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

VIA ELECTRONIC MAIL

May 18, 2018

Mark Roberts
QC Development
P.O. Box 916
Storrs, CT 06268

RE: **EM-CING-007-180403** - New Cingular Wireless PCS, LLC (AT&T) notice of intent to modify an existing telecommunications facility located at 240 Kensington Road, Berlin, Connecticut.

Dear Mr. Roberts:

The Connecticut Siting Council (Council) is in receipt of your email correspondence of May 17, 2018 submitted in response to the Council's April 12, 2018 notification of an incomplete request for exempt modification with regard to the above-referenced matter.

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

Thank you for your attention and cooperation.

Sincerely,

Melanie A. Bachman
Executive Director

MB/CWM/jmb

From: Mark Roberts [mailto:mark.roberts@qcdevelopment.net]
Sent: Thursday, May 17, 2018 5:05 PM
To: CSC-DL Siting Council
Subject: RE: Incomplete - EM-CING-007-180403 - Kensington Rd.
Importance: High

Hello – Please see the attached Revised Tower Structural Analysis report which now correctly identifies the number of mast pipes to be installed.

Thanks

Mark Roberts
QC Development
860-670-9068

May 08, 2018

Cheryl Schultz
Crown Castle
3530 Toringdon Way Suite 300
Charlotte, NC 28277
(704) 405-6632

B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630
btwo@btgrp.com

Subject:	**Structural Analysis Report**	
Carrier Designation:	***AT&T Mobility* Co-Locate**	
	Carrier Site Number:	CT1019
	Carrier Site Name:	Berlin Police Department
Crown Castle Designation:	**Crown Castle BU Number:**	826217
	Crown Castle Site Name:	Newington_1
	Crown Castle JDE Job Number:	478487
	Crown Castle Work Order Number:	1568933
	Crown Castle Order Number:	421391 Rev. 7
Engineering Firm Designation:	**B+T Group Project Number:**	87581.017.01
Site Data:	**240 Kensington Road, Berlin, Hartford County, CT** **Latitude *41° 37' 34.3"*, Longitude *-72° 46' 32.33"*** **191.667 Foot - Monopole Tower**	

Dear Cheryl Schultz,

B+T Group is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 1183378, in accordance with order 421391, revision 7.

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:

LC5: Existing + Proposed Equipment **Sufficient Capacity**
Note: See Table 1 and Table 2 for the proposed and existing loading, respectively.

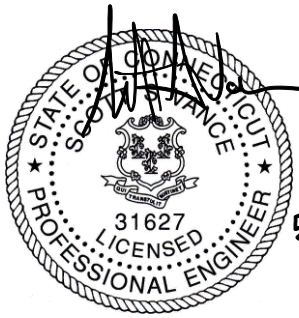
This analysis has been performed in accordance with the 2016 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 125 mph converted to a nominal 3-second gust wind speed of 97 mph per Section 1609.3 and Appendix N as required for use in the TIA-222-G Standard per Exception #5 of Section 1609.1.1. Exposure Category B and Risk Category II were used in this analysis.

All equipment proposed in this report shall be installed in accordance with the attached drawings for the determined available structural capacity to be effective.

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

Structural analysis prepared by: Jacob Johnson, E.I.T.

Respectfully submitted by: B+T Engineering, Inc.
COA: PEC.0001564 Expires: 02/10/2019



5/8/18

Scott S. Vance, P.E.

tnxTower Report - version 7.0.5.1

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1) INTRODUCTION

This tower is a 191.6 ft. Monopole designed by PiROD Manufactures and mapped by TEP in May of 2015. The tower was originally designed for a wind speed of 80 mph per TIA/EIA-222-F. This tower was modified multiple times to accommodate additional loading.

2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of TIA-222-G Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a 3-second gust wind speed of 97 mph with no ice, 50 mph with 1-inch ice thickness and 60 mph under service loads, exposure category B with topographic category 1 and crest height of 0 feet.

Table 1 - Proposed Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
151.0	151.0	3	CCI Antennas	TPA-65R-LCUUUU-H8	--	--	--
		3	Ericsson	RRUS 32			
		3	Ericsson	RRUS 32 B2			
		3	Kaelus	DBC0062F3V52-1			
		3	--	2.5" Std (2.88" O.D.) Pipe Handrail			
		9	--	2.5" Std (2.88" O.D.) Pipe Masts			
		1	Site Pro 1	PRK-1245			
150.0	152.0	3	Ericsson	RRUS 12	--	--	--
	150.0	3	Ericsson	RRUS 11			

Table 2 - Existing Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
192.0	196.0	1	Kathrein	OGB4-900D	1	7/8	1
191.0	196.0	1	Andrew	DB589-A	1	5/16	1
	191.0	1	--	Side Arm Mount [SO 702-1]			
	190.0	1	Motorola	WB2623			
184.0	184.0	1	--	Platform Mount [LP 405-1]	19	1-5/8	1
	181.0	3	Commscope	ATBT-BOTTOM-24V			
		3	Commscope	LNX-6515DS-VTM			
		3	Ericsson	AIR -32 B2A/B66AA			
		6	Ericsson	KRY 112 144/1			
		3	RFS Celwave	APX16DWV-16DWVS-E-A20			
160.0	160.0	3	Alcatel Lucent	RRH2X60-AWS	14	1-5/8	1
		3	Alcatel Lucent	RRH2X60-PCS			
		3	Alcatel Lucent	RRH2x40 700			
		4	Andrew	LNX-6514DS-A1M			
		6	Commscope	HBXX-6517DS-VTM			
		2	Commscope	LNX-8513DS-VTM			
		1	Rfs Celwave	DB-T1-6Z-8AB-0Z			
		6	Rfs Celwave	FD9R6004/2C-3L			
		1	--	Platform Mount [LP 303-1]			

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
158.0	158.0	1	Decibel	DB205-A	2	7/8	1
		1	Sinclair	SRL-224NM-4			
		2	--	Side Arm Mount [SO 702-1]			
151.0	151.0	**1**	**Andrew**	**SBNH-1D6565C**	**--**	**--**	**3**
		3	**Comm. Comp Inc.**	**DTMABP7819VG12A**			
		4	**Ericsson**	**RRUS 11 B12**			
		2	**Kmw Comm.**	**AM-X-CD-16-65-00T-RET**			
		6	**Powerwave Tech.**	**CM1007-DBPXBC-003**			
		6	**Powerwave Tech.**	**LGP21901**			
		3	Andrew	SBNH-1D6565C	12	1-1/4	1
		3	Comm Comp Inc.	DTMABP7819VG12A			
		3	Powerwave Tech.	7770.00			
		1	Raycap	DC6-48-60-18-8F			
		1	--	Platform Mount [LP 403-1]			
150.0	150.0	**3**	**Ericsson**	**RRUS 11 B12**	**--**	**--**	**3**
		1	Raycap	DC6-48-60-18-8F	2	3/4	1
		1	--	Pipe Mount [PM 601-3]	1	3/8	
		1	--	Side Arm Mount [SO 102-3]			
132.0	132.0	1	Sinclair	SRL-235-2	1	7/8	1
		1	--	Side Arm Mount [SO 702-1]			
124.0	124.0	1	Decibel	PCS 1900 TMA RX	--	--	1
		1	--	Side Arm Mount [SO 104-3]			
116.0	118.0	9	Decibel	844G65VTZAS	--	--	2
	120.0	1	Andrew	VHLP2-18	6	5/16	1
		1	Dragonwave	HORIZON DUO			
	118.0	3	Argus Tech.	LLPX310R	3	1/2	
		3	Samsung Tele.	WIMAX DAP HEAD			
	116.0	1	--	Platform Mount [LP 405-1]			
90.0	99.0	1	Decibel	DB205-A	1	7/8	1
	90.0	1	Andrew	KP2F-34	2	1/2	
		1	MTI Wireless Edge	MT-485002	1	5/16	
		2	--	Side Arm Mount [SO 702-1]			
70.0	70.0	1	Sinclair	SRL-235-2	2	7/8	1
		1	--	Side Arm Mount [SO 701-1]			
33.0	33.0	1	Decibel	DB909XVTE-M	2	1/2	1
		1	--	Side Arm Mount [SO 702-1]			

Notes:
1) Existing Equipment
2) Abandoned Equipment; Considered in this analysis
3) Equipment To Be Removed; Not considered in this analysis

Table 3 - Design Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
190.0	190.0	1	Decibel	DB809	1	1-5/8
177.67	177.67	12	EMS	RR90-17-00DP	12	1-5/8
155.0	155.0	2	Decibel	DB205	2	1-5/8
140.0	140.0	2	Decibel	DB205	2	1-5/8
127.67	127.67	12	EMS	RR90-17-00DP	12	1-5/8
117.67	117.67	12	EMS	RR90-17-00DP	12	1-5/8
25.0	25.0	1	Decibel	DB516	2	1-5/8
		1	Decibel	DB809M		
20.0	20.0	1	Decibel	DB205	1	1-5/8

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
Online Application	AT&T Mobility Co-Locate, Rev. 7	421391	CCI Sites
Tower Manufacturer Drawing	PiROD, File No. A-115400	3438498	CCI Sites
Tower Mapping	TEP, Project No. 25651-57340	3438498	CCI Sites
Mount Analysis	HDG LLC, Project No. CT1019	Date: 03/20/2018	--
Tower Modification Drawing	Natcomm Inc., Date: 03/18/2008	3678661	CCI Sites
Tower Modification Drawing	B+T Group, Date: 10/17/2014	4003976	CCI Sites
Post Modification Inspection	SGS, Date: 01/08/2015	5493013	CCI Sites
Tower Modification Drawing	B+T Group, Date: 06/16/2015	5753424	CCI Sites
Post Modification Inspection	SGS, Date: 10/21/2015	5947973	CCI Sites
Foundation Drawing	Pirod, File No. A-115400	3463552	CCI Sites
Geotech Report	French & Parrello, Job No. 98A209ERI	3438510	CCI Sites
	FDH, Project No. 1307031600		
Antenna Configuration	Crown CAD Package	Date: 04/04/2018	CCI Sites

3.1) Analysis Method

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

3.2) Assumptions

1) Tower and structures were built in accordance with the manufacturer's specifications.
2) The tower and structures have been maintained in accordance with the manufacturer's specification.
3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
4) Mount areas and weights are assumed based on photographs provided.
5) The existing base plate grout was not considered in this analysis.

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

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	191.667 - 186.667	Pole	P18x0.375	1	-1.781	784.878	1.7	Pass
L2	186.667 - 181.567	Pole	P24x0.375	2	-11.477	1052.070	2.1	Pass
L3	181.567 - 176.567	Pole	P24x0.375	3	-5.071	1052.070	6.3	Pass
L4	176.567 - 171.567	Pole	P24x0.375	4	-5.777	1052.070	10.8	Pass
L5	171.567 - 166.567	Pole	P24x0.375	5	-6.485	1052.070	15.5	Pass
L6	166.567 - 161.567	Pole	P24x0.375	6	-7.197	1052.070	20.5	Pass
L7	161.567 - 156.567	Pole	P24x0.375	7	-10.914	1052.070	29.1	Pass
L8	156.567 - 151.567	Pole	P24x0.375	8	-11.669	1052.070	39.2	Pass
L9	151.567 - 146.567	Pole	P24x0.375	9	-17.337	1052.070	55.6	Pass
L10	146.567 - 141.567	Pole	P24x0.375	10	-18.235	1052.070	72.7	Pass
L11	141.567 - 141.417	Pole	P24x0.375	11	-18.273	1052.070	73.2	Pass
L12	141.417 - 136.417	Pole	P36x0.375	12	-19.443	1490.100	42.7	Pass
L13	136.417 - 131.417	Pole	P36x0.375	13	-21.072	1490.100	51.2	Pass
L14	131.417 - 126.417	Pole	P36x0.375	14	-22.276	1490.100	60.0	Pass
L15	126.417 - 121.417	Pole	P36x0.375	15	-24.526	1490.100	69.1	Pass
L16	121.417 - 121.167	Pole	P36x0.375	16	-24.605	1490.100	69.6	Pass
L17	121.167 - 116.167	Pole	P42x0.375	17	-26.123	1668.870	59.2	Pass
L18	116.167 - 111.167	Pole	P42x0.375	18	-30.183	1668.870	67.6	Pass
L19	111.167 - 110.042	Pole	P42x0.375	19	-30.495	1668.870	69.5	Pass
L20	110.042 - 109.792	Pole + Reinf.	P42x0.4875	20	-30.586	2332.130	54.2	Pass
L21	109.792 - 105.083	Pole + Reinf.	P42x0.4875	21	-32.228	2332.130	60.3	Pass
L22	105.083 - 104.833	Pole + Reinf.	P42x0.5625	22	-32.340	2767.950	55.1	Pass
L23	104.833 - 100.917	Pole + Reinf.	P42x0.5625	23	-34.763	2767.950	59.9	Pass
L24	100.917 - 100.667	Pole	P48x0.375	24	-34.874	1847.490	66.3	Pass
L25	100.667 - 95.833	Pole	P48x0.375	25	-36.732	1847.490	73.0	Pass
L26	95.833 - 95.583	Pole + Reinf.	P48x0.475	26	-36.830	2481.390	58.3	Pass
L27	95.583 - 90.583	Pole + Reinf.	P48x0.475	27	-38.630	2481.390	63.8	Pass
L28	90.583 - 89.917	Pole + Reinf.	P48x0.475	28	-39.028	2481.390	64.6	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L29	89.917 - 89.667	Pole + Reinf.	P48x0.575	29	-39.144	3174.020	53.9	Pass
L30	89.667 - 84.667	Pole + Reinf.	P48x0.575	30	-41.997	3174.020	58.6	Pass
L31	84.667 - 80.833	Pole + Reinf.	P48x0.575	31	-45.188	3174.020	62.3	Pass
L32	80.833 - 80.583	Pole + Reinf.	P54x0.4875	32	-45.396	2797.170	58.7	Pass
L33	80.583 - 75.583	Pole + Reinf.	P54x0.4875	33	-47.985	2797.170	63.2	Pass
L34	75.583 - 70.583	Pole + Reinf.	P54x0.4875	34	-50.772	2797.170	67.9	Pass
L35	70.583 - 69.5	Pole + Reinf.	P54x0.4875	35	-51.785	2797.170	68.9	Pass
L36	69.5 - 69.25	Pole + Reinf.	P54x0.5875	36	-51.977	3545.230	57.2	Pass
L37	69.25 - 64.25	Pole + Reinf.	P54x0.5875	37	-58.339	3545.230	61.3	Pass
L38	64.25 - 60.583	Pole + Reinf.	P54x0.5875	38	-63.514	3545.230	64.4	Pass
L39	60.583 - 60.333	Pole + Reinf.	P60x0.5125	39	-63.722	3222.890	60.4	Pass
L40	60.333 - 55.333	Pole + Reinf.	P60x0.5125	40	-67.517	3222.890	64.4	Pass
L41	55.333 - 52.167	Pole + Reinf.	P60x0.5125	41	-69.015	3222.890	66.9	Pass
L42	52.167 - 51.917	Pole + Reinf.	P60x0.625	42	-69.161	4139.150	56.1	Pass
L43	51.917 - 46.917	Pole + Reinf.	P60x0.625	43	-72.267	4139.150	59.4	Pass
L44	46.917 - 41.917	Pole + Reinf.	P60x0.625	44	-76.245	4139.150	62.9	Pass
L45	41.917 - 40.333	Pole + Reinf.	P60x0.625	45	-77.495	4139.150	64.0	Pass
L46	40.333 - 40.083	Pole + Reinf.	P60x0.6	46	-77.688	3929.110	64.7	Pass
L47	40.083 - 35.083	Pole + Reinf.	P60x0.6	47	-81.362	3929.110	68.2	Pass
L48	35.083 - 30.083	Pole + Reinf.	P60x0.6	48	-84.595	3929.110	71.7	Pass
L49	30.083 - 28	Pole + Reinf.	P60x0.6	49	-85.718	3929.110	73.2	Pass
L50	28 - 27.75	Pole + Reinf.	P60x0.725	50	-85.884	5015.910	61.6	Pass
L51	27.75 - 22.75	Pole + Reinf.	P60x0.725	51	-90.001	5015.910	64.6	Pass
L52	22.75 - 20.083	Pole + Reinf.	P60x0.725	52	-92.225	5015.910	66.3	Pass
L53	20.083 - 19.833	Pole	P60x0.625	53	-92.424	4139.150	73.9	Pass
L54	19.833 - 17	Pole	P60x0.625	54	-94.569	4139.150	75.8	Pass
L55	17 - 16.75	Pole + Reinf.	P60x0.725	55	-94.794	5015.910	65.7	Pass
L56	16.75 - 11.65	Pole + Reinf.	P60x0.75	56	-99.019	5244.230	67.2	Pass
L57	11.65 - 11.417	Pole + Reinf.	P60x0.75	57	-99.181	5244.230	67.3	Pass
L58	11.417 - 9.375	Pole + Reinf.	P60x0.75	58	-100.545	5244.230	68.5	Pass
L59	9.375 - 9.125	Pole + Reinf.	P60x0.8	59	-100.725	5624.100	68.1	Pass
L60	9.125 - 4.833	Pole + Reinf.	P60x0.8	60	-103.702	5624.100	70.6	Pass
L61	4.833 - 4.583	Pole + Reinf.	P60x0.75	61	-103.879	5244.230	72.2	Pass
L62	4.583 - 0	Pole + Reinf.	P60x0.75	62	-107.010	5244.230	74.9	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
							Summary	
						Pole (L54)	75.8	Pass
						Reinforcement	72.9	Pass
						Rating =	75.8	Pass

Table 6 - Tower Component Stresses vs. Capacity – LC5

Notes	Component	Elevation (ft)	Capacity	Pass / Fail
1	Flange Connection	180	2.3	Pass
1	Flange Connection	140	48.0	Pass
1	Bridge Stiffener	120	74.2	Pass
	Flange Connections		44.7	Pass
1	Bridge Stiffener	100	72.2	Pass
	Flange Connections		44.3	Pass
1	Bridge Stiffener	80	66.9	Pass
	Flange Connections		44.2	Pass
1	Bridge Stiffener	60	48.5	Pass
	Flange Connections		37.7	Pass
1	Existing Bridge Stiffener	40	59.9	Pass
	New Bridge Stiffener		50.8	Pass
	Flange Connections-53BC		41.6	Pass
	Flange Connections-47BC		37.3	Pass
1	Existing Bridge Stiffener	20	68.9	Pass
	New Bridge Stiffener		68.9	Pass
	Flange Connections-53BC		49.5	Pass
	Flange Connections-47BC		44.5	Pass
1	Anchor Rods	Base	31.7	Pass
1	Base Plate	Base	45.0	Pass
1	Base Foundation (Structure)	Base	80.9	Pass
1	Base Foundation (Soil Interaction)	Base	67.1	Pass

Structure Rating (max from all components) =	**80.9%**

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

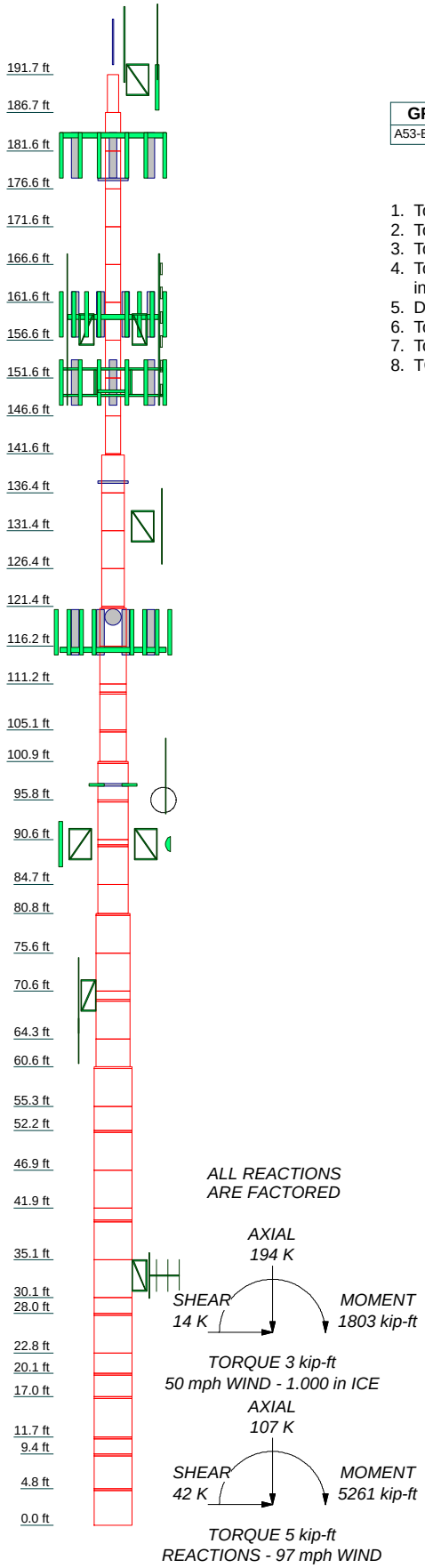
4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT

Section	Size	Length (ft)	Grade	Weight (K)
1	P18.0x0.375	5.000	A53-B-42	0.4
2	P18.0x0.375	5.100		0.5
3	P18.0x0.375	5.000		0.5
4	P18.0x0.375	5.000		0.5
5	P18.0x0.375	5.000		0.5
6	P18.0x0.375	5.000		0.5
7	P18.0x0.375	5.000		0.5
8	P18.0x0.375	5.000		0.5
9	P18.0x0.375	5.000		0.5
10	P18.0x0.375	5.000		0.5
11	P18.0x0.375	5.000		0.7
12	P18.0x0.375	5.000		0.7
13	P18.0x0.375	5.000		0.7
14	P18.0x0.375	5.000		0.7
15	P18.0x0.375	5.000		0.8
16	P18.0x0.375	5.000		0.8
17	P18.0x0.375	5.000		0.8
18	P18.0x0.375	5.000		0.8
19	P18.0x0.375	5.000		1.2
20	P18.0x0.375	5.000		1.2
21	P18.0x0.375	5.000		1.2
22	P18.0x0.375	5.000		1.2
23	P18.0x0.375	5.000		1.2
24	P18.0x0.375	5.000		1.2
25	P18.0x0.375	5.000		1.2
26	P18.0x0.375	5.000		1.2
27	P18.0x0.375	5.000		1.2
28	P18.0x0.375	5.000		1.4
29	P18.0x0.375	5.000		1.4
30	P18.0x0.375	5.000		1.4
31	P18.0x0.375	5.000		1.4
32	P18.0x0.375	5.000		1.4
33	P18.0x0.375	5.000		1.4
34	P18.0x0.375	5.000		1.4
35	P18.0x0.375	5.000		1.4
36	P18.0x0.375	5.000		1.7
37	P18.0x0.375	5.000		1.7
38	P18.0x0.375	5.000		1.7
39	P18.0x0.375	5.000		1.7
40	P18.0x0.375	5.000		1.6
41	P18.0x0.375	5.000		1.6
42	P18.0x0.375	5.000		1.6
43	P18.0x0.375	5.000		2.0
44	P18.0x0.375	5.000		2.0
45	P18.0x0.375	5.000		2.0
46	P18.0x0.375	5.000		2.0
47	P18.0x0.375	5.000		1.9
48	P18.0x0.375	5.000		1.9
49	P18.0x0.375	5.000		1.9
50	P18.0x0.375	5.000		2.3
51	P18.0x0.375	5.000		2.3
52	P18.0x0.375	5.000		2.3
53	P18.0x0.375	5.000		2.3
54	P18.0x0.375	5.000		2.3
55	P18.0x0.375	5.000		2.3
56	P18.0x0.375	5.000		2.5
57	P18.0x0.375	5.000		2.5
58	P18.0x0.375	5.000		2.5
59	P18.0x0.375	5.000		2.5
60	P18.0x0.375	5.000		2.5
61	P18.0x0.375	5.000		2.5
62	P18.0x0.375	4.583		2.3
				48.0



MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A53-B-42	42 ksi	63 ksi			

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-G Standard.
3. Tower designed for a 97 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.000 ft
8. TOWER RATING: 75.8%

B+T Group
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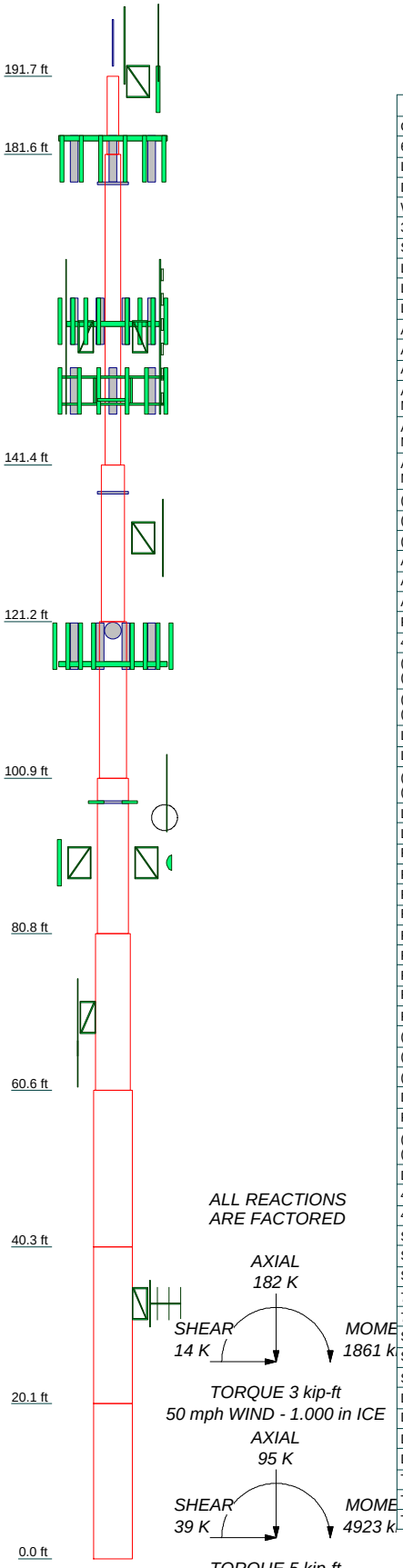
Phone: (918) 587-4630
FAX: (918) 295-0265

Job: 87581.016.01 - Newington_1, CT (BU# 826217			
Project:			
Client: Crown Castle	Drawn by: Gireesh Acharya	App'd:	
Code: TIA-222-G	Date: 05/05/18	Scale: NTS	
Path:		Dwg No. E-1	

Section	Size	Length (ft)	Grade	Weight (K)
1	P18x3/8	10.084	A53-B-42	0.7
2	P24x3/8	40.166		3.8
3	P36x3/8	20.250		2.9
4	P42x3/8	20.250		3.4
5	P48x3/8	20.084		3.8
6	P54x3/8	20.250		4.4
7	P60x3/8	20.250		4.8
8	P60x1/2	20.250		6.4
9	P60x5/8	20.083		8.0
				38.2



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
OGB4-900D (E)	192	RRUS 32 (P)	151
6' x 2" Mount Pipe (E-Omni support)	192	RRUS 32 (P)	151
Lightning Rod 5/8" x 4' on 4' Pole (E)	191.667	RRUS 32 (P)	151
DB589-A (E)	191	RRUS 32 B2 (P)	151
WB2623 w/ Mount Pipe (E)	191	RRUS 32 B2 (P)	151
3' x 2" Pipe Mount (E-For Omni)	191	RRUS 32 B2 (P)	151
Side Arm Mount [SO 702-1] (E)	191	DBC0062F3V52-1 (P)	151
LNX-6515DS-VTM w/ Mount Pipe (E)	184	DBC0062F3V52-1 (P)	151
LNX-6515DS-VTM w/ Mount Pipe (E)	184	DBC0062F3V52-1 (P)	151
LNX-6515DS-VTM w/ Mount Pipe (E)	184	(3) 10' x 2.875" Pipe Mount (P - Mount Mod)	151
AIR -32 B2A/B66AA w/ Mount Pipe (E)	184		
AIR -32 B2A/B66AA w/ Mount Pipe (E)	184	(3) 10' x 2.875" Pipe Mount (P - Mount Mod)	151
AIR -32 B2A/B66AA w/ Mount Pipe (E)	184	(3) 10' x 2.875" Pipe Mount (P - Mount Mod)	151
APX16DWV-16DWVS-E-A20 w/ Mount Pipe (E)	184	Miscellaneous [NA 510-1] (P - Mount Mod)	151
APX16DWV-16DWVS-E-A20 w/ Mount Pipe (E)	184	Miscellaneous [NA 509-3] (P-PRK-1245 - Mount Mod)	151
APX16DWV-16DWVS-E-A20 w/ Mount Pipe (E)	184	Platform Mount [LP 403-1] (E)	151
(2) KRY 112 144/1 (E)	184	7770.00 w/ Mount Pipe (E)	151
(2) KRY 112 144/1 (E)	184	RRUS 11 (P)	150
(2) KRY 112 144/1 (E)	184	RRUS 11 (P)	150
ATBT-BOTTOM-24V (E)	184	RRUS 11 (P)	150
ATBT-BOTTOM-24V (E)	184	RRUS 12 (P)	150
ATBT-BOTTOM-24V (E)	184	RRUS 12 (P)	150
Platform Mount [LP 405-1] (E)	184	RRUS 12 (P)	150
4' ICE SHIELDS (E)	178	Side Arm Mount [SO 102-3] (E)	150
(2) HBXX-6517DS-VTM w/ Mount Pipe (E)	160	Pipe Mount [PM 601-3] (E)	150
(2) HBXX-6517DS-VTM w/ Mount Pipe (E)	160	DC6-48-60-18-8F (E)	150
LNX-6514DS-A1M w/ Mount Pipe (E)	160	4' ICE SHIELDS (E)	138
LNX-6514DS-A1M w/ Mount Pipe (E)	160	Side Arm Mount [SO 702-1] (E)	132
(2) LNX-6514DS-A1M w/ Mount Pipe (E)	160	Side Arm Mount [SO 104-3] (E-Mount Attachment)	132
LNX-8513DS-VTM w/ Mount Pipe (E)	160	SRL-235-2 (E)	132
LNX-8513DS-VTM w/ Mount Pipe (E)	160	4' x 2" Pipe Mount (E-For Omni)	132
RRH2x40 700 (E)	160	Side Arm Mount [SO 104-3] (E)	124
RRH2x40 700 (E)	160	PCS 1900 TMA RX (E)	124
RRH2x40 700 (E)	160	2' x 2" Pipe Mount (E-For TMA)	124
RRH2X60-AWS (E)	160	(3) 844G65VTZAS w/ Mount Pipe (AB)	116
RRH2X60-AWS (E)	160	LLPX310R w/ Mount Pipe (E)	116
RRH2X60-AWS (E)	160	LLPX310R w/ Mount Pipe (E)	116
RRH2X60-PCS (E)	160	LLPX310R w/ Mount Pipe (E)	116
RRH2X60-PCS (E)	160	WIMAX DAP HEAD (E)	116
RRH2X60-PCS (E)	160	WIMAX DAP HEAD (E)	116
(2) FD9R6004/2C-3L (E)	160	WIMAX DAP HEAD (E)	116
(2) FD9R6004/2C-3L (E)	160	HORIZON DUO (E)	116
(2) FD9R6004/2C-3L (E)	160	Platform Mount [LP 405-1] (E)	116
DB-T1-6Z-8AB-0Z (E)	160	(3) 844G65VTZAS w/ Mount Pipe (AB)	116
Platform Mount [LP 303-1] (E)	160	(3) 844G65VTZAS w/ Mount Pipe (AB)	116
(2) HBXX-6517DS-VTM w/ Mount Pipe (E)	160	Andrew VHLP2-18 (E)	116
DB205-A (E)	158	4' ICE SHIELDS (E)	98
4' x 2" Pipe Mount (E-For Omni)	158	4' ICE SHIELDS (E)	98
4' x 2" Pipe Mount (E-For Omni)	158	4' ICE SHIELDS (E)	98
Side Arm Mount [SO 702-1] (E)	158	DB205-A (E-Per Photo)	90
Side Arm Mount [SO 702-1] (E)	158	MT-485002 w/ Mount Pipe (E)	90
SRL-224NM-4 (E)	158	Side Arm Mount [SO 702-1] (E)	90
7770.00 w/ Mount Pipe (E)	151	Side Arm Mount [SO 702-1] (E)	90
7770.00 w/ Mount Pipe (E)	151	5' x 2" Pipe Mount (E-For Omni)	90
SBNH-1D6565C w/ Mount Pipe (E)	151	KP2F-34 (E)	90
SBNH-1D6565C w/ Mount Pipe (E)	151	2" x 2' Omni (E-Per Photo)	70
SBNH-1D6565C w/ Mount Pipe (E)	151	6' x 2" Mount Pipe (E-For Omni)	70
DTMABP7819VG12A (E)	151	Side Arm Mount [SO 701-1] (E)	70
DTMABP7819VG12A (E)	151	Side Arm Mount [SO 102-3] (E-Mount Attachment)	70
DTMABP7819VG12A (E)	151	SRL-235-2 (E)	70
DC6-48-60-18-8F (E)	151	Side Arm Mount [SO 702-1] (E)	33
TPA-65R-LCUUUU-H8 (P)	151	6' x 2" Mount Pipe (E-For Yagi)	33
TPA-65R-LCUUUU-H8 (P)	151	DB909XVTE-M (E)	33
TPA-65R-LCUUUU-H8 (P)	151	2" x 4' Omni (E-Per Photo)	33

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A53-B-42	42 ksi	63 ksi			

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-G Standard

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Project:			
Client: Crown Castle	Drawn by: Gireesh Acharya	App'd:	
Code: TIA-222-G	Date: 05/05/18	Scale: NTS	
Path:		Dwg No. E-1	

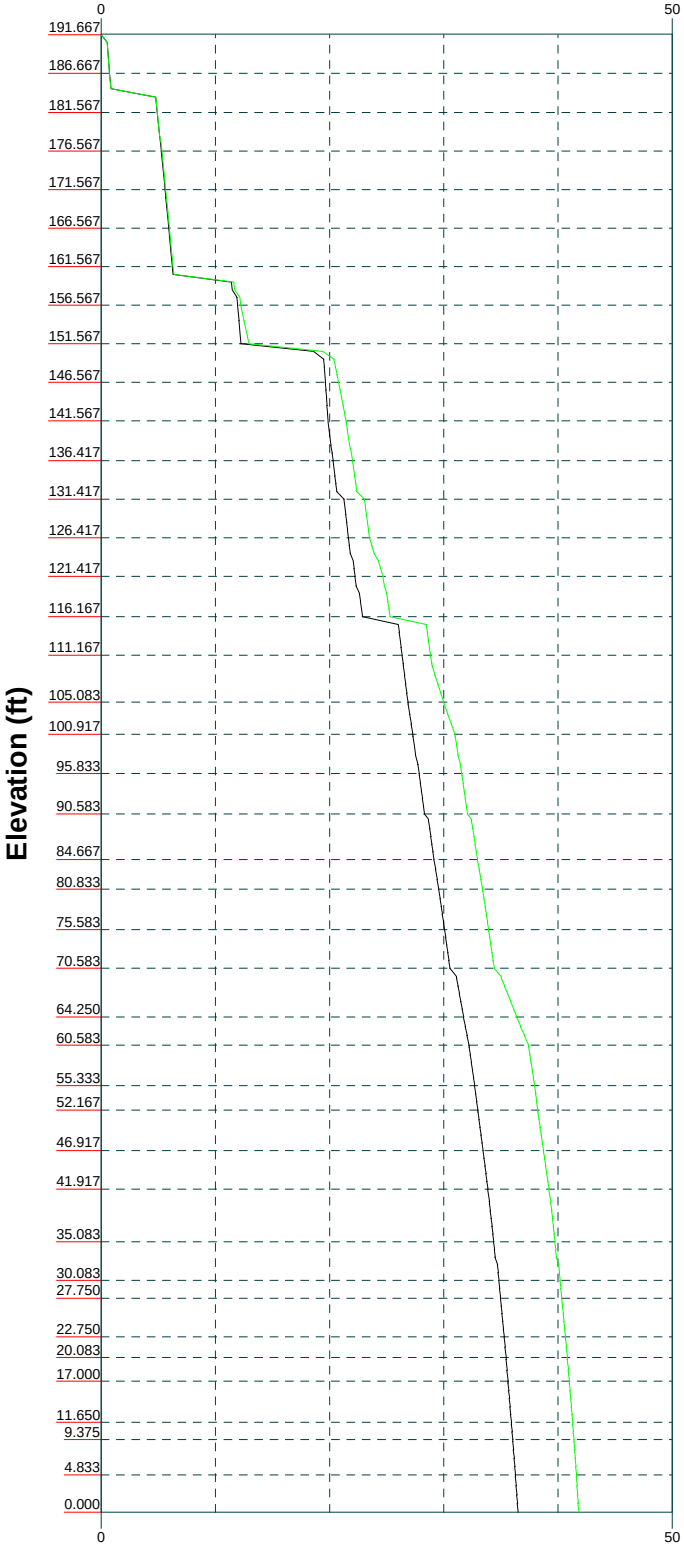
TIA-222-G - 97 mph/50 mph 1.000 in Ice Exposure B

Vx Vz

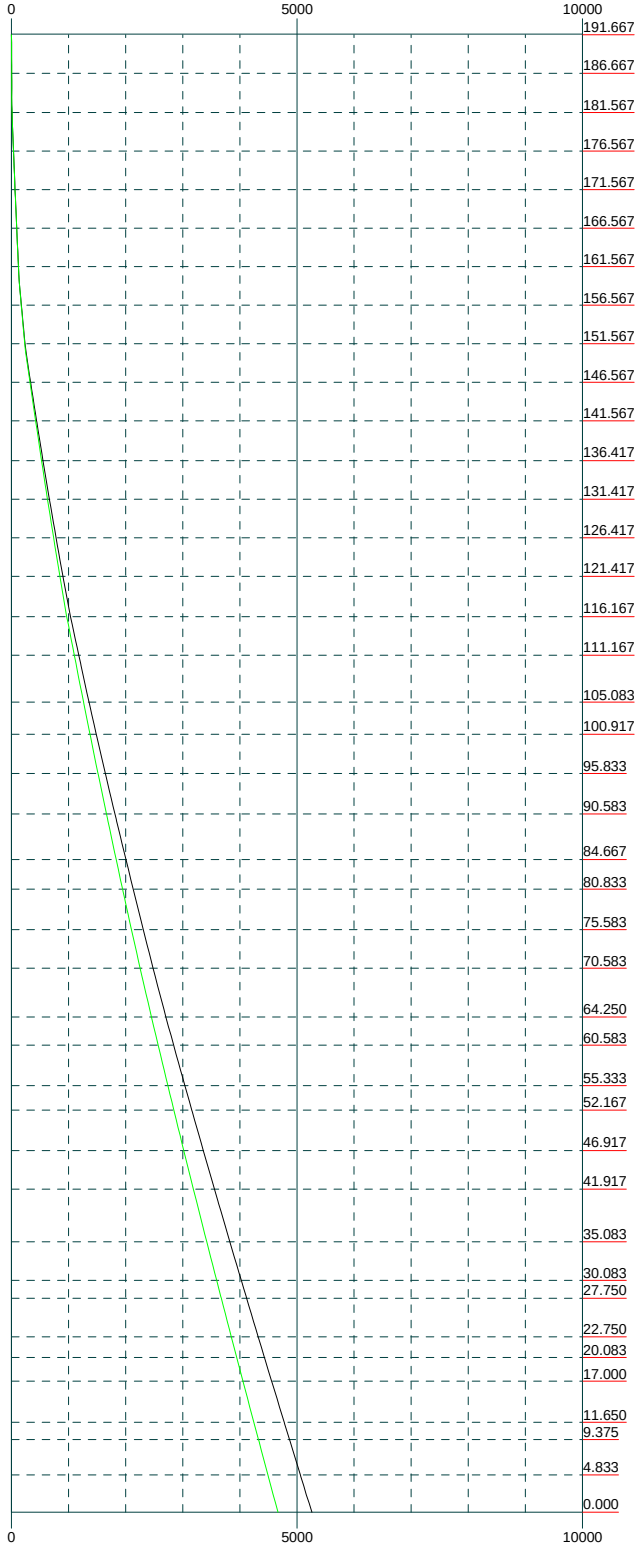
Maximum Values

Mx Mz

Global Mast Shear (K)



Global Mast Moment (kip-ft)



B+T GRP

B+T Group
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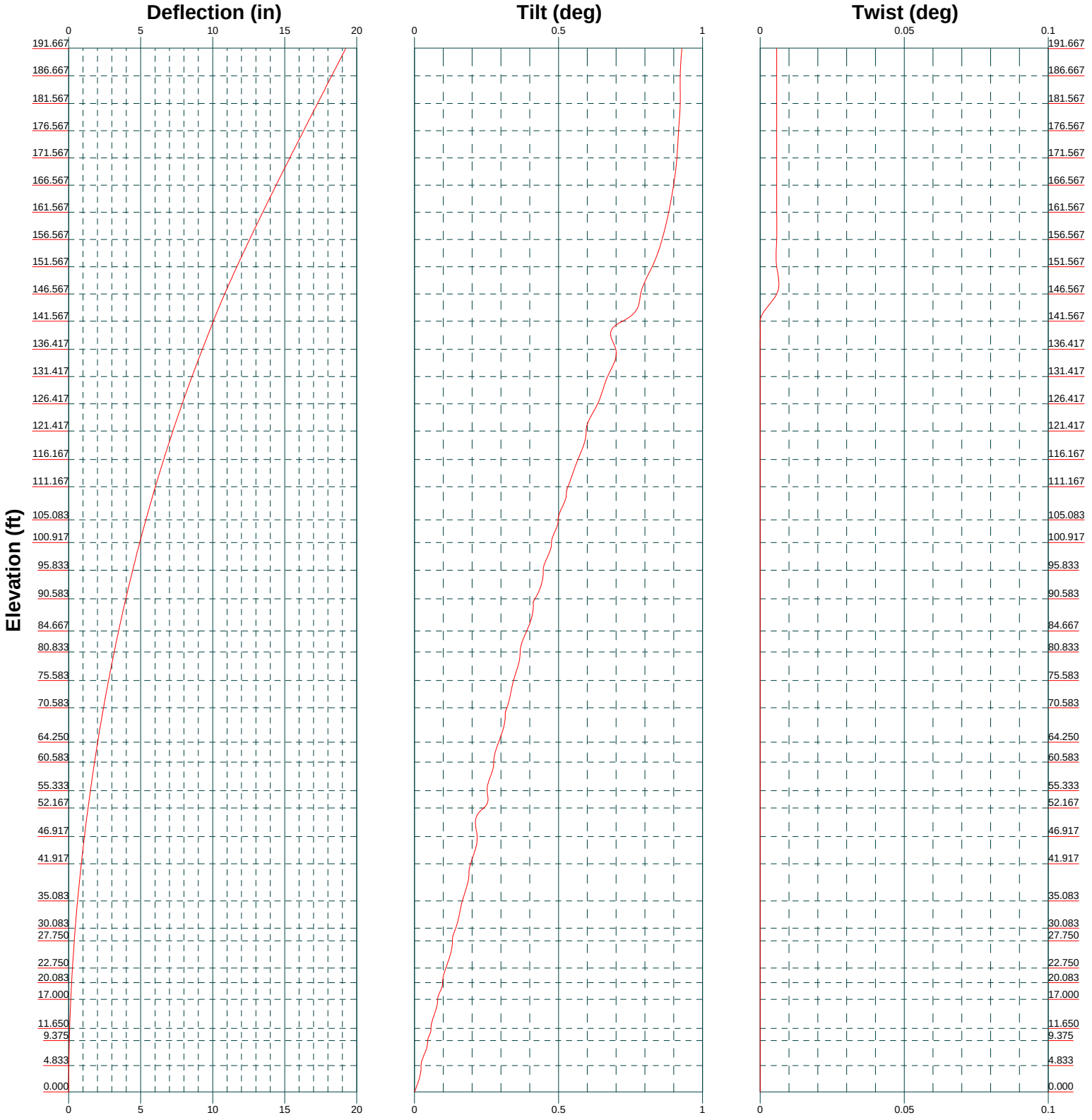
Job: *87581.016.01 - Newington_1, CT (BU# 826217*			
Project:			
Client: Crown Castle	Drawn by: Gireesh Acharya	App'd:	
Code: TIA-222-G	Date: 05/05/18	Scale: NTS	
Path:		Dwg No. E-4	

TIA-222-G - Service - 60 mph

Maximum Values



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Phone: (918) 587-4630
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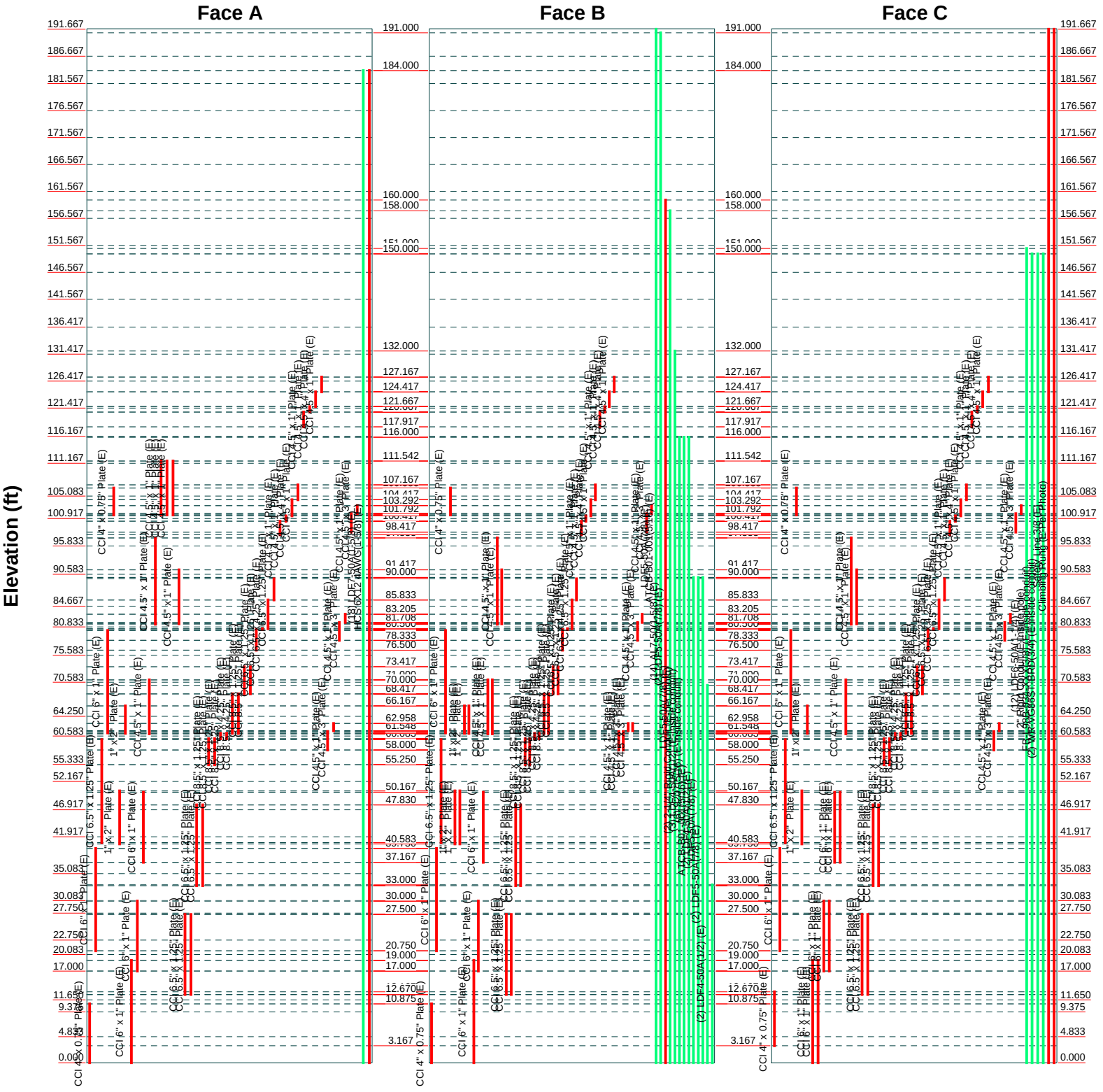
Job: ***87581.016.01 - Newington_1, CT (BU# 826217***			
Project:			
Client: Crown Castle	Drawn by: Gireesh Acharya	App'd:	
Code: TIA-222-G	Date: 05/05/18	Scale: NTS	
Path:		Dwg No. E-5	

Feed Line Distribution Chart
0' - 191'8"

Round | Flat | App In Face | App Out Face | Truss Leg



B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job: *87581.016.01 - Newington_1, CT (BU# 826217*		
	Project:		
	Client: Crown Castle	Drawn by: Gireesh Acharya	App'd:
	Code: TIA-222-G	Date: 05/05/18	Scale: NTS
	Path:		Dwg No. E-7

Tower Input Data

There is a pole section.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

Tower is located in Hartford County, Connecticut.
Basic wind speed of 97 mph.
Structure Class II.
Exposure Category B.
Topographic Category 1.
Crest Height 0.000 ft.
Nominal ice thickness of 1.000 in.
Ice thickness is considered to increase with height.
Ice density of 56.000 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50.000 °F.
Deflections calculated using a wind speed of 60 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

	Consider Moments - Legs		Distribute Leg Loads As Uniform		Use ASCE 10 X-Brace Ly Rules
	Consider Moments - Horizontals		Assume Legs Pinned		Calculate Redundant Bracing Forces
	Consider Moments - Diagonals	√	Assume Rigid Index Plate		Ignore Redundant Members in FEA
	Use Moment Magnification	√	Use Clear Spans For Wind Area		SR Leg Bolts Resist Compression
√	Use Code Stress Ratios		Use Clear Spans For KL/r		All Leg Panels Have Same Allowable
√	Use Code Safety Factors - Guys		Retension Guys To Initial Tension		Offset Girt At Foundation
	Escalate Ice	√	Bypass Mast Stability Checks	√	Consider Feed Line Torque
	Always Use Max Kz	√	Use Azimuth Dish Coefficients		Include Angle Block Shear Check
	Use Special Wind Profile	√	Project Wind Area of Appurt.		Use TIA-222-G Bracing Resist. Exemption
	Include Bolts In Member Capacity		Autocalc Torque Arm Areas		Use TIA-222-G Tension Splice Exemption
	Leg Bolts Are At Top Of Section		Add IBC .6D+W Combination		Poles
	Secondary Horizontal Braces Leg		Sort Capacity Reports By Component	√	Include Shear-Torsion Interaction
	Use Diamond Inner Bracing (4 Sided)		Triangulate Diamond Inner Bracing		Always Use Sub-Critical Flow
	SR Members Have Cut Ends		Treat Feed Line Bundles As Cylinder		Use Top Mounted Sockets
	SR Members Are Concentric				

Pole Section Geometry

Section	Elevation ft	Section Length ft	Pole Size	Pole Grade	Socket Length ft
L1	191.667-186.667	5.000	P18x0.375	A53-B-42 (42 ksi)	
L2	186.667-181.567	5.100	P24x0.375	A53-B-42 (42 ksi)	

Section	Elevation ft	Section Length ft	Pole Size	Pole Grade	Socket Length ft
L3	181.567-176.567	5.000	P24x0.375	A53-B-42 (42 ksi)	
L4	176.567-171.567	5.000	P24x0.375	A53-B-42 (42 ksi)	
L5	171.567-166.567	5.000	P24x0.375	A53-B-42 (42 ksi)	
L6	166.567-161.567	5.000	P24x0.375	A53-B-42 (42 ksi)	
L7	161.567-156.567	5.000	P24x0.375	A53-B-42 (42 ksi)	
L8	156.567-151.567	5.000	P24x0.375	A53-B-42 (42 ksi)	
L9	151.567-146.567	5.000	P24x0.375	A53-B-42 (42 ksi)	
L10	146.567-141.567	5.000	P24x0.375	A53-B-42 (42 ksi)	
L11	141.567-141.417	0.150	P24x0.375	A53-B-42 (42 ksi)	
L12	141.417-136.417	5.000	P36x0.375	A53-B-42 (42 ksi)	
L13	136.417-131.417	5.000	P36x0.375	A53-B-42 (42 ksi)	
L14	131.417-126.417	5.000	P36x0.375	A53-B-42 (42 ksi)	
L15	126.417-121.417	5.000	P36x0.375	A53-B-42 (42 ksi)	
L16	121.417-121.167	0.250	P36x0.375	A53-B-42 (42 ksi)	
L17	121.167-116.167	5.000	P42x0.375	A53-B-42 (42 ksi)	
L18	116.167-111.167	5.000	P42x0.375	A53-B-42 (42 ksi)	
L19	111.167-110.042	1.125	P42x0.375	A53-B-42 (42 ksi)	
L20	110.042-109.792	0.250	P42x0.4875	A53-B-42 (42 ksi)	
L21	109.792-105.083	4.709	P42x0.4875	A53-B-42 (42 ksi)	
L22	105.083-104.833	0.250	P42x0.5625	A53-B-42 (42 ksi)	
L23	104.833-100.917	3.916	P42x0.5625	A53-B-42 (42 ksi)	
L24	100.917-100.667	0.250	P48x0.375	A53-B-42 (42 ksi)	
L25	100.667-95.833	4.834	P48x0.375	A53-B-42 (42 ksi)	
L26	95.833-95.583	0.250	P48x0.475	A53-B-42 (42 ksi)	
L27	95.583-90.583	5.000	P48x0.475	A53-B-42 (42 ksi)	
L28	90.583-89.917	0.666	P48x0.475	A53-B-42 (42 ksi)	
L29	89.917-89.667	0.250	P48x0.575	A53-B-42 (42 ksi)	
L30	89.667-84.667	5.000	P48x0.575	A53-B-42 (42 ksi)	
L31	84.667-80.833	3.834	P48x0.575	A53-B-42 (42 ksi)	
L32	80.833-80.583	0.250	P54x0.4875	A53-B-42 (42 ksi)	
L33	80.583-75.583	5.000	P54x0.4875	A53-B-42	

Section	Elevation ft	Section Length ft	Pole Size	Pole Grade	Socket Length ft
				(42 ksi)	
L34	75.583-70.583	5.000	P54x0.4875	A53-B-42 (42 ksi)	
L35	70.583-69.500	1.083	P54x0.4875	A53-B-42 (42 ksi)	
L36	69.500-69.250	0.250	P54x0.5875	A53-B-42 (42 ksi)	
L37	69.250-64.250	5.000	P54x0.5875	A53-B-42 (42 ksi)	
L38	64.250-60.583	3.667	P54x0.5875	A53-B-42 (42 ksi)	
L39	60.583-60.333	0.250	P60x0.5125	A53-B-42 (42 ksi)	
L40	60.333-55.333	5.000	P60x0.5125	A53-B-42 (42 ksi)	
L41	55.333-52.167	3.166	P60x0.5125	A53-B-42 (42 ksi)	
L42	52.167-51.917	0.250	P60x0.625	A53-B-42 (42 ksi)	
L43	51.917-46.917	5.000	P60x0.625	A53-B-42 (42 ksi)	
L44	46.917-41.917	5.000	P60x0.625	A53-B-42 (42 ksi)	
L45	41.917-40.333	1.584	P60x0.625	A53-B-42 (42 ksi)	
L46	40.333-40.083	0.250	P60x0.6	A53-B-42 (42 ksi)	
L47	40.083-35.083	5.000	P60x0.6	A53-B-42 (42 ksi)	
L48	35.083-30.083	5.000	P60x0.6	A53-B-42 (42 ksi)	
L49	30.083-28.000	2.083	P60x0.6	A53-B-42 (42 ksi)	
L50	28.000-27.750	0.250	P60x0.725	A53-B-42 (42 ksi)	
L51	27.750-22.750	5.000	P60x0.725	A53-B-42 (42 ksi)	
L52	22.750-20.083	2.667	P60x0.725	A53-B-42 (42 ksi)	
L53	20.083-19.833	0.250	P60x0.625	A53-B-42 (42 ksi)	
L54	19.833-17.000	2.833	P60x0.625	A53-B-42 (42 ksi)	
L55	17.000-16.750	0.250	P60x0.725	A53-B-42 (42 ksi)	
L56	16.750-11.650	5.100	P60x0.75	A53-B-42 (42 ksi)	
L57	11.650-11.417	0.233	P60x0.75	A53-B-42 (42 ksi)	
L58	11.417-9.375	2.042	P60x0.75	A53-B-42 (42 ksi)	
L59	9.375-9.125	0.250	P60x0.8	A53-B-42 (42 ksi)	
L60	9.125-4.833	4.292	P60x0.8	A53-B-42 (42 ksi)	
L61	4.833-4.583	0.250	P60x0.75	A53-B-42 (42 ksi)	
L62	4.583-0.000	4.583	P60x0.75	A53-B-42 (42 ksi)	

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 191.667-186.667				1	1	1			
L2 186.667-181.567				1	1	1			
L3 181.567-176.567				1	1	1			
L4 176.567-171.567				1	1	1			
L5 171.567-166.567				1	1	1			
L6 166.567-161.567				1	1	1			
L7 161.567-156.567				1	1	1			
L8 156.567-151.567				1	1	1			
L9 151.567-146.567				1	1	1			
L10 146.567-141.567				1	1	1			
L11 141.567-141.417				1	1	1			
L12 141.417-136.417				1	1	1			
L13 136.417-131.417				1	1	1			
L14 131.417-126.417				1	1	1			
L15 126.417-121.417				1	1	1			
L16 121.417-121.167				1	1	1			
L17 121.167-116.167				1	1	1			
L18 116.167-111.167				1	1	1			
L19 111.167-110.042				1	1	1			

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L20 110.042-109.792				1	1	0.983655			
L21 109.792-105.083				1	1	0.983655			
L22 105.083-104.833				1	1	0.976951			
L23 104.833-100.917				1	1	0.976951			
L24 100.917-100.667				1	1	1			
L25 100.667-95.833				1	1	1			
L26 95.833-95.583				1	1	0.981492			
L27 95.583-90.583				1	1	0.981492			
L28 90.583-89.917				1	1	0.981492			
L29 89.917-89.667				1	1	0.97009			
L30 89.667-84.667				1	1	0.97009			
L31 84.667-80.833				1	1	0.97009			
L32 80.833-80.583				1	1	0.990478			
L33 80.583-75.583				1	1	0.990478			
L34 75.583-70.583				1	1	0.990478			
L35 70.583-69.500				1	1	0.990478			
L36 69.500-69.250				1	1	1.00601			
L37 69.250-64.250				1	1	1.00601			
L38 64.250-60.583				1	1	1.00601			
L39 60.583-60.333				1	1	0.987891			
L40 60.333-55.333				1	1	0.987891			
L41 55.333-52.167				1	1	0.987891			
L42 52.167-51.917				1	1	1.01747			
L43 51.917-46.917				1	1	1.01747			
L44 46.917-41.917				1	1	1.01747			
L45 41.917-40.333				1	1	1.01747			
L46				1	1	0.995499			

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
40.333-40.083									
L47				1	1	0.995499			
40.083-35.083									
L48				1	1	0.995499			
35.083-30.083									
L49				1	1	0.995499			
30.083-28.000									
L50				1	1	1.00337			
28.000-27.750									
L51				1	1	1.00337			
27.750-22.750									
L52				1	1	1.00337			
22.750-20.083									
L53				1	1	1			
20.083-19.833									
L54				1	1	1			
19.833-17.000									
L55				1	1	1.04129			
17.000-16.750									
L56				1	1	1.02849			
16.750-11.650									
L57				1	1	1.02849			
11.650-11.417									
L58				1	1	1.02849			
11.417-9.375									
L59				1	1	1.00535			
9.375-9.125									
L60				1	1	1.00535			
9.125-4.833									
L61				1	1	1.04998			
4.833-4.583									
L62				1	1	1.04998			
4.583-0.000									

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
*									
* Reinforcement Plates*									
CCI 4" x 0.75" Plate (E)	A	Surface Af (CaAa)	10.875 - 0.000	1	1	0.400 0.450	4.000	9.500	0.000
CCI 4" x 0.75" Plate (E)	B	Surface Af (CaAa)	10.875 - 0.000	1	1	-0.250 -0.200	4.000	9.500	0.000
CCI 4" x 0.75" Plate (E) **d**	C	Surface Af (CaAa)	13.167 - 3.167	1	1	0.250 0.300	4.000	9.500	0.000
CCI 6" x 1" Plate (E)	A	Surface Af (CaAa)	39.750 - 20.750	1	1	0.400 0.500	6.000	14.000	0.000
CCI 6" x 1" Plate (E)	B	Surface Af (CaAa)	39.750 - 20.750	1	1	0.400 0.500	6.000	14.000	0.000
CCI 6" x 1" Plate (E) **d**	C	Surface Af (CaAa)	39.750 - 20.750	1	1	0.400 0.500	6.000	14.000	0.000

Description	Sector	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
CCI 6.5" x 1.25" Plate (E)	A	Surface Af (CaAa)	59.917 - 40.833	1	1	-0.450 -0.400	6.500	15.500	0.000
CCI 6.5" x 1.25" Plate (E)	B	Surface Af (CaAa)	59.917 - 40.833	1	1	-0.450 -0.400	6.500	15.500	0.000
CCI 6.5" x 1.25" Plate (E)	C	Surface Af (CaAa)	59.917 - 40.833	1	1	-0.400 -0.350	6.500	15.500	0.000
d									
CCI 6" x 1" Plate (E)	A	Surface Af (CaAa)	80.167 - 61.167	1	1	-0.450 -0.400	6.000	14.000	0.000
CCI 6" x 1" Plate (E)	B	Surface Af (CaAa)	80.167 - 61.167	1	1	-0.350 -0.300	6.000	14.000	0.000
CCI 6" x 1" Plate (E)	C	Surface Af (CaAa)	80.167 - 61.167	1	1	-0.450 -0.400	6.000	14.000	0.000
d									
CCI 4" x 0.75" Plate (E)	A	Surface Af (CaAa)	106.583 - 101.583	1	1	-0.500 -0.450	4.000	9.500	0.000
CCI 4" x 0.75" Plate (E)	B	Surface Af (CaAa)	106.583 - 101.583	1	1	-0.500 -0.450	4.000	9.500	0.000
CCI 4" x 0.75" Plate (E)	C	Surface Af (CaAa)	106.583 - 101.583	1	1	-0.500 -0.450	4.000	9.500	0.000
d									
1" x 2" Plate (E)	A	Surface Af (CaAa)	50.417 - 40.583	1	1	-0.450 -0.400	1.000	6.000	0.007
1" x 2" Plate (E)	B	Surface Af (CaAa)	50.417 - 40.583	1	1	-0.350 -0.300	1.000	6.000	0.007
1" x 2" Plate (E)	B	Surface Af (CaAa)	50.417 - 40.583	1	1	0.200 0.250	1.000	6.000	0.007
1" x 2" Plate (E)	C	Surface Af (CaAa)	50.417 - 40.583	1	1	-0.350 -0.300	1.000	6.000	0.007
d									
1" x 2" Plate (E)	A	Surface Af (CaAa)	66.167 - 61.083	1	1	-0.350 -0.300	1.000	6.000	0.007
1" x 2" Plate (E)	B	Surface Af (CaAa)	66.167 - 61.083	1	1	-0.450 -0.400	1.000	6.000	0.007
1" x 2" Plate (E)	B	Surface Af (CaAa)	66.167 - 61.083	1	1	0.300 0.350	1.000	6.000	0.007
1" x 2" Plate (E)	C	Surface Af (CaAa)	66.167 - 61.083	1	1	-0.450 -0.400	1.000	6.000	0.007
d									
CCI 6" x 1" Plate (E)	A	Surface Af (CaAa)	19.000 - 0.000	1	1	0.300 0.350	6.000	14.000	0.000
CCI 6" x 1" Plate (E)	B	Surface Af (CaAa)	19.000 - 0.000	1	1	0.400 0.450	6.000	14.000	0.000
CCI 6" x 1" Plate (E)	C	Surface Af (CaAa)	19.000 - 0.000	1	1	0.450 0.500	6.000	14.000	0.000
CCI 6" x 1" Plate (E)	C	Surface Af (CaAa)	19.000 - 0.000	1	1	-0.500 -0.450	6.000	14.000	0.000
d									
CCI 6" x 1" Plate (E)	A	Surface Af (CaAa)	30.000 - 17.000	1	1	-0.150 -0.100	6.000	14.000	0.000
CCI 6" x 1" Plate (E)	B	Surface Af (CaAa)	30.000 - 17.000	1	1	-0.450 -0.400	6.000	14.000	0.000
CCI 6" x 1" Plate (E)	C	Surface Af (CaAa)	30.000 - 17.000	1	1	0.350 0.400	6.000	14.000	0.000
CCI 6" x 1" Plate (E)	C	Surface Af (CaAa)	30.000 - 17.000	1	1	-0.500 -0.450	6.000	14.000	0.000
d									
CCI 6" x 1" Plate (E)	A	Surface Af (CaAa)	50.167 - 37.167	1	1	0.250 0.300	6.000	14.000	0.000
CCI 6" x 1" Plate (E)	B	Surface Af (CaAa)	50.167 - 37.167	1	1	0.100 0.150	6.000	14.000	0.000

Description	Sector	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
CCI 6" x 1" Plate (E)	C	Surface Af (CaAa)	50.167 - 37.167	1	1	-0.400 -0.350	6.000	14.000	0.000
CCI 6" x 1" Plate (E) **d**	C	Surface Af (CaAa)	50.167 - 37.167	1	1	0.450 0.500	6.000	14.000	0.000
CCI 4.5" x 1" Plate (E)	A	Surface Af (CaAa)	71.000 - 61.000	1	1	-0.250 -0.200	4.500	11.000	0.000
CCI 4.5" x 1" Plate (E)	B	Surface Af (CaAa)	71.000 - 61.000	1	1	-0.450 -0.400	4.500	11.000	0.000
CCI 4.5" x 1" Plate (E)	B	Surface Af (CaAa)	71.000 - 61.000	1	1	0.400 0.450	4.500	11.000	0.000
CCI 4.5" x 1" Plate (E) **d**	C	Surface Af (CaAa)	71.000 - 61.000	1	1	0.350 0.400	4.500	11.000	0.000
CCI 4.5" x 1" Plate (E)	A	Surface Af (CaAa)	97.333 - 81.333	1	1	-0.500 -0.450	4.500	11.000	0.000
CCI 4.5" x 1" Plate (E)	B	Surface Af (CaAa)	97.333 - 81.333	1	1	-0.500 -0.450	4.500	11.000	0.000
CCI 4.5" x 1" Plate (E) **d**	C	Surface Af (CaAa)	97.333 - 81.333	1	1	-0.500 -0.450	4.500	11.000	0.000
CCI 4.5" x 1" Plate (E)	A	Surface Af (CaAa)	111.542 - 101.542	1	1	-0.350 -0.300	4.500	11.000	0.000
CCI 4.5" x 1" Plate (E)	A	Surface Af (CaAa)	111.542 - 101.542	1	1	-0.350 -0.300	4.500	11.000	0.000
CCI 4.5" x 1" Plate (E) **d**	A	Surface Af (CaAa)	111.542 - 101.542	1	1	-0.350 -0.300	4.500	11.000	0.000
CCI 4.5" x 1" Plate (E)	A	Surface Af (CaAa)	91.417 - 81.417	1	1	-0.150 -0.100	4.500	11.000	0.000
CCI 4.5" x 1" Plate (E)	B	Surface Af (CaAa)	91.417 - 81.417	1	1	-0.150 -0.100	4.500	11.000	0.000
CCI 4.5" x 1" Plate (E) **d** * BS*	C	Surface Af (CaAa)	91.417 - 81.417	1	1	-0.150 -0.100	4.500	11.000	0.000
CCI 6.5" x 1.25" Plate (E)	A	Surface Af (CaAa)	27.500 - 12.670	1	1	0.400 0.450	6.500	15.500	0.028
CCI 6.5" x 1.25" Plate (E)	A	Surface Af (CaAa)	27.500 - 12.670	1	1	-0.250 -0.200	6.500	15.500	0.028
CCI 6.5" x 1.25" Plate (E)	B	Surface Af (CaAa)	27.500 - 12.670	1	1	0.450 0.500	6.500	15.500	0.028
CCI 6.5" x 1.25" Plate (E)	B	Surface Af (CaAa)	27.500 - 12.670	1	1	-0.250 -0.200	6.500	15.500	0.028
CCI 6.5" x 1.25" Plate (E)	C	Surface Af (CaAa)	27.500 - 12.670	1	1	0.350 0.400	6.500	15.500	0.028
CCI 6.5" x 1.25" Plate (E) **d**	C	Surface Af (CaAa)	27.500 - 12.670	1	1	-0.250 -0.200	6.500	15.500	0.028
CCI 6.5" x 1.25" Plate (E)	A	Surface Af (CaAa)	47.830 - 32.830	1	1	0.400 0.450	6.500	15.500	0.028
CCI 6.5" x 1.25" Plate (E)	A	Surface Af (CaAa)	47.830 - 32.830	1	1	-0.400 -0.350	6.500	15.500	0.028
CCI 6.5" x 1.25" Plate (E)	B	Surface Af (CaAa)	47.830 - 32.830	1	1	-0.400 -0.350	6.500	15.500	0.028
CCI 6.5" x 1.25" Plate (E)	B	Surface Af (CaAa)	47.830 - 32.830	1	1	-0.250 -0.200	6.500	15.500	0.028
CCI 6.5" x 1.25" Plate (E)	C	Surface Af (CaAa)	47.830 - 32.830	1	1	-0.400 0.350	6.500	15.500	0.028
CCI 6.5" x 1.25" Plate (E)	C	Surface Af (CaAa)	47.830 - 32.830	1	1	-0.250 -0.200	6.500	15.500	0.028

Description	Sector	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
d									
CCI 8.5" x 1.25" Plate (E)	A	Surface Af (CaAa)	60.083 - 55.250	1	1	0.200 0.250	8.500	19.500	0.036
CCI 8.5" x 1.25" Plate (E)	A	Surface Af (CaAa)	60.083 - 55.250	1	1	-0.400 -0.350	8.500	19.500	0.036
CCI 8.5" x 1.25" Plate (E)	B	Surface Af (CaAa)	60.083 - 55.250	1	1	0.150 0.200	8.500	19.500	0.036
CCI 8.5" x 1.25" Plate (E)	B	Surface Af (CaAa)	60.083 - 55.250	1	1	-0.350 -0.300	8.500	19.500	0.036
CCI 8.5" x 1.25" Plate (E)	C	Surface Af (CaAa)	60.083 - 55.250	1	1	0.100 0.150	8.500	19.500	0.036
CCI 8.5" x 1.25" Plate (E)	C	Surface Af (CaAa)	60.083 - 55.250	1	1	-0.500 -0.450	8.500	19.500	0.036
d									
CCI 8.5" x 1.25" Plate (E)	A	Surface Af (CaAa)	61.083 - 60.083	1	1	0.200 0.250	8.500	19.500	0.036
CCI 8.5" x 1.25" Plate (E)	A	Surface Af (CaAa)	61.083 - 60.083	1	1	-0.400 -0.350	8.500	19.500	0.036
CCI 8.5" x 1.25" Plate (E)	B	Surface Af (CaAa)	61.083 - 60.083	1	1	0.150 0.200	8.500	19.500	0.036
CCI 8.5" x 1.25" Plate (E)	B	Surface Af (CaAa)	61.083 - 60.083	1	1	-0.350 -0.300	8.500	19.500	0.036
CCI 8.5" x 1.25" Plate (E)	C	Surface Af (CaAa)	61.083 - 60.083	1	1	0.100 0.150	8.500	19.500	0.036
CCI 8.5" x 1.25" Plate (E)	C	Surface Af (CaAa)	61.083 - 60.083	1	1	-0.500 -0.450	8.500	19.500	0.036
d									
CCI 8.5" x 4.25" Plate (E)	A	Surface Af (CaAa)	68.417 - 61.083	1	1	0.200 0.250	8.500	25.500	0.123
CCI 8.5" x 4.25" Plate (E)	A	Surface Af (CaAa)	68.417 - 61.083	1	1	-0.400 -0.350	8.500	25.500	0.123
CCI 8.5" x 4.25" Plate (E)	B	Surface Af (CaAa)	68.417 - 61.083	1	1	0.150 0.200	8.500	25.500	0.123
CCI 8.5" x 4.25" Plate (E)	B	Surface Af (CaAa)	68.417 - 61.083	1	1	-0.350 -0.300	8.500	25.500	0.123
CCI 8.5" x 4.25" Plate (E)	C	Surface Af (CaAa)	68.417 - 61.083	1	1	0.100 0.150	8.500	25.500	0.123
CCI 8.5" x 4.25" Plate (E)	C	Surface Af (CaAa)	68.417 - 61.083	1	1	-0.500 -0.450	8.500	25.500	0.123
d									
CCI 8.5" x 1.25" Plate (E)	A	Surface Af (CaAa)	73.417 - 68.417	1	1	0.200 0.250	8.500	19.500	0.036
CCI 8.5" x 1.25" Plate (E)	A	Surface Af (CaAa)	73.417 - 68.417	1	1	-0.400 -0.350	8.500	19.500	0.036
CCI 8.5" x 1.25" Plate (E)	B	Surface Af (CaAa)	73.417 - 68.417	1	1	0.150 0.200	8.500	19.500	0.036
CCI 8.5" x 1.25" Plate (E)	B	Surface Af (CaAa)	73.417 - 68.417	1	1	-0.350 -0.300	8.500	19.500	0.036
CCI 8.5" x 1.25" Plate (E)	C	Surface Af (CaAa)	73.417 - 68.417	1	1	0.100 0.150	8.500	19.500	0.036
CCI 8.5" x 1.25" Plate (E)	C	Surface Af (CaAa)	73.417 - 68.417	1	1	-0.500 -0.450	8.500	19.500	0.036
d									
CCI 6.5" x 1.25" Plate (E)	A	Surface Af (CaAa)	80.333 - 76.500	1	1	0.050 0.100	6.500	15.500	0.028
CCI 6.5" x 1.25" Plate (E)	B	Surface Af (CaAa)	80.333 - 76.500	1	1	0.000 0.050	6.500	15.500	0.028
CCI 6.5" x 1.25" Plate (E)	C	Surface Af (CaAa)	80.333 - 76.500	1	1	0.150 0.200	6.500	15.500	0.028
d									
CCI 6.5" x 1.25" Plate	A	Surface Af	80.500 - 80.333	1	1	0.050	6.500	15.500	0.028

Description	Sector	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
(E)		(CaAa)				0.100			
CCI 6.5" x 1.25" Plate	B	Surface Af	80.500 - 80.333	1	1	0.000	6.500	15.500	0.028
(E)		(CaAa)				0.050			
CCI 6.5" x 1.25" Plate	C	Surface Af	80.500 - 80.333	1	1	0.150	6.500	15.500	0.028
(E)		(CaAa)				0.200			
d									
CCI 6.5" x 4.25" Plate	A	Surface Af	85.833 - 80.500	1	1	0.050	6.500	21.500	0.094
(E)		(CaAa)				0.100			
CCI 6.5" x 4.25" Plate	B	Surface Af	85.833 - 80.500	1	1	0.000	6.500	21.500	0.094
(E)		(CaAa)				0.050			
CCI 6.5" x 4.25" Plate	C	Surface Af	85.833 - 80.500	1	1	0.150	6.500	21.500	0.094
(E)		(CaAa)				0.200			
d									
CCI 6.5" x 1.25" Plate	A	Surface Af	89.750 - 85.833	1	1	0.050	6.500	15.500	0.028
(E)		(CaAa)				0.100			
CCI 6.5" x 1.25" Plate	B	Surface Af	89.750 - 85.833	1	1	0.000	6.500	15.500	0.028
(E)		(CaAa)				0.050			
CCI 6.5" x 1.25" Plate	C	Surface Af	89.750 - 85.833	1	1	0.150	6.500	15.500	0.028
(E)		(CaAa)				0.200			
d									
CCI 4.5" x 1" Plate	A	Surface Af	100.417 - 97.917	1	1	-0.150	4.500	11.000	0.015
(E)		(CaAa)				-0.100			
CCI 4.5" x 1" Plate	B	Surface Af	100.417 - 97.917	1	1	-0.100	4.500	11.000	0.015
(E)		(CaAa)				-0.050			
CCI 4.5" x 1" Plate	C	Surface Af	100.417 - 97.917	1	1	-0.100	4.500	11.000	0.015
(E)		(CaAa)				-0.050			
d									
CCI 4.5" x 1" Plate	A	Surface Af	101.417 - 100.417	1	1	-0.150	4.500	11.000	0.015
(E)		(CaAa)				-0.100			
CCI 4.5" x 1" Plate	B	Surface Af	101.417 - 100.417	1	1	-0.100	4.500	11.000	0.015
(E)		(CaAa)				-0.050			
CCI 4.5" x 1" Plate	C	Surface Af	101.417 - 100.417	1	1	-0.100	4.500	11.000	0.015
(E)		(CaAa)				-0.050			
d									
CCI 4.5" x 4" Plate	A	Surface Af	104.417 - 101.417	1	1	-0.150	4.500	17.000	0.061
(E)		(CaAa)				-0.100			
CCI 4.5" x 4" Plate	B	Surface Af	104.417 - 101.417	1	1	-0.100	4.500	17.000	0.061
(E)		(CaAa)				-0.050			
CCI 4.5" x 4" Plate	C	Surface Af	104.417 - 101.417	1	1	-0.100	4.500	17.000	0.061
(E)		(CaAa)				-0.050			
d									
CCI 4.5" x 1" Plate	A	Surface Af	107.167 - 104.417	1	1	-0.150	4.500	11.000	0.015
(E)		(CaAa)				-0.100			
CCI 4.5" x 1" Plate	B	Surface Af	107.167 - 104.417	1	1	-0.100	4.500	11.000	0.015
(E)		(CaAa)				-0.050			
CCI 4.5" x 1" Plate	C	Surface Af	107.167 - 104.417	1	1	-0.100	4.500	11.000	0.015
(E)		(CaAa)				-0.050			
d									
CCI 4.5" x 1" Plate	A	Surface Af	120.667 - 117.917	1	1	-0.150	4.500	11.000	0.015
(E)		(CaAa)				-0.100			
CCI 4.5" x 1" Plate	B	Surface Af	120.667 - 117.917	1	1	-0.100	4.500	11.000	0.015
(E)		(CaAa)				-0.050			
CCI 4.5" x 1" Plate	C	Surface Af	120.667 - 117.917	1	1	-0.200	4.500	11.000	0.015
(E)		(CaAa)				-0.150			
d									
CCI 4.5" x 1" Plate	A	Surface Af	121.667 - 120.667	1	1	-0.150	4.500	11.000	0.015
(E)		(CaAa)				-0.100			
CCI 4.5" x 1" Plate	B	Surface Af	121.667 - 120.667	1	1	-0.100	4.500	11.000	0.015
(E)		(CaAa)				-0.050			
CCI 4.5" x 1" Plate	C	Surface Af	121.667 - 120.667	1	1	-0.200	4.500	11.000	0.015
(E)		(CaAa)				-0.150			

Description	Sector	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
d									
CCI 4.5" x 4" Plate	A	Surface Af	124.417 - 121.667	1	1	-0.150	4.500	17.000	0.061
(E)		(CaAa)				-0.100			
CCI 4.5" x 4" Plate	B	Surface Af	124.417 - 121.667	1	1	-0.100	4.500	17.000	0.061
(E)		(CaAa)				-0.050			
CCI 4.5" x 4" Plate	C	Surface Af	124.417 - 121.667	1	1	-0.200	4.500	17.000	0.061
(E)		(CaAa)				-0.150			
d									
CCI 4.5" x 1" Plate	A	Surface Af	127.167 - 124.417	1	1	-0.150	4.500	11.000	0.015
(E)		(CaAa)				-0.100			
CCI 4.5" x 1" Plate	B	Surface Af	127.167 - 124.417	1	1	-0.100	4.500	11.000	0.015
(E)		(CaAa)				-0.050			
CCI 4.5" x 1" Plate	C	Surface Af	127.167 - 124.417	1	1	-0.200	4.500	11.000	0.015
(E)		(CaAa)				-0.150			
d									
CCI 4.5" x 1" Plate	A	Surface Af	61.458 - 58.000	1	1	-0.250	4.500	11.000	0.015
(E)		(CaAa)				-0.200			
CCI 4.5" x 1" Plate	B	Surface Af	61.458 - 58.000	1	1	-0.450	4.500	11.000	0.015
(E)		(CaAa)				-0.400			
CCI 4.5" x 1" Plate	B	Surface Af	61.458 - 58.000	1	1	0.400	4.500	11.000	0.015
(E)		(CaAa)				0.450			
CCI 4.5" x 1" Plate	C	Surface Af	61.458 - 58.000	1	1	0.350	4.500	11.000	0.015
(E)		(CaAa)				0.400			
d									
CCI 4.5" x 3" Plate	A	Surface Af	62.958 - 61.548	1	1	-0.250	4.500	15.000	0.046
(E)		(CaAa)				-0.200			
CCI 4.5" x 3" Plate	B	Surface Af	62.958 - 61.548	1	1	-0.450	4.500	15.000	0.046
(E)		(CaAa)				-0.400			
CCI 4.5" x 3" Plate	B	Surface Af	62.958 - 61.548	1	1	0.400	4.500	15.000	0.046
(E)		(CaAa)				0.450			
CCI 4.5" x 3" Plate	C	Surface Af	62.958 - 61.548	1	1	0.350	4.500	15.000	0.046
(E)		(CaAa)				0.400			
d									
CCI 4.5" x 1" Plate	A	Surface Af	81.708 - 78.333	1	1	-0.500	4.500	11.000	0.015
(E)		(CaAa)				-0.450			
CCI 4.5" x 1" Plate	B	Surface Af	81.708 - 78.333	1	1	-0.500	4.500	11.000	0.015
(E)		(CaAa)				-0.450			
CCI 4.5" x 1" Plate	C	Surface Af	81.708 - 78.333	1	1	-0.500	4.500	11.000	0.015
(E)		(CaAa)				-0.450			
d									
CCI 4.5" x 3" Plate	A	Surface Af	83.205 - 81.708	1	1	-0.500	4.500	15.000	0.046
(E)		(CaAa)				-0.450			
CCI 4.5" x 3" Plate	B	Surface Af	83.205 - 81.708	1	1	-0.500	4.500	15.000	0.046
(E)		(CaAa)				-0.450			
CCI 4.5" x 3" Plate	C	Surface Af	83.205 - 81.708	1	1	-0.500	4.500	15.000	0.046
(E)		(CaAa)				-0.450			
d									
CCI 4.5" x 1" Plate	A	Surface Af	101.792 - 98.417	1	1	0.300	4.500	11.000	0.015
(E)		(CaAa)				0.350			
CCI 4.5" x 1" Plate	B	Surface Af	101.792 - 98.417	1	1	0.300	4.500	11.000	0.015
(E)		(CaAa)				0.350			
CCI 4.5" x 1" Plate	C	Surface Af	101.792 - 98.417	1	1	0.300	4.500	11.000	0.015
(E)		(CaAa)				0.350			
d									
CCI 4.5" x 3" Plate	A	Surface Af	103.292 - 101.792	1	1	0.300	4.500	15.000	0.046
(E)		(CaAa)				0.350			
CCI 4.5" x 3" Plate	B	Surface Af	103.292 - 101.792	1	1	0.300	4.500	15.000	0.046
(E)		(CaAa)				0.350			
CCI 4.5" x 3" Plate	C	Surface Af	103.292 - 101.792	1	1	0.300	4.500	15.000	0.046
(E)		(CaAa)				0.350			
HCS 6X12 4AWG(1-5/8)	A	Surface Ar	184.000 - 0.000	1	1	-0.400	1.660		0.002

Description	Sector	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
(E) **d**		(CaAa)				-0.360			
AL7-50(1-5/8) (E) **d**	B	Surface Ar (CaAa)	160.000 - 0.000	14	12	-0.150 0.300	1.960		0.001
Safety Line 3/8 (E)	C	Surface Ar (CaAa)	191.667 - 0.000	1	1	0.000 0.010	0.375		0.000
Climbing Rung (E-Per Photo) **d**	C	Surface Ar (CaAa)	191.667 - 0.000	1	1	-0.050 0.050	1.000		0.008

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
* **d** **d**								
LDF5-50A(7/8) (E)	B	No	Inside Pole	191.667 - 0.000	1	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.000 0.000 0.000
d ATCB-B01-001(5/16) (E)	B	No	Inside Pole	191.000 - 0.000	1	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.000 0.000 0.000
d LDF7-50A(1-5/8) (E)	A	No	Inside Pole	184.000 - 0.000	18	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.001 0.001 0.001
d LDF5-50A(7/8) (E)	B	No	Inside Pole	158.000 - 0.000	2	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.000 0.000 0.000
d LDF6-50A(1-1/4) (E)	C	No	Inside Pole	151.000 - 0.000	12	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.001 0.001 0.001
2" Rigid Conduit (E-inside pole)	C	No	Inside Pole	150.000 - 0.000	1	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.003 0.003 0.003
FB-L98B-034-XXX(3/8) (E-inside conduit)	C	No	Inside Pole	150.000 - 0.000	1	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.000 0.000 0.000
WR-VG86ST-BRD(3/4) (E-inside conduit)	C	No	Inside Pole	150.000 - 0.000	2	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.001 0.001 0.001
d LDF5-50A(7/8) (E)	B	No	Inside Pole	132.000 - 0.000	1	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.000 0.000 0.000
d 2-1/4" Rigid Conduit (E-per photo)	B	No	Inside Pole	116.000 - 0.000	2	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.003 0.003 0.003
LDF4-50A(1/2) (E-inside conduit)	B	No	Inside Pole	116.000 - 0.000	3	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.000 0.000 0.000

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
9207(5/16)	B	No	Inside Pole	116.000 - 0.000	6	No Ice	0.000	0.001
(E-inside conduit)						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
d								
ATCB-B01-001(5/16)	B	No	Inside Pole	90.000 - 0.000	1	No Ice	0.000	0.000
(E)						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
LDF4-50A(1/2)	B	No	Inside Pole	90.000 - 0.000	2	No Ice	0.000	0.000
(E)						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
LDF5-50A(7/8)	B	No	Inside Pole	90.000 - 0.000	1	No Ice	0.000	0.000
(E)						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
d								
LDF5-50A(7/8)	B	No	Inside Pole	70.000 - 0.000	2	No Ice	0.000	0.000
(E)						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
d								
LDF4-50A(1/2)	B	No	Inside Pole	33.000 - 0.000	2	No Ice	0.000	0.000
(E)						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
d								

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	191.667-186.667	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.002
		C	0.000	0.000	0.688	0.000	0.043
L2	186.667-181.567	A	0.000	0.000	0.404	0.000	0.042
		B	0.000	0.000	0.000	0.000	0.002
		C	0.000	0.000	0.701	0.000	0.044
L3	181.567-176.567	A	0.000	0.000	0.830	0.000	0.086
		B	0.000	0.000	0.000	0.000	0.002
		C	0.000	0.000	0.688	0.000	0.043
L4	176.567-171.567	A	0.000	0.000	0.830	0.000	0.086
		B	0.000	0.000	0.000	0.000	0.002
		C	0.000	0.000	0.688	0.000	0.043
L5	171.567-166.567	A	0.000	0.000	0.830	0.000	0.086
		B	0.000	0.000	0.000	0.000	0.002
		C	0.000	0.000	0.688	0.000	0.043
L6	166.567-161.567	A	0.000	0.000	0.830	0.000	0.086
		B	0.000	0.000	0.000	0.000	0.002
		C	0.000	0.000	0.688	0.000	0.043
L7	161.567-156.567	A	0.000	0.000	0.830	0.000	0.086
		B	0.000	0.000	8.074	0.000	0.028
		C	0.000	0.000	0.688	0.000	0.043
L8	156.567-151.567	A	0.000	0.000	0.830	0.000	0.086
		B	0.000	0.000	11.760	0.000	0.042
		C	0.000	0.000	0.688	0.000	0.043
L9	151.567-146.567	A	0.000	0.000	0.830	0.000	0.086
		B	0.000	0.000	11.760	0.000	0.042
		C	0.000	0.000	0.688	0.000	0.089
L10	146.567-141.567	A	0.000	0.000	0.830	0.000	0.086
		B	0.000	0.000	11.760	0.000	0.042
		C	0.000	0.000	0.688	0.000	0.099

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
L11	141.567-141.417	A	0.000	0.000	0.025	0.000	0.003
		B	0.000	0.000	0.353	0.000	0.001
		C	0.000	0.000	0.021	0.000	0.003
L12	141.417-136.417	A	0.000	0.000	0.830	0.000	0.086
		B	0.000	0.000	11.760	0.000	0.042
		C	0.000	0.000	0.688	0.000	0.099
L13	136.417-131.417	A	0.000	0.000	0.830	0.000	0.086
		B	0.000	0.000	11.760	0.000	0.042
		C	0.000	0.000	0.688	0.000	0.099
L14	131.417-126.417	A	0.000	0.000	1.393	0.000	0.097
		B	0.000	0.000	12.323	0.000	0.055
		C	0.000	0.000	1.250	0.000	0.111
L15	126.417-121.417	A	0.000	0.000	4.580	0.000	0.289
		B	0.000	0.000	15.510	0.000	0.246
		C	0.000	0.000	4.438	0.000	0.302
L16	121.417-121.167	A	0.000	0.000	0.229	0.000	0.008
		B	0.000	0.000	0.775	0.000	0.006
		C	0.000	0.000	0.222	0.000	0.009
L17	121.167-116.167	A	0.000	0.000	3.268	0.000	0.136
		B	0.000	0.000	14.198	0.000	0.093
		C	0.000	0.000	3.125	0.000	0.149
L18	116.167-111.167	A	0.000	0.000	1.674	0.000	0.086
		B	0.000	0.000	11.760	0.000	0.092
		C	0.000	0.000	0.688	0.000	0.099
L19	111.167-110.042	A	0.000	0.000	2.718	0.000	0.019
		B	0.000	0.000	2.646	0.000	0.021
		C	0.000	0.000	0.155	0.000	0.022
L20	110.042-109.792	A	0.000	0.000	0.604	0.000	0.004
		B	0.000	0.000	0.588	0.000	0.005
		C	0.000	0.000	0.034	0.000	0.005
L21	109.792-105.083	A	0.000	0.000	13.940	0.000	0.113
		B	0.000	0.000	13.639	0.000	0.120
		C	0.000	0.000	3.210	0.000	0.125
L22	105.083-104.833	A	0.000	0.000	0.958	0.000	0.008
		B	0.000	0.000	0.942	0.000	0.009
		C	0.000	0.000	0.389	0.000	0.009
L23	104.833-100.917	A	0.000	0.000	14.940	0.000	0.347
		B	0.000	0.000	16.095	0.000	0.353
		C	0.000	0.000	7.423	0.000	0.358
L24	100.917-100.667	A	0.000	0.000	0.416	0.000	0.012
		B	0.000	0.000	0.963	0.000	0.012
		C	0.000	0.000	0.409	0.000	0.013
L25	100.667-95.833	A	0.000	0.000	5.677	0.000	0.160
		B	0.000	0.000	16.245	0.000	0.167
		C	0.000	0.000	5.540	0.000	0.173
L26	95.833-95.583	A	0.000	0.000	0.229	0.000	0.004
		B	0.000	0.000	0.775	0.000	0.005
		C	0.000	0.000	0.222	0.000	0.005
L27	95.583-90.583	A	0.000	0.000	5.205	0.000	0.086
		B	0.000	0.000	16.136	0.000	0.094
		C	0.000	0.000	5.063	0.000	0.099
L28	90.583-89.917	A	0.000	0.000	1.110	0.000	0.011
		B	0.000	0.000	2.565	0.000	0.013
		C	0.000	0.000	1.091	0.000	0.013
L29	89.917-89.667	A	0.000	0.000	0.506	0.000	0.007
		B	0.000	0.000	1.053	0.000	0.007
		C	0.000	0.000	0.499	0.000	0.007
L30	89.667-84.667	A	0.000	0.000	13.747	0.000	0.301
		B	0.000	0.000	24.677	0.000	0.313
		C	0.000	0.000	13.604	0.000	0.315
L31	84.667-80.833	A	0.000	0.000	11.507	0.000	0.508

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	19.888	0.000	0.517
		C	0.000	0.000	11.398	0.000	0.519
L32	80.833-80.583	A	0.000	0.000	0.500	0.000	0.032
		B	0.000	0.000	1.046	0.000	0.032
		C	0.000	0.000	0.493	0.000	0.032
L33	80.583-75.583	A	0.000	0.000	11.525	0.000	0.239
		B	0.000	0.000	22.455	0.000	0.250
		C	0.000	0.000	11.382	0.000	0.252
L34	75.583-70.583	A	0.000	0.000	14.172	0.000	0.291
		B	0.000	0.000	25.415	0.000	0.302
		C	0.000	0.000	14.030	0.000	0.304
L35	70.583-69.500	A	0.000	0.000	5.144	0.000	0.097
		B	0.000	0.000	8.323	0.000	0.100
		C	0.000	0.000	5.113	0.000	0.100
L36	69.500-69.250	A	0.000	0.000	1.187	0.000	0.022
		B	0.000	0.000	1.921	0.000	0.023
		C	0.000	0.000	1.180	0.000	0.023
L37	69.250-64.250	A	0.000	0.000	24.066	0.000	1.184
		B	0.000	0.000	39.066	0.000	1.211
		C	0.000	0.000	23.924	0.000	1.197
L38	64.250-60.583	A	0.000	0.000	18.761	0.000	0.978
		B	0.000	0.000	31.456	0.000	1.088
		C	0.000	0.000	18.656	0.000	0.987
L39	60.583-60.333	A	0.000	0.000	0.937	0.000	0.026
		B	0.000	0.000	1.671	0.000	0.031
		C	0.000	0.000	0.930	0.000	0.027
L40	60.333-55.333	A	0.000	0.000	21.712	0.000	0.483
		B	0.000	0.000	34.392	0.000	0.534
		C	0.000	0.000	21.570	0.000	0.497
L41	55.333-52.167	A	0.000	0.000	4.191	0.000	0.060
		B	0.000	0.000	11.111	0.000	0.070
		C	0.000	0.000	4.100	0.000	0.069
L42	52.167-51.917	A	0.000	0.000	0.312	0.000	0.004
		B	0.000	0.000	0.859	0.000	0.005
		C	0.000	0.000	0.305	0.000	0.005
L43	51.917-46.917	A	0.000	0.000	12.058	0.000	0.160
		B	0.000	0.000	23.572	0.000	0.199
		C	0.000	0.000	15.166	0.000	0.174
L44	46.917-41.917	A	0.000	0.000	22.913	0.000	0.396
		B	0.000	0.000	34.677	0.000	0.445
		C	0.000	0.000	27.771	0.000	0.410
L45	41.917-40.333	A	0.000	0.000	6.676	0.000	0.124
		B	0.000	0.000	10.361	0.000	0.138
		C	0.000	0.000	8.214	0.000	0.128
L46	40.333-40.083	A	0.000	0.000	0.833	0.000	0.018
		B	0.000	0.000	1.380	0.000	0.019
		C	0.000	0.000	1.076	0.000	0.019
L47	40.083-35.083	A	0.000	0.000	19.246	0.000	0.362
		B	0.000	0.000	30.176	0.000	0.377
		C	0.000	0.000	22.020	0.000	0.376
L48	35.083-30.083	A	0.000	0.000	10.711	0.000	0.210
		B	0.000	0.000	21.642	0.000	0.226
		C	0.000	0.000	10.569	0.000	0.224
L49	30.083-28.000	A	0.000	0.000	4.429	0.000	0.036
		B	0.000	0.000	8.982	0.000	0.042
		C	0.000	0.000	6.369	0.000	0.041
L50	28.000-27.750	A	0.000	0.000	0.541	0.000	0.004
		B	0.000	0.000	1.088	0.000	0.005
		C	0.000	0.000	0.784	0.000	0.005
L51	27.750-22.750	A	0.000	0.000	21.122	0.000	0.348
		B	0.000	0.000	32.052	0.000	0.365

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
		C	0.000	0.000	25.979	0.000	0.362
L52	22.750-20.083	A	0.000	0.000	10.888	0.000	0.193
		B	0.000	0.000	16.718	0.000	0.202
		C	0.000	0.000	13.479	0.000	0.200
L53	20.083-19.833	A	0.000	0.000	0.833	0.000	0.018
		B	0.000	0.000	1.380	0.000	0.019
		C	0.000	0.000	1.076	0.000	0.019
L54	19.833-17.000	A	0.000	0.000	11.441	0.000	0.205
		B	0.000	0.000	17.634	0.000	0.214
		C	0.000	0.000	16.194	0.000	0.213
L55	17.000-16.750	A	0.000	0.000	0.833	0.000	0.018
		B	0.000	0.000	1.380	0.000	0.019
		C	0.000	0.000	1.076	0.000	0.019
L56	16.750-11.650	A	0.000	0.000	14.787	0.000	0.313
		B	0.000	0.000	25.935	0.000	0.330
		C	0.000	0.000	20.753	0.000	0.327
L57	11.650-11.417	A	0.000	0.000	0.272	0.000	0.004
		B	0.000	0.000	0.781	0.000	0.005
		C	0.000	0.000	0.653	0.000	0.005
L58	11.417-9.375	A	0.000	0.000	3.381	0.000	0.035
		B	0.000	0.000	7.845	0.000	0.042
		C	0.000	0.000	5.726	0.000	0.041
L59	9.375-9.125	A	0.000	0.000	0.458	0.000	0.004
		B	0.000	0.000	1.005	0.000	0.005
		C	0.000	0.000	0.701	0.000	0.005
L60	9.125-4.833	A	0.000	0.000	7.866	0.000	0.074
		B	0.000	0.000	17.248	0.000	0.088
		C	0.000	0.000	12.035	0.000	0.085
L61	4.833-4.583	A	0.000	0.000	0.458	0.000	0.004
		B	0.000	0.000	1.005	0.000	0.005
		C	0.000	0.000	0.701	0.000	0.005
L62	4.583-0.000	A	0.000	0.000	8.399	0.000	0.079
		B	0.000	0.000	18.418	0.000	0.093
		C	0.000	0.000	10.740	0.000	0.091

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	191.667-186.667	A	2.382	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.002
		C		0.000	0.000	5.451	0.000	0.132
L2	186.667-181.567	A	2.375	0.000	0.000	1.560	0.000	0.070
		B		0.000	0.000	0.000	0.000	0.002
		C		0.000	0.000	5.547	0.000	0.135
L3	181.567-176.567	A	2.369	0.000	0.000	3.199	0.000	0.144
		B		0.000	0.000	0.000	0.000	0.002
		C		0.000	0.000	5.425	0.000	0.132
L4	176.567-171.567	A	2.362	0.000	0.000	3.192	0.000	0.144
		B		0.000	0.000	0.000	0.000	0.002
		C		0.000	0.000	5.411	0.000	0.131
L5	171.567-166.567	A	2.355	0.000	0.000	3.185	0.000	0.144
		B		0.000	0.000	0.000	0.000	0.002
		C		0.000	0.000	5.397	0.000	0.131
L6	166.567-161.567	A	2.348	0.000	0.000	3.178	0.000	0.143
		B		0.000	0.000	0.000	0.000	0.002
		C		0.000	0.000	5.383	0.000	0.130

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
L7	161.567-156.567	A	2.341	0.000	0.000	3.171	0.000	0.143
		B		0.000	0.000	12.102	0.000	0.240
		C		0.000	0.000	5.369	0.000	0.130
L8	156.567-151.567	A	2.333	0.000	0.000	3.163	0.000	0.143
		B		0.000	0.000	17.616	0.000	0.349
		C		0.000	0.000	5.354	0.000	0.129
L9	151.567-146.567	A	2.326	0.000	0.000	3.156	0.000	0.142
		B		0.000	0.000	17.607	0.000	0.348
		C		0.000	0.000	5.339	0.000	0.174
L10	146.567-141.567	A	2.318	0.000	0.000	3.148	0.000	0.142
		B		0.000	0.000	17.597	0.000	0.347
		C		0.000	0.000	5.323	0.000	0.184
L11	141.567-141.417	A	2.313	0.000	0.000	0.094	0.000	0.004
		B		0.000	0.000	0.528	0.000	0.010
		C		0.000	0.000	0.159	0.000	0.006
L12	141.417-136.417	A	2.309	0.000	0.000	3.139	0.000	0.142
		B		0.000	0.000	17.586	0.000	0.346
		C		0.000	0.000	5.306	0.000	0.184
L13	136.417-131.417	A	2.301	0.000	0.000	3.131	0.000	0.141
		B		0.000	0.000	17.576	0.000	0.345
		C		0.000	0.000	5.289	0.000	0.183
L14	131.417-126.417	A	2.292	0.000	0.000	3.699	0.000	0.166
		B		0.000	0.000	18.142	0.000	0.370
		C		0.000	0.000	5.848	0.000	0.207
L15	126.417-121.417	A	2.283	0.000	0.000	6.941	0.000	0.446
		B		0.000	0.000	21.382	0.000	0.649
		C		0.000	0.000	9.081	0.000	0.487
L16	121.417-121.167	A	2.278	0.000	0.000	0.334	0.000	0.015
		B		0.000	0.000	1.056	0.000	0.025
		C		0.000	0.000	0.441	0.000	0.017
L17	121.167-116.167	A	2.273	0.000	0.000	5.570	0.000	0.247
		B		0.000	0.000	20.009	0.000	0.449
		C		0.000	0.000	7.701	0.000	0.288
L18	116.167-111.167	A	2.263	0.000	0.000	4.219	0.000	0.159
		B		0.000	0.000	17.529	0.000	0.390
		C		0.000	0.000	5.214	0.000	0.181
L19	111.167-110.042	A	2.257	0.000	0.000	4.070	0.000	0.089
		B		0.000	0.000	3.942	0.000	0.088
		C		0.000	0.000	1.170	0.000	0.041
L20	110.042-109.792	A	2.256	0.000	0.000	0.904	0.000	0.020
		B		0.000	0.000	0.876	0.000	0.020
		C		0.000	0.000	0.260	0.000	0.009
L21	109.792-105.083	A	2.251	0.000	0.000	19.806	0.000	0.464
		B		0.000	0.000	19.279	0.000	0.459
		C		0.000	0.000	7.671	0.000	0.261
L22	105.083-104.833	A	2.245	0.000	0.000	1.292	0.000	0.032
		B		0.000	0.000	1.265	0.000	0.031
		C		0.000	0.000	0.648	0.000	0.021
L23	104.833-100.917	A	2.241	0.000	0.000	19.597	0.000	0.735
		B		0.000	0.000	21.040	0.000	0.763
		C		0.000	0.000	11.382	0.000	0.599
L24	100.917-100.667	A	2.236	0.000	0.000	0.528	0.000	0.023
		B		0.000	0.000	1.249	0.000	0.036
		C		0.000	0.000	0.632	0.000	0.025
L25	100.667-95.833	A	2.231	0.000	0.000	8.545	0.000	0.321
		B		0.000	0.000	22.493	0.000	0.561
		C		0.000	0.000	10.563	0.000	0.359
L26	95.833-95.583	A	2.225	0.000	0.000	0.445	0.000	0.011
		B		0.000	0.000	1.166	0.000	0.024
		C		0.000	0.000	0.549	0.000	0.013
L27	95.583-90.583	A	2.219	0.000	0.000	9.724	0.000	0.236

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	24.149	0.000	0.484
		C		0.000	0.000	11.800	0.000	0.276
L28	90.583-89.917	A	2.212	0.000	0.000	1.846	0.000	0.041
		B		0.000	0.000	3.767	0.000	0.074
		C		0.000	0.000	2.122	0.000	0.046
L29	89.917-89.667	A	2.211	0.000	0.000	0.775	0.000	0.019
		B		0.000	0.000	1.496	0.000	0.032
		C		0.000	0.000	0.879	0.000	0.021
L30	89.667-84.667	A	2.204	0.000	0.000	18.868	0.000	0.627
		B		0.000	0.000	33.289	0.000	0.877
		C		0.000	0.000	20.930	0.000	0.667
L31	84.667-80.833	A	2.193	0.000	0.000	15.193	0.000	0.798
		B		0.000	0.000	26.249	0.000	0.989
		C		0.000	0.000	16.765	0.000	0.828
L32	80.833-80.583	A	2.187	0.000	0.000	0.608	0.000	0.045
		B		0.000	0.000	1.329	0.000	0.057
		C		0.000	0.000	0.710	0.000	0.047
L33	80.583-75.583	A	2.180	0.000	0.000	15.274	0.000	0.496
		B		0.000	0.000	29.689	0.000	0.743
		C		0.000	0.000	17.311	0.000	0.534
L34	75.583-70.583	A	2.166	0.000	0.000	17.377	0.000	0.574
		B		0.000	0.000	32.202	0.000	0.827
		C		0.000	0.000	19.400	0.000	0.612
L35	70.583-69.500	A	2.156	0.000	0.000	5.884	0.000	0.196
		B		0.000	0.000	10.077	0.000	0.266
		C		0.000	0.000	6.320	0.000	0.204
L36	69.500-69.250	A	2.154	0.000	0.000	1.358	0.000	0.045
		B		0.000	0.000	2.326	0.000	0.062
		C		0.000	0.000	1.458	0.000	0.047
L37	69.250-64.250	A	2.146	0.000	0.000	28.760	0.000	1.701
		B		0.000	0.000	49.016	0.000	2.064
		C		0.000	0.000	30.764	0.000	1.738
L38	64.250-60.583	A	2.132	0.000	0.000	22.225	0.000	1.398
		B		0.000	0.000	39.158	0.000	1.808
		C		0.000	0.000	23.683	0.000	1.426
L39	60.583-60.333	A	2.125	0.000	0.000	0.891	0.000	0.044
		B		0.000	0.000	1.806	0.000	0.064
		C		0.000	0.000	0.990	0.000	0.046
L40	60.333-55.333	A	2.115	0.000	0.000	23.542	0.000	0.883
		B		0.000	0.000	39.754	0.000	1.200
		C		0.000	0.000	25.515	0.000	0.920
L41	55.333-52.167	A	2.100	0.000	0.000	6.732	0.000	0.155
		B		0.000	0.000	15.846	0.000	0.309
		C		0.000	0.000	7.971	0.000	0.178
L42	52.167-51.917	A	2.093	0.000	0.000	0.515	0.000	0.011
		B		0.000	0.000	1.235	0.000	0.024
		C		0.000	0.000	0.613	0.000	0.013
L43	51.917-46.917	A	2.082	0.000	0.000	18.747	0.000	0.434
		B		0.000	0.000	35.142	0.000	0.739
		C		0.000	0.000	24.684	0.000	0.528
L44	46.917-41.917	A	2.060	0.000	0.000	32.663	0.000	0.866
		B		0.000	0.000	49.898	0.000	1.195
		C		0.000	0.000	40.720	0.000	0.989
L45	41.917-40.333	A	2.045	0.000	0.000	9.451	0.000	0.259
		B		0.000	0.000	14.765	0.000	0.358
		C		0.000	0.000	11.996	0.000	0.298
L46	40.333-40.083	A	2.040	0.000	0.000	1.120	0.000	0.034
		B		0.000	0.000	1.839	0.000	0.046
		C		0.000	0.000	1.521	0.000	0.040
L47	40.083-35.083	A	2.026	0.000	0.000	26.307	0.000	0.720
		B		0.000	0.000	40.684	0.000	0.956

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
		C		0.000	0.000	31.761	0.000	0.805
L48	35.083-30.083	A	1.997	0.000	0.000	15.779	0.000	0.419
		B		0.000	0.000	30.149	0.000	0.654
		C		0.000	0.000	17.634	0.000	0.454
L49	30.083-28.000	A	1.975	0.000	0.000	6.487	0.000	0.121
		B		0.000	0.000	12.471	0.000	0.218
		C		0.000	0.000	9.689	0.000	0.168
L50	28.000-27.750	A	1.967	0.000	0.000	0.790	0.000	0.015
		B		0.000	0.000	1.508	0.000	0.026
		C		0.000	0.000	1.186	0.000	0.020
L51	27.750-22.750	A	1.947	0.000	0.000	28.344	0.000	0.718
		B		0.000	0.000	42.701	0.000	0.948
		C		0.000	0.000	36.231	0.000	0.832
L52	22.750-20.083	A	1.915	0.000	0.000	14.501	0.000	0.380
		B		0.000	0.000	22.154	0.000	0.501
		C		0.000	0.000	18.682	0.000	0.439
L53	20.083-19.833	A	1.902	0.000	0.000	1.100	0.000	0.032
		B		0.000	0.000	1.817	0.000	0.044
		C		0.000	0.000	1.491	0.000	0.038
L54	19.833-17.000	A	1.887	0.000	0.000	15.182	0.000	0.398
		B		0.000	0.000	23.308	0.000	0.525
		C		0.000	0.000	22.336	0.000	0.491
L55	17.000-16.750	A	1.870	0.000	0.000	1.135	0.000	0.032
		B		0.000	0.000	1.852	0.000	0.043
		C		0.000	0.000	1.563	0.000	0.038
L56	16.750-11.650	A	1.838	0.000	0.000	20.389	0.000	0.561
		B		0.000	0.000	35.005	0.000	0.785
		C		0.000	0.000	30.433	0.000	0.686
L57	11.650-11.417	A	1.800	0.000	0.000	0.438	0.000	0.009
		B		0.000	0.000	1.105	0.000	0.019
		C		0.000	0.000	1.041	0.000	0.017
L58	11.417-9.375	A	1.782	0.000	0.000	5.219	0.000	0.097
		B		0.000	0.000	11.065	0.000	0.184
		C		0.000	0.000	9.095	0.000	0.144
L59	9.375-9.125	A	1.761	0.000	0.000	0.698	0.000	0.012
		B		0.000	0.000	1.414	0.000	0.023
		C		0.000	0.000	1.109	0.000	0.017
L60	9.125-4.833	A	1.712	0.000	0.000	11.889	0.000	0.208
		B		0.000	0.000	24.163	0.000	0.387
		C		0.000	0.000	18.868	0.000	0.291
L61	4.833-4.583	A	1.646	0.000	0.000	0.685	0.000	0.012
		B		0.000	0.000	1.399	0.000	0.022
		C		0.000	0.000	1.085	0.000	0.016
L62	4.583-0.000	A	1.532	0.000	0.000	12.297	0.000	0.202
		B		0.000	0.000	25.361	0.000	0.377
		C		0.000	0.000	16.654	0.000	0.250

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	191.667-186.667	-0.001	0.198	-0.004	0.853
L2	186.667-181.567	-0.111	0.223	-0.254	0.956
L3	181.567-176.567	-0.223	0.247	-0.484	0.947
L4	176.567-171.567	-0.223	0.247	-0.483	0.946
L5	171.567-166.567	-0.223	0.247	-0.483	0.945

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L6	166.567-161.567	-0.223	0.247	-0.482	0.944
L7	161.567-156.567	1.248	-0.384	0.864	0.106
L8	156.567-151.567	1.580	-0.526	1.163	-0.080
L9	151.567-146.567	1.580	-0.526	1.164	-0.081
L10	146.567-141.567	1.580	-0.526	1.165	-0.082
L11	141.567-141.417	1.580	-0.526	1.166	-0.082
L12	141.417-136.417	1.840	-0.609	1.468	-0.079
L13	136.417-131.417	1.840	-0.609	1.470	-0.081
L14	131.417-126.417	1.766	-0.570	1.437	-0.077
L15	126.417-121.417	1.466	-0.415	1.286	-0.053
L16	121.417-121.167	1.463	-0.416	1.295	-0.056
L17	121.167-116.167	1.681	-0.501	1.472	-0.063
L18	116.167-111.167	1.760	-0.510	1.462	0.009
L19	111.167-110.042	0.142	0.659	0.116	0.916
L20	110.042-109.792	0.142	0.659	0.116	0.916
L21	109.792-105.083	0.111	0.587	0.097	0.829
L22	105.083-104.833	0.080	0.501	0.076	0.717
L23	104.833-100.917	0.205	0.364	0.201	0.587
L24	100.917-100.667	1.189	-0.315	1.190	-0.006
L25	100.667-95.833	1.379	-0.404	1.284	-0.032
L26	95.833-95.583	1.512	-0.498	1.289	-0.071
L27	95.583-90.583	1.450	-0.478	1.245	-0.069
L28	90.583-89.917	1.207	-0.397	1.061	-0.060
L29	89.917-89.667	1.019	-0.424	0.951	-0.096
L30	89.667-84.667	0.725	-0.467	0.758	-0.159
L31	84.667-80.833	0.684	-0.447	0.728	-0.163
L32	80.833-80.583	0.911	-0.597	1.013	-0.225
L33	80.583-75.583	1.102	-0.538	1.167	-0.189
L34	75.583-70.583	1.371	-0.481	1.339	-0.168
L35	70.583-69.500	0.603	-0.291	0.547	-0.043
L36	69.500-69.250	0.603	-0.291	0.547	-0.043
L37	69.250-64.250	0.618	-0.282	0.573	-0.032
L38	64.250-60.583	0.317	-0.186	0.365	0.044
L39	60.583-60.333	0.579	-0.345	0.677	-0.065
L40	60.333-55.333	0.852	-0.334	0.885	-0.062
L41	55.333-52.167	1.446	-0.345	1.337	0.052
L42	52.167-51.917	1.458	-0.341	1.344	0.058
L43	51.917-46.917	1.488	-0.668	1.450	-0.255
L44	46.917-41.917	1.330	-0.806	1.336	-0.471
L45	41.917-40.333	1.399	-0.883	1.396	-0.544
L46	40.333-40.083	1.561	-1.126	1.511	-0.835
L47	40.083-35.083	1.314	-0.860	1.262	-0.594
L48	35.083-30.083	1.370	-0.591	1.294	-0.261
L49	30.083-28.000	0.341	-0.977	0.384	-0.626
L50	28.000-27.750	0.305	-0.991	0.352	-0.643
L51	27.750-22.750	0.180	-0.564	0.224	-0.345
L52	22.750-20.083	0.181	-0.568	0.229	-0.350
L53	20.083-19.833	0.204	-0.639	0.260	-0.397
L54	19.833-17.000	0.400	-0.682	0.458	-0.478
L55	17.000-16.750	1.234	-0.348	1.231	-0.153
L56	16.750-11.650	1.234	-0.357	1.223	-0.148
L57	11.650-11.417	1.469	-0.528	1.393	-0.215
L58	11.417-9.375	1.597	-1.104	1.529	-0.821
L59	9.375-9.125	1.639	-1.292	1.575	-1.021
L60	9.125-4.833	1.639	-1.292	1.581	-1.029
L61	4.833-4.583	1.639	-1.292	1.588	-1.040
L62	4.583-0.000	1.961	-1.481	1.916	-1.237

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L1	213	Safety Line 3/8	186.67 - 191.67	1.0000	1.0000
L1	214	Climbing Rung	186.67 - 191.67	1.0000	1.0000
L2	187	HCS 6X12 4AWG(1-5/8)	181.57 - 184.00	1.0000	1.0000
L2	213	Safety Line 3/8	181.57 - 186.67	1.0000	1.0000
L2	214	Climbing Rung	181.57 - 186.67	1.0000	1.0000
L3	187	HCS 6X12 4AWG(1-5/8)	176.57 - 181.57	1.0000	1.0000
L3	213	Safety Line 3/8	176.57 - 181.57	1.0000	1.0000
L3	214	Climbing Rung	176.57 - 181.57	1.0000	1.0000
L4	187	HCS 6X12 4AWG(1-5/8)	171.57 - 176.57	1.0000	1.0000
L4	213	Safety Line 3/8	171.57 - 176.57	1.0000	1.0000
L4	214	Climbing Rung	171.57 - 176.57	1.0000	1.0000
L5	187	HCS 6X12 4AWG(1-5/8)	166.57 - 171.57	1.0000	1.0000
L5	213	Safety Line 3/8	166.57 - 171.57	1.0000	1.0000
L5	214	Climbing Rung	166.57 - 171.57	1.0000	1.0000
L6	187	HCS 6X12 4AWG(1-5/8)	161.57 - 166.57	1.0000	1.0000
L6	213	Safety Line 3/8	161.57 - 166.57	1.0000	1.0000
L6	214	Climbing Rung	161.57 - 166.57	1.0000	1.0000
L7	187	HCS 6X12 4AWG(1-5/8)	156.57 - 161.57	1.0000	1.0000
L7	189	AL7-50(1-5/8)	156.57 - 160.00	1.0000	1.0000
L7	213	Safety Line 3/8	156.57 - 161.57	1.0000	1.0000
L7	214	Climbing Rung	156.57 - 161.57	1.0000	1.0000
L8	187	HCS 6X12 4AWG(1-5/8)	151.57 - 156.57	1.0000	1.0000
L8	189	AL7-50(1-5/8)	151.57 - 156.57	1.0000	1.0000
L8	213	Safety Line 3/8	151.57 - 156.57	1.0000	1.0000
L8	214	Climbing Rung	151.57 - 156.57	1.0000	1.0000
L9	187	HCS 6X12 4AWG(1-5/8)	146.57 - 151.57	1.0000	1.0000
L9	189	AL7-50(1-5/8)	146.57 - 151.57	1.0000	1.0000
L9	213	Safety Line 3/8	146.57 - 151.57	1.0000	1.0000
L9	214	Climbing Rung	146.57 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			151.57		
L10	187	HCS 6X12 4AWG(1-5/8)	141.57 - 146.57	1.0000	1.0000
L10	189	AL7-50(1-5/8)	141.57 - 146.57	1.0000	1.0000
L10	213	Safety Line 3/8	141.57 - 146.57	1.0000	1.0000
L10	214	Climbing Rung	141.57 - 146.57	1.0000	1.0000
L11	187	HCS 6X12 4AWG(1-5/8)	141.42 - 141.57	1.0000	1.0000
L11	189	AL7-50(1-5/8)	141.42 - 141.57	1.0000	1.0000
L11	213	Safety Line 3/8	141.42 - 141.57	1.0000	1.0000
L11	214	Climbing Rung	141.42 - 141.57	1.0000	1.0000
L12	187	HCS 6X12 4AWG(1-5/8)	136.42 - 141.42	1.0000	1.0000
L12	189	AL7-50(1-5/8)	136.42 - 141.42	1.0000	1.0000
L12	213	Safety Line 3/8	136.42 - 141.42	1.0000	1.0000
L12	214	Climbing Rung	136.42 - 141.42	1.0000	1.0000
L13	187	HCS 6X12 4AWG(1-5/8)	131.42 - 136.42	1.0000	1.0000
L13	189	AL7-50(1-5/8)	131.42 - 136.42	1.0000	1.0000
L13	213	Safety Line 3/8	131.42 - 136.42	1.0000	1.0000
L13	214	Climbing Rung	131.42 - 136.42	1.0000	1.0000
L14	152	CCI 4.5" x 1" Plate	126.42 - 127.17	1.0000	1.0000
L14	153	CCI 4.5" x 1" Plate	126.42 - 127.17	1.0000	1.0000
L14	154	CCI 4.5" x 1" Plate	126.42 - 127.17	1.0000	1.0000
L14	187	HCS 6X12 4AWG(1-5/8)	126.42 - 131.42	1.0000	1.0000
L14	189	AL7-50(1-5/8)	126.42 - 131.42	1.0000	1.0000
L14	213	Safety Line 3/8	126.42 - 131.42	1.0000	1.0000
L14	214	Climbing Rung	126.42 - 131.42	1.0000	1.0000
L15	144	CCI 4.5" x 1" Plate	121.42 - 121.67	1.0000	1.0000
L15	145	CCI 4.5" x 1" Plate	121.42 - 121.67	1.0000	1.0000
L15	146	CCI 4.5" x 1" Plate	121.42 - 121.67	1.0000	1.0000
L15	148	CCI 4.5" x 4" Plate	121.67 - 124.42	1.0000	1.0000
L15	149	CCI 4.5" x 4" Plate	121.67 - 124.42	1.0000	1.0000
L15	150	CCI 4.5" x 4" Plate	121.67 - 124.42	1.0000	1.0000
L15	152	CCI 4.5" x 1" Plate	124.42 - 126.42	1.0000	1.0000
L15	153	CCI 4.5" x 1" Plate	124.42 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L15	154	CCI 4.5" x 1" Plate	126.42 124.42 - 126.42	1.0000	1.0000
L15	187	HCS 6X12 4AWG(1-5/8)	121.42 - 126.42	1.0000	1.0000
L15	189	AL7-50(1-5/8)	121.42 - 126.42	1.0000	1.0000
L15	213	Safety Line 3/8	121.42 - 126.42	1.0000	1.0000
L15	214	Climbing Rung	121.42 - 126.42	1.0000	1.0000
L16	144	CCI 4.5" x 1" Plate	121.17 - 121.42	1.0000	1.0000
L16	145	CCI 4.5" x 1" Plate	121.17 - 121.42	1.0000	1.0000
L16	146	CCI 4.5" x 1" Plate	121.17 - 121.42	1.0000	1.0000
L16	187	HCS 6X12 4AWG(1-5/8)	121.17 - 121.42	1.0000	1.0000
L16	189	AL7-50(1-5/8)	121.17 - 121.42	1.0000	1.0000
L16	213	Safety Line 3/8	121.17 - 121.42	1.0000	1.0000
L16	214	Climbing Rung	121.17 - 121.42	1.0000	1.0000
L17	140	CCI 4.5" x 1" Plate	117.92 - 120.67	1.0000	1.0000
L17	141	CCI 4.5" x 1" Plate	117.92 - 120.67	1.0000	1.0000
L17	142	CCI 4.5" x 1" Plate	117.92 - 120.67	1.0000	1.0000
L17	144	CCI 4.5" x 1" Plate	120.67 - 121.17	1.0000	1.0000
L17	145	CCI 4.5" x 1" Plate	120.67 - 121.17	1.0000	1.0000
L17	146	CCI 4.5" x 1" Plate	120.67 - 121.17	1.0000	1.0000
L17	187	HCS 6X12 4AWG(1-5/8)	116.17 - 121.17	1.0000	1.0000
L17	189	AL7-50(1-5/8)	116.17 - 121.17	1.0000	1.0000
L17	213	Safety Line 3/8	116.17 - 121.17	1.0000	1.0000
L17	214	Climbing Rung	116.17 - 121.17	1.0000	1.0000
L18	57	CCI 4.5" x 1" Plate	111.17 - 111.54	1.0000	1.0000
L18	58	CCI 4.5" x 1" Plate	111.17 - 111.54	1.0000	1.0000
L18	59	CCI 4.5" x 1" Plate	111.17 - 111.54	1.0000	1.0000
L18	187	HCS 6X12 4AWG(1-5/8)	111.17 - 116.17	1.0000	1.0000
L18	189	AL7-50(1-5/8)	111.17 - 116.17	1.0000	1.0000
L18	213	Safety Line 3/8	111.17 - 116.17	1.0000	1.0000
L18	214	Climbing Rung	111.17 - 116.17	1.0000	1.0000
L19	57	CCI 4.5" x 1" Plate	110.04 - 111.17	1.0000	1.0000
L19	58	CCI 4.5" x 1" Plate	110.04 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L19	59	CCI 4.5" x 1" Plate	110.04 - 111.17	1.0000	1.0000
L19	187	HCS 6X12 4AWG(1-5/8)	110.04 - 111.17	1.0000	1.0000
L19	189	AL7-50(1-5/8)	110.04 - 111.17	1.0000	1.0000
L19	213	Safety Line 3/8	110.04 - 111.17	1.0000	1.0000
L19	214	Climbing Rung	110.04 - 111.17	1.0000	1.0000
L20	57	CCI 4.5" x 1" Plate	109.79 - 110.04	1.0000	1.0000
L20	58	CCI 4.5" x 1" Plate	109.79 - 110.04	1.0000	1.0000
L20	59	CCI 4.5" x 1" Plate	109.79 - 110.04	1.0000	1.0000
L20	187	HCS 6X12 4AWG(1-5/8)	109.79 - 110.04	1.0000	1.0000
L20	189	AL7-50(1-5/8)	109.79 - 110.04	1.0000	1.0000
L20	213	Safety Line 3/8	109.79 - 110.04	1.0000	1.0000
L20	214	Climbing Rung	109.79 - 110.04	1.0000	1.0000
L21	19	CCI 4" x 0.75" Plate	105.08 - 106.58	1.0000	1.0000
L21	20	CCI 4" x 0.75" Plate	105.08 - 106.58	1.0000	1.0000
L21	21	CCI 4" x 0.75" Plate	105.08 - 106.58	1.0000	1.0000
L21	57	CCI 4.5" x 1" Plate	105.08 - 109.79	1.0000	1.0000
L21	58	CCI 4.5" x 1" Plate	105.08 - 109.79	1.0000	1.0000
L21	59	CCI 4.5" x 1" Plate	105.08 - 109.79	1.0000	1.0000
L21	136	CCI 4.5" x 1" Plate	105.08 - 107.17	1.0000	1.0000
L21	137	CCI 4.5" x 1" Plate	105.08 - 107.17	1.0000	1.0000
L21	138	CCI 4.5" x 1" Plate	105.08 - 107.17	1.0000	1.0000
L21	187	HCS 6X12 4AWG(1-5/8)	105.08 - 109.79	1.0000	1.0000
L21	189	AL7-50(1-5/8)	105.08 - 109.79	1.0000	1.0000
L21	213	Safety Line 3/8	105.08 - 109.79	1.0000	1.0000
L21	214	Climbing Rung	105.08 - 109.79	1.0000	1.0000
L22	19	CCI 4" x 0.75" Plate	104.83 - 105.08	1.0000	1.0000
L22	20	CCI 4" x 0.75" Plate	104.83 - 105.08	1.0000	1.0000
L22	21	CCI 4" x 0.75" Plate	104.83 - 105.08	1.0000	1.0000
L22	57	CCI 4.5" x 1" Plate	104.83 - 105.08	1.0000	1.0000
L22	58	CCI 4.5" x 1" Plate	104.83 - 105.08	1.0000	1.0000
L22	59	CCI 4.5" x 1" Plate	104.83 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L22	136	CCI 4.5" x 1" Plate	104.83 - 105.08	1.0000	1.0000
L22	137	CCI 4.5" x 1" Plate	104.83 - 105.08	1.0000	1.0000
L22	138	CCI 4.5" x 1" Plate	104.83 - 105.08	1.0000	1.0000
L22	187	HCS 6X12 4AWG(1-5/8)	104.83 - 105.08	1.0000	1.0000
L22	189	AL7-50(1-5/8)	104.83 - 105.08	1.0000	1.0000
L22	213	Safety Line 3/8	104.83 - 105.08	1.0000	1.0000
L22	214	Climbing Rung	104.83 - 105.08	1.0000	1.0000
L23	19	CCI 4" x 0.75" Plate	101.58 - 104.83	1.0000	1.0000
L23	20	CCI 4" x 0.75" Plate	101.58 - 104.83	1.0000	1.0000
L23	21	CCI 4" x 0.75" Plate	101.58 - 104.83	1.0000	1.0000
L23	57	CCI 4.5" x 1" Plate	101.54 - 104.83	1.0000	1.0000
L23	58	CCI 4.5" x 1" Plate	101.54 - 104.83	1.0000	1.0000
L23	59	CCI 4.5" x 1" Plate	101.54 - 104.83	1.0000	1.0000
L23	128	CCI 4.5" x 1" Plate	100.92 - 101.42	1.0000	1.0000
L23	129	CCI 4.5" x 1" Plate	100.92 - 101.42	1.0000	1.0000
L23	130	CCI 4.5" x 1" Plate	100.92 - 101.42	1.0000	1.0000
L23	132	CCI 4.5" x 4" Plate	101.42 - 104.42	1.0000	1.0000
L23	133	CCI 4.5" x 4" Plate	101.42 - 104.42	1.0000	1.0000
L23	134	CCI 4.5" x 4" Plate	101.42 - 104.42	1.0000	1.0000
L23	136	CCI 4.5" x 1" Plate	104.42 - 104.83	1.0000	1.0000
L23	137	CCI 4.5" x 1" Plate	104.42 - 104.83	1.0000	1.0000
L23	138	CCI 4.5" x 1" Plate	104.42 - 104.83	1.0000	1.0000
L23	174	CCI 4.5" x 1" Plate	100.92 - 101.79	1.0000	1.0000
L23	175	CCI 4.5" x 1" Plate	100.92 - 101.79	1.0000	1.0000
L23	176	CCI 4.5" x 1" Plate	100.92 - 101.79	1.0000	1.0000
L23	178	CCI 4.5" x 3" Plate	101.79 - 103.29	1.0000	1.0000
L23	179	CCI 4.5" x 3" Plate	101.79 - 103.29	1.0000	1.0000
L23	180	CCI 4.5" x 3" Plate	101.79 - 103.29	1.0000	1.0000
L23	187	HCS 6X12 4AWG(1-5/8)	100.92 - 104.83	1.0000	1.0000
L23	189	AL7-50(1-5/8)	100.92 - 104.83	1.0000	1.0000
L23	213	Safety Line 3/8	100.92 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			104.83		
L23	214	Climbing Rung	100.92 - 104.83	1.0000	1.0000
L24	128	CCI 4.5" x 1" Plate	100.67 - 100.92	1.0000	1.0000
L24	129	CCI 4.5" x 1" Plate	100.67 - 100.92	1.0000	1.0000
L24	130	CCI 4.5" x 1" Plate	100.67 - 100.92	1.0000	1.0000
L24	174	CCI 4.5" x 1" Plate	100.67 - 100.92	1.0000	1.0000
L24	175	CCI 4.5" x 1" Plate	100.67 - 100.92	1.0000	1.0000
L24	176	CCI 4.5" x 1" Plate	100.67 - 100.92	1.0000	1.0000
L24	187	HCS 6X12 4AWG(1-5/8)	100.67 - 100.92	1.0000	1.0000
L24	189	AL7-50(1-5/8)	100.67 - 100.92	1.0000	1.0000
L24	213	Safety Line 3/8	100.67 - 100.92	1.0000	1.0000
L24	214	Climbing Rung	100.67 - 100.92	1.0000	1.0000
L25	53	CCI 4.5" x 1" Plate	95.83 - 97.33	1.0000	1.0000
L25	54	CCI 4.5" x 1" Plate	95.83 - 97.33	1.0000	1.0000
L25	55	CCI 4.5" x 1" Plate	95.83 - 97.33	1.0000	1.0000
L25	124	CCI 4.5" x 1" Plate	97.92 - 100.42	1.0000	1.0000
L25	125	CCI 4.5" x 1" Plate	97.92 - 100.42	1.0000	1.0000
L25	126	CCI 4.5" x 1" Plate	97.92 - 100.42	1.0000	1.0000
L25	128	CCI 4.5" x 1" Plate	100.42 - 100.67	1.0000	1.0000
L25	129	CCI 4.5" x 1" Plate	100.42 - 100.67	1.0000	1.0000
L25	130	CCI 4.5" x 1" Plate	100.42 - 100.67	1.0000	1.0000
L25	174	CCI 4.5" x 1" Plate	98.42 - 100.67	1.0000	1.0000
L25	175	CCI 4.5" x 1" Plate	98.42 - 100.67	1.0000	1.0000
L25	176	CCI 4.5" x 1" Plate	98.42 - 100.67	1.0000	1.0000
L25	187	HCS 6X12 4AWG(1-5/8)	95.83 - 100.67	1.0000	1.0000
L25	189	AL7-50(1-5/8)	95.83 - 100.67	1.0000	1.0000
L25	213	Safety Line 3/8	95.83 - 100.67	1.0000	1.0000
L25	214	Climbing Rung	95.83 - 100.67	1.0000	1.0000
L26	53	CCI 4.5" x 1" Plate	95.58 - 95.83	1.0000	1.0000
L26	54	CCI 4.5" x 1" Plate	95.58 - 95.83	1.0000	1.0000
L26	55	CCI 4.5" x 1" Plate	95.58 - 95.83	1.0000	1.0000
L26	187	HCS 6X12 4AWG(1-5/8)	95.58 - 95.83	1.0000	1.0000
L26	189	AL7-50(1-5/8)	95.58 - 95.83	1.0000	1.0000
L26	213	Safety Line 3/8	95.58 - 95.83	1.0000	1.0000
L26	214	Climbing Rung	95.58 - 95.83	1.0000	1.0000
L27	53	CCI 4.5" x 1" Plate	90.58 - 95.58	1.0000	1.0000
L27	54	CCI 4.5" x 1" Plate	90.58 - 95.58	1.0000	1.0000
L27	55	CCI 4.5" x 1" Plate	90.58 - 95.58	1.0000	1.0000
L27	61	CCI 4.5" x 1" Plate	90.58 - 91.42	1.0000	1.0000
L27	62	CCI 4.5" x 1" Plate	90.58 - 91.42	1.0000	1.0000
L27	63	CCI 4.5" x 1" Plate	90.58 - 91.42	1.0000	1.0000
L27	187	HCS 6X12 4AWG(1-5/8)	90.58 - 95.58	1.0000	1.0000
L27	189	AL7-50(1-5/8)	90.58 - 95.58	1.0000	1.0000
L27	213	Safety Line 3/8	90.58 - 95.58	1.0000	1.0000
L27	214	Climbing Rung	90.58 - 95.58	1.0000	1.0000
L28	53	CCI 4.5" x 1" Plate	89.92 - 90.58	1.0000	1.0000
L28	54	CCI 4.5" x 1" Plate	89.92 - 90.58	1.0000	1.0000
L28	55	CCI 4.5" x 1" Plate	89.92 - 90.58	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L28	61	CCI 4.5" x 1" Plate	89.92 - 90.58	1.0000	1.0000
L28	62	CCI 4.5" x 1" Plate	89.92 - 90.58	1.0000	1.0000
L28	63	CCI 4.5" x 1" Plate	89.92 - 90.58	1.0000	1.0000
L28	187	HCS 6X12 4AWG(1-5/8)	89.92 - 90.58	1.0000	1.0000
L28	189	AL7-50(1-5/8)	89.92 - 90.58	1.0000	1.0000
L28	213	Safety Line 3/8	89.92 - 90.58	1.0000	1.0000
L28	214	Climbing Rung	89.92 - 90.58	1.0000	1.0000
L29	53	CCI 4.5" x 1" Plate	89.67 - 89.92	1.0000	1.0000
L29	54	CCI 4.5" x 1" Plate	89.67 - 89.92	1.0000	1.0000
L29	55	CCI 4.5" x 1" Plate	89.67 - 89.92	1.0000	1.0000
L29	61	CCI 4.5" x 1" Plate	89.67 - 89.92	1.0000	1.0000
L29	62	CCI 4.5" x 1" Plate	89.67 - 89.92	1.0000	1.0000
L29	63	CCI 4.5" x 1" Plate	89.67 - 89.92	1.0000	1.0000
L29	120	CCI 6.5" x 1.25" Plate	89.67 - 89.75	1.0000	1.0000
L29	121	CCI 6.5" x 1.25" Plate	89.67 - 89.75	1.0000	1.0000
L29	122	CCI 6.5" x 1.25" Plate	89.67 - 89.75	1.0000	1.0000
L29	187	HCS 6X12 4AWG(1-5/8)	89.67 - 89.92	1.0000	1.0000
L29	189	AL7-50(1-5/8)	89.67 - 89.92	1.0000	1.0000
L29	213	Safety Line 3/8	89.67 - 89.92	1.0000	1.0000
L29	214	Climbing Rung	89.67 - 89.92	1.0000	1.0000
L30	53	CCI 4.5" x 1" Plate	84.67 - 89.67	1.0000	1.0000
L30	54	CCI 4.5" x 1" Plate	84.67 - 89.67	1.0000	1.0000
L30	55	CCI 4.5" x 1" Plate	84.67 - 89.67	1.0000	1.0000
L30	61	CCI 4.5" x 1" Plate	84.67 - 89.67	1.0000	1.0000
L30	62	CCI 4.5" x 1" Plate	84.67 - 89.67	1.0000	1.0000
L30	63	CCI 4.5" x 1" Plate	84.67 - 89.67	1.0000	1.0000
L30	116	CCI 6.5" x 4.25" Plate	84.67 - 85.83	1.0000	1.0000
L30	117	CCI 6.5" x 4.25" Plate	84.67 - 85.83	1.0000	1.0000
L30	118	CCI 6.5" x 4.25" Plate	84.67 - 85.83	1.0000	1.0000
L30	120	CCI 6.5" x 1.25" Plate	85.83 - 89.67	1.0000	1.0000
L30	121	CCI 6.5" x 1.25" Plate	85.83 - 89.67	1.0000	1.0000
L30	122	CCI 6.5" x 1.25" Plate	85.83 - 89.67	1.0000	1.0000
L30	187	HCS 6X12 4AWG(1-5/8)	84.67 - 89.67	1.0000	1.0000
L30	189	AL7-50(1-5/8)	84.67 - 89.67	1.0000	1.0000
L30	213	Safety Line 3/8	84.67 - 89.67	1.0000	1.0000
L30	214	Climbing Rung	84.67 - 89.67	1.0000	1.0000
L31	53	CCI 4.5" x 1" Plate	81.33 - 84.67	1.0000	1.0000
L31	54	CCI 4.5" x 1" Plate	81.33 - 84.67	1.0000	1.0000
L31	55	CCI 4.5" x 1" Plate	81.33 - 84.67	1.0000	1.0000
L31	61	CCI 4.5" x 1" Plate	81.42 - 84.67	1.0000	1.0000
L31	62	CCI 4.5" x 1" Plate	81.42 - 84.67	1.0000	1.0000
L31	63	CCI 4.5" x 1" Plate	81.42 - 84.67	1.0000	1.0000
L31	116	CCI 6.5" x 4.25" Plate	80.83 - 84.67	1.0000	1.0000
L31	117	CCI 6.5" x 4.25" Plate	80.83 - 84.67	1.0000	1.0000
L31	118	CCI 6.5" x 4.25" Plate	80.83 - 84.67	1.0000	1.0000
L31	166	CCI 4.5" x 1" Plate	80.83 - 81.71	1.0000	1.0000
L31	167	CCI 4.5" x 1" Plate	80.83 - 81.71	1.0000	1.0000
L31	168	CCI 4.5" x 1" Plate	80.83 - 81.71	1.0000	1.0000
L31	170	CCI 4.5" x 3" Plate	81.71 - 83.20	1.0000	1.0000
L31	171	CCI 4.5" x 3" Plate	81.71 - 83.20	1.0000	1.0000
L31	172	CCI 4.5" x 3" Plate	81.71 - 83.20	1.0000	1.0000
L31	187	HCS 6X12 4AWG(1-5/8)	80.83 - 84.67	1.0000	1.0000
L31	189	AL7-50(1-5/8)	80.83 - 84.67	1.0000	1.0000
L31	213	Safety Line 3/8	80.83 - 84.67	1.0000	1.0000
L31	214	Climbing Rung	80.83 - 84.67	1.0000	1.0000
L32	116	CCI 6.5" x 4.25" Plate	80.58 - 80.83	1.0000	1.0000
L32	117	CCI 6.5" x 4.25" Plate	80.58 - 80.83	1.0000	1.0000
L32	118	CCI 6.5" x 4.25" Plate	80.58 - 80.83	1.0000	1.0000
L32	166	CCI 4.5" x 1" Plate	80.58 - 80.83	1.0000	1.0000
L32	167	CCI 4.5" x 1" Plate	80.58 - 80.83	1.0000	1.0000
L32	168	CCI 4.5" x 1" Plate	80.58 - 80.83	1.0000	1.0000
L32	187	HCS 6X12 4AWG(1-5/8)	80.58 - 80.83	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L32	189	AL7-50(1-5/8)	80.58 - 80.83	1.0000	1.0000
L32	213	Safety Line 3/8	80.58 - 80.83	1.0000	1.0000
L32	214	Climbing Rung	80.58 - 80.83	1.0000	1.0000
L33	15	CCI 6" x 1" Plate	75.58 - 80.17	1.0000	1.0000
L33	16	CCI 6" x 1" Plate	75.58 - 80.17	1.0000	1.0000
L33	17	CCI 6" x 1" Plate	75.58 - 80.17	1.0000	1.0000
L33	108	CCI 6.5" x 1.25" Plate	76.50 - 80.33	1.0000	1.0000
L33	109	CCI 6.5" x 1.25" Plate	76.50 - 80.33	1.0000	1.0000
L33	110	CCI 6.5" x 1.25" Plate	76.50 - 80.33	1.0000	1.0000
L33	112	CCI 6.5" x 1.25" Plate	80.33 - 80.50	1.0000	1.0000
L33	113	CCI 6.5" x 1.25" Plate	80.33 - 80.50	1.0000	1.0000
L33	114	CCI 6.5" x 1.25" Plate	80.33 - 80.50	1.0000	1.0000
L33	116	CCI 6.5" x 4.25" Plate	80.50 - 80.58	1.0000	1.0000
L33	117	CCI 6.5" x 4.25" Plate	80.50 - 80.58	1.0000	1.0000
L33	118	CCI 6.5" x 4.25" Plate	80.50 - 80.58	1.0000	1.0000
L33	166	CCI 4.5" x 1" Plate	78.33 - 80.58	1.0000	1.0000
L33	167	CCI 4.5" x 1" Plate	78.33 - 80.58	1.0000	1.0000
L33	168	CCI 4.5" x 1" Plate	78.33 - 80.58	1.0000	1.0000
L33	187	HCS 6X12 4AWG(1-5/8)	75.58 - 80.58	1.0000	1.0000
L33	189	AL7-50(1-5/8)	75.58 - 80.58	1.0000	1.0000
L33	213	Safety Line 3/8	75.58 - 80.58	1.0000	1.0000
L33	214	Climbing Rung	75.58 - 80.58	1.0000	1.0000
L34	15	CCI 6" x 1" Plate	70.58 - 75.58	1.0000	1.0000
L34	16	CCI 6" x 1" Plate	70.58 - 75.58	1.0000	1.0000
L34	17	CCI 6" x 1" Plate	70.58 - 75.58	1.0000	1.0000
L34	48	CCI 4.5" x 1" Plate	70.58 - 71.00	1.0000	1.0000
L34	49	CCI 4.5" x 1" Plate	70.58 - 71.00	1.0000	1.0000
L34	50	CCI 4.5" x 1" Plate	70.58 - 71.00	1.0000	1.0000
L34	51	CCI 4.5" x 1" Plate	70.58 - 71.00	1.0000	1.0000
L34	101	CCI 8.5" x 1.25" Plate	70.58 - 73.42	1.0000	1.0000
L34	102	CCI 8.5" x 1.25" Plate	70.58 - 73.42	1.0000	1.0000
L34	103	CCI 8.5" x 1.25" Plate	70.58 - 73.42	1.0000	1.0000
L34	104	CCI 8.5" x 1.25" Plate	70.58 - 73.42	1.0000	1.0000
L34	105	CCI 8.5" x 1.25" Plate	70.58 - 73.42	1.0000	1.0000
L34	106	CCI 8.5" x 1.25" Plate	70.58 - 73.42	1.0000	1.0000
L34	187	HCS 6X12 4AWG(1-5/8)	70.58 - 75.58	1.0000	1.0000
L34	189	AL7-50(1-5/8)	70.58 - 75.58	1.0000	1.0000
L34	213	Safety Line 3/8	70.58 - 75.58	1.0000	1.0000
L34	214	Climbing Rung	70.58 - 75.58	1.0000	1.0000
L35	15	CCI 6" x 1" Plate	69.50 - 70.58	1.0000	1.0000
L35	16	CCI 6" x 1" Plate	69.50 - 70.58	1.0000	1.0000
L35	17	CCI 6" x 1" Plate	69.50 - 70.58	1.0000	1.0000
L35	48	CCI 4.5" x 1" Plate	69.50 - 70.58	1.0000	1.0000
L35	49	CCI 4.5" x 1" Plate	69.50 - 70.58	1.0000	1.0000
L35	50	CCI 4.5" x 1" Plate	69.50 - 70.58	1.0000	1.0000
L35	51	CCI 4.5" x 1" Plate	69.50 - 70.58	1.0000	1.0000
L35	101	CCI 8.5" x 1.25" Plate	69.50 - 70.58	1.0000	1.0000
L35	102	CCI 8.5" x 1.25" Plate	69.50 - 70.58	1.0000	1.0000
L35	103	CCI 8.5" x 1.25" Plate	69.50 - 70.58	1.0000	1.0000
L35	104	CCI 8.5" x 1.25" Plate	69.50 - 70.58	1.0000	1.0000
L35	105	CCI 8.5" x 1.25" Plate	69.50 - 70.58	1.0000	1.0000
L35	106	CCI 8.5" x 1.25" Plate	69.50 - 70.58	1.0000	1.0000
L35	187	HCS 6X12 4AWG(1-5/8)	69.50 - 70.58	1.0000	1.0000
L35	189	AL7-50(1-5/8)	69.50 - 70.58	1.0000	1.0000
L35	213	Safety Line 3/8	69.50 - 70.58	1.0000	1.0000
L35	214	Climbing Rung	69.50 - 70.58	1.0000	1.0000
L36	15	CCI 6" x 1" Plate	69.25 - 69.50	1.0000	1.0000
L36	16	CCI 6" x 1" Plate	69.25 - 69.50	1.0000	1.0000
L36	17	CCI 6" x 1" Plate	69.25 - 69.50	1.0000	1.0000
L36	48	CCI 4.5" x 1" Plate	69.25 - 69.50	1.0000	1.0000
L36	49	CCI 4.5" x 1" Plate	69.25 - 69.50	1.0000	1.0000
L36	50	CCI 4.5" x 1" Plate	69.25 - 69.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L36	51	CCI 4.5" x 1" Plate	69.25 - 69.50	1.0000	1.0000
L36	101	CCI 8.5" x 1.25" Plate	69.25 - 69.50	1.0000	1.0000
L36	102	CCI 8.5" x 1.25" Plate	69.25 - 69.50	1.0000	1.0000
L36	103	CCI 8.5" x 1.25" Plate	69.25 - 69.50	1.0000	1.0000
L36	104	CCI 8.5" x 1.25" Plate	69.25 - 69.50	1.0000	1.0000
L36	105	CCI 8.5" x 1.25" Plate	69.25 - 69.50	1.0000	1.0000
L36	106	CCI 8.5" x 1.25" Plate	69.25 - 69.50	1.0000	1.0000
L36	187	HCS 6X12 4AWG(1-5/8)	69.25 - 69.50	1.0000	1.0000
L36	189	AL7-50(1-5/8)	69.25 - 69.50	1.0000	1.0000
L36	213	Safety Line 3/8	69.25 - 69.50	1.0000	1.0000
L36	214	Climbing Rung	69.25 - 69.50	1.0000	1.0000
L37	15	CCI 6" x 1" Plate	64.25 - 69.25	1.0000	1.0000
L37	16	CCI 6" x 1" Plate	64.25 - 69.25	1.0000	1.0000
L37	17	CCI 6" x 1" Plate	64.25 - 69.25	1.0000	1.0000
L37	28	1" x 2" Plate	64.25 - 66.17	1.0000	1.0000
L37	29	1" x 2" Plate	64.25 - 66.17	1.0000	1.0000
L37	30	1" x 2" Plate	64.25 - 66.17	1.0000	1.0000
L37	31	1" x 2" Plate	64.25 - 66.17	1.0000	1.0000
L37	48	CCI 4.5" x 1" Plate	64.25 - 69.25	1.0000	1.0000
L37	49	CCI 4.5" x 1" Plate	64.25 - 69.25	1.0000	1.0000
L37	50	CCI 4.5" x 1" Plate	64.25 - 69.25	1.0000	1.0000
L37	51	CCI 4.5" x 1" Plate	64.25 - 69.25	1.0000	1.0000
L37	94	CCI 8.5" x 4.25" Plate	64.25 - 68.42	1.0000	1.0000
L37	95	CCI 8.5" x 4.25" Plate	64.25 - 68.42	1.0000	1.0000
L37	96	CCI 8.5" x 4.25" Plate	64.25 - 68.42	1.0000	1.0000
L37	97	CCI 8.5" x 4.25" Plate	64.25 - 68.42	1.0000	1.0000
L37	98	CCI 8.5" x 4.25" Plate	64.25 - 68.42	1.0000	1.0000
L37	99	CCI 8.5" x 4.25" Plate	64.25 - 68.42	1.0000	1.0000
L37	101	CCI 8.5" x 1.25" Plate	68.42 - 69.25	1.0000	1.0000
L37	102	CCI 8.5" x 1.25" Plate	68.42 - 69.25	1.0000	1.0000
L37	103	CCI 8.5" x 1.25" Plate	68.42 - 69.25	1.0000	1.0000
L37	104	CCI 8.5" x 1.25" Plate	68.42 - 69.25	1.0000	1.0000
L37	105	CCI 8.5" x 1.25" Plate	68.42 - 69.25	1.0000	1.0000
L37	106	CCI 8.5" x 1.25" Plate	68.42 - 69.25	1.0000	1.0000
L37	187	HCS 6X12 4AWG(1-5/8)	64.25 - 69.25	1.0000	1.0000
L37	189	AL7-50(1-5/8)	64.25 - 69.25	1.0000	1.0000
L37	213	Safety Line 3/8	64.25 - 69.25	1.0000	1.0000
L37	214	Climbing Rung	64.25 - 69.25	1.0000	1.0000
L38	15	CCI 6" x 1" Plate	61.17 - 64.25	1.0000	1.0000
L38	16	CCI 6" x 1" Plate	61.17 - 64.25	1.0000	1.0000
L38	17	CCI 6" x 1" Plate	61.17 - 64.25	1.0000	1.0000
L38	28	1" x 2" Plate	61.08 - 64.25	1.0000	1.0000
L38	29	1" x 2" Plate	61.08 - 64.25	1.0000	1.0000
L38	30	1" x 2" Plate	61.08 - 64.25	1.0000	1.0000
L38	31	1" x 2" Plate	61.08 - 64.25	1.0000	1.0000
L38	48	CCI 4.5" x 1" Plate	61.00 - 64.25	1.0000	1.0000
L38	49	CCI 4.5" x 1" Plate	61.00 - 64.25	1.0000	1.0000
L38	50	CCI 4.5" x 1" Plate	61.00 - 64.25	1.0000	1.0000
L38	51	CCI 4.5" x 1" Plate	61.00 - 64.25	1.0000	1.0000
L38	87	CCI 8.5" x 1.25" Plate	60.58 - 61.08	1.0000	1.0000
L38	88	CCI 8.5" x 1.25" Plate	60.58 - 61.08	1.0000	1.0000
L38	89	CCI 8.5" x 1.25" Plate	60.58 - 61.08	1.0000	1.0000
L38	90	CCI 8.5" x 1.25" Plate	60.58 - 61.08	1.0000	1.0000
L38	91	CCI 8.5" x 1.25" Plate	60.58 - 61.08	1.0000	1.0000
L38	92	CCI 8.5" x 1.25" Plate	60.58 - 61.08	1.0000	1.0000
L38	94	CCI 8.5" x 4.25" Plate	61.08 - 64.25	1.0000	1.0000
L38	95	CCI 8.5" x 4.25" Plate	61.08 - 64.25	1.0000	1.0000
L38	96	CCI 8.5" x 4.25" Plate	61.08 - 64.25	1.0000	1.0000
L38	97	CCI 8.5" x 4.25" Plate	61.08 - 64.25	1.0000	1.0000
L38	98	CCI 8.5" x 4.25" Plate	61.08 - 64.25	1.0000	1.0000
L38	99	CCI 8.5" x 4.25" Plate	61.08 - 64.25	1.0000	1.0000
L38	156	CCI 4.5" x 1" Plate	60.58 - 61.46	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L38	157	CCI 4.5" x 1" Plate	60.58 - 61.46	1.0000	1.0000
L38	158	CCI 4.5" x 1" Plate	60.58 - 61.46	1.0000	1.0000
L38	159	CCI 4.5" x 1" Plate	60.58 - 61.46	1.0000	1.0000
L38	161	CCI 4.5" x 3" Plate	61.55 - 62.96	1.0000	1.0000
L38	162	CCI 4.5" x 3" Plate	61.55 - 62.96	1.0000	1.0000
L38	163	CCI 4.5" x 3" Plate	61.55 - 62.96	1.0000	1.0000
L38	164	CCI 4.5" x 3" Plate	61.55 - 62.96	1.0000	1.0000
L38	187	HCS 6X12 4AWG(1-5/8)	60.58 - 64.25	1.0000	1.0000
L38	189	AL7-50(1-5/8)	60.58 - 64.25	1.0000	1.0000
L38	213	Safety Line 3/8	60.58 - 64.25	1.0000	1.0000
L38	214	Climbing Rung	60.58 - 64.25	1.0000	1.0000
L39	87	CCI 8.5" x 1.25" Plate	60.33 - 60.58	1.0000	1.0000
L39	88	CCI 8.5" x 1.25" Plate	60.33 - 60.58	1.0000	1.0000
L39	89	CCI 8.5" x 1.25" Plate	60.33 - 60.58	1.0000	1.0000
L39	90	CCI 8.5" x 1.25" Plate	60.33 - 60.58	1.0000	1.0000
L39	91	CCI 8.5" x 1.25" Plate	60.33 - 60.58	1.0000	1.0000
L39	92	CCI 8.5" x 1.25" Plate	60.33 - 60.58	1.0000	1.0000
L39	156	CCI 4.5" x 1" Plate	60.33 - 60.58	1.0000	1.0000
L39	157	CCI 4.5" x 1" Plate	60.33 - 60.58	1.0000	1.0000
L39	158	CCI 4.5" x 1" Plate	60.33 - 60.58	1.0000	1.0000
L39	159	CCI 4.5" x 1" Plate	60.33 - 60.58	1.0000	1.0000
L39	187	HCS 6X12 4AWG(1-5/8)	60.33 - 60.58	1.0000	1.0000
L39	189	AL7-50(1-5/8)	60.33 - 60.58	1.0000	1.0000
L39	213	Safety Line 3/8	60.33 - 60.58	1.0000	1.0000
L39	214	Climbing Rung	60.33 - 60.58	1.0000	1.0000
L40	11	CCI 6.5" x 1.25" Plate	55.33 - 59.92	1.0000	1.0000
L40	12	CCI 6.5" x 1.25" Plate	55.33 - 59.92	1.0000	1.0000
L40	13	CCI 6.5" x 1.25" Plate	55.33 - 59.92	1.0000	1.0000
L40	80	CCI 8.5" x 1.25" Plate	55.33 - 60.08	1.0000	1.0000
L40	81	CCI 8.5" x 1.25" Plate	55.33 - 60.08	1.0000	1.0000
L40	82	CCI 8.5" x 1.25" Plate	55.33 - 60.08	1.0000	1.0000
L40	83	CCI 8.5" x 1.25" Plate	55.33 - 60.08	1.0000	1.0000
L40	84	CCI 8.5" x 1.25" Plate	55.33 - 60.08	1.0000	1.0000
L40	85	CCI 8.5" x 1.25" Plate	55.33 - 60.08	1.0000	1.0000
L40	87	CCI 8.5" x 1.25" Plate	60.08 - 60.33	1.0000	1.0000
L40	88	CCI 8.5" x 1.25" Plate	60.08 - 60.33	1.0000	1.0000
L40	89	CCI 8.5" x 1.25" Plate	60.08 - 60.33	1.0000	1.0000
L40	90	CCI 8.5" x 1.25" Plate	60.08 - 60.33	1.0000	1.0000
L40	91	CCI 8.5" x 1.25" Plate	60.08 - 60.33	1.0000	1.0000
L40	92	CCI 8.5" x 1.25" Plate	60.08 - 60.33	1.0000	1.0000
L40	156	CCI 4.5" x 1" Plate	58.00 - 60.33	1.0000	1.0000
L40	157	CCI 4.5" x 1" Plate	58.00 - 60.33	1.0000	1.0000
L40	158	CCI 4.5" x 1" Plate	58.00 - 60.33	1.0000	1.0000
L40	159	CCI 4.5" x 1" Plate	58.00 - 60.33	1.0000	1.0000
L40	187	HCS 6X12 4AWG(1-5/8)	55.33 - 60.33	1.0000	1.0000
L40	189	AL7-50(1-5/8)	55.33 - 60.33	1.0000	1.0000
L40	213	Safety Line 3/8	55.33 - 60.33	1.0000	1.0000
L40	214	Climbing Rung	55.33 - 60.33	1.0000	1.0000
L41	11	CCI 6.5" x 1.25" Plate	52.17 - 55.33	1.0000	1.0000
L41	12	CCI 6.5" x 1.25" Plate	52.17 - 55.33	1.0000	1.0000
L41	13	CCI 6.5" x 1.25" Plate	52.17 - 55.33	1.0000	1.0000
L41	80	CCI 8.5" x 1.25" Plate	55.25 - 55.33	1.0000	1.0000
L41	81	CCI 8.5" x 1.25" Plate	55.25 - 55.33	1.0000	1.0000
L41	82	CCI 8.5" x 1.25" Plate	55.25 - 55.33	1.0000	1.0000
L41	83	CCI 8.5" x 1.25" Plate	55.25 - 55.33	1.0000	1.0000
L41	84	CCI 8.5" x 1.25" Plate	55.25 - 55.33	1.0000	1.0000
L41	85	CCI 8.5" x 1.25" Plate	55.25 - 55.33	1.0000	1.0000
L41	187	HCS 6X12 4AWG(1-5/8)	52.17 - 55.33	1.0000	1.0000
L41	189	AL7-50(1-5/8)	52.17 - 55.33	1.0000	1.0000
L41	213	Safety Line 3/8	52.17 - 55.33	1.0000	1.0000
L41	214	Climbing Rung	52.17 - 55.33	1.0000	1.0000
L42	11	CCI 6.5" x 1.25" Plate	51.92 - 52.17	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L42	12	CCI 6.5" x 1.25" Plate	51.92 - 52.17	1.0000	1.0000
L42	13	CCI 6.5" x 1.25" Plate	51.92 - 52.17	1.0000	1.0000
L42	187	HCS 6X12 4AWG(1-5/8)	51.92 - 52.17	1.0000	1.0000
L42	189	AL7-50(1-5/8)	51.92 - 52.17	1.0000	1.0000
L42	213	Safety Line 3/8	51.92 - 52.17	1.0000	1.0000
L42	214	Climbing Rung	51.92 - 52.17	1.0000	1.0000
L43	11	CCI 6.5" x 1.25" Plate	46.92 - 51.92	1.0000	1.0000
L43	12	CCI 6.5" x 1.25" Plate	46.92 - 51.92	1.0000	1.0000
L43	13	CCI 6.5" x 1.25" Plate	46.92 - 51.92	1.0000	1.0000
L43	23	1" x 2" Plate	46.92 - 50.42	1.0000	1.0000
L43	24	1" x 2" Plate	46.92 - 50.42	1.0000	1.0000
L43	25	1" x 2" Plate	46.92 - 50.42	1.0000	1.0000
L43	26	1" x 2" Plate	46.92 - 50.42	1.0000	1.0000
L43	43	CCI 6" x 1" Plate	46.92 - 50.17	1.0000	1.0000
L43	44	CCI 6" x 1" Plate	46.92 - 50.17	1.0000	1.0000
L43	45	CCI 6" x 1" Plate	46.92 - 50.17	1.0000	1.0000
L43	46	CCI 6" x 1" Plate	46.92 - 50.17	1.0000	1.0000
L43	73	CCI 6.5" x 1.25" Plate	46.92 - 47.83	1.0000	1.0000
L43	74	CCI 6.5" x 1.25" Plate	46.92 - 47.83	1.0000	1.0000
L43	75	CCI 6.5" x 1.25" Plate	46.92 - 47.83	1.0000	1.0000
L43	76	CCI 6.5" x 1.25" Plate	46.92 - 47.83	1.0000	1.0000
L43	77	CCI 6.5" x 1.25" Plate	46.92 - 47.83	1.0000	1.0000
L43	78	CCI 6.5" x 1.25" Plate	46.92 - 47.83	1.0000	1.0000
L43	187	HCS 6X12 4AWG(1-5/8)	46.92 - 51.92	1.0000	1.0000
L43	189	AL7-50(1-5/8)	46.92 - 51.92	1.0000	1.0000
L43	213	Safety Line 3/8	46.92 - 51.92	1.0000	1.0000
L43	214	Climbing Rung	46.92 - 51.92	1.0000	1.0000
L44	11	CCI 6.5" x 1.25" Plate	41.92 - 46.92	1.0000	1.0000
L44	12	CCI 6.5" x 1.25" Plate	41.92 - 46.92	1.0000	1.0000
L44	13	CCI 6.5" x 1.25" Plate	41.92 - 46.92	1.0000	1.0000
L44	23	1" x 2" Plate	41.92 - 46.92	1.0000	1.0000
L44	24	1" x 2" Plate	41.92 - 46.92	1.0000	1.0000
L44	25	1" x 2" Plate	41.92 - 46.92	1.0000	1.0000
L44	26	1" x 2" Plate	41.92 - 46.92	1.0000	1.0000
L44	43	CCI 6" x 1" Plate	41.92 - 46.92	1.0000	1.0000
L44	44	CCI 6" x 1" Plate	41.92 - 46.92	1.0000	1.0000
L44	45	CCI 6" x 1" Plate	41.92 - 46.92	1.0000	1.0000
L44	46	CCI 6" x 1" Plate	41.92 - 46.92	1.0000	1.0000
L44	73	CCI 6.5" x 1.25" Plate	41.92 - 46.92	1.0000	1.0000
L44	74	CCI 6.5" x 1.25" Plate	41.92 - 46.92	1.0000	1.0000
L44	75	CCI 6.5" x 1.25" Plate	41.92 - 46.92	1.0000	1.0000
L44	76	CCI 6.5" x 1.25" Plate	41.92 - 46.92	1.0000	1.0000
L44	77	CCI 6.5" x 1.25" Plate	41.92 - 46.92	1.0000	1.0000
L44	78	CCI 6.5" x 1.25" Plate	41.92 - 46.92	1.0000	1.0000
L44	187	HCS 6X12 4AWG(1-5/8)	41.92 - 46.92	1.0000	1.0000
L44	189	AL7-50(1-5/8)	41.92 - 46.92	1.0000	1.0000
L44	213	Safety Line 3/8	41.92 - 46.92	1.0000	1.0000
L44	214	Climbing Rung	41.92 - 46.92	1.0000	1.0000
L45	11	CCI 6.5" x 1.25" Plate	40.83 - 41.92	1.0000	1.0000
L45	12	CCI 6.5" x 1.25" Plate	40.83 - 41.92	1.0000	1.0000
L45	13	CCI 6.5" x 1.25" Plate	40.83 - 41.92	1.0000	1.0000
L45	23	1" x 2" Plate	40.58 - 41.92	1.0000	1.0000
L45	24	1" x 2" Plate	40.58 - 41.92	1.0000	1.0000
L45	25	1" x 2" Plate	40.58 - 41.92	1.0000	1.0000
L45	26	1" x 2" Plate	40.58 - 41.92	1.0000	1.0000
L45	43	CCI 6" x 1" Plate	40.33 - 41.92	1.0000	1.0000
L45	44	CCI 6" x 1" Plate	40.33 - 41.92	1.0000	1.0000
L45	45	CCI 6" x 1" Plate	40.33 - 41.92	1.0000	1.0000
L45	46	CCI 6" x 1" Plate	40.33 - 41.92	1.0000	1.0000
L45	73	CCI 6.5" x 1.25" Plate	40.33 - 41.92	1.0000	1.0000
L45	74	CCI 6.5" x 1.25" Plate	40.33 - 41.92	1.0000	1.0000
L45	75	CCI 6.5" x 1.25" Plate	40.33 - 41.92	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L45	76	CCI 6.5" x 1.25" Plate	40.33 - 41.92	1.0000	1.0000
L45	77	CCI 6.5" x 1.25" Plate	40.33 - 41.92	1.0000	1.0000
L45	78	CCI 6.5" x 1.25" Plate	40.33 - 41.92	1.0000	1.0000
L45	187	HCS 6X12 4AWG(1-5/8)	40.33 - 41.92	1.0000	1.0000
L45	189	AL7-50(1-5/8)	40.33 - 41.92	1.0000	1.0000
L45	213	Safety Line 3/8	40.33 - 41.92	1.0000	1.0000
L45	214	Climbing Rung	40.33 - 41.92	1.0000	1.0000
L46	43	CCI 6" x 1" Plate	40.08 - 40.33	1.0000	1.0000
L46	44	CCI 6" x 1" Plate	40.08 - 40.33	1.0000	1.0000
L46	45	CCI 6" x 1" Plate	40.08 - 40.33	1.0000	1.0000
L46	46	CCI 6" x 1" Plate	40.08 - 40.33	1.0000	1.0000
L46	73	CCI 6.5" x 1.25" Plate	40.08 - 40.33	1.0000	1.0000
L46	74	CCI 6.5" x 1.25" Plate	40.08 - 40.33	1.0000	1.0000
L46	75	CCI 6.5" x 1.25" Plate	40.08 - 40.33	1.0000	1.0000
L46	76	CCI 6.5" x 1.25" Plate	40.08 - 40.33	1.0000	1.0000
L46	77	CCI 6.5" x 1.25" Plate	40.08 - 40.33	1.0000	1.0000
L46	78	CCI 6.5" x 1.25" Plate	40.08 - 40.33	1.0000	1.0000
L46	187	HCS 6X12 4AWG(1-5/8)	40.08 - 40.33	1.0000	1.0000
L46	189	AL7-50(1-5/8)	40.08 - 40.33	1.0000	1.0000
L46	213	Safety Line 3/8	40.08 - 40.33	1.0000	1.0000
L46	214	Climbing Rung	40.08 - 40.33	1.0000	1.0000
L47	7	CCI 6" x 1" Plate	35.08 - 39.75	1.0000	1.0000
L47	8	CCI 6" x 1" Plate	35.08 - 39.75	1.0000	1.0000
L47	9	CCI 6" x 1" Plate	35.08 - 39.75	1.0000	1.0000
L47	43	CCI 6" x 1" Plate	37.17 - 40.08	1.0000	1.0000
L47	44	CCI 6" x 1" Plate	37.17 - 40.08	1.0000	1.0000
L47	45	CCI 6" x 1" Plate	37.17 - 40.08	1.0000	1.0000
L47	46	CCI 6" x 1" Plate	37.17 - 40.08	1.0000	1.0000
L47	73	CCI 6.5" x 1.25" Plate	35.08 - 40.08	1.0000	1.0000
L47	74	CCI 6.5" x 1.25" Plate	35.08 - 40.08	1.0000	1.0000
L47	75	CCI 6.5" x 1.25" Plate	35.08 - 40.08	1.0000	1.0000
L47	76	CCI 6.5" x 1.25" Plate	35.08 - 40.08	1.0000	1.0000
L47	77	CCI 6.5" x 1.25" Plate	35.08 - 40.08	1.0000	1.0000
L47	78	CCI 6.5" x 1.25" Plate	35.08 - 40.08	1.0000	1.0000
L47	187	HCS 6X12 4AWG(1-5/8)	35.08 - 40.08	1.0000	1.0000
L47	189	AL7-50(1-5/8)	35.08 - 40.08	1.0000	1.0000
L47	213	Safety Line 3/8	35.08 - 40.08	1.0000	1.0000
L47	214	Climbing Rung	35.08 - 40.08	1.0000	1.0000
L48	7	CCI 6" x 1" Plate	30.08 - 35.08	1.0000	1.0000
L48	8	CCI 6" x 1" Plate	30.08 - 35.08	1.0000	1.0000
L48	9	CCI 6" x 1" Plate	30.08 - 35.08	1.0000	1.0000
L48	73	CCI 6.5" x 1.25" Plate	32.83 - 35.08	1.0000	1.0000
L48	74	CCI 6.5" x 1.25" Plate	32.83 - 35.08	1.0000	1.0000
L48	75	CCI 6.5" x 1.25" Plate	32.83 - 35.08	1.0000	1.0000
L48	76	CCI 6.5" x 1.25" Plate	32.83 - 35.08	1.0000	1.0000
L48	77	CCI 6.5" x 1.25" Plate	32.83 - 35.08	1.0000	1.0000
L48	78	CCI 6.5" x 1.25" Plate	32.83 - 35.08	1.0000	1.0000
L48	187	HCS 6X12 4AWG(1-5/8)	30.08 - 35.08	1.0000	1.0000
L48	189	AL7-50(1-5/8)	30.08 - 35.08	1.0000	1.0000
L48	213	Safety Line 3/8	30.08 - 35.08	1.0000	1.0000
L48	214	Climbing Rung	30.08 - 35.08	1.0000	1.0000
L49	7	CCI 6" x 1" Plate	28.00 - 30.08	1.0000	1.0000
L49	8	CCI 6" x 1" Plate	28.00 - 30.08	1.0000	1.0000
L49	9	CCI 6" x 1" Plate	28.00 - 30.08	1.0000	1.0000
L49	38	CCI 6" x 1" Plate	28.00 - 30.00	1.0000	1.0000
L49	39	CCI 6" x 1" Plate	28.00 - 30.00	1.0000	1.0000
L49	40	CCI 6" x 1" Plate	28.00 - 30.00	1.0000	1.0000
L49	41	CCI 6" x 1" Plate	28.00 - 30.00	1.0000	1.0000
L49	187	HCS 6X12 4AWG(1-5/8)	28.00 - 30.08	1.0000	1.0000
L49	189	AL7-50(1-5/8)	28.00 - 30.08	1.0000	1.0000
L49	213	Safety Line 3/8	28.00 - 30.08	1.0000	1.0000
L49	214	Climbing Rung	28.00 - 30.08	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L50	7	CCI 6" x 1" Plate	27.75 - 28.00	1.0000	1.0000
L50	8	CCI 6" x 1" Plate	27.75 - 28.00	1.0000	1.0000
L50	9	CCI 6" x 1" Plate	27.75 - 28.00	1.0000	1.0000
L50	38	CCI 6" x 1" Plate	27.75 - 28.00	1.0000	1.0000
L50	39	CCI 6" x 1" Plate	27.75 - 28.00	1.0000	1.0000
L50	40	CCI 6" x 1" Plate	27.75 - 28.00	1.0000	1.0000
L50	41	CCI 6" x 1" Plate	27.75 - 28.00	1.0000	1.0000
L50	187	HCS 6X12 4AWG(1-5/8)	27.75 - 28.00	1.0000	1.0000
L50	189	AL7-50(1-5/8)	27.75 - 28.00	1.0000	1.0000
L50	213	Safety Line 3/8	27.75 - 28.00	1.0000	1.0000
L50	214	Climbing Rung	27.75 - 28.00	1.0000	1.0000
L51	7	CCI 6" x 1" Plate	22.75 - 27.75	1.0000	1.0000
L51	8	CCI 6" x 1" Plate	22.75 - 27.75	1.0000	1.0000
L51	9	CCI 6" x 1" Plate	22.75 - 27.75	1.0000	1.0000
L51	38	CCI 6" x 1" Plate	22.75 - 27.75	1.0000	1.0000
L51	39	CCI 6" x 1" Plate	22.75 - 27.75	1.0000	1.0000
L51	40	CCI 6" x 1" Plate	22.75 - 27.75	1.0000	1.0000
L51	41	CCI 6" x 1" Plate	22.75 - 27.75	1.0000	1.0000
L51	66	CCI 6.5" x 1.25" Plate	22.75 - 27.50	1.0000	1.0000
L51	67	CCI 6.5" x 1.25" Plate	22.75 - 27.50	1.0000	1.0000
L51	68	CCI 6.5" x 1.25" Plate	22.75 - 27.50	1.0000	1.0000
L51	69	CCI 6.5" x 1.25" Plate	22.75 - 27.50	1.0000	1.0000
L51	70	CCI 6.5" x 1.25" Plate	22.75 - 27.50	1.0000	1.0000
L51	71	CCI 6.5" x 1.25" Plate	22.75 - 27.50	1.0000	1.0000
L51	187	HCS 6X12 4AWG(1-5/8)	22.75 - 27.75	1.0000	1.0000
L51	189	AL7-50(1-5/8)	22.75 - 27.75	1.0000	1.0000
L51	213	Safety Line 3/8	22.75 - 27.75	1.0000	1.0000
L51	214	Climbing Rung	22.75 - 27.75	1.0000	1.0000
L52	7	CCI 6" x 1" Plate	20.75 - 22.75	1.0000	1.0000
L52	8	CCI 6" x 1" Plate	20.75 - 22.75	1.0000	1.0000
L52	9	CCI 6" x 1" Plate	20.75 - 22.75	1.0000	1.0000
L52	38	CCI 6" x 1" Plate	20.08 - 22.75	1.0000	1.0000
L52	39	CCI 6" x 1" Plate	20.08 - 22.75	1.0000	1.0000
L52	40	CCI 6" x 1" Plate	20.08 - 22.75	1.0000	1.0000
L52	41	CCI 6" x 1" Plate	20.08 - 22.75	1.0000	1.0000
L52	66	CCI 6.5" x 1.25" Plate	20.08 - 22.75	1.0000	1.0000
L52	67	CCI 6.5" x 1.25" Plate	20.08 - 22.75	1.0000	1.0000
L52	68	CCI 6.5" x 1.25" Plate	20.08 - 22.75	1.0000	1.0000
L52	69	CCI 6.5" x 1.25" Plate	20.08 - 22.75	1.0000	1.0000
L52	70	CCI 6.5" x 1.25" Plate	20.08 - 22.75	1.0000	1.0000
L52	71	CCI 6.5" x 1.25" Plate	20.08 - 22.75	1.0000	1.0000
L52	187	HCS 6X12 4AWG(1-5/8)	20.08 - 22.75	1.0000	1.0000
L52	189	AL7-50(1-5/8)	20.08 - 22.75	1.0000	1.0000
L52	213	Safety Line 3/8	20.08 - 22.75	1.0000	1.0000
L52	214	Climbing Rung	20.08 - 22.75	1.0000	1.0000
L53	38	CCI 6" x 1" Plate	19.83 - 20.08	1.0000	1.0000
L53	39	CCI 6" x 1" Plate	19.83 - 20.08	1.0000	1.0000
L53	40	CCI 6" x 1" Plate	19.83 - 20.08	1.0000	1.0000
L53	41	CCI 6" x 1" Plate	19.83 - 20.08	1.0000	1.0000
L53	66	CCI 6.5" x 1.25" Plate	19.83 - 20.08	1.0000	1.0000
L53	67	CCI 6.5" x 1.25" Plate	19.83 - 20.08	1.0000	1.0000
L53	68	CCI 6.5" x 1.25" Plate	19.83 - 20.08	1.0000	1.0000
L53	69	CCI 6.5" x 1.25" Plate	19.83 - 20.08	1.0000	1.0000
L53	70	CCI 6.5" x 1.25" Plate	19.83 - 20.08	1.0000	1.0000
L53	71	CCI 6.5" x 1.25" Plate	19.83 - 20.08	1.0000	1.0000
L53	187	HCS 6X12 4AWG(1-5/8)	19.83 - 20.08	1.0000	1.0000
L53	189	AL7-50(1-5/8)	19.83 - 20.08	1.0000	1.0000
L53	213	Safety Line 3/8	19.83 - 20.08	1.0000	1.0000
L53	214	Climbing Rung	19.83 - 20.08	1.0000	1.0000
L54	33	CCI 6" x 1" Plate	17.00 - 19.00	1.0000	1.0000
L54	34	CCI 6" x 1" Plate	17.00 - 19.00	1.0000	1.0000
L54	35	CCI 6" x 1" Plate	17.00 - 19.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L54	36	CCI 6" x 1" Plate	17.00 - 19.00	1.0000	1.0000
L54	38	CCI 6" x 1" Plate	17.00 - 19.83	1.0000	1.0000
L54	39	CCI 6" x 1" Plate	17.00 - 19.83	1.0000	1.0000
L54	40	CCI 6" x 1" Plate	17.00 - 19.83	1.0000	1.0000
L54	41	CCI 6" x 1" Plate	17.00 - 19.83	1.0000	1.0000
L54	66	CCI 6.5" x 1.25" Plate	17.00 - 19.83	1.0000	1.0000
L54	67	CCI 6.5" x 1.25" Plate	17.00 - 19.83	1.0000	1.0000
L54	68	CCI 6.5" x 1.25" Plate	17.00 - 19.83	1.0000	1.0000
L54	69	CCI 6.5" x 1.25" Plate	17.00 - 19.83	1.0000	1.0000
L54	70	CCI 6.5" x 1.25" Plate	17.00 - 19.83	1.0000	1.0000
L54	71	CCI 6.5" x 1.25" Plate	17.00 - 19.83	1.0000	1.0000
L54	187	HCS 6X12 4AWG(1-5/8)	17.00 - 19.83	1.0000	1.0000
L54	189	AL7-50(1-5/8)	17.00 - 19.83	1.0000	1.0000
L54	213	Safety Line 3/8	17.00 - 19.83	1.0000	1.0000
L54	214	Climbing Rung	17.00 - 19.83	1.0000	1.0000
L55	33	CCI 6" x 1" Plate	16.75 - 17.00	1.0000	1.0000
L55	34	CCI 6" x 1" Plate	16.75 - 17.00	1.0000	1.0000
L55	35	CCI 6" x 1" Plate	16.75 - 17.00	1.0000	1.0000
L55	36	CCI 6" x 1" Plate	16.75 - 17.00	1.0000	1.0000
L55	66	CCI 6.5" x 1.25" Plate	16.75 - 17.00	1.0000	1.0000
L55	67	CCI 6.5" x 1.25" Plate	16.75 - 17.00	1.0000	1.0000
L55	68	CCI 6.5" x 1.25" Plate	16.75 - 17.00	1.0000	1.0000
L55	69	CCI 6.5" x 1.25" Plate	16.75 - 17.00	1.0000	1.0000
L55	70	CCI 6.5" x 1.25" Plate	16.75 - 17.00	1.0000	1.0000
L55	71	CCI 6.5" x 1.25" Plate	16.75 - 17.00	1.0000	1.0000
L55	187	HCS 6X12 4AWG(1-5/8)	16.75 - 17.00	1.0000	1.0000
L55	189	AL7-50(1-5/8)	16.75 - 17.00	1.0000	1.0000
L55	213	Safety Line 3/8	16.75 - 17.00	1.0000	1.0000
L55	214	Climbing Rung	16.75 - 17.00	1.0000	1.0000
L56	5	CCI 4" x 0.75" Plate	11.65 - 13.17	1.0000	1.0000
L56	33	CCI 6" x 1" Plate	11.65 - 16.75	1.0000	1.0000
L56	34	CCI 6" x 1" Plate	11.65 - 16.75	1.0000	1.0000
L56	35	CCI 6" x 1" Plate	11.65 - 16.75	1.0000	1.0000
L56	36	CCI 6" x 1" Plate	11.65 - 16.75	1.0000	1.0000
L56	66	CCI 6.5" x 1.25" Plate	12.67 - 16.75	1.0000	1.0000
L56	67	CCI 6.5" x 1.25" Plate	12.67 - 16.75	1.0000	1.0000
L56	68	CCI 6.5" x 1.25" Plate	12.67 - 16.75	1.0000	1.0000
L56	69	CCI 6.5" x 1.25" Plate	12.67 - 16.75	1.0000	1.0000
L56	70	CCI 6.5" x 1.25" Plate	12.67 - 16.75	1.0000	1.0000
L56	71	CCI 6.5" x 1.25" Plate	12.67 - 16.75	1.0000	1.0000
L56	187	HCS 6X12 4AWG(1-5/8)	11.65 - 16.75	1.0000	1.0000
L56	189	AL7-50(1-5/8)	11.65 - 16.75	1.0000	1.0000
L56	213	Safety Line 3/8	11.65 - 16.75	1.0000	1.0000
L56	214	Climbing Rung	11.65 - 16.75	1.0000	1.0000
L57	5	CCI 4" x 0.75" Plate	11.42 - 11.65	1.0000	1.0000
L57	33	CCI 6" x 1" Plate	11.42 - 11.65	1.0000	1.0000
L57	34	CCI 6" x 1" Plate	11.42 - 11.65	1.0000	1.0000
L57	35	CCI 6" x 1" Plate	11.42 - 11.65	1.0000	1.0000
L57	36	CCI 6" x 1" Plate	11.42 - 11.65	1.0000	1.0000
L57	187	HCS 6X12 4AWG(1-5/8)	11.42 - 11.65	1.0000	1.0000
L57	189	AL7-50(1-5/8)	11.42 - 11.65	1.0000	1.0000
L57	213	Safety Line 3/8	11.42 - 11.65	1.0000	1.0000
L57	214	Climbing Rung	11.42 - 11.65	1.0000	1.0000
L58	3	CCI 4" x 0.75" Plate	9.38 - 10.88	1.0000	1.0000
L58	4	CCI 4" x 0.75" Plate	9.38 - 10.88	1.0000	1.0000
L58	5	CCI 4" x 0.75" Plate	9.38 - 11.42	1.0000	1.0000
L58	33	CCI 6" x 1" Plate	9.38 - 11.42	1.0000	1.0000
L58	34	CCI 6" x 1" Plate	9.38 - 11.42	1.0000	1.0000
L58	35	CCI 6" x 1" Plate	9.38 - 11.42	1.0000	1.0000
L58	36	CCI 6" x 1" Plate	9.38 - 11.42	1.0000	1.0000
L58	187	HCS 6X12 4AWG(1-5/8)	9.38 - 11.42	1.0000	1.0000
L58	189	AL7-50(1-5/8)	9.38 - 11.42	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L58	213	Safety Line 3/8	9.38 - 11.42	1.0000	1.0000
L58	214	Climbing Rung	9.38 - 11.42	1.0000	1.0000
L59	3	CCI 4" x 0.75" Plate	9.13 - 9.38	1.0000	1.0000
L59	4	CCI 4" x 0.75" Plate	9.13 - 9.38	1.0000	1.0000
L59	5	CCI 4" x 0.75" Plate	9.13 - 9.38	1.0000	1.0000
L59	33	CCI 6" x 1" Plate	9.13 - 9.38	1.0000	1.0000
L59	34	CCI 6" x 1" Plate	9.13 - 9.38	1.0000	1.0000
L59	35	CCI 6" x 1" Plate	9.13 - 9.38	1.0000	1.0000
L59	36	CCI 6" x 1" Plate	9.13 - 9.38	1.0000	1.0000
L59	187	HCS 6X12 4AWG(1-5/8)	9.13 - 9.38	1.0000	1.0000
L59	189	AL7-50(1-5/8)	9.13 - 9.38	1.0000	1.0000
L59	213	Safety Line 3/8	9.13 - 9.38	1.0000	1.0000
L59	214	Climbing Rung	9.13 - 9.38	1.0000	1.0000
L60	3	CCI 4" x 0.75" Plate	4.83 - 9.13	1.0000	1.0000
L60	4	CCI 4" x 0.75" Plate	4.83 - 9.13	1.0000	1.0000
L60	5	CCI 4" x 0.75" Plate	4.83 - 9.13	1.0000	1.0000
L60	33	CCI 6" x 1" Plate	4.83 - 9.13	1.0000	1.0000
L60	34	CCI 6" x 1" Plate	4.83 - 9.13	1.0000	1.0000
L60	35	CCI 6" x 1" Plate	4.83 - 9.13	1.0000	1.0000
L60	36	CCI 6" x 1" Plate	4.83 - 9.13	1.0000	1.0000
L60	187	HCS 6X12 4AWG(1-5/8)	4.83 - 9.13	1.0000	1.0000
L60	189	AL7-50(1-5/8)	4.83 - 9.13	1.0000	1.0000
L60	213	Safety Line 3/8	4.83 - 9.13	1.0000	1.0000
L60	214	Climbing Rung	4.83 - 9.13	1.0000	1.0000
L61	3	CCI 4" x 0.75" Plate	4.58 - 4.83	1.0000	1.0000
L61	4	CCI 4" x 0.75" Plate	4.58 - 4.83	1.0000	1.0000
L61	5	CCI 4" x 0.75" Plate	4.58 - 4.83	1.0000	1.0000
L61	33	CCI 6" x 1" Plate	4.58 - 4.83	1.0000	1.0000
L61	34	CCI 6" x 1" Plate	4.58 - 4.83	1.0000	1.0000
L61	35	CCI 6" x 1" Plate	4.58 - 4.83	1.0000	1.0000
L61	36	CCI 6" x 1" Plate	4.58 - 4.83	1.0000	1.0000
L61	187	HCS 6X12 4AWG(1-5/8)	4.58 - 4.83	1.0000	1.0000
L61	189	AL7-50(1-5/8)	4.58 - 4.83	1.0000	1.0000
L61	213	Safety Line 3/8	4.58 - 4.83	1.0000	1.0000
L61	214	Climbing Rung	4.58 - 4.83	1.0000	1.0000
L62	3	CCI 4" x 0.75" Plate	0.00 - 4.58	1.0000	1.0000
L62	4	CCI 4" x 0.75" Plate	0.00 - 4.58	1.0000	1.0000
L62	5	CCI 4" x 0.75" Plate	3.17 - 4.58	1.0000	1.0000
L62	33	CCI 6" x 1" Plate	0.00 - 4.58	1.0000	1.0000
L62	34	CCI 6" x 1" Plate	0.00 - 4.58	1.0000	1.0000
L62	35	CCI 6" x 1" Plate	0.00 - 4.58	1.0000	1.0000
L62	36	CCI 6" x 1" Plate	0.00 - 4.58	1.0000	1.0000
L62	187	HCS 6X12 4AWG(1-5/8)	0.00 - 4.58	1.0000	1.0000
L62	189	AL7-50(1-5/8)	0.00 - 4.58	1.0000	1.0000
L62	213	Safety Line 3/8	0.00 - 4.58	1.0000	1.0000
L62	214	Climbing Rung	0.00 - 4.58	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Lightning Rod 5/8" x 4' on 4' Pole	B	From Leg	1.000 0.000	0.000	191.667	No Ice 1/2" Ice	1.393 2.131	1.393 2.131	0.066 0.087
(E)			4.000			1" Ice	2.702	2.702	0.112
d									
OGB4-900D	A	From Leg	1.000	0.000	192.000	No Ice	0.785	0.785	0.010
(E)			0.000 4.000			1/2" Ice 1" Ice	1.028 1.281	1.028 1.281	0.016 0.025
6' x 2" Mount Pipe	A	From Leg	0.500	0.000	192.000	No Ice	1.425	1.425	0.022
(E-Omni support)			0.000 0.000			1/2" Ice 1" Ice	1.925 2.294	1.925 2.294	0.033 0.048
d									
DB589-A	B	From Leg	6.000	0.000	191.000	No Ice	2.763	2.763	0.012
(E)			0.000 5.000			1/2" Ice 1" Ice	4.170 5.593	4.170 5.593	0.033 0.063
WB2623 w/ Mount Pipe	B	From Leg	6.000	0.000	191.000	No Ice	1.929	0.866	0.020
(E)			0.000 -1.000			1/2" Ice 1" Ice	2.158 2.399	1.110 1.369	0.038 0.058
3' x 2" Pipe Mount	B	From Leg	6.000	0.000	191.000	No Ice	0.583	0.583	0.011
(E-For Omni)			0.000 -1.000			1/2" Ice 1" Ice	0.770 0.967	0.770 0.967	0.017 0.024
Side Arm Mount [SO 702-1]	B	From Leg	3.000	0.000	191.000	No Ice	1.000	1.430	0.027
(E)			0.000 0.000			1/2" Ice 1" Ice	1.250 1.500	2.050 2.670	0.038 0.049
d									
LNX-6515DS-VTM w/ Mount Pipe	A	From Leg	4.000 0.000	0.000	184.000	No Ice 1/2" Ice	11.683 12.404	9.842 11.366	0.083 0.173
(E)			-3.000			1" Ice	13.135	12.914	0.273
LNX-6515DS-VTM w/ Mount Pipe	B	From Leg	4.000 0.000	0.000	184.000	No Ice 1/2" Ice	11.683 12.404	9.842 11.366	0.083 0.173
(E)			-3.000			1" Ice	13.135	12.914	0.273
LNX-6515DS-VTM w/ Mount Pipe	C	From Leg	4.000 0.000	0.000	184.000	No Ice 1/2" Ice	11.683 12.404	9.842 11.366	0.083 0.173
(E)			-3.000			1" Ice	13.135	12.914	0.273
AIR -32 B2A/B66AA w/ Mount Pipe	A	From Leg	4.000 0.000	0.000	184.000	No Ice 1/2" Ice	6.747 7.202	6.070 6.867	0.153 0.214
(E)			-3.000			1" Ice	7.648	7.583	0.282
AIR -32 B2A/B66AA w/ Mount Pipe	B	From Leg	4.000 0.000	0.000	184.000	No Ice 1/2" Ice	6.747 7.202	6.070 6.867	0.153 0.214
(E)			-3.000			1" Ice	7.648	7.583	0.282
AIR -32 B2A/B66AA w/ Mount Pipe	C	From Leg	4.000 0.000	0.000	184.000	No Ice 1/2" Ice	6.747 7.202	6.070 6.867	0.153 0.214
(E)			-3.000			1" Ice	7.648	7.583	0.282
APX16DWV-16DWVS-E-A20 w/ Mount Pipe	A	From Leg	4.000 0.000	0.000	184.000	No Ice 1/2" Ice	7.233 7.712	3.782 4.643	0.064 0.115
(E)			-3.000			1" Ice	8.176	5.382	0.173
APX16DWV-16DWVS-E-A20 w/ Mount Pipe	B	From Leg	4.000 0.000	0.000	184.000	No Ice 1/2" Ice	7.233 7.712	3.782 4.643	0.064 0.115
(E)			-3.000			1" Ice	8.176	5.382	0.173
APX16DWV-16DWVS-E-A20 w/ Mount Pipe	C	From Leg	4.000 0.000	0.000	184.000	No Ice 1/2" Ice	7.233 7.712	3.782 4.643	0.064 0.115
(E)			-3.000			1" Ice	8.176	5.382	0.173
(2) KRY 112 144/1	A	From Leg	4.000	0.000	184.000	No Ice	0.350	0.175	0.011
(E)			0.000 -3.000			1/2" Ice 1" Ice	0.426 0.509	0.234 0.301	0.014 0.019
(2) KRY 112 144/1	B	From Leg	4.000	0.000	184.000	No Ice	0.350	0.175	0.011
(E)			0.000 -3.000			1/2" Ice 1" Ice	0.426 0.509	0.234 0.301	0.014 0.019

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(2) KRY 112 144/1	C	From Leg	4.000	0.000	184.000	No Ice	0.350	0.175	0.011
(E)			0.000			1/2" Ice	0.426	0.234	0.014
			-3.000			1" Ice	0.509	0.301	0.019
ATBT-BOTTOM-24V	A	From Leg	4.000	0.000	184.000	No Ice	0.104	0.065	0.003
(E)			0.000			1/2" Ice	0.148	0.102	0.004
			-3.000			1" Ice	0.199	0.147	0.006
ATBT-BOTTOM-24V	B	From Leg	4.000	0.000	184.000	No Ice	0.104	0.065	0.003
(E)			0.000			1/2" Ice	0.148	0.102	0.004
			-3.000			1" Ice	0.199	0.147	0.006
ATBT-BOTTOM-24V	C	From Leg	4.000	0.000	184.000	No Ice	0.104	0.065	0.003
(E)			0.000			1/2" Ice	0.148	0.102	0.004
			-3.000			1" Ice	0.199	0.147	0.006
Platform Mount [LP 405-1]	C	None		0.000	184.000	No Ice	20.800	20.800	1.800
(E)						1/2" Ice	28.100	28.100	2.066
						1" Ice	35.400	35.400	2.332
d									
(2) HBXX-6517DS-VTM w/	A	From Leg	4.000	0.000	160.000	No Ice	8.765	6.963	0.069
Mount Pipe			0.000			1/2" Ice	9.342	8.182	0.139
(E)			0.000			1" Ice	9.889	9.144	0.217
(2) HBXX-6517DS-VTM w/	B	From Leg	4.000	0.000	160.000	No Ice	8.765	6.963	0.069
Mount Pipe			0.000			1/2" Ice	9.342	8.182	0.139
(E)			0.000			1" Ice	9.889	9.144	0.217
(2) HBXX-6517DS-VTM w/	C	From Leg	4.000	0.000	160.000	No Ice	8.765	6.963	0.069
Mount Pipe			0.000			1/2" Ice	9.342	8.182	0.139
(E)			0.000			1" Ice	9.889	9.144	0.217
LNX-6514DS-A1M w/	A	From Leg	4.000	0.000	160.000	No Ice	8.411	7.082	0.065
Mount Pipe			0.000			1/2" Ice	8.975	8.273	0.134
(E)			0.000			1" Ice	9.505	9.185	0.211
LNX-6514DS-A1M w/	B	From Leg	4.000	0.000	160.000	No Ice	8.411	7.082	0.065
Mount Pipe			0.000			1/2" Ice	8.975	8.273	0.134
(E)			0.000			1" Ice	9.505	9.185	0.211
(2) LNX-6514DS-A1M w/	C	From Leg	4.000	0.000	160.000	No Ice	8.411	7.082	0.065
Mount Pipe			0.000			1/2" Ice	8.975	8.273	0.134
(E)			0.000			1" Ice	9.505	9.185	0.211
LNX-8513DS-VTM w/	A	From Leg	4.000	0.000	160.000	No Ice	8.411	7.082	0.065
Mount Pipe			0.000			1/2" Ice	8.975	8.273	0.134
(E)			0.000			1" Ice	9.505	9.185	0.211
LNX-8513DS-VTM w/	B	From Leg	4.000	0.000	160.000	No Ice	8.411	7.082	0.065
Mount Pipe			0.000			1/2" Ice	8.975	8.273	0.134
(E)			0.000			1" Ice	9.505	9.185	0.211
RRH2x40 700	A	From Leg	4.000	0.000	160.000	No Ice	1.962	1.034	0.050
(E)			0.000			1/2" Ice	2.137	1.168	0.067
			0.000			1" Ice	2.318	1.311	0.086
RRH2x40 700	B	From Leg	4.000	0.000	160.000	No Ice	1.962	1.034	0.050
(E)			0.000			1/2" Ice	2.137	1.168	0.067
			0.000			1" Ice	2.318	1.311	0.086
RRH2x40 700	C	From Leg	4.000	0.000	160.000	No Ice	1.962	1.034	0.050
(E)			0.000			1/2" Ice	2.137	1.168	0.067
			0.000			1" Ice	2.318	1.311	0.086
RRH2X60-AWS	A	From Leg	4.000	0.000	160.000	No Ice	3.500	1.816	0.060
(E)			0.000			1/2" Ice	3.761	2.052	0.083
			0.000			1" Ice	4.029	2.289	0.109
RRH2X60-AWS	B	From Leg	4.000	0.000	160.000	No Ice	3.500	1.816	0.060
(E)			0.000			1/2" Ice	3.761	2.052	0.083
			0.000			1" Ice	4.029	2.289	0.109
RRH2X60-AWS	C	From Leg	4.000	0.000	160.000	No Ice	3.500	1.816	0.060
(E)			0.000			1/2" Ice	3.761	2.052	0.083

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.000			1" Ice	4.029	2.289	0.109
RRH2X60-PCS	A	From Leg	4.000	0.000	160.000	No Ice	2.200	1.723	0.055
(E)			0.000			1/2" Ice	2.393	1.901	0.075
			0.000			1" Ice	2.593	2.087	0.099
RRH2X60-PCS	B	From Leg	4.000	0.000	160.000	No Ice	2.200	1.723	0.055
(E)			0.000			1/2" Ice	2.393	1.901	0.075
			0.000			1" Ice	2.593	2.087	0.099
RRH2X60-PCS	C	From Leg	4.000	0.000	160.000	No Ice	2.200	1.723	0.055
(E)			0.000			1/2" Ice	2.393	1.901	0.075
			0.000			1" Ice	2.593	2.087	0.099
(2) FD9R6004/2C-3L	A	From Leg	4.000	0.000	160.000	No Ice	0.314	0.076	0.003
(E)			0.000			1/2" Ice	0.386	0.119	0.005
			0.000			1" Ice	0.466	0.169	0.009
(2) FD9R6004/2C-3L	B	From Leg	4.000	0.000	160.000	No Ice	0.314	0.076	0.003
(E)			0.000			1/2" Ice	0.386	0.119	0.005
			0.000			1" Ice	0.466	0.169	0.009
(2) FD9R6004/2C-3L	C	From Leg	4.000	0.000	160.000	No Ice	0.314	0.076	0.003
(E)			0.000			1/2" Ice	0.386	0.119	0.005
			0.000			1" Ice	0.466	0.169	0.009
DB-T1-6Z-8AB-0Z	A	From Leg	4.000	0.000	160.000	No Ice	4.800	2.000	0.044
(E)			0.000			1/2" Ice	5.070	2.193	0.080
			0.000			1" Ice	5.348	2.393	0.120
Platform Mount [LP 303-1]	C	None		0.000	160.000	No Ice	14.660	14.660	1.250
(E)						1/2" Ice	18.870	18.870	1.481
						1" Ice	23.080	23.080	1.713
d									
SRL-224NM-4	B	From Leg	6.000	0.000	158.000	No Ice	2.600	2.600	0.035
(E)			0.000			1/2" Ice	4.680	4.680	0.045
			0.000			1" Ice	6.760	6.760	0.056
DB205-A	C	From Leg	6.000	0.000	158.000	No Ice	1.200	1.200	0.038
(E)			0.000			1/2" Ice	2.160	2.160	0.049
			0.000			1" Ice	3.120	3.120	0.061
4' x 2" Pipe Mount	B	From Leg	6.000	0.000	158.000	No Ice	0.785	0.785	0.029
(E-For Omni)			0.000			1/2" Ice	1.028	1.028	0.035
			0.000			1" Ice	1.281	1.281	0.044
4' x 2" Pipe Mount	C	From Leg	6.000	0.000	158.000	No Ice	0.785	0.785	0.029
(E-For Omni)			0.000			1/2" Ice	1.028	1.028	0.035
			0.000			1" Ice	1.281	1.281	0.044
Side Arm Mount [SO 702-1]	B	From Leg	3.000	0.000	158.000	No Ice	1.000	1.430	0.027
(E)			0.000			1/2" Ice	1.250	2.050	0.038
			0.000			1" Ice	1.500	2.670	0.049
Side Arm Mount [SO 702-1]	C	From Leg	3.000	0.000	158.000	No Ice	1.000	1.430	0.027
(E)			0.000			1/2" Ice	1.250	2.050	0.038
			0.000			1" Ice	1.500	2.670	0.049
d									
7770.00 w/ Mount Pipe	A	From Leg	4.000	0.000	151.000	No Ice	5.746	4.254	0.055
(E)			0.000			1/2" Ice	6.179	5.014	0.103
			0.000			1" Ice	6.607	5.711	0.157
7770.00 w/ Mount Pipe	B	From Leg	4.000	0.000	151.000	No Ice	5.746	4.254	0.055
(E)			0.000			1/2" Ice	6.179	5.014	0.103
			0.000			1" Ice	6.607	5.711	0.157
7770.00 w/ Mount Pipe	C	From Leg	4.000	0.000	151.000	No Ice	5.746	4.254	0.055
(E)			0.000			1/2" Ice	6.179	5.014	0.103
			0.000			1" Ice	6.607	5.711	0.157
SBNH-1D6565C w/ Mount Pipe	A	From Leg	4.000	0.000	151.000	No Ice	11.683	9.842	0.099
			0.000			1/2" Ice	12.404	11.366	0.189
(E)			0.000			1" Ice	13.135	12.914	0.288

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
SBNH-1D6565C w/ Mount Pipe	B	From Leg	4.000 0.000	0.000	151.000	No Ice 1/2" Ice	11.683 12.404	9.842 11.366	0.099 0.189
(E)			0.000			1" Ice	13.135	12.914	0.288
SBNH-1D6565C w/ Mount Pipe	C	From Leg	4.000 0.000	0.000	151.000	No Ice 1/2" Ice	11.683 12.404	9.842 11.366	0.099 0.189
(E)			0.000			1" Ice	13.135	12.914	0.288
DTMABP7819VG12A	A	From Leg	4.000	0.000	151.000	No Ice	0.976	0.339	0.019
(E)			0.000 0.000			1/2" Ice 1" Ice	1.100 1.232	0.419 0.510	0.026 0.036
DTMABP7819VG12A	B	From Leg	4.000	0.000	151.000	No Ice	0.976	0.339	0.019
(E)			0.000 0.000			1/2" Ice 1" Ice	1.100 1.232	0.419 0.510	0.026 0.036
DTMABP7819VG12A	C	From Leg	4.000	0.000	151.000	No Ice	0.976	0.339	0.019
(E)			0.000 0.000			1/2" Ice 1" Ice	1.100 1.232	0.419 0.510	0.026 0.036
DC6-48-60-18-8F	A	From Leg	4.000	0.000	151.000	No Ice	0.917	0.917	0.019
(E)			0.000 0.000			1/2" Ice 1" Ice	1.458 1.643	1.458 1.643	0.037 0.057
TPA-65R-LCUUUU-H8	A	From Leg	4.000	0.000	151.000	No Ice	13.298	8.822	0.082
(P)			0.000 0.000			1/2" Ice 1" Ice	13.897 14.504	9.421 10.026	0.161 0.248
TPA-65R-LCUUUU-H8	B	From Leg	4.000	0.000	151.000	No Ice	13.298	8.822	0.082
(P)			0.000 0.000			1/2" Ice 1" Ice	13.897 14.504	9.421 10.026	0.161 0.248
TPA-65R-LCUUUU-H8	C	From Leg	4.000	0.000	151.000	No Ice	13.298	8.822	0.082
(P)			0.000 0.000			1/2" Ice 1" Ice	13.897 14.504	9.421 10.026	0.161 0.248
RRUS 32	A	From Leg	4.000	0.000	151.000	No Ice	2.857	1.777	0.055
(P)			0.000 0.000			1/2" Ice 1" Ice	3.083 3.316	1.968 2.166	0.077 0.103
RRUS 32	B	From Leg	4.000	0.000	151.000	No Ice	2.857	1.777	0.055
(P)			0.000 0.000			1/2" Ice 1" Ice	3.083 3.316	1.968 2.166	0.077 0.103
RRUS 32	C	From Leg	4.000	0.000	151.000	No Ice	2.857	1.777	0.055
(P)			0.000 0.000			1/2" Ice 1" Ice	3.083 3.316	1.968 2.166	0.077 0.103
RRUS 32 B2	A	From Leg	4.000	0.000	151.000	No Ice	2.731	1.668	0.053
(P)			0.000 0.000			1/2" Ice 1" Ice	2.953 3.182	1.855 2.049	0.074 0.098
RRUS 32 B2	B	From Leg	4.000	0.000	151.000	No Ice	2.731	1.668	0.053
(P)			0.000 0.000			1/2" Ice 1" Ice	2.953 3.182	1.855 2.049	0.074 0.098
RRUS 32 B2	C	From Leg	4.000	0.000	151.000	No Ice	2.731	1.668	0.053
(P)			0.000 0.000			1/2" Ice 1" Ice	2.953 3.182	1.855 2.049	0.074 0.098
DBC0062F3V52-1	A	From Leg	4.000	0.000	151.000	No Ice	0.711	0.220	0.013
(P)			0.000 0.000			1/2" Ice 1" Ice	0.818 0.932	0.289 0.366	0.018 0.025
DBC0062F3V52-1	B	From Leg	4.000	0.000	151.000	No Ice	0.711	0.220	0.013
(P)			0.000 0.000			1/2" Ice 1" Ice	0.818 0.932	0.289 0.366	0.018 0.025
DBC0062F3V52-1	C	From Leg	4.000	0.000	151.000	No Ice	0.711	0.220	0.013
(P)			0.000 0.000			1/2" Ice 1" Ice	0.818 0.932	0.289 0.366	0.018 0.025
(3) 10' x 2.875" Pipe Mount (P - Mount Mod)	A	From Leg	4.000	0.000	151.000	No Ice	2.375	2.375	0.037
			0.000 0.000			1/2" Ice 1" Ice	3.403 4.448	3.403 4.448	0.054 0.079

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(3) 10' x 2.875" Pipe Mount	B	From Leg	4.000	0.000	151.000	No Ice	2.875	2.875	0.085
(P - Mount Mod)			0.000			1/2" Ice	3.907	3.907	0.106
			0.000			1" Ice	4.956	4.956	0.134
(3) 10' x 2.875" Pipe Mount	C	From Leg	4.000	0.000	151.000	No Ice	2.875	2.875	0.085
(P - Mount Mod)			0.000			1/2" Ice	3.907	3.907	0.106
			0.000			1" Ice	4.956	4.956	0.134
Miscellaneous [NA 510-1]	C	None		0.000	151.000	No Ice	6.000	6.000	0.256
(P - Mount Mod)						1/2" Ice	8.500	8.500	0.340
						1" Ice	11.000	11.000	0.423
Miscellaneous [NA 509-3]	C	None		0.000	151.000	No Ice	11.840	11.840	0.275
(P-PRK-1245 - Mount Mod)						1/2" Ice	16.960	16.960	0.296
						1" Ice	22.080	22.080	0.317
Platform Mount [LP 403-1]	C	None		0.000	151.000	No Ice	18.850	18.850	1.500
(E)						1/2" Ice	24.300	24.300	1.797
						1" Ice	29.750	29.750	2.093
GAP									
DC6-48-60-18-8F	C	From Leg	1.000	0.000	150.000	No Ice	0.917	0.917	0.019
(E)			0.000			1/2" Ice	1.458	1.458	0.037
			0.000			1" Ice	1.643	1.643	0.057
RRUS 11	A	From Leg	1.000	0.000	150.000	No Ice	2.784	1.187	0.048
(P)			0.000			1/2" Ice	2.992	1.334	0.068
			0.000			1" Ice	3.207	1.490	0.092
RRUS 11	B	From Leg	1.000	0.000	150.000	No Ice	2.784	1.187	0.048
(P)			0.000			1/2" Ice	2.992	1.334	0.068
			0.000			1" Ice	3.207	1.490	0.092
RRUS 11	C	From Leg	1.000	0.000	150.000	No Ice	2.784	1.187	0.048
(P)			0.000			1/2" Ice	2.992	1.334	0.068
			0.000			1" Ice	3.207	1.490	0.092
RRUS 12	A	From Leg	1.000	0.000	150.000	No Ice	3.145	1.285	0.058
(P)			0.000			1/2" Ice	3.365	1.438	0.081
			2.000			1" Ice	3.592	1.600	0.108
RRUS 12	B	From Leg	1.000	0.000	150.000	No Ice	3.145	1.285	0.058
(P)			0.000			1/2" Ice	3.365	1.438	0.081
			2.000			1" Ice	3.592	1.600	0.108
RRUS 12	C	From Leg	1.000	0.000	150.000	No Ice	3.145	1.285	0.058
(P)			0.000			1/2" Ice	3.365	1.438	0.081
			2.000			1" Ice	3.592	1.600	0.108
Side Arm Mount [SO 102-3]	C	None		0.000	150.000	No Ice	3.000	3.000	0.081
(E)						1/2" Ice	3.480	3.480	0.111
						1" Ice	3.960	3.960	0.141
Pipe Mount [PM 601-3]	C	None		0.000	150.000	No Ice	4.390	4.390	0.195
(E)						1/2" Ice	5.480	5.480	0.237
						1" Ice	6.570	6.570	0.280
d									
SRL-235-2	B	From Leg	6.000	0.000	132.000	No Ice	7.000	7.000	0.076
(E)			0.000			1/2" Ice	9.037	9.037	0.125
			0.000			1" Ice	11.092	11.092	0.187
4' x 2" Pipe Mount	B	From Leg	6.000	0.000	132.000	No Ice	0.785	0.785	0.029
(E-For Omni)			0.000			1/2" Ice	1.028	1.028	0.035
			0.000			1" Ice	1.281	1.281	0.044
Side Arm Mount [SO 702-1]	B	From Leg	3.000	0.000	132.000	No Ice	1.000	1.430	0.027
(E)			0.000			1/2" Ice	1.250	2.050	0.038
			0.000			1" Ice	1.500	2.670	0.049
Side Arm Mount [SO 104-3]	C	None		0.000	132.000	No Ice	3.300	3.300	0.287
(E-Mount Attachment)						1/2" Ice	4.130	4.130	0.317
						1" Ice	4.960	4.960	0.347
d									

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
PCS 1900 TMA RX	A	From Leg	2.000	0.000	124.000	No Ice	0.539	0.529	0.018
(E)			0.000			1/2" Ice	0.638	0.628	0.023
			0.000			1" Ice	0.745	0.734	0.031
2' x 2" Pipe Mount	A	From Leg	2.000	0.000	124.000	No Ice	0.023	0.023	0.007
(E-For TMA)			0.000			1/2" Ice	0.049	0.049	0.008
			0.000			1" Ice	0.085	0.085	0.009
Side Arm Mount [SO 104-3]	C	None		0.000	124.000	No Ice	3.300	3.300	0.287
(E)						1/2" Ice	4.130	4.130	0.317
						1" Ice	4.960	4.960	0.347
d									
* Sprint*									
(3) 844G65VTZAS w/ Mount Pipe	A	From Leg	4.000	0.000	116.000	No Ice	5.486	4.984	0.034
			0.000			1/2" Ice	5.876	5.600	0.086
(AB)			2.000			1" Ice	6.273	6.227	0.144
(3) 844G65VTZAS w/ Mount Pipe	B	From Leg	4.000	0.000	116.000	No Ice	5.486	4.984	0.034
			0.000			1/2" Ice	5.876	5.600	0.086
(AB)			2.000			1" Ice	6.273	6.227	0.144
(3) 844G65VTZAS w/ Mount Pipe	C	From Leg	4.000	0.000	116.000	No Ice	5.486	4.984	0.034
			0.000			1/2" Ice	5.876	5.600	0.086
(AB)			2.000			1" Ice	6.273	6.227	0.144
*									
* Clear Wire*									
LLPX310R w/ Mount Pipe	A	From Leg	4.000	0.000	116.000	No Ice	4.538	2.985	0.045
(E)			0.000			1/2" Ice	4.892	3.528	0.083
			2.000			1" Ice	5.254	4.087	0.126
LLPX310R w/ Mount Pipe	B	From Leg	4.000	0.000	116.000	No Ice	4.538	2.985	0.045
(E)			0.000			1/2" Ice	4.892	3.528	0.083
			2.000			1" Ice	5.254	4.087	0.126
LLPX310R w/ Mount Pipe	C	From Leg	4.000	0.000	116.000	No Ice	4.538	2.985	0.045
(E)			0.000			1/2" Ice	4.892	3.528	0.083
			2.000			1" Ice	5.254	4.087	0.126
WIMAX DAP HEAD	A	From Leg	4.000	0.000	116.000	No Ice	1.547	0.684	0.033
(E)			0.000			1/2" Ice	1.704	0.800	0.045
			2.000			1" Ice	1.868	0.923	0.058
WIMAX DAP HEAD	B	From Leg	4.000	0.000	116.000	No Ice	1.547	0.684	0.033
(E)			0.000			1/2" Ice	1.704	0.800	0.045
			2.000			1" Ice	1.868	0.923	0.058
WIMAX DAP HEAD	C	From Leg	4.000	0.000	116.000	No Ice	1.547	0.684	0.033
(E)			0.000			1/2" Ice	1.704	0.800	0.045
			2.000			1" Ice	1.868	0.923	0.058
HORIZON DUO	A	From Leg	4.000	0.000	116.000	No Ice	0.469	0.294	0.007
(E)			0.000			1/2" Ice	0.556	0.365	0.012
			4.000			1" Ice	0.650	0.444	0.018
Platform Mount [LP 405-1]	C	None		0.000	116.000	No Ice	20.800	20.800	1.800
(E)						1/2" Ice	28.100	28.100	2.066
						1" Ice	35.400	35.400	2.332
d									
DB205-A	B	From Leg	6.000	0.000	90.000	No Ice	1.200	1.200	0.038
(E-Per Photo)			0.000			1/2" Ice	2.160	2.160	0.049
			9.000			1" Ice	3.120	3.120	0.061
MT-485002 w/ Mount Pipe	C	From Leg	6.000	0.000	90.000	No Ice	1.372	0.473	0.011
(E)			0.000			1/2" Ice	1.574	0.681	0.022
			0.000			1" Ice	1.788	0.902	0.037
5' x 2" Pipe Mount	B	From Leg	6.000	0.000	90.000	No Ice	1.000	1.000	0.029
(E-For Omni)			0.000			1/2" Ice	1.393	1.393	0.037
			0.000			1" Ice	1.703	1.703	0.048
Side Arm Mount [SO 702-1]	B	From Leg	3.000	0.000	90.000	No Ice	1.000	1.430	0.027

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(E)			0.000			1/2" Ice	1.250	2.050	0.038
			0.000			1" Ice	1.500	2.670	0.049
Side Arm Mount [SO 702-1]	C	From Leg	3.000	0.000	90.000	No Ice	1.000	1.430	0.027
(E)			0.000			1/2" Ice	1.250	2.050	0.038
			0.000			1" Ice	1.500	2.670	0.049
d									
SRL-235-2	C	From Leg	3.000	0.000	70.000	No Ice	7.000	7.000	0.076
(E)			0.000			1/2" Ice	9.037	9.037	0.125
			0.000			1" Ice	11.092	11.092	0.187
2" x 2' Omni	C	From Leg	3.000	0.000	70.000	No Ice	0.304	0.304	0.005
(E-Per Photo)			0.000			1/2" Ice	0.432	0.432	0.008
			-6.000			1" Ice	0.578	0.578	0.013
6' x 2" Mount Pipe	C	From Leg	3.000	0.000	70.000	No Ice	1.425	1.425	0.022
(E-For Omni)			0.000			1/2" Ice	1.925	1.925	0.033
			0.000			1" Ice	2.294	2.294	0.048
Side Arm Mount [SO 701-1]	C	From Leg	1.500	0.000	70.000	No Ice	0.850	1.670	0.065
(E)			0.000			1/2" Ice	1.140	2.340	0.079
			0.000			1" Ice	1.430	3.010	0.093
Side Arm Mount [SO 102-3]	C	None		0.000	70.000	No Ice	3.000	3.000	0.081
(E-Mount Attachment)						1/2" Ice	3.480	3.480	0.111
						1" Ice	3.960	3.960	0.141
d									
DB909XVTE-M	B	From Leg	3.000	0.000	33.000	No Ice	1.943	1.943	0.024
(E)			0.000			1/2" Ice	2.622	2.622	0.047
			0.000			1" Ice	2.952	2.952	0.073
2" x 4' Omni	B	From Leg	3.000	0.000	33.000	No Ice	0.304	0.304	0.005
(E-Per Photo)			0.000			1/2" Ice	0.432	0.432	0.008
			0.000			1" Ice	0.578	0.578	0.013
6' x 2" Mount Pipe	B	From Leg	3.000	0.000	33.000	No Ice	1.425	1.425	0.022
(E-For Yagi)			0.000			1/2" Ice	1.925	1.925	0.033
			0.000			1" Ice	2.294	2.294	0.048
Side Arm Mount [SO 702-1]	B	From Leg	1.500	0.000	33.000	No Ice	1.000	1.430	0.027
(E)			0.000			1/2" Ice	1.250	2.050	0.038
			0.000			1" Ice	1.500	2.670	0.049
d									
4' ICE SHIELDS	A	From Leg	0.500	0.000	178.000	No Ice	1.400	0.467	0.030
(E)			0.000			1/2" Ice	1.884	0.640	0.095
			0.000			1" Ice	2.377	0.821	0.167
4' ICE SHIELDS	A	From Leg	0.500	0.000	138.000	No Ice	1.400	0.467	0.030
(E)			0.000			1/2" Ice	1.884	0.640	0.095
			0.000			1" Ice	2.377	0.821	0.167
4' ICE SHIELDS	A	From Leg	0.500	0.000	98.000	No Ice	1.400	0.467	0.030
(E)			0.000			1/2" Ice	1.884	0.640	0.095
			0.000			1" Ice	2.377	0.821	0.167
4' ICE SHIELDS	B	From Leg	0.500	0.000	98.000	No Ice	1.400	0.467	0.030
(E)			0.000			1/2" Ice	1.884	0.640	0.095
			0.000			1" Ice	2.377	0.821	0.167
4' ICE SHIELDS	C	From Leg	0.500	0.000	98.000	No Ice	1.400	0.467	0.030
(E)			0.000			1/2" Ice	1.884	0.640	0.095
			0.000			1" Ice	2.377	0.821	0.167
d									

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft²	Weight K
Andrew VHLP2-18 (E) **d**	A	Paraboloid w/Shroud (HP)	From Leg	4.000 0.000 4.000	90.000		116.000	2.175	No Ice 1/2" Ice 1" Ice	3.715 4.006 4.296	0.031 0.052 0.072
KP2F-34 (E) **d**	B	Grid	From Leg	6.000 0.000 0.000	5.000		90.000	2.000	No Ice 1/2" Ice 1" Ice	3.140 3.410 3.680	0.005 0.023 0.040

Load Combinations

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

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

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	191.667 - 186.667	Pole	Max Tension	36	0.000	-0.000	0.000
			Max. Compression	26	-1.790	-3.079	-1.608
			Max. Mx	30	-1.780	-5.053	-1.576
			Max. My	14	-0.627	-0.450	-4.094
			Max. Vy	8	0.728	-4.359	-0.277
			Max. Vx	14	0.716	-0.450	-4.094
			Max. Torque	5			-1.659
L2	186.667 - 181.567	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-11.524	-3.068	-1.779
			Max. Mx	8	-4.362	-10.400	-0.406
			Max. My	14	-4.337	-0.515	-10.192
			Max. Vy	8	4.910	-10.400	-0.406
			Max. Vx	14	4.918	-0.515	-10.192
			Max. Torque	5			-1.660
L3	181.567 - 176.567	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-13.192	-3.040	-1.347
			Max. Mx	8	-5.101	-35.797	-0.489
			Max. My	14	-5.071	-0.581	-35.721
			Max. Vy	8	5.265	-35.797	-0.489
			Max. Vx	14	5.321	-0.581	-35.721
			Max. Torque	5			-1.660
L4	176.567 - 171.567	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-14.444	-3.015	-1.536
			Max. Mx	8	-5.809	-62.922	-0.625
			Max. My	14	-5.777	-0.647	-63.207
			Max. Vy	8	5.591	-62.922	-0.625
			Max. Vx	14	5.651	-0.647	-63.207
			Max. Torque	5			-1.644
L5	171.567 - 166.567	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-15.694	-2.993	-1.726
			Max. Mx	8	-6.519	-91.664	-0.762
			Max. My	14	-6.485	-0.713	-92.329
			Max. Vy	8	5.912	-91.664	-0.762
			Max. Vx	14	5.975	-0.713	-92.329
			Max. Torque	5			-1.644
L6	166.567 - 161.567	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-16.941	-2.971	-1.915

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	8	-7.232	-121.992	-0.899
			Max. My	14	-7.197	-0.779	-123.056
			Max. Vy	8	6.226	-121.992	-0.899
			Max. Vx	14	6.293	-0.779	-123.056
			Max. Torque	5			-1.644
L7	161.567 - 156.567	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-29.693	-3.198	-2.351
			Max. Mx	8	-10.989	-171.761	-1.396
			Max. My	14	-10.911	-0.837	-174.214
			Max. Vy	8	11.948	-171.761	-1.396
			Max. Vx	14	12.217	-0.837	-174.214
			Max. Torque	5			-2.345
L8	156.567 - 151.567	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-31.292	-3.603	-2.404
			Max. Mx	8	-11.774	-232.252	-1.522
			Max. My	14	-11.666	-0.952	-237.134
			Max. Vy	8	12.238	-232.252	-1.522
			Max. Vx	14	12.939	-0.952	-237.134
			Max. Torque	5			-2.345
L9	151.567 - 146.567	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-47.790	-3.811	-3.042
			Max. Mx	8	-17.507	-325.376	-2.418
			Max. My	14	-17.337	-1.041	-335.755
			Max. Vy	8	19.640	-325.376	-2.418
			Max. Vx	14	20.794	-1.041	-335.755
			Max. Torque	5			-2.388
L10	146.567 - 141.567	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-49.450	-4.243	-3.101
			Max. Mx	8	-18.423	-424.152	-2.547
			Max. My	14	-18.235	-1.164	-441.361
			Max. Vy	8	19.869	-424.152	-2.547
			Max. Vx	14	21.445	-1.164	-441.361
			Max. Torque	5			-2.355
L11	141.567 - 141.417	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-49.499	-4.257	-3.103
			Max. Mx	8	-18.460	-427.133	-2.551
			Max. My	14	-18.273	-1.168	-444.579
			Max. Vy	8	19.868	-427.133	-2.551
			Max. Vx	14	21.457	-1.168	-444.579
			Max. Torque	5			-2.354
L12	141.417 - 136.417	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-52.015	-4.812	-2.368
			Max. Mx	8	-19.635	-527.592	-2.628
			Max. My	14	-19.443	-1.312	-553.164
			Max. Vy	8	20.310	-527.592	-2.628
			Max. Vx	14	22.011	-1.312	-553.164
			Max. Torque	5			-2.354
L13	136.417 - 131.417	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-55.220	-9.129	-4.609
			Max. Mx	8	-21.262	-631.445	-3.245
			Max. My	14	-21.068	-2.264	-665.316
			Max. Vy	8	21.264	-631.445	-3.245
			Max. Vx	14	23.046	-2.264	-665.316
			Max. Torque	5			-5.105

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L14	131.417 - 126.417	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-57.409	-9.695	-4.678
			Max. Mx	8	-22.468	-738.763	-3.350
			Max. My	14	-22.276	-2.372	-781.730
			Max. Vy	8	21.651	-738.763	-3.350
			Max. Vx	14	23.505	-2.372	-781.730
			Max. Torque	5			-5.104
L15	126.417 - 121.417	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-61.113	-10.424	-4.476
			Max. Mx	8	-24.741	-848.625	-3.369
			Max. My	14	-24.526	-2.592	-902.144
			Max. Vy	8	22.228	-848.625	-3.369
			Max. Vx	14	24.677	-2.592	-902.144
			Max. Torque	5			-5.104
L16	121.417 - 121.167	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-61.245	-10.456	-4.480
			Max. Mx	8	-24.819	-854.187	-3.374
			Max. My	14	-24.605	-2.600	-908.318
			Max. Vy	8	22.242	-854.187	-3.374
			Max. Vx	14	24.694	-2.600	-908.318
			Max. Torque	5			-5.063
L17	121.167 - 116.167	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-64.050	-11.128	-3.807
			Max. Mx	8	-26.329	-967.203	-3.316
			Max. My	14	-26.120	-2.798	-1033.282
			Max. Vy	20	-22.887	963.460	-1.585
			Max. Vx	14	25.302	-2.798	-1033.282
			Max. Torque	5			-5.063
L18	116.167 - 111.167	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-74.106	-11.706	-3.644
			Max. Mx	8	-30.395	-1101.429	-3.383
			Max. My	14	-30.180	-2.989	-1179.967
			Max. Vy	20	-26.355	1097.757	-1.594
			Max. Vx	14	28.840	-2.989	-1179.967
			Max. Torque	15			4.957
L19	111.167 - 110.042	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-74.699	-11.750	-3.741
			Max. Mx	8	-30.706	-1131.092	-3.408
			Max. My	14	-30.491	-3.032	-1212.486
			Max. Vy	20	-26.447	1127.437	-1.607
			Max. Vx	14	28.960	-3.032	-1212.486
			Max. Torque	15			4.956
L20	110.042 - 109.792	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-74.845	-11.761	-3.762
			Max. Mx	8	-30.795	-1137.698	-3.414
			Max. My	14	-30.582	-3.042	-1219.730
			Max. Vy	20	-26.462	1134.046	-1.610
			Max. Vx	14	28.982	-3.042	-1219.730
			Max. Torque	15			4.956
L21	109.792 - 105.083	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-77.876	-11.935	-4.191
			Max. Mx	8	-32.460	-1263.116	-3.532
			Max. My	14	-32.228	-3.216	-1358.642

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	-26.867	1259.539	-1.675
			Max. Vx	14	29.993	-3.216	-1358.642
			Max. Torque	15			4.967
L22	105.083 - 104.833	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-78.068	-11.945	-4.216
			Max. Mx	8	-32.571	-1269.827	-3.540
			Max. My	14	-32.340	-3.226	-1366.150
			Max. Vy	20	-26.883	1266.254	-1.680
			Max. Vx	14	30.042	-3.226	-1366.150
			Max. Torque	15			4.967
L23	104.833 - 100.917	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-81.996	-12.118	-4.620
			Max. Mx	8	-35.009	-1375.757	-3.714
			Max. My	14	-34.763	-3.352	-1485.747
			Max. Vy	20	-27.290	1372.279	-1.809
			Max. Vx	14	30.979	-3.352	-1485.747
			Max. Torque	15			4.988
L24	100.917 - 100.667	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-82.179	-12.151	-4.628
			Max. Mx	8	-35.118	-1382.573	-3.722
			Max. My	14	-34.874	-3.362	-1493.499
			Max. Vy	20	-27.308	1379.100	-1.814
			Max. Vx	14	31.000	-3.362	-1493.499
			Max. Torque	15			4.988
L25	100.667 - 95.833	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-86.446	-12.774	-4.737
			Max. Mx	8	-36.967	-1515.705	-3.858
			Max. My	14	-36.732	-3.544	-1644.802
			Max. Vy	20	-27.845	1512.298	-1.896
			Max. Vx	14	31.582	-3.544	-1644.802
			Max. Torque	15			4.988
L26	95.833 - 95.583	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-86.601	-12.808	-4.741
			Max. Mx	8	-37.064	-1522.660	-3.865
			Max. My	14	-36.830	-3.554	-1652.702
			Max. Vy	20	-27.861	1519.257	-1.900
			Max. Vx	14	31.599	-3.554	-1652.702
			Max. Torque	15			4.988
L27	95.583 - 90.583	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-89.754	-13.456	-4.810
			Max. Mx	8	-38.854	-1662.954	-3.984
			Max. My	14	-38.630	-3.746	-1811.950
			Max. Vy	20	-28.314	1659.611	-1.963
			Max. Vx	14	32.079	-3.746	-1811.950
			Max. Torque	15			4.987
L28	90.583 - 89.917	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-90.729	-14.805	-6.688
			Max. Mx	8	-39.252	-1682.768	-4.533
			Max. My	14	-39.028	-4.252	-1834.351
			Max. Vy	20	-28.651	1678.419	-2.505
			Max. Vx	14	32.408	-4.252	-1834.351
			Max. Torque	15			5.760
L29	89.917 - 89.667	Pole	Max Tension	1	0.000	0.000	0.000

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	-90.924	-14.834	-6.689
			Max. Mx	8	-39.366	-1689.924	-4.536
			Max. My	14	-39.144	-4.259	-1842.457
			Max. Vy	20	-28.672	1685.583	-2.509
			Max. Vx	14	32.431	-4.259	-1842.457
			Max. Torque	15			5.760
L30	89.667 - 84.667	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-95.654	-15.132	-6.496
			Max. Mx	8	-42.211	-1834.074	-4.439
			Max. My	14	-41.997	-4.187	-2005.797
			Max. Vy	20	-29.145	1830.284	-2.434
			Max. Vx	14	32.956	-4.187	-2005.797
			Max. Torque	15			5.760
L31	84.667 - 80.833	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-100.393	-15.117	-6.164
			Max. Mx	8	-45.395	-1946.075	-4.194
			Max. My	14	-45.188	-3.906	-2132.725
			Max. Vy	20	-29.563	1943.159	-2.205
			Max. Vx	14	33.405	-3.906	-2132.725
			Max. Torque	15			5.759
L32	80.833 - 80.583	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-100.681	-15.117	-6.141
			Max. Mx	8	-45.601	-1953.431	-4.177
			Max. My	14	-45.396	-3.885	-2141.059
			Max. Vy	20	-29.583	1950.577	-2.189
			Max. Vx	14	33.428	-3.885	-2141.059
			Max. Torque	15			5.759
L33	80.583 - 75.583	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-105.008	-15.663	-6.025
			Max. Mx	8	-48.181	-2102.278	-4.161
			Max. My	14	-47.985	-3.914	-2309.394
			Max. Vy	20	-30.074	2099.771	-2.194
			Max. Vx	14	33.927	-3.914	-2309.394
			Max. Torque	15			5.759
L34	75.583 - 70.583	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-109.600	-16.714	-5.909
			Max. Mx	8	-50.957	-2253.857	-4.137
			Max. My	14	-50.772	-4.289	-2480.213
			Max. Vy	20	-30.542	2251.004	-2.192
			Max. Vx	14	34.430	-4.289	-2480.213
			Max. Torque	15			5.758
L35	70.583 - 69.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-111.752	-13.991	-7.560
			Max. Mx	8	-51.969	-2286.381	-4.568
			Max. My	14	-51.785	-3.636	-2518.174
			Max. Vy	20	-31.109	2285.018	-2.614
			Max. Vx	14	35.030	-3.636	-2518.174
			Max. Torque	15			5.758
L36	69.5 - 69.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-112.058	-14.037	-7.552
			Max. Mx	8	-52.160	-2294.171	-4.565
			Max. My	14	-51.977	-3.666	-2526.926
			Max. Vy	20	-31.127	2292.775	-2.607
			Max. Vx	14	35.052	-3.666	-2526.926
			Max. Torque	7			-4.757
L37	69.25 - 64.25	Pole	Max Tension	1	0.000	0.000	0.000

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	-121.040	-15.762	-6.976
			Max. Mx	8	-58.530	-2452.294	-4.094
			Max. My	14	-58.339	-5.014	-2704.980
			Max. Vy	20	-31.737	2448.730	-2.029
			Max. Vx	14	36.397	-5.014	-2704.980
			Max. Torque	7			-4.757
L38	64.25 - 60.583	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-128.303	-16.414	-6.750
			Max. Mx	8	-63.708	-2569.775	-3.880
			Max. My	14	-63.514	-5.549	-2840.013
			Max. Vy	20	-32.211	2565.529	-1.737
			Max. Vx	14	37.418	-5.549	-2840.013
			Max. Torque	7			-4.757
L39	60.583 - 60.333	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-128.611	-16.432	-6.749
			Max. Mx	8	-63.913	-2577.815	-3.884
			Max. My	14	-63.722	-5.554	-2849.368
			Max. Vy	20	-32.227	2573.585	-1.735
			Max. Vx	14	37.437	-5.554	-2849.368
			Max. Torque	7			-4.757
L40	60.333 - 55.333	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-134.652	-17.280	-6.627
			Max. Mx	8	-67.697	-2740.158	-3.882
			Max. My	14	-67.517	-5.941	-3037.766
			Max. Vy	20	-32.712	2735.685	-1.628
			Max. Vx	14	37.966	-5.941	-3037.766
			Max. Torque	7			-4.757
L41	55.333 - 52.167	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-137.063	-17.739	-6.695
			Max. Mx	8	-69.186	-2844.058	-3.984
			Max. My	14	-69.015	-6.103	-3158.411
			Max. Vy	20	-32.986	2839.596	-1.663
			Max. Vx	14	38.235	-6.103	-3158.411
			Max. Torque	7			-4.756
L42	52.167 - 51.917	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-137.275	-17.775	-6.702
			Max. Mx	8	-69.331	-2852.299	-3.993
			Max. My	14	-69.161	-6.116	-3167.975
			Max. Vy	20	-33.001	2847.839	-1.666
			Max. Vx	14	38.249	-6.116	-3167.975
			Max. Torque	7			-4.756
L43	51.917 - 46.917	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-142.293	-18.904	-6.681
			Max. Mx	8	-72.426	-3018.403	-4.160
			Max. My	14	-72.267	-6.498	-3360.481
			Max. Vy	20	-33.445	3013.708	-1.727
			Max. Vx	14	38.729	-6.498	-3360.481
			Max. Torque	7			-4.756
L44	46.917 - 41.917	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-148.795	-20.452	-6.233
			Max. Mx	8	-76.392	-3186.894	-4.108
			Max. My	14	-76.245	-7.114	-3555.173
			Max. Vy	20	-33.867	3181.493	-1.570
			Max. Vx	14	39.217	-7.114	-3555.173
			Max. Torque	7			-4.756

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L45	41.917 - 40.333	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-150.801	-20.917	-6.075
			Max. Mx	8	-77.638	-3240.696	-4.088
			Max. My	14	-77.495	-7.303	-3617.344
			Max. Vy	20	-34.001	3235.086	-1.516
			Max. Vx	14	39.368	-7.303	-3617.344
			Max. Torque	7			-4.756
L46	40.333 - 40.083	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-151.084	-20.978	-6.041
			Max. Mx	8	-77.828	-3249.200	-4.081
			Max. My	14	-77.688	-7.327	-3627.174
			Max. Vy	20	-34.007	3243.568	-1.505
			Max. Vx	14	39.372	-7.327	-3627.174
			Max. Torque	7			-4.756
L47	40.083 - 35.083	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-156.832	-22.098	-5.473
			Max. Mx	8	-81.488	-3420.249	-3.951
			Max. My	14	-81.363	-7.807	-3824.728
			Max. Vy	20	-34.380	3414.181	-1.269
			Max. Vx	14	39.746	-7.807	-3824.728
			Max. Torque	7			-4.756
L48	35.083 - 30.083	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-161.867	-24.430	-6.198
			Max. Mx	8	-84.703	-3593.693	-4.195
			Max. My	14	-84.595	-8.534	-4024.785
			Max. Vy	20	-34.842	3586.644	-1.440
			Max. Vx	14	40.202	-8.534	-4024.785
			Max. Torque	7			-5.408
L49	30.083 - 28	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-163.659	-24.556	-6.115
			Max. Mx	8	-85.819	-3666.317	-4.252
			Max. My	14	-85.718	-8.622	-4108.653
			Max. Vy	20	-34.966	3659.286	-1.476
			Max. Vx	14	40.319	-8.622	-4108.653
			Max. Torque	7			-5.408
L50	28 - 27.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-163.899	-24.571	-6.105
			Max. Mx	8	-85.982	-3675.051	-4.259
			Max. My	14	-85.884	-8.632	-4118.735
			Max. Vy	20	-34.971	3668.022	-1.480
			Max. Vx	14	40.322	-8.632	-4118.735
			Max. Torque	7			-5.407
L51	27.75 - 22.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-170.114	-24.803	-6.114
			Max. Mx	8	-90.085	-3850.532	-4.536
			Max. My	14	-90.001	-8.806	-4321.396
			Max. Vy	20	-35.300	3843.620	-1.707
			Max. Vx	14	40.665	-8.806	-4321.396
			Max. Torque	7			-5.407
L52	22.75 - 20.083	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-173.415	-24.926	-6.126
			Max. Mx	8	-92.302	-3944.773	-4.688
			Max. My	14	-92.226	-8.897	-4430.164
			Max. Vy	20	-35.468	3937.925	-1.833
			Max. Vx	14	40.840	-8.897	-4430.164
			Max. Torque	7			-5.407
L53	20.083 -	Pole	Max Tension	1	0.000	0.000	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
	19.833						
			Max. Compression	26	-173.696	-24.938	-6.128
			Max. Mx	8	-92.497	-3953.629	-4.702
			Max. My	14	-92.424	-8.905	-4440.383
			Max. Vy	20	-35.468	3946.787	-1.844
			Max. Vx	14	40.838	-8.905	-4440.383
			Max. Torque	7			-5.407
L54	19.833 - 17	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-176.988	-25.136	-6.103
			Max. Mx	8	-94.634	-4054.219	-4.862
			Max. My	14	-94.569	-9.000	-4556.419
			Max. Vy	20	-35.639	4047.446	-1.977
			Max. Vx	14	41.015	-9.000	-4556.419
			Max. Torque	7			-5.407
L55	17 - 16.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-177.291	-25.172	-6.111
			Max. Mx	8	-94.856	-4063.116	-4.876
			Max. My	14	-94.794	-9.009	-4566.679
			Max. Vy	20	-35.632	4056.349	-1.988
			Max. Vx	14	41.006	-9.009	-4566.679
			Max. Torque	7			-5.407
L56	16.75 - 11.65	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-183.216	-25.849	-6.254
			Max. Mx	8	-99.064	-4245.397	-5.134
			Max. My	14	-99.019	-9.187	-4776.730
			Max. Vy	20	-35.930	4238.741	-2.196
			Max. Vx	14	41.301	-9.187	-4776.730
			Max. Torque	7			-5.407
L57	11.65 - 11.417	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-183.432	-25.877	-6.255
			Max. Mx	8	-99.224	-4253.761	-5.140
			Max. My	14	-99.181	-9.196	-4786.355
			Max. Vy	20	-35.930	4247.107	-2.200
			Max. Vx	14	41.298	-9.196	-4786.355
			Max. Torque	7			-5.407
L58	11.417 - 9.375	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-185.352	-26.155	-6.169
			Max. Mx	8	-100.582	-4327.180	-5.194
			Max. My	14	-100.545	-9.280	-4870.817
			Max. Vy	20	-36.050	4320.545	-2.234
			Max. Vx	14	41.412	-9.280	-4870.817
			Max. Torque	7			-5.407
L59	9.375 - 9.125	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-185.594	-26.190	-6.154
			Max. Mx	8	-100.760	-4336.184	-5.200
			Max. My	14	-100.725	-9.290	-4881.171
			Max. Vy	20	-36.050	4329.551	-2.238
			Max. Vx	14	41.409	-9.290	-4881.171
			Max. Torque	7			-5.407
L60	9.125 - 4.833	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-189.705	-26.781	-5.914
			Max. Mx	8	-103.723	-4491.270	-5.313
			Max. My	14	-103.702	-9.464	-5059.407
			Max. Vy	20	-36.287	4484.677	-2.309
			Max. Vx	14	41.630	-9.464	-5059.407
			Max. Torque	7			-5.407
L61	4.833 - 4.583	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-189.938	-26.815	-5.901
			Max. Mx	8	-103.898	-4500.332	-5.319
			Max. My	14	-103.879	-9.474	-5069.816
			Max. Vy	20	-36.285	4493.741	-2.313

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L62	4.583 - 0	Pole	Max. Vx	14	41.626	-9.474	-5069.816
			Max. Torque	7			-5.407
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-194.091	-27.464	-5.642
			Max. Mx	8	-107.012	-4666.982	-5.438
			Max. My	14	-107.010	-9.657	-5261.089
			Max. Vy	20	-36.514	4660.436	-2.389
			Max. Vx	14	41.834	-9.657	-5261.089
			Max. Torque	7			-5.407

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	194.091	-0.000	-0.000
	Max. H_x	20	107.020	36.491	0.003
	Max. H_z	2	107.020	-0.010	41.808
	Max. M_x	2	5253.548	-0.010	41.808
	Max. M_z	8	4666.982	-36.452	-0.006
	Max. Torsion	19	5.141	31.390	-18.159
	Min. Vert	7	80.265	-31.355	18.147
	Min. H_x	8	107.020	-36.452	-0.006
	Min. H_z	14	107.020	-0.026	-41.808
	Min. M_x	14	-5261.089	-0.026	-41.808
	Min. M_z	20	-4660.436	36.491	0.003
	Min. Torsion	7	-5.407	-31.355	18.147

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	89.183	0.000	0.000	3.016	-4.589	-0.000
1.2 Dead+1.6 Wind 0 deg - No Ice	107.020	0.010	-41.808	-5253.548	-6.067	4.728
0.9 Dead+1.6 Wind 0 deg - No Ice	80.265	0.010	-41.808	-5204.778	-4.609	4.730
1.2 Dead+1.6 Wind 30 deg - No Ice	107.020	18.520	-32.142	-4083.561	-2356.985	5.262
0.9 Dead+1.6 Wind 30 deg - No Ice	80.265	18.520	-32.142	-4045.273	-2332.956	5.269
1.2 Dead+1.6 Wind 60 deg - No Ice	107.020	31.355	-18.147	-2325.868	-4026.268	5.395
0.9 Dead+1.6 Wind 60 deg - No Ice	80.265	31.355	-18.147	-2304.346	-3985.991	5.407
1.2 Dead+1.6 Wind 90 deg - No Ice	107.020	36.452	0.006	5.438	-4666.982	4.008
0.9 Dead+1.6 Wind 90 deg - No Ice	80.265	36.452	0.006	4.431	-4620.593	4.020
1.2 Dead+1.6 Wind 120 deg - No Ice	107.020	33.054	19.138	2414.023	-4162.099	1.256
0.9 Dead+1.6 Wind 120 deg -	80.265	33.054	19.138	2390.011	-4120.969	1.266

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
No Ice						
1.2 Dead+1.6 Wind 150 deg - No Ice	107.020	20.992	36.421	4555.852	-2626.627	-2.602
0.9 Dead+1.6 Wind 150 deg - No Ice	80.265	20.992	36.421	4511.852	-2600.416	-2.597
1.2 Dead+1.6 Wind 180 deg - No Ice	107.020	0.026	41.808	5261.089	-9.657	-4.917
0.9 Dead+1.6 Wind 180 deg - No Ice	80.265	0.026	41.808	5210.348	-8.151	-4.919
1.2 Dead+1.6 Wind 210 deg - No Ice	107.020	-18.549	32.138	4090.412	2349.394	-5.033
0.9 Dead+1.6 Wind 210 deg - No Ice	80.265	-18.549	32.138	4050.163	2328.268	-5.040
1.2 Dead+1.6 Wind 240 deg - No Ice	107.020	-31.390	18.159	2334.766	4019.347	-5.129
0.9 Dead+1.6 Wind 240 deg - No Ice	80.265	-31.390	18.159	2311.267	3981.972	-5.141
1.2 Dead+1.6 Wind 270 deg - No Ice	107.020	-36.491	-0.003	2.388	4660.436	-3.815
0.9 Dead+1.6 Wind 270 deg - No Ice	80.265	-36.491	-0.003	1.425	4616.950	-3.827
1.2 Dead+1.6 Wind 300 deg - No Ice	107.020	-33.088	-19.142	-2407.147	4155.098	-1.081
0.9 Dead+1.6 Wind 300 deg - No Ice	80.265	-33.088	-19.142	-2385.103	4116.872	-1.091
1.2 Dead+1.6 Wind 330 deg - No Ice	107.020	-21.024	-36.411	-4546.998	2619.373	2.795
0.9 Dead+1.6 Wind 330 deg - No Ice	80.265	-21.024	-36.411	-4504.985	2596.061	2.790
1.2 Dead+1.0 Ice+1.0 Temp	194.091	0.000	0.000	5.642	-27.464	-0.001
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	194.091	-0.021	-13.934	-1777.011	-26.677	2.123
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	194.091	6.316	-11.013	-1431.275	-851.220	2.767
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	194.091	10.686	-6.209	-811.498	-1431.380	2.853
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	194.091	13.063	-0.010	4.070	-1735.494	2.185
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	194.091	11.348	6.587	853.534	-1486.584	0.828
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	194.091	6.985	12.173	1553.786	-914.487	-0.900
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	194.091	-0.004	13.922	1787.271	-26.848	-2.223
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	194.091	-6.328	11.008	1442.143	797.026	-2.710
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	194.091	-10.718	6.192	821.387	1379.077	-2.744
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	194.091	-13.086	-0.015	5.026	1682.287	-2.012
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	194.091	-11.368	-6.600	-843.408	1433.142	-0.751
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	194.091	-7.017	-12.174	-1542.301	862.114	0.858
Dead+Wind 0 deg - Service	89.183	0.002	-8.945	-1115.233	-4.806	0.854
Dead+Wind 30 deg - Service	89.183	3.963	-6.877	-866.202	-504.818	1.128
Dead+Wind 60 deg - Service	89.183	6.709	-3.883	-492.343	-859.820	1.160
Dead+Wind 90 deg - Service	89.183	7.799	0.001	3.477	-996.095	0.862
Dead+Wind 120 deg - Service	89.183	7.072	4.095	515.775	-888.781	0.290
Dead+Wind 150 deg - Service	89.183	4.491	7.793	971.463	-562.265	-0.379
Dead+Wind 180 deg - Service	89.183	0.005	8.945	1121.479	-5.568	-0.895

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Dead+Wind 210 deg - Service	89.183	-3.969	6.876	872.302	496.179	-1.079
Dead+Wind 240 deg - Service	89.183	-6.716	3.885	498.880	851.327	-1.103
Dead+Wind 270 deg - Service	89.183	-7.808	-0.001	2.830	987.684	-0.821
Dead+Wind 300 deg - Service	89.183	-7.079	-4.096	-509.673	880.273	-0.253
Dead+Wind 330 deg - Service	89.183	-4.498	-7.790	-964.942	553.697	0.420

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	0.000	-89.183	0.000	-0.000	89.183	-0.000	0.000%
2	0.010	-107.020	-41.808	-0.010	107.020	41.808	0.000%
3	0.010	-80.265	-41.808	-0.010	80.265	41.808	0.000%
4	18.520	-107.020	-32.142	-18.520	107.020	32.142	0.000%
5	18.520	-80.265	-32.142	-18.520	80.265	32.142	0.000%
6	31.355	-107.020	-18.147	-31.355	107.020	18.147	0.000%
7	31.355	-80.265	-18.147	-31.355	80.265	18.147	0.000%
8	36.452	-107.020	0.006	-36.452	107.020	-0.006	0.000%
9	36.452	-80.265	0.006	-36.452	80.265	-0.006	0.000%
10	33.054	-107.020	19.138	-33.054	107.020	-19.138	0.000%
11	33.054	-80.265	19.138	-33.054	80.265	-19.138	0.000%
12	20.992	-107.020	36.421	-20.992	107.020	-36.421	0.000%
13	20.992	-80.265	36.421	-20.992	80.265	-36.421	0.000%
14	0.026	-107.020	41.808	-0.026	107.020	-41.808	0.000%
15	0.026	-80.265	41.808	-0.026	80.265	-41.808	0.000%
16	-18.549	-107.020	32.138	18.549	107.020	-32.138	0.000%
17	-18.549	-80.265	32.138	18.549	80.265	-32.138	0.000%
18	-31.390	-107.020	18.159	31.390	107.020	-18.159	0.000%
19	-31.390	-80.265	18.159	31.390	80.265	-18.159	0.000%
20	-36.491	-107.020	-0.003	36.491	107.020	0.003	0.000%
21	-36.491	-80.265	-0.003	36.491	80.265	0.003	0.000%
22	-33.088	-107.020	-19.142	33.088	107.020	19.142	0.000%
23	-33.088	-80.265	-19.142	33.088	80.265	19.142	0.000%
24	-21.024	-107.020	-36.411	21.024	107.020	36.411	0.000%
25	-21.024	-80.265	-36.411	21.024	80.265	36.411	0.000%
26	0.000	-194.091	0.000	-0.000	194.091	-0.000	0.000%
27	-0.021	-194.091	-13.934	0.021	194.091	13.934	0.000%
28	6.316	-194.091	-11.013	-6.316	194.091	11.013	0.000%
29	10.686	-194.091	-6.209	-10.686	194.091	6.209	0.000%
30	13.063	-194.091	-0.010	-13.063	194.091	0.010	0.000%
31	11.348	-194.091	6.587	-11.348	194.091	-6.587	0.000%
32	6.985	-194.091	12.173	-6.985	194.091	-12.173	0.000%
33	-0.004	-194.091	13.922	0.004	194.091	-13.922	0.000%
34	-6.328	-194.091	11.008	6.328	194.091	-11.008	0.000%
35	-10.718	-194.091	6.192	10.718	194.091	-6.192	0.000%
36	-13.086	-194.091	-0.015	13.086	194.091	0.015	0.000%
37	-11.368	-194.091	-6.600	11.368	194.091	6.600	0.000%
38	-7.017	-194.091	-12.174	7.017	194.091	12.174	0.000%
39	0.002	-89.183	-8.945	-0.002	89.183	8.945	0.000%
40	3.963	-89.183	-6.877	-3.963	89.183	6.877	0.000%
41	6.709	-89.183	-3.883	-6.709	89.183	3.883	0.000%
42	7.799	-89.183	0.001	-7.799	89.183	-0.001	0.000%
43	7.072	-89.183	4.095	-7.072	89.183	-4.095	0.000%
44	4.491	-89.183	7.793	-4.491	89.183	-7.793	0.000%
45	0.005	-89.183	8.945	-0.005	89.183	-8.945	0.000%
46	-3.969	-89.183	6.876	3.969	89.183	-6.876	0.000%
47	-6.716	-89.183	3.885	6.716	89.183	-3.885	0.000%

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
48	-7.808	-89.183	-0.001	7.808	89.183	0.001	0.000%
49	-7.079	-89.183	-4.096	7.079	89.183	4.096	0.000%
50	-4.498	-89.183	-7.790	4.498	89.183	7.790	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000275
2	Yes	5	0.00000001	0.00073522
3	Yes	5	0.00000001	0.00036732
4	Yes	6	0.00000001	0.00020792
5	Yes	6	0.00000001	0.00007668
6	Yes	6	0.00000001	0.00017324
7	Yes	6	0.00000001	0.00006321
8	Yes	5	0.00000001	0.00048608
9	Yes	5	0.00000001	0.00024311
10	Yes	6	0.00000001	0.00019746
11	Yes	6	0.00000001	0.00007199
12	Yes	6	0.00000001	0.00024563
13	Yes	6	0.00000001	0.00008834
14	Yes	5	0.00000001	0.00077069
15	Yes	5	0.00000001	0.00038528
16	Yes	6	0.00000001	0.00017589
17	Yes	6	0.00000001	0.00006404
18	Yes	6	0.00000001	0.00020287
19	Yes	6	0.00000001	0.00007491
20	Yes	5	0.00000001	0.00045535
21	Yes	5	0.00000001	0.00022677
22	Yes	6	0.00000001	0.00019332
23	Yes	6	0.00000001	0.00007057
24	Yes	6	0.00000001	0.00022197
25	Yes	6	0.00000001	0.00007946
26	Yes	5	0.00000001	0.00025152
27	Yes	7	0.00000001	0.00011799
28	Yes	7	0.00000001	0.00012633
29	Yes	7	0.00000001	0.00012373
30	Yes	7	0.00000001	0.00011896
31	Yes	7	0.00000001	0.00012895
32	Yes	7	0.00000001	0.00013547
33	Yes	7	0.00000001	0.00011989
34	Yes	7	0.00000001	0.00012269
35	Yes	7	0.00000001	0.00012162
36	Yes	6	0.00000001	0.00098221
37	Yes	7	0.00000001	0.00012222
38	Yes	7	0.00000001	0.00012864
39	Yes	4	0.00000001	0.00097636
40	Yes	5	0.00000001	0.00006844
41	Yes	5	0.00000001	0.00005370
42	Yes	4	0.00000001	0.00083178
43	Yes	5	0.00000001	0.00005966
44	Yes	5	0.00000001	0.00007396
45	Yes	5	0.00000001	0.00004078
46	Yes	5	0.00000001	0.00005433
47	Yes	5	0.00000001	0.00006603
48	Yes	4	0.00000001	0.00081103

49	Yes	5	0.00000001	0.00005644
50	Yes	5	0.00000001	0.00006362

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	191.667 - 186.667	19.232	45	0.925	0.007
L2	186.667 - 181.567	18.264	45	0.924	0.006
L3	181.567 - 176.567	17.278	45	0.923	0.006
L4	176.567 - 171.567	16.313	45	0.919	0.005
L5	171.567 - 166.567	15.355	45	0.911	0.005
L6	166.567 - 161.567	14.406	45	0.899	0.005
L7	161.567 - 156.567	13.473	45	0.882	0.004
L8	156.567 - 151.567	12.561	45	0.859	0.004
L9	151.567 - 146.567	11.677	45	0.827	0.004
L10	146.567 - 141.567	10.833	45	0.782	0.003
L11	141.567 - 141.417	10.044	45	0.721	0.003
L12	141.417 - 136.417	10.022	45	0.719	0.003
L13	136.417 - 131.417	9.280	45	0.696	0.002
L14	131.417 - 126.417	8.565	45	0.668	0.002
L15	126.417 - 121.417	7.882	45	0.635	0.002
L16	121.417 - 121.167	7.237	45	0.597	0.002
L17	121.167 - 116.167	7.206	45	0.595	0.002
L18	116.167 - 111.167	6.597	45	0.567	0.001
L19	111.167 - 110.042	6.020	45	0.535	0.001
L20	110.042 - 109.792	5.894	45	0.528	0.001
L21	109.792 - 105.083	5.867	45	0.526	0.001
L22	105.083 - 104.833	5.361	45	0.499	0.001
L23	104.833 - 100.917	5.335	45	0.498	0.001
L24	100.917 - 100.667	4.935	45	0.476	0.001
L25	100.667 - 95.833	4.910	45	0.475	0.001
L26	95.833 - 95.583	4.444	45	0.446	0.001
L27	95.583 - 90.583	4.421	45	0.445	0.001
L28	90.583 - 89.917	3.968	45	0.419	0.001
L29	89.917 - 89.667	3.910	45	0.415	0.001
L30	89.667 - 84.667	3.888	45	0.414	0.001
L31	84.667 - 80.833	3.468	45	0.389	0.001
L32	80.833 - 80.583	3.163	45	0.369	0.001
L33	80.583 - 75.583	3.144	45	0.368	0.001
L34	75.583 - 70.583	2.770	45	0.345	0.001
L35	70.583 - 69.5	2.421	45	0.321	0.001
L36	69.5 - 69.25	2.349	45	0.315	0.001
L37	69.25 - 64.25	2.332	45	0.314	0.001
L38	64.25 - 60.583	2.015	45	0.291	0.000
L39	60.583 - 60.333	1.798	45	0.274	0.000
L40	60.333 - 55.333	1.784	45	0.273	0.000
L41	55.333 - 52.167	1.509	44	0.252	0.000
L42	52.167 - 51.917	1.347	44	0.238	0.000
L43	51.917 - 46.917	1.334	44	0.237	0.000
L44	46.917 - 41.917	1.096	44	0.218	0.000
L45	41.917 - 40.333	0.879	44	0.197	0.000
L46	40.333 - 40.083	0.815	44	0.191	0.000
L47	40.083 - 35.083	0.805	44	0.189	0.000
L48	35.083 - 30.083	0.618	44	0.167	0.000
L49	30.083 - 28	0.456	44	0.143	0.000
L50	28 - 27.75	0.396	44	0.132	0.000
L51	27.75 - 22.75	0.390	44	0.131	0.000
L52	22.75 - 20.083	0.263	44	0.110	0.000

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L53	20.083 - 19.833	0.206	44	0.098	0.000
L54	19.833 - 17	0.201	44	0.096	0.000
L55	17 - 16.75	0.148	44	0.081	0.000
L56	16.75 - 11.65	0.144	44	0.080	0.000
L57	11.65 - 11.417	0.070	44	0.057	0.000
L58	11.417 - 9.375	0.068	44	0.055	0.000
L59	9.375 - 9.125	0.046	44	0.046	0.000
L60	9.125 - 4.833	0.044	44	0.045	0.000
L61	4.833 - 4.583	0.013	44	0.025	0.000
L62	4.583 - 0	0.011	44	0.023	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
192.000	OGB4-900D	45	19.232	0.925	0.007	197639
191.667	Lightning Rod 5/8" x 4' on 4' Pole	45	19.232	0.925	0.007	197639
191.000	DB589-A	45	19.103	0.925	0.007	197639
184.000	LNX-6515DS-VTM w/ Mount Pipe	45	17.748	0.924	0.006	175734
178.000	4' ICE SHIELDS	45	16.589	0.921	0.005	61854
160.000	(2) HBXX-6517DS-VTM w/ Mount Pipe	45	13.185	0.876	0.004	13151
158.000	SRL-224NM-4	45	12.820	0.867	0.004	11470
151.000	7770.00 w/ Mount Pipe	45	11.579	0.823	0.003	7235
150.000	DC6-48-60-18-8F	45	11.407	0.815	0.003	6765
138.000	4' ICE SHIELDS	45	9.512	0.699	0.002	10923
132.000	SRL-235-2	45	8.647	0.672	0.002	9597
124.000	PCS 1900 TMA RX	45	7.565	0.617	0.002	7751
120.000	Andrew VHLP2-18	45	7.061	0.586	0.002	9137
116.000	(3) 844G65VTZAS w/ Mount Pipe	45	6.577	0.566	0.001	9594
98.000	4' ICE SHIELDS	45	4.649	0.459	0.001	9868
90.000	KP2F-34	45	3.917	0.415	0.001	11268
70.000	SRL-235-2	45	2.382	0.317	0.001	11908
33.000	DB909XVTE-M	44	0.548	0.157	0.000	11952

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	191.667 - 186.667	90.087	14	4.326	0.031
L2	186.667 - 181.567	85.563	14	4.321	0.028
L3	181.567 - 176.567	80.953	14	4.318	0.027
L4	176.567 - 171.567	76.443	14	4.301	0.025
L5	171.567 - 166.567	71.960	14	4.265	0.024
L6	166.567 - 161.567	67.526	14	4.208	0.022
L7	161.567 - 156.567	63.162	14	4.129	0.020
L8	156.567 - 151.567	58.894	14	4.023	0.019
L9	151.567 - 146.567	54.759	14	3.873	0.017
L10	146.567 - 141.567	50.809	14	3.664	0.014
L11	141.567 - 141.417	47.116	14	3.380	0.012

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L12	141.417 - 136.417	47.010	14	3.370	0.012
L13	136.417 - 131.417	43.537	14	3.264	0.011
L14	131.417 - 126.417	40.187	14	3.134	0.011
L15	126.417 - 121.417	36.986	14	2.979	0.009
L16	121.417 - 121.167	33.959	14	2.799	0.008
L17	121.167 - 116.167	33.813	14	2.790	0.008
L18	116.167 - 111.167	30.960	14	2.660	0.007
L19	111.167 - 110.042	28.251	14	2.511	0.006
L20	110.042 - 109.792	27.664	14	2.475	0.006
L21	109.792 - 105.083	27.535	14	2.469	0.006
L22	105.083 - 104.833	25.161	14	2.343	0.005
L23	104.833 - 100.917	25.039	14	2.337	0.005
L24	100.917 - 100.667	23.164	14	2.236	0.005
L25	100.667 - 95.833	23.047	14	2.229	0.005
L26	95.833 - 95.583	20.858	14	2.093	0.004
L27	95.583 - 90.583	20.749	14	2.087	0.004
L28	90.583 - 89.917	18.627	14	1.964	0.004
L29	89.917 - 89.667	18.354	14	1.947	0.004
L30	89.667 - 84.667	18.252	14	1.942	0.004
L31	84.667 - 80.833	16.278	14	1.828	0.004
L32	80.833 - 80.583	14.848	14	1.734	0.003
L33	80.583 - 75.583	14.757	14	1.729	0.003
L34	75.583 - 70.583	13.002	14	1.621	0.003
L35	70.583 - 69.5	11.364	14	1.505	0.003
L36	69.5 - 69.25	11.026	14	1.479	0.003
L37	69.25 - 64.25	10.949	14	1.474	0.003
L38	64.25 - 60.583	9.460	14	1.368	0.002
L39	60.583 - 60.333	8.441	14	1.286	0.002
L40	60.333 - 55.333	8.374	14	1.281	0.002
L41	55.333 - 52.167	7.083	14	1.182	0.002
L42	52.167 - 51.917	6.321	14	1.116	0.002
L43	51.917 - 46.917	6.263	14	1.112	0.002
L44	46.917 - 41.917	5.145	14	1.022	0.002
L45	41.917 - 40.333	4.125	14	0.926	0.001
L46	40.333 - 40.083	3.823	14	0.894	0.001
L47	40.083 - 35.083	3.776	14	0.889	0.001
L48	35.083 - 30.083	2.901	14	0.782	0.001
L49	30.083 - 28	2.141	14	0.669	0.001
L50	28 - 27.75	1.860	14	0.620	0.001
L51	27.75 - 22.75	1.827	14	0.615	0.001
L52	22.75 - 20.083	1.236	14	0.514	0.001
L53	20.083 - 19.833	0.964	14	0.458	0.001
L54	19.833 - 17	0.940	14	0.452	0.001
L55	17 - 16.75	0.693	14	0.381	0.001
L56	16.75 - 11.65	0.673	14	0.376	0.001
L57	11.65 - 11.417	0.330	14	0.265	0.000
L58	11.417 - 9.375	0.318	14	0.260	0.000
L59	9.375 - 9.125	0.216	14	0.214	0.000
L60	9.125 - 4.833	0.205	14	0.209	0.000
L61	4.833 - 4.583	0.059	14	0.116	0.000
L62	4.583 - 0	0.053	14	0.110	0.000

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
192.000	OGB4-900D	14	90.087	4.326	0.031	45520
191.667	Lightning Rod 5/8" x 4' on 4' Pole	14	90.087	4.326	0.031	45520
191.000	DB589-A	14	89.483	4.325	0.031	45520
184.000	LNX-6515DS-VTM w/ Mount Pipe	14	83.152	4.320	0.027	44412
178.000	4' ICE SHIELDS	14	77.734	4.308	0.026	14028
160.000	(2) HBXX-6517DS-VTM w/ Mount Pipe	14	61.813	4.100	0.020	2857
158.000	SRL-224NM-4	14	60.105	4.057	0.019	2492
151.000	7770.00 w/ Mount Pipe	14	54.300	3.852	0.016	1572
150.000	DC6-48-60-18-8F	14	53.498	3.814	0.016	1470
138.000	4' ICE SHIELDS	14	44.624	3.276	0.011	2356
132.000	SRL-235-2	14	40.570	3.152	0.011	2070
124.000	PCS 1900 TMA RX	14	35.499	2.896	0.009	1670
120.000	Andrew VHLP2-18	14	33.135	2.751	0.008	1966
116.000	(3) 844G65VTZAS w/ Mount Pipe	14	30.867	2.656	0.007	2062
98.000	4' ICE SHIELDS	14	21.823	2.152	0.005	2111
90.000	KP2F-34	14	18.388	1.949	0.004	2409
70.000	SRL-235-2	14	11.182	1.491	0.003	2541
33.000	DB909XVTE-M	14	2.570	0.736	0.001	2545

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	191.667 - 186.667 (1)	P18x0.375	5.000	0.000	0.0	20.764	-1.781	784.878	0.002
L2	186.667 - 181.567 (2)	P24x0.375	5.100	0.000	0.0	27.833	-11.477	1052.070	0.011
L3	181.567 - 176.567 (3)	P24x0.375	5.000	0.000	0.0	27.833	-5.071	1052.070	0.005
L4	176.567 - 171.567 (4)	P24x0.375	5.000	0.000	0.0	27.833	-5.777	1052.070	0.005
L5	171.567 - 166.567 (5)	P24x0.375	5.000	0.000	0.0	27.833	-6.485	1052.070	0.006
L6	166.567 - 161.567 (6)	P24x0.375	5.000	0.000	0.0	27.833	-7.197	1052.070	0.007
L7	161.567 - 156.567 (7)	P24x0.375	5.000	0.000	0.0	27.833	-10.914	1052.070	0.010
L8	156.567 - 151.567 (8)	P24x0.375	5.000	0.000	0.0	27.833	-11.669	1052.070	0.011
L9	151.567 - 146.567 (9)	P24x0.375	5.000	0.000	0.0	27.833	-17.337	1052.070	0.016
L10	146.567 - 141.567 (10)	P24x0.375	5.000	0.000	0.0	27.833	-18.235	1052.070	0.017
L11	141.567 - 141.417 (11)	P24x0.375	0.150	0.000	0.0	27.833	-18.273	1052.070	0.017
L12	141.417 - 136.417 (12)	P36x0.375	5.000	0.000	0.0	41.970	-19.443	1490.100	0.013
L13	136.417 - 131.417 (13)	P36x0.375	5.000	0.000	0.0	41.970	-21.072	1490.100	0.014
L14	131.417 -	P36x0.375	5.000	0.000	0.0	41.970	-22.276	1490.100	0.015

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L15	126.417 (14) 126.417 - 121.417 (15)	P36x0.375	5.000	0.000	0.0	41.970	-24.526	1490.100	0.016
L16	121.417 - 121.167 (16)	P36x0.375	0.250	0.000	0.0	41.970	-24.605	1490.100	0.017
L17	121.167 - 116.167 (17)	P42x0.375	5.000	0.000	0.0	49.038	-26.123	1668.870	0.016
L18	116.167 - 111.167 (18)	P42x0.375	5.000	0.000	0.0	49.038	-30.183	1668.870	0.018
L19	111.167 - 110.042 (19)	P42x0.375	1.125	0.000	0.0	49.038	-30.495	1668.870	0.018
L20	110.042 - 109.792 (20)	P42x0.4875	0.250	0.000	0.0	63.577	-30.586	2332.130	0.013
L21	109.792 - 105.083 (21)	P42x0.4875	4.709	0.000	0.0	63.577	-32.228	2332.130	0.014
L22	105.083 - 104.833 (22)	P42x0.5625	0.250	0.000	0.0	73.226	-32.340	2767.950	0.012
L23	104.833 - 100.917 (23)	P42x0.5625	3.916	0.000	0.0	73.226	-34.763	2767.950	0.013
L24	100.917 - 100.667 (24)	P48x0.375	0.250	0.000	0.0	56.107	-34.874	1847.490	0.019
L25	100.667 - 95.833 (25)	P48x0.375	4.834	0.000	0.0	56.107	-36.732	1847.490	0.020
L26	95.833 - 95.583 (26)	P48x0.475	0.250	0.000	0.0	70.920	-36.830	2481.390	0.015
L27	95.583 - 90.583 (27)	P48x0.475	5.000	0.000	0.0	70.920	-38.630	2481.390	0.016
L28	90.583 - 89.917 (28)	P48x0.475	0.666	0.000	0.0	70.920	-39.028	2481.390	0.016
L29	89.917 - 89.667 (29)	P48x0.575	0.250	0.000	0.0	85.669	-39.144	3174.020	0.012
L30	89.667 - 84.667 (30)	P48x0.575	5.000	0.000	0.0	85.669	-41.997	3174.020	0.013
L31	84.667 - 80.833 (31)	P48x0.575	3.834	0.000	0.0	85.669	-45.188	3174.020	0.014
L32	80.833 - 80.583 (32)	P54x0.4875	0.250	0.000	0.0	81.956	-45.396	2797.170	0.016
L33	80.583 - 75.583 (33)	P54x0.4875	5.000	0.000	0.0	81.956	-47.985	2797.170	0.017
L34	75.583 - 70.583 (34)	P54x0.4875	5.000	0.000	0.0	81.956	-50.772	2797.170	0.018
L35	70.583 - 69.5 (35)	P54x0.4875	1.083	0.000	0.0	81.956	-51.785	2797.170	0.019
L36	69.5 - 69.25 (36)	P54x0.5875	0.250	0.000	0.0	98.583	-51.977	3545.230	0.015
L37	69.25 - 64.25 (37)	P54x0.5875	5.000	0.000	0.0	98.583	-58.339	3545.230	0.016
L38	64.25 - 60.583 (38)	P54x0.5875	3.667	0.000	0.0	98.583	-63.514	3545.230	0.018
L39	60.583 - 60.333 (39)	P60x0.5125	0.250	0.000	0.0	95.779	-63.722	3222.890	0.020
L40	60.333 - 55.333 (40)	P60x0.5125	5.000	0.000	0.0	95.779	-67.517	3222.890	0.021
L41	55.333 - 52.167 (41)	P60x0.5125	3.166	0.000	0.0	95.779	-69.015	3222.890	0.021
L42	52.167 - 51.917 (42)	P60x0.625	0.250	0.000	0.0	116.583	-69.161	4139.150	0.017
L43	51.917 - 46.917 (43)	P60x0.625	5.000	0.000	0.0	116.583	-72.267	4139.150	0.017
L44	46.917 -	P60x0.625	5.000	0.000	0.0	116.583	-76.245	4139.150	0.018

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
	41.917 (44)								
L45	41.917 - 40.333 (45)	P60x0.625	1.584	0.000	0.0	116.583	-77.495	4139.150	0.019
L46	40.333 - 40.083 (46)	P60x0.6	0.250	0.000	0.0	111.966	-77.688	3929.110	0.020
L47	40.083 - 35.083 (47)	P60x0.6	5.000	0.000	0.0	111.966	-81.362	3929.110	0.021
L48	35.083 - 30.083 (48)	P60x0.6	5.000	0.000	0.0	111.966	-84.595	3929.110	0.022
L49	30.083 - 28 (49)	P60x0.6	2.083	0.000	0.0	111.966	-85.718	3929.110	0.022
L50	28 - 27.75 (50)	P60x0.725	0.250	0.000	0.0	135.008	-85.884	5015.910	0.017
L51	27.75 - 22.75 (51)	P60x0.725	5.000	0.000	0.0	135.008	-90.001	5015.910	0.018
L52	22.75 - 20.083 (52)	P60x0.725	2.667	0.000	0.0	135.008	-92.225	5015.910	0.018
L53	20.083 - 19.833 (53)	P60x0.625	0.250	0.000	0.0	116.583	-92.424	4139.150	0.022
L54	19.833 - 17 (54)	P60x0.625	2.833	0.000	0.0	116.583	-94.569	4139.150	0.023
L55	17 - 16.75 (55)	P60x0.725	0.250	0.000	0.0	135.008	-94.794	5015.910	0.019
L56	16.75 - 11.65 (56)	P60x0.75	5.100	0.000	0.0	139.605	-99.019	5244.230	0.019
L57	11.65 - 11.417 (57)	P60x0.75	0.233	0.000	0.0	139.605	-99.181	5244.230	0.019
L58	11.417 - 9.375 (58)	P60x0.75	2.042	0.000	0.0	139.605	-100.545	5244.230	0.019
L59	9.375 - 9.125 (59)	P60x0.8	0.250	0.000	0.0	148.786	-100.725	5624.100	0.018
L60	9.125 - 4.833 (60)	P60x0.8	4.292	0.000	0.0	148.786	-103.702	5624.100	0.018
L61	4.833 - 4.583 (61)	P60x0.75	0.250	0.000	0.0	139.605	-103.879	5244.230	0.020
L62	4.583 - 0 (62)	P60x0.75	4.583	0.000	0.0	139.605	-107.010	5244.230	0.020

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	191.667 - 186.667 (1)	P18x0.375	5.353	367.000	0.015	0.000	367.000	0.000
L2	186.667 - 181.567 (2)	P24x0.375	8.821	623.717	0.014	0.000	623.717	0.000
L3	181.567 - 176.567 (3)	P24x0.375	36.099	623.717	0.058	0.000	623.717	0.000
L4	176.567 - 171.567 (4)	P24x0.375	63.587	623.717	0.102	0.000	623.717	0.000
L5	171.567 - 166.567 (5)	P24x0.375	92.711	623.717	0.149	0.000	623.717	0.000
L6	166.567 - 161.567 (6)	P24x0.375	123.439	623.717	0.198	0.000	623.717	0.000
L7	161.567 - 156.567 (7)	P24x0.375	174.464	623.717	0.280	0.000	623.717	0.000
L8	156.567 - 151.567 (8)	P24x0.375	237.287	623.717	0.380	0.000	623.717	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 $\frac{M_{uy}}{\phi M_{ny}}$
L9	151.567 - 146.567 (9)	P24x0.375	335.757	623.717	0.538	0.000	623.717	0.000
L10	146.567 - 141.567 (10)	P24x0.375	441.363	623.717	0.708	0.000	623.717	0.000
L11	141.567 - 141.417 (11)	P24x0.375	444.581	623.717	0.713	0.000	623.717	0.000
L12	141.417 - 136.417 (12)	P36x0.375	553.166	1338.808	0.413	0.000	1338.808	0.000
L13	136.417 - 131.417 (13)	P36x0.375	665.447	1338.808	0.497	0.000	1338.808	0.000
L14	131.417 - 126.417 (14)	P36x0.375	781.734	1338.808	0.584	0.000	1338.808	0.000
L15	126.417 - 121.417 (15)	P36x0.375	902.150	1338.808	0.674	0.000	1338.808	0.000
L16	121.417 - 121.167 (16)	P36x0.375	908.325	1338.808	0.678	0.000	1338.808	0.000
L17	121.167 - 116.167 (17)	P42x0.375	1033.433	1796.558	0.575	0.000	1796.558	0.000
L18	116.167 - 111.167 (18)	P42x0.375	1180.217	1796.558	0.657	0.000	1796.558	0.000
L19	111.167 - 110.042 (19)	P42x0.375	1212.742	1796.558	0.675	0.000	1796.558	0.000
L20	110.042 - 109.792 (20)	P42x0.4875	1219.983	2395.433	0.509	0.000	2395.433	0.000
L21	109.792 - 105.083 (21)	P42x0.4875	1358.642	2395.433	0.567	0.000	2395.433	0.000
L22	105.083 - 104.833 (22)	P42x0.5625	1366.150	2809.308	0.486	0.000	2809.308	0.000
L23	104.833 - 100.917 (23)	P42x0.5625	1485.750	2809.308	0.529	0.000	2809.308	0.000
L24	100.917 - 100.667 (24)	P48x0.375	1493.500	2321.108	0.643	0.000	2321.108	0.000
L25	100.667 - 95.833 (25)	P48x0.375	1644.808	2321.108	0.709	0.000	2321.108	0.000
L26	95.833 - 95.583 (26)	P48x0.475	1652.708	2999.958	0.551	0.000	2999.958	0.000
L27	95.583 - 90.583 (27)	P48x0.475	1811.950	2999.958	0.604	0.000	2999.958	0.000
L28	90.583 - 89.917 (28)	P48x0.475	1834.358	2999.958	0.611	0.000	2999.958	0.000
L29	89.917 - 89.667 (29)	P48x0.575	1842.458	3702.967	0.498	0.000	3702.967	0.000
L30	89.667 - 84.667 (30)	P48x0.575	2005.800	3702.967	0.542	0.000	3702.967	0.000
L31	84.667 - 80.833 (31)	P48x0.575	2132.725	3702.967	0.576	0.000	3702.967	0.000
L32	80.833 - 80.583 (32)	P54x0.4875	2141.067	3864.467	0.554	0.000	3864.467	0.000
L33	80.583 - 75.583 (33)	P54x0.4875	2309.400	3864.467	0.598	0.000	3864.467	0.000
L34	75.583 - 70.583 (34)	P54x0.4875	2480.217	3864.467	0.642	0.000	3864.467	0.000
L35	70.583 - 69.5 (35)	P54x0.4875	2518.175	3864.467	0.652	0.000	3864.467	0.000
L36	69.5 - 69.25 (36)	P54x0.5875	2526.925	4739.867	0.533	0.000	4739.867	0.000
L37	69.25 - 64.25 (37)	P54x0.5875	2704.983	4739.867	0.571	0.000	4739.867	0.000
L38	64.25 - 60.583 (38)	P54x0.5875	2840.017	4739.867	0.599	0.000	4739.867	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 $\frac{M_{uy}}{\phi M_{ny}}$
L39	60.583 - 60.333 (39)	P60x0.5125	2849.375	4992.042	0.571	0.000	4992.042	0.000
L40	60.333 - 55.333 (40)	P60x0.5125	3037.775	4992.042	0.609	0.000	4992.042	0.000
L41	55.333 - 52.167 (41)	P60x0.5125	3158.417	4992.042	0.633	0.000	4992.042	0.000
L42	52.167 - 51.917 (42)	P60x0.625	3167.983	6198.183	0.511	0.000	6198.183	0.000
L43	51.917 - 46.917 (43)	P60x0.625	3360.492	6198.183	0.542	0.000	6198.183	0.000
L44	46.917 - 41.917 (44)	P60x0.625	3555.183	6198.183	0.574	0.000	6198.183	0.000
L45	41.917 - 40.333 (45)	P60x0.625	3617.350	6198.183	0.584	0.000	6198.183	0.000
L46	40.333 - 40.083 (46)	P60x0.6	3627.183	5926.841	0.612	0.000	5926.841	0.000
L47	40.083 - 35.083 (47)	P60x0.6	3824.733	5926.841	0.645	0.000	5926.841	0.000
L48	35.083 - 30.083 (48)	P60x0.6	4024.792	5926.841	0.679	0.000	5926.841	0.000
L49	30.083 - 28 (49)	P60x0.6	4108.658	5926.841	0.693	0.000	5926.841	0.000
L50	28 - 27.75 (50)	P60x0.725	4118.742	7302.233	0.564	0.000	7302.233	0.000
L51	27.75 - 22.75 (51)	P60x0.725	4321.408	7302.233	0.592	0.000	7302.233	0.000
L52	22.75 - 20.083 (52)	P60x0.725	4430.175	7302.233	0.607	0.000	7302.233	0.000
L53	20.083 - 19.833 (53)	P60x0.625	4440.392	6198.183	0.716	0.000	6198.183	0.000
L54	19.833 - 17 (54)	P60x0.625	4556.425	6198.183	0.735	0.000	6198.183	0.000
L55	17 - 16.75 (55)	P60x0.725	4566.692	7302.233	0.625	0.000	7302.233	0.000
L56	16.75 - 11.65 (56)	P60x0.75	4776.742	7582.875	0.630	0.000	7582.875	0.000
L57	11.65 - 11.417 (57)	P60x0.75	4786.367	7582.875	0.631	0.000	7582.875	0.000
L58	11.417 - 9.375 (58)	P60x0.75	4870.825	7582.875	0.642	0.000	7582.875	0.000
L59	9.375 - 9.125 (59)	P60x0.8	4881.183	8149.650	0.599	0.000	8149.650	0.000
L60	9.125 - 4.833 (60)	P60x0.8	5059.417	8149.650	0.621	0.000	8149.650	0.000
L61	4.833 - 4.583 (61)	P60x0.75	5069.825	7582.875	0.669	0.000	7582.875	0.000
L62	4.583 - 0 (62)	P60x0.75	5261.100	7582.875	0.694	0.000	7582.875	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	191.667 - 186.667 (1)	P18x0.375	0.344	392.439	0.001	0.060	564.642	0.000
L2	186.667 - 181.567 (2)	P24x0.375	1.883	526.035	0.004	0.367	1019.708	0.000
L3	181.567 -	P24x0.375	5.325	526.035	0.010	0.962	1019.708	0.001

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
	176.567 (3)							
L4	176.567 - 171.567 (4)	P24x0.375	5.654	526.035	0.011	0.962	1019.708	0.001
L5	171.567 - 166.567 (5)	P24x0.375	5.979	526.035	0.011	0.962	1019.708	0.001
L6	166.567 - 161.567 (6)	P24x0.375	6.297	526.035	0.012	0.962	1019.708	0.001
L7	161.567 - 156.567 (7)	P24x0.375	12.194	526.035	0.023	0.928	1019.708	0.001
L8	156.567 - 151.567 (8)	P24x0.375	12.919	526.035	0.025	1.083	1019.708	0.001
L9	151.567 - 146.567 (9)	P24x0.375	20.794	526.035	0.040	2.122	1019.708	0.002
L10	146.567 - 141.567 (10)	P24x0.375	21.445	526.035	0.041	2.265	1019.708	0.002
L11	141.567 - 141.417 (11)	P24x0.375	21.457	526.035	0.041	2.269	1019.708	0.002
L12	141.417 - 136.417 (12)	P36x0.375	22.011	745.048	0.030	2.269	2189.067	0.001
L13	136.417 - 131.417 (13)	P36x0.375	23.020	745.048	0.031	2.686	2189.067	0.001
L14	131.417 - 126.417 (14)	P36x0.375	23.505	745.048	0.032	4.658	2189.067	0.002
L15	126.417 - 121.417 (15)	P36x0.375	24.677	745.048	0.033	4.821	2189.067	0.002
L16	121.417 - 121.167 (16)	P36x0.375	24.694	745.048	0.033	4.820	2189.067	0.002
L17	121.167 - 116.167 (17)	P42x0.375	25.321	834.437	0.030	3.569	2868.842	0.001
L18	116.167 - 111.167 (18)	P42x0.375	28.854	834.437	0.035	3.597	2868.842	0.001
L19	111.167 - 110.042 (19)	P42x0.375	28.957	834.437	0.035	3.597	2868.842	0.001
L20	110.042 - 109.792 (20)	P42x0.4875	28.976	1166.060	0.025	3.597	3987.583	0.001
L21	109.792 - 105.083 (21)	P42x0.4875	29.993	1166.060	0.026	4.960	3987.583	0.001
L22	105.083 - 104.833 (22)	P42x0.5625	30.042	1383.970	0.022	4.961	4715.900	0.001
L23	104.833 - 100.917 (23)	P42x0.5625	30.979	1383.970	0.022	4.982	4715.900	0.001
L24	100.917 - 100.667 (24)	P48x0.375	31.000	923.745	0.034	4.982	3637.700	0.001
L25	100.667 - 95.833 (25)	P48x0.375	31.582	923.745	0.034	4.981	3637.700	0.001
L26	95.833 - 95.583 (26)	P48x0.475	31.599	1240.700	0.025	4.981	4865.533	0.001
L27	95.583 - 90.583 (27)	P48x0.475	32.079	1240.700	0.026	4.980	4865.533	0.001
L28	90.583 - 89.917 (28)	P48x0.475	32.408	1240.700	0.026	5.755	4865.533	0.001
L29	89.917 - 89.667 (29)	P48x0.575	32.431	1587.010	0.020	5.755	6197.767	0.001
L30	89.667 - 84.667 (30)	P48x0.575	32.956	1587.010	0.021	5.754	6197.767	0.001
L31	84.667 - 80.833 (31)	P48x0.575	33.406	1587.010	0.021	5.754	6197.767	0.001
L32	80.833 - 80.583 (32)	P54x0.4875	33.428	1398.580	0.024	5.753	6181.017	0.001
L33	80.583 -	P54x0.4875	33.927	1398.580	0.024	5.753	6181.017	0.001

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L34	75.583 (33) 75.583 - 70.583 (34)	P54x0.4875	34.430	1398.580	0.025	5.752	6181.017	0.001
L35	70.583 - 69.5 (35)	P54x0.4875	35.030	1398.580	0.025	5.752	6181.017	0.001
L36	69.5 - 69.25 (36)	P54x0.5875	35.051	1772.620	0.020	4.143	7805.091	0.001
L37	69.25 - 64.25 (37)	P54x0.5875	36.398	1772.620	0.021	4.228	7805.091	0.001
L38	64.25 - 60.583 (38)	P54x0.5875	37.418	1772.620	0.021	4.266	7805.091	0.001
L39	60.583 - 60.333 (39)	P60x0.5125	37.437	1611.450	0.023	4.266	7920.767	0.001
L40	60.333 - 55.333 (40)	P60x0.5125	37.966	1611.450	0.024	4.266	7920.767	0.001
L41	55.333 - 52.167 (41)	P60x0.5125	38.234	1611.450	0.024	4.266	7920.767	0.001
L42	52.167 - 51.917 (42)	P60x0.625	38.249	2069.580	0.018	4.266	10134.583	0.000
L43	51.917 - 46.917 (43)	P60x0.625	38.729	2069.580	0.019	4.265	10134.583	0.000
L44	46.917 - 41.917 (44)	P60x0.625	39.217	2069.580	0.019	4.265	10134.583	0.000
L45	41.917 - 40.333 (45)	P60x0.625	39.368	2069.580	0.019	4.265	10134.583	0.000
L46	40.333 - 40.083 (46)	P60x0.6	39.373	1964.560	0.020	4.265	9628.250	0.000
L47	40.083 - 35.083 (47)	P60x0.6	39.746	1964.560	0.020	4.265	9628.250	0.000
L48	35.083 - 30.083 (48)	P60x0.6	40.202	1964.560	0.020	4.918	9628.250	0.001
L49	30.083 - 28 (49)	P60x0.6	40.319	1964.560	0.021	4.918	9628.250	0.001
L50	28 - 27.75 (50)	P60x0.725	40.322	2507.960	0.016	4.918	12240.416	0.000
L51	27.75 - 22.75 (51)	P60x0.725	40.664	2507.960	0.016	4.917	12240.416	0.000
L52	22.75 - 20.083 (52)	P60x0.725	40.840	2507.960	0.016	4.917	12240.416	0.000
L53	20.083 - 19.833 (53)	P60x0.625	40.838	2069.580	0.020	4.917	10134.583	0.000
L54	19.833 - 17 (54)	P60x0.625	41.015	2069.580	0.020	4.917	10134.583	0.000
L55	17 - 16.75 (55)	P60x0.725	41.006	2507.960	0.016	4.917	12240.416	0.000
L56	16.75 - 11.65 (56)	P60x0.75	41.301	2622.110	0.016	4.917	12786.916	0.000
L57	11.65 - 11.417 (57)	P60x0.75	41.298	2622.110	0.016	4.917	12786.916	0.000
L58	11.417 - 9.375 (58)	P60x0.75	41.412	2622.110	0.016	4.917	12786.916	0.000
L59	9.375 - 9.125 (59)	P60x0.8	41.409	2812.050	0.015	4.917	13690.333	0.000
L60	9.125 - 4.833 (60)	P60x0.8	41.630	2812.050	0.015	4.917	13690.333	0.000
L61	4.833 - 4.583 (61)	P60x0.75	41.626	2622.110	0.016	4.917	12786.916	0.000
L62	4.583 - 0 (62)	P60x0.75	41.834	2622.110	0.016	4.917	12786.916	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	191.667 - 186.667 (1)	0.002	0.015	0.000	0.001	0.000	0.017 ✔	1.000	4.8.2 ✔
L2	186.667 - 181.567 (2)	0.011	0.014	0.000	0.004	0.000	0.025 ✔	1.000	4.8.2 ✔
L3	181.567 - 176.567 (3)	0.005	0.058	0.000	0.010	0.001	0.063 ✔	1.000	4.8.2 ✔
L4	176.567 - 171.567 (4)	0.005	0.102	0.000	0.011	0.001	0.108 ✔	1.000	4.8.2 ✔
L5	171.567 - 166.567 (5)	0.006	0.149	0.000	0.011	0.001	0.155 ✔	1.000	4.8.2 ✔
L6	166.567 - 161.567 (6)	0.007	0.198	0.000	0.012	0.001	0.205 ✔	1.000	4.8.2 ✔
L7	161.567 - 156.567 (7)	0.010	0.280	0.000	0.023	0.001	0.291 ✔	1.000	4.8.2 ✔
L8	156.567 - 151.567 (8)	0.011	0.380	0.000	0.025	0.001	0.392 ✔	1.000	4.8.2 ✔
L9	151.567 - 146.567 (9)	0.016	0.538	0.000	0.040	0.002	0.557 ✔	1.000	4.8.2 ✔
L10	146.567 - 141.567 (10)	0.017	0.708	0.000	0.041	0.002	0.727 ✔	1.000	4.8.2 ✔
L11	141.567 - 141.417 (11)	0.017	0.713	0.000	0.041	0.002	0.732 ✔	1.000	4.8.2 ✔
L12	141.417 - 136.417 (12)	0.013	0.413	0.000	0.030	0.001	0.427 ✔	1.000	4.8.2 ✔
L13	136.417 - 131.417 (13)	0.014	0.497	0.000	0.031	0.001	0.512 ✔	1.000	4.8.2 ✔
L14	131.417 - 126.417 (14)	0.015	0.584	0.000	0.032	0.002	0.600 ✔	1.000	4.8.2 ✔
L15	126.417 - 121.417 (15)	0.016	0.674	0.000	0.033	0.002	0.692 ✔	1.000	4.8.2 ✔
L16	121.417 - 121.167 (16)	0.017	0.678	0.000	0.033	0.002	0.696 ✔	1.000	4.8.2 ✔
L17	121.167 - 116.167 (17)	0.016	0.575	0.000	0.030	0.001	0.592 ✔	1.000	4.8.2 ✔
L18	116.167 - 111.167 (18)	0.018	0.657	0.000	0.035	0.001	0.676 ✔	1.000	4.8.2 ✔
L19	111.167 - 110.042 (19)	0.018	0.675	0.000	0.035	0.001	0.695 ✔	1.000	4.8.2 ✔
L20	110.042 - 109.792 (20)	0.013	0.509	0.000	0.025	0.001	0.523 ✔	1.000	4.8.2 ✔
L21	109.792 - 105.083 (21)	0.014	0.567	0.000	0.026	0.001	0.582 ✔	1.000	4.8.2 ✔
L22	105.083 - 104.833 (22)	0.012	0.486	0.000	0.022	0.001	0.498 ✔	1.000	4.8.2 ✔
L23	104.833 - 100.917 (23)	0.013	0.529	0.000	0.022	0.001	0.542 ✔	1.000	4.8.2 ✔
L24	100.917 - 100.667 (24)	0.019	0.643	0.000	0.034	0.001	0.664 ✔	1.000	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
L25	100.667 - 95.833 (25)	0.020	0.709	0.000	0.034	0.001	0.730 ✔	1.000	4.8.2 ✔
L26	95.833 - 95.583 (26)	0.015	0.551	0.000	0.025	0.001	0.566 ✔	1.000	4.8.2 ✔
L27	95.583 - 90.583 (27)	0.016	0.604	0.000	0.026	0.001	0.620 ✔	1.000	4.8.2 ✔
L28	90.583 - 89.917 (28)	0.016	0.611	0.000	0.026	0.001	0.628 ✔	1.000	4.8.2 ✔
L29	89.917 - 89.667 (29)	0.012	0.498	0.000	0.020	0.001	0.510 ✔	1.000	4.8.2 ✔
L30	89.667 - 84.667 (30)	0.013	0.542	0.000	0.021	0.001	0.555 ✔	1.000	4.8.2 ✔
L31	84.667 - 80.833 (31)	0.014	0.576	0.000	0.021	0.001	0.591 ✔	1.000	4.8.2 ✔
L32	80.833 - 80.583 (32)	0.016	0.554	0.000	0.024	0.001	0.571 ✔	1.000	4.8.2 ✔
L33	80.583 - 75.583 (33)	0.017	0.598	0.000	0.024	0.001	0.615 ✔	1.000	4.8.2 ✔
L34	75.583 - 70.583 (34)	0.018	0.642	0.000	0.025	0.001	0.661 ✔	1.000	4.8.2 ✔
L35	70.583 - 69.5 (35)	0.019	0.652	0.000	0.025	0.001	0.671 ✔	1.000	4.8.2 ✔
L36	69.5 - 69.25 (36)	0.015	0.533	0.000	0.020	0.001	0.548 ✔	1.000	4.8.2 ✔
L37	69.25 - 64.25 (37)	0.016	0.571	0.000	0.021	0.001	0.588 ✔	1.000	4.8.2 ✔
L38	64.25 - 60.583 (38)	0.018	0.599	0.000	0.021	0.001	0.618 ✔	1.000	4.8.2 ✔
L39	60.583 - 60.333 (39)	0.020	0.571	0.000	0.023	0.001	0.591 ✔	1.000	4.8.2 ✔
L40	60.333 - 55.333 (40)	0.021	0.609	0.000	0.024	0.001	0.630 ✔	1.000	4.8.2 ✔
L41	55.333 - 52.167 (41)	0.021	0.633	0.000	0.024	0.001	0.655 ✔	1.000	4.8.2 ✔
L42	52.167 - 51.917 (42)	0.017	0.511	0.000	0.018	0.000	0.528 ✔	1.000	4.8.2 ✔
L43	51.917 - 46.917 (43)	0.017	0.542	0.000	0.019	0.000	0.560 ✔	1.000	4.8.2 ✔
L44	46.917 - 41.917 (44)	0.018	0.574	0.000	0.019	0.000	0.592 ✔	1.000	4.8.2 ✔
L45	41.917 - 40.333 (45)	0.019	0.584	0.000	0.019	0.000	0.603 ✔	1.000	4.8.2 ✔
L46	40.333 - 40.083 (46)	0.020	0.612	0.000	0.020	0.000	0.632 ✔	1.000	4.8.2 ✔
L47	40.083 - 35.083 (47)	0.021	0.645	0.000	0.020	0.000	0.666 ✔	1.000	4.8.2 ✔
L48	35.083 - 30.083 (48)	0.022	0.679	0.000	0.020	0.001	0.701 ✔	1.000	4.8.2 ✔
L49	30.083 - 28 (49)	0.022	0.693	0.000	0.021	0.001	0.715 ✔	1.000	4.8.2 ✔
L50	28 - 27.75 (50)	0.017	0.564	0.000	0.016	0.000	0.581 ✔	1.000	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
L51	27.75 - 22.75 (51)	0.018	0.592	0.000	0.016	0.000	0.610 ✔	1.000	4.8.2 ✔
L52	22.75 - 20.083 (52)	0.018	0.607	0.000	0.016	0.000	0.625 ✔	1.000	4.8.2 ✔
L53	20.083 - 19.833 (53)	0.022	0.716	0.000	0.020	0.000	0.739 ✔	1.000	4.8.2 ✔
L54	19.833 - 17 (54)	0.023	0.735	0.000	0.020	0.000	0.758 ✔	1.000	4.8.2 ✔
L55	17 - 16.75 (55)	0.019	0.625	0.000	0.016	0.000	0.645 ✔	1.000	4.8.2 ✔
L56	16.75 - 11.65 (56)	0.019	0.630	0.000	0.016	0.000	0.649 ✔	1.000	4.8.2 ✔
L57	11.65 - 11.417 (57)	0.019	0.631	0.000	0.016	0.000	0.650 ✔	1.000	4.8.2 ✔
L58	11.417 - 9.375 (58)	0.019	0.642	0.000	0.016	0.000	0.662 ✔	1.000	4.8.2 ✔
L59	9.375 - 9.125 (59)	0.018	0.599	0.000	0.015	0.000	0.617 ✔	1.000	4.8.2 ✔
L60	9.125 - 4.833 (60)	0.018	0.621	0.000	0.015	0.000	0.639 ✔	1.000	4.8.2 ✔
L61	4.833 - 4.583 (61)	0.020	0.669	0.000	0.016	0.000	0.689 ✔	1.000	4.8.2 ✔
L62	4.583 - 0 (62)	0.020	0.694	0.000	0.016	0.000	0.714 ✔	1.000	4.8.2 ✔

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	191.667 - 186.667	Pole	P18x0.375	1	-1.781	784.878	**	**
L2	186.667 - 181.567	Pole	P24x0.375	2	-11.477	1052.070	**	**
L3	181.567 - 176.567	Pole	P24x0.375	3	-5.071	1052.070	**	**
L4	176.567 - 171.567	Pole	P24x0.375	4	-5.777	1052.070	**	**
L5	171.567 - 166.567	Pole	P24x0.375	5	-6.485	1052.070	**	**
L6	166.567 - 161.567	Pole	P24x0.375	6	-7.197	1052.070	**	**
L7	161.567 - 156.567	Pole	P24x0.375	7	-10.914	1052.070	**	**
L8	156.567 - 151.567	Pole	P24x0.375	8	-11.669	1052.070	**	**
L9	151.567 - 146.567	Pole	P24x0.375	9	-17.337	1052.070	**	**
L10	146.567 - 141.567	Pole	P24x0.375	10	-18.235	1052.070	**	**
L11	141.567 -	Pole	P24x0.375	11	-18.273	1052.070	**	**

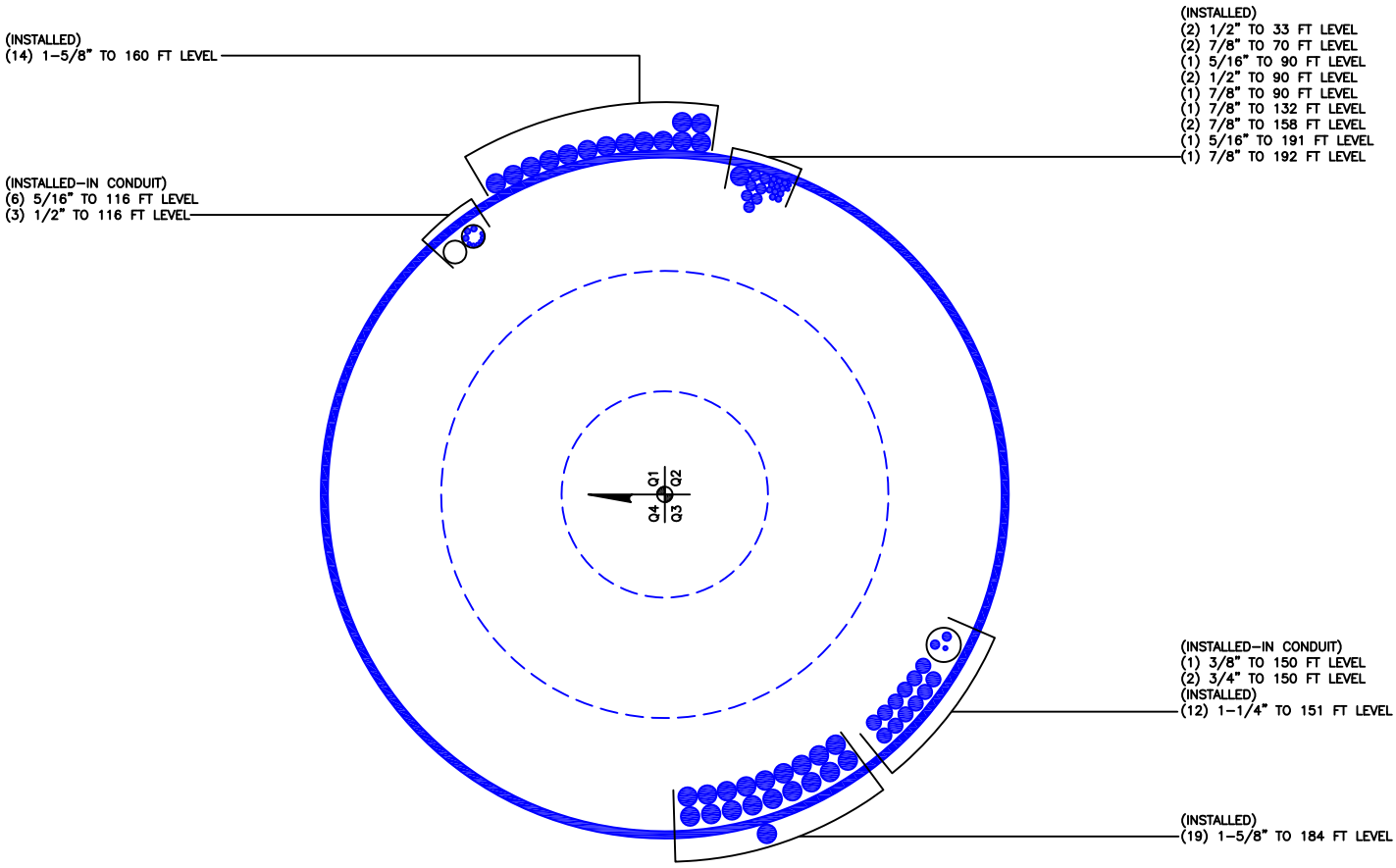
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
	141.417							
L12	141.417 - 136.417	Pole	P36x0.375	12	-19.443	1490.100	**	**
L13	136.417 - 131.417	Pole	P36x0.375	13	-21.072	1490.100	**	**
L14	131.417 - 126.417	Pole	P36x0.375	14	-22.276	1490.100	**	**
L15	126.417 - 121.417	Pole	P36x0.375	15	-24.526	1490.100	**	**
L16	121.417 - 121.167	Pole	P36x0.375	16	-24.605	1490.100	**	**
L17	121.167 - 116.167	Pole	P42x0.375	17	-26.123	1668.870	**	**
L18	116.167 - 111.167	Pole	P42x0.375	18	-30.183	1668.870	**	**
L19	111.167 - 110.042	Pole	P42x0.375	19	-30.495	1668.870	**	**
L20	110.042 - 109.792	Pole	P42x0.4875	20	-30.586	2332.130	**	**
L21	109.792 - 105.083	Pole	P42x0.4875	21	-32.228	2332.130	**	**
L22	105.083 - 104.833	Pole	P42x0.5625	22	-32.340	2767.950	**	**
L23	104.833 - 100.917	Pole	P42x0.5625	23	-34.763	2767.950	**	**
L24	100.917 - 100.667	Pole	P48x0.375	24	-34.874	1847.490	**	**
L25	100.667 - 95.833	Pole	P48x0.375	25	-36.732	1847.490	**	**
L26	95.833 - 95.583	Pole	P48x0.475	26	-36.830	2481.390	**	**
L27	95.583 - 90.583	Pole	P48x0.475	27	-38.630	2481.390	**	**
L28	90.583 - 89.917	Pole	P48x0.475	28	-39.028	2481.390	**	**
L29	89.917 - 89.667	Pole	P48x0.575	29	-39.144	3174.020	**	**
L30	89.667 - 84.667	Pole	P48x0.575	30	-41.997	3174.020	**	**
L31	84.667 - 80.833	Pole	P48x0.575	31	-45.188	3174.020	**	**
L32	80.833 - 80.583	Pole	P54x0.4875	32	-45.396	2797.170	**	**
L33	80.583 - 75.583	Pole	P54x0.4875	33	-47.985	2797.170	**	**
L34	75.583 - 70.583	Pole	P54x0.4875	34	-50.772	2797.170	**	**
L35	70.583 - 69.5	Pole	P54x0.4875	35	-51.785	2797.170	**	**
L36	69.5 - 69.25	Pole	P54x0.5875	36	-51.977	3545.230	**	**
L37	69.25 - 64.25	Pole	P54x0.5875	37	-58.339	3545.230	**	**
L38	64.25 - 60.583	Pole	P54x0.5875	38	-63.514	3545.230	**	**
L39	60.583 - 60.333	Pole	P60x0.5125	39	-63.722	3222.890	**	**
L40	60.333 - 55.333	Pole	P60x0.5125	40	-67.517	3222.890	**	**
L41	55.333 - 52.167	Pole	P60x0.5125	41	-69.015	3222.890	**	**
L42	52.167 - 51.917	Pole	P60x0.625	42	-69.161	4139.150	**	**
L43	51.917 - 46.917	Pole	P60x0.625	43	-72.267	4139.150	**	**
L44	46.917 - 41.917	Pole	P60x0.625	44	-76.245	4139.150	**	**
L45	41.917 - 40.333	Pole	P60x0.625	45	-77.495	4139.150	**	**
L46	40.333 - 40.083	Pole	P60x0.6	46	-77.688	3929.110	**	**
L47	40.083 - 35.083	Pole	P60x0.6	47	-81.362	3929.110	**	**
L48	35.083 - 30.083	Pole	P60x0.6	48	-84.595	3929.110	**	**
L49	30.083 - 28	Pole	P60x0.6	49	-85.718	3929.110	**	**
L50	28 - 27.75	Pole	P60x0.725	50	-85.884	5015.910	**	**
L51	27.75 - 22.75	Pole	P60x0.725	51	-90.001	5015.910	**	**
L52	22.75 - 20.083	Pole	P60x0.725	52	-92.225	5015.910	**	**
L53	20.083 - 19.833	Pole	P60x0.625	53	-92.424	4139.150	**	**
L54	19.833 - 17	Pole	P60x0.625	54	-94.569	4139.150	**	**
L55	17 - 16.75	Pole	P60x0.725	55	-94.794	5015.910	**	**
L56	16.75 - 11.65	Pole	P60x0.75	56	-99.019	5244.230	**	**
L57	11.65 - 11.417	Pole	P60x0.75	57	-99.181	5244.230	**	**
L58	11.417 - 9.375	Pole	P60x0.75	58	-100.545	5244.230	**	**

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L59	9.375 - 9.125	Pole	P60x0.8	59	-100.725	5624.100	**	**
L60	9.125 - 4.833	Pole	P60x0.8	60	-103.702	5624.100	**	**
L61	4.833 - 4.583	Pole	P60x0.75	61	-103.879	5244.230	**	**
L62	4.583 - 0	Pole	P60x0.75	62	-107.010	5244.230	**	**
							**	
						Pole (L54)	**	**
						RATING =	**	**

Program Version 7.0.5.1

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT:826217

APPENDIX C

ADDITIONAL CALCULATIONS

CCIpole

per TIA-222- G

Site BU: 826217

Work Order: 1568933

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	191.667	10.084		0	18	18	0.375	n/a	A53-B-42
2	181.583	40.166		0	24.00	24	0.375	n/a	A53-B-42
3	141.417	20.25		0	36.00	36	0.375	n/a	A53-B-42
4	121.167	20.25		0	42.00	42	0.375	n/a	A53-B-42
5	100.917	20.084		0	48.00	48	0.375	n/a	A53-B-42
6	80.833	20.25		0	54.00	54	0.375	n/a	A53-B-42
7	60.583	20.25		0	60.00	60	0.375	n/a	A53-B-42
8	40.333	20.25		0	60.00	60	0.5	n/a	A53-B-42
9	20.083	20.083		0	60.00	60	0.625	n/a	A53-B-42

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	0	9.375	plate	CCI-AFP-040075	2				70												313		
2	20.083	40.333	plate	CCI-SFP-060100	3				66						189						312		
3	40.333	60.583	plate	CCI-SFP-065125	3				67.5						188						307		
4	60.583	80.833	plate	CCI-SFP-060100	3				67.5						190						307		
5	80.833	89.917	plate	CCI-SFP-045100	3				72						192						312		
6	100.917	105.083	plate	CCI-AFP-040075	3			53						178							303		
7	4.833	11.667	plate	CCI-AFP-040075	1										198								
8	0	17	plate	CCI-SFP-060100	4		36				113						223			294			
9	20.083	28	plate	CCI-SFP-060100	4			53					157					247				339	
10	40.333	52.167	plate	CCI-SFP-060100	4		36					126					234			294			
11	60.583	69.5	plate	CCI-SFP-045100	4				80				155					254					341
12	80.833	95.833	plate	CCI-SFP-045100	3					93						213						333	
13	100.917	110.042	plate	CCI-SFP-045100	3		30						150						270				
14																							

Reinforcement Details

	B (in)	H (in)	Gross Area (in^2)	Pole Face to Centroid (in)	Bottom Termination Length (in)	Top Termination Length (in)	L_u (in)	Net Area (in^2)	Bolt Hole Size (in)	Reinforcement Material
1	4	0.75	3	0.375	18.000	18.000	16.000	2.063	1.1875	A572-65
2	6	1	6	0.5	24.000	24.000	16.000	4.750	1.1875	A572-65
3	6.5	1.25	8.125	0.625	33.000	33.000	19.000	6.563	1.1875	A572-65
4	6	1	6	0.5	24.000	24.000	16.000	4.750	1.1875	A572-65
5	4.5	1	4.5	0.5	18.000	18.000	20.000	3.250	1.1875	A572-65
6	4	0.75	3	0.375	18.000	18.000	16.000	2.063	1.1875	A572-65
7	4	0.75	3	0.375	18.000	18.000	16.000	2.063	1.1875	A572-65
8	6	1	6	0.5	24.000	24.000	16.000	4.750	1.1875	A572-65
9	6	1	6	0.5	24.000	24.000	16.000	4.750	1.1875	A572-65
10	6	1	6	0.5	24.000	24.000	16.000	4.750	1.1875	A572-65
11	4.5	1	4.5	0.5	18.000	18.000	20.000	3.250	1.1875	A572-65
12	4.5	1	4.5	0.5	18.000	18.000	20.000	3.250	1.1875	A572-65
13	4.5	1	4.5	0.5	18.000	18.000	20.000	3.250	1.1875	A572-65

TNX Geometry Input

Increment (ft): 5

	Section Height (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Tapered Pole Grade	Weight Multiplier
1	191.667 - 186.667	5	0	0	18.000	18.000	0.375	A53-B-42	1.000
2	186.667 - 181.567	5.1		0	24.000	24.000	0.375	A53-B-42	1.000
3	181.567 - 176.567	5		0	24.000	24.000	0.375	A53-B-42	1.000
4	176.567 - 171.567	5		0	24.000	24.000	0.375	A53-B-42	1.000
5	171.567 - 166.567	5		0	24.000	24.000	0.375	A53-B-42	1.000
6	166.567 - 161.567	5		0	24.000	24.000	0.375	A53-B-42	1.000
7	161.567 - 156.567	5		0	24.000	24.000	0.375	A53-B-42	1.000
8	156.567 - 151.567	5		0	24.000	24.000	0.375	A53-B-42	1.000
9	151.567 - 146.567	5		0	24.000	24.000	0.375	A53-B-42	1.000
10	146.567 - 141.567	5		0	24.000	24.000	0.375	A53-B-42	1.000
11	141.567 - 141.417	0.15	0	0	24.000	24.000	0.375	A53-B-42	1.000
12	141.417 - 136.417	5		0	36.000	36.000	0.375	A53-B-42	1.000
13	136.417 - 131.417	5		0	36.000	36.000	0.375	A53-B-42	1.000
14	131.417 - 126.417	5		0	36.000	36.000	0.375	A53-B-42	1.000
15	126.417 - 121.417	5		0	36.000	36.000	0.375	A53-B-42	1.000
16	121.417 - 121.167	0.25	0	0	36.000	36.000	0.375	A53-B-42	1.000
17	121.167 - 116.167	5		0	42.000	42.000	0.375	A53-B-42	1.000
18	116.167 - 111.167	5		0	42.000	42.000	0.375	A53-B-42	1.000
19	111.167 - 110.042	1.125		0	42.000	42.000	0.375	A53-B-42	1.000
20	110.042 - 109.792	0.25		0	42.000	42.000	0.4875	A53-B-42	0.984
21	109.792 - 105.083	4.709		0	42.000	42.000	0.4875	A53-B-42	0.984
22	105.083 - 104.833	0.25		0	42.000	42.000	0.5625	A53-B-42	0.977
23	104.833 - 100.917	3.916	0	0	42.000	42.000	0.5625	A53-B-42	0.977
24	100.917 - 100.667	0.25		0	48.000	48.000	0.375	A53-B-42	1.000
25	100.667 - 95.833	4.834		0	48.000	48.000	0.375	A53-B-42	1.000
26	95.833 - 95.583	0.25		0	48.000	48.000	0.475	A53-B-42	0.981
27	95.583 - 90.583	5		0	48.000	48.000	0.475	A53-B-42	0.981
28	90.583 - 89.917	0.666		0	48.000	48.000	0.475	A53-B-42	0.981
29	89.917 - 89.667	0.25		0	48.000	48.000	0.575	A53-B-42	0.970
30	89.667 - 84.667	5		0	48.000	48.000	0.575	A53-B-42	0.970
31	84.667 - 80.833	3.834	0	0	48.000	48.000	0.575	A53-B-42	0.970
32	80.833 - 80.583	0.25		0	54.000	54.000	0.4875	A53-B-42	0.990
33	80.583 - 75.583	5		0	54.000	54.000	0.4875	A53-B-42	0.990
34	75.583 - 70.583	5		0	54.000	54.000	0.4875	A53-B-42	0.990
35	70.583 - 69.5	1.083		0	54.000	54.000	0.4875	A53-B-42	0.990
36	69.5 - 69.25	0.25		0	54.000	54.000	0.5875	A53-B-42	1.006
37	69.25 - 64.25	5		0	54.000	54.000	0.5875	A53-B-42	1.006
38	64.25 - 60.583	3.667	0	0	54.000	54.000	0.5875	A53-B-42	1.006
39	60.583 - 60.333	0.25		0	60.000	60.000	0.5125	A53-B-42	0.988
40	60.333 - 55.333	5		0	60.000	60.000	0.5125	A53-B-42	0.988
41	55.333 - 52.167	3.166		0	60.000	60.000	0.5125	A53-B-42	0.988
42	52.167 - 51.917	0.25		0	60.000	60.000	0.625	A53-B-42	1.017
43	51.917 - 46.917	5		0	60.000	60.000	0.625	A53-B-42	1.017
44	46.917 - 41.917	5		0	60.000	60.000	0.625	A53-B-42	1.017
45	41.917 - 40.333	1.584	0	0	60.000	60.000	0.625	A53-B-42	1.017
46	40.333 - 40.083	0.25		0	60.000	60.000	0.6	A53-B-42	0.995
47	40.083 - 35.083	5		0	60.000	60.000	0.6	A53-B-42	0.995
48	35.083 - 30.083	5		0	60.000	60.000	0.6	A53-B-42	0.995
49	30.083 - 28	2.083		0	60.000	60.000	0.6	A53-B-42	0.995
50	28 - 27.75	0.25		0	60.000	60.000	0.725	A53-B-42	1.003
51	27.75 - 22.75	5		0	60.000	60.000	0.725	A53-B-42	1.003
52	22.75 - 20.083	2.667	0	0	60.000	60.000	0.725	A53-B-42	1.003
53	20.083 - 19.833	0.25		0	60.000	60.000	0.625	A53-B-42	1.000
54	19.833 - 17	2.833		0	60.000	60.000	0.625	A53-B-42	1.000
55	17 - 16.75	0.25		0	60.000	60.000	0.725	A53-B-42	1.041
56	16.75 - 11.65	5.1		0	60.000	60.000	0.75	A53-B-42	1.028
57	11.65 - 11.417	0.233		0	60.000	60.000	0.75	A53-B-42	1.028
58	11.417 - 9.375	2.042		0	60.000	60.000	0.75	A53-B-42	1.028
59	9.375 - 9.125	0.25		0	60.000	60.000	0.8	A53-B-42	1.005
60	9.125 - 4.833	4.292		0	60.000	60.000	0.8	A53-B-42	1.005
61	4.833 - 4.583	0.25		0	60.000	60.000	0.75	A53-B-42	1.050
62	4.583 - 0	4.583		0	60.000	60.000	0.75	A53-B-42	1.050

TNX Section Forces

Increment (ft): 5

	Section Height (ft)	TNX Output P_u (K)	TNX Output M_{ux} (kip-ft)	TNX Output V_u (K)
1	191.667 - 186.667	1.78	5.35	0.34
2	186.667 - 181.567	4.36	10.58	4.92
3	181.567 - 176.567	5.07	36.10	5.32
4	176.567 - 171.567	5.78	63.59	5.65
5	171.567 - 166.567	6.49	92.71	5.98
6	166.567 - 161.567	7.20	123.44	6.30
7	161.567 - 156.567	10.91	174.46	12.19
8	156.567 - 151.567	11.67	237.29	12.92
9	151.567 - 146.567	17.34	335.76	20.79
10	146.567 - 141.567	18.24	441.36	21.44
11	141.567 - 141.417	18.27	444.58	21.46
12	141.417 - 136.417	19.44	553.17	22.01
13	136.417 - 131.417	21.07	665.45	23.02
14	131.417 - 126.417	22.28	781.76	23.48
15	126.417 - 121.417	24.53	902.19	24.67
16	121.417 - 121.167	24.61	908.36	24.69
17	121.167 - 116.167	26.12	1033.43	25.32
18	116.167 - 111.167	30.18	1180.21	28.85
19	111.167 - 110.042	30.50	1212.74	28.96
20	110.042 - 109.792	30.59	1219.99	28.98
21	109.792 - 105.083	32.23	1358.65	29.99
22	105.083 - 104.833	32.34	1366.15	30.04
23	104.833 - 100.917	34.76	1485.75	30.98
24	100.917 - 100.667	34.87	1493.50	31.00
25	100.667 - 95.833	36.73	1644.81	31.58
26	95.833 - 95.583	36.83	1652.71	31.60
27	95.583 - 90.583	38.63	1811.95	32.08
28	90.583 - 89.917	39.03	1834.36	32.41
29	89.917 - 89.667	39.14	1842.46	32.43
30	89.667 - 84.667	42.00	2005.80	32.96
31	84.667 - 80.833	45.19	2132.73	33.41
32	80.833 - 80.583	45.40	2141.06	33.43
33	80.583 - 75.583	47.99	2309.40	33.93
34	75.583 - 70.583	50.77	2480.22	34.43
35	70.583 - 69.5	51.78	2518.18	35.03
36	69.5 - 69.25	51.98	2526.93	35.05
37	69.25 - 64.25	58.34	2704.98	36.40
38	64.25 - 60.583	63.51	2840.02	37.42
39	60.583 - 60.333	63.72	2849.37	37.44
40	60.333 - 55.333	67.52	3037.77	37.97
41	55.333 - 52.167	69.01	3158.42	38.23
42	52.167 - 51.917	69.16	3167.98	38.25
43	51.917 - 46.917	72.27	3360.49	38.73
44	46.917 - 41.917	76.25	3555.18	39.22
45	41.917 - 40.333	77.49	3617.35	39.37
46	40.333 - 40.083	77.69	3627.18	39.37
47	40.083 - 35.083	81.36	3824.74	39.75
48	35.083 - 30.083	84.59	4024.79	40.20
49	30.083 - 28	85.72	4108.66	40.32
50	28 - 27.75	85.88	4118.74	40.32
51	27.75 - 22.75	90.00	4321.40	40.66
52	22.75 - 20.083	92.23	4430.17	40.84
53	20.083 - 19.833	92.42	4440.39	40.84
54	19.833 - 17	94.57	4556.43	41.01
55	17 - 16.75	94.79	4566.69	41.01
56	16.75 - 11.65	99.02	4776.74	41.30
57	11.65 - 11.417	99.18	4786.36	41.30
58	11.417 - 9.375	100.54	4870.83	41.41
59	9.375 - 9.125	100.73	4881.18	41.41
60	9.125 - 4.833	103.70	5059.42	41.63
61	4.833 - 4.583	103.88	5069.82	41.63
62	4.583 - 0	107.01	5261.10	41.83

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
191.67 - 186.67	Pole	TP18x18x0.375	Pole	1.7%	Pass
186.67 - 181.57	Pole	TP24x24x0.375	Pole	2.1%	Pass
181.57 - 176.57	Pole	TP24x24x0.375	Pole	6.3%	Pass
176.57 - 171.57	Pole	TP24x24x0.375	Pole	10.8%	Pass
171.57 - 166.57	Pole	TP24x24x0.375	Pole	15.5%	Pass
166.57 - 161.57	Pole	TP24x24x0.375	Pole	20.5%	Pass
161.57 - 156.57	Pole	TP24x24x0.375	Pole	29.1%	Pass
156.57 - 151.57	Pole	TP24x24x0.375	Pole	39.2%	Pass
151.57 - 146.57	Pole	TP24x24x0.375	Pole	55.6%	Pass
146.57 - 141.57	Pole	TP24x24x0.375	Pole	72.7%	Pass
141.57 - 141.42	Pole	TP24x24x0.375	Pole	73.2%	Pass
141.42 - 136.42	Pole	TP36x36x0.375	Pole	42.7%	Pass
136.42 - 131.42	Pole	TP36x36x0.375	Pole	51.2%	Pass
131.42 - 126.42	Pole	TP36x36x0.375	Pole	60.0%	Pass
126.42 - 121.42	Pole	TP36x36x0.375	Pole	69.1%	Pass
121.42 - 121.17	Pole	TP36x36x0.375	Pole	69.6%	Pass
121.17 - 116.17	Pole	TP42x42x0.375	Pole	59.2%	Pass
116.17 - 111.17	Pole	TP42x42x0.375	Pole	67.6%	Pass
111.17 - 110.04	Pole	TP42x42x0.375	Pole	69.5%	Pass
110.04 - 109.79	Pole + Reinf.	TP42x42x0.4875	Reinf. 13 Tension Rupture	54.2%	Pass
109.79 - 105.08	Pole + Reinf.	TP42x42x0.4875	Reinf. 13 Tension Rupture	60.3%	Pass
105.08 - 104.83	Pole + Reinf.	TP42x42x0.5625	Reinf. 6 Tension Rupture	55.1%	Pass
104.83 - 100.92	Pole + Reinf.	TP42x42x0.5625	Reinf. 6 Tension Rupture	59.9%	Pass
100.92 - 100.67	Pole	TP48x48x0.375	Pole	66.3%	Pass
100.67 - 95.83	Pole	TP48x48x0.375	Pole	73.0%	Pass
95.83 - 95.58	Pole + Reinf.	TP48x48x0.475	Pole	58.3%	Pass
95.58 - 90.58	Pole + Reinf.	TP48x48x0.475	Pole	63.8%	Pass
90.58 - 89.92	Pole + Reinf.	TP48x48x0.475	Pole	64.6%	Pass
89.92 - 89.67	Pole + Reinf.	TP48x48x0.575	Pole	53.9%	Pass
89.67 - 84.67	Pole + Reinf.	TP48x48x0.575	Pole	58.6%	Pass
84.67 - 80.83	Pole + Reinf.	TP48x48x0.575	Pole	62.3%	Pass
80.83 - 80.58	Pole + Reinf.	TP54x54x0.4875	Pole	58.7%	Pass
80.58 - 75.58	Pole + Reinf.	TP54x54x0.4875	Pole	63.2%	Pass
75.58 - 70.58	Pole + Reinf.	TP54x54x0.4875	Pole	67.9%	Pass
70.58 - 69.5	Pole + Reinf.	TP54x54x0.4875	Pole	68.9%	Pass
69.5 - 69.25	Pole + Reinf.	TP54x54x0.5875	Pole	57.2%	Pass
69.25 - 64.25	Pole + Reinf.	TP54x54x0.5875	Pole	61.3%	Pass
64.25 - 60.58	Pole + Reinf.	TP54x54x0.5875	Pole	64.4%	Pass
60.58 - 60.33	Pole + Reinf.	TP60x60x0.5125	Pole	60.4%	Pass
60.33 - 55.33	Pole + Reinf.	TP60x60x0.5125	Pole	64.4%	Pass
55.33 - 52.17	Pole + Reinf.	TP60x60x0.5125	Pole	66.9%	Pass
52.17 - 51.92	Pole + Reinf.	TP60x60x0.625	Pole	56.1%	Pass
51.92 - 46.92	Pole + Reinf.	TP60x60x0.625	Pole	59.4%	Pass
46.92 - 41.92	Pole + Reinf.	TP60x60x0.625	Pole	62.9%	Pass
41.92 - 40.33	Pole + Reinf.	TP60x60x0.625	Pole	64.0%	Pass
40.33 - 40.08	Pole + Reinf.	TP60x60x0.6	Pole	64.7%	Pass
40.08 - 35.08	Pole + Reinf.	TP60x60x0.6	Pole	68.2%	Pass
35.08 - 30.08	Pole + Reinf.	TP60x60x0.6	Pole	71.7%	Pass
30.08 - 28	Pole + Reinf.	TP60x60x0.6	Pole	73.2%	Pass
28 - 27.75	Pole + Reinf.	TP60x60x0.725	Pole	61.6%	Pass
27.75 - 22.75	Pole + Reinf.	TP60x60x0.725	Pole	64.6%	Pass
22.75 - 20.08	Pole + Reinf.	TP60x60x0.725	Pole	66.3%	Pass
20.08 - 19.83	Pole	TP60x60x0.625	Pole	73.9%	Pass
19.83 - 17	Pole	TP60x60x0.625	Pole	75.8%	Pass
17 - 16.75	Pole + Reinf.	TP60x60x0.725	Pole	65.7%	Pass
16.75 - 11.65	Pole + Reinf.	TP60x60x0.75	Pole	67.2%	Pass
11.65 - 11.42	Pole + Reinf.	TP60x60x0.75	Pole	67.3%	Pass
11.42 - 9.38	Pole + Reinf.	TP60x60x0.75	Pole	68.5%	Pass
9.38 - 9.13	Pole + Reinf.	TP60x60x0.8	Reinf. 7 Tension Rupture	68.1%	Pass
9.13 - 4.83	Pole + Reinf.	TP60x60x0.8	Reinf. 7 Tension Rupture	70.6%	Pass
4.83 - 4.58	Pole + Reinf.	TP60x60x0.75	Pole	72.2%	Pass
4.58 - 0	Pole + Reinf.	TP60x60x0.75	Pole	74.9%	Pass
				Summary	
			Pole	75.8%	Pass
			Reinforcement	72.9%	Pass
			Overall	75.8%	Pass

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in^4)			Area (in^2)			% Capacity												
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13
191.67 - 186.67	807	n/a	807	20.76	n/a	20.76	1.7%													
186.67 - 181.57	1942	n/a	1942	27.83	n/a	27.83	2.1%													
181.57 - 176.57	1942	n/a	1942	27.83	n/a	27.83	6.3%													
176.57 - 171.57	1942	n/a	1942	27.83	n/a	27.83	10.8%													
171.57 - 166.57	1942	n/a	1942	27.83	n/a	27.83	15.5%													
166.57 - 161.57	1942	n/a	1942	27.83	n/a	27.83	20.5%													
161.57 - 156.57	1942	n/a	1942	27.83	n/a	27.83	29.1%													
156.57 - 151.57	1942	n/a	1942	27.83	n/a	27.83	39.2%													
151.57 - 146.57	1942	n/a	1942	27.83	n/a	27.83	55.6%													
146.57 - 141.57	1942	n/a	1942	27.83	n/a	27.83	72.7%													
141.57 - 141.42	1942	n/a	1942	27.83	n/a	27.83	73.2%													
141.42 - 136.42	6659	n/a	6659	41.97	n/a	41.97	42.7%													
136.42 - 131.42	6659	n/a	6659	41.97	n/a	41.97	51.2%													
131.42 - 126.42	6659	n/a	6659	41.97	n/a	41.97	60.0%													
126.42 - 121.42	6659	n/a	6659	41.97	n/a	41.97	69.1%													
121.42 - 121.17	6659	n/a	6659	41.97	n/a	41.97	69.6%													
121.17 - 116.17	10622	n/a	10622	49.04	n/a	49.04	59.2%													
116.17 - 111.17	10622	n/a	10622	49.04	n/a	49.04	67.6%													
111.17 - 110.04	10622	n/a	10622	49.04	n/a	49.04	69.5%													
110.04 - 109.79	10622	3132	13754	49.04	13.50	62.54	53.9%													54.2%
109.79 - 105.08	10622	3132	13754	49.04	13.50	62.54	59.9%													60.3%
105.08 - 104.83	10622	5106	15728	49.04	22.50	71.54	52.8%						55.1%							53.4%
104.83 - 100.92	10622	5106	15728	49.04	22.50	71.54	57.4%						59.9%							58.1%
100.92 - 100.67	15908	n/a	15908	56.11	n/a	56.11	66.3%													
100.67 - 95.83	15908	n/a	15908	56.11	n/a	56.11	73.0%													
95.83 - 95.58	15908	4064	19972	56.11	13.50	69.61	58.3%												57.7%	
95.58 - 90.58	15908	4064	19972	56.11	13.50	69.61	63.8%												63.2%	
90.58 - 89.92	15908	4064	19972	56.11	13.50	69.61	64.6%												63.9%	
89.92 - 89.67	15908	8127	24036	56.11	27.00	83.11	53.9%					53.3%							53.3%	
89.67 - 84.67	15908	8127	24036	56.11	27.00	83.11	58.6%					58.0%							58.0%	
84.67 - 80.83	15908	8127	24036	56.11	27.00	83.11	62.3%					61.7%							61.7%	
80.83 - 80.58	22710	6614	29324	63.18	18.00	81.18	58.7%				52.1%									
80.58 - 75.58	22710	6614	29324	63.18	18.00	81.18	63.2%				56.1%									
75.58 - 70.58	22710	6614	29324	63.18	18.00	81.18	67.9%				60.2%									
70.58 - 69.5	22710	6614	29324	63.18	18.00	81.18	68.9%				61.2%									
69.5 - 69.25	22710	12687	35397	63.18	36.00	99.18	57.2%				50.8%							54.8%		
69.25 - 64.25	22710	12687	35397	63.18	36.00	99.18	61.3%				54.5%							58.8%		
64.25 - 60.58	22710	12687	35397	63.18	36.00	99.18	64.4%				57.2%							61.8%		
60.58 - 60.33	31217	11364	42581	70.24	24.38	94.62	60.4%			52.5%										
60.33 - 55.33	31217	11364	42581	70.24	24.38	94.62	64.4%			56.0%										
55.33 - 52.17	31217	11364	42581	70.24	24.38	94.62	66.9%			58.2%										
52.17 - 51.92	31219	19812	51030	70.24	48.38	118.62	56.1%			48.4%							47.6%			
51.92 - 46.92	31219	19812	51030	70.24	48.38	118.62	59.4%			51.3%							50.5%			
46.92 - 41.92	31219	19812	51030	70.24	48.38	118.62	62.9%			54.2%							53.4%			
41.92 - 40.33	31219	19812	51030	70.24	48.38	118.62	64.0%			55.2%							54.3%			
40.33 - 40.08	41363	7892	49255	93.46	18.00	111.46	64.7%		58.2%											
40.08 - 35.08	41363	7892	49255	93.46	18.00	111.46	68.2%		61.4%											
35.08 - 30.08	41363	7892	49255	93.46	18.00	111.46	71.7%		64.6%											
30.08 - 28	41363	7892	49255	93.46	18.00	111.46	73.2%		65.9%											
28 - 27.75	41368	17587	58955	93.46	42.00	135.46	61.6%		54.2%							54.4%				
27.75 - 22.75	41368	17587	58955	93.46	42.00	135.46	64.6%		56.9%							57.1%				
22.75 - 20.08	41368	17587	58955	93.46	42.00	135.46	66.3%		58.3%							58.5%				
20.08 - 19.83	51381	n/a	51381	116.58	n/a	116.58	73.9%													
19.83 - 17	51381	n/a	51381	116.58	n/a	116.58	75.8%													
17 - 16.75	51383	8145	59528	116.58	24.00	140.58	65.7%								57.8%					
16.75 - 11.65	51395	9920	61315	116.58	27.00	143.58	67.2%							66.9%	60.0%					
11.65 - 11.42	51395	9920	61315	116.58	27.00	143.58	67.3%							67.1%	60.2%					
11.42 - 9.38	51395	9920	61315	116.58	27.00	143.58	68.5%							68.2%	61.2%					
9.38 - 9.13	51382	13787	65169	116.58	33.00	149.58	64.1%	67.6%						68.1%	58.2%					
9.13 - 4.83	51382	13787	65169	116.58	33.00	149.58	66.4%	70.0%						70.6%	60.3%					
4.83 - 4.58	51446	9839	61284	116.58	30.00	146.58	72.2%	70.3%							62.9%					
4.58 - 0	51446	9839	61284	116.58	30.00	146.58	74.9%	72.9%							65.2%					

Note: Section capacity checked in 5 degree increments.

Stiffened or Unstiffened, Exterior Flange Plate - Any Bolt Material TIA Rev G

Site Data

BU#: *826217*
Site Name: *Newington ,CT*
App #: *421391 Rev. 7*

Reactions		
Mu	10.578	ft-kips
Axial, Pu:	4.356	kips
Shear, Vu:	4.922	kips
Elevation:	180	feet

Bolt Threads:
X-Excluded
φVn=φ(0.55*Ab*Fu)
φ=0.75, φ*Vn (kips):
38.88

Pole Manufacturer:	Pirod

If No stiffeners, Criteria:	TIA G	<-Only Applcable to Unstiffened Cases

Bolt Data

Qty:	16		
Diameter (in.):	1	Bolt Fu:	120
Bolt Material:	A325	Bolt Fy:	92
N/A:		<-- Disregard	
N/A:		<-- Disregard	
Circle (in.):	21		

Plate Data

Diam:	24	in
Thick, t:	1.25	in
Grade (Fy):	36	ksi
Strength, Fu:	58	ksi
Single-Rod B-eff:	3.53	in

Stiffener Data (Welding at Both Sides)

Config:	2	*
Weld Type:	Fillet	
Groove Depth:		<-- Disregard
Groove Angle:		<-- Disregard
Fillet H. Weld:	0.3125	in
Fillet V. Weld:	0.3125	in
Width:	3	in
Height:	5	in
Thick:	0.625	in
Notch:		in
Grade:	36	ksi
Weld str.:	70	ksi

Pole Data

Diam:	18	in
Thick:	0.375	in
Grade:	42	ksi
# of Sides:	0	"0" IF Round
Fu	60	ksi
Reinf. Fillet Weld	0	"0" if None

Flange Bolt Results

			Rigid
Bolt Tension Capacity, φ*Tn,**B1**:	54.54	kips	φ*Tn
Adjusted φ*Tn (due to Vu=Vu/Qty), **B**:	54.54	kips	φTn[(1-(Vu/φVn)^2]^0.5
Max Bolt directly applied Tu:	1.24	Kips	
Min. PL "tc" for **B** cap. **w/o** Pry:	1.087	in	
Min PL "treq" for actual **T w/ Pry**:	0.126	in	
Min PL "t1" for actual **T w/o Pry**:	0.164	in	
T allowable w/o Prying:	54.54	kips	α'<0 case
Prying Force, q:	0.00	kips	
Total Bolt Tension=Tu+q:	1.24	kips	
Non-Prying Bolt Stress Ratio, Tu/B:	2.3%	**Pass**	

Exterior Flange Plate Results Flexural Check — Rigid

Compression Side Plate Stress:	Rohn/Pirod, OK	TIA G
Allowable Plate Stress:	32.4 ksi	φ*Fy
Compression Plate Stress Ratio:	Rohn/Pirod, OK	Comp. Y.L. Length:
No Prying		10.82
Tension Side Stress Ratio, (treq/t)^2:	1.0% **Pass**	

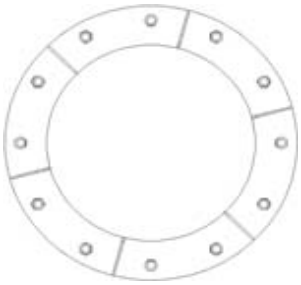
b/Le>2, Stiffeners are not fully effective

Stiffener Results N/A for Rohn / Pirod

Horizontal Weld :	N/A
Vertical Weld:	N/A
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	N/A
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	N/A
Plate Comp. (AISC Bracket):	N/A

Pole Results

Pole Punching Shear Check: N/A



* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

Stiffened or Unstiffened, Exterior Flange Plate - Any Bolt Material TIA Rev G

Site Data

BU#: *826217*
Site Name: *Newington ,CT*
App #: *421391 Rev. 7*

Reactions		
Mu	444.58	ft-kips
Axial, Pu:	18.272	kips
Shear, Vu:	21.456	kips
Elevation:	140	feet

Bolt Threads:
X-Excluded
φVn=φ(0.55*Ab*Fu)
φ=0.75, φ*Vn (kips):
38.88

Pole Manufacturer:	Pirod

If No stiffeners, Criteria:	TIA G	<-Only Applcable to Unstiffened Cases

Bolt Data			
Qty:	24		
Diameter (in.):	1	Bolt Fu:	120
Bolt Material:	A325	Bolt Fy:	92
N/A:		<-- Disregard	
N/A:		<-- Disregard	
Circle (in.):	33		

Plate Data		
Diam:	36.375	in
Thick, t:	1.25	in
Grade (Fy):	36	ksi
Strength, Fu:	58	ksi
Single-Rod B-eff:	3.14	in

Stiffener Data (Welding at Both Sides)		
Config:	2	*
Weld Type:	Fillet	
Groove Depth:		<-- Disregard
Groove Angle:		<-- Disregard
Fillet H. Weld:	0.3125	in
Fillet V. Weld:	0.3125	in
Width:	6	in
Height:	8	in
Thick:	1	in
Notch:	1	in
Grade:	36	ksi
Weld str.:	70	ksi

Pole Data		
Diam:	24	in
Thick:	0.375	in
Grade:	42	ksi
# of Sides:	0	"0" IF Round
Fu	63	ksi
Reinf. Fillet Weld	0	"0" if None

Flange Bolt Results — Stiffened

Bolt Tension Capacity, φ*Tn,**B1**:	54.54	kips	φ*Tn
Adjusted φ*Tn (due to Vu=Vu/Qty), **B**:	54.53	kips	φTn[(1-(Vu/φVn)^2]^0.5
Max Bolt directly applied Tu:	26.18	Kips	
Min. PL "tc" for **B** cap. **w/o** Pry:	Stiffened	in	
Min PL "treq" for actual **T w/ Pry**:	Stiffened	in	
Min PL "t1" for actual **T w/o Pry**:	Stiffened	in	
T allowable	54.54	kips	<-- B, Stiffened
Prying Force, q:	0.00	kips	Stiffened
Total Bolt Tension=Tu+q:	26.18	kips	
Non-Prying Bolt Stress Ratio, Tu/B:	48.0%	**Pass**	

Exterior Flange Plate Results — Flexural Check — Stiffened

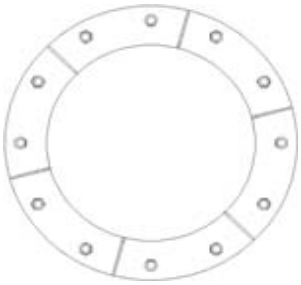
Compression Side Plate Stress:	Rohn/Pirod,	OK	TIA G
Allowable Plate Stress:	32.4	ksi	φ*Fy
Compression Plate Stress Ratio:	Rohn/Pirod,	OK	Comp. Y.L. Length:
Stiffened			N/A, Roark
Tension Side Stress Ratio, (treq/t)^2:	N/A		

Stiffener Results — N/A for Rohn / Pirod

Horizontal Weld :	N/A
Vertical Weld:	N/A
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	N/A
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	N/A
Plate Comp. (AISC Bracket):	N/A

Pole Results

Pole Punching Shear Check: N/A



* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

PROJECT	**87581.017.01 - Newington_1, CT**				
SUBJECT	**Bridge Stiffeners @120'**				
DATE	**05-05-18**	PAGE	1	OF	1

B+T GRP
1717 S. Boulder, Suite 300
Tulsa, OK 74119
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0

Determine Load to Bridge Stiffener:

M =	**908.4 k-ft**	From Risa Model	**Stiffener Width**	**4.500 in**
I =	**7461.4 in^4**	From AutoCAD Sketch	**Stiffener Thickness**	**1.000 in**
ybar =	**22.000 in**		**Stiffener Height**	**39.000 in**
S =	339.15 in^3	I/y	**Fy**	**65 ksi**
fc =	32.14 ksi	M/S	**Fu**	**80 ksi**
Ag =	4.500 in^2		**Step Width**	**3.00 in**
Pu =	144.63 k	fc x Ag	**Bolt Circle**	**39.00 in**
			Number of Bolts	**28**
			Bolt Size	**1**
			Gap @ Flange	**6.00 in**

Determine ΦPn (Allowable Axial Load):

Pn = Fcr x Ag		Eqn E3-1, AISC 13th Edition, Section E3.
K =	0.99	
l =	16.000 in	Unsupported Length
Iy =	.375 in^4	Local Weak Axis Moment of Intertia
Ag =	4.500 in^2	Stiffener Cross Sectional Area
ry =	.289 in	Radius of Gyration (Weak Axis)
kl/r =	54.87	
4.71 x √(E/Fy) =	99.49	Limit State Equation for Flexural Buckling - AISC 13th Edition, Section E3.
Fe =	95.06 ksi	Eqn E3-4 - AISC 13th Edition, Section E3. Elastic Critical Buckling Stress
Fcr =	48.82 ksi	Eqn E3-2, AISC 13th Edition, Section E3 Critical Buckling Stress
Pn =	219.70 k	Nominal Compressive Strength
ΦPn =	197.73 k	Allowable Compressive Strength

Unity% = 73.1 %

Tension Rupture Check: AISC 13th Edition, Chapter J4.1

Hole Size	1.25	
U =	1	Shear Lag Factor - Table D3.1 and TIA222-G
Ag =	4.500 in^2	Gross Area
An =	3.250 in^2	Net Area
Ae =	3.250 in^2	Effective Area
ΦRn =	263.25 k	Tension Yielding: Eqn J4-1
ΦRn =	195.00 k	Tension Rupture: Eqn J4-2
ΦRn(Equiv)	195.00 ksi	

Unity% 74.17 %

Moment to Existing Bolt Group:

S_{BG} =	382.64 in^3	# Bolts Acting	7
ft =	28.49 ksi		
Ab =	.785 in^2		
T =	156.62 k		
Arm =	39.00 ksi		
M_{EQ} =	509.0 k-ft	**<-------Insert into Flange Spreadsheet**	

Stiffened or Unstiffened, Exterior Flange Plate - Any Bolt Material TIA Rev G

Site Data

BU#: *826217*
Site Name: *Newington ,CT*
App #: *421391 Rev. 7*

Reactions		
Mu	509	ft-kips
Axial, Pu:	24.608	kips
Shear, Vu:	24.685	kips
Elevation:	120	feet

Bolt Threads:
X-Excluded
φVn=φ(0.55*Ab*Fu)
φ=0.75, φ*Vn (kips):
38.88

Pole Manufacturer:	Other

If No stiffeners, Criteria: TIA G <-Only Applcable to Unstiffened Cases

Bolt Data

Qty:	28		
Diameter (in.):	1	Bolt Fu:	120
Bolt Material:	A325	Bolt Fy:	92
N/A:		<-- Disregard	
N/A:		<-- Disregard	
Circle (in.):	39		

Plate Data

Diam:	42	in
Thick, t:	1.25	in
Grade (Fy):	36	ksi
Strength, Fu:	58	ksi
Single-Rod B-eff:	4.04	in

Stiffener Data (Welding at Both Sides)

Config:	2	*
Weld Type:	Fillet	
Groove Depth:		<-- Disregard
Groove Angle:		<-- Disregard
Fillet H. Weld:	0.3125	in
Fillet V. Weld:	0.3125	in
Width:	3	in
Height:	5	in
Thick:	0.625	in
Notch:		in
Grade:	36	ksi
Weld str.:	70	ksi

Pole Data

Diam:	36	in
Thick:	0.375	in
Grade:	42	ksi
# of Sides:	0	"0" IF Round
Fu	63	ksi
Reinf. Fillet Weld	0	"0" if None

Flange Bolt Results — Rigid

Bolt Tension Capacity, φ*Tn,**B1**:	54.54	kips
Adjusted φ*Tn (due to Vu=Vu/Qty), **B**:	54.53	kips
Max Bolt directly applied Tu:	21.49	Kips
Min. PL "tc" for **B** cap. **w/o** Pry:	1.017	in
Min PL "treq" for actual **T w/ Pry**:	0.484	in
Min PL "t1" for actual **T w/o Pry**:	0.638	in
T allowable w/o Prying:	54.54	kips α'<0 case
Prying Force, q:	0.00	kips
Total Bolt Tension=Tu+q:	21.49	kips
Non-Prying Bolt Stress Ratio, Tu/B:	39.4%	**Pass**

φ*Tn | φTn[(1-(Vu/φVn)^2]^0.5

Exterior Flange Plate Results — Flexural Check — Rigid

Compression Side Plate Stress:	13.9	ksi
Allowable Plate Stress:	32.4	ksi
Compression Plate Stress Ratio:	42.9%	**Pass**
No Prying		
Tension Side Stress Ratio, (treq/t)^2:	15.0%	**Pass**

TIA G | φ*Fy | Comp. Y.L. Length: 15.00

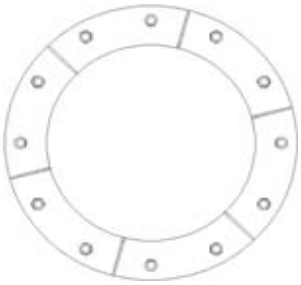
b/Le>2, Stiffeners are not fully effective

Stiffener Results

Horizontal Weld :	n/a
Vertical Weld:	n/a
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	n/a
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	n/a
Plate Comp. (AISC Bracket):	n/a

Pole Results

Pole Punching Shear Check: n/a



* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

Stiffened or Unstiffened, Interior Flange Plate - Any Bolt Material TIA Rev G

Site Data

BU#: *826217*
Site Name: *Newington ,CT*
App #: *421391 Rev. 7*

Manufacturer:	Other

Reactions		
Moment:	509	ft-kips
Axial:	24.608	kips
Shear:	24.685	kips
Exterior Flange Run, T+q:	21.49	kips

Bolt Threads:
X-Excluded
φVn=φ(0.55*Ab*Fu)
φ=0.75, φ*Vn (kips):
38.88

Elevation: 120 feet

Bolt Data			
Qty:	28		
Diam:	1	Bolt Fu:	120
Bolt Material:	A325	Bolt Fy:	92
N/A:		<-- Disregard	
N/A:		<-- Disregard	
Circle:	39	in	

Interior Flange Bolt Results

Maximum Bolt Tension, Tu:	21.5	Kips, Ext. Tu=Interior Tu
Adjusted φ*Tn (due to Vu=Vu/Qty),	54.5	Kips
Bolt Stress Ratio:	39.4%	**Pass**

Plate Data		
Plate Outer Diam:	41.25	in
Plate Inner Diam:	36	in (Hole @ Ctr)
Thick:	1.25	in
Grade:	36	ksi
Effective Width:	4.63	in

Interior Flange Plate Results Flexural Check

Controlling Bolt Axial Force:	23.3	Kips, Ext. Cu=Interior Cu
Plate Stress:	14.5	ksi
Allowable Plate Stress, φ*Fy:	32.4	ksi
Plate Stress Ratio:	44.7%	**Pass**

Stiffener Data (Welding at Both Sides)		
Config:	0	*
Weld Type:		
Groove Depth:		in **
Groove Angle:		degrees
Fillet H. Weld:		<-- Disregard
Fillet V. Weld:		in
Width:		in
Height:		in
Thick:		in
Notch:		in
Grade:		ksi
Weld str.:		ksi

n/a

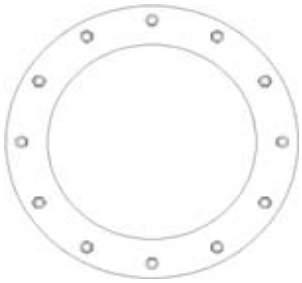
Stiffener Results

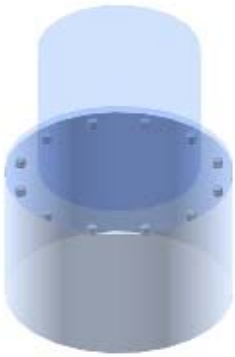
Horizontal Weld :	n/a
Vertical Weld:	n/a
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	n/a
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	n/a
Plate Comp. (AISC Bracket):	n/a

Pole Results

Pole Punching Shear Check: n/a

Pole Data		
Pole OuterDiam:	42	in
Thick:	0.375	in
Pole Inner Diam:	41.25	in
Grade:	42	ksi
# of Sides:	0	"0" IF Round
Fu	63	ksi





* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

PROJECT	**87581.016.01 - Newington_1, CT**				
SUBJECT	**Bridge Stiffeners @100'**				
DATE	**05-05-18**	PAGE	1	OF	1

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Determine Load to Bridge Stiffener:

M =	**1493.5 k-ft**	From Risa Model	**Stiffener Width**	**4.500 in**
I =	**14381.2 in^4**	From AutoCAD Sketch	**Stiffener Thickness**	**1.000 in**
ybar =	**25.000 in**		**Stiffener Height**	**58.500 in**
S =	575.25 in^3	I/y	**Fy**	**65 ksi**
fc =	31.16 ksi	M/S	**Fu**	**80 ksi**
Ag =	4.500 in^2		**Step Width**	**3.00 in**
Pu =	140.20 k	fc x Ag	**Bolt Circle**	**45.00 in**
			Number of Bolts	**32**
			Bolt Size	**1**
			Gap @ Flange	**6.00 in**

Determine ΦPn (Allowable Axial Load):

Pn = Fcr x Ag — Eqn E3-1, AISC 13th Edition, Section E3.

K =	0.99	
l =	16.500 in	Unsupported Length
Iy =	.375 in^4	Local Weak Axis Moment of Intertia
Ag =	4.500 in^2	Stiffener Cross Sectional Area
ry =	.289 in	Radius of Gyration (Weak Axis)
kl/r =	56.59	

4.71 x √(E/Fy) = 99.49 — Limit State Equation for Flexural Buckling - AISC 13th Edition, Section E3.

Fe =	89.39 ksi	Eqn E3-4 - AISC 13th Edition, Section E3. Elastic Critical Buckling Stress
Fcr =	47.94 ksi	Eqn E3-2, AISC 13th Edition, Section E3 Critical Buckling Stress
Pn =	215.75 k	Nominal Compressive Strength
ΦPn =	194.17 k	Allowable Compressive Strength

Unity% = 72.2 %

Tension Rupture Check: AISC 13th Edition, Chapter J4.1

Hole Size	1.25	
U =	1	Shear Lag Factor - Table D3.1 and TIA222-G
Ag =	4.500 in^2	Gross Area
An =	3.250 in^2	Net Area
Ae =	3.250 in^2	Effective Area
ΦRn =	263.25 k	Tension Yielding: Eqn J4-1
ΦRn =	195.00 k	Tension Rupture: Eqn J4-2
ΦRn(Equiv)	195.00 ksi	

Unity% 71.90 %

Moment to Existing Bolt Group:

S_{BG} =	639.16 in^3	# Bolts Acting	8
ft =	28.04 ksi		
Ab =	.785 in^2		
T =	176.18 k		
Arm =	45.00 ksi		
M_{EQ} =	660.7 k-ft	**<-------Insert into Flange Spreadsheet**	

Stiffened or Unstiffened, Exterior Flange Plate - Any Bolt Material TIA Rev G

Site Data

BU#: *826217*
Site Name: *Newington ,CT*
App #: *421391 Rev. 7*

Reactions		
Mu	660.7	ft-kips
Axial, Pu:	34.874	kips
Shear, Vu:	31	kips
Elevation:	100	feet

Bolt Threads:
X-Excluded
φVn=φ(0.55*Ab*Fu)
φ=0.75, φ*Vn (kips):
38.88

Pole Manufacturer:	Other

If No stiffeners, Criteria: TIA G <-Only Applcable to Unstiffened Cases

Bolt Data			
Qty:	32		
Diameter (in.):	1	Bolt Fu:	120
Bolt Material:	A325	Bolt Fy:	92
N/A:		<-- Disregard	
N/A:		<-- Disregard	
Circle (in.):	45		

Plate Data		
Diam:	48	in
Thick, t:	1.25	in
Grade (Fy):	36	ksi
Strength, Fu:	58	ksi
Single-Rod B-eff:	4.12	in

Stiffener Data (Welding at Both Sides)		
Config:	1	*
Weld Type:	Fillet	
Groove Depth:		<-- Disregard
Groove Angle:		<-- Disregard
Fillet H. Weld:	0.3125	in
Fillet V. Weld:	0.3125	in
Width:	3	in
Height:	5	in
Thick:	0.625	in
Notch:		in
Grade:	36	ksi
Weld str.:	70	ksi

Pole Data		
Diam:	42	in
Thick:	0.375	in
Grade:	42	ksi
# of Sides:	0	"0" IF Round
Fu	63	ksi
Reinf. Fillet Weld	0	"0" if None

Flange Bolt Results — Stiffened

Bolt Tension Capacity, φ*Tn,**B1**:	54.54	kips	φ*Tn
Adjusted φ*Tn (due to Vu=Vu/Qty), **B**:	54.52	kips	φTn[(1-(Vu/φVn)^2]^0.5
Max Bolt directly applied Tu:	20.93	Kips	
Min. PL "tc" for **B** cap. **w/o** Pry:	Stiffened	in	
Min PL "treq" for actual **T w/ Pry**:	Stiffened	in	
Min PL "t1" for actual **T w/o Pry**:	Stiffened	in	
T allowable	54.54	kips	<-- B, Stiffened
Prying Force, q:	0.00	kips	Stiffened
Total Bolt Tension=Tu+q:	20.93	kips	
Non-Prying Bolt Stress Ratio, Tu/B:	38.4%	**Pass**	

Exterior Flange Plate Results — Flexural Check — Stiffened

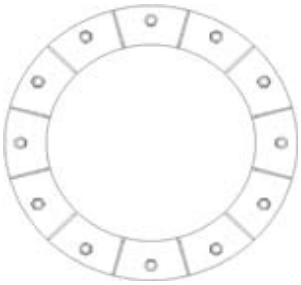
Compression Side Plate Stress:	13.7	ksi	TIA G
Allowable Plate Stress:	32.4	ksi	φ*Fy
Compression Plate Stress Ratio:	42.3%	**Pass**	Comp. Y.L. Length:
Stiffened			N/A, Roark
Tension Side Stress Ratio, (treq/t)^2:	N/A		

Stiffener Results

Horizontal Weld :	35.6%	**Pass**
Vertical Weld:	26.2%	**Pass**
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	17.0%	**Pass**
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	25.1%	**Pass**
Plate Comp. (AISC Bracket):	47.1%	**Pass**

Pole Results

Pole Punching Shear Check:	14.3%	**Pass**



* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

Stiffened or Unstiffened, Interior Flange Plate - Any Bolt Material TIA Rev G

Site Data

BU#: *826217*
Site Name: *Newington ,CT*
App #: *421391 Rev. 7*

Manufacturer:	Other

Reactions		
Moment:	660.7	ft-kips
Axial:	34.874	kips
Shear:	31	kips
Exterior Flange Run, T+q:	20.93	kips

Bolt Threads:
X-Excluded
φVn=φ(0.55*Ab*Fu)
φ=0.75, φ*Vn (kips):
38.88

Elevation: 100 feet

Bolt Data			
Qty:	32		
Diam:	1	Bolt Fu:	120
Bolt Material:	A325	Bolt Fy:	92
N/A:		<-- Disregard	
N/A:		<-- Disregard	
Circle:	45	in	

Plate Data		
Plate Outer Diam:	47.25	in
Plate Inner Diam:	42	in (Hole @ Ctr)
Thick:	1.25	in
Grade:	36	ksi
Effective Width:	4.64	in

Stiffener Data (Welding at Both Sides)		
Config:	0	*
Weld Type:		
Groove Depth:		in **
Groove Angle:		degrees
Fillet H. Weld:		<-- Disregard
Fillet V. Weld:		in
Width:		in
Height:		in
Thick:		in
Notch:		in
Grade:		ksi
Weld str.:		ksi

Pole Data		
Pole OuterDiam:	48	in
Thick:	0.375	in
Pole Inner Diam:	47.25	in
Grade:	42	ksi
# of Sides:	0	"0" IF Round
Fu	63	ksi

Interior Flange Bolt Results

Maximum Bolt Tension, Tu:	20.9	Kips, Ext. Tu=Interior Tu
Adjusted φ*Tn (due to Vu=Vu/Qty),	54.5	Kips
Bolt Stress Ratio:	38.4%	**Pass**

Interior Flange Plate Results Flexural Check

Controlling Bolt Axial Force:	23.1	Kips, Ext. Cu=Interior Cu
Plate Stress:	14.3	ksi
Allowable Plate Stress, φ*Fy:	32.4	ksi
Plate Stress Ratio:	44.3%	**Pass**

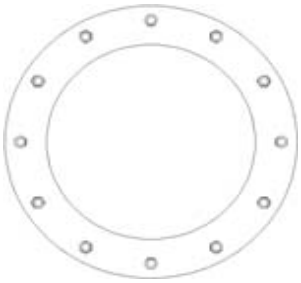
n/a

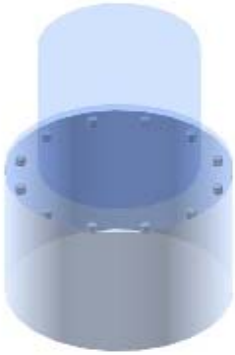
Stiffener Results

Horizontal Weld :	n/a
Vertical Weld:	n/a
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	n/a
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	n/a
Plate Comp. (AISC Bracket):	n/a

Pole Results

Pole Punching Shear Check: n/a





* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt
** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

PROJECT	**87581.017.01 - Newington_1, CT**				
SUBJECT	**Bridge Stiffeners @80'**				
DATE	**05-05-18**	PAGE	1	OF	1

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Tulsa, OK 74159
(918) 587-4630

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Determine Load to Bridge Stiffener:

M =	**2141.1 k-ft**	From Risa Model	**Stiffener Width**	**4.500 in**
I =	**24813.4 in^4**	From AutoCAD Sketch	**Stiffener Thickness**	**1.000 in**
ybar =	**28.000 in**		**Stiffener Height**	**111.000 in**
S =	886.19 in^3	I/y	**Fy**	**65 ksi**
fc =	28.99 ksi	M/S	**Fu**	**80 ksi**
Ag =	4.500 in^2		**Step Width**	**3.00 in**
Pu =	130.47 k	fc x Ag	**Bolt Circle**	**51.00 in**
			Number of Bolts	**36**
			Bolt Size	**1**
			Gap @ Flange	**6.00 in**

Determine ΦPn (Allowable Axial Load):

Pn = Fcr x Ag — Eqn E3-1, AISC 13th Edition, Section E3.

K =	0.99	
l =	16.000 in	Unsupported Length
Iy =	.375 in^4	Local Weak Axis Moment of Intertia
Ag =	4.500 in^2	Stiffener Cross Sectional Area
ry =	.289 in	Radius of Gyration (Weak Axis)
kl/r =	54.87	

4.71 x √(E/Fy) = 99.49 — Limit State Equation for Flexural Buckling - AISC 13th Edition, Section E3.

Fe =	95.06 ksi	Eqn E3-4 - AISC 13th Edition, Section E3. Elastic Critical Buckling Stress
Fcr =	48.82 ksi	Eqn E3-2, AISC 13th Edition, Section E3 Critical Buckling Stress
Pn =	219.70 k	Nominal Compressive Strength
ΦPn =	197.73 k	Allowable Compressive Strength

Unity% = 66.0 %

Tension Rupture Check: — AISC 13th Edition, Chapter J4.1

Hole Size	1.25	
U =	1	Shear Lag Factor - Table D3.1 and TIA222-G
Ag =	4.500 in^2	Gross Area
An =	3.250 in^2	Net Area
Ae =	3.250 in^2	Effective Area
ΦRn =	263.25 k	Tension Yielding: Eqn J4-1
ΦRn =	195.00 k	Tension Rupture: Eqn J4-2
ΦRn(Equiv)	195.00 ksi	

Unity% 66.91 %

Moment to Existing Bolt Group:

S_{BG} =	973.07 in^3	# Bolts Acting	9
ft =	26.40 ksi		
Ab =	.785 in^2		
T =	186.64 k		
Arm =	51.00 ksi		
M_{EQ} =	793.2 k-ft	**<-------Insert into Flange Spreadsheet**	

Stiffened or Unstiffened, Exterior Flange Plate - Any Bolt Material TIA Rev G

Site Data

BU#: *826217*
Site Name: *Newington ,CT*
App #: *421391 Rev. 7*

Reactions		
Mu	793.2	ft-kips
Axial, Pu:	45.396	kips
Shear, Vu:	33.427	kips
Elevation:	80	feet

Bolt Threads:
X-Excluded
φVn=φ(0.55*Ab*Fu)
φ=0.75, φ*Vn (kips):
38.88

Pole Manufacturer:	Other

If No stiffeners, Criteria: TIA G <-Only Applcable to Unstiffened Cases

Bolt Data			
Qty:	36		
Diameter (in.):	1	Bolt Fu:	120
Bolt Material:	A325	Bolt Fy:	92
N/A:		<-- Disregard	
N/A:		<-- Disregard	
Circle (in.):	51		

Plate Data		
Diam:	54	in
Thick, t:	1.25	in
Grade (Fy):	36	ksi
Strength, Fu:	58	ksi
Single-Rod B-eff:	4.19	in

Stiffener Data (Welding at Both Sides)		
Config:	1	*
Weld Type:	Fillet	
Groove Depth:		<-- Disregard
Groove Angle:		<-- Disregard
Fillet H. Weld:	0.3125	in
Fillet V. Weld:	0.3125	in
Width:	3	in
Height:	5	in
Thick:	0.625	in
Notch:		in
Grade:	36	ksi
Weld str.:	70	ksi

Pole Data		
Diam:	48	in
Thick:	0.375	in
Grade:	42	ksi
# of Sides:	0	"0" IF Round
Fu	63	ksi
Reinf. Fillet Weld	0	"0" if None

Flange Bolt Results | Stiffened

Bolt Tension Capacity, φ*Tn,**B1**:	54.54	kips	φ*Tn
Adjusted φ*Tn (due to Vu=Vu/Qty), **B**:	54.52	kips	φTn[(1-(Vu/φVn)^2]^0.5
Max Bolt directly applied Tu:	19.48	Kips	
Min. PL "tc" for **B** cap. **w/o** Pry:	Stiffened	in	
Min PL "treq" for actual **T w/ Pry**:	Stiffened	in	
Min PL "t1" for actual **T w/o Pry**:	Stiffened	in	
T allowable	54.54	kips	<-- B, Stiffened
Prying Force, q:	0.00	kips	Stiffened
Total Bolt Tension=Tu+q:	19.48	kips	
Non-Prying Bolt Stress Ratio, Tu/B:	35.7%	**Pass**	

Exterior Flange Plate Results Flexural Check | Stiffened

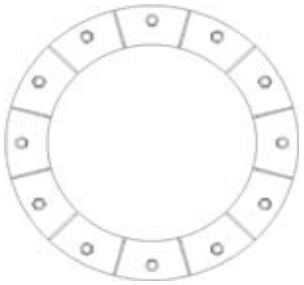
Compression Side Plate Stress:	13.0	ksi	TIA G
Allowable Plate Stress:	32.4	ksi	φ*Fy
Compression Plate Stress Ratio:	40.2%	**Pass**	Comp. Y.L. Length:
Stiffened			N/A, Roark
Tension Side Stress Ratio, (treq/t)^2:	N/A		

Stiffener Results

Horizontal Weld :	33.4%	**Pass**
Vertical Weld:	24.6%	**Pass**
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	15.7%	**Pass**
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	23.4%	**Pass**
Plate Comp. (AISC Bracket):	44.2%	**Pass**

Pole Results

Pole Punching Shear Check:	13.4%	**Pass**



* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

Stiffened or Unstiffened, Interior Flange Plate - Any Bolt Material TIA Rev G

Site Data

BU#: *826217*
Site Name: *Newington ,CT*
App #: *421391 Rev. 7*

Manufacturer:	Other

Reactions		
Moment:	793.2	ft-kips
Axial:	45.396	kips
Shear:	33.427	kips
Exterior Flange Run, T+q:	19.48	kips

Bolt Threads:
X-Excluded
φVn=φ(0.55*Ab*Fu)
φ=0.75, φ*Vn (kips):
38.88

Elevation: 80 feet

Bolt Data			
Qty:	36		
Diam:	1	Bolt Fu:	120
Bolt Material:	A325	Bolt Fy:	92
N/A:		<-- Disregard	
N/A:		<-- Disregard	
Circle:	51	in	

Plate Data		
Plate Outer Diam:	53.25	in
Plate Inner Diam:	48	in (Hole @ Ctr)
Thick:	1.25	in
Grade:	36	ksi
Effective Width:	4.65	in

Stiffener Data (Welding at Both Sides)		
Config:	0	*
Weld Type:		
Groove Depth:		in **
Groove Angle:		degrees
Fillet H. Weld:		<-- Disregard
Fillet V. Weld:		in
Width:		in
Height:		in
Thick:		in
Notch:		in
Grade:		ksi
Weld str.:		ksi

Pole Data		
Pole OuterDiam:	54	in
Thick:	0.375	in
Pole Inner Diam:	53.25	in
Grade:	42	ksi
# of Sides:	0	"0" IF Round
Fu	63	ksi

Interior Flange Bolt Results

Maximum Bolt Tension, Tu:	19.5	Kips, Ext. Flange Tu+q
Adjusted φ*Tn (due to Vu=Vu/Qty),	54.5	Kips
Bolt Stress Ratio:	35.7%	**Pass**

Interior Flange Plate Results Flexural Check

Controlling Bolt Axial Force:	22.0	Kips, Ext. Cu=Interior Cu
Plate Stress:	13.6	ksi
Allowable Plate Stress, φ*Fy:	32.4	ksi
Plate Stress Ratio:	42.1%	**Pass**

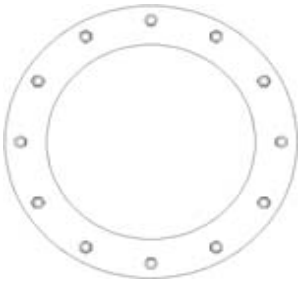
n/a

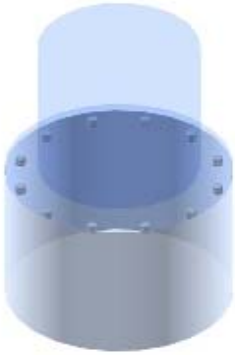
Stiffener Results

Horizontal Weld :	n/a
Vertical Weld:	n/a
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	n/a
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	n/a
Plate Comp. (AISC Bracket):	n/a

Pole Results

Pole Punching Shear Check: n/a





* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt
** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

PROJECT	**87581.017.01 - Newington_1, CT**				
SUBJECT	**Existing and New Bridge Stiffeners @ 60'**				
DATE	**05-05-18**	PAGE	1	OF	1

B+T GRP
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Tulsa, OK 74159
(918) 587-4630

0

Determine Load to Bridge Stiffener:

M =	**2849.4 k-ft**	From Risa Model	**Stiffener Width**	**4.500 in**
I =	**50598.5 in^4**	From AutoCAD Sketch	**Stiffener Thickness**	**1.000 in**
ybar =	**31.000 in**		**Stiffener Height**	**159.000 in**
S =	1632.21 in^3	I/y	**Fy**	**65 ksi**
fc =	20.95 ksi	M/S	**Fu**	**80 ksi**
Ag =	4.500 in^2		**Step Width**	**3.00 in**
Pu =	94.27 k	fc x Ag	**Bolt Circle**	**57.00 in**
			Number of Bolts	**48**
			Bolt Size	**1**
			Gap @ Flange	**6.00 in**

Determine ΦPn (Allowable Axial Load):

Pn = Fcr x Ag		Eqn E3-1, AISC 13th Edition, Section E3.
K =	0.99	
l =	16.500 in	Unsupported Length
Iy =	.375 in^4	Local Weak Axis Moment of Intertia
Ag =	4.500 in^2	Stiffener Cross Sectional Area
ry =	.289 in	Radius of Gyration (Weak Axis)
kl/r =	56.59	
4.71 x √(E/Fy) =	99.49	Limit State Equation for Flexural Buckling - AISC 13th Edition, Section E3.
Fe =	89.39 ksi	Eqn E3-4 - AISC 13th Edition, Section E3. Elastic Critical Buckling Stress
Fcr =	47.94 ksi	Eqn E3-2, AISC 13th Edition, Section E3 Critical Buckling Stress
Pn =	215.75 k	Nominal Compressive Strength
ΦPn =	194.17 k	Allowable Compressive Strength

Unity% = 48.5 %

Tension Rupture Check:

AISC 13th Edition, Chapter J4.1

Hole Size	1.25	
U =	1	Shear Lag Factor - Table D3.1 and TIA222-G
Ag =	4.500 in^2	Gross Area
An =	3.250 in^2	Net Area
Ae =	3.250 in^2	Effective Area
ΦRn =	263.25 k	Tension Yielding: Eqn J4-1
ΦRn =	195.00 k	Tension Rupture: Eqn J4-2
ΦRn(Equiv)	195.00 ksi	

Unity% 48.34 %

Moment to Existing Bolt Group:

S_{BG} =	1775.38 in^3	# Bolts Acting	12
ft =	19.26 ksi		
Ab =	.785 in^2		
T =	181.51 k		
Arm =	57.00 ksi		
M_{EQ} =	862.2 k-ft	**<-------Insert into Flange Spreadsheet**	

Stiffened or Unstiffened, Exterior Flange Plate - Any Bolt Material TIA Rev G

Site Data

BU#: *826217*
Site Name: *Newington ,CT*
App #: *421391 Rev. 7*

Reactions		
Mu	862.2	ft-kips
Axial, Pu:	63.721	kips
Shear, Vu:	37.436	kips
Elevation:	60	feet

Bolt Threads:
X-Excluded
φVn=φ(0.55*Ab*Fu)
φ=0.75, φ*Vn (kips):
38.88

Pole Manufacturer:	Other

If No stiffeners, Criteria: TIA G <-Only Applcable to Unstiffened Cases

Bolt Data

Qty:	48		
Diameter (in.):	1	Bolt Fu:	120
Bolt Material:	A325	Bolt Fy:	92
N/A:		<-- Disregard	
N/A:		<-- Disregard	
Circle (in.):	57		

Plate Data

Diam:	60	in
Thick, t:	1.25	in
Grade (Fy):	36	ksi
Strength, Fu:	58	ksi
Single-Rod B-eff:	3.53	in

Stiffener Data (Welding at Both Sides)

Config:	0	*
Weld Type:	Fillet	
Groove Depth:		<-- Disregard
Groove Angle:		<-- Disregard
Fillet H. Weld:		in
Fillet V. Weld:		in
Width:		in
Height:		in
Thick:		in
Notch:		in
Grade:		ksi
Weld str.:		ksi

Pole Data

Diam:	54	in
Thick:	0.375	in
Grade:	42	ksi
# of Sides:	0	"0" IF Round
Fu	63	ksi
Reinf. Fillet Weld	0	"0" if None

Flange Bolt Results | Rigid

Bolt Tension Capacity, φ*Tn,**B1**:	54.54	kips
Adjusted φ*Tn (due to Vu=Vu/Qty), **B**:	54.53	kips
Max Bolt directly applied Tu:	13.80	Kips
Min. PL "tc" for **B** cap. **w/o** Pry:	1.087	in
Min PL "treq" for actual **T w/ Pry**:	0.419	in
Min PL "t1" for actual **T w/o Pry**:	0.547	in
T allowable w/o Prying:	54.54	kips α'<0 case
Prying Force, q:	0.00	kips
Total Bolt Tension=Tu+q:	13.80	kips
Non-Prying Bolt Stress Ratio, Tu/B:	25.3%	**Pass**

φ*Tn	φTn[(1-(Vu/φVn)^2]^0.5

Exterior Flange Plate Results Flexural Check | Rigid

Compression Side Plate Stress:	11.6	ksi
Allowable Plate Stress:	32.4	ksi
Compression Plate Stress Ratio:	35.7%	**Pass**
No Prying		
Tension Side Stress Ratio, (treq/t)^2:	11.3%	**Pass**

TIA G	φ*Fy	Comp. Y.L. Length: 18.25

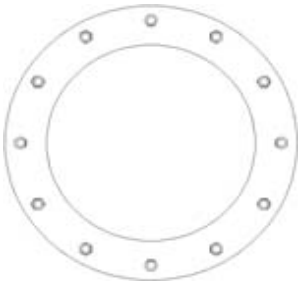
n/a

Stiffener Results

Horizontal Weld :	n/a
Vertical Weld:	n/a
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	n/a
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	n/a
Plate Comp. (AISC Bracket):	n/a

Pole Results

Pole Punching Shear Check: n/a



* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

Stiffened or Unstiffened, Interior Flange Plate - Any Bolt Material TIA Rev G

Site Data

BU#: *826217*
Site Name: *Newington ,CT*
App #: *421391 Rev. 7*

Manufacturer:	Other

Reactions		
Moment:	862.2	ft-kips
Axial:	63.721	kips
Shear:	37.436	kips
Exterior Flange Run, T+q:	13.8	kips

Bolt Threads:
X-Excluded
φVn=φ(0.55*Ab*Fu)
φ=0.75, φ*Vn (kips):
38.88

Elevation: 60 feet

Bolt Data			
Qty:	48		
Diam:	1	Bolt Fu:	120
Bolt Material:	A325	Bolt Fy:	92
N/A:		<-- Disregard	
N/A:		<-- Disregard	
Circle:	57	in	

Plate Data		
Plate Outer Diam:	59.25	in
Plate Inner Diam:	54	in (Hole @ Ctr)
Thick:	1.25	in
Grade:	36	ksi
Effective Width:	3.88	in

Stiffener Data (Welding at Both Sides)		
Config:	0	*
Weld Type:		
Groove Depth:		in **
Groove Angle:		degrees
Fillet H. Weld:		<-- Disregard
Fillet V. Weld:		in
Width:		in
Height:		in
Thick:		in
Notch:		in
Grade:		ksi
Weld str.:		ksi

Pole Data		
Pole OuterDiam:	60	in
Thick:	0.375	in
Pole Inner Diam:	59.25	in
Grade:	42	ksi
# of Sides:	0	"0" IF Round
Fu	63	ksi

Interior Flange Bolt Results

Maximum Bolt Tension, Tu:	13.8	Kips, Ext. Flange Tu+q
Adjusted φ*Tn (due to Vu=Vu/Qty),	54.5	Kips
Bolt Stress Ratio:	25.3%	**Pass**

Interior Flange Plate Results Flexural Check

Controlling Bolt Axial Force:	16.5	Kips, Ext. Cu=Interior Cu
Plate Stress:	12.2	ksi
Allowable Plate Stress, φ*Fy:	32.4	ksi
Plate Stress Ratio:	37.7%	**Pass**

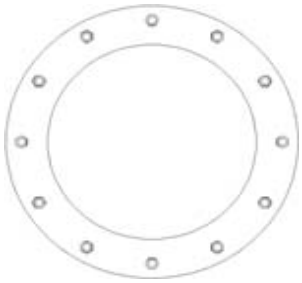
n/a

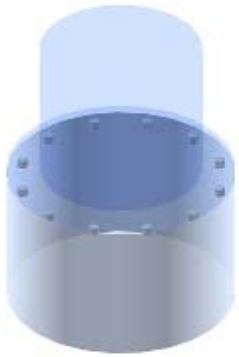
Stiffener Results

Horizontal Weld :	n/a
Vertical Weld:	n/a
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	n/a
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	n/a
Plate Comp. (AISC Bracket):	n/a

Pole Results

Pole Punching Shear Check: n/a





* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

PROJECT	**87581.017.01 - Newington_1, CT**				
SUBJECT	**Existing Bridge Stiffeners @ 40'**				
DATE	**05-05-18**	PAGE	1	OF	1

B+T GRP
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Determine Load to Bridge Stiffener:

M =	**3627.2 k-ft**	From Risa Model	**Stiffener Width**	**6.500 in**
I =	**60442.4 in^4**	From AutoCAD Sketch	**Stiffener Thickness**	**1.250 in**
ybar =	**31.125 in**		**Stiffener Height**	**179.000 in**
S =	1941.92 in^3	I/y	**Fy**	**65 ksi**
fc =	22.41 ksi	M/S	**Fu**	**80 ksi**
Ag =	8.125 in^2		**Step Width**	**.00 in**
Pu =	182.11 k	fc x Ag	**Bolt Circle**	**50.00 in**
			Number of Bolts	**64**
			Bolt Size	**1 1/4**
			Gap @ Flange	**6.00 in**

Determine ΦPn (Allowable Axial Load):

Pn = Fcr x Ag		Eqn E3-1, AISC 13th Edition, Section E3.
K =	0.99	
l =	25.000 in	Unsupported Length
Iy =	1.058 in^4	Local Weak Axis Moment of Intertia
Ag =	8.125 in^2	Stiffener Cross Sectional Area
ry =	.361 in	Radius of Gyration (Weak Axis)
kl/r =	68.59	
4.71 x √(E/Fy) =	99.49	Limit State Equation for Flexural Buckling - AISC 13th Edition, Section E3.
Fe =	60.84 ksi	Eqn E3-4 - AISC 13th Edition, Section E3. Elastic Critical Buckling Stress
Fcr =	41.56 ksi	Eqn E3-2, AISC 13th Edition, Section E3 Critical Buckling Stress
Pn =	337.70 k	Nominal Compressive Strength
ΦPn =	303.93 k	Allowable Compressive Strength

Unity% = 59.9 %

Tension Rupture Check: AISC 13th Edition, Chapter J4.1

Hole Size	1.25	
U =	1	Shear Lag Factor - Table D3.1 and TIA222-G
Ag =	8.125 in^2	Gross Area
An =	6.563 in^2	Net Area
Ae =	6.563 in^2	Effective Area
ΦRn =	475.31 k	Tension Yielding: Eqn J4-1
ΦRn =	393.75 k	Tension Rupture: Eqn J4-2
ΦRn(Equiv)	393.75 ksi	

Unity% 46.25 %

Moment to Existing Bolt Group:

S_{BG} =	2417.70 in^3	# Bolts Acting	16
ft =	18.00 ksi		
Ab =	1.227 in^2		
T =	353.49 k		
Arm =	50.00 ksi		
M_{EQ} =	1472.9 k-ft	**<-------Insert into Flange Spreadsheet**	

PROJECT	**87581.017.01 - Newington_1, CT**				
SUBJECT	**New Bridge Stiffeners @ 40'**				
DATE	**05-05-18**	PAGE	1	OF	1

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Tulsa, OK 74119
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0

Determine Load to Bridge Stiffener:

M =	**3627.2 k-ft**	From Risa Model	**Stiffener Width**	**6.000 in**
I =	**60442.4 in^4**	From AutoCAD Sketch	**Stiffener Thickness**	**1.000 in**
ybar =	**31.000 in**		**Stiffener Height**	**156.000 in**
S =	1949.75 in^3	I/y	**Fy**	**65 ksi**
fc =	22.32 ksi	M/S	**Fu**	**80 ksi**
Ag =	6.000 in^2		**Step Width**	**.00 in**
Pu =	133.94 k	fc x Ag	**Bolt Circle**	**50.00 in**
			Number of Bolts	**64**
			Bolt Size	**1 1/4**
			Gap @ Flange	**6.00 in**

Determine ΦPn (Allowable Axial Load):

Pn = Fcr x Ag — Eqn E3-1, AISC 13th Edition, Section E3.

K =	0.99	
l =	16.000 in	Unsupported Length
Iy =	.500 in^4	Local Weak Axis Moment of Intertia
Ag =	6.000 in^2	Stiffener Cross Sectional Area
ry =	.289 in	Radius of Gyration (Weak Axis)
kl/r =	54.87	

4.71 x √(E/Fy) = 99.49 — Limit State Equation for Flexural Buckling - AISC 13th Edition, Section E3.

Fe =	95.06 ksi	Eqn E3-4 - AISC 13th Edition, Section E3. Elastic Critical Buckling Stress
Fcr =	48.82 ksi	Eqn E3-2, AISC 13th Edition, Section E3 Critical Buckling Stress
Pn =	292.94 k	Nominal Compressive Strength
ΦPn =	263.64 k	Allowable Compressive Strength

Unity% = 50.8 %

Tension Rupture Check: AISC 13th Edition, Chapter J4.1

Hole Size	1.25	
U =	1	Shear Lag Factor - Table D3.1 and TIA222-G
Ag =	6.000 in^2	Gross Area
An =	4.750 in^2	Net Area
Ae =	4.750 in^2	Effective Area
ΦRn =	351.00 k	Tension Yielding: Eqn J4-1
ΦRn =	285.00 k	Tension Rupture: Eqn J4-2
ΦRn(Equiv)	285.00 ksi	

Unity% 47.00 %

Moment to Existing Bolt Group:

S_{BG} =	2417.70 in^3	# Bolts Acting	16
ft =	18.00 ksi		
Ab =	1.227 in^2		
T =	353.49 k		
Arm =	50.00 ksi		
M_{EQ} =	1472.9 k-ft	**<-------Insert into Flange Spreadsheet**	

Stiffened or Unstiffened, Interior Flange Plate - Any Bolt Material TIA Rev G

Site Data

BU#: *826217*
Site Name: *Newington ,CT*
App #: *421391 Rev. 7*

Manufacturer:	Other

Reactions		
Moment:	824.51	ft-kips
Axial:	77.687	kips
Shear:	39.372	kips
Exterior Flange Run, T+q:	0	kips

Bolt Threads:
X-Excluded
φVn=φ(0.55*Ab*Fu)
φ=0.75, φ*Vn (kips):
53.15

Elevation: 40-53BC feet

Bolt Data			
Qty:	32		
Diam:	1.25	Bolt Fu:	105
Bolt Material:	A325	Bolt Fy:	81
N/A:		<-- Disregard	
N/A:		<-- Disregard	
Circle:	53	in	

Interior Flange Bolt Results

Maximum Bolt Tension, Tu:	20.9	Kips, Ext. Tu=Interior Tu
Adjusted φ*Tn (due to Vu=Vu/Qty),	76.3	Kips
Bolt Stress Ratio:	27.4%	**Pass**

Plate Data		
Plate Outer Diam:	59	in
Plate Inner Diam:	45	in (Hole @ Ctr)
Thick:	1.25	in
Grade:	36	ksi
Effective Width:	5.79	in

Interior Flange Plate Results Flexural Check

Controlling Bolt Axial Force:	25.8	Kips, Ext. Cu=Interior Cu
Plate Stress:	13.5	ksi
Allowable Plate Stress, φ*Fy:	32.4	ksi
Plate Stress Ratio:	41.6%	**Pass**

Stiffener Data (Welding at Both Sides)		
Config:	1	*
Weld Type:	Fillet	
Groove Depth:		<-- Disregard
Groove Angle:		<-- Disregard
Fillet H. Weld:	0.3125	in
Fillet V. Weld:	0.3125	in
Width:	3	in
Height:	6	in
Thick:	0.5	in
Notch:	0.5	in
Grade:	36	ksi
Weld str.:	70	ksi

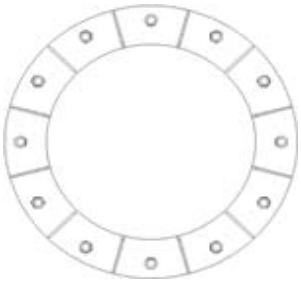
Stiffener Results

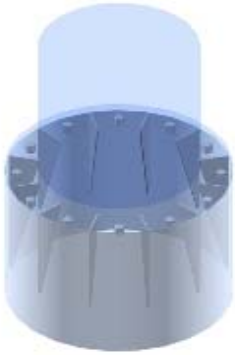
Horizontal Weld :	21.2%	**Pass**
Vertical Weld:	11.3%	**Pass**
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	7.7%	**Pass**
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	18.2%	**Pass**
Plate Comp. (AISC Bracket):	24.2%	**Pass**

Pole Results

Pole Punching Shear Check:	4.4%	**Pass**

Pole Data		
Pole OuterDiam:	60	in
Thick:	0.5	in
Pole Inner Diam:	59	in
Grade:	42	ksi
# of Sides:	0	"0" IF Round
Fu	63	ksi





* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

Stiffened or Unstiffened, Interior Flange Plate - Any Bolt Material TIA Rev G

Site Data

BU#: *826217*
Site Name: *Newington ,CT*
App #: *421391 Rev. 7*

Manufacturer:	Other

Reactions		
Moment:	648.39	ft-kips
Axial:	77.596	kips
Shear:	39.128	kips
Exterior Flange Run, T+q:	0	kips

Bolt Threads:
X-Excluded
φVn=φ(0.55*Ab*Fu)
φ=0.75, φ*Vn (kips):
53.15

Elevation: 40-47BC feet

Bolt Data			
Qty:	32		
Diam:	1.25	Bolt Fu:	105
Bolt Material:	A325	Bolt Fy:	81
N/A:		<-- Disregard	
N/A:		<-- Disregard	
Circle:	47	in	

Plate Data		
Plate Outer Diam:	59	in
Plate Inner Diam:	45	in (Hole @ Ctr)
Thick:	1.25	in
Grade:	36	ksi
Effective Width:	5.79	in

Stiffener Data (Welding at Both Sides)		
Config:	1	*
Weld Type:	Fillet	
Groove Depth:		<-- Disregard
Groove Angle:		<-- Disregard
Fillet H. Weld:	0.3125	in
Fillet V. Weld:	0.3125	in
Width:	3	in
Height:	6	in
Thick:	0.5	in
Notch:	0.5	in
Grade:	36	ksi
Weld str.:	70	ksi

Pole Data		
Pole OuterDiam:	60	in
Thick:	0.5	in
Pole Inner Diam:	59	in
Grade:	42	ksi
# of Sides:	0	"0" IF Round
Fu	63	ksi

Interior Flange Bolt Results

Maximum Bolt Tension, Tu:	18.3	Kips, Ext. Tu=Interior Tu
Adjusted φ*Tn (due to Vu=Vu/Qty),	76.3	Kips
Bolt Stress Ratio:	23.9%	**Pass**

Interior Flange Plate Results Flexural Check

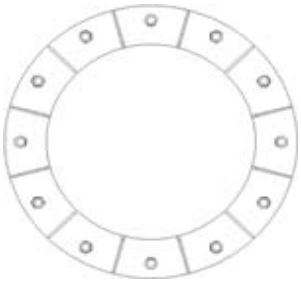
Controlling Bolt Axial Force:	23.1	Kips, Ext. Cu=Interior Cu
Plate Stress:	12.1	ksi
Allowable Plate Stress, φ*Fy:	32.4	ksi
Plate Stress Ratio:	37.3%	**Pass**

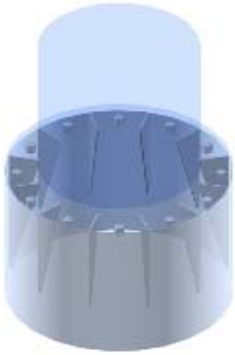
Stiffener Results

Horizontal Weld :	17.2%	**Pass**
Vertical Weld:	9.2%	**Pass**
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	6.0%	**Pass**
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	14.5%	**Pass**
Plate Comp. (AISC Bracket):	19.6%	**Pass**

Pole Results

Pole Punching Shear Check:	3.5%	**Pass**





* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt
** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

PROJECT	**87581.017.01 - Newington_1, CT**				
SUBJECT	**Existing Bridge Stiffeners @ 20'**				
DATE	**05-05-18**	PAGE	1	OF	1

B+T GRP
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630

0

Determine Load to Bridge Stiffener:

M =	**4430.2 k-ft**	From Risa Model	**Stiffener Width**	**6.500 in**
I =	**61968.8 in^4**	From AutoCAD Sketch	**Stiffener Thickness**	**1.250 in**
ybar =	**31.125 in**		**Stiffener Height**	**178.000 in**
S =	1990.96 in^3	I/y	**Fy**	**65 ksi**
fc =	26.70 ksi	M/S	**Fu**	**80 ksi**
Ag =	8.125 in^2		**Step Width**	**.00 in**
Pu =	216.95 k	fc x Ag	**Bolt Circle**	**50.00 in**
			Number of Bolts	**64**
			Bolt Size	**1 1/4**
			Gap @ Flange	**6.00 in**

Determine ΦPn (Allowable Axial Load):

Pn = Fcr x Ag — Eqn E3-1, AISC 13th Edition, Section E3.

K =	0.99	
l =	24.000 in	Unsupported Length
Iy =	1.058 in^4	Local Weak Axis Moment of Intertia
Ag =	8.125 in^2	Stiffener Cross Sectional Area
ry =	.361 in	Radius of Gyration (Weak Axis)
kl/r =	65.85	
4.71 x √(E/Fy) =	99.49	Limit State Equation for Flexural Buckling - AISC 13th Edition, Section E3.
Fe =	66.02 ksi	Eqn E3-4 - AISC 13th Edition, Section E3. Elastic Critical Buckling Stress
Fcr =	43.05 ksi	Eqn E3-2, AISC 13th Edition, Section E3 Critical Buckling Stress
Pn =	349.75 k	Nominal Compressive Strength
ΦPn =	314.78 k	Allowable Compressive Strength

Unity% = 68.9 %

Tension Rupture Check:

AISC 13th Edition, Chapter J4.1

Hole Size	1.25	
U =	1	Shear Lag Factor - Table D3.1 and TIA222-G
Ag =	8.125 in^2	Gross Area
An =	6.563 in^2	Net Area
Ae =	6.563 in^2	Effective Area
ΦRn =	475.31 k	Tension Yielding: Eqn J4-1
ΦRn =	393.75 k	Tension Rupture: Eqn J4-2
ΦRn(Equiv)	393.75 ksi	

Unity% 55.10 %

Moment to Existing Bolt Group:

S_{BG} =	2478.75 in^3	# Bolts Acting	16
ft =	21.45 ksi		
Ab =	1.227 in^2		
T =	421.11 k		
Arm =	50.00 ksi		
M_{EQ} =	1754.6 k-ft	**<-------Insert into Flange Spreadsheet**	

PROJECT	**87581.017.01 - Newington_1, CT**				
SUBJECT	**New Bridge Stiffeners @ 20'**				
DATE	**05-05-18**	PAGE	1	OF	1

B+T GRP
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630

0

Determine Load to Bridge Stiffener:

M =	**4430.2 k-ft**	From Risa Model	**Stiffener Width**	**6.000 in**
I =	**61968.8 in^4**	From AutoCAD Sketch	**Stiffener Thickness**	**1.000 in**
ybar =	**31.000 in**		**Stiffener Height**	**156.000 in**
S =	1998.99 in^3	I/y	**Fy**	**65 ksi**
fc =	26.59 ksi	M/S	**Fu**	**80 ksi**
Ag =	6.000 in^2		**Step Width**	**.00 in**
Pu =	159.57 k	fc x Ag	**Bolt Circle**	**50.00 in**
			Number of Bolts	**64**
			Bolt Size	**1 1/4**
			Gap @ Flange	**6.00 in**

Determine ΦPn (Allowable Axial Load):

Pn = Fcr x Ag		Eqn E3-1, AISC 13th Edition, Section E3.
K =	0.99	
l =	16.000 in	Unsupported Length
Iy =	.500 in^4	Local Weak Axis Moment of Intertia
Ag =	6.000 in^2	Stiffener Cross Sectional Area
ry =	.289 in	Radius of Gyration (Weak Axis)
kl/r =	54.87	
4.71 x √(E/Fy) =	99.49	Limit State Equation for Flexural Buckling - AISC 13th Edition, Section E3.
Fe =	95.06 ksi	Eqn E3-4 - AISC 13th Edition, Section E3. Elastic Critical Buckling Stress
Fcr =	48.82 ksi	Eqn E3-2, AISC 13th Edition, Section E3 Critical Buckling Stress
Pn =	292.94 k	Nominal Compressive Strength
ΦPn =	263.64 k	Allowable Compressive Strength

Unity% = 60.5 %

Tension Rupture Check:

AISC 13th Edition, Chapter J4.1

Hole Size	1.25	
U =	1	Shear Lag Factor - Table D3.1 and TIA222-G
Ag =	6.000 in^2	Gross Area
An =	4.750 in^2	Net Area
Ae =	4.750 in^2	Effective Area
ΦRn =	351.00 k	Tension Yielding: Eqn J4-1
ΦRn =	285.00 k	Tension Rupture: Eqn J4-2
ΦRn(Equiv)	285.00 ksi	

Unity% 55.99 %

Moment to Existing Bolt Group:

S_{BG} =	2478.75 in^3	# Bolts Acting	16
ft =	21.45 ksi		
Ab =	1.227 in^2		
T =	421.11 k		
Arm =	50.00 ksi		
M_{EQ} =	1754.6 k-ft	**<-------Insert into Flange Spreadsheet**	

Stiffened or Unstiffened, Interior Flange Plate - Any Bolt Material TIA Rev G

Site Data

BU#: *826217*
Site Name: *Newington ,CT*
App #: *421391 Rev. 7*

Manufacturer:	Other

Reactions		
Moment:	982.2	ft-kips
Axial:	92.225	kips
Shear:	40.839	kips
Exterior Flange Run, T+q:	0	kips

Bolt Threads:
X-Excluded
φVn=φ(0.55*Ab*Fu)
φ=0.75, φ*Vn (kips):
53.15

Elevation: 20-53BC feet

Bolt Data			
Qty:	32		
Diam:	1.25	Bolt Fu:	105
Bolt Material:	A325	Bolt Fy:	81
N/A:		<-- Disregard	
N/A:		<-- Disregard	
Circle:	53	in	

Plate Data		
Plate Outer Diam:	58.75	in
Plate Inner Diam:	45	in (Hole @ Ctr)
Thick:	1.25	in
Grade:	36	ksi
Effective Width:	5.77	in

Stiffener Data (Welding at Both Sides)		
Config:	1	*
Weld Type:	Fillet	
Groove Depth:		<-- Disregard
Groove Angle:		<-- Disregard
Fillet H. Weld:	0.3125	in
Fillet V. Weld:	0.3125	in
Width:	3	in
Height:	6	in
Thick:	0.5	in
Notch:	0.5	in
Grade:	36	ksi
Weld str.:	70	ksi

Pole Data		
Pole OuterDiam:	60	in
Thick:	0.625	in
Pole Inner Diam:	58.75	in
Grade:	42	ksi
# of Sides:	0	"0" IF Round
Fu	63	ksi

Interior Flange Bolt Results

Maximum Bolt Tension, Tu:	24.9	Kips, Ext. Tu=Interior Tu
Adjusted φ*Tn (due to Vu=Vu/Qty),	76.3	Kips
Bolt Stress Ratio:	32.7%	**Pass**

Interior Flange Plate Results Flexural Check

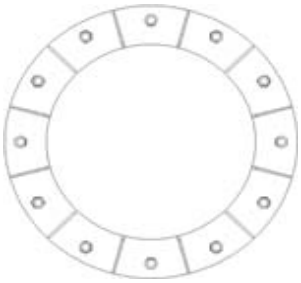
Controlling Bolt Axial Force:	30.7	Kips, Ext. Cu=Interior Cu
Plate Stress:	16.0	ksi
Allowable Plate Stress, φ*Fy:	32.4	ksi
Plate Stress Ratio:	49.5%	**Pass**

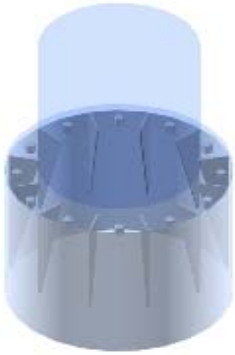
Stiffener Results

Horizontal Weld :	21.4%	**Pass**
Vertical Weld:	11.5%	**Pass**
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	7.8%	**Pass**
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	18.4%	**Pass**
Plate Comp. (AISC Bracket):	24.4%	**Pass**

Pole Results

Pole Punching Shear Check:	3.5%	**Pass**





* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt
** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

Stiffened or Unstiffened, Interior Flange Plate - Any Bolt Material TIA Rev G

Site Data

BU#: *826217*
Site Name: *Newington ,CT*
App #: *421391 Rev. 7*

Manufacturer:	Other

Reactions		
Moment:	772.4	ft-kips
Axial:	92.225	kips
Shear:	40.839	kips
Exterior Flange Run, T+q:	0	kips

Bolt Threads:
X-Excluded
φVn=φ(0.55*Ab*Fu)
φ=0.75, φ*Vn (kips):
53.15

Elevation: 20-47BC feet

Bolt Data			
Qty:	32		
Diam:	1.25	Bolt Fu:	105
Bolt Material:	A325	Bolt Fy:	81
N/A:		<-- Disregard	
N/A:		<-- Disregard	
Circle:	47	in	

Plate Data		
Plate Outer Diam:	58.75	in
Plate Inner Diam:	45	in (Hole @ Ctr)
Thick:	1.25	in
Grade:	36	ksi
Effective Width:	5.77	in

Stiffener Data (Welding at Both Sides)		
Config:	1	*
Weld Type:	Fillet	
Groove Depth:		<-- Disregard
Groove Angle:		<-- Disregard
Fillet H. Weld:	0.3125	in
Fillet V. Weld:	0.3125	in
Width:	3	in
Height:	6	in
Thick:	0.5	in
Notch:	0.5	in
Grade:	36	ksi
Weld str.:	70	ksi

Pole Data		
Pole OuterDiam:	60	in
Thick:	0.625	in
Pole Inner Diam:	58.75	in
Grade:	42	ksi
# of Sides:	0	"0" IF Round
Fu	63	ksi

Interior Flange Bolt Results

Maximum Bolt Tension, Tu:	21.8	Kips, Ext. Tu=Interior Tu
Adjusted φ*Tn (due to Vu=Vu/Qty),	76.3	Kips
Bolt Stress Ratio:	28.5%	**Pass**

Interior Flange Plate Results Flexural Check

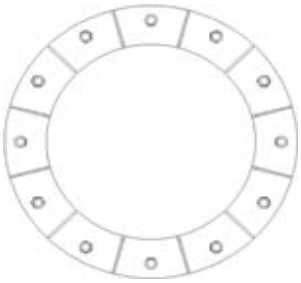
Controlling Bolt Axial Force:	27.5	Kips, Ext. Cu=Interior Cu
Plate Stress:	14.4	ksi
Allowable Plate Stress, φ*Fy:	32.4	ksi
Plate Stress Ratio:	44.5%	**Pass**

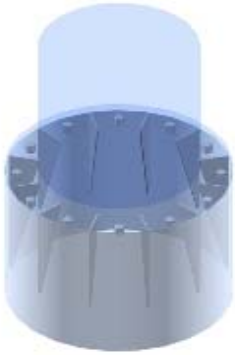
Stiffener Results

Horizontal Weld :	17.4%	**Pass**
Vertical Weld:	9.3%	**Pass**
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	6.1%	**Pass**
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	14.7%	**Pass**
Plate Comp. (AISC Bracket):	19.8%	**Pass**

Pole Results

Pole Punching Shear Check:	2.9%	**Pass**





* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt
** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

Anchor Rod Information for TIA/EIA-222-F and TIA-222-G-2

Site Information	
ID:	826217
Name:	Newington_1
App. #:	421391 Rev. 7

AeroSolutions LLC
Optimizing Your Tower Infrastructure

Base Reactions		
Moment:	5261	ft-kip
Axial:	107	kip
Shear:	42	kip
Base Plate Type:	Circular	

Design Information	
TIA Code:	G
ASIF:	1.000
Failure:	105%
eta Factor:	0.50

Original Anchor Rod Data

Quantity:	52	
Diameter:	1.25	in
Material:	A687	
Bolt Circle:	67.0	in
Bolt Spacing:		in
Bolt Group Area:	63.81	in^2
Bolt Group MOIx:	35807	in^4

Reactions Seen by Original AR Group

Moment:	2410.6	kip-ft
Axial:	107.0	kip
Shear:	42.0	kip

Original AR Capacity Check

Combined Load:	36.9	kip
Allowable load:	116.3	kip
AR Capacity:	31.7%	Pass

First Added Anchor Rod Data

Quantity:	10	
Diameter:	2.25	in
Material:	A687	
Bolt Circle:	92.3	in
Bolt Group Area:	39.76	in^2
Bolt Group MOIx:	42342	in^4

Reactions Seen by First Added AR Group

Moment:	2850.4	kip-ft
Axial:	0.0	kip
Shear:	0.0	kip

First Added AR Capacity Check

Combined Load:	148.2	kip
Allowable load:	389.7	kip
AR Capacity:	38.0%	Pass

Second Added Anchor Rod Data

Quantity:		
Diameter:		in
Material:		
Bolt Circle:		in
Bolt Group Area:	0.00	in^2
Bolt Group MOIx:	0	in^4

Reactions Seen by Second Added AR Group

Moment:	0.0	kip-ft
Axial:	0.0	kip
Shear:	0.0	kip

Second Added AR Capacity Check

Combined Load:	0.0	kip
Allowable load:	0.0	kip
AR Capacity:	0.0%	

Third Added Anchor Rod Data

Quantity:		
Diameter:		in
Material:		
Bolt Circle:		in
Bolt Group Area:	0.00	in^2
Bolt Group MOIx:	0	in^4

Reactions Seen by Second Added AR Group

Moment:	0.0	kip-ft
Axial:	0.0	kip
Shear:	0.0	kip

Second Added AR Capacity Check

Combined Load:	0.0	kip
Allowable load:	0.0	kip
AR Capacity:	0.0%	

Stiffened or Unstiffened, Ungrouted, Circular Base Plate - Any Rod Material

TIA Rev G Assumption: Clear space between bottom of leveling nut and top of concrete **not** exceeding (1)*(Rod Diameter)

Site Data

BU#: *826217*
Site Name: *Newington_1*
App #: *421391 Rev. 7*
Pole Manufacturer: *Other*

Reactions		
Mu:	2410.6	ft-kips
Axial, Pu:	107	kips
Shear, Vu:	42	kips
Eta Factor, η	0.5	TIA G (Fig. 4-4)

Anchor Rod Data		
Qty:	52	
Diam:	1.25	in
Rod Material:	Other	
Strength (Fu):	150	ksi
Yield (Fy):	105	ksi
Bolt Circle:	67	in

If No stiffeners, Criteria: AISC LRFD <-Only Applcable to Unstiffened Cases

Anchor Rod Results

		Stiffened
Max Rod (Cu+ Vu/ή):	36.9 Kips	AISC LRFD
Allowable Axial, Φ*Fu*Anet:	116.3 Kips	φ*Tn
Anchor Rod Stress Ratio:	31.7% **Pass**	

Plate Data		
Diam:	70	in
Thick:	1.25	in
Grade:	36	ksi
Single-Rod B-eff:	3.62	in

Base Plate Results Shear Check Only

		Stiffened
Base Plate Stress:	4.7 ksi	AISC LRFD
Allowable Plate Stress:	19.4 ksi	φ*Fy
Base Plate Stress Ratio:	24.2% **Pass**	Y.L. Length: N/A, Roark

Stiffener Data (Welding at both sides)		
Config:	1	*
Weld Type:	Fillet	
Groove Depth:		<-- Disregard
Groove Angle:		<-- Disregard
Fillet H. Weld:	0.3125	in
Fillet V. Weld:	0.3125	in
Width:	3	in
Height:	6	in
Thick:	0.5	in
Notch:	0.5	in
Grade:	36	ksi
Weld str.:	70	ksi

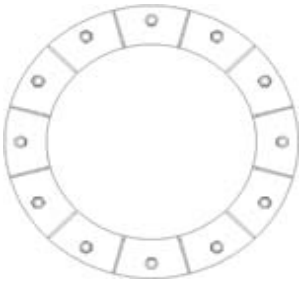
Stiffener Results

Horizontal Weld :	45.0% **Pass**
Vertical Weld:	24.1% **Pass**
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	20.2% **Pass**
Plate Tension+Shear, ft/Ft+(fv/Fv)^2	42.1% **Pass**
Plate Comp. (AISC Bracket):	51.3% **Pass**

Pole Results

Pole Punching Shear Check:	7.4% **Pass**

Pole Data		
Diam:	60	in
Thick:	0.625	in
Grade:	42	ksi
# of Sides:	0	"0" IF Round
Fu	57	ksi
Reinf. Fillet Weld	0	"0" if None



* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

Pier and Pad Foundation

BU # :	826217
Site Name:	Newington_1, CT
App. Number:	421391 Rev. 7

TIA-222 Revision:	G
Tower Type:	Monopole

Block Foundation?: ☐

Superstructure Analysis Reactions

Compression, P_{comp}:	107	kips
Base Shear, Vu_comp:	42	kips
Moment, M_u:	4061	ft-kips
Tower Height, **H**:	191.667	ft
BP Dist. Above Fdn, bp_{dist}:	3	in

Pier Properties

Pier Shape:	Circular	
Pier Diameter, **dpier**:	7.0	ft
Ext. Above Grade, **E**:	0.50	ft
Pier Rebar Size, **Sc**:	9	
Pier Rebar Quantity, **mc**:	34	
Pier Tie/Spiral Size, **St**:	4	
Pier Tie/Spiral Quantity, **mt**:	11	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier}:	3	in

Pad Properties

Depth, **D**:	9.0	ft
Pad Width, **W**:	20.5	ft
Pad Thickness, **T**:	2.5	ft
Pad Rebar Size, **Sp**:	11	
Pad Rebar Quantity, **mp**:	30	
Pad Clear Cover, cc_{pad}:	3	in

Material Properties

Rebar Grade, **Fy**:	60000	psi
Concrete Compressive Strength, **F'c**:	3000	psi
Dry Concrete Density, **δc**:	150	pcf

Soil Properties

Total Soil Unit Weight, **γ**:	130	pcf
Ultimate Gross Bearing, Qult:	16.000	ksf
Cohesion, **Cu**:	0.000	ksf
Friction Angle, **ϕ**:	36	degrees
SPT Blow Count, N_{blows}:		
Base Friction, **μ**:	0.35	
Neglected Depth, **N**:	3.33	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, **gw**:	None	ft

<--Toggle between Gross and Net

Foundation Analysis Checks

	Capacity	Demand	Rating	Check
Lateral (Sliding) (kips)	334.15	42.00	**12.6%**	**Pass**
Bearing Pressure (ksf)	12.00	4.31	**35.9%**	**Pass**
*Overturning (kip*ft)*	6666.47	4470.50	**67.1%**	**Pass**
*Pier Flexure (Comp.) (kip*ft)*	5538.56	4355.00	**78.6%**	**Pass**
Pier Compression (kip)	18370.97	155.49	**0.8%**	**Pass**
*Pad Flexure (kip*ft)*	4769.42	2036.97	**42.7%**	**Pass**
Pad Shear - 1-way (kips)	502.95	406.69	**80.9%**	**Pass**
Pad Shear - 2-way (ksi)	0.16	0.00	**0.0%**	**Pass**

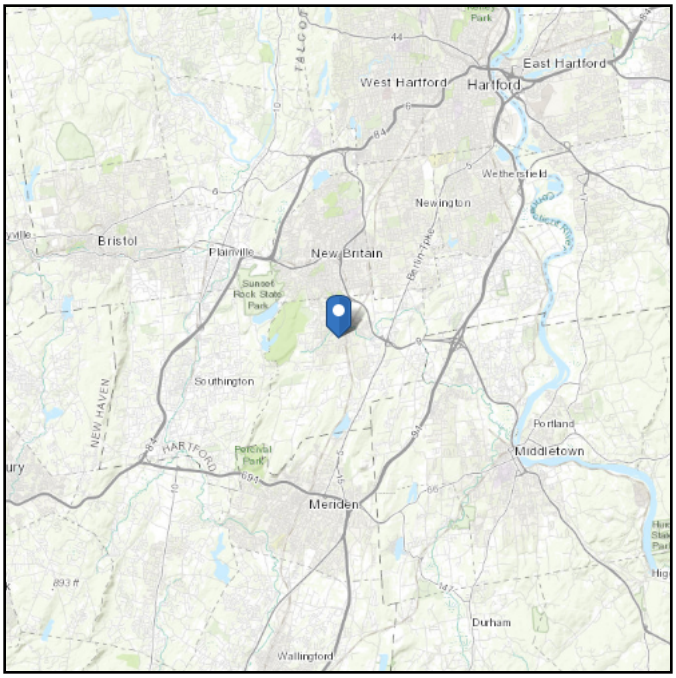
Soil Rating:	**67.1%**
Structural Rating:	**80.9%**

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 133.49 ft (NAVD 88)
Latitude: 41.626194
Longitude: -72.775647



Wind

Results:

Wind Speed:	123 Vmph
10-year MRI	77 Vmph
25-year MRI	86 Vmph
50-year MRI	93 Vmph
100-year MRI	100 Vmph
Data Source:	ASCE/SEI 7-10, Fig. 26.5-1A and Figs. CC-1–CC-4, incorporating errata of March 12, 2014
Date Accessed:	Sat May 05 2018

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

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

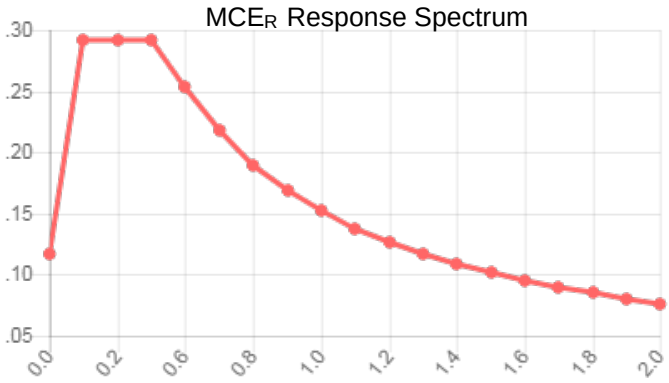
Seismic

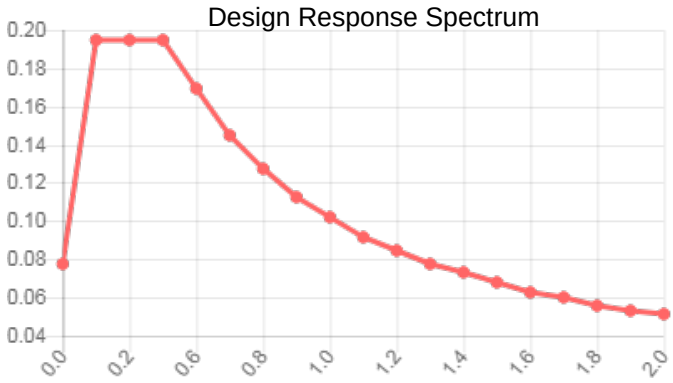
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.183	S_{DS} :	0.195
S_1 :	0.063	S_{D1} :	0.102
F_a :	1.600	T_L :	6.000
F_v :	2.400	PGA :	0.093
S_{MS} :	0.292	PGA_M :	0.149
S_{M1} :	0.152	F_{PGA} :	1.600
		I_e :	1

Seismic Design Category B





Data Accessed: Sat May 05 2018

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

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	5 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Sat May 05 2018

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

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