEVEL
Q4
Q1
Q3
Q2
(OTHER CONSIDERED EQUIPMENT)
(3) 1-5/8" TO 128 FT LEVEL
CLIMBING PEGS

APPENDIX C

ADDITIONAL CALCULATIONS

CCIpole

per TIA-222- H

Site BU: 806361

Work Order: 2166810

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	150	54.833	4.333	12	16	26.28	0.1875	Auto	A572-65
2	99.5	54.833	5.333	12	25.09	35.38	0.3125	Auto	A572-65
3	50	50	0	12	33.75	43.13	0.375	Auto	A572-65

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12
1	0	29.75	plate	PL9x1-1/4 {Bar #1}	3				■				■				■
2	29.75	59.5	plate	PL8x1-1/4 {Bar #2}	3				■				■				■
3	59.5	89.25	plate	PL7x1-1/4 {Bar #3}	3				■				■				■
4	89.25	123.75	plate	PL5x1-1/4 {Bar #4}	3				■				■				■
5	25	34.5	plate	MS-650 (1.1875")	3			■				■				■	
6	56	67	plate	MS-600 (1.1875")	3			■				■				■	
7	85.75	92.75	plate	MS-450 (1.1875")	3			■				■				■	
8	56.25	63.25	plate	CCI-SFP-045100	3		■				■				■		
9	85.75	93.75	plate	CCI-SFP-040075	3		■				■				■		
10	0	4.5	plate	ransistion Stiffener TS	1										■		
11	0	11.5	plate	ransistion Stiffener TS	1						■						
12	0	14.5	plate	ransistion Stiffener TS	1		■										
13	3	9.25	plate	CCI-AFP-060100	1									■			
14	9.25	12.25	plate	CCI-AFP-060100	2					■				■			
15	12.25	33	plate	CCI-AFP-060100	3	■				■				■			
16	33	68.083	plate	CCI-AFP-060100	3	■				■				■			
17	68.083	91.25	plate	CCI-AFP-045100	3	■				■				■			
18	91.25	117	plate	CCI-AFP-045100	3	■				■				■			
19	117	118.75	plate	CCI-AFP-045100	6	■	■			■	■			■	■		
20	118.75	133	plate	CCI-AFP-045100	3		■				■				■		
21																	

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 (in2)	Bolt Hole Size (in)	Reinforcement Material
1	9	1.25	11.25	0.625	Welded	n/a	Capacity Input	n/a	15.000	9.647	1.2200	A572-65
2	8	1.25	10	0.625	Capacity Input	n/a	Capacity Input	n/a	18.000	8.397	1.2200	A572-65
3	7	1.25	8.75	0.625	Capacity Input	n/a	Capacity Input	n/a	18.000	7.147	1.2200	A572-65
4	5	1.25	6.25	0.625	Capacity Input	n/a	PC 8.8 - M20 (100)	15.000	18.000	4.647	1.2200	A572-65
5	6.5	1.25	8.125	0.625	PC 8.8 - M20 (100)	33	PC 8.8 - M20 (100)	33.000	19.250	6.563	1.1875	A572-65
6	6	1	6	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	16.375	4.750	1.1875	A572-65
7	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	18	PC 8.8 - M20 (100)	18.000	20.625	3.250	1.1875	A572-65
8	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	18	PC 8.8 - M20 (100)	18.000	20.000	3.250	1.1875	A572-65
9	4	0.75	3	0.375	PC 8.8 - M20 (100)	12	PC 8.8 - M20 (100)	12.000	16.000	2.063	1.1875	A572-65
10	1	6	6	3	Welded	n/a	Welded	n/a	0.000	6.000	0.0000	A572-65
11	1	6	6	3	Welded	n/a	Welded	n/a	0.000	6.000	0.0000	A572-65
12	1	6	6	3	Welded	n/a	Welded	n/a	0.000	6.000	0.0000	A572-65
13	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
14	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
15	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
16	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
17	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	20.000	3.250	1.1875	A572-65
18	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	20.000	3.250	1.1875	A572-65
19	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	20.000	3.250	1.1875	A572-65
20	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	20.000	3.250	1.1875	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)
PL9x1-1/4 {Bar #1}	Top	-	0	-	-	-	-	-	-	-	-	-	-	565
	Bottom	-	-	-	-	80	CJP Groove	9	1.25	45	0	-	-	-
PL8x1-1/4 {Bar #2}	Top	-	0	-	-	-	-	-	-	-	-	-	-	494
	Bottom	-	0	-	-	-	0	-	-	-	-	-	-	565
PL7x1-1/4 {Bar #3}	Top	-	-	-	-	-	-	-	-	-	-	-	-	353
	Bottom	-	-	-	-	-	0	-	-	-	-	-	-	494
PL5x1-1/4 {Bar #4}	Top	5	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-	-	0	-	-	-	-	-	-	353
Transistion Stiffener TS1	Top	-	-	-	-	70	None	-	-	-	-	191.25	0.375	-
	Bottom	-	-	-	-	80	CJP Groove	10.5	0.5	45	0.625	-	-	-
Transistion Stiffener TS2	Top	-	-	-	-	70	None	-	-	-	-	155.25	0.375	-
	Bottom	-	-	-	-	80	CJP Groove	10.5	0.5	45	0.625	-	-	-
Transistion Stiffener TS3	Top	-	-	-	-	70	None	-	-	-	-	71.25	0.375	-
	Bottom	-	-	-	-	80	CJP Groove	10.5	0.5	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	150 - 145	5		12	16.000	16.937	0.1875	A572-65	1.000
2	145 - 140	5		12	16.937	17.875	0.1875	A572-65	1.000
3	140 - 135	5		12	17.875	18.812	0.1875	A572-65	1.000
4	135 - 133	2		12	18.812	19.187	0.1875	A572-65	1.000
5	133 - 132.75	0.25		12	19.187	19.234	0.45	A572-65	0.919
6	132.75 - 127.75	5		12	19.234	20.171	0.4375	A572-65	0.920
7	127.75 - 123.75	4		12	20.171	20.921	0.425	A572-65	0.928
8	123.75 - 123.5	0.25		12	20.921	20.968	0.425	A572-65	0.927
9	123.5 - 118.75	4.75		12	20.968	21.859	0.7625	A572-65	0.876
10	118.75 - 118.5	0.25		12	21.859	21.906	1.0375	A572-65	0.845
11	118.5 - 117	1.5		12	21.906	22.187	1.0125	A572-65	0.856
12	117 - 116.75	0.25		12	22.187	22.234	0.75	A572-65	0.879
13	116.75 - 111.75	5		12	22.234	23.171	0.7125	A572-65	0.896
14	111.75 - 106.75	5		12	23.171	24.108	0.6875	A572-65	0.901
15	106.75 - 101.75	5		12	24.108	25.046	0.6625	A572-65	0.909
16	101.75 - 99.5	6.583	4.333	12	25.046	26.280	0.6625	A572-65	0.899
17	99.5 - 94.5	5		12	25.093	26.031	0.7875	A572-65	0.909
18	94.5 - 93.75	0.75		12	26.031	26.171	0.7875	A572-65	0.906
19	93.75 - 93.5	0.25		12	26.171	26.218	0.9125	A572-65	0.906
20	93.5 - 92.75	0.75		12	26.218	26.359	0.9125	A572-65	0.903
21	92.75 - 92.5	0.25		12	26.359	26.406	1.1375	A572-65	0.876
22	92.5 - 91.25	1.25		12	26.406	26.640	1.1125	A572-65	0.889
23	91.25 - 91	0.25		12	26.640	26.687	1.1125	A572-65	0.888
24	91 - 89.25	1.75		12	26.687	27.016	1.1125	A572-65	0.880
25	89.25 - 89	0.25		12	27.016	27.063	1.2125	A572-65	0.884
26	89 - 85.75	3.25		12	27.063	27.672	1.1875	A572-65	0.887
27	85.75 - 85.5	0.25		12	27.672	27.719	0.8625	A572-65	0.903
28	85.5 - 80.5	5		12	27.719	28.657	0.8375	A572-65	0.911
29	80.5 - 75.5	5		12	28.657	29.595	0.8125	A572-65	0.920
30	75.5 - 70.5	5		12	29.595	30.533	0.7875	A572-65	0.931
31	70.5 - 68.083	2.417		12	30.533	30.987	0.7875	A572-65	0.923
32	68.083 - 67.833	0.25		12	30.987	31.034	0.8375	A572-65	0.924
33	67.833 - 67	0.833		12	31.034	31.190	0.8375	A572-65	0.921
34	67 - 66.75	0.25		12	31.190	31.237	1.0625	A572-65	0.905
35	66.75 - 63.25	3.5		12	31.237	31.894	1.0375	A572-65	0.913
36	63.25 - 63	0.25		12	31.894	31.941	1.2125	A572-65	0.898
37	63 - 59.5	3.5		12	31.941	32.597	1.1875	A572-65	0.902
38	59.5 - 59.25	0.25		12	32.597	32.644	1.2375	A572-65	0.896
39	59.25 - 56.25	3		12	32.644	33.207	1.2125	A572-65	0.902
40	56.25 - 56	0.25		12	33.207	33.254	1.0625	A572-65	0.901
41	56 - 55.75	0.25		12	33.254	33.301	0.8375	A572-65	0.928
42	55.75 - 50.75	5		12	33.301	34.239	0.825	A572-65	0.926
43	50.75 - 50	6.083	5.333	12	34.239	35.380	0.8125	A572-65	0.938
44	50 - 43.667	6.333		12	33.754	34.942	0.875	A572-65	0.936
45	43.667 - 38.667	5		12	34.942	35.880	0.8625	A572-65	0.935
46	38.667 - 34.5	4.167		12	35.880	36.661	0.85	A572-65	0.937
47	34.5 - 34.25	0.25		12	36.661	36.708	1.1	A572-65	0.923
48	34.25 - 33	1.25		12	36.708	36.942	1.1	A572-65	0.919
49	33 - 32.75	0.25		12	36.942	36.989	1.1	A572-65	0.918
50	32.75 - 29.75	3		12	36.989	37.552	1.075	A572-65	0.930
51	29.75 - 29.5	0.25		12	37.552	37.598	1.125	A572-65	0.917
52	29.5 - 25	4.5		12	37.598	38.442	1.1	A572-65	0.924
53	25 - 24.75	0.25		12	38.442	38.489	0.8625	A572-65	0.936
54	24.75 - 19.75	5		12	38.489	39.427	0.85	A572-65	0.937
55	19.75 - 14.75	5		12	39.427	40.364	0.825	A572-65	0.953
56	14.75 - 14.5	0.25		12	40.364	40.411	0.825	A572-65	0.953
57	14.5 - 14.25	0.25		12	40.411	40.458	0.825	A572-65	0.952
58	14.25 - 12.25	2		12	40.458	40.833	0.825	A572-65	0.947
59	12.25 - 12	0.25		12	40.833	40.880	0.7875	A572-65	0.991
60	12 - 11.5	0.5		12	40.880	40.974	0.7875	A572-65	0.990
61	11.5 - 11.25	0.25		12	40.974	41.021	0.9	A572-65	0.920
62	11.25 - 9.25	2		12	41.021	41.396	0.8875	A572-65	0.927
63	9.25 - 9	0.25		12	41.396	41.442	0.85	A572-65	0.913
64	9 - 4.5	4.5		12	41.442	42.286	0.825	A572-65	0.930
65	4.5 - 4.25	0.25		12	42.286	42.333	0.85	A572-65	0.956
66	4.25 - 3	1.25		12	42.333	42.567	0.85	A572-65	0.953
67	3 - 2.75	0.25		12	42.567	42.614	0.8375	A572-65	0.913
68	2.75 - 0	2.75		12	42.614	43.130	0.825	A572-65	0.921

TNX Section Forces

Increment (ft): 5

	Section Height (ft)	TNX Output P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	150 - 145	3.26	45.50	9.26
2	145 - 140	3.50	92.80	9.66
3	140 - 135	7.70	181.71	17.18
4	135 - 133	7.89	216.22	17.34
5	133 - 132.75	7.94	220.55	17.35
6	132.75 - 127.75	12.35	309.57	22.35
7	127.75 - 123.75	12.95	399.64	22.70
8	123.75 - 123.5	13.00	405.31	22.72
9	123.5 - 118.75	14.03	514.33	23.20
10	118.75 - 118.5	14.11	520.13	23.22
11	118.5 - 117	14.51	555.09	23.39
12	117 - 116.75	14.58	560.94	23.41
13	116.75 - 111.75	15.71	679.25	23.92
14	111.75 - 106.75	19.79	811.47	27.89
15	106.75 - 101.75	21.01	952.08	28.38
16	101.75 - 99.5	21.57	1016.14	28.59
17	99.5 - 94.5	23.81	1160.66	29.22
18	94.5 - 93.75	24.03	1182.59	29.30
19	93.75 - 93.5	24.12	1189.92	29.32
20	93.5 - 92.75	24.35	1211.93	29.40
21	92.75 - 92.5	24.46	1219.28	29.42
22	92.5 - 91.25	24.92	1256.14	29.57
23	91.25 - 91	25.02	1263.54	29.60
24	91 - 89.25	25.67	1315.50	29.81
25	89.25 - 89	25.79	1322.95	29.82
26	89 - 85.75	27.11	1420.47	30.21
27	85.75 - 85.5	27.20	1428.03	30.23
28	85.5 - 80.5	28.84	1580.42	30.75
29	80.5 - 75.5	30.52	1735.35	31.25
30	75.5 - 70.5	32.23	1892.75	31.75
31	70.5 - 68.083	33.07	1969.73	31.99
32	68.083 - 67.833	33.18	1977.72	32.00
33	67.833 - 67	33.47	2004.40	32.09
34	67 - 66.75	33.59	2012.42	32.11
35	66.75 - 63.25	35.10	2125.45	32.50
36	63.25 - 63	35.23	2133.57	32.52
37	63 - 59.5	36.93	2248.07	32.93
38	59.5 - 59.25	37.07	2256.30	32.95
39	59.25 - 56.25	38.58	2355.64	33.30
40	56.25 - 56	38.70	2363.97	33.32
41	56 - 55.75	38.80	2372.30	33.35
42	55.75 - 50.75	40.74	2540.19	33.84
43	50.75 - 50	41.05	2565.58	33.90
44	50 - 43.667	45.44	2782.75	34.69
45	43.667 - 38.667	47.59	2957.17	35.13
46	38.667 - 34.5	49.40	3104.17	35.48
47	34.5 - 34.25	49.54	3113.03	35.49
48	34.25 - 33	50.19	3157.46	35.62
49	33 - 32.75	50.34	3166.36	35.63
50	32.75 - 29.75	51.93	3273.63	35.92
51	29.75 - 29.5	52.07	3282.61	35.93
52	29.5 - 25	54.54	3445.16	36.35
53	25 - 24.75	54.66	3454.24	36.35
54	24.75 - 19.75	56.97	3636.87	36.73
55	19.75 - 14.75	59.31	3821.21	37.06
56	14.75 - 14.5	59.44	3830.47	37.06
57	14.5 - 14.25	59.56	3839.74	37.07
58	14.25 - 12.25	60.50	3913.98	37.21
59	12.25 - 12	60.63	3923.28	37.21
60	12 - 11.5	60.86	3941.89	37.24
61	11.5 - 11.25	60.99	3951.20	37.25
62	11.25 - 9.25	61.98	4025.82	37.40
63	9.25 - 9	62.11	4035.17	37.40
64	9 - 4.5	64.19	4204.05	37.70
65	4.5 - 4.25	64.32	4213.47	37.69
66	4.25 - 3	64.92	4260.63	37.80
67	3 - 2.75	65.05	4270.07	37.79
68	2.75 - 0	66.32	4374.22	38.00

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
150 - 145	Pole	TP16.937x16x0.1875	Pole	18.3%	Pass
145 - 140	Pole	TP17.875x16.937x0.1875	Pole	33.4%	Pass
140 - 135	Pole	TP18.812x17.875x0.1875	Pole	60.4%	Pass
135 - 133	Pole	TP19.187x18.812x0.1875	Pole	69.3%	Pass
133 - 132.75	Pole + Reinf.	TP19.234x19.187x0.45	Reinf. 20 Tension Rupture	48.3%	Pass
132.75 - 127.75	Pole + Reinf.	TP20.171x19.234x0.4375	Reinf. 20 Tension Rupture	63.5%	Pass
127.75 - 123.75	Pole + Reinf.	TP20.921x20.171x0.425	Reinf. 20 Tension Rupture	77.5%	Pass
123.75 - 123.5	Pole + Reinf.	TP20.968x20.921x0.425	Reinf. 20 Tension Rupture	78.4%	Pass
123.5 - 118.75	Pole + Reinf.	TP21.859x20.968x0.7625	Reinf. 20 Tension Rupture	53.1%	Pass
118.75 - 118.5	Pole + Reinf.	TP21.906x21.859x1.0375	Reinf. 19 Tension Rupture	41.2%	Pass
118.5 - 117	Pole + Reinf.	TP22.187x21.906x1.0125	Reinf. 19 Tension Rupture	43.3%	Pass
117 - 116.75	Pole + Reinf.	TP22.234x22.187x0.75	Reinf. 18 Tension Rupture	56.7%	Pass
116.75 - 111.75	Pole + Reinf.	TP23.171x22.234x0.7125	Reinf. 18 Tension Rupture	65.2%	Pass
111.75 - 106.75	Pole + Reinf.	TP24.108x23.171x0.6875	Reinf. 18 Tension Rupture	74.3%	Pass
106.75 - 101.75	Pole + Reinf.	TP25.046x24.108x0.6625	Reinf. 18 Tension Rupture	83.0%	Pass
101.75 - 99.5	Pole + Reinf.	TP26.28x25.046x0.6625	Reinf. 18 Tension Rupture	86.7%	Pass
99.5 - 94.5	Pole + Reinf.	TP26.031x25.093x0.7875	Reinf. 18 Tension Rupture	80.4%	Pass
94.5 - 93.75	Pole + Reinf.	TP26.171x26.031x0.7875	Reinf. 18 Tension Rupture	81.3%	Pass
93.75 - 93.5	Pole + Reinf.	TP26.218x26.171x0.9125	Reinf. 9 Tension Rupture	73.4%	Pass
93.5 - 92.75	Pole + Reinf.	TP26.359x26.218x0.9125	Reinf. 9 Tension Rupture	74.3%	Pass
92.75 - 92.5	Pole + Reinf.	TP26.406x26.359x1.1375	Reinf. 9 Tension Rupture	61.8%	Pass
92.5 - 91.25	Pole + Reinf.	TP26.64x26.406x1.1125	Reinf. 9 Tension Rupture	63.0%	Pass
91.25 - 91	Pole + Reinf.	TP26.687x26.64x1.1125	Reinf. 9 Tension Rupture	63.2%	Pass
91 - 89.25	Pole + Reinf.	TP27.016x26.687x1.1125	Reinf. 9 Tension Rupture	64.8%	Pass
89.25 - 89	Pole + Reinf.	TP27.063x27.016x1.2125	Reinf. 3 Connection	61.5%	Pass
89 - 85.75	Pole + Reinf.	TP27.672x27.063x1.1875	Reinf. 9 Tension Rupture	61.7%	Pass
85.75 - 85.5	Pole + Reinf.	TP27.719x27.672x0.8625	Reinf. 17 Tension Rupture	79.6%	Pass
85.5 - 80.5	Pole + Reinf.	TP28.657x27.719x0.8375	Reinf. 17 Tension Rupture	84.2%	Pass
80.5 - 75.5	Pole + Reinf.	TP29.595x28.657x0.8125	Reinf. 17 Tension Rupture	88.4%	Pass
75.5 - 70.5	Pole + Reinf.	TP30.533x29.595x0.7875	Reinf. 17 Tension Rupture	92.3%	Pass
70.5 - 68.08	Pole + Reinf.	TP30.987x30.533x0.7875	Reinf. 17 Tension Rupture	94.1%	Pass
68.08 - 67.83	Pole + Reinf.	TP31.034x30.987x0.8375	Reinf. 16 Tension Rupture	80.7%	Pass
67.83 - 67	Pole + Reinf.	TP31.19x31.034x0.8375	Reinf. 16 Tension Rupture	81.2%	Pass
67 - 66.75	Pole + Reinf.	TP31.237x31.19x1.0625	Reinf. 6 Tension Rupture	65.4%	Pass
66.75 - 63.25	Pole + Reinf.	TP31.894x31.237x1.0375	Reinf. 6 Tension Rupture	67.3%	Pass
63.25 - 63	Pole + Reinf.	TP31.941x31.894x1.2125	Reinf. 8 Tension Rupture	64.4%	Pass
63 - 59.5	Pole + Reinf.	TP32.597x31.941x1.1875	Reinf. 8 Tension Rupture	66.2%	Pass
59.5 - 59.25	Pole + Reinf.	TP32.644x32.597x1.2375	Reinf. 8 Tension Rupture	64.0%	Pass
59.25 - 56.25	Pole + Reinf.	TP33.207x32.644x1.2125	Reinf. 8 Tension Rupture	65.4%	Pass
56.25 - 56	Pole + Reinf.	TP33.254x33.207x1.0625	Reinf. 6 Tension Rupture	68.0%	Pass
56 - 55.75	Pole + Reinf.	TP33.301x33.254x0.8375	Reinf. 16 Tension Rupture	83.5%	Pass
55.75 - 50.75	Pole + Reinf.	TP34.239x33.301x0.825	Reinf. 16 Tension Rupture	86.0%	Pass
50.75 - 50	Pole + Reinf.	TP35.38x34.239x0.8125	Reinf. 16 Tension Rupture	86.4%	Pass
50 - 43.67	Pole + Reinf.	TP34.942x33.754x0.875	Reinf. 16 Tension Rupture	85.0%	Pass
43.67 - 38.67	Pole + Reinf.	TP35.88x34.942x0.8625	Reinf. 16 Tension Rupture	87.0%	Pass
38.67 - 34.5	Pole + Reinf.	TP36.661x35.88x0.85	Reinf. 16 Tension Rupture	88.5%	Pass
34.5 - 34.25	Pole + Reinf.	TP36.708x36.661x1.1	Reinf. 16 Tension Rupture	69.5%	Pass
34.25 - 33	Pole + Reinf.	TP36.942x36.708x1.1	Reinf. 16 Tension Rupture	69.9%	Pass
33 - 32.75	Pole + Reinf.	TP36.989x36.942x1.1	Reinf. 15 Tension Rupture	70.0%	Pass
32.75 - 29.75	Pole + Reinf.	TP37.552x36.989x1.075	Reinf. 15 Tension Rupture	70.9%	Pass
29.75 - 29.5	Pole + Reinf.	TP37.598x37.552x1.125	Reinf. 15 Tension Rupture	68.6%	Pass
29.5 - 25	Pole + Reinf.	TP38.442x37.598x1.1	Reinf. 15 Tension Rupture	69.9%	Pass
25 - 24.75	Pole + Reinf.	TP38.489x38.442x0.8625	Reinf. 15 Tension Rupture	88.0%	Pass
24.75 - 19.75	Pole + Reinf.	TP39.427x38.489x0.85	Reinf. 15 Tension Rupture	89.5%	Pass
19.75 - 14.75	Pole + Reinf.	TP40.364x39.427x0.825	Reinf. 15 Tension Rupture	90.9%	Pass
14.75 - 14.5	Pole + Reinf.	TP40.411x40.364x0.825	Reinf. 15 Tension Rupture	90.9%	Pass
14.5 - 14.25	Pole + Reinf.	TP40.458x40.411x0.825	Reinf. 15 Tension Rupture	91.0%	Pass
14.25 - 12.25	Pole + Reinf.	TP40.833x40.458x0.825	Reinf. 15 Tension Rupture	91.5%	Pass
12.25 - 12	Pole + Reinf.	TP40.88x40.833x0.7875	Reinf. 14 Tension Rupture	92.5%	Pass
12 - 11.5	Pole + Reinf.	TP40.974x40.88x0.7875	Reinf. 14 Tension Rupture	92.6%	Pass
11.5 - 11.25	Pole + Reinf.	TP41.021x40.974x0.9	Reinf. 14 Tension Rupture	87.7%	Pass
11.25 - 9.25	Pole + Reinf.	TP41.396x41.021x0.8875	Reinf. 14 Tension Rupture	88.2%	Pass
9.25 - 9	Pole + Reinf.	TP41.442x41.396x0.85	Reinf. 13 Tension Rupture	89.0%	Pass
9 - 4.5	Pole + Reinf.	TP42.286x41.442x0.825	Reinf. 13 Tension Rupture	90.0%	Pass
4.5 - 4.25	Pole + Reinf.	TP42.333x42.286x0.85	Reinf. 1 Tension Rupture	83.4%	Pass
4.25 - 3	Pole + Reinf.	TP42.567x42.333x0.85	Reinf. 1 Tension Rupture	83.7%	Pass
3 - 2.75	Pole + Reinf.	TP42.614x42.567x0.8375	Reinf. 1 Tension Rupture	83.8%	Pass
2.75 - 0	Pole + Reinf.	TP43.13x42.614x0.825	Reinf. 1 Tension Rupture	84.4%	Pass
				Summary	
			Pole	69.9%	Pass
			Reinforcement	94.1%	Pass
			Overall	94.1%	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	R12	R13	R14	R15	R16	R17	R18	R19	R20
150 - 145	363	n/a	363	10.10	n/a	10.10	18.3%																				
145 - 140	427	n/a	427	10.66	n/a	10.66	33.4%																				
140 - 135	499	n/a	499	11.23	n/a	11.23	60.4%																				
135 - 133	529	n/a	529	11.45	n/a	11.45	69.3%																				
133 - 132.75	533	703	1236	11.48	13.50	24.98	29.3%																				48.3%
132.75 - 127.75	616	768	1384	12.05	13.50	25.55	39.4%																				63.5%
127.75 - 123.75	688	823	1511	12.50	13.50	26.00	48.8%																				77.5%
123.75 - 123.5	692	826	1519	12.53	13.50	26.03	49.4%																				78.4%
123.5 - 118.75	785	2166	2951	13.07	32.25	45.32	34.2%				52.2%																53.1%
118.75 - 118.5	790	3072	3863	13.09	45.75	58.84	26.5%				40.4%															41.2%	
118.5 - 117	822	3147	3968	13.26	45.75	59.01	28.0%				42.5%															43.3%	
117 - 116.75	827	2236	3063	13.29	32.25	45.54	36.8%				55.7%														56.7%		
116.75 - 111.75	937	2416	3353	13.86	32.25	46.11	43.2%				64.0%														65.2%		
111.75 - 106.75	1056	2604	3660	14.42	32.25	46.67	50.3%				72.9%														74.3%		
106.75 - 101.75	1185	2798	3983	14.99	32.25	47.24	57.5%				81.4%														83.0%		
101.75 - 99.5	1247	2888	4135	15.24	32.25	47.49	60.7%				85.0%														86.7%		
99.5 - 94.5	2188	3010	5198	25.84	32.25	58.09	45.9%				78.8%														80.4%		
94.5 - 93.75	2224	3041	5265	25.98	32.25	58.23	46.5%				79.7%														81.3%		
93.75 - 93.5	2236	3876	6112	26.03	41.25	67.28	40.4%				69.2%					73.4%									70.6%		
93.5 - 92.75	2273	3915	6188	26.17	41.25	67.42	40.9%				70.0%					74.3%									71.4%		
92.75 - 92.5	2285	5208	7493	26.22	54.75	80.97	34.1%				58.2%			60.0%		61.8%									59.4%		
92.5 - 91.25	2347	5297	7644	26.45	54.75	81.20	34.8%				59.3%			61.1%		63.0%									60.5%		
91.25 - 91	2360	5314	7674	26.50	54.75	81.25	35.0%				59.5%			61.4%		63.2%								60.7%			
91 - 89.25	2449	5440	7889	26.83	54.75	81.58	36.0%				61.0%			62.9%		64.8%								62.2%			
89.25 - 89	2462	6244	8706	26.88	62.25	89.13	32.9%			61.5%				57.4%		59.1%								56.8%			
89 - 85.75	2634	6514	9148	27.49	62.25	89.74	34.6%			53.0%				59.9%		61.7%								59.3%			
85.75 - 85.5	2648	4213	6860	27.54	39.75	67.29	46.4%			71.1%														79.6%			
85.5 - 80.5	2929	4486	7415	28.48	39.75	68.23	49.7%			75.1%														84.2%			
80.5 - 75.5	3229	4769	7998	29.42	39.75	69.17	52.8%			78.9%														88.4%			
75.5 - 70.5	3550	5060	8610	30.37	39.75	70.12	55.8%			82.3%														92.3%			
70.5 - 68.08	3712	5204	8916	30.82	39.75	70.57	57.2%			83.9%														94.1%			
68.08 - 67.83	3729	5812	9541	30.87	44.25	75.12	53.8%			78.8%													80.7%				
67.83 - 67	3786	5868	9654	31.03	44.25	75.28	54.2%			79.4%													81.2%				
67 - 66.75	3804	8250	12054	31.07	62.25	93.32	43.7%			63.9%			65.4%										65.4%				
66.75 - 63.25	4051	8584	12635	31.73	62.25	93.98	45.3%			65.7%			67.3%										67.3%				
63.25 - 63	4069	10451	14520	31.78	75.75	107.53	39.7%			57.5%			58.8%		64.4%								58.8%				
63 - 59.5	4328	10866	15194	32.44	75.75	108.19	41.1%			59.0%			60.4%		66.2%								60.4%				
59.5 - 59.25	4347	11461	15808	32.49	79.50	111.99	39.7%		56.6%				58.4%		64.0%								58.4%				
59.25 - 56.25	4578	11842	16419	33.05	79.50	112.55	40.9%		56.8%				59.7%		65.4%								59.7%				
56.25 - 56	4597	9882	14479	33.10	66.00	99.10	46.6%		64.7%				68.0%										68.0%				
56 - 55.75	4617	7233	11850	33.15	48.00	81.15	57.3%		79.5%														83.5%				
55.75 - 50.75	5022	7627	12649	34.09	48.00	82.09	59.8%		81.9%														86.0%				
50.75 - 50	5085	7687	12771	34.23	48.00	82.23	60.2%		82.3%														86.4%				
50 - 43.67	6375	7928	14303	41.68	48.00	89.68	55.6%		80.9%														85.0%				
43.67 - 38.67	6907	8340	15247	42.81	48.00	90.81	57.4%		82.8%														87.0%				
38.67 - 34.5	7374	8691	16064	43.75	48.00	91.75	58.9%		84.2%														88.5%				
34.5 - 34.25	7402	13146	20548	43.81	72.38	116.18	46.3%		66.1%			68.6%											69.5%				
34.25 - 33	7546	13308	20854	44.09	72.38	116.47	46.7%		66.5%			69.0%											69.9%				
33 - 32.75	7575	13340	20915	44.15	72.38	116.52	46.8%		66.6%			69.1%										70.0%					
32.75 - 29.75	7930	13731	21661	44.83	72.38	117.20	47.7%		67.5%			70.0%										70.9%					
29.75 - 29.5	7960	14506	22466	44.88	76.13	121.01	46.2%	65.4%				67.7%										68.6%					
29.5 - 25	8514	15135	23649	45.90	76.13	122.03	47.5%	65.0%				69.0%										69.9%					
25 - 24.75	8545	10315	18860	45.96	51.75	97.71	59.8%	81.8%														88.0%					
24.75 - 19.75	9191	10801	19993	47.09	51.75	98.84	61.4%	83.2%														89.5%					
19.75 - 14.75	9869	11299	21169	48.22	51.75	99.97	63.0%	84.5%														90.9%					
14.75 - 14.5	9904	11325	21229	48.27	51.75	100.02	63.0%	84.5%														90.9%					
14.5 - 14.25	9939	11350	21289	48.33	51.75	100.08	63.1%	84.6%														91.0%					
14.25 - 12.25	10220	11553	21773	48.78	51.75	100.53	63.7%	85.1%														91.5%					
12.25 - 12	10273	10673	20947	48.84	51.75	100.59	69.7%	91.6%											78.3%		92.5%						
12 - 11.5	10345	10720	21065	48.95	51.75	100.70	69.9%	91.7%											78.4%		92.6%						
11.5 - 11.25	10387	13354	23741	49.01	57.75	106.76	62.7%	85.1%										71.6%	77.4%		87.7%						
11.25 - 9.25	10677	13586	24264	49.46	57.75	107.21	63.3%	85.5%										72.0%	77.8%		88.2%						
9.25 - 9	10690	12521	23210	49.52	51.75	101.27	65.3%	88.9%										81.7%	78.0%	89.0%							
9 - 4.5	11362	13008	24370	50.54	51.75	102.29	66.7%	89.9%										82.6%	78.8%	90.0%							
4.5 - 4.25	11401	13451	24852	50.59	57.75	108.34	65.0%	83.4%									72.7%	81.3%	78.8%	76.8%							
4.25 - 3	11593	13589	25181	50.87	57.75	108.62	65.4%	83.7%									72.9%	81.6%	79.0%	77.0%							
3 - 2.75	11631	13579	25209	50.93	51.75	102.68	64.1%	83.8%									81.8%	81.8%	81.8%								
2.75 - 0	12062	13884	25946	51.55	51.75	103.30	65.0%	84.4%									82.2%	82.2%	82.2%								

Note: Section capacity checked using 5 degree increments.

**Rating per TIA-222-H Section 15.5.*

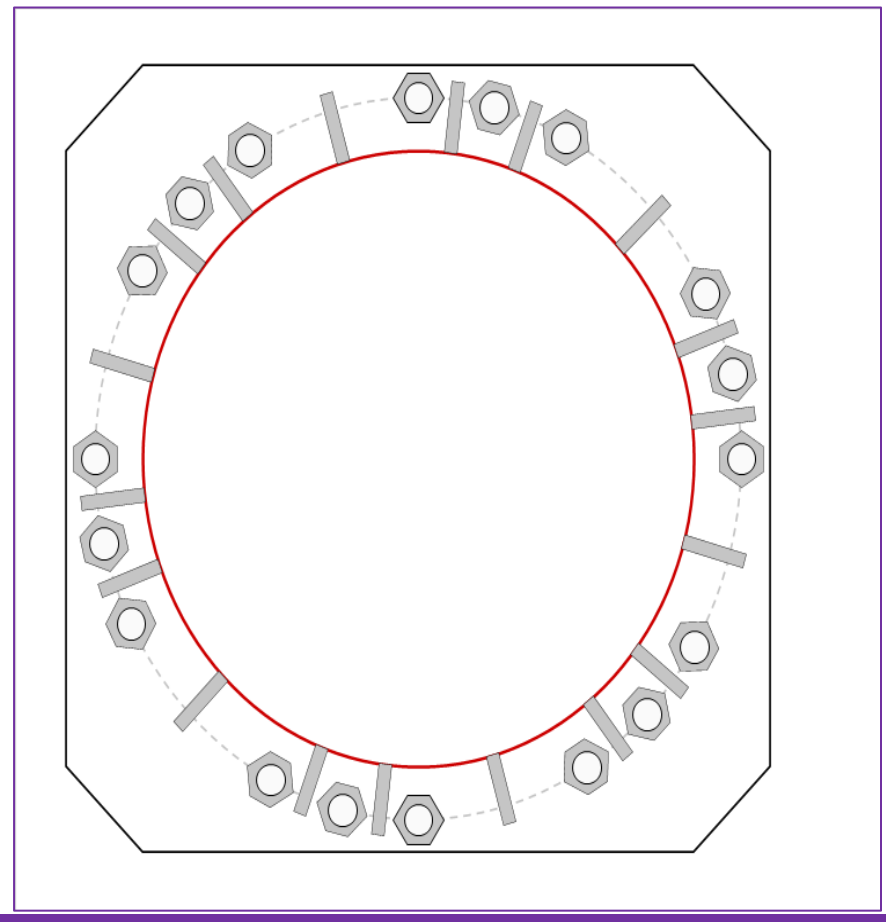
Monopole Base Plate Connection

Site Info	
BU #	806361
Site Name	NHV 102 943127
Order #	634513 Rev. 0

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

Applied Loads	
Moment (kip-ft)	4374.22
Axial Force (kips)	66.32
Shear Force (kips)	38.00

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

GROUP 1: (12) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 50.6" BC
pos. (deg): 62.8, 90, 121.4, 148.6, 242.8, 270, 301.4, 328.6, 0, 27.2,

GROUP 2: (6) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 50.6" BC
pos. (deg): 76.4, 135, 256.4, 315, 13.6, 193.6

Base Plate Data

55.1" W x 2.5" Plate (A572-60; Fy=60 ksi, Fu=75 ksi); Clip: 6 in

Stiffener Data

(18) 18"H x 5"W x 1"T, Notch: 0.75"
plate: Fy= 50 ksi ; weld: Fy= 70 ksi
horiz. weld: 0.5" groove, 45° dbl bevel, 0.5" fillet
vert. weld: 0.5" fillet

Pole Data

43.13" x 0.375" 12-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

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

GROUP 1:		
Pu_t = 229.86	ϕPn_t = 243.75	**Stress Rating**
Vu = 3.17	ϕVn = 149.1	**89.8%**
Mu = n/a	ϕMn = n/a	**Pass**
GROUP 2:		
Pu_t = 233.32	ϕPn_t = 243.75	**Stress Rating**
Vu = 0	ϕVn = 149.1	**91.2%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

Max Stress (ksi):	33.37	(Roark's Flexural)
Allowable Stress (ksi):	54	
Stress Rating:	**58.9%**	**Pass**

Stiffener Summary

Horizontal Weld:	**87.8%**	**Pass**
Vertical Weld:	**43.8%**	**Pass**
Plate Flexure+Shear:	**18.2%**	**Pass**
Plate Tension+Shear:	**88.6%**	**Pass**
Plate Compression:	**77.9%**	**Pass**

Pole Summary

Punching Shear:	**13.9%**	**Pass**

CCIplate

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	Yes	No	No	

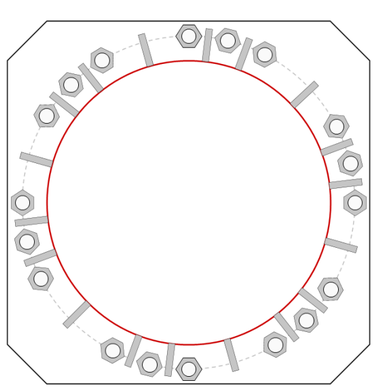
Custom Bolt Connection

Bolt	Bolt Group ID	Location (deg.)	Diameter (in)	Material	Bolt Circle (in)	Eta Factor, η:	l_{ar} (in):	Thread Type	Area Override, in^2	Tension Only
1	1	62.7600454	2.25	A615-75	50.6	0.5	0	N-Included		No
2	2	76.3800227	2.25	A615-75	50.6	0.5	0	N-Included		No
3	1	90	2.25	A615-75	50.6	0.5	0	N-Included		No
4	1	121.380023	2.25	A615-75	50.6	0.5	0	N-Included		No
5	2	135	2.25	A615-75	50.6	0.5	0	N-Included		No
6	1	148.619977	2.25	A615-75	50.6	0.5	0	N-Included		No
7	1	242.760045	2.25	A615-75	50.6	0.5	0	N-Included		No
8	2	256.380023	2.25	A615-75	50.6	0.5	0	N-Included		No
9	1	270	2.25	A615-75	50.6	0.5	0	N-Included		No
10	1	301.380023	2.25	A615-75	50.6	0.5	0	N-Included		No
11	2	315	2.25	A615-75	50.6	0.5	0	N-Included		No
12	1	328.619977	2.25	A615-75	50.6	0.5	0	N-Included		No
13	1	0	2.25	A615-75	50.6	0.5	0	N-Included		No
14	2	13.6199773	2.25	A615-75	50.6	0.5	0	N-Included		No
15	1	27.2399546	2.25	A615-75	50.6	0.5	0	N-Included		No
16	1	180	2.25	A615-75	50.6	0.5	0	N-Included		No
17	2	193.619977	2.25	A615-75	50.6	0.5	0	N-Included		No
18	1	207.239955	2.25	A615-75	50.6	0.5	0	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	6.809989	5	18	1	0.75	0.75	50	Both	0.5	45	0.5	0.5	70
2	1	20.427767	5	18	1	0.75	0.75	50	Both	0.5	45	0.5	0.5	70
3	1	69.5678344	5	18	1	0.75	0.75	50	Both	0.5	45	0.5	0.5	70
4	1	83.1878124	5	18	1	0.75	0.75	50	Both	0.5	45	0.5	0.5	70
5	1	105.690012	5	18	1	0.75	0.75	50	Both	0.5	45	0.5	0.5	70
6	1	128.190011	5	18	1	0.75	0.75	50	Both	0.5	45	0.5	0.5	70
7	1	141.809989	5	18	1	0.75	0.75	50	Both	0.5	45	0.5	0.5	70
8	1	164.309989	5	18	1	0.75	0.75	50	Both	0.5	45	0.5	0.5	70
9	1	186.807789	5	18	1	0.75	0.75	50	Both	0.5	45	0.5	0.5	70
10	1	200.427767	5	18	1	0.75	0.75	50	Both	0.5	45	0.5	0.5	70
11	1	225	5	18	1	0.75	0.75	50	Both	0.5	45	0.5	0.5	70
12	1	249.570033	5	18	1	0.75	0.75	50	Both	0.5	45	0.5	0.5	70
13	1	263.190011	5	18	1	0.75	0.75	50	Both	0.5	45	0.5	0.5	70
14	1	308.190011	5	18	1	0.75	0.75	50	Both	0.5	45	0.5	0.5	70
15	1	321.809989	5	18	1	0.75	0.75	50	Both	0.5	45	0.5	0.5	70
16	1	344.309989	5	18	1	0.75	0.75	50	Both	0.5	45	0.5	0.5	70
17	1	285.690012	5	18	1	0.75	0.75	50	Both	0.5	45	0.5	0.5	70
18	1	42.9299661	5	18	1	0.75	0.75	50	Both	0.5	45	0.5	0.5	70

Plot Graphic



Drilled Pier Foundation

BU # :	806361
Site Name:	NHV 102 943127
Order Number:	634513 Rev. 0
TIA-222 Revison:	H
Tower Type:	Monopole

Applied Loads	Comp.	Uplift
Moment (kip-ft)	4374.22	
Axial Force (kips)	66.34	
Shear Force (kips)	37.96	

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

Pier Design Data		
Depth	33	ft
Ext. Above Grade	0.5	ft
Pier Section 1		
From 0.5' above grade to 23' below grade		
Pier Diameter	6	ft
Rebar Quantity	32	
Rebar Size	11	
Rebar Cage Diameter	61	in
Tie Size	4	
Tie Spacing		in

Rebar & Pier Options
Embedded Pole Inputs
Belled Pier Inputs

Pier Section 2		
From 23' below grade to 33' below grade		
Pier Diameter	6	ft
Rebar Quantity	16	
Rebar Size	11	
Rebar Cage Diameter	61	in
Tie Size	4	
Tie Spacing		in

Analysis Results		
Soil Lateral Check	*Compression*	*Uplift*
$D_{v=0}$ (ft from TOC)	7.69	-
Soil Safety Factor	5.42	-
Max Moment (kip-ft)	4603.95	-
Rating*	*23.4%*	-
Soil Vertical Check	*Compression*	*Uplift*
Skin Friction (kips)	418.46	-
End Bearing (kips)	783.03	-
Weight of Concrete (kips)	121.77	-
Total Capacity (kips)	1201.49	-
Axial (kips)	188.11	-
Rating*	*14.9%*	-
Reinforced Concrete Flexure	*Compression*	*Uplift*
Critical Depth (ft from TOC)	7.52	-
Critical Moment (kip-ft)	4603.76	-
Critical Moment Capacity	6122.16	-
Rating*	*71.6%*	-
Reinforced Concrete Shear	*Compression*	*Uplift*
Critical Depth (ft from TOC)	28.71	-
Critical Shear (kip)	191.77	-
Critical Shear Capacity	544.17	-
Rating*	*33.6%*	-

Shear-Friction Methodology is Applied

Structural Foundation Rating*	**71.6%**
Soil Interaction Rating*	**23.4%**

*Rating per TIA-222-H Section 15.5

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

Go to Soil Calculations

Soil Profile

Groundwater Depth	10

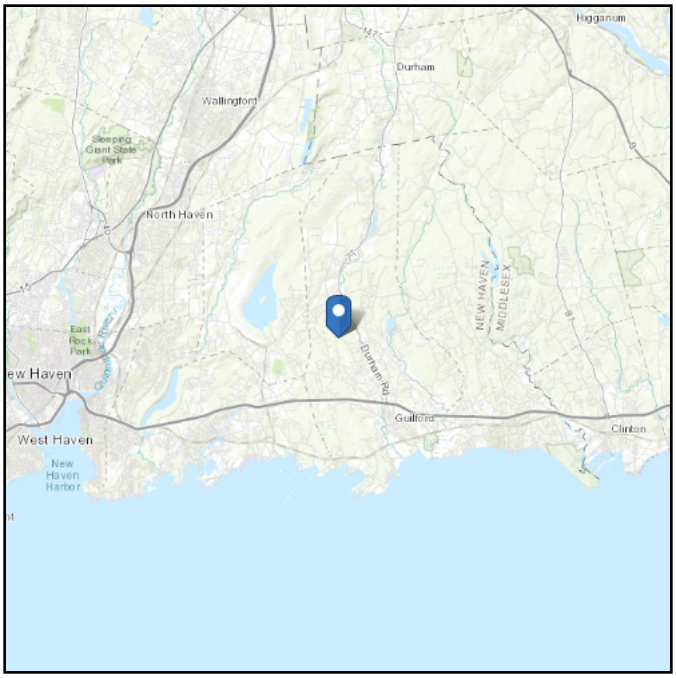
# of Layers	5

Layer	Top (ft)	Bottom (ft)	Thickness (ft)	γ_{soil} (pcf)	$\gamma_{concrete}$ (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Gross Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	3.33	3.33	135	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
2	3.33	5	1.67	135	150	0	38	0.000	0.000	0.00	0.00			Cohesionless
3	5	10	5	135	150	0	38	0.000	0.000	0.80	0.80			Cohesionless
4	10	15	5	75	87.6	0	38	0.000	0.000	0.80	0.80			Cohesionless
5	15	33	18	75	87.6	0	38	0.000	0.000	1.20	1.20	36.92541		Cohesionless

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard:	ASCE/SEI 7-16	**Elevation:**	281.72 ft (NAVD 88)
Risk Category:	II	**Latitude:**	41.330025
Soil Class:	D - Default (see Section 11.4.3)	**Longitude:**	-72.721808



Wind

Results:

Wind Speed:	122 Vmph Wind Speed Rounded Up to 125 Vmph
10-year MRI	75 Vmph
25-year MRI	85 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
Date Accessed:	Fri Jan 29 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.

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

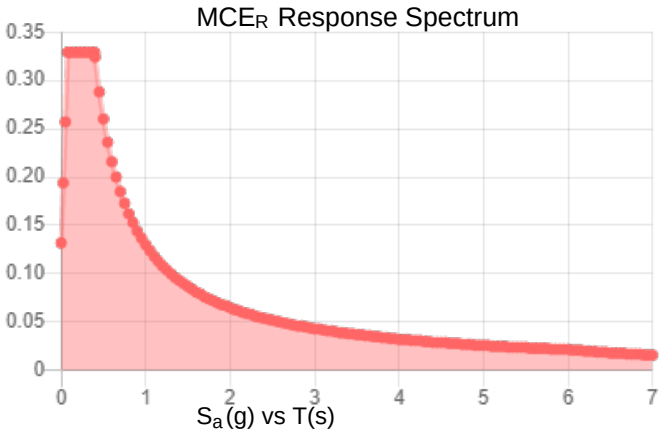
Seismic

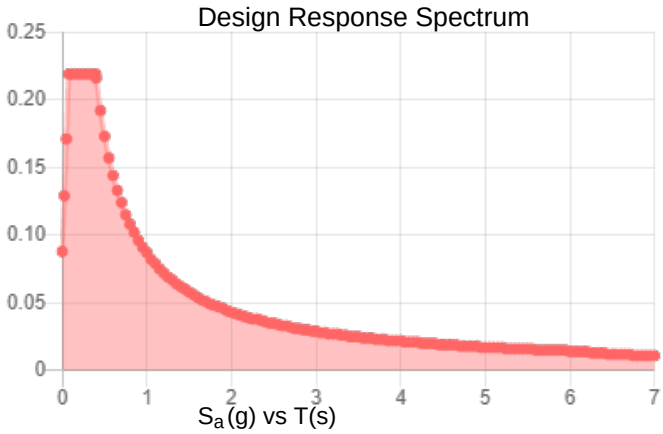
Site Soil Class: D - Default (see Section 11.4.3)

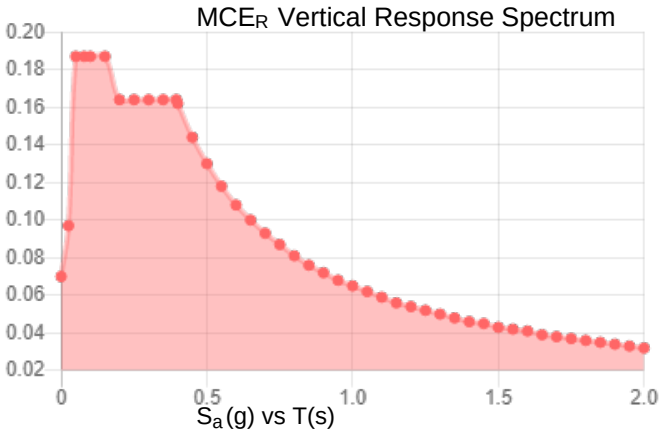
Results:

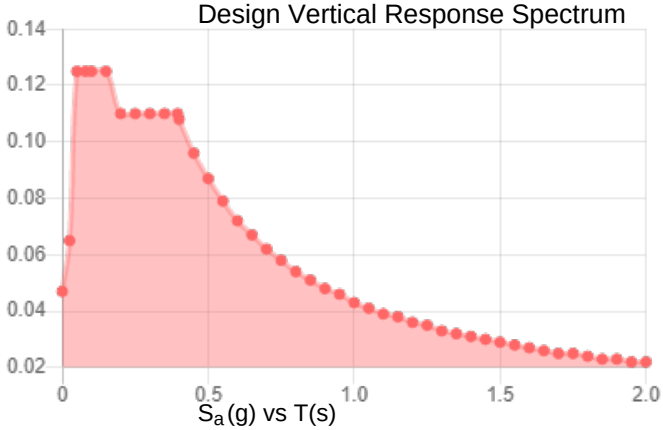
S_S :	0.206	S_{D1} :	0.087
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.115
F_v :	2.4	PGA_M :	0.181
S_{MS} :	0.329	F_{PGA} :	1.57
S_{M1} :	0.13	I_e :	1
S_{DS} :	0.219	C_v :	0.711

Seismic Design Category B









Data Accessed: Fri Jan 29 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:	Fri Jan 29 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.